Piping Material Specification

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Unit Abbreviation.: Not Applicable

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Issue Purpose	For Construction

Rev	Date	Page	Description	Prep'd	Chk'd	App'd
2	29/AUG/14	All	For Construction	K.Y	T.S	T.Y
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JGCS CONSORTIUM

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HOLD LIST

No.	Para.	Subject	Description
1	12.0	Individual Piping Classes	- Material selection for A0QP & B0QP under discussion with Employer.

MAJOR REVISION HISTORY

No.	Para.	Subject	Description
REV.B			
1	3.2	International Codes and Standards	Chlorine Institute Pamphlet 6 “Piping System for Dry Chlorine” was considered not applicable (no dry chlorine service in NSRP) and therefore deleted.
2	7.1	Piping Class Designation Code	“6” and “7” have been newly added to the 4th digit for piping class designation code.
3	8.0	Piping Class Index	JVD decided to use only one GRP piping class S0CW for various services.
4	8.0 9.0 11.0	Piping Class Index Service Limit Table NDE Summary	Para.8.0 “Piping Class Index”, 9.0 “Service Limit Table”, and 11.0 “NDE Summary” were split into two tables, one is for piping classes except for PPU, and the other is for piping classes for PPU, as per Employer’s comment.
5	12.0	Individual Piping Classes	- Orifice flanges were added to each piping class. - 14 new piping classes were added for further development.
REV.0			
1	4.17.4	Valve Gland Packing	Group ‘D’ was newly specified as low emission packing (less than 100ppm) for benzene service.
2	7.1	Piping Class Designation Code	- “9” was newly added to the 3rd digit of piping class designation code for high strength CS for pipeline. - “8” and “9” was newly added to the 4th digit of piping class designation code for benzene service. - “VV” was newly added to the 5th digit of piping class designation code for AIV.
REV.1			
1	7.1	Piping Class Designation Code	Type 347 Stainless steel (for HHP steam service) was added in 3rd digit “M”.
2	8.0 – 12.0	Additional Piping Classes	- Piping classes with 4th digit “8” & “9” (for benzene service) were added. - Piping classes with 5th digit “VV” (for AIV piping) were added. - B19P (for pipeline) was added. - Other new piping classes required during the engineering development were added.
REV.2			
1	8.0 – 12.0	Additional Piping Classes	- Several new piping classes required during the engineering development were added.

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1.0 SCOPE

This Project Specification covers the general Piping Material requirements for the NSRP Complex Project. The following piping bulk components are included in this specification:

- Pipe
- Fittings such as Elbows, Tees, Reducers, Caps, Nipples, Couplings, Olets, Plugs
- Flanges (including Blind Flanges)
- Gaskets
- Bolts and Nuts
- Gate, Globe, Lift Check, Swing Check, Dual Plate Check, Ball, Plug, and Butterfly Valves
- Orifice Flanges
- Spectacle Blanks, Paddle Blanks and Spacers

The piping specialties such as strainers, tagged valves, and pressure relief valves are out of scope of this specification.

This Specification has been developed based on Project Specification 3550-8230-SP-0001. Piping classes will continuously be developed in accordance with the revision of P&ID's.

All Licensors' requirements are followed where applicable.

The detail technical requirements for piping bulk components are specified in S-000-1360-0008V and S-000-1360-0009V.

2.0 DEFINITIONS

For the purpose of this Specification, the following definitions apply:

NSRP:	Nghi Son Refinery and Petrochemical LLC
Contractor:	A Joint Venture formed by JGC Corporation, Chiyoda Corporation, GS Engineering & Construction Corporation, SK Engineering & Construction Co., Ltd., Technip France and Technip Geoproduction (M) Sdn. Bhd., as Contractor for the execution of the NSRP Complex Project
Carbon steel:	Carbon steel includes LTCS (Low Temperature Carbon Steel), unless otherwise specified
JVD:	Contractor's Joint Venture Directorate
OC:	Operation Centre of each Contractor

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3.0 LIST OF APPLICABLE REFERENCE DOCUMENTS

3.1 PROJECT STANDARDS (Note 1)

3550-8440-SP-0004	Cathodic protection scope
3550-8440-SP-0005	Cathodic protection of in-plant facilities
3550-8440-SP-0025	General Requirement for Pipe work Fabrication
S-000-1220-0001V	Basic Engineering Design Data
S-000-1225-0001V	Preparation of P&IDs
S-000-1244-0010V	Specification for the Avoidance of Fatigue Failures from Acoustically Induced Piping Vibration
S-000-1274-0001V	Materials Selection and Corrosion Control Guide
S-000-1274-0002V	Materials Requirements for Pressurised Equipment and Piping
S-000-1274-0005V	Specification for Coating and Wrapping of Buried Pipework
S-000-1360-0006V	Guideline for Stress Critical Line List Preparation
S-000-1360-0007V	Specification for Heat Tracing and Jacketing
S-000-1360-0008V	Technical Specification for Pipes, Fittings, Flanges, Bolts & Nuts, Gaskets and Spectacle Blanks
S-000-1360-0009V	Technical Specification for Manual Valves
S-000-13A0-0001V	Specification for Painting
S-000-1378-0005V	Instrument Piping Specification
S-000-1520-0107V	Supplementary Welding Requirements to API RP 582
S-000-1670-0007V	Positive Materials Identification (PMI) of Alloy Materials during Site Fabrication and Erection

Note 1: Document numbers 3550-xxxx-SP-xxxx are to be replaced with S-000-xxxx-xxxxV for detail EPC in due course.

3.2 INTERNATIONAL CODES AND STANDARDS

Where no specific revision numbers or issue dates of the international codes and standards are specified, the latest versions of them as of 27 January 2013 shall govern.

3.2.1 American Petroleum Institute

API 5L	Specification for Line Pipe
API 582	Welding guidelines for the chemical, oil and gas industries

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API 594	Check Valves: Flanged Lug, Wafer and butt-welding
API 599	Metal Plug Valves – Flanged and Welding Ends
API 600	Bolted Bonnet Gate Valves for Petroleum and Natural Gas Industries
API 602	Steel, Gate Globe and Check Valves for DN100 and smaller for the Petroleum and Natural Gas Industries
API 608	Metal Ball Valves – Flanged, Threaded and Butt-Welding Ends
API 609	Butterfly Valves - Double Flanged, Lug and Wafer Type
API 941	Steels for Hydrogen Service at Elevated Temperatures and Pressures in Petroleum Refineries and Petrochemical Plants

3.2.2 American Society of Mechanical Engineers

ASME B31.1	Power Piping
ASME B31.3	Process Piping
ASME B31.4	Liquid Transportation Systems for Hydrocarbons, Liquid Petroleum Gas, Anhydrous Ammonia, and Alcohols
ASME B1.20.1	Pipe Threads, General Purpose (Inch)
ASME B16.5	Pipe Flanges and Flanged Fittings: NPS ½ through NSP 24 Metric/Inch Standard.
ASME B16.9	Factory-Made Wrought Steel Butt-welding Fittings
ASME B16.11	Forged Steel Fittings, Socket-Welding and Threaded
ASME B16.20	Metallic Gaskets for Pipe Flanges – Ring-joint, Spiral-wound & Jacketed
ASME B16.21	Non-metallic Gaskets for Pipe Flanges
ASME B16.34	Valves – Flanged Threaded, and Welding End
ASME B16.36	Orifice Flanges
ASME B16.47	Large Diameter Steel Flanges: NPS 26 through NPS60 (Metric/Inch std)
ASME B16.48	Steel Line Blanks
ASME B36.10M	Seamless and Welded Wrought Steel Pipe
ASME B36.19M	Stainless Steel Pipe

3.2.3 British Standards

BS 1868	Steel Check Valves, Flanged and Butt Welding Ends
BS 1873	Steel Globe Valves, Flanged and Butt Welding Ends

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3.2.4 EN Standards

BS EN 558	Face to Face and Centre to End Dimensions of Metal Valves for use in Flanged Pipe Systems.
BS EN 10204	Metallic products Types of inspection documents

3.2.5 American Society for Testing and Materials

ASTM A105	Carbon Steel Forgings for piping applications
ASTM A106	Seamless Carbon Steel Pipe for High Temperature Service
ASTM A182	Forged or Rolled Alloy-Steel Pipe Flanges, Forged Fittings, and Valves, and Parts for High Temperature Service
ASTM A193	Alloy-Steel and Stainless Steel Bolting Materials for High Temperature Service or High pressure service and other special purpose application
ASTM A194	Carbon and Alloy Steel Nuts for Bolts for High-Pressure and High Temperature Service or both
ASTM A216	Steel Casting, Carbon, Suitable for Fusion Welding for High Temperature Service
ASTM A217	Steel Casting, Martensitic Stainless and Alloy, for Pressure-Containing Parts Suitable for High Temperature Service
ASTM A234	Pipe Fittings of Wrought Carbon Steel and Alloy Steel for Moderate and High Temperature services
ASTM A240	Chromium and Chromium-Nickel Stainless Steel Plate, Sheets, and Strip for Pressure Vessels and for General Application
ASTM A307	Carbon Steel Bolts and Studs, 60,000 PSI Tensile Strength
ASTM A312	Seamless, Welded, and Heavily Cold Worked Austenitic Stainless Steel Pipes
ASTM A320	Alloy-Steel and Stainless Steel Bolting for Low-Temperature Service
ASTM A333	Seamless and Welded Steel Pipe for Low-Temperature Service
ASTM A335	Seamless Ferritic Alloy Steel for High-Temperature Service
ASTM A350	Carbon and Low-Alloy steel Forgings, Requiring Notch Toughness Testing for Piping Components
ASTM A351	Castings, Austenitic, for Pressure-Containing Parts
ASTM A352	Steel Castings, Ferritic and Martensitic, for Pressure -Containing Parts, Suitable for Low - Temperature Service
ASTM A358	Electric-Fusion-Welded Austenitic Chromium-Nickel Stainless Steel Pipe for High-Temperature Service and General Applications
ASTM A395	Ferritic Ductile Iron Pressure-Retaining Castings for Use at Elevated Temperatures

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ASTM A403	Wrought Austenitic Stainless Steel Piping Fittings
ASTM A420	Piping Fittings of Wrought Carbon Steel and Alloy Steel for Low-Temperature Service
ASTM A494	Castings, Nickel and Nickel Alloy
ASTM A515	Pressure Vessel Plates, Carbon Steel, for Intermediate and Higher Temperature Service
ASTM A516	Pressure Vessel Plates, Carbon Steel, for Moderate and Lower Temperature Service
ASTM A563	Carbon and Alloy Steel Nuts
ASTM A671	Electric Fusion Welded Steel Pipe for Atmospheric and Low Temperatures
ASTM A672	Electric Fusion Welded Steel Pipe for High Pressure Service at Moderate Temperatures
ASTM A691	Carbon and Alloy Steel Pipe, Electric-Fusion-Welded for High-Pressure Service at High Temperatures
ASTM B62	Composition Bronze or Ounce Metal Castings
ASTM B366	Factory-Made Wrought Nickel and Nickel-Alloy Fittings
ASTM B423	Nickel-Iron-Chromium-Molybdenum-Copper Alloy (UNS N08825 and N08221) Seamless Pipe and Tube
ASTM B444	Nickel-Chromium-Molybdenum-Columbium Alloys (UNS N06625 and UNS N06852) and Nickel-Chromium- Molybdenum-Silicon Alloy (UNS N06219) Pipe and Tube
ASTM B564	Nickel Alloy Forgings
ASTM B705	Nickel Alloy (UNS N06625, N06219 and N08825) Welded Pipe

3.2.6 Manufacturers Standardization Society

MSS SP-80	Bronze Gate, Globe, Angle, and Check Valves
MSS SP-83	Class 3000 Steel Pipe Unions, Socket-Welding and Threaded
MSS SP-95	Swage(d) Nipples and Bull Plugs
MSS SP-97	Integrally Reinforced Forged Branch Outlet Fittings - Socket Welding, Threaded

3.2.7 National Association of corrosion Engineers

NACE MR0103	Materials Resistant to Sulfide Stress Cracking in Corrosive Petroleum Refining Environments

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4.0 GENERAL NOTES

This specification is in accordance with ASME B31.1, B31.3 and B31.4.

The piping class designation identification shall be in accordance with Para.7.0 below.

4.1 SERVICE LIMITS AND PIPE WALL THICKNESS

4.1.1 Pipe wall thicknesses of each piping class are calculated in accordance with ASME B31.1, B31.3 or B31.4 as applicable. Vacuum conditions, where applicable, are also considered.
The service limits and applicability of vacuum conditions for each piping class are summarized in Para.9.0 below.

4.1.2 Pipe wall thicknesses of the following size & class combinations are calculated based on the full pressure-temperature ratings of each applicable material group in ASME B16.5:

(1) All sizes NPS 24 & smaller in Class 150 Carbon steel and Low alloy steel process piping classes

(2) All sizes NPS 14 & smaller in Class 300 Carbon steel and Low alloy steel process piping classes

(3) All sizes NPS 10 & smaller in Classes 150 & 300 Stainless steel, and Nickel alloy process piping classes

(4) All sizes NPS 6 & smaller in Class 600 Carbon steel, Low alloy steel, Stainless steel, and Nickel alloy process piping classes

4.1.3 Pipe wall thicknesses of the following size & class combinations are calculated based on the applicable individual line design conditions:

(1) All sizes NPS 26 & larger in Class 150 Carbon steel and Low alloy steel process piping classes

(2) All sizes NPS 16 & larger in Class 300 Carbon steel and Low alloy steel process piping classes

(3) All sizes NPS 12 & larger in Classes 150 & 300 Stainless steel, and Nickel alloy process piping classes

(4) All sizes NPS 8 & larger in Class 600 Carbon steel, Low alloy steel, Stainless steel, and Nickel alloy process piping classes

(5) All sizes in Classes 900 & above Carbon steel, Low alloy steel, Stainless steel, and Nickel alloy process piping classes

(6) All sizes in all classes of Utility services piping classes (based on the utility design conditions specified in S-000-1220-0001V)

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4.1.4 The minimum wall thickness after reduction by:

a) Corrosion Allowance

b) Mill Tolerance

c) Threading Allowance, where applicable, in accordance with ASME B1.20.1 (NPT)

shall not be less than the following:

NOMINAL PIPE SIZE (NPS)	MINIMUM CORRODED THICKNESS (Retirement Thickness)
1/2 – 3/4	0.04" (1.0mm)
1 - 8	0.06" (1.5mm)
10	0.09" (2.3mm)
12 - 14	0.110" (2.8mm)
16 - 24	0.120" (3.1mm)
26 - 36	0.15" (3.8mm)
38 - 46	0.18" (4.6mm)
48	0.21" (5.3mm)
Above 48	0.25" (6.4mm)

If the metal thickness required to contain the pressure is less than the "Minimum Corroded Thickness", the "Minimum Corroded Thickness" shall be used. For larger pipe sizes, the minimum thickness may need to be increased to retain the required shape. The value of D/t is kept less than 150, generally.

4.1.5 Mill tolerances of wall thickness for pipe, fittings and flanges shall be in accordance with the applicable international standards, with the following exception:

For size ranges where welded pipe is used (see Para.4.8.2 below), the mill tolerances of wall thickness for fittings and flanges shall be 0.3mm.

4.1.6 For Carbon steel piping classes excluding LTCS piping classes, the MDMT (Minimum Design Metal Temperature) is basically considered as 0°C.

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4.2 PIPE SIZES

4.2.1 Minimum pipe size shall be NPS 3/4 unless stated otherwise. Smaller sizes may be permitted for instrument connections and steam tracing etc., only where specifically stated. Refer to S-000-1378-0005V for details.

4.2.2 The pipe dimensions shall be in accordance with ASME B36.10M and B36.19M.

4.2.3 Non-standard pipe sizes NPS 1-1/4, 2-1/2, 3-1/2, 5, 7, 9 & 22 shall not be used in any piping class, except where specifically indicated on P&ID's. In addition, pipe sizes for NPS 24 and larger shall basically be selected in accordance with the following rules:

- NPS 24 thru NPS 48: every 6” (i.e. NPS 24, 30, 36, 42 and 48)
- Larger than NPS 48: every 4” (i.e. NPS 52, 56, 60, …)

Note: Where equipment is supplied with non-standard nozzle sizes, these shall be adjusted to a standard size by means of a reducing fitting immediately adjacent to the equipment. The non-standard adaptor component shall be supplied by the equipment manufacturer. Wall thicknesses of such fittings shall be in accordance with the next standard size up.

4.2.4 For the piping classes with 6.0mm C.A., the minimum pipe size shall be NPS 1.

4.3 THREADS

All screwed connections shall have taper threads in accordance with ASME B1.20.1 (NPT), and limited to NPS 1-1/2 or less, except Fire Water (Wet) piping class A0RU where screwed connection is allowed up to NPS 2.

4.4 THREADED PIPING SYSTEMS

4.4.1 As a general design policy to reduce the incidence of leakage, the use of threaded joints and unions (where permitted by Para.8.0 Piping Class index) shall be kept to a minimum consistent with ease of pipe work fabrication, installation and maintenance.

4.4.2 All threaded connections that require seal welding, shall meet the requirements of the relevant fabrication specification.

4.4.3 Threaded plugs on hydrostatic vents not provided with a valve, shall be seal welded after testing has been carried out and after removing any PTFE tapes or joining compound, if used.

Threaded connections, not requiring seal welding, shall be sealed using PTFE tapes or joining compound as per manufacturer's recommendation.

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4.5 JOINTING OF SMALL BORE PIPES

4.5.1 Straight lengths of small bore piping NPS 1-1/2 and smaller, shall be joined together by full couplings in piping classes where socket weld joints are permitted. Similarly in CS galvanized piping classes, threaded unions, as well as threaded couplings and breaking flanges, shall be used for joining straight lengths of pipe as specified in Para.4.9.3.

4.6 BENDS AND ELBOWS IN SMALL BORE PIPING

4.6.1 In small bore welded piping NPS 1-1/2 and smaller, hot or cold formed bends with a radius of 5D min. may be used for LP steam tracing only. The maximum permissible ovality after bending is 5% on outside diameter. The maximum permissible thinning on the back of the bend shall be 12.5% of nominal wall thickness.

The seamless and seam bends shall be in accordance with PFI (Pipe Fabrication Institute) ES-24 & 3550-8440-SP-0025.

4.7 PRESSURE

4.7.1 All pressures given in this specification are gauge pressure, unless otherwise stated.

4.8 PIPE

4.8.1 Where API 5L material is specified, the PSL (Product Specification Level) requirement shall be stated within the individual piping classes.

4.8.2 Seamless / Welded Size Range for Pipe

- Design Code ASME B31.3 Piping Classes:

BASE MATERIAL	SERVICE	SEAMLESS	WELDED
Carbon steel / Low alloy steel	Non-wet H2S Sour	NPS 16 & smaller	NPS 18 & larger
Carbon steel / Low alloy steel	Wet H2S Sour	NPS 24 & smaller	NPS 26 & larger
Stainless steel / Nickel alloy	All	NPS 6 & smaller	NPS 8 & larger

- Design Code ASME B31.1 Piping Classes:

  Seamless for all sizes.

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4.9 PIPE FITTINGS

4.9.1 Piping classes where more than one pressure class of socket weld fitting is used, such as class 3000 and class 6000, reducing fittings shall be specified to the higher rating if dictated by the outlet pipe size schedule.

4.9.2 Swaged nipples

For dimensions of swage nipples refer to MSS SP-95, and reference to end condition in accordance with piping class requirements and Project standards.

4.9.3 Unions

Unions may be restrictively used up to NPS 2 and shall not be used in:

- Hydrogen service
- Steam service
- Process (Flammable and combustible) service
- Systems Class 300 and above
- Where design temperatures are above 150 °C
- Toxic and highly corrosive fluids (including sour service)
- Low temperature service
- Oxygen service

4.9.4 Bends

Hot or cold formed bends NPS 3 and larger, having radii of 2 x NPS or greater, shall be reviewed with particular reference to wall thickness & tolerances.

The seamless bends shall be in accordance with PFI (Pipe Fabrication Institute) ES-24

Bend thickness shall be inspected according to 3550-8440-SP-0025 to ensure that minimum thickness at the mid-span, intrados, extrados and end tangents is not less than the wall thickness specified in the requisition.

4.9.5 Elbows

Dimensions and tolerances of elbows shall be in accordance with ASME B16.9 and ASME B16.11 as applicable.

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4.9.6 Seamless / Welded Size Range for Wrought Fittings

BASE MATERIAL	SERVICE	SEAMLESS	WELDED
Carbon steel / Low alloy steel	Non-wet H2S Sour	NPS 16 & smaller (Note 1)	NPS 18 & larger (Note 1)
Carbon steel / Low alloy steel	Wet H2S Sour	NPS 24 & smaller	NPS 26 & larger
Stainless steel / Nickel alloy	All	NPS 6 & smaller	NPS 8 & larger

Note 1: Elbows are seamless up to NPS 24, and welded for NPS 26 and larger.

4.10 FLANGES

4.10.1 Flanges shall be in accordance with the industry standards tabulated below:

- Metal Flanges

<table>
<tr><th rowspan="2">FACING TYPE</th><th rowspan="2">ASME CLASS</th><th colspan="5">SIZE RANGE (NPS)</th></tr>
<tr><th>Up to 12</th><th>14 thru 24</th><th>26 thru 36</th><th>38 thru 60</th><th>Above 60</th></tr>
<tr><td rowspan="2">RF / FF</td><td>150 / 300</td><td colspan="2">ASME B16.5</td><td colspan="2">ASME B16.47 Seies B (Note 4)</td><td rowspan="4">ASME Sec.VIII Div.1</td></tr>
<tr><td>600</td><td colspan="2">ASME B16.5</td><td>ASME B16.47 Seies B</td><td>ASME B16.47 Seies A (Note 1)</td></tr>
<tr><td rowspan="3">RJ</td><td>600 / 900</td><td colspan="2">ASME B16.5</td><td>ASME B16.47 Seies A (Note 2)</td><td>ASME Sec.VIII Div.1</td></tr>
<tr><td>1500</td><td colspan="2">ASME B16.5</td><td colspan="2">ASME Sec.VIII Div.1</td></tr>
<tr><td>2500</td><td>ASME B16.5</td><td colspan="3">ASME Sec.VIII Div.1</td></tr>
</table>

Note 1: For RF / FF & Class 600, "Series A" shall be mentioned for notational standardization. (Both Series A & B exist in ASME B16.47, and the dimensions of these two are the same for these size range & ASME class.)

Note 2: For RJ, only "Series A" exists in ASME B16.47.

Note 4: Flanges to be connected with GRP or resilient lined butterfly valves shall be Series A.

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➢ GRP Flanges

FACING TYPE	ASME CLASS	SIZE RANGE (NPS)		
		Up to 24	26 thru 60	Above 60
FF	150	ASME B16.5	ASME B16.47 Series A (Note 3)	AWWA C207 Cl.E

Note 3: "Series A" shall be used because the built-up hub of GRP flange would interfere with bolting if "Series B" is used.

4.10.2 Slip-on flanges with hub may be considered only in above ground non corrosive utilities category "D" fluid limited to Class150 and NPS 24 due to increased stress intensification.

4.10.3 Flange facing finish shall be per ASME B16.5 unless otherwise stated.

4.10.4 Ring joint flanges shall be used in Class 900 and above unless otherwise stated.

4.10.5 Flat faced flanges shall only be used when mating to cast iron or non-metallic flanges or to flat face flanges on equipment.

4.10.6 Flanged joints shall be protected by splash guards for all acid and caustic services.

4.11 GASKETS

4.11.1 RJ and Spiral wound gaskets, when specified, shall comply with ASME B16.20.

4.11.2 "Flexible Graphite" compounds shall contain min.98% pure Carbon, leachable chlorides of 50ppm max. and total sulphur of 500ppm max., except where specific Service requirement is determined otherwise.

4.11.3 For design temperature above 427°C, in spiral wound gasket, suitable gasket filler material such as combination of mica layers and graphite fillers or equivalent shall be used or as defined by the Licensor.

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4.12 BOLTS

4.12.1 All bolting shall comply with the requirements of the relevant listed standards and documents.

4.12.2 Bolt Tensioners

The bolt tensioners shall be considered for all bolts with 1-1/4" diameter and larger in Class 600 and above only. In all such cases, the bolt length shall be increased by one bolt diameter.

4.13 FABRICATION

4.13.1 Fabrication of piping shall comply with 3550-8440-SP-0025 and supplementary welding requirements as defined in S-000-1520-0107V and PMI requirements as in S-000-1670-0007V.

4.14 BRANCH REINFORCEMENT

4.14.1 Branch reinforcement shall be in accordance with applicable design code of each piping class as per Para.8.0 Piping Class Index.

4.15 STANDARD SUB ASSEMBLIES

4.15.1 Vent, drain & instrument connections shall be in accordance with standard assembly drawings.

4.16 BURIED PIPING

4.16.1 All buried carbon steel piping shall be externally protected and cathodic protected in accordance with S-000-1274-0005V and 3550-8440-SP-0005.

4.17 VALVES

4.17.1 Valves shall comply with all referenced international standards, specifications and project technical requirements.

4.17.2 Gear operated valves shall be used where indicated by size & rating in order to provide the recommended operational effort. Bevel gear operators are to be used in preference to spur gear operators. Where frequency of operation or high operating torque dictates, valves of other sizes may be equipped with gear operators, and the Valve Data Sheet developed by Contractor shall indicate such requirements.

Valve Type	Valve Size (NPS) / ASME Class With Gear Operator					
	Class 150	Class 300	Class 600	Class 900	Class 1500	Class 2500
Gate	≥ 14	≥ 10	≥ 8	≥ 6	≥ 4	≥ 3

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Globe	≥ 14	≥ 10	≥ 8	≥ 6	≥ 4	≥ 3
Ball	≥ 6	≥ 4	≥ 3	≥ 3	≥ 3	≥ 3
Plug	≥ 6	≥ 4	≥ 3	≥ 3	≥ 3	≥ 3
Concentric Butterfly	≥ 6	≥ 6	≥ 4	-	-	-
Eccentric Butterfly	All	All	All	All	-	-

4.17.3 Valve trim numbers for gate, globe and check valves are generally in accordance with API 600 Table 8.

4.17.4 Valve gland packing material shall be in accordance with the following table.

Group	Packing Type	Service
'A'	Braided graphite top & bottom rings. Die-formed flexible graphite intermediate rings with corrosion inhibitor (low emission: less than 500 ppm)	Hydrocarbon Liquid & Vapour, Hydrogen, H2S/HC/H2 mixtures, Saturated / Superheated Steam, Condensate, Air, Inert Gas, Water (including brackish) Caustic, Ammonia, Amines, Organic Solvents. Temp. Range: -240 ^{O}C to +427 ^{O}C
'B'	PTFE / Compressed synthetic Fibre with oil resistant binder And PTFE fibre impregnated with PTFE dispersion and lubricant (Except Potable water)	Potable Water, Chemicals, Acids, Halogens, Oxygen and other strong oxidisers Temp. Range : - 45 ^{O}C to +232 ^{O}C
'C'	Mica or equivalent	Hydrocarbon Liquid and vapour, Hydrogen, HC/H2 mixtures Temp. Range: -29 ^{O}C to +600 ^{O}C
'D'	Braided graphite top & bottom rings. Die-formed flexible graphite intermediate rings with corrosion inhibitor (low emission: less than 100 ppm)	Benzene service (containing 5wt% or more benzene) Temp. Range: -29 ^{O}C to +427 ^{O}C

S-000-1360-0009V shall indicate gland packing materials for special service duties not covered by the above table.

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4.17.5 Gate, Globe and Check valves in pressure class 900 and above shall have pressure seal bonnets and covers to minimize bonnet leakage. Welded bonnets are acceptable for sizes lower than NPS 2 for Class 900 & above.

4.17.6 Face to Face / End to End dimension of valves shall confirm to ASME B16.10, API 594 or API 609 as applicable. For valves in 1-1/2" and smaller not covered in ASME B16.10, reference shall be made to BS EN 558 and / or manufacturer's standard.

4.17.7 All wrench operated ball valves shall have 120mm extended spindle (measured from the valve bonnet). The spindle to have an outer stationary tube welded to the valve bonnet and have a weather seal at the wrench end. The stationary tube enables the insulation to be properly sealed around it.

4.17.8 Full-bore valves shall only be used when specifically indicated on P&IDs. Ball valves shall be specified with reduced port, as standard in the piping material specification. The selection of suitable port is verified by Contractor.

4.17.9 Butterfly valves up to NPS 18 shall be of lug type for all services. Above NPS 18 for all services, it shall be of double flanged ends. Butterfly valve disc type, in throttling applications shall be properly reviewed and selected to prevent cavitation erosion of intermediate graphite, where throttling angle is maintained less than 30 degree during operation, resulting in improper sealing, where a solid disc is to be used.

4.17.10 Dual plate check valves to be with wafer end types for Class 600 & below, and with lug types for Class 900 & above.

4.17.11 Pressure – temperature rating of flanged and butt welding end valves shall be in accordance with ASME B16.34 except for soft seated valves.

For soft seated valves, the pressure – temperature rating shall be in accordance with ASME B16.34 up to 170 dec.C as a minimum. Above 170 dec.C, the pressure – temperature rating shall be as per the selected Vendor's standard. For rubber lined butterfly valves, the pressure – temperature rating shall be 1.0 MPa up to 76 dec.C as a minimum.

4.17.12 In all hydrogen and hydrogen rich Hydrocarbon thermal cyclic services, the gate and globe valves NPS 3 and above shall be provided with spring loaded stuffing box up to Class 600.

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4.17.13 Dual Plate Check Valve Size Range

Dual plate check valves are used in lieu of Swing check valves for the following sizes:

ASME CLASS	SIZE RANGE (NPS)	
	Carbon Steel / Low Alloy Steel	Stainless Steel / Nickel Alloy
150	≥ 26	≥ 26
300	≥ 26	≥ 14
600 / 900	≥ 12	≥ 12
1500 / 2500	≥ 8	≥ 8

4.17.14 Ball Valve – Floating / Trunnion

Type selection of floating / trunnion type for ball valves is as follows:

ASME CLASS	SIZE RANGE (NPS)	
	FLOATING	TRUNNION
150 / 300	≤ 4	≥ 6
600 / 900 / 1500	≤ 1-1/2	≥ 2

4.17.15 Valve End Connection

Valve end connections are as per following table:

ASME CLASS	SIZE RANGE (NPS)	VALVE TYPE	
		Gate, Globe, Check	Others
150 / 300 / 600	≤ 1-1/2	SW if SW is allowed and no PWHT applied. Flanged for other than above case. (Note 1)	Flanged
	≥ 2	Flanged	Flanged
900 / 1500 / 2500	≤ 1-1/2	Flanged (Note 2)	Flanged
	≥ 2	Flanged if PWHT applied due to service. BW for other than above case. (Note 1, 2)	Flanged

Note 1: See Para.8.0 Piping Class Index.

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Note 2: For CLG Unit, the valve ends are BW regardless of PWHT applicability.

4.18 DISSIMILAR METAL CONNECTIONS

4.18.1 Information relevant to dissimilar metal connections is covered in 3550-8440-SP-0025.

4.19 STEAM TRACING

4.19.1 Steam tracing shall be in accordance with S-000-1360-0007V.

4.20 SPECTACLE BLANKS, PADDLE BLANKS AND SPACERS

The selection criteria of spectacle blanks, paddle blanks and spacers shall be as follows:

<table>
<tr><td rowspan="2">NPS</td><td colspan="3">ASME CLASS</td></tr>
<tr><td>150 & 300</td><td>600</td><td>900, 1500 & 2500</td></tr>
<tr><td>≤ 2</td><td>Spectacle Blank
(Note 1)</td><td rowspan="2">Spectacle Blank</td><td rowspan="4">Blank & Spacer
(Note 1)</td></tr>
<tr><td>3 thru 6</td><td rowspan="2">Spectacle Blank</td></tr>
<tr><td>8 thru 12</td><td rowspan="2">Blank & Spacer</td></tr>
<tr><td>≥ 14</td><td>Blank & Spacer</td></tr>
</table>

Note 1: For these size & ASME class combinations, spectacle blanks, paddle blanks and spacers are not to be used as per S-000-1225-0001V, except where specifically required in P&ID.

5.0 HEAT TREATMENT

5.1.1 PWHT requirements shall be in accordance with Para.8.0 Piping Class Index for each corresponding piping class & applicable codes.

5.1.2 Austenitic stainless steel materials supplied shall be in solution heat treated condition.

5.1.3 Suitable heat treatment shall be applied to ERW pipes of ferritic steels, so that no untempered martensite is present.

5.1.4 Submerged arc welded API 5L Gr.B pipes shall be furnished in the normalized condition. And all API 5L Gr.B pipes shall be killed or semi-killed.

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6.0 INSPECTION AND CERTIFICATION

Inspection Certificate 3.1 according to BS EN 10204(2004) of the results of all required tests on the purchased materials are to be furnished by the supplier. Further temperature of heat treatment, where applicable, shall also be indicated by supplier.

For welded pipes fabricated from plate materials and which are not referenced in any pipe specification, the test report shall include Inspection Certificate 3.1 according to BS EN 10204(2004) or certified mill test report for the plates used & the report on NDE and its results.

The Inspection Certificate 3.1 according to BS EN 10204(2004) or certified mill test report for the plate (parent plate or coil) shall contain, as a minimum, the heat number, heat analysis, tensile test results and results of all other tests, in addition to the dimensions, material specification, grade and Heat treatment temperatures.

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7.0 PIPING CLASS DESIGNATION CODE

A breakdown of the piping class designation code is listed below for information purpose.

7.1 Piping Classes except for PPU Unit

1st - Nominal Pressure and Flange Facing (ASME B16.5 / B16.47 Flange Class)			
Digit	**Description**	**Digit**	**Description**
A	150, RF	M	900, RJ
B	300, RF	N	1500, RJ
C	Not Used	P	2500, RJ
D	600,	Q	150, Lap Joint
E	900, RF	R	300, Lap Joint
F	1500, RF	S	150, FF
G	2500, RF	T	300, FF
H	150, RJ	U	3000 psi – Compression FittingTubing system
J	300, RJ	V	300, Large Tongue and Groove
K	Not Used	W	600, Large Tongue and Groove
L	600, RJ		
2nd – Corrosion Allowance			
0	NIL or nominal up to 1mm	3	4.5mm (nominal up to 5.0mm)
1	1.5mm	4	6.0mm
2	3.0mm		
3rd – Material			
A	Killed Carbon Steel	T	PP, PVDF, PE – Butt/Socket Fusion or Screwed
B	Copper Tube (C12200)	U	CS, Coated & Wrapped for underground
C	RTRP (GR Epoxy / Polyester/Vinyl-ester)	V	Titanium / Titanium Alloys
D	1-1/4% Cr – 1/2% Mo	W	Duplex Stainless Steel
E	2-1/4% Cr – 1% Mo	X	Ferritic Stainless Steel
F	5% Cr – 1/2% Mo	Y	Nickel / Nickel Alloys, Copper-Nickel Alloys

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G	Fine Grained CS, Impact Tested (LTCS)	Z	Aluminium / Aluminium Alloys
H	3-1/2% NI (Low Temp. Service)	1	Carbon Steel Refractory Lined
J	Type 304L Stainless Steel	2	Alloy 20 (N08020)
K	Mod. Austenitic SS (304 / 304H with 0.04% min. Carbon)	3	904L (N08904)
L	Type 316L Stainless Steel	4	Not used
M	Type 321 / 321H / 347 Stainless steel	5	Super Duplex Stainless Steel
N	Cast Ductile or Grey Iron, Plain or Lined	6	Type 316 / 316H Stainless Steel with 0.04% min. Carbon
P	Carbon Steel, Plastic or Rubber Lined	7	Not used
Q	Carbon Steel, Cement or Epoxy Lined	8	9% Cr – 1% Mo
R	Carbon Steel Galvanised	9	High Strength CS for Pipeline
S	uPVC, ABS, c-PVC – Solvent Weld or Screwed		
4th – Service or Limiting Factors			
A	Utility – Instrument/Plant Air, Nitrogen and non-hydrocarbon	S	Utility – Steam, Condensate, Boiler Feed Water to ASME B31.3
B	Process – Light Hydrocarbons using Ball valves only	T	Utility – Tracing by steam or liquid.
C	Process – Catalyst slurry, fluidised or powdered coke & other erosive process	U	Utility – Fire Water
D	Utility – Hydrocarbon e.g. Fuel Oil, Pilot Gas, LPG etc.	V	Corrosive service, other than symbol J or Q, and CS or Cr-Mo steel with corr.allow. >3mm, and Cr-Ni steels with corr.allow. >1mm
E	Process – Special valve trim or special piping requirement	W	Utility – Water services viz. cooling, potable, etc.
F	Process – P symbol Service (Sulphur etc) jacketed piping systems	X	Process – Category 'M' fluids as determined by Employer
G	Utility – Steam, Condensate, Boiler Feed Water to ASME B31.1	Y	Chemical dosing
H	Process – Hydrogen or Hydrogen rich Hydrocarbon mixtures (ppH2 ≥7Kg/cm2g)	Z	Cryogenic Service
J	Acids - Corrosive	1	Not used

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K	Chlorine	2	Process vacuum service
L	Non NACE mild corrosive sour service and Amines – Stress Relieved	3	Process – Q symbol service (NACE) jacketed piping systems
M	Ammonia	4	Process - Q symbol service (NACE) plus Amines or Caustic – Stress Relieved
N	Caustic	5	Process - R symbol service (NACE + HIC) plus Amines or Caustic – Stress Relieved
O	Oxygen	6	Process – Q symbol service (NACE) plus H symbol service (Note 2)
P	Process - General Process Non sour, non corrosive	7	Process – R symbol service (NACE + HIC) plus H symbol service (Note 2)
Q	Process – Wet Low Severity Sour (Moderate Wet H2S) service subject to NACE std. and Project Specification S-000-1274-0001V, para.4.3	8	Process – Benzene service (containing 5wt% or more benzene)
R	Process – Wet High Severity Sour (Severe Wet H2S) service subject to NACE + HIC std. and Project Specification S-000-1274-0001V, para.4.3	9	Process – Benzene service plus H symbol service
5th – Licensor (Note 1) / AIV (Note 3)			
01	Axens	03	JACOBS
02	CLG	04	UOP
V V	AIV Piping		

Note 1: The following identification wordings (Licensor-x) are specified in the commodity description for each component to call for Licensor specific requirements:

- Licensor-1: with Axens specific requirements
- Licensor-2: with CLG specific requirements
- Licensor-3: with JACOBS specific requirements
- Licensor-4: with UOP specific requirements

Note 2: 4th letter “6” or “7” shall be used for Licensor units of Axens, CLG and UOP only.

Note 3: Countermeasures for AIV are taken in accordance with S-000-1244-0010V.

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7.2 Piping Classes for PPU Unit (Licensed by MCI)

1st - Pressure Rating Class Symbol (ASME B16.5 / B16.47 Flange Class)			
Digit	**Description**	**Digit**	**Description**
A	150	E	900
B	300	F	1500
D	600	X	Others
2nd – Supplemental Symbol			
No specific rule			
3rd – Detail Material Symbol			
1	Killed Carbon Steel or Type 304 Stainless Steel	4	Type 316L Stainless Steel
2	Killed Carbon Steel or Type 304L Stainless Steel	6	Stress Corrosion Resistant Steel (UNS S31803, S32205, N08904)
3	Killed Carbon Steel or Type 316 Stainless Steel		
4th – Basic Material Symbol			
A	Killed Carbon Steel	F	Stainless Steel
B	Killed Carbon Steel for High Press. and High Temp.Service	G	Ferritic-austenitic Stainless Steel
C	Alloy Steel	X	Galvanized Carbon Steel
D	Killed Carbon Steel for Low Temp. Service		
5th – Licensor (Note 1)			
05	MCI		

Note 1: The identification wording of Licensor-5 is specified in the commodity description for each component to call for Licensor specific requirements.

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8.0 PIPING CLASS INDEX

See the following pages.

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8.1 Piping Classes except for PPU Unit

SR. NO.	PIPING CLASS	ASME CLASS	SERVICE DESCRIPTION	DESIGN CODE	FLUID	HIC	NACE MR 0103	PWHT (Note 37)	PIPE / FLANGE MATERIAL	C/A mm	VALVE TRIM	ASME B16.5 MAT, GROUP	CONSTR/ ENDS	FLANGE FACE TYPE	DESIGN TEMP RANGE (DEG C)	BOLTING	GASKET (S)	SIZE RANGE Inch	VALVE TYPE	NOTE
1	A0AC01	Class 150	PROCESS - CATALYST	B31.3	SOLID	NO	NO	B31.3	CS - ASTM A106 Gr.B / ASTM A105	NOTE 6	Trim 12 (SS316 / HF)	1.1	BW, FL	RF	0 to 427	B7 / 2H	316SS SPW / GRAPHITE	NPS 1 - 12	GA, GL, CH, BA	1,6
2	A0AC04	Class 150	PROCESS - CATALYST	B31.3	SOLID	NO	NO	B31.3	CS - ASTM A106 Gr.B / ASTM A105	NOTE 6	RTFE / SS316, STELLITE	1.1	BW, FL	RF	0 to 427	B7 / 2H	316SS SPW / GRAPHITE	NPS 1 - 6	BA	1,6,2
3	A0J501	Class 150	PROCESS - WET SEVERE SOUR SERVICE SUBJECT TO NACE + HIC STD + AMINES OR CAUSTIC - STRESS RELIEVED	B31.3	LIQUID	NO	YES	NO	SS - ASTM A312 TP304/TP304L Dual Grade / ASTM A182 F304/304L Dual Grade	0.0	Trim 12 (SS316 / HF)	2.1	BW, FL	RF	-29 to 425	B7M / 2HM	316SS SPW / GRAPHITE	NPS 1/2 - 6	GA, GL, CH	1,5
4	A0J503	Class 150	PROCESS - WET SEVERE SOUR SERVICE SUBJECT TO NACE + HIC STD + AMINES OR CAUSTIC - STRESS RELIEVED	B31.3	LIQUID / VAPOUR	NO	YES	NO	SS - ASTM A312 TP304/TP304L Dual Grade / ASTM A358 304/304L Dual Grade CL.1 / ASTM A182 F304/304L Dual Grade	0.0	Trim 12 (SS316 / HF)	2.1	BW, FL	RF	-29 to 425	B7M / 2HM	316SS SPW / GRAPHITE	NPS 1/2 - 30	GA, GL, CH	1,5
5	A0JP	Class 150	PROCESS / UTILITY - CORROSIVE SERVICE : / DEMINERALISED WATER (< 4") / POLISHED CONDENSATE / REJECT WATER (BACK WASH) / PROCESS / CHEMICALS / AMINE	B31.3	LIQUID / VAPOUR	NO	NO	NO	SS - ASTM A312 TP304/TP304L Dual Grade / ASTM A358 304/304L Dual Grade CL.1 / ASTM A182 F304/304L Dual Grade	0.8	Trim 12 (SS316 / HF)	2.1	SW, BW, FL	RF	-29 to 425	B7 / 2H	316SS SPW / GRAPHITE	NPS 1/2 - 42	GA, GL, CH, BF	1,2
6	A0JP03	Class 150	PROCESS - GENERAL PROCESS NON SOUR, NON CORROSIVE	B31.3	LIQUID / VAPOUR	NO	NO	NO	SS - ASTM A312 TP304/TP304L Dual Grade / ASTM A182 F304/304L Dual Grade	0.8	Trim 12 (SS316 / HF)	2.1	SW, BW, FL	RF	-29 to 425	B7 / 2H	316SS SPW / GRAPHITE	NPS 1/2 - 4	GA, GL, CH, BF	1,2
7	A0JQ	Class 150	PROCESS -WET SOUR SERVICE SUBJECT TO NACE STD. : / RICH AMINE / SOUR GAS / SOUR WATER	B31.3	LIQUID / LIQUID + VAPOUR	NO	YES	NO	SS - ASTM A312 TP304/TP304L Dual Grade / ASTM A358 304/304L Dual Grade CL.1 / ASTM A182 F304/304L Dual Grade	0.8	Trim 12 (SS316 / HF)	2.1	BW, FL	RF	-29 to 425	B7M / 2HM	316SS SPW / GRAPHITE	NPS 1/2 - 14	GA, GL, CH, BA, BF, NV	1,2,5
8	A0JQ01	Class 150	PROCESS -WET SOUR SERVICE SUBJECT TO NACE STD. : / RICH AMINE / SOUR GAS / SOUR WATER	B31.3	LIQUID / LIQUID + VAPOUR	NO	YES	NO	SS - ASTM A312 TP304/TP304L Dual Grade / ASTM A182 F304/304L Dual Grade	0.8	Trim 12 (SS316 / HF)	2.1	BW, FL	RF	-29 to 425	B7M / 2HM	316SS SPW / GRAPHITE	NPS 1/2 - 6	GA, GL, CH, BA, BF, NV	1,2,5
9	A0JR	Class 150	PROCESS - WET SEVERE SOUR SERVICE SUBJECT TO NACE + HIC STD.	B31.3	LIQUID / LIQUID + VAPOUR	NO	YES	NO	SS - ASTM A312 TP304/TP304L Dual Grade / ASTM A358 304/304L Dual Grade CL.1 / ASTM A182 F304/304L Dual Grade	0.0	Trim 12 (SS316 / HF)	2.1	BW, FL	RF	-29 to 425	B7M / 2HM	316SS SPW / GRAPHITE	NPS 1/2 - 24	GA, GL, CH	1,5
10	A0JR01	Class 150	PROCESS - WET SEVERE SOUR SERVICE SUBJECT TO NACE + HIC STD.	B31.3	LIQUID / LIQUID + VAPOUR	NO	YES	NO	SS - ASTM A312 TP304/TP304L Dual Grade / ASTM A182 F304/304L Dual Grade	0.0	Trim 12 (SS316 / HF)	2.1	BW, FL	RF	-29 to 425	B7M / 2HM	316SS SPW / GRAPHITE	NPS 1/2 - 6	GA, GL, CH	1,5
11	A0JR03	Class 150	PROCESS - WET SEVERE SOUR SERVICE SUBJECT TO NACE + HIC STD.	B31.3	LIQUID / LIQUID + VAPOUR	NO	YES	NO	SS - ASTM A312 TP304/TP304L Dual Grade / ASTM A358 304/304L Dual Grade CL.1 / ASTM A182 F304/304L Dual Grade	0.0	Trim 12 (SS316 / HF)	2.1	BW, FL	RF	-29 to 425	B7M / 2HM	316SS SPW / GRAPHITE	NPS 1/2 - 24	GA, GL, CH	1,5
12	A0JS	Class 150	UTILITY, CORROSIVE : STEAM AND CONDENSATE	B31.3	VAPOUR / LIQUID + VAPOUR	NO	NO	NO	SS - ASTM A312 TP304/TP304L Dual Grade / ASTM A358 304/304L Dual Grade CL.1 / ASTM A182 F304/304L Dual Grade	0.0	Trim 12 (SS316 / HF)	2.1	SW, BW, FL	RF	-29 to 300	B7 / 2H	316SS SPW / GRAPHITE	NPS 1/2 - 20	GA, GL, CH	1,3
13	A0JS01	Class 150	UTILITY - STEAM, CONDENSATE, BOILER FEED WATER TO ASME B31.3	B31.3	VAPOUR / LIQUID + VAPOUR	NO	NO	NO	SS - ASTM A312 TP304/TP304L Dual Grade / ASTM A358 304/304L Dual Grade CL.1 / ASTM A182 F304/304L Dual Grade	0.0	Trim 12 (SS316 / HF)	2.1	SW, BW, FL	RF	-29 to 265	B7 / 2H	316SS SPW / GRAPHITE	NPS 1/2 - 16	GA, GL, CH	1,3
14	A0JS04	Class 150	UTILITY - STEAM, CONDENSATE, BOILER FEED WATER TO ASME B31.3	B31.3	VAPOUR / LIQUID + VAPOUR	NO	NO	NO	SS - ASTM A312 TP304/TP304L Dual Grade / ASTM A358 304/304L Dual Grade CL.1 / ASTM A182 F304/304L Dual Grade	0.0	Trim 12 (SS316 / HF)	2.1	SW, BW, FL	RF	-29 to 265	B7 / 2H	316SS SPW / GRAPHITE	NPS 1/2 - 12	GA, GL, CH	1,3
15	A0JV	Class 150	PROCESS - CORROSIVE SERVICE:	B31.3	LIQUID / VAPOUR	NO	NO	NO	SS - ASTM A312 TP304/TP304L Dual Grade / ASTM A358 304/304L Dual Grade CL.1 / ASTM A182 F304/304L Dual Grade	1.0	Trim 12 (SS316 / HF)	2.1	SW, BW, FL	RF	-29 to 425	B7 / 2H	316SS SPW / GRAPHITE	NPS 1/2 - 18	GA, GL, CH	1,2
16	A0JW	Class 150	UTILITY – WATER SERVICE : DEMINERALISED WATER	B31.3	LIQUID	NO	NO	NO	SS - ASTM A312 TP304/TP304L Dual Grade / ASTM A358 304/304L Dual Grade CL.1 / ASTM A182 F304/304L Dual Grade	0.0	Trim 12 (SS316 / HF)	2.1	SW, BW, FL	RF	-29 to 155	B7 / 2H	316SS SPW / GRAPHITE	NPS 1/2 - 42	GA, GL, CH	1
17	A0JY	Class 150	PROCESS - CHEMICAL DOSING : / CHEMICALS	B31.3	LIQUID	NO	NO	NO	SS - ASTM A312 TP304/TP304L Dual Grade / ASTM A358 304/304L Dual Grade CL.1 / ASTM A182 F304/304L Dual Grade	0.0	Trim 12 (SS316 / HF)	2.1	BW, FL	RF	-29 to 232	B7 / 2H	316SS SPW / GRAPHITE	NPS 1/2 - 8	GA, GL, CH, BA, BF	1,2
18	A0JY01	Class 150	PROCESS - CHEMICAL DOSING	B31.3	LIQUID	NO	NO	NO	SS - ASTM A312 TP304/TP304L Dual Grade / ASTM A182 F304/304L Dual Grade	0.0	Trim 12 (SS316 / HF)	2.1	BW, FL	RF	-29 to 232	B7 / 2H	316SS SPW / GRAPHITE	NPS 1/2 - 4	GA, GL, CH, BA	1,2
19	A0JY04	Class 150	PROCESS - CHEMICAL DOSING	B31.3	LIQUID	NO	NO	NO	SS - ASTM A312 TP304/TP304L Dual Grade / ASTM A182 F304/304L Dual Grade	0.0	Trim 12 (SS316 / HF)	2.1	BW, FL	RF	-29 to 232	B7 / 2H	316SS SPW / GRAPHITE	NPS 1/2 - 4	GA, GL, CH, BA	1,2
20	A0L4	Class 150	PROCESS -WET LOW SEVERITY SOUR SERVICE SUBJECT TO NACE + AMINES OR CAUSTIC - STRESS RELIEVED	B31.3	LIQUID	NO	YES	NO	SS - ASTM A312 TP316/TP316L Dual Grade / ASTM A358 316/316L Dual Grade CL.1 / ASTM A182 F316/316L Dual Grade	0.0	Trim 12 (SS316 / HF)	2.2	BW, FL	RF	-29 to 425	B7M / 2HM	316SS SPW / GRAPHITE	NPS 1/2 - 10	GA, GL, CH	1,5
21	A0L5	Class 150	PROCESS - WET SEVERE SOUR SERVICE SUBJECT TO NACE + HIC STD + AMINES OR CAUSTIC - STRESS RELIEVED	B31.3	VAPOUR / LIQUID	NO	YES	NO	SS - ASTM A312 TP316/TP316L Dual Grade / ASTM A358 316/316L Dual Grade CL.1 / ASTM A182 F316/316L Dual Grade	0.0	Trim 12 (SS316 / HF)	2.2	BW, FL	RF	-29 to 425	B7M / 2HM	316SS SPW / GRAPHITE	NPS 1/2 - 30	GA, GL, CH	1,5
22	A0L501	Class 150	PROCESS - WET SEVERE SOUR SERVICE SUBJECT TO NACE + HIC STD + AMINES OR CAUSTIC - STRESS RELIEVED	B31.3	VAPOUR / LIQUID	NO	YES	NO	SS - ASTM A312 TP316/TP316L Dual Grade / ASTM A358 316/316L Dual Grade CL.1 / ASTM A182 F316/316L Dual Grade	0.0	Trim 12 (SS316 / HF)	2.2	BW, FL	RF	-29 to 425	B7M / 2HM	316SS SPW / GRAPHITE	NPS 1/2 - 10	GA, GL, CH	1,5
23	A0L503	Class 150	PROCESS - WET SEVERE SOUR SERVICE SUBJECT TO NACE + HIC STD + AMINES OR CAUSTIC - STRESS RELIEVED	B31.3	VAPOUR / LIQUID	NO	YES	NO	SS - ASTM A312 TP316/TP316L Dual Grade / ASTM A182 F316/316L Dual Grade	0.0	Trim 12 (SS316 / HF)	2.2	BW, FL	RF	-29 to 425	B7M / 2HM	316SS SPW / GRAPHITE	NPS 1/2 - 4	GA, GL, CH	1,5
24	A0LG	Class 150	UTILITY - POWER PIPING, CORROSIVE SERVICE : / CHEMICAL (O2 SCAVENGER & AMINE DOSING TO DE AERATOR)	B31.1	LIQUID	NO	NO	NO	SS - ASME SA312 TP316/TP316L Dual Grade / ASME SA182 F316/316L Dual Grade	0.0	Trim 12 (SS316 / HF)	2.2	SW, BW, FL	RF	-29 to 425	B7 / 2H	316SS SPW / GRAPHITE	NPS 1/2 - 6	GA, GL, CH	1
25	A0LG01	Class 150	UTILITY - STEAM, CONDENSATE, BOILER FEED WATER TO ASME B31.1	B31.1	LIQUID	NO	NO	NO	SS - ASME SA312 TP316/TP316L Dual Grade / ASME SA182 F316/316L Dual Grade	0.0	Trim 12 (SS316 / HF)	2.2	SW, BW, FL	RF	-29 to 265	B7 / 2H	316SS SPW / GRAPHITE	NPS 1/2 - 18	GA, GL, CH	1
26	A0LP03	Class 150	PROCESS - GENERAL PROCESS NON SOUR, NON CORROSIVE	B31.3	LIQUID / VAPOUR	NO	NO	NO	SS - ASTM A312 TP316/TP316L Dual Grade / ASTM A182 F316/316L Dual Grade	0.8	Trim 12 (SS316 / HF)	2.2	SW, BW, FL	RF	-29 to 425	B7 / 2H	316SS SPW / GRAPHITE	NPS 1/2 - 6	GA, GL, CH, BA	1,2,24
27	A0LP04	Class 150	PROCESS - GENERAL PROCESS NON SOUR, NON CORROSIVE	B31.3	LIQUID / VAPOUR	NO	NO	NO	SS - ASTM A312 TP316/TP316L Dual Grade / ASTM A182 F316/316L Dual Grade	0.8	Trim 12 (SS316 / HF)	2.2	SW, BW, FL	RF	-29 to 425	B7 / 2H	316SS SPW / GRAPHITE	***NPS 1/2 - 8***	GA, GL, CH, BA	1,2,24
28	A0LQ	Class 150	PROCESS - WET SOUR SERVICE SUBJECT TO NACE STD. : / SWS FEED	B31.3	LIQUID	NO	YES	NO	SS - ASTM A312 TP316/TP316L Dual Grade / ASTM A358 316/316L Dual Grade CL.1 / ASTM A182 F316/316L Dual Grade	0.0	Trim 12 (SS316 / HF)	2.2	BW, FL	RF	-29 to 425	B7M / 2HM	316SS SPW / GRAPHITE	NPS 1/2 - 30	GA, GL, CH, BA, BF	1,2,5
29	A0LQ03	Class 150	PROCESS - WET LOW SEVERITY SOUR SERVICE SUBJECT TO NACE STD	B31.3	LIQUID	NO	YES	NO	SS - ASTM A312 TP316/TP316L Dual Grade / ASTM A358 316/316L Dual Grade CL.1 / ASTM A182 F316/316L Dual Grade	0.0	Trim 12 (SS316 / HF)	2.2	BW, FL	RF	-29 to 425	B7M / 2HM	316SS SPW / GRAPHITE	NPS 1/2 - 30	GA, GL, CH, BA, BF	1,2,5
30	A0LR	Class 150	PROCESS - WET SEVERE SOUR SERVICE SUBJECT TO NACE + HIC STD.	B31.3	LIQUID	NO	YES	NO	SS - ASTM A312 TP316/TP316L Dual Grade / ASTM A358 316/316L Dual Grade CL.1 / ASTM A182 F316/316L Dual Grade	0.0	Trim 12 (SS316 / HF)	2.2	BW, FL	RF	-29 to 425	B7M / 2HM	316SS SPW / GRAPHITE	NPS 1/2 - 30	GA, GL, CH	1,5

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SR. NO.	PIPING CLASS	ASME CLASS	SERVICE DESCRIPTION	DESIGN CODE	FLUID	HIC	NACE MR 0103	PWHT (Note 37)	PIPE / FLANGE MATERIAL	C/A mm	VALVE TRIM	ASME B16.5 MAT, GROUP	CONSTR/ ENDS	FLANGE FACE TYPE	DESIGN TEMP RANGE (DEG C)	BOLTING	GASKET (S)	SIZE RANGE Inch	VALVE TYPE	NOTE
31	A0LR01	Class 150	PROCESS - WET SEVERE SOUR SERVICE SUBJECT TO NACE + HIC STD.	B31.3	LIQUID	NO	YES	NO	SS - ASTM A312 TP316/TP316L Dual Grade / ASTM A358 316/316L Dual Grade CL.1 / ASTM A182 F316/316L Dual Grade	0.0	Trim 12 (SS316 / HF)	2.2	BW, FL	RF	-29 to 425	B7M / 2HM	316SS SPW / GRAPHITE	NPS 1/2 - 24	GA, GL, CH	1,5
32	A0LR03	Class 150	PROCESS - WET SEVERE SOUR SERVICE SUBJECT TO NACE + HIC STD.	B31.3	LIQUID	NO	YES	NO	SS - ASTM A312 TP316/TP316L Dual Grade / ASTM A358 316/316L Dual Grade CL.1 / ASTM A182 F316/316L Dual Grade	0.0	Trim 12 (SS316 / HF)	2.2	BW, FL	RF	-29 to 425	B7M / 2HM	316SS SPW / GRAPHITE	NPS 1/2 - 24	GA, GL, CH	1,5
33	A0LU	Class 150	UTILITY - ABOVEGROUND FIRE WATER (FOAM CONCENTRATE) SERVICE.	B31.3	LIQUID	NO	NO	NO	SS - ASTM A312 TP316/TP316L Dual Grade / ASTM A358 316/316L Dual Grade CL.1 / ASTM A182 F316/316L Dual Grade	0.0	Trim 12 (SS316 / HF)	2.2	SW, BW, FL	RF	0 to 60	B7 / 2H	316SS SPW / GRAPHITE	NPS 1/2 - 12	GA, GL, CH	1
34	A0LW	Class 150	UTILITY – WATER SERVICE : / POTABLE WATER / DRINKING WATER (A/G) / SANITARY	B31.3	LIQUID	NO	NO	NO	SS - ASTM A312 TP316/TP316L Dual Grade / ASTM A358 316/316L Dual Grade CL.1 / ASTM A182 F316/316L Dual Grade	0.0	Trim 12 (SS316 / HF)	2.2	SW, BW, FL	RF	-29 to 60	B7 / 2H	316SS SPW / GRAPHITE	NPS 1/2 - 14	GA, GL, CH, BA	1,2,29
35	A0MP01	Class 150	PROCESS - GENERAL PROCESS NON SOUR, NON CORROSIVE	B31.3	VAPOUR / LIQUID + VAPOUR	NO	NO	NO	SS - ASTM A312 TP321 / ASTM A358 321 CL.1 / ASTM A182 F321	0.8	Trim SS347	2.4	SW, BW, FL	RF	-29 to 538	B7 / 2H	321SS SPW / MICA OR EQUIVALENT	NPS 1/2 - 18	GA, GL, CH	1
36	A0QP	Class 150	UTILITY - CONTINUALLY OIL CONTAMINATED WASTE WATER, NON OILY WASTE WATER, WASTE SLUDGE, SANITARY WASTE WATER	B31.3	LIQUID	NO	NO	B31.3	***DSS - ASTM A790 UNS S31803 (NPS 1/2-2) / CS - ASTM A106 Gr.B (Cement Lined) (NPS 3-16)***	0.0	***Trim UNS S31803***	***2.8 & 1.1***	***SW, BW, FL***	***FF***	0 to 70	B7 / 2H	SYNTHETIC FIBRE	***NPS 1/2 - 16***	***GA, CH, BF***	1
37	A0RA	Class 150	UTILITY - ABOVEGROUND FIRE WATER (DRY) SERVICE.	B31.3	LIQUID	NO	NO	B31.3	NPS 1-1/2 & Smaller: CS (Galv. at Field) - ASTM A106 Gr.B (Galv.)/ ASTM A105(Galv.) NPS 2 & Larger: CS (Galv. at shop & Outer surface Touch-up at Field) - ASTM A106 Gr.B(Galv.), ASTM A672 Gr.B60 CL.22 (Galv.)/ ASTM A105 (Galv.)	0.0	Trim 8 (13CR / HF)	1.1	SW, BW, FL	RF	0 to 65	B7 / 2H (Galv)	316SS SPW / GRAPHITE	NPS 1/2 - 20	GA, GL, CH	1
38	A0RU	Class 150	UTILITY - ABOVEGROUND FIRE WATER (WET) SERVICE.	B31.3	LIQUID	NO	NO	B31.3	NPS 2 & Smaller: CS (Galv. at shop) - ASTM A106 Gr.B(Galv.)/ ASTM A105(Galv.) NPS 3 & Larger: CS - ASTM A106 Gr.B/ ASTM A672 Gr.B60 CL.22/ ASTM A105	0.0 (NPS 2 & Smaller) / 3.0 (NPS 3 & Larger)	Trim 8 (13CR / HF)	1.1	THRD, BW, FL	RF	***0 to 65***	B7 / 2H (Galv)	316SS SPW / GRAPHITE	NPS 1/2 - 42	GA, GL, CH, BF	1
39	A0YQ	Class 150	PROCESS -WET SOUR SERVICE SUBJECT TO NACE STD. : / PROCESS WITH HYDROGEN	B31.3	VAPOUR / LIQUID + VAPOUR	NO	YES	NO	Inconel 625 - ASTM B444 UNS N06625 Grade 1 / ASTM B705 UNS N06625 / ASTM B564 UNS N06625	0.0	Trim Alloy 625	3.8	BW, FL	RF	0 to 427	B7M / 2HM	INCONEL 625 SPW / GRAPHITE	NPS 1/2 - 42	GA, GL, CH	1,5,13
40	A1A201	Class 150	PROCESS - VACUUM SERVICE	B31.3	LIQUID	NO	NO	B31.3	CS - ASTM A106 Gr.B / ASTM A672 Gr.B60 CL.22 / ASTM A105	1.5	Trim 8 (13CR / HF)	1.1	SW, BW, FL	RF	0 to 427	B7 / 2H	316SS SPW / GRAPHITE	NPS 1/2 - 18	GA, GL, CH	1,3,4
41	A1A8	Class 150	PROCESS - BENZENE SERVICE (CONTAINING 5WT% OR MORE BENZENE)	B31.3	VAPOUR / SOLID	NO	NO	B31.3	CS - ASTM A106 Gr.B / ASTM A672 Gr.B60 CL.22 / ASTM A105	1.5	Trim 8 (13CR / HF)	1.1	SW, BW, FL	RF	0 to 427	B7 / 2H	316SS SPW / GRAPHITE	NPS 1/2 - 24	GA, CH, BA	1,2
42	A1A804	Class 150	PROCESS - BENZENE SERVICE (5% WT)	B31.3	LATER	NO	NO	B31.3	CS - ASTM A106 Gr.B / ASTM A672 Gr.B60 CL.22 / ASTM A105	1.5	Trim 8 (13CR / HF)	1.1	SW, BW, FL	RF	0 to 427	B7 / 2H	316SS SPW / GRAPHITE	NPS 1/2 - 36	GA, GL, CH	1
43	A1A904	Class 150	PROCESS - BENZENE SERVICE (5% WT) + HYDROGEN	B31.3	LATER	NO	NO	B31.3	CS - ASTM A106 Gr.B / ASTM A672 Gr.B60 CL.22 / ASTM A105	1.5	Trim 8 (13CR / HF)	1.1	SW, BW, FL	RF	0 to 427	B7 / 2H	316SS SPW / GRAPHITE	NPS 1/2 - 42	GA, GL, CH, BA	1,2,16
44	A1AA	Class 150	UTILITY - CATEGORY "D" FLUID : / DRY INSTRUMENT AIR >=2"NB, NITROGEN (All sizes)	B31.3	VAPOUR	NO	NO	B31.3	CS - ASTM A106 Gr.B / ASTM A672 Gr.B60 CL.22 / ASTM A105	1.5	Trim 8 (13CR / HF)	1.1	SW, BW, FL	RF	0 to 250	B7 / 2H	316SS SPW / GRAPHITE	NPS 1/2 - 52	GA, GL, CH, BA, NV	1
45	A1AC04	Class 150	PROCESS - CATALYST	B31.3	SOLID	NO	NO	B31.3	CS - ASTM A106 Gr.B / ASTM A105	1.5	RTFE / SS316, STELLITE	1.1	BW, FL	RF	0 to 427	B7 / 2H	316SS SPW / GRAPHITE	NPS 1/2 - 4	BA	1,2
46	A1AD	Class 150	UTILITY - HYDROCARBON : / FUEL OIL / FUEL GAS	B31.3	LIQUID / VAPOUR	NO	NO	B31.3	CS - ASTM A106 Gr.B / ASTM A672 Gr.B60 CL.22 / ASTM A105	1.5	Trim 8 (13CR / HF)	1.1	SW, BW, FL	RF	0 to 265	B7 / 2H	316SS SPW / GRAPHITE	NPS 1/2 - 20	GA, GL, CH, BA, BF	1,2
47	A1AG	Class 150	UTILITY - POWER PIPING : / LOW PRESSURE STEAM / BOILER BLOW DOWN	B31.1	VAPOUR	NO	NO	B31.1	CS - ASME SA106 Gr.B / ASME SA105	1.5	Trim 5 (HF)	1.1	SW, BW, FL	RF	0 to 265	B7 / 2H	316SS SPW / GRAPHITE	NPS 1/2 - 16	GA, GL, CH	1,10
48	A1AH	Class 150	PROCESS - HYDROGEN OR HYDROGEN RICH HYDROCARBON MIXTURE : / HYDROGEN / PROCESS WITH HYDROGEN	B31.3	VAPOUR	NO	NO	B31.3	CS - ASTM A106 Gr.B / ASTM A672 Gr.B60 CL.22 / ASTM A105	1.5	Trim 8 (13CR / HF)	1.1	SW, BW, FL	RF	0 to 427	B7 / 2H	316SS SPW / GRAPHITE	NPS 1/2 - 48	GA, GL, CH, BA	1,2,16
49	A1AH04	Class 150	PROCESS - HYDROGEN OR HYDROGEN RICH HYDROCARBON MIXTURES	B31.3	VAPOUR	NO	NO	B31.3	CS - ASTM A106 Gr.B / ASTM A672 Gr.B60 CL.22 / ASTM A105	1.5	Trim 8 (13CR / HF)	1.1	SW, BW, FL	RF	0 to 427	B7 / 2H	316SS SPW / GRAPHITE	NPS 1/2 - 42	GA, GL, CH, BA	1,2,16
50	A1AL	Class 150	PROCESS -AMINES AND NON NACE SOUR (STRESS RELIEVED): / DHT GAS OIL FEED / DHDT PRODUCT STRIPPER BOTTOMS / WASTE GAS (NOTES :4, 5) / DHT DRIER RECYCLE (NOTES: 4, 5) / DIESEL PRODUCT / DHT DRIER OVHD (NOTES: 4, 5) / PROCESS	B31.3	LIQUID / VAPOUR	NO	NO	YES	CS - ASTM A106 Gr.B / ASTM A672 Gr.B60 CL.22 / ASTM A105	1.5	Trim 12 (SS316 / HF)	1.1	BW, FL	RF	0 to 427	B7 / 2H	316SS SPW / GRAPHITE	NPS 1/2 - 48	GA, GL, CH, BA, BF	1,2,27
51	A1AL01	Class 150	PROCESS - NON NACE MILD CORROSIVE SOUR SERVICE AND AMINES - STRESS RELIEVED	B31.3	LIQUID / VAPOUR	NO	NO	YES	CS - ASTM A106 Gr.B / ASTM A105	1.5	Trim 12 (SS316 / HF)	1.1	BW, FL	RF	0 to 427	B7 / 2H	316SS SPW / GRAPHITE	NPS 1/2 - 4	GA, GL, CH, BA	1,2,27
52	A1AL03	Class 150	PROCESS - NON NACE MILD CORROSIVE SOUR SERVICE AND AMINES - STRESS RELIEVED	B31.3	LIQUID / VAPOUR	NO	NO	YES	CS - ASTM A106 Gr.B / ASTM A105	1.5	Trim 12 (SS316 / HF)	1.1	BW, FL	RF	0 to 427	B7 / 2H	316SS SPW / GRAPHITE	NPS 1/2 - 4	GA, GL, CH, BA,	1,2,27
53	A1AM	Class 150	AMMONIA WATER	B31.3	LIQUID	NO	NO	B31.3	CS - ASTM A106 Gr.B / ASTM A105	1.5	Trim 8 (13CR / HF)	1.1	SW, BW, FL	RF	0 to 427	B7 / 2H	316SS SPW / GRAPHITE	NPS 1/2 - 3	GA, GL, CH	1
54	A1AP	Class 150	PROCESS - NON SOUR, NON CORROSIVE : / FLASHED CRUDE / STABILISED NAPHTHA / BLOWDOWN / ATMOSPHERIC VENT / HYDROCARBONS - WATER CONDENSATE / HYDROCARBONS - WATER VAPOUR / HYDROCARBONS / HOT WATER BLOWDOWN / NITROGEN / CONTAMINATED WATER / NAPHTHA + DSO / LPG / FLUSHING OIL / OFF GAS / PROCESS	B31.3	LIQUID / VAPOUR	NO	NO	B31.3	CS - ASTM A106 Gr.B / ASTM A672 Gr.B60 CL.22 / ASTM A105	1.5	Trim 8 (13CR / HF)	1.1	SW, BW, FL	RF	0 to 427	B7 / 2H	316SS SPW / GRAPHITE	NPS 1/2 - 80	GA, GL, CH, BA, BF	1,2
55	A1AP01	Class 150	PROCESS - GENERAL PROCESS NON SOUR, NON CORROSIVE	B31.3	LIQUID / LIQUID + VAPOUR	NO	NO	B31.3	CS - ASTM A106 Gr.B / ASTM A672 Gr.B60 CL.22 / ASTM A105	1.5	Trim 8 (13CR / HF)	1.1	SW, BW, FL	RF	0 to 427	B7 / 2H	316SS SPW / GRAPHITE	NPS 1/2 - 80	GA, GL, CH, BA, BF	1,2
56	A1AP02	Class 150	PROCESS - GENERAL PROCESS NON SOUR, NON CORROSIVE	B31.3	LIQUID / VAPOUR	NO	NO	B31.3	CS - ASTM A106 Gr.B / ASTM A105	1.5	Trim 8 (13CR / HF)	1.1	SW, BW, FL	RF	0 to 427	B7 / 2H	316SS SPW / GRAPHITE	NPS 1/2 - 14	GA, GL, CH, NV(1/2)	1,2
57	A1AP03	Class 150	PROCESS - GENERAL PROCESS NON SOUR, NON CORROSIVE	B31.3	LIQUID / VAPOUR	NO	NO	B31.3	CS - ASTM A106 Gr.B / ASTM A672 Gr.B60 CL.22 / ASTM A105	1.5	Trim 8 (13CR / HF)	1.1	SW, BW, FL	RF	0 to 427	B7 / 2H	316SS SPW / GRAPHITE	NPS 1/2 - 52	GA, GL, CH, BA, BF	1,2
58	A1AP04	Class 150	PROCESS - GENERAL PROCESS NON SOUR, NON CORROSIVE	B31.3	LIQUID / VAPOUR	NO	NO	B31.3	CS - ASTM A106 Gr.B / ASTM A672 Gr.B60 CL.22 / ASTM A105	1.5	Trim 8 (13CR / HF)	1.1	SW, BW, FL	RF	0 to 427	B7 / 2H	316SS SPW / GRAPHITE	NPS 1/2 - 48	GA, GL, CH, BA, BF	1,2
59	A1APCL	Class 150	PROCESS - GENERAL PROCESS NON SOUR, NON CORROSIVE (CONTRO TRACE)	B31.3	LATER	NO	NO	B31.3	CS - ASTM A106 Gr.B / ASTM A672 Gr.B60 CL.22 / ASTM A105	1.5	Trim 8 (13CR / HF)	1.1	SW, BW, FL	RF	0 to 427	B7 / 2H	316SS SPW / GRAPHITE	NPS 1/2 - 20	CH, PL	1
60	A1APCM	Class 150	PROCESS - GENERAL PROCESS NON SOUR, NON CORROSIVE (CONTRO TRACE)	B31.3	LATER	NO	NO	B31.3	CS - ASTM A106 Gr.B / ASTM A672 Gr.B60 CL.22 / ASTM A105	1.5	Trim 8 (13CR / HF)	1.1	SW, BW, FL	RF	0 to 427	B7 / 2H	316SS SPW / GRAPHITE	NPS 1/2 - 56	CH, PL	1

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SR. NO.	PIPING CLASS	ASME CLASS	SERVICE DESCRIPTION	DESIGN CODE	FLUID	HIC	NACE MR 0103	PWHT (Note 37)	PIPE / FLANGE MATERIAL	C/A mm	VALVE TRIM	ASME B16.5 MAT, GROUP	CONSTR/ ENDS	FLANGE FACE TYPE	DESIGN TEMP RANGE (DEG C)	BOLTING	GASKET (S)	SIZE RANGE Inch	VALVE TYPE	NOTE
61	A1APVV	Class 150	PROCESS - GENERAL PROCESS NON SOUR, NON CORROSIVE	B31.3	LIQUID / VAPOUR	NO	NO	B31.3	CS - ASTM A106 Gr.B / ASTM A672 Gr.B60 CL.22 / ASTM A105	1.5	Trim 8 (13CR / HF)	1.1	SW, BW, FL	RF	0 to 427	B7 / 2H	316SS SPW / GRAPHITE	NPS 1/2 - 80	GA, GL, CH, BA, BF	1,2
62	A1AQ	Class 150	PROCESS -WET SOUR SERVICE SUBJECT TO NACE STD. : / DHT STRIPPER RECYCLE PUMP SUCTION	B31.3	LIQUID / VAPOUR	NO	YES	YES	CS - ASTM A106 Gr.B / ASTM A671 Gr.CC60 CL.22 / ASTM A105	1.5	Trim 12 (SS316 / HF)	1.1	BW, FL	RF	0 to 427	B7M / 2HM	316SS SPW / GRAPHITE	NPS 1/2 - 48	GA, GL, CH, BA, BF	1,2,5,27
63	A1AQ03	Class 150	PROCESS - WET LOW SEVERITY SOUR SERVICE SUBJECT TO NACE STD	B31.3	LIQUID	NO	YES	YES	CS - ASTM A106 Gr.B / ASTM A671 Gr.CC60 CL.22 / ASTM A105	1.5	Trim 12 (SS316 / HF)	1.1	BW, FL	RF	0 to 427	B7M / 2HM	316SS SPW / GRAPHITE	NPS 1/2 - 30	GA, GL, CH, BA, BF	1,2,5,27
64	A1AQ04	Class 150	PROCESS - WET LOW SEVERITY SOUR SERVICE SUBJECT TO NACE STD	B31.3	LIQUID	NO	YES	YES	CS - ASTM A106 Gr.B / ASTM A105	1.5	Trim 12 (SS316 / HF)	1.1	BW, FL	RF	0 to 427	B7M / 2HM	316SS SPW / GRAPHITE	NPS 1/2 - 4	GA, GL, CH, BA	1,2,5,27
65	A1AQCL	Class 150	PROCESS -WET LOW SEVERITY SOUR SERVICE SUBJECT TO NACE (CONTRO TRACE)	B31.3	LATER	NO	YES	YES	CS - ASTM A106 Gr.B / ASTM A671 Gr.CC60 CL.22 / ASTM A105	1.5	Trim 12 (SS316 / HF)	1.1	BW, FL	RF	0 to 427	B7M / 2HM	316SS SPW / GRAPHITE	NPS 1/2 - 36	CH, PL	1, 5, 27
66	A1AS	Class 150	UTILITY - LOW PRESSURE STEAM / LP SUPERHEATED STEAM / BLOWDOWN STEAM / HYDROCARBONS - WATER VAPOUR	B31.3	VAPOUR	NO	NO	B31.3	CS - ASTM A106 Gr.B / ASTM A672 Gr.B60 CL.22 / ASTM A105	1.5	Trim 5 (HF)	1.1	SW, BW, FL	RF	0 to 425	B7 / 2H	316SS SPW / GRAPHITE	NPS 1/2 - 42	GA, GL, CH	1
67	A1AY	Class 150	PROCESS - CHEMICAL DOSING	B31.3	LIQUID	NO	NO	B31.3	CS - ASTM A106 Gr.B / ASTM A105	1.5	Trim 8 (13CR / HF)	1.1	SW, BW, FL	RF	0 to 232	B7 / 2H	316SS SPW / GRAPHITE	NPS 1/2 - 4	GA, GL, CH	1
68	A1AY04	Class 150	PROCESS - CHEMICAL DOSING	B31.3	LIQUID	NO	NO	B31.3	CS - ASTM A106 Gr.B / ASTM A105	1.5	Trim 8 (13CR / HF)	1.1	SW, BW, FL	RF	0 to 232	B7 / 2H	316SS SPW / GRAPHITE	NPS 1/2 - 6	GA, GL, CH, BA	1,2
69	A1EH	Class 150	PROCESS - HYDROGEN OR HYDROGEN RICH HYDROCARBON MIXTURE : / PROCESS WITH HYDROGEN	B31.3	LIQUID + VAPOUR / VAPOUR	NO	NO	YES	2-1/4Cr-1Mo - ASTM A335 Gr.P22 / ASTM A182 F22 CL.3	1.5	Trim 5 (HF)	1.10	SW, BW, FL	RF	-29 to 538	B16 / 4	316SS SPW / MICA OR EQUIVALENT	NPS 1/2 - 10	GA, GL, CH	1,24
70	A1G804	Class 150	PROCESS - BENZENE SERVICE (5% WT)	B31.3	LIQUID / VAPOUR / LIQUID + VAPOUR	NO	NO	B31.3	LTCS - ASTM A333 Gr.6 / ASTM A671 GR.CC60 CL.22 / ASTM A350 LF2	1.5	Trim 12 (SS316 / HF)	1.1	SW, BW, FL	RF	-50 to 345	L7 / 4	316SS SPW / GRAPHITE	NPS 1/2 - 24	GA, GL, CH, BA, BF	1,2
71	A1GA	Class 150	UTILITY - LOW PRESSURE NITROGEN	B31.3	VAPOUR	NO	NO	B31.3	LTCS - ASTM A333 Gr.6 / ASTM A350 LF2	1.5	Trim 8 (13CR / HF)	1.1	SW, FL	RF	-50 to 235	L7 / 4	316SS SPW / GRAPHITE	NPS 1/2 - 1 1/2	GA, GL, CH	1
72	A1GP	Class 150	PROCESS - LOW TEMPERATURE SERVICE : / HYDROCARBONS (LIGHT) / REFRIGERANT / BLOWDOWN HC- WET FLARE / DEPROPANISER OVHD / PROCESS / LP BLOWDOWN	B31.3	LIQUID / VAPOUR / LIQUID + VAPOUR	NO	NO	B31.3	LTCS - ASTM A333 Gr.6 / ASTM A671 GR.CC60 CL.22 / ASTM A350 LF2	1.5	Trim 12 (SS316 / HF)	1.1	SW, BW, FL	RF	-50 to 345	L7 / 4	316SS SPW / GRAPHITE	NPS 1/2 - 48	GA, GL, CH, BA, BF	1,2
73	A1GP01	Class 150	PROCESS - GENERAL PROCESS NON SOUR, NON CORROSIVE	B31.3	LIQUID / VAPOUR / LIQUID + VAPOUR	NO	NO	B31.3	LTCS - ASTM A333 Gr.6 / ASTM A671 GR.CC60 CL.22 / ASTM A350 LF2	1.5	Trim 12 (SS316 / HF)	1.1	SW, BW, FL	RF	-50 to 345	L7 / 4	316SS SPW / GRAPHITE	NPS 1/2 - 42	GA, GL, CH, BA, BF	1,2
74	A1GP04	Class 150	PROCESS - GENERAL PROCESS NON SOUR, NON CORROSIVE	B31.3	LIQUID / VAPOUR / LIQUID + VAPOUR	NO	NO	B31.3	LTCS - ASTM A333 Gr.6 / ASTM A671 GR.CC60 CL.22 / ASTM A350 LF2	1.5	Trim 12 (SS316 / HF)	1.1	SW, BW, FL	RF	-50 to 345	L7 / 4	316SS SPW / GRAPHITE	NPS 1/2 - 24	GA, GL, CH, BA, BF	1,2
75	A1GPVV	Class 150	PROCESS - GENERAL PROCESS NON SOUR, NON CORROSIVE	B31.3	LIQUID / VAPOUR / LIQUID + VAPOUR	NO	NO	B31.3	LTCS - ASTM A333 Gr.6 / ASTM A671 GR.CC60 CL.22 / ASTM A350 LF2	1.5	Trim 12 (SS316 / HF)	1.1	SW, BW, FL	RF	-50 to 345	L7 / 4	316SS SPW / GRAPHITE	NPS 1/2 - 48	GA, GL, CH, BA, BF	1,2
76	A1J804	Class 150	PROCESS - BENZENE SERVICE (5% WT)	B31.3	LATER	NO	NO	NO	SS - ASTM A312 TP304/TP304L Dual Grade / ASTM A358 304/304L Dual Grade CL.1 / ASTM A182 F304/304L Dual Grade	1.5	Trim 12 (SS316 / HF)	2.1	SW, BW, FL	RF	-29 to 425	B7 / 2H	316SS SPW / GRAPHITE	NPS 1/2 - 18	GA, GL, CH	1,3
77	A1JM	Class 150	AMMONIA WATER	B31.3	LIQUID	NO	NO	NO	SS - ASTM A312 TP304/TP304L Dual Grade / ASTM A182 F304/304L Dual Grade	1.5	Trim 12 (SS316 / HF)	2.1	SW, BW, FL	RF	-29 to 70	B7 / 2H	316SS SPW / GRAPHITE	NPS 1/2 - 3	GA, GL, CH	1
78	A1JV04	Class 150	PROCESS - CORROSIVE SERVICE :/ SULFOLANE WITH AROMATIC HC	B31.3	LIQUID + VAPOUR	NO	NO	NO	SS - ASTM A312 TP304/TP304L Dual Grade / ASTM A358 304/304L Dual Grade CL.1 / ASTM A182 F304/304L Dual Grade	1.5	Trim 12 (SS316 / HF)	2.1	SW, BW, FL	RF	0 to 205	B7 / 2H	316SS SPW / GRAPHITE	NPS 1/2 - 18	GA, GL, CH	1,2
79	***A1LA***	***Class 150***	***UTILITY - NITROGEN(AFTER FILTER)***	***B31.3***	***VAPOUR***	***NO***	***NO***	***NO***	***SS - ASTM A312 TP316/TP316L Dual Grade / ASTM A182 F316/316L Dual Grade***	***1.5***	***Trim 12 (SS316 / HF)***	***2.2***	***SW, BW, FL***	***RF***	***0 to 70***	***B7 / 2H***	***316SS SPW / GRAPHITE***	***NPS 1/2 - 2***	***-***	***1***
80	A1LJ	Class 150	PROCESS -ACID SERVICE : / FRESH ACID (98WT% H2SO4) / ALKY REACTOR FEED / ACIDIC RELEASES AND DRAIN	B31.3	LIQUID	NO	NO	NO	SS - ASTM A312 TP316/TP316L Dual Grade / ASTM A182 F316/316L Dual Grade	1.5	Trim Alloy 20	2.2	BW, FL	RF	-29 to 204	B7 / 2H	PTFE	NPS 1/2 - 2	GA, GL, CH, BA	1,2,9
81	***A1LP***	***Class 150***	***UTILITY - SPENT CAUSTIC***	***B31.3***	***LIQUID***	***NO***	***NO***	***NO***	***SS - ASTM A312 TP316/TP316L Dual Grade / ASTM A358 316/316L Dual Grade CL.1 / ASTM A182 F316/316L Dual Grade***	***1.5***	***Trim 12 (SS316 / HF)***	***2.2***	***SW, BW, FL***	***RF***	***0 to 70***	***B7 / 2H***	***316SS SPW / GRAPHITE***	***NPS 1/2 - 18***	***-***	***1***
82	A1LP04	Class 150	PROCESS - GENERAL PROCESS NON SOUR, NON CORROSIVE	B31.3	LIQUID	NO	NO	NO	SS - ASTM A312 TP316/TP316L Dual Grade / ASTM A358 316/316L Dual Grade CL.1 / ASTM A182 F316/316L Dual Grade	1.5	Trim 12 (SS316 / HF)	2.2	SW, BW, FL	RF	-29 to 425	B7 / 2H	316SS SPW / GRAPHITE	NPS 1/2 - 8	GA, GL, CH	1
83	A1LV	Class 150	PROCESS - CORROSIVE SERVICE:	B31.3	VAPOUR	NO	NO	NO	SS - ASTM A312 TP316/TP316L Dual Grade / ASTM A358 316/316L Dual Grade CL.1 / ASTM A182 F316/316L Dual Grade	1.5	Trim 12 (SS316 / HF)	2.2	SW, BW, FL	RF	-29 to 425	B7 / 2H	316SS SPW / GRAPHITE	NPS 1/2 - 14	GA, GL, CH	1
84	A1LV04	Class 150	PROCESS - CORROSIVE SERVICE:	B31.3	LIQUID / VAPOUR	NO	NO	NO	SS - ASTM A312 TP316/TP316L Dual Grade / ASTM A358 316/316L Dual Grade CL.1 / ASTM A182 F316/316L Dual Grade	1.5	Trim 12 (SS316 / HF)	2.2	SW, BW, FL	RF	-29 to 425	B7 / 2H	316SS SPW / GRAPHITE	NPS 1/2 - 30	GA, GL, CH, BA, BF	1,2,24
85	A1LW	Class 150	UTILITY - WATER SERVICES :/ COOLING, WASTE WATER WITH TRACE AROMATIC ETC	B31.3	LIQUID	NO	NO	NO	SS - ASTM A312 TP316/TP316L Dual Grade / ASTM A182 F316/316L Dual Grade	1.5	Trim 12 (SS316 / HF)	2.2	SW, BW, FL	RF	0 to 350	B7 / 2H	316SS SPW / GRAPHITE	NPS 1/2 - 2	GA, GL, CH, BA	1,2
86	A1LY	Class 150	PROCESS - CHEMICAL DOSING	B31.3	LIQUID	NO	NO	NO	SS - ASTM A312 TP316/TP316L Dual Grade / ASTM A182 F316/316L Dual Grade	1.5	Trim 12 (SS316 / HF)	2.2	BW, FL	RF	-29 to 232	B7 / 2H	316SS SPW / GRAPHITE	NPS 1/2 - 6	GA, GL, CH	1,2
87	A1LY01	Class 150	PROCESS - CHEMICAL DOSING	B31.3	LIQUID	NO	NO	NO	SS - ASTM A312 TP316/TP316L Dual Grade / ASTM A182 F316/316L Dual Grade	1.5	Trim 12 (SS316 / HF)	2.2	BW, FL	RF	-29 to 232	B7 / 2H	316SS SPW / GRAPHITE	NPS 1/2 - 6	GA, GL, CH	1,2
88	A1LY04	Class 150	PROCESS - CHEMICAL DOSING	B31.3	LIQUID	NO	NO	NO	SS - ASTM A312 TP316/TP316L Dual Grade / ASTM A182 F316/316L Dual Grade	1.5	Trim 12 (SS316 / HF)	2.2	BW, FL	RF	-29 to 232	B7 / 2H	316SS SPW / GRAPHITE	NPS 1/2 - 4	GA, GL, CH	1,2
89	A1YV	Class 150	PROCESS - CORROSIVE SERVICE:	B31.3	LIQUID / LIQUID + VAPOUR	NO	NO	NO	Inconel 625 - ASTM B444 UNS N06625 Grade 1 / ASTM B564 UNS N06625	1.5	Trim Alloy 625	3.8	BW, FL	RF	0 to 427	B7 / 2H	INCONEL 625 SPW / GRAPHITE	NPS 1/2 - 6	GA, GL, CH	1,13
90	A1YV04	Class 150	PROCESS - CORROSIVE SERVICE:	B31.3	LIQUID / LIQUID + VAPOUR	NO	NO	NO	Inconel 625 - ASTM B444 UNS N06625 Grade 1 / ASTM B564 UNS N06625	1.5	Trim Alloy 625	3.8	BW, FL	RF	0 to 427	B7 / 2H	INCONEL 625 SPW / GRAPHITE	NPS 1/2 - 6	GA, GL, CH	1,13
91	A28P	Class 150	PROCESS - NON SOUR, NON NACE SOUR : / PROCESS WITH H2S(< 25 PPMW)	B31.3	VAPOUR + LIQUID	NO	NO	YES	9Cr - 1MO - ASTM A335 Gr. P9 / ASTM A691 GR.9CR CL.22 / ASTM A182 F9	3.0	Trim 5 (HF)	1.14	SW, BW, FL	RF	-29 to 538	B16 / 4	316SS SPW / MICA OR EQUIVALENT	NPS 1/2 - 42	GA, GL, CH	1,24,36
92	A2A201	Class 150	PROCESS - VACUUM SERVICE	B31.3	LIQUID / VAPOUR / LIQUID + VAPOUR	NO	NO	B31.3	CS - ASTM A106 Gr.B / ASTM A672 Gr.B60 CL.22 / ASTM A105	3.0	Trim 8 (13CR / HF)	1.1	SW, BW, FL	RF	0 to 427	B7 / 2H	316SS SPW / GRAPHITE	NPS 1/2 - 24	GA, GL, CH, BA, BF	1,2,3,4
93	A2A4	Class 150	PROCESS -WET LOW SEVERITY SOUR SERVICE SUBJECT TO NACE + AMINES OR CAUSTIC - STRESS RELIEVED	B31.3	LIQUID / VAPOUR	NO	YES	YES	CS - ASTM A106 Gr.B / ASTM A105	3.0	Trim 12 (SS316 / HF)	1.1	BW, FL	RF	0 to 427	B7M / 2HM	316SS SPW / GRAPHITE	NPS 1/2 - 24	GA, GL, CH,	1,5,,27
94	A2A5	Class 150	PROCESS - WET SEVERE SOUR SERVICE SUBJECT TO NACE + HIC STD + AMINES OR CAUSTIC - STRESS RELIEVED	B31.3	LIQUID / VAPOUR	YES	YES	YES	CS - ASTM A106 Gr.B / ASTM A671 Gr.CC60 CL.22 / ASTM A105	3.0	Trim 12 (SS316 / HF)	1.1	BW, FL	RF	0 to 427	B7M / 2HM	316SS SPW / GRAPHITE	NPS 1/2 - 30	GA, GL, CH	1,5,27

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SR. NO.	PIPING CLASS	ASME CLASS	SERVICE DESCRIPTION	DESIGN CODE	FLUID	HIC	NACE MR 0103	PWHT (Note 37)	PIPE / FLANGE MATERIAL	C/A mm	VALVE TRIM	ASME B16.5 MAT, GROUP	CONSTR/ ENDS	FLANGE FACE TYPE	DESIGN TEMP RANGE (DEG C)	BOLTING	GASKET (S)	SIZE RANGE Inch	VALVE TYPE	NOTE
95	A2A501	Class 150	PROCESS - WET SEVERE SOUR SERVICE SUBJECT TO NACE + HIC STD + AMINES OR CAUSTIC - STRESS RELIEVED	B31.3	LIQUID / LIQUID + VAPOUR	YES	YES	YES	CS - ASTM A106 Gr.B / ASTM A105	3.0	Trim 12 (SS316 / HF)	1.1	BW, FL	RF	0 to 427	B7M / 2HM	316SS SPW / GRAPHITE	NPS 1/2 - 12	GA, GL, CH	1,5,27
96	A2A503	Class 150	PROCESS - WET SEVERE SOUR SERVICE SUBJECT TO NACE + HIC STD + AMINES OR CAUSTIC - STRESS RELIEVED	B31.3	LIQUID / VAPOUR	YES	YES	YES	CS - ASTM A106 Gr.B / ASTM A105	3.0	Trim 12 (SS316 / HF)	1.1	BW, FL	RF	0 to 427	B7M / 2HM	316SS SPW / GRAPHITE	NPS 1/2 - 24	GA, GL, CH	1,5,27
97	A2A604	Class 150	PROCESS -WET LOW SEVERITY SOUR SERVICE SUBJECT TO NACE + HYDROGEN SERVICE	B31.3	LIQUID / VAPOUR / LIQUID + VAPOUR	NO	YES	YES	CS - ASTM A106 Gr.B / ASTM A105	3.0	Trim 12 (SS316 / HF)	1.1	BW, FL	RF	0 to 427	B7M / 2HM	316SS SPW / GRAPHITE	NPS 1/2 - 10	GA, GL, CH	1,5,27
98	A2A704	Class 150	PROCESS - WET SEVERE SOUR SERVICE SUBJECT TO NACE + HIC STD + HYDROGEN SERVICE	B31.3	VAPOUR / LIQUID + VAPOUR	YES	YES	YES	CS - ASTM A106 Gr.B / ASTM A105	3.0	Trim 12 (SS316 / HF)	1.1	BW, FL	RF	0 to 204	B7M / 2HM	316SS SPW / GRAPHITE	NPS 1/2 - 10	GA, GL, CH	1,5,27
99	A2AA	Class 150	UTILITY - CATEGORY "D" FLUID : / PLANT AIR	B31.3	VAPOUR	NO	NO	B31.3	CS - ASTM A106 Gr.B / ASTM A672 Gr.B60 CL.22 / ASTM A105	3.0	Trim 8 (13CR / HF)	1.1	SW, BW, FL	RF	0 to 100	B7 / 2H	316SS SPW / GRAPHITE	NPS 1/2 - 24	GA, GL, CH, BA, BF	1
100	A2AC01	Class 150	PROCESS - CATALYST	B31.3	SOLID	NO	NO	B31.3	CS - ASTM A106 Gr.B / ASTM A672 Gr.B60 CL.22 / ASTM A105	3.0	Trim 5 (HF)	1.1	BW, FL	RF	0 to 427	B7 / 2H	316SS SPW / GRAPHITE	NPS 1/2 - 24	GA, GL, CH, BA	1
101	A2AD	Class 150	UTILITY - HYDROCARBON : / FUEL OIL / FUEL GAS	B31.3	LIQUID / VAPOUR	NO	NO	B31.3	CS - ASTM A106 Gr.B / ASTM A105	3.0	Trim 8 (13CR / HF)	1.1	SW, BW, FL	RF	0 to 200	B7 / 2H	316SS SPW / GRAPHITE	NPS 1/2 - 10	GA, GL, CH	1,2
102	A2AG	Class 150	UTILITY - POWER PIPING : / LOW PRESSURE STEAM / BOILER BLOW DOWN	B31.1	VAPOUR	NO	NO	B31.1	CS - ASME SA106 Gr.B / ASME SA105	3.0	Trim 5 (HF)	1.1	SW, BW, FL	RF	0 to 265	B7 / 2H	316SS SPW / GRAPHITE	NPS 1/2 - 6	GA, GL, CH	1
103	A2AL	Class 150	PROCESS -AMINES AND NON NACE SOUR (STRESS RELIEVED): / TREATED VENT GAS / LEAN AMINE / PROCESS WITH H2S / DHT DRIER OVHD (NOTES : 4, 5) / DHT DRIER SOUR WATER (NOTES : 4, 5) / PROCESS	B31.3	LIQUID / VAPOUR	NO	NO	YES	CS - ASTM A106 Gr.B / ASTM A672 Gr.B60 CL.22 / ASTM A105	3.0	Trim 12 (SS316 / HF)	1.1	BW, FL	RF	0 to 427	B7 / 2H	316SS SPW / GRAPHITE	NPS 1/2 - 20	GA, GL, CH, BA, BF	1,2,27
104	A2AL01	Class 150	PROCESS - NON NACE MILD CORROSIVE SOUR SERVICE AND AMINES - STRESS RELIEVED	B31.3	VAPOUR	NO	NO	YES	CS - ASTM A106 Gr.B / ASTM A672 Gr.B60 CL.22 / ASTM A105	3.0	Trim 12 (SS316 / HF)	1.1	BW, FL	RF	0 to 427	B7 / 2H	316SS SPW / GRAPHITE	NPS 1/2 - 20	GA, GL, CH, BA	1,2,27
105	A2AL03	Class 150	PROCESS - NON NACE MILD CORROSIVE SOUR SERVICE AND AMINES - STRESS RELIEVED	B31.3	LIQUID / VAPOUR	NO	NO	YES	CS - ASTM A106 Gr.B / ASTM A105	3.0	Trim 12 (SS316 / HF)	1.1	BW, FL	RF	0 to 427	B7 / 2H	316SS SPW / GRAPHITE	NPS 1/2 - 4	GA, GL, CH, BA	1,2,27
106	A2AL04	Class 150	PROCESS - RICH AMINE SERVICE (STRESS RELIEVED)	B31.3	LIQUID / VAPOUR	NO	NO	YES	CS - ASTM A106 Gr.B / ASTM A105	3.0	Trim 12 (SS316 / HF)	1.1	BW, FL	RF	0 to 427	B7 / 2H	316SS SPW / GRAPHITE	NPS 1/2 - 4	GA, GL, CH	1,27
107	A2AM	Class 150	AMMONIA WATER	B31.3	LIQUID	NO	NO	B31.3	CS - ASTM A106 Gr.B / ASTM A105	3.0	Trim 8 (13CR / HF)	1.1	SW, BW, FL	RF	0 to 427	B7 / 2H	316SS SPW / GRAPHITE	NPS 1/2 - 8	GA, GL, CH	1
108	A2AN	Class 150	CAUSTIC - CAUSTIC 14.4% CONC. / CAUSTIC 50% CONC.	B31.3	LIQUID	NO	NO	YES	CS - ASTM A106 Gr.B / ASTM A672 Gr.B60 CL.22 / ASTM A105	3.0	Trim 9 (Monel)	1.1	BW, FL	RF	0 to 250	B7 / 2H	316SS SPW / GRAPHITE	NPS 1/2 - 18	GA, GL, CH, BA, BF	1,27
109	A2AN01	Class 150	CAUSTIC SERVICE	B31.3	LIQUID	NO	NO	YES	CS - ASTM A106 Gr.B / ASTM A105	3.0	Trim 9 (Monel)	1.1	BW, FL	RF	0 to 70	B7 / 2H	316SS SPW / GRAPHITE	NPS 1/2 - 10	GA, GL, CH, BA	1,27
110	A2AN03	Class 150	CAUSTIC SERVICE	B31.3	LIQUID	NO	NO	YES	CS - ASTM A106 Gr.B / ASTM A105	3.0	Trim 9 (Monel)	1.1	BW, FL	RF	0 to 265	B7 / 2H	316SS SPW / GRAPHITE	NPS 1/2 - 4	GA, GL, CH, BA	1,27
111	A2AN04	Class 150	CAUSTIC SERVICE	B31.3	LIQUID	NO	NO	YES	CS - ASTM A106 Gr.B / ASTM A105	3.0	Trim 9 (Monel)	1.1	BW, FL	RF	0 to 358	B7 / 2H	316SS SPW / GRAPHITE	NPS 1/2 - 8	GA, GL, CH, BA	1,2,27
112	A2AP	Class 150	PROCESS / UTILITY - GENERAL, NON SOUR : / LLP CONDENSATE / SUSPECT CONDENSATE / REJECT WATER / CRUDE FLASH VAPOUR / CRUDE OIL / HAGO / AGO / KEROSENE / DIESEL / NAPHTHA STABILISER OVHD VAPOUR / AGO FEED / NAPHTHA / DIESEL / DEETHANISER / DEBUTANISER / FRESH DEA / PROCESS / BLOWER AIR / FLARE / OILY WATER SEWER / HYDROCARBON / BIO TREATMENT SLUDGE / VENT GAS / AROMATIC FLARE / NON-ACID RELEASES AND VENTS / REFRIGERANT / ISOBUTANE / BUTAMER PRODUCT TO DEISOBUTANISER / BUTANE PRODUCT / DEISOBUTANISER OVHD / BOTTOM / DEBUTANISER OVHD / BOTTOM / N-BUTANE / ALKYLATE PRODUCT / HYDROCARBON / PROCESS WATER / PROCESS AIR / OFF GAS / PROCESS	B31.3	LIQUID / VAPOUR	NO	NO	B31.3	CS - ASTM A106 Gr.B / ASTM A672 Gr.B60 CL.22 / ASTM A105	3.0	Trim 8 (13CR / HF)	1.1	SW, BW, FL	RF	0 to 427	B7 / 2H	316SS SPW / GRAPHITE	NPS 1/2 - 48	GA, GL, CH, BA, BF, NV	1,2
113	A2AP01	Class 150	PROCESS - GENERAL PROCESS NON SOUR, NON CORROSIVE	B31.3	LIQUID / VAPOUR / LIQUID + VAPOUR	NO	NO	B31.3	CS - ASTM A106 Gr.B / ASTM A672 Gr.B60 CL.22 / ASTM A105	3.0	Trim 8 (13CR / HF)	1.1	SW, BW, FL	RF	0 to 427	B7 / 2H	316SS SPW / GRAPHITE	NPS 1/2 - 30	GA, GL, CH, BA, BF	1,2
114	A2AP02	Class 150	PROCESS - GENERAL PROCESS NON SOUR, NON CORROSIVE	B31.3	LIQUID / VAPOUR	NO	NO	B31.3	CS - ASTM A106 Gr.B / ASTM A672 Gr.B60 CL.32 / ASTM A105	3.0	Trim SS316L / HF	1.1	SW, BW, FL	RF	0 to 427	B7 / 2H	316SS SPW / GRAPHITE	NPS 1/2 - 20	GA, GL, CH, NV(1/2), BA	1,2
115	A2AP03	Class 150	PROCESS - GENERAL PROCESS NON SOUR, NON CORROSIVE	B31.3	LIQUID / VAPOUR / LIQUID + VAPOUR	NO	NO	B31.3	CS - ASTM A106 Gr.B / ASTM A672 Gr.B60 CL.22 / ASTM A105	3.0	Trim 8 (13CR / HF)	1.1	SW, BW, FL	RF	0 to 427	B7 / 2H	316SS SPW / GRAPHITE	NPS 1/2 - 48	GA, GL, CH, BA, BF	1,2
116	A2AP04	Class 150	PROCESS - GENERAL PROCESS NON SOUR, NON CORROSIVE	B31.3	LIQUID / VAPOUR / LIQUID + VAPOUR	NO	NO	B31.3	CS - ASTM A106 Gr.B / ASTM A672 Gr.B60 CL.22 / ASTM A105	3.0	Trim 8 (13CR / HF)	1.1	SW, BW, FL	RF	0 to 427	B7 / 2H	316SS SPW / GRAPHITE	NPS 1/2 - 48	GA, GL, CH, BA, BF	1,2
117	A2APCL	Class 150	PROCESS - GENERAL PROCESS NON SOUR, NON CORROSIVE (CONTRO TRACE)	B31.3	LATER	NO	NO	B31.3	CS - ASTM A106 Gr.B / ASTM A105	3.0	Trim 8 (13CR / HF)	1.1	SW, BW, FL	RF	0 to 427	B7 / 2H	316SS SPW / GRAPHITE	NPS 1/2 - 10	CH, PL	1
118	A2APCM	Class 150	PROCESS - GENERAL PROCESS NON SOUR, NON CORROSIVE (CONTRO TRACE)	B31.3	LATER	NO	NO	B31.3	CS - ASTM A106 Gr.B / ASTM A672 Gr.B60 CL.22 / ASTM A105	3.0	Trim 8 (13CR / HF)	1.1	SW, BW, FL	RF	0 to 427	B7 / 2H	316SS SPW / GRAPHITE	NPS 1/2 - 56	CH, PL	1
119	A2AQ	Class 150	PROCESS -WET SOUR SERVICE SUBJECT TO NACE STD. : / DESALTER WATER / CRUDE OVHD VAPOUR / CRUDE DISTILLATION TOP PA / CDU COLUMN OFFGAS / CDU OVHD LIQUID / OFFGAS COMP. SUCTION / RECONTACTOR DRUM OFFGAS / NAPHTHA / UNSTABILISED NAPHTHA / SOUR NAPHTHA FROM NHT / NAPHTHA STABILISER OVHD TO CONDENSER / NAPHTHA STABILISER REFLUX / NAPHTHA STAB. OVHD LIQUID / DE-ETHANISER OFFGAS / SOUR WATER / HOT WELL OIL / SOUR GAS / OFF GAS TO AMINE TREATING / MHC STRIPPER REFLUX / RICH AMINE , AMINE DRAIN / DEETHANISER / HDT STRIPPER FEED / HDT STRIPPER REFLUX / OILY WATER / SLOPS / MAKE-UP DEA FROM AMINE SOLUTION STORAGE TANK / AMINE REGENERATOR OVHD / RECOVERED OIL FROM SLOPE OIL PUMP / SKIMMED OIL / STRIPPED WATER / SWS STRIPPER OVHD / SWS STRIPPER BOTTOMS / SWS STRIPPER REBOILER OUTLET / VENT GAS , ACID GAS / DHT CHPS/CLPS LIQUID / OFFGAS FROM DHT CLPS / CONDENSED HYDROCARBONS / PROCESS / LP FLARE / ACID GAS FLARE / HP FLARE	B31.3	LIQUID / VAPOUR	NO	YES	YES	CS - ASTM A106 Gr.B / ASTM A671 Gr.CC60 CL.22 / ASTM A105	3.0	Trim 12 (SS316 / HF)	1.1	BW, FL	RF	0 to 427	B7M / 2HM	316SS SPW / GRAPHITE	NPS 1/2 - 92	GA, GL, CH, BA, BF	1,2,5,27
120	A2AQ01	Class 150	***PROCESS - WET LOW SEVERITY SOUR SERVICE SUBJECT TO NACE STD, CARBONATE SCC***	B31.3	LIQUID / VAPOUR / LIQUID + VAPOUR	NO	YES	YES	CS - ASTM A106 Gr.B / ASTM A671 Gr.CC60 CL.22 / ASTM A105	3.0	Trim 12 (SS316 / HF)	1.1	BW, FL	RF	0 to 427	B7M / 2HM	316SS SPW / GRAPHITE	NPS 1/2 - 48	GA, GL, CH, BA, BF	1,2,5,27
121	A2AQ03	Class 150	PROCESS - WET LOW SEVERITY SOUR SERVICE SUBJECT TO NACE STD	B31.3	LIQUID + VAPOUR / VAPOUR	NO	YES	YES	CS - ASTM A106 Gr.B / ASTM A105	3.0	Trim 12 (SS316 / HF)	1.1	BW, FL	RF	0 to 427	B7M / 2HM	316SS SPW / GRAPHITE	NPS 1/2 - 16	GA, GL, CH, BA, BF	1,2,5,27
122	A2AQ04	Class 150	PROCESS - WET LOW SEVERITY SOUR SERVICE SUBJECT TO NACE STD	B31.3	LIQUID + VAPOUR / VAPOUR	NO	YES	YES	CS - ASTM A106 Gr.B / ASTM A671 Gr.CC60 CL.22 / ASTM A105	3.0	Trim 12 (SS316 / HF)	1.1	BW, FL	RF	0 to 427	B7M / 2HM	316SS SPW / GRAPHITE	NPS 1/2 - 36	GA, GL, CH, BA, BF	1,2,5,27

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SR. NO.	PIPING CLASS	ASME CLASS	SERVICE DESCRIPTION	DESIGN CODE	FLUID	HIC	NACE MR 0103	PWHT (Note 37)	PIPE / FLANGE MATERIAL	C/A mm	VALVE TRIM	ASME B16.5 MAT, GROUP	CONSTR/ ENDS	FLANGE FACE TYPE	DESIGN TEMP RANGE (DEG C)	BOLTING	GASKET (S)	SIZE RANGE Inch	VALVE TYPE	NOTE
123	A2AQCL	Class 150	PROCESS -WET LOW SEVERITY SOUR SERVICE SUBJECT TO NACE (CONTRO TRACE)	B31.3	LATER	NO	YES	YES	CS - ASTM A106 Gr.B / ASTM A671 Gr.CC60 CL.22 / ASTM A105	3.0	Trim 12 (SS316 / HF)	1.1	BW, FL	RF	0 to 427	B7M / 2HM	316SS SPW / GRAPHITE	NPS 1/2 - 36	CH, PL	1, 5, 27
124	A2AQVV	Class 150	PROCESS - WET LOW SEVERITY SOUR SERVICE SUBJECT TO NACE STD	B31.3	LIQUID + VAPOUR / VAPOUR	NO	YES	YES	CS - ASTM A106 Gr.B / ASTM A671 Gr.CC60 CL.22 / ASTM A105	3.0	Trim 12 (SS316 / HF)	1.1	BW, FL	RF	0 to 427	B7M / 2HM	316SS SPW / GRAPHITE	NPS 1/2 - 92	GA, GL, CH, BA, BF	1,2,5,27
125	A2AR	Class 150	PROCESS - WET SEVERE SOUR SERVICE SUBJECT TO NACE + HIC STD. : / CRUDE COLUMN OVHD CONDENSER INLET / OUTLET / DHT WASH WATER / DHT STRIPPER OVHD CONDENSER OUTLET / RICH AMINE / PROCESS . PX / CAUSTIC SERVICE WITH PH > 9, H2S >50PPM (SPENT CAUSTIC)	B31.3	LIQUID / VAPOUR	YES	YES	YES	CS - ASTM A106 Gr.B / ASTM A671 Gr.CC60 CL.22 / ASTM A105	3.0	Trim 12 (SS316 / HF)	1.1	BW, FL	RF	0 to 427	B7M / 2HM	316SS SPW / GRAPHITE	NPS 1/2 - 48	GA, GL, CH, BA, BF	1,2,5,27
126	A2AR01	Class 150	***PROCESS - WET SEVERE SOUR SERVICE SUBJECT TO NACE + HIC STD, CARBONATE SCC***	B31.3	LIQUID / VAPOUR	YES	YES	YES	CS - ASTM A106 Gr.B / ASTM A671 Gr.CC60 CL.22 / ASTM A105	3.0	Trim 12 (SS316 / HF)	1.1	BW, FL	RF	0 to 427	B7M / 2HM	316SS SPW / GRAPHITE	NPS 1/2 - 52	GA, GL, CH, BA, BF	1,2,5,27
127	A2AR03	Class 150	PROCESS - WET SEVERE SOUR SERVICE SUBJECT TO NACE + HIC STD.	B31.3	LIQUID / VAPOUR	YES	YES	YES	CS - ASTM A106 Gr.B / ASTM A671 Gr.CC60 CL.22 / ASTM A105	3.0	Trim 12 (SS316 / HF)	1.1	BW, FL	RF	0 to 427	B7M / 2HM	316SS SPW / GRAPHITE	NPS 1/2 - 48	GA, GL, CH, BA, BF	1,2,5,27
128	A2AR04	Class 150	PROCESS - WET SEVERE SOUR SERVICE SUBJECT TO NACE + HIC STD.	B31.3	LIQUID / VAPOUR	YES	YES	YES	CS - ASTM A106 Gr.B / ASTM A105	3.0	Trim 12 (SS316 / HF)	1.1	BW, FL	RF	0 to 427	B7M / 2HM	316SS SPW / GRAPHITE	NPS 1/2 - 14	GA, GL, CH, BA, BF	1,2,5,27
129	A2AS	Class 150	UTILITY - LOW PRESSURE CONDENSATE / HYDROCARBONS - WATER CONDENSATE / BOILER FEED WATER	B31.3	LIQUID	NO	NO	B31.3	CS - ASTM A106 Gr.B / ASTM A672 Gr.B60 CL.22 / ASTM A105	3.0	Trim 5 (HF)	1.1	SW, BW, FL	RF	0 to 425	B7 / 2H	316SS SPW / GRAPHITE	NPS 1/2 - 36	GA, GL, CH, BF, NV	1,2
130	A2AW	Class 150	UTILITY - WATER SERVICE, CATEGORY D" FLUID : " / COOLING WATER SUPPLY / COOLING WATER RETURN / SERVICE WATER / RAW WATER (A/G)	B31.3	LIQUID	NO	NO	B31.3	CS - ASTM A106 Gr.B / ASTM A672 Gr.B60 CL.22 / ASTM A672 Gr.B60 CL.12 (For NPS 80 & Above) / ASTM A105	3.0	Trim 8 (13CR / HF)	1.1	SW, BW, FL	RF / FF	0 to 76	B7 / 2H	***SYNTHETIC FIBRE / OIL RESISTANT BINDER, 316SS SPW / GRAPHITE***	NPS 1/2 - 108	GA, GL, CH, BA, BF	1,2,25,30
131	A2AY04	Class 150	CHEMICAL DOSING : / AMINE	B31.3	LIQUID	NO	NO	B31.3	CS - ASTM A106 Gr.B / ASTM A105	3.0	Trim 8 (13CR / HF)	1.1	SW, BW, FL	RF	0 to 120	B7 / 2H	316SS SPW / GRAPHITE	NPS 1/2 - 6	GA, GL, CH, BA	1,2
132	A2DC01	Class 150	PROCESS - CATALYST	B31.3	SOLID	NO	NO	YES	1-1/4Cr - 1/2Mo - ASTM A335 Gr P11 / ASTM A691 GR.1 1/4CR CL.22 / ASTM A182 F11 CL.2	3.0	Trim 5 (HF)	1.9	BW, FL	RF	-29 to 538	B16 / 4	316SS SPW / MICA OR EQUIVALENT	NPS 1/2 - 20	GA, GL, CH, BA	1,36
133	A2DP01	Class 150	PROCESS - GENERAL PROCESS NON SOUR, NON CORROSIVE	B31.3	LIQUID / VAPOUR	NO	NO	YES	1-1/4Cr - 1/2Mo - ASTM A335 Gr P11 / ASTM A691 GR.1 1/4CR CL.22 / ASTM A182 F11 CL.2	3.0	Trim 5 (HF)	1.9	SW, BW, FL	RF	-29 to 538	B16 / 4	316SS SPW / MICA OR EQUIVALENT	NPS 1/2 - 30	GA, GL, CH	1,24,36
134	A2FC01	Class 150	PROCESS - CATALYST	B31.3	SOLID	NO	NO	YES	5Cr-1/2Mo - ASTM A335 Gr. P5 / ASTM A691 GR.5CR CL.22 / ASTM A182 F5	3.0	Trim 5 (HF)	1.17	BW, FL	RF	-29 to 538	B16 / 4	316SS SPW / MICA OR EQUIVALENT	NPS 1/2 - 30	GA, GL, CH	1,24
135	A2GN	Class 150	PROCESS - LOW TEMPERATURE SERVICE, STRESS RELIEVED: / CAUSTIC	B31.3	LIQUID / VAPOUR	NO	NO	YES	LTCS - ASTM A333 Gr.6 / ASTM A350 LF2	3.0	Trim 9 (Monel)	1.1	BW, FL	RF	-50 to 65	L7 / 4	316SS SPW / GRAPHITE	NPS 1/2 - 8	GA, GL, CH, BA	1,27
136	A2GP	Class 150	PROCESS - GENERAL PROCESS NON SOUR, NON CORROSIVE	B31.3	LIQUID	NO	NO	B31.3	LTCS - ASTM A333 Gr.6 / ASTM A671 GR.CC60 CL.22 / ASTM A350 LF2	3.0	Trim 12 (SS316 / HF)	1.1	SW, BW, FL	RF	-50 to 345	L7 / 4	316SS SPW / GRAPHITE	NPS 1/2 - 18	GA, GL, CH	1
137	A2GP04	Class 150	PROCESS - GENERAL PROCESS NON SOUR, NON CORROSIVE	B31.3	LIQUID / VAPOUR	NO	NO	B31.3	LTCS - ASTM A333 Gr.6 / ASTM A350 LF2	3.0	Trim 12 (SS316 / HF)	1.1	SW, BW, FL	RF	-50 to 345	L7 / 4	316SS SPW / GRAPHITE	NPS 1/2 - 8	GA, GL, CH	1,2
138	A2GQ	Class 150	PROCESS -WET SOUR SERVICE SUBJECT TO NACE STD. : / DE-ETHANISER OVHD / DE-ETHANISER OFFGAS	B31.3	LIQUID / VAPOUR	NO	YES	YES	LTCS - ASTM A333 Gr.6 / ASTM A671 GR.CC60 CL.22 / ASTM A350 LF2	3.0	Trim 12 (SS316 / HF)	1.1	BW, FL	RF	-50 to 345	L7M / 7M	316SS SPW / GRAPHITE	NPS 1/2 - 92	GA, GL, CH, BA, BF	1,2,5,15,27
139	A2GQ01	Class 150	***PROCESS -WET SOUR SERVICE SUBJECT TO NACE STD. : / DE-ETHANISER OVHD / DE-ETHANISER OFFGAS, CARBONATE SCC***	B31.3	LIQUID / VAPOUR	NO	YES	YES	LTCS - ASTM A333 Gr.6 / ASTM A350 LF2	3.0	Trim 12 (SS316 / HF)	1.1	BW, FL	RF	-50 to 345	L7M / 7M	316SS SPW / GRAPHITE	NPS 1/2 - 24	GA, GL, CH, BA, BF	1,2,5,15,27
140	A2GQVV	Class 150	PROCESS -WET SOUR SERVICE SUBJECT TO NACE STD.	B31.3	LIQUID / VAPOUR	NO	YES	YES	LTCS - ASTM A333 Gr.6 / ASTM A671 GR.CC60 CL.22 / ASTM A350 LF2	3.0	Trim 12 (SS316 / HF)	1.1	BW, FL	RF	-50 to 345	L7M / 7M	316SS SPW / GRAPHITE	NPS 1/2 - 92	GA, GL, CH, BA, BF	1,2,5,15,27
141	A2UQ	Class 150	UTILITY - UNDERGROUND PROCESS SERVICE(WRAPPED AND COATED): CLOSED BLOW DOWN DRAIN HEADER	B31.3	LIQUID	NO	YES	YES	CS - ASTM A106 Gr.B (WRAPPED AND COATED) / ASTM A105 (WRAPPED AND COATED)	3.0	Trim 12 (SS316 / HF)	1.1	BW, FL	RF	0 to 65	A307-B / A563-A (GALV.)	316SS SPW / GRAPHITE	NPS 4 - 24	GA, GL, CH, BF	1,5,11,27,28
142	A4A4	Class 150	PROCESS -WET LOW SEVERITY SOUR SERVICE SUBJECT TO NACE + AMINES OR CAUSTIC - STRESS RELIEVED	B31.3	LIQUID / VAPOUR / LIQUID + VAPOUR	NO	YES	YES	CS - ASTM A106 Gr.B / ASTM A671 Gr.CC60 CL.22 / ASTM A105	6.0	Trim 12 (SS316 / HF)	1.1	BW, FL	RF	0 to 427	B7M / 2HM	316SS SPW / GRAPHITE	NPS 1 - 30	GA, GL, CH	1,5,27
143	A4A5	Class 150	PROCESS - WET SEVERE SOUR SERVICE SUBJECT TO NACE + HIC STD + AMINES OR CAUSTIC - STRESS RELIEVED	B31.3	LIQUID / VAPOUR / LIQUID + VAPOUR	YES	YES	YES	CS - ASTM A106 Gr.B / ASTM A671 Gr.CC60 CL.22 / ASTM A105	6.0	Trim 12 (SS316 / HF)	1.1	BW, FL	RF	0 to 427	B7M / 2HM	316SS SPW / GRAPHITE	NPS 1 - 30	GA, GL, CH	1,5,27
144	A4AQ	Class 150	PROCESS - WET LOW SEVERITY SOUR SERVICE SUBJECT TO NACE STD	B31.3	LIQUID / VAPOUR	NO	YES	YES	CS - ASTM A106 Gr.B / ASTM A671 Gr.CC60 CL.22 / ASTM A105	6.0	Trim 12 (SS316 / HF)	1.1	BW, FL	RF	0 to 427	B7M / 2HM	316SS SPW / GRAPHITE	NPS 1 - 42	GA, GL, CH, BA, BF, NV	1,5,27
145	A4AQ01	Class 150	***PROCESS - WET LOW SEVERITY SOUR SERVICE SUBJECT TO NACE STD, CARBONATE SCC***	B31.3	LIQUID / VAPOUR	NO	YES	YES	CS - ASTM A106 Gr.B / ASTM A105	6.0	Trim 12 (SS316 / HF)	1.1	BW, FL	RF	0 to 427	B7M / 2HM	316SS SPW / GRAPHITE	NPS 1 - 18	GA, GL, CH	1,5,27
146	A4AR	Class 150	PROCESS - WET SEVERE SOUR SERVICE SUBJECT TO NACE + HIC STD. : / SOUR WATER / NAPHTHA STABILISER OVHD CONDENSER OUTLET / WASH WATER / MHC STRIPPER OVERHEAD / NAPHTHA STABILISER OVHD / LEAN AMINE / RICH AMINE / SLOPS / DEETHANISER / FLARE / HDT STRIPPER OVHD	B31.3	LIQUID / LIQUID + VAPOUR	YES	YES	YES	CS - ASTM A106 Gr.B / ASTM A671 Gr.CC60 CL.22 / ASTM A105	6.0	Trim 12 (SS316 / HF)	1.1	BW, FL	RF	0 to 427	B7M / 2HM	316SS SPW / GRAPHITE	NPS 1 - 52	GA, GL, CH, BA, BF, NV	1,5,27
147	A4AR01	Class 150	***PROCESS - WET SEVERE SOUR SERVICE SUBJECT TO NACE + HIC STD, CARBONATE SCC***	B31.3	LIQUID / LIQUID + VAPOUR	YES	YES	YES	CS - ASTM A106 Gr.B / ASTM A671 Gr.CC60 CL.22 / ASTM A105	6.0	Trim 12 (SS316 / HF)	1.1	BW, FL	RF	0 to 427	B7M / 2HM	316SS SPW / GRAPHITE	NPS 1 - 54	GA, GL, CH	1,5,27
148	A4AR03	Class 150	PROCESS - WET SEVERE SOUR SERVICE SUBJECT TO NACE + HIC STD.	B31.3	LIQUID / LIQUID + VAPOUR	YES	YES	YES	CS - ASTM A106 Gr.B / ASTM A105	6.0	Trim 12 (SS316 / HF)	1.1	BW, FL	RF	0 to 427	B7M / 2HM	316SS SPW / GRAPHITE	NPS 1 - 4	GA, GL, CH	1,5,27
149	A4AR04	Class 150	PROCESS - WET SEVERE SOUR SERVICE SUBJECT TO NACE + HIC STD.	B31.3	LIQUID / LIQUID + VAPOUR	YES	YES	YES	CS - ASTM A106 Gr.B / ASTM A105	6.0	Trim 12 (SS316 / HF)	1.1	BW, FL	RF	0 to 427	B7M / 2HM	316SS SPW / GRAPHITE	NPS 1 - 8	GA, GL, CH	1,5,27
150	A4AV03	Class 150	PROCESS - CORROSIVE SERVICE:	B31.3	LIQUID / VAPOUR	NO	NO	B31.3	CS - ASTM A106 Gr.B / ASTM A105	6.0	Trim 12 (SS316 / HF)	1.1	BW, FL	RF	0 to 427	B7 / 2H	316SS SPW / GRAPHITE	NPS 1 - 4	GA, GL, CH	1
151	A4FV	Class 150	CORROSIVE SERVICE, Cr-Mo STEEL WITH CORROSION ALLOWANCE. >3mm	B31.3	LIQUID / VAPOUR	NO	NO	YES	5Cr-1/2Mo - ASTM A335 Gr. P5 / ASTM A691 GR.5CR CL.22 / ASTM A182 F5	6.0	Trim 12 (SS316 / HF)	1.17	BW, FL	RF	-29 to 538	B16 / 4	316SS SPW / MICA OR EQUIVALENT	NPS 1 - 30	GA, GL, CH	1
152	A4GQ	Class 150	PROCESS - DEBUTANISER COLUMN OVERHEAD VAPOR LPG REFLUX	B31.3	LIQUID / VAPOUR	NO	YES	YES	LTCS - ASTM A333 Gr.6 / ASTM A350 LF2	6.0	Trim 12 (SS316 / HF)	1.1	BW, FL	RF	-50 to 345	L7M / 7M	316SS SPW / GRAPHITE	NPS 1 - 20	GA, GL, CH	1,5,15,27
153	A4GR01	Class 150	***PROCESS - WET SEVERE SOUR SERVICE SUBJECT TO NACE + HIC STD, CARBONATE SCC***	B31.3	LIQUID / VAPOUR	YES	YES	YES	LTCS - ASTM A333 Gr.6 / ASTM A671 GR.CC60 CL.22 / ASTM A350 LF2	6.0	Trim 12 (SS316 / HF)	1.1	BW, FL	RF	-50 to 345	L7M / 7M	316SS SPW / GRAPHITE	NPS 1 - 30	GA, GL, CH	1,5,15,27
154	B0AC01	Class 300	PROCESS - CATALYST	B31.3	SOLID	NO	NO	B31.3	CS - ASTM A106 Gr.B / ASTM A105	NOTE 6	Trim 12 (SS316 / HF)	1.1	BW, FL	RF	0 to 427	B7 / 2H	316SS SPW / GRAPHITE	NPS 1 - 12	GA, GL, CH, BA	1,6
155	B0AC03	Class 300	PROCESS - CATALYST	B31.3	SOLID	NO	NO	B31.3	CS - ASTM A106 Gr.B / ASTM A105	NOTE 6	RTFE / SS316, STELLITE	1.1	BW, FL	RF	0 to 427	B7 / 2H	316SS SPW / GRAPHITE	NPS 1 - 10	BA	1,6
156	B0AC04	Class 300	PROCESS - CATALYST	B31.3	SOLID	NO	NO	B31.3	CS - ASTM A106 Gr.B / ASTM A105	NOTE 6	RTFE / SS316, STELLITE	1.1	BW, FL	RF	0 to 427	B7 / 2H	316SS SPW / GRAPHITE	NPS 1 - 10	BA	1,6

INDRA
01-SEP-2014

SR. NO.	PIPING CLASS	ASME CLASS	SERVICE DESCRIPTION	DESIGN CODE	FLUID	HIC	NACE MR 0103	PWHT (Note 37)	PIPE / FLANGE MATERIAL	C/A mm	VALVE TRIM	ASME B16.5 MAT, GROUP	CONSTR/ ENDS	FLANGE FACE TYPE	DESIGN TEMP RANGE (DEG C)	BOLTING	GASKET (S)	SIZE RANGE Inch	VALVE TYPE	NOTE
157	B0JP	Class 300	EFFLUENT	B31.3	LIQUID	NO	NO	NO	SS - ASTM A312 TP304/TP304L Dual Grade / ASTM A182 F304/304L Dual Grade	0.0	Trim 12 (SS316 / HF)	2.1	SW, BW, FL	RF	0 to 160	B7 / 2H	316SS SPW / GRAPHITE	***NPS 1/2 - 6***	GA, GL, CH	1
158	B0JQ	Class 300	PROCESS -WET SOUR SERVICE SUBJECT TO NACE STD. : / RICH AMINE / SOUR GAS / SOUR WATER	B31.3	LIQUID / LIQUID + VAPOUR	NO	YES	NO	SS - ASTM A312 TP304/TP304L Dual Grade / ASTM A182 F304/304L Dual Grade	0.8	Trim 12 (SS316 / HF)	2.1	BW, FL	RF	-29 to 425	B7M / 2HM	316SS SPW / GRAPHITE	NPS 1/2 - 6	GA, GL, CH, BA, BF	1,2,5
159	B0JR	Class 300	PROCESS - WET SEVERE SOUR SERVICE SUBJECT TO NACE + HIC STD.	B31.3	LIQUID / VAPOUR	NO	YES	NO	SS - ASTM A312 TP304/TP304L Dual Grade / ASTM A182 F304/304L Dual Grade	0.0	Trim 12 (SS316 / HF)	2.1	BW, FL	RF	-29 to 425	B7M / 2HM	316SS SPW / GRAPHITE	NPS 1/2 - 6	GA, GL, CH	1,5
160	B0JR01	Class 300	PROCESS - WET SEVERE SOUR SERVICE SUBJECT TO NACE + HIC STD.	B31.3	LIQUID / VAPOUR	NO	YES	NO	SS - ASTM A312 TP304/TP304L Dual Grade / ASTM A182 F304/304L Dual Grade	0.0	Trim 12 (SS316 / HF)	2.1	BW, FL	RF	-29 to 425	B7M / 2HM	316SS SPW / GRAPHITE	NPS 1/2 - 4	GA, GL, CH	1,5
161	B0JR03	Class 300	PROCESS - WET SEVERE SOUR SERVICE SUBJECT TO NACE + HIC STD.	B31.3	LIQUID / VAPOUR	NO	YES	NO	SS - ASTM A312 TP304/TP304L Dual Grade / ASTM A182 F304/304L Dual Grade	0.0	Trim 12 (SS316 / HF)	2.1	BW, FL	RF	-29 to 425	B7M / 2HM	316SS SPW / GRAPHITE	NPS 1/2 - 4	GA, GL, CH	1,5
162	B0JS	Class 300	UTILITY - STEAM AND CONDENSATE, BOILER FEED WATER TO ASME B31.3	B31.3	VAPOUR / LIQUID + VAPOUR	NO	NO	NO	SS - ASTM A312 TP304/TP304L Dual Grade / ASTM A358 304/304L Dual Grade CL.1 / ASTM A182 F304/304L Dual Grade	0.0	Trim 12 (SS316 / HF)	2.1	SW, BW, FL	RF	-29 to 410	B7 / 2H	316SS SPW / GRAPHITE	NPS 1/2 - 14	GA, GL, CH	1,3
163	B0JW	Class 300	UTILITY – WATER SERVICE : DEMINERALISED WATER	B31.3	LIQUID	NO	NO	NO	SS - ASTM A312 TP304/TP304L Dual Grade / ASTM A358 304/304L Dual Grade CL.1 / ASTM A182 F304/304L Dual Grade	0.0	Trim 12 (SS316 / HF)	2.1	SW, BW, FL	RF	-29 to 155	B7 / 2H	316SS SPW / GRAPHITE	NPS 1/2 - 12	GA, GL, CH	1
164	B0JY	Class 300	PROCESS - CHEMICAL DOSING : / CHEMICALS	B31.3	LIQUID	NO	NO	NO	SS - ASTM A312 TP304/TP304L Dual Grade / ASTM A182 F304/304L Dual Grade	0.0	Trim 12 (SS316 / HF)	2.1	BW, FL	RF	-29 to 232	B7 / 2H	316SS SPW / GRAPHITE	NPS 1/2 - 2	GA, GL, CH, BA, BF	1,2
165	B0JY01	Class 300	PROCESS - CHEMICAL DOSING	B31.3	LIQUID	NO	NO	NO	SS - ASTM A312 TP304/TP304L Dual Grade / ASTM A182 F304/304L Dual Grade	0.0	Trim 12 (SS316 / HF)	2.1	BW, FL	RF	-29 to 232	B7 / 2H	316SS SPW / GRAPHITE	NPS 1/2 - 4	GA, GL, CH, BA	1,2
166	B0JY04	Class 300	PROCESS - CHEMICAL DOSING	B31.3	LIQUID	NO	NO	NO	SS - ASTM A312 TP304/TP304L Dual Grade / ASTM A182 F304/304L Dual Grade	0.0	Trim 12 (SS316 / HF)	2.1	BW, FL	RF	-29 to 232	B7 / 2H	316SS SPW / GRAPHITE	NPS 1/2 - 4	GA, GL, CH, BA	1,2
167	B0KC01	Class 300	PROCESS - CATALYST	B31.3	SOLID	NO	NO	NO	SS - ASTM A312 304H / ASTM A358 304H CL.1 / ASTM A182 F304H	***NOTE 6***	Trim SS304H / HF	2.1	BW, FL	RF	-29 to 538	B8M CL.2 / 8MA	316SS SPW / MICA OR EQUIVALENT	***NPS 1 - 12***	GA, GL, CH	1,24
168	B0KP01	Class 300	PROCESS - GENERAL PROCESS NON SOUR, NON CORROSIVE	B31.3	LIQUID / VAPOUR	NO	NO	NO	SS - ASTM A312 304H / ASTM A358 304H CL.1 / ASTM A182 F304H	0.0	Trim SS304H / HF	2.1	BW, FL	RF	***-29 to 565***	B8M CL.2 / 8MA	316SS SPW / MICA OR EQUIVALENT	NPS 1/2 - 48	GA, GL, CH	1,24
169	B0L5	Class 300	PROCESS - WET SEVERE SOUR SERVICE SUBJECT TO NACE + HIC STD + AMINES OR CAUSTIC - STRESS RELIEVED	B31.3	LIQUID	NO	YES	NO	SS - ASTM A312 TP316/TP316L Dual Grade / ASTM A358 316/316L Dual Grade CL.1 / ASTM A182 F316/316L Dual Grade	0.0	Trim 12 (SS316 / HF)	2.2	BW, FL	RF	-29 to 425	B7M / 2HM	316SS SPW / GRAPHITE	***NPS 1/2 - 18***	GA, GL, CH	1,5
170	B0L501	Class 300	PROCESS - WET SEVERE SOUR SERVICE SUBJECT TO NACE + HIC STD + AMINES OR CAUSTIC - STRESS RELIEVED	B31.3	VAPOUR / LIQUID	NO	YES	NO	SS - ASTM A312 TP316/TP316L Dual Grade / ASTM A182 F316/316L Dual Grade	0.0	Trim 12 (SS316 / HF)	2.2	BW, FL	RF	-29 to 425	B7M / 2HM	316SS SPW / GRAPHITE	NPS 1/2 - 6	GA, GL, CH	1,5
171	B0LH04	Class 300	PROCESS - HYDROGEN OR HYDROGEN RICH HYDROCARBON MIXTURE : / PROCESS WITH HYDROGEN	B31.3	LIQUID + VAPOUR	NO	NO	NO	SS - ASTM A312 TP316/TP316L Dual Grade / ASTM A182 F316/316L Dual Grade	0.0	Trim 12 (SS316 / HF)	2.2	SW, FL	RF	-29 to 425	B7 / 2H	316SS SPW / GRAPHITE	NPS 1/2 - 1 1/2	GA, GL, CH	1,24
172	B0LQ	Class 300	PROCESS - WET LOW SEVERITY SOUR SERVICE SUBJECT TO NACE STD	B31.3	LIQUID	NO	YES	NO	SS - ASTM A312 TP316/TP316L Dual Grade / ASTM A358 316/316L Dual Grade CL.1 / ASTM A182 F316/316L Dual Grade	1.0	Trim 12 (SS316 / HF)	2.2	BW, FL	RF	-29 to 425	B7M / 2HM	316SS SPW / GRAPHITE	NPS 1/2 - 8	GA, GL, CH, BA, BF	1,2,5
173	B0LQ03	Class 300	PROCESS - WET LOW SEVERITY SOUR SERVICE SUBJECT TO NACE STD	B31.3	LIQUID	NO	YES	NO	SS - ASTM A312 TP316/TP316L Dual Grade / ASTM A358 316/316L Dual Grade CL.1 / ASTM A182 F316/316L Dual Grade	1.0	Trim 12 (SS316 / HF)	2.2	BW, FL	RF	-29 to 425	B7M / 2HM	316SS SPW / GRAPHITE	NPS 1/2 - 12	GA, GL, CH, BA	1,2,5
174	B0LR	Class 300	PROCESS - WET SEVERE SOUR SERVICE SUBJECT TO NACE + HIC STD.	B31.3	LIQUID	NO	YES	NO	SS - ASTM A312 TP316/TP316L Dual Grade / ASTM A358 316/316L Dual Grade CL.1 / ASTM A182 F316/316L Dual Grade	0.0	Trim 12 (SS316 / HF)	2.2	BW, FL	RF	-29 to 425	B7M / 2HM	316SS SPW / GRAPHITE	NPS 1/2 - 24	GA, GL, CH	1,5
175	B0LR01	Class 300	PROCESS - WET SEVERE SOUR SERVICE SUBJECT TO NACE + HIC STD.	B31.3	LIQUID	NO	YES	NO	SS - ASTM A312 TP316/TP316L Dual Grade / ASTM A358 316/316L Dual Grade CL.1 / ASTM A182 F316/316L Dual Grade	0.0	Trim 12 (SS316 / HF)	2.2	BW, FL	RF	-29 to 425	B7M / 2HM	316SS SPW / GRAPHITE	NPS 1/2 - 8	GA, GL, CH	1,5
176	B0LR03	Class 300	PROCESS - WET SEVERE SOUR SERVICE SUBJECT TO NACE + HIC STD.	B31.3	LIQUID	NO	YES	NO	SS - ASTM A312 TP316/TP316L Dual Grade / ASTM A182 F316/316L Dual Grade	0.0	Trim 12 (SS316 / HF)	2.2	BW, FL	RF	-29 to 425	B7M / 2HM	316SS SPW / GRAPHITE	NPS 1/2 - 6	GA, GL, CH	1,5
177	B0MH01	Class 300	PROCESS - HYDROGEN OR HYDROGEN RICH HYDROCARBON MIXTURE:	B31.3	LIQUID + VAPOUR	NO	NO	NO	SS - ASTM A312 TP321 / ASTM A358 321 CL.1 / ASTM A182 F321	1.0	Trim SS347	2.4	SW, BW, FL	RF	-29 to 538	B7 / 2H	321SS SPW / MICA OR EQUIVALENT	NPS 1/2 - 10	GA, GL, CH	1,24
178	B0MP01	Class 300	PROCESS - GENERAL PROCESS NON SOUR, NON CORROSIVE	B31.3	LIQUID	NO	NO	NO	SS - ASTM A312 TP321 / ASTM A182 F321	0.8	Trim SS347	2.4	SW, BW, FL	RF	-29 to 538	B7 / 2H	321SS SPW / MICA OR EQUIVALENT	NPS 1/2 - 6	GA, GL, CH, BA	1
179	B0QP	Class 300	***UTILITY - CONTINUALLY OIL CONTAMINATED WASTE WATER, NON OILY WASTE WATER, WASTE SLUDGE, SANITARY WASTE WATER***	B31.3	LIQUID	NO	NO	B31.3	***DSS - ASTM A790 UNS S31803 (NPS 1/2-2) / CS - ASTM A106 Gr.B (Cement Lined) (NPS 3-12)***	0.0	***Trim UNS S31803***	***2.8 & 1.1***	***SW, BW, FL***	***FF***	***0 to 70***	B7 / 2H	SYNTHETIC FIBRE	NPS 2 - 12	***GA, CH, BF***	1
180	B0YN	Class 300	CAUSTIC SERVICE	B31.3	LIQUID	NO	NO	NO	Alloy 400 - ASTM B165 UNS N04400 / ASTM B564 UNS N04400	0.0	Trim Alloy 400	3.4	BW, FL	RF	0 to 184	***B7 / 2H***	Alloy 400 SPW / GRAPHITE	NPS 1/2 - 4	GA, GL, CH	1,5
181	***B0YQ***	***Class 300***	***PROCESS -WET SOUR SERVICE SUBJECT TO NACE STD. : / PROCESS WITH HYDROGEN***	***B31.3***	***VAPOUR / LIQUID + VAPOUR***	***NO***	***YES***	***NO***	***Inconel 625 - ASTM B444 UNS N06625 Grade 1 / ASTM B564 UNS N06625***	***0.0***	***Trim Alloy 625***	***3.8***	***BW, FL***	***RF***	***-29 to 427***	***B7M / 2HM***	***INCONEL 625 SPW / GRAPHITE***	***NPS 1/2 - 2***	***GA, GL, CH***	***1,5,13***
182	B19P	Class 300	CRUDE OIL	B31.3	LIQUID	NO	NO	NO	API5L PSL1 Grade X52 / ASTM A694 Grade F52	1.5	SS316 / RTFE		BW, FL	RF	0 to 50	B7 / 2H	316SS SPW / GRAPHITE	NPS 1 1/2 - 48	GA, BA	1
183	B1A402	Class 300	PROCESS -WET LOW SEVERITY SOUR SERVICE SUBJECT TO NACE + AMINES OR CAUSTIC - STRESS RELIEVED	B31.3	LIQUID / VAPOUR	NO	YES	YES	CS - ASTM A106 Gr.B / ASTM A105	1.5	Trim SS316L / HF	1.1	BW, FL	RF	0 to 427	B7M / 2HM	316SS SPW / GRAPHITE	NPS 1/2 - 14	GA, GL, CH, BA,	1,2,5,27
184	***B1A8***	***Class 300***	***PROCESS - BENZENE SERVICE (CONTAINING 5WT% OR MORE BENZENE)***	***B31.3***	***LIQUID***	***NO***	***NO***	***B31.3***	***CS - ASTM A106 Gr.B / ASTM A105***	***1.5***	***Trim 8 (13CR / HF)***	***1.1***	***SW, BW, FL***	***RF***	***0 to 427***	***B7 / 2H***	***316SS SPW / GRAPHITE***	***NPS 1/2 - 14***	***GA, GL, CH***	***1***
185	B1A804	Class 300	PROCESS - BENZENE SERVICE (5% WT)	B31.3	LATER	NO	NO	B31.3	CS - ASTM A106 Gr.B / ASTM A672 Gr.B60 CL.22 / ASTM A105	1.5	Trim 8 (13CR / HF)	1.1	SW, BW, FL	RF	0 to 427	B7 / 2H	316SS SPW / GRAPHITE	NPS 1/2 - 20	GA, GL, CH	1
186	B1A904	Class 300	PROCESS - BENZENE SERVICE (5% WT) + HYDROGEN	B31.3	LATER	NO	NO	B31.3	CS - ASTM A106 Gr.B / ASTM A672 Gr.B60 CL.22 / ASTM A105	1.5	Trim 8 (13CR / HF)	1.1	SW, BW, FL	RF	0 to 427	B7 / 2H	316SS SPW / GRAPHITE	NPS 1/2 - 24	GA, GL, CH, BA	1,2,16
187	B1AA	Class 300	UTILITY - CATEGORY "D" FLUID : / DRY INSTRUMENT AIR	B31.3	VAPOUR	NO	NO	B31.3	CS - ASTM A106 Gr.B / ASTM A105	1.5	Trim 8 (13CR / HF)	1.1	SW, BW, FL	RF	0 to 70	B7 / 2H	316SS SPW / GRAPHITE	NPS 1/2 - 10	GA, GL, CH	1
188	B1AA04	Class 300	UTILITY - CATEGORY "D" FLUID : / DRY INSTRUMENT AIR	B31.3	VAPOUR	NO	NO	B31.3	CS - ASTM A106 Gr.B / ASTM A105	1.5	Trim 8 (13CR / HF)	1.1	SW, BW, FL	RF	0 to 70	B7 / 2H	316SS SPW / GRAPHITE	NPS 1/2 - 2	GA, GL, CH, BA	1
189	B1AC	Class 300	PROCESS - CATALYST	B31.3	SOLID	NO	NO	B31.3	CS - ASTM A106 Gr.B / ASTM A105	1.5	RTFE / SS316, STELLITE	1.1	BW, FL	RF	0 to 427	B7 / 2H	316SS SPW / GRAPHITE	NPS 1/2 - 6	BA	1
190	B1AC01	Class 300	PROCESS - CATALYST	B31.3	SOLID	NO	NO	B31.3	CS - ASTM A106 Gr.B / ASTM A105	1.5	RTFE / SS316, STELLITE	1.1	BW, FL	RF	0 to 427	B7 / 2H	316SS SPW / GRAPHITE	NPS 1/2 - 6	BA	1

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SR. NO.	PIPING CLASS	ASME CLASS	SERVICE DESCRIPTION	DESIGN CODE	FLUID	HIC	NACE MR 0103	PWHT (Note 37)	PIPE / FLANGE MATERIAL	C/A mm	VALVE TRIM	ASME B16.5 MAT, GROUP	CONSTR/ ENDS	FLANGE FACE TYPE	DESIGN TEMP RANGE (DEG C)	BOLTING	GASKET (S)	SIZE RANGE Inch	VALVE TYPE	NOTE
191	B1AD	Class 300	UTILITY - HYDROCARBON : / JET FUEL OIL / FUEL OIL / FUEL GAS / HSFO (TO HHP & HP STEAM BOILERS)	B31.3	LIQUID	NO	NO	B31.3	CS - ASTM A106 Gr.B / ASTM A105	1.5	Trim 8 (13CR / HF)	1.1	SW, BW, FL	RF	0 to 280	B7 / 2H	316SS SPW / GRAPHITE	NPS 1/2 - 16	GA, GL, CH, BA, BF, NV	1,2
192	B1AD01	Class 300	UTILITY - HYDROCARBON : / JET FUEL OIL / FUEL OIL / FUEL GAS / HSFO (TO HHP & HP STEAM BOILERS)	B31.3	LIQUID	NO	NO	B31.3	CS - ASTM A106 Gr.B / ASTM A105	1.5	Trim 8 (13CR / HF)	1.1	SW, BW, FL	RF	0 to 260	B7 / 2H	316SS SPW / GRAPHITE	NPS 1/2 - 4	GA, GL, CH, BA	1,2
193	B1AG	Class 300	UTILITY - POWER PIPING : / MEDIUM PRESSURE STEAM / LP BOILER FEED WATER	B31.1	VAPOUR	NO	NO	B31.1	CS - ASME SA106 Gr.B / ASME SA105	1.5	Trim 5 (HF)	1.1	SW, BW, FL	RF	0 to 380	B7 / 2H	316SS SPW / GRAPHITE	NPS 1/2 - 10	GA, GL, CH	1
194	B1AH	Class 300	PROCESS - HYDROGEN OR HYDROGEN RICH HYDROCARBON MIXTURE : / HYDROGEN / PROCESS WITH HYDROGEN	B31.3	VAPOUR	NO	NO	B31.3	CS - ASTM A106 Gr.B / ASTM A672 Gr.B60 CL.22 / ASTM A105	1.5	Trim 8 (13CR / HF)	1.1	SW, BW, FL	RF	0 to 427	B7 / 2H	316SS SPW / GRAPHITE	NPS 1/2 - 30	GA, GL, CH, BA	1,2,16
195	B1AH01	Class 300	PROCESS - HYDROGEN OR HYDROGEN RICH HYDROCARBON MIXTURE : / HYDROGEN / PROCESS WITH HYDROGEN	B31.3	LIQUID / VAPOUR	NO	NO	B31.3	CS - ASTM A106 Gr.B / ASTM A672 Gr.B60 CL.22 / ASTM A105	1.5	Trim 8 (13CR / HF)	1.1	SW, BW, FL	RF	0 to 427	B7 / 2H	316SS SPW / GRAPHITE	NPS 1/2 - 18	GA, GL, CH, BA	1,2,16
196	B1AH02	Class 300	PROCESS - HYDROGEN OR HYDROGEN RICH HYDROCARBON MIXTURES	B31.3	VAPOUR	NO	NO	B31.3	CS - ASTM A106 Gr.B / ASTM A105	1.5	Trim SS316L / HF	1.1	SW, BW, FL	RF	0 to 427	B7 / 2H	316SS SPW / GRAPHITE	NPS 1/2 - 16	GA, GL, CH, BA, NV	1,2,16
197	B1AH03	Class 300	PROCESS - HYDROGEN OR HYDROGEN RICH HYDROCARBON MIXTURES	B31.3	VAPOUR	NO	NO	B31.3	CS - ASTM A106 Gr.B / ASTM A105	1.5	Trim 8 (13CR / HF)	1.1	SW, BW, FL	RF	0 to 427	B7 / 2H	316SS SPW / GRAPHITE	NPS 1/2 - 6	GA, GL, CH, BA	1,2,16
198	B1AH04	Class 300	PROCESS - HYDROGEN OR HYDROGEN RICH HYDROCARBON MIXTURES	B31.3	VAPOUR	NO	NO	B31.3	CS - ASTM A106 Gr.B / ASTM A672 Gr.B60 CL.22 / ASTM A105	1.5	Trim 8 (13CR / HF)	1.1	SW, BW, FL	RF	0 to 427	B7 / 2H	316SS SPW / GRAPHITE	NPS 1/2 - 24	GA, GL, CH, BA	1,2,16
199	B1AP	Class 300	PROCESS - NON SOUR, NON CORROSIVE: / DESALTED CRUDE / KEROSENE / AGO / NAPHTHA STABILISER BOTTOMS / C4 LPG / SOUR LPG / FLASHED CRUDE / DEETHANISER / DIESEL PRODUCT / AGO AND HAGO PRODUCT AFTER COOLER / SWEET LPG / HYDROCARBONS / HGU PROCESS / NITROGEN / NAPHTHA, NAPHTHA + DSO / PROCESS	B31.3	LIQUID / VAPOUR	NO	NO	B31.3	CS - ASTM A106 Gr.B / ASTM A672 Gr.B60 CL.22 / ASTM A105	1.5	Trim 8 (13CR / HF)	1.1	SW, BW, FL	RF	0 to 427	B7 / 2H	316SS SPW / GRAPHITE	NPS 1/2 - 36	GA, GL, CH, BA, BF	1,2
200	B1AP01	Class 300	PROCESS - GENERAL PROCESS NON SOUR, NON CORROSIVE	B31.3	LIQUID	NO	NO	B31.3	CS - ASTM A106 Gr.B / ASTM A672 Gr.B60 CL.22 / ASTM A105	1.5	Trim 8 (13CR / HF)	1.1	SW, BW, FL	RF	0 to 427	B7 / 2H	316SS SPW / GRAPHITE	NPS 1/2 - 30	GA, GL, CH, BA, BF	1,2
201	B1AP02	Class 300	PROCESS - GENERAL PROCESS NON SOUR, NON CORROSIVE	B31.3	LIQUID / VAPOUR	NO	NO	B31.3	CS - ASTM A106 Gr.B / ASTM A105	1.5	Trim 8 (13CR / HF)	1.1	SW, BW, FL	RF	0 to 427	B7 / 2H	316SS SPW / GRAPHITE	NPS 1/2 - 16	GA, GL, CH, BA, BF	1,2
202	B1AP04	Class 300	PROCESS - GENERAL PROCESS NON SOUR, NON CORROSIVE	B31.3	LIQUID	NO	NO	B31.3	CS - ASTM A106 Gr.B / ASTM A672 Gr.B60 CL.22 / ASTM A105	1.5	Trim 8 (13CR / HF)	1.1	SW, BW, FL	RF	0 to 427	B7 / 2H	316SS SPW / GRAPHITE	NPS 1/2 - 30	GA, GL, CH, BA, BF	1,2
203	B1APCM	Class 300	PROCESS - GENERAL PROCESS NON SOUR, NON CORROSIVE (CONTRO TRACE)	B31.3	LATER	NO	NO	B31.3	CS - ASTM A106 Gr.B / ASTM A105	1.5	Trim 8 (13CR / HF)	1.1	SW, BW, FL	RF	0 to 427	B7 / 2H	316SS SPW / GRAPHITE	NPS 1/2 - 6	CH, PL	1
204	B1AQ02	Class 300	PROCESS - WET LOW SEVERITY SOUR SERVICE SUBJECT TO NACE STD	B31.3	LIQUID / VAPOUR	NO	YES	YES	CS - ASTM A106 Gr.B / ASTM A105	1.5	Trim SS316L / HF	1.1	BW, FL	RF	0 to 427	B7M / 2HM	316SS SPW / GRAPHITE	NPS 1/2 - 18	GA, GL, CH, BA, BF	1,2,5,27
205	B1AR02	Class 300	PROCESS - WET SEVERE SOUR SERVICE SUBJECT TO NACE + HIC STD.	B31.3	LIQUID / VAPOUR	YES	YES	YES	CS - ASTM A106 Gr.B / ASTM A105	1.5	Trim SS316L / HF	1.1	BW, FL	RF	0 to 427	B7M / 2HM	316SS SPW / GRAPHITE	NPS 1/2 - 12	GA, GL, CH, BA, BF, NV	1,2,5,27
206	B1AS	Class 300	UTILITY - MEDIUM PRESSURE STEAM / BLOWDOWN STEAM	B31.3	VAPOUR	NO	NO	B31.3	CS - ASTM A106 Gr.B / ASTM A672 Gr.B60 CL.22 / ASTM A105	1.5	Trim 5 (HF)	1.1	SW, BW, FL	RF	0 to 425	B7 / 2H	316SS SPW / GRAPHITE	NPS 1/2 - 30	GA, GL, CH, BF, NV	1
207	***B1AY***	***Class 300***	***PROCESS - CHEMICAL DOSING***	***B31.3***	***LIQUID***	***NO***	***NO***	***B31.3***	***CS - ASTM A106 Gr.B / ASTM A105***	***1.5***	***Trim 8 (13CR / HF)***	***1.1***	***SW, BW, FL***	***RF***	***0 to 232***	***B7 / 2H***	***316SS SPW / GRAPHITE***	***NPS 1/2 - 1***	***GA, GL, CH***	***1***
208	B1AY04	Class 300	PROCESS - CHEMICAL DOSING	B31.3	LIQUID	NO	NO	B31.3	CS - ASTM A106 Gr.B / ASTM A105	1.5	Trim 8 (13CR / HF)	1.1	SW, BW, FL	RF	0 to 232	B7 / 2H	316SS SPW / GRAPHITE	NPS 1/2 - 8	GA, GL, CH, BA	1,2
209	B1DH04	Class 300	PROCESS - HYDROGEN OR HYDROGEN RICH HYDROCARBON MIXTURES	B31.3	VAPOUR	NO	NO	YES	1-1/4Cr - 1/2Mo - ASTM A335 Gr P11 / ASTM A691 GR.1 1/4CR CL.22 / ASTM A182 F11 CL.2	1.5	Trim 5 (HF)	1.9	SW, BW, FL	RF	-29 to 593	B16 / 4	316SS SPW / MICA OR EQUIVALENT	NPS 1/2 - 30	GA, GL, CH	1,24
210	B1DP04	Class 300	PROCESS - NON SOUR, NON NACE SOUR: / PROCESS / PROCESS WITH H2S / HYDROCARBON	B31.3	LIQUID / VAPOUR	NO	NO	YES	1-1/4Cr - 1/2Mo - ASTM A335 Gr P11 / ASTM A691 GR.1 1/4CR CL.22 / ASTM A182 F11 CL.2	1.5	Trim 5 (HF)	1.9	SW, BW, FL	RF	-29 to 593	B16 / 4	316SS SPW / MICA OR EQUIVALENT	NPS 1/2 - 48	GA, GL, CH	1,24,36
211	B1EH	Class 300	PROCESS - HYDROGEN OR HYDROGEN RICH HYDROCARBON MIXTURE : / PROCESS WITH HYDROGEN	B31.3	LIQUID + VAPOUR / VAPOUR	NO	NO	YES	2-1/4Cr-1Mo - ASTM A335 Gr.P22 / ASTM A182 F22 CL.3	1.5	Trim 5 (HF)	1.10	SW, BW, FL	RF	-29 to 593	B16 / 4	316SS SPW / MICA OR EQUIVALENT	NPS 1/2 - 10	GA, GL, CH	1,24
212	***B1G804***	***Class 300***	***Process – Benzene service (containing 5wt% or more benzene)***	***B31.3***	***LIQUID / VAPOR***	***NO***	***NO***	***B31.3***	***LTCS - ASTM A333 Gr.6 / ASTM A350 LF2***	***1.5***	***Trim 12 (SS316 / HF)***	***1.1***	***SW, BW, FL***	***RF***	***-50 to 345***	***L7 / 4***	***316SS SPW / GRAPHITE***	***NPS 1/2 - 4***	***GA, GL, CH***	***1,2***
213	B1GH04	Class 300	PROCESS - HYDROGEN OR HYDROGEN RICH HYDROCARBON MIXTURE	B31.3	VAPOUR	NO	NO	B31.3	LTCS - ASTM A333 Gr.6 / ASTM A671 GR.CC60 CL.22 / ASTM A350 LF2	1.5	Trim 8 (13CR / HF)	1.1	SW, BW, FL	RF	-50 to 345	L7 / 4	316SS SPW / GRAPHITE	NPS 1/2 - 20	GA, GL, CH	1,2
214	B1GP	Class 300	PROCESS - LOW TEMPERATURE SERVICE: / HYDROCARBONS (LIGHT) / REFRIGERANT / DEPROPANISER REFLUX / C3 LPG (Note 21) / PROCESS	B31.3	LIQUID / LIQUID + VAPOUR	NO	NO	B31.3	LTCS - ASTM A333 Gr.6 / ASTM A671 GR.CC60 CL.22 / ASTM A350 LF2	1.5	Trim 12 (SS316 / HF)	1.1	SW, BW, FL	RF	-50 to 345	L7 / 4	316SS SPW / GRAPHITE	NPS 1/2 - 48	GA, GL, CH, BA, BF	1,2
215	B1GP01	Class 300	PROCESS - GENERAL PROCESS NON SOUR, NON CORROSIVE	B31.3	LIQUID / LIQUID + VAPOUR	NO	NO	B31.3	LTCS - ASTM A333 Gr.6 / ASTM A671 GR.CC60 CL.22 / ASTM A350 LF2	1.5	Trim 12 (SS316 / HF)	1.1	SW, BW, FL	RF	-50 to 345	L7 / 4	316SS SPW / GRAPHITE	NPS 1/2 - 36	GA, GL, CH, BA, BF	1,2
216	B1GP04	Class 300	PROCESS - GENERAL PROCESS NON SOUR, NON CORROSIVE	B31.3	LIQUID / LIQUID + VAPOUR	NO	NO	B31.3	LTCS - ASTM A333 Gr.6 / ASTM A671 GR.CC60 CL.22 / ASTM A350 LF2	1.5	Trim 12 (SS316 / HF)	1.1	SW, BW, FL	RF	-50 to 345	L7 / 4	316SS SPW / GRAPHITE	NPS 1/2 - 24	GA, GL, CH, BA, BF	1,2
217	B1J502	Class 300	PROCESS - WET SEVERE SOUR SERVICE SUBJECT TO NACE + HIC STD + AMINES OR CAUSTIC - STRESS RELIEVED	B31.3	LIQUID	NO	YES	NO	***SS - ASTM A312 TP304/TP304L Dual Grade / ASTM A358 304/304L Dual Grade CL.1 / ASTM A182 F304/304L Dual Grade***	1.5	Trim SS316L / HF	2.1	BW, FL	RF	-29 to 425	B7M / 2HM	316SS SPW / GRAPHITE	***NPS 1/2 - 18***	GA, GL, CH	1,5
218	B1KH04	Class 300	PROCESS - HYDROGEN OR HYDROGEN RICH HYDROCARBON MIXTURES	B31.3	LATER	NO	NO	NO	SS - ASTM A312 304H / ASTM A182 F304H	1.5	Trim SS304H / HF	2.1	BW, FL	RF	-29 to 570	B8M CL.1 / 8MA	316SS SPW / MICA OR EQUIVALENT	NPS 1/2 - 6	GA, GL, CH	1,24
219	B1LP04	Class 300	PROCESS - GENERAL PROCESS NON SOUR, NON CORROSIVE	B31.3	LIQUID	NO	NO	NO	SS - ASTM A312 TP316/TP316L Dual Grade / ASTM A358 316/316L Dual Grade CL.1 / ASTM A182 F316/316L Dual Grade	1.5	Trim 12 (SS316 / HF)	2.2	SW, BW, FL	RF	-29 to 425	B7 / 2H	316SS SPW / GRAPHITE	NPS 1/2 - 8	GA, GL, CH	1
220	B1LV04	Class 300	PROCESS - CORROSIVE SERVICE:	B31.3	LIQUID / VAPOUR	NO	NO	NO	SS - ASTM A312 TP316/TP316L Dual Grade / ASTM A358 316/316L Dual Grade CL.1 / ASTM A182 F316/316L Dual Grade	1.5	Trim 12 (SS316 / HF)	2.2	SW, BW, FL	RF	-29 to 425	B7 / 2H	316SS SPW / GRAPHITE	NPS 1/2 - 10	GA, GL, CH	1,24
221	B1LW	Class 300	UTILITY - WATER SERVICES :/ COOLING, WASTE WATER WITH TRACE AROMATIC ETC	B31.3	LIQUID	NO	NO	NO	SS - ASTM A312 TP316/TP316L Dual Grade / ASTM A182 F316/316L Dual Grade	1.5	Trim 12 (SS316 / HF)	2.2	SW, BW, FL	RF	0 to 100	B7 / 2H	316SS SPW / GRAPHITE	NPS 1/2 - 1	GA, GL, CH, BA	1,2
222	B1LY	Class 300	PROCESS - CHEMICAL DOSING	B31.3	LIQUID	NO	NO	NO	SS - ASTM A312 TP316/TP316L Dual Grade / ASTM A182 F316/316L Dual Grade	1.5	Trim 12 (SS316 / HF)	2.2	BW, FL	RF	-29 to 232	B7 / 2H	316SS SPW / GRAPHITE	NPS 1/2 - 4	GA, GL, CH, BA	1,2
223	B1LY04	Class 300	CHEMICAL DOSING :/ SULFOLANE	B31.3	LIQUID	NO	NO	NO	SS - ASTM A312 TP316/TP316L Dual Grade / ASTM A182 F316/316L Dual Grade	1.5	Trim 12 (SS316 / HF)	2.2	BW, FL	RF	0 to 70	B7 / 2H	316SS SPW / GRAPHITE	NPS 1/2 - 4	GA, GL, CH, BA	1,2
224	B1MQ02	Class 300	PROCESS - WET LOW SEVERITY SOUR SERVICE SUBJECT TO NACE STD	B31.3	LIQUID / VAPOUR / LIQUID + VAPOUR	NO	YES	NO	SS - ASTM A312 TP321 / ASTM A358 321 CL.1 / ASTM A182 F321	1.5	Trim SS347	2.4	BW, FL	RF	-29 to 538	B7M / 2HM	321SS SPW / MICA OR EQUIVALENT	NPS 1/2 - 14	GA, GL, CH	1,5
225	B28P	Class 300	PROCESS - NON SOUR : / PROCESS WITH H2S (< 25 PPMW)	B31.3	LIQUID / VAPOUR	NO	NO	YES	9Cr - 1MO - ASTM A335 Gr. P9 / ASTM A691 GR.9CR CL.22 / ASTM A182 F9	3.0	Trim 5 (HF)	1.14	SW, BW, FL	RF	-29 to 538	B16 / 4	316SS SPW / MICA OR EQUIVALENT	NPS 1/2 - 42	GA, GL, CH	1,24,36

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SR. NO.	PIPING CLASS	ASME CLASS	SERVICE DESCRIPTION	DESIGN CODE	FLUID	HIC	NACE MR 0103	PWHT (Note 37)	PIPE / FLANGE MATERIAL	C/A mm	VALVE TRIM	ASME B16.5 MAT, GROUP	CONSTR/ ENDS	FLANGE FACE TYPE	DESIGN TEMP RANGE (DEG C)	BOLTING	GASKET (S)	SIZE RANGE Inch	VALVE TYPE	NOTE
226	***B28Q02***	***Class 300***	***PROCESS - WET LOW SEVERITY SOUR SERVICE SUBJECT TO NACE STD***	***B31.3***	***LIQUID + VAPOUR***	***NO***	***YES***	***YES***	***9Cr - 1MO - ASTM A335 Gr. P9 / ASTM A182 F9***	***3.0***	***Trim SS316L / HF***	***1.14***	***BW, FL***	***RF***	***-29 to 538***	***B7M / 2HM***	***316SS SPW / MICA OR EQUIVALENT***	***NPS 1/2 - 16***	***GA***	***1,5***
227	B28V02	Class 300	PROCESS - CORROSIVE SERVICE:	B31.3	LIQUID / VAPOUR / LIQUID + VAPOUR	NO	NO	YES	9Cr - 1Mo - ASTM A335 Gr. P9 / ASTM A182 F9	3.0	Trim 5 (HF)	1.14	BW, FL	RF	-29 to 538	B16 / 4	316SS SPW / MICA OR EQUIVALENT	NPS 1/2 - 16	GA, GL, CH	1,24,36
228	B2A4	Class 300	PROCESS -WET LOW SEVERITY SOUR SERVICE SUBJECT TO NACE + AMINES OR CAUSTIC - STRESS RELIEVED	B31.3	LIQUID / VAPOUR	NO	YES	YES	CS - ASTM A106 Gr.B / ASTM A105	3.0	Trim 12 (SS316 / HF)	1.1	BW, FL	RF	0 to 427	B7M / 2HM	316SS SPW / GRAPHITE	NPS 1/2 - 24	GA, GL, CH,	1,5,,27
229	B2A5	Class 300	PROCESS - WET SEVERE SOUR SERVICE SUBJECT TO NACE + HIC STD + AMINES OR CAUSTIC - STRESS RELIEVED	B31.3	LIQUID	YES	YES	YES	CS - ASTM A106 Gr.B / ASTM A105	3.0	Trim 12 (SS316 / HF)	1.1	BW, FL	RF	0 to 427	B7M / 2HM	316SS SPW / GRAPHITE	NPS 1/2 - 6	GA, GL, CH	1,5,27
230	B2A501	Class 300	PROCESS - WET SEVERE SOUR SERVICE SUBJECT TO NACE + HIC STD + AMINES OR CAUSTIC - STRESS RELIEVED	B31.3	LIQUID / VAPOUR / LIQUID + VAPOUR	YES	YES	YES	CS - ASTM A106 Gr.B / ASTM A105	3.0	Trim 12 (SS316 / HF)	1.1	BW, FL	RF	0 to 427	B7M / 2HM	316SS SPW / GRAPHITE	NPS 1/2 - 12	GA, GL, CH	1,5,27
231	B2A502	Class 300	PROCESS - WET SEVERE SOUR SERVICE SUBJECT TO NACE + HIC STD + AMINES OR CAUSTIC - STRESS RELIEVED	B31.3	LIQUID / VAPOUR / LIQUID + VAPOUR	YES	YES	YES	CS - ASTM A106 Gr.B / ASTM A105	3.0	Trim SS316L / HF	1.1	BW, FL	RF	0 to 427	B7M / 2HM	316SS SPW / GRAPHITE	NPS 1/2 - 24	GA, GL, CH, BA, BF	1,2,5,27
232	B2A503	Class 300	PROCESS - WET SEVERE SOUR SERVICE SUBJECT TO NACE + HIC STD + AMINES OR CAUSTIC - STRESS RELIEVED	B31.3	LIQUID	YES	YES	YES	CS - ASTM A106 Gr.B / ASTM A105	3.0	Trim 12 (SS316 / HF)	1.1	BW, FL	RF	0 to 427	B7M / 2HM	316SS SPW / GRAPHITE	NPS 1/2 - 1 1/2	GA, GL, CH	1,5,27
233	B2A602	Class 300	PROCESS -WET LOW SEVERITY SOUR SERVICE SUBJECT TO NACE + HYDROGEN SERVICE	B31.3	LIQUID / VAPOUR / LIQUID + VAPOUR	NO	YES	YES	CS - ASTM A106 Gr.B / ASTM A105	3.0	Trim SS316L / HF	1.1	BW, FL	RF	0 to 427	B7M / 2HM	316SS SPW / GRAPHITE	NPS 1/2 - 6	GA, GL, CH, BA, BF	1,2,5,27
234	B2A604	Class 300	PROCESS -WET LOW SEVERITY SOUR SERVICE SUBJECT TO NACE + HYDROGEN SERVICE	B31.3	LIQUID / VAPOUR / LIQUID + VAPOUR	NO	YES	YES	CS - ASTM A106 Gr.B / ASTM A105	3.0	Trim 12 (SS316 / HF)	1.1	BW, FL	RF	0 to 427	B7M / 2HM	316SS SPW / GRAPHITE	NPS 1/2 - 20	GA, GL, CH	1,5,27
235	B2A704	Class 300	PROCESS - WET SEVERE SOUR SERVICE SUBJECT TO NACE + HIC STD + HYDROGEN SERVICE	B31.3	LIQUID + VAPOUR	YES	YES	YES	CS - ASTM A106 Gr.B / ASTM A105	3.0	Trim 12 (SS316 / HF)	1.1	BW, FL	RF	0 to 427	B7M / 2HM	316SS SPW / GRAPHITE	NPS 1/2 - 14	GA, GL, CH	1,5,27
236	B2A804	Class 300	PROCESS - BENZENE SERVICE (5% WT)	B31.3	LATER	NO	NO	B31.3	CS - ASTM A106 Gr.B / ASTM A672 Gr.B60 CL.22 / ASTM A105	3.0	Trim 8 (13CR / HF)	1.1	SW, BW, FL	RF	0 to 427	B7 / 2H	316SS SPW / GRAPHITE	NPS 1/2 - 42	GA, GL, CH, BA, BF	1,2
237	B2AC01	Class 300	PROCESS - CATALYST	B31.3	SOLID	NO	NO	B31.3	CS - ASTM A106 Gr.B / ASTM A672 Gr.B60 CL.22 / ASTM A105	3.0	Trim 5 (HF)	1.1	BW, FL	RF	0 to 427	B7 / 2H	316SS SPW / GRAPHITE	NPS 1/2 - 24	GA, GL, CH, BA	1
238	B2AG	Class 300	UTILITY - POWER PIPING : / LP BOILER FEED WATER	B31.1	LIQUID	NO	NO	B31.1	CS - ASME SA106 Gr.B / ASME SA105	3.0	Trim 5 (HF)	1.1	SW, BW, FL	RF	0 to 155	B7 / 2H	316SS SPW / GRAPHITE	NPS 1/2 - 8	GA, GL, CH	1
239	B2AH02	Class 300	PROCESS - HYDROGEN OR HYDROGEN RICH HYDROCARBON MIXTURE	B31.3	VAPOUR	NO	NO	B31.3	CS - ASTM A106 Gr.B / ASTM A105	3.0	Trim SS316L / HF	1.1	SW, BW, FL	RF	0 to 427	B7 / 2H	316SS SPW / GRAPHITE	NPS 1/2 - 6	GA, GL, CH, BA	1,2,16
240	B2AH04	Class 300	PROCESS - HYDROGEN OR HYDROGEN RICH HYDROCARBON MIXTURE	B31.3	VAPOUR	NO	NO	B31.3	CS - ASTM A106 Gr.B / ASTM A672 Gr.B60 CL.22 / ASTM A105	3.0	Trim 8 (13CR / HF)	1.1	SW, BW, FL	RF	0 to 427	B7 / 2H	316SS SPW / GRAPHITE	NPS 1/2 - 24	GA, GL, CH, BA	1,2,16
241	B2AL	Class 300	PROCESS -AMINES AND NON NACE SOUR (STRESS RELIEVED): / LEAN AMINE / PROCESS WITH H2S / DHT DRIER SOUR WATER / PROCESS	B31.3	LIQUID / VAPOUR	NO	NO	YES	CS - ASTM A106 Gr.B / ASTM A672 Gr.B60 CL.22 / ASTM A105	3.0	Trim 12 (SS316 / HF)	1.1	BW, FL	RF	0 to 427	B7 / 2H	316SS SPW / GRAPHITE	NPS 1/2 - 18	GA, GL, CH, BA, BF	1,2,27
242	B2AL04	Class 300	PROCESS - RICH AMINE SERVICE (STRESS RELIEVED)	B31.3	LIQUID / VAPOUR	NO	NO	YES	CS - ASTM A106 Gr.B / ASTM A105	3.0	Trim 12 (SS316 / HF)	1.1	BW, FL	RF	0 to 427	B7 / 2H	316SS SPW / GRAPHITE	NPS 1/2 - 2	GA, GL, CH	1,27
243	B2AN	Class 300	PROCESS - CAUSTIC, CAUSTIC RICH MIXTURE, STRESS RELIEVED : / CAUSTIC / ALKY REFRIGERANT PURGE / PROCESS WITH CAUSTIC	B31.3	LIQUID	NO	NO	YES	CS - ASTM A106 Gr.B / ASTM A105	3.0	Trim 9 (Monel)	1.1	BW, FL	RF	0 to 100	B7 / 2H	316SS SPW / GRAPHITE	NPS 1/2 - 6	GA, GL, CH, BA, BF	1,2,27
244	B2AN04	Class 300	CAUSTIC SERVICE	B31.3	LIQUID	NO	NO	YES	CS - ASTM A106 Gr.B / ASTM A105	3.0	Trim 9 (Monel)	1.1	BW, FL	RF	0 to 265	B7 / 2H	316SS SPW / GRAPHITE	NPS 1/2 - 12	GA, GL, CH, BA, BF	1,2,27
245	B2AP	Class 300	PROCESS - NON SOUR : / DESALTER WATER / FLASHED CRUDE / CRUDE OIL / LAGO / HAGO / KEROSENE PRODUCT / KEROSENE PUMP AROUND / DIESEL / STRIPPED WATER / HYDROTREATED RESIDUE / DIESEL PRODUCT / DEETHANISER / DEBUTANISER / NAPHTHA / HDT STRIPPER FEED / PROCESS / STRIPPER FEED /BOTTOMS / OVHD / WASH WATER / NON ACIDIC DRAIN / ALKYLATE PRODUCT / ISOBUTANE / REFRIGERANT PURGE / ALKY DEPROPANISER OVHD / BOTTOMS / ALKY PROPANE PRODUCT / ALKY CCR LPG / BUTAMER PRODUCT TO DEISOBUTANISER / DEISOBUTANISER BOTTOM / ISOBUTANE / PROPANE PRODUCT / BUTANE PRODUCT / DEBUTANISER OVHD / BOTTOM / DEPROPANISER BOTTOMS / HYDROCARBONS / HYDROCARBON / PROCESS WATER / PROCESS AIR / LPG / PROCESS	B31.3	LIQUID	NO	NO	B31.3	CS - ASTM A106 Gr.B / ASTM A672 Gr.B60 CL.22 / ASTM A105	3.0	Trim 8 (13CR / HF)	1.1	SW, BW, FL	RF	0 to 427	B7 / 2H	316SS SPW / GRAPHITE	NPS 1/2 - 48	GA, GL, CH, BA, BF, NV	1,2
246	B2AP01	Class 300	PROCESS - GENERAL PROCESS NON SOUR, NON CORROSIVE	B31.3	LIQUID / VAPOUR / LIQUID + VAPOUR	NO	NO	B31.3	CS - ASTM A106 Gr.B / ASTM A672 Gr.B60 CL.22 / ASTM A105	3.0	Trim 8 (13CR / HF)	1.1	SW, BW, FL	RF	0 to 427	B7 / 2H	316SS SPW / GRAPHITE	NPS 1/2 - 30	GA, GL, CH, BA, BF	1,2
247	B2AP02	Class 300	PROCESS - GENERAL PROCESS NON SOUR, NON CORROSIVE	B31.3	LIQUID / VAPOUR	NO	NO	B31.3	CS - ASTM A106 Gr.B / ASTM A105	3.0	Trim 8 (13CR / HF)	1.1	SW, BW, FL	RF	0 to 427	B7 / 2H	316SS SPW / GRAPHITE	NPS 1/2 - 16	GA, GL, CH, BA, BF, NV	1,2
248	B2AP04	Class 300	PROCESS - GENERAL PROCESS NON SOUR, NON CORROSIVE	B31.3	LIQUID / LIQUID + VAPOUR	NO	NO	B31.3	CS - ASTM A106 Gr.B / ASTM A672 Gr.B60 CL.22 / ASTM A105	3.0	Trim 8 (13CR / HF)	1.1	SW, BW, FL	RF	0 to 427	B7 / 2H	316SS SPW / GRAPHITE	NPS 1/2 - 48	GA, GL, CH, BA, BF	1,2
249	B2APCL	Class 300	PROCESS - GENERAL PROCESS NON SOUR, NON CORROSIVE (CONTRO TRACE)	B31.3	LATER	NO	NO	B31.3	CS - ASTM A106 Gr.B / ASTM A105	3.0	Trim 8 (13CR / HF)	1.1	SW, BW, FL	RF	0 to 427	B7 / 2H	316SS SPW / GRAPHITE	NPS 1/2 - 6	CH, PL	1
250	B2AQ	Class 300	PROCESS -WET SOUR SERVICE SUBJECT TO NACE STD. : / CRUDE DISTILLATION TOP PA / SOUR WATER / CDU OVHD LIQUID / UNSTABILISED NAPHTHA / SOUR NAPHTHA / NAPHTHA STAB. OVHD LIQUID / HOT WELL OIL / WASH WATER / SOUR GAS / HC WASH / STRIPPED WATER / LOW PRESSURE FLARE / SLOPS / PROCESS	B31.3	LIQUID / VAPOUR / LIQUID + VAPOUR	NO	YES	YES	CS - ASTM A106 Gr.B / ASTM A671 Gr.CC60 CL.22 / ASTM A105	3.0	Trim 12 (SS316 / HF)	1.1	BW, FL	RF	0 to 427	B7M / 2HM	316SS SPW / GRAPHITE	NPS 1/2 - 30	GA, GL, CH, BA, BF, NV	1,2,5,27
251	B2AQ01	Class 300	***PROCESS - WET LOW SEVERITY SOUR SERVICE SUBJECT TO NACE STD, CARBONATE SCC***	B31.3	LIQUID / VAPOUR	NO	YES	YES	CS - ASTM A106 Gr.B / ASTM A105	3.0	Trim 12 (SS316 / HF)	1.1	BW, FL	RF	0 to 427	B7M / 2HM	316SS SPW / GRAPHITE	NPS 1/2 - 24	GA, GL, CH, BA, BF	1,2,5,27
252	B2AQ02	Class 300	PROCESS - WET LOW SEVERITY SOUR SERVICE SUBJECT TO NACE STD	B31.3	LIQUID / VAPOUR / LIQUID + VAPOUR	NO	YES	YES	CS - ASTM A106 Gr.B / ASTM A672 Gr.B60 CL.32 / ASTM A105	3.0	Trim SS316L / HF	1.1	BW, FL	RF	0 to 427	B7M / 2HM	316SS SPW / GRAPHITE	NPS 1/2 - 30	GA, GL, CH, BA, BF	1,2,5,27
253	B2AQ04	Class 300	PROCESS - WET LOW SEVERITY SOUR SERVICE SUBJECT TO NACE STD	B31.3	LIQUID / VAPOUR / LIQUID + VAPOUR	NO	YES	YES	CS - ASTM A106 Gr.B / ASTM A105	3.0	Trim 12 (SS316 / HF)	1.1	BW, FL	RF	0 to 427	B7M / 2HM	316SS SPW / GRAPHITE	NPS 1/2 - 12	GA, GL, CH, BA	1,2,5,27
254	B2AR	Class 300	PROCESS - WET SEVERE SOUR SERVICE SUBJECT TO NACE + HIC STD, COLD LOW PRESSURE BOILER FEED WATER, LOW PRESSURE STEAM	B31.3	LIQUID / VAPOUR	YES	YES	YES	CS - ASTM A106 Gr.B / ASTM A105	3.0	Trim 12 (SS316 / HF)	1.1	BW, FL	RF	0 to 184	B7M / 2HM	316SS SPW / GRAPHITE	***NPS 1/2 - 4***	GA, GL, CH	1,5,27
255	B2AR01	Class 300	***PROCESS - WET SEVERE SOUR SERVICE SUBJECT TO NACE + HIC STD, CARBONATE SCC***	B31.3	LIQUID / LIQUID + VAPOUR	YES	YES	YES	CS - ASTM A106 Gr.B / ASTM A671 Gr.CC60 CL.22 / ASTM A105	3.0	Trim 12 (SS316 / HF)	1.1	BW, FL	RF	0 to 427	B7M / 2HM	316SS SPW / GRAPHITE	NPS 1/2 - 30	GA, GL, CH, BA, BF	1,2,5,27
256	B2AR02	Class 300	PROCESS - WET SEVERE SOUR SERVICE SUBJECT TO NACE + HIC STD.	B31.3	LIQUID / VAPOUR / LIQUID + VAPOUR	YES	YES	YES	CS - ASTM A106 Gr.B / ASTM A105	3.0	Trim SS316L / HF	1.1	BW, FL	RF	0 to 427	B7M / 2HM	316SS SPW / GRAPHITE	NPS 1/2 - 24	GA, GL, CH, BA, BF	1,2,5,27
257	B2AR03	Class 300	PROCESS - WET SEVERE SOUR SERVICE SUBJECT TO NACE + HIC STD.	B31.3	LIQUID / LIQUID + VAPOUR	YES	YES	YES	CS - ASTM A106 Gr.B / ASTM A105	3.0	Trim 12 (SS316 / HF)	1.1	BW, FL	RF	0 to 427	B7M / 2HM	316SS SPW / GRAPHITE	NPS 1/2 - 4	GA, GL, CH, BA, BF	1,2,5,27

INDRA
01-SEP-2014

SR. NO.	PIPING CLASS	ASME CLASS	SERVICE DESCRIPTION	DESIGN CODE	FLUID	HIC	NACE MR 0103	PWHT (Note 37)	PIPE / FLANGE MATERIAL	C/A mm	VALVE TRIM	ASME B16.5 MAT, GROUP	CONSTR/ ENDS	FLANGE FACE TYPE	DESIGN TEMP RANGE (DEG C)	BOLTING	GASKET (S)	SIZE RANGE Inch	VALVE TYPE	NOTE
258	B2AR04	Class 300	PROCESS - WET SEVERE SOUR SERVICE SUBJECT TO NACE + HIC STD.	B31.3	LIQUID / LIQUID + VAPOUR	YES	YES	YES	CS - ASTM A106 Gr.B / ASTM A105	3.0	Trim 12 (SS316 / HF)	1.1	BW, FL	RF	0 to 427	B7M / 2HM	316SS SPW / GRAPHITE	NPS 1/2 - 14	GA, GL, CH, BA, BF	1,2,5,27
259	B2AS	Class 300	UTILITY - MP BOILER FEED WATER / MEDIUM PRESSURE CONDENSATE	B31.3	LIQUID	NO	NO	B31.3	CS - ASTM A106 Gr.B / ASTM A672 Gr.B60 CL.22 / ASTM A105	3.0	Trim 5 (HF)	1.1	SW, BW, FL	RF	0 to 425	B7 / 2H	316SS SPW / GRAPHITE	NPS 1/2 - 24	GA, GL, CH, NV	1
260	B2AW	Class 300	UTILITY - WATER SERVICE, CATEGORY D" FLUID : " / COOLING WATER SUPPLY / COOLING WATER RETURN / SERVICE WATER / RAW WATER (A/G)	B31.3	LIQUID	NO	NO	B31.3	CS - ASTM A106 Gr.B / ASTM A105	3.0	Trim 8 (13CR / HF)	1.1	SW, BW, FL	RF	0 to 76	B7 / 2H	316SS SPW / GRAPHITE	NPS 1/2 - 16	GA, GL, CH	1,25,30
261	B2AW04	Class 300	UTILITY - WATER SERVICE, CATEGORY D" FLUID : " / COOLING WATER SUPPLY / COOLING WATER RETURN / SERVICE WATER / RAW WATER (A/G)	B31.3	LIQUID	NO	NO	B31.3	CS - ASTM A106 Gr.B / ASTM A105	3.0	Trim 8 (13CR / HF)	1.1	SW, BW, FL	RF	0 to 76	B7 / 2H	316SS SPW / GRAPHITE	NPS 1/2 - 3	GA, GL, CH	1,25,30
262	B2AY04	Class 300	CHEMICAL DOSING : / AMINE	B31.3	LIQUID	NO	NO	B31.3	CS - ASTM A106 Gr.B / ASTM A105	3.0	Trim 8 (13CR / HF)	1.1	SW, BW, FL	RF	0 to 170	B7 / 2H	316SS SPW / GRAPHITE	NPS 1/2 - 2	GA, GL, CH, BA	1,2
263	B2DC01	Class 300	PROCESS - CATALYST	B31.3	SOLID	NO	NO	YES	1-1/4Cr - 1/2Mo - ASTM A335 Gr P11 / ASTM A182 F11 CL.2	3.0	RTFE / SS316, STELLITE	1.9	BW, FL	RF	-29 to 593	B16 / 4	316SS SPW / MICA OR EQUIVALENT	NPS 1/2 - 14	BA	1
264	B2DH	Class 300	PROCESS - HYDROGEN OR HYDROGEN RICH HYDROCARBON MIXTURE : / PROCESS WITH HYDROGEN	B31.3	VAPOUR / LIQUID + VAPOUR	NO	NO	YES	1-1/4Cr - 1/2Mo - ASTM A335 Gr P11 / ASTM A691 GR.1 1/4CR CL.22 / ASTM A182 F11 CL.2	3.0	Trim 5 (HF)	1.9	SW, BW, FL	RF	-29 to 593	B16 / 4	316SS SPW / MICA OR EQUIVALENT	NPS 1/2 - 24	GA, GL, CH	1,24,36
265	B2DP01	Class 300	PROCESS - GENERAL PROCESS NON SOUR, NON CORROSIVE	B31.3	LIQUID / VAPOUR	NO	NO	YES	1-1/4Cr - 1/2Mo - ASTM A335 Gr P11 / ASTM A691 GR.1 1/4CR CL.22 / ASTM A182 F11 CL.2	3.0	Trim 5 (HF)	1.9	SW, BW, FL	RF	-29 to 593	B16 / 4	316SS SPW / MICA OR EQUIVALENT	NPS 1/2 - 30	GA, GL, CH	1,24,36
266	B2FC01	Class 300	PROCESS - CATALYST	B31.3	SOLID	NO	NO	YES	5Cr-1/2Mo - ASTM A335 Gr. P5 / ASTM A691 GR.5CR CL.22 / ASTM A182 F5	3.0	Trim 5 (HF)	1.17	BW, FL	RF	-29 to 593	B16 / 4	316SS SPW / MICA OR EQUIVALENT	NPS 1/2 - 30	GA, GL, CH	1,24
267	B2FP	Class 300	PROCESS - NON SOUR, NON NACE SOUR : / HAGO / PREHEATED CRUDE / PROCESS WITH H2S (< 25 PPMW)	B31.3	LIQUID / VAPOUR	NO	NO	YES	5Cr-1/2Mo - ASTM A335 Gr. P5 / ASTM A691 GR.5CR CL.22 / ASTM A182 F5	3.0	Trim 5 (HF)	1.17	SW, BW, FL	RF	-29 to 593	B16 / 4	316SS SPW / MICA OR EQUIVALENT	NPS 1/2 - 20	GA, GL, CH	1,24,36
268	***B2FP02***	***Class 300***	***PROCESS - GENERAL PROCESS NON SOUR, NON CORROSIVE***	***B31.3***	***LIQUID / VAPOUR / LIQUID + VAPOUR***	***NO***	***NO***	***YES***	***5Cr-1/2Mo - ASTM A335 Gr. P5 / ASTM A691 GR.5CR CL.32 / ASTM A182 F5***	***3.0***	***Trim SS316L / HF***	***1.17***	***SW, BW, FL***	***RF***	***-29 to 538***	***B16 / 4***	***316SS SPW / MICA OR EQUIVALENT***	***NPS 1/2 - 20***	***GA, CH***	***1***
269	B2G404	Class 300	PROCESS -WET LOW SEVERITY SOUR SERVICE SUBJECT TO NACE + AMINES OR CAUSTIC - STRESS RELIEVED	B31.3	LIQUID	NO	YES	YES	LTCS - ASTM A333 Gr.6 / ASTM A350 LF2	3.0	Trim 12 (SS316 / HF)	1.1	BW, FL	RF	-50 to 345	L7M / 7M	316SS SPW / GRAPHITE	NPS 1/2 - 10	GA, GL, CH	1,5,15,27
270	B2G501	Class 300	PROCESS - WET SEVERE SOUR SERVICE SUBJECT TO NACE + HIC STD + AMINES OR CAUSTIC - STRESS RELIEVED	B31.3	LIQUID	YES	YES	YES	LTCS - ASTM A333 Gr.6 / ASTM A350 LF2	3.0	Trim 12 (SS316 / HF)	1.1	BW, FL	RF	-50 to 345	L7M / 7M	316SS SPW / GRAPHITE	NPS 1/2 - 16	GA, GL, CH	1,5,15,27
271	B2GH04	Class 300	PROCESS - HYDROGEN OR HYDROGEN RICH HYDROCARBON MIXTURE	B31.3	VAPOUR	NO	NO	B31.3	LTCS - ASTM A333 Gr.6 / ASTM A671 GR.CC60 CL.22 / ASTM A350 LF2	3.0	Trim 8 (13CR / HF)	1.1	SW, BW, FL	RF	-50 to 345	L7 / 4	316SS SPW / GRAPHITE	NPS 1/2 - 20	GA, GL, CH	1,2
272	B2GN04	Class 300	CAUSTIC SERVICE	B31.3	LIQUID	NO	NO	YES	LTCS - ASTM A333 Gr.6 / ASTM A671 GR.CC60 CL.22 / ASTM A350 LF2	3.0	Trim 9 (Monel)	1.1	BW, FL	RF	-50 to 265	L7 / 4	316SS SPW / GRAPHITE	NPS 1/2 - 24	GA, GL, CH, BA, BF	1,27
273	B2GP	Class 300	PROCESS - GENERAL PROCESS NON SOUR, NON CORROSIVE	B31.3	LIQUID / VAPOUR	NO	NO	B31.3	LTCS - ASTM A333 Gr.6 / ASTM A350 LF2	3.0	Trim 12 (SS316 / HF)	1.1	SW, BW, FL	RF	-50 to 345	L7 / 4	316SS SPW / GRAPHITE	NPS 1/2 - 12	GA, GL, CH, BA	1,2
274	B2GP01	Class 300	PROCESS - GENERAL PROCESS NON SOUR, NON CORROSIVE	B31.3	LATER	NO	NO	B31.3	LTCS - ASTM A333 Gr.6 / ASTM A350 LF2	3.0	Trim 12 (SS316 / HF)	1.1	SW, BW, FL	RF	-50 to 345	L7 / 4	316SS SPW / GRAPHITE	NPS 1/2 - 8	GA, GL, CH	1
275	B2GP04	Class 300	PROCESS - GENERAL PROCESS NON SOUR, NON CORROSIVE	B31.3	LIQUID / VAPOUR	NO	NO	B31.3	LTCS - ASTM A333 Gr.6 / ASTM A671 GR.CC60 CL.22 / ASTM A350 LF2	3.0	Trim 12 (SS316 / HF)	1.1	SW, BW, FL	RF	-50 to 345	L7 / 4	316SS SPW / GRAPHITE	NPS 1/2 - 24	GA, GL, CH, BA, BF	1,2
276	B2GQ	Class 300	PROCESS -WET SOUR SERVICE SUBJECT TO NACE STD. : / DE-ETHANISER REFLUX / PROCESS, HYDROCARBONS	B31.3	LIQUID	NO	YES	YES	LTCS - ASTM A333 Gr.6 / ASTM A350 LF2	3.0	Trim 12 (SS316 / HF)	1.1	BW, FL	RF	-50 to 345	L7M / 7M	316SS SPW / GRAPHITE	NPS 1/2 - 24	GA, GL, CH, BA, BF	1,2,5,15,27
277	B2GQ01	Class 300	***PROCESS -WET SOUR SERVICE SUBJECT TO NACE STD. : / DE-ETHANISER REFLUX / PROCESS, HYDROCARBONS, CARBONATE SCC***	B31.3	LIQUID / VAPOUR	NO	YES	YES	LTCS - ASTM A333 Gr.6 / ASTM A350 LF2	3.0	Trim 12 (SS316 / HF)	1.1	BW, FL	RF	-50 to 345	L7M / 7M	316SS SPW / GRAPHITE	NPS 1/2 - 24	GA, GL, CH, BA, BF	1,2,5,15,27
278	B2GQ04	Class 300	PROCESS -WET SOUR SERVICE SUBJECT TO NACE STD. : / DE-ETHANISER REFLUX / PROCESS, HYDROCARBONS	B31.3	LIQUID / VAPOUR	NO	YES	YES	LTCS - ASTM A333 Gr.6 / ASTM A350 LF2	3.0	Trim 12 (SS316 / HF)	1.1	BW, FL	RF	-50 to 345	L7M / 7M	316SS SPW / GRAPHITE	NPS 1/2 - 10	GA, GL, CH, BA, BF	1,2,5,15,27
279	B2GR01	Class 300	***PROCESS - WET SEVERE SOUR SERVICE SUBJECT TO NACE + HIC STD, CARBONATE SCC***	B31.3	LIQUID / VAPOUR	YES	YES	YES	LTCS - ASTM A333 Gr.6 / ASTM A350 LF2	3.0	Trim 12 (SS316 / HF)	1.1	BW, FL	RF	-50 to 345	L7M / 7M	316SS SPW / GRAPHITE	NPS 1/2 - 14	GA, GL, CH	1,5,15,27
280	B3A502	Class 300	PROCESS - WET SEVERE SOUR SERVICE SUBJECT TO NACE + HIC STD + AMINES OR CAUSTIC - STRESS RELIEVED	B31.3	LIQUID	YES	YES	YES	CS - ASTM A106 Gr.B / ASTM A105	4.5	Trim SS316L / HF	1.1	BW, FL	RF	0 to 427	B7M / 2HM	316SS SPW / GRAPHITE	NPS 1/2 - 2	GA, GL, CH, BA, BF	1,2,5,27
281	B3A702	Class 300	PROCESS - WET SEVERE SOUR SERVICE SUBJECT TO NACE + HIC STD + HYDROGEN SERVICE	B31.3	LIQUID / VAPOUR / LIQUID + VAPOUR	YES	YES	YES	CS - ASTM A106 Gr.B / ASTM A105	4.5	Trim SS316L / HF	1.1	BW, FL	RF	0 to 427	B7M / 2HM	316SS SPW / GRAPHITE	NPS 1/2 - 10	GA, GL, CH, BA, BF	1,2,5,27
282	B3AH02	Class 300	PROCESS - HYDROGEN OR HYDROGEN RICH HYDROCARBON MIXTURE	B31.3	LIQUID	NO	NO	B31.3	CS - ASTM A106 Gr.B / ASTM A105	4.5	Trim SS316L / HF	1.1	BW, FL	RF	0 to 427	B7 / 2H	316SS SPW / GRAPHITE	NPS 1/2 - 4	GA, GL, CH	1,16
283	B3AR02	Class 300	PROCESS - WET SEVERE SOUR SERVICE SUBJECT TO NACE + HIC STD.	B31.3	LIQUID / VAPOUR / LIQUID + VAPOUR	YES	YES	YES	CS - ASTM A106 Gr.B / ASTM A105	4.5	Trim SS316L / HF	1.1	BW, FL	RF	0 to 427	B7M / 2HM	316SS SPW / GRAPHITE	NPS 1/2 - 12	GA, GL, CH, BA, BF, NV	1,2,5,27
284	B4A4	Class 300	PROCESS -WET LOW SEVERITY SOUR SERVICE SUBJECT TO NACE + AMINES OR CAUSTIC - STRESS RELIEVED	B31.3	LIQUID / VAPOUR	NO	YES	YES	CS - ASTM A106 Gr.B / ASTM A105	6.0	Trim 12 (SS316 / HF)	1.1	BW, FL	RF	0 to 427	B7M / 2HM	316SS SPW / GRAPHITE	NPS 1 - 24	GA, GL, CH	1,5,27
285	***B4A402***	***Class 300***	***PROCESS -WET LOW SEVERITY SOUR SERVICE SUBJECT TO NACE + AMINES OR CAUSTIC - STRESS RELIEVED***	***B31.3***	***LIQUID***	***NO***	***YES***	***YES***	***CS - ASTM A106 Gr.B / ASTM A105***	***6.0***	***Trim SS316L / HF***	***1.1***	***BW, FL***	***RF***	***0 to 427***	***B7M / 2HM***	***316SS SPW / GRAPHITE***	***NPS 1 - 14***	***GL***	***1,5,27***
286	B4A5	Class 300	PROCESS - WET SEVERE SOUR SERVICE SUBJECT TO NACE + HIC STD + AMINES OR CAUSTIC - STRESS RELIEVED	B31.3	LIQUID	YES	YES	YES	CS - ASTM A106 Gr.B / ASTM A105	6.0	Trim 12 (SS316 / HF)	1.1	BW, FL	RF	0 to 427	B7M / 2HM	316SS SPW / GRAPHITE	NPS 1 - 20	GA, GL, CH	1,5,27
287	B4A704	Class 300	PROCESS - WET SEVERE SOUR SERVICE SUBJECT TO NACE + HIC STD + HYDROGEN SERVICE	B31.3	LIQUID + VAPOUR	YES	YES	YES	CS - ASTM A106 Gr.B / ASTM A105	6.0	Trim 12 (SS316 / HF)	1.1	BW, FL	RF	0 to 427	B7M / 2HM	316SS SPW / GRAPHITE	NPS 1 - 18	GA, GL, CH	1,5,27
288	B4AP01	Class 300	PROCESS - GENERAL PROCESS NON SOUR, NON CORROSIVE	B31.3	LIQUID / VAPOUR	NO	NO	B31.3	CS - ASTM A106 Gr.B / ASTM A672 Gr.B60 CL.22 / ASTM A105	6.0	Trim 12 (SS316 / HF)	1.1	BW, FL	RF	0 to 427	B7 / 2H	316SS SPW / GRAPHITE	NPS 1 - 18	GA, GL, CH	1
289	***B4AP02***	***Class 300***	***PROCESS - GENERAL PROCESS NON SOUR, NON CORROSIVE***	***B31.3***	***LIQUID***	***NO***	***NO***	***B31.3***	***CS - ASTM A106 Gr.B / ASTM A105***	***6.0***	***Trim 8 (13CR / HF)***	***1.1***	***BW, FL***	***RF***	***0 to 427***	***B7 / 2H***	***316SS SPW / GRAPHITE***	***NPS 1 - 6***	***GA***	***1***
290	B4AQ	Class 300	PROCESS - WET LOW SEVERITY SOUR SERVICE SUBJECT TO NACE STD	B31.3	LIQUID / VAPOUR / LIQUID + VAPOUR	NO	YES	YES	CS - ASTM A106 Gr.B / ASTM A105	6.0	Trim 12 (SS316 / HF)	1.1	BW, FL	RF	0 to 427	B7M / 2HM	316SS SPW / GRAPHITE	NPS 1 - 20	GA, GL, CH, BA, BF	1,5,27
291	B4AQ01	Class 300	***PROCESS - WET LOW SEVERITY SOUR SERVICE SUBJECT TO NACE STD, CARBONATE SCC***	B31.3	LIQUID / VAPOUR / LIQUID + VAPOUR	NO	YES	YES	CS - ASTM A106 Gr.B / ASTM A105	6.0	Trim 12 (SS316 / HF)	1.1	BW, FL	RF	0 to 427	B7M / 2HM	316SS SPW / GRAPHITE	NPS 1 - 12	GA, GL, CH	1,5,27
292	B4AR	Class 300	PROCESS - WET SEVERE SOUR SERVICE SUBJECT TO NACE + HIC STD. : / RECONTACTOR LIQUID / OFFGAS COMP. DISCHARGE / SOUR WATER / SLOPS / FLARE / RICH AMINE / LEAN AMINE	B31.3	LIQUID / VAPOUR	YES	YES	YES	CS - ASTM A106 Gr.B / ASTM A105	6.0	Trim 12 (SS316 / HF)	1.1	BW, FL	RF	0 to 427	B7M / 2HM	316SS SPW / GRAPHITE	NPS 1 - 20	GA, GL, CH, BA, BF, NV	1,5,27
293	B4AR01	Class 300	***PROCESS - WET SEVERE SOUR SERVICE SUBJECT TO NACE + HIC STD, CARBONATE SCC***	B31.3	LIQUID / VAPOUR	YES	YES	YES	CS - ASTM A106 Gr.B / ASTM A105	6.0	Trim 12 (SS316 / HF)	1.1	BW, FL	RF	0 to 427	B7M / 2HM	316SS SPW / GRAPHITE	NPS 1 - 18	GA, GL, CH	1,5,27

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SR. NO.	PIPING CLASS	ASME CLASS	SERVICE DESCRIPTION	DESIGN CODE	FLUID	HIC	NACE MR 0103	PWHT (Note 37)	PIPE / FLANGE MATERIAL	C/A mm	VALVE TRIM	ASME B16.5 MAT, GROUP	CONSTR/ ENDS	FLANGE FACE TYPE	DESIGN TEMP RANGE (DEG C)	BOLTING	GASKET (S)	SIZE RANGE Inch	VALVE TYPE	NOTE
294	***B4AR02***	***Class 300***	***PROCESS - WET SEVERE SOUR SERVICE SUBJECT TO NACE + HIC STD.***	***B31.3***	***LIQUID***	***YES***	***YES***	***YES***	***CS - ASTM A106 Gr.B / ASTM A105***	***6.0***	***Trim SS316L / HF***	***1.1***	***BW, FL***	***RF***	***0 to 427***	***B7M / 2HM***	***316SS SPW / GRAPHITE***	***NPS 1 - 6***	***GL***	***1,5,27***
295	B4AR04	Class 300	PROCESS - WET SEVERE SOUR SERVICE SUBJECT TO NACE + HIC STD.	B31.3	LIQUID / VAPOUR	YES	YES	YES	CS - ASTM A106 Gr.B / ASTM A105	6.0	Trim 12 (SS316 / HF)	1.1	BW, FL	RF	0 to 427	B7M / 2HM	316SS SPW / GRAPHITE	NPS 1 - 14	GA, GL, CH	1,5,27
296	B4AV	Class 300	PROCESS - NON SOUR, CORROSIVE SERVICE : / DESALTER EFFLUENT (AL-BRZ TRIM) / HAGO / PROCESS / WASH WATER / NON-ACIDIC DRAIN	B31.3	LIQUID	NO	NO	B31.3	CS - ASTM A106 Gr.B / ASTM A105	6.0	Trim 12 (SS316 / HF)	1.1	BW, FL	RF	0 to 427	B7 / 2H	316SS SPW / GRAPHITE	***NPS 1 - 12***	GA, GL, CH, BA, BF, NV	1
297	B4FV	Class 300	PROCESS - NON SOUR, CORROSIVE SERVICE : / PREHEATED CRUDE	B31.3	LIQUID + VAPOUR	NO	NO	YES	5Cr-1/2Mo - ASTM A335 Gr. P5 / ASTM A691 GR.5CR CL.22 / ASTM A182 F5	6.0	Trim 12 (SS316 / HF)	1.17	BW, FL	RF	-29 to 593	B16 / 4	316SS SPW / MICA OR EQUIVALENT	NPS 1 - 42	GA, GL, CH	1,36
298	B4GQ	Class 300	PROCESS - WET LOW SEVERITY SOUR SERVICE SUBJECT TO NACE STD	B31.3	LIQUID	NO	YES	YES	LTCS - ASTM A333 Gr.6 / ASTM A350 LF2	6.0	Trim 12 (SS316 / HF)	1.1	BW, FL	RF	-50 to 345	L7M / 7M	316SS SPW / GRAPHITE	NPS 1 - 16	GA, GL, CH, NV	1,5,15,27
299	B4GR01	Class 300	PROCESS - WET SEVERE SOUR SERVICE SUBJECT TO NACE + HIC STD	B31.3	LIQUID / VAPOUR	YES	YES	YES	LTCS - ASTM A333 Gr.6 / ASTM A350 LF2	6.0	Trim 12 (SS316 / HF)	1.1	BW, FL	RF	-50 to 345	L7M / 7M	316SS SPW / GRAPHITE	NPS 1 - 6	GA, GL, CH	1,5,15,27
300	D0JH	Class 600	PROCESS - HYDROGEN OR HYDROGEN RICH HYDROCARBON MIXTURE : / HYDROGEN	B31.3	VAPOUR	NO	NO	NO	SS - ASTM A312 TP304/TP304L Dual Grade / ASTM A358 304/304L Dual Grade CL.1 / ASTM A182 F304/304L Dual Grade	0.0	Trim 12 (SS316 / HF)	2.1	SW, BW, FL	RF	-29 to 425	B7 / 2H	316SS SPW / GRAPHITE	NPS 1/2 - 36	GA, GL, CH, PL	1
301	D0JS	Class 600	UTILITY - STEAM, CONDENSATE, BOILER FEED WATER TO ASME B31.3	B31.3	VAPOUR / LIQUID + VAPOUR	NO	NO	NO	SS - ASTM A312 TP304/TP304L Dual Grade / ASTM A358 304/304L Dual Grade CL.1 / ASTM A182 F304/304L Dual Grade	0.0	Trim 12 (SS316 / HF)	2.1	SW, BW, FL	RF	-29 to 425	B7 / 2H	316SS SPW / GRAPHITE	NPS 1/2 - 10	GA, GL, CH	1,3
302	D0JY	Class 600	PROCESS - PHOSPHATE	B31.3	LATER	NO	NO	NO	SS - ASTM A312 TP304/TP304L Dual Grade / ASTM A182 F304/304L Dual Grade	0.0	Trim 12 (SS316 / HF)	2.1	BW, FL	RF	-29 to 232	B7 / 2H	316SS SPW / GRAPHITE	NPS 1/2 - 1	GA, GL, CH, BA	1,2
303	D0JY03	Class 600	PROCESS - CHEMICAL DOSING : / CHEMICALS	B31.3	LIQUID	NO	NO	NO	SS - ASTM A312 TP304/TP304L Dual Grade / ASTM A182 F304/304L Dual Grade	0.0	Trim 12 (SS316 / HF)	2.1	BW, FL	RF	-29 to 252	B7 / 2H	316SS SPW / GRAPHITE	NPS 1/2 - 2	GA, GL, CH, BA	1,2
304	D0KC01	Class 600	PROCESS - CATALYST	B31.3	LATER	NO	NO	NO	SS - ASTM A312 304H / ASTM A182 F304H	***NOTE 6***	Trim SS304H / HF	2.1	BW, FL	RF	-29 to 538	B8M CL.2 / 8MA	316SS SPW / MICA OR EQUIVALENT	***NPS 1 - 8***	GA, GL, CH	1,24
305	D0KP01	Class 600	PROCESS - GENERAL PROCESS NON SOUR, NON CORROSIVE	B31.3	LIQUID / VAPOUR	NO	NO	NO	SS - ASTM A312 304H / ASTM A182 F304H	0.0	Trim SS304H / HF	2.1	BW, FL	RF	-29 to 538	B8M CL.2 / 8MA	316SS SPW / MICA OR EQUIVALENT	NPS 1/2 - 6	GA, GL, CH	1,24
306	***D0L604***	***Class 600***	***PROCESS -WET LOW SEVERITY SOUR SERVICE SUBJECT TO NACE + HYDROGEN SERVICE***	***B31.3***	***VAPOUR***	***NO***	***YES***	***NO***	***SS - ASTM A312 TP316/TP316L Dual Grade / ASTM A182 F316/316L Dual Grade***	***0.8***	***Trim 12 (SS316 / HF)***	***2.2***	***BW, FL***	***RF***	***-29 to 425***	***B7M / 2HM***	***316SS SPW / GRAPHITE***	***NPS 1/2 - 2***	***GA, GL, CH***	***1,5***
307	D0LG	Class 600	UTILITY - POWER PIPING, CORROSIVE SERVICE : / CHEMICAL (PHOSPHATE DOSING TO HRSG)	B31.1	LIQUID	NO	NO	NO	SS - ASME SA312 TP316/TP316L Dual Grade / ASME SA182 F316/316L Dual Grade	0.0	Trim 12 (SS316 / HF)	2.2	SW, BW, FL	RF	-29 to 425	B7 / 2H	316SS SPW / GRAPHITE	NPS 1/2 - 2	GA, GL, CH	1
308	D0LS	Class 600	UTILITY - STEAM, CONDENSATE, BOILER FEED WATER TO ASME B31.3	B31.3	LIQUID + VAPOUR	NO	NO	NO	SS - ASTM A312 TP316/TP316L Dual Grade / ASTM A358 316/316L Dual Grade CL.1 / ASTM A182 F316/316L Dual Grade	0.0	Trim 12 (SS316 / HF)	2.2	SW, BW, FL	RF	-29 to 425	B7 / 2H	316SS SPW / GRAPHITE	NPS 1/2 - 12	GA, GL, CH	1,3
309	D0MH01	Class 600	PROCESS - HYDROGEN OR HYDROGEN RICH HYDROCARBON MIXTURE	B31.3	VAPOUR / LIQUID + VAPOUR	NO	NO	NO	SS - ASTM A312 TP321 / ASTM A358 321 CL.1 / ASTM A182 F321	1.0	Trim SS347	2.4	SW, BW, FL	RF	-29 to 538	B7 / 2H	321SS SPW / MICA OR EQUIVALENT	NPS 1/2 - 12	GA, GL, CH	1,24
310	***D0MS***	***Class 600***	***Utility – Steam, Condensate, Boiler Feed Water to ASME B31.3***	***B31.3***	***LIQUID / VAPOR***	***NO***	***NO***	***NO***	***SS - ASTM A312 TP347 / ASTM A358 347 CL.1 / ASTM A182 F347(min. carbon content 0.04%)***	***0.0***	***Trim SS347 (min. carbon content 0.04%)***	***2.5***	***BW, FL***	***RF***	***0 to 545***	***A453 Grade 660 Class C / A453 Grade 660 Class C***	***347 SS SPW / MICA***	***NPS 1/2 - 14***	***GA, GL, CH***	***1, 19, 24***
311	D1AA	Class 600	UTILITY – INSTRUMENT/PLANT AIR, NITROGEN AND NON-HYDROCARBON	B31.3	VAPOUR	NO	NO	B31.3	CS - ASTM A106 Gr.B / ASTM A105	1.5	Trim 8 (13CR / HF)	1.1	SW, BW, FL	RF	0 to 65	B7 / 2H	316SS SPW / GRAPHITE	NPS 1/2 - 8	GA, GL, CH	1
312	D1AG	Class 600	UTILITY - POWER PIPING : / MEDIUM PRESSURE STEAM, BOILER FEED WATER, ASME B31.1	B31.1	VAPOUR	NO	NO	B31.1	CS - ASME SA106 Gr.B / ASME SA105	1.5	Trim 5 (HF)	1.1	SW, BW, FL	RF	0 to 425	B7 / 2H	316SS SPW / GRAPHITE	NPS 1/2 - 18	GA, GL, CH	1
313	D1AH	Class 600	PROCESS - HYDROGEN OR HYDROGEN RICH HYDROCARBON MIXTURE : / HYDROGEN (DRY) / PROCESS WITH HYDROGEN	B31.3	VAPOUR	NO	NO	B31.3	CS - ASTM A106 Gr.B / ASTM A105	1.5	Trim 8 (13CR / HF)	1.1	SW, BW, FL	RF	0 to 427	B7 / 2H	316SS SPW / GRAPHITE	NPS 1/2 - 12	GA, GL, CH	1,16
314	D1AH01	Class 600	PROCESS - HYDROGEN OR HYDROGEN RICH HYDROCARBON MIXTURE	B31.3	LIQUID / VAPOUR	NO	NO	B31.3	CS - ASTM A106 Gr.B / ASTM A105	1.5	Trim 8 (13CR / HF)	1.1	SW, BW, FL	RF	0 to 427	B7 / 2H	316SS SPW / GRAPHITE	NPS 1/2 - 10	GA, GL, CH	1,16
315	***D1AH02***	***Class 600***	***PROCESS - HYDROGEN OR HYDROGEN RICH HYDROCARBON MIXTURE***	***B31.3***	***VAPOUR***	***NO***	***NO***	***B31.3***	***CS - ASTM A106 Gr.B / ASTM A105***	***1.5***	***Trim SS316L / HF***	***1.1***	***SW, BW, FL***	***RF***	***0 to 427***	***B7 / 2H***	***316SS SPW / GRAPHITE***	***NPS 1/2 - 1 1/2***	***GA, GL, CH***	***1,16***
316	D1AH04	Class 600	PROCESS - HYDROGEN OR HYDROGEN RICH HYDROCARBON MIXTURE	B31.3	LIQUID / VAPOUR	NO	NO	B31.3	CS - ASTM A106 Gr.B / ASTM A105	1.5	Trim 8 (13CR / HF)	1.1	SW, BW, FL	RF	0 to 427	B7 / 2H	316SS SPW / GRAPHITE	NPS 1/2 - 8	GA, GL, CH	1,16
317	D1AP	Class 600	PROCESS - NON SOUR: / HYDROCARBONS / HGU PROCESS / CONDENSATE / PROCESS	B31.3	LIQUID / VAPOUR / LIQUID + VAPOUR	NO	NO	B31.3	CS - ASTM A106 Gr.B / ASTM A672 Gr.B60 CL.22 / ASTM A105	1.5	Trim 8 (13CR / HF)	1.1	SW, BW, FL	RF	0 to 427	B7 / 2H	316SS SPW / GRAPHITE	NPS 1/2 - 20	GA, GL, CH, BA	1,2
318	D1AP01	Class 600	PROCESS - GENERAL PROCESS NON SOUR, NON CORROSIVE	B31.3	VAPOUR	NO	NO	B31.3	CS - ASTM A106 Gr.B / ASTM A672 Gr.B60 CL.22 / ASTM A105	1.5	Trim 8 (13CR / HF)	1.1	SW, BW, FL	RF	0 to 427	B7 / 2H	316SS SPW / GRAPHITE	NPS 1/2 - 20	GA, GL, CH, BA	1,2
319	D1AP02	Class 600	PROCESS - GENERAL PROCESS NON SOUR, NON CORROSIVE	B31.3	LIQUID / VAPOUR	NO	NO	B31.3	CS - ASTM A106 Gr.B / ASTM A105	1.5	Trim 8 (13CR / HF)	1.1	SW, BW, FL	RF	0 to 427	B7 / 2H	316SS SPW / GRAPHITE	NPS 1/2 - 16	GA, GL, CH, BA, NV, BF	1,2
320	D1AP03	Class 600	PROCESS - GENERAL PROCESS NON SOUR, NON CORROSIVE	B31.3	LATER	NO	NO	B31.3	CS - ASTM A106 Gr.B / ASTM A105	1.5	Trim 8 (13CR / HF)	1.1	SW, BW, FL	RF	0 to 427	B7 / 2H	316SS SPW / GRAPHITE	NPS 1/2 - 16	GA, GL, CH	1
321	D1AP04	Class 600	PROCESS - GENERAL PROCESS NON SOUR, NON CORROSIVE	B31.3	LIQUID	NO	NO	B31.3	CS - ASTM A106 Gr.B / ASTM A672 Gr.B60 CL.22 / ASTM A105	1.5	Trim 8 (13CR / HF)	1.1	SW, BW, FL	RF	0 to 427	B7 / 2H	316SS SPW / GRAPHITE	NPS 1/2 - 20	GA, GL, CH, BA	1,2
322	D1APCL	Class 600	PROCESS - GENERAL PROCESS NON SOUR, NON CORROSIVE (CONTRO TRACE)	B31.3	LATER	NO	NO	B31.3	CS - ASTM A106 Gr.B / ASTM A672 Gr.B60 CL.22 / ASTM A105	1.5	Trim 8 (13CR / HF)	1.1	SW, BW, FL	RF	0 to 427	B7 / 2H	316SS SPW / GRAPHITE	NPS 1/2 - 20	CH, PL	1
323	D1APCM	Class 600	PROCESS - GENERAL PROCESS NON SOUR, NON CORROSIVE (CONTRO TRACE)	B31.3	LATER	NO	NO	B31.3	CS - ASTM A106 Gr.B / ASTM A105	1.5	Trim 8 (13CR / HF)	1.1	SW, BW, FL	RF	0 to 427	B7 / 2H	316SS SPW / GRAPHITE	***NPS 1/2 - 6***	CH, PL	1
324	D1AS	Class 600	UTILITY - HIGH PRESSURE STEAM / BLOWDOWN STEAM	B31.3	VAPOUR	NO	NO	B31.3	CS - ASTM A106 Gr.B / ASTM A672 Gr.B60 CL.22 / ASTM A105	1.5	Trim 5 (HF)	1.1	SW, BW, FL	RF	0 to 425	B7 / 2H	316SS SPW / GRAPHITE	NPS 1/2 - 24	GA, GL, CH, BF	1
325	D1AY04	Class 600	PROCESS - CHEMICAL DOSING : / CHEMICALS	B31.3	LIQUID	NO	NO	B31.3	CS - ASTM A106 Gr.B / ASTM A105	1.5	Trim 8 (13CR / HF)	1.1	SW, BW, FL	RF	0 to 232	B7 / 2H	316SS SPW / GRAPHITE	NPS 1/2 - 4	GA, GL, CH, BA	1,2
326	D1D904	Class 600	PROCESS - BENZENE SERVICE (5% WT) + HYDROGEN	B31.3	LATER	NO	NO	YES	1-1/4Cr - 1/2Mo - ASTM A335 Gr P11 / ASTM A691 GR.1 1/4CR CL.22 / ASTM A182 F11 CL.2	1.5	Trim 5 (HF)	1.9	SW, BW, FL	RF	-29 to 538	B16 / 4	316SS SPW / MICA OR EQUIVALENT	NPS 1/2 - 24	GA, GL, CH	1,24
327	D1DH04	Class 600	PROCESS - HYDROGEN OR HYDROGEN RICH HYDROCARBON MIXTURE	B31.3	LIQUID / VAPOUR	NO	NO	YES	1-1/4Cr - 1/2Mo - ASTM A335 Gr P11 / ASTM A691 GR.1 1/4CR CL.22 / ASTM A182 F11 CL.2	1.5	Trim 5 (HF)	1.9	SW, BW, FL	RF	-29 to 593	B16 / 4	316SS SPW / MICA OR EQUIVALENT	NPS 1/2 - 24	GA, GL, CH	1,24
328	D1EG	Class 600	UTILITY - STEAM, CONDENSATE, BOILER FEED WATER TO ASME B31.1	B31.1	VAPOUR	NO	NO	B31.1	2-1/4Cr-1Mo - ASME SA335 Gr P22 / ASME SA182 F22 CL.3	1.5	Trim 5 (HF)	1.10	SW, BW, FL	RF	-29 to 484	B16 / 4	316SS SPW / MICA OR EQUIVALENT	NPS 1/2 - 12	GA, GL, CH	1

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SR. NO.	PIPING CLASS	ASME CLASS	SERVICE DESCRIPTION	DESIGN CODE	FLUID	HIC	NACE MR 0103	PWHT (Note 37)	PIPE / FLANGE MATERIAL	C/A mm	VALVE TRIM	ASME B16.5 MAT, GROUP	CONSTR/ ENDS	FLANGE FACE TYPE	DESIGN TEMP RANGE (DEG C)	BOLTING	GASKET (S)	SIZE RANGE Inch	VALVE TYPE	NOTE
329	D1GP	Class 600	PROCESS - LOW TEMP. SERVICE: / HYDROCARBONS (LIGHT) / REFRIGERANT / PROCESS	B31.3	VAPOUR / LIQUID + VAPOUR	NO	NO	B31.3	LTCS - ASTM A333 Gr.6 / ASTM A350 LF2	1.5	Trim 12 (SS316 / HF)	1.1	SW, BW, FL	RF	-50 to 345	L7 / 4	316SS SPW / GRAPHITE	NPS 1/2 - 14	GA, GL, CH	1
330	D1GP01	Class 600	PROCESS - LOW TEMP. SERVICE: / HYDROCARBONS (LIGHT) / REFRIGERANT / PROCESS	B31.3	VAPOUR / LIQUID + VAPOUR	NO	NO	B31.3	LTCS - ASTM A333 Gr.6 / ASTM A671 GR.CC60 CL.22 / ASTM A350 LF2	1.5	Trim 12 (SS316 / HF)	1.1	SW, BW, FL	RF	-50 to 345	L7 / 4	316SS SPW / GRAPHITE	NPS 1/2 - 20	GA, GL, CH	1,2
331	D1GP04	Class 600	PROCESS - GENERAL PROCESS NON SOUR, NON CORROSIVE	B31.3	VAPOUR / LIQUID	NO	NO	B31.3	LTCS - ASTM A333 Gr.6 / ASTM A671 GR.CC60 CL.22 / ASTM A350 LF2	1.5	Trim 12 (SS316 / HF)	1.1	SW, BW, FL	RF	-50 to 345	L7 / 4	316SS SPW / GRAPHITE	NPS 1/2 - 30	GA, GL, CH	1
332	D1LH04	Class 600	PROCESS - HYDROGEN OR HYDROGEN RICH HYDROCARBON MIXTURE : / PROCESS WITH HYDROGEN	B31.3	LIQUID / VAPOUR	NO	NO	NO	SS - ASTM A312 TP316/TP316L Dual Grade / ASTM A358 316/316L Dual Grade CL.1 / ASTM A182 F316/316L Dual Grade	1.5	Trim 12 (SS316 / HF)	2.2	SW, BW, FL	RF	-29 to 425	B7 / 2H	316SS SPW / GRAPHITE	NPS 1/2 - 30	GA, GL, CH	1,24
333	D1LV04	Class 600	PROCESS - CORROSIVE SERVICE:	B31.3	LIQUID / VAPOUR	NO	NO	NO	SS - ASTM A312 TP316/TP316L Dual Grade / ASTM A358 316/316L Dual Grade CL.1 / ASTM A182 F316/316L Dual Grade	1.5	Trim 12 (SS316 / HF)	2.2	SW, BW, FL	RF	-29 to 425	B7 / 2H	316SS SPW / GRAPHITE	NPS 1/2 - 8	GA, GL, CH	1,24
334	D1MQ02	Class 600	PROCESS - WET LOW SEVERITY SOUR SERVICE SUBJECT TO NACE STD	B31.3	LIQUID / VAPOUR / LIQUID + VAPOUR	NO	YES	NO	SS - ASTM A312 TP321 / ASTM A358 321 CL.1 / ASTM A182 F321	1.5	Trim SS347	2.4	BW, FL	RF	-29 to 538	B7M / 2HM	321SS SPW / MICA OR EQUIVALENT	NPS 1/2 - 14	GA, GL, CH	1,5
335	D2A604	Class 600	PROCESS -WET LOW SEVERITY SOUR SERVICE SUBJECT TO NACE + HYDROGEN SERVICE	B31.3	LIQUID / VAPOUR / LIQUID + VAPOUR	NO	YES	YES	CS - ASTM A106 Gr.B / ASTM A105	3.0	Trim 12 (SS316 / HF)	1.1	BW, FL	RF	0 to 427	B7M / 2HM	316SS SPW / GRAPHITE	NPS 1/2 - 20	GA, GL, CH	1,5,27
336	D2AG	Class 600	UTILITY - POWER PIPING : / HP BOILER FEED WATER TO ASME B31.1	B31.1	LIQUID / VAPOUR	NO	NO	B31.1	CS - ASME SA106 Gr.B / ASME SA105	3.0	Trim 5 (HF)	1.1	SW, BW, FL	RF	0 to 300	B7 / 2H	316SS SPW / GRAPHITE	***NPS 1/2 - 18***	GA, GL, CH	1
337	D2AP	Class 600	PROCESS - NON SOUR, NON TO MILD CORROSIVE: / DESALTER WATER / PROCESS	B31.3	LIQUID	NO	NO	B31.3	CS - ASTM A106 Gr.B / ASTM A105	3.0	Trim 8 (13CR / HF)	1.1	SW, BW, FL	RF	0 to 427	B7 / 2H	316SS SPW / GRAPHITE	NPS 1/2 - 10	GA, GL, CH	1
338	D2AP01	Class 600	PROCESS - GENERAL PROCESS NON SOUR, NON CORROSIVE	B31.3	LIQUID	NO	NO	B31.3	CS - ASTM A106 Gr.B / ASTM A105	3.0	Trim 8 (13CR / HF)	1.1	SW, BW, FL	RF	0 to 427	B7 / 2H	316SS SPW / GRAPHITE	NPS 1/2 - 10	GA, GL, CH	1
339	D2AP02	Class 600	PROCESS - GENERAL PROCESS NON SOUR, NON CORROSIVE	B31.3	LIQUID / VAPOUR	NO	NO	B31.3	***CS - ASTM A106 Gr.B / ASTM A672 Gr.B60 CL.32 / ASTM A105***	3.0	Trim 8 (13CR / HF)	1.1	SW, BW, FL	RF	0 to 427	B7 / 2H	316SS SPW / GRAPHITE	***NPS 1/2 - 24***	GA, GL, CH	1
340	D2AQ01	Class 600	PROCESS - WET LOW SEVERITY SOUR SERVICE SUBJECT TO NACE STD	B31.3	LIQUID + VAPOUR / VAPOUR	NO	YES	YES	CS - ASTM A106 Gr.B / ASTM A105	3.0	Trim 12 (SS316 / HF)	1.1	BW, FL	RF	0 to 427	B7M / 2HM	316SS SPW / GRAPHITE	NPS 1/2 - 14	GA, GL, CH	1,5,27
341	D2AQ04	Class 600	PROCESS - WET LOW SEVERITY SOUR SERVICE SUBJECT TO NACE STD	B31.3	LIQUID + VAPOUR / VAPOUR	NO	YES	YES	CS - ASTM A106 Gr.B / ASTM A105	3.0	Trim 12 (SS316 / HF)	1.1	BW, FL	RF	0 to 427	B7M / 2HM	316SS SPW / GRAPHITE	NPS 1/2 - 12	GA, GL, CH	1,5,27
342	D2AS	Class 600	UTILITY - HP BOILER FEED WATER / HIGH PRESSURE CONDENSATE	B31.3	LIQUID	NO	NO	B31.3	CS - ASTM A106 Gr.B / ASTM A672 Gr.B60 CL.22 / ASTM A105	3.0	Trim 5 (HF)	1.1	SW, BW, FL	RF	0 to 425	B7 / 2H	316SS SPW / GRAPHITE	NPS 1/2 - 24	GA, GL, CH	1
343	D2DH	Class 600	PROCESS - HYDROGEN OR HYDROGEN RICH HYDROCARBON MIXTURE : / PROCESS WITH HYDROGEN	B31.3	VAPOUR / LIQUID + VAPOUR	NO	NO	YES	1-1/4Cr - 1/2Mo - ASTM A335 Gr P11 / ASTM A691 GR.1 1/4CR CL.22 / ASTM A182 F11 CL.2	3.0	Trim 5 (HF)	1.9	SW, BW, FL	RF	-29 to 593	B16 / 4	316SS SPW / MICA OR EQUIVALENT	NPS 1/2 - 24	GA, GL, CH, BF	1,24,36
344	D2DH01	Class 600	PROCESS - HYDROGEN OR HYDROGEN RICH HYDROCARBON MIXTURE : / PROCESS WITH HYDROGEN	B31.3	LIQUID + VAPOUR	NO	NO	YES	1-1/4Cr - 1/2Mo - ASTM A335 Gr P11 / ASTM A182 F11 CL.2	3.0	Trim 5 (HF)	1.9	SW, BW, FL	RF	-29 to 593	B16 / 4	316SS SPW / MICA OR EQUIVALENT	NPS 1/2 - 10	GA, GL, CH	1,24,36
345	D2G501	Class 600	PROCESS - WET SEVERE SOUR SERVICE SUBJECT TO NACE + HIC STD + AMINES OR CAUSTIC - STRESS RELIEVED	B31.3	LIQUID	YES	YES	YES	LTCS - ASTM A333 Gr.6 / ASTM A350 LF2	3.0	Trim 12 (SS316 / HF)	1.1	BW, FL	RF	-50 to 345	L7M / 7M	316SS SPW / GRAPHITE	NPS 1/2 - 1	GA, GL, CH	1,5,15,27
346	D2GQ01	Class 600	PROCESS -WET SOUR SERVICE SUBJECT TO NACE STD. : / DE-ETHANISER REFLUX / PROCESS, HYDROCARBONS	B31.3	LATER	NO	YES	YES	LTCS - ASTM A333 Gr.6 / ASTM A350 LF2	3.0	Trim 12 (SS316 / HF)	1.1	BW, FL	RF	-50 to 345	L7M / 7M	316SS SPW / GRAPHITE	NPS 1/2 - 3	GA, GL, CH, BA, BF	1,2,5,15,27
347	D2GR01	Class 600	PROCESS -WET SEVERE SOUR SERVICE SUBJECT TO NACE + HIC STD.:	B31.3	LATER	YES	YES	YES	LTCS - ASTM A333 Gr.6 / ASTM A350 LF2	3.0	Trim 12 (SS316 / HF)	1.1	BW, FL	RF	-50 to 345	L7M / 7M	316SS SPW / GRAPHITE	NPS 1/2 - 1	GA, GL, CH	1,5,15,27
348	D3A702	Class 600	PROCESS - WET SEVERE SOUR SERVICE SUBJECT TO NACE + HIC STD + HYDROGEN SERVICE	B31.3	VAPOUR	YES	YES	YES	CS - ASTM A106 Gr.B / ASTM A105	4.5	Trim SS316L / HF	1.1	BW, FL	RF	0 to 427	B7M / 2HM	316SS SPW / GRAPHITE	NPS 1/2 - 10	GA, GL, CH,	1,5,27
349	L1AH02	Class 600	PROCESS - HYDROGEN OR HYDROGEN RICH HYDROCARBON MIXTURE	B31.3	LIQUID / VAPOUR	NO	NO	B31.3	CS - ASTM A106 Gr.B / ASTM A105	1.5	Trim SS316L / HF	1.1	BW, FL	RJ	0 to 427	B7 / 2H	OCTAGONAL RING SOFT IRON	NPS 1/2 - 10	GA, GL, CH , BA, NV	1,16
350	L1M602	Class 600	PROCESS -WET LOW SEVERITY SOUR SERVICE SUBJECT TO NACE + HYDROGEN SERVICE	B31.3	VAPOUR / LIQUID + VAPOUR	NO	YES	NO	SS - ASTM A312 TP321 / ASTM A358 321 CL.1 / ASTM A182 F321	1.5	Trim SS347	2.4	BW, FL	RJ	-29 to 538	B7M / 2HM	OCTAGONAL RING SS347	NPS 1/2 - 10	GA, GL, CH,	1,5
351	L1M702	Class 600	PROCESS - WET SEVERE SOUR SERVICE SUBJECT TO NACE + HIC STD + HYDROGEN SERVICE	B31.3	VAPOUR	NO	YES	NO	SS - ASTM A312 TP321 / ASTM A358 321 CL.1 / ASTM A182 F321	1.5	Trim SS347	2.4	BW, FL	RJ	-29 to 538	B7M / 2HM	OCTAGONAL RING SS347	NPS 1/2 - 10	GA, GL, CH	1,5
352	L28V02	Class 600	PROCESS - CORROSIVE SERVICE:	B31.3	LIQUID / VAPOUR	NO	NO	YES	9Cr - 1Mo - ASTM A335 Gr. P9 / ASTM A182 F9	3.0	Trim 5 (HF)	1.14	BW, FL	RJ	-29 to 538	B16 / 4	OCTAGONAL RING 4-6% Cr 1/2% Mo	NPS 1/2 - 16	GA, GL, CH	1,24,36
353	L3AH02	Class 600	PROCESS - HYDROGEN OR HYDROGEN RICH HYDROCARBON MIXTURE: (CONDENSATE)	B31.3	LIQUID	NO	NO	B31.3	CS - ASTM A106 Gr.B / ASTM A105	4.5	Trim SS316L / HF	1.1	BW, FL	RJ	0 to 427	B7 / 2H	OCTAGONAL RING SOFT IRON	NPS 1/2 - 4	GA, GL, CH	1,16
354	M0JS	Class 900	UTILITY - STEAM, CONDENSATE, BOILER FEED WATER TO ASME B31.3	B31.3	LIQUID	NO	NO	NO	SS - ASTM A312 TP304/TP304L Dual Grade / ASTM A358 304/304L Dual Grade CL.1 / ASTM A182 F304/304L Dual Grade	0.0	Trim 12 (SS316 / HF)	2.1	BW, FL	RJ	-29 to 155	B7 / 2H	OCTAGONAL RING SS304	NPS 1/2 - 12	GA, GL, CH	1
355	M0LR01	Class 900	PROCESS - WET SEVERE SOUR SERVICE SUBJECT TO NACE + HIC STD., HP SCRUBBER BOTTOM	B31.3	LIQUID	NO	YES	NO	SS - ASTM A312 TP316/TP316L Dual Grade / ASTM A358 316/316L Dual Grade CL.1 / ASTM A182 F316/316L Dual Grade	0.0	Trim 12 (SS316 / HF)	2.2	BW, FL	RJ	-29 to 204	B7M / 2HM	***OCTAGONAL RING SS316***	NPS 1/2 - 8	GA, GL, CH	1,5
356	***M1A602***	***Class 900***	***PROCESS -WET LOW SEVERITY SOUR SERVICE SUBJECT TO NACE + HYDROGEN SERVICE***	***B31.3***	***LIQUID / VAPOUR***	***NO***	***YES***	***YES***	***CS - ASTM A106 Gr.B / ASTM A105***	***1.5***	***Trim SS316L / HF***	***1.1***	***BW, FL***	***RJ***	***0 to 427***	***B7M / 2HM***	***OCTAGONAL RING SOFT IRON***	***NPS 1/2 - 6***	***GA, GL***	***1,5,27***
357	M1AH01	Class 900	PROCESS - HYDROGEN OR HYDROGEN RICH HYDROCARBON MIXTURE	B31.3	LIQUID / VAPOUR	NO	NO	B31.3	CS - ASTM A106 Gr.B / ASTM A105	1.5	Trim 8 (13CR / HF)	1.1	BW, FL	RJ	0 to 427	B7 / 2H	OCTAGONAL RING SOFT IRON	NPS 1/2 - 8	GA, GL, CH	1,16
358	M1AH02	Class 900	PROCESS - HYDROGEN OR HYDROGEN RICH HYDROCARBON MIXTURE	B31.3	LIQUID / VAPOUR	NO	NO	B31.3	CS - ASTM A106 Gr.B / ASTM A105	1.5	Trim SS316L / HF	1.1	BW, FL	RJ	0 to 427	B7 / 2H	OCTAGONAL RING SOFT IRON	***NPS 1/2 - 8***	GA, GL, CH	1,16
359	M1DS	Class 900	UTILITY - STEAM, CONDENSATE, BOILER FEED WATER TO ASME B31.3	B31.3	VAPOUR	NO	NO	YES	1-1/4Cr - 1/2Mo - ASTM A335 Gr P11 / ASTM A182 F11 CL.2	1.5	Trim 5 (HF)	1.9	BW, FL	RJ	-29 to 550	B16 / 4	OCTAGONAL RING 4-6% Cr 1/2% Mo	NPS 1/2 - 16	GA, GL, CH	1,24
360	M1EG	Class 900	UTILITY - STEAM, CONDENSATE, BOILER FEED WATER TO ASME B31.1	B31.1	VAPOUR	NO	NO	B31.1	2-1/4Cr-1Mo - ASME SA335 Gr P22 / ASME SA182 F22 CL.3	1.5	Trim 5 (HF)	1.10	BW, FL	RJ	0 to 515	B16 / 4	OCTAGONAL RING 4-6% Cr 1/2% Mo	NPS 1/2 - 10	GA, GL, CH	1
361	M1EH	Class 900	PROCESS - HYDROGEN OR HYDROGEN RICH HYDROCARBON MIXTURE : / PROCESS WITH HYDROGEN	B31.3	LIQUID + VAPOUR / VAPOUR	NO	NO	YES	2-1/4Cr-1Mo - ASTM A335 Gr P22 / ASTM A691 GR.2 1/4CR CL.22 / ASTM A182 F22 CL.3	1.5	Trim 5 (HF)	1.10	BW, FL	RJ	-29 to 593	B16 / 4	OCTAGONAL RING 4-6% Cr 1/2% Mo	NPS 1/2 - 24	GA, GL, CH, BF	1, 2, 24,36
362	***M2A602***	***Class 900***	***PROCESS -WET LOW SEVERITY SOUR SERVICE SUBJECT TO NACE + HYDROGEN SERVICE***	***B31.3***	***LIQUID / VAPOUR***	***NO***	***YES***	***YES***	***CS - ASTM A106 Gr.B / ASTM A105***	***3.0***	***Trim SS316L / HF***	***1.1***	***BW, FL***	***RJ***	***0 to 427***	***B7M / 2HM***	***OCTAGONAL RING SOFT IRON***	***NPS 1/2 - 4***	***GA, GL, CH, BA***	***1,5,27***
363	M2AG	Class 900	UTILITY - POWER PIPING : / HP BOILER FEED WATER	B31.1	LIQUID	NO	NO	B31.1	CS - ASME SA106 Gr.B / ASME SA105	3.0	Trim 5 (HF)	1.1	BW, FL	RJ	0 to 220	B7 / 2H	OCTAGONAL RING SOFT IRON	NPS 1/2 - 8	GA, GL, CH	1

INDRA
01-SEP-2014

SR. NO.	PIPING CLASS	ASME CLASS	SERVICE DESCRIPTION	DESIGN CODE	FLUID	HIC	NACE MR 0103	PWHT (Note 37)	PIPE / FLANGE MATERIAL	C/A mm	VALVE TRIM	ASME B16.5 MAT, GROUP	CONSTR/ ENDS	FLANGE FACE TYPE	DESIGN TEMP RANGE (DEG C)	BOLTING	GASKET (S)	SIZE RANGE Inch	VALVE TYPE	NOTE
364	M2AQ01	Class 900	PROCESS - WET LOW SEVERITY SOUR SERVICE SUBJECT TO NACE STD	B31.3	VAPOUR	NO	YES	YES	CS - ASTM A106 Gr.B / ASTM A105	3.0	Trim 12 (SS316 / HF)	1.1	BW, FL	RJ	0 to 427	B7M / 2HM	OCTAGONAL RING SOFT IRON	NPS 1/2 - 20	GA, GL, CH	1,5,27
365	M2AR01	Class 900	PROCESS - WET SEVERE SOUR SERVICE SUBJECT TO NACE + HIC STD.	B31.3	LIQUID / VAPOUR	YES	YES	YES	CS - ASTM A106 Gr.B / ASTM A671 Gr.CC60 CL.22 / ASTM A105	3.0	Trim 12 (SS316 / HF)	1.1	BW, FL	RJ	0 to 427	B7M / 2HM	OCTAGONAL RING SOFT IRON	NPS 1/2 - 30	GA, GL, CH	1,5,27
366	M2AS	Class 900	UTILITY - HP BOILER FEED WATER	B31.3	LIQUID	NO	NO	B31.3	***CS - ASTM A106 Gr.B / ASTM A671 Gr.CC60 CL.22 / ASTM A105***	3.0	Trim 5 (HF)	1.1	BW, FL	RJ	0 to 220	B7 / 2H	OCTAGONAL RING SOFT IRON	***NPS 1/2 - 18***	GA, GL, CH, NV	1
367	M2DH	Class 900	PROCESS - HYDROGEN OR HYDROGEN RICH HYDROCARBON MIXTURE : / RECYCLE GAS	B31.3	LIQUID + VAPOUR / VAPOUR	NO	NO	YES	1-1/4Cr - 1/2Mo - ASTM A335 Gr P11 / ASTM A691 GR.1 1/4CR CL.22 / ASTM A182 F11 CL.2	3.0	Trim 5 (HF)	1.9	BW, FL	RJ	-29 to 593	B16 / 4	OCTAGONAL RING 4-6% Cr 1/2% Mo	NPS 1/2 - 24	GA, GL, CH	1,24,36
368	M2DH01	Class 900	PROCESS - HYDROGEN OR HYDROGEN RICH HYDROCARBON MIXTURE : / RECYCLE GAS	B31.3	LIQUID + VAPOUR / VAPOUR	NO	NO	YES	1-1/4Cr - 1/2Mo - ASTM A335 Gr P11 / ASTM A691 GR.1 1/4CR CL.22 / ASTM A182 F11 CL.2	3.0	Trim 5 (HF)	1.9	BW, FL	RJ	-29 to 593	B16 / 4	OCTAGONAL RING 4-6% Cr 1/2% Mo	NPS 1/2 - 18	GA, GL, CH	1,24,36
369	M3AH02	Class 900	PROCESS - HYDROGEN OR HYDROGEN RICH HYDROCARBON MIXTURE: (CONDENSATE)	B31.3	LIQUID / VAPOUR	NO	NO	B31.3	CS - ASTM A106 Gr.B / ASTM A105	4.5	Trim SS316L / HF	1.1	BW, FL	RJ	0 to 427	B7 / 2H	OCTAGONAL RING SOFT IRON	NPS 1/2 - 4	GA, GL, CH	1,16
370	***N0JP***	***Class 1500***	***JACKING OIL***	***B31.3***	***LIQUID***	***NO***	***NO***	***NO***	***SS - ASTM A312 TP304/TP304L Dual Grade / ASTM A182 F304/304L Dual Grade***	***0.0***	***Trim 12 (SS316 / HF)***	***2.1***	***BW, FL***	***RTJ***	***-29 to 425***	***B7 / 2H***	***OCTAGONAL RING SS304***	***NPS 1/2 - 1***	***GA, GL, CH***	***1***
371	N0LG	Class 1500	UTILITY - POWER PIPING, CORROSIVE SERVICE : / CHEMICAL (PHOSPHATE DOSING TO UTILITY BOILERS)	B31.1	LIQUID	NO	NO	NO	SS - ASME SA312 TP316/TP316L Dual Grade / ASME SA182 F316/316L Dual Grade	0.0	Trim 12 (SS316 / HF)	2.2	BW, FL	RJ	-29 to 425	B7 / 2H	OCTAGONAL RING SS316	***NPS 1/2 - 3***	GA, GL, CH	1
372	N1A402	Class 1500	PROCESS -WET LOW SEVERITY SOUR SERVICE SUBJECT TO NACE + AMINES OR CAUSTIC - STRESS RELIEVED	B31.3	LIQUID	NO	YES	YES	CS - ASTM A106 Gr.B / ASTM A105	1.5	Trim SS316L / HF	1.1	BW, FL	RJ	0 to 427	B7M / 2HM	OCTAGONAL RING SOFT IRON	NPS 1/2 - 12	GA, GL, CH,	1,5,27
373	N1A602	Class 1500	PROCESS -WET LOW SEVERITY SOUR SERVICE SUBJECT TO NACE + HYDROGEN SERVICE	B31.3	LIQUID / VAPOUR	NO	YES	YES	CS - ASTM A106 Gr.B / ASTM A105	1.5	Trim SS316L / HF	1.1	BW, FL	RJ	0 to 427	B7M / 2HM	OCTAGONAL RING SOFT IRON	NPS 1/2 - 24	GA, GL, CH	1,5,27
374	N1AH	Class 1500	PROCESS - HYDROGEN OR HYDROGEN RICH HYDROCARBON MIXTURE : / PROCESS WITH HYDROGEN	B31.3	VAPOUR / LIQUID + VAPOUR	NO	NO	B31.3	CS - ASTM A106 Gr.B / ASTM A105	1.5	Trim 8 (13CR / HF)	1.1	BW, FL	RJ	0 to 427	B7 / 2H	OCTAGONAL RING SOFT IRON	NPS 1/2 - 8	GA, GL, CH	1,16
375	N1AH02	Class 1500	PROCESS - HYDROGEN OR HYDROGEN RICH HYDROCARBON MIXTURE	B31.3	LIQUID / VAPOUR	NO	NO	B31.3	CS - ASTM A106 Gr.B / ASTM A105	1.5	***Trim SS316L / HF***	1.1	BW, FL	RJ	0 to 427	B7 / 2H	OCTAGONAL RING SOFT IRON	NPS 1/2 - 12	GA, GL, CH	1,16
376	N1AL02	Class 1500	PROCESS - LEAN AMINE SERVICE (STRESS RELIEVED)	B31.3	VAPOUR	NO	NO	YES	CS - ASTM A106 Gr.B / ASTM A672 Gr.B60 CL.22 / ASTM A105	1.5	Trim SS316L / HF	1.1	BW, FL	RJ	0 to 427	B7 / 2H	OCTAGONAL RING SOFT IRON	NPS 1/2 - 24	GA, GL, CH, BA, NV	1,27
377	N1AQ	Class 1500	PROCESS - WET LOW SEVERITY SOUR SERVICE SUBJECT TO NACE STD	B31.3	LIQUID / VAPOUR	NO	YES	YES	CS - ASTM A106 Gr.B / ASTM A105	1.5	Trim 12 (SS316 / HF)	1.1	BW, FL	RJ	0 to 427	B7M / 2HM	OCTAGONAL RING SOFT IRON	NPS 1/2 - 16	GA, GL, CH	1,5,27
378	***N1AS***	***Class 1500***	***Utility – Steam, Condensate, Boiler Feed Water to ASME B31.3 HHP Steam Header***	***B31.3***	***LIQUID / VAPOUR***	***NO***	***NO***	***B31.3***	***CS - ASTM A106 Gr.B / ASTM A672 Gr.B60 CL.22 / ASTM A105***	***1.5***	***Trim 5 (HF)***	***1.1***	***BW, FL***	***RJ***	***0 to 425***	***B7 / 2H***	***OCTAGONAL RING SOFT IRON***	***NPS 1/2 - 8***	***GA, GL, CH***	***1,24***
379	N1J502	Class 1500	PROCESS - WET SEVERE SOUR SERVICE SUBJECT TO NACE + HIC STD + AMINES OR CAUSTIC - STRESS RELIEVED	B31.3	LIQUID / LIQUID + VAPOUR	NO	YES	NO	SS - ASTM A312 TP304/TP304L Dual Grade / ASTM A358 304/304L Dual Grade CL.1 / ASTM A182 F304/304L Dual Grade	1.5	Trim SS316L / HF	2.1	BW, FL	RJ	-29 to 425	B7M / 2HM	OCTAGONAL RING SS304	NPS 1/2 - 14	GA, GL, CH	1,5
380	***N1J702***	***Class 1500***	***PROCESS - WET SEVERE SOUR SERVICE SUBJECT TO NACE + HIC STD + HYDROGEN SERVICE***	***B31.3***	***LIQUID + VAPOUR***	***NO***	***YES***	***NO***	***SS - ASTM A312 TP304/TP304L Dual Grade / ASTM A182 F304/304L Dual Grade***	***1.5***	***Trim SS316L / HF***	***2.1***	***BW, FL***	***RJ***	***-29 to 425***	***B7M / 2HM***	***OCTAGONAL RING SS304***	***NPS 1/2 - 1 1/2***	***GA, GL***	***1,5***
381	N1JR02	Class 1500	PROCESS - WET SEVERE SOUR SERVICE SUBJECT TO NACE + HIC STD.	B31.3	LIQUID / LIQUID + VAPOUR	NO	YES	NO	SS - ASTM A312 TP304/TP304L Dual Grade / ASTM A358 304/304L Dual Grade CL.1 / ASTM A182 F304/304L Dual Grade	1.5	Trim SS316L / HF	2.1	BW, FL	RJ	-29 to 425	B7M / 2HM	OCTAGONAL RING SS304	NPS 1/2 - 14	GA, GL, CH , NV	1,5
382	N1MH01	Class 1500	PROCESS - HYDROGEN OR HYDROGEN RICH HYDROCARBON MIXTURE	B31.3	LIQUID + VAPOUR / VAPOUR	NO	NO	NO	SS - ASTM A312 TP321 / ASTM A358 321 CL.1 / ASTM A182 F321	1.5	Trim SS347	2.4	BW, FL	RJ	-29 to 538	B7 / 2H	OCTAGONAL RING SS347	NPS 1/2 - 24	GA, GL, CH	1
383	N1Y602	Class 1500	PROCESS -WET LOW SEVERITY SOUR SERVICE SUBJECT TO NACE + HYDROGEN SERVICE	B31.3	VAPOUR	NO	YES	NO	Inconel 825 - ASTM B423 UNS N08825 / ASTM B705 UNS N08825 Class 1 / ASTM B564 UNS N08825	1.5	Trim Incoloy 825	3.8	BW, FL	RJ	0 to 427	B7M / 2HM	OCTAGONAL RING INCOLOY825	NPS 1/2 - 16	GA, GL, CH	1,5
384	N1Y702	Class 1500	PROCESS - WET SEVERE SOUR SERVICE SUBJECT TO NACE + HIC STD + HYDROGEN SERVICE	B31.3	LIQUID / VAPOUR / LIQUID + VAPOUR	NO	YES	NO	Inconel 825 - ASTM B423 UNS N08825 / ASTM B705 UNS N08825 Class 1 / ASTM B564 UNS N08825	1.5	Trim Incoloy 825 / HF	3.8	BW, FL	RJ	0 to 427	B7M / 2HM	OCTAGONAL RING INCOLOY825	NPS 1/2 - 16	GA, GL, CH	1,5
385	N1YQ02	Class 1500	PROCESS - WET LOW SEVERITY SOUR SERVICE SUBJECT TO NACE STD	B31.3	VAPOUR	NO	YES	NO	Inconel 825 - ASTM B423 UNS N08825 / ASTM B705 UNS N08825 Class 1 / ASTM B564 UNS N08825	1.5	Trim Incoloy 825	3.8	BW, FL	RJ	0 to 427	B7M / 2HM	OCTAGONAL RING INCOLOY825	NPS 1/2 - 14	GA, GL, CH , BA	1,5
386	N1YR02	Class 1500	PROCESS - WET SEVERE SOUR SERVICE SUBJECT TO NACE + HIC STD.	B31.3	LIQUID	NO	YES	NO	Inconel 825 - ASTM B423 UNS N08825 / ASTM B564 UNS N08825	1.5	Trim Incoloy 825 / HF	3.8	BW, FL	RJ	0 to 427	B7M / 2HM	OCTAGONAL RING INCOLOY825	NPS 1/2 - 16	GA, GL, CH	1,5
387	N2A502	Class 1500	PROCESS - WET SEVERE SOUR SERVICE SUBJECT TO NACE + HIC STD + AMINES OR CAUSTIC - STRESS RELIEVED	B31.3	LIQUID / LIQUID + VAPOUR	YES	YES	YES	CS - ASTM A106 Gr.B / ASTM A105	3.0	Trim SS316L / HF	1.1	BW, FL	RJ	0 to 427	B7M / 2HM	OCTAGONAL RING SOFT IRON	NPS 1/2 - 16	GA, GL, CH	1,5,27
388	N2A602	Class 1500	PROCESS -WET LOW SEVERITY SOUR SERVICE SUBJECT TO NACE + HYDROGEN SERVICE	B31.3	LIQUID / VAPOUR	NO	YES	YES	CS - ASTM A106 Gr.B / ASTM A105	3.0	Trim SS316L / HF	1.1	BW, FL	RJ	0 to 427	B7M / 2HM	OCTAGONAL RING SOFT IRON	NPS 1/2 - 10	GA, GL, CH	1,5,27
389	N2AP01	Class 1500	PROCESS - GENERAL PROCESS NON SOUR, NON CORROSIVE	B31.3	LATER	NO	NO	B31.3	CS - ASTM A106 Gr.B / ASTM A105	3.0	Trim 8 (13CR / HF)	1.1	BW, FL	RJ	0 to 427	B7 / 2H	OCTAGONAL RING SOFT IRON	NPS 1/2 - 14	GA, GL, CH , BA	1
390	N2AR02	Class 1500	PROCESS - WET SEVERE SOUR SERVICE SUBJECT TO NACE + HIC STD.	B31.3	LIQUID	YES	YES	YES	CS - ASTM A106 Gr.B / ASTM A105	3.0	Trim SS316L / HF	1.1	BW, FL	RJ	0 to 427	B7M / 2HM	OCTAGONAL RING SOFT IRON	NPS 1/2 - 16	GA, GL, CH	1,5,27
391	N2D602	Class 1500	PROCESS -WET LOW SEVERITY SOUR SERVICE SUBJECT TO NACE + HYDROGEN SERVICE	B31.3	VAPOUR	NO	YES	YES	1-1/4Cr - 1/2Mo - ASTM A335 Gr P11 / ASTM A182 F11 CL.2	3.0	Trim SS316L / HF	1.9	BW, FL	RJ	-29 to 538	B7M / 2HM	OCTAGONAL RING 4-6% Cr 1/2% Mo	NPS 1/2 - 10	GA, GL, CH	1,5
392	***N3A502***	***Class 1500***	***PROCESS - WET SEVERE SOUR SERVICE SUBJECT TO NACE + HIC STD + AMINES OR CAUSTIC - STRESS RELIEVED***	***B31.3***	***LIQUID***	***YES***	***YES***	***YES***	***CS - ASTM A106 Gr.B / ASTM A105***	***4.5***	***Trim SS316L / HF***	***1.1***	***BW, FL***	***RJ***	***0 to 427***	***B7M / 2HM***	***OCTAGONAL RING SOFT IRON***	***NPS 1/2 - 3***	***GA***	***1,5,27***
393	N3A702	Class 1500	PROCESS - WET SEVERE SOUR SERVICE SUBJECT TO NACE + HIC STD + HYDROGEN SERVICE	B31.3	LIQUID / LIQUID + VAPOUR	YES	YES	YES	CS - ASTM A106 Gr.B / ASTM A105	4.5	Trim SS316L / HF	1.1	BW, FL	RJ	0 to 427	B7M / 2HM	OCTAGONAL RING SOFT IRON	NPS 1/2 - 6	GA, GL, CH,	1,5,27
394	N3D702	Class 1500	PROCESS - WET SEVERE SOUR SERVICE SUBJECT TO NACE + HIC STD + HYDROGEN SERVICE	B31.3	LIQUID / LIQUID + VAPOUR	NO	YES	YES	1-1/4Cr - 1/2Mo - ASTM A335 Gr P11 / ASTM A182 F11 CL.2	4.5	Trim SS316L / HF	1.9	BW, FL	RJ	-29 to 538	B7M / 2HM	OCTAGONAL RING 4-6% Cr 1/2% Mo	NPS 1/2 - 12	GA, GL, CH,	1,5
395	P0LG	Class 2500	UTILITY - POWER PIPING, CORROSIVE SERVICE : / CHEMICAL	B31.1	LIQUID	NO	NO	NO	SS - ASME SA312 TP316/TP316L Dual Grade / ASME SA182 F316/316L Dual Grade	0.0	Trim 12 (SS316 / HF)	2.2	BW, FL	RJ	-29 to 425	B7 / 2H	OCTAGONAL RING SS316	NPS 1/2 - 12	GA, GL, CH	1
396	P0MS	Class 2500	HIGH HIGH PRESSURE STEAM	B31.3	VAPOUR	NO	NO	NO	SS - ASTM A312 TP347 / ASTM A358 347 CL.1 / ASTM A182 F347(min. carbon content 0.04%)	0.0	Trim SS347 (min. carbon content 0.04%)	2.5	BW, FL	RJ	0 to 545	A453 Grade 660 class C	OCTAGONAL RING SS347 (min. carbon content 0.04%)	NPS 1/2 - 24	***GA, GL***	1
397	***P1AH02***	***Class 2500***	***PROCESS - HYDROGEN OR HYDROGEN RICH HYDROCARBON MIXTURE***	***B31.3***	***VAPOUR***	***NO***	***NO***	***B31.3***	***CS - ASTM A106 Gr.B / ASTM A105***	***1.5***	***Trim SS316L / HF***	***1.1***	***BW, FL***	***RJ***	***0 to 427***	***B7 / 2H***	***OCTAGONAL RING SOFT IRON***	***NPS 1/2 - 1 1/2***	***GL***	***1,16***
398	P1M602	Class 2500	PROCESS -WET LOW SEVERITY SOUR SERVICE SUBJECT TO NACE + HYDROGEN SERVICE	B31.3	LIQUID / VAPOUR / LIQUID + VAPOUR	NO	YES	NO	SS - ASTM A312 TP321 / ASTM A358 321 CL.1 / ASTM A182 F321	1.5	Trim SS347	2.4	BW, FL	RJ	-29 to 538	B7M / 2HM	OCTAGONAL RING SS347	NPS 1/2 - 20	GA, GL, CH	1,5

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SR. NO.	PIPING CLASS	ASME CLASS	SERVICE DESCRIPTION	DESIGN CODE	FLUID	HIC	NACE MR 0103	PWHT (Note 37)	PIPE / FLANGE MATERIAL	C/A mm	VALVE TRIM	ASME B16.5 MAT, GROUP	CONSTR/ ENDS	FLANGE FACE TYPE	DESIGN TEMP RANGE (DEG C)	BOLTING	GASKET (S)	SIZE RANGE Inch	VALVE TYPE	NOTE
399	P1MQ	Class 2500	PROCESS - WET LOW SEVERITY SOUR SERVICE SUBJECT TO NACE STD	B31.3	LIQUID + VAPOUR	NO	YES	NO	SS - ASTM A312 TP321 / ASTM A358 321 CL.1 / ASTM A182 F321	1.5	Trim SS347	2.4	BW, FL	RJ	-29 to 538	B7M / 2HM	OCTAGONAL RING SS347	NPS 1/2 - 20	GA, GL, CH	1,5
400	P1Y702	Class 2500	PROCESS - WET SEVERE SOUR SERVICE SUBJECT TO NACE + HIC STD + HYDROGEN SERVICE	B31.3	LIQUID / LIQUID + VAPOUR	NO	YES	NO	Inconel 825 - ASTM B423 UNS N08825 / ASTM B705 UNS N08825 Class 1 / ASTM B564 UNS N08825	1.5	Trim Incoloy 825	3.8	BW, FL	RJ	0 to 427	B7M / 2HM	OCTAGONAL RING INCOLOY825	NPS 1/2 - 16	GA, GL, CH,	1,5
401	P2AG	Class 2500	PROCESS – POWER PIPING: HHP BOILER FEED WATER	B31.1	LIQUID	NO	NO	B31.1	CS - ASME SA106 Gr.B / ASME SA105	3.0	Trim 5 (HF)	1.1	BW, FL	RJ	0 to 155	B7 / 2H	OCTAGONAL RING SOFT IRON	NPS 1/2 - 18	GA, GL, CH	1
402	P2AS	Class 2500	UTILITY - HHP BOILER FEED WATER	B31.3	LIQUID	NO	NO	B31.3	***CS - ASTM A106 Gr.B / ASTM A671 Gr.CC60 CL.22 / ASTM A105***	3.0	Trim 5 (HF)	1.1	BW, FL	RJ	0 to 155	B7 / 2H	OCTAGONAL RING SOFT IRON	NPS 1/2 - 18	GA, GL, CH	1
403	P2M602	Class 2500	PROCESS -WET LOW SEVERITY SOUR SERVICE SUBJECT TO NACE + HYDROGEN SERVICE	B31.3	VAPOUR / LIQUID + VAPOUR	NO	YES	NO	SS - ASTM A312 TP321 / ASTM A358 321 CL.1 / ASTM A182 F321	3.0	Trim SS347	2.4	BW, FL	RJ	-29 to 538	B7M / 2HM	OCTAGONAL RING SS347	NPS 1/2 - 20	GA, GL, CH,	1,5
404	P4AP02	Class 2500	PROCESS - GENERAL PROCESS NON SOUR, NON CORROSIVE	B31.3	LIQUID	NO	NO	B31.3	CS - ASTM A106 Gr.B / ASTM A105	6.0	Trim 8 (13CR / HF)	1.1	BW, FL	RJ	0 to 427	B7 / 2H	OCTAGONAL RING SOFT IRON	NPS 1 - 12	GA, GL, CH	1
405	S0CW	Class 150	UTILITY - WATER SERVICE (UNDERGROUND): / SEA WATER-INTAKE & OUTFALL (A/G), SEA WATER (U/G) / FIRE WATER U/G / POTABLE WATER / DRINKING WATER (U/G) / RAW WATER (U/G) / WASTE WATER (U/G) / DEMINERALISED WATER (U/G) / COOLING WATER SUPPLY/RETURN (U/G)	-	LIQUID	NO	NO	NO	***NPS 1-1/2 & Smaller: 90/10 Cu-Ni*** ***NPS 2 & Larger: RTRP***	0.0	AL-BRZ	-	***THRD, FL***	FF	0 to 65	A307-B / A563-A	NBR	***NPS 1/2 - 116***	***CH, BF, GA, NV***	1,31,33,35
406	S0RA	Class 150	UTILITY - NON HYDROCARBON, CATEGORY D" FLUID : " / INSTRUMENT AIR <= 1 1/2 NB "	B31.3	VAPOUR	NO	NO	B31.3	Up to 1.5": CS (Galv.) - ASTM A106 Gr.B (GALV.) / ASTM A105 (GALV.) 2" and above: CS - ASTM A106 Gr.B/ ASTM A105	0.0	Trim Bronze	1.1	THD, FL	***FF, RF***	0 to 70	B7 / 2H (Galv)	***SYNTHETIC FIBRE; 316SS SPW / GRAPHITE***	NPS 1/2 - 10	GA, GL, CH, BA	1,12
407	S0SP	Class 150	UTILITY - SANITARY (U/G)	B31.3	LIQUID	NO	NO	NO	CPVC - ASTM D1784 Class 23447 / ASTM D1784 Class 23447	0.0	AL-BRZ	-	FL	FF	0 to 65	A307-B / A563-A	NBR	NPS 1/2 - 6	BA	1
408	S0SW	Class 150	UTILITY - POTABLE WATER (U/G)	B31.3	LIQUID	NO	NO	NO	CPVC - ASTM D1784 Class 23447 / ASTM D1784 Class 23447	0.0	AL-BRZ	-	FL	FF	0 to 65	A307-B / A563-A	NBR	NPS 1/2 - 8	BA	1
409	T0RA	Class 300	UTILITY - NON HYDROCARBON, CATEGORY D" FLUID : " / INSTRUMENT AIR <= 1 1/2 NB "	B31.3	VAPOUR	NO	NO	B31.3	CS (Galv. at Shop) - ASTM A106 Gr.B (GALV.) / ASTM A105 (GALV.)	0.0	Trim Bronze	1.1	THD, FL	FF	0 to 70	B7 / 2H (Galv)	316SS SPW / GRAPHITE	NPS 1/2 - 1 1/2	GA, GL, CH, BA	1,12

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8.2 Piping Classes for PPU Unit (Licenced by MCI)

SR. NO.	PIPING CLASS	ASME CLASS	SERVICE DESCRIPTION	DESIGN CODE	FLUID	HIC	NACE MR 0103	PWHT (Note 37)	PIPE / FLANGE MATERIAL	C/A mm	VALVE TRIM	ASME B16.5 MAT, GROUP	CONSTR/ ENDS	FLANGE FACE TYPE	DESIGN TEMP RANGE (DEG C)	BOLTING	GASKET (S)	SIZE RANGE Inch	VALVE TYPE	NOTE
1	A11A05	Class 150	CHILLED WATER, COOLING WATER, HOT WATER, JACKET WATER, SEERVICE WATER, REFINERY NITROGEN, LP NITROGEN, MP NITROGEN, PLANT AIR, VENT GAS	B31.3	LIQUID / VAPOUR	NO	NO	B31.3	CS - ASTM A106 Gr.B / ASTM A672 Gr.B60 CL.22 / ASTM A105	***1.5***	Trim 8 (13CR / HF)	1.1	SW, BW, FL	RF	0 to 100	B7 / 2H	COMPRESSED NON ASBESTOS V/#6502 OR EQ	NPS 1/2 - 48	GA, GL, CH, BA, BF	1
2	A11B05	Class 150	MINERAL OIL, GREASE, MP NITROGEN, PROCESS NITROGEN, PROCESS WATER, WASTE OIL	B31.3	LIQUID / VAPOUR	NO	NO	B31.3	CS - ASTM A106 Gr.B / ASTM A672 Gr.B60 CL.22 / ASTM A105	3.0	Trim 8 (13CR / HF)	1.1	SW, BW, FL	RF	0 to 270	B7 / 2H	SPIRAL WOUND NON-ASBESTOS V/#6591 W/OUTER RING OR EQ	NPS 1/2 - 24	GA, GL, CH, BA, N, 3-way BA, BF	1,2
3	A11D05	Class 150	LP BLOW DOWN, EXHAUST TO FLARE STACK, WASTE OIL	B31.3	LIQUID / VAPOUR / LIQUID+ SOLID	NO	NO	B31.3	LTCS - ASTM A333 Gr.6 / ASTM A671 GR.CC60 CL.22 / ASTM A350 LF2	3.0	Trim 12 (SS316 / HF)	1.1	SW, BW, FL	RF	-48 to 120	L7 / 4	SPIRAL WOUND NON-ASBESTOS V/#7591 W/OUTER RING OR EQ	NPS 1/2 - 30	GA, GL, CH, BA, BF	1
4	A11F05	Class 150	DEMINERALISED WATER, CARBON DIOXIDE, ETHYLENE GYCOL, LIQUID ADDITIVE, LP NITROGEN, LIQUID STABILIZER, MP NITROGEN, MINERAL OIL, OF-CATALYST, PROCESS NITROGEN, PEROXIDE, PROPYLENE, SEAL OIL, VENT GAS	B31.3	LIQUID / VAPOUR	NO	NO	NO	SS - ASTM A312 TP304/TP304L Dual Grade / ASTM A358 304/304L Dual Grade CL.1 / ASTM A182 F304/304L Dual Grade	0.0	Trim 12 (SS316 / HF)	2.1	BW, FL	RF	-29 to 180	B7 / 2H	SPIRAL WOUND NON-ASBESTOS V/#6591 W/OUTER RING OR EQ	NPS 1/2 - 30	GA, GL, CH, BA, BF, 3-way BA	1
5	A11X05	Class 150	INSTRUMENT AIR	B31.3	VAPOUR	NO	NO	NO	ASTM A106 Gr.B (GALV.) / ASTM A105 (GALV.)	1.0	Trim 8 (13CR / HF)	1.1	TH, FL	RF	0 to 70	B7 / 2H	COMPRESSED NON ASBESTOS V/#6502 OR EQ	NPS 1/2 - 10	GA, GL, CH, BA	1, 12
6	A16G05	Class 150	POWDER	B31.3	SOLID	NO	NO	NO	DSS - ASTM A790 UNS S31803 / ASTM A182 F51	1.0	Trim Duplex S31803/HF	2.8	SW, BW, FL	RF	-29 to 180	B7 / 2H	SPIRAL WOUND NON-ASBESTOS V/#7596 W/OUTER RING OR EQ	NPS 3/4 - 24	GA, GL, CH, BA	1
7	A21A05	Class 150	CHILLED WATER, STEAM CONDENSATE, LP STEAM, MP NITROGEN, VENT GAS	B31.3	LIQUID / VAPOUR / LIQUID + VAPOUR	NO	NO	B31.3	CS - ASTM A106 Gr.B / ASTM A105	***1.5***	Trim 8 (13CR / HF)	1.1	SW, BW, FL	RF	0 to 180	B7 / 2H	SPIRAL WOUND NON-ASBESTOS V/#6591 W/OUTER RING OR EQ	NPS 1/2 - 16	GA, GL, CH, BA, BF	1
8	A21B05	Class 150	LIQUID ADDITIVE, PROPYLENE, PROCESS WATER, WASTE OIL, WASTE WATER	B31.3	LIQUID / VAPOUR	NO	NO	B31.3	CS - ASTM A106 Gr.B / ASTM A672 Gr.B60 CL.22 / ASTM A105	3.0	Trim 8 (13CR / HF)	1.1	SW, BW, FL	RF	0 to 120	B7 / 2H	SPIRAL WOUND NON-ASBESTOS V/#6591 W/OUTER RING OR EQ	NPS 1/2 - 20	GA, GL, CH, BA, N	1
9	A21F05	Class 150	POWDER, SLURRY, TK-CATALYST	B31.3	SOLID / LIQUID + SOLID	NO	NO	NO	SS - ASTM A312 TP304/TP304L Dual Grade / ASTM A182 F304/304L Dual Grade	0.0	Trim 12 (SS316 / HF)	2.1	BW, FL	RF	-45 to 180	B7 / 2H	SPIRAL WOUND NON-ASBESTOS V/#7596 W/OUTER RING OR EQ	NPS 1/2 - 4	GA, GL, CH, BA	1,6
10	A31B05	Class 150	EXHAUST TO FLARE STACK, LP BLOWDOWN	B31.3	VAPOUR / LIQUID+ SOLID	NO	NO	B31.3	CS - ASTM A106 Gr.B / ASTM A672 Gr.B60 CL.22 / ASTM A105	3.0	Trim 8 (13CR / HF)	1.1	SW, BW, FL	RF	0 to 120	B7 / 2H	SPIRAL WOUND NON-ASBESTOS V/#6591 W/OUTER RING OR EQ	NPS 1/2 - 20	GA, GL, CH, BA, BF	1
11	A31F05	Class 150	STEAM CONDENSATE, LP STEAM, MINERAL OIL, GREASE, VENT GAS	B31.3	VAPOUR / LIQUID+ SOLID	NO	NO	NO	SS - ASTM A312 TP304/TP304L Dual Grade / ASTM A358 304/304L Dual Grade CL.1 / ASTM A182 F304/304L Dual Grade	0.0	Trim 12 (SS316 / HF)	2.1	SW, BW, FL	RF	-29 to 180	B7 / 2H	SPIRAL WOUND NON-ASBESTOS V/#6591 W/OUTER RING OR EQ	NPS 1/2 - 8	GA, GL, CH, BA	1
12	A41F05	Class 150	AT-CATALYST	B31.3	LIQUID	NO	NO	NO	SS - ASTM A312 TP304/TP304L Dual Grade / ASTM A182 F304/304L Dual Grade	0.0	Trim 12 (SS316 / HF)	2.1	BW, FL	RF	-29 to 65	B7 / 2H	SPIRAL WOUND NON-ASBESTOS V/#7591 W/OUTER RING OR EQ	NPS 1/2 - 1 1/2	GA, GL, CH, BA	1
13	A61F05	Class 150	PELLET COOLING WATER, DEMINERALISED WATER, PELLIET	B31.3	LIQUID	NO	NO	NO	SS - ASTM A312 TP304/TP304L Dual Grade / ASTM A358 304/304L Dual Grade CL.1 / ASTM A182 F304/304L Dual Grade	0.0	Trim 12 (SS316 / HF)	2.1	SW, BW, FL	RF	-29 to 100	B7 / 2H	COMPRESSED NON ASBESTOS V/#7035 OR EQ	NPS 1/2 - 20	GA, GL, CH, BA, BF	1, 6
14	B11F05	Class 300	PROPYLENE, LIQUID STABILIZER, MINERAL OIL, SEAL OIL	B31.3	LIQUID	NO	NO	NO	SS - ASTM A312 TP304/TP304L Dual Grade / ASTM A182 F304/304L Dual Grade	0.0	Trim 12 (SS316 / HF)	2.1	SW, BW, FL	RF	-45 to 120	B7 / 2H	SPIRAL WOUND NON-ASBESTOS V/#7596 W/OUTER RING OR EQ	NPS 1/2 - 2	GA, GL, CH, BA	1
15	B21B05	Class 300	HYDROGEN, STEAM CONDENSATE, LP STEAM, WASTE OIL	B31.3	LIQUID / VAPOUR	NO	NO	B31.3	CS - ASTM A106 Gr.B / ASTM A672 Gr.B60 CL.22 / ASTM A105	3.0	Trim 5 (HF)	1.1	SW, BW, FL	RF	0 to 180	B7 / 2H	SPIRAL WOUND NON-ASBESTOS V/#6596 W/OUTER RING OR EQ	NPS 1/2 - 20	GA, GL, CH, BA, N, BF	1
16	B21D05	Class 300	PROPYLENE, OFF GAS	B31.3	LIQUID / VAPOUR	NO	NO	B31.3	LTCS - ASTM A333 Gr.6 / ASTM A671 GR.CC60 CL.22 / ASTM A350 LF2	3.0	Trim 12 (SS316 / HF)	1.1	SW, BW, FL	RF	-48 to 180	L7 / 4	SPIRAL WOUND NON-ASBESTOS V/#6596 W/OUTER RING OR EQ	NPS 1/2 - 20	GA, GL, CH, BA	1
17	B21F05	Class 300	POWDER, PROPYLENE, SLURRY, TK-CATALYST	B31.3	SOLID / LIQUID / LIQUID + SOLID	NO	NO	NO	***SS - ASTM A312 TP304/TP304L Dual Grade / ASTM A358 304/304L Dual Grade CL.1 / ASTM A182 F304/304L Dual Grade***	0.0	Trim 12 (SS316 / HF)	2.1	BW, FL	RF	-45 to 180	B7 / 2H	SPIRAL WOUND NON-ASBESTOS V/#7596 W/OUTER RING OR EQ	***NPS 1/2 - 8***	GA, GL, CH, BA	1,6
18	B22D05	Class 300	HP BLOWDOWN, LP BLOWDOWN	B31.3	LIQUID + SOLID	NO	NO	B31.3	LTCS - ASTM A333 Gr.6 / ASTM A671 GR.CC60 CL.22 / ASTM A350 LF2	3.0	Trim 12 (SS316 / HF)	1.1	SW, BW, FL	RF	-48 to 120	B7 / 2H	SPIRAL WOUND NON-ASBESTOS V/#6596 W/OUTER RING OR EQ	NPS 1/2 - 24	GA, GL, CH, BA	1
19	B31D05	Class 300	PROPYLENE	B31.3	LIQUID	NO	NO	B31.3	LTCS - ASTM A333 Gr.6 / ASTM A350 LF2	3.0	Trim 8 (13CR / HF)	1.1	SW, BW, FL	RF	-48 to 270	L7 / 4	SPIRAL WOUND NON-ASBESTOS V/#6596 W/OUTER RING OR EQ	NPS 1/2 - 6	GA, GL, CH	1
20	D11B05	Class 600	STEAM CONDENSATE, LP STEAM, HP STEAM	B31.3	LIQUID / VAPOUR	NO	NO	B31.3	CS - ASTM A106 Gr.B / ASTM A105	3.0	Trim 5 (HF)	1.1	SW, BW, FL	RF	0 to 425	B7 / 2H	SPIRAL WOUND NON-ASBESTOS V/#6596 W/OUTER RING OR EQ	NPS 3/4 - 6	GA, GL, CH	1
21	D11D05	Class 600	PROPYLENE	B31.3	LIQUID	NO	NO	B31.3	LTCS - ASTM A333 Gr.6 / ASTM A350 LF2	3.0	Trim 12 (SS316 / HF)	1.1	SW, BW, FL	RF	-48 to 120	L7 / 4	SPIRAL WOUND NON-ASBESTOS V/#6596 W/OUTER RING OR EQ	NPS 1/2 - 12	GA, GL, CH, BA	1
22	D11F05	Class 600	MINERAL OIL, SEAL OIL	B31.3	LIQUID	NO	NO	NO	SS - ASTM A312 TP304/TP304L Dual Grade / ASTM A182 F304/304L Dual Grade	0.0	Trim 12 (SS316 / HF)	2.1	SW, BW, FL	RF	-29 to 80	B7 / 2H	SPIRAL WOUND NON-ASBESTOS V/#6596 W/OUTER RING OR EQ	NPS 1/2 - 2	GA, GL, CH, BA	1
23	D21B05	Class 600	HYDROGEN	B31.3	VAPOUR	NO	NO	B31.3	CS - ASTM A106 Gr.B / ASTM A105	3.0	Trim 5 (HF)	1.1	SW, BW, FL	RF	0 to 120	B7 / 2H	SPIRAL WOUND NON-ASBESTOS V/#6596 W/OUTER RING OR EQ	NPS 1/2 - 4	GA, GL, CH	1
24	D21F05	Class 600	CARBON MONOXIDE + N2, HYDROGEN, LIQUID ADDITIVE	B31.3	LIQUID / VAPOUR	NO	NO	NO	SS - ASTM A312 TP304/TP304L Dual Grade / ASTM A182 F304/304L Dual Grade	0.0	Trim 12 (SS316 / HF)	2.1	SW, BW, FL	RF	-29 to 120	B7 / 2H	SPIRAL WOUND NON-ASBESTOS V/#6596 W/OUTER RING OR EQ	NPS 1/2 - 2	GA, GL, CH, BA	1
25	D31F05	Class 600	MINERAL OIL, PROPYLENE, SEAL OIL	B31.3	LIQUID	NO	NO	NO	SS - ASTM A312 TP304/TP304L Dual Grade / ASTM A358 304/304L Dual Grade CL.1 / ASTM A182 F304/304L Dual Grade	0.0	Trim 12 (SS316 / HF)	2.1	SW, BW, FL	RF	-45 to 120	B7 / 2H	SPIRAL WOUND NON-ASBESTOS V/#6596 W/OUTER RING OR EQ	NPS 1/2 - 8	GA, GL, CH, BA	1
26	D41F05	Class 600	AT-CATALYST, OF-CATALYST, TK-CATALYST	B31.3	LIQUID / SOLID	NO	NO	NO	SS - ASTM A312 TP304/TP304L Dual Grade / ASTM A182 F304/304L Dual Grade	0.0	Trim 12 (SS316 / HF)	2.1	BW, FL	LTG (LARGE TONGUE & GROOVE)	0 to 65	B7 / 2H	METALLIC GASKET V/#540 (ALUMINIUM) OR EQ	NPS 1/2 - 2	GA, GL, CH, BA	1
27	D51F05	Class 600	TK-CATALYST	B31.3	SOLID	NO	NO	NO	SS - ASTM A312 TP304/TP304L Dual Grade / ASTM A182 F304/304L Dual Grade	0.0	Trim 12 (SS316 / HF)	2.1	BW, FL	LTG (LARGE TONGUE & GROOVE)	-45 to 65	B7 / 2H	METALLIC GASKET V/#540 (ALUMINIUM) OR EQ	NPS 1/2 - 1/2	GA, GL, BA	1
28	D61F05	Class 600	SLURRY	B31.3	LIQUID + SOLID	NO	NO	NO	SS - ASTM A312 TP304/TP304L Dual Grade / ASTM A182 F304/304L Dual Grade	0.0	Trim 12 (SS316 / HF)	2.1	SW, BW, FL	MF (LARGE MALE & FEMALE)	-45 to 120	B7 / 2H	SPIRAL WOUND NON-ASBESTOS V/#7592 W/OUTER RING OR EQ	NPS 1/2 - 6	GA, GL, CH, BA	1
29	F11F05	Class 1500	CARBON MONOXIDE + N2	B31.3	LIQUID	NO	NO	NO	SS - ASTM A312 TP304/TP304L Dual Grade / ASTM A182 F304/304L Dual Grade	0.0	Trim 12 (SS316 / HF)	2.1	BW, FL	RJ	-29 to 65	B7 / 2H	METALLIC GASKET V/#540 OVEL(304SS) OR EQ	NPS 1/2 - 3/4	GA, GL, CH, BA	1
30	X11F05	Class 150	NITROGEN FOR POWDER, POWDER, PELLIET, SOLID STABILIZER, VENT GAS	B31.3	VAPOUR / SOLID / VAPOUR + SOLID	NO	NO	NO	SS - ASTM A312 TP304/TP304L Dual Grade / ASTM A358 304/304L Dual Grade CL.1 / ASTM A182 F304/304L Dual Grade	0.0	Trim 12 (SS316 / HF)	2.1	SW, BW, FL	RF	-29 to 120	B7 / 2H	COMPRESSED NON ASBESTOS V/#7035 OR EQ	NPS 1/2 - 24	GA, GL, CH, BA, BF	1
31	X31F05	Class 150	POWDER	B31.3	SOLID	NO	NO	NO	SS - ASTM A312 TP304/TP304L Dual Grade / ASTM A358 304/304L Dual Grade CL.1 / ASTM A182 F304/304L Dual Grade	0.0	Trim 12 (SS316 / HF)	2.1	SW, BW, FL	RF	-29 to 120	B7 / 2H	SPIRAL WOUND NON-ASBESTOS V/#7596 W/OUTER RING OR EQ	NPS 1/2 - 20	GA, GL, CH, BA	1

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ABBREVIATIONS:

ABBREVIATION	DESCRIPTION	ABBREVIATION	DESCRIPTION
A/G	Above Ground	HP	High Pressure
AL-BRZ	Aluminum Bronze	LP	Low Pressure
BA	Ball Valve	LTCS	Low Temperature Carbon Steel
BF	Butterfly Valve	MAT.	Material
BW	Buttweld	MP	Middle Pressure
C/A	Corrosion Allowance	OVHD	Overhead
CH	Check Valve	PL	Plug Valve
CL.	Class	PWHT	Post Weld Heat Treatment
CONC.	Concentration	RF	Raised Face
CS	Carbon Steel	RJ	Ring Joint
FF	Flat Face	RTRP	Reinforced Thermosetting Resin Pipe
FL	Flanged	SPW	Spiral Wound
GA	Gate Valve	SS	Stainless Steel
GL	Globe Valve	STD	Standard
GR.	Grade	SW	Socket Weld
HF	Hard-Faced	THD	Threaded
HHP	High-High Pressure	U/G	Under Ground
HIC	Hydrogen Induced Cracking		

NOTES:

1. Additional valves shall be added in individual piping classes when specified.
2. Use of soft seated Ball, Plug and Butterfly valves shall be limited to maximum of 204^{o}C (400^{o}F).
3. Stiffener rings, if needed, shall be provided as per ASME SEC.VIII, DIV.1 for full vacuum condition.
4. Valves to be tested for vacuum as per ASME SEC.V, ART.10 (HOOD Method).
5. Bolting conforming to B7M / 2HM shall be used under conditions (a) direct exposure to sour environments (b) when the bolting will be buried or insulated.

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6. Pipe thickness calculation to include corrosion and erosion allowances due to the process catalyst flow, as per Process Licensor specifications.
7. Material shall have 0.04% Min. carbon content.
8. Flanges are not allowed except as noted as "flange" on the P&IDs, except that valves (incl. in-line components) end connections are exempted, unless otherwise specified by Licensors.
9. All acid and caustic service line flanged joints shall be covered with safety splash guards.
10. Steam Jacketing beyond steam supply manifold isolation valves.
11. Underground piping shall be externally protected in accordance with S-000-13A0-0001V and 3550-8440-SP-0009.
12. Galvanised coating shall be in accordance with S-000-13A0-0001V.
13. All Inconel 625 (Alloy UNS N06625) material shall be supplied in annealed condition.
14. Deleted
15. Bolting conforming to L7M / 7M shall be used under conditions (a) direct exposure to sour environments (b) when the bolting will be buried or insulated.
16. Piping class shall be used within the normal operating pressure/temperature limits specified in API RP 941. Pressure / temperature specified in the pipe class exceeding API RP 941 limits should be regarded as upset conditions rather than for continuous service.
17. Deleted
18. Deleted
19. For all relevant piping classes, full vacuum conditions and steam out conditions to be verified.
20. Deleted
21. The materials shall be impact tested at -50 ^{o}C with min. 27 Joules energy.
22. Use Durolok coupling joints as recommended by Licensor.
23. For cement lined piping, the pH shall be controlled between 7 to 9.
24. For all relevant piping classes with line design temperature above 427ºC, in spiral wound gasket, suitable gasket filler material such as combination of mica layers and graphite fillers or equivalent shall be reviewed and selected or as defined by Licensor.
25. The welded pipes shall be grooving corrosion resistant.
26. Flanged spools with one end flanged and the other end with Lap joint flange.
27. PWHT of carbon steel piping in wet H2S, Caustic and Amine services shall be in accordance with Section 10.2, 10.3, and 10.4 of S-000-1274-0002V.

    For Caustic and Amine service the following shall apply:

    PWHT of all component manufacturing welds is required for all wall thicknesses.

    PWHT of all site piping fabrication welds is required for all wall thicknesses.

    For moderate and severe Wet H2S service the following shall apply:

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PWHT of all component manufacturing welds is required for all wall thicknesses.

PWHT of site fabrication circumferential or branch welds is not required if welds are multipass and in accordance with Para 10.2.13 of the same project specification.

For services meeting the Wet H2S criteria and Caustic or Amine criteria the more stringent PWHT requirement shall govern.

28. Underground Carbon steel piping shall be cathodic protected in accordance with 3550-8440-SP-0004 and 3550-8440-SP-0005.
29. For Potable water piping, the material shall be suitably certified for use with Potable water.
30. Raw Water design conditions shall be supplied by 3rd Party Raw Water Supplier.
31. The use of RTRP piping for Sea water aboveground may be considered for short interface lengths subject to Employer approval.
32. Contractor shall verify design conditions for the Normally Dry Fire water Piping System.
33. Laminated Butt & Strap is the preferred method of jointing.
34. Piping shall be flushed with fresh water whenever sea water is used as fire water.
35. Contractor shall design Underground Utilities Piping System to suit design conditions specified in Basic Engineering Design Data S-000-1220-0001V Para.2.4.
36. ASTM A691 Cr-Mo welded pipes specified with Class 22 can be used in lieu of Class 42 in Non-Licensed Units only. Grade shall be as specified in “Pipe / Flange Material” Section in Para.8.0 “Piping Class Index”.
37. PWHT for Vendor shop fabrication. PWHT for site fabrication is summarized in Para.11.0 “NDE, PWHT, Hardness Test and PMI Summary for Site Fabrication”.

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9.0 SERVICE LIMIT TABLE

See the following pages.

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9.1 Piping Classes except for PPU Unit

Sr. No.	PIPING CLASS	CONDITION	BASE (Note1)	UNIT	SIZE From (NPS)	SIZE To (NPS)																												
1	A0AC01	Service Limit		degC			0	50	100	150	200	250	300	350	400	427																		
			PT	MPag	1	12	1.960	1.920	1.770	1.580	1.380	1.210	1.020	0.840	0.650	0.542																		
		Full Vacuum	-	-	1	***4***	***FV @ 425 degC***																												
					6	8	FV @ 375 degC																												
2	A0AC04	Service Limit		degC			0	50	70	150	200	250	300	350	400	427																		
			PT	MPag	1	6	1.960	1.920	1.770	1.580	1.380	1.210	1.020	0.840	0.650	0.542																		
		Full Vacuum					N/A																												
3	A0J501	Service Limit		degC			-29	0	50	72	100	119	125	150	200	250	260	300	350	400	425													
			PT	MPag	1/2	6	1.900	1.900	1.830	1.715	1.570	1.513	1.495	1.420	1.320	1.210	1.172	1.020	0.840	0.650	0.550													
		Full Vacuum	-	-	1/2	6	FV @ 175 degC																												
4	A0J503	Service Limit		degC			-29	0	50	100	150	200	250	260	300	350	400	425																
			PT	MPag	1/2	10	1.900	1.900	1.830	1.570	1.420	1.320	1.210	1.153	1.020	0.840	0.650	0.550																
			IN	MPag	12	30	1.900	1.900	1.830	1.570	1.420	1.320	1.210	1.153	1.020	0.840	0.650	0.550																
		Full Vacuum	-	-	1/2	4	FV @ 265 degC																												
					6	***30***	FV @ 175 degC																												
5	A0JP	Service Limit		degC			-29	0	50	53	65	100	150	200	250	260	270	275	300	350	400	425												
			PT	MPag	1/2	10	1.900	1.900	1.830	1.814	1.752	1.570	1.420	1.320	1.210	1.172	1.134	1.115	1.020	0.840	0.650	0.550												
			IN	MPag	12	42	1.900	1.900	1.830	1.814	1.752	1.570	1.420	1.320	1.210	1.172	1.134	1.115	1.020	0.840	0.650	0.550												
		Full Vacuum	-	-	1/2	6	FV @ 175 degC																												
6	A0JP03	Service Limit		degC			-29	0	50	100	150	200	250	300	350	400	425																		
			PT	MPag	1/2	4	1.900	1.900	1.830	1.570	1.420	1.320	1.210	1.020	0.840	0.650	0.550																		
		Full Vacuum					N/A																												
7	A0JQ	Service Limit		degC			-29	0	50	80	100	117	150	200	250	300	350	400	425															
			PT	MPag	1/2	10	1.900	1.900	1.830	1.674	1.570	1.519	1.420	1.320	1.210	1.020	0.840	0.650	0.550															
			IN	MPag	12	14	1.900	1.900	1.830	1.674	1.570	1.519	1.420	1.320	1.210	1.020	0.840	0.650	0.550															
		Full Vacuum	-	-	1/2	14	FV @ 175 degC																												
8	A0JQ01	Service Limit		degC			-29	0	50	80	100	117	150	200	250	300	350	400	425															
			PT	MPag	1/2	6	1.900	1.900	1.830	1.674	1.570	1.519	1.420	1.320	1.210	1.020	0.840	0.650	0.550															
		Full Vacuum					N/A																												
9	A0JR	Service Limit		degC			-29	0	50	68	100	117	150	177	200	250	265	300	350	400	425													
			PT	MPag	1/2	10	1.900	1.900	1.830	1.736	1.570	1.519	1.420	1.366	1.320	1.210	1.153	1.020	0.840	0.650	0.550													
			IN	MPag	12	24	1.900	1.900	1.830	1.736	1.570	1.519	1.420	1.366	1.320	1.210	1.153	1.020	0.840	0.650	0.550													
		Full Vacuum	-	-	1/2	***3***	***FV @ 265 degC***																												
					4	8	FV @ 175 degC																												
10	A0JR01	Service Limit		degC			-29	0	50	100	119	150	200	250	260	300	350	400	425															
			PT	MPag	1/2	6	1.900	1.900	1.830	1.570	1.513	1.420	1.320	1.210	1.172	1.020	0.840	0.650	0.550															
		Full Vacuum	-	-	1/2	6	FV @ 175 degC																												
11	A0JR03	Service Limit		degC			-29	0	50	100	150	200	250	260	300	350	400	425																
			PT	MPag	1/2	10	1.900	1.900	1.830	1.570	1.420	1.320	1.210	1.172	1.020	0.840	0.650	0.550																
			IN	MPag	12	24	1.900	1.900	1.830	1.570	1.420	1.320	1.210	1.172	1.020	0.840	0.650	0.550																
		Full Vacuum					N/A																												
12	A0JS	Service Limit		degC			-29	0	50	100	150	200	250	265	300																			
			PT	MPag	1/2	10	1.900	1.900	1.830	1.570	1.420	1.320	1.210	1.153	1.020																			
			IN	MPag	12	20	1.900	1.900	1.830	1.570	1.420	1.320	1.210	1.153	1.020																			
		Full Vacuum	-	-	1/2	12	FV @ 265 degC																												
					14	18	FV @ 150 degC																												
13	A0JS01	Service Limit		degC			-29	0	50	100	150	200	250	265																				
			PT	MPag	1/2	10	1.900	1.900	1.830	1.570	1.420	1.320	1.210	1.153																				
			IN	MPag	12	16	1.900	1.900	1.830	1.570	1.420	1.320	1.210	1.153																				
		Full Vacuum					N/A																												
14	A0JS04	Service Limit		degC			-29	0	50	100	150	200	250	265																				
			PT	MPag	1/2	10	1.900	1.900	1.830	1.570	1.420	1.320	1.210	1.153																				
			IN	MPag	12	12	1.900	1.900	1.830	1.570	1.420	1.320	1.210	1.153																				
		Full Vacuum					N/A																												
15	A0JV	Service Limit		degC			-29	0	50	60	100	120	150	200	250	300	350	400	425															
			PT	MPag	1/2	10	1.900	1.900	1.830	1.778	1.570	1.510	1.420	1.320	1.210	1.020	0.840	0.650	0.550															
			IN	MPag	12	18	1.900	1.900	1.830	1.778	1.570	1.510	1.420	1.320	1.210	1.020	0.840	0.650	0.550															
		Full Vacuum					N/A																												
16	A0JW	Service Limit		degC			-29	0	50	60	75	100	115	150	155																			
			IN	MPag	1/2	42	1.900	1.900	1.830	1.778	1.700	1.570	1.525	1.420	1.410																			
		Full Vacuum					N/A																												
17	A0JY	Service Limit		degC			-29	0	50	65	69	70	100	150	200	232																		
			PT	MPag	1/2	8	1.9	1.9	1.83	1.752	1.731	1.726	1.57	1.42	1.32	1.249																		
		Full Vacuum	-	-	1/2	2	FV @ 265 degC																												
			-	-	3	8	FV @ 175 degC																												
18	A0JY01	Service Limit		degC			-29	0	50	100	150	200	232																						
			PT	MPag	1/2	4	1.900	1.900	1.830	1.570	1.420	1.320	1.249																						
		Full Vacuum					N/A																												
19	A0JY04	Service Limit		degC			-29	0	50	100	150	200	232																						
			PT	MPag	1/2	4	1.900	1.900	1.830	1.570	1.420	1.320	1.249																						
		Full Vacuum					N/A																												
20	A0L4	Service Limit		degC			-29	0	50	100	150	156	200	250	300	350	400	425																
			PT	MPag	1/2	10	1.900	1.900	1.840	1.620	1.480	1.466	1.370	1.210	1.020	0.840	0.650	0.550																
		Full Vacuum	-	-	1/2	10	FV @ 175 degC																												
21	A0L5	Service Limit		degC			-29	0	50	97	100	150	156	200	250	265	300	350	400	425														
			PT	MPag	1/2	10	1.900	1.900	1.840	1.633	1.620	1.480	1.466	1.370	1.210	1.153	1.020	0.840	0.650	0.550														
			IN	MPag	12	30	1.900	1.900	1.840	1.633	1.620	1.480	1.466	1.370	1.210	1.153	1.020	0.840	0.650	0.550														
		Full Vacuum	-	-	1/2	30	FV @ 175 degC																												
22	A0L501	Service Limit		degC			-29	0	50	100	150	158	200	250	265	300	350	400	425															
			PT	MPag	1/2	10	1.900	1.900	1.840	1.620	1.480	1.462	1.370	1.210	1.153	1.020	0.840	0.650	0.550															
		Full Vacuum	-	-	1/2	***2***	***FV @ 265 degC***																												
					3	10	FV @ 175 degC																												
23	A0L503	Service Limit		degC			-29	0	50	100	150	170	200	250	265	300	350	400	425															
			PT	MPag	1/2	4	1.900	1.900	1.840	1.620	1.480	1.436	1.370	1.210	1.153	1.020	0.840	0.650	0.550															
		Full Vacuum	-	-	1/2	4	FV @ 170 degC																												
24	A0LG	Service Limit		degC			-29	0	50	100	150	200	250	300	350	400	425																	
			PT	MPag	1/2	6	1.900	1.900	1.840	1.620	1.480	1.370	1.210	1.020	0.840	0.650	0.550																	
		Full Vacuum	-	-	1/2	4	FV @ 175 degC																												
25	A0LG01	Service Limit		degC			-29	0	50	100	150	200	250	265																				
			PT	MPag	1/2	10	1.900	1.900	1.840	1.620	1.480	1.370	1.210	1.153																				
			IN	MPag	12	18	1.900	1.900	1.840	1.620	1.480	1.370	1.210	1.153																				
		Full Vacuum					N/A																												
26	A0LP03	Service Limit		degC			-29	0	50	100	150	200	250	300	350	400	425																	
			PT	MPag	1/2	6	1.900	1.900	1.840	1.620	1.480	1.370	1.210	1.020	0.840	0.650	0.550																	
		Full Vacuum	-	-	1/2	***1 1/2***	***FV @ 265 degC***																												
					2	6	FV @ 175 degC																												
27	A0LP04	Service Limit		degC			-29	0	50	100	150	200	250	300	350	400	425																	
			PT	MPag	1/2	***6***	1.900	1.900	1.840	1.620	1.480	1.370	1.210	1.020	0.840	0.650	0.550																	
		Full Vacuum					N/A																												
28	A0LQ	Service Limit		degC			-29	0	50	65	72	82	100	120	124.3	125	150	153.2	175	200	250	280	300	350	400	425								
			PT	MPag	1/2	10	1.900	1.900	1.840	1.774	1.743	1.699	1.620	1.564	1.551	1.550	1.480	1.472	1.425	1.370	1.210	1.096	1.020	0.840	0.650	0.550								
			IN	MPag	12	30	1.900	1.900	1.840	1.774	1.743	1.699	1.620	1.564	1.551	1.550	1.480	1.472	1.425	1.370	1.210	1.096	1.020	0.840	0.650	0.550								
		Full Vacuum	-	-	1/2	30	FV @ 175 degC																												

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Sr. No.	PIPING CLASS	CONDITION	BASE (Note1)	UNIT	SIZE From (NPS)	SIZE To (NPS)																																		
29	A0LQ03	Service Limit		degC			-29	0	50	100	150	170	175	200	250	252	300	350	400	425																			
			PT	MPag	1/2	10	1.900	1.900	1.840	1.620	1.480	1.436	1.425	1.370	1.210	1.202	1.020	0.840	0.650	0.550																			
			IN	MPag	12	30	1.900	1.900	1.840	1.774	1.743	1.436	1.425	1.699	1.210	1.202	1.020	0.840	0.650	0.550																			
		Full Vacuum	-	-	1/2	***2***	***FV @ 265 degC***																																	
					3	4	FV @ 175 degC																																	
30	A0LR	Service Limit		degC			-29	0	50	80	100	110	122	131	133	150	200	250	265	300	350	400	425																
			PT	MPag	1/2	10	1.900	1.900	1.840	1.708	1.620	1.592	1.558	1.533	1.527	1.480	1.370	1.210	1.153	1.020	0.840	0.650	0.550																
			IN	MPag	12	30	1.900	1.900	1.840	1.708	1.620	1.592	1.558	1.533	1.527	1.480	1.370	1.210	1.153	1.020	0.840	0.650	0.550																
		Full Vacuum	-	-	1/2	***1 1/2***	***FV @ 265 degC***																																
					2	24	FV @ 175 degC																																	
31	A0LR01	Service Limit		degC			-29	0	50	100	150	200	204	250	300	350	400	425																					
			PT	MPag	1/2	10	1.900	1.900	1.840	1.620	1.480	1.370	1.357	1.210	1.020	0.840	0.650	0.550																					
			IN	MPag	12	24	1.900	1.900	1.840	1.708	1.620	1.592	1.558	1.210	1.020	0.840	0.650	0.550																					
		Full Vacuum					N/A																																
32	A0LR03	Service Limit		degC			-29	0	50	100	110	150	170	200	204	250	300	350	400	425																			
			PT	MPag	1/2	10	1.900	1.900	1.840	1.620	1.592	1.480	1.436	1.370	1.357	1.210	1.020	0.840	0.650	0.550																			
			IN	MPag	12	24	1.900	1.900	1.840	1.620	1.592	1.480	1.436	1.370	1.357	1.210	1.020	0.840	0.650	0.550																			
		Full Vacuum	-	-	1/2	***1***	***FV @ 265 degC***																																	
					1 1/2	24	***FV @ 175 degC***																																	
33	A0LU	Service Limit		degC			0	50	60																														
			PT	MPag	1/2	10	1.900	1.840	1.796																														
			IN	MPag	12	12	1.900	1.840	1.796																														
		Full Vacuum					N/A																																
34	A0LW	Service Limit		degC			-29	0	50	60																													
			IN	MPag	1/2	14	1.900	1.900	1.840	1.796																													
		Full Vacuum	-	-	1/2	4	FV @ 175 degC																																
35	A0MP01	Service Limit		degC			-29	0	50	100	150	200	250	300	350	400	450	500	538																				
			PT	MPag	1/2	10	1.900	1.900	1.860	1.700	1.570	1.380	1.210	1.020	0.840	0.650	0.460	0.280	0.140																				
			IN	MPag	12	18	1.900	1.900	1.860	1.700	1.570	1.380	1.210	1.020	0.840	0.650	0.460	0.280	0.140																				
		Full Vacuum					N/A																																
36	A0QP	Service Limit		degC			0	50	70																														
			PT	MPag	***1/2***	***16***	1.960	1.920	1.960																														
		Full Vacuum	-	-	***1/2***	4	FV @ 175 degC																																
37	A0RA	Service Limit		degC			0	50	60	65																													
			IN	Mpag	1/2	20	1.960	1.920	1.890	1.875																													
		Full Vacuum					N/A																																
38	A0RU	Service Limit		degC			0	50	60	65																													
			IN	Mpag	1/2	2	1.960	1.920	1.890	1.875																													
			IN	Mpag	3	42	1.890	1.877	1.867	1.862																													
		Full Vacuum					N/A																																
39	A0YQ	Service Limit		degC			0	50	100	150	200	250	300	350	400	427																							
			PT	MPag	1/2	10	2.000	1.950	1.770	1.580	1.380	1.210	1.020	0.840	0.650	0.542																							
			IN	MPag	12	42	2.000	1.950	1.770	1.580	1.380	1.210	1.020	0.840	0.650	0.542																							
		Full Vacuum					N/A																																
40	A1A201	Service Limit		degC			0	50	100	150	200	250	300	350	400	427																							
			PT	MPag	1/2	18	1.960	1.920	1.770	1.580	1.380	1.210	1.020	0.840	0.650	0.542																							
		Full Vacuum	-	-	1/2	18	FV @ 175 degC																																
41	A1A8	Service Limit		degC			0	50	100	150	200	250	300	350	400	427																							
			PT	MPag	1/2	24	1.960	1.920	1.770	1.580	1.380	1.210	1.020	0.840	0.650	0.542																							
		Full Vacuum					N/A																																
42	A1A804	Service Limit		degC			0	50	100	150	200	250	300	350	400	427																							
			PT	MPag	1/2	24	1.960	1.920	1.770	1.580	1.380	1.210	1.020	0.840	0.650	0.542																							
			IN	MPag	30	36	1.960	1.920	1.770	1.580	1.380	1.210	1.020	0.840	0.650	0.542																							
		Full Vacuum			1/2	2	FV @ 175 degC																																
43	A1A904	Service Limit		degC			0	50	100	150	200	250	300	350	400	427																							
			PT	MPag	1/2	24	1.960	1.920	1.770	1.580	1.380	1.210	1.020	0.840	0.650	0.542																							
			IN	MPag	30	42	1.960	1.920	1.770	1.580	1.380	1.210	1.020	0.840	0.650	0.542																							
		Full Vacuum					N/A																																
44	A1AA	Service Limit		degC			0	50	65	70	100	150	200	235	250																							
			IN	MPag	1/2	52	1.936	1.920	1.875	1.860	1.770	1.580	1.380	1.261	1.210																							
		Full Vacuum	-	-	1/2	8	FV @ 175 degC																																
45	A1AC04	Service Limit		degC			0	50	70	100	150	200	250	300	350	400	427																						
			PT	MPag	1/2	4	1.960	1.920	1.860	1.770	1.580	1.380	1.210	1.020	0.840	0.650	0.542																						
		Full Vacuum					N/A																																
46	A1AD	Service Limit		degC			0	50	100	107	150	200	250	265																							
			IN	MPag	1/2	20	1.960	1.920	1.770	1.743	1.580	1.380	1.210	1.153																							
		Full Vacuum	-	-	1/2	***1 1/2***	***FV @ 265 degC***																																
					2	6	FV @ 250 degC																																	
					8	20	FV @ 175 degC																																	
47	A1AG	Service Limit		degC			0	50	100	150	200	250	265																							
			IN	MPag	1/2	16	1.960	1.920	1.770	1.580	1.380	1.210	1.153																							
		Full Vacuum	-	-	1/2	6	FV @ 180 degC																																
48	A1AH	Service Limit		degC			0	50	100	107	145	150	200	250	270	300	350	400	405	427																	
			PT	MPag	1/2	24	1.960	1.920	1.770	1.743	1.599	1.580	1.380	1.210	1.134	1.020	0.840	0.650	0.630	0.542																	
			IN	MPag	30	48	1.856	1.844	1.770	1.743	1.599	1.580	1.380	1.210	1.134	1.020	0.840	0.650	0.630	0.542																	
		Full Vacuum	-	-	1/2	36	FV @ 175 degC																																
49	A1AH04	Service Limit		degC			0	50	100	150	200	250	300	350	400	427																							
			PT	MPag	1/2	24	1.960	1.920	1.770	1.580	1.380	1.210	1.020	0.840	0.650	0.542																							
			IN	MPag	30	42	1.960	1.920	1.770	1.580	1.380	1.210	1.020	0.840	0.650	0.542																							
		Full Vacuum	-	-	1/2	24	FV @ 175 degC																																
			-	-	30	42	FV @ 108 degC																																
50	A1AL	Service Limit		degC			0	50	75	80	100	150	200	250	300	350	400	427																			
			PT	MPag	1/2	24	1.960	1.920	1.845	1.830	1.770	1.580	1.380	1.210	1.020	0.840	0.650	0.542																			
			IN	MPag	30	48	1.960	1.920	1.845	1.830	1.770	1.580	1.380	1.210	1.020	0.840	0.650	0.542																			
		Full Vacuum	-	-	1/2	36	FV @ 175 degC																																
51	A1AL01	Service Limit		degC			0	50	100	150	200	250	300	350	400	427																							
			PT	MPag	1/2	4	1.960	1.920	1.770	1.580	1.380	1.210	1.020	0.840	0.650	0.542																							
		Full Vacuum					N/A																																
52	A1AL03	Service Limit		degC			0	50	100	150	200	250	300	350	400	427																							
			PT	MPag	1/2	4	1.960	1.920	1.770	1.580	1.380	1.210	1.020	0.840	0.650	0.542																							
		Full Vacuum					N/A																																
53	A1AM	Service Limit		degC			0	50	100	150	200	250	300	350	400	427																							
			PT	MPag	1/2	3	1.960	1.920	1.770	1.580	1.380	1.210	1.020	0.840	0.650	0.542																							
		Full Vacuum					N/A																																
54	A1AP	Service Limit		degC			0	50	80	100	107	150	200	250	265	300	340	343	350	400	427																
			PT	MPag	1/2	24	1.960	1.920	1.830	1.770	1.743	1.580	1.380	1.210	1.153	1.020	0.876	0.865	0.840	0.650	0.542																
			IN	MPag	30	80	1.858	1.846	1.821	1.770	1.743	1.580	1.380	1.210	1.153	1.020	0.876	0.865	0.840	0.650	0.542																
		Full Vacuum	-	-	1/2	4	FV @ 350 degC																																
					6	10	FV @ 340 degC																																
55	A1AP01	Service Limit		degC			0	50	100	150	200	250	300	350	400	427																							
			PT	MPag	1/2	24	1.960	1.920	1.770	1.580	1.380	1.210	1.020	0.840	0.650	0.542																							
			IN	MPag	30	80	1.858	1.846	1.770	1.580	1.380	1.210	1.020	0.840	0.650	0.542																							
		Full Vacuum	-	-	1/2	***8***	***FV @ 265 degC***																																
					10	12	FV @ 225 degC																																
					14	36	FV @ 214 degC																																

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Sr. No.	PIPING CLASS	CONDITION	BASE (Note1)	UNIT	SIZE From (NPS)	SIZE To (NPS)																																		
56	A1AP02	Service Limit		degC			0	50	100	150	200	250	300	350	400	427																									
			PT	Mpag	1/2	14	1.960	1.920	1.770	1.580	1.380	1.210	1.020	0.840	0.650	0.542																									
		Full Vacuum			1/2	12	FV @ 175 degC																																			
57	A1AP03	Service Limit		degC			0	50	100	150	200	250	300	340	350	370	400	425	427																						
			PT	MPag	1/2	24	1.960	1.920	1.770	1.580	1.380	1.210	1.020	0.876	0.840	0.760	0.650	0.550	0.542																						
			IN	MPag	30	52	1.958	1.920	1.770	1.580	1.380	1.210	1.020	0.876	0.840	0.760	0.650	0.550	0.542																						
		Full Vacuum	-	-	1/2	30	FV @ 340 degC																																		
					36	48	FV @ 175 degC																																		
58	A1AP04	Service Limit		degC			0	50	100	150	200	250	270	300	350	400	427																								
			PT	MPag	1/2	24	1.960	1.920	1.770	1.580	1.380	1.210	1.134	1.020	0.840	0.650	0.542																								
			IN	MPag	26	48	1.960	1.920	1.770	1.580	1.380	1.210	1.134	1.020	0.840	0.650	0.542																								
		Full Vacuum	-	-	1/2	***24***	***FV @ 400 degC***																																		
			-	-	***26***	***36***	***FV @ 175 degC***																																		
			-	-	***42***	***48***	***FV @ 101 degC***																																		
59	A1APCL	Service Limit		degC			0	50	100	150	200	250	300	350	400	427																									
			PT	Mpag	1/2	20	1.960	1.920	1.770	1.580	1.380	1.210	1.020	0.840	0.650	0.542																									
		Full Vacuum			1/2	20	FV @ 325 degC																																			
60	A1APCM	Service Limit		degC			0	50	100	150	200	250	300	350	400	427																									
			PT	Mpag	1/2	24	1.960	1.920	1.770	1.580	1.380	1.210	1.020	0.840	0.650	0.542																									
			IN	MPag	30	56	1.960	1.920	1.770	1.580	1.380	1.210	1.020	0.840	0.650	0.542																									
		Full Vacuum					N/A																																	
61	A1APVV	Service Limit		degC			0	50	100	150	200	250	300	350	400	427																									
			PT	MPag	1/2	24	1.960	1.920	1.770	1.580	1.380	1.210	1.020	0.840	0.650	0.542																									
			IN	MPag	30	80	1.858	1.846	1.770	1.580	1.380	1.210	1.020	0.840	0.650	0.542																									
		Full Vacuum	-	-	1/2	4	FV @ 350 degC																																		
					6	10	FV @ 340 degC																																		
62	A1AQ	Service Limit		degC			0	50	100	150	200	250	300	350	394	400	427																									
			PT	MPag	1/2	24	1.960	1.920	1.770	1.580	1.380	1.210	1.020	0.840	0.671	0.650	0.542																									
			IN	MPag	30	48	1.856	1.844	1.770	1.580	1.380	1.210	1.020	0.840	0.671	0.650	0.542																									
		Full Vacuum	-	-	1/2	18	FV @ 175 degC																																			
63	A1AQ03	Service Limit		degC			0	50	100	120	150	200	250	300	320	350	400	427																								
			PT	MPag	1/2	24	1.960	1.920	1.770	1.694	1.580	1.380	1.210	1.020	0.948	0.940	0.650	0.542																								
			IN	MPag	30	30	1.960	1.920	1.770	1.694	1.580	1.380	1.210	1.020	0.948	0.840	0.650	0.542																								
		Full Vacuum	-	-	1/2	4	FV @ 200 degC																																		
					6	30	FV @ 175 degC																																		
64	A1AQ04	Service Limit		degC			0	50	100	120	150	200	250	300	350	400	427																								
			PT	MPag	1/2	4	1.960	1.920	1.770	1.694	1.580	1.380	1.210	1.020	0.840	0.650	0.542																								
		Full Vacuum	-	-	1/2	4	FV @ 175 degC																																		
65	A1AQCL	Service Limit		degC			0	50	100	150	200	250	300	350	400	427																									
			PT	Mpag	1/2	20	1.960	1.920	1.770	1.580	1.380	1.210	1.020	0.840	0.650	0.542																									
			IN	MPag	30	36	1.960	1.920	1.770	1.580	1.380	1.210	1.020	0.840	0.650	0.542																									
		Full Vacuum			1/2	30	FV @ 175 degC																																			
66	A1AS	Service Limit		degC			0	50	100	150	200	250	265	300	350	375	400	425																								
			IN	MPag	1/2	42	1.960	1.920	1.770	1.580	1.380	1.210	1.153	1.020	0.840	0.740	0.650	0.550																								
		Full Vacuum	-	-	1/2	10	FV @ 350 degC																																		
					12	20	FV @ 325 degC																																		
					24	24	FV @ 265 degC																																		
					30	36	FV @ 180 degC																																		
67	A1AY	Service Limit		degC			0	50	100	150	200	232																													
			PT	MPag	1/2	4	1.960	1.920	1.770	1.580	1.380	1.271																													
		Full Vacuum	-	-	***1/2***	***1***	***FV @ 175 degC***																																		
68	A1AY04	Service Limit		degC			0	50	100	120	150	200	232																											
			PT	MPag	1/2	6	1.960	1.920	1.770	1.694	1.580	1.380	1.271																												
		Full Vacuum	-	-	1/2	4	FV @ 175 degC																																		
69	A1EH	Service Limit		degC			-29	0	50	100	150	200	250	300	350	400	450	500	519	538																				
			PT	MPag	1/2	10	1.980	1.980	1.950	1.770	1.580	1.380	1.210	1.020	0.840	0.650	0.460	0.280	0.210	0.140																				
		Full Vacuum					N/A																																		
70	A1G804	Service Limit		degC			-50	0	50	100	150	200	250	300	345																									
			PT	MPag	1/2	24	1.960	1.960	1.920	1.770	1.580	1.380	1.210	1.020	0.858																									
		Full Vacuum					N/A																																	
71	A1GA	Service Limit		degC			-50	0	50	100	150	200	235																											
			PT	MPag	1/2	1 1/2	1.960	1.960	1.920	1.770	1.580	1.380	1.261																											
		Full Vacuum	-	-	1/2	1 1/2	FV @ 175 degC																																	
72	A1GP	Service Limit		degC			-50	0	50	100	150	200	250	300	345																									
			PT	MPag	1/2	24	1.960	1.960	1.920	1.770	1.580	1.380	1.210	1.020	0.858																									
			IN	MPag	30	48	1.960	1.960	1.920	1.770	1.580	1.380	1.210	1.020	0.858																									
		Full Vacuum	-	-	1/2	36	FV @ 175 degC																																	
73	A1GP01	Service Limit		degC			-50	0	50	65	66	69	94	100	150	200	250	300	335	345																			
			PT	MPag	1/2	24	1.960	1.960	1.920	1.875	1.872	1.863	1.788	1.770	1.580	1.380	1.210	1.020	0.894	0.858																			
			IN	MPag	30	42	1.856	1.856	1.844	1.829	1.828	1.826	1.788	1.770	1.580	1.380	1.210	1.020	0.894	0.858																			
		Full Vacuum	-	-	1/2	4	FV @ 335 degC																																	
					6	20	FV @ 175 degC																																	
74	A1GP04	Service Limit		degC			-50	0	50	70	100	107	120	150	160	170	175	200	250	260	265	300	345															
			PT	MPag	1/2	24	1.960	1.960	1.920	1.860	1.770	1.743	1.694	1.580	1.540	1.500	1.480	1.380	1.210	1.172	1.153	1.020	0.858															
		Full Vacuum	-	-	1/2	***1***	***FV @ 265 degC***																																	
					1 1/2	18	FV @ 175 degC																																	
75	A1GPVV	Service Limit		degC			-50	0	50	100	150	200	250	300	345																									
			PT	MPag	1/2	24	1.960	1.960	1.920	1.770	1.580	1.380	1.210	1.020	0.858																									
			IN	MPag	30	48	1.960	1.960	1.920	1.770	1.580	1.380	1.210	1.020	0.858																									
		Full Vacuum	-	-	1/2	36	FV @ 175 degC																																	
76	A1J804	Service Limit		degC			-29	0	50	100	120	150	200	250	300	350	400	425																								
			PT	MPag	1/2	10	1.900	1.900	1.830	1.570	1.510	1.420	1.320	1.210	1.020	0.840	0.650	0.550																								
			IN	MPag	12	18	1.900	1.900	1.830	1.570	1.510	1.420	1.320	1.210	1.020	0.840	0.650	0.550																								
		Full Vacuum					N/A																																		
77	A1JM	Service Limit		degC			-29	0	50	70																													
			PT	MPag	1/2	3	1.900	1.900	1.830	1.726																													
		Full Vacuum					N/A																																		
78	A1JV04	Service Limit		degC			0	50	100	150	200	205																											
			PT	MPag	1/2	10	1.900	1.830	1.570	1.420	1.320	1.309																											
			IN	MPag	12	18	1.900	1.830	1.570	1.420	1.320	1.309																											
		Full Vacuum					N/A																																		
79	***A1LA***	***Service Limit***		***degC***			***0***	***50***	***65***	***70***																													
			PT	***MPag***	***1/2***	***2***	***1.900***	***1.840***	***1.774***	***1.752***																													
		Full Vacuum					***N/A***																																	
80	A1LJ	Service Limit		degC			-29	0	50	65	100	150	200	204																									
			PT	MPag	1/2	2	1.900	1.900	1.840	1.774	1.620	1.480	1.370	1.357																									
		Full Vacuum	-	-	1/2	2	FV @ 175 degC																																	
81	***A1LP***	***Service Limit***	***PT***	***degC***			***0***	***50***	***70***																													
				MPag	***1/2***	***10***	***1.900***	***1.840***	***1.752***																													
			IN	***MPag***	***12***	***18***	***1.900***	***1.840***	***1.752***																													
		Full Vacuum					***N/A***																																	
82	A1LP04	Service Limit		degC			-29	0	50	100	150	200	250	300	350	400	425																								
			PT	MPag	1/2	8	1.900	1.900	1.840	1.620	1.480	1.370	1.210	1.020	0.840	0.650	0.550																								
		Full Vacuum	-	-	1/2	8	FV @ 175 degC																																		

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Sr. No.	PIPING CLASS	CONDITION	BASE (Note1)	UNIT	SIZE From (NPS)	SIZE To (NPS)																														
83	A1LV	Service Limit		degC			-29	0	50	100	150	200	250	300	350	400	425																			
			PT	MPag	1/2	10	1.900	1.900	1.840	1.620	1.480	1.370	1.210	1.020	0.840	0.650	0.550																			
			IN	MPag	12	14	1.900	1.900	1.840	1.620	1.480	1.370	1.210	1.020	0.840	0.650	0.550																			
		Full Vacuum	-	-	***1/2***	***4***	***FV @ 175 degC***																													
84	A1LV04	Service Limit		degC			-29	0	50	100	150	200	250	300	350	400	425																			
			PT	MPag	1/2	10	1.900	1.900	1.840	1.620	1.480	1.370	1.210	1.020	0.840	0.650	0.550																			
			IN	MPag	12	30	1.900	1.900	1.840	1.620	1.480	1.370	1.210	1.020	0.840	0.650	0.550																			
		Full Vacuum	-	-	1/2	***10***	FV @ 175 degC																													
85	A1LW	Service Limit		degC			0	50	100	150	200	250	300	350																						
			PT	MPag	1/2	2	1.900	1.840	1.620	1.480	1.370	1.210	1.020	0.840																						
		Full Vacuum					N/A																													
86	A1LY	Service Limit		degC			-29	0	50	94	100	150	200	232																						
			PT	MPag	1/2	6	1.900	1.900	1.840	1.646	1.620	1.480	1.370	1.267																						
		Full Vacuum	-	-	1/2	4	FV @ 175 degC																													
87	A1LY01	Service Limit		degC			-29	0	50	100	150	200	232																						
			PT	MPag	1/2	6	1.900	1.900	1.840	1.620	1.480	1.370	1.267																						
		Full Vacuum					N/A																													
88	A1LY04	Service Limit		degC			-29	0	50	100	120	150	200	232																						
			PT	MPag	1/2	4	1.900	1.900	1.840	1.620	1.564	1.480	1.370	1.267																						
		Full Vacuum	-	-	1/2	4	FV @ 175 degC																													
89	A1YV	Service Limit		degC			0	50	83	100	150	200	250	300	350	400	427																			
			PT	MPag	1/2	6	2.000	1.950	1.831	1.770	1.580	1.380	1.210	1.020	0.840	0.650	0.542																			
		Full Vacuum	-	-	1/2	6	FV @ 175 degC																													
90	A1YV04	Service Limit		degC			0	50	100	150	200	250	300	350	400	427																				
			PT	MPag	1/2	6	2.000	1.950	1.770	1.580	1.380	1.210	1.020	0.840	0.650	0.542																				
		Full Vacuum	-	-	1/2	6	***FV @ 175 degC***																													
91	A28P	Service Limit		degC			-29	0	50	100	150	200	250	300	350	378	400	450	500	538																
			PT	MPag	1/2	24	2.000	2.000	1.950	1.770	1.580	1.380	1.210	1.020	0.840	0.729	0.650	0.460	0.280	0.140																
			IN	MPag	30	42	1.890	1.890	1.848	1.701	1.580	1.380	1.210	1.020	0.840	0.729	0.650	0.460	0.280	0.140																
		Full Vacuum	-	-	1/2	24	FV @ 175 degC																													
92	A2A201	Service Limit		degC			0	50	100	150	200	250	300	350	400	427																				
			PT	MPag	1/2	24	1.960	1.920	1.770	1.580	1.380	1.210	1.020	0.840	0.650	0.542																				
		Full Vacuum	-	-	1/2	10	FV @ 320 degC																													
					12	24	FV @ 175 degC																													
93	A2A4	Service Limit		degC			0	50	100	131	150	156	200	250	300	350	400	427																		
			PT	MPag	1/2	24	1.960	1.920	1.770	1.652	1.580	1.556	1.380	1.210	1.020	0.840	0.650	0.542																		
		Full Vacuum	-	-	1/2	24	FV @ 175 degC																													
94	A2A5	Service Limit		degC			0	50	100	125	150	156	200	204	200	250	300	350	400	427																
			PT	MPag	1/2	24	1.960	1.920	1.770	1.675	1.580	1.556	1.380	1.366	1.380	1.210	1.020	0.840	0.650	0.542																
			IN	MPag	30	30	1.960	1.920	1.770	1.675	1.580	1.556	1.380	1.366	1.380	1.210	1.020	0.840	0.650	0.542																
		Full Vacuum	-	-	1/2	***2***	***FV @ 265 degC***																													
					3	30	FV @ 175 degC																													
95	A2A501	Service Limit		degC			0	50	67	70	74	77	80	100	133	150	158	175	200	204	200	250	300	350	400	427								
			PT	MPag	1/2	12	1.960	1.920	1.869	1.860	1.848	1.839	1.830	1.770	1.644	1.580	1.548	1.480	1.380	1.366	1.380	1.210	1.020	0.840	0.650	0.542								
					1/2	***2***	***FV @ 265 degC***																													
		Full Vacuum	-	-	***3***	12	FV @ 175 degC																													
96	A2A503	Service Limit		degC			0	50	70	100	110	125	150	170	200	250	265	300	350	400	427														
			PT	MPag	1/2	24	1.960	1.920	1.860	1.770	1.732	1.675	1.580	1.500	1.380	1.210	1.153	1.020	0.840	0.650	0.542															
					1/2	4	FV @ 265 degC																													
		Full Vacuum	-	-	6	***24***	FV @ 175 degC																													
97	A2A604	Service Limit		degC			0	50	100	150	200	250	300	350	400	427																				
			PT	MPag	1/2	10	1.960	1.920	1.770	1.580	1.380	1.210	1.020	0.840	0.650	0.542																				
		Full Vacuum	-	-	1/2	10	FV @ 175 degC																													
98	A2A704	Service Limit		degC			0	50	100	150	200	204																								
			PT	MPag	1/2	10	1.960	1.920	1.770	1.580	1.380	1.366																								
		Full Vacuum	-	-	1/2	10	FV @ 175 degC																													
99	A2AA	Service Limit		degC			0	50	70	100																										
			IN	MPag	1/2	24	1.960	1.920	1.860	1.770																										
		Full Vacuum	-	-	1/2	4	FV @ 375 degC																													
100	A2AC01	Service Limit		degC			0	50	100	150	200	250	294	300	350	400	427																			
			PT	MPag	1/2	24	1.960	1.920	1.770	1.580	1.380	1.210	1.042	1.020	0.840	0.650	0.542																			
					1/2	***2***	***FV @ 265 degC***																													
		Full Vacuum	-	-	***3***	20	FV @ 175 degC																													
101	A2AD	Service Limit		degC			0	50	65	100	107	150	200																							
			IN	MPag	1/2	10	1.960	1.920	1.875	1.770	1.743	1.580	1.380																							
		Full Vacuum	-	-	1/2	8	FV @ 175 degC																													
102	A2AG	Service Limit		degC			0	50	100	150	200	250	265																							
			IN	MPag	1/2	6	1.960	1.920	1.770	1.580	1.380	1.210	1.153																							
		Full Vacuum	-	-	***1/2***	***3/4***	***FV @ 200 degC***																													
103	A2AL	Service Limit		degC			0	50	55	65	87	100	125	150	200	250	300	350	400	427																
			PT	MPag	1/2	20	1.960	1.920	1.905	1.875	1.809	1.770	1.675	1.580	1.380	1.210	1.020	0.840	0.650	0.542																
		Full Vacuum	-	-	1/2	20	FV @ 175 degC																													
104	A2AL01	Service Limit		degC			0	50	100	150	200	250	300	350	400	427																				
			PT	MPag	1/2	20	1.960	1.920	1.770	1.580	1.380	1.210	1.020	0.840	0.650	0.542																				
		Full Vacuum					N/A																													
105	A2AL03	Service Limit		degC			0	50	100	150	200	250	300	350	400	427																				
			PT	MPag	1/2	4	1.960	1.920	1.770	1.580	1.380	1.210	1.020	0.840	0.650	0.542																				
		Full Vacuum					N/A																													
106	A2AL04	Service Limit		degC			0	50	100	150	200	250	300	350	400	427																				
			PT	MPag	1/2	4	1.960	1.920	1.770	1.580	1.380	1.210	1.020	0.840	0.650	0.542																				
		Full Vacuum					N/A																													
107	A2AM	Service Limit		degC			0	50	100	150	200	250	300	350	400	427																				
			PT	MPag	1/2	8	1.960	1.920	1.770	1.580	1.380	1.210	1.020	0.840	0.650	0.542																				
		Full Vacuum	-	-			N/A																													
108	A2AN	Service Limit		degC			0	50	70	100	150	200	250																							
			PT	MPag	1/2	18	1.960	1.920	1.860	1.770	1.580	1.380	1.210																							
		Full Vacuum	-	-	1/2	10	FV @ 175 degC																													
109	A2AN01	Service Limit		degC			0	50	70																											
			PT	MPag	1/2	10	1.960	1.920	1.860																											
		Full Vacuum					N/A																													
110	A2AN03	Service Limit		degC			0	50	70	100	150	200	250	265																						
			PT	MPag	1/2	4	1.960	1.920	1.860	1.770	1.580	1.380	1.210	1.153																						
		Full Vacuum	-	-	1/2	4	FV @ 175 degC																													
111	A2AN04	Service Limit		degC			0	50	100	150	200	250	265	300	350	358																				
			PT	MPag	1/2	8	1.960	1.920	1.770	1.580	1.380	1.210	1.153	1.020	0.840	0.808																				
		Full Vacuum	-	-	1/2	***2***	***FV @ 265 degC***																													
					3	6	FV @ 175 degC																													
112	A2AP	Service Limit		degC			0	50	81	93	100	120	150	153	153.2	200	242	250	265	270	280	300	302	303	350	378	380	381	400	427
			PT	MPag	1/2	24	1.960	1.920	1.827	1.791	1.770	1.694	1.580	1.568	1.567	1.380	1.237	1.210	1.153	1.134	1.096	1.020	1.012	1.009	0.840	0.729	0.722	0.718	0.650	0.542
			IN	MPag	30	48	1.960	1.920	1.827	1.791	1.770	1.694	1.580	1.568	1.567	1.380	1.237	1.210	1.153	1.134	1.096	1.020	1.012	1.009	0.840	0.729	0.722	0.718	0.650	0.542
					1/2	4	FV @ 320 degC																													
		Full Vacuum	-	-	***6***	***12***	***FV @ 250 degC***																													
					14	30	FV @ 175 degC																													

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Sr. No.	PIPING CLASS	CONDITION	BASE (Note1)	UNIT	SIZE From (NPS)	SIZE To (NPS)																												
113	A2AP01	Service Limit		degC			0	50	100	150	200	250	300	350	400	425	427																	
			PT	MPag	1/2	24	1.960	1.920	1.770	1.580	1.380	1.210	1.020	0.840	0.650	0.550	0.542																	
			IN	MPag	30	30	1.960	1.920	1.770	1.580	1.380	1.210	1.020	0.840	0.650	0.550	0.542																	
		Full Vacuum	-	-	1/2	3	FV @ 425 degC																											
			-	-	4	6	FV @ 250 degC																											
114	A2AP02	Service Limit		degC			0	50	100	150	200	250	300	350	400	427																		
			PT	Mpag	1/2	20	1.960	1.920	1.770	1.580	1.380	1.210	1.020	0.840	0.650	0.542																		
		Full Vacuum	-	-	1/2	10	FV @ 175 degC																											
115	A2AP03	Service Limit		degC			0	50	100	150	200	220	250	300	350	400	427																	
			PT	MPag	1/2	24	1.960	1.920	1.770	1.580	1.380	1.312	1.210	1.020	0.840	0.650	0.542																	
			IN	MPag	30	48	1.890	1.877	1.770	1.580	1.380	1.312	1.210	1.020	0.840	0.650	0.542																	
		Full Vacuum	-	-	1/2	6	FV @ 175 degC																											
116	A2AP04	Service Limit		degC			0	50	100	150	200	250	300	350	400	427																		
			PT	MPag	1/2	24	1.960	1.920	1.770	1.580	1.380	1.210	1.020	0.840	0.650	0.542																		
			IN	MPag	26	48	1.960	1.920	1.770	1.580	1.380	1.210	1.020	0.840	0.650	0.542																		
		Full Vacuum	-	-	1/2	10	FV @ 175 degC																											
117	A2APCL	Service Limit		degC			0	50	100	150	200	250	300	350	400	427																		
			PT	MPag	1/2	10	1.960	1.920	1.770	1.580	1.380	1.210	1.020	0.840	0.650	0.542																		
		Full Vacuum					N/A																											
118	A2APCM	Service Limit		degC			0	50	100	150	200	250	300	350	400	427																		
			PT	MPag	1/2	24	1.960	1.920	1.770	1.580	1.380	1.210	1.020	0.840	0.650	0.542																		
			IN	MPag	30	56	1.890	1.877	1.770	1.580	1.380	1.210	1.020	0.840	0.650	0.542																		
		Full Vacuum			1/2	24	FV @ 220 degC																											
119	A2AQ	Service Limit		degC			0	50	80	100	119	150	155	200	250	260	300	350	396	400	427													
			PT	MPag	1/2	24	1.960	1.920	1.830	1.770	1.697	1.580	1.560	1.380	1.210	1.172	1.020	0.840	0.664	0.650	0.542													
			IN	MPag	30	92	1.960	1.920	1.830	1.770	1.697	1.580	1.560	1.380	1.210	1.172	1.020	0.840	0.664	0.650	0.542													
		Full Vacuum	-	-	1/2	***2***	***FV @ 265 degC***																											
					3	80	FV @ 175 degC																											
120	A2AQ01	Service Limit		degC			0	50	71	75	87	100	107	128	132	150	158	200	250	300	350	400	427											
			PT	MPag	1/2	24	1.960	1.920	1.857	1.845	1.809	1.770	1.743	1.663	1.648	1.580	1.548	1.380	1.210	1.020	0.840	0.650	0.542											
			IN	MPag	30	48	1.960	1.920	1.857	1.845	1.809	1.770	1.743	1.663	1.648	1.580	1.548	1.380	1.210	1.020	0.840	0.650	0.542											
		Full Vacuum	-	-	1/2	24	FV @ 175 degC																											
121	A2AQ03	Service Limit		degC			0	50	100	120	150	200	250	252	300	350	400	427																	
			PT	MPag	1/2	16	1.960	1.920	1.770	1.694	1.580	1.380	1.210	1.202	1.020	0.840	0.650	0.542																	
		Full Vacuum	-	-	1/2	14	FV @ 175 degC																											
122	A2AQ04	Service Limit		degC			0	50	100	120	125	150	200	250	300	350	400	427																	
			PT	MPag	1/2	24	1.960	1.920	1.770	1.694	1.675	1.580	1.380	1.210	1.020	0.840	0.650	0.542																	
			IN	MPag	30	36	1.960	1.920	1.770	1.694	1.675	1.580	1.380	1.210	1.020	0.840	0.650	0.542																	
		Full Vacuum	-	-	1/2	10	FV @ 175 degC																											
123	A2AQCL	Service Limit		degC			0	50	100	150	200	250	300	350	400	427																		
			PT	MPag	1/2	24	1.960	1.920	1.770	1.580	1.380	1.210	1.020	0.840	0.650	0.542																		
			IN	MPag	30	36	1.960	1.920	1.770	1.580	1.380	1.210	1.020	0.840	0.650	0.542																		
		Full Vacuum			1/2	30	FV @ 175 degC (Note 2)																											
124	A2AQVV	Service Limit		degC			0	50	100	150	200	250	300	350	400	427																		
			PT	MPag	1/2	24	1.960	1.920	1.770	1.580	1.380	1.210	1.020	0.840	0.650	0.542																		
			IN	MPag	30	92	1.960	1.920	1.770	1.580	1.380	1.210	1.020	0.840	0.650	0.542																		
		Full Vacuum	-	-	1/2	80	FV @ 175 degC																											
125	A2AR	Service Limit		degC			0	50	69	80	92	100	150	185	200	250	300	303	350	400	427													
			PT	MPag	1/2	24	1.960	1.920	1.863	1.830	1.794	1.770	1.580	1.440	1.380	1.210	1.020	1.009	0.840	0.650	0.542													
			IN	MPag	30	48	1.890	1.877	1.859	1.830	1.794	1.770	1.580	1.440	1.380	1.210	1.020	1.009	0.840	0.650	0.542													
		Full Vacuum	-	-	1/2	14	FV @ 175 degC																											
126	A2AR01	Service Limit		degC			0	50	65	70	80	100	140	150	200	250	265	300	303	350	400	427												
			PT	MPag	1/2	24	1.960	1.920	1.875	1.860	1.830	1.770	1.618	1.580	1.380	1.210	1.153	1.020	1.009	0.840	0.650	0.542												
			IN	MPag	30	***54***	1.960	1.920	1.875	1.860	1.830	1.770	1.618	1.580	1.380	1.210	1.153	1.020	1.009	0.840	0.650	0.542												
		Full Vacuum	-	-	1/2	***2***	***FV @ 265 degC***																											
					3	52	FV @ 175 degC																											
127	A2AR03	Service Limit		degC			0	50	100	110	120	150	170	200	204	200	250	300	350	400	427													
			PT	MPag	1/2	24	1.960	1.920	1.770	1.732	1.694	1.580	1.500	1.380	1.366	1.380	1.210	1.020	0.840	0.650	0.542													
			IN	MPag	30	48	1.960	1.920	1.770	1.732	1.694	1.580	1.500	1.380	1.366	1.380	1.210	1.020	0.840	0.650	0.542													
		Full Vacuum	-	-	1/2	***3***	***FV @ 265 degC***																											
					4	42	FV @ 175 degC																											
128	A2AR04	Service Limit		degC			0	50	100	125	150	200	240	250	265	300	350	400	427															
			PT	MPag	1/2	14	1.960	1.920	1.770	1.675	1.580	1.380	1.244	1.210	1.153	1.020	0.840	0.650	0.542															
		Full Vacuum	-	-	1/2	14	FV @ 208 degC																											
129	A2AS	Service Limit		degC			0	50	100	135	150	155	200	250	265	300	325	350	400	425														
			IN	MPag	1/2	36	1.890	1.877	1.770	1.637	1.580	1.560	1.380	1.210	1.153	1.020	0.930	0.840	0.650	0.550														
		Full Vacuum	-	-	1/2	4	FV @ 325 degC																											
					6	14	FV @ 300 degC																											
					16	24	FV @ 265 degC																											
130	A2AW	Service Limit		degC			0	50	60	76																								
			IN	MPag	1/2	24	1.960	1.920	1.890	1.842																								
			IN	MPag	30	76	1.870	1.858	1.848	1.835																								
			IN	MPag	80	108	1.590	1.580	1.571	1.560																								
		Full Vacuum	-	-	1/2	4	FV @ 250 degC																											
					6	20	FV @ 175 degC																											
131	A2AY04	Service Limit		degC			0	50	100	120																								
			PT	MPag	1/2	6	1.960	1.920	1.770	1.694																								
		Full Vacuum					N/A																											
132	A2DC01	Service Limit		degC			-29	0	50	100	150	200	250	295	300	350	400	450	500	538														
			PT	MPag	1/2	20	1.980	1.980	1.950	1.770	1.580	1.380	1.210	1.039	1.020	0.840	0.650	0.460	0.280	0.140														
		Full Vacuum	-	-	1/2	20	FV @ 175 degC																											
133	A2DP01	Service Limit		degC			-29	0	50	100	150	200	250	300	323	350	400	450	500	538														
			PT	MPag	1/2	24	1.980	1.980	1.950	1.770	1.580	1.380	1.210	1.020	0.937	0.840	0.650	0.460	0.280	0.140														
			IN	MPag	30	30	1.980	1.980	1.950	1.770	1.580	1.380	1.210	1.020	0.937	0.840	0.650	0.460	0.280	0.140														
		Full Vacuum	-	-	1/2	6	FV @ 323 degC																											
					8	30	FV @ 175 degC																											
134	A2FC01	Service Limit		degC			-29	0	50	100	150	200	250	300	345	350	400	450	500	538														
			PT	MPag	1/2	24	1.980	1.980	1.950	1.770	1.580	1.380	1.210	1.020	0.858	0.840	0.650	0.460	0.280	0.140														
			IN	MPag	30	30	1.980	1.980	1.950	1.770	1.580	1.380	1.210	1.020	0.858	0.840	0.650	0.460	0.280	0.140														
		Full Vacuum			1/2	30	FV @ 175 degC																											
135	A2GN	Service Limit		degC			-50	0	50	65																								
			PT	MPag	1/2	8	1.960	1.960	1.920	1.875																								
		Full Vacuum			1/2	4	FV @ 65 degC																											
136	A2GP	Service Limit		degC			-50	0	50	100	150	175	200	250	300	345																		
			PT	MPag	1/2	18	1.960	1.960	1.920	1.770	1.580	1.480	1.380	1.210	1.020	0.858																		
		Full Vacuum			1/2	18	FV @ 175 degC																											
137	A2GP04	Service Limit		degC			-50	0	50	100	150	200	250	260	300	345																		
			PT	MPag	1/2	8	1.960	1.960	1.920	1.770	1.580	1.380	1.210	1.172	1.020	0.858																		
		Full Vacuum			1/2	6	FV @ 175 degC																											
138	A2GQ	Service Limit		degC			-50	0	50	100	150	200	250	300	345																			
			PT	MPag	1/2	24	1.960	1.960	1.920	1.770	1.580	1.380	1.210	1.020	0.858																			
			IN	MPag	30	92	1.868	1.868	1.856	1.770	1.580	1.380	1.210	1.020	0.858																			
		Full Vacuum			***1/2***	***48***	***FV @ 175 degC***																											

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| Sr. No. | PIPING CLASS | CONDITION | BASE (Note1) | UNIT | SIZE From (NPS) | SIZE To (NPS) | | |

| Sr. No. | PIPING CLASS | CONDITION | BASE (Note1) | UNIT | SIZE From (NPS) | SIZE To (NPS) | | |

Sr. No.	PIPING CLASS	CONDITION	BASE (Note1)	UNIT	SIZE From (NPS)	SIZE To (NPS)																												
199	B1AP	Service Limit		degC			0	50	100	150	200	250	300	350	400	427																		
			PT	MPag	1/2	14	5.110	5.010	4.660	4.510	4.380	4.190	3.980	3.760	3.470	2.833																		
			IN	MPag	16	18	4.704	4.697	4.593	4.465	4.314	4.148	3.944	3.707	3.246	2.681																		
			IN	MPag	20	36	2.229	2.214	2.165	2.105	2.034	1.955	1.859	1.747	1.538	1.270																		
		Full Vacuum	-	-	1/2	18	FV @ 175 degC																											
200	B1AP01	Service Limit		degC			0	50	100	150	156	164	200	205	217	227	231	250	279	293	300	335	350	400	427									
			PT	MPag	1/2	14	5.110	5.010	4.660	4.510	4.494	4.473	4.380	4.361	4.315	4.277	4.262	4.190	4.068	4.009	3.980	3.826	3.760	3.470	2.833									
			IN	MPag	16	18	3.724	3.708	3.626	3.525	3.508	3.487	3.406	3.395	3.363	3.336	3.325	3.274	3.184	3.137	3.113	2.983	2.927	2.570	2.123									
			IN	MPag	20	30	2.820	2.802	2.740	2.663	2.651	2.634	2.573	2.565	2.541	2.521	2.512	2.474	2.405	2.370	2.352	2.253	2.211	1.946	1.607									
					1/2	10	FV @ 335 degC																											
		Full Vacuum	-	-	12	24	FV @ 206 degC																											
					30	30	FV @ 175 degC																											
201	B1AP02	Service Limit		degC			0	50	100	150	200	250	300	350	400	427																		
			PT	MPag	1/2	14	5.110	5.010	4.660	4.510	4.380	4.190	3.980	3.760	3.470	2.833																		
			IN	MPag	16	16	3.724	3.724	3.724	3.724	3.706	3.565	3.385	3.195	2.570	2.123																		
		Full Vacuum	-	-	1/2	14	FV @ 175 degC																											
202	B1AP04	Service Limit		degC			0	50	100	150	185	200	250	300	350	400	427																		
			PT	MPag	1/2	14	5.110	5.010	4.660	4.510	4.419	4.380	4.190	3.980	3.760	3.470	2.833																		
			IN	MPag	16	16	4.704	4.704	4.660	4.510	4.419	4.380	4.190	3.980	3.760	3.246	2.681																		
			IN	MPag	18	30	2.820	2.802	2.740	2.663	2.596	2.573	2.474	2.352	2.211	1.946	1.607																		
					1/2	8	FV @ 400 degC																											
		Full Vacuum	-	-	10	16	FV @ 251 degC																											
					18	24	FV @ 208 degC																											
203	B1APCM	Service Limit		degC			0	50	100	150	200	250	300	350	400	427																		
			PT	MPag	1/2	6	5.110	5.010	4.660	4.510	4.380	4.190	3.980	3.760	3.470	2.833																		
		Full Vacuum					N/A																											
204	B1AQ02	Service Limit		degC			0	50	100	150	200	250	300	350	400	427																		
			PT	MPag	1/2	14	5.110	5.010	4.660	4.510	4.380	4.190	3.980	3.760	3.470	2.833																		
			IN	MPag	16	18	3.308	3.308	3.308	3.307	3.291	3.166	3.007	2.837	2.282	1.885																		
		Full Vacuum			1/2	18	FV @ 175 degC																											
205	B1AR02	Service Limit		degC			0	50	100	150	200	250	300	350	400	427																		
			PT	MPag	1/2	12	5.110	5.010	4.660	4.510	4.380	4.190	3.980	3.760	3.470	2.833																		
		Full Vacuum			1/2	8	FV @ 175 degC																											
206	B1AS	Service Limit		degC			0	50	100	150	200	250	300	350	400	425																		
			IN	MPag	1/2	6	5.110	5.010	4.660	4.510	4.380	4.190	3.980	3.760	3.470	2.880																		
			IN	MPag	8	30	3.489	3.489	3.489	3.489	3.406	3.274	3.113	2.927	2.408	2.015																		
					1/2	6	FV @ 425 degC																											
		Full Vacuum	-	-	8	8	FV @ 375 degC																											
					10	20	FV @ 350 degC																											
					24	24	FV @ 320 degC																											
207	***B1AY***	***Service Limit***	***PT***	***degC***			***0***	***50***	***100***	***150***	***200***	***232***																						
				MPag	***1/2***	***1***	***5.110***	***5.010***	***4.660***	***4.510***	***4.380***	***4.258***																						
		Full Vacuum			***1/2***	***1***	***FV @ 175 degC***																											
208	B1AY04	Service Limit		degC			0	50	100	150	200	232																						
			PT	MPag	1/2	8	5.110	5.010	4.660	4.510	4.380	4.258																						
		Full Vacuum			1/2	8	FV @ 175 degC																											
209	B1DH04	Service Limit		degC			-29	0	50	100	150	200	250	300	350	400	450	500	520	550	593													
			PT	MPag	1/2	14	5.170	5.170	5.170	5.150	4.970	4.800	4.630	4.290	4.030	3.650	3.370	2.570	2.001	1.270	0.685													
			IN	MPag	16	30	4.704	4.704	4.631	4.376	4.231	4.123	4.054	3.954	3.776	3.573	3.370	2.438	1.728	1.023	0.49													
		Full Vacuum	-	-	1/2	30	FV @ 175 degC																											
210	B1DP04	Service Limit		degC			-29	0	50	100	150	200	250	300	350	400	450	500	550	593														
			PT	MPag	1/2	14	5.170	5.170	5.170	5.150	4.970	4.800	4.630	4.290	4.030	3.650	3.370	2.570	1.270	0.685														
			IN	MPag	16	48	4.704	4.704	4.631	4.376	4.231	4.123	4.054	3.954	3.776	3.573	3.370	2.489	1.095	0.525														
		Full Vacuum	-	-	1/2	42	FV @ 400 degC																											
211	B1EH	Service Limit		degC			-29	0	50	100	150	200	250	300	350	400	450	500	550	593														
			PT	MPag	1/2	10	5.170	5.170	5.170	5.150	5.030	4.860	4.630	4.290	4.030	3.650	3.370	2.820	1.560	0.790														
		Full Vacuum			1/2	10	FV @ 175 degC																											
212	***B1G804***	***Service Limit***		***degC***			***-50***	***0***	***50***	***100***	***150***	***200***	***250***	***300***	***345***																			
			PT	***MPag***	***1/2***	***4***	***5.110***	***5.110***	***5.010***	***4.660***	***4.510***	***4.380***	***4.190***	***3.980***	***3.782***																		
		Full Vacuum					***N/A***																											
213	B1GH04	Service Limit		degC			-50	0	50	85	100	150	200	240	250	300	345																	
			PT	MPag	1/2	14	5.110	5.110	5.010	4.765	4.660	4.510	4.380	4.228	4.190	3.980	3.782																	
			IN	MPag	16	20	3.733	3.733	3.708	3.651	3.626	3.525	3.406	3.301	3.274	3.113	2.943																	
		Full Vacuum			1/2	***20***	FV @ 175 degC																											
214	B1GP	Service Limit		degC			-50	0	50	67	70	85	88	100	145	150	200	250	265	280	300	345												
			PT	MPag	1/2	14	5.110	5.110	5.010	4.891	4.870	4.765	4.744	4.660	4.525	4.510	4.380	4.190	4.127	4.064	3.980	3.782												
			IN	MPag	16	48	2.009	2.009	1.996	1.978	1.976	1.965	1.963	1.952	1.903	1.897	1.833	1.762	1.739	1.712	1.676	1.584												
		Full Vacuum			1/2	***1 1/2***	***FV @ 265 degC***																											
					2	16	FV @ 175 degC																											
215	B1GP01	Service Limit		degC			-50	0	50	66	67	79	81	94	100	131	150	175	200	250	265	300	345											
			PT	MPag	1/2	14	5.110	5.110	5.010	4.898	4.891	4.807	4.793	4.702	4.660	4.567	4.510	4.445	4.380	4.190	4.127	3.980	3.782											
			IN	MPag	16	20	4.248	4.248	4.220	4.184	4.182	4.164	4.160	4.140	4.126	4.055	4.011	3.934	3.876	3.726	3.677	3.543	3.349											
			IN	MPag	24	36	2.348	2.348	2.332	2.313	2.311	2.301	2.300	2.288	2.281	2.241	2.217	2.175	2.142	2.060	2.032	1.958	1.851											
		Full Vacuum	-	-	1/2	***12***	FV @ 335 degC																											
					14	24	FV @ 175 degC																											
216	B1GP04	Service Limit		degC			-50	0	50	70	85	100	145	150	180	200	250	260	265	300	345												
			PT	MPag	1/2	14	5.110	5.110	5.010	4.870	4.765	4.660	4.525	4.510	4.432	4.380	4.190	4.148	4.127	3.980	3.782												
			IN	MPag	16	16	4.704	4.704	4.704	4.704	4.704	4.660	4.525	4.510	4.432	4.380	4.190	4.148	4.127	3.980	3.782												
			IN	MPag	18	24	3.530	3.530	3.507	3.472	3.453	3.429	3.343	3.333	3.259	3.221	3.097	3.071	3.055	2.944	2.784												
		Full Vacuum			1/2	24	FV @ 175 degC																											
217	B1J502	Service Limit		degC			-29	0	50	100	150	200	250	260	300	350	400	425															
			PT	MPag	1/2	***16***	4.960	4.960	4.780	4.090	3.700	3.450	3.250	3.218	3.090	2.960	2.840	2.800															
			IN	***MPag***	***12***	***18***	***4.729***	***4.729***	***4.729***	***4.090***	***3.700***	***3.450***	***3.250***	***3.218***	***3.090***	***2.960***	***2.840***	***2.800***														
		Full Vacuum			1/2	***18***	FV @ 175 degC																											
218	B1KH04	Service Limit		degC			-29	0	50	100	150	200	250	300	350	400	450	500	550	570													
			PT	MPag	1/2	6	4.960	4.960	4.780	4.090	3.700	3.450	3.250	3.090	2.960	2.840	2.740	2.650	2.360	2.136														
		Full Vacuum			***1/2***	***6***	***FV @ 400 degC***																											
219	B1LP04	Service Limit		degC			-29	0	50	100	146	150	200	250	300	350	400	425															
			PT	MPag	1/2	8	4.960	4.960	4.810	4.220	3.879	3.850	3.570	3.340	3.160	3.030	2.940	2.910															
		Full Vacuum			1/2	8	FV @ 175 degC																											
220	B1LV04	Service Limit		degC			-29	0	50	100	150	200	250	300	350	400	425																
			PT	MPag	1/2	10	4.960	4.960	4.810	4.220	3.850	3.570	3.340	3.160	3.030	2.940	2.910																
		Full Vacuum					N/A																										
221	B1LW	Service Limit		degC			0	50	100																								
			PT	MPag	1/2	1	4.960	4.810	4.220																								
		Full Vacuum					N/A																										
222	B1LY	Service Limit		degC			-29	0	50	67	100	150	200	232																			
			PT	MPag	1/2	4	4.960	4.960	4.810	4.609	4.220	3.850	3.570	3.422																			
		Full Vacuum			1/2	4	FV @ 175 degC																											
223	B1LY04	Service Limit		degC			0	50	70																								
			PT	MPag	1/2	4	4.960	4.810	4.574																								
		Full Vacuum					N/A																										
224	B1MQ02	Service Limit		degC			-29	0	50	100	150	200	250	300	350	400	450	500	538														
			PT	MPag	1/2	10	4.960	4.960	4.860	4.420	4.100	3.830	3.600	3.410	3.260	3.160	3.080	2.820	2.520														
			IN	MPag	12	14	4.960	4.960	4.860	4.420	4.100	3.830	3.600	3.410	3.260	3.160	3.080	2.820	2.520														
		Full Vacuum			1/2	14	FV @ 175 degC																											

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| Sr. No. | PIPING CLASS | CONDITION | BASE (Note1) | UNIT | SIZE From (NPS) | SIZE To (NPS) | | |

Sr. No.	PIPING CLASS	CONDITION	BASE (Note1)	UNIT	SIZE From (NPS)	SIZE To (NPS)																																	
252	B2AQ02	Service Limit		degC			0	50	100	150	200	250	300	350	400	427																							
			PT	MPag	1/2	14	5.110	5.010	4.660	4.510	4.380	4.190	3.980	3.760	3.470	2.833																							
			IN	MPag	16	30	2.687	2.687	2.687	2.687	2.674	2.572	2.443	2.305	1.854	1.532																							
		Full Vacuum	-	-	1/2	30	FV @ 175 degC																																	
253	B2AQ04	Service Limit		degC			0	50	100	120	150	170	195	200	250	300	350	400	427																					
			PT	MPag	1/2	12	5.110	5.010	4.660	4.600	4.510	4.458	4.393	4.380	4.190	3.980	3.760	3.470	2.833																					
		Full Vacuum	-	-	1/2	6	FV @ 208 degC																																	
			-	-	8	10	FV @ 175 degC																																	
254	B2AR	Service Limit		degC			0	50	100	150	184																													
			PT	MPag	1/2	***4***	5.110	5.010	4.660	4.510	4.421																													
		Full Vacuum					N/A																																	
255	B2AR01	Service Limit		degC			0	50	100	150	200	250	265	300	350	400	427																							
			PT	MPag	1/2	14	5.110	5.010	4.660	4.510	4.380	4.190	4.127	3.980	3.760	3.470	2.833																							
			IN	MPag	16	30	2.269	2.254	2.204	2.143	2.070	1.991	1.964	1.892	1.779	1.566	1.293																							
		Full Vacuum			1/2	***3***	***FV @ 265 degC***																																	
					4	24	FV @ 175 degC																																	
256	B2AR02	Service Limit		degC			0	50	100	150	200	250	300	350	400	427																							
			PT	MPag	1/2	14	5.110	5.010	4.660	4.510	4.380	4.190	3.980	3.760	3.470	2.833																							
			IN	MPag	16	24	2.687	2.687	2.687	2.687	2.674	2.572	2.443	2.305	1.854	1.532																							
		Full Vacuum			1/2	24	FV @ 175 degC																																	
257	B2AR03	Service Limit		degC			0	50	100	120	150	200	204	250	300	350	400	427																					
			PT	MPag	1/2	4	5.110	5.010	4.660	4.600	4.510	4.380	4.364	4.190	3.980	3.760	3.470	2.833																					
		Full Vacuum			1/2	4	FV @ 175 degC																																	
258	B2AR04	Service Limit		degC			0	50	100	135	150	200	204	250	300	350	400	427																					
			PT	MPag	1/2	14	5.110	5.010	4.660	4.555	4.510	4.380	4.364	4.190	3.980	3.760	3.470	2.833																					
		Full Vacuum			1/2	4	FV @ 175 degC																																	
259	B2AS	Service Limit		degC			0	50	70	100	135	150	155	200	250	260	265	300	350	375	400	410	425															
			IN	MPag	1/2	6	5.110	5.010	4.870	4.660	4.555	4.510	4.497	4.380	4.190	4.148	4.127	3.980	3.760	3.640	3.470	3.234	2.880																
			IN	MPag	8	24	3.661	3.661	3.661	3.661	3.620	3.589	3.575	3.468	3.334	3.307	3.289	3.170	2.980	2.870	2.526	2.361	2.114																
		Full Vacuum	-	-	1/2	***6***	***FV @ 425 degC***																																	
					8	***24***	***FV @ 350 degC***																																	
260	B2AW	Service Limit		degC			0	50	76																															
			PT	MPag	1/2	14	5.110	5.010	4.828																															
			IN	MPag	16	16	2.687	2.687	2.687																															
		Full Vacuum			***1/2***	***16***	***FV @ 76 degC***																																	
261	B2AW04	Service Limit		degC			0	50	76																															
			PT	MPag	1/2	3	5.110	5.010	4.828																															
		Full Vacuum					N/A																																	
262	B2AY04	Service Limit		degC			0	50	100	150	170																													
			PT	MPag	1/2	2	5.110	5.010	4.660	4.510	4.458																													
		Full Vacuum					N/A																																	
263	B2DC01	Service Limit		degC			-29	0	50	100	150	200	250	300	320	350	400	450	500	550	593																		
			PT	MPag	1/2	14	5.170	5.170	5.170	5.150	4.970	4.800	4.630	4.290	4.170	4.030	3.650	3.370	2.570	1.270	0.685																		
		Full Vacuum			1/2	14	FV @ 175 degC																																	
264	B2DH	Service Limit		degC			-29	0	50	100	150	200	250	300	350	368	400	450	500	550	593																		
			PT	MPag	1/2	14	5.170	5.170	5.170	5.150	4.970	4.800	4.630	4.290	4.030	3.929	3.650	3.370	2.570	1.270	0.685																		
			IN	MPag	16	24	3.801	3.801	3.801	3.801	3.799	3.747	3.619	3.510	3.402	3.353	3.284	2.979	1.959	0.821	0.393																		
		Full Vacuum			1/2	24	FV @ 175 degC																																	
265	B2DP01	Service Limit		degC			-29	0	50	100	150	200	250	300	318	323	350	400	450	500	550	593																	
			PT	MPag	1/2	14	5.170	5.170	5.150	5.150	4.970	4.800	4.630	4.290	4.182	4.152	4.030	3.650	3.370	2.570	1.270	0.685																	
			IN	MPag	16	30	2.687	2.687	2.646	2.500	2.417	2.356	2.316	2.259	2.238	2.226	2.157	2.041	1.959	1.420	0.605	0.290																	
		Full Vacuum			1/2	30	FV @ 175 degC																																	
266	B2FC01	Service Limit		degC			-29	0	50	100	150	200	250	300	345	350	400	450	500	550	593																		
			PT	MPag	1/2	14	5.170	5.170	5.150	5.040	4.820	4.630	4.480	4.290	4.052	4.030	3.650	3.370	2.140	1.200	0.685																		
			IN	MPag	16	30	2.687	2.687	2.628	2.419	2.337	2.313	2.298	2.265	2.228	2.221	1.771	1.641	1.115	0.574	0.290																		
		Full Vacuum			1/2	***3***	***FV @ 350 degC***																																	
					4	30	FV @ 175 degC																																	
267	B2FP	Service Limit		degC			-29	0	50	100	150	200	250	265	300	350	400	450	500	550	593																		
			PT	MPag	1/2	14	5.170	5.170	5.150	5.040	4.820	4.630	4.480	4.423	4.290	4.030	3.650	3.370	2.140	1.200	0.685																		
			IN	MPag	16	20	2.687	2.687	2.628	2.419	2.337	2.313	2.298	2.293	2.265	2.221	1.771	1.641	1.115	0.574	0.290																		
		Full Vacuum			1/2	4	FV @ 175 degC																																	
268	***B2FP02***	***Service Limit***		***degC***			***-29***	***0***	***50***	***100***	***150***	***200***	***250***	***300***	***322***	***350***	***400***	***450***	***500***	***538***																		
			PT	***MPag***	***1/2***	***14***	***5.170***	***5.170***	***5.150***	***5.040***	***4.820***	***4.630***	***4.480***	***4.290***	***4.158***	***4.030***	***3.650***	***3.370***	***2.140***	***1.200***																		
			IN	***MPag***	***16***	***20***	***2.687***	***2.687***	***2.628***	***2.419***	***2.337***	***2.313***	***2.298***	***2.265***	***2.251***	***2.221***	***1.771***	***1.641***	***1.115***	***0.671***																		
		Full Vacuum			***1/2***	***20***	***FV @ 175 degC***																																	
269	B2G404	Service Limit		degC			-50	0	50	100	150	200	250	300	345																							
			PT	MPag	1/2	10	5.110	5.110	5.010	4.660	4.510	4.380	4.190	3.980	3.782																							
		Full Vacuum			1/2	8	FV @ 175 degC																																	
270	B2G501	Service Limit		degC			-50	0	50	67	100	150	200	250	265	300	345																							
			PT	MPag	1/2	14	5.110	5.110	5.010	4.891	4.660	4.510	4.380	4.190	4.127	3.980	3.782																							
			IN	MPag	16	16	5.110	5.110	5.010	4.891	4.660	4.510	4.380	4.190	4.127	3.980	3.782																							
		Full Vacuum			***1/2***	***1 1/2***	***FV @ 265 degC***																																	
					2	16	FV @ 175 degC																																	
271	B2GH04	Service Limit		degC			-50	0	50	100	150	200	250	260	300	330	345																							
			PT	MPag	1/2	14	5.110	5.110	5.010	4.660	4.510	4.380	4.190	4.148	3.980	3.848	3.782																							
			IN	MPag	16	20	3.661	3.661	3.661	3.661	3.589	3.468	3.334	3.307	3.170	3.057	2.997																							
		Full Vacuum			1/2	***20***	FV @ 175 degC																																	
272	B2GN04	Service Limit		degC			-50	0	50	70	100	150	200	250	265																							
			PT	MPag	1/2	14	5.110	5.110	5.010	4.870	4.660	4.510	4.380	4.190	4.127																							
			IN	MPag	16	24	4.303	4.303	4.274	4.231	4.190	4.062	3.926	3.774	3.724																							
		Full Vacuum			1/2	***3***	***FV @ 265 degC***																																	
					4	***24***	FV @ 175 degC																																	
273	B2GP	Service Limit		degC			-50	0	50	67	100	150	200	250	300	345																							
			PT	MPag	1/2	12	5.110	5.110	5.010	4.891	4.660	4.510	4.380	4.190	3.980	3.782																							
		Full Vacuum			1/2	4	FV @ 175 degC																																	
274	B2GP01	Service Limit		degC			-50	0	50	67	100	150	200	250	300	345																							
			PT	MPag	1/2	8	5.110	5.110	5.010	4.891	4.660	4.510	4.380	4.190	3.980	3.782																							
		Full Vacuum			1/2	8	FV @ 175 degC																																	
275	B2GP04	Service Limit		degC			-50	0	50	100	150	200	250	300	330	345																							
			PT	MPag	1/2	14	5.110	5.110	5.010	4.660	4.510	4.380	4.190	3.980	3.848	3.782																							
			IN	MPag	16	20	3.661	3.661	3.661	3.661	3.589	3.468	3.334	3.170	3.057	2.997																							
			IN	MPag	24	24	2.839	2.839	2.821	2.758	2.681	2.591	2.491	2.368	2.284	2.239																							
		Full Vacuum			1/2	20	FV @ 175 degC																																	
276	B2GQ	Service Limit		degC			-50	0	50	100	107	150	200	250	300	345																							
			PT	MPag	1/2	14	5.110	5.110	5.010	4.660	4.639	4.510	4.380	4.190	3.980	3.782																							
			IN	MPag	16	24	3.252	3.252	3.252	3.252	3.252	3.251	3.236	3.113	2.956	2.807																							
		Full Vacuum			1/2	3/4	FV @ 175 degC																																	
277	B2GQ01	Service Limit		degC			-50	0	50	67	88	100	150	200	250	300	345																							
			PT	MPag	1/2	14	5.110	5.110	5.010	4.891	4.744	4.660	4.510	4.380	4.190	3.980	3.782																							
			IN	MPag	16	24	3.252	3.252	3.252	3.252	3.252	3.252	3.251	3.236	3.113	2.956	2.807																							
		Full Vacuum			1/2	***3***	***FV @ 265 degC***																																	
					4	24	FV @ 175 degC																																	
278	B2GQ04	Service Limit		degC			-50	0	50	100	150	200	250	300	345																							
			PT	MPag	1/2	10	5.110	5.110	5.010	4.660	4.510	4.380	4.190	3.980	3.782																							
		Full Vacuum					N/A																																	

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| Sr. No. | PIPING CLASS | CONDITION | BASE (Note1) | UNIT | SIZE From (NPS) | SIZE To (NPS) | | |

| Sr. No. | PIPING CLASS | CONDITION | BASE (Note1) | UNIT | SIZE From (NPS) | SIZE To (NPS) | | |

| Sr. No. | PIPING CLASS | CONDITION | BASE (Note1) | UNIT | SIZE From (NPS) | SIZE To (NPS) | | |

| Sr. No. | PIPING CLASS | CONDITION | BASE (Note1) | UNIT | SIZE From (NPS) | SIZE To (NPS) | | |

| Sr. No. | PIPING CLASS | CONDITION | BASE (Note1) | UNIT | SIZE From (NPS) | SIZE To (NPS) | | |

9.2 Piping Classes for PPU Unit (Licenced by MCI)

Sr. No.	PIPING CLASS	CONDITION	BASE (Note1)	UNIT	SIZE From (NPS)	SIZE To (NPS)											
1	A11A05	Service Limit		degC			0	50	70	76	90	100					
			PT	Mpag	1/2	24	1.960	1.920	1.860	1.842	1.800	1.770					
			IN	Mpag	30	48	***1.960***	***1.920***	***1.860***	1.842	1.800	1.770					
		Full Vacuum	-	-	1/2	4	FV @ 90 degC										
2	A11B05	Service Limit		degC			0	50	65	100	120	150	180	200	250	270	
			PT	Mpag	1/4	24	1.960	1.920	1.875	1.770	1.694	1.580	1.460	1.380	1.210	1.134	
		Full Vacuum					N/A										
3	A11D05	Service Limit		degC			-48	0	50	100	120						
			PT	MPag	1/2	24	1.960	1.960	1.920	1.770	1.694						
			IN	MPag	30	30	1.960	1.960	1.920	1.770	1.694						
		Full Vacuum	-	-	1/2	24	FV @ 175 degC										
4	A11F05	Service Limit		degC			-29	0	50	60	70	100	120	150	180		
			PT	MPag	1/2	10	1.900	1.900	1.830	1.778	1.726	1.570	1.510	1.420	1.360		
			IN	MPag	12	30	1.900	1.900	1.830	1.778	1.726	1.570	1.510	1.420	1.360		
		Full Vacuum	-	-	1/2	4	FV @ 180 degC										
5	A11X05	Service Limit		degC			0	50	65	70							
			IN	Mpag	1/2	10	1.960	1.920	1.875	1.860							
		Full Vacuum					N/A										
6	A16G05	Service Limit		degC			-29	50	100	120	150	180					
			PT	MPag	3/4	10	2.000	1.950	1.770	1.694	1.580	1.460					
			IN	MPag	12	24	2.000	1.950	1.770	1.694	1.580	1.460					
		Full Vacuum	-	-	1/2	12	FV @ 180 degC										
7	A21A05	Service Limit		degC			0	50	100	125	150	180					
			PT	Mpag	1/2	16	1.960	1.920	1.770	1.675	1.580	1.460					
		Full Vacuum	-	-	1/2	14	FV @ 175 degC										
					16	16	FV @ 145 degC										
8	A21B05	Service Limit		degC			0	50	80	100	120						
			PT	Mpag	1/2	20	1.960	1.920	1.830	1.770	1.694						
		Full Vacuum					N/A										
9	A21F05	Service Limit		degC			-45	0	50	65	100	120	150	180			
			PT	MPag	1/2	4	1.900	1.900	1.830	1.752	1.570	1.510	1.420	1.360			
		Full Vacuum					N/A										
10	A31B05	Service Limit		degC			0	50	100	120							
			PT	Mpag	1/2	20	1.960	1.920	1.770	1.694							
		Full Vacuum	-	-	1/2	20	FV @ 175 degC										
11	A31F05	Service Limit		degC			-29	0	50	65	100	120	150	180			
			PT	MPag	1/2	8	1.900	1.900	1.830	1.752	1.570	1.510	1.420	1.360			
		Full Vacuum	-	-	1/2	8	FV @ 145 degC										
12	A41F05	Service Limit		degC			-29	0	50	65							
			PT	MPag	1/2	1 1/2	1.900	1.900	1.830	1.752							
		Full Vacuum					N/A										
13	A61F05	Service Limit		degC			-29	0	50	60	100						
			PT	MPag	1/2	10	1.900	1.900	1.830	1.778	1.570						
			IN	MPag	12	20	1.900	1.900	1.830	1.778	1.570						
		Full Vacuum					N/A										
14	B11F05	Service Limit		degC			-45	0	50	90	100	120					
			PT	MPag	1/2	2	4.960	4.960	4.780	4.228	4.090	3.934					
		Full Vacuum					N/A										
15	B21B05	Service Limit		degC			0	50	70	100	120	150	180				
			PT	MPag	1/2	14	5.110	5.010	4.870	4.660	4.600	4.510	4.432				
			IN	MPag	16	20	2.687	2.687	2.687	2.687	2.687	2.654	2.595				
		Full Vacuum	-	-	1/2	4	FV @ 175 degC										
16	B21D05	Service Limit		degC			-48	0	50	65	100	120	150	180			
			PT	MPag	1/2	14	5.110	5.110	5.010	4.905	4.660	4.600	4.510	4.432			
			IN	MPag	16	20	2.687	2.687	2.687	2.687	2.687	2.687	2.654	2.595			
		Full Vacuum					N/A										
17	B21F05	Service Limit		degC			-45	0	50	100	120	150	180				
			PT	MPag	1/2	***8***	4.960	4.960	4.780	4.090	3.934	3.700	3.550				
		Full Vacuum					N/A										
18	B22D05	Service Limit		degC			-48	0	50	100	120						
			PT	MPag	1/2	14	5.110	5.110	5.010	4.660	4.600						
			IN	MPag	16	24	2.687	2.687	2.687	2.687	2.687						
		Full Vacuum					N/A										
19	B31D05	Service Limit		degC			-48	0	50	100	150	200	250	270			
			PT	MPag	1/2	6	5.110	5.110	5.010	4.660	4.510	4.380	4.190	4.106			
		Full Vacuum					N/A										
20	D11B05	Service Limit		degC			0	50	100	120	150	200	250	300	350	400	425
			IN	MPag	3/4	6	10.210	10.020	9.319	9.200	9.020	8.760	8.389	7.959	7.510	6.939	5.750
		Full Vacuum	-	-	3/4	4	FV @ 145 degC										
21	D11D05	Service Limit		degC			-48	0	50	100	120						
			PT	MPag	1/2	6	10.210	10.210	10.020	9.319	9.200						
			IN	MPag	8	12	7.051	7.051	7.051	7.051	7.051						
		Full Vacuum					N/A										

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SERVICE LIMIT TABLE

Sr. No.	PIPING CLASS	CONDITION	BASE (Note1)	UNIT	SIZE From (NPS)	SIZE To (NPS)											
22	D11F05	Service Limit		degC			-29	0	50	80							
			PT	MPag	1/4	2	9.930	9.930	9.560	8.726							
		Full Vacuum					N/A										
23	D21B05	Service Limit		degC			0	50	65	80	100	120					
			PT	MPag	1/2	4	10.210	10.020	9.810	9.600	9.319	9.200					
		Full Vacuum	-	-	1/2	2	FV @ 175 degC										
24	D21F05	Service Limit		degC			-29	0	50	65	100	120					
			PT	MPag	1/2	2	9.930	9.930	9.560	9.143	8.169	7.861					
		Full Vacuum	-	-	1/2	2	FV @ 175 degC										
25	D31F05	Service Limit		degC			-45	0	50	80	100	120					
			PT	MPag	1/2	6	9.930	9.930	9.560	8.726	8.169	7.861					
			IN	MPag	8	8	9.930	9.930	9.560	8.726	8.169	7.861					
		Full Vacuum					N/A										
26	D41F05	Service Limit		degC			0	50	65								
			PT	Mpag	1/4	2	9.930	9.560	9.143								
		Full Vacuum					N/A										
27	D51F05	Service Limit		degC			-45	0	50	65							
			PT	Mpag	1/2	1/2	9.930	9.930	9.560	9.143							
		Full Vacuum					N/A										
28	D61F05	Service Limit		degC			-45	0	50	100	120						
			PT	Mpag	1/2	6	9.930	9.930	9.560	8.169	7.861						
		Full Vacuum					N/A										
29	F11F05	Service Limit		degC			-29	0	50	65							
			IN	MPag	1/2	3/4	21.617	21.617	21.617	21.617							
		Full Vacuum					N/A										
30	X11F05	Service Limit		degC			-29	0	50	60	100	120					
			PT	MPag	1/2	10	1.900	1.900	1.830	1.778	1.570	1.510					
			IN	MPag	12	24	1.900	1.900	1.830	1.778	1.570	1.510					
		Full Vacuum					N/A										
31	X31F05	Service Limit		degC			-29	0	50	100	120						
			PT	MPag	1/2	10	1.900	1.900	1.830	1.570	1.510						
			IN	MPag	12	20	1.900	1.900	1.830	1.570	1.510						
		Full Vacuum					N/A										

Note 1: PT : Wall thickness is calculated based on the full Pressure-Temperature rating of the applicable material group in ASME B16.5.
IN : Wall thickness is calculated based on the applicable individual line design conditions.

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10.0 WALL THICKNESS SUMMARY

See the following pages.

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NSRP Complex Project
JOB NO. : 0-6495-20-0000

DOC. NO. : S-000-1360-0002V
REV NO. : 2
SHEET NO. : 64

WALL THICKNESS TABLE

LINE CLASS	MATL	C. A.	0.25"	0.5"	0.75"	1"	1.5"	2"	2.5"	3"	4"	5"	6"	8"	10"	12"	14"	16"	18"	20"	22"	24"	26"
A0AC01	Killed CS	0 mm				xxs	xxs	xxs		xxs	xxs		xxs	xxs	xxs	xxs							
						9.09mm	10.15mm	11.07mm		15.24mm	17.12mm		21.95mm	22.23mm	25.4mm	25.4mm							
A0AC04	Killed CS	0 mm				xxs	xxs	xxs		xxs	xxs		xxs										
						9.09mm	10.15mm	11.07mm		15.24mm	17.12mm		21.95mm										
A0J501	SS304L	0 mm		sch80s	sch80s	sch80s	sch80s	sch10s		sch10s	sch10s		sch10s										
				3.73mm	3.91mm	4.55mm	5.08mm	2.77mm		3.05mm	3.05mm		3.4mm										
A0J503	SS304L	0 mm		sch80s	sch80s	sch80s	sch80s	sch10s		sch10s	sch10s		sch10s	sch10s	sch10s	sch10s	sch10s	sch10s	sch10s	sch10s		sch10s	
				3.73mm	3.91mm	4.55mm	5.08mm	2.77mm		3.05mm	3.05mm		3.4mm	3.76mm	4.19mm	4.57mm	4.78mm	4.78mm	4.78mm	5.54mm		6.35mm	
A0JP	SS304L	0.8 mm		sch80s	sch80s	sch80s	sch80s	sch10s		sch10s	sch10s		sch40s	sch10s	sch10s	sch10s	sch10s	sch10s	sch10s	sch10s		sch10s	
				3.73mm	3.91mm	4.55mm	5.08mm	2.77mm		3.05mm	3.05mm		7.11mm	3.76mm	4.19mm	4.57mm	4.78mm	4.78mm	4.78mm	5.54mm		6.35mm	
A0JP03	SS304L	0.8 mm		sch80s	sch80s	sch80s	sch80s	sch10s		sch10s	sch10s												
				3.73mm	3.91mm	4.55mm	5.08mm	2.77mm		3.05mm	3.05mm												
A0JQ	SS304L	0.8 mm		sch80s	sch80s	sch80s	sch80s	sch10s		sch10s	sch10s		sch40s	sch40s	sch10s	sch10s	sch10s						
				3.73mm	3.91mm	4.55mm	5.08mm	2.77mm		3.05mm	3.05mm		7.11mm	8.18mm	4.19mm	4.57mm	4.78mm						
A0JQ01	SS304L	0.8 mm		sch80s	sch80s	sch80s	sch80s	sch10s		sch10s	sch10s		sch40s										
				3.73mm	3.91mm	4.55mm	5.08mm	2.77mm		3.05mm	3.05mm		7.11mm										
A0JR	SS304L	0 mm		sch80s	sch80s	sch80s	sch80s	sch10s		sch10s	sch10s		sch10s	sch10s	sch10s	sch10s	sch10s	sch10s	sch10s	sch10s		sch10s	
				3.73mm	3.91mm	4.55mm	5.08mm	2.77mm		3.05mm	3.05mm		3.4mm	3.76mm	4.19mm	4.57mm	4.78mm	4.78mm	4.78mm	5.54mm		6.35mm	
A0JR01	SS304L	0 mm		sch80s	sch80s	sch80s	sch80s	sch10s		sch10s	sch10s		sch10s										
				3.73mm	3.91mm	4.55mm	5.08mm	2.77mm		3.05mm	3.05mm		3.4mm										
A0JR03	SS304L	0 mm		sch80s	sch80s	sch80s	sch80s	sch10s		sch10s	sch10s		sch10s	sch10s	sch10s	sch10s	sch10s	sch10s	sch10s	sch10s		sch10s	
				3.73mm	3.91mm	4.55mm	5.08mm	2.77mm		3.05mm	3.05mm		3.4mm	3.76mm	4.19mm	4.57mm	4.78mm	4.78mm	4.78mm	5.54mm		6.35mm	
A0JS	SS304L	0 mm		sch80s	sch80s	sch80s	sch80s	sch10s		sch10s	sch10s		sch10s	sch10s	sch10s	sch10s	sch10s	sch10s	sch10s	sch10s			
				3.73mm	3.91mm	4.55mm	5.08mm	2.77mm		3.05mm	3.05mm		3.4mm	3.76mm	4.19mm	4.57mm	4.78mm	4.78mm	4.78mm	5.54mm			
A0JS01	SS304L	0 mm		sch80s	sch80s	sch80s	sch80s	sch10s		sch10s	sch10s		sch10s	sch10s	sch10s	sch10s	sch10s	sch10s					
				3.73mm	3.91mm	4.55mm	5.08mm	2.77mm		3.05mm	3.05mm		3.4mm	3.76mm	4.19mm	4.57mm	4.78mm	4.78mm					
A0JS04	SS304L	0 mm		sch80s	sch80s	sch80s	sch80s	sch10s		sch10s	sch10s		sch10s	sch10s	sch10s	sch10s							
				3.73mm	3.91mm	4.55mm	5.08mm	2.77mm		3.05mm	3.05mm		3.4mm	3.76mm	4.19mm	4.57mm							
A0JV	SS304L	1 mm		sch80s	sch80s	sch80s	sch80s	sch40s		sch10s	sch10s		sch10s	sch10s	sch10s	sch10s	sch10s	sch10s	sch10s				
				3.73mm	3.91mm	4.55mm	5.08mm	3.91mm		3.05mm	3.05mm		3.4mm	3.76mm	4.19mm	4.57mm	4.78mm	4.78mm	4.78mm				
A0JW	SS304L	0 mm		sch80s	sch80s	sch80s	sch80s	sch10s		sch10s	sch10s		sch10s	sch10s	sch10s	sch10s	sch10s	sch10s	sch10s	sch10s		sch10s	
				3.73mm	3.91mm	4.55mm	5.08mm	2.77mm		3.05mm	3.05mm		3.4mm	3.76mm	4.19mm	4.57mm	4.78mm	4.78mm	4.78mm	5.54mm		6.35mm	
A0JY	SS304L	0 mm		sch80s	sch80s	sch80s	sch80s	sch10s		sch10s	sch10s		sch10s	sch10s									
				3.73mm	3.91mm	4.55mm	5.08mm	2.77mm		3.05mm	3.05mm		3.4mm	3.76mm									
A0JY01	SS304L	0 mm		sch80s	sch80s	sch80s	sch80s	sch10s		sch10s	sch10s												
				3.73mm	3.91mm	4.55mm	5.08mm	2.77mm		3.05mm	3.05mm												
A0JY04	SS304L	0 mm		sch80s	sch80s	sch80s	sch80s	sch10s		sch10s	sch10s												
				3.73mm	3.91mm	4.55mm	5.08mm	2.77mm		3.05mm	3.05mm												
A0L4	SS316L	0 mm		sch80s	sch80s	sch80s	sch80s	sch10s		sch10s	sch10s		sch10s	sch10s	sch10s								
				3.73mm	3.91mm	4.55mm	5.08mm	2.77mm		3.05mm	3.05mm		3.4mm	3.76mm	4.19mm								
A0L5	SS316L	0 mm		sch80s	sch80s	sch80s	sch80s	sch10s		sch10s	sch10s		sch10s	sch10s	sch10s	sch10s	sch10s	sch10s	sch10s	sch10s		sch10s	
				3.73mm	3.91mm	4.55mm	5.08mm	2.77mm		3.05mm	3.05mm		3.4mm	3.76mm	4.19mm	4.57mm	4.78mm	4.78mm	4.78mm	5.54mm		6.35mm	
A0L501	SS316L	0 mm		sch80s	sch80s	sch80s	sch80s	sch10s		sch10s	sch10s		sch10s	sch10s	sch10s								
				3.73mm	3.91mm	4.55mm	5.08mm	2.77mm		3.05mm	3.05mm		3.4mm	3.76mm	4.19mm								
A0L503	SS316L	0 mm		sch80s	sch80s	sch80s	sch80s	sch10s		sch10s	sch10s												
				3.73mm	3.91mm	4.55mm	5.08mm	2.77mm		3.05mm	3.05mm												
A0L5	SS316L	0 mm		sch80s	sch80s	sch80s	sch80s	sch10s		sch10s	sch10s		sch10s										
				3.73mm	3.91mm	4.55mm	5.08mm	2.77mm		3.05mm	3.05mm		3.4mm										

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SHEET NO. : 65

WALL THICKNESS TABLE

LINE CLASS	MATL	C. A.	28"	30"	32"	34"	36"	40"	42"	44"	48"	52"	54"	56"	60"	64"	68"	72"	76"	80"	84"	92"	96"
A0AC01	Killed CS	0 mm																					
A0AC04	Killed CS	0 mm																					
A0J501	SS304L	0 mm																					
A0J503	SS304L	0 mm		sch10s 7.92mm																			
A0JP	SS304L	0.8 mm		sch10s 7.92mm			sch10 7.92mm		std 9.53mm														
A0JP03	SS304L	0.8 mm																					
A0JQ	SS304L	0.8 mm																					
A0JQ01	SS304L	0.8 mm																					
A0JR	SS304L	0 mm																					
A0JR01	SS304L	0 mm																					
A0JR03	SS304L	0 mm																					
A0JS	SS304L	0 mm																					
A0JS01	SS304L	0 mm																					
A0JS04	SS304L	0 mm																					
A0JV	SS304L	1 mm																					
A0JW	SS304L	0 mm		sch10s 7.92mm			sch10 7.92mm		std 9.53mm														
A0JY	SS304L	0 mm																					
A0JY01	SS304L	0 mm																					
A0JY04	SS304L	0 mm																					
A0L4	SS316L	0 mm																					
A0L5	SS316L	0 mm		sch10s 7.92mm																			
A0L501	SS316L	0 mm																					
A0L503	SS316L	0 mm																					
A0L5	SS316L	0 mm																					

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DOC. NO. : S-000-1360-0002V
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SHEET NO. : 66

WALL THICKNESS TABLE

LINE CLASS	MATL	C. A.	100"	104"	108"	116"
A0AC01	Killed CS	0 mm				
A0AC04	Killed CS	0 mm				
A0J501	SS304L	0 mm				
A0J503	SS304L	0 mm				
A0JP	SS304L	0.8 mm				
A0JP03	SS304L	0.8 mm				
A0JQ	SS304L	0.8 mm				
A0JQ01	SS304L	0.8 mm				
A0JR	SS304L	0 mm				
A0JR01	SS304L	0 mm				
A0JR03	SS304L	0 mm				
A0JS	SS304L	0 mm				
A0JS01	SS304L	0 mm				
A0JS04	SS304L	0 mm				
A0JV	SS304L	1 mm				
A0JW	SS304L	0 mm				
A0JY	SS304L	0 mm				
A0JY01	SS304L	0 mm				
A0JY04	SS304L	0 mm				
A0L4	SS316L	0 mm				
A0L5	SS316L	0 mm				
A0L501	SS316L	0 mm				
A0L503	SS316L	0 mm				
A0L6	SS316L	0 mm				

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DOC. NO. : S-000-1360-0002V
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SHEET NO. : 67

WALL THICKNESS TABLE

LINE CLASS	MATL	C. A.	0.25"	0.5"	0.75"	1"	1.5"	2"	2.5"	3"	4"	5"	6"	8"	10"	12"	14"	16"	18"	20"	22"	24"	26"
A0LG01	SS316L	0 mm		sch80s	sch80s	sch80s	sch80s	sch10s		sch10s	sch10s		sch10s	sch10s	sch10s	sch10s	sch10s	sch10s	sch10s				
				3.73mm	3.91mm	4.55mm	5.08mm	2.77mm		3.05mm	3.05mm		3.4mm	3.76mm	4.19mm	4.57mm	4.78mm	4.78mm	4.78mm				
A0LP03	SS316L	0.8 mm		sch80s	sch80s	sch80s	sch80s	sch10s		sch10s	sch10s		sch10s										
				3.73mm	3.91mm	4.55mm	5.08mm	2.77mm		3.05mm	3.05mm		3.4mm										
A0LP04	SS316L	0.8 mm		sch80s	sch80s	sch80s	sch80s	sch40s		sch40s	sch40s												
				3.73mm	3.91mm	4.55mm	5.08mm	3.91mm		5.49mm	6.02mm												
A0LQ	SS316L	0 mm		sch80s	sch80s	sch80s	sch80s	sch10s		sch10s	sch10s		sch10s	sch10s	sch10s	sch10s	sch10s	sch10s	sch10s	sch10s		sch10s	
				3.73mm	3.91mm	4.55mm	5.08mm	2.77mm		3.05mm	3.05mm		3.4mm	3.76mm	4.19mm	4.57mm	4.78mm	4.78mm	4.78mm	5.54mm		6.35mm	
A0LQ03	SS316L	0 mm		sch80s	sch80s	sch80s	sch80s	sch10s		sch10s	sch10s		sch10s	sch10s	sch10s	sch10s	sch10s	sch10s	sch10s	sch10s		sch10s	
				3.73mm	3.91mm	4.55mm	5.08mm	2.77mm		3.05mm	3.05mm		3.4mm	3.76mm	4.19mm	4.57mm	4.78mm	4.78mm	4.78mm	5.54mm		6.35mm	
A0LR	SS316L	0 mm		sch80s	sch80s	sch80s	sch80s	sch10s		sch10s	sch10s		sch10s	sch10s	sch10s	sch10s	sch10s	sch10s	sch10s	sch10s		sch10s	
				3.73mm	3.91mm	4.55mm	5.08mm	2.77mm		3.05mm	3.05mm		3.4mm	3.76mm	4.19mm	4.57mm	4.78mm	4.78mm	4.78mm	5.54mm		6.35mm	
A0LR01	SS316L	0 mm		sch80s	sch80s	sch80s	sch80s	sch10s		sch10s	sch10s		sch10s	sch10s	sch10s	sch10s	sch10s	sch10s	sch10s	sch10s		sch10s	
				3.73mm	3.91mm	4.55mm	5.08mm	2.77mm		3.05mm	3.05mm		3.4mm	3.76mm	4.19mm	4.57mm	4.78mm	4.78mm	4.78mm	5.54mm		6.35mm	
A0LR03	SS316L	0 mm		sch80s	sch80s	sch80s	sch80s	sch10s		sch10s	sch10s		sch10s	sch10s	sch10s	sch10s	sch10s	sch10s	sch10s	sch10s		sch10s	
				3.73mm	3.91mm	4.55mm	5.08mm	2.77mm		3.05mm	3.05mm		3.4mm	3.76mm	4.19mm	4.57mm	4.78mm	4.78mm	4.78mm	5.54mm		6.35mm	
A0LU	SS316L	0 mm		sch80s	sch80s	sch80s	sch80s	sch10s		sch10s	sch10s		sch10s	sch10s	sch10s	sch10s							
				3.73mm	3.91mm	4.55mm	5.08mm	2.77mm		3.05mm	3.05mm		3.4mm	3.76mm	4.19mm	4.57mm							
A0LW	SS316L	0 mm		sch80s	sch80s	sch80s	sch80s	sch10s		sch10s	sch10s		sch10s	sch10s	sch10s	sch10s	sch10s						
				3.73mm	3.91mm	4.55mm	5.08mm	2.77mm		3.05mm	3.05mm		3.4mm	3.76mm	4.19mm	4.57mm	4.78mm						
A0MP01	SS321	0.8 mm		sch80s	sch80s	sch80s	sch80s	sch10s		sch10s	sch10s		sch10s	sch10s	sch10s	sch10s	sch10s	sch10s	sch10s				
				3.73mm	3.91mm	4.55mm	5.08mm	2.77mm		3.05mm	3.05mm		3.4mm	3.76mm	4.19mm	4.57mm	4.78mm	4.78mm	4.78mm				
A0QP	FBE Coated CS	0 mm						xs		std	std		std	sch20	sch20	sch20	sch20	sch20	sch20	std		std	
								5.54mm		5.49mm	6.02mm		7.11mm	6.35mm	6.35mm	6.35mm	7.92mm	7.92mm	7.92mm	9.53mm		9.53mm	
A0RA	Killed CS (Galv.)	0 mm		xs	xs	xs	xs	xs		std	std		std	sch20	sch20	sch20	sch20	sch20	sch20	std			
				3.73mm	3.91mm	4.55mm	5.08mm	5.54mm		5.49mm	6.02mm		7.11mm	6.35mm	6.35mm	6.35mm	7.92mm	7.92mm	7.92mm	9.53mm			
A0RU	Killed CS (Galv.)	0 mm		xs	xs	xs	xs	xs		std	std		std	sch20	sch20	sch30	sch20	sch20	sch20	std		std	
				3.73mm	3.91mm	4.55mm	5.08mm	5.54mm		5.49mm	6.02mm		7.11mm	6.35mm	6.35mm	8.38mm	7.92mm	7.92mm	7.92mm	9.53mm		9.53mm	
A0YQ	INCONEL 625	0 mm		sch80s	sch80s	sch80s	sch80s	sch10s		sch10s	sch10s		sch10s	sch10s	sch10s	sch10s	sch10s	sch10s	sch10s	sch10s		sch10s	
				3.73mm	3.91mm	4.55mm	5.08mm	2.77mm		3.05mm	3.05mm		3.4mm	3.76mm	4.19mm	4.57mm	4.78mm	4.78mm	4.78mm	5.54mm		6.35mm	
A11A05	Killed CS	1.5 mm		xs	xs	xs	xs	xs		std	std		std	sch20	sch20	sch30	sch20	sch20	sch20	std		std	
				3.73mm	3.91mm	4.55mm	5.08mm	5.54mm		5.49mm	6.02mm		7.11mm	6.35mm	6.35mm	8.38mm	7.92mm	7.92mm	7.92mm	9.53mm		9.53mm	
A11B05	Killed CS	3 mm	3.60mm	sch160	sch160	sch160	sch160	xs		std	std		std	sch20	sch20	sch30	sch20	sch20	sch20	std	std	std	
				4.78mm	5.56mm	6.35mm	7.14mm	5.54mm		5.49mm	6.02mm		7.11mm	6.35mm	6.35mm	8.38mm	7.92mm	7.92mm	7.92mm	9.53mm	9.53mm	9.53mm	
A11D05	LTCS	3 mm		sch160	sch160	sch160	sch160	xs		std	std		std	sch20	sch20	sch30	sch20	sch20	sch20	std		std	
				4.78mm	5.56mm	6.35mm	7.14mm	5.54mm		5.49mm	6.02mm		7.11mm	6.35mm	6.35mm	8.38mm	7.92mm	7.92mm	7.92mm	9.53mm		9.53mm	
A11F05	SS304L	0 mm	sch80s	sch80s	sch80s	sch80s	sch80s	sch10s		sch10s	sch10s		sch10s	sch10s	sch10s	sch10s	sch10s	sch10s	sch10s	sch10s	sch10s	sch10s	
			3.02mm	3.73mm	3.91mm	4.55mm	5.08mm	2.77mm		3.05mm	3.05mm		3.4mm	3.76mm	4.19mm	4.57mm	4.78mm	4.78mm	4.78mm	5.54mm	5.54mm	6.35mm	
A11X05	Killed CS (Galv.)	1 mm		sch160	sch160	sch160	xs	xs		std	std		std	sch20	sch20								
				4.78mm	5.56mm	6.35mm	5.08mm	5.54mm		5.49mm	6.02mm		7.11mm	6.35mm	6.35mm								
A16G05	Duplex SS	1 mm			sch80s	sch80s	sch80s	sch40s		sch10s	sch10s		sch10s	sch10s	sch10s	sch40s	sch10s	sch10s	sch10s	sch10s		sch10s	
					3.91mm	4.55mm	5.08mm	3.91mm		3.05mm	3.05mm		3.4mm	3.76mm	4.19mm	9.53mm	4.78mm	4.78mm	4.78mm	5.54mm		6.35mm	
A1A201	Killed CS	1.5 mm		xs	xs	xs	xs	xs		std	std		std	sch20	sch20	sch20	sch20	sch20	sch20				
				3.73mm	3.91mm	4.55mm	5.08mm	5.54mm		5.49mm	6.02mm		7.11mm	6.35mm	6.35mm	6.35mm	7.92mm	7.92mm	7.92mm				
A1A8	Killed CS	1.5 mm		xs	xs	xs	xs	xs		std	std		std	sch20	sch20	sch20	sch20	sch20	sch20	std		std	
				3.73mm	3.91mm	4.55mm	5.08mm	5.54mm		5.49mm	6.02mm		7.11mm	6.35mm	6.35mm	6.35mm	7.92mm	7.92mm	7.92mm	9.53mm		9.53mm	
A1A304	Killed CS	1.5 mm		xs	xs	xs	xs	xs		std	std		std	sch20	sch20	sch20	sch20	sch20	sch20	std		std	
				3.73mm	3.91mm	4.55mm	5.08mm	5.54mm		5.49mm	6.02mm		7.11mm	6.35mm	6.35mm	6.35mm	7.92mm	7.92mm	7.92mm	9.53mm		9.53mm	

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WALL THICKNESS TABLE

LINE CLASS	MATL	C. A.	28"	30"	32"	34"	36"	40"	42"	44"	48"	52"	54"	56"	60"	64"	68"	72"	76"	80"	84"	92"	96"
A0LG01	SS316L	0 mm																					
A0LP03	SS316L	0.8 mm																					
A0LP04	SS316L	0.8 mm																					
A0LQ	SS316L	0 mm		sch10s 7.92mm																			
A0LQ03	SS316L	0 mm		sch10s 7.92mm																			
A0LR	SS316L	0 mm		sch10s 7.92mm																			
A0LR01	SS316L	0 mm																					
A0LR03	SS316L	0 mm																					
A0LU	SS316L	0 mm																					
A0LW	SS316L	0 mm																					
A0MP01	SS321	0.8 mm																					
A0QP	FBE Coated CS	0 mm																					
A0RA	Killed CS (Galv.)	0 mm																					
A0RU	Killed CS (Galv.)	0 mm		std 9.53mm			std 9.53mm		xs 12.7mm														
A0YQ	INCONEL 625	0 mm		sch10s 7.92mm			sch10 7.92mm		std 9.53mm														
A11A05	Killed CS	1.5 mm		std 9.53mm			std 9.53mm		xs 12.7mm		xs 12.7mm												
A11B05	Killed CS	3 mm																					
A11D05	LTCS	3 mm		std 9.53mm																			
A11F05	SS304L	0 mm	sch10 7.92mm	sch10s 7.92mm																			
A11X05	Killed CS (Galv.)	1 mm																					
A16G05	Duplex SS	1 mm																					
A1A201	Killed CS	1.5 mm																					
A1A8	Killed CS	1.5 mm																					
A1A304	Killed CS	1.5 mm		std 9.53mm			std 9.53mm																

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WALL THICKNESS TABLE

LINE CLASS	MATL	C. A.	100"	104"	108"	116"
A0LG01	SS316L	0 mm				
A0LP03	SS316L	0.8 mm				
A0LP04	SS316L	0.8 mm				
A0LQ	SS316L	0 mm				
A0LQ03	SS316L	0 mm				
A0LR	SS316L	0 mm				
A0LR01	SS316L	0 mm				
A0LR03	SS316L	0 mm				
A0LU	SS316L	0 mm				
A0LW	SS316L	0 mm				
A0MP01	SS321	0.8 mm				
A0QP	FBE Coated CS	0 mm				
A0RA	Killed CS (Galv.)	0 mm				
A0RU	Killed CS (Galv.)	0 mm				
A0YQ	INCONEL 625	0 mm				
A11A05	Killed CS	1.5 mm				
A11B05	Killed CS	3 mm				
A11D05	LTCS	3 mm				
A11F05	SS304L	0 mm				
A11X05	Killed CS (Galv.)	1 mm				
A16G05	Duplex SS	1 mm				
A1A201	Killed CS	1.5 mm				
A1A8	Killed CS	1.5 mm				
A1A304	Killed CS	1.5 mm				

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WALL THICKNESS TABLE

LINE CLASS	MATL	C. A.	0.25"	0.5"	0.75"	1"	1.5"	2"	2.5"	3"	4"	5"	6"	8"	10"	12"	14"	16"	18"	20"	22"	24"	26"
A1A904	Killed CS	1.5 mm		xs	xs	xs	xs	xs		std	std		std	sch20	sch20	sch20	sch20	sch20	sch20	std		std	
				3.73mm	3.91mm	4.55mm	5.08mm	5.54mm		5.49mm	6.02mm		7.11mm	6.35mm	6.35mm	6.35mm	7.92mm	7.92mm	7.92mm	9.53mm		9.53mm	
A1AA	Killed CS	1.5 mm		xs	xs	xs	xs	xs		std	std		std	sch20	sch20	sch20	sch20	sch20	sch20	std		std	
				3.73mm	3.91mm	4.55mm	5.08mm	5.54mm		5.49mm	6.02mm		7.11mm	6.35mm	6.35mm	6.35mm	7.92mm	7.92mm	7.92mm	9.53mm		9.53mm	
A1AC04	Killed CS	1.5 mm		xs	xs	xs	xs	xs		std	std												
				3.73mm	3.91mm	4.55mm	5.08mm	5.54mm		5.49mm	6.02mm												
A1AD	Killed CS	1.5 mm		xs	xs	xs	xs	xs		std	std		std	sch20	sch20	sch20	sch20	sch20	sch20	std			
				3.73mm	3.91mm	4.55mm	5.08mm	5.54mm		5.49mm	6.02mm		7.11mm	6.35mm	6.35mm	6.35mm	7.92mm	7.92mm	7.92mm	9.53mm			
A1AG	CS (ASME)	1.5 mm		xs	xs	xs	xs	xs		std	std		std	sch20	sch20	sch20	sch20	sch20					
				3.73mm	3.91mm	4.55mm	5.08mm	5.54mm		5.49mm	6.02mm		7.11mm	6.35mm	6.35mm	6.35mm	7.92mm	7.92mm					
A1AH	Killed CS	1.5 mm		xs	xs	xs	xs	xs		std	std		std	sch20	sch20	sch20	sch20	sch20	sch20	std		std	
				3.73mm	3.91mm	4.55mm	5.08mm	5.54mm		5.49mm	6.02mm		7.11mm	6.35mm	6.35mm	6.35mm	7.92mm	7.92mm	7.92mm	9.53mm		9.53mm	
A1AH04	Killed CS	1.5 mm		xs	xs	xs	xs	xs		std	std		std	sch20	sch20	sch20	sch20	sch20	sch20	std		std	
				3.73mm	3.91mm	4.55mm	5.08mm	5.54mm		5.49mm	6.02mm		7.11mm	6.35mm	6.35mm	6.35mm	7.92mm	7.92mm	7.92mm	9.53mm		9.53mm	
A1AL	Killed CS	1.5 mm		xs	xs	xs	xs	xs		std	std		std	sch20	sch20	sch20	sch20	sch20	sch20	std		std	
				3.73mm	3.91mm	4.55mm	5.08mm	5.54mm		5.49mm	6.02mm		7.11mm	6.35mm	6.35mm	6.35mm	7.92mm	7.92mm	7.92mm	9.53mm		9.53mm	
A1AL01	Killed CS	1.5 mm		xs	xs	xs	xs	xs		std	std												
				3.73mm	3.91mm	4.55mm	5.08mm	5.54mm		5.49mm	6.02mm												
A1AL03	Killed CS	1.5 mm		xs	xs	xs	xs	xs		std	std												
				3.73mm	3.91mm	4.55mm	5.08mm	5.54mm		5.49mm	6.02mm												
A1AM	Killed CS	1.5 mm		xs	xs	xs	xs	xs		std													
				3.73mm	3.91mm	4.55mm	5.08mm	5.54mm		5.49mm													
A1AP	Killed CS	1.5 mm		xs	xs	xs	xs	xs		std	std		std	sch20	sch20	sch20	sch20	sch20	sch20	std		std	
				3.73mm	3.91mm	4.55mm	5.08mm	5.54mm		5.49mm	6.02mm		7.11mm	6.35mm	6.35mm	6.35mm	7.92mm	7.92mm	7.92mm	9.53mm		9.53mm	
A1AP01	Killed CS	1.5 mm		xs	xs	xs	xs	xs		std	std		std	sch20	sch20	sch20	sch20	sch20	sch20	std		std	
				3.73mm	3.91mm	4.55mm	5.08mm	5.54mm		5.49mm	6.02mm		7.11mm	6.35mm	6.35mm	6.35mm	7.92mm	7.92mm	7.92mm	9.53mm		9.53mm	
A1AP02	Killed CS	1.5 mm		xs	xs	xs	xs	xs		std	std		std	sch20	sch20	sch20	sch20						
				3.73mm	3.91mm	4.55mm	5.08mm	5.54mm		5.49mm	6.02mm		7.11mm	6.35mm	6.35mm	6.35mm	7.92mm						
A1AP03	Killed CS	1.5 mm		xs	xs	xs	xs	xs		std	std		std	sch20	sch20	sch20	sch20	sch20	sch20	std		std	
				3.73mm	3.91mm	4.55mm	5.08mm	5.54mm		5.49mm	6.02mm		7.11mm	6.35mm	6.35mm	6.35mm	7.92mm	7.92mm	7.92mm	9.53mm		9.53mm	
A1AP04	Killed CS	1.5 mm		xs	xs	xs	xs	xs		std	std		std	sch20	sch20	sch20	sch20	sch20	sch20	std		std	std
				3.73mm	3.91mm	4.55mm	5.08mm	5.54mm		5.49mm	6.02mm		7.11mm	6.35mm	6.35mm	6.35mm	7.92mm	7.92mm	7.92mm	9.53mm		9.53mm	9.53mm
A1APCL	Killed CS	1.5 mm		xs	xs	xs	xs	xs		std	std		std	sch20	sch20	sch20	sch20	sch20					
				3.73mm	3.91mm	4.55mm	5.08mm	5.54mm		5.49mm	6.02mm		7.11mm	6.35mm	6.35mm	6.35mm	7.92mm	7.92mm					
A1APCM	Killed CS	1.5 mm		xs	xs	xs	xs	xs		std	std		std	sch20	sch20	sch20	sch20	sch20	sch20	std		std	
				3.73mm	3.91mm	4.55mm	5.08mm	5.54mm		5.49mm	6.02mm		7.11mm	6.35mm	6.35mm	6.35mm	7.92mm	7.92mm	7.92mm	9.53mm		9.53mm	
A1APVV	Killed CS	1.5 mm		xxs	xxs	xxs	xxs	xxs		xxs	sch160		sch120	xs	xs	xs	xs	xs	xs	xs		xs	
				7.47mm	7.82mm	9.09mm	10.15mm	11.07mm		15.24mm	13.49mm		14.27mm	12.7mm	12.7mm	12.7mm	12.7mm	12.7mm	12.7mm	12.7mm		12.7mm	
A1AQ	Killed CS	1.5 mm		xs	xs	xs	xs	xs		std	std		std	sch20	sch20	sch20	sch20	sch20	sch20	std		std	
				3.73mm	3.91mm	4.55mm	5.08mm	5.54mm		5.49mm	6.02mm		7.11mm	6.35mm	6.35mm	6.35mm	7.92mm	7.92mm	7.92mm	9.53mm		9.53mm	
A1AQ03	Killed CS	1.5 mm		xs	xs	xs	xs	xs		std	std		std	sch20	sch20	sch20	sch20	sch20	sch20	std		std	
				3.73mm	3.91mm	4.55mm	5.08mm	5.54mm		5.49mm	6.02mm		7.11mm	6.35mm	6.35mm	6.35mm	7.92mm	7.92mm	7.92mm	9.53mm		9.53mm	
A1AQ04	Killed CS	1.5 mm		xs	xs	xs	xs	xs		std	std												
				3.73mm	3.91mm	4.55mm	5.08mm	5.54mm		5.49mm	6.02mm												
A1AQCL	Killed CS	1.5 mm		xs	xs	xs	xs	xs		std	std		std	sch20	sch20	sch20	sch20	sch20	sch20	std		std	
				3.73mm	3.91mm	4.55mm	5.08mm	5.54mm		5.49mm	6.02mm		7.11mm	6.35mm	6.35mm	6.35mm	7.92mm	7.92mm	7.92mm	9.53mm		9.53mm	
A1AS	Killed CS	1.5 mm		xs	xs	xs	xs	xs		std	std		std	sch20	sch20	sch20	sch20	sch20	sch20	std		std	
				3.73mm	3.91mm	4.55mm	5.08mm	5.54mm		5.49mm	6.02mm		7.11mm	6.35mm	6.35mm	6.35mm	7.92mm	7.92mm	7.92mm	9.53mm		9.53mm	

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WALL THICKNESS TABLE

LINE CLASS	MATL	C. A.	28"	30"	32"	34"	36"	40"	42"	44"	48"	52"	54"	56"	60"	64"	68"	72"	76"	80"	84"	92"	96"
A1A904	Killed CS	1.5 mm		std			std																
				9.53mm			9.53mm																
A1AA	Killed CS	1.5 mm		sch10			std		std		10.31mm	11.13mm											
				7.92mm			9.53mm		9.53mm														
A1AC04	Killed CS	1.5 mm																					
A1AD	Killed CS	1.5 mm																					
A1AG	CS (ASME)	1.5 mm																					
A1AH	Killed CS	1.5 mm		std			xs		std		xs												
				9.53mm			12.7mm		9.53mm		12.7mm												
A1AH04	Killed CS	1.5 mm		std			xs		xs														
				9.53mm			12.7mm		12.7mm														
A1AL	Killed CS	1.5 mm		std			xs		std		xs												
				9.53mm			12.7mm		9.53mm		12.7mm												
A1AL01	Killed CS	1.5 mm																					
A1AL03	Killed CS	1.5 mm																					
A1AM	Killed CS	1.5 mm																					
A1AP	Killed CS	1.5 mm		std			xs		std		xs	11.13mm		11.91mm	12.70mm	12.70mm	14.27mm	14.27mm	15.88mm	15.88mm			
				9.53mm			12.7mm		9.53mm		12.7mm												
A1AP01	Killed CS	1.5 mm		std	std		xs	xs	std		xs	11.13mm		11.91mm	12.70mm	12.70mm	14.27mm	14.27mm	15.88mm	15.88mm			
				9.53mm	9.53mm		12.7mm	12.7mm	9.53mm		12.7mm												
A1AP02	Killed CS	1.5 mm																					
A1AP03	Killed CS	1.5 mm		std			xs		xs		xs	11.13mm											
				9.53mm			12.7mm		12.7mm		12.7mm												
A1AP04	Killed CS	1.5 mm	std	std	xs	xs	xs		std	xs	xs												
			9.53mm	9.53mm	12.7mm	12.7mm	12.7mm		9.53mm	12.7mm	12.7mm												
A1APCL	Killed CS	1.5 mm																					
A1APCM	Killed CS	1.5 mm		std			xs		xs		xs												
				9.53mm			12.7mm		12.7mm		12.7mm												
A1APVV	Killed CS	1.5 mm		xs			xs		xs		xs	12.70mm		12.70mm	12.70mm	12.70mm	14.27mm	14.27mm	15.88mm	15.88mm			
				12.7mm			12.7mm		12.7mm		12.7mm												
A1AQ	Killed CS	1.5 mm		sch10			sch10		std		xs												
				7.92mm			7.92mm		9.53mm		12.7mm												
A1AQ03	Killed CS	1.5 mm		std																			
				9.53mm																			
A1AQ04	Killed CS	1.5 mm																					
A1AQCL	Killed CS	1.5 mm		std																			
				9.53mm																			
A1AS	Killed CS	1.5 mm		std			xs		std														
				9.53mm			12.7mm		9.53mm														

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WALL THICKNESS TABLE

LINE CLASS	MATL	C. A.	100"	104"	108"	116"
A1A904	Killed CS	1.5 mm				
A1AA	Killed CS	1.5 mm				
A1AC04	Killed CS	1.5 mm				
A1AD	Killed CS	1.5 mm				
A1AG	CS (ASME)	1.5 mm				
A1AH	Killed CS	1.5 mm				
A1AH04	Killed CS	1.5 mm				
A1AL	Killed CS	1.5 mm				
A1AL01	Killed CS	1.5 mm				
A1AL03	Killed CS	1.5 mm				
A1AM	Killed CS	1.5 mm				
A1AP	Killed CS	1.5 mm				
A1AP01	Killed CS	1.5 mm				
A1AP02	Killed CS	1.5 mm				
A1AP03	Killed CS	1.5 mm				
A1AP04	Killed CS	1.5 mm				
A1APCL	Killed CS	1.5 mm				
A1APCM	Killed CS	1.5 mm				
A1APVV	Killed CS	1.5 mm				
A1AQ	Killed CS	1.5 mm				
A1AQ03	Killed CS	1.5 mm				
A1AQ04	Killed CS	1.5 mm				
A1AQCL	Killed CS	1.5 mm				
A1AS	Killed CS	1.5 mm				

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WALL THICKNESS TABLE

LINE CLASS	MATL	C. A.	0.25"	0.5"	0.75"	1"	1.5"	2"	2.5"	3"	4"	5"	6"	8"	10"	12"	14"	16"	18"	20"	22"	24"	26"
A1AY	Killed CS	1.5 mm		xs	xs	xs	xs	xs		std	std												
				3.73mm	3.91mm	4.55mm	5.08mm	5.54mm		5.49mm	6.02mm												
A1AY04	Killed CS	1.5 mm		xs	xs	xs	xs	xs		std	std		std										
				3.73mm	3.91mm	4.55mm	5.08mm	5.54mm		5.49mm	6.02mm		7.11mm										
A1EH	2-1/4Cr-1Mo	1.5 mm		xs	xs	xs	xs	xs		std	std		std	sch20	sch20								
				3.73mm	3.91mm	4.55mm	5.08mm	5.54mm		5.49mm	6.02mm		7.11mm	6.35mm	6.35mm								
A1G804	LTCS	1.5 mm		xs	xs	xs	xs	xs		std	std		std	sch20	sch20	sch20	sch20	sch20	sch20	std		std	
				3.73mm	3.91mm	4.55mm	5.08mm	5.54mm		5.49mm	6.02mm		7.11mm	6.35mm	6.35mm	6.35mm	7.92mm	7.92mm	7.92mm	9.53mm		9.53mm	
A1GA	LTCS	1.5 mm		xs	xs	xs	xs																
				3.73mm	3.91mm	4.55mm	5.08mm																
A1GP	LTCS	1.5 mm		xs	xs	xs	xs	xs		std	std		std	sch20	sch20	sch20	sch20	sch20	sch20	std		std	
				3.73mm	3.91mm	4.55mm	5.08mm	5.54mm		5.49mm	6.02mm		7.11mm	6.35mm	6.35mm	6.35mm	7.92mm	7.92mm	7.92mm	9.53mm		9.53mm	
A1GP01	LTCS	1.5 mm		xs	xs	xs	xs	xs		std	std		std	sch20	sch20	sch20	sch20	sch20	sch20	std		std	
				3.73mm	3.91mm	4.55mm	5.08mm	5.54mm		5.49mm	6.02mm		7.11mm	6.35mm	6.35mm	6.35mm	7.92mm	7.92mm	7.92mm	9.53mm		9.53mm	
A1GP04	LTCS	1.5 mm		xs	xs	xs	xs	xs		std	std		std	sch20	sch20	sch20	sch20	sch20	sch20	std		std	
				3.73mm	3.91mm	4.55mm	5.08mm	5.54mm		5.49mm	6.02mm		7.11mm	6.35mm	6.35mm	6.35mm	7.92mm	7.92mm	7.92mm	9.53mm		9.53mm	
A1GPVV	LTCS	1.5 mm		xxs	xxs	xxs	xxs	xxs		xxs	sch160		sch120	xs	xs	xs	xs	xs	xs	xs		xs	
				7.47mm	7.82mm	9.09mm	10.15mm	11.07mm		15.24mm	13.49mm		14.27mm	12.7mm	12.7mm	12.7mm	12.7mm	12.7mm	12.7mm	12.7mm		12.7mm	
A1J804	SS304L	1.5 mm		sch80s	sch80s	sch80s	sch80s	sch40s		sch40s	sch40s		sch40s	sch40s	sch40s	sch40s	sch40s	sch40s	sch40s				
				3.73mm	3.91mm	4.55mm	5.08mm	3.91mm		5.49mm	6.02mm		7.11mm	8.18mm	9.27mm	9.53mm	9.53mm	9.53mm	9.53mm				
A1JM	SS304L	1.5 mm		sch80s	sch80s	sch80s	sch80s	sch40s		sch40s													
				3.73mm	3.91mm	4.55mm	5.08mm	3.91mm		5.49mm													
A1JV04	SS304L	1.5 mm		sch80s	sch80s	sch80s	sch80s	sch40s		sch40s	sch40s		sch40s	sch40s	sch40s	sch40s	sch40s	sch40s	sch40s				
				3.73mm	3.91mm	4.55mm	5.08mm	3.91mm		5.49mm	6.02mm		7.11mm	8.18mm	9.27mm	9.53mm	9.53mm	9.53mm	9.53mm				
A1LA	SS316L	1.5 mm		sch80s	sch80s	sch80s	sch80s	sch40s															
				3.73mm	3.91mm	4.55mm	5.08mm	3.91mm															
A1LJ	SS316L	1.5 mm		sch80s	sch80s	sch80s	sch80s	sch40s															
				3.73mm	3.91mm	4.55mm	5.08mm	3.91mm															
A1LP	SS316L	1.5 mm		sch80s	sch80s	sch80s	sch80s	sch40s		sch40s	sch40s												
				3.73mm	3.91mm	4.55mm	5.08mm	3.91mm		5.49mm	6.02mm												
A1LP04	SS316L	1.5 mm		sch80s	sch80s	sch80s	sch80s	sch40s		sch40s	sch40s		sch40s	sch40s									
				3.73mm	3.91mm	4.55mm	5.08mm	3.91mm		5.49mm	6.02mm		7.11mm	8.18mm									
A1LV	SS316L	1.5 mm		sch80s	sch80s	sch80s	sch80s	sch40s		sch40s	sch40s		sch40s	sch10s	sch40s	sch40s	sch40s						
				3.73mm	3.91mm	4.55mm	5.08mm	3.91mm		5.49mm	6.02mm		7.11mm	3.76mm	9.27mm	9.53mm	9.53mm						
A1LV04	SS316L	1.5 mm		sch80s	sch80s	sch80s	sch80s	sch40s		sch40s	sch40s		sch40s	sch40s	sch40s	sch40s	sch40s	sch40s	sch40s	sch40s		sch40s	
				3.73mm	3.91mm	4.55mm	5.08mm	3.91mm		5.49mm	6.02mm		7.11mm	8.18mm	9.27mm	9.53mm	9.53mm	9.53mm	9.53mm	9.53mm		9.53mm	
A1LW	SS316L	0 mm		sch80s	sch80s	sch80s	sch80s	sch40s															
				3.73mm	3.91mm	4.55mm	5.08mm	3.91mm															
A1LY	SS316L	1.5 mm		sch80s	sch80s	sch80s	sch80s	sch40s		sch40s	sch40s		sch40s										
				3.73mm	3.91mm	4.55mm	5.08mm	3.91mm		5.49mm	6.02mm		7.11mm										
A1LY01	SS316L	1.5 mm		sch80s	sch80s	sch80s	sch80s	sch40s		sch40s	sch40s		sch40s										
				3.73mm	3.91mm	4.55mm	5.08mm	3.91mm		5.49mm	6.02mm		7.11mm										
A1LY04	SS316L	1.5 mm		sch80s	sch80s	sch80s	sch80s	sch40s		sch40s	sch40s												
				3.73mm	3.91mm	4.55mm	5.08mm	3.91mm		5.49mm	6.02mm												
A1YV	INCONEL 625	1.5 mm		sch80s	sch80s	sch80s	sch80s	sch40s		sch40s	sch40s		sch40s										
				3.73mm	3.91mm	4.55mm	5.08mm	3.91mm		5.49mm	6.02mm		7.11mm										
A1YV04	INCONEL 625	1.5 mm		sch80s	sch80s	sch80s	sch80s	sch40s		sch40s	sch40s		sch40s										
				3.73mm	3.91mm	4.55mm	5.08mm	3.91mm		5.49mm	6.02mm		7.11mm										

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WALL THICKNESS TABLE

LINE CLASS	MATL	C. A.	28"	30"	32"	34"	36"	40"	42"	44"	48"	52"	54"	56"	60"	64"	68"	72"	76"	80"	84"	92"	96"
A1AY	Killed CS	1.5 mm																					
A1AY04	Killed CS	1.5 mm																					
A1EH	2-1/4Cr-1Mo	1.5 mm																					
A1G804	LTCS	1.5 mm																					
A1GA	LTCS	1.5 mm																					
A1GP	LTCS	1.5 mm		std 9.53mm			xs 12.7mm		std 9.53mm		xs 12.7mm												
A1GP01	LTCS	1.5 mm		sch10 7.92mm	sch10 7.92mm		sch10 7.92mm	std 9.53mm	std 9.53mm														
A1GP04	LTCS	1.5 mm																					
A1GPVV	LTCS	1.5 mm		xs 12.7mm			xs 12.7mm		xs 12.7mm		xs 12.7mm												
A1J804	SS304L	1.5 mm																					
A1JM	SS304L	1.5 mm																					
A1JV04	SS304L	1.5 mm																					
A1LA	SS316L	1.5 mm																					
A1LJ	SS316L	1.5 mm																					
A1LP	SS316L	1.5 mm																					
A1LP04	SS316L	1.5 mm																					
A1LV	SS316L	1.5 mm																					
A1LV04	SS316L	1.5 mm		std 9.53mm																			
A1LW	SS316L	0 mm																					
A1LY	SS316L	1.5 mm																					
A1LY01	SS316L	1.5 mm																					
A1LY04	SS316L	1.5 mm																					
A1YV	INCONEL 625	1.5 mm																					
A1YV04	INCONEL 625	1.5 mm																					

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WALL THICKNESS TABLE

LINE CLASS	MATL	C. A.	100"	104"	108"	116"
A1AY	Killed CS	1.5 mm				
A1AY04	Killed CS	1.5 mm				
A1EH	2-1/4Cr-1Mo	1.5 mm				
A1G804	LTCS	1.5 mm				
A1GA	LTCS	1.5 mm				
A1GP	LTCS	1.5 mm				
A1GP01	LTCS	1.5 mm				
A1GP04	LTCS	1.5 mm				
A1GPVV	LTCS	1.5 mm				
A1J804	SS304L	1.5 mm				
A1JM	SS304L	1.5 mm				
A1JV04	SS304L	1.5 mm				
A1LA	SS316L	1.5 mm				
A1LJ	SS316L	1.5 mm				
A1LP	SS316L	1.5 mm				
A1LP04	SS316L	1.5 mm				
A1LV	SS316L	1.5 mm				
A1LV04	SS316L	1.5 mm				
A1LW	SS316L	0 mm				
A1LY	SS316L	1.5 mm				
A1LY01	SS316L	1.5 mm				
A1LY04	SS316L	1.5 mm				
A1YV	INCONEL 625	1.5 mm				
A1YV04	INCONEL 625	1.5 mm				

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WALL THICKNESS TABLE

LINE CLASS	MATL	C. A.	0.25"	0.5"	0.75"	1"	1.5"	2"	2.5"	3"	4"	5"	6"	8"	10"	12"	14"	16"	18"	20"	22"	24"	26"
A21A05	Killed CS	1.5 mm		xs	xs	xs	xs	xs	std	std	std	std	std	sch30	sch30	sch30	sch20	sch20					
				3.73mm	3.91mm	4.55mm	5.08mm	5.54mm	5.16mm	5.49mm	6.02mm	6.55mm	7.11mm	7.04mm	7.8mm	8.38mm	7.92mm	7.92mm					
A21B05	Killed CS	3 mm		sch160	sch160	sch160	sch160	xs		std	std		std	sch20	sch20	sch30	sch20	sch20	sch20	std			
				4.78mm	5.56mm	6.35mm	7.14mm	5.54mm		5.49mm	6.02mm		7.11mm	6.35mm	6.35mm	8.38mm	7.92mm	7.92mm	7.92mm	9.53mm			
A21F05	SS304L	0 mm		sch80s	sch80s	sch80s	sch80s	sch10s		sch10s	sch10s												
				3.73mm	3.91mm	4.55mm	5.08mm	2.77mm		3.05mm	3.05mm												
A28P	9Cr - 1MO	3 mm		sch160	sch160	sch160	sch160	xs		std	std		std	sch30	sch30	sch30	sch20	sch20	sch20	std		std	
				4.78mm	5.56mm	6.35mm	7.14mm	5.54mm		5.49mm	6.02mm		7.11mm	7.04mm	7.8mm	8.38mm	7.92mm	7.92mm	7.92mm	9.53mm		9.53mm	
A2A201	Killed CS	3 mm		sch160	sch160	sch160	sch160	xs		std	std		std	sch30	sch30	sch30	sch20	sch20	sch20	std		std	
				4.78mm	5.56mm	6.35mm	7.14mm	5.54mm		5.49mm	6.02mm		7.11mm	7.04mm	7.8mm	8.38mm	7.92mm	7.92mm	7.92mm	9.53mm		9.53mm	
A2A4	Killed CS	3 mm		sch160	sch160	sch160	sch160	xs		std	std		std	sch30	sch30	sch30	sch20	sch20	std	std		xs	
				4.78mm	5.56mm	6.35mm	7.14mm	5.54mm		5.49mm	6.02mm		7.11mm	7.04mm	7.8mm	8.38mm	7.92mm	7.92mm	9.53mm	9.53mm		12.7mm	
A2A5	Killed CS	3 mm		sch160	sch160	sch160	sch160	xs		std	std		std	sch30	sch30	sch30	sch20	sch20	std	std		xs	
				4.78mm	5.56mm	6.35mm	7.14mm	5.54mm		5.49mm	6.02mm		7.11mm	7.04mm	7.8mm	8.38mm	7.92mm	7.92mm	9.53mm	9.53mm		12.7mm	
A2A501	Killed CS	3 mm		sch160	sch160	sch160	sch160	xs		std	std		std	sch30	sch30	sch30							
				4.78mm	5.56mm	6.35mm	7.14mm	5.54mm		5.49mm	6.02mm		7.11mm	7.04mm	7.8mm	8.38mm							
A2A503	Killed CS	3 mm		sch160	sch160	sch160	sch160	xs		std	std		std	sch30	sch30	sch30	sch20	sch20	std	std		xs	
				4.78mm	5.56mm	6.35mm	7.14mm	5.54mm		5.49mm	6.02mm		7.11mm	7.04mm	7.8mm	8.38mm	7.92mm	7.92mm	9.53mm	9.53mm		12.7mm	
A2A604	Killed CS	3 mm		xxs	sch160	sch160	sch160	xs		xs	std		std	sch30	sch30								
				7.47mm	5.56mm	6.35mm	7.14mm	5.54mm		7.62mm	6.02mm		7.11mm	7.04mm	7.8mm								
A2A704	Killed CS	3 mm		xxs	sch160	sch160	sch160	xs		xs	std		std	sch30	sch30								
				7.47mm	5.56mm	6.35mm	7.14mm	5.54mm		7.62mm	6.02mm		7.11mm	7.04mm	7.8mm								
A2AA	Killed CS	3 mm		sch160	sch160	sch160	sch160	xs		std	std		std	sch20	sch20	sch30	sch20	sch20	sch20	std		std	
				4.78mm	5.56mm	6.35mm	7.14mm	5.54mm		5.49mm	6.02mm		7.11mm	6.35mm	6.35mm	8.38mm	7.92mm	7.92mm	7.92mm	9.53mm		9.53mm	
A2AC01	Killed CS	3 mm		sch160	sch160	sch160	sch160	xs		std	std		std	sch30	sch30	sch30	sch20	sch20	sch20	std		std	
				4.78mm	5.56mm	6.35mm	7.14mm	5.54mm		5.49mm	6.02mm		7.11mm	7.04mm	7.8mm	8.38mm	7.92mm	7.92mm	7.92mm	9.53mm		9.53mm	
A2AD	Killed CS	3 mm		sch160	sch160	sch160	sch160	xs		std	std		std	sch30	sch20								
				4.78mm	5.56mm	6.35mm	7.14mm	5.54mm		5.49mm	6.02mm		7.11mm	7.04mm	6.35mm								
A2AG	CS (ASME)	3 mm		sch160	sch160	sch160	sch160	xs		std	std		std										
				4.78mm	5.56mm	6.35mm	7.14mm	5.54mm		5.49mm	6.02mm		7.11mm										
A2AL	Killed CS	3 mm		sch160	sch160	sch160	sch160	xs		std	std		std	sch30	sch30	sch30	sch20	sch20	sch20	std			
				4.78mm	5.56mm	6.35mm	7.14mm	5.54mm		5.49mm	6.02mm		7.11mm	7.04mm	7.8mm	8.38mm	7.92mm	7.92mm	7.92mm	9.53mm			
A2AL01	Killed CS	3 mm		sch160	sch160	sch160	sch160	xs		std	std		std	sch20	sch20	sch30	sch20	sch20	sch20	std			
				4.78mm	5.56mm	6.35mm	7.14mm	5.54mm		5.49mm	6.02mm		7.11mm	6.35mm	6.35mm	8.38mm	7.92mm	7.92mm	7.92mm	9.53mm			
A2AL03	Killed CS	3 mm		sch160	sch160	sch160	sch160	xs		std	std												
				4.78mm	5.56mm	6.35mm	7.14mm	5.54mm		5.49mm	6.02mm												
A2AL04	Killed CS	3 mm		xxs	sch160	sch160	sch160	xs		xs	std												
				7.47mm	5.56mm	6.35mm	7.14mm	5.54mm		7.62mm	6.02mm												
A2AM	Killed CS	3 mm		sch160	sch160	sch160	sch160	xs		std	std		std	sch20									
				4.78mm	5.56mm	6.35mm	7.14mm	5.54mm		5.49mm	6.02mm		7.11mm	6.35mm									
A2AN	Killed CS	3 mm		sch160	sch160	sch160	sch160	xs		std	std		std	sch30	sch30	sch30	sch20	sch20	sch20				
				4.78mm	5.56mm	6.35mm	7.14mm	5.54mm		5.49mm	6.02mm		7.11mm	7.04mm	7.8mm	8.38mm	7.92mm	7.92mm	7.92mm				
A2AN01	Killed CS	3 mm		sch160	sch160	sch160	sch160	xs		std	std		std	sch20	sch20								
				4.78mm	5.56mm	6.35mm	7.14mm	5.54mm		5.49mm	6.02mm		7.11mm	6.35mm	6.35mm								
A2AN03	Killed CS	3 mm		sch160	sch160	sch160	sch160	xs		std	std												
				4.78mm	5.56mm	6.35mm	7.14mm	5.54mm		5.49mm	6.02mm												
A2AN04	Killed CS	3 mm		xxs	sch160	sch160	sch160	xs		xs	std		std	sch30									
				7.47mm	5.56mm	6.35mm	7.14mm	5.54mm		7.62mm	6.02mm		7.11mm	7.04mm									

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WALL THICKNESS TABLE

LINE CLASS	MATL	C. A.	28"	30"	32"	34"	36"	40"	42"	44"	48"	52"	54"	56"	60"	64"	68"	72"	76"	80"	84"	92"	96"
A21A05	Killed CS	1.5 mm																					
A21B05	Killed CS	3 mm																					
A21F05	SS304L	0 mm																					
A28P	9Cr - 1MO	3 mm		std 9.53mm			std 9.53mm		xs 12.7mm														
A2A201	Killed CS	3 mm																					
A2A4	Killed CS	3 mm																					
A2A5	Killed CS	3 mm		xs 12.7mm																			
A2A501	Killed CS	3 mm																					
A2A503	Killed CS	3 mm																					
A2A604	Killed CS	3 mm																					
A2A704	Killed CS	3 mm																					
A2AA	Killed CS	3 mm																					
A2AC01	Killed CS	3 mm																					
A2AD	Killed CS	3 mm																					
A2AG	CS (ASME)	3 mm																					
A2AL	Killed CS	3 mm																					
A2AL01	Killed CS	3 mm																					
A2AL03	Killed CS	3 mm																					
A2AL04	Killed CS	3 mm																					
A2AM	Killed CS	3 mm																					
A2AN	Killed CS	3 mm																					
A2AN01	Killed CS	3 mm																					
A2AN03	Killed CS	3 mm																					
A2AN04	Killed CS	3 mm																					

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WALL THICKNESS TABLE

LINE CLASS	MATL	C. A.	100"	104"	108"	116"
A21A05	Killed CS	1.5 mm				
A21B05	Killed CS	3 mm				
A21F05	SS304L	0 mm				
A28P	9Cr - 1MO	3 mm				
A2A201	Killed CS	3 mm				
A2A4	Killed CS	3 mm				
A2A5	Killed CS	3 mm				
A2A501	Killed CS	3 mm				
A2A503	Killed CS	3 mm				
A2A604	Killed CS	3 mm				
A2A704	Killed CS	3 mm				
A2AA	Killed CS	3 mm				
A2AC01	Killed CS	3 mm				
A2AD	Killed CS	3 mm				
A2AG	CS (ASME)	3 mm				
A2AL	Killed CS	3 mm				
A2AL01	Killed CS	3 mm				
A2AL03	Killed CS	3 mm				
A2AL04	Killed CS	3 mm				
A2AM	Killed CS	3 mm				
A2AN	Killed CS	3 mm				
A2AN01	Killed CS	3 mm				
A2AN03	Killed CS	3 mm				
A2AN04	Killed CS	3 mm				

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WALL THICKNESS TABLE

LINE CLASS	MATL	C. A.	0.25"	0.5"	0.75"	1"	1.5"	2"	2.5"	3"	4"	5"	6"	8"	10"	12"	14"	16"	18"	20"	22"	24"	26"
A2AP	Killed CS	3 mm		sch160	sch160	sch160	sch160	xs		std	std		std	sch20	sch20	sch30	sch20	sch20	sch20	std		std	
				4.78mm	5.56mm	6.35mm	7.14mm	5.54mm		5.49mm	6.02mm		7.11mm	6.35mm	6.35mm	8.38mm	7.92mm	7.92mm	7.92mm	9.53mm		9.53mm	
A2AP01	Killed CS	3 mm		sch160	sch160	sch160	sch160	xs		std	std		std	sch20	sch20	sch30	sch20	sch20	sch20	std		std	
				4.78mm	5.56mm	6.35mm	7.14mm	5.54mm		5.49mm	6.02mm		7.11mm	6.35mm	6.35mm	8.38mm	7.92mm	7.92mm	7.92mm	9.53mm		9.53mm	
A2AP02	Killed CS	3 mm		sch160	sch160	sch160	sch160	xs		std	std		std	sch20	sch20	sch30	sch20	sch20	sch20	std			
				4.78mm	5.56mm	6.35mm	7.14mm	5.54mm		5.49mm	6.02mm		7.11mm	6.35mm	6.35mm	8.38mm	7.92mm	7.92mm	7.92mm	9.53mm			
A2AP03	Killed CS	3 mm		sch160	sch160	sch160	sch160	xs		std	std		std	sch20	sch20	sch30	sch20	sch20	sch20	std		std	
				4.78mm	5.56mm	6.35mm	7.14mm	5.54mm		5.49mm	6.02mm		7.11mm	6.35mm	6.35mm	8.38mm	7.92mm	7.92mm	7.92mm	9.53mm		9.53mm	
A2AP04	Killed CS	3 mm		xxs	sch160	sch160	sch160	xs		xs	std		std	sch30	sch30	sch30	std	std	sch20	std		std	xs
				7.47mm	5.56mm	6.35mm	7.14mm	5.54mm		7.62mm	6.02mm		7.11mm	7.04mm	7.8mm	8.38mm	9.53mm	9.53mm	7.92mm	9.53mm		9.53mm	12.7mm
A2APCL	Killed CS	3 mm		sch160	sch160	sch160	sch160	xs		std	std		std	sch20									
				4.78mm	5.56mm	6.35mm	7.14mm	5.54mm		5.49mm	6.02mm		7.11mm	6.35mm									
A2APCM	Killed CS	3 mm		sch160	sch160	sch160	sch160	xs		std	std		std	sch20	sch20	sch30	sch20	sch20	sch20	std		std	
				4.78mm	5.56mm	6.35mm	7.14mm	5.54mm		5.49mm	6.02mm		7.11mm	6.35mm	6.35mm	8.38mm	7.92mm	7.92mm	7.92mm	9.53mm		9.53mm	
A2AQ	Killed CS	3 mm		sch160	sch160	sch160	sch160	xs		std	std		std	sch30	sch30	sch30	sch20	sch20	std	std		xs	
				4.78mm	5.56mm	6.35mm	7.14mm	5.54mm		5.49mm	6.02mm		7.11mm	7.04mm	7.8mm	8.38mm	7.92mm	7.92mm	9.53mm	9.53mm		12.7mm	
A2AQ01	Killed CS	3 mm		sch160	sch160	sch160	sch160	xs		std	std		std	sch30	sch30	sch30	sch20	sch20	std	std		xs	
				4.78mm	5.56mm	6.35mm	7.14mm	5.54mm		5.49mm	6.02mm		7.11mm	7.04mm	7.8mm	8.38mm	7.92mm	7.92mm	9.53mm	9.53mm		12.7mm	
A2AQ03	Killed CS	3 mm		sch160	sch160	sch160	sch160	xs		std	std		std	sch30	sch30	sch30	sch20	sch20					
				4.78mm	5.56mm	6.35mm	7.14mm	5.54mm		5.49mm	6.02mm		7.11mm	7.04mm	7.8mm	8.38mm	7.92mm	7.92mm					
A2AQ04	Killed CS	3 mm		xxs	sch160	sch160	sch160	xs		xs	std		std	sch30	sch30	sch30	std	std	std	std		xs	
				7.47mm	5.56mm	6.35mm	7.14mm	5.54mm		7.62mm	6.02mm		7.11mm	7.04mm	7.8mm	8.38mm	9.53mm	9.53mm	9.53mm	9.53mm		12.7mm	
A2AQCL	Killed CS	3 mm		sch160	sch160	sch160	sch160	xs		std	std		std	sch30	sch30	sch30	sch20	sch20	sch20	std		std	
				4.78mm	5.56mm	6.35mm	7.14mm	5.54mm		5.49mm	6.02mm		7.11mm	7.04mm	7.8mm	8.38mm	7.92mm	7.92mm	7.92mm	9.53mm		9.53mm	
A2AQVV	Killed CS	3 mm		xxs	xxs	xxs	xxs	xxs		xxs	sch160		sch120	xs	xs	xs	xs	xs	xs	xs		xs	
				7.47mm	7.82mm	9.09mm	10.15mm	11.07mm		15.24mm	13.49mm		14.27mm	12.7mm	12.7mm	12.7mm	12.7mm	12.7mm	12.7mm	12.7mm		12.7mm	
A2AR	Killed CS	3 mm		sch160	sch160	sch160	sch160	xs		std	std		std	sch30	sch30	sch30	sch20	sch20	sch20	std		std	
				4.78mm	5.56mm	6.35mm	7.14mm	5.54mm		5.49mm	6.02mm		7.11mm	7.04mm	7.8mm	8.38mm	7.92mm	7.92mm	7.92mm	9.53mm		9.53mm	
A2AR01	Killed CS	3 mm		sch160	sch160	sch160	sch160	xs		std	std		std	sch30	sch30	sch30	sch20	sch20	std	std		xs	
				4.78mm	5.56mm	6.35mm	7.14mm	5.54mm		5.49mm	6.02mm		7.11mm	7.04mm	7.8mm	8.38mm	7.92mm	7.92mm	9.53mm	9.53mm		12.7mm	
A2AR03	Killed CS	3 mm		sch160	sch160	sch160	sch160	xs		std	std		std	sch30	sch30	sch30	sch20	sch20	std	std		xs	
				4.78mm	5.56mm	6.35mm	7.14mm	5.54mm		5.49mm	6.02mm		7.11mm	7.04mm	7.8mm	8.38mm	7.92mm	7.92mm	9.53mm	9.53mm		12.7mm	
A2AR04	Killed CS	3 mm		xxs	sch160	sch160	sch160	xs		xs	std		std	sch30	sch30	sch30	std						
				7.47mm	5.56mm	6.35mm	7.14mm	5.54mm		7.62mm	6.02mm		7.11mm	7.04mm	7.8mm	8.38mm	9.53mm						
A2AS	Killed CS	3 mm		sch160	sch160	sch160	sch160	xs		std	std		std	sch30	sch30	sch30	sch20	sch20	sch20	std		std	
				4.78mm	5.56mm	6.35mm	7.14mm	5.54mm		5.49mm	6.02mm		7.11mm	7.04mm	7.8mm	8.38mm	7.92mm	7.92mm	7.92mm	9.53mm		9.53mm	
A2AW	Killed CS	3 mm		sch160	sch160	sch160	sch160	xs		std	std		std	sch30	sch30	sch30	sch20	sch20	sch20	std		std	
				4.78mm	5.56mm	6.35mm	7.14mm	5.54mm		5.49mm	6.02mm		7.11mm	7.04mm	7.8mm	8.38mm	7.92mm	7.92mm	7.92mm	9.53mm		9.53mm	
A2AY04	Killed CS	3 mm		xxs	sch160	sch160	sch160	xs		xs	std		std										
				7.47mm	5.56mm	6.35mm	7.14mm	5.54mm		7.62mm	6.02mm		7.11mm										
A2DC01	1-1/4Cr - 1/2Mo	3 mm		sch160	sch160	sch160	sch160	xs		std	std		std	sch30	sch30	sch30	sch20	sch20	sch20	std			
				4.78mm	5.56mm	6.35mm	7.14mm	5.54mm		5.49mm	6.02mm		7.11mm	7.04mm	7.8mm	8.38mm	7.92mm	7.92mm	7.92mm	9.53mm			
A2DP01	1-1/4Cr - 1/2Mo	3 mm		sch160	sch160	sch160	sch160	xs		std	std		std	sch30	sch30	sch30	sch20	sch20	sch20	std		std	
				4.78mm	5.56mm	6.35mm	7.14mm	5.54mm		5.49mm	6.02mm		7.11mm	7.04mm	7.8mm	8.38mm	7.92mm	7.92mm	7.92mm	9.53mm		9.53mm	
A2FC01	5Cr-1/2Mo	3 mm		sch160	sch160	sch160	sch160	xs		std	std		std	sch30	sch30	sch30	sch20	sch20	sch20	std		std	
				4.78mm	5.56mm	6.35mm	7.14mm	5.54mm		5.49mm	6.02mm		7.11mm	7.04mm	7.8mm	8.38mm	7.92mm	7.92mm	7.92mm	9.53mm		9.53mm	
A2GN	LTCS	3 mm		sch160	sch160	sch160	sch160	xs		std	std		std	sch20									
				4.78mm	5.56mm	6.35mm	7.14mm	5.54mm		5.49mm	6.02mm		7.11mm	6.35mm									

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WALL THICKNESS TABLE

LINE CLASS	MATL	C. A.	28"	30"	32"	34"	36"	40"	42"	44"	48"	52"	54"	56"	60"	64"	68"	72"	76"	80"	84"	92"	96"
A2AP	Killed CS	3 mm		xs 12.7mm			xs 12.7mm		14.27mm		xs 12.7mm												
A2AP01	Killed CS	3 mm		std 9.53mm																			
A2AP02	Killed CS	3 mm																					
A2AP03	Killed CS	3 mm		std 9.53mm			std 9.53mm		xs 12.7mm		xs 12.7mm												
A2AP04	Killed CS	3 mm	std 9.53mm	xs 12.7mm			xs 12.7mm		xs 12.7mm	xs 12.7mm	xs 12.7mm												
A2APCL	Killed CS	3 mm																					
A2APCM	Killed CS	3 mm		std 9.53mm			std 9.53mm		xs 12.7mm		xs 12.7mm												
A2AQ	Killed CS	3 mm		xs 12.7mm			xs 12.7mm		14.27mm		14.27mm	15.88mm		17.48mm	17.48mm	19.05mm	19.05mm	19.05mm	19.05mm	22.23mm		22.23mm	
A2AQ01	Killed CS	3 mm		xs 12.7mm			xs 12.7mm		14.27mm		14.27mm												
A2AQ03	Killed CS	3 mm																					
A2AQ04	Killed CS	3 mm		xs 12.7mm			xs 12.7mm																
A2AQCL	Killed CS	3 mm		std 9.53mm																			
A2AQVV	Killed CS	3 mm		xs 12.7mm			xs 12.7mm		14.27mm		14.27mm	15.88mm		17.48mm	17.48mm	19.05mm	19.05mm	19.05mm	19.05mm	22.23mm		22.23mm	
A2AR	Killed CS	3 mm		std 9.53mm			std 9.53mm		xs 12.7mm		xs 12.7mm												
A2AR01	Killed CS	3 mm		xs 12.7mm			xs 12.7mm		14.27mm		14.27mm	15.88mm	15.88mm										
A2AR03	Killed CS	3 mm		xs 12.7mm			xs 12.7mm		14.27mm		xs 12.7mm												
A2AR04	Killed CS	3 mm																					
A2AS	Killed CS	3 mm		std 9.53mm			std 9.53mm																
A2AW	Killed CS	3 mm		std 9.53mm			std 9.53mm	11.13mm	11.13mm		11.91mm	12.70mm		14.27mm	14.27mm	14.27mm	15.88mm	15.88mm	17.48mm	17.48mm	17.48mm	17.48mm	19.05mm
A2AY04	Killed CS	3 mm																					
A2DC01	1-1/4Cr - 1/2Mo	3 mm																					
A2DP01	1-1/4Cr - 1/2Mo	3 mm		xs 12.7mm																			
A2FC01	5Cr-1/2Mo	3 mm		xs 12.7mm																			
A2GN	LTCS	3 mm																					

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WALL THICKNESS TABLE

LINE CLASS	MATL	C. A.	100"	104"	108"	116"
A2AP	Killed CS	3 mm				
A2AP01	Killed CS	3 mm				
A2AP02	Killed CS	3 mm				
A2AP03	Killed CS	3 mm				
A2AP04	Killed CS	3 mm				
A2APCL	Killed CS	3 mm				
A2APCM	Killed CS	3 mm				
A2AQ	Killed CS	3 mm				
A2AQ01	Killed CS	3 mm				
A2AQ03	Killed CS	3 mm				
A2AQ04	Killed CS	3 mm				
A2AQCL	Killed CS	3 mm				
A2AQVV	Killed CS	3 mm				
A2AR	Killed CS	3 mm				
A2AR01	Killed CS	3 mm				
A2AR03	Killed CS	3 mm				
A2AR04	Killed CS	3 mm				
A2AS	Killed CS	3 mm				
A2AW	Killed CS	3 mm		19.05mm	19.05mm	
A2AY04	Killed CS	3 mm				
A2DC01	1-1/4Cr - 1/2Mo	3 mm				
A2DP01	1-1/4Cr - 1/2Mo	3 mm				
A2FC01	5Cr-1/2Mo	3 mm				
A2GN	LTCS	3 mm				

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WALL THICKNESS TABLE

LINE CLASS	MATL	C. A.	0.25"	0.5"	0.75"	1"	1.5"	2"	2.5"	3"	4"	5"	6"	8"	10"	12"	14"	16"	18"	20"	22"	24"	26"
A2GP	LTCS	3 mm		sch160	sch160	sch160	sch160	xs		std	std		std	sch20	sch20	sch30	sch20	sch20	sch20				
				4.78mm	5.56mm	6.35mm	7.14mm	5.54mm		5.49mm	6.02mm		7.11mm	6.35mm	6.35mm	8.38mm	7.92mm	7.92mm	7.92mm				
A2GP04	LTCS	3 mm		xxs	sch160	sch160	sch160	xs		xs	std		std	sch30									
				7.47mm	5.56mm	6.35mm	7.14mm	5.54mm		7.62mm	6.02mm		7.11mm	7.04mm									
A2GQ	LTCS	3 mm		sch160	sch160	sch160	sch160	xs		std	std		std	sch30	sch30	sch30	sch20	sch20	std	std		xs	
				4.78mm	5.56mm	6.35mm	7.14mm	5.54mm		5.49mm	6.02mm		7.11mm	7.04mm	7.8mm	8.38mm	7.92mm	7.92mm	9.53mm	9.53mm		12.7mm	
A2GQ01	LTCS	3 mm		sch160	sch160	sch160	sch160	xs		std	std		std	sch30	sch30	sch30	sch20	sch20	std	std		xs	
				4.78mm	5.56mm	6.35mm	7.14mm	5.54mm		5.49mm	6.02mm		7.11mm	7.04mm	7.8mm	8.38mm	7.92mm	7.92mm	9.53mm	9.53mm		12.7mm	
A2GQVV	LTCS	3 mm		xxs	xxs	xxs	xxs	xxs		xxs	sch160		sch120	xs	xs	xs	xs	xs	xs	xs		xs	
				7.47mm	7.82mm	9.09mm	10.15mm	11.07mm		15.24mm	13.49mm		14.27mm	12.7mm	12.7mm	12.7mm	12.7mm	12.7mm	12.7mm	12.7mm		12.7mm	
A2UQ	CS Coated & Wrapped	3 mm									std		std	sch20	sch20	sch30	sch20	sch20	sch20	std		std	
											6.02mm		7.11mm	6.35mm	6.35mm	8.38mm	7.92mm	7.92mm	7.92mm	9.53mm		9.53mm	
A31B05	Killed CS	3 mm		sch160	sch160	sch160	sch160	xs		std	std		std	sch30	sch30	sch30	sch20	sch20	sch20	std			
				4.78mm	5.56mm	6.35mm	7.14mm	5.54mm		5.49mm	6.02mm		7.11mm	7.04mm	7.8mm	8.38mm	7.92mm	7.92mm	7.92mm	9.53mm			
A31F05	SS304L	0 mm		sch80s	sch80s	sch80s	sch80s	sch10s		sch10s	sch10s		sch10s	sch10s									
				3.73mm	3.91mm	4.55mm	5.08mm	2.77mm		3.05mm	3.05mm		3.4mm	3.76mm									
A41F05	SS304L	0 mm		sch80s	sch80s	sch80s	sch80s																
				3.73mm	3.91mm	4.55mm	5.08mm																
A4A4	Killed CS	6 mm		sch80s		xxs	xxs	sch160		sch160	sch120		xs	sch60	xs	sch40	sch40	xs	xs	xs		sch30	
				3.73mm		9.09mm	10.15mm	8.74mm		11.13mm	11.13mm		10.97mm	10.31mm	12.7mm	10.31mm	11.13mm	12.7mm	12.7mm	12.7mm		14.27mm	
A4A5	Killed CS	6 mm		sch80s		xxs	xxs	sch160		sch160	sch120		xs	sch60	xs	sch40	sch40	xs	xs	xs		sch30	
				3.73mm		9.09mm	10.15mm	8.74mm		11.13mm	11.13mm		10.97mm	10.31mm	12.7mm	10.31mm	11.13mm	12.7mm	12.7mm	12.7mm		14.27mm	
A4AQ	Killed CS	6 mm		sch80s		xxs	xxs	sch160		sch160	sch120		xs	sch60	xs	sch40	sch40	xs	xs	xs		sch30	
				3.73mm		9.09mm	10.15mm	8.74mm		11.13mm	11.13mm		10.97mm	10.31mm	12.7mm	10.31mm	11.13mm	12.7mm	12.7mm	12.7mm		14.27mm	
A4AQ01	Killed CS	6 mm		sch80s		xxs	xxs	sch160		sch160	sch120		xs	sch60	xs	sch40	sch40	xs	sch30				
				3.73mm		9.09mm	10.15mm	8.74mm		11.13mm	11.13mm		10.97mm	10.31mm	12.7mm	10.31mm	11.13mm	12.7mm	11.13mm				
A4AR	Killed CS	6 mm		sch80s		xxs	xxs	sch160		sch160	sch120		xs	sch60	xs	sch40	sch40	xs	xs	xs		sch30	
				3.73mm		9.09mm	10.15mm	8.74mm		11.13mm	11.13mm		10.97mm	10.31mm	12.7mm	10.31mm	11.13mm	12.7mm	12.7mm	12.7mm		14.27mm	
A4AR01	Killed CS	6 mm		sch80s		xxs	xxs	sch160		sch160	sch120		xs	sch60	xs	sch40	sch40	xs	xs	xs		sch30	
				3.73mm		9.09mm	10.15mm	8.74mm		11.13mm	11.13mm		10.97mm	10.31mm	12.7mm	10.31mm	11.13mm	12.7mm	12.7mm	12.7mm		14.27mm	
A4AR03	Killed CS	6 mm				xxs	xxs	sch160		sch160	sch120												
						9.09mm	10.15mm	8.74mm		11.13mm	11.13mm												
A4AR04	Killed CS	6 mm				xxs	xxs	xxs		sch160	sch120		xs	sch60									
						9.09mm	10.15mm	11.07mm		11.13mm	11.13mm		10.97mm	10.31mm									
A4AV03	Killed CS	6 mm				xxs	xxs	sch160		sch160	sch120												
						9.09mm	10.15mm	8.74mm		11.13mm	11.13mm												
A4FV	5Cr-1/2Mo	6 mm				xxs	xxs	sch160		sch160	sch120		xs	sch60	xs	sch40	sch40	xs	sch30	xs		xs	
						9.09mm	10.15mm	8.74mm		11.13mm	11.13mm		10.97mm	10.31mm	12.7mm	10.31mm	11.13mm	12.7mm	11.13mm	12.7mm		12.7mm	
A4GQ	LTCS	6 mm		sch80s		xxs	xxs	sch160		sch160	sch120		xs	sch60	xs	sch40	sch40	xs	xs	xs			
				3.73mm		9.09mm	10.15mm	8.74mm		11.13mm	11.13mm		10.97mm	10.31mm	12.7mm	10.31mm	11.13mm	12.7mm	12.7mm	12.7mm			
A4GR01	LTCS	6 mm				xxs	xxs	sch160		sch160	sch120		xs	sch60	xs	sch40	sch40	xs	xs	xs		sch30	
						9.09mm	10.15mm	8.74mm		11.13mm	11.13mm		10.97mm	10.31mm	12.7mm	10.31mm	11.13mm	12.7mm	12.7mm	12.7mm		14.27mm	
A61F05	SS304L	0 mm		sch80s	sch80s	sch80s	sch80s	sch10s		sch10s	sch10s		sch10s	sch10s	sch10s	sch10s	sch10s	sch10s	sch10s	sch10s			
				3.73mm	3.91mm	4.55mm	5.08mm	2.77mm		3.05mm	3.05mm		3.4mm	3.76mm	4.19mm	4.57mm	4.78mm	4.78mm	4.78mm	5.54mm			
B0AC01	Killed CS	0 mm				xxs	xxs	xxs		xxs	xxs		xxs	xxs	xxs	xxs							
						9.09mm	10.15mm	11.07mm		15.24mm	17.12mm		21.95mm	22.23mm	25.4mm	25.4mm							
B0AC03	Killed CS	0 mm				xxs	xxs	xxs		xxs	xxs		xxs	xxs	xxs								
						9.09mm	10.15mm	11.07mm		15.24mm	17.12mm		21.95mm	22.23mm	25.4mm								

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WALL THICKNESS TABLE

LINE CLASS	MATL	C. A.	28"	30"	32"	34"	36"	40"	42"	44"	48"	52"	54"	56"	60"	64"	68"	72"	76"	80"	84"	92"	96"
A2GP	LTCS	3 mm																					
A2GP04	LTCS	3 mm																					
A2GQ	LTCS	3 mm		xs 12.7mm			xs 12.7mm		14.27mm		14.27mm	15.88mm		17.48mm	17.48mm	19.05mm	19.05mm	19.05mm	19.05mm	22.23mm		19.05mm	
A2GQ01	LTCS	3 mm																					
A2GQVV	LTCS	3 mm		xs 12.7mm			xs 12.7mm		14.27mm		14.27mm	15.88mm		17.48mm	17.48mm	19.05mm	19.05mm	19.05mm	19.05mm	22.23mm		19.05mm	
A2UQ	CS Coated & Wrapped	3 mm																					
A31B05	Killed CS	3 mm																					
A31F05	SS304L	0 mm																					
A41F05	SS304L	0 mm																					
A4A4	Killed CS	6 mm		sch30 15.88mm																			
A4A5	Killed CS	6 mm		sch30 15.88mm																			
A4AQ	Killed CS	6 mm		sch30 15.88mm			sch30 15.88mm		15.88mm														
A4AQ01	Killed CS	6 mm																					
A4AR	Killed CS	6 mm		sch30 15.88mm			xs 12.7mm		14.27mm		15.88mm	15.88mm											
A4AR01	Killed CS	6 mm		xs 12.7mm			sch30 15.88mm		17.48mm		17.48mm	19.05mm	19.05mm										
A4AR03	Killed CS	6 mm																					
A4AR04	Killed CS	6 mm																					
A4AV03	Killed CS	6 mm																					
A4FV	5Cr-1/2Mo	6 mm		sch30 15.88mm																			
A4GQ	LTCS	6 mm																					
A4GR01	LTCS	6 mm		sch30 15.88mm																			
A61F05	SS304L	0 mm																					
B0AC01	Killed CS	0 mm																					
B0AC03	Killed CS	0 mm																					

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WALL THICKNESS TABLE

LINE CLASS	MATL	C. A.	100"	104"	108"	116"
A2GP	LTCS	3 mm				
A2GP04	LTCS	3 mm				
A2GQ	LTCS	3 mm				
A2GQ01	LTCS	3 mm				
A2GQVV	LTCS	3 mm				
A2UQ	CS Coated & Wrapped	3 mm				
A31B05	Killed CS	3 mm				
A31F05	SS304L	0 mm				
A41F05	SS304L	0 mm				
A4A4	Killed CS	6 mm				
A4A5	Killed CS	6 mm				
A4AQ	Killed CS	6 mm				
A4AQ01	Killed CS	6 mm				
A4AR	Killed CS	6 mm				
A4AR01	Killed CS	6 mm				
A4AR03	Killed CS	6 mm				
A4AR04	Killed CS	6 mm				
A4AV03	Killed CS	6 mm				
A4FV	5Cr-1/2Mo	6 mm				
A4GQ	LTCS	6 mm				
A4GR01	LTCS	6 mm				
A61F05	SS304L	0 mm				
B0AC01	Killed CS	0 mm				
B0AC03	Killed CS	0 mm				

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WALL THICKNESS TABLE

LINE CLASS	MATL	C. A.	0.25"	0.5"	0.75"	1"	1.5"	2"	2.5"	3"	4"	5"	6"	8"	10"	12"	14"	16"	18"	20"	22"	24"	26"
B0AC04	Killed CS	0 mm				xxs	xxs	xxs		xxs	xxs		xxs	xxs	xxs								
						9.09mm	10.15mm	11.07mm		15.24mm	17.12mm		21.95mm	22.23mm	25.4mm								
B0JP	SS304L	0 mm		sch80s	sch80s	sch80s	sch80s	sch10s		sch10s	sch10s		sch40s										
				3.73mm	3.91mm	4.55mm	5.08mm	2.77mm		3.05mm	3.05mm		7.11mm										
B0JQ	SS304L	0.8 mm		sch80s	sch80s	sch80s	sch80s	sch10s		sch10s	sch40s		sch40s										
				3.73mm	3.91mm	4.55mm	5.08mm	2.77mm		3.05mm	6.02mm		7.11mm										
B0JR	SS304L	0 mm		sch80s	sch80s	sch80s	sch80s	sch10s		sch10s	sch10s		sch40s										
				3.73mm	3.91mm	4.55mm	5.08mm	2.77mm		3.05mm	3.05mm		7.11mm										
B0JR01	SS304L	0 mm		sch80s	sch80s	sch80s	sch80s	sch10s		sch10s	sch10s												
				3.73mm	3.91mm	4.55mm	5.08mm	2.77mm		3.05mm	3.05mm												
B0JR03	SS304L	0 mm		sch80s	sch80s	sch80s	sch80s	sch10s		sch10s	sch10s												
				3.73mm	3.91mm	4.55mm	5.08mm	2.77mm		3.05mm	3.05mm												
B0JS	SS304L	0 mm		sch80s	sch80s	sch80s	sch80s	sch10s		sch10s	sch10s		sch40s	sch40s	sch40s	sch10s	sch10s						
				3.73mm	3.91mm	4.55mm	5.08mm	2.77mm		3.05mm	3.05mm		7.11mm	8.18mm	9.27mm	4.57mm	4.78mm						
B0JW	SS304L	0 mm		sch80s	sch80s	sch80s	sch80s	sch10s		sch10s	sch10s		sch40s	sch40s	sch40s	sch10s							
				3.73mm	3.91mm	4.55mm	5.08mm	2.77mm		3.05mm	3.05mm		7.11mm	8.18mm	9.27mm	4.57mm							
B0JY	SS304L	0 mm		sch80s	sch80s	sch80s	sch80s	sch10s															
				3.73mm	3.91mm	4.55mm	5.08mm	2.77mm															
B0JY01	SS304L	0 mm		sch80s	sch80s	sch80s	sch80s	sch10s		sch10s	sch10s												
				3.73mm	3.91mm	4.55mm	5.08mm	2.77mm		3.05mm	3.05mm												
B0JY04	SS304L	0 mm		sch80s	sch80s	sch80s	sch80s	sch10s		sch10s	sch10s												
				3.73mm	3.91mm	4.55mm	5.08mm	2.77mm		3.05mm	3.05mm												
B0KC01	SS304H	0 mm				xxs	xxs	xxs		xxs	xxs		xxs	xxs									
						9.09mm	10.15mm	11.07mm		15.24mm	17.12mm		21.95mm	22.23mm									
B0KP01	SS304H	0 mm		sch80s	sch80s	sch80s	sch80s	sch10s		sch10s	sch10s		sch40s	sch40s	sch40s	sch10s	sch10s	sch10s	sch10s	sch10s		sch10s	
				3.73mm	3.91mm	4.55mm	5.08mm	2.77mm		3.05mm	3.05mm		7.11mm	8.18mm	9.27mm	4.57mm	4.78mm	4.78mm	4.78mm	5.54mm		6.35mm	
B0L5	SS316L	0 mm		sch80s	sch80s	sch80s	sch80s	sch10s		sch10s	sch10s		sch40s	sch40s	sch40s	sch10s	sch10s	sch10s	sch10s				
				3.73mm	3.91mm	4.55mm	5.08mm	2.77mm		3.05mm	3.05mm		7.11mm	8.18mm	9.27mm	4.57mm	4.78mm	4.78mm	4.78mm				
B0L501	SS316L	0 mm		sch80s	sch80s	sch80s	sch80s	sch10s		sch10s	sch10s		sch40s										
				3.73mm	3.91mm	4.55mm	5.08mm	2.77mm		3.05mm	3.05mm		7.11mm										
B0LH04	SS316L	0 mm		sch80s	sch80s	sch80s	sch80s																
				3.73mm	3.91mm	4.55mm	5.08mm																
B0LQ	SS316L	1 mm		sch80s	sch80s	sch80s	sch80s	sch40s		sch10s	sch40s		sch40s	sch40s									
				3.73mm	3.91mm	4.55mm	5.08mm	3.91mm		3.05mm	6.02mm		7.11mm	8.18mm									
B0LQ03	SS316L	1 mm		sch80s	sch80s	sch80s	sch80s	sch40s		sch10s	sch40s		sch40s	sch40s	sch40s	sch10s							
				3.73mm	3.91mm	4.55mm	5.08mm	3.91mm		3.05mm	6.02mm		7.11mm	8.18mm	9.27mm	4.57mm							
B0LR	SS316L	0 mm		sch80s	sch80s	sch80s	sch80s	sch10s		sch10s	sch10s		sch40s	sch40s	sch40s	sch10s	sch10s	sch10s	sch10s	sch10s		sch10s	
				3.73mm	3.91mm	4.55mm	5.08mm	2.77mm		3.05mm	3.05mm		7.11mm	8.18mm	9.27mm	4.57mm	4.78mm	4.78mm	4.78mm	5.54mm		6.35mm	
B0LR01	SS316L	0 mm		sch80s	sch80s	sch80s	sch80s	sch10s		sch10s	sch10s		sch40s	sch40s									
				3.73mm	3.91mm	4.55mm	5.08mm	2.77mm		3.05mm	3.05mm		7.11mm	8.18mm									
B0LR03	SS316L	0 mm		sch80s	sch80s	sch80s	sch80s	sch10s		sch10s	sch10s		sch40s										
				3.73mm	3.91mm	4.55mm	5.08mm	2.77mm		3.05mm	3.05mm		7.11mm										
B0MH01	SS321	1 mm		sch80s	sch80s	sch80s	sch80s	sch40s		sch10s	sch40s		sch40s	sch40s	sch40s								
				3.73mm	3.91mm	4.55mm	5.08mm	3.91mm		3.05mm	6.02mm		7.11mm	8.18mm	9.27mm								
B0MP01	SS321	0.8 mm		sch80s	sch80s	sch80s	sch80s	sch10s		sch10s	sch40s		sch40s										
				3.73mm	3.91mm	4.55mm	5.08mm	2.77mm		3.05mm	6.02mm		7.11mm										
B0QP	Fbe Coated CS	0 mm						xs		std	std		std	sch20	sch30	std							
								5.54mm		5.49mm	6.02mm		7.11mm	6.35mm	7.8mm	9.53mm							

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WALL THICKNESS TABLE

LINE CLASS	MATL	C. A.	28"	30"	32"	34"	36"	40"	42"	44"	48"	52"	54"	56"	60"	64"	68"	72"	76"	80"	84"	92"	96"
B0AC04	Killed CS	0 mm																					
B0JP	SS304L	0 mm																					
B0JQ	SS304L	0.8 mm																					
B0JR	SS304L	0 mm																					
B0JR01	SS304L	0 mm																					
B0JR03	SS304L	0 mm																					
B0JS	SS304L	0 mm																					
B0JW	SS304L	0 mm																					
B0JY	SS304L	0 mm																					
B0JY01	SS304L	0 mm																					
B0JY04	SS304L	0 mm																					
B0KC01	SS304H	0 mm																					
B0KP01	SS304H	0 mm		sch10s 7.92mm			sch10 7.92mm		std 9.53mm		std 9.53mm												
B0L5	SS316L	0 mm																					
B0L501	SS316L	0 mm																					
B0LH04	SS316L	0 mm																					
B0LQ	SS316L	1 mm																					
B0LQ03	SS316L	1 mm																					
B0LR	SS316L	0 mm																					
B0LR01	SS316L	0 mm																					
B0LR03	SS316L	0 mm																					
B0MH01	SS321	1 mm																					
B0MP01	SS321	0.8 mm																					
B0QP	FRE Coated CS	0 mm																					

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WALL THICKNESS TABLE

LINE CLASS	MATL	C. A.	100"	104"	108"	116"
B0AC04	Killed CS	0 mm				
B0JP	SS304L	0 mm				
B0JQ	SS304L	0.8 mm				
B0JR	SS304L	0 mm				
B0JR01	SS304L	0 mm				
B0JR03	SS304L	0 mm				
B0JS	SS304L	0 mm				
B0JW	SS304L	0 mm				
B0JY	SS304L	0 mm				
B0JY01	SS304L	0 mm				
B0JY04	SS304L	0 mm				
B0KC01	SS304H	0 mm				
B0KP01	SS304H	0 mm				
B0L5	SS316L	0 mm				
B0L501	SS316L	0 mm				
B0LH04	SS316L	0 mm				
B0LQ	SS316L	1 mm				
B0LQ03	SS316L	1 mm				
B0LR	SS316L	0 mm				
B0LR01	SS316L	0 mm				
B0LR03	SS316L	0 mm				
B0MH01	SS321	1 mm				
B0MP01	SS321	0.8 mm				
B0QP	FBE Coated CS	0 mm				

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NSRP Complex Project
JOB NO. : 0-6495-20-0000

DOC. NO. : S-000-1360-0002V
REV NO. : 2
SHEET NO. : 88

WALL THICKNESS TABLE

LINE CLASS	MATL	C. A.	0.25"	0.5"	0.75"	1"	1.5"	2"	2.5"	3"	4"	5"	6"	8"	10"	12"	14"	16"	18"	20"	22"	24"	26"
B0YN	70%CU-30%NI	0 mm		sch80s	sch80s	sch80s	sch80s	sch10s		sch10s	sch10s												
				3.73mm	3.91mm	4.55mm	5.08mm	2.77mm		3.05mm	3.05mm												
B11F05	SS304L	0 mm		sch80s	sch80s	sch80s	sch80s	sch10s															
				3.73mm	3.91mm	4.55mm	5.08mm	2.77mm															
B19P	CS	1.5 mm					xs	xs			std												
							5.08mm	5.54mm			6.02mm												
B1A402	Killed CS	1.5 mm		xs	xs	xs	xs	xs		std	std		std	sch20	sch30	std	std						
				3.73mm	3.91mm	4.55mm	5.08mm	5.54mm		5.49mm	6.02mm		7.11mm	6.35mm	7.8mm	9.53mm	9.53mm						
B1A8	Killed CS	1.5 mm		xs	xs	xs	xs	xs		std	std		std	sch20	sch30	std	std						
				3.73mm	3.91mm	4.55mm	5.08mm	5.54mm		5.49mm	6.02mm		7.11mm	6.35mm	7.8mm	9.53mm	9.53mm						
B1A804	Killed CS	1.5 mm		xs	xs	xs	xs	xs		std	std		std	sch20	sch30	std	std	sch20	sch20	std			
				3.73mm	3.91mm	4.55mm	5.08mm	5.54mm		5.49mm	6.02mm		7.11mm	6.35mm	7.8mm	9.53mm	9.53mm	7.92mm	7.92mm	9.53mm			
B1A904	Killed CS	1.5 mm		xs	xs	xs	xs	xs		std	std		std	sch20	sch30	std	std	sch20	sch20	std		std	
				3.73mm	3.91mm	4.55mm	5.08mm	5.54mm		5.49mm	6.02mm		7.11mm	6.35mm	7.8mm	9.53mm	9.53mm	7.92mm	7.92mm	9.53mm		9.53mm	
B1AA	Killed CS	1.5 mm		xs	xs	xs	xs	xs		std	std		std	sch20	sch30								
				3.73mm	3.91mm	4.55mm	5.08mm	5.54mm		5.49mm	6.02mm		7.11mm	6.35mm	7.8mm								
B1AA04	Killed CS	1.5 mm		xs	xs	xs	xs	xs															
				3.73mm	3.91mm	4.55mm	5.08mm	5.54mm															
B1AC	Killed CS	1.5 mm		xs	xs	xs	xs	xs		std	std		std										
				3.73mm	3.91mm	4.55mm	5.08mm	5.54mm		5.49mm	6.02mm		7.11mm										
B1AC01	Killed CS	1.5 mm		xs	xs	xs	xs	xs		std	std		std										
				3.73mm	3.91mm	4.55mm	5.08mm	5.54mm		5.49mm	6.02mm		7.11mm										
B1AD	Killed CS	1.5 mm		xs	xs	xs	xs	xs		std	std		std	sch20	sch30	std	std	sch20					
				3.73mm	3.91mm	4.55mm	5.08mm	5.54mm		5.49mm	6.02mm		7.11mm	6.35mm	7.8mm	9.53mm	9.53mm	7.92mm					
B1AD01	Killed CS	1.5 mm		xs	xs	xs	xs	xs		std	std												
				3.73mm	3.91mm	4.55mm	5.08mm	5.54mm		5.49mm	6.02mm												
B1AG	CS (ASME)	1.5 mm		xs	xs	xs	xs	xs		std	std		std	sch20	sch20								
				3.73mm	3.91mm	4.55mm	5.08mm	5.54mm		5.49mm	6.02mm		7.11mm	6.35mm	6.35mm								
B1AH	Killed CS	1.5 mm		xs	xs	xs	xs	xs		std	std		std	sch20	sch30	std	std	sch20	sch20	std		std	
				3.73mm	3.91mm	4.55mm	5.08mm	5.54mm		5.49mm	6.02mm		7.11mm	6.35mm	7.8mm	9.53mm	9.53mm	7.92mm	7.92mm	9.53mm		9.53mm	
B1AH01	Killed CS	1.5 mm		xs	xs	xs	xs	xs		std	std		std	sch20	sch30	std	std	sch20	sch20				
				3.73mm	3.91mm	4.55mm	5.08mm	5.54mm		5.49mm	6.02mm		7.11mm	6.35mm	7.8mm	9.53mm	9.53mm	7.92mm	7.92mm				
B1AH02	Killed CS	1.5 mm		xs	xs	xs	xs	xs		std	std		std	sch20	sch30	std	std	sch20					
				3.73mm	3.91mm	4.55mm	5.08mm	5.54mm		5.49mm	6.02mm		7.11mm	6.35mm	7.8mm	9.53mm	9.53mm	7.92mm					
B1AH03	Killed CS	1.5 mm		xs	xs	xs	xs	xs		std	std		std										
				3.73mm	3.91mm	4.55mm	5.08mm	5.54mm		5.49mm	6.02mm		7.11mm										
B1AH04	Killed CS	1.5 mm		xs	xs	xs	xs	xs		std	std		std	sch20	sch30	std	std	sch20	sch20	std		std	
				3.73mm	3.91mm	4.55mm	5.08mm	5.54mm		5.49mm	6.02mm		7.11mm	6.35mm	7.8mm	9.53mm	9.53mm	7.92mm	7.92mm	9.53mm		9.53mm	
B1AP	Killed CS	1.5 mm		xs	xs	xs	xs	xs		std	std		std	sch20	sch30	std	std	std	std	std		std	
				3.73mm	3.91mm	4.55mm	5.08mm	5.54mm		5.49mm	6.02mm		7.11mm	6.35mm	7.8mm	9.53mm	9.53mm	9.53mm	9.53mm	9.53mm		9.53mm	
B1AP01	Killed CS	1.5 mm		xs	xs	xs	xs	xs		std	std		std	sch20	sch30	std	std	sch20	sch20	std		std	
				3.73mm	3.91mm	4.55mm	5.08mm	5.54mm		5.49mm	6.02mm		7.11mm	6.35mm	7.8mm	9.53mm	9.53mm	7.92mm	7.92mm	9.53mm		9.53mm	
B1AP02	Killed CS	1.5 mm		xs	xs	xs	xs	xs		std	std		std	sch20	sch30	std	std	sch20					
				3.73mm	3.91mm	4.55mm	5.08mm	5.54mm		5.49mm	6.02mm		7.11mm	6.35mm	7.8mm	9.53mm	9.53mm	7.92mm					
B1AP04	Killed CS	1.5 mm		xs	xs	xs	xs	xs		std	std	std	std	sch20	sch30	std	std	std	sch20	std		std	std
				3.73mm	3.91mm	4.55mm	5.08mm	5.54mm		5.49mm	6.02mm	6.55mm	7.11mm	6.35mm	7.8mm	9.53mm	9.53mm	9.53mm	7.92mm	9.53mm		9.53mm	9.53mm
B1APCM	Killed CS	1.5 mm		xs	xs	xs	xs	xs		std	std												
				3.73mm	3.91mm	4.55mm	5.08mm	5.54mm		5.49mm	6.02mm												

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WALL THICKNESS TABLE

LINE CLASS	MATL	C. A.	28"	30"	32"	34"	36"	40"	42"	44"	48"	52"	54"	56"	60"	64"	68"	72"	76"	80"	84"	92"	96"
B0YN	70%CU-30%NI	0 mm																					
B11F05	SS304L	0 mm																					
B19P	CS	1.5 mm									14.27mm												
B1A402	Killed CS	1.5 mm																					
B1A8	Killed CS	1.5 mm																					
B1A804	Killed CS	1.5 mm																					
B1A904	Killed CS	1.5 mm																					
B1AA	Killed CS	1.5 mm																					
B1AA04	Killed CS	1.5 mm																					
B1AC	Killed CS	1.5 mm																					
B1AC01	Killed CS	1.5 mm																					
B1AD	Killed CS	1.5 mm																					
B1AD01	Killed CS	1.5 mm																					
B1AG	CS (ASME)	1.5 mm																					
B1AH	Killed CS	1.5 mm		std 9.53mm																			
B1AH01	Killed CS	1.5 mm																					
B1AH02	Killed CS	1.5 mm																					
B1AH03	Killed CS	1.5 mm																					
B1AH04	Killed CS	1.5 mm																					
B1AP	Killed CS	1.5 mm		sch10 7.92mm			std 9.53mm																
B1AP01	Killed CS	1.5 mm		std 9.53mm																			
B1AP02	Killed CS	1.5 mm																					
B1AP04	Killed CS	1.5 mm		std 9.53mm																			
B1APCM	Killed CS	1.5 mm																					

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SHEET NO. : 90

WALL THICKNESS TABLE

LINE CLASS	MATL	C. A.	100"	104"	108"	116"
B0YN	70%CU-30%NI	0 mm				
B11F05	SS304L	0 mm				
B19P	CS	1.5 mm				
B1A402	Killed CS	1.5 mm				
B1A8	Killed CS	1.5 mm				
B1A804	Killed CS	1.5 mm				
B1A904	Killed CS	1.5 mm				
B1AA	Killed CS	1.5 mm				
B1AA04	Killed CS	1.5 mm				
B1AC	Killed CS	1.5 mm				
B1AC01	Killed CS	1.5 mm				
B1AD	Killed CS	1.5 mm				
B1AD01	Killed CS	1.5 mm				
B1AG	CS (ASME)	1.5 mm				
B1AH	Killed CS	1.5 mm				
B1AH01	Killed CS	1.5 mm				
B1AH02	Killed CS	1.5 mm				
B1AH03	Killed CS	1.5 mm				
B1AH04	Killed CS	1.5 mm				
B1AP	Killed CS	1.5 mm				
B1AP01	Killed CS	1.5 mm				
B1AP02	Killed CS	1.5 mm				
B1AP04	Killed CS	1.5 mm				
B1APCM	Killed CS	1.5 mm				

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NSRP Complex Project
JOB NO. : 0-6495-20-0000

DOC. NO. : S-000-1360-0002V
REV NO. : 2
SHEET NO. : 91

WALL THICKNESS TABLE

LINE CLASS	MATL	C. A.	0.25"	0.5"	0.75"	1"	1.5"	2"	2.5"	3"	4"	5"	6"	8"	10"	12"	14"	16"	18"	20"	22"	24"	26"
B1AQ02	Killed CS	1.5 mm		xs	xs	xs	xs	xs		std	std		std	sch20	sch30	std	std	sch20	sch20				
				3.73mm	3.91mm	4.55mm	5.08mm	5.54mm		5.49mm	6.02mm		7.11mm	6.35mm	7.8mm	9.53mm	9.53mm	7.92mm	7.92mm				
B1AR02	Killed CS	1.5 mm		xs	xs	xs	xs	xs		std	std		std	sch20	sch30	std							
				3.73mm	3.91mm	4.55mm	5.08mm	5.54mm		5.49mm	6.02mm		7.11mm	6.35mm	7.8mm	9.53mm							
B1AS	Killed CS	1.5 mm		xs	xs	xs	xs	xs		std	xs		xs	sch20	sch30	sch20	sch20	sch20	sch20	std		xs	
				3.73mm	3.91mm	4.55mm	5.08mm	5.54mm		5.49mm	8.56mm		10.97mm	6.35mm	7.8mm	6.35mm	7.92mm	7.92mm	7.92mm	9.53mm		12.7mm	
B1AY	Killed CS	1.5 mm		xs	xs	xs																	
				3.73mm	3.91mm	4.55mm																	
B1AY04	Killed CS	1.5 mm		xs	xs	xs	xs	xs		std	std		std	sch20									
				3.73mm	3.91mm	4.55mm	5.08mm	5.54mm		5.49mm	6.02mm		7.11mm	6.35mm									
B1DH04	1-1/4Cr - 1/2Mo	1.5 mm		xs	xs	xs	xs	xs		std	std		std	sch30	std	std	sch40	std	std	xs		xs	
				3.73mm	3.91mm	4.55mm	5.08mm	5.54mm		5.49mm	6.02mm		7.11mm	7.04mm	9.27mm	9.53mm	11.13mm	9.53mm	9.53mm	12.7mm		12.7mm	
B1DP04	1-1/4Cr - 1/2Mo	1.5 mm		xs	xs	xs	xs	xs		std	std		std	sch30	std	std	sch40	std	sch30	xs		sch30	
				3.73mm	3.91mm	4.55mm	5.08mm	5.54mm		5.49mm	6.02mm		7.11mm	7.04mm	9.27mm	9.53mm	11.13mm	9.53mm	11.13mm	12.7mm		14.27mm	
B1EH	2-1/4Cr-1Mo	1.5 mm		xs	xs	xs	xs	xs		std	std		std	sch30	std								
				3.73mm	3.91mm	4.55mm	5.08mm	5.54mm		5.49mm	6.02mm		7.11mm	7.04mm	9.27mm								
B1GH04	LTCS	1.5 mm		xs	xs	xs	xs	xs		std	std		std	sch20	sch30	std	std	std	sch20	std			
				3.73mm	3.91mm	4.55mm	5.08mm	5.54mm		5.49mm	6.02mm		7.11mm	6.35mm	7.8mm	9.53mm	9.53mm	9.53mm	7.92mm	9.53mm			
B1GP	LTCS	1.5 mm		xs	xs	xs	xs	xs		std	std		std	sch20	sch30	std	std	std	sch20	std		std	
				3.73mm	3.91mm	4.55mm	5.08mm	5.54mm		5.49mm	6.02mm		7.11mm	6.35mm	7.8mm	9.53mm	9.53mm	9.53mm	7.92mm	9.53mm		9.53mm	
B1GP01	LTCS	1.5 mm		xs	xs	xs	xs	xs		std	std		std	sch20	sch30	std	std	std	std	std		std	
				3.73mm	3.91mm	4.55mm	5.08mm	5.54mm		5.49mm	6.02mm		7.11mm	6.35mm	7.8mm	9.53mm	9.53mm	9.53mm	9.53mm	9.53mm		9.53mm	
B1GP04	LTCS	1.5 mm		xs	xs	xs	xs	xs		std	std		std	sch20	sch30	std	std	std	sch20	std		std	
				3.73mm	3.91mm	4.55mm	5.08mm	5.54mm		5.49mm	6.02mm		7.11mm	6.35mm	7.8mm	9.53mm	9.53mm	9.53mm	7.92mm	9.53mm		9.53mm	
B1J502	SS304L	1.5 mm		sch80s	sch80s	sch80s	sch80s	sch40s		sch40s	sch40s		sch40s	sch40s	sch40s	sch40s	sch40s	sch40s	sch40s				
				3.73mm	3.91mm	4.55mm	5.08mm	3.91mm		5.49mm	6.02mm		7.11mm	8.18mm	9.27mm	9.53mm	9.53mm	9.53mm	9.53mm				
B1KH04	SS304H	1.5 mm		sch80s	sch80s	sch80s	sch80s	sch40s		sch40s	sch40s		sch40s										
				3.73mm	3.91mm	4.55mm	5.08mm	3.91mm		5.49mm	6.02mm		7.11mm										
B1LP04	SS316L	1.5 mm		sch80s	sch80s	sch80s	sch80s	sch40s		sch40s	sch40s		sch40s	sch40s									
				3.73mm	3.91mm	4.55mm	5.08mm	3.91mm		5.49mm	6.02mm		7.11mm	8.18mm									
B1LV04	SS316L	1.5 mm		sch80s	sch80s	sch80s	sch80s	sch40s		sch40s	sch40s		sch40s	sch40s	sch80s								
				3.73mm	3.91mm	4.55mm	5.08mm	3.91mm		5.49mm	6.02mm		7.11mm	8.18mm	12.7mm								
B1LW	SS316L	0 mm		sch80s	sch80s	sch80s																	
				3.73mm	3.91mm	4.55mm																	
B1LY	SS316L	1.5 mm		sch80s	sch80s	sch80s	sch80s	sch40s		sch40s	sch40s												
				3.73mm	3.91mm	4.55mm	5.08mm	3.91mm		5.49mm	6.02mm												
B1LY04	SS316L	1.5 mm		sch80s	sch80s	sch80s	sch80s	sch40s		sch40s	sch40s												
				3.73mm	3.91mm	4.55mm	5.08mm	3.91mm		5.49mm	6.02mm												
B1MQ02	SS321	1.5 mm		sch80s	sch80s	sch80s	sch80s	sch40s		sch40s	sch40s		sch40s	sch40s	sch40s	sch40s	sch40s						
				3.73mm	3.91mm	4.55mm	5.08mm	3.91mm		5.49mm	6.02mm		7.11mm	8.18mm	9.27mm	9.53mm	9.53mm						
B21B05	Killed CS	3 mm		sch160	sch160	sch160	sch160	xs		std	std		std	std	std	sch40	sch40	sch20	sch20	std			
				4.78mm	5.56mm	6.35mm	7.14mm	5.54mm		5.49mm	6.02mm		7.11mm	8.18mm	9.27mm	10.31mm	11.13mm	7.92mm	7.92mm	9.53mm			
B21D05	LTCS	3 mm		sch160	sch160	sch160	sch160	xs		std	std		std	std	std	sch40	sch40	sch20	sch20	std			
				4.78mm	5.56mm	6.35mm	7.14mm	5.54mm		5.49mm	6.02mm		7.11mm	8.18mm	9.27mm	10.31mm	11.13mm	7.92mm	7.92mm	9.53mm			
B21E05	SS304L	0 mm		sch80s	sch80s	sch80s	sch80s	sch10s		sch10s	sch10s		sch40s	sch40s									
				3.73mm	3.91mm	4.55mm	5.08mm	2.77mm		3.05mm	3.05mm		7.11mm	8.18mm									
B22D05	LTCS	3 mm		sch160	sch160	sch160	sch160	xs		std	std		std	std	std	sch40	sch40	sch20	sch20	std		std	
				4.78mm	5.56mm	6.35mm	7.14mm	5.54mm		5.49mm	6.02mm		7.11mm	8.18mm	9.27mm	10.31mm	11.13mm	7.92mm	7.92mm	9.53mm		9.53mm	

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WALL THICKNESS TABLE

LINE CLASS	MATL	C. A.	28"	30"	32"	34"	36"	40"	42"	44"	48"	52"	54"	56"	60"	64"	68"	72"	76"	80"	84"	92"	96"
B1AQ02	Killed CS	1.5 mm																					
B1AR02	Killed CS	1.5 mm																					
B1AS	Killed CS	1.5 mm		xs 12.7mm																			
B1AY	Killed CS	1.5 mm																					
B1AY04	Killed CS	1.5 mm																					
B1DH04	1-1/4Cr - 1/2Mo	1.5 mm	sch30 15.88mm	sch30 15.88mm																			
B1DP04	1-1/4Cr - 1/2Mo	1.5 mm		sch30 15.88mm			sch40 19.05mm		22.23mm		23.83mm												
B1EH	2-1/4Cr-1Mo	1.5 mm																					
B1GH04	LTCS	1.5 mm																					
B1GP	LTCS	1.5 mm		sch10 7.92mm			std 9.53mm		std 9.53mm		xs 12.7mm												
B1GP01	LTCS	1.5 mm	std 9.53mm	std 9.53mm			std 9.53mm																
B1GP04	LTCS	1.5 mm																					
B1J502	SS304L	1.5 mm																					
B1KH04	SS304H	1.5 mm																					
B1LP04	SS316L	1.5 mm																					
B1LV04	SS316L	1.5 mm																					
B1LW	SS316L	0 mm																					
B1LY	SS316L	1.5 mm																					
B1LY04	SS316L	1.5 mm																					
B1MQ02	SS321	1.5 mm																					
B21B05	Killed CS	3 mm																					
B21D05	LTCS	3 mm																					
B21F05	SS304L	0 mm																					
B22D05	LTCS	3 mm																					

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WALL THICKNESS TABLE

LINE CLASS	MATL	C. A.	100"	104"	108"	116"
B1AQ02	Killed CS	1.5 mm				
B1AR02	Killed CS	1.5 mm				
B1AS	Killed CS	1.5 mm				
B1AY	Killed CS	1.5 mm				
B1AY04	Killed CS	1.5 mm				
B1DH04	1-1/4Cr - 1/2Mo	1.5 mm				
B1DP04	1-1/4Cr - 1/2Mo	1.5 mm				
B1EH	2-1/4Cr-1Mo	1.5 mm				
B1GH04	LTCS	1.5 mm				
B1GP	LTCS	1.5 mm				
B1GP01	LTCS	1.5 mm				
B1GP04	LTCS	1.5 mm				
B1J502	SS304L	1.5 mm				
B1KH04	SS304H	1.5 mm				
B1LP04	SS316L	1.5 mm				
B1LV04	SS316L	1.5 mm				
B1LW	SS316L	0 mm				
B1LY	SS316L	1.5 mm				
B1LY04	SS316L	1.5 mm				
B1MQ02	SS321	1.5 mm				
B21B05	Killed CS	3 mm				
B21D05	LTCS	3 mm				
B21F05	SS304L	0 mm				
B22D05	LTCS	3 mm				

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NSRP Complex Project
JOB NO. : 0-6495-20-0000

DOC. NO. : S-000-1360-0002V
REV NO. : 2
SHEET NO. : 94

WALL THICKNESS TABLE

LINE CLASS	MATL	C. A.	0.25"	0.5"	0.75"	1"	1.5"	2"	2.5"	3"	4"	5"	6"	8"	10"	12"	14"	16"	18"	20"	22"	24"	26"
B28P	9Cr - 1MO	3 mm		sch160	sch160	sch160	sch160	xs		xs	xs		xs	sch60	xs	xs	xs	std	std	xs		xs	
				4.78mm	5.56mm	6.35mm	7.14mm	5.54mm		7.62mm	8.56mm		10.97mm	10.31mm	12.7mm	12.7mm	12.7mm	9.53mm	9.53mm	12.7mm		12.7mm	
B28Q02	9Cr - 1MO	3 mm		sch160	sch160	sch160	sch160	xs		xs	xs		xs	sch60	xs	sch60	sch60	sch20					
				4.78mm	5.56mm	6.35mm	7.14mm	5.54mm		7.62mm	8.56mm		10.97mm	10.31mm	12.7mm	14.27mm	15.09mm	7.92mm					
B28V02	9Cr - 1MO	3 mm		sch160	sch160	sch160	sch160	xs		xs	xs		xs	sch60	xs	sch60	sch60	sch20					
				4.78mm	5.56mm	6.35mm	7.14mm	5.54mm		7.62mm	8.56mm		10.97mm	10.31mm	12.7mm	14.27mm	15.09mm	7.92mm					
B2A4	Killed CS	3 mm		sch160	sch160	sch160	sch160	xs		std	std		std	std	std	sch40	sch40	sch20	std	std		xs	
				4.78mm	5.56mm	6.35mm	7.14mm	5.54mm		5.49mm	6.02mm		7.11mm	8.18mm	9.27mm	10.31mm	11.13mm	7.92mm	9.53mm	9.53mm		12.7mm	
B2A5	Killed CS	3 mm		sch160	sch160	sch160	sch160	xs		std	std		std										
				4.78mm	5.56mm	6.35mm	7.14mm	5.54mm		5.49mm	6.02mm		7.11mm										
B2A501	Killed CS	3 mm		sch160	sch160	sch160	sch160	xs		std	std		std	std	std	sch40							
				4.78mm	5.56mm	6.35mm	7.14mm	5.54mm		5.49mm	6.02mm		7.11mm	8.18mm	9.27mm	10.31mm							
B2A502	Killed CS	3 mm		sch160	sch160	sch160	sch160	xs		xs	xs		xs	std	std	sch40	sch40	std	sch30	xs		xs	
				4.78mm	5.56mm	6.35mm	7.14mm	5.54mm		7.62mm	8.56mm		10.97mm	8.18mm	9.27mm	10.31mm	11.13mm	9.53mm	11.13mm	12.7mm		12.7mm	
B2A503	Killed CS	3 mm		sch160	sch160	sch160	sch160																
				4.78mm	5.56mm	6.35mm	7.14mm																
B2A602	Killed CS	3 mm		sch160	sch160	sch160	sch160	xs		std	std		std										
				4.78mm	5.56mm	6.35mm	7.14mm	5.54mm		5.49mm	6.02mm		7.11mm										
B2A604	Killed CS	3 mm		xxs	sch160	sch160	sch160	xs		xs	std		std	std	std	sch40	sch40	xs	xs	xs			
				7.47mm	5.56mm	6.35mm	7.14mm	5.54mm		7.62mm	6.02mm		7.11mm	8.18mm	9.27mm	10.31mm	11.13mm	12.7mm	12.7mm	12.7mm			
B2A704	Killed CS	3 mm		xxs	sch160	sch160	sch160	xs		xs	std		std	std	std	sch40	sch40						
				7.47mm	5.56mm	6.35mm	7.14mm	5.54mm		7.62mm	6.02mm		7.11mm	8.18mm	9.27mm	10.31mm	11.13mm						
B2A804	Killed CS	3 mm		xxs	sch160	sch160	sch160	xs		xs	std		std	std	std	sch40	sch40	std	sch20	std		std	
				7.47mm	5.56mm	6.35mm	7.14mm	5.54mm		7.62mm	6.02mm		7.11mm	8.18mm	9.27mm	10.31mm	11.13mm	9.53mm	7.92mm	9.53mm		9.53mm	
B2AC01	Killed CS	3 mm		sch160	sch160	sch160	sch160	xs		std	std		std	std	std	sch40	sch40	sch20	sch20	std		std	
				4.78mm	5.56mm	6.35mm	7.14mm	5.54mm		5.49mm	6.02mm		7.11mm	8.18mm	9.27mm	10.31mm	11.13mm	7.92mm	7.92mm	9.53mm		9.53mm	
B2AG	CS (ASME)	3 mm		sch160	sch160	sch160	sch160	xs		std	std		std	sch30									
				4.78mm	5.56mm	6.35mm	7.14mm	5.54mm		5.49mm	6.02mm		7.11mm	7.04mm									
B2AH02	Killed CS	3 mm		sch160	sch160	sch160	sch160	xs		std	std		std										
				4.78mm	5.56mm	6.35mm	7.14mm	5.54mm		5.49mm	6.02mm		7.11mm										
B2AH04	Killed CS	3 mm		xxs	sch160	sch160	sch160	xs		xs	std		std	std	std	sch40	sch40	std	sch20	std		std	
				7.47mm	5.56mm	6.35mm	7.14mm	5.54mm		7.62mm	6.02mm		7.11mm	8.18mm	9.27mm	10.31mm	11.13mm	9.53mm	7.92mm	9.53mm		9.53mm	
B2AL	Killed CS	3 mm		sch160	sch160	sch160	sch160	xs		std	std		std	std	std	sch40	sch40	sch20	sch20				
				4.78mm	5.56mm	6.35mm	7.14mm	5.54mm		5.49mm	6.02mm		7.11mm	8.18mm	9.27mm	10.31mm	11.13mm	7.92mm	7.92mm				
B2AL04	Killed CS	3 mm		xxs	sch160	sch160	sch160	xs															
				7.47mm	5.56mm	6.35mm	7.14mm	5.54mm															
B2AN	Killed CS	3 mm		sch160	sch160	sch160	sch160	xs		std	std		std										
				4.78mm	5.56mm	6.35mm	7.14mm	5.54mm		5.49mm	6.02mm		7.11mm										
B2AN04	Killed CS	3 mm		xxs	sch160	sch160	sch160	xs		xs	std		std	std	std	sch40							
				7.47mm	5.56mm	6.35mm	7.14mm	5.54mm		7.62mm	6.02mm		7.11mm	8.18mm	9.27mm	10.31mm							
B2AP	Killed CS	3 mm		sch160	sch160	sch160	sch160	xs		std	std		std	std	std	sch40	sch40	xs	sch30	xs		xs	
				4.78mm	5.56mm	6.35mm	7.14mm	5.54mm		5.49mm	6.02mm		7.11mm	8.18mm	9.27mm	10.31mm	11.13mm	12.7mm	11.13mm	12.7mm		12.7mm	
B2AP01	Killed CS	3 mm		sch160	sch160	sch160	sch160	xs		std	std		std	std	std	sch40	sch40	sch20	sch20	std		std	
				4.78mm	5.56mm	6.35mm	7.14mm	5.54mm		5.49mm	6.02mm		7.11mm	8.18mm	9.27mm	10.31mm	11.13mm	7.92mm	7.92mm	9.53mm		9.53mm	
B2AP02	Killed CS	3 mm		sch160	sch160	sch160	sch160	xs		std	std		std	std	std	sch40	sch40	sch20					
				4.78mm	5.56mm	6.35mm	7.14mm	5.54mm		5.49mm	6.02mm		7.11mm	8.18mm	9.27mm	10.31mm	11.13mm	7.92mm					
B2AP04	Killed CS	3 mm		xxs	sch160	sch160	sch160	xs		xs	std		std	std	std	sch40	sch40	xs	xs	xs		xs	14.27mm
				7.47mm	5.56mm	6.35mm	7.14mm	5.54mm		7.62mm	6.02mm		7.11mm	8.18mm	9.27mm	10.31mm	11.13mm	12.7mm	12.7mm	12.7mm		12.7mm	

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SHEET NO. : 95

WALL THICKNESS TABLE

LINE CLASS	MATL	C. A.	28"	30"	32"	34"	36"	40"	42"	44"	48"	52"	54"	56"	60"	64"	68"	72"	76"	80"	84"	92"	96"
B28P	9Cr - 1MO	3 mm		xs 12.7mm			xs 12.7mm		14.27mm														
B28Q02	9Cr - 1MO	3 mm																					
B28V02	9Cr - 1MO	3 mm																					
B2A4	Killed CS	3 mm																					
B2A5	Killed CS	3 mm																					
B2A501	Killed CS	3 mm																					
B2A502	Killed CS	3 mm																					
B2A503	Killed CS	3 mm																					
B2A602	Killed CS	3 mm																					
B2A604	Killed CS	3 mm																					
B2A704	Killed CS	3 mm																					
B2A804	Killed CS	3 mm		xs 12.7mm			xs 12.7mm		xs 12.7mm														
B2AC01	Killed CS	3 mm																					
B2AG	CS (ASME)	3 mm																					
B2AH02	Killed CS	3 mm																					
B2AH04	Killed CS	3 mm																					
B2AL	Killed CS	3 mm																					
B2AL04	Killed CS	3 mm																					
B2AN	Killed CS	3 mm																					
B2AN04	Killed CS	3 mm																					
B2AP	Killed CS	3 mm		sch30 15.88mm			sch30 15.88mm		14.27mm		14.27mm												
B2AP01	Killed CS	3 mm		std 9.53mm																			
B2AP02	Killed CS	3 mm																					
B2AP04	Killed CS	3 mm		sch30 15.88mm	xs 12.7mm		xs 12.7mm		xs 12.7mm		xs 12.7mm												

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WALL THICKNESS TABLE

LINE CLASS	MATL	C. A.	100"	104"	108"	116"
B28P	9Cr - 1MO	3 mm				
B28Q02	9Cr - 1MO	3 mm				
B28V02	9Cr - 1MO	3 mm				
B2A4	Killed CS	3 mm				
B2A5	Killed CS	3 mm				
B2A501	Killed CS	3 mm				
B2A502	Killed CS	3 mm				
B2A503	Killed CS	3 mm				
B2A602	Killed CS	3 mm				
B2A604	Killed CS	3 mm				
B2A704	Killed CS	3 mm				
B2A804	Killed CS	3 mm				
B2AC01	Killed CS	3 mm				
B2AG	CS (ASME)	3 mm				
B2AH02	Killed CS	3 mm				
B2AH04	Killed CS	3 mm				
B2AL	Killed CS	3 mm				
B2AL04	Killed CS	3 mm				
B2AN	Killed CS	3 mm				
B2AN04	Killed CS	3 mm				
B2AP	Killed CS	3 mm				
B2AP01	Killed CS	3 mm				
B2AP02	Killed CS	3 mm				
B2AP04	Killed CS	3 mm				

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WALL THICKNESS TABLE

LINE CLASS	MATL	C. A.	0.25"	0.5"	0.75"	1"	1.5"	2"	2.5"	3"	4"	5"	6"	8"	10"	12"	14"	16"	18"	20"	22"	24"	26"
B2APCL	Killed CS	1.5 mm		sch160	sch160	sch160	sch160	xs		std	std		std										
				4.78mm	5.56mm	6.35mm	7.14mm	5.54mm		5.49mm	6.02mm		7.11mm										
B2AQ	Killed CS	3 mm		sch160	sch160	sch160	sch160	xs		std	std		std	std	std	sch40	sch40	sch20	std	std		xs	
				4.78mm	5.56mm	6.35mm	7.14mm	5.54mm		5.49mm	6.02mm		7.11mm	8.18mm	9.27mm	10.31mm	11.13mm	7.92mm	9.53mm	9.53mm		12.7mm	
B2AQ01	Killed CS	3 mm		sch160	sch160	sch160	sch160	xs		std	std		std	std	std	sch40	sch40	sch20	sch20	std		std	
				4.78mm	5.56mm	6.35mm	7.14mm	5.54mm		5.49mm	6.02mm		7.11mm	8.18mm	9.27mm	10.31mm	11.13mm	7.92mm	7.92mm	9.53mm		9.53mm	
B2AQ02	Killed CS	3 mm		sch160	sch160	sch160	sch160	xs		std	std		std	std	std	sch40	sch40	sch20	std	std		xs	
				4.78mm	5.56mm	6.35mm	7.14mm	5.54mm		5.49mm	6.02mm		7.11mm	8.18mm	9.27mm	10.31mm	11.13mm	7.92mm	9.53mm	9.53mm		12.7mm	
B2AQ04	Killed CS	3 mm		xxs	sch160	sch160	sch160	xs		xs	std		std	std	std	sch40							
				7.47mm	5.56mm	6.35mm	7.14mm	5.54mm		7.62mm	6.02mm		7.11mm	8.18mm	9.27mm	10.31mm							
B2AR	Killed CS	3 mm		sch160	sch160	sch160	sch160	xs		std	std												
				4.78mm	5.56mm	6.35mm	7.14mm	5.54mm		5.49mm	6.02mm												
B2AR01	Killed CS	3 mm		sch160	sch160	sch160	sch160	xs		std	std		std	std	std	sch40	sch40	sch20	std	std		xs	
				4.78mm	5.56mm	6.35mm	7.14mm	5.54mm		5.49mm	6.02mm		7.11mm	8.18mm	9.27mm	10.31mm	11.13mm	7.92mm	9.53mm	9.53mm		12.7mm	
B2AR02	Killed CS	3 mm		sch160	sch160	sch160	sch160	xs		std	std		std	std	std	sch40	sch40	sch20	std	std		xs	
				4.78mm	5.56mm	6.35mm	7.14mm	5.54mm		5.49mm	6.02mm		7.11mm	8.18mm	9.27mm	10.31mm	11.13mm	7.92mm	9.53mm	9.53mm		12.7mm	
B2AR03	Killed CS	3 mm		sch160	sch160	sch160	sch160	xs		std	std												
				4.78mm	5.56mm	6.35mm	7.14mm	5.54mm		5.49mm	6.02mm												
B2AR04	Killed CS	3 mm		xxs	sch160	sch160	sch160	xs		xs	std		std	std	std	sch40	sch40						
				7.47mm	5.56mm	6.35mm	7.14mm	5.54mm		7.62mm	6.02mm		7.11mm	8.18mm	9.27mm	10.31mm	11.13mm						
B2AS	Killed CS	3 mm		sch160	sch160	sch160	sch160	xs		xs	xs		xs	sch30	sch30	sch30	std	std	std	xs		xs	
				4.78mm	5.56mm	6.35mm	7.14mm	5.54mm		7.62mm	8.56mm		10.97mm	7.04mm	7.8mm	8.38mm	9.53mm	9.53mm	9.53mm	12.7mm		12.7mm	
B2AW	Killed CS	3 mm		sch160	sch160	sch160	sch160	xs		std	std		std	std	std	sch40	sch40	sch20					
				4.78mm	5.56mm	6.35mm	7.14mm	5.54mm		5.49mm	6.02mm		7.11mm	8.18mm	9.27mm	10.31mm	11.13mm	7.92mm					
B2AW04	Killed CS	3 mm		xxs	sch160	sch160	sch160	xs		xs													
				7.47mm	5.56mm	6.35mm	7.14mm	5.54mm		7.62mm													
B2AY04	Killed CS	1.5 mm		xxs	sch160	sch160	sch160	xs															
				7.47mm	5.56mm	6.35mm	7.14mm	5.54mm															
B2DC01	1-1/4Cr - 1/2Mo	3 mm		sch160	sch160	sch160	sch160	xs		std	std		xs	sch60	xs	xs	xs						
				4.78mm	5.56mm	6.35mm	7.14mm	5.54mm		5.49mm	6.02mm		10.97mm	10.31mm	12.7mm	12.7mm	12.7mm						
B2DH	1-1/4Cr - 1/2Mo	3 mm		sch160	sch160	sch160	sch160	xs		std	std		xs	sch60	xs	xs	xs	xs	std	xs		xs	
				4.78mm	5.56mm	6.35mm	7.14mm	5.54mm		5.49mm	6.02mm		10.97mm	10.31mm	12.7mm	12.7mm	12.7mm	12.7mm	9.53mm	12.7mm		12.7mm	
B2DP01	1-1/4Cr - 1/2Mo	3 mm		sch160	sch160	sch160	sch160	xs		std	std		xs	sch60	xs	xs	xs	sch20	sch20	std		std	
				4.78mm	5.56mm	6.35mm	7.14mm	5.54mm		5.49mm	6.02mm		10.97mm	10.31mm	12.7mm	12.7mm	12.7mm	7.92mm	7.92mm	9.53mm		9.53mm	
B2FC01	5Cr-1/2Mo	3 mm		sch160	sch160	sch160	sch160	xs		std	xs		xs	sch60	xs	xs	xs	sch20	sch20	std		std	
				4.78mm	5.56mm	6.35mm	7.14mm	5.54mm		5.49mm	8.56mm		10.97mm	10.31mm	12.7mm	12.7mm	12.7mm	7.92mm	7.92mm	9.53mm		9.53mm	
B2FP	5Cr-1/2Mo	3 mm		sch160	sch160	sch160	sch160	xs		std	xs		xs	sch60	xs	xs	xs	sch20	sch20	std			
				4.78mm	5.56mm	6.35mm	7.14mm	5.54mm		5.49mm	8.56mm		10.97mm	10.31mm	12.7mm	12.7mm	12.7mm	7.92mm	7.92mm	9.53mm			
B2FP02	5Cr-1/2Mo	3 mm		sch160	sch160	sch160	sch160	xs		std	xs		xs	sch60	xs	xs	xs	sch20	sch20	std			
				4.78mm	5.56mm	6.35mm	7.14mm	5.54mm		5.49mm	8.56mm		10.97mm	10.31mm	12.7mm	12.7mm	12.7mm	7.92mm	7.92mm	9.53mm			
B2G404	LTCS	3 mm		xxs	sch160	sch160	sch160	xs		xs	std		std	std	std								
				7.47mm	5.56mm	6.35mm	7.14mm	5.54mm		7.62mm	6.02mm		7.11mm	8.18mm	9.27mm								
B2G501	LTCS	3 mm		sch160	sch160	sch160	sch160	xs		std	std		std	std	std	sch40	sch40	xs					
				4.78mm	5.56mm	6.35mm	7.14mm	5.54mm		5.49mm	6.02mm		7.11mm	8.18mm	9.27mm	10.31mm	11.13mm	12.7mm					
B2GH04	LTCS	3 mm		xxs	sch160	sch160	sch160	xs		xs	std		std	std	std	sch40	sch40	std	std	xs			
				7.47mm	5.56mm	6.35mm	7.14mm	5.54mm		7.62mm	6.02mm		7.11mm	8.18mm	9.27mm	10.31mm	11.13mm	9.53mm	9.53mm	12.7mm			
B2GN04	LTCS	3 mm		xxs	sch160	sch160	sch160	xs		xs	std		std	std	std	sch40	sch40	xs	sch30	xs		xs	
				7.47mm	5.56mm	6.35mm	7.14mm	5.54mm		7.62mm	6.02mm		7.11mm	8.18mm	9.27mm	10.31mm	11.13mm	12.7mm	11.13mm	12.7mm		12.7mm	

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SHEET NO. : 98

WALL THICKNESS TABLE

LINE CLASS	MATL	C. A.	28"	30"	32"	34"	36"	40"	42"	44"	48"	52"	54"	56"	60"	64"	68"	72"	76"	80"	84"	92"	96"
B2APCL	Killed CS	1.5 mm																					
B2AQ	Killed CS	3 mm		xs 12.7mm																			
B2AQ01	Killed CS	3 mm																					
B2AQ02	Killed CS	3 mm		xs 12.7mm																			
B2AQ04	Killed CS	3 mm																					
B2AR	Killed CS	3 mm																					
B2AR01	Killed CS	3 mm		std 9.53mm																			
B2AR02	Killed CS	3 mm																					
B2AR03	Killed CS	3 mm																					
B2AR04	Killed CS	3 mm																					
B2AS	Killed CS	3 mm																					
B2AW	Killed CS	3 mm																					
B2AW04	Killed CS	3 mm																					
B2AY04	Killed CS	1.5 mm																					
B2DC01	1-1/4Cr - 1/2Mo	3 mm																					
B2DH	1-1/4Cr - 1/2Mo	3 mm																					
B2DP01	1-1/4Cr - 1/2Mo	3 mm		xs 12.7mm																			
B2FC01	5Cr-1/2Mo	3 mm		xs 12.7mm																			
B2FP	5Cr-1/2Mo	3 mm																					
B2FP02	5Cr-1/2Mo	3 mm																					
B2G404	LTCS	3 mm																					
B2G501	LTCS	3 mm																					
B2GH04	LTCS	3 mm																					
B2GN04	LTCS	3 mm																					

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WALL THICKNESS TABLE

LINE CLASS	MATL	C. A.	100"	104"	108"	116"
B2APCL	Killed CS	1.5 mm				
B2AQ	Killed CS	3 mm				
B2AQ01	Killed CS	3 mm				
B2AQ02	Killed CS	3 mm				
B2AQ04	Killed CS	3 mm				
B2AR	Killed CS	3 mm				
B2AR01	Killed CS	3 mm				
B2AR02	Killed CS	3 mm				
B2AR03	Killed CS	3 mm				
B2AR04	Killed CS	3 mm				
B2AS	Killed CS	3 mm				
B2AW	Killed CS	3 mm				
B2AW04	Killed CS	3 mm				
B2AY04	Killed CS	1.5 mm				
B2DC01	1-1/4Cr - 1/2Mo	3 mm				
B2DH	1-1/4Cr - 1/2Mo	3 mm				
B2DP01	1-1/4Cr - 1/2Mo	3 mm				
B2FC01	5Cr-1/2Mo	3 mm				
B2FP	5Cr-1/2Mo	3 mm				
B2FP02	5Cr-1/2Mo	3 mm				
B2G404	LTCS	3 mm				
B2G501	LTCS	3 mm				
B2GH04	LTCS	3 mm				
B2GN04	LTCS	3 mm				

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NSRP Complex Project
JOB NO. : 0-6495-20-0000

DOC. NO. : S-000-1360-0002V
REV NO. : 2
SHEET NO. : 100

WALL THICKNESS TABLE

LINE CLASS	MATL	C. A.	0.25"	0.5"	0.75"	1"	1.5"	2"	2.5"	3"	4"	5"	6"	8"	10"	12"	14"	16"	18"	20"	22"	24"	26"
B2GP	LTCS	3 mm		sch160	sch160	sch160	sch160	xs		std	std		std	std	std	sch40							
				4.78mm	5.56mm	6.35mm	7.14mm	5.54mm		5.49mm	6.02mm		7.11mm	8.18mm	9.27mm	10.31mm							
B2GP01	LTCS	3 mm		sch160	sch160	sch160	sch160	xs		std	std		std	std									
				4.78mm	5.56mm	6.35mm	7.14mm	5.54mm		5.49mm	6.02mm		7.11mm	8.18mm									
B2GP04	LTCS	3 mm		xxs	sch160	sch160	sch160	xs		xs	std		std	std	std	sch40	sch40	std	std	xs		std	
				7.47mm	5.56mm	6.35mm	7.14mm	5.54mm		7.62mm	6.02mm		7.11mm	8.18mm	9.27mm	10.31mm	11.13mm	9.53mm	9.53mm	12.7mm		9.53mm	
B2GQ	LTCS	3 mm		sch160	sch160	sch160	sch160	xs		std	std		std	std	std	sch40	sch40	std	std	xs		xs	
				4.78mm	5.56mm	6.35mm	7.14mm	5.54mm		5.49mm	6.02mm		7.11mm	8.18mm	9.27mm	10.31mm	11.13mm	9.53mm	9.53mm	12.7mm		12.7mm	
B2GQ01	LTCS	3 mm		sch160	sch160	sch160	sch160	xs		std	std		std	std	std	sch40	sch40	std	std	xs		xs	
				4.78mm	5.56mm	6.35mm	7.14mm	5.54mm		5.49mm	6.02mm		7.11mm	8.18mm	9.27mm	10.31mm	11.13mm	9.53mm	9.53mm	12.7mm		12.7mm	
B2GQ04	LTCS	3 mm		xxs	sch160	sch160	sch160	xs		xs	std		std	std	std								
				7.47mm	5.56mm	6.35mm	7.14mm	5.54mm		7.62mm	6.02mm		7.11mm	8.18mm	9.27mm								
B2GR01	LTCS	3 mm		sch160	sch160	sch160	sch160	xs		std	std		std	std	std	sch40	sch40						
				4.78mm	5.56mm	6.35mm	7.14mm	5.54mm		5.49mm	6.02mm		7.11mm	8.18mm	9.27mm	10.31mm	11.13mm						
B31D05	LTCS	3 mm		sch160	sch160	sch160	sch160	xs		std	std		std										
				4.78mm	5.56mm	6.35mm	7.14mm	5.54mm		5.49mm	6.02mm		7.11mm										
B3A502	Killed CS	4.5 mm		xxs	xxs	xxs	sch160	sch160															
				7.47mm	7.82mm	9.09mm	7.14mm	8.74mm															
B3A702	Killed CS	4.5 mm		xxs	xxs	xxs	sch160	sch160		xs	xs		xs	sch60	xs								
				7.47mm	7.82mm	9.09mm	7.14mm	8.74mm		7.62mm	8.56mm		10.97mm	10.31mm	12.7mm								
B3AH02	Killed CS	4.5 mm		xxs	xxs	xxs	sch160	sch160		xs	xs												
				7.47mm	7.82mm	9.09mm	7.14mm	8.74mm		7.62mm	8.56mm												
B3AR02	Killed CS	4.5 mm		xxs	xxs	xxs	sch160	sch160		xs	xs		xs	sch60	xs	xs							
				7.47mm	7.82mm	9.09mm	7.14mm	8.74mm		7.62mm	8.56mm		10.97mm	10.31mm	12.7mm	12.7mm							
B4A4	Killed CS	6 mm		sch80s		xxs	xxs	sch160		sch160	sch120		xs	xs	xs	sch60	sch60	sch60	sch60	sch60		sch60	
				3.73mm		9.09mm	10.15mm	8.74mm		11.13mm	11.13mm		10.97mm	12.7mm	12.7mm	14.27mm	15.09mm	16.66mm	19.05mm	20.62mm		24.61mm	
B4A402	Killed CS	6 mm				xxs	xxs	sch160		sch160	sch120		xs	xs	xs	sch60	sch60						
						9.09mm	10.15mm	8.74mm		11.13mm	11.13mm		10.97mm	12.7mm	12.7mm	14.27mm	15.09mm						
B4A5	Killed CS	6 mm				xxs	xxs	sch160		sch160	sch120		xs	xs	xs	sch60	sch60	xs	xs	sch40			
						9.09mm	10.15mm	8.74mm		11.13mm	11.13mm		10.97mm	12.7mm	12.7mm	14.27mm	15.09mm	12.7mm	12.7mm	15.09mm			
B4A704	Killed CS	6 mm				xxs	xxs	xxs		sch160	sch120		xs	xs	xs	sch60	sch60	xs	sch40				
						9.09mm	10.15mm	11.07mm		11.13mm	11.13mm		10.97mm	12.7mm	12.7mm	14.27mm	15.09mm	12.7mm	14.27mm				
B4AP01	Killed CS	6 mm		sch80s		xxs	xxs	sch160		sch160	sch120		xs	xs	xs	sch60	sch60	xs	sch30				
				3.73mm		9.09mm	10.15mm	8.74mm		11.13mm	11.13mm		10.97mm	12.7mm	12.7mm	14.27mm	15.09mm	12.7mm	11.13mm				
B4AP02	Killed CS	6 mm				xxs	xxs	sch160		sch160	sch120		xs	xs									
						9.09mm	10.15mm	8.74mm		11.13mm	11.13mm		10.97mm	12.7mm									
B4AQ	Killed CS	6 mm		sch80s		xxs	xxs	sch160		sch160	sch120		xs	xs	xs	sch60	sch60	xs	sch30	xs			
				3.73mm		9.09mm	10.15mm	8.74mm		11.13mm	11.13mm		10.97mm	12.7mm	12.7mm	14.27mm	15.09mm	12.7mm	11.13mm	12.7mm			
B4AQ01	Killed CS	6 mm		sch80s		xxs	xxs	sch160		sch160	sch120		xs	xs	xs	sch60							
				3.73mm		9.09mm	10.15mm	8.74mm		11.13mm	11.13mm		10.97mm	12.7mm	12.7mm	14.27mm							
B4AR	Killed CS	6 mm		sch80s		xxs	xxs	sch160		sch160	sch120		xs	xs	xs	sch60	sch60	xs	xs	xs			
				3.73mm		9.09mm	10.15mm	8.74mm		11.13mm	11.13mm		10.97mm	12.7mm	12.7mm	14.27mm	15.09mm	12.7mm	12.7mm	12.7mm			
B4AR01	Killed CS	6 mm		sch80s		xxs	xxs	sch160		sch160	sch120		xs	xs	xs	sch60	sch60	xs	xs				
				3.73mm		9.09mm	10.15mm	8.74mm		11.13mm	11.13mm		10.97mm	12.7mm	12.7mm	14.27mm	15.09mm	12.7mm	12.7mm				
B4AR02	Killed CS	6 mm				xxs	xxs	sch160		sch160	sch120		xs										
						9.09mm	10.15mm	8.74mm		11.13mm	11.13mm		10.97mm										
B4AR04	Killed CS	6 mm				xxs	xxs	xxs		sch160	sch120		xs	xs	xs	sch60	sch60						
						9.09mm	10.15mm	11.07mm		11.13mm	11.13mm		10.97mm	12.7mm	12.7mm	14.27mm	15.09mm						

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WALL THICKNESS TABLE

LINE CLASS	MATL	C. A.	28"	30"	32"	34"	36"	40"	42"	44"	48"	52"	54"	56"	60"	64"	68"	72"	76"	80"	84"	92"	96"
B2GP	LTCS	3 mm																					
B2GP01	LTCS	3 mm																					
B2GP04	LTCS	3 mm																					
B2GQ	LTCS	3 mm																					
B2GQ01	LTCS	3 mm																					
B2GQ04	LTCS	3 mm																					
B2GR01	LTCS	3 mm																					
B31D05	LTCS	3 mm																					
B3A502	Killed CS	4.5 mm																					
B3A702	Killed CS	4.5 mm																					
B3AH02	Killed CS	4.5 mm																					
B3AR02	Killed CS	4.5 mm																					
B4A4	Killed CS	6 mm																					
B4A402	Killed CS	6 mm																					
B4A5	Killed CS	6 mm																					
B4A704	Killed CS	6 mm																					
B4AP01	Killed CS	6 mm																					
B4AP02	Killed CS	6 mm																					
B4AQ	Killed CS	6 mm																					
B4AQ01	Killed CS	6 mm																					
B4AR	Killed CS	6 mm																					
B4AR01	Killed CS	6 mm																					
B4AR02	Killed CS	6 mm																					
B4AR04	Killed CS	6 mm																					

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WALL THICKNESS TABLE

LINE CLASS	MATL	C. A.	100"	104"	108"	116"
B2GP	LTCS	3 mm				
B2GP01	LTCS	3 mm				
B2GP04	LTCS	3 mm				
B2GQ	LTCS	3 mm				
B2GQ01	LTCS	3 mm				
B2GQ04	LTCS	3 mm				
B2GR01	LTCS	3 mm				
B31D05	LTCS	3 mm				
B3A502	Killed CS	4.5 mm				
B3A702	Killed CS	4.5 mm				
B3AH02	Killed CS	4.5 mm				
B3AR02	Killed CS	4.5 mm				
B4A4	Killed CS	6 mm				
B4A402	Killed CS	6 mm				
B4A5	Killed CS	6 mm				
B4A704	Killed CS	6 mm				
B4AP01	Killed CS	6 mm				
B4AP02	Killed CS	6 mm				
B4AQ	Killed CS	6 mm				
B4AQ01	Killed CS	6 mm				
B4AR	Killed CS	6 mm				
B4AR01	Killed CS	6 mm				
B4AR02	Killed CS	6 mm				
B4AR04	Killed CS	6 mm				

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WALL THICKNESS TABLE

LINE CLASS	MATL	C. A.	0.25"	0.5"	0.75"	1"	1.5"	2"	2.5"	3"	4"	5"	6"	8"	10"	12"	14"	16"	18"	20"	22"	24"	26"
B4AV	Killed CS	6 mm		sch80s		xxs	xxs	sch160		sch160	sch120		xs	xs	xs	sch60							
				3.73mm		9.09mm	10.15mm	8.74mm		11.13mm	11.13mm		10.97mm	12.7mm	12.7mm	14.27mm							
B4FV	5Cr-1/2Mo	6 mm		sch80s		xxs	xxs	sch160		sch160	sch120		xs	xs	sch80	sch60	sch60	sch60	sch40	sch40		xs	
				3.73mm		9.09mm	10.15mm	8.74mm		11.13mm	11.13mm		10.97mm	12.7mm	15.09mm	14.27mm	15.09mm	16.66mm	14.27mm	15.09mm		12.7mm	
B4GQ	LTCS	6 mm		sch80s		xxs	xxs	sch160		sch160	sch120		xs	xs	xs	sch60	sch60	xs					
				3.73mm		9.09mm	10.15mm	8.74mm		11.13mm	11.13mm		10.97mm	12.7mm	12.7mm	14.27mm	15.09mm	12.7mm					
B4GR01	LTCS	6 mm				xxs	xxs	sch160		sch160	sch120		xs										
						9.09mm	10.15mm	8.74mm		11.13mm	11.13mm		10.97mm										
D0JH	SS304L	0 mm		sch80s	sch80s	sch80s	sch80s	sch10s		sch40s	sch40s		sch40s	sch10s	sch10s	sch40s	sch40s	sch40s	sch40s	sch40s		sch40s	
				3.73mm	3.91mm	4.55mm	5.08mm	2.77mm		5.49mm	6.02mm		7.11mm	3.76mm	4.19mm	9.53mm	9.53mm	9.53mm	9.53mm	9.53mm		9.53mm	
D0JS	SS304L	0 mm		sch80s	sch80s	sch80s	sch80s	sch10s		sch40s	sch40s		sch40s	sch40s	sch40s								
				3.73mm	3.91mm	4.55mm	5.08mm	2.77mm		5.49mm	6.02mm		7.11mm	8.18mm	9.27mm								
D0JY	SS304L	0 mm		sch80s	sch80s	sch80s	sch80s																
				3.73mm	3.91mm	4.55mm	5.08mm																
D0JY03	SS304L	0 mm		sch80s	sch80s	sch80s	sch80s	sch10s															
				3.73mm	3.91mm	4.55mm	5.08mm	2.77mm															
D0KC01	SS304H	0 mm				xxs	xxs	xxs		xxs	xxs		xxs	xxs									
						9.09mm	10.15mm	11.07mm		15.24mm	17.12mm		21.95mm	22.23mm									
D0KP01	SS304H	0 mm		sch80s	sch80s	sch80s	sch80s	sch10s		sch40s	sch40s		sch40s										
				3.73mm	3.91mm	4.55mm	5.08mm	2.77mm		5.49mm	6.02mm		7.11mm										
D0LG	SS316L	0 mm		sch80s	sch80s	sch80s	sch80s	sch10s															
				3.73mm	3.91mm	4.55mm	5.08mm	2.77mm															
D0LS	SS316L	0 mm		sch80s	sch80s	sch80s	sch80s	sch40s		sch40s	sch40s		sch40s	sch40s	sch40s	sch40s							
				3.73mm	3.91mm	4.55mm	5.08mm	3.91mm		5.49mm	6.02mm		7.11mm	8.18mm	9.27mm	9.53mm							
D0MH01	SS321	1 mm		sch80s	sch80s	sch80s	sch80s	sch40s		sch40s	sch40s		sch80s	sch40s	sch40s	sch40s							
				3.73mm	3.91mm	4.55mm	5.08mm	3.91mm		5.49mm	6.02mm		10.97mm	8.18mm	9.27mm	9.53mm							
D0MS	SS347	0 mm		sch80s	sch80s	sch80s	sch80s	sch40s		sch40s	sch40s		sch80s	sch40s	sch40s	sch40s	sch40s						
				3.73mm	3.91mm	4.55mm	5.08mm	3.91mm		5.49mm	6.02mm		10.97mm	8.18mm	9.27mm	9.53mm	9.53mm						
D11B05	Killed CS	3 mm			sch160	sch160	sch160	sch160		xs	xs		xs										
					5.56mm	6.35mm	7.14mm	8.74mm		7.62mm	8.56mm		10.97mm										
D11D05	LTCS	3 mm		sch160	sch160	sch160	sch160	sch160		xs	xs		xs	sch60	xs	xs							
				4.78mm	5.56mm	6.35mm	7.14mm	8.74mm		7.62mm	8.56mm		10.97mm	10.31mm	12.7mm	12.7mm							
D11F05	SS304L	0 mm	sch80s	sch80s	sch80s	sch80s	sch80s	sch10s															
			3.02mm	3.73mm	3.91mm	4.55mm	5.08mm	2.77mm															
D1AA	Killed CS	1.5 mm		xs	xs	xs	xs	xs		std	std		std	sch30									
				3.73mm	3.91mm	4.55mm	5.08mm	5.54mm		5.49mm	6.02mm		7.11mm	7.04mm									
D1AG	CS (ASME)	1.5 mm		xs	xs	xs	xs	xs		std	xs		xs	xs	sch80	sch80	sch80	sch80	sch80				
				3.73mm	3.91mm	4.55mm	5.08mm	5.54mm		5.49mm	8.56mm		10.97mm	12.7mm	15.09mm	17.48mm	19.05mm	21.44mm	23.83mm				
D1AH	Killed CS	1.5 mm		xs	xs	xs	xs	xs		std	xs		xs	sch60	sch20	sch20							
				3.73mm	3.91mm	4.55mm	5.08mm	5.54mm		5.49mm	8.56mm		10.97mm	10.31mm	6.35mm	6.35mm							
D1AH01	Killed CS	1.5 mm		xs	xs	xs	xs	xs		std	xs		xs	sch60	sch20								
				3.73mm	3.91mm	4.55mm	5.08mm	5.54mm		5.49mm	8.56mm		10.97mm	10.31mm	6.35mm								
D1AH02	Killed CS	1.5 mm		xs	xs	xs	xs																
				3.73mm	3.91mm	4.55mm	5.08mm																
D1AH04	Killed CS	1.5 mm		xs	xs	xs	xs	xs		std	xs		xs	sch20									
				3.73mm	3.91mm	4.55mm	5.08mm	5.54mm		5.49mm	8.56mm		10.97mm	6.35mm									
D1AP	Killed CS	1.5 mm		xs	xs	xs	xs	xs		std	xs		xs	xs	xs	sch80	xs	xs	sch20	std			
				3.73mm	3.91mm	4.55mm	5.08mm	5.54mm		5.49mm	8.56mm		10.97mm	12.7mm	12.7mm	17.48mm	12.7mm	12.7mm	7.92mm	9.53mm			

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WALL THICKNESS TABLE

LINE CLASS	MATL	C. A.	28"	30"	32"	34"	36"	40"	42"	44"	48"	52"	54"	56"	60"	64"	68"	72"	76"	80"	84"	92"	96"
B4AV	Killed CS	6 mm																					
B4FV	5Cr-1/2Mo	6 mm		xs 12.7mm			xs 12.7mm		14.27mm														
B4GQ	LTCS	6 mm																					
B4GR01	LTCS	6 mm																					
D0JH	SS304L	0 mm		sch10s 7.92mm			xs 12.7mm																
D0JS	SS304L	0 mm																					
D0JY	SS304L	0 mm																					
D0JY03	SS304L	0 mm																					
D0KC01	SS304H	0 mm																					
D0KP01	SS304H	0 mm																					
D0LG	SS316L	0 mm																					
D0LS	SS316L	0 mm																					
D0MH01	SS321	1 mm																					
D0MS	SS347	0 mm																					
D11B05	Killed CS	3 mm																					
D11D05	LTCS	3 mm																					
D11F05	SS304L	0 mm																					
D1AA	Killed CS	1.5 mm																					
D1AG	CS (ASME)	1.5 mm																					
D1AH	Killed CS	1.5 mm																					
D1AH01	Killed CS	1.5 mm																					
D1AH02	Killed CS	1.5 mm																					
D1AH04	Killed CS	1.5 mm																					
D1AP	Killed CS	1.5 mm																					

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WALL THICKNESS TABLE

LINE CLASS	MATL	C. A.	100"	104"	108"	116"
B4AV	Killed CS	6 mm				
B4FV	5Cr-1/2Mo	6 mm				
B4GQ	LTCS	6 mm				
B4GR01	LTCS	6 mm				
D0JH	SS304L	0 mm				
D0JS	SS304L	0 mm				
D0JY	SS304L	0 mm				
D0JY03	SS304L	0 mm				
D0KC01	SS304H	0 mm				
D0KP01	SS304H	0 mm				
D0LG	SS316L	0 mm				
D0LS	SS316L	0 mm				
D0MH01	SS321	1 mm				
D0MS	SS347	0 mm				
D11B05	Killed CS	3 mm				
D11D05	LTCS	3 mm				
D11F05	SS304L	0 mm				
D1AA	Killed CS	1.5 mm				
D1AG	CS (ASME)	1.5 mm				
D1AH	Killed CS	1.5 mm				
D1AH01	Killed CS	1.5 mm				
D1AH02	Killed CS	1.5 mm				
D1AH04	Killed CS	1.5 mm				
D1AP	Killed CS	1.5 mm				

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WALL THICKNESS TABLE

LINE CLASS	MATL	C. A.	0.25"	0.5"	0.75"	1"	1.5"	2"	2.5"	3"	4"	5"	6"	8"	10"	12"	14"	16"	18"	20"	22"	24"	26"
D1AP01	Killed CS	1.5 mm		xs	xs	xs	xs	xs		std	xs		xs	std	xs	xs	sch20	sch20	sch20	std			
				3.73mm	3.91mm	4.55mm	5.08mm	5.54mm		5.49mm	8.56mm		10.97mm	8.18mm	12.7mm	12.7mm	7.92mm	7.92mm	7.92mm	9.53mm			
D1AP02	Killed CS	1.5 mm		xs	xs	xs	xs	xs		std	xs		xs	sch60	xs	xs	sch20	sch20					
				3.73mm	3.91mm	4.55mm	5.08mm	5.54mm		5.49mm	8.56mm		10.97mm	10.31mm	12.7mm	12.7mm	7.92mm	7.92mm					
D1AP03	Killed CS	1.5 mm		xs	xs	xs	xs	xs		std	xs		xs	xs	xs	sch80	sch20	sch20					
				3.73mm	3.91mm	4.55mm	5.08mm	5.54mm		5.49mm	8.56mm		10.97mm	12.7mm	12.7mm	17.48mm	7.92mm	7.92mm					
D1AP04	Killed CS	1.5 mm		xs	xs	xs	xs	xs		std	xs		xs	std	std	sch40	sch20	sch20	sch20	std			
				3.73mm	3.91mm	4.55mm	5.08mm	5.54mm		5.49mm	8.56mm		10.97mm	8.18mm	9.27mm	10.31mm	7.92mm	7.92mm	7.92mm	9.53mm			
D1APCL	Killed CS	1.5 mm		xs	xs	xs	xs	xs		std	xs		xs	xs	xs	sch80	xs	xs					
				3.73mm	3.91mm	4.55mm	5.08mm	5.54mm		5.49mm	8.56mm		10.97mm	12.7mm	12.7mm	17.48mm	12.7mm	12.7mm					
D1APCM	Killed CS	1.5 mm		xs	xs	xs	xs	xs		std	xs		xs										
				3.73mm	3.91mm	4.55mm	5.08mm	5.54mm		5.49mm	8.56mm		10.97mm										
D1AS	Killed CS	1.5 mm		xs	xs	xs	xs	xs		xs	xs		xs	xs	sch80	sch80	sch80	sch80	sch60	sch60		sch60	
				3.73mm	3.91mm	4.55mm	5.08mm	5.54mm		7.62mm	8.56mm		10.97mm	12.7mm	15.09mm	17.48mm	19.05mm	21.44mm	19.05mm	20.62mm		24.61mm	
D1AY04	Killed CS	1.5 mm		xs	xs	xs	xs	xs		std	xs												
				3.73mm	3.91mm	4.55mm	5.08mm	5.54mm		5.49mm	8.56mm												
D1D904	1-1/4Cr - 1/2Mo	1.5 mm		xs	xs	xs	xs	xs		xs	xs		xs	sch60	xs	sch60	sch60	sch80	sch80	sch80		sch80	
				3.73mm	3.91mm	4.55mm	5.08mm	5.54mm		7.62mm	8.56mm		10.97mm	10.31mm	12.7mm	14.27mm	15.09mm	21.44mm	23.83mm	26.19mm		30.96mm	
D1DH04	1-1/4Cr - 1/2Mo	1.5 mm		xs	xs	xs	xs	xs		xs	xs		xs	sch60	xs	sch60	sch60	sch60	sch60	sch60		sch60	
				3.73mm	3.91mm	4.55mm	5.08mm	5.54mm		7.62mm	8.56mm		10.97mm	10.31mm	12.7mm	14.27mm	15.09mm	16.66mm	19.05mm	20.62mm		24.61mm	
D1EG	2-1/4Cr-1Mo	1.5 mm		xs	xs	xs	xs	xs		xs	xs		xs	sch20	sch20	sch20							
				3.73mm	3.91mm	4.55mm	5.08mm	5.54mm		7.62mm	8.56mm		10.97mm	6.35mm	6.35mm	6.35mm							
D1GP	LTCS	1.5 mm		xs	xs	xs	xs	xs		std	xs		xs	std	std	sch20	sch20						
				3.73mm	3.91mm	4.55mm	5.08mm	5.54mm		5.49mm	8.56mm		10.97mm	8.18mm	9.27mm	6.35mm	7.92mm						
D1GP01	LTCS	1.5 mm		xs	xs	xs	xs	xs		std	xs		xs	sch20	sch30	sch30	std	sch20	sch20	std			
				3.73mm	3.91mm	4.55mm	5.08mm	5.54mm		5.49mm	8.56mm		10.97mm	6.35mm	7.8mm	8.38mm	9.53mm	7.92mm	7.92mm	9.53mm			
D1GP04	LTCS	1.5 mm		xs	xs	xs	xs	xs		std	xs		xs	std	std	sch40	sch40	xs	sch40	sch40		sch40	
				3.73mm	3.91mm	4.55mm	5.08mm	5.54mm		5.49mm	8.56mm		10.97mm	8.18mm	9.27mm	10.31mm	11.13mm	12.7mm	14.27mm	15.09mm		17.48mm	
D1LH04	SS316L	1.5 mm		sch80s	sch80s	sch80s	sch80s	sch80s		sch40s	sch80s		sch80s	sch40s	sch40s	sch40s	sch40s	sch40s	sch40s	sch40s		sch40s	
				3.73mm	3.91mm	4.55mm	5.08mm	5.54mm		5.49mm	8.56mm		10.97mm	8.18mm	9.27mm	9.53mm	9.53mm	9.53mm	9.53mm	9.53mm		9.53mm	
D1LV04	SS316L	1.5 mm		sch80s	sch80s	sch80s	sch80s	sch80s		sch40s	sch80s		sch80s	sch40s									
				3.73mm	3.91mm	4.55mm	5.08mm	5.54mm		5.49mm	8.56mm		10.97mm	8.18mm									
D1MQ02	SS321	1.5 mm		sch80s	sch80s	sch80s	sch80s	sch80s		sch40s	sch80s		sch80s	sch40s	sch40s	sch40s	sch40s						
				3.73mm	3.91mm	4.55mm	5.08mm	5.54mm		5.49mm	8.56mm		10.97mm	8.18mm	9.27mm	9.53mm	9.53mm						
D21B05	Killed CS	3 mm		sch160	sch160	sch160	sch160	sch160		xs	xs												
				4.78mm	5.56mm	6.35mm	7.14mm	8.74mm		7.62mm	8.56mm												
D21F05	SS304L	0 mm	sch80s	sch80s	sch80s	sch80s	sch80s	sch10s															
			3.02mm	3.73mm	3.91mm	4.55mm	5.08mm	2.77mm															
D2A604	Killed CS	3 mm		xxs	sch160	sch160	sch160	sch160		xs	xs		xs	std	std	std	sch40	xs	xs	xs			
				7.47mm	5.56mm	6.35mm	7.14mm	8.74mm		7.62mm	8.56mm		10.97mm	8.18mm	9.27mm	9.53mm	11.13mm	12.7mm	12.7mm	12.7mm			
D2AG	CS (ASME)	3 mm		sch160	sch160	sch160	sch160	xs		xs	xs		xs	sch60	xs	sch60	sch60	sch60	sch60				
				4.78mm	5.56mm	6.35mm	7.14mm	5.54mm		7.62mm	8.56mm		10.97mm	10.31mm	12.7mm	14.27mm	15.09mm	16.66mm	19.05mm				
D2AP	Killed CS	3 mm		sch160	sch160	sch160	sch160	sch160		xs	xs		xs	xs	xs								
				4.78mm	5.56mm	6.35mm	7.14mm	8.74mm		7.62mm	8.56mm		10.97mm	12.7mm	12.7mm								
D2AP01	Killed CS	3 mm		sch160	sch160	sch160	sch160	sch160		xs	xs		xs	sch20	sch20								
				4.78mm	5.56mm	6.35mm	7.14mm	8.74mm		7.62mm	8.56mm		10.97mm	6.35mm	6.35mm								
D2AP02	Killed CS	3 mm		sch160	sch160	sch160	sch160	sch160		xs	xs		xs	xs	sch80	sch80	sch80	sch80	sch60	sch80		sch60	
				4.78mm	5.56mm	6.35mm	7.14mm	8.74mm		7.62mm	8.56mm		10.97mm	12.7mm	15.09mm	17.48mm	19.05mm	21.44mm	19.05mm	26.19mm		24.61mm	

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WALL THICKNESS TABLE

LINE CLASS	MATL	C. A.	28"	30"	32"	34"	36"	40"	42"	44"	48"	52"	54"	56"	60"	64"	68"	72"	76"	80"	84"	92"	96"
D1AP01	Killed CS	1.5 mm																					
D1AP02	Killed CS	1.5 mm																					
D1AP03	Killed CS	1.5 mm																					
D1AP04	Killed CS	1.5 mm																					
D1APCL	Killed CS	1.5 mm																					
D1APCM	Killed CS	1.5 mm																					
D1AS	Killed CS	1.5 mm																					
D1AY04	Killed CS	1.5 mm																					
D1D904	1-1/4Cr - 1/2Mo	1.5 mm																					
D1DH04	1-1/4Cr - 1/2Mo	1.5 mm																					
D1EG	2-1/4Cr-1Mo	1.5 mm																					
D1GP	LTCS	1.5 mm																					
D1GP01	LTCS	1.5 mm																					
D1GP04	LTCS	1.5 mm		22.23mm																			
D1LH04	SS316L	1.5 mm		std 9.53mm																			
D1LV04	SS316L	1.5 mm																					
D1MQ02	SS321	1.5 mm																					
D21B05	Killed CS	3 mm																					
D21F05	SS304L	0 mm																					
D2A604	Killed CS	3 mm																					
D2AG	CS (ASME)	3 mm																					
D2AP	Killed CS	3 mm																					
D2AP01	Killed CS	3 mm																					
D2AP02	Killed CS	3 mm																					

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WALL THICKNESS TABLE

LINE CLASS	MATL	C. A.	100"	104"	108"	116"
D1AP01	Killed CS	1.5 mm				
D1AP02	Killed CS	1.5 mm				
D1AP03	Killed CS	1.5 mm				
D1AP04	Killed CS	1.5 mm				
D1APCL	Killed CS	1.5 mm				
D1APCM	Killed CS	1.5 mm				
D1AS	Killed CS	1.5 mm				
D1AY04	Killed CS	1.5 mm				
D1D904	1-1/4Cr - 1/2Mo	1.5 mm				
D1DH04	1-1/4Cr - 1/2Mo	1.5 mm				
D1EG	2-1/4Cr-1Mo	1.5 mm				
D1GP	LTCS	1.5 mm				
D1GP01	LTCS	1.5 mm				
D1GP04	LTCS	1.5 mm				
D1LH04	SS316L	1.5 mm				
D1LV04	SS316L	1.5 mm				
D1MQ02	SS321	1.5 mm				
D21B05	Killed CS	3 mm				
D21F05	SS304L	0 mm				
D2A604	Killed CS	3 mm				
D2AG	CS (ASME)	3 mm				
D2AP	Killed CS	3 mm				
D2AP01	Killed CS	3 mm				
D2AP02	Killed CS	3 mm				

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WALL THICKNESS TABLE

LINE CLASS	MATL	C. A.	0.25"	0.5"	0.75"	1"	1.5"	2"	2.5"	3"	4"	5"	6"	8"	10"	12"	14"	16"	18"	20"	22"	24"	26"
D2AQ01	Killed CS	3 mm		sch160	sch160	sch160	sch160	sch160		xs	xs		xs	std	std	sch30	sch20						
				4.78mm	5.56mm	6.35mm	7.14mm	8.74mm		7.62mm	8.56mm		10.97mm	8.18mm	9.27mm	8.38mm	7.92mm						
D2AQ04	Killed CS	3 mm		xxs	sch160	sch160	sch160	sch160		xs	xs		xs	sch30	std	std							
				7.47mm	5.56mm	6.35mm	7.14mm	8.74mm		7.62mm	8.56mm		10.97mm	7.04mm	9.27mm	9.53mm							
D2AS	Killed CS	3 mm		sch160	sch160	sch160	sch160	xs		xs	xs		xs	sch60	xs	xs	xs	sch60	sch60	sch60		sch60	
				4.78mm	5.56mm	6.35mm	7.14mm	5.54mm		7.62mm	8.56mm		10.97mm	10.31mm	12.7mm	12.7mm	12.7mm	16.66mm	19.05mm	20.62mm		24.61mm	
D2DH	1-1/4Cr - 1/2Mo	3 mm		sch160	sch160	sch160	sch160	sch160		xs	xs		xs	xs	sch80	sch80	sch80	xs	std	xs		xs	
				4.78mm	5.56mm	6.35mm	7.14mm	8.74mm		7.62mm	8.56mm		10.97mm	12.7mm	15.09mm	17.48mm	19.05mm	12.7mm	9.53mm	12.7mm		12.7mm	
D2DH01	1-1/4Cr - 1/2Mo	3 mm		sch160	sch160	sch160	sch160	sch160		xs	xs		xs	xs	sch80								
				4.78mm	5.56mm	6.35mm	7.14mm	8.74mm		7.62mm	8.56mm		10.97mm	12.7mm	15.09mm								
D2G501	LTCS	3 mm		sch160	sch160	sch160																	
				4.78mm	5.56mm	6.35mm																	
D2GQ01	LTCS	3 mm		sch160	sch160	sch160	sch160	sch160		xs													
				4.78mm	5.56mm	6.35mm	7.14mm	8.74mm		7.62mm													
D2GR01	LTCS	3 mm		sch160	sch160	sch160																	
				4.78mm	5.56mm	6.35mm																	
D31F05	SS304L	0 mm		sch80s	sch80s	sch80s	sch80s	sch10s		sch40s	sch40s		sch40s	sch40s									
				3.73mm	3.91mm	4.55mm	5.08mm	2.77mm		5.49mm	6.02mm		7.11mm	8.18mm									
D3A702	Killed CS	4.5 mm		xxs	xxs	xxs	sch160	sch160		sch160	sch120		sch120	sch60	xs								
				7.47mm	7.82mm	9.09mm	7.14mm	8.74mm		11.13mm	11.13mm		14.27mm	10.31mm	12.7mm								
D41F05	SS304L	0 mm	sch80s	sch80s	sch80s	sch80s	sch80s	sch10s															
			3.02mm	3.73mm	3.91mm	4.55mm	5.08mm	2.77mm															
D51F05	SS304L	0 mm		sch80s																			
				3.73mm																			
D61F05	SS304L	0 mm		sch80s	sch80s	sch80s	sch80s	sch10s		sch40s	sch40s	sch40s	sch40s										
				3.73mm	3.91mm	4.55mm	5.08mm	2.77mm		5.49mm	6.02mm	6.55mm	7.11mm										
F11F05	SS304L	0 mm		sch80s	sch80s																		
				3.73mm	3.91mm																		
L1AH02	Killed CS	1.5 mm		xs	xs	xs	xs	xs		std	xs		xs	sch30	sch20								
				3.73mm	3.91mm	4.55mm	5.08mm	5.54mm		5.49mm	8.56mm		10.97mm	7.04mm	6.35mm								
L1M602	SS321	1.5 mm		sch80s	sch80s	sch80s	sch80s	sch80s		sch40s	sch80s		sch80s	sch40s	sch40s								
				3.73mm	3.91mm	4.55mm	5.08mm	5.54mm		5.49mm	8.56mm		10.97mm	8.18mm	9.27mm								
L1M702	SS321	1.5 mm		sch80s	sch80s	sch80s	sch80s	sch80s		sch40s	sch80s		sch80s	sch40s	sch40s								
				3.73mm	3.91mm	4.55mm	5.08mm	5.54mm		5.49mm	8.56mm		10.97mm	8.18mm	9.27mm								
L28V02	9Cr - 1MO	3 mm		sch160	sch160	sch160	sch160	sch160		xs	sch120		sch120	xs	sch80	sch80	sch80	sch80					
				4.78mm	5.56mm	6.35mm	7.14mm	8.74mm		7.62mm	11.13mm		14.27mm	12.7mm	15.09mm	17.48mm	19.05mm	21.44mm					
L3AH02	Killed CS	4.5 mm		xxs	xxs	xxs	sch160	sch160		sch160	sch120												
				7.47mm	7.82mm	9.09mm	7.14mm	8.74mm		11.13mm	11.13mm												
M0JS	SS304L	0 mm		sch80s	sch80s	sch80s	sch80s	sch10s		sch40s	sch40s		sch40s	sch40s	sch40s	sch40s							
				3.73mm	3.91mm	4.55mm	5.08mm	2.77mm		5.49mm	6.02mm		7.11mm	8.18mm	9.27mm	9.53mm							
M0LR01	SS316L	0 mm		sch80s	sch80s	sch80s	sch80s	sch40s		sch40s	sch40s		sch80s	sch80s									
				3.73mm	3.91mm	4.55mm	5.08mm	3.91mm		5.49mm	6.02mm		10.97mm	12.7mm									
M1A602	Killed CS	1.5 mm		xs	xs	xs	xs	xs		xs	xs		xs										
				3.73mm	3.91mm	4.55mm	5.08mm	5.54mm		7.62mm	8.56mm		10.97mm										
M1AH01	Killed CS	1.5 mm		xs	xs	xs	xs	xs		xs	xs		xs	std									
				3.73mm	3.91mm	4.55mm	5.08mm	5.54mm		7.62mm	8.56mm		10.97mm	8.18mm									
M1AH02	Killed CS	1.5 mm		xs	xs	xs	xs	xs		xs	xs		xs	xs									
				3.73mm	3.91mm	4.55mm	5.08mm	5.54mm		7.62mm	8.56mm		10.97mm	12.7mm									

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WALL THICKNESS TABLE

LINE CLASS	MATL	C. A.	28"	30"	32"	34"	36"	40"	42"	44"	48"	52"	54"	56"	60"	64"	68"	72"	76"	80"	84"	92"	96"
D2AQ01	Killed CS	3 mm																					
D2AQ04	Killed CS	3 mm																					
D2AS	Killed CS	3 mm																					
D2DH	1-1/4Cr - 1/2Mo	3 mm	xs 12.7mm																				
D2DH01	1-1/4Cr - 1/2Mo	3 mm																					
D2G501	LTCS	3 mm																					
D2GQ01	LTCS	3 mm																					
D2GR01	LTCS	3 mm																					
D31F05	SS304L	0 mm																					
D3A702	Killed CS	4.5 mm																					
D41F05	SS304L	0 mm																					
D51F05	SS304L	0 mm																					
D61F05	SS304L	0 mm																					
F11F05	SS304L	0 mm																					
L1AH02	Killed CS	1.5 mm																					
L1M602	SS321	1.5 mm																					
L1M702	SS321	1.5 mm																					
L28V02	9Cr - 1MO	3 mm																					
L3AH02	Killed CS	4.5 mm																					
M0JS	SS304L	0 mm																					
M0LR01	SS316L	0 mm																					
M1A602	Killed CS	1.5 mm																					
M1AH01	Killed CS	1.5 mm																					
M1AH02	Killed CS	1.5 mm																					

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WALL THICKNESS TABLE

LINE CLASS	MATL	C. A.	100"	104"	108"	116"
D2AQ01	Killed CS	3 mm				
D2AQ04	Killed CS	3 mm				
D2AS	Killed CS	3 mm				
D2DH	1-1/4Cr - 1/2Mo	3 mm				
D2DH01	1-1/4Cr - 1/2Mo	3 mm				
D2G501	LTCS	3 mm				
D2GQ01	LTCS	3 mm				
D2GR01	LTCS	3 mm				
D31F05	SS304L	0 mm				
D3A702	Killed CS	4.5 mm				
D41F05	SS304L	0 mm				
D51F05	SS304L	0 mm				
D61F05	SS304L	0 mm				
F11F05	SS304L	0 mm				
L1AH02	Killed CS	1.5 mm				
L1M602	SS321	1.5 mm				
L1M702	SS321	1.5 mm				
L28V02	9Cr - 1MO	3 mm				
L3AH02	Killed CS	4.5 mm				
M0JS	SS304L	0 mm				
M0LR01	SS316L	0 mm				
M1A602	Killed CS	1.5 mm				
M1AH01	Killed CS	1.5 mm				
M1AH02	Killed CS	1.5 mm				

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WALL THICKNESS TABLE

LINE CLASS	MATL	C. A.	0.25"	0.5"	0.75"	1"	1.5"	2"	2.5"	3"	4"	5"	6"	8"	10"	12"	14"	16"	18"	20"	22"	24"	26"
M1DS	1-1/4Cr - 1/2Mo	1.5 mm		xs	xs	xs	xs	xs		xs	xs		xs	sch100	sch100	sch100	sch100	sch100					
				3.73mm	3.91mm	4.55mm	5.08mm	5.54mm		7.62mm	8.56mm		10.97mm	15.09mm	18.26mm	21.44mm	23.83mm	26.19mm					
M1EG	2-1/4Cr-1Mo	1.5 mm		xs	xs	xs	xs	xs		xs	xs		xs	xs	sch80								
				3.73mm	3.91mm	4.55mm	5.08mm	5.54mm		7.62mm	8.56mm		10.97mm	12.7mm	15.09mm								
M1EH	2-1/4Cr-1Mo	1.5 mm		xs	xs	xs	xs	xs		xs	xs		xs	sch100	sch100	sch100	sch100	sch100	sch80	sch80		sch80	
				3.73mm	3.91mm	4.55mm	5.08mm	5.54mm		7.62mm	8.56mm		10.97mm	15.09mm	18.26mm	21.44mm	23.83mm	26.19mm	23.83mm	26.19mm		30.96mm	
M2A602	Killed CS	3 mm		xxs	sch160	sch160	sch160	sch160		sch160	sch160												
				7.47mm	5.56mm	6.35mm	7.14mm	8.74mm		11.13mm	13.49mm												
M2AG	CS (ASME)	3 mm		sch160	sch160	sch160	sch160	sch160		sch160	sch120		sch120	sch120									
				4.78mm	5.56mm	6.35mm	7.14mm	8.74mm		11.13mm	11.13mm		14.27mm	18.26mm									
M2AQ01	Killed CS	3 mm		sch160	sch160	sch160	sch160	sch160		sch160	sch160		sch160	sch140	xxs	xxs	sch100	sch100	sch100	sch100			
				4.78mm	5.56mm	6.35mm	7.14mm	8.74mm		11.13mm	13.49mm		18.26mm	20.62mm	25.4mm	25.4mm	23.83mm	26.19mm	29.36mm	32.54mm			
M2AR01	Killed CS	3 mm		sch160	sch160	sch160	sch160	sch160		sch160	sch160		sch160	sch140	xxs	xxs	sch100	sch100	sch100	sch100		sch100	
				4.78mm	5.56mm	6.35mm	7.14mm	8.74mm		11.13mm	13.49mm		18.26mm	20.62mm	25.4mm	25.4mm	23.83mm	26.19mm	29.36mm	32.54mm		38.89mm	
M2AS	Killed CS	3 mm		sch160	sch160	sch160	sch160	sch160		sch160	sch120		sch120	sch100	sch100	sch100	sch100	sch100	sch100				
				4.78mm	5.56mm	6.35mm	7.14mm	8.74mm		11.13mm	11.13mm		14.27mm	15.09mm	18.26mm	21.44mm	23.83mm	26.19mm	29.36mm				
M2DH	1-1/4Cr - 1/2Mo	3 mm		sch160	sch160	sch160	sch160	xs		std	xs		xs	xs	sch80	sch80	sch80	sch80	sch60	sch60		sch60	
				4.78mm	5.56mm	6.35mm	7.14mm	5.54mm		5.49mm	8.56mm		10.97mm	12.7mm	15.09mm	17.48mm	19.05mm	21.44mm	19.05mm	20.62mm		24.61mm	
M2DH01	1-1/4Cr - 1/2Mo	3 mm		sch160	sch160	sch160	sch160	sch160		sch160	sch120		sch120	sch120	sch120	xxs	sch120	sch120	sch100				
				4.78mm	5.56mm	6.35mm	7.14mm	8.74mm		11.13mm	11.13mm		14.27mm	18.26mm	21.44mm	25.4mm	27.79mm	30.96mm	29.36mm				
M3AH02	Killed CS	4.5 mm		xxs	xxs	xxs	xxs	sch160		sch160	sch120												
				7.47mm	7.82mm	9.09mm	10.15mm	8.74mm		11.13mm	11.13mm												
N0JP	SS304L	0 mm		sch80s	sch80s	sch80s																	
				3.73mm	3.91mm	4.55mm																	
N0LG	SS316L	0 mm		sch80s	sch80s	sch80s	sch80s	sch160		sch40s													
				3.73mm	3.91mm	4.55mm	5.08mm	8.74mm		5.49mm													
N1A402	Killed CS	1.5 mm		xs	sch160	sch160	sch160	sch160		sch160	sch160		sch160	xxs	xxs	sch160							
				3.73mm	5.56mm	6.35mm	7.14mm	8.74mm		11.13mm	13.49mm		18.26mm	22.23mm	25.4mm	33.32mm							
N1A602	Killed CS	1.5 mm		xs	sch160	sch160	sch160	sch160		sch160	sch160		sch160	sch140	xxs	sch160	sch160	sch160	sch160	sch160		sch160	
				3.73mm	5.56mm	6.35mm	7.14mm	8.74mm		11.13mm	13.49mm		18.26mm	20.62mm	25.4mm	33.32mm	35.71mm	40.49mm	45.24mm	50.01mm		59.54mm	
N1AH	Killed CS	1.5 mm		sch160	sch160	sch160	sch160	sch160		sch160	sch160		sch160	sch140									
				4.78mm	5.56mm	6.35mm	7.14mm	8.74mm		11.13mm	13.49mm		18.26mm	20.62mm									
N1AH02	Killed CS	1.5 mm		sch160	sch160	sch160	sch160	sch160		sch160	sch160		sch160	sch140	xxs	sch160							
				4.78mm	5.56mm	6.35mm	7.14mm	8.74mm		11.13mm	13.49mm		18.26mm	20.62mm	25.4mm	33.32mm							
N1AL02	Killed CS	1.5 mm		sch160	sch160	sch160	sch160	sch160		sch160	sch160		sch160	sch120	sch100	xxs	sch120	sch120	sch120	sch120		sch120	
				4.78mm	5.56mm	6.35mm	7.14mm	8.74mm		11.13mm	13.49mm		18.26mm	18.26mm	18.26mm	25.4mm	27.79mm	30.96mm	34.93mm	38.1mm		46.02mm	
N1AQ	Killed CS	1.5 mm		sch160	sch160	sch160	sch160	sch160		sch160	sch160		sch160	sch120	sch100	xxs	sch120	sch120					
				4.78mm	5.56mm	6.35mm	7.14mm	8.74mm		11.13mm	13.49mm		18.26mm	18.26mm	18.26mm	25.4mm	27.79mm	30.96mm					
N1AS	Killed CS	1.5 mm		sch160	sch160	sch160	sch160	sch160		sch160	sch160		sch160	sch120									
				4.78mm	5.56mm	6.35mm	7.14mm	8.74mm		11.13mm	13.49mm		18.26mm	18.26mm									
N1J502	SS304L	1.5 mm		sch80s	sch80s	sch80s	sch160	sch160		sch160	sch120		sch120	sch120	sch120	xxs	sch100						
				3.73mm	3.91mm	4.55mm	7.14mm	8.74mm		11.13mm	11.13mm		14.27mm	18.26mm	21.44mm	25.4mm	23.83mm						
N1J702	SS304L	1.5 mm		sch80s	sch80s	sch80s	sch160																
				3.73mm	3.91mm	4.55mm	7.14mm																
N1JR02	SS304L	1.5 mm		sch80s	sch80s	sch80s	sch160	sch160		sch160	sch120		sch120	sch80s	sch80s	sch80s	sch80s						
				3.73mm	3.91mm	4.55mm	7.14mm	8.74mm		11.13mm	11.13mm		14.27mm	12.7mm	12.7mm	12.7mm	12.7mm						
N1MH01	SS321	1.5 mm		sch80s	sch80s	sch80s	sch80s	sch80s		sch80s	sch120		sch120	sch100	sch100	sch100	sch100	sch100	sch100	sch100		sch80	
				3.73mm	3.91mm	4.55mm	5.08mm	5.54mm		7.62mm	11.13mm		14.27mm	15.09mm	18.26mm	21.44mm	23.83mm	26.19mm	29.36mm	32.54mm		30.96mm	

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DOC. NO. : S-000-1360-0002V
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SHEET NO. : 113

WALL THICKNESS TABLE

LINE CLASS	MATL	C. A.	28"	30"	32"	34"	36"	40"	42"	44"	48"	52"	54"	56"	60"	64"	68"	72"	76"	80"	84"	92"	96"
M1DS	1-1/4Cr - 1/2Mo	1.5 mm																					
M1EG	2-1/4Cr-1Mo	1.5 mm																					
M1EH	2-1/4Cr-1Mo	1.5 mm																					
M2A602	Killed CS	3 mm																					
M2AG	CS (ASME)	3 mm																					
M2AQ01	Killed CS	3 mm																					
M2AR01	Killed CS	3 mm		47.00mm																			
M2AS	Killed CS	3 mm																					
M2DH	1-1/4Cr - 1/2Mo	3 mm																					
M2DH01	1-1/4Cr - 1/2Mo	3 mm																					
M3AH02	Killed CS	4.5 mm																					
N0JP	SS304L	0 mm																					
N0LG	SS316L	0 mm																					
N1A402	Killed CS	1.5 mm																					
N1A602	Killed CS	1.5 mm																					
N1AH	Killed CS	1.5 mm																					
N1AH02	Killed CS	1.5 mm																					
N1AL02	Killed CS	1.5 mm																					
N1AQ	Killed CS	1.5 mm																					
N1AS	Killed CS	1.5 mm																					
N1J502	SS304L	1.5 mm																					
N1J702	SS304L	1.5 mm																					
N1JR02	SS304L	1.5 mm																					
N1MH01	SS321	1.5 mm																					

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DOC. NO. : S-000-1360-0002V
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WALL THICKNESS TABLE

LINE CLASS	MATL	C. A.	100"	104"	108"	116"
M1DS	1-1/4Cr - 1/2Mo	1.5 mm				
M1EG	2-1/4Cr-1Mo	1.5 mm				
M1EH	2-1/4Cr-1Mo	1.5 mm				
M2A602	Killed CS	3 mm				
M2AG	CS (ASME)	3 mm				
M2AQ01	Killed CS	3 mm				
M2AR01	Killed CS	3 mm				
M2AS	Killed CS	3 mm				
M2DH	1-1/4Cr - 1/2Mo	3 mm				
M2DH01	1-1/4Cr - 1/2Mo	3 mm				
M3AH02	Killed CS	4.5 mm				
N0JP	SS304L	0 mm				
N0LG	SS316L	0 mm				
N1A402	Killed CS	1.5 mm				
N1A602	Killed CS	1.5 mm				
N1AH	Killed CS	1.5 mm				
N1AH02	Killed CS	1.5 mm				
N1AL02	Killed CS	1.5 mm				
N1AQ	Killed CS	1.5 mm				
N1AS	Killed CS	1.5 mm				
N1J502	SS304L	1.5 mm				
N1J702	SS304L	1.5 mm				
N1JR02	SS304L	1.5 mm				
N1MH01	SS321	1.5 mm				

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WALL THICKNESS TABLE

LINE CLASS	MATL	C. A.	0.25"	0.5"	0.75"	1"	1.5"	2"	2.5"	3"	4"	5"	6"	8"	10"	12"	14"	16"	18"	20"	22"	24"	26"
N1Y602	Incoloy 825	1.5 mm		sch80s	sch80s	sch80s	sch80s	sch80s		sch80s	sch120		sch120	sch100	sch100	sch100	sch100	sch100					
				3.73mm	3.91mm	4.55mm	5.08mm	5.54mm		7.62mm	11.13mm		14.27mm	15.09mm	18.26mm	21.44mm	23.83mm	26.19mm					
N1Y702	Incoloy 825	1.5 mm		sch80s	sch80s	sch80s	sch160	sch160		sch160	sch120		sch160	sch120	sch120	sch120	sch120	sch120					
				3.73mm	3.91mm	4.55mm	7.14mm	8.74mm		11.13mm	11.13mm		18.26mm	18.26mm	21.44mm	25.4mm	27.79mm	30.96mm					
N1YQ02	Incoloy 825	1.5 mm		sch80s	sch80s	sch80s	sch80s	sch80s		sch80s	sch80s		sch120	sch100	sch100	sch100	sch100						
				3.73mm	3.91mm	4.55mm	5.08mm	5.54mm		7.62mm	8.56mm		14.27mm	15.09mm	18.26mm	21.44mm	23.83mm						
N1YR02	Incoloy 825	1.5 mm		sch80s	sch80s	sch80s	sch160	sch80s		sch80s	sch120		sch120	sch100	sch100	sch100	sch100	sch100					
				3.73mm	3.91mm	4.55mm	7.14mm	5.54mm		7.62mm	11.13mm		14.27mm	15.09mm	18.26mm	21.44mm	23.83mm	26.19mm					
N2A502	Killed CS	3 mm		xxs	sch160	sch160	sch160	sch160		sch160	sch160		sch160	sch140	xxs	sch140	sch140	sch140					
				7.47mm	5.56mm	6.35mm	7.14mm	8.74mm		11.13mm	13.49mm		18.26mm	20.62mm	25.4mm	28.58mm	31.75mm	36.53mm					
N2A602	Killed CS	3 mm		xxs	sch160	sch160	sch160	sch160		sch160	sch160		sch160	sch140	xxs								
				7.47mm	5.56mm	6.35mm	7.14mm	8.74mm		11.13mm	13.49mm		18.26mm	20.62mm	25.4mm								
N2AP01	Killed CS	3 mm		sch160	sch160	sch160	sch160	sch160		sch160	sch160		sch160	sch140	xxs	sch140	sch140						
				4.78mm	5.56mm	6.35mm	7.14mm	8.74mm		11.13mm	13.49mm		18.26mm	20.62mm	25.4mm	28.58mm	31.75mm						
N2AR02	Killed CS	3 mm		xxs	xxs	xxs	xxs	sch160		xxs	xxs		sch160	sch140	xxs	sch140	sch140	sch140					
				7.47mm	7.82mm	9.09mm	10.15mm	8.74mm		15.24mm	17.12mm		18.26mm	20.62mm	25.4mm	28.58mm	31.75mm	36.53mm					
N2D602	1-1/4Cr - 1/2Mo	3 mm		xxs	xxs	xxs	xxs	xxs		xxs	xxs		xxs	27.10mm	32.90mm								
				7.47mm	7.82mm	9.09mm	10.15mm	11.07mm		15.24mm	17.12mm		21.95mm										
N3A502	Killed CS	3 mm		xxs	xxs	xxs	xxs	xxs		xxs													
				7.47mm	7.82mm	9.09mm	10.15mm	11.07mm		15.24mm													
N3A702	Killed CS	4.5 mm		xxs	xxs	xxs	xxs	xxs		xxs	sch160		sch160										
				7.47mm	7.82mm	9.09mm	10.15mm	11.07mm		15.24mm	13.49mm		18.26mm										
N3D702	1-1/4Cr - 1/2Mo	4.5 mm		xxs	xxs	xxs	xxs	xxs		xxs	xxs		xxs	25.50mm	30.50mm	35.20mm							
				7.47mm	7.82mm	9.09mm	10.15mm	11.07mm		15.24mm	17.12mm		21.95mm										
P0LG	SS316L	0 mm		sch160	sch160	sch160	sch160	sch160		sch160	sch160		sch160	sch140	xxs	sch140							
				4.78mm	5.56mm	6.35mm	7.14mm	8.74mm		11.13mm	13.49mm		18.26mm	20.62mm	25.4mm	28.58mm							
P0MS	SS347	0 mm		sch160	sch160	sch160	sch160	sch80s		sch80s	sch80s		sch120	sch100	sch100	sch100	sch100	sch100	sch100	sch100		sch100	
				4.78mm	5.56mm	6.35mm	7.14mm	5.54mm		7.62mm	8.56mm		14.27mm	15.09mm	18.26mm	21.44mm	23.83mm	26.19mm	29.36mm	32.54mm		38.89mm	
P1AH02	Killed CS	1.5 mm		xs	sch160	sch160	sch160																
				3.73mm	5.56mm	6.35mm	7.14mm																
P1M602	SS321	1.5 mm		sch160	sch160	sch160	sch160	sch160		xxs	xxs		23.70mm	sch160	sch160	sch160	sch140	sch140	sch140	sch140			
				4.78mm	5.56mm	6.35mm	7.14mm	8.74mm		15.24mm	17.12mm			23.01mm	28.58mm	33.32mm	31.75mm	36.53mm	39.67mm	44.45mm			
P1MQ	SS321	1.5 mm		sch160	sch160	sch160	sch160	sch160		sch160	sch160		sch160	sch140	xxs	sch140	sch120	sch140	sch120	sch140			
				4.78mm	5.56mm	6.35mm	7.14mm	8.74mm		11.13mm	13.49mm		18.26mm	20.62mm	25.4mm	28.58mm	27.79mm	36.53mm	34.93mm	44.45mm			
P1Y702	Incoloy 825	1.5 mm		sch80s	sch80s	sch80s	sch160	sch160		sch160	sch120		sch160	sch120	sch120	sch120	sch120						
				3.73mm	3.91mm	4.55mm	7.14mm	8.74mm		11.13mm	11.13mm		18.26mm	18.26mm	21.44mm	25.4mm	27.79mm	30.96mm					
P2AG	CS (ASME)	3 mm		xxs	xxs	xxs	xxs	xxs		xxs	xxs		23.00mm	29.00mm	35.00mm	41.00mm	45.00mm	50.00mm	56.00mm				
				7.47mm	7.82mm	9.09mm	10.15mm	11.07mm		15.24mm	17.12mm												
P2AS	Killed CS	3 mm		xxs	xxs	xxs	xxs	xxs		xxs	xxs		xxs	25.40mm	31.75mm	36.00mm	39.00mm	44.00mm	sch160				
				7.47mm	7.82mm	9.09mm	10.15mm	11.07mm		15.24mm	17.12mm		21.95mm						45.24mm			
P2M602	SS321	3 mm		xxs	xxs	xxs	xxs	xxs		xxs	xxs		23.70mm	sch160	sch160	sch160	sch160	sch140	sch160	sch140			
				7.47mm	7.82mm	9.09mm	10.15mm	11.07mm		15.24mm	17.12mm			23.01mm	28.58mm	33.32mm	35.71mm	36.53mm	45.24mm	44.45mm			
P4AP02	Killed CS	6 mm		sch160	sch160	10.70mm	12.30mm	13.70mm		16.90mm	19.80mm		25.80mm	31.50mm	37.60mm	xxs							
				4.78mm	5.56mm											25.4mm							
S0CW	GRP	0 mm		sch80s	sch80s	sch80s	sch80s	mfr_std		mfr_std	mfr_std		mfr_std	mfr_std	mfr_std	mfr_std	mfr_std	mfr_std	mfr_std	mfr_std		mfr_std	mfr_std
				3.73mm	3.91mm	4.55mm	5.08mm																
S0RA	Killed CS (Galv.)	0 mm		xs	xs	xs	xs	xs		std	std		std	sch20	sch20								
				3.73mm	3.91mm	4.55mm	5.08mm	5.54mm		5.49mm	6.02mm		7.11mm	6.35mm	6.35mm								

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WALL THICKNESS TABLE

LINE CLASS	MATL	C. A.	28"	30"	32"	34"	36"	40"	42"	44"	48"	52"	54"	56"	60"	64"	68"	72"	76"	80"	84"	92"	96"
N1Y602	Incoloy 825	1.5 mm																					
N1Y702	Incoloy 825	1.5 mm																					
N1YQ02	Incoloy 825	1.5 mm																					
N1YR02	Incoloy 825	1.5 mm																					
N2A502	Killed CS	3 mm																					
N2A602	Killed CS	3 mm																					
N2AP01	Killed CS	3 mm																					
N2AR02	Killed CS	3 mm																					
N2D602	1-1/4Cr - 1/2Mo	3 mm																					
N3A502	Killed CS	3 mm																					
N3A702	Killed CS	4.5 mm																					
N3D702	1-1/4Cr - 1/2Mo	4.5 mm																					
P0LG	SS316L	0 mm																					
P0MS	SS347	0 mm																					
P1AH02	Killed CS	1.5 mm																					
P1M602	SS321	1.5 mm																					
P1MQ	SS321	1.5 mm																					
P1Y702	Incoloy 825	1.5 mm																					
P2AG	CS (ASME)	3 mm																					
P2AS	Killed CS	3 mm																					
P2M602	SS321	3 mm																					
P4AP02	Killed CS	6 mm																					
S0CW	GRP	0 mm		mfr_std	mfr_std		mfr_std	mfr_std		mfr_std	mfr_std	mfr_std		mfr_std	mfr_std	mfr_std	mfr_std	mfr_std	mfr_std		mfr_std		mfr_std
S0RA	Killed CS (Galv.)	0 mm																					

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WALL THICKNESS TABLE

LINE CLASS	MATL	C. A.	100"	104"	108"	116"
N1Y602	Incoloy 825	1.5 mm				
N1Y702	Incoloy 825	1.5 mm				
N1YQ02	Incoloy 825	1.5 mm				
N1YR02	Incoloy 825	1.5 mm				
N2A502	Killed CS	3 mm				
N2A602	Killed CS	3 mm				
N2AP01	Killed CS	3 mm				
N2AR02	Killed CS	3 mm				
N2D602	1-1/4Cr - 1/2Mo	3 mm				
N3A502	Killed CS	3 mm				
N3A702	Killed CS	4.5 mm				
N3D702	1-1/4Cr - 1/2Mo	4.5 mm				
P0LG	SS316L	0 mm				
P0MS	SS347	0 mm				
P1AH02	Killed CS	1.5 mm				
P1M602	SS321	1.5 mm				
P1MQ	SS321	1.5 mm				
P1Y702	Incoloy 825	1.5 mm				
P2AG	CS (ASME)	3 mm				
P2AS	Killed CS	3 mm				
P2M602	SS321	3 mm				
P4AP02	Killed CS	6 mm				
S0CW	GRP	0 mm	mfr_std	mfr_std		mfr_std
S0RA	Killed CS (Galv.)	0 mm				

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WALL THICKNESS TABLE

LINE CLASS	MATL	C. A.	0.25"	0.5"	0.75"	1"	1.5"	2"	2.5"	3"	4"	5"	6"	8"	10"	12"	14"	16"	18"	20"	22"	24"	26"
S0SP	CPVC	0 mm		sch80	sch80	sch80	sch80	sch80		sch80	sch80		sch80										
				3.73mm	3.91mm	4.55mm	5.08mm	5.54mm		7.62mm	8.56mm		10.97mm										
S0SW	CPVC	0 mm		sch80	sch80	sch80	sch80	sch80		sch80	sch80		sch80	sch80									
				3.73mm	3.91mm	4.55mm	5.08mm	5.54mm		7.62mm	8.56mm		10.97mm	12.7mm									
T0RA	Killed CS (Galv.)	0 mm		xs	xs	xs	xs																
				3.73mm	3.91mm	4.55mm	5.08mm																
X11F05	SS304L	0 mm		sch80s	sch80s	sch80s	sch80s	sch10s		sch10s	sch10s		sch10s	sch10s	sch10s	sch10s	sch10s	sch10s	sch10s	sch10s	sch10s	sch10s	
				3.73mm	3.91mm	4.55mm	5.08mm	2.77mm		3.05mm	3.05mm		3.4mm	3.76mm	4.19mm	4.57mm	4.78mm	4.78mm	4.78mm	5.54mm	5.54mm	6.35mm	
X31F05	SS304L	0 mm		sch80s	sch80s	sch80s	sch80s	sch10s		sch10s	sch10s		sch10s	sch10s	sch10s	sch10s	sch10s	sch10s	sch10s	sch10s			
				3.73mm	3.91mm	4.55mm	5.08mm	2.77mm		3.05mm	3.05mm		3.4mm	3.76mm	4.19mm	4.57mm	4.78mm	4.78mm	4.78mm	5.54mm			

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WALL THICKNESS TABLE

LINE CLASS	MATL	C. A.	28"	30"	32"	34"	36"	40"	42"	44"	48"	52"	54"	56"	60"	64"	68"	72"	76"	80"	84"	92"	96"
S0SP	CPVC	0 mm																					
S0SW	CPVC	0 mm																					
T0RA	Killed CS (Galv.)	0 mm																					
X11F05	SS304L	0 mm																					
X31F05	SS304L	0 mm																					

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DOC. NO. : S-000-1360-0002V
REV NO. : 2
SHEET NO. : 120

WALL THICKNESS TABLE

LINE CLASS	MATL	C. A.	100"	104"	108"	116"
S0SP	CPVC	0 mm				
S0SW	CPVC	0 mm				
T0RA	Killed CS (Galv.)	0 mm				
X11F05	SS304L	0 mm				
X31F05	SS304L	0 mm				

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11.0 NDE, PWHT, HARDNESS TEST AND PMI SUMMARY FOR SITE FABRICATION

See the following pages.

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11.1 Piping Classes except for PPU Unit

SR. NO.	PIPING CLASS	ASME CLASS	MATERIAL	PWHT *4			BUTT WELDS (Shown on each isometric drawing)					BRANCH WELDS Pipe-to-pipe branch connections (including reinforcing pads) and branches made with "O-let" fittings					FILLET/SOCKET WELDS					ATTACHMENT WELDS					PMI (Yes/No)	Ferrite Check (Yes/No)	HARDNESS TEST (%)	NDE CLASS *6
				SIZE (Wall Thick)	Circumferential Welds (Yes/No)	Attachments Welds (Yes/No)	VISUAL (%)	RT (%)	UT (%)	PT (%)	MT (%)	VISUAL (%)	RT (%)	UT (%)	PT (%)	MT (%)	VISUAL (%)	RT (%)	UT (%)	PT (%)	MT (%)	VISUAL (%)	RT (%)	UT (%)	PT (%)	MT (%)				
1	A0AC01	Class 150	Killed CS	Up to NPS 4 (Wall thick ≤ 20mm)	No	No	100	10	-	-	10	100	-	-	-	10	100	-	-	-	10	100	-	-	-	10	No	No	0	N01
				NPS 6 to 12 (Wall thick > 20mm)	Yes	Yes	100	10	-	-	10	100	-	-	-	10	100	-	-	-	10	100	-	-	-	10	No	No	100	N02
2	A0AC04	Class 150	Killed CS	Up to NPS 4 (Wall thick ≤ 20mm)	No	No	100	10	-	-	10	100	-	(*2)	-	10	100	(10/100 *3)	-	-	10	100	-	-	-	10	No	No	0	N03
				NPS 6 (Wall thick > 20mm)	Yes	Yes	100	10	-	-	10	100	-	(*2)	-	10	100	(10/100 *3)	-	-	10	100	-	-	-	10	No	No	100	N04
3	A0J501	Class 150	SS304L	All sizes	No	No	100	10	-	10	-	100	-	-	10	-	100	-	-	10	-	100	-	-	10	-	Yes	No	0	N05
4	A0J503	Class 150	SS304L	All sizes	No	No	100	10	-	10	-	100	-	-	10	-	100	-	-	10	-	100	-	-	10	-	Yes	No	0	N05
5	A0JP	Class 150	SS304L	All sizes	No	No	100	10	-	10	-	100	-	-	10	-	100	-	-	10	-	100	-	-	10	-	Yes	No	0	N05
6	A0JP03	Class 150	SS304L	All sizes	No	No	100	10	-	10	-	100	-	-	10	-	100	-	-	10	-	100	-	-	10	-	Yes	No	0	N05
7	A0JQ	Class 150	SS304L	All sizes	No	No	100	10	-	10	-	100	-	-	10	-	100	-	-	10	-	100	-	-	10	-	Yes	No	0	N05
8	A0JQ01	Class 150	SS304L	All sizes	No	No	100	10	-	10	-	100	-	-	10	-	100	-	-	10	-	100	-	-	10	-	Yes	No	0	N05
9	A0JR	Class 150	SS304L	All sizes	No	No	100	10	-	10	-	100	-	-	10	-	100	-	-	10	-	100	-	-	10	-	Yes	No	0	N05
10	A0JR01	Class 150	SS304L	All sizes	No	No	100	10	-	10	-	100	-	-	10	-	100	-	-	10	-	100	-	-	10	-	Yes	No	0	N05
11	A0JR03	Class 150	SS304L	All sizes	No	No	100	10	-	10	-	100	-	-	10	-	100	-	-	10	-	100	-	-	10	-	Yes	No	0	N05
12	A0JS	Class 150	SS304L	All sizes	No	No	100	10	-	10	-	100	-	-	10	-	100	-	-	10	-	100	-	-	10	-	Yes	No	0	N05
13	A0JS01	Class 150	SS304L	All sizes	No	No	100	10	-	10	-	100	-	-	10	-	100	-	-	10	-	100	-	-	10	-	Yes	No	0	N05
14	A0JS04	Class 150	SS304L	All sizes	No	No	100	10	-	10	-	100	-	-	10	-	100	(10/100 *3)	-	10	-	100	-	-	10	-	Yes	No	0	N06
15	A0JV	Class 150	SS304L	All sizes	No	No	100	10	-	10	-	100	-	-	10	-	100	-	-	10	-	100	-	-	10	-	Yes	No	0	N05
16	A0JW	Class 150	SS304L	All sizes	No	No	100	10	-	10	-	100	-	-	10	-	100	-	-	10	-	100	-	-	10	-	Yes	No	0	N05
17	A0JY	Class 150	SS304L	All sizes	No	No	100	10	-	10	-	100	-	-	10	-	100	-	-	10	-	100	-	-	10	-	Yes	No	0	N05
18	A0JY01	Class 150	SS304L	All sizes	No	No	100	10	-	10	-	100	-	-	10	-	100	-	-	10	-	100	-	-	10	-	Yes	No	0	N05
19	A0JY04	Class 150	SS304L	All sizes	No	No	100	10	-	10	-	100	-	-	10	-	100	(10/100 *3)	-	10	-	100	-	-	10	-	Yes	No	0	N06
20	A0L4	Class 150	SS316L	All sizes	No	No	100	10	-	10	-	100	-	-	10	-	100	-	-	10	-	100	-	-	10	-	Yes	No	0	N05
21	A0L5	Class 150	SS316L	All sizes	No	No	100	10	-	10	-	100	-	-	10	-	100	-	-	10	-	100	-	-	10	-	Yes	No	0	N05
22	A0L501	Class 150	SS316L	All sizes	No	No	100	10	-	10	-	100	-	-	10	-	100	-	-	10	-	100	-	-	10	-	Yes	No	0	N05
23	A0L503	Class 150	SS316L	All sizes	No	No	100	10	-	10	-	100	-	-	10	-	100	-	-	10	-	100	-	-	10	-	Yes	No	0	N05
24	A0LG	Class 150	SS316L	All sizes	No	No	100	10	-	10	-	100	-	-	10	-	100	-	-	10	-	100	-	-	10	-	Yes	No	0	N05
25	A0LG01	Class 150	SS316L	All sizes	No	No	100	10	-	10	-	100	-	-	10	-	100	-	-	10	-	100	-	-	10	-	Yes	No	0	N05
26	A0LP03	Class 150	SS316L	All sizes	No	No	100	10	-	10	-	100	-	-	10	-	100	-	-	10	-	100	-	-	10	-	Yes	No	0	N05
27	A0LP04	Class 150	SS316L	All sizes	No	No	100	10	-	10	-	100	-	-	10	-	100	(10/100 *3)	-	10	-	100	-	-	10	-	Yes	No	0	N06
28	A0LQ	Class 150	SS316L	All sizes	No	No	100	10	-	10	-	100	-	-	10	-	100	-	-	10	-	100	-	-	10	-	Yes	No	0	N05
29	A0LQ03	Class 150	SS316L	All sizes	No	No	100	10	-	10	-	100	-	-	10	-	100	-	-	10	-	100	-	-	10	-	Yes	No	0	N05
30	A0LR	Class 150	SS316L	All sizes	No	No	100	10	-	10	-	100	-	-	10	-	100	-	-	10	-	100	-	-	10	-	Yes	No	0	N05
31	A0LR01	Class 150	SS316L	All sizes	No	No	100	10	-	10	-	100	-	-	10	-	100	-	-	10	-	100	-	-	10	-	Yes	No	0	N05
32	A0LR03	Class 150	SS316L	All sizes	No	No	100	10	-	10	-	100	-	-	10	-	100	-	-	10	-	100	-	-	10	-	Yes	No	0	N05
33	A0LU	Class 150	SS316L	All sizes	No	No	100	10	-	10	-	100	-	-	10	-	100	-	-	10	-	100	-	-	10	-	Yes	No	0	N05
34	A0LW	Class 150	SS316L	All sizes	No	No	100	10	-	10	-	100	-	-	10	-	100	-	-	10	-	100	-	-	10	-	Yes	No	0	N05
35	A0MP01	Class 150	SS321	All sizes	No	No	100	10	-	10	-	100	-	-	10	-	100	-	-	10	-	100	-	-	10	-	Yes	Yes*5	0	N07
36	A0QP	Class 150	Killed CS (FBE Lined)	All sizes	No	No	100	10	-	-	10	100	-	-	-	10	100	-	-	-	10	100	-	-	-	10	No	No	0	N01
37	A0RA	Class 150	Killed CS (Galv.)	All sizes	No	No	100	***10***	-	-	-	100	-	-	-	-	100	-	-	-	-	100	-	-	-	-	No	No	0	***N51***
38	A0RU	Class 150	Killed CS (Galv.)	All sizes	No	No	100	***10***	-	-	-	100	-	-	-	-	100	-	-	-	-	100	-	-	-	-	No	No	0	***N51***
39	A0YQ	Class 150	INCONEL 625	All sizes	No	No	100	100	-	100	-	100	-	-	100	-	100	-	-	100	-	100	-	-	100	-	Yes	No	0	N09
40	A1A201	Class 150	Killed CS	All sizes	No	No	100	10	-	-	10	100	-	-	-	10	100	-	-	-	10	100	-	-	-	10	No	No	0	N01
41	A1A8	Class 150	Killed CS	All sizes	No	No	100	10	-	-	10	100	-	-	-	10	100	-	-	-	10	100	-	-	-	10	No	No	0	N01
42	A1A804	Class 150	Killed CS	All sizes	No	No	100	10	-	-	10	100	-	(*2)	-	10	100	(10/100 *3)	-	-	10	100	-	-	-	10	No	No	0	N03
43	A1A904	Class 150	Killed CS	All sizes	No	No	100	10	-	-	10	100	-	(*2)	-	10	100	(10/100 *3)	-	-	10	100	-	-	-	10	No	No	0	N03
44	A1AA	Class 150	Killed CS	All sizes	No	No	100	-	-	-	-	100	-	-	-	-	100	-	-	-	-	100	-	-	-	-	No	No	0	N08
45	A1AC04	Class 150	Killed CS	All sizes	No	No	100	10	-	-	10	100	-	(*2)	-	10	100	(10/100 *3)	-	-	10	100	-	-	-	10	No	No	0	N03
46	A1AD	Class 150	Killed CS	All sizes	No	No	100	10	-	-	10	100	-	-	-	10	100	-	-	-	10	100	-	-	-	10	No	No	0	N01
47	A1AG	Class 150	CS (ASME)	All sizes	No	No	100	10	-	-	10	100	-	-	-	10	100	-	-	-	10	100	-	-	-	10	No	No	0	N01
48	A1AH	Class 150	Killed CS	All sizes	No	No	100	10	-	-	10	100	-	-	-	10	100	-	-	-	10	100	-	-	-	10	No	No	0	N01
49	A1AH04	Class 150	Killed CS	All sizes	No	No	100	10	-	-	10	100	-	(*2)	-	10	100	(10/100 *3)	-	-	10	100	-	-	-	10	No	No	0	N03
50	A1AL	Class 150	Killed CS	All sizes	Yes	Yes	100	10	-	-	10	100	-	-	-	10	100	-	-	-	10	100	-	-	-	10	No	No	100	N02
51	A1AL01	Class 150	Killed CS	All sizes	Yes	Yes	100	10	-	-	10	100	-	-	-	10	100	-	-	-	10	100	-	-	-	10	No	No	100	N02
52	A1AL03	Class 150	Killed CS	All sizes	Yes	Yes	100	10	-	-	10	100	-	-	-	10	100	-	-	-	10	100	-	-	-	10	No	No	100	N02

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SR. NO.	PIPING CLASS	ASME CLASS	MATERIAL	PWHT *4			BUTT WELDS (Shown on each isometric drawing)					BRANCH WELDS Pipe-to-pipe branch connections (including reinforcing pads) and branches made with "O-let" fittings					FILLET/SOCKET WELDS					ATTACHMENT WELDS					PMI (Yes/No)	Ferrite Check (Yes/No)	HARDNESS TEST (%)	NDE CLASS *6
				SIZE (Wall Thick)	Circumferential Welds (Yes/No)	Attachments Welds (Yes/No)	VISUAL (%)	RT (%)	UT (%)	PT (%)	MT (%)	VISUAL (%)	RT (%)	UT (%)	PT (%)	MT (%)	VISUAL (%)	RT (%)	UT (%)	PT (%)	MT (%)	VISUAL (%)	RT (%)	UT (%)	PT (%)	MT (%)				
53	A1AM	Class 150	Killed CS	All sizes	No	No	100	10	-	-	10	100	-	-	-	10	100	-	-	-	10	100	-	-	-	10	No	No	0	N01
54	A1AP	Class 150	Killed CS	All sizes	No	No	100	10	-	-	10	100	-	-	-	10	100	-	-	-	10	100	-	-	-	10	No	No	0	N01
55	A1AP01	Class 150	Killed CS	All sizes	No	No	100	10	-	-	10	100	-	-	-	10	100	-	-	-	10	100	-	-	-	10	No	No	0	N01
56	A1AP02	Class 150	Killed CS	All sizes	No	No	100	10	-	-	10	100	-	-	-	10	100	-	-	-	10	100	-	-	-	10	No	No	0	N01
57	A1AP03	Class 150	Killed CS	All sizes	No	No	100	10	-	-	10	100	-	-	-	10	100	-	-	-	10	100	-	-	-	10	No	No	0	N01
58	A1AP04	Class 150	Killed CS	All sizes	No	No	100	10	-	-	10	100	-	(*2)	-	10	100	(10/100 *3)	-	-	10	100	-	-	-	10	No	No	0	N03
59	A1APCL	Class 150	Killed CS	All sizes	No	No	100	10	-	-	10	100	-	-	-	10	100	-	-	-	10	100	-	-	-	10	No	No	0	N01
60	A1APCM	Class 150	Killed CS	All sizes	No	No	100	10	-	-	10	100	-	-	-	10	100	-	-	-	10	100	-	-	-	10	No	No	0	N01
61	A1APVV	Class 150	Killed CS	All sizes	No	No	100	10	-	-	10	100	-	-	-	10	100	-	-	-	10	100	-	-	-	10	No	No	0	N01
62	A1AQ	Class 150	Killed CS	All sizes	No	No	100	10	-	-	10	100	-	-	-	10	100	-	-	-	10	100	-	-	-	10	No	No	100	N10
63	A1AQ03	Class 150	Killed CS	All sizes	Yes	No	100	10	-	-	10	100	-	-	-	10	100	-	-	-	10	100	-	-	-	10	No	No	100	N11
64	A1AQ04	Class 150	Killed CS	All sizes	Yes	Yes	100	10	-	-	10	100	-	(*2)	-	10	100	(10/100 *3)	-	-	10	100	-	-	-	10	No	No	100	N04
65	A1AQCL	Class 150	Killed CS	All sizes	Yes	No	100	10	-	-	10	100	-	-	-	10	100	-	-	-	10	100	-	-	-	10	No	No	100	N11
66	A1AS	Class 150	Killed CS	All sizes	No	No	100	10	-	-	10	100	-	-	-	10	100	-	-	-	10	100	-	-	-	10	No	No	0	N01
67	A1AY	Class 150	Killed CS	All sizes	No	No	100	10	-	-	10	100	-	-	-	10	100	-	-	-	10	100	-	-	-	10	No	No	0	N01
68	A1AY04	Class 150	Killed CS	All sizes	No	No	100	10	-	-	10	100	-	(*2)	-	10	100	(10/100 *3)	-	-	10	100	-	-	-	10	No	No	0	N03
69	A1EH	Class 150	2-1/4Cr-1Mo	All sizes	Yes	Yes	100	100	-	-	100	100	-	-	-	100	100	-	-	-	100	100	-	-	-	100	Yes	No	100	N13
70	A1G804	Class 150	LTCS	All sizes	No	No	100	100	-	-	100	100	-	(*2)	-	100	100	(10/100 *3)	-	-	100	100	-	-	-	100	No	No	0	N21
71	A1GA	Class 150	LTCS	All sizes	No	No	100	100	-	-	100	100	-	-	-	100	100	-	-	-	100	100	-	-	-	100	No	No	0	N14
72	A1GP	Class 150	LTCS	All sizes	No	No	100	100	-	-	100	100	-	-	-	100	100	-	-	-	100	100	-	-	-	100	No	No	0	N14
73	A1GP01	Class 150	LTCS	All sizes	No	No	100	100	-	-	100	100	-	-	-	100	100	-	-	-	100	100	-	-	-	100	No	No	0	N14
74	A1GP04	Class 150	LTCS	All sizes	No	No	100	100	-	-	100	100	-	(*2)	-	100	100	(10/100 *3)	-	-	100	100	-	-	-	100	No	No	0	N21
75	A1GPVV	Class 150	LTCS	All sizes	No	No	100	100	-	-	100	100	-	-	-	100	100	-	-	-	100	100	-	-	-	100	No	No	0	N14
76	A1J804	Class 150	SS304L	All sizes	No	No	100	10	-	10	-	100	-	-	10	-	100	(10/100 *3)	-	10	-	100	-	-	10	-	Yes	No	0	N06
77	A1JM	Class 150	SS304L	All sizes	No	No	100	10	-	10	-	100	-	-	10	-	100	-	-	10	-	100	-	-	10	-	Yes	No	0	N05
78	A1JV04	Class 150	SS304L	All sizes	No	No	100	10	-	10	-	100	-	-	10	-	100	(10/100 *3)	-	10	-	100	-	-	10	-	Yes	No	0	N06
79	***A1LA***	***Class 150***	***SS316L***	***All sizes***	***No***	***No***	***100***	***10***	***-***	***10***	***-***	***100***	***-***	***-***	***10***	***-***	***100***	***-***	***-***	***10***	***-***	***100***	***-***	***-***	***10***	***-***	***Yes***	***No***	***0***	***N05***
80	A1LJ	Class 150	SS316L	All sizes	No	No	100	10	-	10	-	100	-	-	10	-	100	-	-	10	-	100	-	-	10	-	Yes	No	0	N05
81	***A1LP***	***Class 150***	***SS316L***	***All sizes***	***No***	***No***	***100***	***10***	***-***	***10***	***-***	***100***	***-***	***-***	***10***	***-***	***100***	***-***	***-***	***10***	***-***	***100***	***-***	***-***	***10***	***-***	***Yes***	***No***	***0***	***N05***
82	A1LP04	Class 150	SS316L	All sizes	No	No	100	10	-	10	-	100	-	-	10	-	100	(10/100 *3)	-	10	-	100	-	-	10	-	Yes	No	0	N06
83	A1LV	Class 150	SS316L	All sizes	No	No	100	10	-	10	-	100	-	-	10	-	100	-	-	10	-	100	-	-	10	-	Yes	No	0	N05
84	A1LV04	Class 150	SS316L	All sizes	No	No	100	10	-	10	-	100	-	-	10	-	100	(10/100 *3)	-	10	-	100	-	-	10	-	Yes	No	0	N06
85	A1LW	Class 150	SS316L	All sizes	No	No	100	10	-	10	-	100	-	-	10	-	100	-	-	10	-	100	-	-	10	-	Yes	No	0	N05
86	A1LY	Class 150	SS316L	All sizes	No	No	100	10	-	10	-	100	-	-	10	-	100	-	-	10	-	100	-	-	10	-	Yes	No	0	N05
87	A1LY01	Class 150	SS316L	All sizes	No	No	100	10	-	10	-	100	-	-	10	-	100	-	-	10	-	100	-	-	10	-	Yes	No	0	N05
88	A1LY04	Class 150	SS316L	All sizes	No	No	100	10	-	10	-	100	-	-	10	-	100	(10/100 *3)	-	10	-	100	-	-	10	-	Yes	No	0	N06
89	A1YV	Class 150	INCONEL 625	All sizes	No	No	100	100	-	100	-	100	-	-	100	-	100	-	-	100	-	100	-	-	100	-	Yes	No	0	N09
90	A1YV04	Class 150	INCONEL 625	All sizes	No	No	100	100	-	100	-	100	-	-	100	-	100	-	-	100	-	100	-	-	100	-	Yes	No	0	N09
91	A28P	Class 150	9Cr - 1MO	All sizes	Yes	Yes	100	100	-	-	100	100	-	-	-	100	100	-	-	-	100	100	-	-	-	100	Yes	No	100	N13
92	A2A201	Class 150	Killed CS	All sizes	No	No	100	10	-	-	10	100	-	-	-	10	100	-	-	-	10	100	-	-	-	10	No	No	0	N01
93	A2A4	Class 150	Killed CS	All sizes	Yes	Yes	100	10	-	-	10	100	-	-	-	10	100	-	-	-	10	100	-	-	-	10	No	No	100	N02
94	A2A5	Class 150	Killed CS	All sizes	Yes	Yes	100	10	-	-	10	100	-	-	-	10	100	-	-	-	10	100	-	-	-	10	No	No	100	N02
95	A2A501	Class 150	Killed CS	All sizes	Yes	Yes	100	10	-	-	10	100	-	-	-	10	100	-	-	-	10	100	-	-	-	10	No	No	100	N02
96	A2A503	Class 150	Killed CS	All sizes	Yes	Yes	100	10	-	-	10	100	-	-	-	10	100	-	-	-	10	100	-	-	-	10	No	No	100	N02
97	A2A604	Class 150	Killed CS	All sizes	Yes	Yes	100	10	-	-	10	100	-	(*2)	-	10	100	(10/100 *3)	-	-	10	100	-	-	-	10	No	No	100	N04
98	A2A704	Class 150	Killed CS	All sizes	Yes	Yes	100	10	-	-	10	100	-	(*2)	-	10	100	(10/100 *3)	-	-	10	100	-	-	-	10	No	No	100	N04
99	A2AA	Class 150	Killed CS	All sizes	No	No	100	-	-	-	-	100	-	-	-	-	100	-	-	-	-	100	-	-	-	-	No	No	0	N08
100	A2AC01	Class 150	Killed CS	All sizes	No	No	100	10	-	-	10	100	-	-	-	10	100	-	-	-	10	100	-	-	-	10	No	No	0	N01
101	A2AD	Class 150	Killed CS	All sizes	No	No	100	10	-	-	10	100	-	-	-	10	100	-	-	-	10	100	-	-	-	10	No	No	0	N01
102	A2AG	Class 150	CS (ASME)	All sizes	No	No	100	10	-	-	10	100	-	-	-	10	100	-	-	-	10	100	-	-	-	10	No	No	0	N01
103	A2AL	Class 150	Killed CS	All sizes	Yes	Yes	100	10	-	-	10	100	-	-	-	10	100	-	-	-	10	100	-	-	-	10	No	No	100	N02
104	A2AL01	Class 150	Killed CS	All sizes	Yes	Yes	100	10	-	-	10	100	-	-	-	10	100	-	-	-	10	100	-	-	-	10	No	No	100	N02
105	A2AL03	Class 150	Killed CS	All sizes	Yes	Yes	100	10	-	-	10	100	-	-	-	10	100	-	-	-	10	100	-	-	-	10	No	No	100	N02
106	A2AL04	Class 150	Killed CS	All sizes	Yes	Yes	100	10	-	-	10	100	-	(*2)	-	10	100	(10/100 *3)	-	-	10	100	-	-	-	10	No	No	100	N04
107	A2AM	Class 150	Killed CS	All sizes	No	No	100	10	-	-	10	100	-	-	-	10	100	-	-	-	10	100	-	-	-	10	No	No	0	N01

INDRA
01-SEP-2014

NDE, PWHT, HARDNESS TEST AND PMI SUMMARY FOR SITE FABRICATION

SR. NO.	PIPING CLASS	ASME CLASS	MATERIAL	PWHT *4			BUTT WELDS (Shown on each isometric drawing)					BRANCH WELDS Pipe-to-pipe branch connections (including reinforcing pads) and branches made with "O-let" fittings					FILLET/SOCKET WELDS					ATTACHMENT WELDS					PMI (Yes/No)	Ferrite Check (Yes/No)	HARDNESS TEST (%)	NDE CLASS *6
				SIZE (Wall Thick)	Circumferential Welds (Yes/No)	Attachments Welds (Yes/No)	VISUAL (%)	RT (%)	UT (%)	PT (%)	MT (%)	VISUAL (%)	RT (%)	UT (%)	PT (%)	MT (%)	VISUAL (%)	RT (%)	UT (%)	PT (%)	MT (%)	VISUAL (%)	RT (%)	UT (%)	PT (%)	MT (%)				
108	A2AN	Class 150	Killed CS	All sizes	Yes	Yes	100	10	-	-	10	100	-	-	-	10	100	-	-	-	10	100	-	-	-	10	No	No	100	N02
109	A2AN01	Class 150	Killed CS	All sizes	Yes	Yes	100	10	-	-	10	100	-	-	-	10	100	-	-	-	10	100	-	-	-	10	No	No	100	N02
110	A2AN03	Class 150	Killed CS	All sizes	Yes	Yes	100	10	-	-	10	100	-	-	-	10	100	-	-	-	10	100	-	-	-	10	No	No	100	N02
111	A2AN04	Class 150	Killed CS	All sizes	Yes	Yes	100	10	-	-	10	100	-	(*2)	-	10	100	(10/100 *3)	-	-	10	100	-	-	-	10	No	No	100	N04
112	A2AP	Class 150	Killed CS	All sizes	No	No	100	10	-	-	10	100	-	-	-	10	100	-	-	-	10	100	-	-	-	10	No	No	0	N01
113	A2AP01	Class 150	Killed CS	All sizes	No	No	100	10	-	-	10	100	-	-	-	10	100	-	-	-	10	100	-	-	-	10	No	No	0	N01
114	A2AP02	Class 150	Killed CS	All sizes	No	No	100	10	-	-	10	100	-	-	-	10	100	-	-	-	10	100	-	-	-	10	No	No	0	N01
115	A2AP03	Class 150	Killed CS	All sizes	No	No	100	10	-	-	10	100	-	-	-	10	100	-	-	-	10	100	-	-	-	10	No	No	0	N01
116	A2AP04	Class 150	Killed CS	All sizes	No	No	100	10	-	-	10	100	-	(*2)	-	10	100	(10/100 *3)	-	-	10	100	-	-	-	10	No	No	0	N03
117	A2APCL	Class 150	Killed CS	All sizes	No	No	100	10	-	-	10	100	-	-	-	10	100	-	-	-	10	100	-	-	-	10	No	No	0	N01
118	A2APCM	Class 150	Killed CS	All sizes	No	No	100	10	-	-	10	100	-	-	-	10	100	-	-	-	10	100	-	-	-	10	No	No	0	N01
119	A2AQ	Class 150	Killed CS	Up to NPS 76 (Wall thick ≤ 20mm)	No	No	100	10	-	-	10	100	-	-	-	10	100	-	-	-	10	100	-	-	-	10	No	No	100	N10
				NPS 80 to 92 (Wall thick > 20mm)	Yes	Yes	100	10	-	-	10	100	-	-	-	10	100	-	-	-	10	100	-	-	-	10	No	No	100	N02
120	A2AQ01	Class 150	Killed CS	All sizes	Yes	Yes	100	10	-	-	10	100	-	-	-	10	100	-	-	-	10	100	-	-	-	10	No	No	100	N02
121	A2AQ03	Class 150	Killed CS	All sizes	Yes	No	100	10	-	-	10	100	-	-	-	10	100	-	-	-	10	100	-	-	-	10	No	No	100	N11
122	A2AQ04	Class 150	Killed CS	All sizes	Yes	Yes	100	10	-	-	10	100	-	(*2)	-	10	100	(10/100 *3)	-	-	10	100	-	-	-	10	No	No	100	N04
123	A2AQCL	Class 150	Killed CS	All sizes	Yes	No	100	10	-	-	10	100	-	-	-	10	100	-	-	-	10	100	-	-	-	10	No	No	100	N11
124	A2AQVV	Class 150	Killed CS	Up to NPS 76 (Wall thick ≤ 20mm)	No	No	100	10	-	-	10	100	-	-	-	10	100	-	-	-	10	100	-	-	-	10	No	No	100	N10
				NPS 80 to 92 (Wall thick > 20mm)	Yes	Yes	100	10	-	-	10	100	-	-	-	10	100	-	-	-	10	100	-	-	-	10	No	No	100	N02
125	A2AR	Class 150	Killed CS	All sizes	No	No	100	10	-	-	10	100	-	-	-	10	100	-	-	-	10	100	-	-	-	10	No	No	100	N10
126	A2AR01	Class 150	Killed CS	All sizes	Yes	Yes	100	10	-	-	10	100	-	-	-	10	100	-	-	-	10	100	-	-	-	10	No	No	100	N02
127	A2AR03	Class 150	Killed CS	All sizes	Yes	No	100	10	-	-	10	100	-	-	-	10	100	-	-	-	10	100	-	-	-	10	No	No	100	N11
128	A2AR04	Class 150	Killed CS	All sizes	Yes	Yes	100	10	-	-	10	100	-	(*2)	-	10	100	(10/100 *3)	-	-	10	100	-	-	-	10	No	No	100	N04
129	A2AS	Class 150	Killed CS	All sizes	No	No	100	10	-	-	10	100	-	-	-	10	100	-	-	-	10	100	-	-	-	10	No	No	0	N01
130	A2AW	Class 150	Killed CS	All sizes	No	No	100	***- / 100 (*7)***	-	-	-	100	-	-	-	-	100	-	-	-	-	100	-	-	-	-	No	No	0	***N52***
131	A2AY04	Class 150	Killed CS	All sizes	No	No	100	10	-	-	10	100	-	(*2)	-	10	100	(10/100 *3)	-	-	10	100	-	-	-	10	No	No	0	N03
132	A2DC01	Class 150	1-1/4Cr - 1/2Mo	All sizes	Yes	Yes	100	100	-	-	100	100	-	-	-	100	100	-	-	-	100	100	-	-	-	100	Yes	No	100	N13
133	A2DP01	Class 150	1-1/4Cr - 1/2Mo	All sizes	Yes	Yes	100	100	-	-	100	100	-	-	-	100	100	-	-	-	100	100	-	-	-	100	Yes	No	100	N13
134	A2FC01	Class 150	5Cr-1/2Mo	All sizes	Yes	Yes	100	100	-	-	100	100	-	-	-	100	100	-	-	-	100	100	-	-	-	100	Yes	No	100	N13
135	A2GN	Class 150	LTCS	All sizes	Yes	Yes	100	100	-	-	100	100	-	-	-	100	100	-	-	-	100	100	-	-	-	100	No	No	100	N15
136	A2GP	Class 150	LTCS	All sizes	No	No	100	100	-	-	100	100	-	-	-	100	100	-	-	-	100	100	-	-	-	100	No	No	0	N14
137	A2GP04	Class 150	LTCS	All sizes	No	No	100	100	-	-	100	100	-	(*2)	-	100	100	(10/100 *3)	-	-	100	100	-	-	-	100	No	No	0	N21
138	A2GQ	Class 150	LTCS	Up to NPS 76 (Wall thick ≤ 20mm)	No	No	100	100	-	-	100	100	-	-	-	100	100	-	-	-	100	100	-	-	-	100	No	No	100	N24
				NPS 80 (Wall thick > 20mm)	Yes	Yes	100	100	-	-	100	100	-	-	-	100	100	-	-	-	100	100	-	-	-	100	No	No	100	N15
				NPS 92 (Wall thick ≤ 20mm)	No	No	100	100	-	-	100	100	-	-	-	100	100	-	-	-	100	100	-	-	-	100	No	No	100	N24
139	A2GQ01	Class 150	LTCS	All sizes	Yes	Yes	100	100	-	-	100	100	-	-	-	100	100	-	-	-	100	100	-	-	-	100	No	No	100	N15
140	A2GQVV	Class 150	LTCS	Up to NPS 76 (Wall thick ≤ 20mm)	No	No	100	100	-	-	100	100	-	-	-	100	100	-	-	-	100	100	-	-	-	100	No	No	100	N24
				NPS 80 (Wall thick > 20mm)	Yes	Yes	100	100	-	-	100	100	-	-	-	100	100	-	-	-	100	100	-	-	-	100	No	No	100	N15
				NPS 92 (Wall thick ≤ 20mm)	No	No	100	100	-	-	100	100	-	-	-	100	100	-	-	-	100	100	-	-	-	100	No	No	100	N24
141	A2UQ	Class 150	CS Coated & Wrapped	All sizes	No	No	100	10	-	-	10	100	-	-	-	10	100	-	-	-	10	100	-	-	-	10	No	No	100	N10
142	A4A4	Class 150	Killed CS	All sizes	Yes	Yes	100	10	-	-	10	100	-	-	-	10	100	-	-	-	10	100	-	-	-	10	No	No	100	N02
143	A4A5	Class 150	Killed CS	All sizes	Yes	Yes	100	10	-	-	10	100	-	-	-	10	100	-	-	-	10	100	-	-	-	10	No	No	100	N02
144	A4AQ	Class 150	Killed CS	All sizes	No	No	100	10	-	-	10	100	-	-	-	10	100	-	-	-	10	100	-	-	-	10	No	No	100	N10
145	A4AQ01	Class 150	Killed CS	All sizes	Yes	Yes	100	10	-	-	10	100	-	-	-	10	100	-	-	-	10	100	-	-	-	10	No	No	100	N02
146	A4AR	Class 150	Killed CS	All sizes	No	No	100	10	-	-	10	100	-	-	-	10	100	-	-	-	10	100	-	-	-	10	No	No	100	N10
147	A4AR01	Class 150	Killed CS	All sizes	Yes	Yes	100	10	-	-	10	100	-	-	-	10	100	-	-	-	10	100	-	-	-	10	No	No	100	N02
148	A4AR03	Class 150	Killed CS	All sizes	Yes	No	100	10	-	-	10	100	-	-	-	10	100	-	-	-	10	100	-	-	-	10	No	No	100	N11
149	A4AR04	Class 150	Killed CS	All sizes	Yes	Yes	100	10	-	-	10	100	-	(*2)	-	10	100	(10/100 *3)	-	-	10	100	-	-	-	10	No	No	100	N04
150	A4AV03	Class 150	Killed CS	All sizes	No	No	100	10	-	-	10	100	-	-	-	10	100	-	-	-	10	100	-	-	-	10	No	No	0	N01
151	A4FV	Class 150	5Cr-1/2Mo	All sizes	Yes	Yes	100	100	-	-	100	100	-	-	-	100	100	-	-	-	100	100	-	-	-	100	Yes	No	100	N13
152	A4GQ	Class 150	LTCS	All sizes	No	No	100	100	-	-	100	100	-	-	-	100	100	-	-	-	100	100	-	-	-	100	No	No	100	N24
153	A4GR01	Class 150	LTCS	All sizes	Yes	Yes	100	100	-	-	100	100	-	-	-	100	100	-	-	-	100	100	-	-	-	100	No	No	100	N15
154	B0AC01	Class 300	Killed CS	Up to NPS 4 (Wall thick ≤ 20mm)	No	No	100	10	-	-	10	100	-	-	-	10	100	-	-	-	10	100	-	-	-	10	No	No	0	N01
				NPS 6 to 12 (Wall thick > 20mm)	Yes	Yes	100	10	-	-	10	100	-	-	-	10	100	-	-	-	10	100	-	-	-	10	No	No	100	N02

INDRA
01-SEP-2014

SR. NO.	PIPING CLASS	ASME CLASS	MATERIAL	PWHT *4			BUTT WELDS (Shown on each isometric drawing)					BRANCH WELDS Pipe-to-pipe branch connections (including reinforcing pads) and branches made with "O-let" fittings					FILLET/SOCKET WELDS					ATTACHMENT WELDS					PMI (Yes/No)	Ferrite Check (Yes/No)	HARDNESS TEST (%)	NDE CLASS *6
				SIZE (Wall Thick)	Circumferential Welds (Yes/No)	Attachments Welds (Yes/No)	VISUAL (%)	RT (%)	UT (%)	PT (%)	MT (%)	VISUAL (%)	RT (%)	UT (%)	PT (%)	MT (%)	VISUAL (%)	RT (%)	UT (%)	PT (%)	MT (%)	VISUAL (%)	RT (%)	UT (%)	PT (%)	MT (%)				
155	B0AC03	Class 300	Killed CS	Up to NPS 4 (Wall thick ≤ 20mm)	No	No	100	10	-	-	10	100	-	-	-	10	100	-	-	-	10	100	-	-	-	10	No	No	0	N01
				NPS 6 to 10 (Wall thick > 20mm)	Yes	Yes	100	10	-	-	10	100	-	-	-	10	100	-	-	-	10	100	-	-	-	10	No	No	100	N02
156	B0AC04	Class 300	Killed CS	Up to NPS 4 (Wall thick ≤ 20mm)	No	No	100	10	-	-	10	100	-	(*2)	-	10	100	(10/100 *3)	-	-	10	100	-	-	-	10	No	No	0	N03
				NPS 6 to 10 (Wall thick > 20mm)	Yes	Yes	100	10	-	-	10	100	-	(*2)	-	10	100	(10/100 *3)	-	-	10	100	-	-	-	10	No	No	100	N04
157	B0JP	Class 300	SS304L	All sizes	No	No	100	10	-	10	-	100	-	-	10	-	100	-	-	10	-	100	-	-	10	-	Yes	No	0	N05
158	B0JQ	Class 300	SS304L	All sizes	No	No	100	10	-	10	-	100	-	-	10	-	100	-	-	10	-	100	-	-	10	-	Yes	No	0	N05
159	B0JR	Class 300	SS304L	All sizes	No	No	100	10	-	10	-	100	-	-	10	-	100	-	-	10	-	100	-	-	10	-	Yes	No	0	N05
160	B0JR01	Class 300	SS304L	All sizes	No	No	100	10	-	10	-	100	-	-	10	-	100	-	-	10	-	100	-	-	10	-	Yes	No	0	N05
161	B0JR03	Class 300	SS304L	All sizes	No	No	100	10	-	10	-	100	-	-	10	-	100	-	-	10	-	100	-	-	10	-	Yes	No	0	N05
162	B0JS	Class 300	SS304L	All sizes	No	No	100	10	-	10	-	100	-	-	10	-	100	-	-	10	-	100	-	-	10	-	Yes	No	0	N05
163	B0JW	Class 300	SS304L	All sizes	No	No	100	10	-	10	-	100	-	-	10	-	100	-	-	10	-	100	-	-	10	-	Yes	No	0	N05
164	B0JY	Class 300	SS304L	All sizes	No	No	100	10	-	10	-	100	-	-	10	-	100	-	-	10	-	100	-	-	10	-	Yes	No	0	N05
165	B0JY01	Class 300	SS304L	All sizes	No	No	100	10	-	10	-	100	-	-	10	-	100	-	-	10	-	100	-	-	10	-	Yes	No	0	N05
166	B0JY04	Class 300	SS304L	All sizes	No	No	100	10	-	10	-	100	-	-	10	-	100	(10/100 *3)	-	10	-	100	-	-	10	-	Yes	No	0	N06
167	B0KC01	Class 300	SS304H	All sizes	No	No	100	10	-	10	-	100	-	-	10	-	100	-	-	10	-	100	-	-	10	-	Yes	Yes*5	0	N07
168	B0KP01	Class 300	SS304H	All sizes	No	No	100	10	-	10	-	100	-	-	10	-	100	-	-	10	-	100	-	-	10	-	Yes	Yes*5	0	N07
169	B0L5	Class 300	SS316L	All sizes	No	No	100	10	-	10	-	100	-	-	10	-	100	-	-	10	-	100	-	-	10	-	Yes	No	0	N05
170	B0L501	Class 300	SS316L	All sizes	No	No	100	10	-	10	-	100	-	-	10	-	100	-	-	10	-	100	-	-	10	-	Yes	No	0	N05
171	B0LH04	Class 300	SS316L	All sizes	No	No	100	10	-	10	-	100	-	-	10	-	100	(10/100 *3)	-	10	-	100	-	-	10	-	Yes	No	0	N06
172	B0LQ	Class 300	SS316L	All sizes	No	No	100	10	-	10	-	100	-	-	10	-	100	-	-	10	-	100	-	-	10	-	Yes	No	0	N05
173	B0LQ03	Class 300	SS316L	All sizes	No	No	100	10	-	10	-	100	-	-	10	-	100	-	-	10	-	100	-	-	10	-	Yes	No	0	N05
174	B0LR	Class 300	SS316L	All sizes	No	No	100	10	-	10	-	100	-	-	10	-	100	-	-	10	-	100	-	-	10	-	Yes	No	0	N05
175	B0LR01	Class 300	SS316L	All sizes	No	No	100	10	-	10	-	100	-	-	10	-	100	-	-	10	-	100	-	-	10	-	Yes	No	0	N05
176	B0LR03	Class 300	SS316L	All sizes	No	No	100	10	-	10	-	100	-	-	10	-	100	-	-	10	-	100	-	-	10	-	Yes	No	0	N05
177	B0MH01	Class 300	SS321	All sizes	No	No	100	10	-	10	-	100	-	-	10	-	100	-	-	10	-	100	-	-	10	-	Yes	Yes*5	0	N07
178	B0MP01	Class 300	SS321	All sizes	No	No	100	10	-	10	-	100	-	-	10	-	100	-	-	10	-	100	-	-	10	-	Yes	Yes*5	0	N07
179	B0QP	Class 300	Killed CS (FBE Lined)	All sizes	No	No	100	10	-	-	10	100	-	-	-	10	100	-	-	-	10	100	-	-	-	10	No	No	0	N01
180	B0YN	Class 300	Alloy 400	All sizes	No	No	100	100	-	100	-	100	-	-	100	-	100	-	-	100	-	100	-	-	100	-	Yes	No	0	N09
181	***B0YQ***	***Class 300***	***INCONEL 625***	***All sizes***	***No***	***No***	***100***	***100***	***-***	***100***	***-***	***100***	***-***	***-***	***100***	***-***	***100***	***-***	***-***	***100***	***-***	***100***	***-***	***-***	***100***	***-***	***Yes***	***No***	***0***	***N09***
182	B19P	Class 300	Killed CS	All sizes	No	No	100	10	-	-	10	100	-	-	-	10	100	-	-	-	10	100	-	-	-	10	No	No	0	N01
183	B1A402	Class 300	Killed CS	All sizes	Yes	Yes	100	10	-	-	10	100	-	-	-	10	100	-	-	-	10	100	-	-	-	10	No	No	100	N02
184	***B1A8***	***Class 300***	***Killed CS***	***All sizes***	***No***	***No***	***100***	***10***	***-***	***-***	***10***	***100***	***-***	***-***	***-***	***10***	***100***	***-***	***-***	***-***	***10***	***100***	***-***	***-***	***-***	***10***	***No***	***No***	***0***	***N01***
185	B1A804	Class 300	Killed CS	All sizes	No	No	100	10	-	-	10	100	-	(*2)	-	10	100	(10/100 *3)	-	-	10	100	-	-	-	10	No	No	0	N03
186	B1A904	Class 300	Killed CS	All sizes	No	No	100	10	-	-	10	100	-	(*2)	-	10	100	(10/100 *3)	-	-	10	100	-	-	-	10	No	No	0	N03
187	B1AA	Class 300	Killed CS	All sizes	No	No	100	10	-	-	10	100	-	-	-	10	100	-	-	-	10	100	-	-	-	10	No	No	0	N01
188	B1AA04	Class 300	Killed CS	All sizes	No	No	100	10	-	-	10	100	-	(*2)	-	10	100	(10/100 *3)	-	-	10	100	-	-	-	10	No	No	0	N03
189	B1AC	Class 300	Killed CS	All sizes	No	No	100	10	-	-	10	100	-	-	-	10	100	-	-	-	10	100	-	-	-	10	No	No	0	N01
190	B1AC01	Class 300	Killed CS	All sizes	No	No	100	10	-	-	10	100	-	-	-	10	100	-	-	-	10	100	-	-	-	10	No	No	0	N01
191	B1AD	Class 300	Killed CS	All sizes	No	No	100	10	-	-	10	100	-	-	-	10	100	-	-	-	10	100	-	-	-	10	No	No	0	N01
192	B1AD01	Class 300	Killed CS	All sizes	No	No	100	10	-	-	10	100	-	-	-	10	100	-	-	-	10	100	-	-	-	10	No	No	0	N01
193	B1AG	Class 300	CS (ASME)	All sizes	No	No	100	10	-	-	10	100	-	-	-	10	100	-	-	-	10	100	-	-	-	10	No	No	0	N01
194	B1AH	Class 300	Killed CS	All sizes	No	No	100	10	-	-	10	100	-	-	-	10	100	-	-	-	10	100	-	-	-	10	No	No	0	N01
195	B1AH01	Class 300	Killed CS	All sizes	No	No	100	10	-	-	10	100	-	-	-	10	100	-	-	-	10	100	-	-	-	10	No	No	0	N01
196	B1AH02	Class 300	Killed CS	All sizes	No	No	100	(100)	-	-	***(100)***	100	***-***	-	-	***(100)***	100	***-***	-	-	***(100)***	100	***-***	-	-	***(100)***	No	No	0	***N40***
197	B1AH03	Class 300	Killed CS	All sizes	No	No	100	10	-	-	10	100	-	-	-	10	100	-	-	-	10	100	-	-	-	10	No	No	0	N01
198	B1AH04	Class 300	Killed CS	All sizes	No	No	100	10	-	-	10	100	-	(*2)	-	10	100	(10/100 *3)	-	-	10	100	-	-	-	10	No	No	0	N03
199	B1AP	Class 300	Killed CS	All sizes	No	No	100	10	-	-	10	100	-	-	-	10	100	-	-	-	10	100	-	-	-	10	No	No	0	N01
200	B1AP01	Class 300	Killed CS	All sizes	No	No	100	10	-	-	10	100	-	-	-	10	100	-	-	-	10	100	-	-	-	10	No	No	0	N01
201	B1AP02	Class 300	Killed CS	All sizes	No	No	100	10	-	-	10	100	-	-	-	10	100	-	-	-	10	100	-	-	-	10	No	No	0	N01
202	B1AP04	Class 300	Killed CS	All sizes	No	No	100	10	-	-	10	100	-	(*2)	-	10	100	(10/100 *3)	-	-	10	100	-	-	-	10	No	No	0	N03
203	B1APCM	Class 300	Killed CS	All sizes	No	No	100	10	-	-	10	100	-	-	-	10	100	-	-	-	10	100	-	-	-	10	No	No	0	N01
204	B1AQ02	Class 300	Killed CS	All sizes	***No***	No	100	10	-	-	10	100	-	-	-	10	100	-	-	-	10	100	-	-	-	10	No	No	***10***	***N47***
205	B1AR02	Class 300	Killed CS	All sizes	***No***	No	100	10	-	-	10	100	-	-	-	10	100	-	-	-	10	100	-	-	-	10	No	No	***10***	***N47***
206	B1AS	Class 300	Killed CS	All sizes	No	No	100	10	-	-	10	100	-	-	-	10	100	-	-	-	10	100	-	-	-	10	No	No	0	N01
207	***B1AY***	***Class 300***	***Killed CS***	***All sizes***	***No***	***No***	***100***	***10***	***-***	***-***	***10***	***100***	***-***	***-***	***-***	***10***	***100***	***-***	***-***	***-***	***10***	***100***	***-***	***-***	***-***	***10***	***No***	***No***	***0***	***N01***

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SR. NO.	PIPING CLASS	ASME CLASS	MATERIAL	PWHT *4			BUTT WELDS (Shown on each isometric drawing)					BRANCH WELDS Pipe-to-pipe branch connections (including reinforcing pads) and branches made with "O-let" fittings					FILLET/SOCKET WELDS					ATTACHMENT WELDS					PMI (Yes/No)	Ferrite Check (Yes/No)	HARDNESS TEST (%)	NDE CLASS *6
				SIZE (Wall Thick)	Circumferential Welds (Yes/No)	Attachments Welds (Yes/No)	VISUAL (%)	RT (%)	UT (%)	PT (%)	MT (%)	VISUAL (%)	RT (%)	UT (%)	PT (%)	MT (%)	VISUAL (%)	RT (%)	UT (%)	PT (%)	MT (%)	VISUAL (%)	RT (%)	UT (%)	PT (%)	MT (%)				
208	B1AY04	Class 300	Killed CS	All sizes	No	No	100	10	-	-	10	100	-	(*2)	-	10	100	(10/100 *3)	-	-	10	100	-	-	-	10	No	No	0	N03
209	B1DH04	Class 300	1-1/4Cr - 1/2Mo	All sizes	Yes	Yes	100	100	-	-	100	100	(100 *1)	-	-	100	100	(100)	(100)	-	100	100	-	-	-	100	Yes	No	100	N20
210	B1DP04	Class 300	1-1/4Cr - 1/2Mo	All sizes	Yes	Yes	100	100	-	-	100	100	(100 *1)	-	-	100	100	(100)	(100)	-	100	100	-	-	-	100	Yes	No	100	N20
211	B1EH	Class 300	2-1/4Cr-1Mo	All sizes	Yes	Yes	100	100	-	-	100	100	-	-	-	100	100	-	-	-	100	100	-	-	-	100	Yes	No	100	N13
212	***B1G804***	***Class 300***	***LTCS***	***All sizes***	***No***	***No***	***100***	***100***	***-***	***-***	***100***	***100***	***-***	***(*2)***	***-***	***100***	***100***	***(10/100 *3)***	***-***	***-***	***100***	***100***	***-***	***-***	***-***	***100***	***No***	***No***	***0***	***N21***
213	B1GH04	Class 300	LTCS	All sizes	No	No	100	100	-	-	100	100	-	(*2)	-	100	100	(10/100 *3)	-	-	100	100	-	-	-	100	No	No	0	N21
214	B1GP	Class 300	LTCS	All sizes	No	No	100	100	-	-	100	100	-	-	-	100	100	-	-	-	100	100	-	-	-	100	No	No	0	N14
215	B1GP01	Class 300	LTCS	All sizes	No	No	100	100	-	-	100	100	-	-	-	100	100	-	-	-	100	100	-	-	-	100	No	No	0	N14
216	B1GP04	Class 300	LTCS	All sizes	No	No	100	100	-	-	100	100	-	(*2)	-	100	100	(10/100 *3)	-	-	100	100	-	-	-	100	No	No	0	N21
217	B1J502	Class 300	SS304L	All sizes	No	No	100	10	-	10	-	100	-	-	10	-	100	-	-	10	-	100	-	-	10	-	Yes	***(Yes)***	0	***N48***
218	B1KH04	Class 300	SS304H	All sizes	No	No	100	10	-	10	-	100	-	-	10	-	100	(10/100 *3)	-	10	-	100	-	-	10	-	Yes	Yes*5	0	N18
219	B1LP04	Class 300	SS316L	All sizes	No	No	100	10	-	10	-	100	-	-	10	-	100	(10/100 *3)	-	10	-	100	-	-	10	-	Yes	No	0	N06
220	B1LV04	Class 300	SS316L	All sizes	No	No	100	10	-	10	-	100	-	-	10	-	100	(10/100 *3)	-	10	-	100	-	-	10	-	Yes	No	0	N06
221	B1LW	Class 300	SS316L	All sizes	No	No	100	10	-	10	-	100	-	-	10	-	100	-	-	10	-	100	-	-	10	-	Yes	No	0	N05
222	B1LY	Class 300	SS316L	All sizes	No	No	100	10	-	10	-	100	-	-	10	-	100	-	-	10	-	100	-	-	10	-	Yes	No	0	N05
223	B1LY04	Class 300	SS316L	All sizes	No	No	100	10	-	10	-	100	-	-	10	-	100	(10/100 *3)	-	10	-	100	-	-	10	-	Yes	No	0	N06
224	B1MQ02	Class 300	SS321	All sizes	No	No	100	***(100)***	***-***	***(100)***	-	100	-	-	10	-	100	-	-	10	-	100	-	-	10	-	Yes	***(Yes)***	0	***N42***
225	B28P	Class 300	9Cr - 1MO	All sizes	Yes	Yes	100	100	-	-	100	100	-	-	-	100	100	-	-	-	100	100	-	-	-	100	Yes	No	100	N13
226	***B28Q02***	***Class 300***	***9Cr - 1MO***	***All sizes***	***Yes***	***Yes***	***100***	***100***	***-***	***-***	***100***	***100***	***-***	***-***	***-***	***100***	***100***	***-***	***-***	***-***	***100***	***100***	***-***	***-***	***-***	***100***	***Yes***	***No***	***100***	***N49***
227	B28V02	Class 300	9Cr - 1Mo	All sizes	Yes	Yes	100	100	-	-	100	100	-	-	-	100	100	-	-	-	100	100	-	-	-	100	Yes	No	100	N13
228	B2A4	Class 300	Killed CS	All sizes	Yes	Yes	100	10	-	-	10	100	-	-	-	10	100	-	-	-	10	100	-	-	-	10	No	No	100	N02
229	B2A5	Class 300	Killed CS	All sizes	Yes	Yes	100	10	-	-	10	100	-	-	-	10	100	-	-	-	10	100	-	-	-	10	No	No	100	N02
230	B2A501	Class 300	Killed CS	All sizes	Yes	Yes	100	10	-	-	10	100	-	-	-	10	100	-	-	-	10	100	-	-	-	10	No	No	100	N02
231	B2A502	Class 300	Killed CS	All sizes	Yes	Yes	100	10	-	-	10	100	-	-	-	10	100	-	-	-	10	100	-	-	-	10	No	No	100	N02
232	B2A503	Class 300	Killed CS	All sizes	Yes	Yes	100	10	-	-	10	100	-	-	-	10	100	-	-	-	10	100	-	-	-	10	No	No	100	N02
233	B2A602	Class 300	Killed CS	All sizes	***No***	No	100	(100)	-	-	***(100)***	100	***-***	-	-	***(100)***	100	***-***	-	-	***(100)***	100	***-***	-	-	***(100)***	No	No	***10***	***N41***
234	B2A604	Class 300	Killed CS	All sizes	Yes	Yes	100	10	-	-	10	100	-	(*2)	-	10	100	(10/100 *3)	-	-	10	100	-	-	-	10	No	No	100	N04
235	B2A704	Class 300	Killed CS	All sizes	Yes	Yes	100	10	-	-	10	100	-	(*2)	-	10	100	(10/100 *3)	-	-	10	100	-	-	-	10	No	No	100	N04
236	B2A804	Class 300	Killed CS	All sizes	No	No	100	10	-	-	10	100	-	(*2)	-	10	100	(10/100 *3)	-	-	10	100	-	-	-	10	No	No	0	N03
237	B2AC01	Class 300	Killed CS	All sizes	No	No	100	10	-	-	10	100	-	-	-	10	100	-	-	-	10	100	-	-	-	10	No	No	0	N01
238	B2AG	Class 300	CS (ASME)	All sizes	No	No	100	10	-	-	10	100	-	-	-	10	100	-	-	-	10	100	-	-	-	10	No	No	0	N01
239	B2AH02	Class 300	Killed CS	All sizes	***(Yes)***	***(Yes)***	100	(100)	-	-	***(100)***	100	***-***	-	-	***(100)***	100	***-***	-	-	***(100)***	100	***-***	-	-	***(100)***	No	No	***(100)***	***N37***
240	B2AH04	Class 300	Killed CS	All sizes	No	No	100	10	-	-	10	100	-	(*2)	-	10	100	(10/100 *3)	-	-	10	100	-	-	-	10	No	No	0	N03
241	B2AL	Class 300	Killed CS	All sizes	Yes	Yes	100	10	-	-	10	100	-	-	-	10	100	-	-	-	10	100	-	-	-	10	No	No	100	N02
242	B2AL04	Class 300	Killed CS	All sizes	Yes	Yes	100	10	-	-	10	100	-	(*2)	-	10	100	(10/100 *3)	-	-	10	100	-	-	-	10	No	No	100	N04
243	B2AN	Class 300	Killed CS	All sizes	Yes	Yes	100	10	-	-	10	100	-	-	-	10	100	-	-	-	10	100	-	-	-	10	No	No	100	N02
244	B2AN04	Class 300	Killed CS	All sizes	Yes	Yes	100	10	-	-	10	100	-	(*2)	-	10	100	(10/100 *3)	-	-	10	100	-	-	-	10	No	No	100	N04
245	B2AP	Class 300	Killed CS	All sizes	No	No	100	10	-	-	10	100	-	-	-	10	100	-	-	-	10	100	-	-	-	10	No	No	0	N01
246	B2AP01	Class 300	Killed CS	All sizes	No	No	100	10	-	-	10	100	-	-	-	10	100	-	-	-	10	100	-	-	-	10	No	No	0	N01
247	B2AP02	Class 300	Killed CS	All sizes	No	No	100	10	-	-	10	100	-	-	-	10	100	-	-	-	10	100	-	-	-	10	No	No	0	N01
248	B2AP04	Class 300	Killed CS	All sizes	No	No	100	10	-	-	10	100	-	(*2)	-	10	100	(10/100 *3)	-	-	10	100	-	-	-	10	No	No	0	N03
249	B2APCL	Class 300	Killed CS	All sizes	No	No	100	10	-	-	10	100	-	-	-	10	100	-	-	-	10	100	-	-	-	10	No	No	0	N01
250	B2AQ	Class 300	Killed CS	All sizes	No	No	100	10	-	-	10	100	-	-	-	10	100	-	-	-	10	100	-	-	-	10	No	No	100	N10
251	B2AQ01	Class 300	Killed CS	All sizes	Yes	Yes	100	10	-	-	10	100	-	-	-	10	100	-	-	-	10	100	-	-	-	10	No	No	100	N02
252	B2AQ02	Class 300	Killed CS	All sizes	***No***	No	100	10	-	-	10	100	-	-	-	10	100	-	-	-	10	100	-	-	-	10	No	No	***10***	***N47***
253	B2AQ04	Class 300	Killed CS	All sizes	Yes	Yes	100	10	-	-	10	100	-	(*2)	-	10	100	(10/100 *3)	-	-	10	100	-	-	-	10	No	No	100	N04
254	B2AR	Class 300	Killed CS	All sizes	No	No	100	10	-	-	10	100	-	-	-	10	100	-	-	-	10	100	-	-	-	10	No	No	100	N10
255	B2AR01	Class 300	Killed CS	All sizes	Yes	Yes	100	10	-	-	10	100	-	-	-	10	100	-	-	-	10	100	-	-	-	10	No	No	100	N02
256	B2AR02	Class 300	Killed CS	All sizes	***No***	No	100	10	-	-	10	100	-	-	-	10	100	-	-	-	10	100	-	-	-	10	No	No	***10***	***N47***
257	B2AR03	Class 300	Killed CS	All sizes	Yes	No	100	10	-	-	10	100	-	-	-	10	100	-	-	-	10	100	-	-	-	10	No	No	100	N11
258	B2AR04	Class 300	Killed CS	All sizes	Yes	Yes	100	10	-	-	10	100	-	(*2)	-	10	100	(10/100 *3)	-	-	10	100	-	-	-	10	No	No	100	N04
259	B2AS	Class 300	Killed CS	All sizes	No	No	100	10	-	-	10	100	-	-	-	10	100	-	-	-	10	100	-	-	-	10	No	No	0	N01
260	B2AW	Class 300	Killed CS	All sizes	No	No	100	10	-	-	10	100	-	-	-	10	100	-	-	-	10	100	-	-	-	10	No	No	0	N01
261	B2AW04	Class 300	Killed CS	All sizes	No	No	100	10	-	-	10	100	-	(*2)	-	10	100	(10/100 *3)	-	-	10	100	-	-	-	10	No	No	0	N03
262	B2AY04	Class 300	Killed CS	All sizes	No	No	100	10	-	-	10	100	-	(*2)	-	10	100	(10/100 *3)	-	-	10	100	-	-	-	10	No	No	0	N03

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SR. NO.	PIPING CLASS	ASME CLASS	MATERIAL	PWHT *4			BUTT WELDS (Shown on each isometric drawing)					BRANCH WELDS Pipe-to-pipe branch connections (including reinforcing pads) and branches made with "O-let" fittings					FILLET/SOCKET WELDS					ATTACHMENT WELDS					PMI (Yes/No)	Ferrite Check (Yes/No)	HARDNESS TEST (%)	NDE CLASS *6
				SIZE (Wall Thick)	Circumferential Welds (Yes/No)	Attachments Welds (Yes/No)	VISUAL (%)	RT (%)	UT (%)	PT (%)	MT (%)	VISUAL (%)	RT (%)	UT (%)	PT (%)	MT (%)	VISUAL (%)	RT (%)	UT (%)	PT (%)	MT (%)	VISUAL (%)	RT (%)	UT (%)	PT (%)	MT (%)				
263	B2DC01	Class 300	1-1/4Cr - 1/2Mo	All sizes	Yes	Yes	100	100	-	-	100	100	-	-	-	100	100	-	-	-	100	100	-	-	-	100	Yes	No	100	N13
264	B2DH	Class 300	1-1/4Cr - 1/2Mo	All sizes	Yes	Yes	100	100	-	-	100	100	-	-	-	100	100	-	-	-	100	100	-	-	-	100	Yes	No	100	N13
265	B2DP01	Class 300	1-1/4Cr - 1/2Mo	All sizes	Yes	Yes	100	100	-	-	100	100	-	-	-	100	100	-	-	-	100	100	-	-	-	100	Yes	No	100	N13
266	B2FC01	Class 300	5Cr-1/2Mo	All sizes	Yes	Yes	100	100	-	-	100	100	-	-	-	100	100	-	-	-	100	100	-	-	-	100	Yes	No	100	N13
267	B2FP	Class 300	5Cr-1/2Mo	All sizes	Yes	Yes	100	100	-	-	100	100	-	-	-	100	100	-	-	-	100	100	-	-	-	100	Yes	No	100	N13
268	***B2FP02***	***Class 300***	***5Cr-1/2Mo***	***All sizes***	***Yes***	***Yes***	***100***	***100***	***-***	***-***	***100***	***100***	***-***	***-***	***-***	***100***	***100***	***-***	***-***	***-***	***100***	***100***	***-***	***-***	***-***	***100***	***Yes***	***No***	***100***	***N49***
269	B2G404	Class 300	LTCS	All sizes	Yes	Yes	100	100	-	-	100	100	-	(*2)	-	100	100	(10/100 *3)	-	-	100	100	-	-	-	100	No	No	100	N22
270	B2G501	Class 300	LTCS	All sizes	Yes	Yes	100	100	-	-	100	100	-	-	-	100	100	-	-	-	100	100	-	-	-	100	No	No	100	N15
271	B2GH04	Class 300	LTCS	All sizes	No	No	100	100	-	-	100	100	-	(*2)	-	100	100	(10/100 *3)	-	-	100	100	-	-	-	100	No	No	0	N21
272	B2GN04	Class 300	LTCS	All sizes	Yes	Yes	100	100	-	-	100	100	-	(*2)	-	100	100	(10/100 *3)	-	-	100	100	-	-	-	100	No	No	100	N22
273	B2GP	Class 300	LTCS	All sizes	No	No	100	100	-	-	100	100	-	-	-	100	100	-	-	-	100	100	-	-	-	100	No	No	0	N14
274	B2GP01	Class 300	LTCS	All sizes	No	No	100	100	-	-	100	100	-	-	-	100	100	-	-	-	100	100	-	-	-	100	No	No	0	N14
275	B2GP04	Class 300	LTCS	All sizes	No	No	100	100	-	-	100	100	-	(*2)	-	100	100	(10/100 *3)	-	-	100	100	-	-	-	100	No	No	0	N21
276	B2GQ	Class 300	LTCS	All sizes	No	No	100	100	-	-	100	100	-	-	-	100	100	-	-	-	100	100	-	-	-	100	No	No	100	N24
277	B2GQ01	Class 300	LTCS	All sizes	Yes	Yes	100	100	-	-	100	100	-	-	-	100	100	-	-	-	100	100	-	-	-	100	No	No	100	N15
278	B2GQ04	Class 300	LTCS	All sizes	Yes	Yes	100	100	-	-	100	100	-	(*2)	-	100	100	(10/100 *3)	-	-	100	100	-	-	-	100	No	No	100	N22
279	B2GR01	Class 300	LTCS	All sizes	Yes	Yes	100	100	-	-	100	100	-	-	-	100	100	-	-	-	100	100	-	-	-	100	No	No	100	N15
280	B3A502	Class 300	Killed CS	All sizes	Yes	Yes	100	10	-	-	10	100	-	-	-	10	100	-	-	-	10	100	-	-	-	10	No	No	100	N02
281	B3A702	Class 300	Killed CS	All sizes	***No***	No	100	(100)	-	-	10	100	***-***	-	-	10	100	***-***	-	-	10	100	***-***	-	-	10	No	No	***10***	***N44***
282	B3AH02	Class 300	Killed CS	All sizes	No	No	100	(100)	-	-	***(100)***	100	***-***	-	-	***(100)***	100	***-***	-	-	***(100)***	100	***-***	-	-	***(100)***	No	No	0	***N40***
283	B3AR02	Class 300	Killed CS	All sizes	***No***	No	100	***(100)***	-	-	***(100)***	100	-	-	-	***(100)***	100	-	-	-	***(100)***	100	-	-	-	***(100)***	No	No	***10***	***N41***
284	B4A4	Class 300	Killed CS	All sizes	Yes	Yes	100	10	-	-	10	100	-	-	-	10	100	-	-	-	10	100	-	-	-	10	No	No	100	N02
285	***B4A402***	***Class 300***	***Killed CS***	***All sizes***	***Yes***	***Yes***	***100***	***10***	***-***	***-***	***10***	***100***	***-***	***-***	***-***	***10***	***100***	***-***	***-***	***-***	***10***	***100***	***-***	***-***	***-***	***10***	***No***	***No***	***100***	***N02***
286	B4A5	Class 300	Killed CS	All sizes	Yes	Yes	100	10	-	-	10	100	-	-	-	10	100	-	-	-	10	100	-	-	-	10	No	No	100	N02
287	B4A704	Class 300	Killed CS	All sizes	Yes	Yes	100	10	-	-	10	100	-	(*2)	-	10	100	(10/100 *3)	-	-	10	100	-	-	-	10	No	No	100	N04
288	B4AP01	Class 300	Killed CS	All sizes	No	No	100	10	-	-	10	100	-	-	-	10	100	-	-	-	10	100	-	-	-	10	No	No	0	N01
289	***B4AP02***	***Class 300***	***Killed CS***	***All sizes***	***No***	***No***	***100***	***10***	***-***	***-***	***10***	***100***	***-***	***-***	***-***	***10***	***100***	***-***	***-***	***-***	***10***	***100***	***-***	***-***	***-***	***10***	***No***	***No***	***0***	***N01***
290	B4AQ	Class 300	Killed CS	All sizes	No	No	100	10	-	-	10	100	-	-	-	10	100	-	-	-	10	100	-	-	-	10	No	No	100	N10
291	B4AQ01	Class 300	Killed CS	All sizes	Yes	Yes	100	10	-	-	10	100	-	-	-	10	100	-	-	-	10	100	-	-	-	10	No	No	100	N02
292	B4AR	Class 300	Killed CS	All sizes	No	No	100	10	-	-	10	100	-	-	-	10	100	-	-	-	10	100	-	-	-	10	No	No	100	N10
293	B4AR01	Class 300	Killed CS	All sizes	Yes	Yes	100	10	-	-	10	100	-	-	-	10	100	-	-	-	10	100	-	-	-	10	No	No	100	N02
294	***B4AR02***	***Class 300***	***Killed CS***	***All sizes***	***No***	***No***	***100***	***10***	***-***	***-***	***10***	***100***	***-***	***-***	***-***	***10***	***100***	***-***	***-***	***-***	***10***	***100***	***-***	***-***	***-***	***10***	***No***	***No***	***10***	***N47***
295	B4AR04	Class 300	Killed CS	All sizes	Yes	Yes	100	10	-	-	10	100	-	(*2)	-	10	100	(10/100 *3)	-	-	10	100	-	-	-	10	No	No	100	N04
296	B4AV	Class 300	Killed CS	All sizes	No	No	100	10	-	-	10	100	-	-	-	10	100	-	-	-	10	100	-	-	-	10	No	No	0	N01
297	B4FV	Class 300	5Cr-1/2Mo	All sizes	Yes	Yes	100	100	-	-	100	100	-	-	-	100	100	-	-	-	100	100	-	-	-	100	Yes	No	100	N13
298	B4GQ	Class 300	LTCS	All sizes	No	No	100	100	-	-	100	100	-	-	-	100	100	-	-	-	100	100	-	-	-	100	No	No	100	N24
299	B4GR01	Class 300	LTCS	All sizes	Yes	Yes	100	100	-	-	100	100	-	-	-	100	100	-	-	-	100	100	-	-	-	100	No	No	100	N15
300	D0JH	Class 600	SS304L	All sizes	No	No	100	10	-	10	-	100	-	-	10	-	100	-	-	10	-	100	-	-	10	-	Yes	No	0	N05
301	D0JS	Class 600	SS304L	All sizes	No	No	100	10	-	10	-	100	-	-	10	-	100	-	-	10	-	100	-	-	10	-	Yes	No	0	N05
302	D0JY	Class 600	SS304L	All sizes	No	No	100	10	-	10	-	100	-	-	10	-	100	-	-	10	-	100	-	-	10	-	Yes	No	0	N05
303	D0JY03	Class 600	SS304L	All sizes	No	No	100	10	-	10	-	100	-	-	10	-	100	-	-	10	-	100	-	-	10	-	Yes	No	0	N05
304	D0KC01	Class 600	SS304H	All sizes	No	No	100	10	-	10	-	100	-	-	10	-	100	-	-	10	-	100	-	-	10	-	Yes	Yes*5	0	N07
305	D0KP01	Class 600	SS304H	All sizes	No	No	100	10	-	10	-	100	-	-	10	-	100	-	-	10	-	100	-	-	10	-	Yes	Yes*5	0	N07
306	D0LG	Class 600	SS316L	All sizes	No	No	100	10	-	10	-	100	-	-	10	-	100	-	-	10	-	100	-	-	10	-	Yes	No	0	N05
307	D0LS	Class 600	SS316L	All sizes	No	No	100	10	-	10	-	100	-	-	10	-	100	-	-	10	-	100	-	-	10	-	Yes	No	0	N05
308	***D0L604***	***Class 600***	***SS316L***	***All sizes***	***No***	***No***	***100***	***10***	***-***	***10***	***-***	***100***	***-***	***-***	***10***	***-***	***100***	***(10/100 *3)***	***-***	***10***	***-***	***100***	***-***	***-***	***10***	***-***	***Yes***	***No***	***0***	***N06***
309	D0MH01	Class 600	SS321	All sizes	No	No	100	10	-	10	-	100	-	-	10	-	100	-	-	10	-	100	-	-	10	-	Yes	Yes*5	0	N07
310	***D0MS***	***Class 600***	***SS347***	***All sizes***	***No***	***No***	***100***	***10***	***-***	***10***	***-***	***100***	***-***	***-***	***10***	***-***	***100***	***-***	***-***	***10***	***-***	***100***	***-***	***-***	***10***	***-***	***Yes***	***Yes*5***	***0***	***N07***
311	D1AA	Class 600	Killed CS	All sizes	No	No	100	10	-	-	10	100	-	-	-	10	100	-	-	-	10	100	-	-	-	10	No	No	0	N01
312	D1AG	Class 600	CS (ASME)	Up to NPS 14 (Wall thick ≤ 20mm)	No	No	100	10	-	-	10	100	-	-	-	10	100	-	-	-	10	100	-	-	-	10	No	No	0	N01
				NPS 16 to 18 (Wall thick > 20mm)	Yes	Yes	100	10	-	-	10	100	-	-	-	10	100	-	-	-	10	100	-	-	-	10	No	No	100	N02
313	D1AH	Class 600	Killed CS	All sizes	No	No	100	10	-	-	10	100	-	-	-	10	100	-	-	-	10	100	-	-	-	10	No	No	0	N01
314	D1AH01	Class 600	Killed CS	All sizes	No	No	100	10	-	-	10	100	-	-	-	10	100	-	-	-	10	100	-	-	-	10	No	No	0	N01
315	***D1AH02***	***Class 600***	***Killed CS***	***All sizes***	***No***	***No***	***100***	***(100)***	***-***	***-***	***100***	***100***	***-***	***-***	***-***	***100***	***100***	***-***	***-***	***-***	***100***	***100***	***-***	***-***	***-***	***100***	***No***	***No***	***0***	***N43***
316	D1AH04	Class 600	Killed CS	All sizes	No	No	100	10	-	-	10	100	-	(*2)	-	10	100	(10/100 *3)	-	-	10	100	-	-	-	10	No	No	0	N03

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NDE, PWHT, HARDNESS TEST AND PMI SUMMARY FOR SITE FABRICATION

SR. NO.	PIPING CLASS	ASME CLASS	MATERIAL	PWHT *4			BUTT WELDS (Shown on each isometric drawing)					BRANCH WELDS Pipe-to-pipe branch connections (including reinforcing pads) and branches made with "O-let" fittings					FILLET/SOCKET WELDS					ATTACHMENT WELDS					PMI (Yes/No)	Ferrite Check (Yes/No)	HARDNESS TEST (%)	NDE CLASS *6
				SIZE (Wall Thick)	Circumferential Welds (Yes/No)	Attachments Welds (Yes/No)	VISUAL (%)	RT (%)	UT (%)	PT (%)	MT (%)	VISUAL (%)	RT (%)	UT (%)	PT (%)	MT (%)	VISUAL (%)	RT (%)	UT (%)	PT (%)	MT (%)	VISUAL (%)	RT (%)	UT (%)	PT (%)	MT (%)				
317	D1AP	Class 600	Killed CS	All sizes	No	No	100	10	-	-	10	100	-	-	-	10	100	-	-	-	10	100	-	-	-	10	No	No	0	N01
318	D1AP01	Class 600	Killed CS	All sizes	No	No	100	10	-	-	10	100	-	-	-	10	100	-	-	-	10	100	-	-	-	10	No	No	0	N01
319	D1AP02	Class 600	Killed CS	All sizes	No	No	100	10	-	-	10	100	-	-	-	10	100	-	-	-	10	100	-	-	-	10	No	No	0	N01
320	D1AP03	Class 600	Killed CS	All sizes	No	No	100	10	-	-	10	100	-	-	-	10	100	-	-	-	10	100	-	-	-	10	No	No	0	N01
321	D1AP04	Class 600	Killed CS	All sizes	No	No	100	10	-	-	10	100	-	(*2)	-	10	100	(10/100 *3)	-	-	10	100	-	-	-	10	No	No	0	N03
322	D1APCL	Class 600	Killed CS	All sizes	No	No	100	10	-	-	10	100	-	-	-	10	100	-	-	-	10	100	-	-	-	10	No	No	0	N01
323	D1APCM	Class 600	Killed CS	All sizes	No	No	100	10	-	-	10	100	-	-	-	10	100	-	-	-	10	100	-	-	-	10	No	No	0	N01
324	D1AS	Class 600	Killed CS	Up to NPS 14 (Wall thick ≤ 20mm)	No	No	100	10	-	-	10	100	-	-	-	10	100	-	-	-	10	100	-	-	-	10	No	No	0	N01
				NPS 16 (Wall thick > 20mm)	Yes	Yes	100	10	-	-	10	100	-	-	-	10	100	-	-	-	10	100	-	-	-	10	No	No	100	N02
				NPS 18 (Wall thick ≤ 20mm)	No	No	100	10	-	-	10	100	-	-	-	10	100	-	-	-	10	100	-	-	-	10	No	No	0	N01
				NPS 20 to 24 (Wall thick > 20mm)	Yes	Yes	100	10	-	-	10	100	-	-	-	10	100	-	-	-	10	100	-	-	-	10	No	No	100	N02
325	D1AY04	Class 600	Killed CS	All sizes	No	No	100	10	-	-	10	100	-	(*2)	-	10	100	(10/100 *3)	-	-	10	100	-	-	-	10	No	No	0	N03
326	D1D904	Class 600	1-1/4Cr - 1/2Mo	All sizes	Yes	Yes	100	100	-	-	100	100	(100 *1)	-	-	100	100	(100)	(100)	-	100	100	-	-	-	100	Yes	No	100	N20
327	D1DH04	Class 600	1-1/4Cr - 1/2Mo	All sizes	Yes	Yes	100	100	-	-	100	100	(100 *1)	-	-	100	100	(100)	(100)	-	100	100	-	-	-	100	Yes	No	100	N20
328	D1EG	Class 600	2-1/4Cr-1Mo	All sizes	Yes	Yes	100	100	-	-	100	100	-	-	-	100	100	-	-	-	100	100	-	-	-	100	Yes	No	100	N13
329	D1GP	Class 600	LTCS	All sizes	No	No	100	100	-	-	100	100	-	-	-	100	100	-	-	-	100	100	-	-	-	100	No	No	0	N14
330	D1GP01	Class 600	LTCS	All sizes	No	No	100	100	-	-	100	100	-	-	-	100	100	-	-	-	100	100	-	-	-	100	No	No	0	N14
331	D1GP04	Class 600	LTCS	Up to NPS 24 (Wall thick ≤ 20mm)	No	No	100	100	-	-	100	100	-	(*2)	-	100	100	(10/100 *3)	-	-	100	100	-	-	-	100	No	No	0	N21
				NPS 30 (Wall thick > 20mm)	Yes	Yes	100	100	-	-	100	100	-	(*2)	-	100	100	(10/100 *3)	-	-	100	100	-	-	-	100	No	No	100	N22
332	D1LH04	Class 600	SS316L	All sizes	No	No	100	10	-	10	-	100	-	-	10	-	100	(10/100 *3)	-	10	-	100	-	-	10	-	Yes	No	0	N06
333	D1LV04	Class 600	SS316L	All sizes	No	No	100	10	-	10	-	100	-	-	10	-	100	(10/100 *3)	-	10	-	100	-	-	10	-	Yes	No	0	N06
334	D1MQ02	Class 600	SS321	All sizes	No	No	100	***(100)***	-	***(100)***	-	100	-	-	10	-	100	-	-	10	-	100	-	-	10	-	Yes	***(Yes)***	0	***N42***
335	D2A604	Class 600	Killed CS	All sizes	Yes	Yes	100	10	-	-	10	100	-	(*2)	-	10	100	(10/100 *3)	-	-	10	100	-	-	-	10	No	No	100	N04
336	D2AG	Class 600	CS (ASME)	All sizes	No	No	100	10	-	-	10	100	-	-	-	10	100	-	-	-	10	100	-	-	-	10	No	No	0	N01
337	D2AP	Class 600	Killed CS	All sizes	No	No	100	10	-	-	10	100	-	-	-	10	100	-	-	-	10	100	-	-	-	10	No	No	0	N01
338	D2AP01	Class 600	Killed CS	All sizes	No	No	100	10	-	-	10	100	-	-	-	10	100	-	-	-	10	100	-	-	-	10	No	No	0	N01
339	D2AP02	Class 600	Killed CS	***Up to NPS 14 (Wall thick ≤ 20mm)***	No	No	100	10	-	-	10	100	-	-	-	10	100	-	-	-	10	100	-	-	-	10	No	No	0	N01
				NPS 16 (Wall thick > 20mm)	***Yes***	***Yes***	***100***	***10***	***-***	***-***	***10***	***100***	***-***	***-***	***-***	***10***	***100***	***-***	***-***	***-***	***10***	***100***	***-***	***-***	***-***	***10***	***No***	***No***	***100***	***N02***
				NPS 18 (Wall thick ≤ 20mm)	***No***	***No***	***100***	***10***	***-***	***-***	***10***	***100***	***-***	***-***	***-***	***10***	***100***	***-***	***-***	***-***	***10***	***100***	***-***	***-***	***-***	***10***	***No***	***No***	***0***	***N01***
				NPS 20 to 24 (Wall thick > 20mm)	***Yes***	***Yes***	***100***	***10***	***-***	***-***	***10***	***100***	***-***	***-***	***-***	***10***	***100***	***-***	***-***	***-***	***10***	***100***	***-***	***-***	***-***	***10***	***No***	***No***	***100***	***N02***
340	D2AQ01	Class 600	Killed CS	All sizes	Yes	Yes	100	10	-	-	10	100	-	-	-	10	100	-	-	-	10	100	-	-	-	10	No	No	100	N02
341	D2AQ04	Class 600	Killed CS	All sizes	Yes	Yes	100	10	-	-	10	100	-	(*2)	-	10	100	(10/100 *3)	-	-	10	100	-	-	-	10	No	No	100	N04
342	D2AS	Class 600	Killed CS	Up to NPS 18 (Wall thick ≤ 20mm)	No	No	100	10	-	-	10	100	-	-	-	10	100	-	-	-	10	100	-	-	-	10	No	No	0	N01
				NPS 20 to 24 (Wall thick > 20mm)	Yes	Yes	100	10	-	-	10	100	-	-	-	10	100	-	-	-	10	100	-	-	-	10	No	No	100	N02
343	D2DH	Class 600	1-1/4Cr - 1/2Mo	All sizes	Yes	Yes	100	100	-	-	100	100	-	-	-	100	100	-	-	-	100	100	-	-	-	100	Yes	No	100	N13
344	D2DH01	Class 600	1-1/4Cr - 1/2Mo	All sizes	Yes	Yes	100	100	-	-	100	100	-	-	-	100	100	-	-	-	100	100	-	-	-	100	Yes	No	100	N13
345	D2G501	Class 600	LTCS	All sizes	Yes	Yes	100	100	-	-	100	100	-	-	-	100	100	-	-	-	100	100	-	-	-	100	No	No	100	N15
346	D2GQ01	Class 600	LTCS	All sizes	Yes	Yes	100	100	-	-	100	100	-	-	-	100	100	-	-	-	100	100	-	-	-	100	No	No	100	N15
347	D2GR01	Class 600	LTCS	All sizes	Yes	Yes	100	100	-	-	100	100	-	-	-	100	100	-	-	-	100	100	-	-	-	100	No	No	100	N15
348	D3A702	Class 600	Killed CS	All sizes	Yes	***Yes***	100	***10***	-	-	10	100	***-***	-	-	10	100	***-***	-	-	10	100	***-***	-	-	10	No	No	100	***N02***
349	L1AH02	Class 600	Killed CS	All sizes	No	No	100	(100)	-	-	***(100)***	100	***-***	-	-	***(100)***	100	***-***	-	-	***(100)***	100	***-***	-	-	***(100)***	No	No	0	***N40***
350	L1M602	Class 600	SS321	All sizes	No	No	100	(100)	-	***(100)***	-	100	***-***	-	10	-	100	***-***	-	10	-	100	***-***	-	10	-	Yes	***(Yes)***	0	***N42***
351	L1M702	Class 600	SS321	All sizes	No	No	100	(100)	-	***(100)***	-	100	***-***	-	10	-	100	***-***	-	10	-	100	***-***	-	10	-	Yes	***(Yes)***	0	***N42***
352	L28V02	Class 600	9Cr - 1Mo	All sizes	Yes	Yes	100	100	-	-	100	100	-	-	-	100	100	-	-	-	100	100	-	-	-	100	Yes	No	100	N13
353	L3AH02	Class 600	Killed CS	All sizes	No	No	100	(100)	-	-	***(100)***	100	***-***	-	-	***(100)***	100	***-***	-	-	***(100)***	100	***-***	-	-	***(100)***	No	No	0	***N40***
354	M0JS	Class 900	SS304L	All sizes	No	No	100	100	-	100	-	100	-	-	100	-	100	-	-	100	-	100	-	-	100	-	Yes	No	0	N09
355	M0LR01	Class 900	SS316L	All sizes	No	No	100	100	-	100	-	100	-	-	100	-	100	-	-	100	-	100	-	-	100	-	Yes	No	0	N09
356	***M1A602***	***Class 900***	***Killed CS***	***All sizes***	***No***	***No***	***100***	***100***	***-***	***-***	***100***	***100***	***-***	***-***	***-***	***100***	***100***	***-***	***-***	***-***	***100***	***100***	***-***	***-***	***-***	***100***	***No***	***No***	***10***	***N45***
357	M1AH01	Class 900	Killed CS	All sizes	No	No	100	100	-	-	100	100	-	-	-	100	100	-	-	-	100	100	-	-	-	100	No	No	0	N14
358	M1AH02	Class 900	Killed CS	All sizes	No	No	100	100	-	-	100	100	***-***	-	-	100	100	***-***	-	-	100	100	***-***	-	-	100	No	No	0	***N14***
359	M1DS	Class 900	1-1/4Cr - 1/2Mo	All sizes	Yes	Yes	100	100	-	-	100	100	-	-	-	100	100	-	-	-	100	100	-	-	-	100	Yes	No	100	N13
360	M1EG	Class 900	2-1/4Cr-1Mo	All sizes	Yes	Yes	100	100	-	-	100	100	-	-	-	100	100	-	-	-	100	100	-	-	-	100	Yes	No	100	N13
361	M1EH	Class 900	2-1/4Cr-1Mo	All sizes	Yes	Yes	100	100	-	-	100	100	-	-	-	100	100	-	-	-	100	100	-	-	-	100	Yes	No	100	N13
362	***M2A602***	***Class 900***	***Killed CS***	***All sizes***	***(Yes)***	***Yes***	***100***	***100***	***-***	***-***	***100***	***100***	***-***	***-***	***-***	***100***	***100***	***-***	***-***	***-***	***100***	***100***	***-***	***-***	***-***	***100***	***No***	***No***	***100***	***N39***
363	M2AG	Class 900	CS (ASME)	Up to NPS 8 (Wall thick ≤ 20mm)	No	No	100	100	-	-	100	100	-	-	-	100	100	-	-	-	100	100	-	-	-	100	No	No	0	N14

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SR. NO.	PIPING CLASS	ASME CLASS	MATERIAL	PWHT *4			BUTT WELDS (Shown on each isometric drawing)					BRANCH WELDS Pipe-to-pipe branch connections (including reinforcing pads) and branches made with "O-let" fittings					FILLET/SOCKET WELDS					ATTACHMENT WELDS					PMI (Yes/No)	Ferrite Check (Yes/No)	HARDNESS TEST (%)	NDE CLASS *6
				SIZE (Wall Thick)	Circumferential Welds (Yes/No)	Attachments Welds (Yes/No)	VISUAL (%)	RT (%)	UT (%)	PT (%)	MT (%)	VISUAL (%)	RT (%)	UT (%)	PT (%)	MT (%)	VISUAL (%)	RT (%)	UT (%)	PT (%)	MT (%)	VISUAL (%)	RT (%)	UT (%)	PT (%)	MT (%)				
363	M2AG	Class 900	CS (ASME)	NPS 10 to 24 (Wall thick > 20mm)	Yes	Yes	100	100	-	-	100	100	-	-	-	100	100	-	-	-	100	100	-	-	-	100	No	No	100	N15
364	M2AQ01	Class 900	Killed CS	All sizes	Yes	Yes	100	100	-	-	100	100	-	-	-	100	100	-	-	-	100	100	-	-	-	100	No	No	100	N15
365	M2AR01	Class 900	Killed CS	All sizes	Yes	Yes	100	100	-	-	100	100	-	-	-	100	100	-	-	-	100	100	-	-	-	100	No	No	100	N15
366	M2AS	Class 900	Killed CS	Up to NPS 10 (Wall thick ≤ 20mm)	No	No	100	100	-	-	100	100	-	-	-	100	100	-	-	-	100	100	-	-	-	100	No	No	0	N14
				NPS 12 to 18 (Wall thick > 20mm)	Yes	Yes	100	100	-	-	100	100	-	-	-	100	100	-	-	-	100	100	-	-	-	100	No	No	100	N15
367	M2DH	Class 900	1-1/4Cr - 1/2Mo	All sizes	Yes	Yes	100	100	-	-	100	100	-	-	-	100	100	-	-	-	100	100	-	-	-	100	Yes	No	100	N13
368	M2DH01	Class 900	1-1/4Cr - 1/2Mo	All sizes	Yes	Yes	100	100	-	-	100	100	-	-	-	100	100	-	-	-	100	100	-	-	-	100	Yes	No	100	N13
369	M3AH02	Class 900	Killed CS	All sizes	No	No	100	100	-	-	100	100	-	-	-	100	100	-	-	-	100	100	-	-	-	100	No	No	0	***N14***
370	***N0JP***	***Class 1500***	***SS304L***	***All sizes***	***No***	***No***	***100***	***100***	***-***	***100***	***-***	***100***	***-***	***-***	***100***	***-***	***100***	***-***	***-***	***100***	***-***	***100***	***-***	***-***	***100***	***-***	***Yes***	***No***	***0***	***N09***
371	N0LG	Class 1500	SS316L	All sizes	No	No	100	100	-	100	-	100	-	-	100	-	100	-	-	100	-	100	-	-	100	-	Yes	No	0	N09
372	N1A402	Class 1500	Killed CS	All sizes	Yes	Yes	100	100	-	-	100	100	-	-	-	100	100	-	-	-	100	100	-	-	-	100	No	No	100	N15
373	N1A602	Class 1500	Killed CS	***Up to NPS 6 (Wall thick ≤ 20mm)***	No	No	100	100	-	-	100	100	***-***	-	-	100	100	***-***	-	-	100	100	***-***	-	-	100	No	No	***0***	***N14***
				NPS 8 to 24 (Wall thick > 20mm)	***Yes***	***Yes***	***100***	***100***	***-***	***-***	***100***	***100***	***-***	***-***	***-***	***100***	***100***	***-***	***-***	***-***	***100***	***100***	***-***	***-***	***-***	***100***	***No***	***No***	***100***	***N15***
374	N1AH	Class 1500	Killed CS	Up to NPS 6 (Wall thick ≤ 20mm)	No	No	100	100	-	-	100	100	-	-	-	100	100	-	-	-	100	100	-	-	-	100	No	No	0	N14
				NPS 8 (Wall thick > 20mm)	Yes	Yes	100	100	-	-	100	100	-	-	-	100	100	-	-	-	100	100	-	-	-	100	No	No	100	N15
375	N1AH02	Class 1500	Killed CS	Up to NPS 6 (Wall thick ≤ 20mm)	No	No	100	100	-	-	100	100	***-***	-	-	100	100	***-***	-	-	100	100	***-***	-	-	100	No	No	0	***N14***
				NPS 8 to 12 (Wall thick > 20mm)	Yes	Yes	100	100	-	-	100	100	***-***	-	-	100	100	***-***	-	-	100	100	***-***	-	-	100	No	No	100	***N15***
376	N1AL02	Class 1500	Killed CS	All sizes	Yes	Yes	100	100	-	-	100	100	-	-	-	100	100	-	-	-	100	100	-	-	-	100	No	No	100	N15
377	N1AQ	Class 1500	Class 1500	Up to NPS 10 (Wall thick ≤ 20mm)	No	No	100	100	-	-	100	100	-	-	-	100	100	-	-	-	100	100	-	-	-	100	No	No	100	N24
				NPS 12 to 16 (Wall thick > 20mm)	Yes	Yes	100	100	-	-	100	100	-	-	-	100	100	-	-	-	100	100	-	-	-	100	No	No	100	N15
378	***N1AS***	***Class 1500***	***Class 1500***	***All sizes***	***No***	***No***	***100***	***100***	***-***	***-***	***100***	***100***	***-***	***-***	***-***	***100***	***100***	***-***	***-***	***-***	***100***	***100***	***-***	***-***	***-***	***100***	***No***	***No***	***0***	***N14***
379	N1J502	Class 1500	SS304L	All sizes	No	No	100	100	-	100	-	100	-	-	100	-	100	-	-	100	-	100	-	-	100	-	Yes	***(Yes)***	0	***N46***
380	***N1J702***	***Class 1500***	***SS304L***	***All sizes***	***No***	***No***	***100***	***100***	***-***	***100***	***-***	***100***	***-***	***-***	***100***	***-***	***100***	***-***	***-***	***100***	***-***	***100***	***-***	***-***	***100***	***-***	***Yes***	***(Yes)***	***0***	***N46***
381	N1JR02	Class 1500	SS304L	All sizes	No	No	100	100	-	100	-	100	-	-	100	-	100	-	-	100	-	100	-	-	100	-	Yes	***(Yes)***	0	***N46***
382	N1MH01	Class 1500	SS321	All sizes	No	No	100	100	-	100	-	100	-	-	100	-	100	-	-	100	-	100	-	-	100	-	Yes	Yes*5	0	N27
383	N1Y602	Class 1500	Incoloy 825	All sizes	No	No	100	100	-	100	-	100	***-***	-	100	-	100	***-***	-	100	-	100	***-***	-	100	-	Yes	No	0	***N09***
384	N1Y702	Class 1500	Incoloy 825	All sizes	No	No	100	100	-	100	-	100	***-***	-	100	-	100	***-***	-	100	-	100	***-***	-	100	-	Yes	No	0	***N09***
385	N1YQ02	Class 1500	Incoloy 825	All sizes	No	No	100	100	-	100	-	100	-	-	100	-	100	-	-	100	-	100	-	-	100	-	Yes	No	0	N09
386	N1YR02	Class 1500	Incoloy 825	All sizes	No	No	100	100	-	100	-	100	-	-	100	-	100	-	-	100	-	100	-	-	100	-	Yes	No	0	N09
387	N2A502	Class 1500	Killed CS	All sizes	Yes	Yes	100	100	-	-	100	100	-	-	-	100	100	-	-	-	100	100	-	-	-	100	No	No	100	N15
388	N2A602	Class 1500	Killed CS	***(Yes)***	***(Yes)***		100	100	-	-	100	100	***-***	-	-	100	100	***-***	-	-	100	100	***-***	-	-	100	No	No	100	***N38***
389	N2AP01	Class 1500	Killed CS	Up to NPS 6 (Wall thick ≤ 20mm)	No	No	100	100	-	-	100	100	-	-	-	100	100	-	-	-	100	100	-	-	-	100	No	No	0	N14
				NPS 8 to 10 (Wall thick > 20mm)	Yes	Yes	100	100	-	-	100	100	-	-	-	100	100	-	-	-	100	100	-	-	-	100	No	No	100	N15
390	N2AR02	Class 1500	Killed CS	All sizes	***(Yes)***	***(Yes)***	100	100	-	-	100	100	-	-	-	100	100	-	-	-	100	100	-	-	-	100	No	No	100	***N38***
391	N2D602	Class 1500	1-1/4Cr - 1/2Mo	All sizes	Yes	Yes	100	100	-	-	100	100	***-***	-	-	100	100	***-***	-	-	100	100	***-***	-	-	100	Yes	No	100	***N13***
392	***N3A502***	***Class 1500***	***Killed CS***	***All sizes***	***Yes***	***Yes***	***100***	***100***	***-***	***-***	***-***	***100***	***-***	***-***	***-***	***100***	***100***	***-***	***-***	***-***	***100***	***100***	***-***	***-***	***-***	***100***	***No***	***No***	***100***	***N50***
393	N3A702	Class 1500	Killed CS	All sizes	***(Yes)***	***(Yes)***	100	100	-	-	100	100	***-***	-	-	100	100	***-***	-	-	100	100	***-***	-	-	100	No	No	100	***N38***
394	N3D702	Class 1500	1-1/4Cr - 1/2Mo	All sizes	Yes	Yes	100	100	-	-	100	100	***-***	-	-	100	100	***-***	-	-	100	100	***-***	-	-	100	Yes	No	100	***N13***
395	P0LG	Class 2500	SS316L	All sizes	No	No	100	100	-	100	-	100	-	-	100	-	100	-	-	100	-	100	-	-	100	-	Yes	No	0	N09
396	P0MS	Class 2500	SS347	All sizes	No	No	100	100	-	100	-	100	-	-	100	-	100	-	-	100	-	100	-	-	100	-	Yes	Yes*5	0	N27
397	***P1AH02***	***Class 2500***	***Killed CS***	***All sizes***	***No***	***No***	***100***	***100***	***-***	***-***	***100***	***100***	***-***	***-***	***-***	***100***	***100***	***-***	***-***	***-***	***100***	***100***	***-***	***-***	***-***	***100***	***No***	***No***	***0***	***N14***
398	P1M602	Class 2500	SS321	All sizes	No	No	100	100	-	100	-	100	***-***	-	100	-	100	***-***	-	100	-	100	***-***	-	100	-	Yes	***(Yes)***	0	***N46***
399	P1MQ	Class 2500	SS321	All sizes	No	No	100	100	-	100	-	100	-	-	100	-	100	-	-	100	-	100	-	-	100	-	Yes	Yes*5	0	N27
400	P1Y702	Class 2500	Incoloy 825	All sizes	No	No	100	100	-	100	-	100	***-***	-	100	-	100	***-***	-	100	-	100	***-***	-	100	-	Yes	No	0	***N09***
401	P2AG	Class 2500	CS (ASME)	Up to NPS 4 (Wall thick ≤ 20mm)	No	No	100	100	-	-	100	100	-	-	-	100	100	-	-	-	100	100	-	-	-	100	No	No	0	N14
				NPS 6 to 18 (Wall thick > 20mm)	Yes	Yes	100	100	-	-	100	100	-	-	-	100	100	-	-	-	100	100	-	-	-	100	No	No	100	N15
402	P2AS	Class 2500	Killed CS	Up to NPS 4 (Wall thick ≤ 20mm)	No	No	100	100	-	-	100	100	-	-	-	100	100	-	-	-	100	100	-	-	-	100	No	No	0	N14
				NPS 6 to 18 (Wall thick > 20mm)	Yes	Yes	100	100	-	-	100	100	-	-	-	100	100	-	-	-	100	100	-	-	-	100	No	No	100	N15
403	P2M602	Class 2500	SS321	All sizes	No	No	100	100	-	100	-	100	***-***	-	100	-	100	***-***	-	100	-	100	***-***	-	100	-	Yes	***(Yes)***	0	***N46***
404	P4AP02	Class 2500	Killed CS	Up to NPS 4 (Wall thick ≤ 20mm)	No	No	100	100	-	-	100	100	-	-	-	100	100	-	-	-	100	100	-	-	-	100	No	No	0	N14
				NPS 6 to 12 (Wall thick > 20mm)	Yes	Yes	100	100	-	-	100	100	-	-	-	100	100	-	-	-	100	100	-	-	-	100	No	No	100	N15
405	S0CW	Class 150	RTRP	All sizes	No	No	100	-	-	-	-	100	-	-	-	-	100	-	-	-	-	100	-	-	-	-	No	No	0	N08
406	S0RA	Class 150	Killed CS (Galv.)	All sizes	No	No	100	-	-	-	-	100	-	-	-	-	100	-	-	-	-	100	-	-	-	-	No	No	0	N08
407	S0SP	Class 150	CPVC	All sizes	No	No	100	-	-	-	-	100	-	-	-	-	100	-	-	-	-	100	-	-	-	-	No	No	0	N08

INDRA
01-SEP-2014

NDE, PWHT, HARDNESS TEST AND PMI SUMMARY FOR SITE FABRICATION

SR. NO.	PIPING CLASS	ASME CLASS	MATERIAL	PWHT *4			BUTT WELDS (Shown on each isometric drawing)					BRANCH WELDS Pipe-to-pipe branch connections (including reinforcing pads) and branches made with "O-let" fittings					FILLET/SOCKET WELDS					ATTACHMENT WELDS					PMI (Yes/No)	Ferrite Check (Yes/No)	HARDNESS TEST (%)	NDE CLASS *6
				SIZE (Wall Thick)	Circumferential Welds (Yes/No)	Attachments Welds (Yes/No)	VISUAL (%)	RT (%)	UT (%)	PT (%)	MT (%)	VISUAL (%)	RT (%)	UT (%)	PT (%)	MT (%)	VISUAL (%)	RT (%)	UT (%)	PT (%)	MT (%)	VISUAL (%)	RT (%)	UT (%)	PT (%)	MT (%)				
408	S0SW	Class 150	CPVC	All sizes	No	No	100	-	-	-	-	100	-	-	-	-	100	-	-	-	-	100	-	-	-	-	No	No	0	N08
409	T0RA	Class 300	Killed CS (Galv.)	All sizes	No	No	100	-	-	-	-	100	-	-	-	-	100	-	-	-	-	100	-	-	-	-	No	No	0	N08

GENERAL NOTES:
- This table is prepared in accordance with 3550-8440-SP-0025, 3550-8440-SP-0030 and licensor's requirements.
- The values with parentheses "( )" are required in accordance with licensor's requirement.

NOTES:
*1. Branch welds that cannot be RT shall be 100% UT. If UT is also not possible, the branch weld shall be 100% PT.
*2. Branch welds shall be examined by 10% UT. If UT is not possible, the branch welds shall be 10% PT.
*3. Socket welds shall be examined by 100% RT, if practical or examined by PT or MT. Fillet welds shall be examined by 10% RT.
*4. PWHT shall be performed at the temperature between 605° C and 630° C .
*5. Austenitic stainless steel welds subject to stress relief (PWHT below 927 dec.C) or maximum operating temperature above 500 dec C, shall be subject to a minimum of 3 ferrite checks per weld, with a minimum of one check per 200 mm length of manual welds.
6. NDE class is used for internal setting of requirements for PWHT, NDE, PMI, Ferrite Check and Hardness Test.
7. For piping class A2AW, 100% RT is required for the underground joints which are subject to backfilling before the Hydrotest at site only.

INDRA
01-SEP-2014

11.2 Piping Classes for PPU Unit (Licenced by MCI)

SR. NO.	PIPING CLASS	ASME CLASS	MATERIAL	PWHT *4			BUTT WELDS (Shown on each isometric drawing)					BRANCH WELDS Pipe-to-pipe branch connections (including reinforcing pads) and branches made with "O-let" fittings					FILLET/SOCKET WELDS					ATTACHMENT WELDS					PMI (Yes/No)	Ferrite Check (Yes/No)	HARDNESS TEST (%)	***NDE CLASS* 6**
				SIZE (Wall Thick)	Circumferential Welds (Yes/No)	Attachments Welds (Yes/No)	VISUAL (%)	RT (%)	UT (%)	PT (%)	MT (%)	VISUAL (%)	RT (%)	UT (%)	PT (%)	MT (%)	VISUAL (%)	RT (%)	UT (%)	PT (%)	MT (%)	VISUAL (%)	RT (%)	UT (%)	PT (%)	MT (%)				
1	A11A05	Class 150	Killed CS	All sizes	No	No	100	-	-	-	-	100	-	-	-	-	100	-	-	-	-	100	-	-	-	-	No	No	0	N08
2	A11B05	Class 150	Killed CS	All sizes	No	No	100	10	-	-	10	100	-	-	-	10	100	-	-	-	10	100	-	-	-	10	No	No	0	N01
3	A11D05	Class 150	LTCS	All sizes	No	No	100	100	-	-	100	100	-	-	-	100	100	-	-	-	100	100	-	-	-	100	No	No	0	N14
4	A11F05	Class 150	SS304L	All sizes	No	No	100	10	-	10	-	100	-	-	10	-	100	-	-	10	-	100	-	-	10	-	Yes	No	0	N05
5	A11X05	Class 150	Killed CS (Galv.)	All sizes	No	No	100	-	-	-	-	100	-	-	-	-	100	-	-	-	-	100	-	-	-	-	No	No	0	N08
6	A16G05	Class 150	Duplex SS	All sizes	No	No	100	100	-	100	-	100	-	-	100	-	100	-	-	100	-	100	-	-	100	-	Yes	No	0	N09
7	A21A05	Class 150	Killed CS	All sizes	No	No	100	-	-	-	-	100	-	-	-	-	100	-	-	-	-	100	-	-	-	-	No	No	0	N08
8	A21B05	Class 150	Killed CS	All sizes	No	No	100	10	-	-	10	100	-	-	-	10	100	-	-	-	10	100	-	-	-	10	No	No	0	N01
9	A21F05	Class 150	SS304L	All sizes	No	No	100	10	-	10	-	100	-	-	10	-	100	-	-	10	-	100	-	-	10	-	Yes	No	0	N05
10	A31B05	Class 150	Killed CS	All sizes	No	No	100	10	-	-	10	100	-	-	-	10	100	-	-	-	10	100	-	-	-	10	No	No	0	N01
11	A31F05	Class 150	SS304L	All sizes	No	No	100	10	-	10	-	100	-	-	10	-	100	-	-	10	-	100	-	-	10	-	Yes	No	0	N05
12	A41F05	Class 150	SS304L	All sizes	No	No	100	(100)	-	(100)	-	100	-	-	(100)	-	100	(100)	-	(100)	-	100	-	-	(100)	-	Yes	No	0	N28
13	A61F05	Class 150	SS304L	All sizes	No	No	100	10	-	10	-	100	-	-	10	-	100	-	-	10	-	100	-	-	10	-	Yes	No	0	N05
14	B11F05	Class 300	SS304L	All sizes	No	No	100	10	-	10	-	100	-	-	10	-	100	-	-	10	-	100	-	-	10	-	Yes	No	0	N05
15	B21B05	Class 300	Killed CS	All sizes	No	No	100	10	-	-	10	100	-	-	-	10	100	-	-	-	10	100	-	-	-	10	No	No	0	N01
16	B21D05	Class 300	LTCS	All sizes	No	No	100	100	-	-	100	100	-	-	-	100	100	-	-	-	100	100	-	-	-	100	No	No	0	N14
17	B21F05	Class 300	SS304L	All sizes	No	No	100	10	-	10	-	100	-	-	10	-	100	-	-	10	-	100	-	-	10	-	Yes	No	0	N05
18	B22D05	Class 300	LTCS	All sizes	No	No	100	100	-	-	100	100	-	-	-	100	100	-	-	-	100	100	-	-	-	100	No	No	0	N14
19	B31D05	Class 300	LTCS	All sizes	No	No	100	100	-	-	100	100	-	-	-	100	100	-	-	-	100	100	-	-	-	100	No	No	0	N14
20	D11B05	Class 600	Killed CS	All sizes	No	No	100	10	-	-	10	100	-	-	-	10	100	-	-	-	10	100	-	-	-	10	No	No	0	N01
21	D11D05	Class 600	LTCS	All sizes	No	No	100	100	-	-	100	100	-	-	-	100	100	-	-	-	100	100	-	-	-	100	No	No	0	N14
22	D11F05	Class 600	SS304L	All sizes	No	No	100	10	-	10	-	100	-	-	10	-	100	-	-	10	-	100	-	-	10	-	Yes	No	0	N05
23	D21B05	Class 600	Killed CS	All sizes	No	No	100	10	-	-	10	100	-	-	-	10	100	-	-	-	10	100	-	-	-	10	No	No	0	N01
24	D21F05	Class 600	SS304L	All sizes	No	No	100	10	-	10	-	100	-	-	10	-	100	-	-	10	-	100	-	-	10	-	Yes	No	0	N05
25	D31F05	Class 600	SS304L	All sizes	No	No	100	10	-	10	-	100	-	-	10	-	100	-	-	10	-	100	-	-	10	-	Yes	No	0	N05
26	D41F05	Class 600	SS304L	All sizes	No	No	100	(100)	-	(100)	-	100	-	-	(100)	-	100	(100)	-	(100)	-	100	-	-	(100)	-	Yes	No	0	N28
27	D51F05	Class 600	SS304L	All sizes	No	No	100	10	-	10	-	100	-	-	10	-	100	-	-	10	-	100	-	-	10	-	Yes	No	0	N05
28	D61F05	Class 600	SS304L	All sizes	No	No	100	10	-	10	-	100	-	-	10	-	100	-	-	10	-	100	-	-	10	-	Yes	No	0	N05
29	F11F05	Class 1500	SS304L	All sizes	No	No	100	100	-	100	-	100	-	-	100	-	100	(100)	-	100	-	100	-	-	100	-	Yes	No	0	N29
30	X11F05	Class 150	SS304L	All sizes	No	No	100	10	-	10	-	100	-	-	10	-	100	-	-	10	-	100	-	-	10	-	Yes	No	0	N05
31	X31F05	Class 150	SS304L	All sizes	No	No	100	10	-	10	-	100	-	-	10	-	100	-	-	10	-	100	-	-	10	-	Yes	No	0	N05

GENERAL NOTES:
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- The values with parentheses "( )" are required in accordance with licensor's requirement.

NOTES:
*1. Branch welds that cannot be RT shall be 100% UT. If UT is also not possible, the branch weld shall be 100% PT.
*2. Branch welds shall be examined by 10% UT. If UT is not possible, the branch welds shall be 10% PT.
*3. Socket welds shall be examined by 100% RT, if practical or examined by PT or MT. Fillet welds shall be examined by 10% RT.
*4. PWHT shall be performed at the temperature between 605° C and 630° C .
*5. Austenitic stainless steel welds subject to stress relief (PWHT below 927 dec.C) or maximum operating temperature above 500 dec C, shall be subject to a minimum of 3 ferrite checks per weld, with a minimum of one check per 200 mm length of manual welds.
6. NDE class is used for internal setting of requirements for PWHT, NDE, PMI, Ferrite Check and Hardness Test.

INDRA
01-SEP-2014

NDE Class Summary

NDE Class	PWHT *4		BUTT WELDS (Shown on each isometric drawing)					BRANCH WELDS Pipe-to-pipe branch connections (including reinforcing pads) and branches made with "O-let" fittings					FILLET/SOCKET WELDS					ATTACHMENT WELDS					PMI (Yes/No)	Ferrite Check (Yes/No)	HARDNESS TEST (%)	Remarks
	Circumferential Welds (Yes/No)	Attachments Welds (Yes/No)	VISUAL (%)	RT (%)	UT (%)	PT (%)	MT (%)	VISUAL (%)	RT (%)	UT (%)	PT (%)	MT (%)	VISUAL (%)	RT (%)	UT (%)	PT (%)	MT (%)	VISUAL (%)	RT (%)	UT (%)	PT (%)	MT (%)				
N01	No	No	100	10	-	-	10	100	-	-	-	10	100	-	-	-	10	100	-	-	-	10	No	No	0	
N02	Yes	Yes	100	10	-	-	10	100	-	-	-	10	100	-	-	-	10	100	-	-	-	10	No	No	100	
N03	No	No	100	10	-	-	10	100	-	(*2)	-	10	100	(10/100 *3)	-	-	10	100	-	-	-	10	No	No	0	
N04	Yes	Yes	100	10	-	-	10	100	-	(*2)	-	10	100	(10/100 *3)	-	-	10	100	-	-	-	10	No	No	100	
N05	No	No	100	10	-	10	-	100	-	-	10	-	100	-	-	10	-	100	-	-	10	-	Yes	No	0	
N06	No	No	100	10	-	10	-	100	-	-	10	-	100	(10/100 *3)	-	10	-	100	-	-	10	-	Yes	No	0	
N07	No	No	100	10	-	10	-	100	-	-	10	-	100	-	-	10	-	100	-	-	10	-	Yes	Yes*5	0	
N08	No	No	100	-	-	-	-	100	-	-	-	-	100	-	-	-	-	100	-	-	-	-	No	No	0	
N09	No	No	100	100	-	100	-	100	-	-	100	-	100	-	-	100	-	100	-	-	100	-	Yes	No	0	
N10	No	No	100	10	-	-	10	100	-	-	-	10	100	-	-	-	10	100	-	-	-	10	No	No	100	
N11	Yes	No	100	10	-	-	10	100	-	-	-	10	100	-	-	-	10	100	-	-	-	10	No	No	100	
N12	Yes	No	100	10	-	-	10	100	-	(*2)	-	10	100	(10/100 *3)	-	-	10	100	-	-	-	10	No	No	100	
N13	Yes	Yes	100	100	-	-	100	100	-	-	-	100	100	-	-	-	100	100	-	-	-	100	Yes	No	100	
N14	No	No	100	100	-	-	100	100	-	-	-	100	100	-	-	-	100	100	-	-	-	100	No	No	0	
N15	Yes	Yes	100	100	-	-	100	100	-	-	-	100	100	-	-	-	100	100	-	-	-	100	No	No	100	
N16	Yes	No	100	100	-	-	100	100	-	-	-	100	100	-	-	-	100	100	-	-	-	100	No	No	100	
N17	No	No	100	10	-	10	-	100	-	-	10	-	100	-	-	10	-	100	-	-	10	-	Yes	Yes*5	0	
N18	No	No	100	10	-	10	-	100	-	-	10	-	100	(10/100 *3)	-	10	-	100	-	-	10	-	Yes	Yes*5	0	
N19	No	No	100	(100)	-	-	10	100	(100 *1)	-	-	10	100	(100)	-	-	10	100	(100)	-	-	10	No	No	0	
N20	Yes	Yes	100	100	-	-	100	100	(100 *1)	-	-	100	100	(100)	(100)	-	100	100	-	-	-	100	Yes	No	100	
N21	No	No	100	100	-	-	100	100	-	(*2)	-	100	100	(10/100 *3)	-	-	100	100	-	-	-	100	No	No	0	
N22	Yes	Yes	100	100	-	-	100	100	-	(*2)	-	100	100	(10/100 *3)	-	-	100	100	-	-	-	100	No	No	100	
N23	Yes	No	100	100	-	-	100	100	-	(*2)	-	100	100	(10/100 *3)	-	-	100	100	-	-	-	100	No	No	100	
N24	No	No	100	100	-	-	100	100	-	-	-	100	100	-	-	-	100	100	-	-	-	100	No	No	100	
N25	No	No	100	100	-	100	-	100	-	-	100	-	100	-	-	100	-	100	-	-	100	-	Yes	(Yes)	0	
N26	No	No	100	100	-	-	100	100	(100 *1)	-	-	100	100	(100)	-	-	100	100	(100)	-	-	100	No	No	0	
N27	No	No	100	100	-	100	-	100	-	-	100	-	100	-	-	100	-	100	-	-	100	-	Yes	Yes*5	0	
N28	No	No	100	(100)	-	(100)	-	100	-	-	(100)	-	100	(100)	-	(100)	-	100	-	-	(100)	-	Yes	No	0	
N29	No	No	100	100	-	100	-	100	-	-	100	-	100	(100)	-	100	-	100	-	-	100	-	Yes	No	0	
N30	Yes	No	100	(100)	-	-	10	100	(100 *1)	-	-	10	100	(100)	-	-	10	100	(100)	-	-	10	No	No	100	
N31	No	No	100	(100)	-	10	-	100	(100 *1)	-	10	-	100	(100)	-	10	-	100	(100)	-	10	-	Yes	(Yes)	0	
N32	Yes	No	100	100	-	-	100	100	(100 *1)	-	-	100	100	(100)	-	-	100	100	(100)	-	-	100	No	No	100	
N33	No	No	100	100	-	100	-	100	(100 *1)	-	100	-	100	(100)	-	100	-	100	(100)	-	100	-	Yes	No	0	
N34	Yes	Yes	100	100	-	-	100	100	(100 *1)	-	-	100	100	(100)	-	-	100	100	(100)	-	-	100	Yes	No	100	
N35	No	No	100	100	-	100	-	100	(100 *1)	-	100	-	100	(100)	-	100	-	100	(100)	-	100	-	Yes	(Yes)	0	
N36	Yes	Yes	100	100	-	-	100	100	(100 *1)	-	-	100	100	(100)	-	-	100	100	(100)	-	-	100	No	No	100	
N37	(Yes)	(Yes)	100	(100)	-	-	(100)	100	-	-	-	(100)	100	-	-	-	(100)	100	-	-	-	(100)	No	No	(100)	
N38	(Yes)	(Yes)	100	100	-	-	100	100	-	-	-	100	100	-	-	-	100	100	-	-	-	100	No	No	100	
N39	(Yes)	Yes	100	100	-	-	100	100	-	-	-	100	100	-	-	-	100	100	-	-	-	100	No	No	100	
N40	No	No	100	(100)	-	-	(100)	100	-	-	-	(100)	100	-	-	-	(100)	100	-	-	-	(100)	No	No	0	
N41	No	No	100	(100)	-	-	(100)	100	-	-	-	(100)	100	-	-	-	(100)	100	-	-	-	(100)	No	No	10	
N42	No	No	100	(100)	-	(100)	-	100	-	-	10	-	100	-	-	10	-	100	-	-	10	-	Yes	(Yes)	0	
N43	No	No	100	(100)	-	-	100	100	-	-	-	100	100	-	-	-	100	100	-	-	-	100	No	No	0	
N44	No	No	100	(100)	-	-	10	100	-	-	-	10	100	-	-	-	10	100	-	-	-	10	No	No	10	
N45	No	No	100	100	-	-	100	100	-	-	-	100	100	-	-	-	100	100	-	-	-	100	No	No	10	
N46	No	No	100	100	-	100	-	100	-	-	100	-	100	-	-	100	-	100	-	-	100	-	Yes	(Yes)	0	
N47	No	No	100	10	-	-	10	100	-	-	-	10	100	-	-	-	10	100	-	-	-	10	No	No	10	
N48	No	No	100	10	-	10	-	100	-	-	10	-	100	-	-	10	-	100	-	-	10	-	Yes	(Yes)	0	
N49	Yes	Yes	100	100	-	-	100	100	-	-	-	100	100	-	-	-	100	100	-	-	-	100	Yes	No	100	
N50	Yes	Yes	100	100	-	-	-	100	-	-	-	100	100	-	-	-	100	100	-	-	-	100	No	No	100	
N51	No	No	100	10	-	-	-	100	-	-	-	-	100	-	-	-	-	100	-	-	-	-	No	No	0	
N52	No	No	100	- / 100 (*7)	-	-	-	100	-	-	-	-	100	-	-	-	-	100	-	-	-	-	No	No	0	

GENERAL NOTES:
- This table is prepared in accordance with 3550-8440-SP-0025, 3550-8440-SP-0030 and licensor's requirements.
- The values with parentheses "( )" are required in accordance with licensor's requirement.

NOTES:
*1. Branch welds that cannot be RT shall be 100% UT. If UT is also not possible, the branch weld shall be 100% PT.
*2. Branch welds shall be examined by 10% UT. If UT is not possible, the branch welds shall be 10% PT.
*3. Socket welds shall be examined by 100% RT, if practical or examined by PT or MT. Fillet welds shall be examined by 10% RT.
*4. PWHT shall be performed at the temperature between 605° C and 630° C .
*5. Austenitic stainless steel welds subject to stress relief (PWHT below 927 dec.C) or maximum operating temperature above 500 dec C, shall be subject to a minimum of 3 ferrite checks per weld, with a minimum of one check per 200 mm length of manual welds.
*6. NDE class is used for internal setting of requirements for PWHT, NDE, PMI, Ferrite Check and Hardness Test.
*7. For piping class A2AW, 100% RT is required for the underground joints which are subject to backfilling before the Hydrotest at site only.

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12.0 INDIVIDUAL PIPING CLASSES

See the following pages.

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PIPING CLASS

A0AC01 REV NO. 2

Material : Killed CS
Rating : ASME CLASS 150
Flange Face : RF
C.A.(mm) : 0.00
Gasket : Spiral Wound
Service : PROCESS - CATALYST : / CATALYST
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
2	USE OF SOFT SEATED BALL, PLUG AND BUTTERFLY VALVES SHALL BE LIMITED TO MAXIMUM OF 204DEGC (400DEGF)
6	PIPE THICKNESS CALCULATION TO INCLUDE CORROSION AND EROSION ALLOWANCES DUE TO THE PROCESS CATALYST FLOW, AS PER PROCESS LICENSOR SPECIFICATIONS

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
541	NPT(F) (CA,F,L)
773	CLASS 300 (B,F,G)
4208	45 DEGREE LATERAL STRAIGHT TEE (TLS)
4608	VALVE WITH NIPPLES (V)

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PIPING CLASS
A0AC01 REV NO. 2

PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		XXS		P01A-0078C	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE Licensor-1	
1	1.5		XXS		P01A-0078D	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE Licensor-1	
1	2		XXS		P01A-0078E	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Licensor-1	
1	3		XXS		P01A-0078F	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Licensor-1	
1	4		XXS		P01A-0078G	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Licensor-1	
1	6		XXS		P01A-0078H	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Licensor-1	
1	8		XXS		P01A-0078J	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Licensor-1	
1	10		XXS		P01A-0078K	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE Licensor-1	
1	12		XXS		P01A-007T5	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE Licensor-1	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		XXS		P02A-003PU	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	1.5		XXS		P02A-003PV	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	2		XXS		P02A-003PW	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	3		XXS		P02A-003PX	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	4		XXS		P02A-003PY	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	6		XXS		P02A-003PZ	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	8		XXS		P02A-003R0	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	10		XXS		P02A-003R1	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Licensor-1	
1	12		XXS		P02A-0045D	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Licensor-1	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		XXS		P03A-003MG	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	1.5		XXS		P03A-003MH	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	2		XXS		P03A-003MJ	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	3		XXS		P03A-003MK	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	4		XXS		P03A-003ML	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	6		XXS		P03A-003MM	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	8		XXS		P03A-003MN	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	10		XXS		P03A-003MP	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Licensor-1	
1	12		XXS		P03A-0042Y	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Licensor-1	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		XXS		P21A-0048B	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	1.5		XXS		P21A-0048C	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	2		XXS		P21A-0048D	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	3		XXS		P21A-0048E	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	4		XXS		P21A-0048F	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	6		XXS		P21A-0048G	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	8		XXS		P21A-0048H	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	10		XXS		P21A-0048J	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	12		XXS		P21A-004N8	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	

STRAIGHT LATERAL TEE (TLS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
4208	3		XXS		P22A-000ES	Straight lateral-tee ASTM A234 Grade WPB Seamless ASME B16.9 BW 45 degree Licensor-1	

STRAIGHT CROSS TEE (TCS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	4		XXS		P23A-0004Z	Straight cross-tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	6		XXS		P23A-00050	Straight cross-tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	8		XXS		P23A-00051	Straight cross-tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	12		XXS		P23A-0004X	Straight cross-tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	

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REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5	1	XXS	XXS	P24A-00JZS	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	2	1	XXS	XXS	P24A-00JZT	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	2	1.5	XXS	XXS	P24A-00JZU	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	3	1.5	XXS	XXS	P24A-00JZV	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	3	2	XXS	XXS	P24A-00JZW	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	4	2	XXS	XXS	P24A-00JZX	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	4	3	XXS	XXS	P24A-00JZY	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	6	3	XXS	XXS	P24A-00JZZ	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	6	4	XXS	XXS	P24A-00K00	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	8	4	XXS	XXS	P24A-00K03	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	8	6	XXS	XXS	P24A-00K04	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	10	4	XXS	XXS	P24A-00K05	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	10	6	XXS	XXS	P24A-00K01	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	10	8	XXS	XXS	P24A-00K02	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	12	6	XXS	XXS	P24A-00M20	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	12	8	XXS	XXS	P24A-00M21	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	12	10	XXS	XXS	P24A-00M1Z	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	

REDUCING LATERAL TEE (TLR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	XXS	XXS	P25A-002TG	Reducing lateral-tee ASTM A234 Grade WPB Seamless ASME B16.9 BW 45 degree Licensor-1	
1	4	2	XXS	XXS	P25A-002TE	Reducing lateral-tee ASTM A234 Grade WPB Seamless ASME B16.9 BW 45 degree Licensor-1	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5	1	XXS	XXS	P27A-00EK4	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	2	1	XXS	XXS	P27A-00EK6	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	2	1.5	XXS	XXS	P27A-00EK7	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	3	1.5	XXS	XXS	P27A-00EK8	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	3	2	XXS	XXS	P27A-00EK9	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	4	1.5	XXS	XXS	P27A-00EKA	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	4	2	XXS	XXS	P27A-00EKB	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	4	3	XXS	XXS	P27A-00EKC	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	6	3	XXS	XXS	P27A-00EKD	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	6	4	XXS	XXS	P27A-00EKE	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	8	4	XXS	XXS	P27A-00EKF	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	8	6	XXS	XXS	P27A-00EKG	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	10	4	XXS	XXS	P27A-00EKH	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	10	6	XXS	XXS	P27A-00EKJ	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	10	8	XXS	XXS	P27A-00EKK	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	12	6	XXS	XXS	P27A-00G3F	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	12	8	XXS	XXS	P27A-00G3G	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	12	10	XXS	XXS	P27A-00G3E	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5	1	XXS	XXS	P28A-00BNE	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	2	1	XXS	XXS	P28A-00BNG	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	2	1.5	XXS	XXS	P28A-00BNH	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	3	1.5	XXS	XXS	P28A-00BNJ	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	3	2	XXS	XXS	P28A-00BNK	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	4	1.5	XXS	XXS	P28A-00BNL	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	4	2	XXS	XXS	P28A-00BNM	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	4	3	XXS	XXS	P28A-00BNN	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	6	3	XXS	XXS	P28A-00BNP	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	6	4	XXS	XXS	P28A-00BNR	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	8	4	XXS	XXS	P28A-00BNS	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	8	6	XXS	XXS	P28A-00BNT	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	10	4	XXS	XXS	P28A-00BNU	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	

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ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	10	6	XXS	XXS	P28A-00BNV	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	10	8	XXS	XXS	P28A-00BNW	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	12	6	XXS	XXS	P28A-00D9P	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	12	8	XXS	XXS	P28A-00D9R	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	12	10	XXS	XXS	P28A-00D9N	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		XXS		P29A-0031W	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	1.5		XXS		P29A-0031X	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	2		XXS		P29A-0031Y	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	3		XXS		P29A-0031Z	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	4		XXS		P29A-00320	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	6		XXS		P29A-00321	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	8		XXS		P29A-00322	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	10		XXS		P29A-00323	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	12		XXS		P29A-003G4	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
541	1				P29B-0006N	Cap ASTM A105 Class 6000 ASME B16.11 NPT Licensor-1	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		10.60mm		P41A-001AR	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Licensor-1	
1	1.5		10.60mm		P41A-001AS	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Licensor-1	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
541	1.5	1			P31B-0118C	Outlet ASTM A105 Class 6000 MSS SP-97 NPT Licensor-1	
541	2 - 2.5	1			P31B-0136R	Outlet ASTM A105 Class 6000 MSS SP-97 NPT Licensor-1	
541	3 - 10	1			P31B-0136S	Outlet ASTM A105 Class 6000 MSS SP-97 NPT Licensor-1	
541	12 and larger	1			P31B-0136T	Outlet ASTM A105 Class 6000 MSS SP-97 NPT Licensor-1	
1	3	1	XXS	XXS	P31B-00XFL	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	4	1	XXS	XXS	P31B-00XFN	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	6	1	XXS	XXS	P31B-00XFR	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	8	1	XXS	XXS	P31B-00XG0	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	10	1	XXS	XXS	P31B-00XG3	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	12	1	XXS	XXS	P31B-00ZH1	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	4	1.5	XXS	XXS	P31B-00XFP	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	6	1.5	XXS	XXS	P31B-00XFS	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	8	1.5	XXS	XXS	P31B-00XG1	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	10	1.5	XXS	XXS	P31B-00XG4	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	12	1.5	XXS	XXS	P31B-00ZH2	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	6	2	XXS	XXS	P31B-00XFT	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	8	2	XXS	XXS	P31B-00XFU	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	10	2	XXS	XXS	P31B-00XFW	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	12	2	XXS	XXS	P31B-00ZH3	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	8	3	XXS	XXS	P31B-00XFV	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	10	3	XXS	XXS	P31B-00XFX	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	12	3	XXS	XXS	P31B-00ZGZ	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	12	4	XXS	XXS	P31B-00ZH4	Outlet ASTM A105 MSS SP-97 BW Licensor-1	

LATROLET (LL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	8	3	XXS	XXS	P34B-001TA	Lateral-outlet ASTM A105 MSS SP-97 BW 45 degree Licensor-1	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P30B-00069	Plug ASTM A105 ASME B16.11 NPT Round head Licensor-1	
1	1.5				P30B-0006A	Plug ASTM A105 ASME B16.11 NPT Round head Licensor-1	

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FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		XXS		P61B-009RT	Flange WN ASTM A105 Class 150 ASME B16.5 RF Licensor-1	
1	1.5		XXS		P61B-009RU	Flange WN ASTM A105 Class 150 ASME B16.5 RF Licensor-1	
1	2		XXS		P61B-009RW	Flange WN ASTM A105 Class 150 ASME B16.5 RF Licensor-1	
1	3		XXS		P61B-009RX	Flange WN ASTM A105 Class 150 ASME B16.5 RF Licensor-1	
1	4		XXS		P61B-009RY	Flange WN ASTM A105 Class 150 ASME B16.5 RF Licensor-1	
1	6		XXS		P61B-009RZ	Flange WN ASTM A105 Class 150 ASME B16.5 RF Licensor-1	
1	8		XXS		P61B-009S0	Flange WN ASTM A105 Class 150 ASME B16.5 RF Licensor-1	
1	10		XXS		P61B-009RV	Flange WN ASTM A105 Class 150 ASME B16.5 RF Licensor-1	
1	12		XXS		P61B-00B1E	Flange WN ASTM A105 Class 150 ASME B16.5 RF Licensor-1	
541	1				P61B-00CWD	Flange NPT ASTM A105 Class 150 ASME B16.5 RF Licensor-1	
773	1		XXS		P61B-009S3	Flange WN ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
773	1.5		XXS		P61B-009S4	Flange WN ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
773	2		XXS		P61B-009S6	Flange WN ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
773	3		XXS		P61B-009S7	Flange WN ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
773	4		XXS		P61B-009S8	Flange WN ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
773	6		XXS		P61B-009S9	Flange WN ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
773	8		XXS		P61B-009SA	Flange WN ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
773	10		XXS		P61B-009S5	Flange WN ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
773	12		XXS		P61B-00B1F	Flange WN ASTM A105 Class 300 ASME B16.5 RF Licensor-1	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P67B-002D8	Blind flange ASTM A105 Class 150 ASME B16.5 RF Licensor-1	
1	1.5				P67B-002D9	Blind flange ASTM A105 Class 150 ASME B16.5 RF Licensor-1	
1	2				P67B-002DB	Blind flange ASTM A105 Class 150 ASME B16.5 RF Licensor-1	
1	3				P67B-002DC	Blind flange ASTM A105 Class 150 ASME B16.5 RF Licensor-1	
1	4				P67B-002DD	Blind flange ASTM A105 Class 150 ASME B16.5 RF Licensor-1	
1	6				P67B-002DE	Blind flange ASTM A105 Class 150 ASME B16.5 RF Licensor-1	
1	8				P67B-002DF	Blind flange ASTM A105 Class 150 ASME B16.5 RF Licensor-1	
1	10				P67B-002DA	Blind flange ASTM A105 Class 150 ASME B16.5 RF Licensor-1	
1	12				P67B-002FK	Blind flange ASTM A105 Class 150 ASME B16.5 RF Licensor-1	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P73T-000LA	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000LB	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000LH	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000LL	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000LM	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	6				P73T-000LN	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	8				P73T-000LP	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	10				P73T-000LC	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	12				P73T-000LD	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	3				P73T-000G5	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	4				P73T-000G6	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	6				P73T-000G7	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	8				P73T-000G8	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	10				P73T-000FX	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	12				P73T-000FY	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

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BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1-12				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
773	1-10				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
773	12				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P81B-001UE	Gate valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated C.A.=6.0mm Licensor-1	
1	1.5				P81B-001UF	Gate valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated C.A.=6.0mm Licensor-1	
1	2				P81C-0061R	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated C.A.=6.0mm Licensor-1	
1	3				P81C-0061S	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated C.A.=6.0mm Licensor-1	
1	4				P81C-0061T	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated C.A.=6.0mm Licensor-1	
1	6				P81C-0061U	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated C.A.=6.0mm Licensor-1	
1	8				P81C-0061V	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated C.A.=6.0mm Licensor-1	
4608	1				P81B-002W7	Gate valve ASTM A105 Class 150 API 602 BW both sides w/ nipples BE - NPT ASTM A106-B T=10.60MM-nipple Trim number 12 BB-BG-OS&Y Handwheel operated C.A.=6.0mm Licensor-1	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2				P82C-003UR	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated C.A.=6.0mm Licensor-1	
1	3				P82C-003US	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated C.A.=6.0mm Licensor-1	
1	4				P82C-003UT	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated C.A.=6.0mm Licensor-1	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P83B-001DC	Check valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover C.A.=6.0mm Licensor-1	
1	1.5				P83B-001DD	Check valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover C.A.=6.0mm Licensor-1	
1	2				P83C-0039M	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover C.A.=6.0mm Licensor-1	
1	3				P83C-0039N	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover C.A.=6.0mm Licensor-1	
1	4				P83C-0039P	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover C.A.=6.0mm Licensor-1	
1	6				P83C-0039R	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover C.A.=6.0mm Licensor-1	

BALL VALVE (Q)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P84B-001G2	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design C.A.=6.0mm Licensor-1	
1	1.5				P84B-001G3	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design C.A.=6.0mm Licensor-1	
1	2				P84C-006PR	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design C.A.=6.0mm Licensor-1	
1	3				P84C-006PS	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design C.A.=6.0mm Licensor-1	
1	4				P84C-006PT	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design C.A.=6.0mm Licensor-1	
1	6				P84C-006PW	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design C.A.=6.0mm Licensor-1	
1	8				P84C-006PX	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design C.A.=6.0mm Licensor-1	
1	10				P84C-006PU	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design C.A.=6.0mm Licensor-1	
1	12				P84C-006PV	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design C.A.=6.0mm Licensor-1	

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SPECT BLANK (SB)							
OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P71B-00082	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	1.5				P71B-00083	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	2				P71B-00085	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	3				P71B-00086	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	4				P71B-00087	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	6				P71B-00088	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	8				P71B-00089	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	10				P71B-00084	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	12				P71B-0008S	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Licensor-1	

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BOLT TABLE (B_A0AC01 , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
1	4	0.500	70	P80S-003V4		
1.5	4	0.500	75	P80S-003V5		
2	4	0.625	85	P80S-003XE		
3	4	0.625	95	P80S-003XG		
4	8	0.625	95	P80S-003XG		
6	8	0.750	105	P80S-003XJ		
8	8	0.750	110	P80S-003XK		
10	12	0.875	120	P80S-00419		
12	12	0.875	120	P80S-00419		

BOLT TABLE (B_A0AC01_773 , STUD ASME RF, OPTION CODE 773)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
1	4	0.625	80	P80S-003XD		
1.5	4	0.750	95	P80S-00414		
2	8	0.625	90	P80S-003XF		
3	8	0.750	110	P80S-003XK		
4	8	0.750	115	P80S-003XL		
6	12	0.750	125	P80S-003XN		
8	12	0.875	140	P80S-0041D		
10	16	1.000	160	P80S-0043K		
12	16	1.125	175	P80S-0046S		

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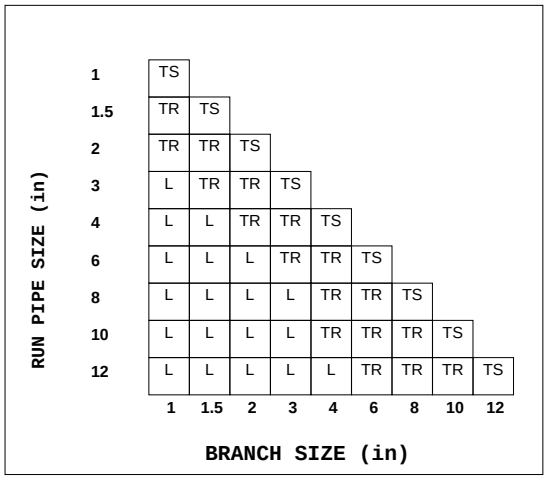
BRANCH TABLE (T_A0AC01)



TS : STRAIGHT TEE
TR : REDUCING TEE
L : OUTLET

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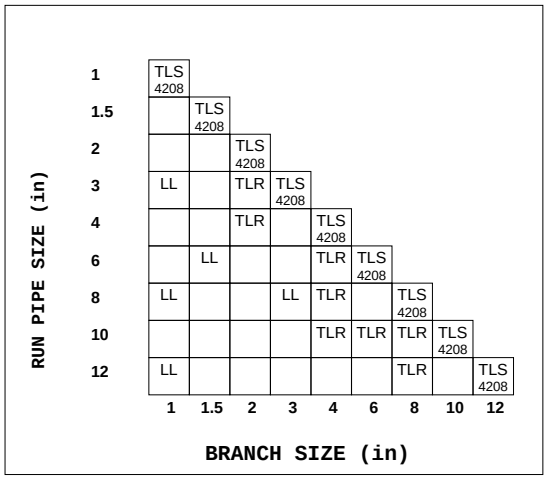
BRANCH TABLE (T_A0AC01_2)



TLR : REDUCING LATERAL TEE
LL : LATROLET
TLS : STRAIGHT LATERAL TEE

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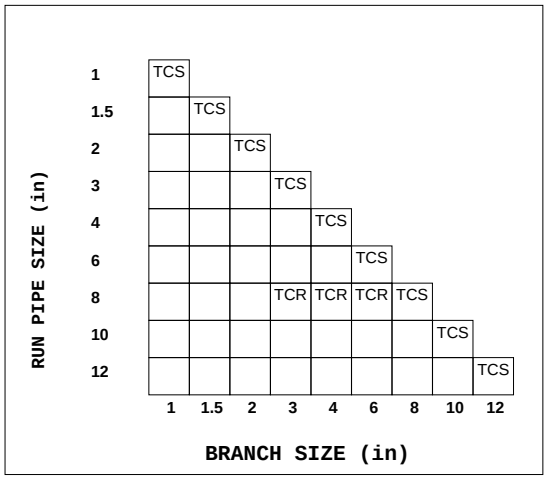
BRANCH TABLE (T_A0AC01_4)



TCS : STRAIGHT CROSS TEE
TCR : REDUCING CROSS TEE

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PIPING CLASS

A0AC04 REV NO. 2

Material : Killed CS
Rating : ASME CLASS 150
Flange Face : RF
C.A.(mm) : 0.00
Gasket : Spiral Wound
Service : PROCESS - CATALYST : / CATALYST
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
2	USE OF SOFT SEATED BALL, PLUG AND BUTTERFLY VALVES SHALL BE LIMITED TO MAXIMUM OF 204DEGC (400DEGF)
6	PIPE THICKNESS CALCULATION TO INCLUDE CORROSION AND EROSION ALLOWANCES DUE TO THE PROCESS CATALYST FLOW, AS PER PROCESS LICENSOR SPECIFICATIONS

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
541	NPT(F) (L)
773	CLASS 300 (B,F,G)

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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		XXS		P01A-0014U	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1.5		XXS		P01A-00162	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	2		XXS		P01A-001R0	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	3		XXS		P01A-001SB	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	4		XXS		P01A-001TV	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	6		XXS		P01A-001VH	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		XXS		P02A-000XJ	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1.5		XXS		P02A-002N4	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	2		XXS		P02A-00111	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		XXS		P02A-002JA	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		XXS		P02A-002K0	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		XXS		P02A-002K1	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		XXS		P03A-000U8	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1.5		XXS		P03A-002KD	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	2		XXS		P03A-000XH	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		XXS		P03A-002FU	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		XXS		P03A-002GH	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		XXS		P03A-002GJ	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		XXS		P21A-002DP	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5		XXS		P21A-003KU	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2		XXS		P21A-002G3	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		XXS		P21A-003GV	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		XXS		P21A-003HF	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6		XXS		P21A-003HG	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5	1	XXS	XXS	P24A-00H61	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	XXS	XXS	P24A-00H63	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	XXS	XXS	P24A-006TT	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	XXS	XXS	P24A-00K07	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	XXS	XXS	P24A-00GPM	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	XXS	XXS	P24A-00GT8	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	XXS	XXS	P24A-00GT9	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	XXS	XXS	P24A-00K08	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	XXS	XXS	P24A-00K09	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5	1	XXS	XXS	P27A-004NR	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	XXS	XXS	P27A-0033N	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	XXS	XXS	P27A-00339	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	XXS	XXS	P27A-006BZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	XXS	XXS	P27A-006C9	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	1.5	XXS	XXS	P27A-0073V	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	XXS	XXS	P27A-0074A	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	XXS	XXS	P27A-0074Z	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	XXS	XXS	P27A-007PA	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	XXS	XXS	P27A-007R2	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5	1	XXS	XXS	P28A-008W0	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	XXS	XXS	P28A-004KN	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	XXS	XXS	P28A-004KP	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	XXS	XXS	P28A-00BP2	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	XXS	XXS	P28A-008GE	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	1.5	XXS	XXS	P28A-00BP3	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	XXS	XXS	P28A-008JV	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	XXS	XXS	P28A-008JW	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	XXS	XXS	P28A-00BP4	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	XXS	XXS	P28A-00BP5	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		XXS		P29A-000W3	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5		XXS		P29A-0031N	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2		XXS		P29A-000YP	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		XXS		P29A-000L4	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		XXS		P29A-000M5	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6		XXS		P29A-000N9	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		10.60mm		P41A-001AT	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		10.60mm		P41A-001AU	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
541	1.5	1			P31B-005J1	Outlet ASTM A105 Class 6000 MSS SP-97 NPT	
541	2 - 2.5	1			P31B-005J3	Outlet ASTM A105 Class 6000 MSS SP-97 NPT	
541	3 - 10	1			P31B-007KG	Outlet ASTM A105 Class 6000 MSS SP-97 NPT	
1	3	1	XXS	XXS	P31B-00B48	Outlet ASTM A105 MSS SP-97 BW	
1	4	1	XXS	XXS	P31B-00B04	Outlet ASTM A105 MSS SP-97 BW	
1	6	1	XXS	XXS	P31B-00AYY	Outlet ASTM A105 MSS SP-97 BW	
1	4	1.5	XXS	XXS	P31B-00BMC	Outlet ASTM A105 MSS SP-97 BW	
1	6	1.5	XXS	XXS	P31B-00BJ3	Outlet ASTM A105 MSS SP-97 BW	
1	6	2	XXS	XXS	P31B-007SA	Outlet ASTM A105 MSS SP-97 BW	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P30B-0002F	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1.5				P30B-0002G	Plug ASTM A105 ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		XXS		P61B-003M2	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	1.5		XXS		P61B-003MC	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	2		XXS		P61B-003MH	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	3		XXS		P61B-0090A	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	4		XXS		P61B-009SB	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	6		XXS		P61B-00765	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
773	1		XXS		P61B-003MB	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	1.5		XXS		P61B-003MR	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	2		XXS		P61B-003MS	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	3		XXS		P61B-0090D	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	4		XXS		P61B-009SC	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	6		XXS		P61B-009SD	Flange WN ASTM A105 Class 300 ASME B16.5 RF	

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BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P67B-000FK	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	1.5				P67B-000FL	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	2				P67B-000FT	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	3				P67B-000FW	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	4				P67B-000FX	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	6				P67B-000FY	Blind flange ASTM A105 Class 150 ASME B16.5 RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P73T-000LA	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000LB	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000LH	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000LL	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000LM	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	6				P73T-000LN	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	3				P73T-000G5	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	4				P73T-000G6	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	6				P73T-000G7	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1-6				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
773	1-6				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	

BALL VALVE (Q)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P84B-001G6	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design C.A.=6.0mm	
1	1.5				P84B-001G7	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design C.A.=6.0mm	
1	2				P84C-006PY	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design C.A.=6.0mm	
1	3				P84C-006PZ	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design C.A.=6.0mm	
1	4				P84C-006R0	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design C.A.=6.0mm	
1	6				P84C-006R1	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design C.A.=6.0mm	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P71B-0008C	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71B-0008D	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	2				P71B-0000P	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	3				P71B-0000N	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	4				P71B-0000M	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	6				P71B-0000L	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	

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BOLT TABLE (B_A0AC04 , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
1	4	0.500	70	P80S-003V4		
1.5	4	0.500	75	P80S-003V5		
2	4	0.625	85	P80S-003XE		
3	4	0.625	95	P80S-003XG		
4	8	0.625	95	P80S-003XG		
6	8	0.750	105	P80S-003XJ		

BOLT TABLE (B_A0AC04_773 , STUD ASME RF, OPTION CODE 773)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
1	4	0.625	80	P80S-003XD		
1.5	4	0.750	95	P80S-00414		
2	8	0.625	90	P80S-003XF		
3	8	0.750	110	P80S-003XK		
4	8	0.750	115	P80S-003XL		
6	12	0.750	125	P80S-003XN		

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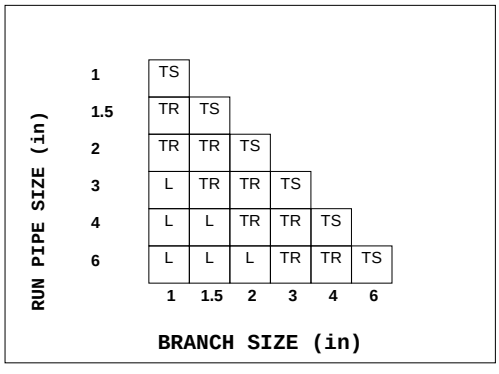
BRANCH TABLE (T_A0AC04)



TS : STRAIGHT TEE
L : OUTLET
TR : REDUCING TEE

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PIPING CLASS

A0J501 REV NO. 2

Material : SS304L
Rating : ASME CLASS 150
Flange Face : RF
C.A.(mm) : 0.00
Gasket : Spiral Wound
Service : PROCESS - WET SEVERE SOUR SERVICE SUBJECT TO NACE + HIC STD + AMINES OR CAUSTIC - STRESS RELIEVED
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
5	BOLTING CONFIRMING TO B7M / 2HM SHALL BE USED UNDER CONDITIONS (A) DIRECT EXPOSURE TO SOUR ENVIRONMENTS (B) WHEN THE BOLTING WILL BE BURIED OR INSULATED

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
200	WITH JACK SCREW (FO)
541	NPT(F) (CA,F,L)
773	CLASS 300 (B,F,G,V)
4608	VALVE WITH NIPPLES (V)

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PIPING CLASS
A0J501 REV NO. 2

PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P01J-002CF	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE Severe wet H2S service	
1	0.75		SCH80S		P01J-002CG	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE Severe wet H2S service	
1	1		SCH80S		P01J-002CH	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE Severe wet H2S service	
1	1.5		SCH80S		P01J-002CJ	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE Severe wet H2S service	
1	2		SCH10S		P01J-002CK	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M BE Severe wet H2S service	
1	3		SCH10S		P01J-002CL	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M BE Severe wet H2S service	
1	4		SCH10S		P01J-002CM	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M BE Severe wet H2S service	
1	6		SCH10S		P01J-002CN	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M BE Severe wet H2S service	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P02J-001VV	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	0.75		SCH80S		P02J-001VW	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	1		SCH80S		P02J-001VX	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	1.5		SCH80S		P02J-001VY	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	2		SCH10S		P02J-001VZ	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	3		SCH10S		P02J-001W0	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	4		SCH10S		P02J-001W1	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	6		SCH10S		P02J-001W2	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P03J-001TA	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	0.75		SCH80S		P03J-001TB	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	1		SCH80S		P03J-001TC	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	1.5		SCH80S		P03J-001TD	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	2		SCH10S		P03J-001TE	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	3		SCH10S		P03J-001TF	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	4		SCH10S		P03J-001TG	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	6		SCH10S		P03J-001TH	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P21J-001JN	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	0.75		SCH80S		P21J-001JP	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1		SCH80S		P21J-001JR	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5		SCH80S		P21J-001JS	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	2		SCH10S		P21J-001JT	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	3		SCH10S		P21J-001JU	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	4		SCH10S		P21J-001JV	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	6		SCH10S		P21J-001KA	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75	SCH80S	SCH80S	P24J-006UM	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5	0.75	SCH80S	SCH80S	P24J-006UN	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	

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REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5	1	SCH80S	SCH80S	P24J-006UP	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	2	1	SCH10S	SCH80S	P24J-006UR	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	2	1.5	SCH10S	SCH80S	P24J-006US	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	3	1.5	SCH10S	SCH80S	P24J-006UT	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	3	2	SCH10S	SCH10S	P24J-006UU	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	4	2	SCH10S	SCH10S	P24J-006UV	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	4	3	SCH10S	SCH10S	P24J-006UW	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	6	3	SCH10S	SCH10S	P24J-006VD	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	6	4	SCH10S	SCH10S	P24J-006VE	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH80S	SCH80S	P27J-005NC	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1	0.5	SCH80S	SCH80S	P27J-005ND	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1	0.75	SCH80S	SCH80S	P27J-005NE	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5	0.5	SCH80S	SCH80S	P27J-005NF	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5	0.75	SCH80S	SCH80S	P27J-005NG	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5	1	SCH80S	SCH80S	P27J-005NH	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	2	0.75	SCH10S	SCH80S	P27J-005NJ	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	2	1	SCH10S	SCH80S	P27J-005NK	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	2	1.5	SCH10S	SCH80S	P27J-005NL	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	3	1.5	SCH10S	SCH80S	P27J-005NM	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	3	2	SCH10S	SCH10S	P27J-005NN	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	4	1.5	SCH10S	SCH80S	P27J-005NP	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	4	2	SCH10S	SCH10S	P27J-005NR	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	4	3	SCH10S	SCH10S	P27J-005NS	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	6	3	SCH10S	SCH10S	P27J-005PA	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	6	4	SCH10S	SCH10S	P27J-005PB	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH80S	SCH80S	P28J-005P7	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1	0.5	SCH80S	SCH80S	P28J-005P8	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1	0.75	SCH80S	SCH80S	P28J-005P9	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5	0.5	SCH80S	SCH80S	P28J-005PA	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5	0.75	SCH80S	SCH80S	P28J-005PB	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5	1	SCH80S	SCH80S	P28J-005PC	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	2	0.75	SCH10S	SCH80S	P28J-005PD	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	2	1	SCH10S	SCH80S	P28J-005PE	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	2	1.5	SCH10S	SCH80S	P28J-005PF	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	3	1.5	SCH10S	SCH80S	P28J-005PG	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	3	2	SCH10S	SCH10S	P28J-005PH	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	4	1.5	SCH10S	SCH80S	P28J-005PJ	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	4	2	SCH10S	SCH10S	P28J-005PK	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	4	3	SCH10S	SCH10S	P28J-005PL	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	

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ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	6	3	SCH10S	SCH10S	P28J-005R6	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	6	4	SCH10S	SCH10S	P28J-005R7	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P29J-001CY	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	0.75		SCH80S		P29J-001CZ	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1		SCH80S		P29J-001D0	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5		SCH80S		P29J-001D1	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	2		SCH10S		P29J-001D2	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	3		SCH10S		P29J-001D3	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	4		SCH10S		P29J-001D4	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	6		SCH10S		P29J-002CX	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
541	0.75				P29K-00046	Cap ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 NPT Severe wet H2S service	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P41J-001TC	Straight nipple ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Severe wet H2S service	
1	0.75		SCH80S		P41J-001TD	Straight nipple ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Severe wet H2S service	
1	1		SCH80S		P41J-001TE	Straight nipple ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Severe wet H2S service	
1	1.5		SCH80S		P41J-001TF	Straight nipple ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Severe wet H2S service	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
541	1	0.75			P31K-00FLV	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 NPT Severe wet H2S service	
541	1.5	0.75			P31K-00FLU	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 NPT Severe wet H2S service	
541	2 - 2.5	0.75			P31K-00GFC	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 NPT Severe wet H2S service	
541	3 - 5	0.75			P31K-00GFD	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 NPT Severe wet H2S service	
541	6 - 12	0.75			P31K-00GFE	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 NPT Severe wet H2S service	
1	2	0.75	SCH10S	SCH80S	P31K-00EFT	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	3	0.75	SCH10S	SCH80S	P31K-00EFU	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	4	0.75	SCH10S	SCH80S	P31K-00EFW	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	6	0.75	SCH10S	SCH80S	P31K-00EFZ	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	3	1	SCH10S	SCH80S	P31K-00EFV	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	4	1	SCH10S	SCH80S	P31K-00EFX	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	6	1	SCH10S	SCH80S	P31K-00EG0	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	4	1.5	SCH10S	SCH80S	P31K-00EFY	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	6	1.5	SCH10S	SCH80S	P31K-00EG1	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	6	2	SCH10S	SCH10S	P31K-00EG2	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30K-00051	Plug ASTM A182 Grade F304/F304L dual grade ASME B16.11 NPT Round head Severe wet H2S service	
1	0.75				P30K-00052	Plug ASTM A182 Grade F304/F304L dual grade ASME B16.11 NPT Round head Severe wet H2S service	
1	1				P30K-00053	Plug ASTM A182 Grade F304/F304L dual grade ASME B16.11 NPT Round head Severe wet H2S service	
1	1.5				P30K-00054	Plug ASTM A182 Grade F304/F304L dual grade ASME B16.11 NPT Round head Severe wet H2S service	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P61K-005AY	Flange WN ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	0.75		SCH80S		P61K-005AZ	Flange WN ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	1		SCH80S		P61K-005B0	Flange WN ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	1.5		SCH80S		P61K-005B1	Flange WN ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	

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FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2		SCH10S		P61K-005B7	Flange WN ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	3		SCH10S		P61K-005BA	Flange WN ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	4		SCH10S		P61K-005BB	Flange WN ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	6		SCH10S		P61K-005BC	Flange WN ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
541	0.5				P61K-005ZF	Flange NPT ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
541	0.75				P61K-005ZD	Flange NPT ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
773	0.5		SCH80S		P61K-005AH	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
773	0.75		SCH80S		P61K-005AJ	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
773	1		SCH80S		P61K-005AK	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
773	1.5		SCH80S		P61K-005AL	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
773	2		SCH10S		P61K-005AM	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
773	3		SCH10S		P61K-005AN	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
773	4		SCH10S		P61K-005AP	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
773	6		SCH10S		P61K-005C6	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67K-001J2	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	0.75				P67K-001J3	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	1				P67K-001J4	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	1.5				P67K-001J5	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	2				P67K-001JB	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	3				P67K-001JE	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	4				P67K-001JF	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	6				P67K-001JG	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000L8	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000L9	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000LA	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000LB	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000LH	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000LL	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000LM	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	6				P73T-000LN	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	0.5				P73T-000FT	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	0.75				P73T-000FU	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	3				P73T-000G5	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	4				P73T-000G6	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	6				P73T-000G7	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-6				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
773	0.5-6				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	

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GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81K-001AJ	Gate valve ASTM A182 Grade F304/F304L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service	
1	0.75				P81K-001AK	Gate valve ASTM A182 Grade F304/F304L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service	
1	1				P81K-001AL	Gate valve ASTM A182 Grade F304/F304L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service	
1	1.5				P81K-001AM	Gate valve ASTM A182 Grade F304/F304L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service	
1	2				P81L-002PH	Gate valve ASTM A351 Grade CF8 Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service	
1	3				P81L-002PJ	Gate valve ASTM A351 Grade CF8 Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service	
1	4				P81L-002PK	Gate valve ASTM A351 Grade CF8 Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service	
1	6				P81L-002PL	Gate valve ASTM A351 Grade CF8 Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service	
4608	0.75				P81K-001NX	Gate valve ASTM A182 Grade F304/F304L dual grade Class 150 API 602 BW both sides w/ nipples BE - NPT ASTM A312-TP304(L) dual grade Seamless Sch80S-nipple Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service	
773	2				P81L-0037R	Gate valve ASTM A351 Grade CF8 Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82K-000WG	Globe valve ASTM A182 Grade F304/F304L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service	
1	0.75				P82K-000WH	Globe valve ASTM A182 Grade F304/F304L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service	
1	1				P82K-000WJ	Globe valve ASTM A182 Grade F304/F304L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service	
1	1.5				P82K-000WK	Globe valve ASTM A182 Grade F304/F304L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service	
1	2				P82L-001FZ	Globe valve ASTM A351 Grade CF8 Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service	
1	3				P82L-001G0	Globe valve ASTM A351 Grade CF8 Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service	
1	4				P82L-001G1	Globe valve ASTM A351 Grade CF8 Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service	
1	6				P82L-001G2	Globe valve ASTM A351 Grade CF8 Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83K-000U3	Check valve ASTM A182 Grade F304/F304L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Severe wet H2S service Amine service	
1	0.75				P83K-000U4	Check valve ASTM A182 Grade F304/F304L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Severe wet H2S service Amine service	
1	1				P83K-000U5	Check valve ASTM A182 Grade F304/F304L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Severe wet H2S service Amine service	
1	1.5				P83K-000U6	Check valve ASTM A182 Grade F304/F304L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Severe wet H2S service Amine service	
1	2				P83L-001EE	Check valve ASTM A351 Grade CF8 Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service Amine service	
1	3				P83L-001EF	Check valve ASTM A351 Grade CF8 Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service Amine service	
1	4				P83L-001EG	Check valve ASTM A351 Grade CF8 Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service Amine service	
1	6				P83L-001EH	Check valve ASTM A351 Grade CF8 Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service Amine service	

ORIFICE FLANGE (FO)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2		SCH10S		P66K-003T7	Orifice flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Severe wet H2S service	
200	2		SCH10S		P66K-003TD	Orifice flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Severe wet H2S service with Jack screw	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71K-000BG	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	
1	0.75				P71K-000BH	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	
1	1				P71K-000BJ	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	
1	1.5				P71K-000BK	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	
1	2				P71K-000BN	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	
1	3				P71K-000BP	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	

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SPECT BLANK (SB)							
OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	4				P71K-000BR	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	
1	6				P71K-000BS	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	

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BOLT TABLE (B_A0J501 , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	60	P80S-008SY		
0.75	4	0.500	65	P80S-008SZ		
1	4	0.500	70	P80S-008T0		
1.5	4	0.500	75	P80S-008T1		
2	4	0.625	85	P80S-0090A		
3	4	0.625	95	P80S-0090C		
4	8	0.625	95	P80S-0090C		
6	8	0.750	105	P80S-0090E		

BOLT TABLE (B_A0J501_773 , STUD ASME RF, OPTION CODE 773)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-008T0		
0.75	4	0.625	75	P80S-00908		
1	4	0.625	80	P80S-00909		
1.5	4	0.750	95	P80S-005Z4		
2	8	0.625	90	P80S-0090B		
3	8	0.750	110	P80S-0090F		
4	8	0.750	115	P80S-0090G		
6	12	0.750	125	P80S-0090J		

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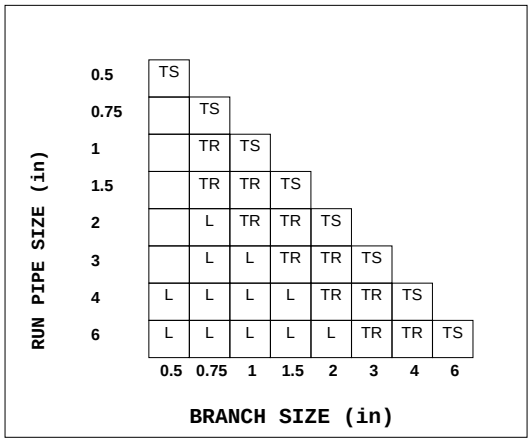
BRANCH TABLE (T_A0J501)



TS : STRAIGHT TEE
TR : REDUCING TEE
L : OUTLET

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Material	:	SS304L
Rating	:	ASME CLASS 150
Flange Face	:	RF
C.A.(mm)	:	0.00
Gasket	:	Spiral Wound
Service	:	PROCESS - WET SEVERE SOUR SERVICE SUBJECT TO NACE + HIC STD + AMINES OR CAUSTIC - STRESS RELIEVED
Design Code	:	ASME B31.3
Heat Treatment	:	

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
5	BOLTING CONFIRMING TO B7M / 2HM SHALL BE USED UNDER CONDITIONS (A) DIRECT EXPOSURE TO SOUR ENVIRONMENTS (B) WHEN THE BOLTING WILL BE BURIED OR INSULATED

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
541	NPT(F) (CA,F,L)
773	CLASS 300 (B,F,G,V)
4608	VALVE WITH NIPPLES (V)

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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P01J-002CF	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE Severe wet H2S service	
1	0.75		SCH80S		P01J-002CG	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE Severe wet H2S service	
1	1		SCH80S		P01J-002CH	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE Severe wet H2S service	
1	1.5		SCH80S		P01J-002CJ	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE Severe wet H2S service	
1	2		SCH10S		P01J-002CK	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M BE Severe wet H2S service	
1	3		SCH10S		P01J-002CL	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M BE Severe wet H2S service	
1	4		SCH10S		P01J-002CM	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M BE Severe wet H2S service	
1	6		SCH10S		P01J-002CN	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M BE Severe wet H2S service	
1	8		SCH10S		P01J-002CX	Pipe ASTM A358 Grade 304/304L Class 1 dual grade EFW ASME B36.10M/B36.19M BE Severe wet H2S service	
1	10		SCH10S		P01J-002CP	Pipe ASTM A358 Grade 304/304L Class 1 dual grade EFW ASME B36.10M/B36.19M BE Severe wet H2S service	
1	12		SCH10S		P01J-002CR	Pipe ASTM A358 Grade 304/304L Class 1 dual grade EFW ASME B36.10M/B36.19M BE Severe wet H2S service	
1	14		SCH10S		P01J-002CS	Pipe ASTM A358 Grade 304/304L Class 1 dual grade EFW ASME B36.10M/B36.19M BE Severe wet H2S service	
1	16		SCH10S		P01J-002CT	Pipe ASTM A358 Grade 304/304L Class 1 dual grade EFW ASME B36.10M/B36.19M BE Severe wet H2S service	
1	18		SCH10S		P01J-002CU	Pipe ASTM A358 Grade 304/304L Class 1 dual grade EFW ASME B36.10M/B36.19M BE Severe wet H2S service	
1	20		SCH10S		P01J-002CV	Pipe ASTM A358 Grade 304/304L Class 1 dual grade EFW ASME B36.10M/B36.19M BE Severe wet H2S service	
1	24		SCH10S		P01J-002CW	Pipe ASTM A358 Grade 304/304L Class 1 dual grade EFW ASME B36.10M/B36.19M BE Severe wet H2S service	
1	30		SCH10S		P01J-002PG	Pipe ASTM A358 Grade 304/304L Class 1 dual grade EFW ASME B36.10M/B36.19M BE Severe wet H2S service	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P02J-001VV	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	0.75		SCH80S		P02J-001VW	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	1		SCH80S		P02J-001VX	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	1.5		SCH80S		P02J-001VY	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	2		SCH10S		P02J-001VZ	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	3		SCH10S		P02J-001W0	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	4		SCH10S		P02J-001W1	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	6		SCH10S		P02J-001W2	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	8		SCH10S		P02J-001WA	90 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius Severe wet H2S service	
1	10		SCH10S		P02J-001W3	90 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius Severe wet H2S service	
1	12		SCH10S		P02J-001W4	90 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius Severe wet H2S service	
1	14		SCH10S		P02J-001W5	90 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius Severe wet H2S service	
1	16		SCH10S		P02J-001W6	90 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius Severe wet H2S service	
1	18		SCH10S		P02J-001W7	90 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius Severe wet H2S service	
1	20		SCH10S		P02J-001W8	90 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius Severe wet H2S service	
1	24		SCH10S		P02J-001W9	90 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius Severe wet H2S service	
1	30		SCH10S		P02J-0023N	90 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius Severe wet H2S service	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P03J-001TA	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	0.75		SCH80S		P03J-001TB	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	1		SCH80S		P03J-001TC	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	1.5		SCH80S		P03J-001TD	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	2		SCH10S		P03J-001TE	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3		SCH10S		P03J-001TF	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	4		SCH10S		P03J-001TG	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	6		SCH10S		P03J-001TH	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	8		SCH10S		P03J-001TM	45 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius Severe wet H2S service	
1	10		SCH10S		P03J-001TJ	45 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius Severe wet H2S service	
1	12		SCH10S		P03J-001TK	45 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius Severe wet H2S service	
1	14		SCH10S		P03J-001TL	45 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius Severe wet H2S service	
1	16		SCH10S		P03J-001TN	45 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius Severe wet H2S service	
1	18		SCH10S		P03J-001TP	45 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius Severe wet H2S service	
1	20		SCH10S		P03J-001TR	45 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius Severe wet H2S service	
1	24		SCH10S		P03J-001TS	45 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius Severe wet H2S service	
1	30		SCH10S		P03J-0023E	45 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius Severe wet H2S service	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P21J-001JN	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	0.75		SCH80S		P21J-001JP	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1		SCH80S		P21J-001JR	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5		SCH80S		P21J-001JS	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	2		SCH10S		P21J-001JT	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	3		SCH10S		P21J-001JU	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	4		SCH10S		P21J-001JV	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	6		SCH10S		P21J-001KA	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	8		SCH10S		P21J-001K9	Straight tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	10		SCH10S		P21J-001K2	Straight tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	12		SCH10S		P21J-001K3	Straight tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	14		SCH10S		P21J-001K4	Straight tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	16		SCH10S		P21J-001K5	Straight tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	18		SCH10S		P21J-001K6	Straight tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	20		SCH10S		P21J-001K7	Straight tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	24		SCH10S		P21J-001K8	Straight tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	30		SCH10S		P21J-001TN	Straight tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75	SCH80S	SCH80S	P24J-006UM	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5	0.75	SCH80S	SCH80S	P24J-006UN	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5	1	SCH80S	SCH80S	P24J-006UP	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	2	1	SCH10S	SCH80S	P24J-006UR	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	2	1.5	SCH10S	SCH80S	P24J-006US	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	3	1.5	SCH10S	SCH80S	P24J-006UT	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	3	2	SCH10S	SCH10S	P24J-006UU	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	4	2	SCH10S	SCH10S	P24J-006UV	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	4	3	SCH10S	SCH10S	P24J-006UW	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	6	3	SCH10S	SCH10S	P24J-006VD	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	

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REDUCING TEE (TR)							
OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	6	4	SCH10S	SCH10S	P24J-006VE	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	8	4	SCH10S	SCH10S	P24J-006VF	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	8	6	SCH10S	SCH10S	P24J-006VG	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	10	4	SCH10S	SCH10S	P24J-006VH	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	10	6	SCH10S	SCH10S	P24J-006VJ	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	10	8	SCH10S	SCH10S	P24J-006VK	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	12	6	SCH10S	SCH10S	P24J-006VM	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	12	8	SCH10S	SCH10S	P24J-006VN	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	12	10	SCH10S	SCH10S	P24J-006VL	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	14	6	SCH10S	SCH10S	P24J-006VS	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	14	8	SCH10S	SCH10S	P24J-006VT	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	14	10	SCH10S	SCH10S	P24J-006VP	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	14	12	SCH10S	SCH10S	P24J-006VR	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	16	6	SCH10S	SCH10S	P24J-006VX	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	16	8	SCH10S	SCH10S	P24J-006VY	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	16	10	SCH10S	SCH10S	P24J-006VU	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	16	12	SCH10S	SCH10S	P24J-006VV	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	16	14	SCH10S	SCH10S	P24J-006VW	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	18	8	SCH10S	SCH10S	P24J-006W3	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	18	10	SCH10S	SCH10S	P24J-006VZ	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	18	12	SCH10S	SCH10S	P24J-006W0	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	18	14	SCH10S	SCH10S	P24J-006W1	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	18	16	SCH10S	SCH10S	P24J-006W2	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	20	8	SCH10S	SCH10S	P24J-006W9	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	20	10	SCH10S	SCH10S	P24J-006W4	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	20	12	SCH10S	SCH10S	P24J-006W5	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	20	14	SCH10S	SCH10S	P24J-006W6	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	20	16	SCH10S	SCH10S	P24J-006W7	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	20	18	SCH10S	SCH10S	P24J-006W8	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	24	10	SCH10S	SCH10S	P24J-006WA	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	24	12	SCH10S	SCH10S	P24J-006WB	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	24	14	SCH10S	SCH10S	P24J-006WC	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	24	16	SCH10S	SCH10S	P24J-006WD	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	24	18	SCH10S	SCH10S	P24J-006WE	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	24	20	SCH10S	SCH10S	P24J-006WF	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	30	10	SCH10S	SCH10S	P24J-007PR	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	30	12	SCH10S	SCH10S	P24J-007PS	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	30	14	SCH10S	SCH10S	P24J-007PT	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	30	16	SCH10S	SCH10S	P24J-007PU	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	30	18	SCH10S	SCH10S	P24J-007PV	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	30	20	SCH10S	SCH10S	P24J-007PW	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	30	24	SCH10S	SCH10S	P24J-007PX	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	

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CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH80S	SCH80S	P27J-005NC	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1	0.5	SCH80S	SCH80S	P27J-005ND	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1	0.75	SCH80S	SCH80S	P27J-005NE	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5	0.5	SCH80S	SCH80S	P27J-005NF	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5	0.75	SCH80S	SCH80S	P27J-005NG	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5	1	SCH80S	SCH80S	P27J-005NH	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	2	0.75	SCH10S	SCH80S	P27J-005NJ	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	2	1	SCH10S	SCH80S	P27J-005NK	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	2	1.5	SCH10S	SCH80S	P27J-005NL	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	3	1.5	SCH10S	SCH80S	P27J-005NM	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	3	2	SCH10S	SCH10S	P27J-005NN	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	4	1.5	SCH10S	SCH80S	P27J-005NP	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	4	2	SCH10S	SCH10S	P27J-005NR	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	4	3	SCH10S	SCH10S	P27J-005NS	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	6	3	SCH10S	SCH10S	P27J-005PA	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	6	4	SCH10S	SCH10S	P27J-005PB	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	8	4	SCH10S	SCH10S	P27J-005PC	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	8	6	SCH10S	SCH10S	P27J-005PD	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	10	4	SCH10S	SCH10S	P27J-005PE	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	10	6	SCH10S	SCH10S	P27J-005PF	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	10	8	SCH10S	SCH10S	P27J-005PG	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	12	6	SCH10S	SCH10S	P27J-005PJ	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	12	8	SCH10S	SCH10S	P27J-005PK	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	12	10	SCH10S	SCH10S	P27J-005PH	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	14	6	SCH10S	SCH10S	P27J-005PN	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	14	8	SCH10S	SCH10S	P27J-005PP	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	14	10	SCH10S	SCH10S	P27J-005PL	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	14	12	SCH10S	SCH10S	P27J-005PM	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	16	8	SCH10S	SCH10S	P27J-005PU	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	16	10	SCH10S	SCH10S	P27J-005PR	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	16	12	SCH10S	SCH10S	P27J-005PS	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	16	14	SCH10S	SCH10S	P27J-005PT	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	18	10	SCH10S	SCH10S	P27J-005PV	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	18	12	SCH10S	SCH10S	P27J-005PW	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	18	14	SCH10S	SCH10S	P27J-005PX	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	18	16	SCH10S	SCH10S	P27J-005R5	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	20	12	SCH10S	SCH10S	P27J-005PY	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	20	14	SCH10S	SCH10S	P27J-005PZ	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	20	16	SCH10S	SCH10S	P27J-005R0	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	20	18	SCH10S	SCH10S	P27J-005R1	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	24	16	SCH10S	SCH10S	P27J-005R2	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	24	18	SCH10S	SCH10S	P27J-005R3	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	24	20	SCH10S	SCH10S	P27J-005R4	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	30	20	SCH10S	SCH10S	P27J-006G8	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	30	24	SCH10S	SCH10S	P27J-006G9	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH80S	SCH80S	P28J-005P7	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1	0.5	SCH80S	SCH80S	P28J-005P8	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1	0.75	SCH80S	SCH80S	P28J-005P9	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5	0.5	SCH80S	SCH80S	P28J-005PA	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5	0.75	SCH80S	SCH80S	P28J-005PB	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5	1	SCH80S	SCH80S	P28J-005PC	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	2	0.75	SCH10S	SCH80S	P28J-005PD	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	2	1	SCH10S	SCH80S	P28J-005PE	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	2	1.5	SCH10S	SCH80S	P28J-005PF	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	3	1.5	SCH10S	SCH80S	P28J-005PG	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	3	2	SCH10S	SCH10S	P28J-005PH	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	4	1.5	SCH10S	SCH80S	P28J-005PJ	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	4	2	SCH10S	SCH10S	P28J-005PK	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	4	3	SCH10S	SCH10S	P28J-005PL	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	6	3	SCH10S	SCH10S	P28J-005R6	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	6	4	SCH10S	SCH10S	P28J-005R7	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	8	4	SCH10S	SCH10S	P28J-005R8	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	8	6	SCH10S	SCH10S	P28J-005R9	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	10	4	SCH10S	SCH10S	P28J-005RC	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	10	6	SCH10S	SCH10S	P28J-005RA	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	10	8	SCH10S	SCH10S	P28J-005RB	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	12	6	SCH10S	SCH10S	P28J-005RE	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	12	8	SCH10S	SCH10S	P28J-005RF	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	12	10	SCH10S	SCH10S	P28J-005RD	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	14	6	SCH10S	SCH10S	P28J-005RJ	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	14	8	SCH10S	SCH10S	P28J-005RK	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	14	10	SCH10S	SCH10S	P28J-005RG	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	14	12	SCH10S	SCH10S	P28J-005RH	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	16	8	SCH10S	SCH10S	P28J-005RP	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	16	10	SCH10S	SCH10S	P28J-005RL	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	16	12	SCH10S	SCH10S	P28J-005RM	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	16	14	SCH10S	SCH10S	P28J-005RN	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	18	10	SCH10S	SCH10S	P28J-005RR	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	18	12	SCH10S	SCH10S	P28J-005RS	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	18	14	SCH10S	SCH10S	P28J-005RT	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	18	16	SCH10S	SCH10S	P28J-005RU	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	20	12	SCH10S	SCH10S	P28J-005RV	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	20	14	SCH10S	SCH10S	P28J-005RW	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	20	16	SCH10S	SCH10S	P28J-005RX	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	20	18	SCH10S	SCH10S	P28J-005RY	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	24	16	SCH10S	SCH10S	P28J-005RZ	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	

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ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	24	18	SCH10S	SCH10S	P28J-005S0	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	24	20	SCH10S	SCH10S	P28J-005S1	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	30	20	SCH10S	SCH10S	P28J-006HF	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	30	24	SCH10S	SCH10S	P28J-006HG	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P29J-001CY	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	0.75		SCH80S		P29J-001CZ	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1		SCH80S		P29J-001D0	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5		SCH80S		P29J-001D1	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	2		SCH10S		P29J-001D2	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	3		SCH10S		P29J-001D3	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	4		SCH10S		P29J-001D4	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	6		SCH10S		P29J-002CX	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	8		SCH10S		P29J-002JA	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	10		SCH10S		P29J-001GS	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	12		SCH10S		P29J-001JC	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	14		SCH10S		P29J-001KT	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	16		SCH10S		P29J-001MD	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	18		SCH10S		P29J-001NR	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	20		SCH10S		P29J-001SK	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	24		SCH10S		P29J-001V3	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	30		SCH10S		P29J-001ZX	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
541	0.75				P29K-00046	Cap ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 NPT Severe wet H2S service	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P41J-001TC	Straight nipple ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Severe wet H2S service	
1	0.75		SCH80S		P41J-001TD	Straight nipple ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Severe wet H2S service	
1	1		SCH80S		P41J-001TE	Straight nipple ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Severe wet H2S service	
1	1.5		SCH80S		P41J-001TF	Straight nipple ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Severe wet H2S service	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
541	1	0.75			P31K-00FLV	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 NPT Severe wet H2S service	
541	1.5	0.75			P31K-00FLU	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 NPT Severe wet H2S service	
541	2 - 2.5	0.75			P31K-00GFC	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 NPT Severe wet H2S service	
541	3 - 5	0.75			P31K-00GFD	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 NPT Severe wet H2S service	
541	6 - 12	0.75			P31K-00GFE	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 NPT Severe wet H2S service	
541	14 - 36	0.75			P31K-00GFF	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 NPT Severe wet H2S service	
1	2	0.75	SCH10S	SCH80S	P31K-00EFT	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	3	0.75	SCH10S	SCH80S	P31K-00EFU	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	4	0.75	SCH10S	SCH80S	P31K-00EFW	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	6	0.75	SCH10S	SCH80S	P31K-00EFZ	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	8	0.75	SCH10S	SCH80S	P31K-00EG3	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	10	0.75	SCH10S	SCH80S	P31K-00EG8	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	12	0.75	SCH10S	SCH80S	P31K-00EGD	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	14	0.75	SCH10S	SCH80S	P31K-00EGK	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	16	0.75	SCH10S	SCH80S	P31K-00EGS	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	

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OUTLET (L)							
OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	18	0.75	SCH10S	SCH80S	P31K-00EGY	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	20	0.75	SCH10S	SCH80S	P31K-00EH5	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	24	0.75	SCH10S	SCH80S	P31K-00EHC	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	30	0.75	SCH10S	SCH80S	P31K-00F9T	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	3	1	SCH10S	SCH80S	P31K-00EFV	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	4	1	SCH10S	SCH80S	P31K-00EFX	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	6	1	SCH10S	SCH80S	P31K-00EG0	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	8	1	SCH10S	SCH80S	P31K-00EG4	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	10	1	SCH10S	SCH80S	P31K-00EG9	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	12	1	SCH10S	SCH80S	P31K-00EGE	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	14	1	SCH10S	SCH80S	P31K-00EGL	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	16	1	SCH10S	SCH80S	P31K-00EGT	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	18	1	SCH10S	SCH80S	P31K-00EGZ	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	20	1	SCH10S	SCH80S	P31K-00EH6	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	24	1	SCH10S	SCH80S	P31K-00EHD	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	30	1	SCH10S	SCH80S	P31K-00F9U	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	4	1.5	SCH10S	SCH80S	P31K-00EFY	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	6	1.5	SCH10S	SCH80S	P31K-00EG1	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	8	1.5	SCH10S	SCH80S	P31K-00EG5	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	10	1.5	SCH10S	SCH80S	P31K-00EGA	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	12	1.5	SCH10S	SCH80S	P31K-00EGF	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	14	1.5	SCH10S	SCH80S	P31K-00EGM	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	16	1.5	SCH10S	SCH80S	P31K-00EGU	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	18	1.5	SCH10S	SCH80S	P31K-00EH0	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	20	1.5	SCH10S	SCH80S	P31K-00EH7	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	24	1.5	SCH10S	SCH80S	P31K-00EHE	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	30	1.5	SCH10S	SCH80S	P31K-00F9V	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	6	2	SCH10S	SCH10S	P31K-00EG2	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	8	2	SCH10S	SCH10S	P31K-00EG6	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	10	2	SCH10S	SCH10S	P31K-00EGB	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	12	2	SCH10S	SCH10S	P31K-00EGG	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	14	2	SCH10S	SCH10S	P31K-00EGN	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	16	2	SCH10S	SCH10S	P31K-00EGV	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	18	2	SCH10S	SCH10S	P31K-00EH1	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	20	2	SCH10S	SCH10S	P31K-00EH8	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	24	2	SCH10S	SCH10S	P31K-00EHF	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	30	2	SCH10S	SCH10S	P31K-00F9W	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	8	3	SCH10S	SCH10S	P31K-00EG7	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	10	3	SCH10S	SCH10S	P31K-00EGC	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	12	3	SCH10S	SCH10S	P31K-00EGH	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	14	3	SCH10S	SCH10S	P31K-00EGP	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	16	3	SCH10S	SCH10S	P31K-00EGW	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	18	3	SCH10S	SCH10S	P31K-00EH2	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	20	3	SCH10S	SCH10S	P31K-00EH9	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	24	3	SCH10S	SCH10S	P31K-00EHG	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	30	3	SCH10S	SCH10S	P31K-00F9X	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	12	4	SCH10S	SCH10S	P31K-00EGJ	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	14	4	SCH10S	SCH10S	P31K-00EGR	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	16	4	SCH10S	SCH10S	P31K-00EGX	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	18	4	SCH10S	SCH10S	P31K-00EH3	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	20	4	SCH10S	SCH10S	P31K-00EHA	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	24	4	SCH10S	SCH10S	P31K-00EHH	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	30	4	SCH10S	SCH10S	P31K-00F9Y	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	18	6	SCH10S	SCH10S	P31K-00EH4	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	20	6	SCH10S	SCH10S	P31K-00EHB	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	24	6	SCH10S	SCH10S	P31K-00EHJ	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	30	6	SCH10S	SCH10S	P31K-00F9Z	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	

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PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30K-00051	Plug ASTM A182 Grade F304/F304L dual grade ASME B16.11 NPT Round head Severe wet H2S service	
1	0.75				P30K-00052	Plug ASTM A182 Grade F304/F304L dual grade ASME B16.11 NPT Round head Severe wet H2S service	
1	1				P30K-00053	Plug ASTM A182 Grade F304/F304L dual grade ASME B16.11 NPT Round head Severe wet H2S service	
1	1.5				P30K-00054	Plug ASTM A182 Grade F304/F304L dual grade ASME B16.11 NPT Round head Severe wet H2S service	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P61K-005AY	Flange WN ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	0.75		SCH80S		P61K-005AZ	Flange WN ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	1		SCH80S		P61K-005B0	Flange WN ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	1.5		SCH80S		P61K-005B1	Flange WN ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	2		SCH10S		P61K-005B7	Flange WN ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	3		SCH10S		P61K-005BA	Flange WN ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	4		SCH10S		P61K-005BB	Flange WN ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	6		SCH10S		P61K-005BC	Flange WN ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	8		SCH10S		P61K-005BD	Flange WN ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	10		SCH10S		P61K-005B2	Flange WN ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	12		SCH10S		P61K-005B3	Flange WN ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	14		SCH10S		P61K-005B4	Flange WN ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	16		SCH10S		P61K-005B5	Flange WN ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	18		SCH10S		P61K-005B6	Flange WN ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	20		SCH10S		P61K-005B8	Flange WN ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	24		SCH10S		P61K-005B9	Flange WN ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	30		SCH10S		P61K-005Y0	Flange WN ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.47 Series B RF Severe wet H2S service	
541	0.5				P61K-005ZF	Flange NPT ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
541	0.75				P61K-005ZD	Flange NPT ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
773	0.5		SCH80S		P61K-005AH	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
773	0.75		SCH80S		P61K-005AJ	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
773	1		SCH80S		P61K-005AK	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
773	1.5		SCH80S		P61K-005AL	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
773	2		SCH10S		P61K-005AM	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
773	3		SCH10S		P61K-005AN	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
773	4		SCH10S		P61K-005AP	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
773	6		SCH10S		P61K-005C6	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
773	8		SCH10S		P61K-005C7	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
773	10		SCH10S		P61K-005BZ	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
773	12		SCH10S		P61K-005C0	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
773	14		SCH10S		P61K-005C1	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
773	16		SCH10S		P61K-005C2	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
773	18		SCH10S		P61K-005C3	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
773	20		SCH10S		P61K-005C4	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
773	24		SCH10S		P61K-005C5	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
773	30		SCH10S		P61K-005Y1	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.47 Series B RF Severe wet H2S service	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67K-001J2	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	0.75				P67K-001J3	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	1				P67K-001J4	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	1.5				P67K-001J5	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	2				P67K-001JB	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	3				P67K-001JE	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	4				P67K-001JF	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	6				P67K-001JG	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	8				P67K-001JH	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	10				P67K-001J6	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	12				P67K-001J7	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	14				P67K-001J8	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	16				P67K-001J9	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	18				P67K-001JA	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	20				P67K-001JC	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	24				P67K-001JD	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	30				P67K-001UR	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.47 Series B RF Severe wet H2S service	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000L8	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000L9	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000LA	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000LB	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000LH	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000LL	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000LM	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	6				P73T-000LN	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	8				P73T-000LP	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	10				P73T-000LC	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	12				P73T-000LD	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	14				P73T-000LE	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	16				P73T-000LF	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	18				P73T-000LG	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	20				P73T-000LJ	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	24				P73T-000LK	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	30				P73T-000LT	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	0.5				P73T-000FT	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	0.75				P73T-000FU	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	3				P73T-000G5	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	4				P73T-000G6	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	6				P73T-000G7	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	8				P73T-000G8	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	10				P73T-000FX	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	12				P73T-000FY	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	14				P73T-000FZ	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	16				P73T-000G0	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	18				P73T-000G1	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	20				P73T-000G3	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	24				P73T-000G4	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	30				P73T-000H9	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-16				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	

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BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	18-24				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
1	30				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
773	0.5-10				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
773	12-30				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81K-001AJ	Gate valve ASTM A182 Grade F304/F304L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service	
1	0.75				P81K-001AK	Gate valve ASTM A182 Grade F304/F304L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service	
1	1				P81K-001AL	Gate valve ASTM A182 Grade F304/F304L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service	
1	1.5				P81K-001AM	Gate valve ASTM A182 Grade F304/F304L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service	
1	2				P81L-002PH	Gate valve ASTM A351 Grade CF8 Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service	
1	3				P81L-002PJ	Gate valve ASTM A351 Grade CF8 Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service	
1	4				P81L-002PK	Gate valve ASTM A351 Grade CF8 Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service	
1	6				P81L-002PL	Gate valve ASTM A351 Grade CF8 Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service	
1	8				P81L-002PP	Gate valve ASTM A351 Grade CF8 Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service	
1	10				P81L-002PM	Gate valve ASTM A351 Grade CF8 Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service	
1	12				P81L-002PN	Gate valve ASTM A351 Grade CF8 Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service	
1	14				P81L-002PR	Gate valve ASTM A351 Grade CF8 Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Severe wet H2S service Amine service	
1	16				P81L-002YL	Gate valve ASTM A351 Grade CF8 Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Severe wet H2S service Amine service	
1	18				P81L-002YM	Gate valve ASTM A351 Grade CF8 Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Severe wet H2S service Amine service	
1	20				P81L-002YN	Gate valve ASTM A351 Grade CF8 Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Severe wet H2S service Amine service	
1	24				P81L-002YP	Gate valve ASTM A351 Grade CF8 Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Severe wet H2S service Amine service	
4608	0.75				P81K-001NX	Gate valve ASTM A182 Grade F304/F304L dual grade Class 150 API 602 BW both sides w/ nipples BE - NPT ASTM A312-TP304(L) dual grade Seamless Sch80S-nipple Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service	
773	2				P81L-0037R	Gate valve ASTM A351 Grade CF8 Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82K-000WG	Globe valve ASTM A182 Grade F304/F304L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service	
1	0.75				P82K-000WH	Globe valve ASTM A182 Grade F304/F304L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service	
1	1				P82K-000WJ	Globe valve ASTM A182 Grade F304/F304L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service	
1	1.5				P82K-000WK	Globe valve ASTM A182 Grade F304/F304L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service	
1	2				P82L-001FZ	Globe valve ASTM A351 Grade CF8 Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service	
1	3				P82L-001G0	Globe valve ASTM A351 Grade CF8 Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service	
1	4				P82L-001G1	Globe valve ASTM A351 Grade CF8 Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service	
1	6				P82L-001G2	Globe valve ASTM A351 Grade CF8 Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83K-000U3	Check valve ASTM A182 Grade F304/F304L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Severe wet H2S service Amine service	
1	0.75				P83K-000U4	Check valve ASTM A182 Grade F304/F304L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Severe wet H2S service Amine service	
1	1				P83K-000U5	Check valve ASTM A182 Grade F304/F304L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Severe wet H2S service Amine service	
1	1.5				P83K-000U6	Check valve ASTM A182 Grade F304/F304L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Severe wet H2S service Amine service	
1	2				P83L-001EE	Check valve ASTM A351 Grade CF8 Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service Amine service	
1	3				P83L-001EF	Check valve ASTM A351 Grade CF8 Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service Amine service	

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CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	4				P83L-001EG	Check valve ASTM A351 Grade CF8 Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service Amine service	
1	6				P83L-001EH	Check valve ASTM A351 Grade CF8 Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service Amine service	
1	8				P83L-001HL	Check valve ASTM A351 Grade CF8 Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service Amine service	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71K-000BG	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	
1	0.75				P71K-000BH	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	
1	1				P71K-000BJ	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	
1	1.5				P71K-000BK	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	
1	2				P71K-000BN	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	
1	3				P71K-000BP	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	
1	4				P71K-000BR	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	
1	6				P71K-000BS	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	
1	8				P71K-000BT	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	
1	10				P71K-000BL	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	
1	12				P71K-000BM	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	

PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72K-000AU	Paddle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	
1	16				P72K-000AV	Paddle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	
1	18				P72K-000AW	Paddle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	
1	20				P72K-000AX	Paddle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	
1	24				P72K-000AY	Paddle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	
1	30				P72K-000HJ	Paddle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.47-B RF Severe wet H2S service	

PADDLE SPACER (PS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72K-000AZ	Paddle spacer ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	
1	16				P72K-000B0	Paddle spacer ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	
1	18				P72K-000B1	Paddle spacer ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	
1	20				P72K-000B2	Paddle spacer ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	
1	24				P72K-000B3	Paddle spacer ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	
1	30				P72K-000HK	Paddle spacer ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.47-B RF Severe wet H2S service	

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BOLT TABLE (B_A0J503 , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	60	P80S-008SY		
0.75	4	0.500	65	P80S-008SZ		
1	4	0.500	70	P80S-008T0		
1.5	4	0.500	75	P80S-008T1		
2	4	0.625	85	P80S-0090A		
3	4	0.625	95	P80S-0090C		
4	8	0.625	95	P80S-0090C		
6	8	0.750	105	P80S-0090E		
8	8	0.750	110	P80S-0090F		
10	12	0.875	120	P80S-005Z9		
12	12	0.875	120	P80S-005Z9		
14	12	1.000	135	P80S-00619		
16	16	1.000	140	P80S-0061A		
18	16	1.125	150	P80S-0064L		
20	20	1.125	160	P80S-0064N		
24	20	1.250	175	P80S-00686		
30	44	0.750	145	P80S-0090N		

BOLT TABLE (B_A0J503_773 , STUD ASME RF, OPTION CODE 773)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-008T0		
0.75	4	0.625	75	P80S-00908		
1	4	0.625	80	P80S-00909		
1.5	4	0.750	95	P80S-005Z4		
2	8	0.625	90	P80S-0090B		
3	8	0.750	110	P80S-0090F		
4	8	0.750	115	P80S-0090G		
6	12	0.750	125	P80S-0090J		
8	12	0.875	140	P80S-005ZD		
10	16	1.000	160	P80S-0061E		
12	16	1.125	175	P80S-0064S		
14	20	1.125	180	P80S-0064T		
16	20	1.250	190	P80S-00689		
18	24	1.250	200	P80S-0068B		
20	24	1.250	210	P80S-0068D		
24	24	1.500	235	P80S-006LB		
30	36	1.375	285	P80S-006HY		

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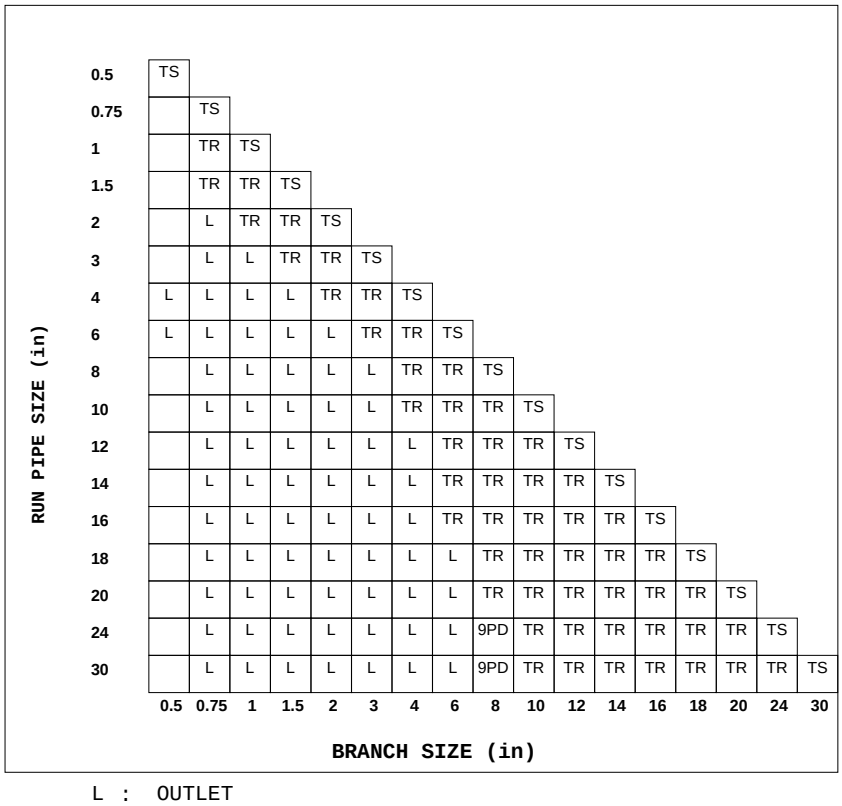
BRANCH TABLE (T_A0J503)



L : OUTLET
TR : REDUCING TEE
9PD : REINFORCING PAD 90 DEG
TS : STRAIGHT TEE

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PIPING CLASS

A0JP REV NO. 2

Material : SS304L
Rating : ASME CLASS 150
Flange Face : RF
C.A.(mm) : 0.80
Gasket : Spiral Wound
Service : PROCESS / UTILITY - CORROSIVE SERVICE : / DEMINERALISED WATER (< 4") / POLISHED CONDENSATE / REJECT WATER (BACK WASH) / PROCESS / CHEMICALS / AMINE

Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
2	USE OF SOFT SEATED BALL, PLUG AND BUTTERFLY VALVES SHALL BE LIMITED TO MAXIMUM OF 204DEGC (400DEGF)

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
200	WITH JACK SCREW (FO)
541	NPT(F) (CA,L)
714	SW - NPT(F) (V)
773	CLASS 300 (B,F,G)
781	CLASS 600 (B,F,G)

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PIPING CLASS
A0JP REV NO. 2

PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P01J-000UC	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE	
1	0.75		SCH80S		P01J-000UD	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE	
1	1		SCH80S		P01J-000UE	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE	
1	1.5		SCH80S		P01J-000UF	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE	
1	2		SCH10S		P01J-000RD	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M BE	
1	3		SCH10S		P01J-000RE	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M BE	
1	4		SCH10S		P01J-000RF	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M BE	
1	6		SCH40S		P01J-000RH	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M BE	
1	8		SCH10S		P01J-001F7	Pipe ASTM A358 Grade 304/304L Class 1 dual grade EFW ASME B36.10M/B36.19M BE	
1	10		SCH10S		P01J-000S7	Pipe ASTM A358 Grade 304/304L Class 1 dual grade EFW ASME B36.10M/B36.19M BE	
1	12		SCH10S		P01J-000S8	Pipe ASTM A358 Grade 304/304L Class 1 dual grade EFW ASME B36.10M/B36.19M BE	
1	14		SCH10S		P01J-000S9	Pipe ASTM A358 Grade 304/304L Class 1 dual grade EFW ASME B36.10M/B36.19M BE	
1	16		SCH10S		P01J-000SA	Pipe ASTM A358 Grade 304/304L Class 1 dual grade EFW ASME B36.10M/B36.19M BE	
1	18		SCH10S		P01J-000SB	Pipe ASTM A358 Grade 304/304L Class 1 dual grade EFW ASME B36.10M/B36.19M BE	
1	20		SCH10S		P01J-000SC	Pipe ASTM A358 Grade 304/304L Class 1 dual grade EFW ASME B36.10M/B36.19M BE	
1	24		SCH10S		P01J-000SE	Pipe ASTM A358 Grade 304/304L Class 1 dual grade EFW ASME B36.10M/B36.19M BE	
1	30		SCH10S		P01J-000SH	Pipe ASTM A358 Grade 304/304L Class 1 dual grade EFW ASME B36.10M/B36.19M BE	
1	36		SCH10		P01J-000TA	Pipe ASTM A358 Grade 304/304L Class 1 dual grade EFW ASME B36.10M/B36.19M BE	
1	42		STD		P01J-000U0	Pipe ASTM A358 Grade 304/304L Class 1 dual grade EFW ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P02K-0001K	90 degree elbow ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	0.75				P02K-0001L	90 degree elbow ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	1				P02K-0001M	90 degree elbow ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	1.5				P02K-0001N	90 degree elbow ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	2		SCH10S		P02J-000J0	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	3		SCH10S		P02J-000J1	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	4		SCH10S		P02J-000J2	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	6		SCH40S		P02J-000J4	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	8		SCH10S		P02J-0017L	90 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius	
1	10		SCH10S		P02J-000JC	90 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius	
1	12		SCH10S		P02J-000JD	90 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius	
1	14		SCH10S		P02J-000JE	90 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius	
1	16		SCH10S		P02J-000JF	90 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius	
1	18		SCH10S		P02J-000JG	90 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius	
1	20		SCH10S		P02J-000JH	90 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius	
1	24		SCH10S		P02J-000JK	90 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius	
1	30		SCH10S		P02J-000JN	90 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius	
1	36		SCH10		P02J-000K4	90 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius	
1	42		STD		P02J-000KM	90 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P03K-0001G	45 degree elbow ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	0.75				P03K-0001H	45 degree elbow ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	1				P03K-0001J	45 degree elbow ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	1.5				P03K-0001K	45 degree elbow ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	2		SCH10S		P03J-000HS	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	3		SCH10S		P03J-000HT	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	4		SCH10S		P03J-000HU	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	6		SCH40S		P03J-000HW	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	

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45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	8		SCH10S		P03J-0016G	45 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius	
1	10		SCH10S		P03J-000J4	45 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius	
1	12		SCH10S		P03J-000J5	45 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius	
1	14		SCH10S		P03J-000J6	45 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius	
1	16		SCH10S		P03J-000J7	45 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius	
1	18		SCH10S		P03J-000J8	45 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius	
1	20		SCH10S		P03J-000J9	45 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius	
1	24		SCH10S		P03J-000JB	45 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius	
1	30		SCH10S		P03J-000JE	45 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius	
1	36		SCH10		P03J-000JT	45 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius	
1	42		STD		P03J-000KA	45 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P21K-0001G	Straight tee ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	0.75				P21K-0001H	Straight tee ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	1				P21K-0001J	Straight tee ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	1.5				P21K-0001K	Straight tee ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	2		SCH10S		P21J-000HM	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	3		SCH10S		P21J-000HN	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	4		SCH10S		P21J-000HP	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	6		SCH40S		P21J-000HS	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	8		SCH10S		P21J-000ZZ	Straight tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	10		SCH10S		P21J-000J0	Straight tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	12		SCH10S		P21J-000J1	Straight tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	14		SCH10S		P21J-000J2	Straight tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	16		SCH10S		P21J-000J3	Straight tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	18		SCH10S		P21J-000J4	Straight tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	20		SCH10S		P21J-000J5	Straight tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	24		SCH10S		P21J-000J7	Straight tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	30		SCH10S		P21J-000JA	Straight tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	36		SCH10		P21J-000JS	Straight tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	42		STD		P21J-000K9	Straight tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75			P24K-0001X	Reducing tee ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	1.5	0.75			P24K-0001Z	Reducing tee ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	1.5	1			P24K-00020	Reducing tee ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	2	1	SCH10S	SCH80S	P24J-0065A	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	2	1.5	SCH10S	SCH80S	P24J-0065B	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	3	1.5	SCH10S	SCH80S	P24J-004SV	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	3	2	SCH10S	SCH10S	P24J-002H7	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	4	2	SCH10S	SCH10S	P24J-002H8	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	4	3	SCH10S	SCH10S	P24J-002H9	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	6	3	SCH40S	SCH10S	P24J-002HC	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	6	4	SCH40S	SCH10S	P24J-002HD	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	8	4	SCH10S	SCH10S	P24J-004SY	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	8	6	SCH10S	SCH40S	P24J-00624	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	10	4	SCH10S	SCH10S	P24J-004T0	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	10	6	SCH10S	SCH40S	P24J-002HS	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	10	8	SCH10S	SCH10S	P24J-004T2	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	12	6	SCH10S	SCH40S	P24J-006DK	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	12	8	SCH10S	SCH10S	P24J-004T4	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	12	10	SCH10S	SCH10S	P24J-002HT	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	

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REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14	6	SCH10S	SCH40S	P24J-006EA	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	14	8	SCH10S	SCH10S	P24J-004T6	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	14	10	SCH10S	SCH10S	P24J-002HU	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	14	12	SCH10S	SCH10S	P24J-002HV	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	16	6	SCH10S	SCH40S	P24J-006DL	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	16	8	SCH10S	SCH10S	P24J-004T8	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	16	10	SCH10S	SCH10S	P24J-002HW	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	16	12	SCH10S	SCH10S	P24J-002HX	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	16	14	SCH10S	SCH10S	P24J-002HY	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	18	8	SCH10S	SCH10S	P24J-004T9	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	18	10	SCH10S	SCH10S	P24J-002HZ	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	18	12	SCH10S	SCH10S	P24J-002J0	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	18	14	SCH10S	SCH10S	P24J-002J1	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	18	16	SCH10S	SCH10S	P24J-002J2	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	20	8	SCH10S	SCH10S	P24J-0065C	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	20	10	SCH10S	SCH10S	P24J-002J3	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	20	12	SCH10S	SCH10S	P24J-002J4	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	20	14	SCH10S	SCH10S	P24J-002J5	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	20	16	SCH10S	SCH10S	P24J-002J6	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	20	18	SCH10S	SCH10S	P24J-002J7	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	24	10	SCH10S	SCH10S	P24J-0065D	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	24	12	SCH10S	SCH10S	P24J-002P9	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	24	14	SCH10S	SCH10S	P24J-002JD	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	24	16	SCH10S	SCH10S	P24J-002JE	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	24	18	SCH10S	SCH10S	P24J-002JF	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	24	20	SCH10S	SCH10S	P24J-002JG	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	30	10	SCH10S	SCH10S	P24J-00755	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	30	12	SCH10S	SCH10S	P24J-00756	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	30	14	SCH10S	SCH10S	P24J-002M4	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	30	16	SCH10S	SCH10S	P24J-002JV	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	30	18	SCH10S	SCH10S	P24J-002JW	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	30	20	SCH10S	SCH10S	P24J-002JX	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	30	24	SCH10S	SCH10S	P24J-002JY	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	36	16	SCH10	SCH10S	P24J-005VD	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	36	18	SCH10	SCH10S	P24J-002M9	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	36	20	SCH10	SCH10S	P24J-002MA	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	36	24	SCH10	SCH10S	P24J-002MB	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	36	30	SCH10	SCH10S	P24J-002MD	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	42	16	STD	SCH10S	P24J-0077E	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	42	18	STD	SCH10S	P24J-0077F	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	42	20	STD	SCH10S	P24J-006GA	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	42	24	STD	SCH10S	P24J-002PX	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	42	30	STD	SCH10S	P24J-002R0	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	42	36	STD	SCH10	P24J-002RR	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	SCH10S	SCH10S	P27J-001PS	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	4	2	SCH10S	SCH10S	P27J-001PT	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	4	3	SCH10S	SCH10S	P27J-001PU	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	6	3	SCH40S	SCH10S	P27J-001PX	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	6	4	SCH40S	SCH10S	P27J-001PY	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	8	4	SCH10S	SCH10S	P27J-003L1	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	8	6	SCH10S	SCH40S	P27J-00527	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	10	4	SCH10S	SCH10S	P27J-003L3	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	10	6	SCH10S	SCH40S	P27J-001RC	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	10	8	SCH10S	SCH10S	P27J-003L5	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	12	6	SCH10S	SCH40S	P27J-001RE	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	12	8	SCH10S	SCH10S	P27J-003L7	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	12	10	SCH10S	SCH10S	P27J-001RD	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	14	6	SCH10S	SCH40S	P27J-001RH	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	14	8	SCH10S	SCH10S	P27J-003L9	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	14	10	SCH10S	SCH10S	P27J-001RF	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	14	12	SCH10S	SCH10S	P27J-001RG	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	16	8	SCH10S	SCH10S	P27J-003LA	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	16	10	SCH10S	SCH10S	P27J-001RJ	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	16	12	SCH10S	SCH10S	P27J-001RK	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	16	14	SCH10S	SCH10S	P27J-001RL	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	18	10	SCH10S	SCH10S	P27J-001RM	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	18	12	SCH10S	SCH10S	P27J-001RN	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	18	14	SCH10S	SCH10S	P27J-001RP	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	18	16	SCH10S	SCH10S	P27J-001RR	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	20	12	SCH10S	SCH10S	P27J-001RS	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	20	14	SCH10S	SCH10S	P27J-001RT	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	20	16	SCH10S	SCH10S	P27J-001RU	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	20	18	SCH10S	SCH10S	P27J-001RV	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	24	16	SCH10S	SCH10S	P27J-001S0	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	24	18	SCH10S	SCH10S	P27J-001S1	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	24	20	SCH10S	SCH10S	P27J-001S2	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	30	20	SCH10S	SCH10S	P27J-001SB	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	30	24	SCH10S	SCH10S	P27J-001SC	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	36	24	SCH10	SCH10S	P27J-001U5	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	36	30	SCH10	SCH10S	P27J-001U7	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	42	30	STD	SCH10S	P27J-001W8	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	42	36	STD	SCH10	P27J-001WK	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	SCH10S	SCH10S	P28J-001P8	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	4	2	SCH10S	SCH10S	P28J-001P9	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	4	3	SCH10S	SCH10S	P28J-001PA	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	6	3	SCH40S	SCH10S	P28J-001PD	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	6	4	SCH40S	SCH10S	P28J-001PE	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	8	4	SCH10S	SCH10S	P28J-003LP	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	8	6	SCH10S	SCH40S	P28J-00531	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	10	4	SCH10S	SCH10S	P28J-003LS	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	10	6	SCH10S	SCH40S	P28J-001PV	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	10	8	SCH10S	SCH10S	P28J-003LU	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	12	6	SCH10S	SCH40S	P28J-001PX	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	12	8	SCH10S	SCH10S	P28J-003LW	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	12	10	SCH10S	SCH10S	P28J-001PW	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	14	6	SCH10S	SCH40S	P28J-001R0	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	14	8	SCH10S	SCH10S	P28J-003LY	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	14	10	SCH10S	SCH10S	P28J-001PY	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	14	12	SCH10S	SCH10S	P28J-001PZ	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	16	8	SCH10S	SCH10S	P28J-003LZ	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	16	10	SCH10S	SCH10S	P28J-001R1	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	16	12	SCH10S	SCH10S	P28J-001R2	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	16	14	SCH10S	SCH10S	P28J-001R3	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	18	10	SCH10S	SCH10S	P28J-001R4	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	18	12	SCH10S	SCH10S	P28J-001R5	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	18	14	SCH10S	SCH10S	P28J-001R6	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	18	16	SCH10S	SCH10S	P28J-001R7	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	20	12	SCH10S	SCH10S	P28J-001R8	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	20	14	SCH10S	SCH10S	P28J-001R9	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	20	16	SCH10S	SCH10S	P28J-001RA	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	20	18	SCH10S	SCH10S	P28J-001RB	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	24	16	SCH10S	SCH10S	P28J-001RG	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	24	18	SCH10S	SCH10S	P28J-001RH	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	24	20	SCH10S	SCH10S	P28J-001RJ	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	30	20	SCH10S	SCH10S	P28J-001RU	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	30	24	SCH10S	SCH10S	P28J-001RV	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	36	24	SCH10	SCH10S	P28J-001TL	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	36	30	SCH10	SCH10S	P28J-001TN	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	42	30	STD	SCH10S	P28J-001VP	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	42	36	STD	SCH10	P28J-001W1	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P29K-0001V	Cap ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	0.75				P29K-0001W	Cap ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	1				P29K-0001X	Cap ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	1.5				P29K-0001Y	Cap ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	2		SCH10S		P29J-000G1	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	3		SCH10S		P29J-000G2	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	4		SCH10S		P29J-000G3	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	6		SCH40S		P29J-000G5	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	8		SCH10S		P29J-000X3	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	10		SCH10S		P29J-000GB	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	12		SCH10S		P29J-000GC	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	14		SCH10S		P29J-000GD	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	16		SCH10S		P29J-000GE	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	18		SCH10S		P29J-000GF	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	20		SCH10S		P29J-000GG	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	24		SCH10S		P29J-000GJ	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	30		SCH10S		P29J-000GN	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	36		SCH10		P29J-000H3	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	42		STD		P29J-000HR	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
541	0.75				P29K-00020	Cap ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P41J-001FS	Straight nipple ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		SCH80S		P41J-001FT	Straight nipple ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		SCH160		P41J-001V2	Straight nipple ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		SCH80S		P41J-001FV	Straight nipple ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

CON SWAGED NIPPLE (SNC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH80S	SCH80S	P42J-00081	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	SCH80S	SCH80S	P42J-00082	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	SCH80S	SCH80S	P42J-00083	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	SCH80S	SCH80S	P42J-00084	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	SCH80S	SCH80S	P42J-00085	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	SCH80S	SCH80S	P42J-00086	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	SCH10S	SCH80S	P42J-000F9	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	SCH10S	SCH80S	P42J-000F6	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	SCH10S	SCH80S	P42J-000F7	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	SCH10S	SCH80S	P42J-000F8	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	SCH10S	SCH80S	P42J-000AG	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	

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ECC SWAGED NIPPLE (SNE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH80S	SCH80S	P43J-0008D	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	SCH80S	SCH80S	P43J-0008E	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	SCH80S	SCH80S	P43J-0008F	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	SCH80S	SCH80S	P43J-0008G	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	SCH80S	SCH80S	P43J-0008H	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	SCH80S	SCH80S	P43J-0008J	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	SCH10S	SCH80S	P43J-000CT	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	SCH10S	SCH80S	P43J-000CU	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	SCH10S	SCH80S	P43J-000CV	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	SCH10S	SCH80S	P43J-000CW	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	SCH10S	SCH80S	P43J-0008P	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	

COUPLING (CPS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P47K-00035	Coupling ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW - SW	
1	0.75				P47K-00036	Coupling ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW - SW	
1	1				P47K-00037	Coupling ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW - SW	
1	1.5				P47K-00038	Coupling ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW - SW	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2 - 2.5	0.75			P31K-00GFG	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 SW	
1	3 - 5	0.75			P31K-00GFH	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 SW	
1	6 - 12	0.75			P31K-008YY	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 SW	
1	14 - 36	0.75			P31K-008YC	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 SW	
1	38 and larger	0.75			P31K-008YT	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 SW	
1	3	1			P31K-008ZG	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 SW	
1	4 - 5	1			P31K-00GFL	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 SW	
1	6 - 10	1			P31K-008ZU	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 SW	
1	12 - 36	1			P31K-008Z6	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 SW	
1	38 and larger	1			P31K-008ZN	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 SW	
1	4	1.5			P31K-0099M	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 SW	
1	5 - 6	1.5			P31K-00GFS	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 SW	
1	8 - 12	1.5			P31K-0099Z	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 SW	
1	14 - 24	1.5			P31K-00991	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 SW	
1	26 - 36	1.5			P31K-00GFT	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 SW	
1	38 and larger	1.5			P31K-0099J	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 SW	
541	1	0.75			P31K-00911	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 NPT	
541	1.5	0.75			P31K-00916	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 NPT	
541	2 - 2.5	0.75			P31K-00GFJ	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 NPT	
541	3 - 5	0.75			P31K-00GFK	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 NPT	
541	6 - 12	0.75			P31K-0091X	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 NPT	
541	14 - 36	0.75			P31K-0091B	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 NPT	
541	38 and larger	0.75			P31K-0091S	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 NPT	
1	6	2	SCH40S	SCH10S	P31K-005AW	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	8	2	SCH10S	SCH10S	P31K-007G1	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	10	2	SCH10S	SCH10S	P31K-005JV	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	12	2	SCH10S	SCH10S	P31K-005JX	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	14	2	SCH10S	SCH10S	P31K-005K0	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	16	2	SCH10S	SCH10S	P31K-005K3	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	18	2	SCH10S	SCH10S	P31K-005K5	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	20	2	SCH10S	SCH10S	P31K-005K8	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	24	2	SCH10S	SCH10S	P31K-005B4	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	30	2	SCH10S	SCH10S	P31K-005BA	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	36	2	SCH10	SCH10S	P31K-005CZ	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	42	2	STD	SCH10S	P31K-005KG	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	8	3	SCH10S	SCH10S	P31K-007XV	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	10	3	SCH10S	SCH10S	P31K-007KK	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	12	3	SCH10S	SCH10S	P31K-007LF	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	14	3	SCH10S	SCH10S	P31K-007ME	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	16	3	SCH10S	SCH10S	P31K-007NJ	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	18	3	SCH10S	SCH10S	P31K-007PR	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	20	3	SCH10S	SCH10S	P31K-007RR	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	24	3	SCH10S	SCH10S	P31K-007SP	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	30	3	SCH10S	SCH10S	P31K-007UJ	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	36	3	SCH10	SCH10S	P31K-007VK	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	42	3	STD	SCH10S	P31K-007WE	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	12	4	SCH10S	SCH10S	P31K-00812	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	14	4	SCH10S	SCH10S	P31K-00821	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	16	4	SCH10S	SCH10S	P31K-00837	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	18	4	SCH10S	SCH10S	P31K-0084E	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	20	4	SCH10S	SCH10S	P31K-0085E	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	24	4	SCH10S	SCH10S	P31K-0086F	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	30	4	SCH10S	SCH10S	P31K-00889	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	36	4	SCH10	SCH10S	P31K-0089A	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	42	4	STD	SCH10S	P31K-008A3	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	18	6	SCH10S	SCH40S	P31K-005K7	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	20	6	SCH10S	SCH40S	P31K-005KA	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	24	6	SCH10S	SCH40S	P31K-005B5	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	30	6	SCH10S	SCH40S	P31K-005BB	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	36	6	SCH10	SCH40S	P31K-005D2	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	42	6	STD	SCH40S	P31K-005KK	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30K-0001G	Plug ASTM A182 Grade F304/F304L dual grade ASME B16.11 NPT Round head	
1	0.75				P30K-0001H	Plug ASTM A182 Grade F304/F304L dual grade ASME B16.11 NPT Round head	
1	1				P30K-0001J	Plug ASTM A182 Grade F304/F304L dual grade ASME B16.11 NPT Round head	
1	1.5				P30K-0001K	Plug ASTM A182 Grade F304/F304L dual grade ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P61K-003A4	Flange SW ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	0.75		SCH80S		P61K-003A5	Flange SW ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	1		SCH80S		P61K-003A6	Flange SW ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	1.5		SCH80S		P61K-003A7	Flange SW ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	2		SCH10S		P61K-0023K	Flange WN ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	3		SCH10S		P61K-0023L	Flange WN ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	4		SCH10S		P61K-0023M	Flange WN ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	6		SCH40S		P61K-0024K	Flange WN ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	8		SCH10S		P61K-003A8	Flange WN ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	10		SCH10S		P61K-0024B	Flange WN ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	12		SCH10S		P61K-0024C	Flange WN ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	14		SCH10S		P61K-0024D	Flange WN ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	16		SCH10S		P61K-0024E	Flange WN ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	18		SCH10S		P61K-0024F	Flange WN ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	20		SCH10S		P61K-0024G	Flange WN ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	24		SCH10S		P61K-0024N	Flange WN ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	30		SCH10S		P61K-0024S	Flange WN ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.47 Series B RF	
1	36		SCH10		P61K-00262	Flange WN ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.47 Series B RF	
1	42		STD		P61K-0026P	Flange WN ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.47 Series B RF	
773	0.5		SCH80S		P61K-003A9	Flange SW ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
773	0.75		SCH80S		P61K-003AA	Flange SW ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
773	1		SCH80S		P61K-003AB	Flange SW ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	

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FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
773	1.5		SCH80S		P61K-003AC	Flange SW ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
773	2		SCH10S		P61K-0023W	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
773	3		SCH10S		P61K-0023X	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
773	4		SCH10S		P61K-0023Y	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
773	6		SCH40S		P61K-0023Z	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
773	8		SCH10S		P61K-003AE	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
773	10		SCH10S		P61K-0024Y	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
773	12		SCH10S		P61K-0024Z	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
773	14		SCH10S		P61K-00250	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
773	16		SCH10S		P61K-00251	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
773	18		SCH10S		P61K-00252	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
773	20		SCH10S		P61K-00253	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
773	24		SCH10S		P61K-00258	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
773	30		SCH10S		P61K-00273	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.47 Series B RF	
773	36		SCH10		P61K-00276	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.47 Series B RF	
773	42		STD		P61K-00279	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.47 Series B RF	
781	0.5		SCH80S		P61K-003AT	Flange SW ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 RF	
781	0.75		SCH80S		P61K-003AU	Flange SW ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 RF	
781	1		SCH80S		P61K-003AV	Flange SW ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 RF	
781	1.5		SCH80S		P61K-003AW	Flange SW ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 RF	
781	2		SCH10S		P61K-00290	Flange WN ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 RF	
781	3		SCH10S		P61K-003D3	Flange WN ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 RF	
781	4		SCH10S		P61K-0046H	Flange WN ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 RF	
781	6		SCH40S		P61K-00293	Flange WN ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 RF	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67K-000K9	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	0.75				P67K-000KA	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	1				P67K-000KB	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	1.5				P67K-000KC	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	2				P67K-000KD	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	3				P67K-000KE	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	4				P67K-000KF	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	6				P67K-000KG	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	8				P67K-000L7	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	10				P67K-000L1	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	12				P67K-000L2	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	14				P67K-000L3	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	16				P67K-000L4	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	18				P67K-000L5	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	20				P67K-000L6	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	24				P67K-000L9	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	30				P67K-000LC	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.47 Series B RF	
1	36				P67K-000LR	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.47 Series B RF	
1	42				P67K-000LW	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.47 Series B RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000L8	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000L9	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000LA	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000LB	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000LH	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000LL	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000LM	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

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GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	6				P73T-000LN	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	8				P73T-000LP	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	10				P73T-000LC	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	12				P73T-000LD	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	14				P73T-000LE	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	16				P73T-000LF	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	18				P73T-000LG	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	20				P73T-000LJ	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	24				P73T-000LK	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	30				P73T-000LT	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	36				P73T-000LW	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	42				P73T-000LZ	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	0.5				P73T-000FT	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	0.75				P73T-000FU	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	3				P73T-000G5	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	4				P73T-000G6	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	6				P73T-000G7	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	8				P73T-000G8	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	10				P73T-000FX	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	12				P73T-000FY	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	14				P73T-000FZ	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	16				P73T-000G0	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	18				P73T-000G1	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	20				P73T-000G3	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	24				P73T-000G4	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	30				P73T-000H9	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	36				P73T-000HC	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	42				P73T-000KM	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	0.5				P73T-000J8	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	0.75				P73T-000J9	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1				P73T-000JA	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1.5				P73T-000JB	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	2				P73T-000JH	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	3				P73T-000JL	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	4				P73T-000JM	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	6				P73T-000JN	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-16				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	18-24				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
1	30-42				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	

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BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
773	0.5-10				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
773	12-42				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
781	0.5-6				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81K-00108	Gate valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	0.75				P81K-00109	Gate valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	1				P81K-0010A	Gate valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	1.5				P81K-0010B	Gate valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	2				P81L-00293	Gate valve ASTM A351 Grade CF8 Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	3				P81L-00294	Gate valve ASTM A351 Grade CF8 Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	4				P81L-00295	Gate valve ASTM A351 Grade CF8 Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	6				P81L-00296	Gate valve ASTM A351 Grade CF8 Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	8				P81L-00297	Gate valve ASTM A351 Grade CF8 Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	10				P81L-002BX	Gate valve ASTM A351 Grade CF8 Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	12				P81L-002BY	Gate valve ASTM A351 Grade CF8 Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	14				P81L-002BZ	Gate valve ASTM A351 Grade CF8 Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated	
1	16				P81L-002C0	Gate valve ASTM A351 Grade CF8 Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated	
1	18				P81L-002C1	Gate valve ASTM A351 Grade CF8 Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated	
1	20				P81L-002C2	Gate valve ASTM A351 Grade CF8 Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated	
1	24				P81L-002C3	Gate valve ASTM A351 Grade CF8 Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated	
714	0.5				P81K-001LC	Gate valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW - NPT Trim number 12 BB-BG-OS&Y Handwheel operated	
714	0.75				P81K-001FD	Gate valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW - NPT Trim number 12 BB-BG-OS&Y Handwheel operated	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82K-000NR	Globe valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	0.75				P82K-000NS	Globe valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	1				P82K-000NT	Globe valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	1.5				P82K-000NU	Globe valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	2				P82L-00195	Globe valve ASTM A351 Grade CF8 Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	3				P82L-00196	Globe valve ASTM A351 Grade CF8 Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	4				P82L-00197	Globe valve ASTM A351 Grade CF8 Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	6				P82L-001AD	Globe valve ASTM A351 Grade CF8 Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	8				P82L-001AE	Globe valve ASTM A351 Grade CF8 Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83K-000LM	Check valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 Lift-type Bolted cover	
1	0.75				P83K-000LN	Check valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 Lift-type Bolted cover	
1	1				P83K-000LP	Check valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 Lift-type Bolted cover	
1	1.5				P83K-000LR	Check valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 Lift-type Bolted cover	
1	2				P83L-00196	Check valve ASTM A351 Grade CF8 Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	3				P83L-00197	Check valve ASTM A351 Grade CF8 Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	4				P83L-00198	Check valve ASTM A351 Grade CF8 Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	

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CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	6				P83L-0019U	Check valve ASTM A351 Grade CF8 Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	8				P83L-0019V	Check valve ASTM A351 Grade CF8 Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	10				P83L-001AA	Check valve ASTM A351 Grade CF8 Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	12				P83L-001AB	Check valve ASTM A351 Grade CF8 Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	14				P83L-001AC	Check valve ASTM A351 Grade CF8 Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	16				P83L-001AD	Check valve ASTM A351 Grade CF8 Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	18				P83L-001AE	Check valve ASTM A351 Grade CF8 Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	20				P83L-001B6	Check valve ASTM A351 Grade CF8 Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	24				P83L-001B7	Check valve ASTM A351 Grade CF8 Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	

ORIFICE FLANGE (FO)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2		SCH10S		P66K-00312	Orifice flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	3		SCH10S		P66K-00313	Orifice flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	4		SCH10S		P66K-00314	Orifice flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	6		SCH40S		P66K-00315	Orifice flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	8		SCH10S		P66K-00316	Orifice flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	10		SCH10S		P66K-0030X	Orifice flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	12		SCH10S		P66K-0030Y	Orifice flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	14		SCH10S		P66K-0030Z	Orifice flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	16		SCH10S		P66K-00310	Orifice flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	18		SCH10S		P66K-00311	Orifice flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
200	2		SCH10S		P66K-0031E	Orifice flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	3		SCH10S		P66K-0031F	Orifice flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	4		SCH10S		P66K-0031G	Orifice flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	6		SCH40S		P66K-0031H	Orifice flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	8		SCH10S		P66K-0031J	Orifice flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	10		SCH10S		P66K-00319	Orifice flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	12		SCH10S		P66K-0031A	Orifice flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	14		SCH10S		P66K-0031B	Orifice flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	16		SCH10S		P66K-0031C	Orifice flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	18		SCH10S		P66K-0031D	Orifice flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71K-00065	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	0.75				P71K-00066	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	1				P71K-00067	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71K-00068	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	2				P71K-0006A	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	3				P71K-0006B	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	4				P71K-0006C	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	6				P71K-0006D	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	8				P71K-0006E	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	10				P71K-00069	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	

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SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	12				P71K-0006F	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	

PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72K-0003T	Paddle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	16				P72K-0003U	Paddle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	18				P72K-0003V	Paddle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	20				P72K-0003W	Paddle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	24				P72K-0003X	Paddle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	30				P72K-000E9	Paddle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	36				P72K-000F8	Paddle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	42				P72K-000F9	Paddle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.47-B RF	

PADDLE SPACER (PS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72K-0003Y	Paddle spacer ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	16				P72K-0003Z	Paddle spacer ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	18				P72K-00040	Paddle spacer ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	20				P72K-00041	Paddle spacer ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	24				P72K-00042	Paddle spacer ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	30				P72K-000EA	Paddle spacer ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	36				P72K-000FA	Paddle spacer ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	42				P72K-000FB	Paddle spacer ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.47-B RF	

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BOLT TABLE (B_A0JP , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	60	P80S-003V2		
0.75	4	0.500	65	P80S-003V3		
1	4	0.500	70	P80S-003V4		
1.5	4	0.500	75	P80S-003V5		
2	4	0.625	85	P80S-003XE		
3	4	0.625	95	P80S-003XG		
4	8	0.625	95	P80S-003XG		
6	8	0.750	105	P80S-003XJ		
8	8	0.750	110	P80S-003XK		
10	12	0.875	120	P80S-00419		
12	12	0.875	120	P80S-00419		
14	12	1.000	135	P80S-0043E		
16	16	1.000	140	P80S-0043F		
18	16	1.125	150	P80S-0046K		
20	20	1.125	160	P80S-0046M		
24	20	1.250	175	P80S-004AG		
30	44	0.750	145	P80S-003ZK		
36	44	0.875	175	P80S-0041M		
42	48	1.000	190	P80S-0043T		

BOLT TABLE (B_A0JP_773 , STUD ASME RF, OPTION CODE 773)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-003V4		
0.75	4	0.625	75	P80S-003XC		
1	4	0.625	80	P80S-003XD		
1.5	4	0.750	95	P80S-00414		
2	8	0.625	90	P80S-003XF		
3	8	0.750	110	P80S-003XK		
4	8	0.750	115	P80S-003XL		
6	12	0.750	125	P80S-003XN		
8	12	0.875	140	P80S-0041D		
10	16	1.000	160	P80S-0043K		
12	16	1.125	175	P80S-0046S		
14	20	1.125	180	P80S-0046T		
16	20	1.250	190	P80S-004AK		
18	24	1.250	200	P80S-004AM		
20	24	1.250	210	P80S-004AP		
24	24	1.500	235	P80S-003F8		
30	36	1.375	285	P80S-003EA		
36	32	1.625	320	P80S-005TT		
42	36	1.750	355	P80S-007B5		

BOLT TABLE (B_A0JP_781 , STUD ASME RF, OPTION CODE 781)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	80	P80S-003V6		
0.75	4	0.625	90	P80S-003XF		
1	4	0.625	95	P80S-003XG		
1.5	4	0.750	110	P80S-003XK		
2	8	0.625	110	P80S-003VC		
3	8	0.750	130	P80S-003XP		
4	8	0.875	150	P80S-0041F		
6	12	1.000	175	P80S-0043P		
8	12	1.125	195			
10	16	1.250	250			
12	20	1.250	255			
14	20	1.375	270			
16	20	1.500	295			
18	20	1.625	320			
20	24	1.625	335			
24	24	1.875	380			
30	28	1.875	435			
36	28	2.250	510			
42	28	2.500	575			

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BRANCH TABLE (T_A0JP)

RUN PIPE SIZE (in) \ BRANCH SIZE (in)	0.5	0.75	1	1.5	2	3	4	6	8	10	12	14	16	18	20	24	30	36	42
0.5	TS																		
0.75		TS																	
1		TR	TS																
1.5		TR	TR	TS															
2		L	TR	TR	TS														
3		L	L	TR	TR	TS													
4	L	L	L	L	TR	TR	TS												
6	L	L	L	L	L	TR	TR	TS											
8		L	L	L	L	L	TR	TR	TS										
10		L	L	L	L	L	TR	TR	TR	TS									
12		L	L	L	L	L	L	TR	TR	TR	TS								
14		L	L	L	L	L	L	TR	TR	TR	TR	TS							
16		L	L	L	L	L	L	TR	TR	TR	TR	TR	TS						
18		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TS					
20		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TR	TS				
24		L	L	L	L	L	L	L	9PD	TR	TR	TR	TR	TR	TR	TS			
30		L	L	L	L	L	L	L	9PD	TR	TR	TR	TR	TR	TR	TR	TS		
36		L	L	L	L	L	L	L	9PD	9PD	9PD	9PD	TR	TR	TR	TR	TR	TS	
42		L	L	L	L	L	L	L	9PD	9PD	9PD	9PD	TR	TR	TR	TR	TR	TR	TS

TR : REDUCING TEE
9PD : REINFORCING PAD 90 DEG
TS : STRAIGHT TEE
L : OUTLET

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PIPING CLASS

A0JP03 REV NO. 2

Material : SS304L
Rating : ASME CLASS 150
Flange Face : RF
C.A.(mm) : 0.80
Gasket : Spiral Wound
Service : PROCESS - GENERAL PROCESS NON SOUR, NON CORROSIVE
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
2	USE OF SOFT SEATED BALL, PLUG AND BUTTERFLY VALVES SHALL BE LIMITED TO MAXIMUM OF 204DEGC (400DEGF)

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
541	NPT(F) (CA,L)
714	SW - NPT(F) (V)
773	CLASS 300 (B,F,G)

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PIPING CLASS
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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P01J-000UC	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE	
1	0.75		SCH80S		P01J-000UD	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE	
1	1		SCH80S		P01J-000UE	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE	
1	1.5		SCH80S		P01J-000UF	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE	
1	2		SCH10S		P01J-000RD	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M BE	
1	3		SCH10S		P01J-000RE	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M BE	
1	4		SCH10S		P01J-000RF	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P02K-0001K	90 degree elbow ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	0.75				P02K-0001L	90 degree elbow ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	1				P02K-0001M	90 degree elbow ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	1.5				P02K-0001N	90 degree elbow ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	2		SCH10S		P02J-000J0	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	3		SCH10S		P02J-000J1	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	4		SCH10S		P02J-000J2	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P03K-0001G	45 degree elbow ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	0.75				P03K-0001H	45 degree elbow ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	1				P03K-0001J	45 degree elbow ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	1.5				P03K-0001K	45 degree elbow ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	2		SCH10S		P03J-000HS	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	3		SCH10S		P03J-000HT	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	4		SCH10S		P03J-000HU	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P21K-0001G	Straight tee ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	0.75				P21K-0001H	Straight tee ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	1				P21K-0001J	Straight tee ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	1.5				P21K-0001K	Straight tee ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	2		SCH10S		P21J-000HM	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	3		SCH10S		P21J-000HN	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	4		SCH10S		P21J-000HP	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75			P24K-0001X	Reducing tee ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	1.5	0.75			P24K-0001Z	Reducing tee ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	1.5	1			P24K-00020	Reducing tee ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	2	1	SCH10S	SCH80S	P24J-0065A	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	2	1.5	SCH10S	SCH80S	P24J-0065B	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	3	1.5	SCH10S	SCH80S	P24J-004SV	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	3	2	SCH10S	SCH10S	P24J-002H7	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	4	2	SCH10S	SCH10S	P24J-002H8	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	4	3	SCH10S	SCH10S	P24J-002H9	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	SCH10S	SCH10S	P27J-001PS	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	4	2	SCH10S	SCH10S	P27J-001PT	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	4	3	SCH10S	SCH10S	P27J-001PU	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	

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ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	SCH10S	SCH10S	P28J-001P8	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	4	2	SCH10S	SCH10S	P28J-001P9	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	4	3	SCH10S	SCH10S	P28J-001PA	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P29K-0001V	Cap ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	0.75				P29K-0001W	Cap ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	1				P29K-0001X	Cap ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	1.5				P29K-0001Y	Cap ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	2		SCH10S		P29J-000G1	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	3		SCH10S		P29J-000G2	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	4		SCH10S		P29J-000G3	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
541	0.75				P29K-00020	Cap ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P41J-001FS	Straight nipple ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		SCH80S		P41J-001FT	Straight nipple ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		SCH160		P41J-001V2	Straight nipple ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		SCH80S		P41J-001FV	Straight nipple ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

CON SWAGED NIPPLE (SNC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH80S	SCH80S	P42J-00081	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	SCH80S	SCH80S	P42J-00082	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	SCH80S	SCH80S	P42J-00083	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	SCH80S	SCH80S	P42J-00084	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	SCH80S	SCH80S	P42J-00085	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	SCH80S	SCH80S	P42J-00086	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	SCH10S	SCH80S	P42J-000F9	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	SCH10S	SCH80S	P42J-000F6	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	SCH10S	SCH80S	P42J-000F7	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	SCH10S	SCH80S	P42J-000F8	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	SCH10S	SCH80S	P42J-000AG	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	

ECC SWAGED NIPPLE (SNE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH80S	SCH80S	P43J-0008D	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	SCH80S	SCH80S	P43J-0008E	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	SCH80S	SCH80S	P43J-0008F	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	SCH80S	SCH80S	P43J-0008G	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	SCH80S	SCH80S	P43J-0008H	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	SCH80S	SCH80S	P43J-0008J	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	SCH10S	SCH80S	P43J-000CT	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	SCH10S	SCH80S	P43J-000CU	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	SCH10S	SCH80S	P43J-000CV	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	SCH10S	SCH80S	P43J-000CW	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	SCH10S	SCH80S	P43J-0008P	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	

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COUPLING (CPS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P47K-00035	Coupling ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW - SW	
1	0.75				P47K-00036	Coupling ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW - SW	
1	1				P47K-00037	Coupling ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW - SW	
1	1.5				P47K-00038	Coupling ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW - SW	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2 - 2.5	0.75			P31K-00GFG	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 SW	
1	3 - 5	0.75			P31K-00GFH	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 SW	
1	3	1			P31K-008ZG	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 SW	
1	4 - 5	1			P31K-00GFL	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 SW	
1	4	1.5			P31K-0099M	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 SW	
541	1	0.75			P31K-00911	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 NPT	
541	1.5	0.75			P31K-00916	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 NPT	
541	2 - 2.5	0.75			P31K-00GFJ	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 NPT	
541	3 - 5	0.75			P31K-00GFK	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 NPT	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30K-0001G	Plug ASTM A182 Grade F304/F304L dual grade ASME B16.11 NPT Round head	
1	0.75				P30K-0001H	Plug ASTM A182 Grade F304/F304L dual grade ASME B16.11 NPT Round head	
1	1				P30K-0001J	Plug ASTM A182 Grade F304/F304L dual grade ASME B16.11 NPT Round head	
1	1.5				P30K-0001K	Plug ASTM A182 Grade F304/F304L dual grade ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P61K-003A4	Flange SW ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	0.75		SCH80S		P61K-003A5	Flange SW ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	1		SCH80S		P61K-003A6	Flange SW ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	1.5		SCH80S		P61K-003A7	Flange SW ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	2		SCH10S		P61K-0023K	Flange WN ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	3		SCH10S		P61K-0023L	Flange WN ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	4		SCH10S		P61K-0023M	Flange WN ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
773	0.5		SCH80S		P61K-003A9	Flange SW ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
773	0.75		SCH80S		P61K-003AA	Flange SW ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
773	1		SCH80S		P61K-003AB	Flange SW ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
773	1.5		SCH80S		P61K-003AC	Flange SW ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
773	2		SCH10S		P61K-0023W	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
773	3		SCH10S		P61K-0023X	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
773	4		SCH10S		P61K-0023Y	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67K-000K9	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	0.75				P67K-000KA	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	1				P67K-000KB	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	1.5				P67K-000KC	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	2				P67K-000KD	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	3				P67K-000KE	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	4				P67K-000KF	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000L8	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000L9	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000LA	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000LB	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

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GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2				P73T-000LH	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000LL	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000LM	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	0.5				P73T-000FT	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	0.75				P73T-000FU	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	3				P73T-000G5	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	4				P73T-000G6	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-4				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
773	0.5-4				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81K-00108	Gate valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	0.75				P81K-00109	Gate valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	1				P81K-0010A	Gate valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	1.5				P81K-0010B	Gate valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	2				P81L-00293	Gate valve ASTM A351 Grade CF8 Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	3				P81L-00294	Gate valve ASTM A351 Grade CF8 Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	4				P81L-00295	Gate valve ASTM A351 Grade CF8 Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
714	0.5				P81K-001LC	Gate valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW - NPT Trim number 12 BB-BG-OS&Y Handwheel operated	
714	0.75				P81K-001FD	Gate valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW - NPT Trim number 12 BB-BG-OS&Y Handwheel operated	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82K-000NR	Globe valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	0.75				P82K-000NS	Globe valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	1				P82K-000NT	Globe valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	1.5				P82K-000NU	Globe valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	2				P82L-00195	Globe valve ASTM A351 Grade CF8 Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	3				P82L-00196	Globe valve ASTM A351 Grade CF8 Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	4				P82L-00197	Globe valve ASTM A351 Grade CF8 Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83K-000LM	Check valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 Lift-type Bolted cover	
1	0.75				P83K-000LN	Check valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 Lift-type Bolted cover	
1	1				P83K-000LP	Check valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 Lift-type Bolted cover	
1	1.5				P83K-000LR	Check valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 Lift-type Bolted cover	
1	2				P83L-00196	Check valve ASTM A351 Grade CF8 Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	3				P83L-00197	Check valve ASTM A351 Grade CF8 Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	

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CHECK VALVE (X)							
OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	4				P83L-00198	Check valve ASTM A351 Grade CF8 Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	

SPECT BLANK (SB)							
OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71K-00065	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	0.75				P71K-00066	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	1				P71K-00067	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71K-00068	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	2				P71K-0006A	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	3				P71K-0006B	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	4				P71K-0006C	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	

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BOLT TABLE (B_A0JP03 , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	60	P80S-003V2		
0.75	4	0.500	65	P80S-003V3		
1	4	0.500	70	P80S-003V4		
1.5	4	0.500	75	P80S-003V5		
2	4	0.625	85	P80S-003XE		
3	4	0.625	95	P80S-003XG		
4	8	0.625	95	P80S-003XG		

BOLT TABLE (B_A0JP03_773 , STUD ASME RF, OPTION CODE 773)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-003V4		
0.75	4	0.625	75	P80S-003XC		
1	4	0.625	80	P80S-003XD		
1.5	4	0.750	95	P80S-00414		
2	8	0.625	90	P80S-003XF		
3	8	0.750	110	P80S-003XK		
4	8	0.750	115	P80S-003XL		

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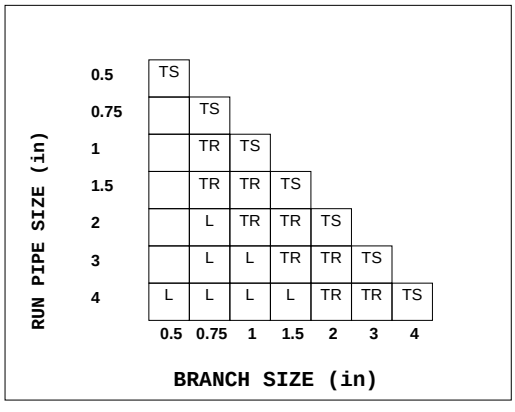
BRANCH TABLE (T_A0JP03)



TR : REDUCING TEE
L : OUTLET
TS : STRAIGHT TEE

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PIPING CLASS

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Material : SS304L
Rating : ASME CLASS 150
Flange Face : RF
C.A.(mm) : 0.80
Gasket : Spiral Wound
Service : PROCESS - WET SOUR SERVICE SUBJECT TO NACE STD. : / RICH AMINE / SOUR GAS / SOUR WATER

Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
2	USE OF SOFT SEATED BALL, PLUG AND BUTTERFLY VALVES SHALL BE LIMITED TO MAXIMUM OF 204DEGC (400DEGF)
5	BOLTING CONFIRMING TO B7M / 2HM SHALL BE USED UNDER CONDITIONS (A) DIRECT EXPOSURE TO SOUR ENVIRONMENTS (B) WHEN THE BOLTING WILL BE BURIED OR INSULATED

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
200	WITH JACK SCREW (FO)
541	NPT(F) (CA,F,L)
773	CLASS 300 (B,F,G)
4608	VALVE WITH NIPPLES (V)

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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P01J-002C1	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE Moderate wet H2S service	
1	0.75		SCH80S		P01J-002C2	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE Moderate wet H2S service	
1	1		SCH80S		P01J-002C3	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE Moderate wet H2S service	
1	1.5		SCH80S		P01J-002C4	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE Moderate wet H2S service	
1	2		SCH10S		P01J-002C5	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M BE Moderate wet H2S service	
1	3		SCH10S		P01J-002C6	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M BE Moderate wet H2S service	
1	4		SCH10S		P01J-002CD	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M BE Moderate wet H2S service	
1	6		SCH40S		P01J-002C8	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M BE Moderate wet H2S service	
1	8		SCH40S		P01J-002NC	Pipe ASTM A358 Grade 304/304L Class 1 dual grade EFW ASME B36.10M/B36.19M BE Moderate wet H2S service	
1	10		SCH10S		P01J-002C9	Pipe ASTM A358 Grade 304/304L Class 1 dual grade EFW ASME B36.10M/B36.19M BE Moderate wet H2S service	
1	12		SCH10S		P01J-002CA	Pipe ASTM A358 Grade 304/304L Class 1 dual grade EFW ASME B36.10M/B36.19M BE Moderate wet H2S service	
1	14		SCH10S		P01J-002CB	Pipe ASTM A358 Grade 304/304L Class 1 dual grade EFW ASME B36.10M/B36.19M BE Moderate wet H2S service	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P02J-001VE	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius Moderate wet H2S service	
1	0.75		SCH80S		P02J-001VF	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius Moderate wet H2S service	
1	1		SCH80S		P02J-001VG	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius Moderate wet H2S service	
1	1.5		SCH80S		P02J-001VH	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius Moderate wet H2S service	
1	2		SCH10S		P02J-001VJ	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius Moderate wet H2S service	
1	3		SCH10S		P02J-001VK	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius Moderate wet H2S service	
1	4		SCH10S		P02J-001VN	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius Moderate wet H2S service	
1	6		SCH40S		P02J-001VM	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius Moderate wet H2S service	
1	8		SCH40S		P02J-0022F	90 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius Moderate wet H2S service	
1	10		SCH10S		P02J-001VR	90 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius Moderate wet H2S service	
1	12		SCH10S		P02J-001VS	90 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius Moderate wet H2S service	
1	14		SCH10S		P02J-001VT	90 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius Moderate wet H2S service	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P03J-001SW	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius Moderate wet H2S service	
1	0.75		SCH80S		P03J-001SX	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius Moderate wet H2S service	
1	1		SCH80S		P03J-001SY	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius Moderate wet H2S service	
1	1.5		SCH80S		P03J-001SZ	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius Moderate wet H2S service	
1	2		SCH10S		P03J-001T0	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius Moderate wet H2S service	
1	3		SCH10S		P03J-001T1	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius Moderate wet H2S service	
1	4		SCH10S		P03J-001T4	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius Moderate wet H2S service	
1	6		SCH40S		P03J-001T3	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius Moderate wet H2S service	
1	8		SCH40S		P03J-00227	45 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius Moderate wet H2S service	
1	10		SCH10S		P03J-001T6	45 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius Moderate wet H2S service	
1	12		SCH10S		P03J-001T7	45 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius Moderate wet H2S service	
1	14		SCH10S		P03J-001T8	45 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius Moderate wet H2S service	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P21J-001JE	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	

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STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75		SCH80S		P21J-001JF	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	1		SCH80S		P21J-001JG	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	1.5		SCH80S		P21J-001JH	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	2		SCH10S		P21J-001JJ	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	3		SCH10S		P21J-001JK	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	4		SCH10S		P21J-001JW	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	6		SCH40S		P21J-001JM	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	8		SCH40S		P21J-001SF	Straight tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	10		SCH10S		P21J-001JY	Straight tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	12		SCH10S		P21J-001JZ	Straight tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	14		SCH10S		P21J-001K0	Straight tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75	SCH80S	SCH80S	P24J-006UA	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	1.5	0.75	SCH80S	SCH80S	P24J-006UB	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	1.5	1	SCH80S	SCH80S	P24J-006UC	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	2	1	SCH10S	SCH80S	P24J-006UD	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	2	1.5	SCH10S	SCH80S	P24J-006UE	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	3	1.5	SCH10S	SCH80S	P24J-006UF	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	3	2	SCH10S	SCH10S	P24J-006UG	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	4	2	SCH10S	SCH10S	P24J-006UZ	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	4	3	SCH10S	SCH10S	P24J-006V0	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	6	3	SCH40S	SCH10S	P24J-006UK	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	6	4	SCH40S	SCH10S	P24J-007HE	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	8	4	SCH40S	SCH10S	P24J-007HF	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	8	6	SCH40S	SCH40S	P24J-007HG	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	10	4	SCH10S	SCH10S	P24J-006V3	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	10	6	SCH10S	SCH40S	P24J-007HH	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	10	8	SCH10S	SCH40S	P24J-007HJ	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	12	6	SCH10S	SCH40S	P24J-007HK	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	12	8	SCH10S	SCH40S	P24J-007HL	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	12	10	SCH10S	SCH10S	P24J-006V6	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	14	6	SCH10S	SCH40S	P24J-007HM	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	14	8	SCH10S	SCH40S	P24J-007HN	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	14	10	SCH10S	SCH10S	P24J-006V9	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	14	12	SCH10S	SCH10S	P24J-006VA	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH80S	SCH80S	P27J-005MW	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	1	0.5	SCH80S	SCH80S	P27J-005MX	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	1	0.75	SCH80S	SCH80S	P27J-005MY	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	1.5	0.5	SCH80S	SCH80S	P27J-005MZ	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	1.5	0.75	SCH80S	SCH80S	P27J-005N0	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5	1	SCH80S	SCH80S	P27J-005N1	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	2	0.75	SCH10S	SCH80S	P27J-005N2	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	2	1	SCH10S	SCH80S	P27J-005N3	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	2	1.5	SCH10S	SCH80S	P27J-005N4	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	3	1.5	SCH10S	SCH80S	P27J-005N5	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	3	2	SCH10S	SCH10S	P27J-005N6	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	4	1.5	SCH10S	SCH80S	P27J-005NT	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	4	2	SCH10S	SCH10S	P27J-005NU	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	4	3	SCH10S	SCH10S	P27J-005NV	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	6	3	SCH40S	SCH10S	P27J-005NA	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	6	4	SCH40S	SCH10S	P27J-006AV	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	8	4	SCH40S	SCH10S	P27J-006AW	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	8	6	SCH40S	SCH40S	P27J-006AX	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	10	4	SCH10S	SCH10S	P27J-005P0	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	10	6	SCH10S	SCH40S	P27J-006AY	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	10	8	SCH10S	SCH40S	P27J-006AZ	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	12	6	SCH10S	SCH40S	P27J-006B0	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	12	8	SCH10S	SCH40S	P27J-006B1	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	12	10	SCH10S	SCH10S	P27J-005P3	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	14	6	SCH10S	SCH40S	P27J-006B2	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	14	8	SCH10S	SCH40S	P27J-006B3	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	14	10	SCH10S	SCH10S	P27J-005P6	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	14	12	SCH10S	SCH10S	P27J-005P7	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH80S	SCH80S	P28J-005NR	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	1	0.5	SCH80S	SCH80S	P28J-005NS	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	1	0.75	SCH80S	SCH80S	P28J-005NT	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	1.5	0.5	SCH80S	SCH80S	P28J-005NU	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	1.5	0.75	SCH80S	SCH80S	P28J-005NV	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	1.5	1	SCH80S	SCH80S	P28J-005NW	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	2	0.75	SCH10S	SCH80S	P28J-005NX	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	2	1	SCH10S	SCH80S	P28J-005NY	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	2	1.5	SCH10S	SCH80S	P28J-005NZ	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	3	1.5	SCH10S	SCH80S	P28J-005P0	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	3	2	SCH10S	SCH10S	P28J-005P1	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	4	1.5	SCH10S	SCH80S	P28J-005PM	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	4	2	SCH10S	SCH10S	P28J-005PN	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	4	3	SCH10S	SCH10S	P28J-005PP	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	6	3	SCH40S	SCH10S	P28J-005P5	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	6	4	SCH40S	SCH10S	P28J-006C6	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	8	4	SCH40S	SCH10S	P28J-006C7	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	8	6	SCH40S	SCH40S	P28J-006C8	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	10	4	SCH10S	SCH10S	P28J-005PV	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	10	6	SCH10S	SCH40S	P28J-006C9	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	10	8	SCH10S	SCH40S	P28J-006CA	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	12	6	SCH10S	SCH40S	P28J-006CB	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	12	8	SCH10S	SCH40S	P28J-006CC	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	12	10	SCH10S	SCH10S	P28J-005PY	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	14	6	SCH10S	SCH40S	P28J-006CD	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	14	8	SCH10S	SCH40S	P28J-006CE	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	14	10	SCH10S	SCH10S	P28J-005R1	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	14	12	SCH10S	SCH10S	P28J-005R2	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P29J-001CH	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	0.75		SCH80S		P29J-001CJ	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	1		SCH80S		P29J-001CK	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	1.5		SCH80S		P29J-001CL	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	2		SCH10S		P29J-001CM	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	3		SCH10S		P29J-001CN	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	4		SCH10S		P29J-001CV	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	6		SCH40S		P29J-001CR	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	8		SCH40S		P29J-003XR	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	10		SCH10S		P29J-001CS	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	12		SCH10S		P29J-001CT	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	14		SCH10S		P29J-001CU	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
541	0.75				P29K-00047	Cap ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 NPT Moderate wet H2S service	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P41J-001T8	Straight nipple ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Moderate wet H2S service	
1	0.75		SCH80S		P41J-001T9	Straight nipple ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Moderate wet H2S service	
1	1		SCH160		P41J-001V3	Straight nipple ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Moderate wet H2S service	
1	1.5		SCH80S		P41J-001TB	Straight nipple ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Moderate wet H2S service	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
541	1	0.75			P31K-00FM2	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 NPT Moderate wet H2S service	
541	1.5	0.75			P31K-00FM1	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 NPT Moderate wet H2S service	
541	2 - 2.5	0.75			P31K-00GFM	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 NPT Moderate wet H2S service	
541	3 - 5	0.75			P31K-00GFN	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 NPT Moderate wet H2S service	
541	6 - 12	0.75			P31K-00GFP	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 NPT Moderate wet H2S service	
541	14 - 36	0.75			P31K-00GFR	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 NPT Moderate wet H2S service	
1	2	0.75	SCH10S	SCH80S	P31K-00EEL	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Moderate wet H2S service	
1	3	0.75	SCH10S	SCH80S	P31K-00EEM	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Moderate wet H2S service	
1	4	0.75	SCH10S	SCH80S	P31K-00EEX	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Moderate wet H2S service	
1	6	0.75	SCH40S	SCH80S	P31K-00EET	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Moderate wet H2S service	
1	8	0.75	SCH40S	SCH80S	P31K-00F5X	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Moderate wet H2S service	
1	10	0.75	SCH10S	SCH80S	P31K-00EF9	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Moderate wet H2S service	
1	12	0.75	SCH10S	SCH80S	P31K-00EFE	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Moderate wet H2S service	
1	14	0.75	SCH10S	SCH80S	P31K-00EFL	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Moderate wet H2S service	
1	3	1	SCH10S	SCH80S	P31K-00EEN	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Moderate wet H2S service	

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OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	4	1	SCH10S	SCH80S	P31K-00EEY	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Moderate wet H2S service	
1	6	1	SCH40S	SCH80S	P31K-00EEU	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Moderate wet H2S service	
1	8	1	SCH40S	SCH80S	P31K-00F5Y	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Moderate wet H2S service	
1	10	1	SCH10S	SCH80S	P31K-00EFA	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Moderate wet H2S service	
1	12	1	SCH10S	SCH80S	P31K-00EFF	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Moderate wet H2S service	
1	14	1	SCH10S	SCH80S	P31K-00EFM	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Moderate wet H2S service	
1	4	1.5	SCH10S	SCH80S	P31K-00EEZ	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Moderate wet H2S service	
1	6	1.5	SCH40S	SCH80S	P31K-00EEV	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Moderate wet H2S service	
1	8	1.5	SCH40S	SCH80S	P31K-00F5Z	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Moderate wet H2S service	
1	10	1.5	SCH10S	SCH80S	P31K-00EFB	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Moderate wet H2S service	
1	12	1.5	SCH10S	SCH80S	P31K-00EFG	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Moderate wet H2S service	
1	14	1.5	SCH10S	SCH80S	P31K-00EFN	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Moderate wet H2S service	
1	6	2	SCH40S	SCH10S	P31K-00EEW	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Moderate wet H2S service	
1	8	2	SCH40S	SCH10S	P31K-00F60	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Moderate wet H2S service	
1	10	2	SCH10S	SCH10S	P31K-00EFC	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Moderate wet H2S service	
1	12	2	SCH10S	SCH10S	P31K-00EFH	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Moderate wet H2S service	
1	14	2	SCH10S	SCH10S	P31K-00EFP	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Moderate wet H2S service	
1	8	3	SCH40S	SCH10S	P31K-00F61	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Moderate wet H2S service	
1	10	3	SCH10S	SCH10S	P31K-00EFD	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Moderate wet H2S service	
1	12	3	SCH10S	SCH10S	P31K-00EFJ	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Moderate wet H2S service	
1	14	3	SCH10S	SCH10S	P31K-00EFR	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Moderate wet H2S service	
1	12	4	SCH10S	SCH10S	P31K-00EFK	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Moderate wet H2S service	
1	14	4	SCH10S	SCH10S	P31K-00EFS	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Moderate wet H2S service	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30K-0004X	Plug ASTM A182 Grade F304/F304L dual grade ASME B16.11 NPT Round head Moderate wet H2S service	
1	0.75				P30K-0004Y	Plug ASTM A182 Grade F304/F304L dual grade ASME B16.11 NPT Round head Moderate wet H2S service	
1	1				P30K-0004Z	Plug ASTM A182 Grade F304/F304L dual grade ASME B16.11 NPT Round head Moderate wet H2S service	
1	1.5				P30K-00050	Plug ASTM A182 Grade F304/F304L dual grade ASME B16.11 NPT Round head Moderate wet H2S service	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P61K-0059Z	Flange WN ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF Moderate wet H2S service	
1	0.75		SCH80S		P61K-005A0	Flange WN ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF Moderate wet H2S service	
1	1		SCH80S		P61K-005A1	Flange WN ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF Moderate wet H2S service	
1	1.5		SCH80S		P61K-005A2	Flange WN ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF Moderate wet H2S service	
1	2		SCH10S		P61K-005A6	Flange WN ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF Moderate wet H2S service	
1	3		SCH10S		P61K-005A7	Flange WN ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF Moderate wet H2S service	
1	4		SCH10S		P61K-005A8	Flange WN ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF Moderate wet H2S service	
1	6		SCH40S		P61K-005W5	Flange WN ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF Moderate wet H2S service	
1	8		SCH40S		P61K-005W6	Flange WN ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF Moderate wet H2S service	
1	10		SCH10S		P61K-005A3	Flange WN ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF Moderate wet H2S service	
1	12		SCH10S		P61K-005A4	Flange WN ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF Moderate wet H2S service	
1	14		SCH10S		P61K-005A5	Flange WN ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF Moderate wet H2S service	
541	0.5				P61K-0069F	Flange NPT ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF Moderate wet H2S service	
541	0.75				P61K-00600	Flange NPT ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF Moderate wet H2S service	
773	0.5		SCH80S		P61K-0059G	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF Moderate wet H2S service	
773	0.75		SCH80S		P61K-0059H	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF Moderate wet H2S service	
773	1		SCH80S		P61K-0059J	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF Moderate wet H2S service	
773	1.5		SCH80S		P61K-0059K	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF Moderate wet H2S service	
773	2		SCH10S		P61K-0059L	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF Moderate wet H2S service	

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FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
773	3		SCH10S		P61K-0059M	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF Moderate wet H2S service	
773	4		SCH10S		P61K-005AE	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF Moderate wet H2S service	
773	6		SCH40S		P61K-0059P	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF Moderate wet H2S service	
773	8		SCH40S		P61K-005W7	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF Moderate wet H2S service	
773	10		SCH10S		P61K-005AB	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF Moderate wet H2S service	
773	12		SCH10S		P61K-005AC	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF Moderate wet H2S service	
773	14		SCH10S		P61K-005AD	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF Moderate wet H2S service	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67K-001HG	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF Moderate wet H2S service	
1	0.75				P67K-001HH	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF Moderate wet H2S service	
1	1				P67K-001HJ	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF Moderate wet H2S service	
1	1.5				P67K-001HK	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF Moderate wet H2S service	
1	2				P67K-001HP	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF Moderate wet H2S service	
1	3				P67K-001HR	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF Moderate wet H2S service	
1	4				P67K-001HS	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF Moderate wet H2S service	
1	6				P67K-001HT	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF Moderate wet H2S service	
1	8				P67K-001HU	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF Moderate wet H2S service	
1	10				P67K-001HL	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF Moderate wet H2S service	
1	12				P67K-001HM	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF Moderate wet H2S service	
1	14				P67K-001HN	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF Moderate wet H2S service	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000L8	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000L9	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000LA	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000LB	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000LH	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000LL	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000LM	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	6				P73T-000LN	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	8				P73T-000LP	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	10				P73T-000LC	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	12				P73T-000LD	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	14				P73T-000LE	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	0.5				P73T-000FT	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	0.75				P73T-000FU	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	3				P73T-000G5	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	4				P73T-000G6	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	6				P73T-000G7	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

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GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
773	8				P73T-000G8	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	10				P73T-000FX	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	12				P73T-000FY	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	14				P73T-000FZ	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-14				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
773	0.5-10				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
773	12-14				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81K-0010C	Gate valve ASTM A182 Grade F304/F304L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	0.75				P81K-0010D	Gate valve ASTM A182 Grade F304/F304L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	1				P81K-0010E	Gate valve ASTM A182 Grade F304/F304L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	1.5				P81K-0010F	Gate valve ASTM A182 Grade F304/F304L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	2				P81L-0029L	Gate valve ASTM A351 Grade CF8 Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	3				P81L-0029M	Gate valve ASTM A351 Grade CF8 Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	4				P81L-0029N	Gate valve ASTM A351 Grade CF8 Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	6				P81L-0029P	Gate valve ASTM A351 Grade CF8 Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	8				P81L-0029R	Gate valve ASTM A351 Grade CF8 Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	10				P81L-0029J	Gate valve ASTM A351 Grade CF8 Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	12				P81L-0029K	Gate valve ASTM A351 Grade CF8 Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	14				P81L-0029H	Gate valve ASTM A351 Grade CF8 Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Moderate wet H2S service	
4608	0.75				P81K-001PF	Gate valve ASTM A182 Grade F304/F304L dual grade Class 150 API 602 BW both sides w/ nipples BE - NPT ASTM A312-TP304(L) dual grade Seamless Sch80S-nipple Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82K-000NV	Globe valve ASTM A182 Grade F304/F304L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	0.75				P82K-000NW	Globe valve ASTM A182 Grade F304/F304L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	1				P82K-000NX	Globe valve ASTM A182 Grade F304/F304L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	1.5				P82K-000NY	Globe valve ASTM A182 Grade F304/F304L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	2				P82L-0019D	Globe valve ASTM A351 Grade CF8 Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	3				P82L-0019E	Globe valve ASTM A351 Grade CF8 Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	4				P82L-0019F	Globe valve ASTM A351 Grade CF8 Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	6				P82L-0019G	Globe valve ASTM A351 Grade CF8 Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83K-000LS	Check valve ASTM A182 Grade F304/F304L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Moderate wet H2S service	
1	0.75				P83K-000LT	Check valve ASTM A182 Grade F304/F304L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Moderate wet H2S service	
1	1				P83K-000LU	Check valve ASTM A182 Grade F304/F304L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Moderate wet H2S service	
1	1.5				P83K-000LV	Check valve ASTM A182 Grade F304/F304L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Moderate wet H2S service	
1	2				P83L-0019E	Check valve ASTM A351 Grade CF8 Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Moderate wet H2S service	
1	3				P83L-0019F	Check valve ASTM A351 Grade CF8 Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Moderate wet H2S service	

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CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	4				P83L-0019G	Check valve ASTM A351 Grade CF8 Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Moderate wet H2S service	
1	6				P83L-0019H	Check valve ASTM A351 Grade CF8 Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Moderate wet H2S service	
1	8				P83L-0019J	Check valve ASTM A351 Grade CF8 Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Moderate wet H2S service	

NEEDLE VALVE (NV)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82K-000XH	Needle valve ASTM A182 Grade F304/F304L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	0.75				P82K-000XJ	Needle valve ASTM A182 Grade F304/F304L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	1				P82K-000XK	Needle valve ASTM A182 Grade F304/F304L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	1.5				P82K-000XL	Needle valve ASTM A182 Grade F304/F304L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	

ORIFICE FLANGE (FO)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2		SCH10S		P66K-003EX	Orifice flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Moderate wet H2S service	
1	3		SCH10S		P66K-003LC	Orifice flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Moderate wet H2S service	
1	4		SCH10S		P66K-003N1	Orifice flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Moderate wet H2S service	
1	6		SCH40S		P66K-003R3	Orifice flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Moderate wet H2S service	
1	8		SCH40S		P66K-003SK	Orifice flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Moderate wet H2S service	
200	2		SCH10S		P66K-003T0	Orifice flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Moderate wet H2S service with Jack screw	
200	3		SCH10S		P66K-003T1	Orifice flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Moderate wet H2S service with Jack screw	
200	4		SCH10S		P66K-003T2	Orifice flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Moderate wet H2S service with Jack screw	
200	6		SCH40S		P66K-003T3	Orifice flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Moderate wet H2S service with Jack screw	
200	8		SCH40S		P66K-003T4	Orifice flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Moderate wet H2S service with Jack screw	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71K-000B1	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service	
1	0.75				P71K-000B2	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service	
1	1				P71K-000B3	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service	
1	1.5				P71K-000B5	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service	
1	2				P71K-000B8	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service	
1	3				P71K-000BA	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service	
1	4				P71K-000BC	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service	
1	6				P71K-000BE	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service	
1	8				P71K-000BF	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service	
1	10				P71K-000B6	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service	
1	12				P71K-000B7	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service	

PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72K-000AS	Paddle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service	

PADDLE SPACER (PS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72K-000AT	Paddle spacer ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service	

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BOLT TABLE (B_A0JQ , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	60	P80S-008SY		
0.75	4	0.500	65	P80S-008SZ		
1	4	0.500	70	P80S-008T0		
1.5	4	0.500	75	P80S-008T1		
2	4	0.625	85	P80S-0090A		
3	4	0.625	95	P80S-0090C		
4	8	0.625	95	P80S-0090C		
6	8	0.750	105	P80S-0090E		
8	8	0.750	110	P80S-0090F		
10	12	0.875	120	P80S-005Z9		
12	12	0.875	120	P80S-005Z9		
14	12	1.000	135	P80S-00619		

BOLT TABLE (B_A0JQ_773 , STUD ASME RF, OPTION CODE 773)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-008T0		
0.75	4	0.625	75	P80S-00908		
1	4	0.625	80	P80S-00909		
1.5	4	0.750	95	P80S-005Z4		
2	8	0.625	90	P80S-0090B		
3	8	0.750	110	P80S-0090F		
4	8	0.750	115	P80S-0090G		
6	12	0.750	125	P80S-0090J		
8	12	0.875	140	P80S-005ZD		
10	16	1.000	160	P80S-0061E		
12	16	1.125	175	P80S-0064S		
14	20	1.125	180	P80S-0064T		

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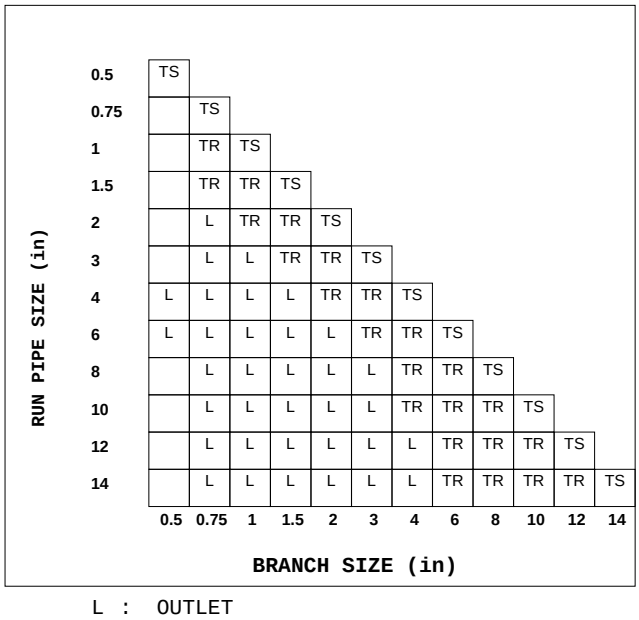
BRANCH TABLE (T_A0JQ)



L : OUTLET
TS : STRAIGHT TEE
TR : REDUCING TEE

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PIPING CLASS

A0JQ01 REV NO. 2

Material : SS304L
Rating : ASME CLASS 150
Flange Face : RF
C.A.(mm) : 0.80
Gasket : Spiral Wound
Service : PROCESS -WET SOUR SERVICE SUBJECT TO NACE STD. : / RICH AMINE / SOUR GAS / SOUR WATER
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
2	USE OF SOFT SEATED BALL, PLUG AND BUTTERFLY VALVES SHALL BE LIMITED TO MAXIMUM OF 204DEGC (400DEGF)
5	BOLTING CONFIRMING TO B7M / 2HM SHALL BE USED UNDER CONDITIONS (A) DIRECT EXPOSURE TO SOUR ENVIRONMENTS (B) WHEN THE BOLTING WILL BE BURIED OR INSULATED

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
200	WITH JACK SCREW (FO)
541	NPT(F) (CA,F,L)
773	CLASS 300 (B,F,G)
4608	VALVE WITH NIPPLES (V)

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PIPING CLASS
A0JQ01 REV NO. 2

PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P01J-002C1	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE Moderate wet H2S service	
1	0.75		SCH80S		P01J-002C2	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE Moderate wet H2S service	
1	1		SCH80S		P01J-002C3	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE Moderate wet H2S service	
1	1.5		SCH80S		P01J-002C4	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE Moderate wet H2S service	
1	2		SCH10S		P01J-002C5	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M BE Moderate wet H2S service	
1	3		SCH10S		P01J-002C6	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M BE Moderate wet H2S service	
1	4		SCH10S		P01J-002CD	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M BE Moderate wet H2S service	
1	6		SCH40S		P01J-002C8	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M BE Moderate wet H2S service	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P02J-001VE	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius Moderate wet H2S service	
1	0.75		SCH80S		P02J-001VF	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius Moderate wet H2S service	
1	1		SCH80S		P02J-001VG	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius Moderate wet H2S service	
1	1.5		SCH80S		P02J-001VH	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius Moderate wet H2S service	
1	2		SCH10S		P02J-001VJ	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius Moderate wet H2S service	
1	3		SCH10S		P02J-001VK	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius Moderate wet H2S service	
1	4		SCH10S		P02J-001VN	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius Moderate wet H2S service	
1	6		SCH40S		P02J-001VM	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius Moderate wet H2S service	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P03J-001SW	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius Moderate wet H2S service	
1	0.75		SCH80S		P03J-001SX	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius Moderate wet H2S service	
1	1		SCH80S		P03J-001SY	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius Moderate wet H2S service	
1	1.5		SCH80S		P03J-001SZ	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius Moderate wet H2S service	
1	2		SCH10S		P03J-001T0	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius Moderate wet H2S service	
1	3		SCH10S		P03J-001T1	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius Moderate wet H2S service	
1	4		SCH10S		P03J-001T4	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius Moderate wet H2S service	
1	6		SCH40S		P03J-001T3	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius Moderate wet H2S service	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P21J-001JE	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	0.75		SCH80S		P21J-001JF	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	1		SCH80S		P21J-001JG	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	1.5		SCH80S		P21J-001JH	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	2		SCH10S		P21J-001JJ	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	3		SCH10S		P21J-001JK	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	4		SCH10S		P21J-001JW	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	6		SCH40S		P21J-001JM	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75	SCH80S	SCH80S	P24J-006UA	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	1.0	0.75	SCH80S	SCH80S	P24J-006UB	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	

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REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5	1	SCH80S	SCH80S	P24J-006UC	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	2	1	SCH10S	SCH80S	P24J-006UD	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	2	1.5	SCH10S	SCH80S	P24J-006UE	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	3	1.5	SCH10S	SCH80S	P24J-006UF	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	3	2	SCH10S	SCH10S	P24J-006UG	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	4	2	SCH10S	SCH10S	P24J-006UZ	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	4	3	SCH10S	SCH10S	P24J-006V0	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	6	3	SCH40S	SCH10S	P24J-006UK	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	6	4	SCH40S	SCH10S	P24J-007HE	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH80S	SCH80S	P27J-005MW	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	1	0.5	SCH80S	SCH80S	P27J-005MX	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	1	0.75	SCH80S	SCH80S	P27J-005MY	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	1.5	0.5	SCH80S	SCH80S	P27J-005MZ	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	1.5	0.75	SCH80S	SCH80S	P27J-005N0	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	1.5	1	SCH80S	SCH80S	P27J-005N1	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	2	0.75	SCH10S	SCH80S	P27J-005N2	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	2	1	SCH10S	SCH80S	P27J-005N3	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	2	1.5	SCH10S	SCH80S	P27J-005N4	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	3	1.5	SCH10S	SCH80S	P27J-005N5	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	3	2	SCH10S	SCH10S	P27J-005N6	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	4	1.5	SCH10S	SCH80S	P27J-005NT	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	4	2	SCH10S	SCH10S	P27J-005NU	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	4	3	SCH10S	SCH10S	P27J-005NV	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	6	3	SCH40S	SCH10S	P27J-005NA	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	6	4	SCH40S	SCH10S	P27J-006AV	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH80S	SCH80S	P28J-005NR	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	1	0.5	SCH80S	SCH80S	P28J-005NS	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	1	0.75	SCH80S	SCH80S	P28J-005NT	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	1.5	0.5	SCH80S	SCH80S	P28J-005NU	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	1.5	0.75	SCH80S	SCH80S	P28J-005NV	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	1.5	1	SCH80S	SCH80S	P28J-005NW	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	2	0.75	SCH10S	SCH80S	P28J-005NX	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	2	1	SCH10S	SCH80S	P28J-005NY	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	2	1.5	SCH10S	SCH80S	P28J-005NZ	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	3	1.5	SCH10S	SCH80S	P28J-005P0	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	3	2	SCH10S	SCH10S	P28J-005P1	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	4	1.5	SCH10S	SCH80S	P28J-005PM	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	4	2	SCH10S	SCH10S	P28J-005PN	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	4	3	SCH10S	SCH10S	P28J-005PP	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	

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ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	6	3	SCH40S	SCH10S	P28J-005P5	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	6	4	SCH40S	SCH10S	P28J-006C6	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P29J-001CH	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	0.75		SCH80S		P29J-001CJ	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	1		SCH80S		P29J-001CK	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	1.5		SCH80S		P29J-001CL	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	2		SCH10S		P29J-001CM	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	3		SCH10S		P29J-001CN	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	4		SCH10S		P29J-001CV	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	6		SCH40S		P29J-001CR	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
541	0.75				P29K-00047	Cap ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 NPT Moderate wet H2S service	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P41J-001T8	Straight nipple ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Moderate wet H2S service	
1	0.75		SCH80S		P41J-001T9	Straight nipple ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Moderate wet H2S service	
1	1		SCH160		P41J-001V3	Straight nipple ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Moderate wet H2S service	
1	1.5		SCH80S		P41J-001TB	Straight nipple ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Moderate wet H2S service	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
541	1	0.75			P31K-00FM2	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 NPT Moderate wet H2S service	
541	1.5	0.75			P31K-00FM1	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 NPT Moderate wet H2S service	
541	2 - 2.5	0.75			P31K-00GFM	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 NPT Moderate wet H2S service	
541	3 - 5	0.75			P31K-00GFN	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 NPT Moderate wet H2S service	
541	6 - 12	0.75			P31K-00GFP	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 NPT Moderate wet H2S service	
1	2	0.75	SCH10S	SCH80S	P31K-00EEL	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Moderate wet H2S service	
1	3	0.75	SCH10S	SCH80S	P31K-00EEM	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Moderate wet H2S service	
1	4	0.75	SCH10S	SCH80S	P31K-00EEX	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Moderate wet H2S service	
1	6	0.75	SCH40S	SCH80S	P31K-00EET	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Moderate wet H2S service	
1	3	1	SCH10S	SCH80S	P31K-00EEN	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Moderate wet H2S service	
1	4	1	SCH10S	SCH80S	P31K-00EEY	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Moderate wet H2S service	
1	6	1	SCH40S	SCH80S	P31K-00EEU	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Moderate wet H2S service	
1	4	1.5	SCH10S	SCH80S	P31K-00EEZ	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Moderate wet H2S service	
1	6	1.5	SCH40S	SCH80S	P31K-00EEV	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Moderate wet H2S service	
1	6	2	SCH40S	SCH10S	P31K-00EEW	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Moderate wet H2S service	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30K-0004X	Plug ASTM A182 Grade F304/F304L dual grade ASME B16.11 NPT Round head Moderate wet H2S service	
1	0.75				P30K-0004Y	Plug ASTM A182 Grade F304/F304L dual grade ASME B16.11 NPT Round head Moderate wet H2S service	
1	1				P30K-0004Z	Plug ASTM A182 Grade F304/F304L dual grade ASME B16.11 NPT Round head Moderate wet H2S service	
1	1.5				P30K-00050	Plug ASTM A182 Grade F304/F304L dual grade ASME B16.11 NPT Round head Moderate wet H2S service	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P61K-0059Z	Flange WN ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF Moderate wet H2S service	
1	0.75		SCH80S		P61K-005A0	Flange WN ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF Moderate wet H2S service	
1	1		SCH80S		P61K-005A1	Flange WN ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF Moderate wet H2S service	

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FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5		SCH80S		P61K-005A2	Flange WN ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF Moderate wet H2S service	
1	2		SCH10S		P61K-005A6	Flange WN ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF Moderate wet H2S service	
1	3		SCH10S		P61K-005A7	Flange WN ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF Moderate wet H2S service	
1	4		SCH10S		P61K-005A8	Flange WN ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF Moderate wet H2S service	
1	6		SCH40S		P61K-005W5	Flange WN ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF Moderate wet H2S service	
541	0.5				P61K-0069F	Flange NPT ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF Moderate wet H2S service	
541	0.75				P61K-00600	Flange NPT ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF Moderate wet H2S service	
773	0.5		SCH80S		P61K-0059G	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF Moderate wet H2S service	
773	0.75		SCH80S		P61K-0059H	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF Moderate wet H2S service	
773	1		SCH80S		P61K-0059J	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF Moderate wet H2S service	
773	1.5		SCH80S		P61K-0059K	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF Moderate wet H2S service	
773	2		SCH10S		P61K-0059L	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF Moderate wet H2S service	
773	3		SCH10S		P61K-0059M	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF Moderate wet H2S service	
773	4		SCH10S		P61K-005AE	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF Moderate wet H2S service	
773	6		SCH40S		P61K-0059P	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF Moderate wet H2S service	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67K-001HG	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF Moderate wet H2S service	
1	0.75				P67K-001HH	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF Moderate wet H2S service	
1	1				P67K-001HJ	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF Moderate wet H2S service	
1	1.5				P67K-001HK	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF Moderate wet H2S service	
1	2				P67K-001HP	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF Moderate wet H2S service	
1	3				P67K-001HR	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF Moderate wet H2S service	
1	4				P67K-001HS	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF Moderate wet H2S service	
1	6				P67K-001HT	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF Moderate wet H2S service	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000L8	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000L9	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000LA	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000LB	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000LH	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000LL	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000LM	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	6				P73T-000LN	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	0.5				P73T-000FT	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	0.75				P73T-000FU	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	3				P73T-000G5	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	4				P73T-000G6	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	6				P73T-000G7	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

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BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-6				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
773	0.5-6				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81K-0010C	Gate valve ASTM A182 Grade F304/F304L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	0.75				P81K-0010D	Gate valve ASTM A182 Grade F304/F304L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	1				P81K-0010E	Gate valve ASTM A182 Grade F304/F304L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	1.5				P81K-0010F	Gate valve ASTM A182 Grade F304/F304L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	2				P81L-0029L	Gate valve ASTM A351 Grade CF8 Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	3				P81L-0029M	Gate valve ASTM A351 Grade CF8 Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	4				P81L-0029N	Gate valve ASTM A351 Grade CF8 Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	6				P81L-0029P	Gate valve ASTM A351 Grade CF8 Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
4608	0.75				P81K-001PF	Gate valve ASTM A182 Grade F304/F304L dual grade Class 150 API 602 BW both sides w/ nipples BE - NPT ASTM A312-TP304(L) dual grade Seamless Sch80S-nipple Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82K-000NV	Globe valve ASTM A182 Grade F304/F304L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	0.75				P82K-000NW	Globe valve ASTM A182 Grade F304/F304L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	1				P82K-000NX	Globe valve ASTM A182 Grade F304/F304L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	1.5				P82K-000NY	Globe valve ASTM A182 Grade F304/F304L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	2				P82L-0019D	Globe valve ASTM A351 Grade CF8 Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	3				P82L-0019E	Globe valve ASTM A351 Grade CF8 Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	4				P82L-0019F	Globe valve ASTM A351 Grade CF8 Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	6				P82L-0019G	Globe valve ASTM A351 Grade CF8 Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83K-000LS	Check valve ASTM A182 Grade F304/F304L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Moderate wet H2S service	
1	0.75				P83K-000LT	Check valve ASTM A182 Grade F304/F304L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Moderate wet H2S service	
1	1				P83K-000LU	Check valve ASTM A182 Grade F304/F304L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Moderate wet H2S service	
1	1.5				P83K-000LV	Check valve ASTM A182 Grade F304/F304L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Moderate wet H2S service	
1	2				P83L-0019E	Check valve ASTM A351 Grade CF8 Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Moderate wet H2S service	
1	3				P83L-0019F	Check valve ASTM A351 Grade CF8 Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Moderate wet H2S service	
1	4				P83L-0019G	Check valve ASTM A351 Grade CF8 Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Moderate wet H2S service	
1	6				P83L-0019H	Check valve ASTM A351 Grade CF8 Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Moderate wet H2S service	

NEEDLE VALVE (NV)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82K-000XH	Needle valve ASTM A182 Grade F304/F304L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	0.75				P82K-000XJ	Needle valve ASTM A182 Grade F304/F304L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	1				P82K-000XK	Needle valve ASTM A182 Grade F304/F304L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	1.5				P82K-000XL	Needle valve ASTM A182 Grade F304/F304L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	

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ORIFICE FLANGE (FO)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2		SCH10S		P66K-003EX	Orifice flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Moderate wet H2S service	
1	3		SCH10S		P66K-003LC	Orifice flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Moderate wet H2S service	
1	4		SCH10S		P66K-003N1	Orifice flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Moderate wet H2S service	
1	6		SCH40S		P66K-003R3	Orifice flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Moderate wet H2S service	
200	2		SCH10S		P66K-003T0	Orifice flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Moderate wet H2S service with Jack screw	
200	3		SCH10S		P66K-003T1	Orifice flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Moderate wet H2S service with Jack screw	
200	4		SCH10S		P66K-003T2	Orifice flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Moderate wet H2S service with Jack screw	
200	6		SCH40S		P66K-003T3	Orifice flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Moderate wet H2S service with Jack screw	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71K-000B1	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service	
1	0.75				P71K-000B2	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service	
1	1				P71K-000B3	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service	
1	1.5				P71K-000B5	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service	
1	2				P71K-000B8	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service	
1	3				P71K-000BA	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service	
1	4				P71K-000BC	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service	
1	6				P71K-000BE	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service	

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BOLT TABLE (B_A0JQ01 , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	60	P80S-008SY		
0.75	4	0.500	65	P80S-008SZ		
1	4	0.500	70	P80S-008T0		
1.5	4	0.500	75	P80S-008T1		
2	4	0.625	85	P80S-0090A		
3	4	0.625	95	P80S-0090C		
4	8	0.625	95	P80S-0090C		
6	8	0.750	105	P80S-0090E		

BOLT TABLE (B_A0JQ01_773 , STUD ASME RF, OPTION CODE 773)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-008T0		
0.75	4	0.625	75	P80S-00908		
1	4	0.625	80	P80S-00909		
1.5	4	0.750	95	P80S-005Z4		
2	8	0.625	90	P80S-0090B		
3	8	0.750	110	P80S-0090F		
4	8	0.750	115	P80S-0090G		
6	12	0.750	125	P80S-0090J		

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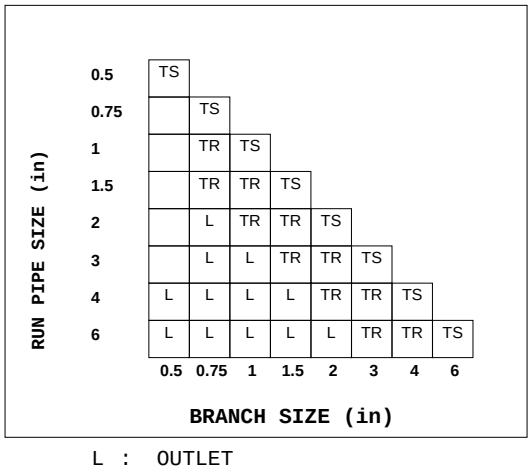
BRANCH TABLE (T_A0JQ01)



L : OUTLET
TS : STRAIGHT TEE
TR : REDUCING TEE

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Material : SS304L
Rating : ASME CLASS 150
Flange Face : RF
C.A.(mm) : 0.00
Gasket : Spiral Wound
Service : PROCESS -WET SEVERE SOUR SERVICE SUBJECT TO NACE STD.
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
5	BOLTING CONFIRMING TO B7M / 2HM SHALL BE USED UNDER CONDITIONS (A) DIRECT EXPOSURE TO SOUR ENVIRONMENTS (B) WHEN THE BOLTING WILL BE BURIED OR INSULATED
27	PWHT OF CARBON STEEL PIPING IN WET H2S, CAUSTIC AND AMINE SERVICES SHALL BE IN ACCORDANCE WITH SECTION 10.2, 10.3, AND 10.4 OF PROJECT SPECIFICATION 3550-8440-SP-0002 MATERIALS REQUIREMENTS FOR PRESSURISED EQUIPMENT AND PIPING. FOR CAUSTIC AND AMINE SERVICE THE FOLLOWING SHALL APPLY: - PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF ALL SITE PIPING FABRICATION WELDS IS REQUIRED FOR ALL WALL THICKNESSES. FOR MODERATE AND SEVERE WET H2S SERVICE THE FOLLOWING SHALL APPLY: PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF SITE FABRICATION CIRCUMFERENTIAL OR BRANCH WELDS IS NOT REQUIRED IF WELDS ARE MULTIPASS AND IN ACCORDANCE WITH PARA 10.2.12 OF PROJECT SPECIFICATION 3550-8440-SP-0002. FOR SERVICES MEETING THE WET H2S CRITERIA AND CAUSTIC OR AMINE CRITERIA THE MORE STRINGENT PWHT REQUIREMENT SHALL GOVERN.

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
200	WITH JACK SCREW (FO)
541	NPT(F) (CA,F,L)
773	CLASS 300 (B,F,G)
4608	VALVE WITH NIPPLES (V)

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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P01J-002CF	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE Severe wet H2S service	
1	0.75		SCH80S		P01J-002CG	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE Severe wet H2S service	
1	1		SCH80S		P01J-002CH	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE Severe wet H2S service	
1	1.5		SCH80S		P01J-002CJ	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE Severe wet H2S service	
1	2		SCH10S		P01J-002CK	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M BE Severe wet H2S service	
1	3		SCH10S		P01J-002CL	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M BE Severe wet H2S service	
1	4		SCH10S		P01J-002CM	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M BE Severe wet H2S service	
1	6		SCH10S		P01J-002CN	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M BE Severe wet H2S service	
1	8		SCH10S		P01J-002CX	Pipe ASTM A358 Grade 304/304L Class 1 dual grade EFW ASME B36.10M/B36.19M BE Severe wet H2S service	
1	10		SCH10S		P01J-002CP	Pipe ASTM A358 Grade 304/304L Class 1 dual grade EFW ASME B36.10M/B36.19M BE Severe wet H2S service	
1	12		SCH10S		P01J-002CR	Pipe ASTM A358 Grade 304/304L Class 1 dual grade EFW ASME B36.10M/B36.19M BE Severe wet H2S service	
1	14		SCH10S		P01J-002CS	Pipe ASTM A358 Grade 304/304L Class 1 dual grade EFW ASME B36.10M/B36.19M BE Severe wet H2S service	
1	16		SCH10S		P01J-002CT	Pipe ASTM A358 Grade 304/304L Class 1 dual grade EFW ASME B36.10M/B36.19M BE Severe wet H2S service	
1	18		SCH10S		P01J-002CU	Pipe ASTM A358 Grade 304/304L Class 1 dual grade EFW ASME B36.10M/B36.19M BE Severe wet H2S service	
1	20		SCH10S		P01J-002CV	Pipe ASTM A358 Grade 304/304L Class 1 dual grade EFW ASME B36.10M/B36.19M BE Severe wet H2S service	
1	24		SCH10S		P01J-002CW	Pipe ASTM A358 Grade 304/304L Class 1 dual grade EFW ASME B36.10M/B36.19M BE Severe wet H2S service	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P02J-001VV	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	0.75		SCH80S		P02J-001VW	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	1		SCH80S		P02J-001VX	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	1.5		SCH80S		P02J-001VY	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	2		SCH10S		P02J-001VZ	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	3		SCH10S		P02J-001W0	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	4		SCH10S		P02J-001W1	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	6		SCH10S		P02J-001W2	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	8		SCH10S		P02J-001WA	90 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius Severe wet H2S service	
1	10		SCH10S		P02J-001W3	90 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius Severe wet H2S service	
1	12		SCH10S		P02J-001W4	90 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius Severe wet H2S service	
1	14		SCH10S		P02J-001W5	90 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius Severe wet H2S service	
1	16		SCH10S		P02J-001W6	90 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius Severe wet H2S service	
1	18		SCH10S		P02J-001W7	90 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius Severe wet H2S service	
1	20		SCH10S		P02J-001W8	90 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius Severe wet H2S service	
1	24		SCH10S		P02J-001W9	90 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius Severe wet H2S service	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P03J-001TA	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	0.75		SCH80S		P03J-001TB	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	1		SCH80S		P03J-001TC	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	1.5		SCH80S		P03J-001TD	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	2		SCH10S		P03J-001TE	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	3		SCH10S		P03J-001TF	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	4		SCH10S		P03J-001TG	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	

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45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	6		SCH10S		P03J-001TH	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	8		SCH10S		P03J-001TM	45 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius Severe wet H2S service	
1	10		SCH10S		P03J-001TJ	45 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius Severe wet H2S service	
1	12		SCH10S		P03J-001TK	45 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius Severe wet H2S service	
1	14		SCH10S		P03J-001TL	45 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius Severe wet H2S service	
1	16		SCH10S		P03J-001TN	45 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius Severe wet H2S service	
1	18		SCH10S		P03J-001TP	45 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius Severe wet H2S service	
1	20		SCH10S		P03J-001TR	45 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius Severe wet H2S service	
1	24		SCH10S		P03J-001TS	45 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius Severe wet H2S service	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P21J-001JN	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	0.75		SCH80S		P21J-001JP	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1		SCH80S		P21J-001JR	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5		SCH80S		P21J-001JS	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	2		SCH10S		P21J-001JT	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	3		SCH10S		P21J-001JU	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	4		SCH10S		P21J-001JV	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	6		SCH10S		P21J-001KA	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	8		SCH10S		P21J-001K9	Straight tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	10		SCH10S		P21J-001K2	Straight tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	12		SCH10S		P21J-001K3	Straight tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	14		SCH10S		P21J-001K4	Straight tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	16		SCH10S		P21J-001K5	Straight tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	18		SCH10S		P21J-001K6	Straight tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	20		SCH10S		P21J-001K7	Straight tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	24		SCH10S		P21J-001K8	Straight tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75	SCH80S	SCH80S	P24J-006UM	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5	0.75	SCH80S	SCH80S	P24J-006UN	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5	1	SCH80S	SCH80S	P24J-006UP	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	2	1	SCH10S	SCH80S	P24J-006UR	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	2	1.5	SCH10S	SCH80S	P24J-006US	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	3	1.5	SCH10S	SCH80S	P24J-006UT	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	3	2	SCH10S	SCH10S	P24J-006UU	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	4	2	SCH10S	SCH10S	P24J-006UV	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	4	3	SCH10S	SCH10S	P24J-006UW	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	6	3	SCH10S	SCH10S	P24J-006VD	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	6	4	SCH10S	SCH10S	P24J-006VE	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	8	4	SCH10S	SCH10S	P24J-006VF	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	8	6	SCH10S	SCH10S	P24J-006VG	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	10	4	SCH10S	SCH10S	P24J-006VH	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	10	6	SCH10S	SCH10S	P24J-006VJ	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	10	8	SCH10S	SCH10S	P24J-006VK	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	12	6	SCH10S	SCH10S	P24J-006VM	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	12	8	SCH10S	SCH10S	P24J-006VN	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	12	10	SCH10S	SCH10S	P24J-006VL	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	14	6	SCH10S	SCH10S	P24J-006VS	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	14	8	SCH10S	SCH10S	P24J-006VT	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	14	10	SCH10S	SCH10S	P24J-006VP	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	14	12	SCH10S	SCH10S	P24J-006VR	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	16	6	SCH10S	SCH10S	P24J-006VX	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	16	8	SCH10S	SCH10S	P24J-006VY	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	16	10	SCH10S	SCH10S	P24J-006VU	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	16	12	SCH10S	SCH10S	P24J-006VV	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	16	14	SCH10S	SCH10S	P24J-006VW	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	18	8	SCH10S	SCH10S	P24J-006W3	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	18	10	SCH10S	SCH10S	P24J-006VZ	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	18	12	SCH10S	SCH10S	P24J-006W0	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	18	14	SCH10S	SCH10S	P24J-006W1	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	18	16	SCH10S	SCH10S	P24J-006W2	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	20	8	SCH10S	SCH10S	P24J-006W9	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	20	10	SCH10S	SCH10S	P24J-006W4	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	20	12	SCH10S	SCH10S	P24J-006W5	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	20	14	SCH10S	SCH10S	P24J-006W6	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	20	16	SCH10S	SCH10S	P24J-006W7	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	20	18	SCH10S	SCH10S	P24J-006W8	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	24	10	SCH10S	SCH10S	P24J-006WA	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	24	12	SCH10S	SCH10S	P24J-006WB	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	24	14	SCH10S	SCH10S	P24J-006WC	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	24	16	SCH10S	SCH10S	P24J-006WD	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	24	18	SCH10S	SCH10S	P24J-006WE	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	24	20	SCH10S	SCH10S	P24J-006WF	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH80S	SCH80S	P27J-005NC	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1	0.5	SCH80S	SCH80S	P27J-005ND	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1	0.75	SCH80S	SCH80S	P27J-005NE	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5	0.5	SCH80S	SCH80S	P27J-005NF	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5	0.75	SCH80S	SCH80S	P27J-005NG	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5	1	SCH80S	SCH80S	P27J-005NH	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	2	0.75	SCH10S	SCH80S	P27J-005NJ	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	2	1	SCH10S	SCH80S	P27J-005NK	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	2	1.5	SCH10S	SCH80S	P27J-005NL	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	3	1.5	SCH10S	SCH80S	P27J-005NM	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	3	2	SCH10S	SCH10S	P27J-005NN	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	4	1.5	SCH10S	SCH80S	P27J-005NP	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	4	2	SCH10S	SCH10S	P27J-005NR	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	4	3	SCH10S	SCH10S	P27J-005NS	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	6	3	SCH10S	SCH10S	P27J-005PA	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	6	4	SCH10S	SCH10S	P27J-005PB	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	8	4	SCH10S	SCH10S	P27J-005PC	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	8	6	SCH10S	SCH10S	P27J-005PD	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	10	4	SCH10S	SCH10S	P27J-005PE	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	10	6	SCH10S	SCH10S	P27J-005PF	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	10	8	SCH10S	SCH10S	P27J-005PG	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	12	6	SCH10S	SCH10S	P27J-005PJ	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	12	8	SCH10S	SCH10S	P27J-005PK	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	12	10	SCH10S	SCH10S	P27J-005PH	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	14	6	SCH10S	SCH10S	P27J-005PN	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	14	8	SCH10S	SCH10S	P27J-005PP	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	14	10	SCH10S	SCH10S	P27J-005PL	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	14	12	SCH10S	SCH10S	P27J-005PM	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	16	8	SCH10S	SCH10S	P27J-005PU	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	16	10	SCH10S	SCH10S	P27J-005PR	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	16	12	SCH10S	SCH10S	P27J-005PS	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	16	14	SCH10S	SCH10S	P27J-005PT	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	18	10	SCH10S	SCH10S	P27J-005PV	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	18	12	SCH10S	SCH10S	P27J-005PW	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	18	14	SCH10S	SCH10S	P27J-005PX	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	18	16	SCH10S	SCH10S	P27J-005R5	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	20	12	SCH10S	SCH10S	P27J-005PY	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	20	14	SCH10S	SCH10S	P27J-005PZ	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	20	16	SCH10S	SCH10S	P27J-005R0	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	20	18	SCH10S	SCH10S	P27J-005R1	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	24	16	SCH10S	SCH10S	P27J-005R2	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	24	18	SCH10S	SCH10S	P27J-005R3	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	24	20	SCH10S	SCH10S	P27J-005R4	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH80S	SCH80S	P28J-005P7	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1	0.5	SCH80S	SCH80S	P28J-005P8	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1	0.75	SCH80S	SCH80S	P28J-005P9	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5	0.5	SCH80S	SCH80S	P28J-005PA	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5	0.75	SCH80S	SCH80S	P28J-005PB	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5	1	SCH80S	SCH80S	P28J-005PC	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	2	0.75	SCH10S	SCH80S	P28J-005PD	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	2	1	SCH10S	SCH80S	P28J-005PE	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	3	1.5	SCH10S	SCH80S	P28J-005PF	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	3	1.5	SCH10S	SCH80S	P28J-005PG	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	

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ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	SCH10S	SCH10S	P28J-005PH	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	4	1.5	SCH10S	SCH80S	P28J-005PJ	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	4	2	SCH10S	SCH10S	P28J-005PK	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	4	3	SCH10S	SCH10S	P28J-005PL	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	6	3	SCH10S	SCH10S	P28J-005R6	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	6	4	SCH10S	SCH10S	P28J-005R7	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	8	4	SCH10S	SCH10S	P28J-005R8	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	8	6	SCH10S	SCH10S	P28J-005R9	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	10	4	SCH10S	SCH10S	P28J-005RC	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	10	6	SCH10S	SCH10S	P28J-005RA	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	10	8	SCH10S	SCH10S	P28J-005RB	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	12	6	SCH10S	SCH10S	P28J-005RE	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	12	8	SCH10S	SCH10S	P28J-005RF	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	12	10	SCH10S	SCH10S	P28J-005RD	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	14	6	SCH10S	SCH10S	P28J-005RJ	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	14	8	SCH10S	SCH10S	P28J-005RK	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	14	10	SCH10S	SCH10S	P28J-005RG	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	14	12	SCH10S	SCH10S	P28J-005RH	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	16	8	SCH10S	SCH10S	P28J-005RP	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	16	10	SCH10S	SCH10S	P28J-005RL	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	16	12	SCH10S	SCH10S	P28J-005RM	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	16	14	SCH10S	SCH10S	P28J-005RN	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	18	10	SCH10S	SCH10S	P28J-005RR	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	18	12	SCH10S	SCH10S	P28J-005RS	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	18	14	SCH10S	SCH10S	P28J-005RT	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	18	16	SCH10S	SCH10S	P28J-005RU	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	20	12	SCH10S	SCH10S	P28J-005RV	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	20	14	SCH10S	SCH10S	P28J-005RW	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	20	16	SCH10S	SCH10S	P28J-005RX	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	20	18	SCH10S	SCH10S	P28J-005RY	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	24	16	SCH10S	SCH10S	P28J-005RZ	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	24	18	SCH10S	SCH10S	P28J-005S0	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	24	20	SCH10S	SCH10S	P28J-005S1	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P29J-001CY	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	0.75		SCH80S		P29J-001CZ	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1		SCH80S		P29J-001D0	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5		SCH80S		P29J-001D1	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	2		SCH10S		P29J-001D2	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	3		SCH10S		P29J-001D3	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	4		SCH10S		P29J-001D4	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	6		SCH10S		P29J-002CX	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	8		SCH10S		P29J-002JA	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	

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CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	10		SCH10S		P29J-001GS	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	12		SCH10S		P29J-001JC	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	14		SCH10S		P29J-001KT	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	16		SCH10S		P29J-001MD	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	18		SCH10S		P29J-001NR	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	20		SCH10S		P29J-001SK	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	24		SCH10S		P29J-001V3	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
541	0.5				P29K-0004H	Cap ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 NPT Severe wet H2S service	
541	0.75				P29K-00046	Cap ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 NPT Severe wet H2S service	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P41J-001TC	Straight nipple ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Severe wet H2S service	
1	0.75		SCH80S		P41J-001TD	Straight nipple ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Severe wet H2S service	
1	1		SCH80S		P41J-001TE	Straight nipple ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Severe wet H2S service	
1	1.5		SCH80S		P41J-001TF	Straight nipple ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Severe wet H2S service	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
541	1	0.75			P31K-00FLV	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 NPT Severe wet H2S service	
541	1.5	0.75			P31K-00FLU	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 NPT Severe wet H2S service	
541	2 - 2.5	0.75			P31K-00GFC	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 NPT Severe wet H2S service	
541	3 - 5	0.75			P31K-00GFD	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 NPT Severe wet H2S service	
541	6 - 12	0.75			P31K-00GFE	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 NPT Severe wet H2S service	
541	14 - 36	0.75			P31K-00GFF	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 NPT Severe wet H2S service	
1	2	0.75	SCH10S	SCH80S	P31K-00EFT	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	3	0.75	SCH10S	SCH80S	P31K-00EFU	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	4	0.75	SCH10S	SCH80S	P31K-00EFW	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	6	0.75	SCH10S	SCH80S	P31K-00EFZ	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	8	0.75	SCH10S	SCH80S	P31K-00EG3	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	10	0.75	SCH10S	SCH80S	P31K-00EG8	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	12	0.75	SCH10S	SCH80S	P31K-00EGD	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	14	0.75	SCH10S	SCH80S	P31K-00EGK	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	16	0.75	SCH10S	SCH80S	P31K-00EGS	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	18	0.75	SCH10S	SCH80S	P31K-00EGY	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	20	0.75	SCH10S	SCH80S	P31K-00EH5	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	24	0.75	SCH10S	SCH80S	P31K-00EHC	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	3	1	SCH10S	SCH80S	P31K-00EFV	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	4	1	SCH10S	SCH80S	P31K-00EFX	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	6	1	SCH10S	SCH80S	P31K-00EG0	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	8	1	SCH10S	SCH80S	P31K-00EG4	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	10	1	SCH10S	SCH80S	P31K-00EG9	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	12	1	SCH10S	SCH80S	P31K-00EGE	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	14	1	SCH10S	SCH80S	P31K-00EGL	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	16	1	SCH10S	SCH80S	P31K-00EGT	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	18	1	SCH10S	SCH80S	P31K-00EGZ	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	20	1	SCH10S	SCH80S	P31K-00EH6	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	24	1	SCH10S	SCH80S	P31K-00EHD	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	4	1.5	SCH10S	SCH80S	P31K-00EFY	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	6	1.5	SCH10S	SCH80S	P31K-00EG1	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	8	1.5	SCH10S	SCH80S	P31K-00EG5	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	10	1.5	SCH10S	SCH80S	P31K-00EGA	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	12	1.5	SCH10S	SCH80S	P31K-00EGF	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	14	1.5	SCH10S	SCH80S	P31K-00EGM	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	16	1.5	SCH10S	SCH80S	P31K-00EGU	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	

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OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	18	1.5	SCH10S	SCH80S	P31K-00EH0	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	20	1.5	SCH10S	SCH80S	P31K-00EH7	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	24	1.5	SCH10S	SCH80S	P31K-00EHE	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	6	2	SCH10S	SCH10S	P31K-00EG2	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	8	2	SCH10S	SCH10S	P31K-00EG6	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	10	2	SCH10S	SCH10S	P31K-00EGB	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	12	2	SCH10S	SCH10S	P31K-00EGG	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	14	2	SCH10S	SCH10S	P31K-00EGN	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	16	2	SCH10S	SCH10S	P31K-00EGV	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	18	2	SCH10S	SCH10S	P31K-00EH1	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	20	2	SCH10S	SCH10S	P31K-00EH8	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	24	2	SCH10S	SCH10S	P31K-00EHF	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	8	3	SCH10S	SCH10S	P31K-00EG7	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	10	3	SCH10S	SCH10S	P31K-00EGC	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	12	3	SCH10S	SCH10S	P31K-00EGH	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	14	3	SCH10S	SCH10S	P31K-00EGP	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	16	3	SCH10S	SCH10S	P31K-00EGW	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	18	3	SCH10S	SCH10S	P31K-00EH2	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	20	3	SCH10S	SCH10S	P31K-00EH9	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	24	3	SCH10S	SCH10S	P31K-00EHG	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	12	4	SCH10S	SCH10S	P31K-00EGJ	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	14	4	SCH10S	SCH10S	P31K-00EGR	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	16	4	SCH10S	SCH10S	P31K-00EGX	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	18	4	SCH10S	SCH10S	P31K-00EH3	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	20	4	SCH10S	SCH10S	P31K-00EHA	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	24	4	SCH10S	SCH10S	P31K-00EHH	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	18	6	SCH10S	SCH10S	P31K-00EH4	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	20	6	SCH10S	SCH10S	P31K-00EHB	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	24	6	SCH10S	SCH10S	P31K-00EHJ	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30K-00051	Plug ASTM A182 Grade F304/F304L dual grade ASME B16.11 NPT Round head Severe wet H2S service	
1	0.75				P30K-00052	Plug ASTM A182 Grade F304/F304L dual grade ASME B16.11 NPT Round head Severe wet H2S service	
1	1				P30K-00053	Plug ASTM A182 Grade F304/F304L dual grade ASME B16.11 NPT Round head Severe wet H2S service	
1	1.5				P30K-00054	Plug ASTM A182 Grade F304/F304L dual grade ASME B16.11 NPT Round head Severe wet H2S service	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P61K-005AY	Flange WN ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	0.75		SCH80S		P61K-005AZ	Flange WN ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	1		SCH80S		P61K-005B0	Flange WN ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	1.5		SCH80S		P61K-005B1	Flange WN ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	2		SCH10S		P61K-005B7	Flange WN ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	3		SCH10S		P61K-005BA	Flange WN ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	4		SCH10S		P61K-005BB	Flange WN ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	6		SCH10S		P61K-005BC	Flange WN ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	8		SCH10S		P61K-005BD	Flange WN ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	10		SCH10S		P61K-005B2	Flange WN ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	12		SCH10S		P61K-005B3	Flange WN ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	14		SCH10S		P61K-005B4	Flange WN ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	16		SCH10S		P61K-005B5	Flange WN ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	18		SCH10S		P61K-005B6	Flange WN ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	20		SCH10S		P61K-005B8	Flange WN ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	24		SCH10S		P61K-005B9	Flange WN ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
541	0.5				P61K-005ZF	Flange NPT ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
773	0.5		SCH80S		P61K-005AH	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
773	0.75		SCH80S		P61K-005AJ	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
773	1		SCH80S		P61K-005AK	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
773	1.5		SCH80S		P61K-005AL	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
773	2		SCH10S		P61K-005AM	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
773	3		SCH10S		P61K-005AN	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
773	4		SCH10S		P61K-005AP	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
773	6		SCH10S		P61K-005C6	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
773	8		SCH10S		P61K-005C7	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
773	10		SCH10S		P61K-005BZ	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
773	12		SCH10S		P61K-005C0	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
773	14		SCH10S		P61K-005C1	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
773	16		SCH10S		P61K-005C2	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
773	18		SCH10S		P61K-005C3	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
773	20		SCH10S		P61K-005C4	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
773	24		SCH10S		P61K-005C5	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67K-001J2	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	0.75				P67K-001J3	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	1				P67K-001J4	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	1.5				P67K-001J5	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	2				P67K-001JB	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	3				P67K-001JE	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	4				P67K-001JF	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	6				P67K-001JG	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	8				P67K-001JH	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	10				P67K-001J6	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	12				P67K-001J7	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	14				P67K-001J8	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	16				P67K-001J9	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	18				P67K-001JA	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	20				P67K-001JC	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	24				P67K-001JD	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000L8	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000L9	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000LA	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000LB	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000LH	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000LL	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000LM	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	6				P73T-000LN	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	8				P73T-000LP	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	10				P73T-000LC	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	12				P73T-000LD	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	14				P73T-000LE	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	16				P73T-000LF	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	18				P73T-000LG	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	20				P73T-000LJ	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	24				P73T-000LK	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	0.5				P73T-000FT	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	0.75				P73T-000FU	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

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GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
773	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	3				P73T-000G5	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	4				P73T-000G6	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	6				P73T-000G7	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	8				P73T-000G8	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	10				P73T-000FX	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	12				P73T-000FY	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	14				P73T-000FZ	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	16				P73T-000G0	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	18				P73T-000G1	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	20				P73T-000G3	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	24				P73T-000G4	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-16				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	18-24				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
773	0.5-10				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
773	12-24				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81K-0014B	Gate valve ASTM A182 Grade F304/F304L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	0.75				P81K-0014C	Gate valve ASTM A182 Grade F304/F304L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	1				P81K-0014D	Gate valve ASTM A182 Grade F304/F304L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	1.5				P81K-0014E	Gate valve ASTM A182 Grade F304/F304L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	2				P81L-0029U	Gate valve ASTM A351 Grade CF8 Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	3				P81L-0029V	Gate valve ASTM A351 Grade CF8 Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	4				P81L-0029W	Gate valve ASTM A351 Grade CF8 Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	6				P81L-0029X	Gate valve ASTM A351 Grade CF8 Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	8				P81L-0029Y	Gate valve ASTM A351 Grade CF8 Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	10				P81L-0029S	Gate valve ASTM A351 Grade CF8 Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	12				P81L-0029T	Gate valve ASTM A351 Grade CF8 Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	14				P81L-002A4	Gate valve ASTM A351 Grade CF8 Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Severe wet H2S service	
4608	0.75				P81K-001P3	Gate valve ASTM A182 Grade F304/F304L dual grade Class 150 API 602 BW both sides w/ nipples BE - NPT ASTM A312-TP304(L) dual grade Seamless Sch80S-nipple Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82K-000RJ	Globe valve ASTM A182 Grade F304/F304L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	0.75				P82K-000RK	Globe valve ASTM A182 Grade F304/F304L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	1				P82K-000RL	Globe valve ASTM A182 Grade F304/F304L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	1.5				P82K-000RM	Globe valve ASTM A182 Grade F304/F304L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	2				P82L-0019H	Globe valve ASTM A351 Grade CF8 Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	

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GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3				P82L-0019J	Globe valve ASTM A351 Grade CF8 Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	4				P82L-0019K	Globe valve ASTM A351 Grade CF8 Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	6				P82L-0019L	Globe valve ASTM A351 Grade CF8 Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83K-000P2	Check valve ASTM A182 Grade F304/F304L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Severe wet H2S service	
1	0.75				P83K-000P3	Check valve ASTM A182 Grade F304/F304L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Severe wet H2S service	
1	1				P83K-000P4	Check valve ASTM A182 Grade F304/F304L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Severe wet H2S service	
1	1.5				P83K-000P5	Check valve ASTM A182 Grade F304/F304L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Severe wet H2S service	
1	2				P83L-0019N	Check valve ASTM A351 Grade CF8 Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service	
1	3				P83L-0019P	Check valve ASTM A351 Grade CF8 Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service	
1	4				P83L-0019R	Check valve ASTM A351 Grade CF8 Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service	
1	6				P83L-0019S	Check valve ASTM A351 Grade CF8 Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service	
1	8				P83L-0019T	Check valve ASTM A351 Grade CF8 Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service	

ORIFICE FLANGE (FO)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2		SCH10S		P66K-003T7	Orifice flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Severe wet H2S service	
1	3		SCH10S		P66K-003T8	Orifice flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Severe wet H2S service	
1	4		SCH10S		P66K-003T9	Orifice flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Severe wet H2S service	
1	6		SCH10S		P66K-003TA	Orifice flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Severe wet H2S service	
200	2		SCH10S		P66K-003TD	Orifice flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Severe wet H2S service with Jack screw	
200	3		SCH10S		P66K-003TE	Orifice flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Severe wet H2S service with Jack screw	
200	4		SCH10S		P66K-003TF	Orifice flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Severe wet H2S service with Jack screw	
200	6		SCH10S		P66K-003TG	Orifice flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Severe wet H2S service with Jack screw	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71K-000BG	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	
1	0.75				P71K-000BH	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	
1	1				P71K-000BJ	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	
1	1.5				P71K-000BK	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	
1	2				P71K-000BN	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	
1	3				P71K-000BP	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	
1	4				P71K-000BR	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	
1	6				P71K-000BS	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	
1	8				P71K-000BT	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	
1	10				P71K-000BL	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	
1	12				P71K-000BM	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	

PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72K-000AU	Paddle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	
1	16				P72K-000AV	Paddle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	
1	18				P72K-000AW	Paddle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	

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PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	20				P72K-000AX	Paddle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	
1	24				P72K-000AY	Paddle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	

PADDLE SPACER (PS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72K-000AZ	Paddle spacer ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	
1	16				P72K-000B0	Paddle spacer ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	
1	18				P72K-000B1	Paddle spacer ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	
1	20				P72K-000B2	Paddle spacer ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	
1	24				P72K-000B3	Paddle spacer ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	

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BOLT TABLE (B_A0JR , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	60	P80S-008SY		
0.75	4	0.500	65	P80S-008SZ		
1	4	0.500	70	P80S-008T0		
1.5	4	0.500	75	P80S-008T1		
2	4	0.625	85	P80S-0090A		
3	4	0.625	95	P80S-0090C		
4	8	0.625	95	P80S-0090C		
6	8	0.750	105	P80S-0090E		
8	8	0.750	110	P80S-0090F		
10	12	0.875	120	P80S-005Z9		
12	12	0.875	120	P80S-005Z9		
14	12	1.000	135	P80S-00619		
16	16	1.000	140	P80S-0061A		
18	16	1.125	150	P80S-0064L		
20	20	1.125	160	P80S-0064N		
24	20	1.250	175	P80S-00686		

BOLT TABLE (B_A0JR_773 , STUD ASME RF, OPTION CODE 773)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-008T0		
0.75	4	0.625	75	P80S-00908		
1	4	0.625	80	P80S-00909		
1.5	4	0.750	95	P80S-005Z4		
2	8	0.625	90	P80S-0090B		
3	8	0.750	110	P80S-0090F		
4	8	0.750	115	P80S-0090G		
6	12	0.750	125	P80S-0090J		
8	12	0.875	140	P80S-005ZD		
10	16	1.000	160	P80S-0061E		
12	16	1.125	175	P80S-0064S		
14	20	1.125	180	P80S-0064T		
16	20	1.250	190	P80S-00689		
18	24	1.250	200	P80S-0068B		
20	24	1.250	210	P80S-0068D		
24	24	1.500	235	P80S-006LB		

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BRANCH TABLE (T_A0JR)

RUN PIPE SIZE (in) \ BRANCH SIZE (in)	0.5	0.75	1	1.5	2	3	4	6	8	10	12	14	16	18	20	24
0.5	TS															
0.75		TS														
1		TR	TS													
1.5		TR	TR	TS												
2		L	TR	TR	TS											
3		L	L	TR	TR	TS										
4	L	L	L	L	TR	TR	TS									
6	L	L	L	L	L	TR	TR	TS								
8		L	L	L	L	L	TR	TR	TS							
10		L	L	L	L	L	TR	TR	TR	TS						
12		L	L	L	L	L	L	TR	TR	TR	TS					
14		L	L	L	L	L	L	TR	TR	TR	TR	TS				
16		L	L	L	L	L	L	TR	TR	TR	TR	TR	TS			
18		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TS		
20		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TR	TS	
24		L	L	L	L	L	L	L	9PD	TR	TR	TR	TR	TR	TR	TS

TR : REDUCING TEE
9PD : REINFORCING PAD 90 DEG
TS : STRAIGHT TEE
L : OUTLET

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PIPING CLASS

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Material : SS304L
Rating : ASME CLASS 150
Flange Face : RF
C.A.(mm) : 0.00
Gasket : Spiral Wound
Service : PROCESS - WET SEVERE SOUR SERVICE SUBJECT TO NACE + HIC STD.
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
5	BOLTING CONFIRMING TO B7M / 2HM SHALL BE USED UNDER CONDITIONS (A) DIRECT EXPOSURE TO SOUR ENVIRONMENTS (B) WHEN THE BOLTING WILL BE BURIED OR INSULATED
27	PWHT OF CARBON STEEL PIPING IN WET H2S, CAUSTIC AND AMINE SERVICES SHALL BE IN ACCORDANCE WITH SECTION 10.2, 10.3, AND 10.4 OF PROJECT SPECIFICATION 3550-8440-SP-0002 MATERIALS REQUIREMENTS FOR PRESSURISED EQUIPMENT AND PIPING. FOR CAUSTIC AND AMINE SERVICE THE FOLLOWING SHALL APPLY: - PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF ALL SITE PIPING FABRICATION WELDS IS REQUIRED FOR ALL WALL THICKNESSES. FOR MODERATE AND SEVERE WET H2S SERVICE THE FOLLOWING SHALL APPLY: PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF SITE FABRICATION CIRCUMFERENTIAL OR BRANCH WELDS IS NOT REQUIRED IF WELDS ARE MULTIPASS AND IN ACCORDANCE WITH PARA 10.2.12 OF PROJECT SPECIFICATION 3550-8440-SP-0002. FOR SERVICES MEETING THE WET H2S CRITERIA AND CAUSTIC OR AMINE CRITERIA THE MORE STRINGENT PWHT REQUIREMENT SHALL GOVERN.

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
200	WITH JACK SCREW (FO)
541	NPT(F) (CA,L)
773	CLASS 300 (B,F,G,V)
4608	VALVE WITH NIPPLES (V)

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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P01J-002CF	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE Severe wet H2S service	
1	0.75		SCH80S		P01J-002CG	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE Severe wet H2S service	
1	1		SCH80S		P01J-002CH	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE Severe wet H2S service	
1	1.5		SCH80S		P01J-002CJ	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE Severe wet H2S service	
1	2		SCH10S		P01J-002CK	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M BE Severe wet H2S service	
1	3		SCH10S		P01J-002CL	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M BE Severe wet H2S service	
1	4		SCH10S		P01J-002CM	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M BE Severe wet H2S service	
1	6		SCH10S		P01J-002CN	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M BE Severe wet H2S service	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P02J-001VV	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	0.75		SCH80S		P02J-001VW	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	1		SCH80S		P02J-001VX	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	1.5		SCH80S		P02J-001VY	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	2		SCH10S		P02J-001VZ	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	3		SCH10S		P02J-001W0	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	4		SCH10S		P02J-001W1	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	6		SCH10S		P02J-001W2	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P03J-001TA	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	0.75		SCH80S		P03J-001TB	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	1		SCH80S		P03J-001TC	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	1.5		SCH80S		P03J-001TD	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	2		SCH10S		P03J-001TE	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	3		SCH10S		P03J-001TF	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	4		SCH10S		P03J-001TG	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	6		SCH10S		P03J-001TH	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P21J-001JN	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	0.75		SCH80S		P21J-001JP	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1		SCH80S		P21J-001JR	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5		SCH80S		P21J-001JS	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	2		SCH10S		P21J-001JT	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	3		SCH10S		P21J-001JU	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	4		SCH10S		P21J-001JV	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	6		SCH10S		P21J-001KA	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75	SCH80S	SCH80S	P24J-006UM	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1.0	0.75	SCH80S	SCH80S	P24J-006UN	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	

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REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5	1	SCH80S	SCH80S	P24J-006UP	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	2	1	SCH10S	SCH80S	P24J-006UR	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	2	1.5	SCH10S	SCH80S	P24J-006US	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	3	1.5	SCH10S	SCH80S	P24J-006UT	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	3	2	SCH10S	SCH10S	P24J-006UU	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	4	2	SCH10S	SCH10S	P24J-006UV	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	4	3	SCH10S	SCH10S	P24J-006UW	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	6	3	SCH10S	SCH10S	P24J-006VD	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	6	4	SCH10S	SCH10S	P24J-006VE	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH80S	SCH80S	P27J-005NC	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1	0.5	SCH80S	SCH80S	P27J-005ND	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1	0.75	SCH80S	SCH80S	P27J-005NE	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5	0.5	SCH80S	SCH80S	P27J-005NF	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5	0.75	SCH80S	SCH80S	P27J-005NG	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5	1	SCH80S	SCH80S	P27J-005NH	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	2	0.75	SCH10S	SCH80S	P27J-005NJ	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	2	1	SCH10S	SCH80S	P27J-005NK	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	2	1.5	SCH10S	SCH80S	P27J-005NL	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	3	1.5	SCH10S	SCH80S	P27J-005NM	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	3	2	SCH10S	SCH10S	P27J-005NN	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	4	1.5	SCH10S	SCH80S	P27J-005NP	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	4	2	SCH10S	SCH10S	P27J-005NR	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	4	3	SCH10S	SCH10S	P27J-005NS	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	6	3	SCH10S	SCH10S	P27J-005PA	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	6	4	SCH10S	SCH10S	P27J-005PB	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH80S	SCH80S	P28J-005P7	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1	0.5	SCH80S	SCH80S	P28J-005P8	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1	0.75	SCH80S	SCH80S	P28J-005P9	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5	0.5	SCH80S	SCH80S	P28J-005PA	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5	0.75	SCH80S	SCH80S	P28J-005PB	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5	1	SCH80S	SCH80S	P28J-005PC	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	2	0.75	SCH10S	SCH80S	P28J-005PD	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	2	1	SCH10S	SCH80S	P28J-005PE	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	2	1.5	SCH10S	SCH80S	P28J-005PF	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	3	1.5	SCH10S	SCH80S	P28J-005PG	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	3	2	SCH10S	SCH10S	P28J-005PH	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	4	1.5	SCH10S	SCH80S	P28J-005PJ	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	4	2	SCH10S	SCH10S	P28J-005PK	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	4	3	SCH10S	SCH10S	P28J-005PL	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	

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ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	6	3	SCH10S	SCH10S	P28J-005R6	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	6	4	SCH10S	SCH10S	P28J-005R7	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P29J-001CY	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	0.75		SCH80S		P29J-001CZ	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1		SCH80S		P29J-001D0	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5		SCH80S		P29J-001D1	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	2		SCH10S		P29J-001D2	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	3		SCH10S		P29J-001D3	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	4		SCH10S		P29J-001D4	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	6		SCH10S		P29J-002CX	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
541	0.75				P29K-00046	Cap ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 NPT Severe wet H2S service	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P41J-001TC	Straight nipple ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Severe wet H2S service	
1	0.75		SCH80S		P41J-001TD	Straight nipple ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Severe wet H2S service	
1	1		SCH80S		P41J-001TE	Straight nipple ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Severe wet H2S service	
1	1.5		SCH80S		P41J-001TF	Straight nipple ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Severe wet H2S service	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
541	1	0.75			P31K-00FLV	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 NPT Severe wet H2S service	
541	1.5	0.75			P31K-00FLU	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 NPT Severe wet H2S service	
541	2 - 2.5	0.75			P31K-00GFC	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 NPT Severe wet H2S service	
541	3 - 5	0.75			P31K-00GFD	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 NPT Severe wet H2S service	
541	6 - 12	0.75			P31K-00GFE	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 NPT Severe wet H2S service	
1	2	0.75	SCH10S	SCH80S	P31K-00EFT	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	3	0.75	SCH10S	SCH80S	P31K-00EFU	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	4	0.75	SCH10S	SCH80S	P31K-00EFW	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	6	0.75	SCH10S	SCH80S	P31K-00EFZ	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	3	1	SCH10S	SCH80S	P31K-00EFV	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	4	1	SCH10S	SCH80S	P31K-00EFX	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	6	1	SCH10S	SCH80S	P31K-00EG0	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	4	1.5	SCH10S	SCH80S	P31K-00EFY	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	6	1.5	SCH10S	SCH80S	P31K-00EG1	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	6	2	SCH10S	SCH10S	P31K-00EG2	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30K-00051	Plug ASTM A182 Grade F304/F304L dual grade ASME B16.11 NPT Round head Severe wet H2S service	
1	0.75				P30K-00052	Plug ASTM A182 Grade F304/F304L dual grade ASME B16.11 NPT Round head Severe wet H2S service	
1	1				P30K-00053	Plug ASTM A182 Grade F304/F304L dual grade ASME B16.11 NPT Round head Severe wet H2S service	
1	1.5				P30K-00054	Plug ASTM A182 Grade F304/F304L dual grade ASME B16.11 NPT Round head Severe wet H2S service	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P61K-005AY	Flange WN ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	0.75		SCH80S		P61K-005AZ	Flange WN ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	1		SCH80S		P61K-005B0	Flange WN ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	1.5		SCH80S		P61K-005B1	Flange WN ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2		SCH10S		P61K-005B7	Flange WN ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	3		SCH10S		P61K-005BA	Flange WN ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	4		SCH10S		P61K-005BB	Flange WN ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	6		SCH10S		P61K-005BC	Flange WN ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
773	0.5		SCH80S		P61K-005AH	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
773	0.75		SCH80S		P61K-005AJ	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
773	1		SCH80S		P61K-005AK	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
773	1.5		SCH80S		P61K-005AL	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
773	2		SCH10S		P61K-005AM	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
773	3		SCH10S		P61K-005AN	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
773	4		SCH10S		P61K-005AP	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
773	6		SCH10S		P61K-005C6	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67K-001J2	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	0.75				P67K-001J3	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	1				P67K-001J4	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	1.5				P67K-001J5	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	2				P67K-001JB	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	3				P67K-001JE	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	4				P67K-001JF	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	6				P67K-001JG	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000L8	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000L9	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000LA	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000LB	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000LH	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000LL	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000LM	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	6				P73T-000LN	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	0.5				P73T-000FT	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	0.75				P73T-000FU	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	3				P73T-000G5	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	4				P73T-000G6	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	6				P73T-000G7	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-6				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
773	0.5-6				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81K-0014B	Gate valve ASTM A182 Grade F304/F304L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	

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GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75				P81K-0014C	Gate valve ASTM A182 Grade F304/F304L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	1				P81K-0014D	Gate valve ASTM A182 Grade F304/F304L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	1.5				P81K-0014E	Gate valve ASTM A182 Grade F304/F304L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	2				P81L-0029U	Gate valve ASTM A351 Grade CF8 Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	3				P81L-0029V	Gate valve ASTM A351 Grade CF8 Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	4				P81L-0029W	Gate valve ASTM A351 Grade CF8 Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	6				P81L-0029X	Gate valve ASTM A351 Grade CF8 Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
4608	0.75				P81K-001P3	Gate valve ASTM A182 Grade F304/F304L dual grade Class 150 API 602 BW both sides w/ nipples BE - NPT ASTM A312-TP304(L) dual grade Seamless Sch80S-nipple Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
773	2				P81L-0029E	Gate valve ASTM A351 Grade CF8 Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82K-000RJ	Globe valve ASTM A182 Grade F304/F304L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	0.75				P82K-000RK	Globe valve ASTM A182 Grade F304/F304L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	1				P82K-000RL	Globe valve ASTM A182 Grade F304/F304L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	1.5				P82K-000RM	Globe valve ASTM A182 Grade F304/F304L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	2				P82L-0019H	Globe valve ASTM A351 Grade CF8 Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	3				P82L-0019J	Globe valve ASTM A351 Grade CF8 Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	4				P82L-0019K	Globe valve ASTM A351 Grade CF8 Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	6				P82L-0019L	Globe valve ASTM A351 Grade CF8 Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83K-000P2	Check valve ASTM A182 Grade F304/F304L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Severe wet H2S service	
1	0.75				P83K-000P3	Check valve ASTM A182 Grade F304/F304L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Severe wet H2S service	
1	1				P83K-000P4	Check valve ASTM A182 Grade F304/F304L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Severe wet H2S service	
1	1.5				P83K-000P5	Check valve ASTM A182 Grade F304/F304L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Severe wet H2S service	
1	2				P83L-0019N	Check valve ASTM A351 Grade CF8 Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service	
1	3				P83L-0019P	Check valve ASTM A351 Grade CF8 Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service	
1	4				P83L-0019R	Check valve ASTM A351 Grade CF8 Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service	
1	6				P83L-0019S	Check valve ASTM A351 Grade CF8 Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service	

ORIFICE FLANGE (FO)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2		SCH10S		P66K-003T7	Orifice flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Severe wet H2S service	
1	3		SCH10S		P66K-003T8	Orifice flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Severe wet H2S service	
1	4		SCH10S		P66K-003T9	Orifice flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Severe wet H2S service	
200	2		SCH10S		P66K-003TD	Orifice flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Severe wet H2S service with Jack screw	
200	3		SCH10S		P66K-003TE	Orifice flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Severe wet H2S service with Jack screw	
200	4		SCH10S		P66K-003TF	Orifice flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Severe wet H2S service with Jack screw	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71K-000BG	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	
1	0.75				P71K-000BH	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	
1	1				P71K-000BJ	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	

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SPECT BLANK (SB)							
OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5				P71K-000BK	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	
1	2				P71K-000BN	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	
1	3				P71K-000BP	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	
1	4				P71K-000BR	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	
1	6				P71K-000BS	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	

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BOLT TABLE (B_A0JR01 , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	60	P80S-008SY		
0.75	4	0.500	65	P80S-008SZ		
1	4	0.500	70	P80S-008T0		
1.5	4	0.500	75	P80S-008T1		
2	4	0.625	85	P80S-0090A		
3	4	0.625	95	P80S-0090C		
4	8	0.625	95	P80S-0090C		
6	8	0.750	105	P80S-0090E		

BOLT TABLE (B_A0JR01_773 , STUD ASME RF, OPTION CODE 773)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-008T0		
0.75	4	0.625	75	P80S-00908		
1	4	0.625	80	P80S-00909		
1.5	4	0.750	95	P80S-005Z4		
2	8	0.625	90	P80S-0090B		
3	8	0.750	110	P80S-0090F		
4	8	0.750	115	P80S-0090G		
6	12	0.750	125	P80S-0090J		

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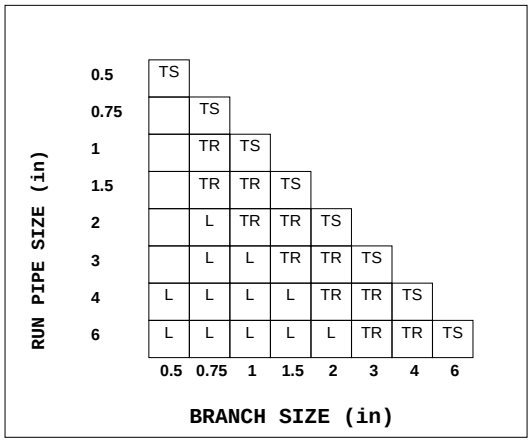
BRANCH TABLE (T_A0JR01)



L : OUTLET
TR : REDUCING TEE
TS : STRAIGHT TEE

INDRA
01-SEP-2014

PIPING CLASS

A0JR03 REV NO. 2

Material : SS304L
Rating : ASME CLASS 150
Flange Face : RF
C.A.(mm) : 0.00
Gasket : Spiral Wound
Service : PROCESS - WET SEVERE SOUR SERVICE SUBJECT TO NACE + HIC STD.
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
5	BOLTING CONFIRMING TO B7M / 2HM SHALL BE USED UNDER CONDITIONS (A) DIRECT EXPOSURE TO SOUR ENVIRONMENTS (B) WHEN THE BOLTING WILL BE BURIED OR INSULATED
27	PWHT OF CARBON STEEL PIPING IN WET H2S, CAUSTIC AND AMINE SERVICES SHALL BE IN ACCORDANCE WITH SECTION 10.2, 10.3, AND 10.4 OF PROJECT SPECIFICATION 3550-8440-SP-0002 MATERIALS REQUIREMENTS FOR PRESSURISED EQUIPMENT AND PIPING. FOR CAUSTIC AND AMINE SERVICE THE FOLLOWING SHALL APPLY: - PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF ALL SITE PIPING FABRICATION WELDS IS REQUIRED FOR ALL WALL THICKNESSES. FOR MODERATE AND SEVERE WET H2S SERVICE THE FOLLOWING SHALL APPLY: PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF SITE FABRICATION CIRCUMFERENTIAL OR BRANCH WELDS IS NOT REQUIRED IF WELDS ARE MULTIPASS AND IN ACCORDANCE WITH PARA 10.2.12 OF PROJECT SPECIFICATION 3550-8440-SP-0002. FOR SERVICES MEETING THE WET H2S CRITERIA AND CAUSTIC OR AMINE CRITERIA THE MORE STRINGENT PWHT REQUIREMENT SHALL GOVERN.

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
541	NPT(F) (CA,L)
773	CLASS 300 (B,F,G)
4608	VALVE WITH NIPPLES (V)

INDRA
01-SEP-2014

PIPING CLASS
A0JR03 REV NO. 2

PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P01J-002CF	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE Severe wet H2S service	
1	0.75		SCH80S		P01J-002CG	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE Severe wet H2S service	
1	1		SCH80S		P01J-002CH	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE Severe wet H2S service	
1	1.5		SCH80S		P01J-002CJ	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE Severe wet H2S service	
1	2		SCH10S		P01J-002CK	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M BE Severe wet H2S service	
1	3		SCH10S		P01J-002CL	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M BE Severe wet H2S service	
1	4		SCH10S		P01J-002CM	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M BE Severe wet H2S service	
1	6		SCH10S		P01J-002CN	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M BE Severe wet H2S service	
1	8		SCH10S		P01J-002CX	Pipe ASTM A358 Grade 304/304L Class 1 dual grade EFW ASME B36.10M/B36.19M BE Severe wet H2S service	
1	10		SCH10S		P01J-002CP	Pipe ASTM A358 Grade 304/304L Class 1 dual grade EFW ASME B36.10M/B36.19M BE Severe wet H2S service	
1	12		SCH10S		P01J-002CR	Pipe ASTM A358 Grade 304/304L Class 1 dual grade EFW ASME B36.10M/B36.19M BE Severe wet H2S service	
1	14		SCH10S		P01J-002CS	Pipe ASTM A358 Grade 304/304L Class 1 dual grade EFW ASME B36.10M/B36.19M BE Severe wet H2S service	
1	16		SCH10S		P01J-002CT	Pipe ASTM A358 Grade 304/304L Class 1 dual grade EFW ASME B36.10M/B36.19M BE Severe wet H2S service	
1	18		SCH10S		P01J-002CU	Pipe ASTM A358 Grade 304/304L Class 1 dual grade EFW ASME B36.10M/B36.19M BE Severe wet H2S service	
1	20		SCH10S		P01J-002CV	Pipe ASTM A358 Grade 304/304L Class 1 dual grade EFW ASME B36.10M/B36.19M BE Severe wet H2S service	
1	24		SCH10S		P01J-002CW	Pipe ASTM A358 Grade 304/304L Class 1 dual grade EFW ASME B36.10M/B36.19M BE Severe wet H2S service	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P02J-001VV	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	0.75		SCH80S		P02J-001VW	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	1		SCH80S		P02J-001VX	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	1.5		SCH80S		P02J-001VY	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	2		SCH10S		P02J-001VZ	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	3		SCH10S		P02J-001W0	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	4		SCH10S		P02J-001W1	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	6		SCH10S		P02J-001W2	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	8		SCH10S		P02J-001WA	90 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius Severe wet H2S service	
1	10		SCH10S		P02J-001W3	90 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius Severe wet H2S service	
1	12		SCH10S		P02J-001W4	90 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius Severe wet H2S service	
1	14		SCH10S		P02J-001W5	90 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius Severe wet H2S service	
1	16		SCH10S		P02J-001W6	90 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius Severe wet H2S service	
1	18		SCH10S		P02J-001W7	90 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius Severe wet H2S service	
1	20		SCH10S		P02J-001W8	90 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius Severe wet H2S service	
1	24		SCH10S		P02J-001W9	90 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius Severe wet H2S service	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P03J-001TA	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	0.75		SCH80S		P03J-001TB	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	1		SCH80S		P03J-001TC	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	1.5		SCH80S		P03J-001TD	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	2		SCH10S		P03J-001TE	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	3		SCH10S		P03J-001TF	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	4		SCH10S		P03J-001TG	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	

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45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	6		SCH10S		P03J-001TH	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	8		SCH10S		P03J-001TM	45 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius Severe wet H2S service	
1	10		SCH10S		P03J-001TJ	45 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius Severe wet H2S service	
1	12		SCH10S		P03J-001TK	45 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius Severe wet H2S service	
1	14		SCH10S		P03J-001TL	45 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius Severe wet H2S service	
1	16		SCH10S		P03J-001TN	45 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius Severe wet H2S service	
1	18		SCH10S		P03J-001TP	45 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius Severe wet H2S service	
1	20		SCH10S		P03J-001TR	45 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius Severe wet H2S service	
1	24		SCH10S		P03J-001TS	45 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius Severe wet H2S service	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P21J-001JN	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	0.75		SCH80S		P21J-001JP	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1		SCH80S		P21J-001JR	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5		SCH80S		P21J-001JS	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	2		SCH10S		P21J-001JT	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	3		SCH10S		P21J-001JU	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	4		SCH10S		P21J-001JV	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	6		SCH10S		P21J-001KA	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	8		SCH10S		P21J-001K9	Straight tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	10		SCH10S		P21J-001K2	Straight tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	12		SCH10S		P21J-001K3	Straight tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	14		SCH10S		P21J-001K4	Straight tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	16		SCH10S		P21J-001K5	Straight tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	18		SCH10S		P21J-001K6	Straight tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	20		SCH10S		P21J-001K7	Straight tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	24		SCH10S		P21J-001K8	Straight tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75	SCH80S	SCH80S	P24J-006UM	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5	0.75	SCH80S	SCH80S	P24J-006UN	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5	1	SCH80S	SCH80S	P24J-006UP	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	2	1	SCH10S	SCH80S	P24J-006UR	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	2	1.5	SCH10S	SCH80S	P24J-006US	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	3	1.5	SCH10S	SCH80S	P24J-006UT	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	3	2	SCH10S	SCH10S	P24J-006UU	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	4	2	SCH10S	SCH10S	P24J-006UV	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	4	3	SCH10S	SCH10S	P24J-006UW	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	6	3	SCH10S	SCH10S	P24J-006VD	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	6	4	SCH10S	SCH10S	P24J-006VE	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	8	4	SCH10S	SCH10S	P24J-006VF	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	8	6	SCH10S	SCH10S	P24J-006VG	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	10	4	SCH10S	SCH10S	P24J-006VH	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	

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REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	10	6	SCH10S	SCH10S	P24J-006VJ	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	10	8	SCH10S	SCH10S	P24J-006VK	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	12	6	SCH10S	SCH10S	P24J-006VM	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	12	8	SCH10S	SCH10S	P24J-006VN	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	12	10	SCH10S	SCH10S	P24J-006VL	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	14	6	SCH10S	SCH10S	P24J-006VS	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	14	8	SCH10S	SCH10S	P24J-006VT	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	14	10	SCH10S	SCH10S	P24J-006VP	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	14	12	SCH10S	SCH10S	P24J-006VR	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	16	6	SCH10S	SCH10S	P24J-006VX	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	16	8	SCH10S	SCH10S	P24J-006VY	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	16	10	SCH10S	SCH10S	P24J-006VU	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	16	12	SCH10S	SCH10S	P24J-006VV	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	16	14	SCH10S	SCH10S	P24J-006VW	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	18	8	SCH10S	SCH10S	P24J-006W3	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	18	10	SCH10S	SCH10S	P24J-006VZ	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	18	12	SCH10S	SCH10S	P24J-006W0	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	18	14	SCH10S	SCH10S	P24J-006W1	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	18	16	SCH10S	SCH10S	P24J-006W2	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	20	8	SCH10S	SCH10S	P24J-006W9	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	20	10	SCH10S	SCH10S	P24J-006W4	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	20	12	SCH10S	SCH10S	P24J-006W5	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	20	14	SCH10S	SCH10S	P24J-006W6	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	20	16	SCH10S	SCH10S	P24J-006W7	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	20	18	SCH10S	SCH10S	P24J-006W8	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	24	10	SCH10S	SCH10S	P24J-006WA	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	24	12	SCH10S	SCH10S	P24J-006WB	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	24	14	SCH10S	SCH10S	P24J-006WC	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	24	16	SCH10S	SCH10S	P24J-006WD	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	24	18	SCH10S	SCH10S	P24J-006WE	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	24	20	SCH10S	SCH10S	P24J-006WF	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH80S	SCH80S	P27J-005NC	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1	0.5	SCH80S	SCH80S	P27J-005ND	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1	0.75	SCH80S	SCH80S	P27J-005NE	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5	0.5	SCH80S	SCH80S	P27J-005NF	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5	0.75	SCH80S	SCH80S	P27J-005NG	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5	1	SCH80S	SCH80S	P27J-005NH	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	2	0.75	SCH10S	SCH80S	P27J-005NJ	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	2	1	SCH10S	SCH80S	P27J-005NK	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	2	1.5	SCH10S	SCH80S	P27J-005NL	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	3	1.5	SCH10S	SCH80S	P27J-005NM	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	3	2	SCH10S	SCH10S	P27J-005NN	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	

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CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	4	1.5	SCH10S	SCH80S	P27J-005NP	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	4	2	SCH10S	SCH10S	P27J-005NR	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	4	3	SCH10S	SCH10S	P27J-005NS	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	6	3	SCH10S	SCH10S	P27J-005PA	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	6	4	SCH10S	SCH10S	P27J-005PB	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	8	4	SCH10S	SCH10S	P27J-005PC	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	8	6	SCH10S	SCH10S	P27J-005PD	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	10	4	SCH10S	SCH10S	P27J-005PE	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	10	6	SCH10S	SCH10S	P27J-005PF	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	10	8	SCH10S	SCH10S	P27J-005PG	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	12	6	SCH10S	SCH10S	P27J-005PJ	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	12	8	SCH10S	SCH10S	P27J-005PK	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	12	10	SCH10S	SCH10S	P27J-005PH	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	14	6	SCH10S	SCH10S	P27J-005PN	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	14	8	SCH10S	SCH10S	P27J-005PP	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	14	10	SCH10S	SCH10S	P27J-005PL	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	14	12	SCH10S	SCH10S	P27J-005PM	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	16	8	SCH10S	SCH10S	P27J-005PU	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	16	10	SCH10S	SCH10S	P27J-005PR	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	16	12	SCH10S	SCH10S	P27J-005PS	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	16	14	SCH10S	SCH10S	P27J-005PT	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	18	10	SCH10S	SCH10S	P27J-005PV	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	18	12	SCH10S	SCH10S	P27J-005PW	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	18	14	SCH10S	SCH10S	P27J-005PX	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	18	16	SCH10S	SCH10S	P27J-005R5	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	20	12	SCH10S	SCH10S	P27J-005PY	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	20	14	SCH10S	SCH10S	P27J-005PZ	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	20	16	SCH10S	SCH10S	P27J-005R0	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	20	18	SCH10S	SCH10S	P27J-005R1	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	24	16	SCH10S	SCH10S	P27J-005R2	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	24	18	SCH10S	SCH10S	P27J-005R3	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	24	20	SCH10S	SCH10S	P27J-005R4	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH80S	SCH80S	P28J-005P7	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1	0.5	SCH80S	SCH80S	P28J-005P8	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1	0.75	SCH80S	SCH80S	P28J-005P9	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5	0.5	SCH80S	SCH80S	P28J-005PA	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5	0.75	SCH80S	SCH80S	P28J-005PB	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5	1	SCH80S	SCH80S	P28J-005PC	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	2	0.75	SCH10S	SCH80S	P28J-005PD	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	2	1	SCH10S	SCH80S	P28J-005PE	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	3	1.5	SCH10S	SCH80S	P28J-005PF	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	3	1.5	SCH10S	SCH80S	P28J-005PG	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	

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ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	SCH10S	SCH10S	P28J-005PH	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	4	1.5	SCH10S	SCH80S	P28J-005PJ	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	4	2	SCH10S	SCH10S	P28J-005PK	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	4	3	SCH10S	SCH10S	P28J-005PL	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	6	3	SCH10S	SCH10S	P28J-005R6	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	6	4	SCH10S	SCH10S	P28J-005R7	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	8	4	SCH10S	SCH10S	P28J-005R8	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	8	6	SCH10S	SCH10S	P28J-005R9	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	10	4	SCH10S	SCH10S	P28J-005RC	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	10	6	SCH10S	SCH10S	P28J-005RA	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	10	8	SCH10S	SCH10S	P28J-005RB	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	12	6	SCH10S	SCH10S	P28J-005RE	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	12	8	SCH10S	SCH10S	P28J-005RF	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	12	10	SCH10S	SCH10S	P28J-005RD	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	14	6	SCH10S	SCH10S	P28J-005RJ	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	14	8	SCH10S	SCH10S	P28J-005RK	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	14	10	SCH10S	SCH10S	P28J-005RG	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	14	12	SCH10S	SCH10S	P28J-005RH	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	16	8	SCH10S	SCH10S	P28J-005RP	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	16	10	SCH10S	SCH10S	P28J-005RL	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	16	12	SCH10S	SCH10S	P28J-005RM	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	16	14	SCH10S	SCH10S	P28J-005RN	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	18	10	SCH10S	SCH10S	P28J-005RR	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	18	12	SCH10S	SCH10S	P28J-005RS	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	18	14	SCH10S	SCH10S	P28J-005RT	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	18	16	SCH10S	SCH10S	P28J-005RU	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	20	12	SCH10S	SCH10S	P28J-005RV	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	20	14	SCH10S	SCH10S	P28J-005RW	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	20	16	SCH10S	SCH10S	P28J-005RX	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	20	18	SCH10S	SCH10S	P28J-005RY	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	24	16	SCH10S	SCH10S	P28J-005RZ	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	24	18	SCH10S	SCH10S	P28J-005S0	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	24	20	SCH10S	SCH10S	P28J-005S1	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P29J-001CY	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	0.75		SCH80S		P29J-001CZ	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1		SCH80S		P29J-001D0	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5		SCH80S		P29J-001D1	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	2		SCH10S		P29J-001D2	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	3		SCH10S		P29J-001D3	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	4		SCH10S		P29J-001D4	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1			SCH10S		P29J-002CX	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	8		SCH10S		P29J-002JA	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	

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CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	10		SCH10S		P29J-001GS	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	12		SCH10S		P29J-001JC	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	14		SCH10S		P29J-001KT	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	16		SCH10S		P29J-001MD	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	18		SCH10S		P29J-001NR	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	20		SCH10S		P29J-001SK	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	24		SCH10S		P29J-001V3	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
541	0.75				P29K-00046	Cap ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 NPT Severe wet H2S service	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P41J-001TC	Straight nipple ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Severe wet H2S service	
1	0.75		SCH80S		P41J-001TD	Straight nipple ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Severe wet H2S service	
1	1		SCH80S		P41J-001TE	Straight nipple ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Severe wet H2S service	
1	1.5		SCH80S		P41J-001TF	Straight nipple ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Severe wet H2S service	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
541	1	0.75			P31K-00FLV	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 NPT Severe wet H2S service	
541	1.5	0.75			P31K-00FLU	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 NPT Severe wet H2S service	
541	2 - 2.5	0.75			P31K-00GFC	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 NPT Severe wet H2S service	
541	3 - 5	0.75			P31K-00GFD	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 NPT Severe wet H2S service	
541	6 - 12	0.75			P31K-00GFE	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 NPT Severe wet H2S service	
541	14 - 36	0.75			P31K-00GFF	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 NPT Severe wet H2S service	
1	2	0.75	SCH10S	SCH80S	P31K-00EFT	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	3	0.75	SCH10S	SCH80S	P31K-00EFU	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	4	0.75	SCH10S	SCH80S	P31K-00EFW	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	6	0.75	SCH10S	SCH80S	P31K-00EFZ	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	8	0.75	SCH10S	SCH80S	P31K-00EG3	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	10	0.75	SCH10S	SCH80S	P31K-00EG8	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	12	0.75	SCH10S	SCH80S	P31K-00EGD	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	14	0.75	SCH10S	SCH80S	P31K-00EGK	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	16	0.75	SCH10S	SCH80S	P31K-00EGS	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	18	0.75	SCH10S	SCH80S	P31K-00EGY	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	20	0.75	SCH10S	SCH80S	P31K-00EH5	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	24	0.75	SCH10S	SCH80S	P31K-00EHC	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	3	1	SCH10S	SCH80S	P31K-00EFV	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	4	1	SCH10S	SCH80S	P31K-00EFX	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	6	1	SCH10S	SCH80S	P31K-00EG0	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	8	1	SCH10S	SCH80S	P31K-00EG4	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	10	1	SCH10S	SCH80S	P31K-00EG9	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	12	1	SCH10S	SCH80S	P31K-00EGE	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	14	1	SCH10S	SCH80S	P31K-00EGL	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	16	1	SCH10S	SCH80S	P31K-00EGT	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	18	1	SCH10S	SCH80S	P31K-00EGZ	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	20	1	SCH10S	SCH80S	P31K-00EH6	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	24	1	SCH10S	SCH80S	P31K-00EHD	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	4	1.5	SCH10S	SCH80S	P31K-00EFY	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	6	1.5	SCH10S	SCH80S	P31K-00EG1	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	8	1.5	SCH10S	SCH80S	P31K-00EG5	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	10	1.5	SCH10S	SCH80S	P31K-00EGA	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	12	1.5	SCH10S	SCH80S	P31K-00EGF	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	14	1.5	SCH10S	SCH80S	P31K-00EGM	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	16	1.5	SCH10S	SCH80S	P31K-00EGU	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	18	1.5	SCH10S	SCH80S	P31K-00EH0	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	

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OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	20	1.5	SCH10S	SCH80S	P31K-00EH7	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	24	1.5	SCH10S	SCH80S	P31K-00EHE	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	6	2	SCH10S	SCH10S	P31K-00EG2	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	8	2	SCH10S	SCH10S	P31K-00EG6	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	10	2	SCH10S	SCH10S	P31K-00EGB	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	12	2	SCH10S	SCH10S	P31K-00EGG	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	14	2	SCH10S	SCH10S	P31K-00EGN	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	16	2	SCH10S	SCH10S	P31K-00EGV	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	18	2	SCH10S	SCH10S	P31K-00EH1	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	20	2	SCH10S	SCH10S	P31K-00EH8	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	24	2	SCH10S	SCH10S	P31K-00EHF	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	8	3	SCH10S	SCH10S	P31K-00EG7	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	10	3	SCH10S	SCH10S	P31K-00EGC	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	12	3	SCH10S	SCH10S	P31K-00EGH	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	14	3	SCH10S	SCH10S	P31K-00EGP	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	16	3	SCH10S	SCH10S	P31K-00EGW	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	18	3	SCH10S	SCH10S	P31K-00EH2	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	20	3	SCH10S	SCH10S	P31K-00EH9	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	24	3	SCH10S	SCH10S	P31K-00EHG	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	12	4	SCH10S	SCH10S	P31K-00EGJ	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	14	4	SCH10S	SCH10S	P31K-00EGR	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	16	4	SCH10S	SCH10S	P31K-00EGX	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	18	4	SCH10S	SCH10S	P31K-00EH3	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	20	4	SCH10S	SCH10S	P31K-00EHA	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	24	4	SCH10S	SCH10S	P31K-00EHH	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	18	6	SCH10S	SCH10S	P31K-00EH4	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	20	6	SCH10S	SCH10S	P31K-00EHB	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	24	6	SCH10S	SCH10S	P31K-00EHJ	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30K-00051	Plug ASTM A182 Grade F304/F304L dual grade ASME B16.11 NPT Round head Severe wet H2S service	
1	0.75				P30K-00052	Plug ASTM A182 Grade F304/F304L dual grade ASME B16.11 NPT Round head Severe wet H2S service	
1	1				P30K-00053	Plug ASTM A182 Grade F304/F304L dual grade ASME B16.11 NPT Round head Severe wet H2S service	
1	1.5				P30K-00054	Plug ASTM A182 Grade F304/F304L dual grade ASME B16.11 NPT Round head Severe wet H2S service	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P61K-005AY	Flange WN ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	0.75		SCH80S		P61K-005AZ	Flange WN ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	1		SCH80S		P61K-005B0	Flange WN ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	1.5		SCH80S		P61K-005B1	Flange WN ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	2		SCH10S		P61K-005B7	Flange WN ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	3		SCH10S		P61K-005BA	Flange WN ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	4		SCH10S		P61K-005BB	Flange WN ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	6		SCH10S		P61K-005BC	Flange WN ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	8		SCH10S		P61K-005BD	Flange WN ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	10		SCH10S		P61K-005B2	Flange WN ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	12		SCH10S		P61K-005B3	Flange WN ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	14		SCH10S		P61K-005B4	Flange WN ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	16		SCH10S		P61K-005B5	Flange WN ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	18		SCH10S		P61K-005B6	Flange WN ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	20		SCH10S		P61K-005B8	Flange WN ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	24		SCH10S		P61K-005B9	Flange WN ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
773	0.5		SCH80S		P61K-005AH	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
773	0.75		SCH80S		P61K-005AJ	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
773	1		SCH80S		P61K-005AK	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
773	1.5		SCH80S		P61K-005AL	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
773	2		SCH10S		P61K-005AM	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
773	3		SCH10S		P61K-005AN	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
773	4		SCH10S		P61K-005AP	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
773	6		SCH10S		P61K-005C6	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
773	8		SCH10S		P61K-005C7	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
773	10		SCH10S		P61K-005BZ	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
773	12		SCH10S		P61K-005C0	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
773	14		SCH10S		P61K-005C1	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
773	16		SCH10S		P61K-005C2	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
773	18		SCH10S		P61K-005C3	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
773	20		SCH10S		P61K-005C4	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
773	24		SCH10S		P61K-005C5	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67K-001J2	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	0.75				P67K-001J3	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	1				P67K-001J4	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	1.5				P67K-001J5	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	2				P67K-001JB	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	3				P67K-001JE	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	4				P67K-001JF	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	6				P67K-001JG	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	8				P67K-001JH	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	10				P67K-001J6	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	12				P67K-001J7	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	14				P67K-001J8	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	16				P67K-001J9	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	18				P67K-001JA	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	20				P67K-001JC	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	24				P67K-001JD	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000L8	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000L9	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000LA	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000LB	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000LH	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000LL	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000LM	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	6				P73T-000LN	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	8				P73T-000LP	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	10				P73T-000LC	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	12				P73T-000LD	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	14				P73T-000LE	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	16				P73T-000LF	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	18				P73T-000LG	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	20				P73T-000LJ	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	24				P73T-000LK	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	0.5				P73T-000FT	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	0.75				P73T-000FU	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

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GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
773	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	3				P73T-000G5	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	4				P73T-000G6	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	6				P73T-000G7	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	8				P73T-000G8	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	10				P73T-000FX	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	12				P73T-000FY	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	14				P73T-000FZ	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	16				P73T-000G0	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	18				P73T-000G1	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	20				P73T-000G3	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	24				P73T-000G4	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-16				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	18-24				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
773	0.5-10				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
773	12-24				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81K-0014B	Gate valve ASTM A182 Grade F304/F304L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	0.75				P81K-0014C	Gate valve ASTM A182 Grade F304/F304L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	1				P81K-0014D	Gate valve ASTM A182 Grade F304/F304L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	1.5				P81K-0014E	Gate valve ASTM A182 Grade F304/F304L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	2				P81L-0029U	Gate valve ASTM A351 Grade CF8 Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	3				P81L-0029V	Gate valve ASTM A351 Grade CF8 Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	4				P81L-0029W	Gate valve ASTM A351 Grade CF8 Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	6				P81L-0029X	Gate valve ASTM A351 Grade CF8 Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	8				P81L-0029Y	Gate valve ASTM A351 Grade CF8 Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	10				P81L-0029S	Gate valve ASTM A351 Grade CF8 Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	12				P81L-0029T	Gate valve ASTM A351 Grade CF8 Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	14				P81L-002A4	Gate valve ASTM A351 Grade CF8 Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Severe wet H2S service	
4608	0.75				P81K-001P3	Gate valve ASTM A182 Grade F304/F304L dual grade Class 150 API 602 BW both sides w/ nipples BE - NPT ASTM A312-TP304(L) dual grade Seamless Sch80S-nipple Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82K-000RJ	Globe valve ASTM A182 Grade F304/F304L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	0.75				P82K-000RK	Globe valve ASTM A182 Grade F304/F304L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	1				P82K-000RL	Globe valve ASTM A182 Grade F304/F304L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	1.5				P82K-000RM	Globe valve ASTM A182 Grade F304/F304L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	2				P82L-0019H	Globe valve ASTM A351 Grade CF8 Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	3				P82L-0019J	Globe valve ASTM A351 Grade CF8 Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	

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GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	4				P82L-0019K	Globe valve ASTM A351 Grade CF8 Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	6				P82L-0019L	Globe valve ASTM A351 Grade CF8 Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83K-000P2	Check valve ASTM A182 Grade F304/F304L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Severe wet H2S service	
1	0.75				P83K-000P3	Check valve ASTM A182 Grade F304/F304L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Severe wet H2S service	
1	1				P83K-000P4	Check valve ASTM A182 Grade F304/F304L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Severe wet H2S service	
1	1.5				P83K-000P5	Check valve ASTM A182 Grade F304/F304L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Severe wet H2S service	
1	2				P83L-0019N	Check valve ASTM A351 Grade CF8 Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service	
1	3				P83L-0019P	Check valve ASTM A351 Grade CF8 Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service	
1	4				P83L-0019R	Check valve ASTM A351 Grade CF8 Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service	
1	6				P83L-0019S	Check valve ASTM A351 Grade CF8 Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service	
1	8				P83L-0019T	Check valve ASTM A351 Grade CF8 Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71K-000BG	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	
1	0.75				P71K-000BH	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	
1	1				P71K-000BJ	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	
1	1.5				P71K-000BK	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	
1	2				P71K-000BN	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	
1	3				P71K-000BP	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	
1	4				P71K-000BR	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	
1	6				P71K-000BS	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	
1	8				P71K-000BT	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	
1	10				P71K-000BL	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	
1	12				P71K-000BM	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	

PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72K-000AU	Paddle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	
1	16				P72K-000AV	Paddle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	
1	18				P72K-000AW	Paddle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	
1	20				P72K-000AX	Paddle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	
1	24				P72K-000AY	Paddle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	

PADDLE SPACER (PS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72K-000AZ	Paddle spacer ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	
1	16				P72K-000B0	Paddle spacer ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	
1	18				P72K-000B1	Paddle spacer ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	
1	20				P72K-000B2	Paddle spacer ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	
1	24				P72K-000B3	Paddle spacer ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	

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BOLT TABLE (B_A0JR03 , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	60	P80S-008SY		
0.75	4	0.500	65	P80S-008SZ		
1	4	0.500	70	P80S-008T0		
1.5	4	0.500	75	P80S-008T1		
2	4	0.625	85	P80S-0090A		
3	4	0.625	95	P80S-0090C		
4	8	0.625	95	P80S-0090C		
6	8	0.750	105	P80S-0090E		
8	8	0.750	110	P80S-0090F		
10	12	0.875	120	P80S-005Z9		
12	12	0.875	120	P80S-005Z9		
14	12	1.000	135	P80S-00619		
16	16	1.000	140	P80S-0061A		
18	16	1.125	150	P80S-0064L		
20	20	1.125	160	P80S-0064N		
24	20	1.250	175	P80S-00686		

BOLT TABLE (B_A0JR03_773 , STUD ASME RF, OPTION CODE 773)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-008T0		
0.75	4	0.625	75	P80S-00908		
1	4	0.625	80	P80S-00909		
1.5	4	0.750	95	P80S-005Z4		
2	8	0.625	90	P80S-0090B		
3	8	0.750	110	P80S-0090F		
4	8	0.750	115	P80S-0090G		
6	12	0.750	125	P80S-0090J		
8	12	0.875	140	P80S-005ZD		
10	16	1.000	160	P80S-0061E		
12	16	1.125	175	P80S-0064S		
14	20	1.125	180	P80S-0064T		
16	20	1.250	190	P80S-00689		
18	24	1.250	200	P80S-0068B		
20	24	1.250	210	P80S-0068D		
24	24	1.500	235	P80S-006LB		

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BRANCH TABLE (T_A0JR03)

RUN PIPE SIZE (in) \ BRANCH SIZE (in)	0.5	0.75	1	1.5	2	3	4	6	8	10	12	14	16	18	20	24
0.5	TS															
0.75		TS														
1		TR	TS													
1.5		TR	TR	TS												
2		L	TR	TR	TS											
3		L	L	TR	TR	TS										
4	L	L	L	L	TR	TR	TS									
6	L	L	L	L	L	TR	TR	TS								
8		L	L	L	L	L	TR	TR	TS							
10		L	L	L	L	L	TR	TR	TR	TS						
12		L	L	L	L	L	L	TR	TR	TR	TS					
14		L	L	L	L	L	L	TR	TR	TR	TR	TS				
16		L	L	L	L	L	L	TR	TR	TR	TR	TR	TS			
18		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TS		
20		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TR	TS	
24		L	L	L	L	L	L	L	9PD	TR	TR	TR	TR	TR	TR	TS

TR : REDUCING TEE
9PD : REINFORCING PAD 90 DEG
L : OUTLET
TS : STRAIGHT TEE

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PIPING CLASS

A0JS REV NO. 2

Material : SS304L
Rating : ASME CLASS 150
Flange Face : RF
C.A.(mm) : 0.00
Gasket : Spiral Wound
Service : UTILITY , CORROSIVE : / STEAM AND CONDENSATE
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
3	STIFFENER RINGS, IF NEEDED, SHALL BE PROVIDED AS PER ASME SEC.VIII, DIV.1 FOR FULL VACUUM CONDITION

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
541	NPT(F) (CA,L)
714	SW - NPT(F) (V)
773	CLASS 300 (B,F,G)
781	CLASS 600 (B,F,G)
3001	INSULATION GASKET KIT AND BOLTS FOR FLANGE (G)

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PIPING CLASS
A0JS REV NO. 2

PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P01J-000UC	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE	
1	0.75		SCH80S		P01J-000UD	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE	
1	1		SCH80S		P01J-000UE	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE	
1	1.5		SCH80S		P01J-000UF	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE	
1	2		SCH10S		P01J-000RD	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M BE	
1	3		SCH10S		P01J-000RE	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M BE	
1	4		SCH10S		P01J-000RF	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M BE	
1	6		SCH10S		P01J-000RG	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M BE	
1	8		SCH10S		P01J-001F7	Pipe ASTM A358 Grade 304/304L Class 1 dual grade EFW ASME B36.10M/B36.19M BE	
1	10		SCH10S		P01J-000S7	Pipe ASTM A358 Grade 304/304L Class 1 dual grade EFW ASME B36.10M/B36.19M BE	
1	12		SCH10S		P01J-000S8	Pipe ASTM A358 Grade 304/304L Class 1 dual grade EFW ASME B36.10M/B36.19M BE	
1	14		SCH10S		P01J-000S9	Pipe ASTM A358 Grade 304/304L Class 1 dual grade EFW ASME B36.10M/B36.19M BE	
1	16		SCH10S		P01J-000SA	Pipe ASTM A358 Grade 304/304L Class 1 dual grade EFW ASME B36.10M/B36.19M BE	
1	18		SCH10S		P01J-000SB	Pipe ASTM A358 Grade 304/304L Class 1 dual grade EFW ASME B36.10M/B36.19M BE	
1	20		SCH10S		P01J-000SC	Pipe ASTM A358 Grade 304/304L Class 1 dual grade EFW ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P02K-0001K	90 degree elbow ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	0.75				P02K-0001L	90 degree elbow ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	1				P02K-0001M	90 degree elbow ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	1.5				P02K-0001N	90 degree elbow ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	2		SCH10S		P02J-000J0	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	3		SCH10S		P02J-000J1	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	4		SCH10S		P02J-000J2	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	6		SCH10S		P02J-000J3	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	8		SCH10S		P02J-0017L	90 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius	
1	10		SCH10S		P02J-000JC	90 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius	
1	12		SCH10S		P02J-000JD	90 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius	
1	14		SCH10S		P02J-000JE	90 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius	
1	16		SCH10S		P02J-000JF	90 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius	
1	18		SCH10S		P02J-000JG	90 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius	
1	20		SCH10S		P02J-000JH	90 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P03K-0001G	45 degree elbow ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	0.75				P03K-0001H	45 degree elbow ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	1				P03K-0001J	45 degree elbow ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	1.5				P03K-0001K	45 degree elbow ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	2		SCH10S		P03J-000HS	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	3		SCH10S		P03J-000HT	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	4		SCH10S		P03J-000HU	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	6		SCH10S		P03J-000HV	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	8		SCH10S		P03J-0016G	45 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius	
1	10		SCH10S		P03J-000J4	45 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius	
1	12		SCH10S		P03J-000J5	45 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius	
1	14		SCH10S		P03J-000J6	45 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius	
1	16		SCH10S		P03J-000J7	45 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius	
1	18		SCH10S		P03J-000J8	45 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius	
1	20		SCH10S		P03J-000J9	45 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius	

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PIPING CLASS
A0JS REV NO. 2

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P21K-0001G	Straight tee ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	0.75				P21K-0001H	Straight tee ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	1				P21K-0001J	Straight tee ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	1.5				P21K-0001K	Straight tee ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	2		SCH10S		P21J-000HM	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	3		SCH10S		P21J-000HN	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	4		SCH10S		P21J-000HP	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	6		SCH10S		P21J-000HR	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	8		SCH10S		P21J-000ZZ	Straight tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	10		SCH10S		P21J-000J0	Straight tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	12		SCH10S		P21J-000J1	Straight tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	14		SCH10S		P21J-000J2	Straight tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	16		SCH10S		P21J-000J3	Straight tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	18		SCH10S		P21J-000J4	Straight tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	20		SCH10S		P21J-000J5	Straight tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75			P24K-0001X	Reducing tee ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	1.5	0.75			P24K-0001Z	Reducing tee ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	1.5	1			P24K-00020	Reducing tee ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	2	1	SCH10S	SCH80S	P24J-0065A	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	2	1.5	SCH10S	SCH80S	P24J-0065B	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	3	1.5	SCH10S	SCH80S	P24J-004SV	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	3	2	SCH10S	SCH10S	P24J-002H7	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	4	2	SCH10S	SCH10S	P24J-002H8	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	4	3	SCH10S	SCH10S	P24J-002H9	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	6	3	SCH10S	SCH10S	P24J-002HA	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	6	4	SCH10S	SCH10S	P24J-002HB	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	8	4	SCH10S	SCH10S	P24J-004SY	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	8	6	SCH10S	SCH10S	P24J-004SZ	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	10	4	SCH10S	SCH10S	P24J-004T0	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	10	6	SCH10S	SCH10S	P24J-004T1	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	10	8	SCH10S	SCH10S	P24J-004T2	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	12	6	SCH10S	SCH10S	P24J-004T3	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	12	8	SCH10S	SCH10S	P24J-004T4	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	12	10	SCH10S	SCH10S	P24J-002HT	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	14	6	SCH10S	SCH10S	P24J-004T5	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	14	8	SCH10S	SCH10S	P24J-004T6	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	14	10	SCH10S	SCH10S	P24J-002HU	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	14	12	SCH10S	SCH10S	P24J-002HV	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	16	6	SCH10S	SCH10S	P24J-004T7	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	16	8	SCH10S	SCH10S	P24J-004T8	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	16	10	SCH10S	SCH10S	P24J-002HW	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	16	12	SCH10S	SCH10S	P24J-002HX	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	16	14	SCH10S	SCH10S	P24J-002HY	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	18	8	SCH10S	SCH10S	P24J-004T9	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	18	10	SCH10S	SCH10S	P24J-002HZ	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	18	12	SCH10S	SCH10S	P24J-002J0	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	18	14	SCH10S	SCH10S	P24J-002J1	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	18	16	SCH10S	SCH10S	P24J-002J2	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	20	8	SCH10S	SCH10S	P24J-0065C	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	20	10	SCH10S	SCH10S	P24J-002J3	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	20	12	SCH10S	SCH10S	P24J-002J4	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	20	14	SCH10S	SCH10S	P24J-002J5	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	20	16	SCH10S	SCH10S	P24J-002J6	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	20	18	SCH10S	SCH10S	P24J-002J7	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	SCH10S	SCH10S	P27J-001PS	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	4	2	SCH10S	SCH10S	P27J-001PT	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	4	3	SCH10S	SCH10S	P27J-001PU	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	6	3	SCH10S	SCH10S	P27J-001PV	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	6	4	SCH10S	SCH10S	P27J-001PW	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	8	4	SCH10S	SCH10S	P27J-003L1	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	8	6	SCH10S	SCH10S	P27J-003L2	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	10	4	SCH10S	SCH10S	P27J-003L3	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	10	6	SCH10S	SCH10S	P27J-003L4	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	10	8	SCH10S	SCH10S	P27J-003L5	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	12	6	SCH10S	SCH10S	P27J-003L6	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	12	8	SCH10S	SCH10S	P27J-003L7	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	12	10	SCH10S	SCH10S	P27J-001RD	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	14	6	SCH10S	SCH10S	P27J-003L8	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	14	8	SCH10S	SCH10S	P27J-003L9	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	14	10	SCH10S	SCH10S	P27J-001RF	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	14	12	SCH10S	SCH10S	P27J-001RG	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	16	8	SCH10S	SCH10S	P27J-003LA	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	16	10	SCH10S	SCH10S	P27J-001RJ	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	16	12	SCH10S	SCH10S	P27J-001RK	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	16	14	SCH10S	SCH10S	P27J-001RL	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	18	10	SCH10S	SCH10S	P27J-001RM	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	18	12	SCH10S	SCH10S	P27J-001RN	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	18	14	SCH10S	SCH10S	P27J-001RP	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	18	16	SCH10S	SCH10S	P27J-001RR	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	20	12	SCH10S	SCH10S	P27J-001RS	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	20	14	SCH10S	SCH10S	P27J-001RT	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	20	16	SCH10S	SCH10S	P27J-001RU	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	20	18	SCH10S	SCH10S	P27J-001RV	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	SCH10S	SCH10S	P28J-001P8	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	4	2	SCH10S	SCH10S	P28J-001P9	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	4	3	SCH10S	SCH10S	P28J-001PA	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	6	3	SCH10S	SCH10S	P28J-001PB	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	6	4	SCH10S	SCH10S	P28J-001PC	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	8	4	SCH10S	SCH10S	P28J-003LP	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	8	6	SCH10S	SCH10S	P28J-003LR	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	10	4	SCH10S	SCH10S	P28J-003LS	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	10	6	SCH10S	SCH10S	P28J-003LT	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	10	8	SCH10S	SCH10S	P28J-003LU	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	12	6	SCH10S	SCH10S	P28J-003LV	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	12	8	SCH10S	SCH10S	P28J-003LW	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	12	10	SCH10S	SCH10S	P28J-001PW	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	14	6	SCH10S	SCH10S	P28J-003LX	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	14	8	SCH10S	SCH10S	P28J-003LY	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	14	10	SCH10S	SCH10S	P28J-001PY	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	14	12	SCH10S	SCH10S	P28J-001PZ	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	16	8	SCH10S	SCH10S	P28J-003LZ	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	16	10	SCH10S	SCH10S	P28J-001R1	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	16	12	SCH10S	SCH10S	P28J-001R2	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	16	14	SCH10S	SCH10S	P28J-001R3	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	18	10	SCH10S	SCH10S	P28J-001R4	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	18	12	SCH10S	SCH10S	P28J-001R5	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	18	14	SCH10S	SCH10S	P28J-001R6	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	18	16	SCH10S	SCH10S	P28J-001R7	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	20	12	SCH10S	SCH10S	P28J-001R8	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	20	14	SCH10S	SCH10S	P28J-001R9	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	20	16	SCH10S	SCH10S	P28J-001RA	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	20	18	SCH10S	SCH10S	P28J-001RB	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P29K-0001V	Cap ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	0.75				P29K-0001W	Cap ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	1				P29K-0001X	Cap ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	1.5				P29K-0001Y	Cap ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	2		SCH10S		P29J-000G1	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	3		SCH10S		P29J-000G2	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	4		SCH10S		P29J-000G3	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	6		SCH10S		P29J-000G4	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	8		SCH10S		P29J-000X3	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	10		SCH10S		P29J-000GB	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	12		SCH10S		P29J-000GC	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	14		SCH10S		P29J-000GD	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	16		SCH10S		P29J-000GE	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	18		SCH10S		P29J-000GF	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	20		SCH10S		P29J-000GG	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
541	0.75				P29K-00020	Cap ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 NPT	
541	1				P29K-0001Z	Cap ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P41J-001FS	Straight nipple ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		SCH80S		P41J-001FT	Straight nipple ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		SCH80S		P41J-001FU	Straight nipple ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		SCH80S		P41J-001FV	Straight nipple ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

CON SWAGED NIPPLE (SNC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH80S	SCH80S	P42J-00081	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	SCH80S	SCH80S	P42J-00082	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	SCH80S	SCH80S	P42J-00083	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	SCH80S	SCH80S	P42J-00084	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	SCH80S	SCH80S	P42J-00085	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	SCH80S	SCH80S	P42J-00086	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	SCH10S	SCH80S	P42J-000F9	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	SCH10S	SCH80S	P42J-000F6	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	SCH10S	SCH80S	P42J-000F7	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	SCH10S	SCH80S	P42J-000F8	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	SCH10S	SCH80S	P42J-000AG	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	

ECC SWAGED NIPPLE (SNE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH80S	SCH80S	P43J-0008D	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	SCH80S	SCH80S	P43J-0008E	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	SCH80S	SCH80S	P43J-0008F	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	SCH80S	SCH80S	P43J-0008G	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	SCH80S	SCH80S	P43J-0008H	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	

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ECC SWAGED NIPPLE (SNE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5	1	SCH80S	SCH80S	P43J-0008J	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	SCH10S	SCH80S	P43J-000CT	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	SCH10S	SCH80S	P43J-000CU	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	SCH10S	SCH80S	P43J-000CV	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	SCH10S	SCH80S	P43J-000CW	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	SCH10S	SCH80S	P43J-0008P	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	

COUPLING (CPS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P47K-00035	Coupling ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW - SW	
1	0.75				P47K-00036	Coupling ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW - SW	
1	1				P47K-00037	Coupling ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW - SW	
1	1.5				P47K-00038	Coupling ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW - SW	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2 - 2.5	0.75			P31K-00GFG	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 SW	
1	3 - 5	0.75			P31K-00GFH	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 SW	
1	6 - 12	0.75			P31K-008YY	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 SW	
1	14 - 36	0.75			P31K-008YC	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 SW	
1	3	1			P31K-008ZG	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 SW	
1	4 - 5	1			P31K-00GFL	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 SW	
1	6 - 10	1			P31K-008ZU	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 SW	
1	12 - 36	1			P31K-008Z6	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 SW	
1	4	1.5			P31K-0099M	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 SW	
1	5 - 6	1.5			P31K-00GFS	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 SW	
1	8 - 12	1.5			P31K-0099Z	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 SW	
1	14 - 24	1.5			P31K-00991	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 SW	
541	1	0.75			P31K-00911	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 NPT	
541	1.5	0.75			P31K-00916	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 NPT	
541	2 - 2.5	0.75			P31K-00GFJ	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 NPT	
541	3 - 5	0.75			P31K-00GFK	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 NPT	
541	6 - 12	0.75			P31K-0091X	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 NPT	
541	14 - 36	0.75			P31K-0091B	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 NPT	
1	6	2	SCH10S	SCH10S	P31K-005AV	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	8	2	SCH10S	SCH10S	P31K-007G1	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	10	2	SCH10S	SCH10S	P31K-005JV	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	12	2	SCH10S	SCH10S	P31K-005JX	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	14	2	SCH10S	SCH10S	P31K-005K0	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	16	2	SCH10S	SCH10S	P31K-005K3	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	18	2	SCH10S	SCH10S	P31K-005K5	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	20	2	SCH10S	SCH10S	P31K-005K8	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	8	3	SCH10S	SCH10S	P31K-007XV	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	10	3	SCH10S	SCH10S	P31K-007KK	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	12	3	SCH10S	SCH10S	P31K-007LF	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	14	3	SCH10S	SCH10S	P31K-007ME	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	16	3	SCH10S	SCH10S	P31K-007NJ	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	18	3	SCH10S	SCH10S	P31K-007PR	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	20	3	SCH10S	SCH10S	P31K-007RR	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	12	4	SCH10S	SCH10S	P31K-00812	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	14	4	SCH10S	SCH10S	P31K-00821	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	16	4	SCH10S	SCH10S	P31K-00837	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	18	4	SCH10S	SCH10S	P31K-0084E	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	20	4	SCH10S	SCH10S	P31K-0085E	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	18	6	SCH10S	SCH10S	P31K-008EY	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	20	6	SCH10S	SCH10S	P31K-008FP	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	

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PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30K-0001G	Plug ASTM A182 Grade F304/F304L dual grade ASME B16.11 NPT Round head	
1	0.75				P30K-0001H	Plug ASTM A182 Grade F304/F304L dual grade ASME B16.11 NPT Round head	
1	1				P30K-0001J	Plug ASTM A182 Grade F304/F304L dual grade ASME B16.11 NPT Round head	
1	1.5				P30K-0001K	Plug ASTM A182 Grade F304/F304L dual grade ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P61K-003A4	Flange SW ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	0.75		SCH80S		P61K-003A5	Flange SW ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	1		SCH80S		P61K-003A6	Flange SW ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	1.5		SCH80S		P61K-003A7	Flange SW ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	2		SCH10S		P61K-0023K	Flange WN ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	3		SCH10S		P61K-0023L	Flange WN ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	4		SCH10S		P61K-0023M	Flange WN ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	6		SCH10S		P61K-0023N	Flange WN ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	8		SCH10S		P61K-003A8	Flange WN ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	10		SCH10S		P61K-0024B	Flange WN ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	12		SCH10S		P61K-0024C	Flange WN ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	14		SCH10S		P61K-0024D	Flange WN ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	16		SCH10S		P61K-0024E	Flange WN ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	18		SCH10S		P61K-0024F	Flange WN ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	20		SCH10S		P61K-0024G	Flange WN ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
773	0.5		SCH80S		P61K-003A9	Flange SW ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
773	0.75		SCH80S		P61K-003AA	Flange SW ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
773	1		SCH80S		P61K-003AB	Flange SW ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
773	1.5		SCH80S		P61K-003AC	Flange SW ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
773	2		SCH10S		P61K-0023W	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
773	3		SCH10S		P61K-0023X	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
773	4		SCH10S		P61K-0023Y	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
773	6		SCH10S		P61K-003AD	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
773	8		SCH10S		P61K-003AE	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
773	10		SCH10S		P61K-0024Y	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
773	12		SCH10S		P61K-0024Z	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
773	14		SCH10S		P61K-00250	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
773	16		SCH10S		P61K-00251	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
773	18		SCH10S		P61K-00252	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
773	20		SCH10S		P61K-00253	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
781	2		SCH10S		P61K-00290	Flange WN ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 RF	
781	3		SCH10S		P61K-003D3	Flange WN ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 RF	
781	4		SCH10S		P61K-0046H	Flange WN ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 RF	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67K-000K9	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	0.75				P67K-000KA	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	1				P67K-000KB	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	1.5				P67K-000KC	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	2				P67K-000KD	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	3				P67K-000KE	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	4				P67K-000KF	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	6				P67K-000KG	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	8				P67K-000L7	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	10				P67K-000L1	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	12				P67K-000L2	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	14				P67K-000L3	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	16				P67K-000L4	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	18				P67K-000L5	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	20				P67K-000L6	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	

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GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000L8	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000L9	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000LA	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000LB	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000LH	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000LL	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000LM	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	6				P73T-000LN	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	8				P73T-000LP	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	10				P73T-000LC	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	12				P73T-000LD	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	14				P73T-000LE	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	16				P73T-000LF	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	18				P73T-000LG	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	20				P73T-000LJ	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
3001	4				P78U-0004R	Insulation gasket kit Glass reinforced epoxy Class 150 Manufacturer-standard Flange ASME B16.5 RF	
773	0.5				P73T-000FT	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	0.75				P73T-000FU	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	3				P73T-000G5	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	4				P73T-000G6	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	6				P73T-000G7	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	8				P73T-000G8	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	10				P73T-000FX	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	12				P73T-000FY	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	14				P73T-000FZ	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	16				P73T-000G0	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	18				P73T-000G1	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	20				P73T-000G3	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	2				P73T-000JH	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	3				P73T-000JL	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	4				P73T-000JM	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-16				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	18-20				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
773	0.5-10				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
773	12-20				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
781	0.75-4				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	

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GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81K-00108	Gate valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	0.75				P81K-00109	Gate valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	1				P81K-0010A	Gate valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	1.5				P81K-0010B	Gate valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	2				P81L-00293	Gate valve ASTM A351 Grade CF8 Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	3				P81L-00294	Gate valve ASTM A351 Grade CF8 Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	4				P81L-00295	Gate valve ASTM A351 Grade CF8 Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	6				P81L-00296	Gate valve ASTM A351 Grade CF8 Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	8				P81L-00297	Gate valve ASTM A351 Grade CF8 Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	10				P81L-002BX	Gate valve ASTM A351 Grade CF8 Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
714	0.5				P81K-001LC	Gate valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW - NPT Trim number 12 BB-BG-OS&Y Handwheel operated	
714	0.75				P81K-001FD	Gate valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW - NPT Trim number 12 BB-BG-OS&Y Handwheel operated	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82K-000NR	Globe valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	0.75				P82K-000NS	Globe valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	1				P82K-000NT	Globe valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	1.5				P82K-000NU	Globe valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	2				P82L-00195	Globe valve ASTM A351 Grade CF8 Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	3				P82L-00196	Globe valve ASTM A351 Grade CF8 Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	4				P82L-00197	Globe valve ASTM A351 Grade CF8 Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83K-000LM	Check valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 Lift-type Bolted cover	
1	0.75				P83K-000LN	Check valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 Lift-type Bolted cover	
1	1				P83K-000LP	Check valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 Lift-type Bolted cover	
1	1.5				P83K-000LR	Check valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 Lift-type Bolted cover	
1	2				P83L-00196	Check valve ASTM A351 Grade CF8 Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	3				P83L-00197	Check valve ASTM A351 Grade CF8 Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	4				P83L-00198	Check valve ASTM A351 Grade CF8 Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71K-00065	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	0.75				P71K-00066	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	1				P71K-00067	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71K-00068	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	2				P71K-0006A	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	3				P71K-0006B	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	4				P71K-0006C	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	6				P71K-0006D	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	8				P71K-0006E	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	10				P71K-00069	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	12				P71K-0006F	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	

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PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72K-0003T	Paddle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	16				P72K-0003U	Paddle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	18				P72K-0003V	Paddle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	20				P72K-0003W	Paddle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	

PADDLE SPACER (PS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72K-0003Y	Paddle spacer ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	16				P72K-0003Z	Paddle spacer ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	18				P72K-00040	Paddle spacer ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	20				P72K-00041	Paddle spacer ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	

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BOLT TABLE (B_A0JS , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	60	P80S-003V2		
0.75	4	0.500	65	P80S-003V3		
1	4	0.500	70	P80S-003V4		
1.5	4	0.500	75	P80S-003V5		
2	4	0.625	85	P80S-003XE		
3	4	0.625	95	P80S-003XG		
4	8	0.625	95	P80S-003XG		
6	8	0.750	105	P80S-003XJ		
8	8	0.750	110	P80S-003XK		
10	12	0.875	120	P80S-00419		
12	12	0.875	120	P80S-00419		
14	12	1.000	135	P80S-0043E		
16	16	1.000	140	P80S-0043F		
18	16	1.125	150	P80S-0046K		
20	20	1.125	160	P80S-0046M		

BOLT TABLE (B_A0JS_773 , STUD ASME RF, OPTION CODE 773)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-003V4		
0.75	4	0.625	75	P80S-003XC		
1	4	0.625	80	P80S-003XD		
1.5	4	0.750	95	P80S-00414		
2	8	0.625	90	P80S-003XF		
3	8	0.750	110	P80S-003XK		
4	8	0.750	115	P80S-003XL		
6	12	0.750	125	P80S-003XN		
8	12	0.875	140	P80S-0041D		
10	16	1.000	160	P80S-0043K		
12	16	1.125	175	P80S-0046S		
14	20	1.125	180	P80S-0046T		
16	20	1.250	190	P80S-004AK		
18	24	1.250	200	P80S-004AM		
20	24	1.250	210	P80S-004AP		

BOLT TABLE (B_A0JS_781 , STUD ASME RF, OPTION CODE 781)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	80			
0.75	4	0.625	90	P80S-003XF		
1	4	0.625	95	P80S-003XG		
1.5	4	0.750	110	P80S-003XK		
2	8	0.625	110	P80S-003VC		
3	8	0.750	130	P80S-003XP		
4	8	0.875	150	P80S-0041F		
6	12	1.000	175			
8	12	1.125	195			
10	16	1.250	250			
12	20	1.250	255			
14	20	1.375	270			
16	20	1.500	295			
18	20	1.625	320			
20	24	1.625	335			

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BRANCH TABLE (T_A0JS)

RUN PIPE SIZE (in) \ BRANCH SIZE (in)	0.5	0.75	1	1.5	2	3	4	6	8	10	12	14	16	18	20
0.5	TS														
0.75		TS													
1		TR	TS												
1.5		TR	TR	TS											
2		L	TR	TR	TS										
3		L	L	TR	TR	TS									
4	L	L	L	L	TR	TR	TS								
6	L	L	L	L	L	TR	TR	TS							
8		L	L	L	L	L	TR	TR	TS						
10		L	L	L	L	L	TR	TR	TR	TS					
12		L	L	L	L	L	L	TR	TR	TR	TS				
14		L	L	L	L	L	L	TR	TR	TR	TR	TS			
16		L	L	L	L	L	L	TR	TR	TR	TR	TR	TS		
18		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TS	
20		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TR	TS

TS : STRAIGHT TEE
L : OUTLET
TR : REDUCING TEE

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PIPING CLASS

A0JS01 REV NO. 2

Material : SS304L
Rating : ASME CLASS 150
Flange Face : RF
C.A.(mm) : 0.00
Gasket : Spiral Wound
Service : UTILITY: STEAM, CONDENSATE, BOILER FEED WATER TO ASME B31.3
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
3	STIFFENER RINGS, IF NEEDED, SHALL BE PROVIDED AS PER ASME SEC.VIII, DIV.1 FOR FULL VACUUM CONDITION

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
541	NPT(F) (CA)
714	SW - NPT(F) (V)
773	CLASS 300 (B,F,G)

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PIPING CLASS
A0JS01 REV NO. 2

PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P01J-000UC	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE	
1	0.75		SCH80S		P01J-000UD	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE	
1	1		SCH80S		P01J-000UE	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE	
1	1.5		SCH80S		P01J-000UF	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE	
1	2		SCH10S		P01J-000RD	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M BE	
1	3		SCH10S		P01J-000RE	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M BE	
1	4		SCH10S		P01J-000RF	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M BE	
1	6		SCH10S		P01J-000RG	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M BE	
1	8		SCH10S		P01J-001F7	Pipe ASTM A358 Grade 304/304L Class 1 dual grade EFW ASME B36.10M/B36.19M BE	
1	10		SCH10S		P01J-000S7	Pipe ASTM A358 Grade 304/304L Class 1 dual grade EFW ASME B36.10M/B36.19M BE	
1	12		SCH10S		P01J-000S8	Pipe ASTM A358 Grade 304/304L Class 1 dual grade EFW ASME B36.10M/B36.19M BE	
1	14		SCH10S		P01J-000S9	Pipe ASTM A358 Grade 304/304L Class 1 dual grade EFW ASME B36.10M/B36.19M BE	
1	16		SCH10S		P01J-000SA	Pipe ASTM A358 Grade 304/304L Class 1 dual grade EFW ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P02K-0001K	90 degree elbow ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	0.75				P02K-0001L	90 degree elbow ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	1				P02K-0001M	90 degree elbow ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	1.5				P02K-0001N	90 degree elbow ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	2		SCH10S		P02J-000J0	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	3		SCH10S		P02J-000J1	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	4		SCH10S		P02J-000J2	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	6		SCH10S		P02J-000J3	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	8		SCH10S		P02J-0017L	90 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius	
1	10		SCH10S		P02J-000JC	90 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius	
1	12		SCH10S		P02J-000JD	90 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius	
1	14		SCH10S		P02J-000JE	90 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius	
1	16		SCH10S		P02J-000JF	90 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P03K-0001G	45 degree elbow ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	0.75				P03K-0001H	45 degree elbow ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	1				P03K-0001J	45 degree elbow ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	1.5				P03K-0001K	45 degree elbow ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	2		SCH10S		P03J-000HS	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	3		SCH10S		P03J-000HT	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	4		SCH10S		P03J-000HU	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	6		SCH10S		P03J-000HV	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	8		SCH10S		P03J-0016G	45 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius	
1	10		SCH10S		P03J-000J4	45 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius	
1	12		SCH10S		P03J-000J5	45 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius	
1	14		SCH10S		P03J-000J6	45 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius	
1	16		SCH10S		P03J-000J7	45 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P21K-0001G	Straight tee ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	0.75				P21K-0001H	Straight tee ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	1				P21K-0001J	Straight tee ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	1.5				P21K-0001K	Straight tee ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	

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STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2		SCH10S		P21J-000HM	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	3		SCH10S		P21J-000HN	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	4		SCH10S		P21J-000HP	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	6		SCH10S		P21J-000HR	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	8		SCH10S		P21J-000ZZ	Straight tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	10		SCH10S		P21J-000J0	Straight tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	12		SCH10S		P21J-000J1	Straight tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	14		SCH10S		P21J-000J2	Straight tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	16		SCH10S		P21J-000J3	Straight tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75			P24K-0001X	Reducing tee ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	1.5	0.75			P24K-0001Z	Reducing tee ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	1.5	1			P24K-00020	Reducing tee ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	2	1	SCH10S	SCH80S	P24J-0065A	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	2	1.5	SCH10S	SCH80S	P24J-0065B	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	3	1.5	SCH10S	SCH80S	P24J-004SV	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	3	2	SCH10S	SCH10S	P24J-002H7	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	4	2	SCH10S	SCH10S	P24J-002H8	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	4	3	SCH10S	SCH10S	P24J-002H9	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	6	3	SCH10S	SCH10S	P24J-002HA	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	6	4	SCH10S	SCH10S	P24J-002HB	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	8	4	SCH10S	SCH10S	P24J-004SY	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	8	6	SCH10S	SCH10S	P24J-004SZ	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	10	4	SCH10S	SCH10S	P24J-004T0	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	10	6	SCH10S	SCH10S	P24J-004T1	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	10	8	SCH10S	SCH10S	P24J-004T2	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	12	6	SCH10S	SCH10S	P24J-004T3	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	12	8	SCH10S	SCH10S	P24J-004T4	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	12	10	SCH10S	SCH10S	P24J-002HT	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	14	6	SCH10S	SCH10S	P24J-004T5	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	14	8	SCH10S	SCH10S	P24J-004T6	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	14	10	SCH10S	SCH10S	P24J-002HU	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	14	12	SCH10S	SCH10S	P24J-002HV	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	16	6	SCH10S	SCH10S	P24J-004T7	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	16	8	SCH10S	SCH10S	P24J-004T8	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	16	10	SCH10S	SCH10S	P24J-002HW	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	16	12	SCH10S	SCH10S	P24J-002HX	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	16	14	SCH10S	SCH10S	P24J-002HY	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	SCH10S	SCH10S	P27J-001PS	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	4	2	SCH10S	SCH10S	P27J-001PT	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	4	3	SCH10S	SCH10S	P27J-001PU	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	6	3	SCH10S	SCH10S	P27J-001PV	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	6	4	SCH10S	SCH10S	P27J-001PW	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	8	4	SCH10S	SCH10S	P27J-003L1	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	8	6	SCH10S	SCH10S	P27J-003L2	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	10	4	SCH10S	SCH10S	P27J-003L3	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	10	6	SCH10S	SCH10S	P27J-003L4	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	10	8	SCH10S	SCH10S	P27J-003L5	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	12	6	SCH10S	SCH10S	P27J-003L6	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	12	8	SCH10S	SCH10S	P27J-003L7	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	12	10	SCH10S	SCH10S	P27J-001RD	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	14	6	SCH10S	SCH10S	P27J-003L8	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	14	8	SCH10S	SCH10S	P27J-003L9	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	14	10	SCH10S	SCH10S	P27J-001RF	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	

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CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14	12	SCH10S	SCH10S	P27J-001RG	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	16	8	SCH10S	SCH10S	P27J-003LA	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	16	10	SCH10S	SCH10S	P27J-001RJ	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	16	12	SCH10S	SCH10S	P27J-001RK	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	16	14	SCH10S	SCH10S	P27J-001RL	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	SCH10S	SCH10S	P28J-001P8	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	4	2	SCH10S	SCH10S	P28J-001P9	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	4	3	SCH10S	SCH10S	P28J-001PA	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	6	3	SCH10S	SCH10S	P28J-001PB	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	6	4	SCH10S	SCH10S	P28J-001PC	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	8	4	SCH10S	SCH10S	P28J-003LP	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	8	6	SCH10S	SCH10S	P28J-003LR	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	10	4	SCH10S	SCH10S	P28J-003LS	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	10	6	SCH10S	SCH10S	P28J-003LT	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	10	8	SCH10S	SCH10S	P28J-003LU	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	12	6	SCH10S	SCH10S	P28J-003LV	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	12	8	SCH10S	SCH10S	P28J-003LW	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	12	10	SCH10S	SCH10S	P28J-001PW	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	14	6	SCH10S	SCH10S	P28J-003LX	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	14	8	SCH10S	SCH10S	P28J-003LY	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	14	10	SCH10S	SCH10S	P28J-001PY	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	14	12	SCH10S	SCH10S	P28J-001PZ	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	16	8	SCH10S	SCH10S	P28J-003LZ	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	16	10	SCH10S	SCH10S	P28J-001R1	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	16	12	SCH10S	SCH10S	P28J-001R2	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	16	14	SCH10S	SCH10S	P28J-001R3	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P29K-0001V	Cap ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	0.75				P29K-0001W	Cap ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	1				P29K-0001X	Cap ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	1.5				P29K-0001Y	Cap ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	2		SCH10S		P29J-000G1	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	3		SCH10S		P29J-000G2	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	4		SCH10S		P29J-000G3	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	6		SCH10S		P29J-000G4	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	8		SCH10S		P29J-000X3	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	10		SCH10S		P29J-000GB	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	12		SCH10S		P29J-000GC	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	14		SCH10S		P29J-000GD	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	16		SCH10S		P29J-000GE	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
541	0.75				P29K-00020	Cap ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P41J-001FS	Straight nipple ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		SCH80S		P41J-001FT	Straight nipple ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		SCH80S		P41J-001FU	Straight nipple ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		SCH80S		P41J-001FV	Straight nipple ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

CON SWAGED NIPPLE (SNC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH80S	SCH80S	P42J-00081	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	

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CON SWAGED NIPPLE (SNC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.5	SCH80S	SCH80S	P42J-00082	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	SCH80S	SCH80S	P42J-00083	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	SCH80S	SCH80S	P42J-00084	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	SCH80S	SCH80S	P42J-00085	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	SCH80S	SCH80S	P42J-00086	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	SCH10S	SCH80S	P42J-000F9	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	SCH10S	SCH80S	P42J-000F6	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	SCH10S	SCH80S	P42J-000F7	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	SCH10S	SCH80S	P42J-000F8	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	SCH10S	SCH80S	P42J-000AG	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	

ECC SWAGED NIPPLE (SNE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH80S	SCH80S	P43J-0008D	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	SCH80S	SCH80S	P43J-0008E	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	SCH80S	SCH80S	P43J-0008F	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	SCH80S	SCH80S	P43J-0008G	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	SCH80S	SCH80S	P43J-0008H	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	SCH80S	SCH80S	P43J-0008J	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	SCH10S	SCH80S	P43J-000CT	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	SCH10S	SCH80S	P43J-000CU	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	SCH10S	SCH80S	P43J-000CV	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	SCH10S	SCH80S	P43J-000CW	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	SCH10S	SCH80S	P43J-0008P	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	

COUPLING (CPS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P47K-00035	Coupling ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW - SW	
1	0.75				P47K-00036	Coupling ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW - SW	
1	1				P47K-00037	Coupling ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW - SW	
1	1.5				P47K-00038	Coupling ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW - SW	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2 - 2.5	0.75			P31K-00GFG	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 SW	
1	3 - 5	0.75			P31K-00GFH	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 SW	
1	6 - 12	0.75			P31K-008YY	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 SW	
1	14 - 36	0.75			P31K-008YC	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 SW	
1	3	1			P31K-008ZG	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 SW	
1	4 - 5	1			P31K-00GFL	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 SW	
1	6 - 10	1			P31K-008ZU	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 SW	
1	12 - 36	1			P31K-008Z6	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 SW	
1	4	1.5			P31K-0099M	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 SW	
1	5 - 6	1.5			P31K-00GFS	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 SW	
1	8 - 12	1.5			P31K-0099Z	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 SW	
1	14 - 24	1.5			P31K-00991	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 SW	
1	6	2	SCH10S	SCH10S	P31K-005AV	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	8	2	SCH10S	SCH10S	P31K-007G1	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	10	2	SCH10S	SCH10S	P31K-005JV	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	12	2	SCH10S	SCH10S	P31K-005JX	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	14	2	SCH10S	SCH10S	P31K-005K0	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	

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OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	16	2	SCH10S	SCH10S	P31K-005K3	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	8	3	SCH10S	SCH10S	P31K-007XV	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	10	3	SCH10S	SCH10S	P31K-007KK	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	12	3	SCH10S	SCH10S	P31K-007LF	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	14	3	SCH10S	SCH10S	P31K-007ME	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	16	3	SCH10S	SCH10S	P31K-007NJ	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	12	4	SCH10S	SCH10S	P31K-00812	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	14	4	SCH10S	SCH10S	P31K-00821	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	16	4	SCH10S	SCH10S	P31K-00837	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30K-0001G	Plug ASTM A182 Grade F304/F304L dual grade ASME B16.11 NPT Round head	
1	0.75				P30K-0001H	Plug ASTM A182 Grade F304/F304L dual grade ASME B16.11 NPT Round head	
1	1				P30K-0001J	Plug ASTM A182 Grade F304/F304L dual grade ASME B16.11 NPT Round head	
1	1.5				P30K-0001K	Plug ASTM A182 Grade F304/F304L dual grade ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P61K-003A4	Flange SW ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	0.75		SCH80S		P61K-003A5	Flange SW ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	1		SCH80S		P61K-003A6	Flange SW ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	1.5		SCH80S		P61K-003A7	Flange SW ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	2		SCH10S		P61K-0023K	Flange WN ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	3		SCH10S		P61K-0023L	Flange WN ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	4		SCH10S		P61K-0023M	Flange WN ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	6		SCH10S		P61K-0023N	Flange WN ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	8		SCH10S		P61K-003A8	Flange WN ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	10		SCH10S		P61K-0024B	Flange WN ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	12		SCH10S		P61K-0024C	Flange WN ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	14		SCH10S		P61K-0024D	Flange WN ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	16		SCH10S		P61K-0024E	Flange WN ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
773	0.5		SCH80S		P61K-003A9	Flange SW ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
773	0.75		SCH80S		P61K-003AA	Flange SW ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
773	1		SCH80S		P61K-003AB	Flange SW ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
773	1.5		SCH80S		P61K-003AC	Flange SW ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
773	2		SCH10S		P61K-0023W	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
773	3		SCH10S		P61K-0023X	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
773	4		SCH10S		P61K-0023Y	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
773	6		SCH10S		P61K-003AD	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
773	8		SCH10S		P61K-003AE	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
773	10		SCH10S		P61K-0024Y	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
773	12		SCH10S		P61K-0024Z	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
773	14		SCH10S		P61K-00250	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
773	16		SCH10S		P61K-00251	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67K-000K9	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	0.75				P67K-000KA	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	1				P67K-000KB	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	1.5				P67K-000KC	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	2				P67K-000KD	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	3				P67K-000KE	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	4				P67K-000KF	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	6				P67K-000KG	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	8				P67K-000L7	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	10				P67K-000L1	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	12				P67K-000L2	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	

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BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P67K-000L3	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	16				P67K-000L4	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000L8	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000L9	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000LA	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000LB	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000LH	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000LL	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000LM	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	6				P73T-000LN	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	8				P73T-000LP	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	10				P73T-000LC	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	12				P73T-000LD	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	14				P73T-000LE	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	16				P73T-000LF	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	0.5				P73T-000FT	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	0.75				P73T-000FU	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	3				P73T-000G5	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	4				P73T-000G6	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	6				P73T-000G7	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	8				P73T-000G8	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	10				P73T-000FX	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	12				P73T-000FY	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	14				P73T-000FZ	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	16				P73T-000G0	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-16				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
773	0.5-10				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
773	12-16				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81K-00108	Gate valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	0.75				P81K-00109	Gate valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	1				P81K-0010A	Gate valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	1.5				P81K-0010B	Gate valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	2				P81L-00293	Gate valve ASTM A351 Grade CF8 Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	3				P81L-00294	Gate valve ASTM A351 Grade CF8 Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	

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GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	4				P81L-00295	Gate valve ASTM A351 Grade CF8 Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	6				P81L-00296	Gate valve ASTM A351 Grade CF8 Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	8				P81L-00297	Gate valve ASTM A351 Grade CF8 Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
714	0.5				P81K-001LC	Gate valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW - NPT Trim number 12 BB-BG-OS&Y Handwheel operated	
714	0.75				P81K-001FD	Gate valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW - NPT Trim number 12 BB-BG-OS&Y Handwheel operated	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82K-000NR	Globe valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	0.75				P82K-000NS	Globe valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	1				P82K-000NT	Globe valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	1.5				P82K-000NU	Globe valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	2				P82L-00195	Globe valve ASTM A351 Grade CF8 Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	3				P82L-00196	Globe valve ASTM A351 Grade CF8 Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	4				P82L-00197	Globe valve ASTM A351 Grade CF8 Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83K-000LM	Check valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 Lift-type Bolted cover	
1	0.75				P83K-000LN	Check valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 Lift-type Bolted cover	
1	1				P83K-000LP	Check valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 Lift-type Bolted cover	
1	1.5				P83K-000LR	Check valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 Lift-type Bolted cover	
1	2				P83L-00196	Check valve ASTM A351 Grade CF8 Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	3				P83L-00197	Check valve ASTM A351 Grade CF8 Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	4				P83L-00198	Check valve ASTM A351 Grade CF8 Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71K-00065	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	0.75				P71K-00066	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	1				P71K-00067	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71K-00068	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	2				P71K-0006A	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	3				P71K-0006B	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	4				P71K-0006C	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	6				P71K-0006D	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	8				P71K-0006E	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	10				P71K-00069	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	12				P71K-0006F	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	

PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72K-0003T	Paddle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	16				P72K-0003U	Paddle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	

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PADDLE SPACER (PS)							
OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72K-0003Y	Paddle spacer ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	16				P72K-0003Z	Paddle spacer ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	

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BOLT TABLE (B_A0JS01 , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	60	P80S-003V2		
0.75	4	0.500	65	P80S-003V3		
1	4	0.500	70	P80S-003V4		
1.5	4	0.500	75	P80S-003V5		
2	4	0.625	85	P80S-003XE		
3	4	0.625	95	P80S-003XG		
4	8	0.625	95	P80S-003XG		
6	8	0.750	105	P80S-003XJ		
8	8	0.750	110	P80S-003XK		
10	12	0.875	120	P80S-00419		
12	12	0.875	120	P80S-00419		
14	12	1.000	135	P80S-0043E		
16	16	1.000	140	P80S-0043F		

BOLT TABLE (B_A0JS01_773 , STUD ASME RF, OPTION CODE 773)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-003V4		
0.75	4	0.625	75	P80S-003XC		
1	4	0.625	80	P80S-003XD		
1.5	4	0.750	95	P80S-00414		
2	8	0.625	90	P80S-003XF		
3	8	0.750	110	P80S-003XK		
4	8	0.750	115	P80S-003XL		
6	12	0.750	125	P80S-003XN		
8	12	0.875	140	P80S-0041D		
10	16	1.000	160	P80S-0043K		
12	16	1.125	175	P80S-0046S		
14	20	1.125	180	P80S-0046T		
16	20	1.250	190	P80S-004AK		

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BRANCH TABLE (T_A0JS01)

RUN PIPE SIZE (in) \ BRANCH SIZE (in)	0.5	0.75	1	1.5	2	3	4	6	8	10	12	14	16
0.5	TS												
0.75		TS											
1		TR	TS										
1.5		TR	TR	TS									
2		L	TR	TR	TS								
3		L	L	TR	TR	TS							
4	L	L	L	L	TR	TR	TS						
6	L	L	L	L	L	TR	TR	TS					
8		L	L	L	L	L	TR	TR	TS				
10		L	L	L	L	L	TR	TR	TR	TS			
12		L	L	L	L	L	L	TR	TR	TR	TS		
14		L	L	L	L	L	L	TR	TR	TR	TR	TS	
16		L	L	L	L	L	L	TR	TR	TR	TR	TR	TS

TS : STRAIGHT TEE
TR : REDUCING TEE
L : OUTLET

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PIPING CLASS

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Material : SS304L
Rating : ASME CLASS 150
Flange Face : RF
C.A.(mm) : 0.00
Gasket : Spiral Wound
Service : UTILITY: STEAM, CONDENSATE, BOILER FEED WATER TO ASME B31.3
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
3	STIFFENER RINGS, IF NEEDED, SHALL BE PROVIDED AS PER ASME SEC.VIII, DIV.1 FOR FULL VACUUM CONDITION

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
541	NPT(F) (CA,L)
714	SW - NPT(F) (V)
773	CLASS 300 (B,F,G)

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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P01J-000UC	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE	
1	0.75		SCH80S		P01J-000UD	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE	
1	1		SCH80S		P01J-000UE	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE	
1	1.5		SCH80S		P01J-000UF	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE	
1	2		SCH10S		P01J-000RD	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M BE	
1	3		SCH10S		P01J-000RE	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M BE	
1	4		SCH10S		P01J-000RF	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M BE	
1	6		SCH10S		P01J-000RG	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M BE	
1	8		SCH10S		P01J-001F7	Pipe ASTM A358 Grade 304/304L Class 1 dual grade EFW ASME B36.10M/B36.19M BE	
1	10		SCH10S		P01J-000S7	Pipe ASTM A358 Grade 304/304L Class 1 dual grade EFW ASME B36.10M/B36.19M BE	
1	12		SCH10S		P01J-000S8	Pipe ASTM A358 Grade 304/304L Class 1 dual grade EFW ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P02K-0001K	90 degree elbow ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	0.75				P02K-0001L	90 degree elbow ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	1				P02K-0001M	90 degree elbow ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	1.5				P02K-0001N	90 degree elbow ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	2		SCH10S		P02J-000J0	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	3		SCH10S		P02J-000J1	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	4		SCH10S		P02J-000J2	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	6		SCH10S		P02J-000J3	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	8		SCH10S		P02J-0017L	90 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius	
1	10		SCH10S		P02J-000JC	90 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius	
1	12		SCH10S		P02J-000JD	90 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P03K-0001G	45 degree elbow ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	0.75				P03K-0001H	45 degree elbow ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	1				P03K-0001J	45 degree elbow ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	1.5				P03K-0001K	45 degree elbow ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	2		SCH10S		P03J-000HS	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	3		SCH10S		P03J-000HT	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	4		SCH10S		P03J-000HU	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	6		SCH10S		P03J-000HV	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	8		SCH10S		P03J-0016G	45 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius	
1	10		SCH10S		P03J-000J4	45 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius	
1	12		SCH10S		P03J-000J5	45 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P21K-0001G	Straight tee ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	0.75				P21K-0001H	Straight tee ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	1				P21K-0001J	Straight tee ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	1.5				P21K-0001K	Straight tee ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	2		SCH10S		P21J-000HM	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	3		SCH10S		P21J-000HN	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	4		SCH10S		P21J-000HP	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	6		SCH10S		P21J-000HR	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	8		SCH10S		P21J-000ZZ	Straight tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	10		SCH10S		P21J-000J0	Straight tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	12		SCH10S		P21J-000J1	Straight tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	

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REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75			P24K-0001X	Reducing tee ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	1.5	0.75			P24K-0001Z	Reducing tee ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	1.5	1			P24K-00020	Reducing tee ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	2	1	SCH10S	SCH80S	P24J-0065A	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	2	1.5	SCH10S	SCH80S	P24J-0065B	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	3	1.5	SCH10S	SCH80S	P24J-004SV	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	3	2	SCH10S	SCH10S	P24J-002H7	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	4	2	SCH10S	SCH10S	P24J-002H8	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	4	3	SCH10S	SCH10S	P24J-002H9	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	6	3	SCH10S	SCH10S	P24J-002HA	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	6	4	SCH10S	SCH10S	P24J-002HB	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	8	4	SCH10S	SCH10S	P24J-004SY	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	8	6	SCH10S	SCH10S	P24J-004SZ	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	10	4	SCH10S	SCH10S	P24J-004T0	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	10	6	SCH10S	SCH10S	P24J-004T1	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	10	8	SCH10S	SCH10S	P24J-004T2	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	12	6	SCH10S	SCH10S	P24J-004T3	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	12	8	SCH10S	SCH10S	P24J-004T4	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	12	10	SCH10S	SCH10S	P24J-002HT	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	SCH10S	SCH10S	P27J-001PS	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	4	2	SCH10S	SCH10S	P27J-001PT	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	4	3	SCH10S	SCH10S	P27J-001PU	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	6	3	SCH10S	SCH10S	P27J-001PV	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	6	4	SCH10S	SCH10S	P27J-001PW	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	8	4	SCH10S	SCH10S	P27J-003L1	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	8	6	SCH10S	SCH10S	P27J-003L2	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	10	4	SCH10S	SCH10S	P27J-003L3	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	10	6	SCH10S	SCH10S	P27J-003L4	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	10	8	SCH10S	SCH10S	P27J-003L5	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	12	6	SCH10S	SCH10S	P27J-003L6	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	12	8	SCH10S	SCH10S	P27J-003L7	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	12	10	SCH10S	SCH10S	P27J-001RD	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	SCH10S	SCH10S	P28J-001P8	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	4	2	SCH10S	SCH10S	P28J-001P9	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	4	3	SCH10S	SCH10S	P28J-001PA	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	6	3	SCH10S	SCH10S	P28J-001PB	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	6	4	SCH10S	SCH10S	P28J-001PC	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	8	4	SCH10S	SCH10S	P28J-003LP	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	8	6	SCH10S	SCH10S	P28J-003LR	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	10	4	SCH10S	SCH10S	P28J-003LS	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	10	6	SCH10S	SCH10S	P28J-003LT	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	10	8	SCH10S	SCH10S	P28J-003LU	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	12	6	SCH10S	SCH10S	P28J-003LV	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	12	8	SCH10S	SCH10S	P28J-003LW	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	12	10	SCH10S	SCH10S	P28J-001PW	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P29K-0001V	Cap ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	0.75				P29K-0001W	Cap ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	1				P29K-0001X	Cap ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	1.5				P29K-0001Y	Cap ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	2		SCH10S		P29J-000G1	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	

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CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3		SCH10S		P29J-000G2	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	4		SCH10S		P29J-000G3	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	6		SCH10S		P29J-000G4	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	8		SCH10S		P29J-000X3	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	10		SCH10S		P29J-000GB	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	12		SCH10S		P29J-000GC	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
541	0.75				P29K-00020	Cap ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P41J-001FS	Straight nipple ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		SCH80S		P41J-001FT	Straight nipple ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		SCH80S		P41J-001FU	Straight nipple ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		SCH80S		P41J-001FV	Straight nipple ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

CON SWAGED NIPPLE (SNC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH80S	SCH80S	P42J-00081	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	SCH80S	SCH80S	P42J-00082	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	SCH80S	SCH80S	P42J-00083	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	SCH80S	SCH80S	P42J-00084	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	SCH80S	SCH80S	P42J-00085	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	SCH80S	SCH80S	P42J-00086	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	SCH10S	SCH80S	P42J-000F9	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	SCH10S	SCH80S	P42J-000F6	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	SCH10S	SCH80S	P42J-000F7	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	SCH10S	SCH80S	P42J-000F8	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	SCH10S	SCH80S	P42J-000AG	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	

ECC SWAGED NIPPLE (SNE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH80S	SCH80S	P43J-0008D	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	SCH80S	SCH80S	P43J-0008E	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	SCH80S	SCH80S	P43J-0008F	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	SCH80S	SCH80S	P43J-0008G	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	SCH80S	SCH80S	P43J-0008H	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	SCH80S	SCH80S	P43J-0008J	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	SCH10S	SCH80S	P43J-000CT	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	SCH10S	SCH80S	P43J-000CU	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	SCH10S	SCH80S	P43J-000CV	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	SCH10S	SCH80S	P43J-000CW	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	SCH10S	SCH80S	P43J-0008P	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	

COUPLING (CPS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P47K-00035	Coupling ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW - SW	
1	0.75				P47K-00036	Coupling ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW - SW	
1	1				P47K-00037	Coupling ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW - SW	
1	1.5				P47K-00038	Coupling ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW - SW	

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OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2 - 2.5	0.75			P31K-00GFG	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 SW	
1	3 - 5	0.75			P31K-00GFH	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 SW	
1	6 - 12	0.75			P31K-008YY	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 SW	
1	3	1			P31K-008ZG	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 SW	
1	4 - 5	1			P31K-00GFL	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 SW	
1	6 - 10	1			P31K-008ZU	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 SW	
1	12 - 36	1			P31K-008Z6	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 SW	
1	4	1.5			P31K-0099M	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 SW	
1	5 - 6	1.5			P31K-00GFS	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 SW	
1	8 - 12	1.5			P31K-0099Z	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 SW	
541	1	0.75			P31K-00911	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 NPT	
541	1.5	0.75			P31K-00916	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 NPT	
541	2 - 2.5	0.75			P31K-00GFJ	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 NPT	
541	3 - 5	0.75			P31K-00GFK	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 NPT	
541	6 - 12	0.75			P31K-0091X	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 NPT	
1	6	2	SCH10S	SCH10S	P31K-005AV	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	8	2	SCH10S	SCH10S	P31K-007G1	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	10	2	SCH10S	SCH10S	P31K-005JV	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	12	2	SCH10S	SCH10S	P31K-005JX	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	8	3	SCH10S	SCH10S	P31K-007XV	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	10	3	SCH10S	SCH10S	P31K-007KK	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	12	3	SCH10S	SCH10S	P31K-007LF	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	12	4	SCH10S	SCH10S	P31K-00812	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30K-0001G	Plug ASTM A182 Grade F304/F304L dual grade ASME B16.11 NPT Round head	
1	0.75				P30K-0001H	Plug ASTM A182 Grade F304/F304L dual grade ASME B16.11 NPT Round head	
1	1				P30K-0001J	Plug ASTM A182 Grade F304/F304L dual grade ASME B16.11 NPT Round head	
1	1.5				P30K-0001K	Plug ASTM A182 Grade F304/F304L dual grade ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P61K-003A4	Flange SW ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	0.75		SCH80S		P61K-003A5	Flange SW ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	1		SCH80S		P61K-003A6	Flange SW ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	1.5		SCH80S		P61K-003A7	Flange SW ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	2		SCH10S		P61K-0023K	Flange WN ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	3		SCH10S		P61K-0023L	Flange WN ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	4		SCH10S		P61K-0023M	Flange WN ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	6		SCH10S		P61K-0023N	Flange WN ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	8		SCH10S		P61K-003A8	Flange WN ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	10		SCH10S		P61K-0024B	Flange WN ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	12		SCH10S		P61K-0024C	Flange WN ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
773	0.5		SCH80S		P61K-003A9	Flange SW ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
773	0.75		SCH80S		P61K-003AA	Flange SW ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
773	1		SCH80S		P61K-003AB	Flange SW ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
773	1.5		SCH80S		P61K-003AC	Flange SW ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
773	2		SCH10S		P61K-0023W	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
773	3		SCH10S		P61K-0023X	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
773	4		SCH10S		P61K-0023Y	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
773	6		SCH10S		P61K-003AD	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
773	8		SCH10S		P61K-003AE	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
773	10		SCH10S		P61K-0024Y	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
773	12		SCH10S		P61K-0024Z	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67K-000K9	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75				P67K-000KA	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	1				P67K-000KB	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	1.5				P67K-000KC	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	2				P67K-000KD	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	3				P67K-000KE	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	4				P67K-000KF	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	6				P67K-000KG	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	8				P67K-000L7	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	10				P67K-000L1	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	12				P67K-000L2	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000L8	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000L9	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000LA	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000LB	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000LH	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000LL	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000LM	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	6				P73T-000LN	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	8				P73T-000LP	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	10				P73T-000LC	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	12				P73T-000LD	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	0.5				P73T-000FT	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	0.75				P73T-000FU	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	3				P73T-000G5	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	4				P73T-000G6	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	6				P73T-000G7	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	8				P73T-000G8	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	10				P73T-000FX	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	12				P73T-000FY	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-12				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
773	0.5-10				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
773	12				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81K-00108	Gate valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	0.75				P81K-00109	Gate valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	1				P81K-0010A	Gate valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	1.5				P81K-0010B	Gate valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	

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GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2				P81L-00293	Gate valve ASTM A351 Grade CF8 Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	3				P81L-00294	Gate valve ASTM A351 Grade CF8 Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	4				P81L-00295	Gate valve ASTM A351 Grade CF8 Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	6				P81L-00296	Gate valve ASTM A351 Grade CF8 Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	8				P81L-00297	Gate valve ASTM A351 Grade CF8 Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
714	0.5				P81K-001LC	Gate valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW - NPT Trim number 12 BB-BG-OS&Y Handwheel operated	
714	0.75				P81K-001FD	Gate valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW - NPT Trim number 12 BB-BG-OS&Y Handwheel operated	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82K-000NR	Globe valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	0.75				P82K-000NS	Globe valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	1				P82K-000NT	Globe valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	1.5				P82K-000NU	Globe valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	2				P82L-00195	Globe valve ASTM A351 Grade CF8 Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	3				P82L-00196	Globe valve ASTM A351 Grade CF8 Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	4				P82L-00197	Globe valve ASTM A351 Grade CF8 Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83K-000LM	Check valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 Lift-type Bolted cover	
1	0.75				P83K-000LN	Check valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 Lift-type Bolted cover	
1	1				P83K-000LP	Check valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 Lift-type Bolted cover	
1	1.5				P83K-000LR	Check valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 Lift-type Bolted cover	
1	2				P83L-00196	Check valve ASTM A351 Grade CF8 Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	3				P83L-00197	Check valve ASTM A351 Grade CF8 Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	4				P83L-00198	Check valve ASTM A351 Grade CF8 Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71K-00065	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	0.75				P71K-00066	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	1				P71K-00067	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71K-00068	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	2				P71K-0006A	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	3				P71K-0006B	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	4				P71K-0006C	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	6				P71K-0006D	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	8				P71K-0006E	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	10				P71K-00069	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	12				P71K-0006F	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	

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BOLT TABLE (B_A0JS04 , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	60	P80S-003V2		
0.75	4	0.500	65	P80S-003V3		
1	4	0.500	70	P80S-003V4		
1.5	4	0.500	75	P80S-003V5		
2	4	0.625	85	P80S-003XE		
3	4	0.625	95	P80S-003XG		
4	8	0.625	95	P80S-003XG		
6	8	0.750	105	P80S-003XJ		
8	8	0.750	110	P80S-003XK		
10	12	0.875	120	P80S-00419		
12	12	0.875	120	P80S-00419		

BOLT TABLE (B_A0JS04_773 , STUD ASME RF, OPTION CODE 773)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-003V4		
0.75	4	0.625	75	P80S-003XC		
1	4	0.625	80	P80S-003XD		
1.5	4	0.750	95	P80S-00414		
2	8	0.625	90	P80S-003XF		
3	8	0.750	110	P80S-003XK		
4	8	0.750	115	P80S-003XL		
6	12	0.750	125	P80S-003XN		
8	12	0.875	140	P80S-0041D		
10	16	1.000	160	P80S-0043K		
12	16	1.125	175	P80S-0046S		

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BRANCH TABLE (T_A0JS04)

RUN PIPE SIZE (in) \ BRANCH SIZE (in)	0.5	0.75	1	1.5	2	3	4	6	8	10	12
0.5	TS										
0.75		TS									
1		TR	TS								
1.5		TR	TR	TS							
2		L	TR	TR	TS						
3		L	L	TR	TR	TS					
4	L	L	L	L	TR	TR	TS				
6	L	L	L	L	L	TR	TR	TS			
8		L	L	L	L	L	TR	TR	TS		
10		L	L	L	L	L	TR	TR	TR	TS	
12		L	L	L	L	L	L	TR	TR	TR	TS

TR : REDUCING TEE
L : OUTLET
TS : STRAIGHT TEE

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PIPING CLASS

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Material : SS304L
Rating : ASME CLASS 150
Flange Face : RF
C.A.(mm) : 1.00
Gasket : Spiral Wound
Service : PROCESS - CORROSIVE SERVICE:

Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
2	USE OF SOFT SEATED BALL, PLUG AND BUTTERFLY VALVES SHALL BE LIMITED TO MAXIMUM OF 204DEGC (400DEGF)

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
541	NPT(F) (CA,L)
714	SW - NPT(F) (V)
773	CLASS 300 (B,F,G)

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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P01J-000UC	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE	
1	0.75		SCH80S		P01J-000UD	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE	
1	1		SCH80S		P01J-000UE	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE	
1	1.5		SCH80S		P01J-000UF	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE	
1	2		SCH40S		P01J-000RJ	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M BE	
1	3		SCH10S		P01J-000RE	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M BE	
1	4		SCH10S		P01J-000RF	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M BE	
1	6		SCH10S		P01J-000RG	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M BE	
1	8		SCH10S		P01J-001F7	Pipe ASTM A358 Grade 304/304L Class 1 dual grade EFW ASME B36.10M/B36.19M BE	
1	10		SCH10S		P01J-000S7	Pipe ASTM A358 Grade 304/304L Class 1 dual grade EFW ASME B36.10M/B36.19M BE	
1	12		SCH10S		P01J-000S8	Pipe ASTM A358 Grade 304/304L Class 1 dual grade EFW ASME B36.10M/B36.19M BE	
1	14		SCH10S		P01J-000S9	Pipe ASTM A358 Grade 304/304L Class 1 dual grade EFW ASME B36.10M/B36.19M BE	
1	16		SCH10S		P01J-000SA	Pipe ASTM A358 Grade 304/304L Class 1 dual grade EFW ASME B36.10M/B36.19M BE	
1	18		SCH10S		P01J-000SB	Pipe ASTM A358 Grade 304/304L Class 1 dual grade EFW ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P02K-0001K	90 degree elbow ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	0.75				P02K-0001L	90 degree elbow ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	1				P02K-0001M	90 degree elbow ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	1.5				P02K-0001N	90 degree elbow ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	2		SCH40S		P02J-000J8	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	3		SCH10S		P02J-000J1	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	4		SCH10S		P02J-000J2	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	6		SCH10S		P02J-000J3	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	8		SCH10S		P02J-0017L	90 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius	
1	10		SCH10S		P02J-000JC	90 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius	
1	12		SCH10S		P02J-000JD	90 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius	
1	14		SCH10S		P02J-000JE	90 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius	
1	16		SCH10S		P02J-000JF	90 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius	
1	18		SCH10S		P02J-000JG	90 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P03K-0001G	45 degree elbow ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	0.75				P03K-0001H	45 degree elbow ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	1				P03K-0001J	45 degree elbow ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	1.5				P03K-0001K	45 degree elbow ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	2		SCH40S		P03J-000J0	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	3		SCH10S		P03J-000HT	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	4		SCH10S		P03J-000HU	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	6		SCH10S		P03J-000HV	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	8		SCH10S		P03J-0016G	45 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius	
1	10		SCH10S		P03J-000J4	45 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius	
1	12		SCH10S		P03J-000J5	45 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius	
1	14		SCH10S		P03J-000J6	45 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius	
1	16		SCH10S		P03J-000J7	45 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius	
1	18		SCH10S		P03J-000J8	45 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P21K-0001G	Straight tee ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	

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STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75				P21K-0001H	Straight tee ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	1				P21K-0001J	Straight tee ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	1.5				P21K-0001K	Straight tee ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	2		SCH40S		P21J-000HW	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	3		SCH10S		P21J-000HN	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	4		SCH10S		P21J-000HP	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	6		SCH10S		P21J-000HR	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	8		SCH10S		P21J-000ZZ	Straight tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	10		SCH10S		P21J-000J0	Straight tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	12		SCH10S		P21J-000J1	Straight tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	14		SCH10S		P21J-000J2	Straight tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	16		SCH10S		P21J-000J3	Straight tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	18		SCH10S		P21J-000J4	Straight tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75			P24K-0001X	Reducing tee ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	1.5	0.75			P24K-0001Z	Reducing tee ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	1.5	1			P24K-00020	Reducing tee ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	2	1	SCH40S	SCH80S	P24J-002SE	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	2	1.5	SCH40S	SCH80S	P24J-002SF	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	3	1.5	SCH10S	SCH80S	P24J-004SV	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	3	2	SCH10S	SCH40S	P24J-004SW	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	4	2	SCH10S	SCH40S	P24J-004SX	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	4	3	SCH10S	SCH10S	P24J-002H9	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	6	3	SCH10S	SCH10S	P24J-002HA	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	6	4	SCH10S	SCH10S	P24J-002HB	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	8	4	SCH10S	SCH10S	P24J-004SY	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	8	6	SCH10S	SCH10S	P24J-004SZ	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	10	4	SCH10S	SCH10S	P24J-004T0	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	10	6	SCH10S	SCH10S	P24J-004T1	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	10	8	SCH10S	SCH10S	P24J-004T2	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	12	6	SCH10S	SCH10S	P24J-004T3	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	12	8	SCH10S	SCH10S	P24J-004T4	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	12	10	SCH10S	SCH10S	P24J-002HT	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	14	6	SCH10S	SCH10S	P24J-004T5	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	14	8	SCH10S	SCH10S	P24J-004T6	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	14	10	SCH10S	SCH10S	P24J-002HU	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	14	12	SCH10S	SCH10S	P24J-002HV	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	16	6	SCH10S	SCH10S	P24J-004T7	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	16	8	SCH10S	SCH10S	P24J-004T8	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	16	10	SCH10S	SCH10S	P24J-002HW	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	16	12	SCH10S	SCH10S	P24J-002HX	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	16	14	SCH10S	SCH10S	P24J-002HY	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	18	8	SCH10S	SCH10S	P24J-004T9	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	18	10	SCH10S	SCH10S	P24J-002HZ	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	18	12	SCH10S	SCH10S	P24J-002J0	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	18	14	SCH10S	SCH10S	P24J-002J1	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	18	16	SCH10S	SCH10S	P24J-002J2	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	SCH10S	SCH40S	P27J-003KZ	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	4	2	SCH10S	SCH40S	P27J-003L0	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	4	3	SCH10S	SCH10S	P27J-001PU	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	6	3	SCH10S	SCH10S	P27J-001PV	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	6	4	SCH10S	SCH10S	P27J-001PW	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	8	4	SCH10S	SCH10S	P27J-003L1	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	8	6	SCH10S	SCH10S	P27J-003L2	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	10	4	SCH10S	SCH10S	P27J-003L3	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	10	6	SCH10S	SCH10S	P27J-003L4	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	10	8	SCH10S	SCH10S	P27J-003L5	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	12	6	SCH10S	SCH10S	P27J-003L6	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	12	8	SCH10S	SCH10S	P27J-003L7	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	12	10	SCH10S	SCH10S	P27J-001RD	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	14	6	SCH10S	SCH10S	P27J-003L8	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	14	8	SCH10S	SCH10S	P27J-003L9	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	14	10	SCH10S	SCH10S	P27J-001RF	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	14	12	SCH10S	SCH10S	P27J-001RG	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	16	8	SCH10S	SCH10S	P27J-003LA	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	16	10	SCH10S	SCH10S	P27J-001RJ	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	16	12	SCH10S	SCH10S	P27J-001RK	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	16	14	SCH10S	SCH10S	P27J-001RL	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	18	10	SCH10S	SCH10S	P27J-001RM	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	18	12	SCH10S	SCH10S	P27J-001RN	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	18	14	SCH10S	SCH10S	P27J-001RP	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	18	16	SCH10S	SCH10S	P27J-001RR	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	SCH10S	SCH40S	P28J-003LM	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	4	2	SCH10S	SCH40S	P28J-003LN	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	4	3	SCH10S	SCH10S	P28J-001PA	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	6	3	SCH10S	SCH10S	P28J-001PB	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	6	4	SCH10S	SCH10S	P28J-001PC	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	8	4	SCH10S	SCH10S	P28J-003LP	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	8	6	SCH10S	SCH10S	P28J-003LR	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	10	4	SCH10S	SCH10S	P28J-003LS	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	10	6	SCH10S	SCH10S	P28J-003LT	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	10	8	SCH10S	SCH10S	P28J-003LU	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	12	6	SCH10S	SCH10S	P28J-003LV	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	12	8	SCH10S	SCH10S	P28J-003LW	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	12	10	SCH10S	SCH10S	P28J-001PW	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	14	6	SCH10S	SCH10S	P28J-003LX	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	14	8	SCH10S	SCH10S	P28J-003LY	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	14	10	SCH10S	SCH10S	P28J-001PY	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	14	12	SCH10S	SCH10S	P28J-001PZ	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	16	8	SCH10S	SCH10S	P28J-003LZ	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	16	10	SCH10S	SCH10S	P28J-001R1	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	16	12	SCH10S	SCH10S	P28J-001R2	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	16	14	SCH10S	SCH10S	P28J-001R3	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	18	10	SCH10S	SCH10S	P28J-001R4	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	18	12	SCH10S	SCH10S	P28J-001R5	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	18	14	SCH10S	SCH10S	P28J-001R6	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	18	16	SCH10S	SCH10S	P28J-001R7	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P29K-0001V	Cap ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	0.75				P29K-0001W	Cap ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	1				P29K-0001X	Cap ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	1.5				P29K-0001Y	Cap ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	2		SCH40S		P29J-000G9	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	3		SCH10S		P29J-000G2	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	4		SCH10S		P29J-000G3	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	6		SCH10S		P29J-000G4	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	8		SCH10S		P29J-000X3	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	10		SCH10S		P29J-000GB	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	

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CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	12		SCH10S		P29J-000GC	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	14		SCH10S		P29J-000GD	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	16		SCH10S		P29J-000GE	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	18		SCH10S		P29J-000GF	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
541	0.75				P29K-00020	Cap ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P41J-001V7	Straight nipple ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		SCH160		P41J-001V8	Straight nipple ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		SCH160		P41J-001V2	Straight nipple ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		SCH80S		P41J-001FV	Straight nipple ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

CON SWAGED NIPPLE (SNC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH80S	SCH80S	P42J-00081	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	SCH80S	SCH80S	P42J-00082	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	SCH80S	SCH80S	P42J-00083	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	SCH80S	SCH80S	P42J-00084	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	SCH80S	SCH80S	P42J-00085	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	SCH80S	SCH80S	P42J-00086	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	SCH40S	SCH80S	P42J-0009M	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	SCH40S	SCH80S	P42J-0009N	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	SCH40S	SCH80S	P42J-0009P	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	SCH40S	SCH80S	P42J-0009R	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	SCH10S	SCH80S	P42J-000AG	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	

ECC SWAGED NIPPLE (SNE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH80S	SCH80S	P43J-0008D	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	SCH80S	SCH80S	P43J-0008E	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	SCH80S	SCH80S	P43J-0008F	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	SCH80S	SCH80S	P43J-0008G	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	SCH80S	SCH80S	P43J-0008H	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	SCH80S	SCH80S	P43J-0008J	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	SCH40S	SCH80S	P43J-0008K	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	SCH40S	SCH80S	P43J-0008L	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	SCH40S	SCH80S	P43J-0008M	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	SCH40S	SCH80S	P43J-0008N	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	SCH10S	SCH80S	P43J-0008P	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	

COUPLING (CPS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P47K-00035	Coupling ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW - SW	
1	0.75				P47K-00036	Coupling ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW - SW	
1	1				P47K-00037	Coupling ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW - SW	
1	1.5				P47K-00038	Coupling ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW - SW	

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OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2 - 2.5	0.75			P31K-00GFG	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 SW	
1	3 - 5	0.75			P31K-00GFH	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 SW	
1	6 - 12	0.75			P31K-008YY	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 SW	
1	14 - 36	0.75			P31K-008YC	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 SW	
1	3	1			P31K-008ZG	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 SW	
1	4 - 5	1			P31K-00GFL	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 SW	
1	6 - 10	1			P31K-008ZU	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 SW	
1	12 - 36	1			P31K-008Z6	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 SW	
1	4	1.5			P31K-0099M	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 SW	
1	5 - 6	1.5			P31K-00GFS	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 SW	
1	8 - 12	1.5			P31K-0099Z	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 SW	
1	14 - 24	1.5			P31K-00991	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 SW	
541	1	0.75			P31K-00911	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 NPT	
541	1.5	0.75			P31K-00916	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 NPT	
541	2 - 2.5	0.75			P31K-00GFJ	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 NPT	
541	3 - 5	0.75			P31K-00GFK	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 NPT	
541	6 - 12	0.75			P31K-0091X	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 NPT	
541	14 - 36	0.75			P31K-0091B	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 NPT	
1	6	2	SCH10S	SCH40S	P31K-007F2	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	8	2	SCH10S	SCH40S	P31K-007G8	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	10	2	SCH10S	SCH40S	P31K-00751	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	12	2	SCH10S	SCH40S	P31K-0075Y	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	14	2	SCH10S	SCH40S	P31K-0076V	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	16	2	SCH10S	SCH40S	P31K-0077W	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	18	2	SCH10S	SCH40S	P31K-0078W	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	8	3	SCH10S	SCH10S	P31K-007XV	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	10	3	SCH10S	SCH10S	P31K-007KK	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	12	3	SCH10S	SCH10S	P31K-007LF	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	14	3	SCH10S	SCH10S	P31K-007ME	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	16	3	SCH10S	SCH10S	P31K-007NJ	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	18	3	SCH10S	SCH10S	P31K-007PR	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	12	4	SCH10S	SCH10S	P31K-00812	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	14	4	SCH10S	SCH10S	P31K-00821	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	16	4	SCH10S	SCH10S	P31K-00837	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	18	4	SCH10S	SCH10S	P31K-0084E	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	18	6	SCH10S	SCH10S	P31K-008EY	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30K-0001G	Plug ASTM A182 Grade F304/F304L dual grade ASME B16.11 NPT Round head	
1	0.75				P30K-0001H	Plug ASTM A182 Grade F304/F304L dual grade ASME B16.11 NPT Round head	
1	1				P30K-0001J	Plug ASTM A182 Grade F304/F304L dual grade ASME B16.11 NPT Round head	
1	1.5				P30K-0001K	Plug ASTM A182 Grade F304/F304L dual grade ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P61K-003A4	Flange SW ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	0.75		SCH80S		P61K-003A5	Flange SW ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	1		SCH80S		P61K-003A6	Flange SW ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	1.5		SCH80S		P61K-003A7	Flange SW ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	2		SCH40S		P61K-0027Y	Flange WN ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	3		SCH10S		P61K-0023L	Flange WN ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	4		SCH10S		P61K-0023M	Flange WN ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	6		SCH10S		P61K-0023N	Flange WN ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	8		SCH10S		P61K-003A8	Flange WN ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	10		SCH10S		P61K-0024B	Flange WN ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	12		SCH10S		P61K-0024C	Flange WN ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	14		SCH10S		P61K-0024D	Flange WN ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	16		SCH10S		P61K-0024E	Flange WN ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	18		SCH10S		P61K-0024F	Flange WN ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
773	0.5		SCH80S		P61K-003A9	Flange SW ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
773	0.75		SCH80S		P61K-003AA	Flange SW ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
773	1		SCH80S		P61K-003AB	Flange SW ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
773	1.5		SCH80S		P61K-003AC	Flange SW ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
773	2		SCH40S		P61K-0028R	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
773	3		SCH10S		P61K-0023X	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
773	4		SCH10S		P61K-0023Y	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
773	6		SCH10S		P61K-003AD	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
773	8		SCH10S		P61K-003AE	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
773	10		SCH10S		P61K-0024Y	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
773	12		SCH10S		P61K-0024Z	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
773	14		SCH10S		P61K-00250	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
773	16		SCH10S		P61K-00251	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
773	18		SCH10S		P61K-00252	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67K-000K9	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	0.75				P67K-000KA	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	1				P67K-000KB	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	1.5				P67K-000KC	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	2				P67K-000KD	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	3				P67K-000KE	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	4				P67K-000KF	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	6				P67K-000KG	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	8				P67K-000L7	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	10				P67K-000L1	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	12				P67K-000L2	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	14				P67K-000L3	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	16				P67K-000L4	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	18				P67K-000L5	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000L8	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000L9	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000LA	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000LB	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000LH	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000LL	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000LM	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	6				P73T-000LN	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	8				P73T-000LP	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	10				P73T-000LC	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	12				P73T-000LD	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	14				P73T-000LE	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	16				P73T-000LF	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	18				P73T-000LG	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	0.5				P73T-000FT	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	0.75				P73T-000FU	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
773	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	3				P73T-000G5	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	4				P73T-000G6	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	6				P73T-000G7	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	8				P73T-000G8	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	10				P73T-000FX	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	12				P73T-000FY	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	14				P73T-000FZ	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	16				P73T-000G0	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	18				P73T-000G1	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-16				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	18				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
773	0.5-10				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
773	12-18				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81K-00108	Gate valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	0.75				P81K-00109	Gate valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	1				P81K-0010A	Gate valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	1.5				P81K-0010B	Gate valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	2				P81L-00293	Gate valve ASTM A351 Grade CF8 Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	3				P81L-00294	Gate valve ASTM A351 Grade CF8 Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	4				P81L-00295	Gate valve ASTM A351 Grade CF8 Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	6				P81L-00296	Gate valve ASTM A351 Grade CF8 Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	8				P81L-00297	Gate valve ASTM A351 Grade CF8 Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
714	0.5				P81K-001LC	Gate valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW - NPT Trim number 12 BB-BG-OS&Y Handwheel operated	
714	0.75				P81K-001FD	Gate valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW - NPT Trim number 12 BB-BG-OS&Y Handwheel operated	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82K-000NR	Globe valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	0.75				P82K-000NS	Globe valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	1				P82K-000NT	Globe valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	1.5				P82K-000NU	Globe valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	2				P82L-00195	Globe valve ASTM A351 Grade CF8 Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83K-000LM	Check valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 Lift-type Bolted cover	
1	0.75				P83K-000LN	Check valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 Lift-type Bolted cover	
1	1				P83K-000LP	Check valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 Lift-type Bolted cover	
1	1.5				P83K-000LR	Check valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 Lift-type Bolted cover	

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CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2				P83L-00196	Check valve ASTM A351 Grade CF8 Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	3				P83L-00197	Check valve ASTM A351 Grade CF8 Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	4				P83L-00198	Check valve ASTM A351 Grade CF8 Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	6				P83L-0019U	Check valve ASTM A351 Grade CF8 Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	8				P83L-0019V	Check valve ASTM A351 Grade CF8 Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71K-00065	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	0.75				P71K-00066	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	1				P71K-00067	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71K-00068	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	2				P71K-0006A	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	3				P71K-0006B	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	4				P71K-0006C	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	6				P71K-0006D	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	8				P71K-0006E	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	10				P71K-00069	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	12				P71K-0006F	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	

PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72K-0003T	Paddle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	16				P72K-0003U	Paddle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	18				P72K-0003V	Paddle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	

PADDLE SPACER (PS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72K-0003Y	Paddle spacer ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	16				P72K-0003Z	Paddle spacer ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	18				P72K-00040	Paddle spacer ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	

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BOLT TABLE (B_A0JV , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	60	P80S-003V2		
0.75	4	0.500	65	P80S-003V3		
1	4	0.500	70	P80S-003V4		
1.5	4	0.500	75	P80S-003V5		
2	4	0.625	85	P80S-003XE		
3	4	0.625	95	P80S-003XG		
4	8	0.625	95	P80S-003XG		
6	8	0.750	105	P80S-003XJ		
8	8	0.750	110	P80S-003XK		
10	12	0.875	120	P80S-00419		
12	12	0.875	120	P80S-00419		
14	12	1.000	135	P80S-0043E		
16	16	1.000	140	P80S-0043F		
18	16	1.125	150	P80S-0046K		

BOLT TABLE (B_A0JV_773 , STUD ASME RF, OPTION CODE 773)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-003V4		
0.75	4	0.625	75	P80S-003XC		
1	4	0.625	80	P80S-003XD		
1.5	4	0.750	95	P80S-00414		
2	8	0.625	90	P80S-003XF		
3	8	0.750	110	P80S-003XK		
4	8	0.750	115	P80S-003XL		
6	12	0.750	125	P80S-003XN		
8	12	0.875	140	P80S-0041D		
10	16	1.000	160	P80S-0043K		
12	16	1.125	175	P80S-0046S		
14	20	1.125	180	P80S-0046T		
16	20	1.250	190	P80S-004AK		
18	24	1.250	200	P80S-004AM		

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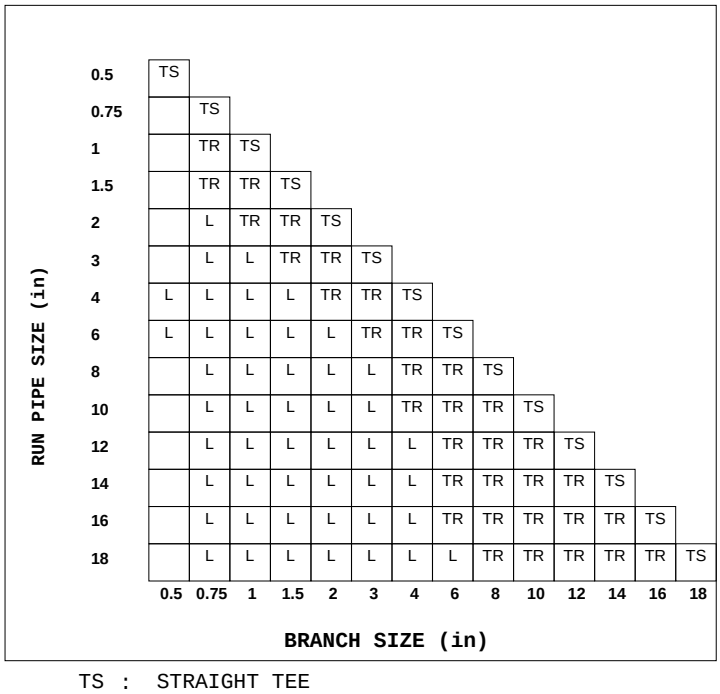
PIPING CLASS

A0JV REV NO. 2

BRANCH TABLE (T_A0JV)



RUN PIPE SIZE (in) \ BRANCH SIZE (in)	0.5	0.75	1	1.5	2	3	4	6	8	10	12	14	16	18
0.5	TS													
0.75		TS												
1		TR	TS											
1.5		TR	TR	TS										
2		L	TR	TR	TS									
3		L	L	TR	TR	TS								
4	L	L	L	L	TR	TR	TS							
6	L	L	L	L	L	TR	TR	TS						
8		L	L	L	L	L	TR	TR	TS					
10		L	L	L	L	L	TR	TR	TR	TS				
12		L	L	L	L	L	L	TR	TR	TR	TS			
14		L	L	L	L	L	L	TR	TR	TR	TR	TS		
16		L	L	L	L	L	L	TR	TR	TR	TR	TR	TS	
18		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TS

TS : STRAIGHT TEE
L : OUTLET
TR : REDUCING TEE

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Material : SS304L
Rating : ASME CLASS 150
Flange Face : RF
C.A.(mm) : 0.00
Gasket : Spiral Wound
Service : UTILITY - WATER SERVICE : DEMINERALISED WATER
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
200	WITH JACK SCREW (FO)
541	NPT(F) (CA,L)
714	SW - NPT(F) (V)
773	CLASS 300 (B,F,G)
797	CLASS 1500 (B,F,G)
2499	ASME B16.47 SERIES A RF (B,F,G)
3001	INSULATION GASKET KIT AND BOLTS FOR FLANGE (G)

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PIPING CLASS
A0JW REV NO. 2

PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P01J-000UC	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE	
1	0.75		SCH80S		P01J-000UD	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE	
1	1		SCH80S		P01J-000UE	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE	
1	1.5		SCH80S		P01J-000UF	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE	
1	2		SCH10S		P01J-000RD	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M BE	
1	3		SCH10S		P01J-000RE	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M BE	
1	4		SCH10S		P01J-000RF	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M BE	
1	6		SCH10S		P01J-000RG	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M BE	
1	8		SCH10S		P01J-001F7	Pipe ASTM A358 Grade 304/304L Class 1 dual grade EFW ASME B36.10M/B36.19M BE	
1	10		SCH10S		P01J-000S7	Pipe ASTM A358 Grade 304/304L Class 1 dual grade EFW ASME B36.10M/B36.19M BE	
1	12		SCH10S		P01J-000S8	Pipe ASTM A358 Grade 304/304L Class 1 dual grade EFW ASME B36.10M/B36.19M BE	
1	14		SCH10S		P01J-000S9	Pipe ASTM A358 Grade 304/304L Class 1 dual grade EFW ASME B36.10M/B36.19M BE	
1	16		SCH10S		P01J-000SA	Pipe ASTM A358 Grade 304/304L Class 1 dual grade EFW ASME B36.10M/B36.19M BE	
1	18		SCH10S		P01J-000SB	Pipe ASTM A358 Grade 304/304L Class 1 dual grade EFW ASME B36.10M/B36.19M BE	
1	20		SCH10S		P01J-000SC	Pipe ASTM A358 Grade 304/304L Class 1 dual grade EFW ASME B36.10M/B36.19M BE	
1	24		SCH10S		P01J-000SE	Pipe ASTM A358 Grade 304/304L Class 1 dual grade EFW ASME B36.10M/B36.19M BE	
1	30		SCH10S		P01J-000SH	Pipe ASTM A358 Grade 304/304L Class 1 dual grade EFW ASME B36.10M/B36.19M BE	
1	36		SCH10		P01J-000TA	Pipe ASTM A358 Grade 304/304L Class 1 dual grade EFW ASME B36.10M/B36.19M BE	
1	42		STD		P01J-000U0	Pipe ASTM A358 Grade 304/304L Class 1 dual grade EFW ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P02K-0001K	90 degree elbow ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	0.75				P02K-0001L	90 degree elbow ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	1				P02K-0001M	90 degree elbow ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	1.5				P02K-0001N	90 degree elbow ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	2		SCH10S		P02J-000J0	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	3		SCH10S		P02J-000J1	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	4		SCH10S		P02J-000J2	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	6		SCH10S		P02J-000J3	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	8		SCH10S		P02J-0017L	90 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius	
1	10		SCH10S		P02J-000JC	90 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius	
1	12		SCH10S		P02J-000JD	90 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius	
1	14		SCH10S		P02J-000JE	90 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius	
1	16		SCH10S		P02J-000JF	90 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius	
1	18		SCH10S		P02J-000JG	90 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius	
1	20		SCH10S		P02J-000JH	90 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius	
1	24		SCH10S		P02J-000JK	90 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius	
1	30		SCH10S		P02J-000JN	90 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius	
1	36		SCH10		P02J-000K4	90 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius	
1	42		STD		P02J-000KM	90 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P03K-0001G	45 degree elbow ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	0.75				P03K-0001H	45 degree elbow ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	1				P03K-0001J	45 degree elbow ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	1.5				P03K-0001K	45 degree elbow ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	2		SCH10S		P03J-000HS	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	3		SCH10S		P03J-000HT	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	4		SCH10S		P03J-000HU	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	6		SCH10S		P03J-000HV	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	

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45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	8		SCH10S		P03J-0016G	45 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius	
1	10		SCH10S		P03J-000J4	45 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius	
1	12		SCH10S		P03J-000J5	45 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius	
1	14		SCH10S		P03J-000J6	45 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius	
1	16		SCH10S		P03J-000J7	45 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius	
1	18		SCH10S		P03J-000J8	45 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius	
1	20		SCH10S		P03J-000J9	45 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius	
1	24		SCH10S		P03J-000JB	45 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius	
1	30		SCH10S		P03J-000JE	45 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius	
1	36		SCH10		P03J-000JT	45 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius	
1	42		STD		P03J-000KA	45 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P21K-0001G	Straight tee ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	0.75				P21K-0001H	Straight tee ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	1				P21K-0001J	Straight tee ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	1.5				P21K-0001K	Straight tee ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	2		SCH10S		P21J-000HM	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	3		SCH10S		P21J-000HN	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	4		SCH10S		P21J-000HP	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	6		SCH10S		P21J-000HR	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	8		SCH10S		P21J-000ZZ	Straight tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	10		SCH10S		P21J-000J0	Straight tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	12		SCH10S		P21J-000J1	Straight tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	14		SCH10S		P21J-000J2	Straight tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	16		SCH10S		P21J-000J3	Straight tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	18		SCH10S		P21J-000J4	Straight tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	20		SCH10S		P21J-000J5	Straight tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	24		SCH10S		P21J-000J7	Straight tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	30		SCH10S		P21J-000JA	Straight tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	36		SCH10		P21J-000JS	Straight tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	42		STD		P21J-000K9	Straight tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75			P24K-0001X	Reducing tee ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	1.5	0.75			P24K-0001Z	Reducing tee ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	1.5	1			P24K-00020	Reducing tee ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	2	1	SCH10S	SCH80S	P24J-0065A	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	2	1.5	SCH10S	SCH80S	P24J-0065B	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	3	1.5	SCH10S	SCH80S	P24J-004SV	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	3	2	SCH10S	SCH10S	P24J-002H7	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	4	2	SCH10S	SCH10S	P24J-002H8	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	4	3	SCH10S	SCH10S	P24J-002H9	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	6	3	SCH10S	SCH10S	P24J-002HA	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	6	4	SCH10S	SCH10S	P24J-002HB	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	8	4	SCH10S	SCH10S	P24J-004SY	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	8	6	SCH10S	SCH10S	P24J-004SZ	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	10	4	SCH10S	SCH10S	P24J-004T0	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	10	6	SCH10S	SCH10S	P24J-004T1	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	10	8	SCH10S	SCH10S	P24J-004T2	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	12	6	SCH10S	SCH10S	P24J-004T3	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	12	8	SCH10S	SCH10S	P24J-004T4	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	12	10	SCH10S	SCH10S	P24J-002HT	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	

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REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14	6	SCH10S	SCH10S	P24J-004T5	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	14	8	SCH10S	SCH10S	P24J-004T6	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	14	10	SCH10S	SCH10S	P24J-002HU	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	14	12	SCH10S	SCH10S	P24J-002HV	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	16	6	SCH10S	SCH10S	P24J-004T7	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	16	8	SCH10S	SCH10S	P24J-004T8	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	16	10	SCH10S	SCH10S	P24J-002HW	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	16	12	SCH10S	SCH10S	P24J-002HX	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	16	14	SCH10S	SCH10S	P24J-002HY	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	18	8	SCH10S	SCH10S	P24J-004T9	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	18	10	SCH10S	SCH10S	P24J-002HZ	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	18	12	SCH10S	SCH10S	P24J-002J0	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	18	14	SCH10S	SCH10S	P24J-002J1	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	18	16	SCH10S	SCH10S	P24J-002J2	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	20	8	SCH10S	SCH10S	P24J-0065C	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	20	10	SCH10S	SCH10S	P24J-002J3	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	20	12	SCH10S	SCH10S	P24J-002J4	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	20	14	SCH10S	SCH10S	P24J-002J5	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	20	16	SCH10S	SCH10S	P24J-002J6	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	20	18	SCH10S	SCH10S	P24J-002J7	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	24	10	SCH10S	SCH10S	P24J-0065D	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	24	12	SCH10S	SCH10S	P24J-002P9	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	24	14	SCH10S	SCH10S	P24J-002JD	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	24	16	SCH10S	SCH10S	P24J-002JE	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	24	18	SCH10S	SCH10S	P24J-002JF	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	24	20	SCH10S	SCH10S	P24J-002JG	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	30	10	SCH10S	SCH10S	P24J-00755	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	30	12	SCH10S	SCH10S	P24J-00756	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	30	14	SCH10S	SCH10S	P24J-002M4	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	30	16	SCH10S	SCH10S	P24J-002JV	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	30	18	SCH10S	SCH10S	P24J-002JW	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	30	20	SCH10S	SCH10S	P24J-002JX	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	30	24	SCH10S	SCH10S	P24J-002JY	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	36	16	SCH10	SCH10S	P24J-005VD	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	36	18	SCH10	SCH10S	P24J-002M9	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	36	20	SCH10	SCH10S	P24J-002MA	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	36	24	SCH10	SCH10S	P24J-002MB	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	36	30	SCH10	SCH10S	P24J-002MD	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	42	16	STD	SCH10S	P24J-0077E	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	42	18	STD	SCH10S	P24J-0077F	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	42	20	STD	SCH10S	P24J-006GA	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	42	24	STD	SCH10S	P24J-002PX	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	42	30	STD	SCH10S	P24J-002R0	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	42	36	STD	SCH10	P24J-002RR	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	SCH10S	SCH10S	P27J-001PS	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	4	2	SCH10S	SCH10S	P27J-001PT	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	4	3	SCH10S	SCH10S	P27J-001PU	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	6	3	SCH10S	SCH10S	P27J-001PV	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	6	4	SCH10S	SCH10S	P27J-001PW	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	8	4	SCH10S	SCH10S	P27J-003L1	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	8	6	SCH10S	SCH10S	P27J-003L2	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	10	4	SCH10S	SCH10S	P27J-003L3	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	10	6	SCH10S	SCH10S	P27J-003L4	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	10	8	SCH10S	SCH10S	P27J-003L5	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	12	6	SCH10S	SCH10S	P27J-003L6	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	12	8	SCH10S	SCH10S	P27J-003L7	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	12	10	SCH10S	SCH10S	P27J-001RD	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	14	6	SCH10S	SCH10S	P27J-003L8	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	14	8	SCH10S	SCH10S	P27J-003L9	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	14	10	SCH10S	SCH10S	P27J-001RF	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	14	12	SCH10S	SCH10S	P27J-001RG	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	16	8	SCH10S	SCH10S	P27J-003LA	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	16	10	SCH10S	SCH10S	P27J-001RJ	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	16	12	SCH10S	SCH10S	P27J-001RK	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	16	14	SCH10S	SCH10S	P27J-001RL	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	18	10	SCH10S	SCH10S	P27J-001RM	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	18	12	SCH10S	SCH10S	P27J-001RN	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	18	14	SCH10S	SCH10S	P27J-001RP	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	18	16	SCH10S	SCH10S	P27J-001RR	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	20	12	SCH10S	SCH10S	P27J-001RS	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	20	14	SCH10S	SCH10S	P27J-001RT	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	20	16	SCH10S	SCH10S	P27J-001RU	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	20	18	SCH10S	SCH10S	P27J-001RV	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	24	16	SCH10S	SCH10S	P27J-001S0	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	24	18	SCH10S	SCH10S	P27J-001S1	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	24	20	SCH10S	SCH10S	P27J-001S2	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	30	20	SCH10S	SCH10S	P27J-001SB	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	30	24	SCH10S	SCH10S	P27J-001SC	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	36	24	SCH10	SCH10S	P27J-001U5	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	36	30	SCH10	SCH10S	P27J-001U7	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	42	30	STD	SCH10S	P27J-001W8	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	42	36	STD	SCH10	P27J-001WK	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	SCH10S	SCH10S	P28J-001P8	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	4	2	SCH10S	SCH10S	P28J-001P9	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	4	3	SCH10S	SCH10S	P28J-001PA	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	6	3	SCH10S	SCH10S	P28J-001PB	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	6	4	SCH10S	SCH10S	P28J-001PC	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	8	4	SCH10S	SCH10S	P28J-003LP	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	8	6	SCH10S	SCH10S	P28J-003LR	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	10	4	SCH10S	SCH10S	P28J-003LS	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	10	6	SCH10S	SCH10S	P28J-003LT	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	10	8	SCH10S	SCH10S	P28J-003LU	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	12	6	SCH10S	SCH10S	P28J-003LV	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	12	8	SCH10S	SCH10S	P28J-003LW	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	12	10	SCH10S	SCH10S	P28J-001PW	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	14	6	SCH10S	SCH10S	P28J-003LX	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	14	8	SCH10S	SCH10S	P28J-003LY	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	14	10	SCH10S	SCH10S	P28J-001PY	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	14	12	SCH10S	SCH10S	P28J-001PZ	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	16	8	SCH10S	SCH10S	P28J-003LZ	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	16	10	SCH10S	SCH10S	P28J-001R1	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	16	12	SCH10S	SCH10S	P28J-001R2	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	16	14	SCH10S	SCH10S	P28J-001R3	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	18	10	SCH10S	SCH10S	P28J-001R4	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	18	12	SCH10S	SCH10S	P28J-001R5	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	18	14	SCH10S	SCH10S	P28J-001R6	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	18	16	SCH10S	SCH10S	P28J-001R7	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	20	12	SCH10S	SCH10S	P28J-001R8	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	20	14	SCH10S	SCH10S	P28J-001R9	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	20	16	SCH10S	SCH10S	P28J-001RA	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	20	18	SCH10S	SCH10S	P28J-001RB	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	24	16	SCH10S	SCH10S	P28J-001RG	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	24	18	SCH10S	SCH10S	P28J-001RH	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	24	20	SCH10S	SCH10S	P28J-001RJ	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	30	20	SCH10S	SCH10S	P28J-001RU	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	30	24	SCH10S	SCH10S	P28J-001RV	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	36	24	SCH10	SCH10S	P28J-001TL	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	36	30	SCH10	SCH10S	P28J-001TN	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	42	30	STD	SCH10S	P28J-001VP	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	42	36	STD	SCH10	P28J-001W1	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P29K-0001V	Cap ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	0.75				P29K-0001W	Cap ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	1				P29K-0001X	Cap ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	1.5				P29K-0001Y	Cap ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	2		SCH10S		P29J-000G1	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	3		SCH10S		P29J-000G2	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	4		SCH10S		P29J-000G3	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	6		SCH10S		P29J-000G4	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	8		SCH10S		P29J-000X3	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	10		SCH10S		P29J-000GB	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	12		SCH10S		P29J-000GC	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	14		SCH10S		P29J-000GD	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	16		SCH10S		P29J-000GE	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	18		SCH10S		P29J-000GF	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	20		SCH10S		P29J-000GG	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	24		SCH10S		P29J-000GJ	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	30		SCH10S		P29J-000GN	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	36		SCH10		P29J-000H3	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	42		STD		P29J-000HR	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
541	0.75				P29K-00020	Cap ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 NPT	
541	1				P29K-0001Z	Cap ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 NPT	
541	1.5				P29K-0003V	Cap ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P41J-001FS	Straight nipple ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		SCH80S		P41J-001FT	Straight nipple ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		SCH80S		P41J-001FU	Straight nipple ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		SCH80S		P41J-001FV	Straight nipple ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

CON SWAGED NIPPLE (SNC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH80S	SCH80S	P42J-00081	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	SCH80S	SCH80S	P42J-00082	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	SCH80S	SCH80S	P42J-00083	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	SCH80S	SCH80S	P42J-00084	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	SCH80S	SCH80S	P42J-00085	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	SCH80S	SCH80S	P42J-00086	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	SCH10S	SCH80S	P42J-000F9	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	SCH10S	SCH80S	P42J-000F6	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	SCH10S	SCH80S	P42J-000F7	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	SCH10S	SCH80S	P42J-000F8	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	1.5	SCH10S	SCH80S	P42J-000AG	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	

ECC SWAGED NIPPLE (SNE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH80S	SCH80S	P43J-0008D	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	SCH80S	SCH80S	P43J-0008E	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	SCH80S	SCH80S	P43J-0008F	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	SCH80S	SCH80S	P43J-0008G	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	SCH80S	SCH80S	P43J-0008H	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	SCH80S	SCH80S	P43J-0008J	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	SCH10S	SCH80S	P43J-000CT	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	SCH10S	SCH80S	P43J-000CU	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	SCH10S	SCH80S	P43J-000CV	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	SCH10S	SCH80S	P43J-000CW	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	SCH10S	SCH80S	P43J-0008P	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	

COUPLING (CPS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P47K-00035	Coupling ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW - SW	
1	0.75				P47K-00036	Coupling ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW - SW	
1	1				P47K-00037	Coupling ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW - SW	
1	1.5				P47K-00038	Coupling ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW - SW	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2 - 2.5	0.75			P31K-00GFG	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 SW	
1	3 - 5	0.75			P31K-00GFH	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 SW	
1	6 - 12	0.75			P31K-008YY	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 SW	
1	14 - 36	0.75			P31K-008YC	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 SW	
1	38 and larger	0.75			P31K-008YT	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 SW	
1	3	1			P31K-008ZG	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 SW	
1	4 - 5	1			P31K-00GFL	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 SW	
1	6 - 10	1			P31K-008ZU	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 SW	
1	12 - 36	1			P31K-008Z6	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 SW	
1	38 and larger	1			P31K-008ZN	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 SW	
1	4	1.5			P31K-0099M	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 SW	
1	5 - 6	1.5			P31K-00GFS	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 SW	
1	8 - 12	1.5			P31K-0099Z	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 SW	
1	14 - 24	1.5			P31K-00991	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 SW	
1	26 - 36	1.5			P31K-00GFT	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 SW	
1	38 and larger	1.5			P31K-0099J	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 SW	
541	1	0.75			P31K-00911	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 NPT	
541	1.5	0.75			P31K-00916	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 NPT	
541	2 - 2.5	0.75			P31K-00GFJ	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 NPT	
541	3 - 5	0.75			P31K-00GFK	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 NPT	
541	6 - 12	0.75			P31K-0091X	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 NPT	
541	14 - 36	0.75			P31K-0091B	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 NPT	
541	38 and larger	0.75			P31K-0091S	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 NPT	
1	6	2	SCH10S	SCH10S	P31K-005AV	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	8	2	SCH10S	SCH10S	P31K-007G1	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	10	2	SCH10S	SCH10S	P31K-005JV	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	12	2	SCH10S	SCH10S	P31K-005JX	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	14	2	SCH10S	SCH10S	P31K-005K0	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	16	2	SCH10S	SCH10S	P31K-005K3	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	

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OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	18	2	SCH10S	SCH10S	P31K-005K5	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	20	2	SCH10S	SCH10S	P31K-005K8	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	24	2	SCH10S	SCH10S	P31K-005B4	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	30	2	SCH10S	SCH10S	P31K-005BA	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	36	2	SCH10	SCH10S	P31K-005CZ	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	42	2	STD	SCH10S	P31K-005KG	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	8	3	SCH10S	SCH10S	P31K-007XV	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	10	3	SCH10S	SCH10S	P31K-007KK	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	12	3	SCH10S	SCH10S	P31K-007LF	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	14	3	SCH10S	SCH10S	P31K-007ME	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	16	3	SCH10S	SCH10S	P31K-007NJ	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	18	3	SCH10S	SCH10S	P31K-007PR	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	20	3	SCH10S	SCH10S	P31K-007RR	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	24	3	SCH10S	SCH10S	P31K-007SP	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	30	3	SCH10S	SCH10S	P31K-007UJ	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	36	3	SCH10	SCH10S	P31K-007VK	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	42	3	STD	SCH10S	P31K-007WE	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	12	4	SCH10S	SCH10S	P31K-00812	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	14	4	SCH10S	SCH10S	P31K-00821	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	16	4	SCH10S	SCH10S	P31K-00837	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	18	4	SCH10S	SCH10S	P31K-0084E	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	20	4	SCH10S	SCH10S	P31K-0085E	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	24	4	SCH10S	SCH10S	P31K-0086F	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	30	4	SCH10S	SCH10S	P31K-00889	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	36	4	SCH10	SCH10S	P31K-0089A	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	42	4	STD	SCH10S	P31K-008A3	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	18	6	SCH10S	SCH10S	P31K-008EY	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	20	6	SCH10S	SCH10S	P31K-008FP	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	24	6	SCH10S	SCH10S	P31K-008GG	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	30	6	SCH10S	SCH10S	P31K-008HM	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	36	6	SCH10	SCH10S	P31K-008J8	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	42	6	STD	SCH10S	P31K-008JS	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30K-0001G	Plug ASTM A182 Grade F304/F304L dual grade ASME B16.11 NPT Round head	
1	0.75				P30K-0001H	Plug ASTM A182 Grade F304/F304L dual grade ASME B16.11 NPT Round head	
1	1				P30K-0001J	Plug ASTM A182 Grade F304/F304L dual grade ASME B16.11 NPT Round head	
1	1.5				P30K-0001K	Plug ASTM A182 Grade F304/F304L dual grade ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P61K-003A4	Flange SW ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	0.75		SCH80S		P61K-003A5	Flange SW ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	1		SCH80S		P61K-003A6	Flange SW ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	1.5		SCH80S		P61K-003A7	Flange SW ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	2		SCH10S		P61K-0023K	Flange WN ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	3		SCH10S		P61K-0023L	Flange WN ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	4		SCH10S		P61K-0023M	Flange WN ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	6		SCH10S		P61K-0023N	Flange WN ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	8		SCH10S		P61K-003A8	Flange WN ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	10		SCH10S		P61K-0024B	Flange WN ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	12		SCH10S		P61K-0024C	Flange WN ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	14		SCH10S		P61K-0024D	Flange WN ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	16		SCH10S		P61K-0024E	Flange WN ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	18		SCH10S		P61K-0024F	Flange WN ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	20		SCH10S		P61K-0024G	Flange WN ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	24		SCH10S		P61K-0024N	Flange WN ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	30		SCH10S		P61K-0024S	Flange WN ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.47 Series B RF	

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FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	36		SCH10		P61K-00262	Flange WN ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.47 Series B RF	
1	42		STD		P61K-0026P	Flange WN ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.47 Series B RF	
2499	30		SCH10S		P61K-0046D	Flange WN ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.47 Series A RF	
773	0.5		SCH80S		P61K-003A9	Flange SW ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
773	0.75		SCH80S		P61K-003AA	Flange SW ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
773	1		SCH80S		P61K-003AB	Flange SW ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
773	1.5		SCH80S		P61K-003AC	Flange SW ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
773	2		SCH10S		P61K-0023W	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
773	3		SCH10S		P61K-0023X	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
773	4		SCH10S		P61K-0023Y	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
773	6		SCH10S		P61K-003AD	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
773	8		SCH10S		P61K-003AE	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
773	10		SCH10S		P61K-0024Y	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
773	12		SCH10S		P61K-0024Z	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
773	14		SCH10S		P61K-00250	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
773	16		SCH10S		P61K-00251	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
773	18		SCH10S		P61K-00252	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
773	20		SCH10S		P61K-00253	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
773	24		SCH10S		P61K-00258	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
773	30		SCH10S		P61K-00273	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.47 Series B RF	
773	36		SCH10		P61K-00276	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.47 Series B RF	
773	42		STD		P61K-00279	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.47 Series B RF	
797	2		SCH10S		P61K-004TB	Flange WN ASTM A182 Grade F304/F304L dual grade Class 1500 ASME B16.5 RJ	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67K-000K9	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	0.75				P67K-000KA	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	1				P67K-000KB	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	1.5				P67K-000KC	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	2				P67K-000KD	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	3				P67K-000KE	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	4				P67K-000KF	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	6				P67K-000KG	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	8				P67K-000L7	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	10				P67K-000L1	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	12				P67K-000L2	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	14				P67K-000L3	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	16				P67K-000L4	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	18				P67K-000L5	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	20				P67K-000L6	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	24				P67K-000L9	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	30				P67K-000LC	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.47 Series B RF	
1	36				P67K-000LR	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.47 Series B RF	
1	42				P67K-000LW	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.47 Series B RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000L8	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000L9	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000LA	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000LB	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000LH	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000LL	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000LM	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	6				P73T-000LN	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

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GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	8				P73T-000LP	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	10				P73T-000LC	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	12				P73T-000LD	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	14				P73T-000LE	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	16				P73T-000LF	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	18				P73T-000LG	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	20				P73T-000LJ	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	24				P73T-000LK	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	30				P73T-000LT	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	36				P73T-000LW	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	42				P73T-000LZ	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
2499	30				P73T-002NG	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.47-A RF 4.5mm-T Outer-ring CS Inner-ring SS316	
3001	6				P78U-0004S	Insulation gasket kit Glass reinforced epoxy Class 150 Manufacturer-standard Flange ASME B16.5 RF	
3001	12				P78U-0004G	Insulation gasket kit Glass reinforced epoxy Class 150 Manufacturer-standard Flange ASME B16.5 RF	
3001	14				P78U-0004H	Insulation gasket kit Glass reinforced epoxy Class 150 Manufacturer-standard Flange ASME B16.5 RF	
773	0.5				P73T-000FT	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	0.75				P73T-000FU	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	3				P73T-000G5	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	4				P73T-000G6	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	6				P73T-000G7	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	8				P73T-000G8	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	10				P73T-000FX	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	12				P73T-000FY	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	14				P73T-000FZ	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	16				P73T-000G0	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	18				P73T-000G1	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	20				P73T-000G3	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	24				P73T-000G4	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	30				P73T-000H9	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	36				P73T-000HC	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	42				P73T-000KM	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
797	2				P75T-000ML	Ring joint gasket SS TP304 Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-16				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	18-24				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
1	30-42				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
2499	30				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
773	0.5-10				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
773	12-42				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
797	2				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	

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GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81K-00108	Gate valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	0.75				P81K-00109	Gate valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	1				P81K-0010A	Gate valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	1.5				P81K-0010B	Gate valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	2				P81L-00293	Gate valve ASTM A351 Grade CF8 Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	3				P81L-00294	Gate valve ASTM A351 Grade CF8 Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	4				P81L-00295	Gate valve ASTM A351 Grade CF8 Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	6				P81L-00296	Gate valve ASTM A351 Grade CF8 Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	8				P81L-00297	Gate valve ASTM A351 Grade CF8 Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	10				P81L-002BX	Gate valve ASTM A351 Grade CF8 Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	12				P81L-002BY	Gate valve ASTM A351 Grade CF8 Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	14				P81L-002BZ	Gate valve ASTM A351 Grade CF8 Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated	
1	16				P81L-002C0	Gate valve ASTM A351 Grade CF8 Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated	
1	18				P81L-002C1	Gate valve ASTM A351 Grade CF8 Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated	
1	20				P81L-002C2	Gate valve ASTM A351 Grade CF8 Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated	
1	24				P81L-002C3	Gate valve ASTM A351 Grade CF8 Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated	
1	30				P81L-002C4	Gate valve ASTM A351 Grade CF8 Class 150 API 600 Flange ASME B16.47-B RF Trim number 12 BB-BG-OS&Y Gear operated	
1	36				P81L-002PF	Gate valve ASTM A351 Grade CF8 Class 150 API 600 Flange ASME B16.47-B RF Trim number 12 BB-BG-OS&Y Gear operated	
1	42				P81L-002PG	Gate valve ASTM A351 Grade CF8 Class 150 API 600 Flange ASME B16.47-B RF Trim number 12 BB-BG-OS&Y Gear operated	
714	0.5				P81K-001LC	Gate valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW - NPT Trim number 12 BB-BG-OS&Y Handwheel operated	
714	0.75				P81K-001FD	Gate valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW - NPT Trim number 12 BB-BG-OS&Y Handwheel operated	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82K-000NR	Globe valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	0.75				P82K-000NS	Globe valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	1				P82K-000NT	Globe valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	1.5				P82K-000NU	Globe valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	2				P82L-00195	Globe valve ASTM A351 Grade CF8 Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	3				P82L-00196	Globe valve ASTM A351 Grade CF8 Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	4				P82L-00197	Globe valve ASTM A351 Grade CF8 Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	6				P82L-001AD	Globe valve ASTM A351 Grade CF8 Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	8				P82L-001AE	Globe valve ASTM A351 Grade CF8 Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83K-000LM	Check valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 Lift-type Bolted cover	
1	0.75				P83K-000LN	Check valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 Lift-type Bolted cover	
1	1				P83K-000LP	Check valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 Lift-type Bolted cover	
1	1.5				P83K-000LR	Check valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 Lift-type Bolted cover	
1	2				P83L-00196	Check valve ASTM A351 Grade CF8 Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	3				P83L-00197	Check valve ASTM A351 Grade CF8 Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	4				P83L-00198	Check valve ASTM A351 Grade CF8 Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	6				P83L-0019U	Check valve ASTM A351 Grade CF8 Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	8				P83L-0019V	Check valve ASTM A351 Grade CF8 Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	

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CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	10				P83L-001AA	Check valve ASTM A351 Grade CF8 Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	12				P83L-001AB	Check valve ASTM A351 Grade CF8 Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	14				P83L-001AC	Check valve ASTM A351 Grade CF8 Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	16				P83L-001AD	Check valve ASTM A351 Grade CF8 Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	18				P83L-001AE	Check valve ASTM A351 Grade CF8 Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	

NEEDLE VALVE (NV)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82K-0010G	Needle valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	0.75				P82K-0010H	Needle valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	1				P82K-0010J	Needle valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	1.5				P82K-0010K	Needle valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	

ORIFICE FLANGE (FO)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2		SCH10S		P66K-00312	Orifice flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	3		SCH10S		P66K-00313	Orifice flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	4		SCH10S		P66K-00314	Orifice flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	6		SCH10S		P66K-0031M	Orifice flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	8		SCH10S		P66K-00316	Orifice flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	10		SCH10S		P66K-0030X	Orifice flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	12		SCH10S		P66K-0030Y	Orifice flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	14		SCH10S		P66K-0030Z	Orifice flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	16		SCH10S		P66K-00310	Orifice flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	18		SCH10S		P66K-00311	Orifice flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	20		SCH10S		P66K-0031N	Orifice flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	24		SCH10S		P66K-003WM	Orifice flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
200	2		SCH10S		P66K-0031E	Orifice flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	3		SCH10S		P66K-0031F	Orifice flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	4		SCH10S		P66K-0031G	Orifice flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	6		SCH10S		P66K-0031R	Orifice flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	8		SCH10S		P66K-0031J	Orifice flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	10		SCH10S		P66K-00319	Orifice flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	12		SCH10S		P66K-0031A	Orifice flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	14		SCH10S		P66K-0031B	Orifice flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	16		SCH10S		P66K-0031C	Orifice flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	18		SCH10S		P66K-0031D	Orifice flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	20		SCH10S		P66K-0031P	Orifice flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	24		SCH10S		P66K-003WN	Orifice flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71K-00065	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	0.75				P71K-00066	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	1				P71K-00067	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71K-00068	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	

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SPECT BLANK (SB)							
OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2				P71K-0006A	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	3				P71K-0006B	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	4				P71K-0006C	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	6				P71K-0006D	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	8				P71K-0006E	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	10				P71K-00069	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	12				P71K-0006F	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	

PADDLE BLANK (PB)							
OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72K-0003T	Paddle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	16				P72K-0003U	Paddle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	18				P72K-0003V	Paddle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	20				P72K-0003W	Paddle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	24				P72K-0003X	Paddle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	30				P72K-000E9	Paddle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	36				P72K-000F8	Paddle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	42				P72K-000F9	Paddle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.47-B RF	

PADDLE SPACER (PS)							
OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72K-0003Y	Paddle spacer ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	16				P72K-0003Z	Paddle spacer ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	18				P72K-00040	Paddle spacer ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	20				P72K-00041	Paddle spacer ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	24				P72K-00042	Paddle spacer ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	30				P72K-000EA	Paddle spacer ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	36				P72K-000FA	Paddle spacer ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	42				P72K-000FB	Paddle spacer ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.47-B RF	

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BOLT TABLE (B_A0JW , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	60	P80S-003V2		
0.75	4	0.500	65	P80S-003V3		
1	4	0.500	70	P80S-003V4		
1.5	4	0.500	75	P80S-003V5		
2	4	0.625	85	P80S-003XE		
3	4	0.625	95	P80S-003XG		
4	8	0.625	95	P80S-003XG		
6	8	0.750	105	P80S-003XJ		
8	8	0.750	110	P80S-003XK		
10	12	0.875	120	P80S-00419		
12	12	0.875	120	P80S-00419		
14	12	1.000	135	P80S-0043E		
16	16	1.000	140	P80S-0043F		
18	16	1.125	150	P80S-0046K		
20	20	1.125	160	P80S-0046M		
24	20	1.250	175	P80S-004AG		
30	44	0.750	145	P80S-003ZK		
36	44	0.875	175	P80S-0041M		
42	48	1.000	190	P80S-0043T		

BOLT TABLE (B_A0JW_2499 , STUD ASME RF, OPTION CODE 2499)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
30	28	1.250	235	P80S-004AV		
36	32	1.500	285			
42	36	1.500	300			

BOLT TABLE (B_A0JW_773 , STUD ASME RF, OPTION CODE 773)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-003V4		
0.75	4	0.625	75	P80S-003XC		
1	4	0.625	80	P80S-003XD		
1.5	4	0.750	95	P80S-00414		
2	8	0.625	90	P80S-003XF		
3	8	0.750	110	P80S-003XK		
4	8	0.750	115	P80S-003XL		
6	12	0.750	125	P80S-003XN		
8	12	0.875	140	P80S-0041D		
10	16	1.000	160	P80S-0043K		
12	16	1.125	175	P80S-0046S		
14	20	1.125	180	P80S-0046T		
16	20	1.250	190	P80S-004AK		
18	24	1.250	200	P80S-004AM		
20	24	1.250	210	P80S-004AP		
24	24	1.500	235	P80S-003F8		
30	36	1.375	285	P80S-003EA		
36	32	1.625	320	P80S-005TT		
42	36	1.750	355	P80S-007B5		

BOLT TABLE (B_A0JW_797 , STUD ASME RJ, OPTION CODE 797)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	110		R12	
0.75	4	0.750	115		R14	
1	4	0.875	130	P80S-0041B	R16	
1.5	4	1.000	140		R20	
2	8	0.875	150	P80S-0041F	R24	P75T-000ML
3	8	1.125	180		R35	
4	8	1.250	230		R39	
6	12	1.375	300		R46	
8	12	1.625	345		R50	
10	12	1.875	395		R54	
12	16	2.000	445		R58	
14	16	2.250	490		R63	
16	16	2.500	540		R67	
18	16	2.750	590		R71	
20	16	3.000	650		R75	
24	16	3.500	745		R79	

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BRANCH TABLE (T_A0JW)

RUN PIPE SIZE (in) \ BRANCH SIZE (in)	0.5	0.75	1	1.5	2	3	4	6	8	10	12	14	16	18	20	24	30	36	42
0.5	TS																		
0.75		TS																	
1		TR	TS																
1.5		TR	TR	TS															
2		L	TR	TR	TS														
3		L	L	TR	TR	TS													
4	L	L	L	L	TR	TR	TS												
6	L	L	L	L	L	TR	TR	TS											
8		L	L	L	L	L	TR	TR	TS										
10		L	L	L	L	L	TR	TR	TR	TS									
12		L	L	L	L	L	L	TR	TR	TR	TS								
14		L	L	L	L	L	L	TR	TR	TR	TR	TS							
16		L	L	L	L	L	L	TR	TR	TR	TR	TR	TS						
18		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TS					
20		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TR	TS				
24		L	L	L	L	L	L	L	9PD	TR	TR	TR	TR	TR	TR	TS			
30		L	L	L	L	L	L	L	9PD	TR	TR	TR	TR	TR	TR	TR	TS		
36		L	L	L	L	L	L	L	9PD	9PD	9PD	9PD	TR	TR	TR	TR	TR	TS	
42		L	L	L	L	L	L	L	9PD	9PD	9PD	9PD	TR	TR	TR	TR	TR	TR	TS

TS : STRAIGHT TEE
9PD : REINFORCING PAD 90 DEG
L : OUTLET
TR : REDUCING TEE

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PIPING CLASS

A0JY REV NO. 2

Material : SS304L
Rating : ASME CLASS 150
Flange Face : RF
C.A.(mm) : 0.00
Gasket : Spiral Wound
Service : PROCESS - CHEMICAL DOSING : / CHEMICALS

Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
2	USE OF SOFT SEATED BALL, PLUG AND BUTTERFLY VALVES SHALL BE LIMITED TO MAXIMUM OF 204DEGC (400DEGF)

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
541	NPT(F) (CA,F,L)
773	CLASS 300 (B,F,G,V)
3001	INSULATION GASKET KIT AND BOLTS FOR FLANGE (G)
4608	VALVE WITH NIPPLES (V)

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PIPING CLASS
A0JY REV NO. 2

PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P01J-000UC	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE	
1	0.75		SCH80S		P01J-000UD	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE	
1	1		SCH80S		P01J-000UE	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE	
1	1.5		SCH80S		P01J-000UF	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE	
1	2		SCH10S		P01J-000RD	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M BE	
1	3		SCH10S		P01J-000RE	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M BE	
1	4		SCH10S		P01J-000RF	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M BE	
1	6		SCH10S		P01J-000RG	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M BE	
1	8		SCH10S		P01J-001F7	Pipe ASTM A358 Grade 304/304L Class 1 dual grade EFW ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P02J-000VD	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	0.75		SCH80S		P02J-000VE	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	1		SCH80S		P02J-000VF	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	1.5		SCH80S		P02J-000VG	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	2		SCH10S		P02J-000J0	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	3		SCH10S		P02J-000J1	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	4		SCH10S		P02J-000J2	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	6		SCH10S		P02J-000J3	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	8		SCH10S		P02J-0017L	90 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P03J-000UW	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	0.75		SCH80S		P03J-000UX	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	1		SCH80S		P03J-000UY	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	1.5		SCH80S		P03J-000UZ	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	2		SCH10S		P03J-000HS	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	3		SCH10S		P03J-000HT	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	4		SCH10S		P03J-000HU	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	6		SCH10S		P03J-000HV	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	8		SCH10S		P03J-0016G	45 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P21J-000V1	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	0.75		SCH80S		P21J-000V2	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	1		SCH80S		P21J-000V3	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	1.5		SCH80S		P21J-000V4	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	2		SCH10S		P21J-000HM	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	3		SCH10S		P21J-000HN	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	4		SCH10S		P21J-000HP	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	6		SCH10S		P21J-000HR	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	8		SCH10S		P21J-000ZZ	Straight tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75	SCH80S	SCH80S	P24J-003NX	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	1.5	0.75	SCH80S	SCH80S	P24J-003NZ	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	1.5	1	SCH80S	SCH80S	P24J-003P0	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	2	1	SCH10S	SCH80S	P24J-0065A	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	

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REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2	1.5	SCH10S	SCH80S	P24J-0065B	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	3	1.5	SCH10S	SCH80S	P24J-004SV	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	3	2	SCH10S	SCH10S	P24J-002H7	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	4	2	SCH10S	SCH10S	P24J-002H8	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	4	3	SCH10S	SCH10S	P24J-002H9	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	6	3	SCH10S	SCH10S	P24J-002HA	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	6	4	SCH10S	SCH10S	P24J-002HB	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	8	4	SCH10S	SCH10S	P24J-004SY	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	8	6	SCH10S	SCH10S	P24J-004SZ	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH80S	SCH80S	P27J-002R0	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	1	0.5	SCH80S	SCH80S	P27J-002R1	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	1	0.75	SCH80S	SCH80S	P27J-002R2	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	1.5	0.5	SCH80S	SCH80S	P27J-002R3	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	1.5	0.75	SCH80S	SCH80S	P27J-002R4	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	1.5	1	SCH80S	SCH80S	P27J-002R5	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	2	0.75	SCH10S	SCH80S	P27J-004KS	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	2	1	SCH10S	SCH80S	P27J-004J0	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	2	1.5	SCH10S	SCH80S	P27J-004J1	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	3	1.5	SCH10S	SCH80S	P27J-003LL	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	3	2	SCH10S	SCH10S	P27J-001PS	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	4	1.5	SCH10S	SCH80S	P27J-003LM	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	4	2	SCH10S	SCH10S	P27J-001PT	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	4	3	SCH10S	SCH10S	P27J-001PU	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	6	3	SCH10S	SCH10S	P27J-001PV	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	6	4	SCH10S	SCH10S	P27J-001PW	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	8	4	SCH10S	SCH10S	P27J-003L1	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	8	6	SCH10S	SCH10S	P27J-003L2	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH80S	SCH80S	P28J-002NL	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	1	0.5	SCH80S	SCH80S	P28J-002NM	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	1	0.75	SCH80S	SCH80S	P28J-002NN	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	1.5	0.5	SCH80S	SCH80S	P28J-002NP	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	1.5	0.75	SCH80S	SCH80S	P28J-002NR	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	1.5	1	SCH80S	SCH80S	P28J-002NS	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	2	0.75	SCH10S	SCH80S	P28J-004L9	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	2	1	SCH10S	SCH80S	P28J-004JH	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	2	1.5	SCH10S	SCH80S	P28J-004JJ	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	3	1.5	SCH10S	SCH80S	P28J-003M9	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	3	2	SCH10S	SCH10S	P28J-001P8	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	4	1.5	SCH10S	SCH80S	P28J-003MA	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	4	2	SCH10S	SCH10S	P28J-001P9	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	4	3	SCH10S	SCH10S	P28J-001PA	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	6	3	SCH10S	SCH10S	P28J-001PB	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	6	4	SCH10S	SCH10S	P28J-001PC	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	8	4	SCH10S	SCH10S	P28J-003LP	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	8	6	SCH10S	SCH10S	P28J-003LR	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P29J-000T0	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	0.75		SCH80S		P29J-000T1	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	1		SCH80S		P29J-000T2	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	1.5		SCH80S		P29J-000T3	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	2		SCH10S		P29J-000G1	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	

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CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3		SCH10S		P29J-000G2	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	4		SCH10S		P29J-000G3	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	6		SCH10S		P29J-000G4	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	8		SCH10S		P29J-000X3	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
541	0.75				P29K-00020	Cap ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P41J-001FS	Straight nipple ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		SCH80S		P41J-001FT	Straight nipple ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		SCH80S		P41J-001FU	Straight nipple ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		SCH80S		P41J-001FV	Straight nipple ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
541	1	0.75			P31K-00911	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 NPT	
541	1.5	0.75			P31K-00916	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 NPT	
541	2 - 2.5	0.75			P31K-00GFJ	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 NPT	
541	3 - 5	0.75			P31K-00GFK	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 NPT	
541	6 - 12	0.75			P31K-0091X	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 NPT	
1	2	0.75	SCH10S	SCH80S	P31K-00DM8	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	3	0.75	SCH10S	SCH80S	P31K-00BWW	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	4	0.75	SCH10S	SCH80S	P31K-00BX1	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	6	0.75	SCH10S	SCH80S	P31K-00683	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	8	0.75	SCH10S	SCH80S	P31K-0068R	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	3	1	SCH10S	SCH80S	P31K-00BWX	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	4	1	SCH10S	SCH80S	P31K-00BX2	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	6	1	SCH10S	SCH80S	P31K-006E7	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	8	1	SCH10S	SCH80S	P31K-006F3	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	4	1.5	SCH10S	SCH80S	P31K-00BX3	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	6	1.5	SCH10S	SCH80S	P31K-006M2	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	8	1.5	SCH10S	SCH80S	P31K-006N0	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	6	2	SCH10S	SCH10S	P31K-005AV	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	8	2	SCH10S	SCH10S	P31K-007G1	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	8	3	SCH10S	SCH10S	P31K-007XV	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30K-0001G	Plug ASTM A182 Grade F304/F304L dual grade ASME B16.11 NPT Round head	
1	0.75				P30K-0001H	Plug ASTM A182 Grade F304/F304L dual grade ASME B16.11 NPT Round head	
1	1				P30K-0001J	Plug ASTM A182 Grade F304/F304L dual grade ASME B16.11 NPT Round head	
1	1.5				P30K-0001K	Plug ASTM A182 Grade F304/F304L dual grade ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P61K-002K3	Flange WN ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	0.75		SCH80S		P61K-002K4	Flange WN ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	1		SCH80S		P61K-002K5	Flange WN ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	1.5		SCH80S		P61K-002K6	Flange WN ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	2		SCH10S		P61K-0023K	Flange WN ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	3		SCH10S		P61K-0023L	Flange WN ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	4		SCH10S		P61K-0023M	Flange WN ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	6		SCH10S		P61K-0023N	Flange WN ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	8		SCH10S		P61K-003A8	Flange WN ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
541	0.5				P61K-0052M	Flange NPT ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
541	0.75				P61K-005ZX	Flange NPT ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
773	0.5		SCH80S		P61K-0027N	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	

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FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
773	0.75		SCH80S		P61K-0027P	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
773	1		SCH80S		P61K-0027R	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
773	1.5		SCH80S		P61K-0027S	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
773	2		SCH10S		P61K-0023W	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
773	3		SCH10S		P61K-0023X	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
773	4		SCH10S		P61K-0023Y	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
773	6		SCH10S		P61K-003AD	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
773	8		SCH10S		P61K-003AE	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67K-000K9	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	0.75				P67K-000KA	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	1				P67K-000KB	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	1.5				P67K-000KC	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	2				P67K-000KD	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	3				P67K-000KE	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	4				P67K-000KF	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	6				P67K-000KG	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	8				P67K-000L7	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000L8	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000L9	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000LA	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000LB	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000LH	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000LL	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000LM	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	6				P73T-000LN	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	8				P73T-000LP	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
3001	1				P78U-00067	Insulation gasket kit Glass reinforced epoxy Class 150 Manufacturer-standard Flange ASME B16.5 RF	
773	0.5				P73T-000FT	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	0.75				P73T-000FU	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	3				P73T-000G5	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	4				P73T-000G6	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	6				P73T-000G7	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	8				P73T-000G8	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-8				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
773	0.5-8				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81K-001B5	Gate valve ASTM A182 Grade F304/F304L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Fluid-1	

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GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75				P81K-001B6	Gate valve ASTM A182 Grade F304/F304L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Fluid-1	
1	1				P81K-001B7	Gate valve ASTM A182 Grade F304/F304L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Fluid-1	
1	1.5				P81K-001B8	Gate valve ASTM A182 Grade F304/F304L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Fluid-1	
1	2				P81L-002RU	Gate valve ASTM A351 Grade CF8 Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Fluid-1	
1	3				P81L-002RV	Gate valve ASTM A351 Grade CF8 Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Fluid-1	
4608	0.75				P81K-001P5	Gate valve ASTM A182 Grade F304/F304L dual grade Class 150 API 602 BW both sides w/ nipples BE - NPT ASTM A312-TP304(L) dual grade Seamless Sch80S-nipple Trim number 12 BB-BG-OS&Y Handwheel operated Fluid-1	
773	2				P81L-002S2	Gate valve ASTM A351 Grade CF8 Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Fluid-1	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75				P82K-00174	Globe valve ASTM A182 Grade F304/F304L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Fluid-1	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83K-000SD	Check valve ASTM A182 Grade F304/F304L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover	
1	0.75				P83K-000SE	Check valve ASTM A182 Grade F304/F304L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover	
1	1				P83K-000SF	Check valve ASTM A182 Grade F304/F304L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover	
1	1.5				P83K-000SG	Check valve ASTM A182 Grade F304/F304L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover	
1	2				P83L-00196	Check valve ASTM A351 Grade CF8 Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71K-00065	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	0.75				P71K-00066	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	1				P71K-00067	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71K-00068	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	2				P71K-0006A	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	3				P71K-0006B	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	4				P71K-0006C	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	6				P71K-0006D	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	8				P71K-0006E	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	

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BOLT TABLE (B_A0JY , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	60	P80S-003V2		
0.75	4	0.500	65	P80S-003V3		
1	4	0.500	70	P80S-003V4		
1.5	4	0.500	75	P80S-003V5		
2	4	0.625	85	P80S-003XE		
3	4	0.625	95	P80S-003XG		
4	8	0.625	95	P80S-003XG		
6	8	0.750	105	P80S-003XJ		
8	8	0.750	110	P80S-003XK		

BOLT TABLE (B_A0JY_773 , STUD ASME RF, OPTION CODE 773)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-003V4		
0.75	4	0.625	75	P80S-003XC		
1	4	0.625	80	P80S-003XD		
1.5	4	0.750	95	P80S-00414		
2	8	0.625	90	P80S-003XF		
3	8	0.750	110	P80S-003XK		
4	8	0.750	115	P80S-003XL		
6	12	0.750	125	P80S-003XN		
8	12	0.875	140	P80S-0041D		

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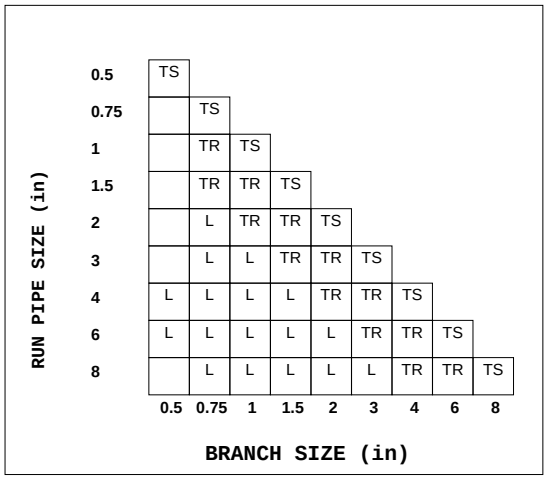
BRANCH TABLE (T_A0JY)



L : OUTLET
TS : STRAIGHT TEE
TR : REDUCING TEE

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Material : SS304L
Rating : ASME CLASS 150
Flange Face : RF
C.A.(mm) : 0.00
Gasket : Spiral Wound
Service : PROCESS - CHEMICAL DOSING
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
2	USE OF SOFT SEATED BALL, PLUG AND BUTTERFLY VALVES SHALL BE LIMITED TO MAXIMUM OF 204DEGC (400DEGF)

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
541	NPT(F) (CA,F,L)
773	CLASS 300 (B,F,G)
4608	VALVE WITH NIPPLES (V)

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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P01J-000UC	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE	
1	0.75		SCH80S		P01J-000UD	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE	
1	1		SCH80S		P01J-000UE	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE	
1	1.5		SCH80S		P01J-000UF	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE	
1	2		SCH10S		P01J-000RD	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M BE	
1	3		SCH10S		P01J-000RE	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M BE	
1	4		SCH10S		P01J-000RF	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P02J-000VD	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	0.75		SCH80S		P02J-000VE	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	1		SCH80S		P02J-000VF	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	1.5		SCH80S		P02J-000VG	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	2		SCH10S		P02J-000J0	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	3		SCH10S		P02J-000J1	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	4		SCH10S		P02J-000J2	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P03J-000UW	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	0.75		SCH80S		P03J-000UX	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	1		SCH80S		P03J-000UY	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	1.5		SCH80S		P03J-000UZ	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	2		SCH10S		P03J-000HS	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	3		SCH10S		P03J-000HT	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	4		SCH10S		P03J-000HU	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P21J-000V1	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	0.75		SCH80S		P21J-000V2	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	1		SCH80S		P21J-000V3	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	1.5		SCH80S		P21J-000V4	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	2		SCH10S		P21J-000HM	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	3		SCH10S		P21J-000HN	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	4		SCH10S		P21J-000HP	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75	SCH80S	SCH80S	P24J-003NX	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	1.5	0.75	SCH80S	SCH80S	P24J-003NZ	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	1.5	1	SCH80S	SCH80S	P24J-003P0	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	2	1	SCH10S	SCH80S	P24J-0065A	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	2	1.5	SCH10S	SCH80S	P24J-0065B	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	3	1.5	SCH10S	SCH80S	P24J-004SV	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	3	2	SCH10S	SCH10S	P24J-002H7	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	4	2	SCH10S	SCH10S	P24J-002H8	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	4	3	SCH10S	SCH10S	P24J-002H9	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH80S	SCH80S	P27J-002R0	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	

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CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.5	SCH80S	SCH80S	P27J-002R1	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	1	0.75	SCH80S	SCH80S	P27J-002R2	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	1.5	0.5	SCH80S	SCH80S	P27J-002R3	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	1.5	0.75	SCH80S	SCH80S	P27J-002R4	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	1.5	1	SCH80S	SCH80S	P27J-002R5	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	2	0.75	SCH10S	SCH80S	P27J-004KS	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	2	1	SCH10S	SCH80S	P27J-004J0	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	2	1.5	SCH10S	SCH80S	P27J-004J1	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	3	1.5	SCH10S	SCH80S	P27J-003LL	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	3	2	SCH10S	SCH10S	P27J-001PS	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	4	1.5	SCH10S	SCH80S	P27J-003LM	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	4	2	SCH10S	SCH10S	P27J-001PT	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	4	3	SCH10S	SCH10S	P27J-001PU	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH80S	SCH80S	P28J-002NL	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	1	0.5	SCH80S	SCH80S	P28J-002NM	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	1	0.75	SCH80S	SCH80S	P28J-002NN	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	1.5	0.5	SCH80S	SCH80S	P28J-002NP	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	1.5	0.75	SCH80S	SCH80S	P28J-002NR	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	1.5	1	SCH80S	SCH80S	P28J-002NS	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	2	0.75	SCH10S	SCH80S	P28J-004L9	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	2	1	SCH10S	SCH80S	P28J-004JH	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	2	1.5	SCH10S	SCH80S	P28J-004JJ	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	3	1.5	SCH10S	SCH80S	P28J-003M9	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	3	2	SCH10S	SCH10S	P28J-001P8	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	4	1.5	SCH10S	SCH80S	P28J-003MA	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	4	2	SCH10S	SCH10S	P28J-001P9	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	4	3	SCH10S	SCH10S	P28J-001PA	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P29J-000T0	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	0.75		SCH80S		P29J-000T1	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	1		SCH80S		P29J-000T2	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	1.5		SCH80S		P29J-000T3	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	2		SCH10S		P29J-000G1	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	3		SCH10S		P29J-000G2	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	4		SCH10S		P29J-000G3	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
541	0.75				P29K-00020	Cap ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P41J-001FS	Straight nipple ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		SCH80S		P41J-001FT	Straight nipple ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		SCH80S		P41J-001FU	Straight nipple ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		SCH80S		P41J-001FV	Straight nipple ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
541	1	0.75			P31K-00911	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 NPT	
541	1.5	0.75			P31K-00916	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 NPT	
541	2 - 2.5	0.75			P31K-00GFJ	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 NPT	
541	3 - 5	0.75			P31K-00GFK	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 NPT	
1	2	0.75	SCH10S	SCH80S	P31K-00DM8	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	3	0.75	SCH10S	SCH80S	P31K-00BWW	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	

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OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	4	0.75	SCH10S	SCH80S	P31K-00BX1	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	3	1	SCH10S	SCH80S	P31K-00BWX	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	4	1	SCH10S	SCH80S	P31K-00BX2	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	4	1.5	SCH10S	SCH80S	P31K-00BX3	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30K-0001G	Plug ASTM A182 Grade F304/F304L dual grade ASME B16.11 NPT Round head	
1	0.75				P30K-0001H	Plug ASTM A182 Grade F304/F304L dual grade ASME B16.11 NPT Round head	
1	1				P30K-0001J	Plug ASTM A182 Grade F304/F304L dual grade ASME B16.11 NPT Round head	
1	1.5				P30K-0001K	Plug ASTM A182 Grade F304/F304L dual grade ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P61K-002K3	Flange WN ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	0.75		SCH80S		P61K-002K4	Flange WN ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	1		SCH80S		P61K-002K5	Flange WN ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	1.5		SCH80S		P61K-002K6	Flange WN ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	2		SCH10S		P61K-0023K	Flange WN ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	3		SCH10S		P61K-0023L	Flange WN ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	4		SCH10S		P61K-0023M	Flange WN ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
541	0.5				P61K-0052M	Flange NPT ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
541	0.75				P61K-005ZX	Flange NPT ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
773	0.5		SCH80S		P61K-0027N	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
773	0.75		SCH80S		P61K-0027P	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
773	1		SCH80S		P61K-0027R	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
773	1.5		SCH80S		P61K-0027S	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
773	2		SCH10S		P61K-0023W	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
773	3		SCH10S		P61K-0023X	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
773	4		SCH10S		P61K-0023Y	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67K-000K9	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	0.75				P67K-000KA	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	1				P67K-000KB	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	1.5				P67K-000KC	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	2				P67K-000KD	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	3				P67K-000KE	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	4				P67K-000KF	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000L8	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000L9	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000LA	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000LB	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000LH	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000LL	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000LM	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	0.5				P73T-000FT	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	0.75				P73T-000FU	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

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GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
773	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	3				P73T-000G5	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	4				P73T-000G6	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-4				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
773	0.5-4				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81K-001B5	Gate valve ASTM A182 Grade F304/F304L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Fluid-1	
1	0.75				P81K-001B6	Gate valve ASTM A182 Grade F304/F304L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Fluid-1	
1	1				P81K-001B7	Gate valve ASTM A182 Grade F304/F304L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Fluid-1	
1	1.5				P81K-001B8	Gate valve ASTM A182 Grade F304/F304L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Fluid-1	
1	2				P81L-002RU	Gate valve ASTM A351 Grade CF8 Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Fluid-1	
4608	0.75				P81K-001P5	Gate valve ASTM A182 Grade F304/F304L dual grade Class 150 API 602 BW both sides w/ nipples BE - NPT ASTM A312-TP304(L) dual grade Seamless Sch80S-nipple Trim number 12 BB-BG-OS&Y Handwheel operated Fluid-1	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71K-00065	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	0.75				P71K-00066	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	1				P71K-00067	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71K-00068	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	2				P71K-0006A	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	3				P71K-0006B	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	4				P71K-0006C	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	

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BOLT TABLE (B_A0JY01 , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	60	P80S-003V2		
0.75	4	0.500	65	P80S-003V3		
1	4	0.500	70	P80S-003V4		
1.5	4	0.500	75	P80S-003V5		
2	4	0.625	85	P80S-003XE		
3	4	0.625	95	P80S-003XG		
4	8	0.625	95	P80S-003XG		

BOLT TABLE (B_A0JY01_773 , STUD ASME RF, OPTION CODE 773)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-003V4		
0.75	4	0.625	75	P80S-003XC		
1	4	0.625	80	P80S-003XD		
1.5	4	0.750	95	P80S-00414		
2	8	0.625	90	P80S-003XF		
3	8	0.750	110	P80S-003XK		
4	8	0.750	115	P80S-003XL		

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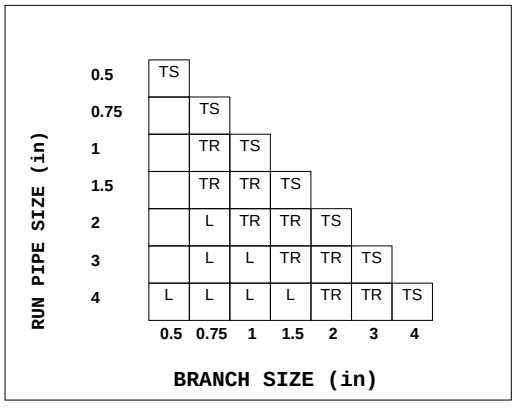
BRANCH TABLE (T_A0JY01)



L : OUTLET
TS : STRAIGHT TEE
TR : REDUCING TEE

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PIPING CLASS

A0JY04 REV NO. 2

Material : SS304L
Rating : ASME CLASS 150
Flange Face : RF
C.A.(mm) : 0.00
Gasket : Spiral Wound
Service : PROCESS - CHEMICAL DOSING
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
2	USE OF SOFT SEATED BALL, PLUG AND BUTTERFLY VALVES SHALL BE LIMITED TO MAXIMUM OF 204DEGC (400DEGF)

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
541	NPT(F) (CA,F,L)
773	CLASS 300 (B,F,G)
4608	VALVE WITH NIPPLES (V)

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PIPING CLASS
A0JY04 REV NO. 2

PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P01J-000UC	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE	
1	0.75		SCH80S		P01J-000UD	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE	
1	1		SCH80S		P01J-000UE	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE	
1	1.5		SCH80S		P01J-000UF	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE	
1	2		SCH10S		P01J-000RD	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M BE	
1	3		SCH10S		P01J-000RE	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M BE	
1	4		SCH10S		P01J-000RF	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P02J-000VD	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	0.75		SCH80S		P02J-000VE	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	1		SCH80S		P02J-000VF	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	1.5		SCH80S		P02J-000VG	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	2		SCH10S		P02J-000J0	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	3		SCH10S		P02J-000J1	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	4		SCH10S		P02J-000J2	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P03J-000UW	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	0.75		SCH80S		P03J-000UX	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	1		SCH80S		P03J-000UY	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	1.5		SCH80S		P03J-000UZ	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	2		SCH10S		P03J-000HS	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	3		SCH10S		P03J-000HT	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	4		SCH10S		P03J-000HU	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P21J-000V1	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	0.75		SCH80S		P21J-000V2	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	1		SCH80S		P21J-000V3	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	1.5		SCH80S		P21J-000V4	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	2		SCH10S		P21J-000HM	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	3		SCH10S		P21J-000HN	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	4		SCH10S		P21J-000HP	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75	SCH80S	SCH80S	P24J-003NX	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	1.5	0.75	SCH80S	SCH80S	P24J-003NZ	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	1.5	1	SCH80S	SCH80S	P24J-003P0	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	2	1	SCH10S	SCH80S	P24J-0065A	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	2	1.5	SCH10S	SCH80S	P24J-0065B	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	3	1.5	SCH10S	SCH80S	P24J-004SV	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	3	2	SCH10S	SCH10S	P24J-002H7	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	4	2	SCH10S	SCH10S	P24J-002H8	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	4	3	SCH10S	SCH10S	P24J-002H9	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH80S	SCH80S	P27J-002R0	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	

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CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.5	SCH80S	SCH80S	P27J-002R1	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	1	0.75	SCH80S	SCH80S	P27J-002R2	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	1.5	0.5	SCH80S	SCH80S	P27J-002R3	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	1.5	0.75	SCH80S	SCH80S	P27J-002R4	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	1.5	1	SCH80S	SCH80S	P27J-002R5	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	2	0.75	SCH10S	SCH80S	P27J-004KS	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	2	1	SCH10S	SCH80S	P27J-004J0	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	2	1.5	SCH10S	SCH80S	P27J-004J1	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	3	1.5	SCH10S	SCH80S	P27J-003LL	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	3	2	SCH10S	SCH10S	P27J-001PS	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	4	1.5	SCH10S	SCH80S	P27J-003LM	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	4	2	SCH10S	SCH10S	P27J-001PT	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	4	3	SCH10S	SCH10S	P27J-001PU	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH80S	SCH80S	P28J-002NL	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	1	0.5	SCH80S	SCH80S	P28J-002NM	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	1	0.75	SCH80S	SCH80S	P28J-002NN	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	1.5	0.5	SCH80S	SCH80S	P28J-002NP	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	1.5	0.75	SCH80S	SCH80S	P28J-002NR	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	1.5	1	SCH80S	SCH80S	P28J-002NS	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	2	0.75	SCH10S	SCH80S	P28J-004L9	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	2	1	SCH10S	SCH80S	P28J-004JH	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	2	1.5	SCH10S	SCH80S	P28J-004JJ	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	3	1.5	SCH10S	SCH80S	P28J-003M9	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	3	2	SCH10S	SCH10S	P28J-001P8	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	4	1.5	SCH10S	SCH80S	P28J-003MA	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	4	2	SCH10S	SCH10S	P28J-001P9	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	4	3	SCH10S	SCH10S	P28J-001PA	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P29J-000T0	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	0.75		SCH80S		P29J-000T1	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	1		SCH80S		P29J-000T2	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	1.5		SCH80S		P29J-000T3	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	2		SCH10S		P29J-000G1	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	3		SCH10S		P29J-000G2	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	4		SCH10S		P29J-000G3	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
541	0.75				P29K-00020	Cap ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P41J-001FS	Straight nipple ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		SCH80S		P41J-001FT	Straight nipple ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		SCH80S		P41J-001FU	Straight nipple ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		SCH80S		P41J-001FV	Straight nipple ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
541	1	0.75			P31K-00911	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 NPT	
541	1.5	0.75			P31K-00916	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 NPT	
541	2 - 2.5	0.75			P31K-00GFJ	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 NPT	
541	3 - 5	0.75			P31K-00GFK	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 NPT	
1	2	0.75	SCH10S	SCH80S	P31K-00DM8	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	3	0.75	SCH10S	SCH80S	P31K-00BWW	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	

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OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	4	0.75	SCH10S	SCH80S	P31K-00BX1	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	3	1	SCH10S	SCH80S	P31K-00BWX	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	4	1	SCH10S	SCH80S	P31K-00BX2	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	4	1.5	SCH10S	SCH80S	P31K-00BX3	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30K-0001G	Plug ASTM A182 Grade F304/F304L dual grade ASME B16.11 NPT Round head	
1	0.75				P30K-0001H	Plug ASTM A182 Grade F304/F304L dual grade ASME B16.11 NPT Round head	
1	1				P30K-0001J	Plug ASTM A182 Grade F304/F304L dual grade ASME B16.11 NPT Round head	
1	1.5				P30K-0001K	Plug ASTM A182 Grade F304/F304L dual grade ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P61K-002K3	Flange WN ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	0.75		SCH80S		P61K-002K4	Flange WN ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	1		SCH80S		P61K-002K5	Flange WN ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	1.5		SCH80S		P61K-002K6	Flange WN ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	2		SCH10S		P61K-0023K	Flange WN ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	3		SCH10S		P61K-0023L	Flange WN ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	4		SCH10S		P61K-0023M	Flange WN ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
541	0.5				P61K-0052M	Flange NPT ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
541	0.75				P61K-005ZX	Flange NPT ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
773	0.5		SCH80S		P61K-0027N	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
773	0.75		SCH80S		P61K-0027P	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
773	1		SCH80S		P61K-0027R	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
773	1.5		SCH80S		P61K-0027S	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
773	2		SCH10S		P61K-0023W	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
773	3		SCH10S		P61K-0023X	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
773	4		SCH10S		P61K-0023Y	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67K-000K9	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	0.75				P67K-000KA	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	1				P67K-000KB	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	1.5				P67K-000KC	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	2				P67K-000KD	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	3				P67K-000KE	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	4				P67K-000KF	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000L8	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000L9	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000LA	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000LB	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000LH	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000LL	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000LM	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	0.5				P73T-000FT	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	0.75				P73T-000FU	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

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GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
773	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	3				P73T-000G5	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	4				P73T-000G6	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-4				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
773	0.5-4				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81K-001B5	Gate valve ASTM A182 Grade F304/F304L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Fluid-1	
1	0.75				P81K-001B6	Gate valve ASTM A182 Grade F304/F304L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Fluid-1	
1	1				P81K-001B7	Gate valve ASTM A182 Grade F304/F304L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Fluid-1	
1	1.5				P81K-001B8	Gate valve ASTM A182 Grade F304/F304L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Fluid-1	
1	2				P81L-002RU	Gate valve ASTM A351 Grade CF8 Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Fluid-1	
4608	0.75				P81K-001P5	Gate valve ASTM A182 Grade F304/F304L dual grade Class 150 API 602 BW both sides w/ nipples BE - NPT ASTM A312-TP304(L) dual grade Seamless Sch80S-nipple Trim number 12 BB-BG-OS&Y Handwheel operated Fluid-1	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71K-00065	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	0.75				P71K-00066	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	1				P71K-00067	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71K-00068	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	2				P71K-0006A	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	3				P71K-0006B	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	4				P71K-0006C	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	

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BOLT TABLE (B_A0JY04 , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	60	P80S-003V2		
0.75	4	0.500	65	P80S-003V3		
1	4	0.500	70	P80S-003V4		
1.5	4	0.500	75	P80S-003V5		
2	4	0.625	85	P80S-003XE		
3	4	0.625	95	P80S-003XG		
4	8	0.625	95	P80S-003XG		

BOLT TABLE (B_A0JY04_773 , STUD ASME RF, OPTION CODE 773)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-003V4		
0.75	4	0.625	75	P80S-003XC		
1	4	0.625	80	P80S-003XD		
1.5	4	0.750	95	P80S-00414		
2	8	0.625	90	P80S-003XF		
3	8	0.750	110	P80S-003XK		
4	8	0.750	115	P80S-003XL		

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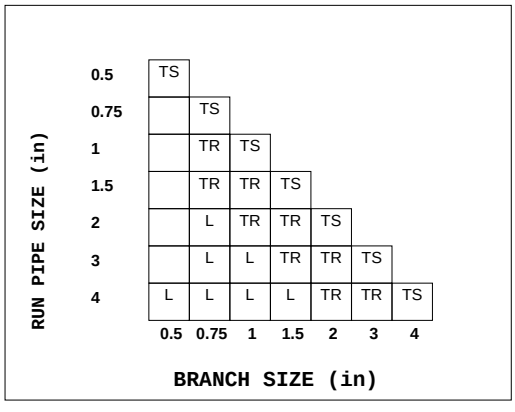
BRANCH TABLE (T_A0JY04)



TS : STRAIGHT TEE
TR : REDUCING TEE
L : OUTLET

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PIPING CLASS

A0L4 REV NO. 2

Material	:	SS316L
Rating	:	ASME CLASS 150
Flange Face	:	RF
C.A.(mm)	:	0.00
Gasket	:	Spiral Wound
Service	:	PROCESS -WET LOW SEVERITY SOUR SERVICE SUBJECT TO NACE + AMINES OR CAUSTIC - STRESS RELIEVED
Design Code	:	ASME B31.3
Heat Treatment	:	

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
5	BOLTING CONFIRMING TO B7M / 2HM SHALL BE USED UNDER CONDITIONS (A) DIRECT EXPOSURE TO SOUR ENVIRONMENTS (B) WHEN THE BOLTING WILL BE BURIED OR INSULATED

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
541	NPT(F) (CA,F,L)
773	CLASS 300 (B,F,G)
4608	VALVE WITH NIPPLES (V)

INDRA
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PIPING CLASS
A0L4 REV NO. 2

PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P01J-002CY	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE Moderate wet H2S service	
1	0.75		SCH80S		P01J-002CZ	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE Moderate wet H2S service	
1	1		SCH80S		P01J-002D0	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE Moderate wet H2S service	
1	1.5		SCH80S		P01J-002D1	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE Moderate wet H2S service	
1	2		SCH10S		P01J-002D7	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M BE Moderate wet H2S service	
1	3		SCH10S		P01J-002D3	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M BE Moderate wet H2S service	
1	4		SCH10S		P01J-002D8	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M BE Moderate wet H2S service	
1	6		SCH10S		P01J-002D9	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M BE Moderate wet H2S service	
1	8		SCH10S		P01J-002DJ	Pipe ASTM A358 Grade 316/316L Class 1 dual grade EFW ASME B36.10M/B36.19M BE Moderate wet H2S service	
1	10		SCH10S		P01J-002DA	Pipe ASTM A358 Grade 316/316L Class 1 dual grade EFW ASME B36.10M/B36.19M BE Moderate wet H2S service	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P02J-001WB	90 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Moderate wet H2S service	
1	0.75		SCH80S		P02J-001WC	90 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Moderate wet H2S service	
1	1		SCH80S		P02J-001WD	90 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Moderate wet H2S service	
1	1.5		SCH80S		P02J-001WE	90 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Moderate wet H2S service	
1	2		SCH10S		P02J-001WL	90 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Moderate wet H2S service	
1	3		SCH10S		P02J-001WG	90 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Moderate wet H2S service	
1	4		SCH10S		P02J-001WM	90 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Moderate wet H2S service	
1	6		SCH10S		P02J-001WN	90 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Moderate wet H2S service	
1	8		SCH10S		P02J-001WY	90 degree elbow ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Long radius Moderate wet H2S service	
1	10		SCH10S		P02J-001WP	90 degree elbow ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Long radius Moderate wet H2S service	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P03J-001TT	45 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Moderate wet H2S service	
1	0.75		SCH80S		P03J-001TU	45 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Moderate wet H2S service	
1	1		SCH80S		P03J-001TV	45 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Moderate wet H2S service	
1	1.5		SCH80S		P03J-001TW	45 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Moderate wet H2S service	
1	2		SCH10S		P03J-001U2	45 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Moderate wet H2S service	
1	3		SCH10S		P03J-001TY	45 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Moderate wet H2S service	
1	4		SCH10S		P03J-001U3	45 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Moderate wet H2S service	
1	6		SCH10S		P03J-001U4	45 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Moderate wet H2S service	
1	8		SCH10S		P03J-001UD	45 degree elbow ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Long radius Moderate wet H2S service	
1	10		SCH10S		P03J-001U5	45 degree elbow ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Long radius Moderate wet H2S service	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P21J-001KB	Straight tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	0.75		SCH80S		P21J-001KC	Straight tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	1		SCH80S		P21J-001KD	Straight tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	1.5		SCH80S		P21J-001KE	Straight tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	2		SCH10S		P21J-001KL	Straight tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	3		SCH10S		P21J-001KG	Straight tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	4		SCH10S		P21J-001KM	Straight tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	

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STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	6		SCH10S		P21J-001KN	Straight tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	8		SCH10S		P21J-001KY	Straight tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	10		SCH10S		P21J-001KP	Straight tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75	SCH80S	SCH80S	P24J-006WG	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	1.5	0.75	SCH80S	SCH80S	P24J-006WH	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	1.5	1	SCH80S	SCH80S	P24J-006WJ	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	2	1	SCH10S	SCH80S	P24J-006WW	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	2	1.5	SCH10S	SCH80S	P24J-006WX	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	3	1.5	SCH10S	SCH80S	P24J-006WM	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	3	2	SCH10S	SCH10S	P24J-006WY	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	4	2	SCH10S	SCH10S	P24J-006WZ	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	4	3	SCH10S	SCH10S	P24J-006X0	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	6	3	SCH10S	SCH10S	P24J-006X1	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	6	4	SCH10S	SCH10S	P24J-006X2	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	8	4	SCH10S	SCH10S	P24J-006X3	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	8	6	SCH10S	SCH10S	P24J-006X4	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	10	4	SCH10S	SCH10S	P24J-006X5	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	10	6	SCH10S	SCH10S	P24J-006X6	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	10	8	SCH10S	SCH10S	P24J-006X7	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH80S	SCH80S	P27J-005R6	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	1	0.5	SCH80S	SCH80S	P27J-005R7	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	1	0.75	SCH80S	SCH80S	P27J-005R8	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	1.5	0.5	SCH80S	SCH80S	P27J-005R9	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	1.5	0.75	SCH80S	SCH80S	P27J-005RA	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	1.5	1	SCH80S	SCH80S	P27J-005RB	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	2	0.75	SCH10S	SCH80S	P27J-005RR	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	2	1	SCH10S	SCH80S	P27J-005RS	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	2	1.5	SCH10S	SCH80S	P27J-005RT	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	3	1.5	SCH10S	SCH80S	P27J-005RF	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	3	2	SCH10S	SCH10S	P27J-005RU	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	4	1.5	SCH10S	SCH80S	P27J-005RV	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	4	2	SCH10S	SCH10S	P27J-005RW	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	4	3	SCH10S	SCH10S	P27J-005RX	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	6	3	SCH10S	SCH10S	P27J-005RY	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	6	4	SCH10S	SCH10S	P27J-005RZ	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	8	4	SCH10S	SCH10S	P27J-005S0	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	8	6	SCH10S	SCH10S	P27J-005S1	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	10	4	SCH10S	SCH10S	P27J-005S2	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	10	6	SCH10S	SCH10S	P27J-005S3	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	

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CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	10	8	SCH10S	SCH10S	P27J-005S4	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH80S	SCH80S	P28J-005S2	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	1	0.5	SCH80S	SCH80S	P28J-005S3	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	1	0.75	SCH80S	SCH80S	P28J-005S4	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	1.5	0.5	SCH80S	SCH80S	P28J-005S5	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	1.5	0.75	SCH80S	SCH80S	P28J-005S6	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	1.5	1	SCH80S	SCH80S	P28J-005S7	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	2	0.75	SCH10S	SCH80S	P28J-005SL	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	2	1	SCH10S	SCH80S	P28J-005SM	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	2	1.5	SCH10S	SCH80S	P28J-005SN	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	3	1.5	SCH10S	SCH80S	P28J-005SB	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	3	2	SCH10S	SCH10S	P28J-005SP	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	4	1.5	SCH10S	SCH80S	P28J-005SR	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	4	2	SCH10S	SCH10S	P28J-005SS	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	4	3	SCH10S	SCH10S	P28J-005ST	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	6	3	SCH10S	SCH10S	P28J-005SU	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	6	4	SCH10S	SCH10S	P28J-005SV	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	8	4	SCH10S	SCH10S	P28J-005SW	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	8	6	SCH10S	SCH10S	P28J-005SX	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	10	4	SCH10S	SCH10S	P28J-005SY	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	10	6	SCH10S	SCH10S	P28J-005SZ	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	10	8	SCH10S	SCH10S	P28J-005T0	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P29J-002KG	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	0.75		SCH80S		P29J-002KH	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	1		SCH80S		P29J-002KJ	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	1.5		SCH80S		P29J-002KK	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	2		SCH10S		P29J-002KX	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	3		SCH10S		P29J-002KM	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	4		SCH10S		P29J-002L1	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	6		SCH10S		P29J-002L2	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	8		SCH10S		P29J-002L3	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	10		SCH10S		P29J-002KS	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
541	0.75				P29K-00048	Cap ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 NPT Moderate wet H2S service	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P41J-001TV	Straight nipple ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Moderate wet H2S service	
1	0.75		SCH80S		P41J-001TW	Straight nipple ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Moderate wet H2S service	
1	1		SCH80S		P41J-001TX	Straight nipple ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Moderate wet H2S service	
1	1.5		SCH80S		P41J-001TY	Straight nipple ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Moderate wet H2S service	

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OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
541	1	0.75			P31K-00FM7	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 NPT Moderate wet H2S service	
541	1.5	0.75			P31K-00FM6	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 NPT Moderate wet H2S service	
541	2 - 2.5	0.75			P31K-00GFU	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 NPT Moderate wet H2S service	
541	3 - 5	0.75			P31K-00GFV	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 NPT Moderate wet H2S service	
541	6 - 12	0.75			P31K-00GFW	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 NPT Moderate wet H2S service	
1	2	0.75	SCH10S	SCH80S	P31K-00EJ2	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Moderate wet H2S service	
1	3	0.75	SCH10S	SCH80S	P31K-00EHM	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Moderate wet H2S service	
1	4	0.75	SCH10S	SCH80S	P31K-00EJ3	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Moderate wet H2S service	
1	6	0.75	SCH10S	SCH80S	P31K-00EJ6	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Moderate wet H2S service	
1	8	0.75	SCH10S	SCH80S	P31K-00EJA	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Moderate wet H2S service	
1	10	0.75	SCH10S	SCH80S	P31K-00EJF	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Moderate wet H2S service	
1	3	1	SCH10S	SCH80S	P31K-00EHN	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Moderate wet H2S service	
1	4	1	SCH10S	SCH80S	P31K-00EJ4	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Moderate wet H2S service	
1	6	1	SCH10S	SCH80S	P31K-00EJ7	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Moderate wet H2S service	
1	8	1	SCH10S	SCH80S	P31K-00EJB	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Moderate wet H2S service	
1	10	1	SCH10S	SCH80S	P31K-00EJG	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Moderate wet H2S service	
1	4	1.5	SCH10S	SCH80S	P31K-00EJ5	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Moderate wet H2S service	
1	6	1.5	SCH10S	SCH80S	P31K-00EJ8	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Moderate wet H2S service	
1	8	1.5	SCH10S	SCH80S	P31K-00EJC	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Moderate wet H2S service	
1	10	1.5	SCH10S	SCH80S	P31K-00EJH	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Moderate wet H2S service	
1	6	2	SCH10S	SCH10S	P31K-00EJ9	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Moderate wet H2S service	
1	8	2	SCH10S	SCH10S	P31K-00EJD	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Moderate wet H2S service	
1	10	2	SCH10S	SCH10S	P31K-00EJJ	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Moderate wet H2S service	
1	8	3	SCH10S	SCH10S	P31K-00EJE	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Moderate wet H2S service	
1	10	3	SCH10S	SCH10S	P31K-00EJK	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Moderate wet H2S service	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30K-00055	Plug ASTM A182 Grade F316/F316L dual grade ASME B16.11 NPT Round head Moderate wet H2S service	
1	0.75				P30K-00056	Plug ASTM A182 Grade F316/F316L dual grade ASME B16.11 NPT Round head Moderate wet H2S service	
1	1				P30K-00057	Plug ASTM A182 Grade F316/F316L dual grade ASME B16.11 NPT Round head Moderate wet H2S service	
1	1.5				P30K-00058	Plug ASTM A182 Grade F316/F316L dual grade ASME B16.11 NPT Round head Moderate wet H2S service	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P61K-005C8	Flange WN ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Moderate wet H2S service	
1	0.75		SCH80S		P61K-005C9	Flange WN ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Moderate wet H2S service	
1	1		SCH80S		P61K-005CA	Flange WN ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Moderate wet H2S service	
1	1.5		SCH80S		P61K-005CB	Flange WN ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Moderate wet H2S service	
1	2		SCH10S		P61K-005CH	Flange WN ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Moderate wet H2S service	
1	3		SCH10S		P61K-005CL	Flange WN ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Moderate wet H2S service	
1	4		SCH10S		P61K-005CM	Flange WN ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Moderate wet H2S service	
1	6		SCH10S		P61K-005CN	Flange WN ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Moderate wet H2S service	
1	8		SCH10S		P61K-005CP	Flange WN ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Moderate wet H2S service	
1	10		SCH10S		P61K-005CC	Flange WN ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Moderate wet H2S service	
541	0.5				P61K-0069G	Flange NPT ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Moderate wet H2S service	
541	0.75				P61K-005ZY	Flange NPT ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Moderate wet H2S service	
773	0.5		SCH80S		P61K-005BE	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Moderate wet H2S service	
773	0.75		SCH80S		P61K-005BF	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Moderate wet H2S service	
773	1		SCH80S		P61K-005BG	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Moderate wet H2S service	
773	1.5		SCH80S		P61K-005BH	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Moderate wet H2S service	
773	2		SCH10S		P61K-005CX	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Moderate wet H2S service	
773	3		SCH10S		P61K-005BK	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Moderate wet H2S service	

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FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
773	4		SCH10S		P61K-005D0	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Moderate wet H2S service	
773	6		SCH10S		P61K-005D1	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Moderate wet H2S service	
773	8		SCH10S		P61K-005D2	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Moderate wet H2S service	
773	10		SCH10S		P61K-005CS	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Moderate wet H2S service	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67K-001K2	Blind flange ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Moderate wet H2S service	
1	0.75				P67K-001K3	Blind flange ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Moderate wet H2S service	
1	1				P67K-001K4	Blind flange ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Moderate wet H2S service	
1	1.5				P67K-001K5	Blind flange ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Moderate wet H2S service	
1	2				P67K-001KB	Blind flange ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Moderate wet H2S service	
1	3				P67K-001KE	Blind flange ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Moderate wet H2S service	
1	4				P67K-001KF	Blind flange ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Moderate wet H2S service	
1	6				P67K-001KG	Blind flange ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Moderate wet H2S service	
1	8				P67K-001KH	Blind flange ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Moderate wet H2S service	
1	10				P67K-001K6	Blind flange ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Moderate wet H2S service	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000L8	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000L9	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000LA	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000LB	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000LH	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000LL	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000LM	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	6				P73T-000LN	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	8				P73T-000LP	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	10				P73T-000LC	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	0.5				P73T-000FT	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	0.75				P73T-000FU	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	3				P73T-000G5	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	4				P73T-000G6	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	6				P73T-000G7	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	8				P73T-000G8	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	10				P73T-000FX	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-10				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
773	0.5-10				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	

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GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81K-001DG	Gate valve ASTM A182 Grade F316/F316L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Amine service Moderate wet H2S service	
1	0.75				P81K-001DH	Gate valve ASTM A182 Grade F316/F316L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Amine service Moderate wet H2S service	
1	1				P81K-001DJ	Gate valve ASTM A182 Grade F316/F316L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Amine service Moderate wet H2S service	
1	1.5				P81K-001DK	Gate valve ASTM A182 Grade F316/F316L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Amine service Moderate wet H2S service	
1	2				P81L-002UW	Gate valve ASTM A351 Grade CF8M Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Amine service Moderate wet H2S service	
1	3				P81L-002UX	Gate valve ASTM A351 Grade CF8M Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Amine service Moderate wet H2S service	
1	4				P81L-002UY	Gate valve ASTM A351 Grade CF8M Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Amine service Moderate wet H2S service	
1	6				P81L-002UZ	Gate valve ASTM A351 Grade CF8M Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Amine service Moderate wet H2S service	
1	8				P81L-002V0	Gate valve ASTM A351 Grade CF8M Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Amine service Moderate wet H2S service	
1	10				P81L-002UV	Gate valve ASTM A351 Grade CF8M Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Amine service Moderate wet H2S service	
4608	0.75				P81K-001P6	Gate valve ASTM A182 Grade F316/F316L dual grade Class 150 API 602 BW both sides w/ nipples BE - NPT ASTM A312-TP316(L) dual grade Seamless Sch80S-nipple Trim number 12 BB-BG-OS&Y Handwheel operated Amine service Moderate wet H2S service	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82K-000YV	Globe valve ASTM A182 Grade F316/F316L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Amine service Moderate wet H2S service	
1	0.75				P82K-000YW	Globe valve ASTM A182 Grade F316/F316L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Amine service Moderate wet H2S service	
1	1				P82K-000YX	Globe valve ASTM A182 Grade F316/F316L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Amine service Moderate wet H2S service	
1	1.5				P82K-000YY	Globe valve ASTM A182 Grade F316/F316L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Amine service Moderate wet H2S service	
1	2				P82L-001JT	Globe valve ASTM A351 Grade CF8M Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Amine service Moderate wet H2S service	
1	3				P82L-001JU	Globe valve ASTM A351 Grade CF8M Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Amine service Moderate wet H2S service	
1	4				P82L-001JV	Globe valve ASTM A351 Grade CF8M Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Amine service Moderate wet H2S service	
1	6				P82L-001JW	Globe valve ASTM A351 Grade CF8M Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Amine service Moderate wet H2S service	
1	8				P82L-001JX	Globe valve ASTM A351 Grade CF8M Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Amine service Moderate wet H2S service	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83K-000U7	Check valve ASTM A182 Grade F316/F316L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Amine service Moderate wet H2S service	
1	0.75				P83K-000U8	Check valve ASTM A182 Grade F316/F316L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Amine service Moderate wet H2S service	
1	1				P83K-000U9	Check valve ASTM A182 Grade F316/F316L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Amine service Moderate wet H2S service	
1	1.5				P83K-000UA	Check valve ASTM A182 Grade F316/F316L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Amine service Moderate wet H2S service	
1	2				P83L-001EK	Check valve ASTM A351 Grade CF8M Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Amine service Moderate wet H2S service	
1	3				P83L-001EL	Check valve ASTM A351 Grade CF8M Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Amine service Moderate wet H2S service	
1	4				P83L-001EM	Check valve ASTM A351 Grade CF8M Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Amine service Moderate wet H2S service	
1	6				P83L-001EN	Check valve ASTM A351 Grade CF8M Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Amine service Moderate wet H2S service	
1	8				P83L-001EP	Check valve ASTM A351 Grade CF8M Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Amine service Moderate wet H2S service	
1	10				P83L-001EJ	Check valve ASTM A351 Grade CF8M Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Amine service Moderate wet H2S service	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71K-000C4	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service	
1	0.75				P71K-000C5	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service	
1	1				P71K-000C6	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service	
1	1.5				P71K-000C7	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service	
1	2				P71K-000CA	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service	
1	3				P71K-000CB	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service	

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SPECT BLANK (SB)							
OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	4				P71K-000CC	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service	
1	6				P71K-000CD	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service	
1	8				P71K-000CE	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service	
1	10				P71K-000C8	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service	

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BOLT TABLE (B_A0L4 , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	60	P80S-008SY		
0.75	4	0.500	65	P80S-008SZ		
1	4	0.500	70	P80S-008T0		
1.5	4	0.500	75	P80S-008T1		
2	4	0.625	85	P80S-0090A		
3	4	0.625	95	P80S-0090C		
4	8	0.625	95	P80S-0090C		
6	8	0.750	105	P80S-0090E		
8	8	0.750	110	P80S-0090F		
10	12	0.875	120	P80S-005Z9		

BOLT TABLE (B_A0L4_773 , STUD ASME RF, OPTION CODE 773)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-008T0		
0.75	4	0.625	75	P80S-00908		
1	4	0.625	80	P80S-00909		
1.5	4	0.750	95	P80S-005Z4		
2	8	0.625	90	P80S-0090B		
3	8	0.750	110	P80S-0090F		
4	8	0.750	115	P80S-0090G		
6	12	0.750	125	P80S-0090J		
8	12	0.875	140	P80S-005ZD		
10	16	1.000	160	P80S-0061E		

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BRANCH TABLE (T_A0L4)

RUN PIPE SIZE (in) \ BRANCH SIZE (in)	0.5	0.75	1	1.5	2	3	4	6	8	10
0.5	TS									
0.75		TS								
1		TR	TS							
1.5		TR	TR	TS						
2		L	TR	TR	TS					
3		L	L	TR	TR	TS				
4	L	L	L	L	TR	TR	TS			
6	L	L	L	L	L	TR	TR	TS		
8		L	L	L	L	L	TR	TR	TS	
10		L	L	L	L	L	TR	TR	TR	TS

L : OUTLET
TR : REDUCING TEE
TS : STRAIGHT TEE

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PIPING CLASS

A0L5 REV NO. 2

Material : SS316L
Rating : ASME CLASS 150
Flange Face : RF
C.A.(mm) : 0.00
Gasket : Spiral Wound
Service : PROCESS - WET SEVERE SOUR SERVICE SUBJECT TO NACE + HIC STD + AMINES OR CAUSTIC - STRESS RELIEVED
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
5	BOLTING CONFIRMING TO B7M / 2HM SHALL BE USED UNDER CONDITIONS (A) DIRECT EXPOSURE TO SOUR ENVIRONMENTS (B) WHEN THE BOLTING WILL BE BURIED OR INSULATED
27	PWHT OF CARBON STEEL PIPING IN WET H2S, CAUSTIC AND AMINE SERVICES SHALL BE IN ACCORDANCE WITH SECTION 10.2, 10.3, AND 10.4 OF PROJECT SPECIFICATION 3550-8440-SP-0002 MATERIALS REQUIREMENTS FOR PRESSURISED EQUIPMENT AND PIPING. FOR CAUSTIC AND AMINE SERVICE THE FOLLOWING SHALL APPLY: - PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF ALL SITE PIPING FABRICATION WELDS IS REQUIRED FOR ALL WALL THICKNESSES. FOR MODERATE AND SEVERE WET H2S SERVICE THE FOLLOWING SHALL APPLY: PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF SITE FABRICATION CIRCUMFERENTIAL OR BRANCH WELDS IS NOT REQUIRED IF WELDS ARE MULTIPASS AND IN ACCORDANCE WITH PARA 10.2.12 OF PROJECT SPECIFICATION 3550-8440-SP-0002. FOR SERVICES MEETING THE WET H2S CRITERIA AND CAUSTIC OR AMINE CRITERIA THE MORE STRINGENT PWHT REQUIREMENT SHALL GOVERN.

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
541	NPT(F) (CA,F,L)
773	CLASS 300 (B,F,G,V)
4202	SHORT RADIUS (9L)
4608	VALVE WITH NIPPLES (V)

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PIPING CLASS
A0L5 REV NO. 2

PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P01J-002ES	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE Severe wet H2S service	
1	0.75		SCH80S		P01J-002ET	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE Severe wet H2S service	
1	1		SCH80S		P01J-002EU	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE Severe wet H2S service	
1	1.5		SCH80S		P01J-002EV	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE Severe wet H2S service	
1	2		SCH10S		P01J-002EW	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M BE Severe wet H2S service	
1	3		SCH10S		P01J-002EX	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M BE Severe wet H2S service	
1	4		SCH10S		P01J-002EY	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M BE Severe wet H2S service	
1	6		SCH10S		P01J-002EZ	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M BE Severe wet H2S service	
1	8		SCH10S		P01J-002F8	Pipe ASTM A358 Grade 316/316L Class 1 dual grade EFW ASME B36.10M/B36.19M BE Severe wet H2S service	
1	10		SCH10S		P01J-002F0	Pipe ASTM A358 Grade 316/316L Class 1 dual grade EFW ASME B36.10M/B36.19M BE Severe wet H2S service	
1	12		SCH10S		P01J-002F1	Pipe ASTM A358 Grade 316/316L Class 1 dual grade EFW ASME B36.10M/B36.19M BE Severe wet H2S service	
1	14		SCH10S		P01J-002F2	Pipe ASTM A358 Grade 316/316L Class 1 dual grade EFW ASME B36.10M/B36.19M BE Severe wet H2S service	
1	16		SCH10S		P01J-002F3	Pipe ASTM A358 Grade 316/316L Class 1 dual grade EFW ASME B36.10M/B36.19M BE Severe wet H2S service	
1	18		SCH10S		P01J-002F4	Pipe ASTM A358 Grade 316/316L Class 1 dual grade EFW ASME B36.10M/B36.19M BE Severe wet H2S service	
1	20		SCH10S		P01J-002F5	Pipe ASTM A358 Grade 316/316L Class 1 dual grade EFW ASME B36.10M/B36.19M BE Severe wet H2S service	
1	24		SCH10S		P01J-002F6	Pipe ASTM A358 Grade 316/316L Class 1 dual grade EFW ASME B36.10M/B36.19M BE Severe wet H2S service	
1	30		SCH10S		P01J-002JP	Pipe ASTM A358 Grade 316/316L Class 1 dual grade EFW ASME B36.10M/B36.19M BE Severe wet H2S service	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P02J-001Y0	90 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	0.75		SCH80S		P02J-001Y1	90 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	1		SCH80S		P02J-001Y2	90 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	1.5		SCH80S		P02J-001Y3	90 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	2		SCH10S		P02J-001Y4	90 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	3		SCH10S		P02J-001Y5	90 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	4		SCH10S		P02J-001Y6	90 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	6		SCH10S		P02J-001Y7	90 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	8		SCH10S		P02J-001YG	90 degree elbow ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Long radius Severe wet H2S service	
1	10		SCH10S		P02J-001Y8	90 degree elbow ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Long radius Severe wet H2S service	
1	12		SCH10S		P02J-001Y9	90 degree elbow ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Long radius Severe wet H2S service	
1	14		SCH10S		P02J-001YA	90 degree elbow ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Long radius Severe wet H2S service	
1	16		SCH10S		P02J-001YB	90 degree elbow ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Long radius Severe wet H2S service	
1	18		SCH10S		P02J-001YC	90 degree elbow ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Long radius Severe wet H2S service	
1	20		SCH10S		P02J-001YD	90 degree elbow ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Long radius Severe wet H2S service	
1	24		SCH10S		P02J-001YE	90 degree elbow ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Long radius Severe wet H2S service	
1	30		SCH10S		P02J-0021K	90 degree elbow ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Long radius Severe wet H2S service	
4202	12		SCH10S		P02J-002BX	90 degree elbow ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Short radius Severe wet H2S service	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P03J-001VR	45 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	0.75		SCH80S		P03J-001VS	45 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	1		SCH80S		P03J-001VT	45 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	1.5		SCH80S		P03J-001VU	45 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	

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45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2		SCH10S		P03J-001VV	45 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	3		SCH10S		P03J-001VW	45 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	4		SCH10S		P03J-001VX	45 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	6		SCH10S		P03J-001VY	45 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	8		SCH10S		P03J-001VP	45 degree elbow ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Long radius Severe wet H2S service	
1	10		SCH10S		P03J-001VF	45 degree elbow ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Long radius Severe wet H2S service	
1	12		SCH10S		P03J-001VG	45 degree elbow ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Long radius Severe wet H2S service	
1	14		SCH10S		P03J-001VH	45 degree elbow ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Long radius Severe wet H2S service	
1	16		SCH10S		P03J-001VJ	45 degree elbow ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Long radius Severe wet H2S service	
1	18		SCH10S		P03J-001VK	45 degree elbow ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Long radius Severe wet H2S service	
1	20		SCH10S		P03J-001VL	45 degree elbow ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Long radius Severe wet H2S service	
1	24		SCH10S		P03J-001VM	45 degree elbow ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Long radius Severe wet H2S service	
1	30		SCH10S		P03J-0021B	45 degree elbow ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Long radius Severe wet H2S service	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P21J-001M5	Straight tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	0.75		SCH80S		P21J-001M6	Straight tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1		SCH80S		P21J-001M7	Straight tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5		SCH80S		P21J-001M8	Straight tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	2		SCH10S		P21J-001M9	Straight tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	3		SCH10S		P21J-001MA	Straight tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	4		SCH10S		P21J-001MB	Straight tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	6		SCH10S		P21J-001MC	Straight tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	8		SCH10S		P21J-001MM	Straight tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	10		SCH10S		P21J-001MD	Straight tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	12		SCH10S		P21J-001ME	Straight tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	14		SCH10S		P21J-001MF	Straight tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	16		SCH10S		P21J-001MG	Straight tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	18		SCH10S		P21J-001MH	Straight tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	20		SCH10S		P21J-001MJ	Straight tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	24		SCH10S		P21J-001MK	Straight tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	30		SCH10S		P21J-001RH	Straight tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75	SCH80S	SCH80S	P24J-0070F	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5	0.75	SCH80S	SCH80S	P24J-0070J	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5	1	SCH80S	SCH80S	P24J-0070K	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	2	1	SCH10S	SCH80S	P24J-0070S	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	2	1.5	SCH10S	SCH80S	P24J-0070T	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	3	1.5	SCH10S	SCH80S	P24J-0070U	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	3	2	SCH10S	SCH10S	P24J-0070V	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	4	2	SCH10S	SCH10S	P24J-0070W	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	4	3	SCH10S	SCH10S	P24J-0070X	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	

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REDUCING TEE (TR)							
OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	6	3	SCH10S	SCH10S	P24J-0070Y	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	6	4	SCH10S	SCH10S	P24J-0070Z	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	8	4	SCH10S	SCH10S	P24J-00710	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	8	6	SCH10S	SCH10S	P24J-00711	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	10	4	SCH10S	SCH10S	P24J-00712	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	10	6	SCH10S	SCH10S	P24J-00713	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	10	8	SCH10S	SCH10S	P24J-00714	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	12	6	SCH10S	SCH10S	P24J-00716	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	12	8	SCH10S	SCH10S	P24J-00717	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	12	10	SCH10S	SCH10S	P24J-00715	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	14	6	SCH10S	SCH10S	P24J-0071A	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	14	8	SCH10S	SCH10S	P24J-0071B	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	14	10	SCH10S	SCH10S	P24J-00718	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	14	12	SCH10S	SCH10S	P24J-00719	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	16	6	SCH10S	SCH10S	P24J-0071F	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	16	8	SCH10S	SCH10S	P24J-0071G	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	16	10	SCH10S	SCH10S	P24J-0071C	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	16	12	SCH10S	SCH10S	P24J-0071D	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	16	14	SCH10S	SCH10S	P24J-0071E	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	18	8	SCH10S	SCH10S	P24J-0071M	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	18	10	SCH10S	SCH10S	P24J-0071H	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	18	12	SCH10S	SCH10S	P24J-0071J	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	18	14	SCH10S	SCH10S	P24J-0071K	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	18	16	SCH10S	SCH10S	P24J-0071L	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	20	8	SCH10S	SCH10S	P24J-0071U	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	20	10	SCH10S	SCH10S	P24J-0071N	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	20	12	SCH10S	SCH10S	P24J-0071P	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	20	14	SCH10S	SCH10S	P24J-0071R	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	20	16	SCH10S	SCH10S	P24J-0071S	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	20	18	SCH10S	SCH10S	P24J-0071T	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	24	10	SCH10S	SCH10S	P24J-0071V	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	24	12	SCH10S	SCH10S	P24J-0071W	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	24	14	SCH10S	SCH10S	P24J-0071X	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	24	16	SCH10S	SCH10S	P24J-0071Y	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	24	18	SCH10S	SCH10S	P24J-0071Z	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	24	20	SCH10S	SCH10S	P24J-00720	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	30	10	SCH10S	SCH10S	P24J-007E9	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	30	12	SCH10S	SCH10S	P24J-007EA	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	30	14	SCH10S	SCH10S	P24J-007EB	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	30	16	SCH10S	SCH10S	P24J-007EC	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	30	18	SCH10S	SCH10S	P24J-007ED	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	30	20	SCH10S	SCH10S	P24J-007EE	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	30	24	SCH10S	SCH10S	P24J-007EF	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	

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PIPING CLASS
A0L5 **REV NO. 2**

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH80S	SCH80S	P27J-005XP	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1	0.5	SCH80S	SCH80S	P27J-005V5	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1	0.75	SCH80S	SCH80S	P27J-005V6	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5	0.5	SCH80S	SCH80S	P27J-005V7	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5	0.75	SCH80S	SCH80S	P27J-005V8	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5	1	SCH80S	SCH80S	P27J-005V9	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	2	0.75	SCH10S	SCH80S	P27J-005VA	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	2	1	SCH10S	SCH80S	P27J-005VB	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	2	1.5	SCH10S	SCH80S	P27J-005VC	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	3	1.5	SCH10S	SCH80S	P27J-005VD	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	3	2	SCH10S	SCH10S	P27J-005VE	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	4	1.5	SCH10S	SCH80S	P27J-005VF	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	4	2	SCH10S	SCH10S	P27J-005VG	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	4	3	SCH10S	SCH10S	P27J-005VH	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	6	3	SCH10S	SCH10S	P27J-005VJ	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	6	4	SCH10S	SCH10S	P27J-005VK	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	8	4	SCH10S	SCH10S	P27J-005VL	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	8	6	SCH10S	SCH10S	P27J-005VM	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	10	4	SCH10S	SCH10S	P27J-005VN	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	10	6	SCH10S	SCH10S	P27J-005VP	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	10	8	SCH10S	SCH10S	P27J-005VR	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	12	6	SCH10S	SCH10S	P27J-005VT	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	12	8	SCH10S	SCH10S	P27J-005VU	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	12	10	SCH10S	SCH10S	P27J-005VS	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	14	6	SCH10S	SCH10S	P27J-005VX	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	14	8	SCH10S	SCH10S	P27J-005VY	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	14	10	SCH10S	SCH10S	P27J-005VV	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	14	12	SCH10S	SCH10S	P27J-005VW	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	16	8	SCH10S	SCH10S	P27J-005W2	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	16	10	SCH10S	SCH10S	P27J-005VZ	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	16	12	SCH10S	SCH10S	P27J-005W0	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	16	14	SCH10S	SCH10S	P27J-005W1	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	18	10	SCH10S	SCH10S	P27J-005W3	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	18	12	SCH10S	SCH10S	P27J-005W4	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	18	14	SCH10S	SCH10S	P27J-005W5	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	18	16	SCH10S	SCH10S	P27J-005W6	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	20	12	SCH10S	SCH10S	P27J-005W7	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	20	14	SCH10S	SCH10S	P27J-005W8	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	20	16	SCH10S	SCH10S	P27J-005W9	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	20	18	SCH10S	SCH10S	P27J-005WA	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	24	16	SCH10S	SCH10S	P27J-005WB	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	24	18	SCH10S	SCH10S	P27J-005WC	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	24	20	SCH10S	SCH10S	P27J-005WD	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	30	20	SCH10S	SCH10S	P27J-0067T	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	

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CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	30	24	SCH10S	SCH10S	P27J-0067U	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH80S	SCH80S	P28J-005YL	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1	0.5	SCH80S	SCH80S	P28J-005W1	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1	0.75	SCH80S	SCH80S	P28J-005W2	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5	0.5	SCH80S	SCH80S	P28J-005W3	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5	0.75	SCH80S	SCH80S	P28J-005W4	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5	1	SCH80S	SCH80S	P28J-005W5	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	2	0.75	SCH10S	SCH80S	P28J-005W6	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	2	1	SCH10S	SCH80S	P28J-005W7	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	2	1.5	SCH10S	SCH80S	P28J-005W8	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	3	1.5	SCH10S	SCH80S	P28J-005W9	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	3	2	SCH10S	SCH10S	P28J-005WA	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	4	1.5	SCH10S	SCH80S	P28J-005WB	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	4	2	SCH10S	SCH10S	P28J-005WC	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	4	3	SCH10S	SCH10S	P28J-005WD	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	6	3	SCH10S	SCH10S	P28J-005WE	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	6	4	SCH10S	SCH10S	P28J-005WF	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	8	4	SCH10S	SCH10S	P28J-005WG	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	8	6	SCH10S	SCH10S	P28J-005WH	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	10	4	SCH10S	SCH10S	P28J-005WJ	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	10	6	SCH10S	SCH10S	P28J-005WK	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	10	8	SCH10S	SCH10S	P28J-005WL	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	12	6	SCH10S	SCH10S	P28J-005WN	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	12	8	SCH10S	SCH10S	P28J-005WP	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	12	10	SCH10S	SCH10S	P28J-005WM	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	14	6	SCH10S	SCH10S	P28J-005WT	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	14	8	SCH10S	SCH10S	P28J-005WU	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	14	10	SCH10S	SCH10S	P28J-005WR	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	14	12	SCH10S	SCH10S	P28J-005WS	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	16	8	SCH10S	SCH10S	P28J-005WY	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	16	10	SCH10S	SCH10S	P28J-005WV	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	16	12	SCH10S	SCH10S	P28J-005WW	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	16	14	SCH10S	SCH10S	P28J-005WX	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	18	10	SCH10S	SCH10S	P28J-005WZ	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	18	12	SCH10S	SCH10S	P28J-005X0	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	18	14	SCH10S	SCH10S	P28J-005X1	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	18	16	SCH10S	SCH10S	P28J-005X2	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	20	12	SCH10S	SCH10S	P28J-005X3	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	20	14	SCH10S	SCH10S	P28J-005X4	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	20	16	SCH10S	SCH10S	P28J-005X5	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	24	18	SCH10S	SCH10S	P28J-005X6	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	24	16	SCH10S	SCH10S	P28J-005X7	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	

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ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	24	18	SCH10S	SCH10S	P28J-005X8	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	24	20	SCH10S	SCH10S	P28J-005X9	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	30	20	SCH10S	SCH10S	P28J-00694	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	30	24	SCH10S	SCH10S	P28J-00695	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P29J-002M5	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	0.75		SCH80S		P29J-002M6	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1		SCH80S		P29J-002M7	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5		SCH80S		P29J-002M8	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	2		SCH10S		P29J-002ME	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	3		SCH10S		P29J-002MH	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	4		SCH10S		P29J-002MK	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	6		SCH10S		P29J-002ML	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	8		SCH10S		P29J-002MM	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	10		SCH10S		P29J-002M9	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	12		SCH10S		P29J-002MA	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	14		SCH10S		P29J-002MB	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	16		SCH10S		P29J-002MC	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	18		SCH10S		P29J-002MD	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	20		SCH10S		P29J-002MF	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	24		SCH10S		P29J-002MG	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	30		SCH10S		P29J-0038G	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
541	0.75				P29K-00049	Cap ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 NPT Severe wet H2S service	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P41J-001U7	Straight nipple ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Severe wet H2S service	
1	0.75		SCH80S		P41J-001U8	Straight nipple ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Severe wet H2S service	
1	1		SCH80S		P41J-001U9	Straight nipple ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Severe wet H2S service	
1	1.5		SCH80S		P41J-001UA	Straight nipple ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Severe wet H2S service	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
541	1	0.75			P31K-00FMB	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 NPT Severe wet H2S service	
541	1.5	0.75			P31K-00FMA	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 NPT Severe wet H2S service	
541	2 - 2.5	0.75			P31K-00GFX	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 NPT Severe wet H2S service	
541	3 - 5	0.75			P31K-00GFY	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 NPT Severe wet H2S service	
541	6 - 12	0.75			P31K-00GFZ	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 NPT Severe wet H2S service	
541	14 - 36	0.75			P31K-00GG0	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 NPT Severe wet H2S service	
1	2	0.75	SCH10S	SCH80S	P31K-00ENM	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	3	0.75	SCH10S	SCH80S	P31K-00ENS	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	4	0.75	SCH10S	SCH80S	P31K-00EP3	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	6	0.75	SCH10S	SCH80S	P31K-00EPB	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	8	0.75	SCH10S	SCH80S	P31K-00EPS	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	10	0.75	SCH10S	SCH80S	P31K-00EPX	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	12	0.75	SCH10S	SCH80S	P31K-00ER2	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	14	0.75	SCH10S	SCH80S	P31K-00ER8	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	16	0.75	SCH10S	SCH80S	P31K-00ERE	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	

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OUTLET (L)							
OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	18	0.75	SCH10S	SCH80S	P31K-00ERL	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	20	0.75	SCH10S	SCH80S	P31K-00ERU	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	24	0.75	SCH10S	SCH80S	P31K-00ES1	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	30	0.75	SCH10S	SCH80S	P31K-00F26	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	3	1	SCH10S	SCH80S	P31K-00ENT	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	4	1	SCH10S	SCH80S	P31K-00EP4	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	6	1	SCH10S	SCH80S	P31K-00EPC	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	8	1	SCH10S	SCH80S	P31K-00EPT	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	10	1	SCH10S	SCH80S	P31K-00EPY	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	12	1	SCH10S	SCH80S	P31K-00ER3	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	14	1	SCH10S	SCH80S	P31K-00ER9	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	16	1	SCH10S	SCH80S	P31K-00ERF	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	18	1	SCH10S	SCH80S	P31K-00ERM	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	20	1	SCH10S	SCH80S	P31K-00ERV	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	24	1	SCH10S	SCH80S	P31K-00ES2	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	30	1	SCH10S	SCH80S	P31K-00F27	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	4	1.5	SCH10S	SCH80S	P31K-00EP5	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	6	1.5	SCH10S	SCH80S	P31K-00EPD	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	8	1.5	SCH10S	SCH80S	P31K-00EPU	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	10	1.5	SCH10S	SCH80S	P31K-00EPZ	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	12	1.5	SCH10S	SCH80S	P31K-00ER4	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	14	1.5	SCH10S	SCH80S	P31K-00ERA	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	16	1.5	SCH10S	SCH80S	P31K-00ERG	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	18	1.5	SCH10S	SCH80S	P31K-00ERN	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	20	1.5	SCH10S	SCH80S	P31K-00ERW	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	24	1.5	SCH10S	SCH80S	P31K-00ES3	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	30	1.5	SCH10S	SCH80S	P31K-00F28	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	6	2	SCH10S	SCH10S	P31K-00EPE	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	8	2	SCH10S	SCH10S	P31K-00EPV	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	10	2	SCH10S	SCH10S	P31K-00ER0	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	12	2	SCH10S	SCH10S	P31K-00ER5	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	14	2	SCH10S	SCH10S	P31K-00ERB	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	16	2	SCH10S	SCH10S	P31K-00ERH	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	18	2	SCH10S	SCH10S	P31K-00ERP	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	20	2	SCH10S	SCH10S	P31K-00ERX	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	24	2	SCH10S	SCH10S	P31K-00ES4	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	30	2	SCH10S	SCH10S	P31K-00F29	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	8	3	SCH10S	SCH10S	P31K-00EPW	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	10	3	SCH10S	SCH10S	P31K-00ER1	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	12	3	SCH10S	SCH10S	P31K-00ER6	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	14	3	SCH10S	SCH10S	P31K-00ERC	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	16	3	SCH10S	SCH10S	P31K-00ERJ	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	18	3	SCH10S	SCH10S	P31K-00ERR	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	20	3	SCH10S	SCH10S	P31K-00ERY	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	24	3	SCH10S	SCH10S	P31K-00ES5	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	30	3	SCH10S	SCH10S	P31K-00F2A	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	12	4	SCH10S	SCH10S	P31K-00ER7	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	14	4	SCH10S	SCH10S	P31K-00ERD	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	16	4	SCH10S	SCH10S	P31K-00ERK	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	18	4	SCH10S	SCH10S	P31K-00ERS	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	20	4	SCH10S	SCH10S	P31K-00ERZ	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	24	4	SCH10S	SCH10S	P31K-00ES6	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	30	4	SCH10S	SCH10S	P31K-00F2B	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	18	6	SCH10S	SCH10S	P31K-00ERT	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	20	6	SCH10S	SCH10S	P31K-00ES0	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	24	6	SCH10S	SCH10S	P31K-00ES7	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	30	6	SCH10S	SCH10S	P31K-00F2C	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	

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PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30K-0005H	Plug ASTM A182 Grade F316/F316L dual grade ASME B16.11 NPT Round head Severe wet H2S service	
1	0.75				P30K-0005J	Plug ASTM A182 Grade F316/F316L dual grade ASME B16.11 NPT Round head Severe wet H2S service	
1	1				P30K-0005K	Plug ASTM A182 Grade F316/F316L dual grade ASME B16.11 NPT Round head Severe wet H2S service	
1	1.5				P30K-0005L	Plug ASTM A182 Grade F316/F316L dual grade ASME B16.11 NPT Round head Severe wet H2S service	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P61K-005FD	Flange WN ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	0.75		SCH80S		P61K-005FE	Flange WN ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	1		SCH80S		P61K-005FF	Flange WN ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	1.5		SCH80S		P61K-005FG	Flange WN ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	2		SCH10S		P61K-005FN	Flange WN ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	3		SCH10S		P61K-005FS	Flange WN ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	4		SCH10S		P61K-005FT	Flange WN ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	6		SCH10S		P61K-005FU	Flange WN ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	8		SCH10S		P61K-005FV	Flange WN ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	10		SCH10S		P61K-005FH	Flange WN ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	12		SCH10S		P61K-005FJ	Flange WN ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	14		SCH10S		P61K-005FK	Flange WN ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	16		SCH10S		P61K-005FL	Flange WN ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	18		SCH10S		P61K-005FM	Flange WN ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	20		SCH10S		P61K-005FP	Flange WN ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	24		SCH10S		P61K-005FR	Flange WN ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	30		SCH10S		P61K-005SU	Flange WN ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.47 Series B RF Severe wet H2S service	
541	0.5				P61K-0069H	Flange NPT ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
541	0.75				P61K-005ZZ	Flange NPT ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
773	0.5		SCH80S		P61K-005FX	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
773	0.75		SCH80S		P61K-005FY	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
773	1		SCH80S		P61K-005FZ	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
773	1.5		SCH80S		P61K-005G0	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
773	2		SCH10S		P61K-005G6	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
773	3		SCH10S		P61K-005G9	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
773	4		SCH10S		P61K-005GA	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
773	6		SCH10S		P61K-005GB	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
773	8		SCH10S		P61K-005GC	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
773	10		SCH10S		P61K-005G1	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
773	12		SCH10S		P61K-005G2	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
773	14		SCH10S		P61K-005G3	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
773	16		SCH10S		P61K-005G4	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
773	18		SCH10S		P61K-005G5	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
773	20		SCH10S		P61K-005G7	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
773	24		SCH10S		P61K-005G8	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
773	30		SCH10S		P61K-005SV	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.47 Series B RF Severe wet H2S service	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67K-001LJ	Blind flange ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	0.75				P67K-001LK	Blind flange ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	1				P67K-001LL	Blind flange ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	1.5				P67K-001LM	Blind flange ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	2				P67K-001LU	Blind flange ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	3				P67K-001LX	Blind flange ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	4				P67K-001LY	Blind flange ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	6				P67K-001LZ	Blind flange ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	8				P67K-001M0	Blind flange ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	10				P67K-001LN	Blind flange ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	12				P67K-001LP	Blind flange ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	14				P67K-001LR	Blind flange ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	

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BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	16				P67K-001LS	Blind flange ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	18				P67K-001LT	Blind flange ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	20				P67K-001LV	Blind flange ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	24				P67K-001LW	Blind flange ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	30				P67K-001M1	Blind flange ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.47 Series B RF Severe wet H2S service	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000L8	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000L9	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000LA	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000LB	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000LH	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000LL	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000LM	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	6				P73T-000LN	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	8				P73T-000LP	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	10				P73T-000LC	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	12				P73T-000LD	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	14				P73T-000LE	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	16				P73T-000LF	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	18				P73T-000LG	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	20				P73T-000LJ	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	24				P73T-000LK	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	30				P73T-000LT	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	0.5				P73T-000FT	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	0.75				P73T-000FU	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	3				P73T-000G5	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	4				P73T-000G6	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	6				P73T-000G7	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	8				P73T-000G8	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	10				P73T-000FX	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	12				P73T-000FY	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	14				P73T-000FZ	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	16				P73T-000G0	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	18				P73T-000G1	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	20				P73T-000G3	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	24				P73T-000G4	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	30				P73T-000H9	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-16				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	

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BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	18-24				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
1	30				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
773	0.5-10				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
773	12-30				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81K-001AT	Gate valve ASTM A182 Grade F316/F316L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service	
1	0.75				P81K-001AU	Gate valve ASTM A182 Grade F316/F316L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service	
1	1				P81K-001AV	Gate valve ASTM A182 Grade F316/F316L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service	
1	1.5				P81K-001AW	Gate valve ASTM A182 Grade F316/F316L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service	
1	2				P81L-002R0	Gate valve ASTM A351 Grade CF8M Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service	
1	3				P81L-002R1	Gate valve ASTM A351 Grade CF8M Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service	
1	4				P81L-002R2	Gate valve ASTM A351 Grade CF8M Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service	
1	6				P81L-002R3	Gate valve ASTM A351 Grade CF8M Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service	
1	8				P81L-002R4	Gate valve ASTM A351 Grade CF8M Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service	
1	10				P81L-002PY	Gate valve ASTM A351 Grade CF8M Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service	
1	12				P81L-002PZ	Gate valve ASTM A351 Grade CF8M Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service	
1	14				P81L-002R5	Gate valve ASTM A351 Grade CF8M Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Severe wet H2S service Amine service	
1	16				P81L-002R6	Gate valve ASTM A351 Grade CF8M Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Severe wet H2S service Amine service	
1	18				P81L-002R7	Gate valve ASTM A351 Grade CF8M Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Severe wet H2S service Amine service	
1	20				P81L-002R8	Gate valve ASTM A351 Grade CF8M Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Severe wet H2S service Amine service	
1	24				P81L-002R9	Gate valve ASTM A351 Grade CF8M Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Severe wet H2S service Amine service	
1	30				P81L-002RA	Gate valve ASTM A351 Grade CF8M Class 150 API 600 Flange ASME B16.47-B RF Trim number 12 BB-BG-OS&Y Gear operated Severe wet H2S service Amine service	
4608	0.75				P81K-001P7	Gate valve ASTM A182 Grade F316/F316L dual grade Class 150 API 602 BW both sides w/ nipples BE - NPT ASTM A312-TP316(L) dual grade Seamless Sch80S-nipple Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service	
773	2				P81L-002RC	Gate valve ASTM A351 Grade CF8M Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82K-000WR	Globe valve ASTM A182 Grade F316/F316L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service	
1	0.75				P82K-000WS	Globe valve ASTM A182 Grade F316/F316L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service	
1	1				P82K-000WT	Globe valve ASTM A182 Grade F316/F316L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service	
1	1.5				P82K-000WU	Globe valve ASTM A182 Grade F316/F316L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service	
1	2				P82L-001G8	Globe valve ASTM A351 Grade CF8M Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service	
1	3				P82L-001G9	Globe valve ASTM A351 Grade CF8M Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service	
1	4				P82L-001GA	Globe valve ASTM A351 Grade CF8M Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service	
1	6				P82L-001GB	Globe valve ASTM A351 Grade CF8M Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service	
1	8				P82L-001GC	Globe valve ASTM A351 Grade CF8M Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83K-000UB	Check valve ASTM A182 Grade F316/F316L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Severe wet H2S service Amine service	
1	0.75				P83K-000UC	Check valve ASTM A182 Grade F316/F316L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Severe wet H2S service Amine service	
1	1				P83K-000UD	Check valve ASTM A182 Grade F316/F316L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Severe wet H2S service Amine service	
1	1.5				P83K-000UE	Check valve ASTM A182 Grade F316/F316L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Severe wet H2S service Amine service	

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CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2				P83L-001ET	Check valve ASTM A351 Grade CF8M Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service Amine service	
1	3				P83L-001EU	Check valve ASTM A351 Grade CF8M Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service Amine service	
1	4				P83L-001EV	Check valve ASTM A351 Grade CF8M Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service Amine service	
1	6				P83L-001EW	Check valve ASTM A351 Grade CF8M Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service Amine service	
1	8				P83L-001EX	Check valve ASTM A351 Grade CF8M Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service Amine service	
1	10				P83L-001ER	Check valve ASTM A351 Grade CF8M Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service Amine service	
1	12				P83L-001ES	Check valve ASTM A351 Grade CF8M Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service Amine service	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71K-000D6	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	
1	0.75				P71K-000D7	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	
1	1				P71K-000D8	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	
1	1.5				P71K-000D9	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	
1	2				P71K-000DC	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	
1	3				P71K-000DD	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	
1	4				P71K-000DE	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	
1	6				P71K-000DF	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	
1	8				P71K-000DG	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	
1	10				P71K-000DA	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	
1	12				P71K-000DB	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	

PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72K-000C2	Paddle blank ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	
1	16				P72K-000C3	Paddle blank ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	
1	18				P72K-000C4	Paddle blank ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	
1	20				P72K-000C5	Paddle blank ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	
1	24				P72K-000C6	Paddle blank ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	
1	30				P72K-000C1	Paddle blank ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.47-B RF Severe wet H2S service	

PADDLE SPACER (PS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72K-000C7	Paddle spacer ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	
1	16				P72K-000C8	Paddle spacer ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	
1	18				P72K-000C9	Paddle spacer ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	
1	20				P72K-000CA	Paddle spacer ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	
1	24				P72K-000CB	Paddle spacer ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	
1	30				P72K-000CC	Paddle spacer ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.47-B RF Severe wet H2S service	

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BOLT TABLE (B_A0L5 , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	60	P80S-008SY		
0.75	4	0.500	65	P80S-008SZ		
1	4	0.500	70	P80S-008T0		
1.5	4	0.500	75	P80S-008T1		
2	4	0.625	85	P80S-0090A		
3	4	0.625	95	P80S-0090C		
4	8	0.625	95	P80S-0090C		
6	8	0.750	105	P80S-0090E		
8	8	0.750	110	P80S-0090F		
10	12	0.875	120	P80S-005Z9		
12	12	0.875	120	P80S-005Z9		
14	12	1.000	135	P80S-00619		
16	16	1.000	140	P80S-0061A		
18	16	1.125	150	P80S-0064L		
20	20	1.125	160	P80S-0064N		
24	20	1.250	175	P80S-00686		
30	44	0.750	145	P80S-0090N		

BOLT TABLE (B_A0L5_773 , STUD ASME RF, OPTION CODE 773)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-008T0		
0.75	4	0.625	75	P80S-00908		
1	4	0.625	80	P80S-00909		
1.5	4	0.750	95	P80S-005Z4		
2	8	0.625	90	P80S-0090B		
3	8	0.750	110	P80S-0090F		
4	8	0.750	115	P80S-0090G		
6	12	0.750	125	P80S-0090J		
8	12	0.875	140	P80S-005ZD		
10	16	1.000	160	P80S-0061E		
12	16	1.125	175	P80S-0064S		
14	20	1.125	180	P80S-0064T		
16	20	1.250	190	P80S-00689		
18	24	1.250	200	P80S-0068B		
20	24	1.250	210	P80S-0068D		
24	24	1.500	235	P80S-006LB		
30	36	1.375	285	P80S-006HY		

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BRANCH TABLE (T_A0L5)

RUN PIPE SIZE (in) \ BRANCH SIZE (in)	0.5	0.75	1	1.5	2	3	4	6	8	10	12	14	16	18	20	24	30
0.5	TS																
0.75		TS															
1		TR	TS														
1.5		TR	TR	TS													
2		L	TR	TR	TS												
3		L	L	TR	TR	TS											
4	L	L	L	L	TR	TR	TS										
6	L	L	L	L	L	TR	TR	TS									
8		L	L	L	L	L	TR	TR	TS								
10		L	L	L	L	L	TR	TR	TR	TS							
12		L	L	L	L	L	L	TR	TR	TR	TS						
14		L	L	L	L	L	L	TR	TR	TR	TR	TS					
16		L	L	L	L	L	L	TR	TR	TR	TR	TR	TS				
18		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TS			
20		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TR	TS		
24		L	L	L	L	L	L	L	9PD	TR	TR	TR	TR	TR	TR	TS	
30		L	L	L	L	L	L	L	9PD	TR	TR	TR	TR	TR	TR	TR	TS

TR : REDUCING TEE
L : OUTLET
TS : STRAIGHT TEE
9PD : REINFORCING PAD 90 DEG

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PIPING CLASS

A0L501 REV NO. 2

Material : SS316L
Rating : ASME CLASS 150
Flange Face : RF
C.A.(mm) : 0.00
Gasket : Spiral Wound
Service : PROCESS - WET SEVERE SOUR SERVICE SUBJECT TO NACE + HIC STD + AMINES OR CAUSTIC - STRESS RELIEVED
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
5	BOLTING CONFIRMING TO B7M / 2HM SHALL BE USED UNDER CONDITIONS (A) DIRECT EXPOSURE TO SOUR ENVIRONMENTS (B) WHEN THE BOLTING WILL BE BURIED OR INSULATED
27	PWHT OF CARBON STEEL PIPING IN WET H2S, CAUSTIC AND AMINE SERVICES SHALL BE IN ACCORDANCE WITH SECTION 10.2, 10.3, AND 10.4 OF PROJECT SPECIFICATION 3550-8440-SP-0002 MATERIALS REQUIREMENTS FOR PRESSURISED EQUIPMENT AND PIPING. FOR CAUSTIC AND AMINE SERVICE THE FOLLOWING SHALL APPLY: - PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF ALL SITE PIPING FABRICATION WELDS IS REQUIRED FOR ALL WALL THICKNESSES. FOR MODERATE AND SEVERE WET H2S SERVICE THE FOLLOWING SHALL APPLY: PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF SITE FABRICATION CIRCUMFERENTIAL OR BRANCH WELDS IS NOT REQUIRED IF WELDS ARE MULTIPASS AND IN ACCORDANCE WITH PARA 10.2.12 OF PROJECT SPECIFICATION 3550-8440-SP-0002. FOR SERVICES MEETING THE WET H2S CRITERIA AND CAUSTIC OR AMINE CRITERIA THE MORE STRINGENT PWHT REQUIREMENT SHALL GOVERN.

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
541	NPT(F) (CA,F,L)
773	CLASS 300 (B,F,G,V)
4608	VALVE WITH NIPPLES (V)

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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P01J-002ES	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE Severe wet H2S service	
1	0.75		SCH80S		P01J-002ET	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE Severe wet H2S service	
1	1		SCH80S		P01J-002EU	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE Severe wet H2S service	
1	1.5		SCH80S		P01J-002EV	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE Severe wet H2S service	
1	2		SCH10S		P01J-002EW	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M BE Severe wet H2S service	
1	3		SCH10S		P01J-002EX	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M BE Severe wet H2S service	
1	4		SCH10S		P01J-002EY	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M BE Severe wet H2S service	
1	6		SCH10S		P01J-002EZ	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M BE Severe wet H2S service	
1	8		SCH10S		P01J-002F8	Pipe ASTM A358 Grade 316/316L Class 1 dual grade EFW ASME B36.10M/B36.19M BE Severe wet H2S service	
1	10		SCH10S		P01J-002F0	Pipe ASTM A358 Grade 316/316L Class 1 dual grade EFW ASME B36.10M/B36.19M BE Severe wet H2S service	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P02J-001Y0	90 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	0.75		SCH80S		P02J-001Y1	90 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	1		SCH80S		P02J-001Y2	90 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	1.5		SCH80S		P02J-001Y3	90 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	2		SCH10S		P02J-001Y4	90 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	3		SCH10S		P02J-001Y5	90 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	4		SCH10S		P02J-001Y6	90 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	6		SCH10S		P02J-001Y7	90 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	8		SCH10S		P02J-001YG	90 degree elbow ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Long radius Severe wet H2S service	
1	10		SCH10S		P02J-001Y8	90 degree elbow ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Long radius Severe wet H2S service	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P03J-001VR	45 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	0.75		SCH80S		P03J-001VS	45 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	1		SCH80S		P03J-001VT	45 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	1.5		SCH80S		P03J-001VU	45 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	2		SCH10S		P03J-001VV	45 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	3		SCH10S		P03J-001VW	45 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	4		SCH10S		P03J-001VX	45 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	6		SCH10S		P03J-001VY	45 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	8		SCH10S		P03J-001VP	45 degree elbow ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Long radius Severe wet H2S service	
1	10		SCH10S		P03J-001VF	45 degree elbow ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Long radius Severe wet H2S service	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P21J-001M5	Straight tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	0.75		SCH80S		P21J-001M6	Straight tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1		SCH80S		P21J-001M7	Straight tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5		SCH80S		P21J-001M8	Straight tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	2		SCH10S		P21J-001M9	Straight tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	3		SCH10S		P21J-001MA	Straight tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	4		SCH10S		P21J-001MB	Straight tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	

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STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	6		SCH10S		P21J-001MC	Straight tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	8		SCH10S		P21J-001MM	Straight tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	10		SCH10S		P21J-001MD	Straight tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75	SCH80S	SCH80S	P24J-0070F	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5	0.75	SCH80S	SCH80S	P24J-0070J	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5	1	SCH80S	SCH80S	P24J-0070K	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	2	1	SCH10S	SCH80S	P24J-0070S	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	2	1.5	SCH10S	SCH80S	P24J-0070T	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	3	1.5	SCH10S	SCH80S	P24J-0070U	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	3	2	SCH10S	SCH10S	P24J-0070V	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	4	2	SCH10S	SCH10S	P24J-0070W	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	4	3	SCH10S	SCH10S	P24J-0070X	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	6	3	SCH10S	SCH10S	P24J-0070Y	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	6	4	SCH10S	SCH10S	P24J-0070Z	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	8	4	SCH10S	SCH10S	P24J-00710	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	8	6	SCH10S	SCH10S	P24J-00711	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	10	4	SCH10S	SCH10S	P24J-00712	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	10	6	SCH10S	SCH10S	P24J-00713	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	10	8	SCH10S	SCH10S	P24J-00714	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH80S	SCH80S	P27J-005XP	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1	0.5	SCH80S	SCH80S	P27J-005V5	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1	0.75	SCH80S	SCH80S	P27J-005V6	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5	0.5	SCH80S	SCH80S	P27J-005V7	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5	0.75	SCH80S	SCH80S	P27J-005V8	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5	1	SCH80S	SCH80S	P27J-005V9	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	2	0.75	SCH10S	SCH80S	P27J-005VA	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	2	1	SCH10S	SCH80S	P27J-005VB	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	2	1.5	SCH10S	SCH80S	P27J-005VC	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	3	1.5	SCH10S	SCH80S	P27J-005VD	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	3	2	SCH10S	SCH10S	P27J-005VE	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	4	1.5	SCH10S	SCH80S	P27J-005VF	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	4	2	SCH10S	SCH10S	P27J-005VG	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	4	3	SCH10S	SCH10S	P27J-005VH	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	6	3	SCH10S	SCH10S	P27J-005VJ	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	6	4	SCH10S	SCH10S	P27J-005VK	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	8	4	SCH10S	SCH10S	P27J-005VL	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	8	6	SCH10S	SCH10S	P27J-005VM	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	10	4	SCH10S	SCH10S	P27J-005VN	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	10	6	SCH10S	SCH10S	P27J-005VP	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	

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CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	10	8	SCH10S	SCH10S	P27J-005VR	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH80S	SCH80S	P28J-005YL	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1	0.5	SCH80S	SCH80S	P28J-005W1	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1	0.75	SCH80S	SCH80S	P28J-005W2	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5	0.5	SCH80S	SCH80S	P28J-005W3	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5	0.75	SCH80S	SCH80S	P28J-005W4	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5	1	SCH80S	SCH80S	P28J-005W5	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	2	0.75	SCH10S	SCH80S	P28J-005W6	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	2	1	SCH10S	SCH80S	P28J-005W7	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	2	1.5	SCH10S	SCH80S	P28J-005W8	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	3	1.5	SCH10S	SCH80S	P28J-005W9	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	3	2	SCH10S	SCH10S	P28J-005WA	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	4	1.5	SCH10S	SCH80S	P28J-005WB	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	4	2	SCH10S	SCH10S	P28J-005WC	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	4	3	SCH10S	SCH10S	P28J-005WD	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	6	3	SCH10S	SCH10S	P28J-005WE	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	6	4	SCH10S	SCH10S	P28J-005WF	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	8	4	SCH10S	SCH10S	P28J-005WG	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	8	6	SCH10S	SCH10S	P28J-005WH	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	10	4	SCH10S	SCH10S	P28J-005WJ	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	10	6	SCH10S	SCH10S	P28J-005WK	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	10	8	SCH10S	SCH10S	P28J-005WL	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P29J-002M5	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	0.75		SCH80S		P29J-002M6	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1		SCH80S		P29J-002M7	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5		SCH80S		P29J-002M8	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	2		SCH10S		P29J-002ME	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	3		SCH10S		P29J-002MH	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	4		SCH10S		P29J-002MK	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	6		SCH10S		P29J-002ML	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	8		SCH10S		P29J-002MM	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	10		SCH10S		P29J-002M9	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
541	0.75				P29K-00049	Cap ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 NPT Severe wet H2S service	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P41J-001U7	Straight nipple ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Severe wet H2S service	
1	0.75		SCH80S		P41J-001U8	Straight nipple ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Severe wet H2S service	
1	1		SCH80S		P41J-001U9	Straight nipple ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Severe wet H2S service	
1	1.5		SCH80S		P41J-001UA	Straight nipple ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Severe wet H2S service	

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OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
541	1	0.75			P31K-00FMB	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 NPT Severe wet H2S service	
541	1.5	0.75			P31K-00FMA	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 NPT Severe wet H2S service	
541	2 - 2.5	0.75			P31K-00GFX	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 NPT Severe wet H2S service	
541	3 - 5	0.75			P31K-00GFY	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 NPT Severe wet H2S service	
541	6 - 12	0.75			P31K-00GFZ	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 NPT Severe wet H2S service	
1	2	0.75	SCH10S	SCH80S	P31K-00ENM	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	3	0.75	SCH10S	SCH80S	P31K-00ENS	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	4	0.75	SCH10S	SCH80S	P31K-00EP3	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	6	0.75	SCH10S	SCH80S	P31K-00EPB	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	8	0.75	SCH10S	SCH80S	P31K-00EPS	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	10	0.75	SCH10S	SCH80S	P31K-00EPX	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	3	1	SCH10S	SCH80S	P31K-00ENT	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	4	1	SCH10S	SCH80S	P31K-00EP4	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	6	1	SCH10S	SCH80S	P31K-00EPC	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	8	1	SCH10S	SCH80S	P31K-00EPT	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	10	1	SCH10S	SCH80S	P31K-00EPY	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	4	1.5	SCH10S	SCH80S	P31K-00EP5	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	6	1.5	SCH10S	SCH80S	P31K-00EPD	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	8	1.5	SCH10S	SCH80S	P31K-00EPU	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	10	1.5	SCH10S	SCH80S	P31K-00EPZ	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	6	2	SCH10S	SCH10S	P31K-00EPE	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	8	2	SCH10S	SCH10S	P31K-00EPV	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	10	2	SCH10S	SCH10S	P31K-00ER0	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	8	3	SCH10S	SCH10S	P31K-00EPW	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	10	3	SCH10S	SCH10S	P31K-00ER1	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30K-0005H	Plug ASTM A182 Grade F316/F316L dual grade ASME B16.11 NPT Round head Severe wet H2S service	
1	0.75				P30K-0005J	Plug ASTM A182 Grade F316/F316L dual grade ASME B16.11 NPT Round head Severe wet H2S service	
1	1				P30K-0005K	Plug ASTM A182 Grade F316/F316L dual grade ASME B16.11 NPT Round head Severe wet H2S service	
1	1.5				P30K-0005L	Plug ASTM A182 Grade F316/F316L dual grade ASME B16.11 NPT Round head Severe wet H2S service	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P61K-005FD	Flange WN ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	0.75		SCH80S		P61K-005FE	Flange WN ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	1		SCH80S		P61K-005FF	Flange WN ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	1.5		SCH80S		P61K-005FG	Flange WN ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	2		SCH10S		P61K-005FN	Flange WN ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	3		SCH10S		P61K-005FS	Flange WN ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	4		SCH10S		P61K-005FT	Flange WN ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	6		SCH10S		P61K-005FU	Flange WN ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	8		SCH10S		P61K-005FV	Flange WN ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	10		SCH10S		P61K-005FH	Flange WN ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
541	0.5				P61K-0069H	Flange NPT ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
541	0.75				P61K-005ZZ	Flange NPT ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
773	0.5		SCH80S		P61K-005FX	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
773	0.75		SCH80S		P61K-005FY	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
773	1		SCH80S		P61K-005FZ	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
773	1.5		SCH80S		P61K-005G0	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
773	2		SCH10S		P61K-005G6	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
773	3		SCH10S		P61K-005G9	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
773	4		SCH10S		P61K-005GA	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
773	6		SCH10S		P61K-005GB	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
773	8		SCH10S		P61K-005GC	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
773	10		SCH10S		P61K-005G1	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	

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BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67K-001LJ	Blind flange ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	0.75				P67K-001LK	Blind flange ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	1				P67K-001LL	Blind flange ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	1.5				P67K-001LM	Blind flange ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	2				P67K-001LU	Blind flange ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	3				P67K-001LX	Blind flange ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	4				P67K-001LY	Blind flange ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	6				P67K-001LZ	Blind flange ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	8				P67K-001M0	Blind flange ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	10				P67K-001LN	Blind flange ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000L8	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000L9	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000LA	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000LB	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000LH	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000LL	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000LM	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	6				P73T-000LN	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	8				P73T-000LP	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	10				P73T-000LC	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	0.5				P73T-000FT	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	0.75				P73T-000FU	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	3				P73T-000G5	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	4				P73T-000G6	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	6				P73T-000G7	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	8				P73T-000G8	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	10				P73T-000FX	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-10				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
773	0.5-10				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81K-001AT	Gate valve ASTM A182 Grade F316/F316L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service	
1	0.75				P81K-001AU	Gate valve ASTM A182 Grade F316/F316L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service	
1	1				P81K-001AV	Gate valve ASTM A182 Grade F316/F316L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service	
1	1.5				P81K-001AW	Gate valve ASTM A182 Grade F316/F316L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service	
1	2				P81L-002R0	Gate valve ASTM A351 Grade CF8M Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service	
1	3				P81L-002R1	Gate valve ASTM A351 Grade CF8M Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service	
1	4				P81L-002R2	Gate valve ASTM A351 Grade CF8M Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service	

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GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	6				P81L-002R3	Gate valve ASTM A351 Grade CF8M Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service	
1	8				P81L-002R4	Gate valve ASTM A351 Grade CF8M Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service	
1	10				P81L-002PY	Gate valve ASTM A351 Grade CF8M Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service	
4608	0.75				P81K-001P7	Gate valve ASTM A182 Grade F316/F316L dual grade Class 150 API 602 BW both sides w/ nipples BE - NPT ASTM A312-TP316(L) dual grade Seamless Sch80S-nipple Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service	
773	2				P81L-002RC	Gate valve ASTM A351 Grade CF8M Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82K-000WR	Globe valve ASTM A182 Grade F316/F316L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service	
1	0.75				P82K-000WS	Globe valve ASTM A182 Grade F316/F316L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service	
1	1				P82K-000WT	Globe valve ASTM A182 Grade F316/F316L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service	
1	1.5				P82K-000WU	Globe valve ASTM A182 Grade F316/F316L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service	
1	2				P82L-001G8	Globe valve ASTM A351 Grade CF8M Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service	
1	3				P82L-001G9	Globe valve ASTM A351 Grade CF8M Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service	
1	4				P82L-001GA	Globe valve ASTM A351 Grade CF8M Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service	
1	6				P82L-001GB	Globe valve ASTM A351 Grade CF8M Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service	
1	8				P82L-001GC	Globe valve ASTM A351 Grade CF8M Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83K-000UB	Check valve ASTM A182 Grade F316/F316L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Severe wet H2S service Amine service	
1	0.75				P83K-000UC	Check valve ASTM A182 Grade F316/F316L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Severe wet H2S service Amine service	
1	1				P83K-000UD	Check valve ASTM A182 Grade F316/F316L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Severe wet H2S service Amine service	
1	1.5				P83K-000UE	Check valve ASTM A182 Grade F316/F316L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Severe wet H2S service Amine service	
1	2				P83L-001ET	Check valve ASTM A351 Grade CF8M Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service Amine service	
1	3				P83L-001EU	Check valve ASTM A351 Grade CF8M Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service Amine service	
1	4				P83L-001EV	Check valve ASTM A351 Grade CF8M Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service Amine service	
1	6				P83L-001EW	Check valve ASTM A351 Grade CF8M Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service Amine service	
1	8				P83L-001EX	Check valve ASTM A351 Grade CF8M Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service Amine service	
1	10				P83L-001ER	Check valve ASTM A351 Grade CF8M Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service Amine service	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71K-000D6	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	
1	0.75				P71K-000D7	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	
1	1				P71K-000D8	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	
1	1.5				P71K-000D9	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	
1	2				P71K-000DC	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	
1	3				P71K-000DD	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	
1	4				P71K-000DE	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	
1	6				P71K-000DF	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	
1	8				P71K-000DG	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	
1	10				P71K-000DA	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	

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BOLT TABLE (B_A0L501 , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	60	P80S-008SY		
0.75	4	0.500	65	P80S-008SZ		
1	4	0.500	70	P80S-008T0		
1.5	4	0.500	75	P80S-008T1		
2	4	0.625	85	P80S-0090A		
3	4	0.625	95	P80S-0090C		
4	8	0.625	95	P80S-0090C		
6	8	0.750	105	P80S-0090E		
8	8	0.750	110	P80S-0090F		
10	12	0.875	120	P80S-005Z9		

BOLT TABLE (B_A0L501_773 , STUD ASME RF, OPTION CODE 773)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-008T0		
0.75	4	0.625	75	P80S-00908		
1	4	0.625	80	P80S-00909		
1.5	4	0.750	95	P80S-005Z4		
2	8	0.625	90	P80S-0090B		
3	8	0.750	110	P80S-0090F		
4	8	0.750	115	P80S-0090G		
6	12	0.750	125	P80S-0090J		
8	12	0.875	140	P80S-005ZD		
10	16	1.000	160	P80S-0061E		

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BRANCH TABLE (T_A0L501)

RUN PIPE SIZE (in) \ BRANCH SIZE (in)	0.5	0.75	1	1.5	2	3	4	6	8	10
0.5	TS									
0.75		TS								
1		TR	TS							
1.5		TR	TR	TS						
2		L	TR	TR	TS					
3		L	L	TR	TR	TS				
4	L	L	L	L	TR	TR	TS			
6	L	L	L	L	L	TR	TR	TS		
8		L	L	L	L	L	TR	TR	TS	
10		L	L	L	L	L	TR	TR	TR	TS

TS : STRAIGHT TEE
TR : REDUCING TEE
L : OUTLET

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Material : SS316L
Rating : ASME CLASS 150
Flange Face : RF
C.A.(mm) : 0.00
Gasket : Spiral Wound
Service : PROCESS - WET SEVERE SOUR SERVICE SUBJECT TO NACE + HIC STD + AMINES OR CAUSTIC - STRESS RELIEVED
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
5	BOLTING CONFIRMING TO B7M / 2HM SHALL BE USED UNDER CONDITIONS (A) DIRECT EXPOSURE TO SOUR ENVIRONMENTS (B) WHEN THE BOLTING WILL BE BURIED OR INSULATED
27	PWHT OF CARBON STEEL PIPING IN WET H2S, CAUSTIC AND AMINE SERVICES SHALL BE IN ACCORDANCE WITH SECTION 10.2, 10.3, AND 10.4 OF PROJECT SPECIFICATION 3550-8440-SP-0002 MATERIALS REQUIREMENTS FOR PRESSURISED EQUIPMENT AND PIPING. FOR CAUSTIC AND AMINE SERVICE THE FOLLOWING SHALL APPLY: - PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF ALL SITE PIPING FABRICATION WELDS IS REQUIRED FOR ALL WALL THICKNESSES. FOR MODERATE AND SEVERE WET H2S SERVICE THE FOLLOWING SHALL APPLY: PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF SITE FABRICATION CIRCUMFERENTIAL OR BRANCH WELDS IS NOT REQUIRED IF WELDS ARE MULTIPASS AND IN ACCORDANCE WITH PARA 10.2.12 OF PROJECT SPECIFICATION 3550-8440-SP-0002. FOR SERVICES MEETING THE WET H2S CRITERIA AND CAUSTIC OR AMINE CRITERIA THE MORE STRINGENT PWHT REQUIREMENT SHALL GOVERN.

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
541	NPT(F) (CA,F,L)
773	CLASS 300 (B,F,G,V)
4608	VALVE WITH NIPPLES (V)

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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P01J-002ES	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE Severe wet H2S service	
1	0.75		SCH80S		P01J-002ET	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE Severe wet H2S service	
1	1		SCH80S		P01J-002EU	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE Severe wet H2S service	
1	1.5		SCH80S		P01J-002EV	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE Severe wet H2S service	
1	2		SCH10S		P01J-002EW	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M BE Severe wet H2S service	
1	3		SCH10S		P01J-002EX	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M BE Severe wet H2S service	
1	4		SCH10S		P01J-002EY	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M BE Severe wet H2S service	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P02J-001Y0	90 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	0.75		SCH80S		P02J-001Y1	90 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	1		SCH80S		P02J-001Y2	90 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	1.5		SCH80S		P02J-001Y3	90 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	2		SCH10S		P02J-001Y4	90 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	3		SCH10S		P02J-001Y5	90 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	4		SCH10S		P02J-001Y6	90 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P03J-001VR	45 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	0.75		SCH80S		P03J-001VS	45 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	1		SCH80S		P03J-001VT	45 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	1.5		SCH80S		P03J-001VU	45 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	2		SCH10S		P03J-001VV	45 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	3		SCH10S		P03J-001VW	45 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	4		SCH10S		P03J-001VX	45 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P21J-001M5	Straight tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	0.75		SCH80S		P21J-001M6	Straight tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1		SCH80S		P21J-001M7	Straight tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5		SCH80S		P21J-001M8	Straight tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	2		SCH10S		P21J-001M9	Straight tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	3		SCH10S		P21J-001MA	Straight tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	4		SCH10S		P21J-001MB	Straight tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75	SCH80S	SCH80S	P24J-0070F	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5	0.75	SCH80S	SCH80S	P24J-0070J	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5	1	SCH80S	SCH80S	P24J-0070K	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	2	1	SCH10S	SCH80S	P24J-0070S	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	2	1.5	SCH10S	SCH80S	P24J-0070T	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	3	1.5	SCH10S	SCH80S	P24J-0070U	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	

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REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	SCH10S	SCH10S	P24J-0070V	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	4	2	SCH10S	SCH10S	P24J-0070W	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	4	3	SCH10S	SCH10S	P24J-0070X	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH80S	SCH80S	P27J-005XP	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1	0.5	SCH80S	SCH80S	P27J-005V5	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1	0.75	SCH80S	SCH80S	P27J-005V6	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5	0.5	SCH80S	SCH80S	P27J-005V7	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5	0.75	SCH80S	SCH80S	P27J-005V8	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5	1	SCH80S	SCH80S	P27J-005V9	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	2	0.75	SCH10S	SCH80S	P27J-005VA	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	2	1	SCH10S	SCH80S	P27J-005VB	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	2	1.5	SCH10S	SCH80S	P27J-005VC	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	3	1.5	SCH10S	SCH80S	P27J-005VD	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	3	2	SCH10S	SCH10S	P27J-005VE	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	4	1.5	SCH10S	SCH80S	P27J-005VF	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	4	2	SCH10S	SCH10S	P27J-005VG	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	4	3	SCH10S	SCH10S	P27J-005VH	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH80S	SCH80S	P28J-005YL	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1	0.5	SCH80S	SCH80S	P28J-005W1	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1	0.75	SCH80S	SCH80S	P28J-005W2	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5	0.5	SCH80S	SCH80S	P28J-005W3	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5	0.75	SCH80S	SCH80S	P28J-005W4	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5	1	SCH80S	SCH80S	P28J-005W5	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	2	0.75	SCH10S	SCH80S	P28J-005W6	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	2	1	SCH10S	SCH80S	P28J-005W7	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	2	1.5	SCH10S	SCH80S	P28J-005W8	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	3	1.5	SCH10S	SCH80S	P28J-005W9	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	3	2	SCH10S	SCH10S	P28J-005WA	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	4	1.5	SCH10S	SCH80S	P28J-005WB	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	4	2	SCH10S	SCH10S	P28J-005WC	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	4	3	SCH10S	SCH10S	P28J-005WD	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P29J-002M5	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	0.75		SCH80S		P29J-002M6	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1		SCH80S		P29J-002M7	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5		SCH80S		P29J-002M8	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	2		SCH10S		P29J-002ME	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	3		SCH10S		P29J-002MH	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	

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CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	4		SCH10S		P29J-002MK	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
541	0.75				P29K-00049	Cap ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 NPT Severe wet H2S service	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P41J-001U7	Straight nipple ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Severe wet H2S service	
1	0.75		SCH80S		P41J-001U8	Straight nipple ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Severe wet H2S service	
1	1		SCH80S		P41J-001U9	Straight nipple ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Severe wet H2S service	
1	1.5		SCH80S		P41J-001UA	Straight nipple ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Severe wet H2S service	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
541	1	0.75			P31K-00FMB	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 NPT Severe wet H2S service	
541	1.5	0.75			P31K-00FMA	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 NPT Severe wet H2S service	
541	2 - 2.5	0.75			P31K-00GFX	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 NPT Severe wet H2S service	
541	3 - 5	0.75			P31K-00GFY	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 NPT Severe wet H2S service	
1	2	0.75	SCH10S	SCH80S	P31K-00ENM	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	3	0.75	SCH10S	SCH80S	P31K-00ENS	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	4	0.75	SCH10S	SCH80S	P31K-00EP3	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	3	1	SCH10S	SCH80S	P31K-00ENT	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	4	1	SCH10S	SCH80S	P31K-00EP4	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	4	1.5	SCH10S	SCH80S	P31K-00EP5	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30K-0005H	Plug ASTM A182 Grade F316/F316L dual grade ASME B16.11 NPT Round head Severe wet H2S service	
1	0.75				P30K-0005J	Plug ASTM A182 Grade F316/F316L dual grade ASME B16.11 NPT Round head Severe wet H2S service	
1	1				P30K-0005K	Plug ASTM A182 Grade F316/F316L dual grade ASME B16.11 NPT Round head Severe wet H2S service	
1	1.5				P30K-0005L	Plug ASTM A182 Grade F316/F316L dual grade ASME B16.11 NPT Round head Severe wet H2S service	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P61K-005FD	Flange WN ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	0.75		SCH80S		P61K-005FE	Flange WN ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	1		SCH80S		P61K-005FF	Flange WN ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	1.5		SCH80S		P61K-005FG	Flange WN ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	2		SCH10S		P61K-005FN	Flange WN ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	3		SCH10S		P61K-005FS	Flange WN ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	4		SCH10S		P61K-005FT	Flange WN ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
541	0.5				P61K-0069H	Flange NPT ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
541	0.75				P61K-005ZZ	Flange NPT ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
773	0.5		SCH80S		P61K-005FX	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
773	0.75		SCH80S		P61K-005FY	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
773	1		SCH80S		P61K-005FZ	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
773	1.5		SCH80S		P61K-005G0	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
773	2		SCH10S		P61K-005G6	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
773	3		SCH10S		P61K-005G9	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
773	4		SCH10S		P61K-005GA	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67K-001LJ	Blind flange ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	0.75				P67K-001LK	Blind flange ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	1				P67K-001LL	Blind flange ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	1.5				P67K-001LM	Blind flange ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	2				P67K-001LU	Blind flange ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	

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BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3				P67K-001LX	Blind flange ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	4				P67K-001LY	Blind flange ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000L8	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000L9	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000LA	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000LB	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000LH	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000LL	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000LM	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	0.5				P73T-000FT	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	0.75				P73T-000FU	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	3				P73T-000G5	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	4				P73T-000G6	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-4				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
773	0.5-4				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81K-001AT	Gate valve ASTM A182 Grade F316/F316L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service	
1	0.75				P81K-001AU	Gate valve ASTM A182 Grade F316/F316L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service	
1	1				P81K-001AV	Gate valve ASTM A182 Grade F316/F316L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service	
1	1.5				P81K-001AW	Gate valve ASTM A182 Grade F316/F316L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service	
1	2				P81L-002R0	Gate valve ASTM A351 Grade CF8M Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service	
1	3				P81L-002R1	Gate valve ASTM A351 Grade CF8M Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service	
1	4				P81L-002R2	Gate valve ASTM A351 Grade CF8M Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service	
4608	0.75				P81K-001P7	Gate valve ASTM A182 Grade F316/F316L dual grade Class 150 API 602 BW both sides w/ nipples BE - NPT ASTM A312-TP316(L) dual grade Seamless Sch80S-nipple Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service	
773	2				P81L-002RC	Gate valve ASTM A351 Grade CF8M Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82K-000WR	Globe valve ASTM A182 Grade F316/F316L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service	
1	0.75				P82K-000WS	Globe valve ASTM A182 Grade F316/F316L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service	
1	1				P82K-000WT	Globe valve ASTM A182 Grade F316/F316L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service	
1	1.5				P82K-000WU	Globe valve ASTM A182 Grade F316/F316L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service	
1	2				P82L-001G8	Globe valve ASTM A351 Grade CF8M Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service	
1	3				P82L-001G9	Globe valve ASTM A351 Grade CF8M Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service	
1	4				P82L-001GA	Globe valve ASTM A351 Grade CF8M Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service	

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CHECK VALVE (X)							
OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83K-000UB	Check valve ASTM A182 Grade F316/F316L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Severe wet H2S service Amine service	
1	0.75				P83K-000UC	Check valve ASTM A182 Grade F316/F316L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Severe wet H2S service Amine service	
1	1				P83K-000UD	Check valve ASTM A182 Grade F316/F316L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Severe wet H2S service Amine service	
1	1.5				P83K-000UE	Check valve ASTM A182 Grade F316/F316L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Severe wet H2S service Amine service	
1	2				P83L-001ET	Check valve ASTM A351 Grade CF8M Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service Amine service	
1	3				P83L-001EU	Check valve ASTM A351 Grade CF8M Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service Amine service	
1	4				P83L-001EV	Check valve ASTM A351 Grade CF8M Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service Amine service	

SPECT BLANK (SB)							
OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71K-000D6	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	
1	0.75				P71K-000D7	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	
1	1				P71K-000D8	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	
1	1.5				P71K-000D9	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	
1	2				P71K-000DC	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	
1	3				P71K-000DD	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	
1	4				P71K-000DE	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	

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BOLT TABLE (B_A0L503 , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	60	P80S-008SY		
0.75	4	0.500	65	P80S-008SZ		
1	4	0.500	70	P80S-008T0		
1.5	4	0.500	75	P80S-008T1		
2	4	0.625	85	P80S-0090A		
3	4	0.625	95	P80S-0090C		
4	8	0.625	95	P80S-0090C		

BOLT TABLE (B_A0L503_773 , STUD ASME RF, OPTION CODE 773)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-008T0		
0.75	4	0.625	75	P80S-00908		
1	4	0.625	80	P80S-00909		
1.5	4	0.750	95	P80S-005Z4		
2	8	0.625	90	P80S-0090B		
3	8	0.750	110	P80S-0090F		
4	8	0.750	115	P80S-0090G		

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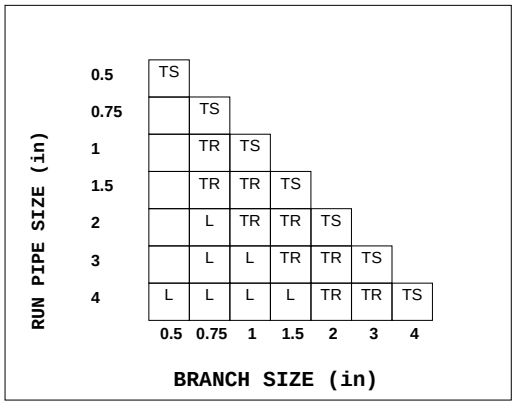
BRANCH TABLE (T_A0L503)



TR : REDUCING TEE
TS : STRAIGHT TEE
L : OUTLET

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PIPING CLASS

A0LG REV NO. 2

Material : SS316L
Rating : ASME CLASS 150
Flange Face : RF
C.A.(mm) : 0.00
Gasket : Spiral Wound
Service : UTILITY - POWER PIPING, CORROSIVE SERVICE : / CHEMICAL (O2 SCAVENGER & AMINE DOSING TO DE AERATOR)

Design Code : ASME B31.1
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
541	NPT(F) (CA,L)
714	SW - NPT(F) (V)
773	CLASS 300 (B,F,G)
3001	INSULATION GASKET KIT AND BOLTS FOR FLANGE (G)
4603	WITH ALTERNATIVE GLAND PACKING MATERIAL (V)

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PIPING CLASS
A0LG REV NO. 2

PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P01J-001FS	Pipe ASME SA312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE	
1	0.75		SCH80S		P01J-001FT	Pipe ASME SA312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE	
1	1		SCH80S		P01J-001FU	Pipe ASME SA312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE	
1	1.5		SCH80S		P01J-001FV	Pipe ASME SA312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE	
1	2		SCH10S		P01J-0028D	Pipe ASME SA312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M BE	
1	3		SCH10S		P01J-0028E	Pipe ASME SA312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M BE	
1	4		SCH10S		P01J-0028F	Pipe ASME SA312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M BE	
1	6		SCH10S		P01J-0029F	Pipe ASME SA312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P02K-0002J	90 degree elbow ASME SA182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	0.75				P02K-0002K	90 degree elbow ASME SA182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	1				P02K-0002L	90 degree elbow ASME SA182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	1.5				P02K-0002M	90 degree elbow ASME SA182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	2		SCH10S		P02J-001RJ	90 degree elbow ASME SA403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	3		SCH10S		P02J-001RK	90 degree elbow ASME SA403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	4		SCH10S		P02J-001RL	90 degree elbow ASME SA403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	6		SCH10S		P02J-001SS	90 degree elbow ASME SA403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P03K-0002F	45 degree elbow ASME SA182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	0.75				P03K-0002G	45 degree elbow ASME SA182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	1				P03K-0002H	45 degree elbow ASME SA182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	1.5				P03K-0002J	45 degree elbow ASME SA182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	2		SCH10S		P03J-001MY	45 degree elbow ASME SA403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	3		SCH10S		P03J-001MZ	45 degree elbow ASME SA403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	4		SCH10S		P03J-001N0	45 degree elbow ASME SA403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	6		SCH10S		P03J-001P5	45 degree elbow ASME SA403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P21K-0002H	Straight tee ASME SA182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	0.75				P21K-0002J	Straight tee ASME SA182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	1				P21K-0002K	Straight tee ASME SA182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	1.5				P21K-0002L	Straight tee ASME SA182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	2		SCH10S		P21J-001EE	Straight tee ASME SA403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	3		SCH10S		P21J-001EF	Straight tee ASME SA403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	4		SCH10S		P21J-001EG	Straight tee ASME SA403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	6		SCH10S		P21J-001FM	Straight tee ASME SA403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75			P24K-0003E	Reducing tee ASME SA182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	1.5	0.75			P24K-0003F	Reducing tee ASME SA182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	1.5	1			P24K-0003G	Reducing tee ASME SA182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	2	1	SCH10S	SCH80S	P24J-0065E	Reducing tee ASME SA403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	2	1.5	SCH10S	SCH80S	P24J-0065F	Reducing tee ASME SA403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	3	1.5	SCH10S	SCH80S	P24J-0065G	Reducing tee ASME SA403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	3	2	SCH10S	SCH10S	P24J-0065H	Reducing tee ASME SA403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	4	2	SCH10S	SCH10S	P24J-0065J	Reducing tee ASME SA403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	4	3	SCH10S	SCH10S	P24J-0065K	Reducing tee ASME SA403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	6	3	SCH10S	SCH10S	P24J-0068W	Reducing tee ASME SA403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	6	4	SCH10S	SCH10S	P24J-0068X	Reducing tee ASME SA403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	

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CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	SCH10S	SCH10S	P27J-0054G	Concentric reducer ASME SA403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	4	2	SCH10S	SCH10S	P27J-0054H	Concentric reducer ASME SA403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	4	3	SCH10S	SCH10S	P27J-0054J	Concentric reducer ASME SA403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	6	3	SCH10S	SCH10S	P27J-00586	Concentric reducer ASME SA403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	6	4	SCH10S	SCH10S	P27J-00587	Concentric reducer ASME SA403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	SCH10S	SCH10S	P28J-0055B	Eccentric reducer ASME SA403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	4	2	SCH10S	SCH10S	P28J-0055C	Eccentric reducer ASME SA403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	4	3	SCH10S	SCH10S	P28J-0055D	Eccentric reducer ASME SA403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	6	3	SCH10S	SCH10S	P28J-00591	Eccentric reducer ASME SA403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	6	4	SCH10S	SCH10S	P28J-00592	Eccentric reducer ASME SA403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P29K-00030	Cap ASME SA182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	0.75				P29K-00031	Cap ASME SA182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	1				P29K-00032	Cap ASME SA182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	1.5				P29K-00033	Cap ASME SA182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	2		SCH10S		P29J-00197	Cap ASME SA403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	3		SCH10S		P29J-00198	Cap ASME SA403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	4		SCH10S		P29J-00199	Cap ASME SA403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	6		SCH10S		P29J-001A1	Cap ASME SA403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
541	0.75				P29K-0003T	Cap ASME SA182 Grade F316/F316L dual grade Class 3000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P41J-001TG	Straight nipple ASME SA312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		SCH80S		P41J-001TH	Straight nipple ASME SA312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		SCH80S		P41J-001TJ	Straight nipple ASME SA312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		SCH80S		P41J-001TK	Straight nipple ASME SA312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

CON SWAGED NIPPLE (SNC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH80S	SCH80S	P42J-000AP	Concentric swaged nipple ASME SA403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	SCH80S	SCH80S	P42J-000AR	Concentric swaged nipple ASME SA403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	SCH80S	SCH80S	P42J-000AS	Concentric swaged nipple ASME SA403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	SCH80S	SCH80S	P42J-000AT	Concentric swaged nipple ASME SA403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	SCH80S	SCH80S	P42J-000AU	Concentric swaged nipple ASME SA403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	SCH80S	SCH80S	P42J-000AV	Concentric swaged nipple ASME SA403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	SCH10S	SCH80S	P42J-000FL	Concentric swaged nipple ASME SA403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	SCH10S	SCH80S	P42J-000FM	Concentric swaged nipple ASME SA403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	SCH10S	SCH80S	P42J-000FN	Concentric swaged nipple ASME SA403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	SCH10S	SCH80S	P42J-000FP	Concentric swaged nipple ASME SA403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	SCH10S	SCH80S	P42J-000FV	Concentric swaged nipple ASME SA403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	

ECC SWAGED NIPPLE (SNE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH80S	SCH80S	P43J-00093	Eccentric swaged nipple ASME SA403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	SCH80S	SCH80S	P43J-00094	Eccentric swaged nipple ASME SA403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	SCH80S	SCH80S	P43J-00095	Eccentric swaged nipple ASME SA403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	

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ECC SWAGED NIPPLE (SNE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5	0.5	SCH80S	SCH80S	P43J-00096	Eccentric swaged nipple ASME SA403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	SCH80S	SCH80S	P43J-00097	Eccentric swaged nipple ASME SA403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	SCH80S	SCH80S	P43J-00098	Eccentric swaged nipple ASME SA403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	SCH10S	SCH80S	P43J-000CJ	Eccentric swaged nipple ASME SA403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	SCH10S	SCH80S	P43J-000CK	Eccentric swaged nipple ASME SA403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	SCH10S	SCH80S	P43J-000CL	Eccentric swaged nipple ASME SA403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	SCH10S	SCH80S	P43J-000CM	Eccentric swaged nipple ASME SA403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	SCH10S	SCH80S	P43J-000CX	Eccentric swaged nipple ASME SA403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	

COUPLING (CPS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P47K-0004C	Coupling ASME SA182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW - SW	
1	0.75				P47K-0004D	Coupling ASME SA182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW - SW	
1	1				P47K-0004E	Coupling ASME SA182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW - SW	
1	1.5				P47K-0004F	Coupling ASME SA182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW - SW	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2 - 2.5	0.75			P31K-00GG1	Outlet ASME SA182 Grade F316/F316L dual grade Class 3000 MSS SP-97 SW	
1	3 - 5	0.75			P31K-00GG2	Outlet ASME SA182 Grade F316/F316L dual grade Class 3000 MSS SP-97 SW	
1	6 - 12	0.75			P31K-00GG3	Outlet ASME SA182 Grade F316/F316L dual grade Class 3000 MSS SP-97 SW	
1	3	1			P31K-00GG4	Outlet ASME SA182 Grade F316/F316L dual grade Class 3000 MSS SP-97 SW	
1	4 - 5	1			P31K-00GG5	Outlet ASME SA182 Grade F316/F316L dual grade Class 3000 MSS SP-97 SW	
1	6 - 10	1			P31K-00GG6	Outlet ASME SA182 Grade F316/F316L dual grade Class 3000 MSS SP-97 SW	
1	4	1.5			P31K-00DME	Outlet ASME SA182 Grade F316/F316L dual grade Class 3000 MSS SP-97 SW	
1	5 - 6	1.5			P31K-00GG7	Outlet ASME SA182 Grade F316/F316L dual grade Class 3000 MSS SP-97 SW	
541	1	0.75			P31K-00FMF	Outlet ASME SA182 Grade F316/F316L dual grade Class 3000 MSS SP-97 NPT	
541	1.5	0.75			P31K-00FME	Outlet ASME SA182 Grade F316/F316L dual grade Class 3000 MSS SP-97 NPT	
541	2 - 2.5	0.75			P31K-00GG8	Outlet ASME SA182 Grade F316/F316L dual grade Class 3000 MSS SP-97 NPT	
541	3 - 5	0.75			P31K-00GG9	Outlet ASME SA182 Grade F316/F316L dual grade Class 3000 MSS SP-97 NPT	
541	6 - 12	0.75			P31K-00GGA	Outlet ASME SA182 Grade F316/F316L dual grade Class 3000 MSS SP-97 NPT	
1	6	2	SCH10S	SCH10S	P31K-00DM9	Outlet ASME SA182 Grade F316/F316L dual grade MSS SP-97 BW	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30K-0002R	Plug ASME SA182 Grade F316/F316L dual grade ASME B16.11 NPT Round head	
1	0.75				P30K-0002S	Plug ASME SA182 Grade F316/F316L dual grade ASME B16.11 NPT Round head	
1	1				P30K-0002T	Plug ASME SA182 Grade F316/F316L dual grade ASME B16.11 NPT Round head	
1	1.5				P30K-0002U	Plug ASME SA182 Grade F316/F316L dual grade ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P61K-003BN	Flange SW ASME SA182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
1	0.75		SCH80S		P61K-003BP	Flange SW ASME SA182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
1	1		SCH80S		P61K-003BR	Flange SW ASME SA182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
1	1.5		SCH80S		P61K-003BS	Flange SW ASME SA182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
1	2		SCH10S		P61K-004SJ	Flange WN ASME SA182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
1	3		SCH10S		P61K-004SL	Flange WN ASME SA182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
1	4		SCH10S		P61K-004SM	Flange WN ASME SA182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
1	6		SCH10S		P61K-005M3	Flange WN ASME SA182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
773	0.5		SCH80S		P61K-003BU	Flange SW ASME SA182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF	
773	0.75		SCH80S		P61K-003BV	Flange SW ASME SA182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF	
773	1		SCH80S		P61K-003BW	Flange SW ASME SA182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF	
773	1.5		SCH80S		P61K-003BX	Flange SW ASME SA182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF	
773	2		SCH10S		P61K-004SK	Flange WN ASME SA182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
773	3		SCH10S		P61K-004SN	Flange WN ASME SA182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF	
773	4		SCH10S		P61K-004SP	Flange WN ASME SA182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF	
773	6		SCH10S		P61K-005MA	Flange WN ASME SA182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67K-0012N	Blind flange ASME SA182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
1	0.75				P67K-0012P	Blind flange ASME SA182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
1	1				P67K-0012R	Blind flange ASME SA182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
1	1.5				P67K-0012S	Blind flange ASME SA182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
1	2				P67K-0012T	Blind flange ASME SA182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
1	3				P67K-001EP	Blind flange ASME SA182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
1	4				P67K-001ER	Blind flange ASME SA182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
1	6				P67K-001PU	Blind flange ASME SA182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000L8	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000L9	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000LA	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000LB	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000LH	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000LL	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000LM	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	6				P73T-000LN	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
3001	3				P78U-0004P	Insulation gasket kit Glass reinforced epoxy Class 150 Manufacturer-standard Flange ASME B16.5 RF	
773	0.5				P73T-000FT	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	0.75				P73T-000FU	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	3				P73T-000G5	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	4				P73T-000G6	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	6				P73T-000G7	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-6				See Attached Bolt Table	Bolt and Nut ASME SA193 Grade B7 / SA194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
773	0.5-6				See Attached Bolt Table	Bolt and Nut ASME SA193 Grade B7 / SA194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81K-0010L	Gate valve ASME SA182 Grade F316/F316L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	0.75				P81K-0010M	Gate valve ASME SA182 Grade F316/F316L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	1				P81K-0010N	Gate valve ASME SA182 Grade F316/F316L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	1.5				P81K-0010P	Gate valve ASME SA182 Grade F316/F316L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	2				P81L-001YS	Gate valve ASME SA351 Grade CF8M Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	3				P81L-00213	Gate valve ASME SA351 Grade CF8M Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	4				P81L-00214	Gate valve ASME SA351 Grade CF8M Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	

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GATE VALVE (V)							
OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	6				P81L-002DB	Gate valve ASME SA351 Grade CF8M Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
4603	0.5				P81K-001DL	Gate valve ASME SA182 Grade F316/F316L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated Fluid-1	
4603	0.75				P81K-001DM	Gate valve ASME SA182 Grade F316/F316L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated Fluid-1	
4603	1				P81K-001DN	Gate valve ASME SA182 Grade F316/F316L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated Fluid-1	
4603	1.5				P81K-001DP	Gate valve ASME SA182 Grade F316/F316L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated Fluid-1	
714	0.5				P81K-001LD	Gate valve ASME SA182 Grade F316/F316L dual grade Class 800 API 602 SW - NPT Trim number 12 BB-BG-OS&Y Handwheel operated	
714	0.75				P81K-001G2	Gate valve ASME SA182 Grade F316/F316L dual grade Class 800 API 602 SW - NPT Trim number 12 BB-BG-OS&Y Handwheel operated	

CHECK VALVE (X)							
OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83K-000LW	Check valve ASME SA182 Grade F316/F316L dual grade Class 800 API 602 SW Trim number 12 Lift-type Bolted cover	
1	0.75				P83K-000LX	Check valve ASME SA182 Grade F316/F316L dual grade Class 800 API 602 SW Trim number 12 Lift-type Bolted cover	
1	1				P83K-000LY	Check valve ASME SA182 Grade F316/F316L dual grade Class 800 API 602 SW Trim number 12 Lift-type Bolted cover	
1	1.5				P83K-000LZ	Check valve ASME SA182 Grade F316/F316L dual grade Class 800 API 602 SW Trim number 12 Lift-type Bolted cover	
1	2				P83L-0011Z	Check valve ASME SA351 Grade CF8M Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	3				P83L-0012U	Check valve ASME SA351 Grade CF8M Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	4				P83L-0012V	Check valve ASME SA351 Grade CF8M Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	6				P83L-001BD	Check valve ASME SA351 Grade CF8M Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	

SPECT BLANK (SB)							
OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71K-0006G	Spectacle blank ASME SA182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	0.75				P71K-0006H	Spectacle blank ASME SA182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	1				P71K-0006J	Spectacle blank ASME SA182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71K-0006K	Spectacle blank ASME SA182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	2				P71K-0006L	Spectacle blank ASME SA182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	3				P71K-0006M	Spectacle blank ASME SA182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	4				P71K-0006N	Spectacle blank ASME SA182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	6				P71K-000EW	Spectacle blank ASME SA182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	

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BOLT TABLE (B_A0LG , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	60	P80S-00MEJ		
0.75	4	0.500	65	P80S-00MEH		
1	4	0.500	70	P80S-00MEG		
1.5	4	0.500	75	P80S-00MEF		
2	4	0.625	85	P80S-00MAN		
3	4	0.625	95	P80S-00MAL		
4	8	0.625	95	P80S-00MAL		
6	8	0.750	105	P80S-00MAJ		

BOLT TABLE (B_A0LG_773 , STUD ASME RF, OPTION CODE 773)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-00MEG		
0.75	4	0.625	75	P80S-00MAR		
1	4	0.625	80	P80S-00MAP		
1.5	4	0.750	95	P80S-00M37		
2	8	0.625	90	P80S-00MAM		
3	8	0.750	110	P80S-00MAH		
4	8	0.750	115	P80S-00M8C		
6	12	0.750	125	P80S-00M8A		

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BRANCH TABLE (T_A0LG)

RUN PIPE SIZE (in) \ BRANCH SIZE (in)	0.5	0.75	1	1.5	2	3	4	6
0.5	TS							
0.75		TS						
1		TR	TS					
1.5		TR	TR	TS				
2		L	TR	TR	TS			
3		L	L	TR	TR	TS		
4	L	L	L	L	TR	TR	TS	
6	L	L	L	L	L	TR	TR	TS

TR : REDUCING TEE
L : OUTLET
TS : STRAIGHT TEE

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A0LG01 REV NO. 2

Material : SS316L
Rating : ASME CLASS 150
Flange Face : RF
C.A.(mm) : 0.00
Gasket : Spiral Wound
Service : UTILITY - STEAM, CONDENSATE, BOILER FEED WATER TO ASME B31.1
Design Code : ASME B31.1
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
541	NPT(F) (CA,L)
714	SW - NPT(F) (V)
773	CLASS 300 (B,F,G)

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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P01J-001FS	Pipe ASME SA312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE	
1	0.75		SCH80S		P01J-001FT	Pipe ASME SA312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE	
1	1		SCH80S		P01J-001FU	Pipe ASME SA312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE	
1	1.5		SCH80S		P01J-001FV	Pipe ASME SA312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE	
1	2		SCH10S		P01J-0028D	Pipe ASME SA312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M BE	
1	3		SCH10S		P01J-0028E	Pipe ASME SA312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M BE	
1	4		SCH10S		P01J-0028F	Pipe ASME SA312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M BE	
1	6		SCH10S		P01J-0029F	Pipe ASME SA312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M BE	
1	8		SCH10S		P01J-0029G	Pipe ASME SA312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M BE	
1	10		SCH10S		P01J-0029D	Pipe ASME SA312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M BE	
1	12		SCH10S		P01J-0029E	Pipe ASME SA312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M BE	
1	14		SCH10S		P01J-002HB	Pipe ASME SA312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M BE	
1	16		SCH10S		P01J-002HC	Pipe ASME SA312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M BE	
1	18		SCH10S		P01J-002HD	Pipe ASME SA312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P02K-0002J	90 degree elbow ASME SA182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	0.75				P02K-0002K	90 degree elbow ASME SA182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	1				P02K-0002L	90 degree elbow ASME SA182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	1.5				P02K-0002M	90 degree elbow ASME SA182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	2		SCH10S		P02J-001RJ	90 degree elbow ASME SA403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	3		SCH10S		P02J-001RK	90 degree elbow ASME SA403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	4		SCH10S		P02J-001RL	90 degree elbow ASME SA403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	6		SCH10S		P02J-001SS	90 degree elbow ASME SA403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P03K-0002F	45 degree elbow ASME SA182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	0.75				P03K-0002G	45 degree elbow ASME SA182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	1				P03K-0002H	45 degree elbow ASME SA182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	1.5				P03K-0002J	45 degree elbow ASME SA182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	2		SCH10S		P03J-001MY	45 degree elbow ASME SA403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	3		SCH10S		P03J-001MZ	45 degree elbow ASME SA403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	4		SCH10S		P03J-001N0	45 degree elbow ASME SA403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	6		SCH10S		P03J-001P5	45 degree elbow ASME SA403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P21K-0002H	Straight tee ASME SA182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	0.75				P21K-0002J	Straight tee ASME SA182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	1				P21K-0002K	Straight tee ASME SA182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	1.5				P21K-0002L	Straight tee ASME SA182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	2		SCH10S		P21J-001EE	Straight tee ASME SA403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	3		SCH10S		P21J-001EF	Straight tee ASME SA403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	4		SCH10S		P21J-001EG	Straight tee ASME SA403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	6		SCH10S		P21J-001FM	Straight tee ASME SA403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75			P24K-0003E	Reducing tee ASME SA182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	1.5	0.75			P24K-0003F	Reducing tee ASME SA182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	1.5	1			P24K-0003G	Reducing tee ASME SA182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	2	1	SCH10S	SCH80S	P24J-0065E	Reducing tee ASME SA403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	2	1.5	SCH10S	SCH80S	P24J-0065F	Reducing tee ASME SA403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	

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REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	1.5	SCH10S	SCH80S	P24J-0065G	Reducing tee ASME SA403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	3	2	SCH10S	SCH10S	P24J-0065H	Reducing tee ASME SA403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	4	2	SCH10S	SCH10S	P24J-0065J	Reducing tee ASME SA403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	4	3	SCH10S	SCH10S	P24J-0065K	Reducing tee ASME SA403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	6	3	SCH10S	SCH10S	P24J-0068W	Reducing tee ASME SA403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	6	4	SCH10S	SCH10S	P24J-0068X	Reducing tee ASME SA403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	SCH10S	SCH10S	P27J-0054G	Concentric reducer ASME SA403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	4	2	SCH10S	SCH10S	P27J-0054H	Concentric reducer ASME SA403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	4	3	SCH10S	SCH10S	P27J-0054J	Concentric reducer ASME SA403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	6	3	SCH10S	SCH10S	P27J-00586	Concentric reducer ASME SA403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	6	4	SCH10S	SCH10S	P27J-00587	Concentric reducer ASME SA403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	SCH10S	SCH10S	P28J-0055B	Eccentric reducer ASME SA403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	4	2	SCH10S	SCH10S	P28J-0055C	Eccentric reducer ASME SA403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	4	3	SCH10S	SCH10S	P28J-0055D	Eccentric reducer ASME SA403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	6	3	SCH10S	SCH10S	P28J-00591	Eccentric reducer ASME SA403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	6	4	SCH10S	SCH10S	P28J-00592	Eccentric reducer ASME SA403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P29K-00030	Cap ASME SA182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	0.75				P29K-00031	Cap ASME SA182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	1				P29K-00032	Cap ASME SA182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	1.5				P29K-00033	Cap ASME SA182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	2		SCH10S		P29J-00197	Cap ASME SA403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	3		SCH10S		P29J-00198	Cap ASME SA403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	4		SCH10S		P29J-00199	Cap ASME SA403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	6		SCH10S		P29J-001A1	Cap ASME SA403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	8		SCH10S		P29J-001A2	Cap ASME SA403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	10		SCH10S		P29J-0019Z	Cap ASME SA403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	12		SCH10S		P29J-001A0	Cap ASME SA403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	14		SCH10S		P29J-003W2	Cap ASME SA403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	16		SCH10S		P29J-003W3	Cap ASME SA403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	18		SCH10S		P29J-003W4	Cap ASME SA403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
541	0.75				P29K-0003T	Cap ASME SA182 Grade F316/F316L dual grade Class 3000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P41J-001TG	Straight nipple ASME SA312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		SCH80S		P41J-001TH	Straight nipple ASME SA312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		SCH80S		P41J-001TJ	Straight nipple ASME SA312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		SCH80S		P41J-001TK	Straight nipple ASME SA312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

CON SWAGED NIPPLE (SNC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH80S	SCH80S	P42J-000AP	Concentric swaged nipple ASME SA403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	SCH80S	SCH80S	P42J-000AR	Concentric swaged nipple ASME SA403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	SCH80S	SCH80S	P42J-000AS	Concentric swaged nipple ASME SA403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	SCH80S	SCH80S	P42J-000AT	Concentric swaged nipple ASME SA403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	SCH80S	SCH80S	P42J-000AU	Concentric swaged nipple ASME SA403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5	1	SCH80S	SCH80S	P42J-000AV	Concentric swaged nipple ASME SA403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	SCH10S	SCH80S	P42J-000FL	Concentric swaged nipple ASME SA403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	SCH10S	SCH80S	P42J-000FM	Concentric swaged nipple ASME SA403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	SCH10S	SCH80S	P42J-000FN	Concentric swaged nipple ASME SA403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	SCH10S	SCH80S	P42J-000FP	Concentric swaged nipple ASME SA403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	SCH10S	SCH80S	P42J-000FV	Concentric swaged nipple ASME SA403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	

ECC SWAGED NIPPLE (SNE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH80S	SCH80S	P43J-00093	Eccentric swaged nipple ASME SA403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	SCH80S	SCH80S	P43J-00094	Eccentric swaged nipple ASME SA403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	SCH80S	SCH80S	P43J-00095	Eccentric swaged nipple ASME SA403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	SCH80S	SCH80S	P43J-00096	Eccentric swaged nipple ASME SA403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	SCH80S	SCH80S	P43J-00097	Eccentric swaged nipple ASME SA403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	SCH80S	SCH80S	P43J-00098	Eccentric swaged nipple ASME SA403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	SCH10S	SCH80S	P43J-000CJ	Eccentric swaged nipple ASME SA403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	SCH10S	SCH80S	P43J-000CK	Eccentric swaged nipple ASME SA403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	SCH10S	SCH80S	P43J-000CL	Eccentric swaged nipple ASME SA403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	SCH10S	SCH80S	P43J-000CM	Eccentric swaged nipple ASME SA403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	SCH10S	SCH80S	P43J-000CX	Eccentric swaged nipple ASME SA403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	

COUPLING (CPS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P47K-0004C	Coupling ASME SA182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW - SW	
1	0.75				P47K-0004D	Coupling ASME SA182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW - SW	
1	1				P47K-0004E	Coupling ASME SA182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW - SW	
1	1.5				P47K-0004F	Coupling ASME SA182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW - SW	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2 - 2.5	0.75			P31K-00GG1	Outlet ASME SA182 Grade F316/F316L dual grade Class 3000 MSS SP-97 SW	
1	3 - 5	0.75			P31K-00GG2	Outlet ASME SA182 Grade F316/F316L dual grade Class 3000 MSS SP-97 SW	
1	6 - 12	0.75			P31K-00GG3	Outlet ASME SA182 Grade F316/F316L dual grade Class 3000 MSS SP-97 SW	
1	14 - 36	0.75			P31K-00GGB	Outlet ASME SA182 Grade F316/F316L dual grade Class 3000 MSS SP-97 SW	
1	3	1			P31K-00GG4	Outlet ASME SA182 Grade F316/F316L dual grade Class 3000 MSS SP-97 SW	
1	4 - 5	1			P31K-00GG5	Outlet ASME SA182 Grade F316/F316L dual grade Class 3000 MSS SP-97 SW	
1	6 - 10	1			P31K-00GG6	Outlet ASME SA182 Grade F316/F316L dual grade Class 3000 MSS SP-97 SW	
1	12 - 36	1			P31K-00GGC	Outlet ASME SA182 Grade F316/F316L dual grade Class 3000 MSS SP-97 SW	
1	4	1.5			P31K-00DME	Outlet ASME SA182 Grade F316/F316L dual grade Class 3000 MSS SP-97 SW	
1	5 - 6	1.5			P31K-00GG7	Outlet ASME SA182 Grade F316/F316L dual grade Class 3000 MSS SP-97 SW	
1	8 - 12	1.5			P31K-00GGD	Outlet ASME SA182 Grade F316/F316L dual grade Class 3000 MSS SP-97 SW	
1	14 - 24	1.5			P31K-00GGE	Outlet ASME SA182 Grade F316/F316L dual grade Class 3000 MSS SP-97 SW	
541	1	0.75			P31K-00FMF	Outlet ASME SA182 Grade F316/F316L dual grade Class 3000 MSS SP-97 NPT	
541	1.5	0.75			P31K-00FME	Outlet ASME SA182 Grade F316/F316L dual grade Class 3000 MSS SP-97 NPT	
541	2 - 2.5	0.75			P31K-00GG8	Outlet ASME SA182 Grade F316/F316L dual grade Class 3000 MSS SP-97 NPT	
541	3 - 5	0.75			P31K-00GG9	Outlet ASME SA182 Grade F316/F316L dual grade Class 3000 MSS SP-97 NPT	
541	6 - 12	0.75			P31K-00GGA	Outlet ASME SA182 Grade F316/F316L dual grade Class 3000 MSS SP-97 NPT	
541	14 - 36	0.75			P31K-00GGF	Outlet ASME SA182 Grade F316/F316L dual grade Class 3000 MSS SP-97 NPT	
1	6	2	SCH10S	SCH10S	P31K-00DM9	Outlet ASME SA182 Grade F316/F316L dual grade MSS SP-97 BW	
1	8	2	SCH10S	SCH10S	P31K-00DMA	Outlet ASME SA182 Grade F316/F316L dual grade MSS SP-97 BW	
1	10	2	SCH10S	SCH10S	P31K-00DR4	Outlet ASME SA182 Grade F316/F316L dual grade MSS SP-97 BW	
1	12	2	SCH10S	SCH10S	P31K-00DR9	Outlet ASME SA182 Grade F316/F316L dual grade MSS SP-97 BW	
1	14	2	SCH10S	SCH10S	P31K-00EYB	Outlet ASME SA182 Grade F316/F316L dual grade MSS SP-97 BW	

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OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	16	2	SCH10S	SCH10S	P31K-00EYE	Outlet ASME SA182 Grade F316/F316L dual grade MSS SP-97 BW	
1	18	2	SCH10S	SCH10S	P31K-00EYH	Outlet ASME SA182 Grade F316/F316L dual grade MSS SP-97 BW	
1	8	3	SCH10S	SCH10S	P31K-00DR0	Outlet ASME SA182 Grade F316/F316L dual grade MSS SP-97 BW	
1	10	3	SCH10S	SCH10S	P31K-00DR5	Outlet ASME SA182 Grade F316/F316L dual grade MSS SP-97 BW	
1	12	3	SCH10S	SCH10S	P31K-00DRA	Outlet ASME SA182 Grade F316/F316L dual grade MSS SP-97 BW	
1	14	3	SCH10S	SCH10S	P31K-00EYC	Outlet ASME SA182 Grade F316/F316L dual grade MSS SP-97 BW	
1	16	3	SCH10S	SCH10S	P31K-00EYF	Outlet ASME SA182 Grade F316/F316L dual grade MSS SP-97 BW	
1	18	3	SCH10S	SCH10S	P31K-00EYJ	Outlet ASME SA182 Grade F316/F316L dual grade MSS SP-97 BW	
1	12	4	SCH10S	SCH10S	P31K-00DRB	Outlet ASME SA182 Grade F316/F316L dual grade MSS SP-97 BW	
1	14	4	SCH10S	SCH10S	P31K-00EYD	Outlet ASME SA182 Grade F316/F316L dual grade MSS SP-97 BW	
1	16	4	SCH10S	SCH10S	P31K-00EYG	Outlet ASME SA182 Grade F316/F316L dual grade MSS SP-97 BW	
1	18	4	SCH10S	SCH10S	P31K-00EYK	Outlet ASME SA182 Grade F316/F316L dual grade MSS SP-97 BW	
1	18	6	SCH10S	SCH10S	P31K-00EYL	Outlet ASME SA182 Grade F316/F316L dual grade MSS SP-97 BW	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30K-0002R	Plug ASME SA182 Grade F316/F316L dual grade ASME B16.11 NPT Round head	
1	0.75				P30K-0002S	Plug ASME SA182 Grade F316/F316L dual grade ASME B16.11 NPT Round head	
1	1				P30K-0002T	Plug ASME SA182 Grade F316/F316L dual grade ASME B16.11 NPT Round head	
1	1.5				P30K-0002U	Plug ASME SA182 Grade F316/F316L dual grade ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P61K-003BN	Flange SW ASME SA182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
1	0.75		SCH80S		P61K-003BP	Flange SW ASME SA182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
1	1		SCH80S		P61K-003BR	Flange SW ASME SA182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
1	1.5		SCH80S		P61K-003BS	Flange SW ASME SA182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
1	2		SCH10S		P61K-004SJ	Flange WN ASME SA182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
1	3		SCH10S		P61K-004SL	Flange WN ASME SA182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
1	4		SCH10S		P61K-004SM	Flange WN ASME SA182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
1	6		SCH10S		P61K-005M3	Flange WN ASME SA182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
1	8		SCH10S		P61K-005M4	Flange WN ASME SA182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
1	10		SCH10S		P61K-005LY	Flange WN ASME SA182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
1	12		SCH10S		P61K-005LZ	Flange WN ASME SA182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
1	14		SCH10S		P61K-005M0	Flange WN ASME SA182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
1	16		SCH10S		P61K-005M1	Flange WN ASME SA182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
1	18		SCH10S		P61K-005M2	Flange WN ASME SA182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
773	0.5		SCH80S		P61K-003BU	Flange SW ASME SA182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF	
773	0.75		SCH80S		P61K-003BV	Flange SW ASME SA182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF	
773	1		SCH80S		P61K-003BW	Flange SW ASME SA182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF	
773	1.5		SCH80S		P61K-003BX	Flange SW ASME SA182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF	
773	2		SCH10S		P61K-004SK	Flange WN ASME SA182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF	
773	3		SCH10S		P61K-004SN	Flange WN ASME SA182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF	
773	4		SCH10S		P61K-004SP	Flange WN ASME SA182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF	
773	6		SCH10S		P61K-005MA	Flange WN ASME SA182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF	
773	8		SCH10S		P61K-005MB	Flange WN ASME SA182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF	
773	10		SCH10S		P61K-005M5	Flange WN ASME SA182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF	
773	12		SCH10S		P61K-005M6	Flange WN ASME SA182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF	
773	14		SCH10S		P61K-005M7	Flange WN ASME SA182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF	
773	16		SCH10S		P61K-005M8	Flange WN ASME SA182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF	
773	18		SCH10S		P61K-005M9	Flange WN ASME SA182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67K-0012N	Blind flange ASME SA182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
1	0.75				P67K-0012P	Blind flange ASME SA182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
1	1				P67K-0012R	Blind flange ASME SA182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
1	1.5				P67K-0012S	Blind flange ASME SA182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
1	2				P67K-0012T	Blind flange ASME SA182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3				P67K-001EP	Blind flange ASME SA182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
1	4				P67K-001ER	Blind flange ASME SA182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
1	6				P67K-001PU	Blind flange ASME SA182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
1	8				P67K-001PV	Blind flange ASME SA182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
1	10				P67K-001PN	Blind flange ASME SA182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
1	12				P67K-001PP	Blind flange ASME SA182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
1	14				P67K-001PR	Blind flange ASME SA182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
1	16				P67K-001PS	Blind flange ASME SA182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
1	18				P67K-001PT	Blind flange ASME SA182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000L8	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000L9	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000LA	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000LB	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000LH	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000LL	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000LM	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	6				P73T-000LN	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	8				P73T-000LP	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	10				P73T-000LC	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	12				P73T-000LD	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	14				P73T-000LE	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	16				P73T-000LF	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	18				P73T-000LG	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	0.5				P73T-000FT	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	0.75				P73T-000FU	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	3				P73T-000G5	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	4				P73T-000G6	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	6				P73T-000G7	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	8				P73T-000G8	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	10				P73T-000FX	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	12				P73T-000FY	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	14				P73T-000FZ	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	16				P73T-000G0	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	18				P73T-000G1	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-16				See Attached Bolt Table	Bolt and Nut ASME SA193 Grade B7 / SA194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	18				See Attached Bolt Table	Bolt and Nut ASME SA193 Grade B7 / SA194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
773	0.5-10				See Attached Bolt Table	Bolt and Nut ASME SA193 Grade B7 / SA194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
773	12-18				See Attached Bolt Table	Bolt and Nut ASME SA193 Grade B7 / SA194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	

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GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81K-0010L	Gate valve ASME SA182 Grade F316/F316L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	0.75				P81K-0010M	Gate valve ASME SA182 Grade F316/F316L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	1				P81K-0010N	Gate valve ASME SA182 Grade F316/F316L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	1.5				P81K-0010P	Gate valve ASME SA182 Grade F316/F316L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	2				P81L-001YS	Gate valve ASME SA351 Grade CF8M Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	3				P81L-00213	Gate valve ASME SA351 Grade CF8M Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	4				P81L-00214	Gate valve ASME SA351 Grade CF8M Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	6				P81L-002DB	Gate valve ASME SA351 Grade CF8M Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	8				P81L-002DC	Gate valve ASME SA351 Grade CF8M Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	10				P81L-002D9	Gate valve ASME SA351 Grade CF8M Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	12				P81L-002DA	Gate valve ASME SA351 Grade CF8M Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	14				P81L-002DD	Gate valve ASME SA351 Grade CF8M Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated	
1	16				P81L-002DE	Gate valve ASME SA351 Grade CF8M Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated	
1	18				P81L-002DF	Gate valve ASME SA351 Grade CF8M Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated	
714	0.5				P81K-001LD	Gate valve ASME SA182 Grade F316/F316L dual grade Class 800 API 602 SW - NPT Trim number 12 BB-BG-OS&Y Handwheel operated	
714	0.75				P81K-001G2	Gate valve ASME SA182 Grade F316/F316L dual grade Class 800 API 602 SW - NPT Trim number 12 BB-BG-OS&Y Handwheel operated	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83K-000LW	Check valve ASME SA182 Grade F316/F316L dual grade Class 800 API 602 SW Trim number 12 Lift-type Bolted cover	
1	0.75				P83K-000LX	Check valve ASME SA182 Grade F316/F316L dual grade Class 800 API 602 SW Trim number 12 Lift-type Bolted cover	
1	1				P83K-000LY	Check valve ASME SA182 Grade F316/F316L dual grade Class 800 API 602 SW Trim number 12 Lift-type Bolted cover	
1	1.5				P83K-000LZ	Check valve ASME SA182 Grade F316/F316L dual grade Class 800 API 602 SW Trim number 12 Lift-type Bolted cover	
1	2				P83L-0011Z	Check valve ASME SA351 Grade CF8M Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	3				P83L-0012U	Check valve ASME SA351 Grade CF8M Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	4				P83L-0012V	Check valve ASME SA351 Grade CF8M Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	6				P83L-001BD	Check valve ASME SA351 Grade CF8M Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	8				P83L-001BE	Check valve ASME SA351 Grade CF8M Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	10				P83L-001B8	Check valve ASME SA351 Grade CF8M Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	12				P83L-001B9	Check valve ASME SA351 Grade CF8M Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	14				P83L-001BA	Check valve ASME SA351 Grade CF8M Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	16				P83L-001BB	Check valve ASME SA351 Grade CF8M Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	18				P83L-001BC	Check valve ASME SA351 Grade CF8M Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71K-0006G	Spectacle blank ASME SA182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	0.75				P71K-0006H	Spectacle blank ASME SA182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	1				P71K-0006J	Spectacle blank ASME SA182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71K-0006K	Spectacle blank ASME SA182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	2				P71K-0006L	Spectacle blank ASME SA182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	3				P71K-0006M	Spectacle blank ASME SA182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	4				P71K-0006N	Spectacle blank ASME SA182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	6				P71K-000EW	Spectacle blank ASME SA182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	8				P71K-000EX	Spectacle blank ASME SA182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	

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SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	10				P71K-000EU	Spectacle blank ASME SA182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	12				P71K-000EV	Spectacle blank ASME SA182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	

PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72K-000FC	Paddle blank ASME SA182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	16				P72K-000FD	Paddle blank ASME SA182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	18				P72K-000FE	Paddle blank ASME SA182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	

PADDLE SPACER (PS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72K-000FF	Paddle spacer ASME SA182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	16				P72K-000FG	Paddle spacer ASME SA182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	18				P72K-000FH	Paddle spacer ASME SA182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	

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BOLT TABLE (B_A0LG01 , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	60	P80S-00MEJ		
0.75	4	0.500	65	P80S-00MEH		
1	4	0.500	70	P80S-00MEG		
1.5	4	0.500	75	P80S-00MEF		
2	4	0.625	85	P80S-00MAN		
3	4	0.625	95	P80S-00MAL		
4	8	0.625	95	P80S-00MAL		
6	8	0.750	105	P80S-00MAJ		
8	8	0.750	110	P80S-00MAH		
10	12	0.875	120	P80S-00M32		
12	12	0.875	120	P80S-00M32		
14	12	1.000	135	P80S-00LYF		
16	16	1.000	140	P80S-00LYE		
18	16	1.125	150	P80S-00LNN		

BOLT TABLE (B_A0LG01_773 , STUD ASME RF, OPTION CODE 773)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-00MEG		
0.75	4	0.625	75	P80S-00MAR		
1	4	0.625	80	P80S-00MAP		
1.5	4	0.750	95	P80S-00M37		
2	8	0.625	90	P80S-00MAM		
3	8	0.750	110	P80S-00MAH		
4	8	0.750	115	P80S-00M8C		
6	12	0.750	125	P80S-00M8A		
8	12	0.875	140	P80S-00M2Y		
10	16	1.000	160	P80S-00LYA		
12	16	1.125	175	P80S-00LNH		
14	20	1.125	180	P80S-00LNG		
16	20	1.250	190	P80S-00LCC		
18	24	1.250	200	P80S-00LCA		

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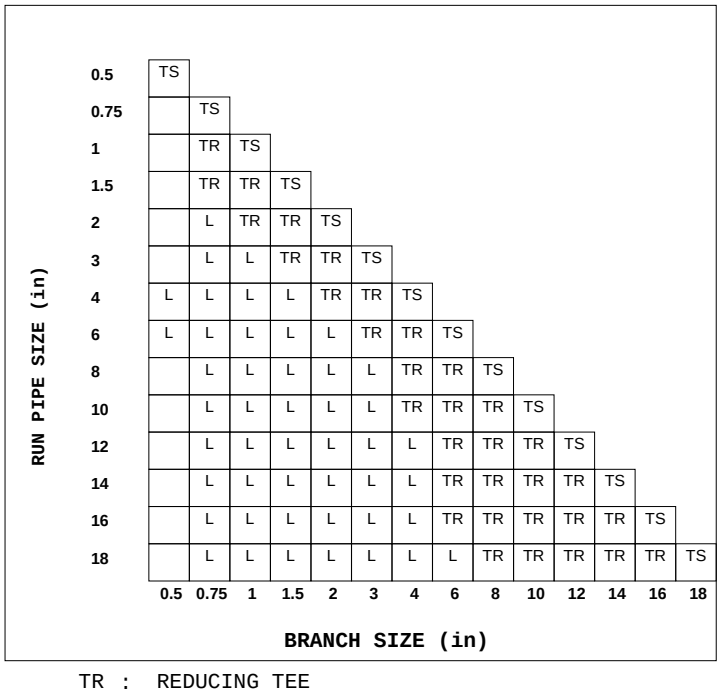
BRANCH TABLE (T_A0LG01)



TR : REDUCING TEE
TS : STRAIGHT TEE
L : OUTLET

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PIPING CLASS

A0LP03 REV NO. 2

Material : SS316L
Rating : ASME CLASS 150
Flange Face : RF
C.A.(mm) : 0.80
Gasket : Spiral Wound
Service : PROCESS - GENERAL PROCESS NON SOUR, NON CORROSIVE
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
2	USE OF SOFT SEATED BALL, PLUG AND BUTTERFLY VALVES SHALL BE LIMITED TO MAXIMUM OF 204DEGC (400DEGF)
24	FOR ALL RELEVANT PIPING CLASSES WITH LINE DESIGN TEMPERATURE ABOVE 427DEGC, IN SPIRAL WOUND GASKET, SUITABLE GASKET FILLER MATERIAL SUCH AS COMBINATION OF MICA LAYERS AND GRAPHITE FILLERS OR EQUIVALENT SHALL BE REVIEWED AND SELECTED OR AS DEFINED BY THE LICENSOR

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
200	WITH JACK SCREW (FO)
541	NPT(F) (CA,L)
714	SW - NPT(F) (V)
773	CLASS 300 (B,F,G,V)

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PIPING CLASS
A0LP03 REV NO. 2

PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P01J-0014A	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE	
1	0.75		SCH80S		P01J-0014B	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE	
1	1		SCH80S		P01J-0014C	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE	
1	1.5		SCH80S		P01J-0014D	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE	
1	2		SCH10S		P01J-000CD	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M BE	
1	3		SCH10S		P01J-000CY	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M BE	
1	4		SCH10S		P01J-000DH	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M BE	
1	6		SCH10S		P01J-000DN	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P02K-0000G	90 degree elbow ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	0.75				P02K-0000H	90 degree elbow ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	1				P02K-0000J	90 degree elbow ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	1.5				P02K-0000K	90 degree elbow ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	2		SCH10S		P02J-00066	90 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	3		SCH10S		P02J-00068	90 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	4		SCH10S		P02J-0006A	90 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	6		SCH10S		P02J-0006D	90 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P03K-0000D	45 degree elbow ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	0.75				P03K-0000E	45 degree elbow ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	1				P03K-0000F	45 degree elbow ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	1.5				P03K-0000G	45 degree elbow ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	2		SCH10S		P03J-00066	45 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	3		SCH10S		P03J-00068	45 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	4		SCH10S		P03J-0006B	45 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	6		SCH10S		P03J-0006C	45 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P21K-0000G	Straight tee ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	0.75				P21K-0000H	Straight tee ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	1				P21K-0000J	Straight tee ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	1.5				P21K-0000K	Straight tee ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	2		SCH10S		P21J-0006F	Straight tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	3		SCH10S		P21J-0006H	Straight tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	4		SCH10S		P21J-0006L	Straight tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	6		SCH10S		P21J-0006N	Straight tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75			P24K-0000M	Reducing tee ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	1.5	0.75			P24K-0000P	Reducing tee ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	1.5	1			P24K-0000R	Reducing tee ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	2	1	SCH10S	SCH80S	P24J-0065L	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	2	1.5	SCH10S	SCH80S	P24J-0064L	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	3	1.5	SCH10S	SCH80S	P24J-004TG	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	3	2	SCH10S	SCH10S	P24J-001EE	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	4	2	SCH10S	SCH10S	P24J-001EB	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	4	3	SCH10S	SCH10S	P24J-001EM	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	6	3	SCH10S	SCH10S	P24J-001EC	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	6	4	SCH10S	SCH10S	P24J-001EP	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	

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CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	SCH10S	SCH10S	P27J-000T5	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	4	2	SCH10S	SCH10S	P27J-000T7	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	4	3	SCH10S	SCH10S	P27J-000TJ	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	6	3	SCH10S	SCH10S	P27J-000T3	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	6	4	SCH10S	SCH10S	P27J-000TD	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	SCH10S	SCH10S	P28J-000T7	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	4	2	SCH10S	SCH10S	P28J-000TA	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	4	3	SCH10S	SCH10S	P28J-000TJ	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	6	3	SCH10S	SCH10S	P28J-000T3	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	6	4	SCH10S	SCH10S	P28J-000TC	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P29K-00021	Cap ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	0.75				P29K-00022	Cap ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	1				P29K-00023	Cap ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	1.5				P29K-00024	Cap ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	2		SCH10S		P29J-0006F	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	3		SCH10S		P29J-00064	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	4		SCH10S		P29J-00066	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	6		SCH10S		P29J-00067	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
541	0.75				P29K-00002	Cap ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 NPT	
541	1				P29K-00003	Cap ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 NPT	
541	1.5				P29K-00004	Cap ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P41J-001CE	Straight nipple ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		SCH80S		P41J-001CF	Straight nipple ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		SCH160		P41J-001V0	Straight nipple ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		SCH80S		P41J-001CH	Straight nipple ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

CON SWAGED NIPPLE (SNC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH80S	SCH80S	P42J-0008N	Concentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	SCH80S	SCH80S	P42J-0008M	Concentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	SCH80S	SCH80S	P42J-0008P	Concentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	SCH80S	SCH80S	P42J-0008R	Concentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	SCH80S	SCH80S	P42J-0008S	Concentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	SCH80S	SCH80S	P42J-0008T	Concentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	SCH10S	SCH80S	P42J-000FG	Concentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	SCH10S	SCH80S	P42J-000FH	Concentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	SCH10S	SCH80S	P42J-000FJ	Concentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	SCH10S	SCH80S	P42J-000FK	Concentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	SCH10S	SCH80S	P42J-000FW	Concentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	

ECC SWAGED NIPPLE (SNE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH80S	SCH80S	P43J-0008R	Eccentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.5	SCH80S	SCH80S	P43J-0008S	Eccentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	SCH80S	SCH80S	P43J-0008T	Eccentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	SCH80S	SCH80S	P43J-0008U	Eccentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	SCH80S	SCH80S	P43J-0008V	Eccentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	SCH80S	SCH80S	P43J-0008W	Eccentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	SCH10S	SCH80S	P43J-000CE	Eccentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	SCH10S	SCH80S	P43J-000CF	Eccentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	SCH10S	SCH80S	P43J-000CG	Eccentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	SCH10S	SCH80S	P43J-000CH	Eccentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	SCH10S	SCH80S	P43J-000CY	Eccentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	

COUPLING (CPS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P47K-0000G	Coupling ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW - SW	
1	0.75				P47K-0000H	Coupling ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW - SW	
1	1				P47K-0000J	Coupling ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW - SW	
1	1.5				P47K-0000K	Coupling ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW - SW	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2 - 2.5	0.75			P31K-00GGG	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 SW	
1	3 - 5	0.75			P31K-00GGH	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 SW	
1	6 - 12	0.75			P31K-003VD	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 SW	
1	3	1			P31K-003UY	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 SW	
1	4 - 5	1			P31K-00GGJ	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 SW	
1	6 - 10	1			P31K-003UU	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 SW	
1	4	1.5			P31K-003UH	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 SW	
1	5 - 6	1.5			P31K-00GGN	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 SW	
541	1	0.75			P31K-001XH	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 NPT	
541	1.5	0.75			P31K-001XM	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 NPT	
541	2 - 2.5	0.75			P31K-00GGK	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 NPT	
541	3 - 5	0.75			P31K-00GGL	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 NPT	
541	6 - 12	0.75			P31K-003U1	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 NPT	
1	6	2	SCH10S	SCH10S	P31K-00335	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30K-0001L	Plug ASTM A182 Grade F316/F316L dual grade ASME B16.11 NPT Round head	
1	0.75				P30K-0001M	Plug ASTM A182 Grade F316/F316L dual grade ASME B16.11 NPT Round head	
1	1				P30K-0001N	Plug ASTM A182 Grade F316/F316L dual grade ASME B16.11 NPT Round head	
1	1.5				P30K-0001P	Plug ASTM A182 Grade F316/F316L dual grade ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P61K-003AF	Flange SW ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
1	0.75		SCH80S		P61K-003AG	Flange SW ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
1	1		SCH80S		P61K-003AH	Flange SW ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
1	1.5		SCH80S		P61K-003AJ	Flange SW ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
1	2		SCH10S		P61K-0017R	Flange WN ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
1	3		SCH10S		P61K-0017M	Flange WN ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
1	4		SCH10S		P61K-0017L	Flange WN ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
1	6		SCH10S		P61K-0017K	Flange WN ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
773	0.5		SCH80S		P61K-003AK	Flange SW ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF	
773	0.75		SCH80S		P61K-003AL	Flange SW ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF	
773	1		SCH80S		P61K-003AM	Flange SW ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF	

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FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
773	1.5		SCH80S		P61K-003AN	Flange SW ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF	
773	2		SCH10S		P61K-0018C	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF	
773	3		SCH10S		P61K-00189	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF	
773	4		SCH10S		P61K-00188	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF	
773	6		SCH10S		P61K-001C6	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67K-0007A	Blind flange ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
1	0.75				P67K-00079	Blind flange ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
1	1				P67K-00078	Blind flange ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
1	1.5				P67K-00077	Blind flange ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
1	2				P67K-00071	Blind flange ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
1	3				P67K-0006Y	Blind flange ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
1	4				P67K-0006X	Blind flange ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
1	6				P67K-0006W	Blind flange ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	

REDUCING FLANGE (FR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	4	3		SCH10S	P62K-00001	Reducing flange WN ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000L8	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000L9	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000LA	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000LB	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000LH	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000LL	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000LM	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	6				P73T-000LN	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	0.5				P73T-000FT	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	0.75				P73T-000FU	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	3				P73T-000G5	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	4				P73T-000G6	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	6				P73T-000G7	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-6				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
773	0.5-6				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81K-0010V	Gate valve ASTM A182 Grade F316/F316L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	0.75				P81K-0010W	Gate valve ASTM A182 Grade F316/F316L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	1				P81K-0010X	Gate valve ASTM A182 Grade F316/F316L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	

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GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5				P81K-0010Y	Gate valve ASTM A182 Grade F316/F316L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	2				P81L-002AV	Gate valve ASTM A351 Grade CF8M Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	3				P81L-002AW	Gate valve ASTM A351 Grade CF8M Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	4				P81L-002AX	Gate valve ASTM A351 Grade CF8M Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	6				P81L-002BU	Gate valve ASTM A351 Grade CF8M Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
714	0.5				P81K-001LF	Gate valve ASTM A182 Grade F316/F316L dual grade Class 800 API 602 SW - NPT Trim number 12 BB-BG-OS&Y Handwheel operated	
714	0.75				P81K-001G3	Gate valve ASTM A182 Grade F316/F316L dual grade Class 800 API 602 SW - NPT Trim number 12 BB-BG-OS&Y Handwheel operated	
773	2				P81L-002CT	Gate valve ASTM A351 Grade CF8M Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82K-000P3	Globe valve ASTM A182 Grade F316/F316L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	0.75				P82K-000P4	Globe valve ASTM A182 Grade F316/F316L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	1				P82K-000P5	Globe valve ASTM A182 Grade F316/F316L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	1.5				P82K-000P6	Globe valve ASTM A182 Grade F316/F316L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	2				P82L-0019X	Globe valve ASTM A351 Grade CF8M Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	3				P82L-0019Y	Globe valve ASTM A351 Grade CF8M Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	4				P82L-0019Z	Globe valve ASTM A351 Grade CF8M Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	6				P82L-001AB	Globe valve ASTM A351 Grade CF8M Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83K-000P6	Check valve ASTM A182 Grade F316/F316L dual grade Class 800 API 602 SW Trim number 12 Lift-type Bolted cover	
1	0.75				P83K-000P7	Check valve ASTM A182 Grade F316/F316L dual grade Class 800 API 602 SW Trim number 12 Lift-type Bolted cover	
1	1				P83K-000P8	Check valve ASTM A182 Grade F316/F316L dual grade Class 800 API 602 SW Trim number 12 Lift-type Bolted cover	
1	1.5				P83K-000P9	Check valve ASTM A182 Grade F316/F316L dual grade Class 800 API 602 SW Trim number 12 Lift-type Bolted cover	
1	2				P83L-000EC	Check valve ASTM A351 Grade CF8M Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	3				P83L-000EB	Check valve ASTM A351 Grade CF8M Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	4				P83L-000EA	Check valve ASTM A351 Grade CF8M Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	6				P83L-000E9	Check valve ASTM A351 Grade CF8M Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	

ORIFICE FLANGE (FO)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	4		SCH10S		P66K-00320	Orifice flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
200	4		SCH10S		P66K-0032B	Orifice flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71K-0006P	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	0.75				P71K-0006R	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	1				P71K-0006S	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71K-0006T	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	2				P71K-0006U	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	3				P71K-0006V	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	4				P71K-0006W	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	6				P71K-0006Z	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	

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BOLT TABLE (B_A0LP03 , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	60	P80S-003V2		
0.75	4	0.500	65	P80S-003V3		
1	4	0.500	70	P80S-003V4		
1.5	4	0.500	75	P80S-003V5		
2	4	0.625	85	P80S-003XE		
3	4	0.625	95	P80S-003XG		
4	8	0.625	95	P80S-003XG		
6	8	0.750	105	P80S-003XJ		

BOLT TABLE (B_A0LP03_773 , STUD ASME RF, OPTION CODE 773)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-003V4		
0.75	4	0.625	75	P80S-003XC		
1	4	0.625	80	P80S-003XD		
1.5	4	0.750	95	P80S-00414		
2	8	0.625	90	P80S-003XF		
3	8	0.750	110	P80S-003XK		
4	8	0.750	115	P80S-003XL		
6	12	0.750	125	P80S-003XN		

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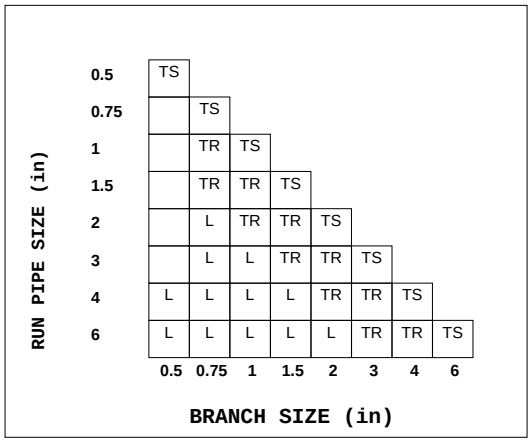
BRANCH TABLE (T_A0LP03)



L : OUTLET
TR : REDUCING TEE
TS : STRAIGHT TEE

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Material : SS316L
Rating : ASME CLASS 150
Flange Face : RF
C.A.(mm) : 0.80
Gasket : Spiral Wound
Service : PROCESS - GENERAL PROCESS NON SOUR, NON CORROSIVE
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
2	USE OF SOFT SEATED BALL, PLUG AND BUTTERFLY VALVES SHALL BE LIMITED TO MAXIMUM OF 204DEGC (400DEGF)
24	FOR ALL RELEVANT PIPING CLASSES WITH LINE DESIGN TEMPERATURE ABOVE 427DEGC, IN SPIRAL WOUND GASKET, SUITABLE GASKET FILLER MATERIAL SUCH AS COMBINATION OF MICA LAYERS AND GRAPHITE FILLERS OR EQUIVALENT SHALL BE REVIEWED AND SELECTED OR AS DEFINED BY THE LICENSOR

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
541	NPT(F) (CA,L)
714	SW - NPT(F) (V)
773	CLASS 300 (B,F,G)

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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P01J-0014A	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE	
1	0.75		SCH80S		P01J-0014B	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE	
1	1		SCH80S		P01J-0014C	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE	
1	1.5		SCH80S		P01J-0014D	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE	
1	2		SCH40S		P01J-000CK	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M BE	
1	3		SCH40S		P01J-000D8	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M BE	
1	4		SCH40S		P01J-000DF	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P02K-0000G	90 degree elbow ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	0.75				P02K-0000H	90 degree elbow ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	1				P02K-0000J	90 degree elbow ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	1.5				P02K-0000K	90 degree elbow ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	2		SCH40S		P02J-0007C	90 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	3		SCH40S		P02J-0007D	90 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	4		SCH40S		P02J-0007E	90 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P03K-0000D	45 degree elbow ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	0.75				P03K-0000E	45 degree elbow ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	1				P03K-0000F	45 degree elbow ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	1.5				P03K-0000G	45 degree elbow ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	2		SCH40S		P03J-0007C	45 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	3		SCH40S		P03J-0007D	45 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	4		SCH40S		P03J-0007E	45 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P21K-0000G	Straight tee ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	0.75				P21K-0000H	Straight tee ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	1				P21K-0000J	Straight tee ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	1.5				P21K-0000K	Straight tee ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	2		SCH40S		P21J-0007W	Straight tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	3		SCH40S		P21J-0007X	Straight tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	4		SCH40S		P21J-0007Y	Straight tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75			P24K-0000M	Reducing tee ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	1.5	0.75			P24K-0000P	Reducing tee ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	1.5	1			P24K-0000R	Reducing tee ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	2	1	SCH40S	SCH80S	P24J-003MZ	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	2	1.5	SCH40S	SCH80S	P24J-003N0	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	3	1.5	SCH40S	SCH80S	P24J-004TU	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	3	2	SCH40S	SCH40S	P24J-001JD	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	4	2	SCH40S	SCH40S	P24J-001JE	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	4	3	SCH40S	SCH40S	P24J-001JF	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	SCH40S	SCH40S	P27J-000WG	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	4	2	SCH40S	SCH40S	P27J-000WJ	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	4	3	SCH40S	SCH40S	P27J-000WK	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	

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ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	SCH40S	SCH40S	P28J-000WB	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	4	2	SCH40S	SCH40S	P28J-000WD	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	4	3	SCH40S	SCH40S	P28J-000WE	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P29K-00021	Cap ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	0.75				P29K-00022	Cap ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	1				P29K-00023	Cap ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	1.5				P29K-00024	Cap ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	2		SCH40S		P29J-0007D	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	3		SCH40S		P29J-0007G	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	4		SCH40S		P29J-0007J	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
541	0.75				P29K-00002	Cap ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P41J-001CE	Straight nipple ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		SCH80S		P41J-001CF	Straight nipple ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		SCH160		P41J-001V0	Straight nipple ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		SCH80S		P41J-001CH	Straight nipple ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

CON SWAGED NIPPLE (SNC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH80S	SCH80S	P42J-0008N	Concentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	SCH80S	SCH80S	P42J-0008M	Concentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	SCH80S	SCH80S	P42J-0008P	Concentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	SCH80S	SCH80S	P42J-0008R	Concentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	SCH80S	SCH80S	P42J-0008S	Concentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	SCH80S	SCH80S	P42J-0008T	Concentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	SCH40S	SCH80S	P42J-000B0	Concentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	SCH40S	SCH80S	P42J-000B1	Concentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	SCH40S	SCH80S	P42J-000B2	Concentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	SCH40S	SCH80S	P42J-000B3	Concentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	SCH40S	SCH80S	P42J-000B4	Concentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	

ECC SWAGED NIPPLE (SNE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH80S	SCH80S	P43J-0008R	Eccentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	SCH80S	SCH80S	P43J-0008S	Eccentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	SCH80S	SCH80S	P43J-0008T	Eccentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	SCH80S	SCH80S	P43J-0008U	Eccentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	SCH80S	SCH80S	P43J-0008V	Eccentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	SCH80S	SCH80S	P43J-0008W	Eccentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	SCH40S	SCH80S	P43J-0009D	Eccentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	SCH40S	SCH80S	P43J-0009E	Eccentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	SCH40S	SCH80S	P43J-0009F	Eccentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	SCH40S	SCH80S	P43J-0009G	Eccentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	SCH40S	SCH80S	P43J-0009H	Eccentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	

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COUPLING (CPS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P47K-0000G	Coupling ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW - SW	
1	0.75				P47K-0000H	Coupling ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW - SW	
1	1				P47K-0000J	Coupling ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW - SW	
1	1.5				P47K-0000K	Coupling ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW - SW	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2 - 2.5	0.75			P31K-00GGG	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 SW	
1	3 - 5	0.75			P31K-00GGH	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 SW	
1	3	1			P31K-003UY	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 SW	
1	4 - 5	1			P31K-00GGJ	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 SW	
1	4	1.5			P31K-003UH	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 SW	
541	1	0.75			P31K-001XH	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 NPT	
541	1.5	0.75			P31K-001XM	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 NPT	
541	2 - 2.5	0.75			P31K-00GGK	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 NPT	
541	3 - 5	0.75			P31K-00GGL	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 NPT	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30K-0001L	Plug ASTM A182 Grade F316/F316L dual grade ASME B16.11 NPT Round head	
1	0.75				P30K-0001M	Plug ASTM A182 Grade F316/F316L dual grade ASME B16.11 NPT Round head	
1	1				P30K-0001N	Plug ASTM A182 Grade F316/F316L dual grade ASME B16.11 NPT Round head	
1	1.5				P30K-0001P	Plug ASTM A182 Grade F316/F316L dual grade ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P61K-003AF	Flange SW ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
1	0.75		SCH80S		P61K-003AG	Flange SW ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
1	1		SCH80S		P61K-003AH	Flange SW ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
1	1.5		SCH80S		P61K-003AJ	Flange SW ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
1	2		SCH40S		P61K-002LB	Flange WN ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
1	3		SCH40S		P61K-00340	Flange WN ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
1	4		SCH40S		P61K-00341	Flange WN ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
773	0.5		SCH80S		P61K-003AK	Flange SW ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF	
773	0.75		SCH80S		P61K-003AL	Flange SW ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF	
773	1		SCH80S		P61K-003AM	Flange SW ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF	
773	1.5		SCH80S		P61K-003AN	Flange SW ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF	
773	2		SCH40S		P61K-002LG	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF	
773	3		SCH40S		P61K-003C5	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF	
773	4		SCH40S		P61K-003C6	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67K-0007A	Blind flange ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
1	0.75				P67K-00079	Blind flange ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
1	1				P67K-00078	Blind flange ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
1	1.5				P67K-00077	Blind flange ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
1	2				P67K-00071	Blind flange ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
1	3				P67K-0006Y	Blind flange ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
1	4				P67K-0006X	Blind flange ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000L8	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000L9	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000LA	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000LB	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

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GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2				P73T-000LH	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000LL	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000LM	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	0.5				P73T-000FT	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	0.75				P73T-000FU	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	3				P73T-000G5	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	4				P73T-000G6	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-4				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
773	0.5-4				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81K-0010V	Gate valve ASTM A182 Grade F316/F316L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	0.75				P81K-0010W	Gate valve ASTM A182 Grade F316/F316L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	1				P81K-0010X	Gate valve ASTM A182 Grade F316/F316L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	1.5				P81K-0010Y	Gate valve ASTM A182 Grade F316/F316L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	2				P81L-002AV	Gate valve ASTM A351 Grade CF8M Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	3				P81L-002AW	Gate valve ASTM A351 Grade CF8M Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	4				P81L-002AX	Gate valve ASTM A351 Grade CF8M Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
714	0.5				P81K-001LF	Gate valve ASTM A182 Grade F316/F316L dual grade Class 800 API 602 SW - NPT Trim number 12 BB-BG-OS&Y Handwheel operated	
714	0.75				P81K-001G3	Gate valve ASTM A182 Grade F316/F316L dual grade Class 800 API 602 SW - NPT Trim number 12 BB-BG-OS&Y Handwheel operated	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82K-000P3	Globe valve ASTM A182 Grade F316/F316L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	0.75				P82K-000P4	Globe valve ASTM A182 Grade F316/F316L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	1				P82K-000P5	Globe valve ASTM A182 Grade F316/F316L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	1.5				P82K-000P6	Globe valve ASTM A182 Grade F316/F316L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	2				P82L-0019X	Globe valve ASTM A351 Grade CF8M Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	3				P82L-0019Y	Globe valve ASTM A351 Grade CF8M Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	4				P82L-0019Z	Globe valve ASTM A351 Grade CF8M Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83K-000P6	Check valve ASTM A182 Grade F316/F316L dual grade Class 800 API 602 SW Trim number 12 Lift-type Bolted cover	
1	0.75				P83K-000P7	Check valve ASTM A182 Grade F316/F316L dual grade Class 800 API 602 SW Trim number 12 Lift-type Bolted cover	
1	1				P83K-000P8	Check valve ASTM A182 Grade F316/F316L dual grade Class 800 API 602 SW Trim number 12 Lift-type Bolted cover	
1	1.5				P83K-000P9	Check valve ASTM A182 Grade F316/F316L dual grade Class 800 API 602 SW Trim number 12 Lift-type Bolted cover	
1	2				P83L-000EC	Check valve ASTM A351 Grade CF8M Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	3				P83L-000EB	Check valve ASTM A351 Grade CF8M Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	

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CHECK VALVE (X)							
OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	4				P83L-000EA	Check valve ASTM A351 Grade CF8M Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	

SPECT BLANK (SB)							
OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71K-0006P	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	0.75				P71K-0006R	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	1				P71K-0006S	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71K-0006T	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	2				P71K-0006U	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	3				P71K-0006V	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	4				P71K-0006W	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	

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BOLT TABLE (B_A0LP04 , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	60	P80S-003V2		
0.75	4	0.500	65	P80S-003V3		
1	4	0.500	70	P80S-003V4		
1.5	4	0.500	75	P80S-003V5		
2	4	0.625	85	P80S-003XE		
3	4	0.625	95	P80S-003XG		
4	8	0.625	95	P80S-003XG		

BOLT TABLE (B_A0LP04_773 , STUD ASME RF, OPTION CODE 773)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-003V4		
0.75	4	0.625	75	P80S-003XC		
1	4	0.625	80	P80S-003XD		
1.5	4	0.750	95	P80S-00414		
2	8	0.625	90	P80S-003XF		
3	8	0.750	110	P80S-003XK		
4	8	0.750	115	P80S-003XL		

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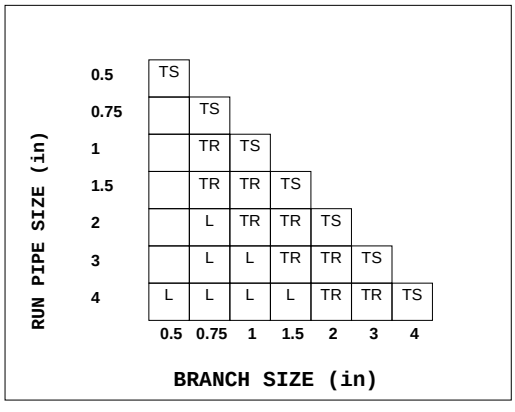
BRANCH TABLE (T_A0LP04)



TR : REDUCING TEE
L : OUTLET
TS : STRAIGHT TEE

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Material : SS316L
Rating : ASME CLASS 150
Flange Face : RF
C.A.(mm) : 0.00
Gasket : Spiral Wound
Service : PROCESS - WET SOUR SERVICE SUBJECT TO NACE STD. : / SWS FEED

Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
2	USE OF SOFT SEATED BALL, PLUG AND BUTTERFLY VALVES SHALL BE LIMITED TO MAXIMUM OF 204DEGC (400DEGF)
5	BOLTING CONFIRMING TO B7M / 2HM SHALL BE USED UNDER CONDITIONS (A) DIRECT EXPOSURE TO SOUR ENVIRONMENTS (B) WHEN THE BOLTING WILL BE BURIED OR INSULATED

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
200	WITH JACK SCREW (FO)
541	NPT(F) (CA,F,L)
773	CLASS 300 (B,F,G,V)
3001	INSULATION GASKET KIT AND BOLTS FOR FLANGE (G)
4608	VALVE WITH NIPPLES (V)

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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P01J-002CY	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE Moderate wet H2S service	
1	0.75		SCH80S		P01J-002CZ	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE Moderate wet H2S service	
1	1		SCH80S		P01J-002D0	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE Moderate wet H2S service	
1	1.5		SCH80S		P01J-002D1	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE Moderate wet H2S service	
1	2		SCH10S		P01J-002D7	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M BE Moderate wet H2S service	
1	3		SCH10S		P01J-002D3	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M BE Moderate wet H2S service	
1	4		SCH10S		P01J-002D8	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M BE Moderate wet H2S service	
1	6		SCH10S		P01J-002D9	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M BE Moderate wet H2S service	
1	8		SCH10S		P01J-002DJ	Pipe ASTM A358 Grade 316/316L Class 1 dual grade EFW ASME B36.10M/B36.19M BE Moderate wet H2S service	
1	10		SCH10S		P01J-002DA	Pipe ASTM A358 Grade 316/316L Class 1 dual grade EFW ASME B36.10M/B36.19M BE Moderate wet H2S service	
1	12		SCH10S		P01J-002DB	Pipe ASTM A358 Grade 316/316L Class 1 dual grade EFW ASME B36.10M/B36.19M BE Moderate wet H2S service	
1	14		SCH10S		P01J-002DC	Pipe ASTM A358 Grade 316/316L Class 1 dual grade EFW ASME B36.10M/B36.19M BE Moderate wet H2S service	
1	16		SCH10S		P01J-002DD	Pipe ASTM A358 Grade 316/316L Class 1 dual grade EFW ASME B36.10M/B36.19M BE Moderate wet H2S service	
1	18		SCH10S		P01J-002DE	Pipe ASTM A358 Grade 316/316L Class 1 dual grade EFW ASME B36.10M/B36.19M BE Moderate wet H2S service	
1	20		SCH10S		P01J-002DF	Pipe ASTM A358 Grade 316/316L Class 1 dual grade EFW ASME B36.10M/B36.19M BE Moderate wet H2S service	
1	24		SCH10S		P01J-002DG	Pipe ASTM A358 Grade 316/316L Class 1 dual grade EFW ASME B36.10M/B36.19M BE Moderate wet H2S service	
1	30		SCH10S		P01J-002HG	Pipe ASTM A358 Grade 316/316L Class 1 dual grade EFW ASME B36.10M/B36.19M BE Moderate wet H2S service	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P02J-001WB	90 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Moderate wet H2S service	
1	0.75		SCH80S		P02J-001WC	90 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Moderate wet H2S service	
1	1		SCH80S		P02J-001WD	90 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Moderate wet H2S service	
1	1.5		SCH80S		P02J-001WE	90 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Moderate wet H2S service	
1	2		SCH10S		P02J-001WL	90 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Moderate wet H2S service	
1	3		SCH10S		P02J-001WG	90 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Moderate wet H2S service	
1	4		SCH10S		P02J-001WM	90 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Moderate wet H2S service	
1	6		SCH10S		P02J-001WN	90 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Moderate wet H2S service	
1	8		SCH10S		P02J-001WY	90 degree elbow ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Long radius Moderate wet H2S service	
1	10		SCH10S		P02J-001WP	90 degree elbow ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Long radius Moderate wet H2S service	
1	12		SCH10S		P02J-001WR	90 degree elbow ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Long radius Moderate wet H2S service	
1	14		SCH10S		P02J-001WS	90 degree elbow ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Long radius Moderate wet H2S service	
1	16		SCH10S		P02J-001WT	90 degree elbow ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Long radius Moderate wet H2S service	
1	18		SCH10S		P02J-001WU	90 degree elbow ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Long radius Moderate wet H2S service	
1	20		SCH10S		P02J-001WV	90 degree elbow ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Long radius Moderate wet H2S service	
1	24		SCH10S		P02J-001WW	90 degree elbow ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Long radius Moderate wet H2S service	
1	30		SCH10S		P02J-0020G	90 degree elbow ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Long radius Moderate wet H2S service	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P03J-001TT	45 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Moderate wet H2S service	
1	0.75		SCH80S		P03J-001TU	45 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Moderate wet H2S service	
1	1		SCH80S		P03J-001TV	45 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Moderate wet H2S service	
1	1.5		SCH80S		P03J-001TW	45 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Moderate wet H2S service	
1	2		SCH10S		P03J-001U2	45 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Moderate wet H2S service	

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45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3		SCH10S		P03J-001TY	45 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Moderate wet H2S service	
1	4		SCH10S		P03J-001U3	45 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Moderate wet H2S service	
1	6		SCH10S		P03J-001U4	45 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Moderate wet H2S service	
1	8		SCH10S		P03J-001UD	45 degree elbow ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Long radius Moderate wet H2S service	
1	10		SCH10S		P03J-001U5	45 degree elbow ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Long radius Moderate wet H2S service	
1	12		SCH10S		P03J-001U6	45 degree elbow ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Long radius Moderate wet H2S service	
1	14		SCH10S		P03J-001U7	45 degree elbow ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Long radius Moderate wet H2S service	
1	16		SCH10S		P03J-001U8	45 degree elbow ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Long radius Moderate wet H2S service	
1	18		SCH10S		P03J-001U9	45 degree elbow ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Long radius Moderate wet H2S service	
1	20		SCH10S		P03J-001UA	45 degree elbow ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Long radius Moderate wet H2S service	
1	24		SCH10S		P03J-001UB	45 degree elbow ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Long radius Moderate wet H2S service	
1	30		SCH10S		P03J-00209	45 degree elbow ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Long radius Moderate wet H2S service	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P21J-001KB	Straight tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	0.75		SCH80S		P21J-001KC	Straight tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	1		SCH80S		P21J-001KD	Straight tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	1.5		SCH80S		P21J-001KE	Straight tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	2		SCH10S		P21J-001KL	Straight tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	3		SCH10S		P21J-001KG	Straight tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	4		SCH10S		P21J-001KM	Straight tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	6		SCH10S		P21J-001KN	Straight tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	8		SCH10S		P21J-001KY	Straight tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	10		SCH10S		P21J-001KP	Straight tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	12		SCH10S		P21J-001KR	Straight tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	14		SCH10S		P21J-001KS	Straight tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	16		SCH10S		P21J-001KT	Straight tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	18		SCH10S		P21J-001KU	Straight tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	20		SCH10S		P21J-001KV	Straight tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	24		SCH10S		P21J-001KW	Straight tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	30		SCH10S		P21J-001PG	Straight tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75	SCH80S	SCH80S	P24J-006WG	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	1.5	0.75	SCH80S	SCH80S	P24J-006WH	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	1.5	1	SCH80S	SCH80S	P24J-006WJ	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	2	1	SCH10S	SCH80S	P24J-006WW	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	2	1.5	SCH10S	SCH80S	P24J-006WX	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	3	1.5	SCH10S	SCH80S	P24J-006WM	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	3	2	SCH10S	SCH10S	P24J-006WY	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	4	2	SCH10S	SCH10S	P24J-006WZ	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	4	3	SCH10S	SCH10S	P24J-006X0	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	6	3	SCH10S	SCH10S	P24J-006X1	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	

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REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	6	4	SCH10S	SCH10S	P24J-006X2	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	8	4	SCH10S	SCH10S	P24J-006X3	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	8	6	SCH10S	SCH10S	P24J-006X4	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	10	4	SCH10S	SCH10S	P24J-006X5	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	10	6	SCH10S	SCH10S	P24J-006X6	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	10	8	SCH10S	SCH10S	P24J-006X7	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	12	6	SCH10S	SCH10S	P24J-006X9	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	12	8	SCH10S	SCH10S	P24J-006XA	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	12	10	SCH10S	SCH10S	P24J-006X8	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	14	6	SCH10S	SCH10S	P24J-006XD	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	14	8	SCH10S	SCH10S	P24J-006XE	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	14	10	SCH10S	SCH10S	P24J-006XB	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	14	12	SCH10S	SCH10S	P24J-006XC	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	16	6	SCH10S	SCH10S	P24J-006XJ	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	16	8	SCH10S	SCH10S	P24J-006XK	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	16	10	SCH10S	SCH10S	P24J-006XF	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	16	12	SCH10S	SCH10S	P24J-006XG	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	16	14	SCH10S	SCH10S	P24J-006XH	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	18	8	SCH10S	SCH10S	P24J-006XR	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	18	10	SCH10S	SCH10S	P24J-006XL	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	18	12	SCH10S	SCH10S	P24J-006XM	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	18	14	SCH10S	SCH10S	P24J-006XN	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	18	16	SCH10S	SCH10S	P24J-006XP	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	20	8	SCH10S	SCH10S	P24J-006XX	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	20	10	SCH10S	SCH10S	P24J-006XS	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	20	12	SCH10S	SCH10S	P24J-006XT	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	20	14	SCH10S	SCH10S	P24J-006XU	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	20	16	SCH10S	SCH10S	P24J-006XV	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	20	18	SCH10S	SCH10S	P24J-006XW	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	24	10	SCH10S	SCH10S	P24J-006XY	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	24	12	SCH10S	SCH10S	P24J-006XZ	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	24	14	SCH10S	SCH10S	P24J-006Y0	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	24	16	SCH10S	SCH10S	P24J-006Y1	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	24	18	SCH10S	SCH10S	P24J-006Y2	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	24	20	SCH10S	SCH10S	P24J-006Y3	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	30	10	SCH10S	SCH10S	P24J-0077G	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	30	12	SCH10S	SCH10S	P24J-0077H	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	30	14	SCH10S	SCH10S	P24J-0077J	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	30	16	SCH10S	SCH10S	P24J-0077K	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	30	18	SCH10S	SCH10S	P24J-0077L	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	30	20	SCH10S	SCH10S	P24J-0077M	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	30	24	SCH10S	SCH10S	P24J-0077N	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	

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CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH80S	SCH80S	P27J-005R6	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	1	0.5	SCH80S	SCH80S	P27J-005R7	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	1	0.75	SCH80S	SCH80S	P27J-005R8	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	1.5	0.5	SCH80S	SCH80S	P27J-005R9	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	1.5	0.75	SCH80S	SCH80S	P27J-005RA	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	1.5	1	SCH80S	SCH80S	P27J-005RB	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	2	0.75	SCH10S	SCH80S	P27J-005RR	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	2	1	SCH10S	SCH80S	P27J-005RS	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	2	1.5	SCH10S	SCH80S	P27J-005RT	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	3	1.5	SCH10S	SCH80S	P27J-005RF	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	3	2	SCH10S	SCH10S	P27J-005RU	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	4	1.5	SCH10S	SCH80S	P27J-005RV	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	4	2	SCH10S	SCH10S	P27J-005RW	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	4	3	SCH10S	SCH10S	P27J-005RX	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	6	3	SCH10S	SCH10S	P27J-005RY	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	6	4	SCH10S	SCH10S	P27J-005RZ	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	8	4	SCH10S	SCH10S	P27J-005S0	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	8	6	SCH10S	SCH10S	P27J-005S1	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	10	4	SCH10S	SCH10S	P27J-005S2	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	10	6	SCH10S	SCH10S	P27J-005S3	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	10	8	SCH10S	SCH10S	P27J-005S4	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	12	6	SCH10S	SCH10S	P27J-005S6	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	12	8	SCH10S	SCH10S	P27J-005S7	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	12	10	SCH10S	SCH10S	P27J-005S5	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	14	6	SCH10S	SCH10S	P27J-005SA	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	14	8	SCH10S	SCH10S	P27J-005SB	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	14	10	SCH10S	SCH10S	P27J-005S8	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	14	12	SCH10S	SCH10S	P27J-005S9	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	16	8	SCH10S	SCH10S	P27J-005SF	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	16	10	SCH10S	SCH10S	P27J-005SC	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	16	12	SCH10S	SCH10S	P27J-005SD	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	16	14	SCH10S	SCH10S	P27J-005SE	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	18	10	SCH10S	SCH10S	P27J-005SG	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	18	12	SCH10S	SCH10S	P27J-005SH	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	18	14	SCH10S	SCH10S	P27J-005SJ	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	18	16	SCH10S	SCH10S	P27J-005SK	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	20	12	SCH10S	SCH10S	P27J-005SL	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	20	14	SCH10S	SCH10S	P27J-005SM	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	20	16	SCH10S	SCH10S	P27J-005SN	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	20	18	SCH10S	SCH10S	P27J-005SP	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	24	16	SCH10S	SCH10S	P27J-005SR	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	24	18	SCH10S	SCH10S	P27J-005SS	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	24	20	SCH10S	SCH10S	P27J-005ST	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	30	20	SCH10S	SCH10S	P27J-0062A	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	

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CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	30	24	SCH10S	SCH10S	P27J-0062B	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH80S	SCH80S	P28J-005S2	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	1	0.5	SCH80S	SCH80S	P28J-005S3	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	1	0.75	SCH80S	SCH80S	P28J-005S4	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	1.5	0.5	SCH80S	SCH80S	P28J-005S5	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	1.5	0.75	SCH80S	SCH80S	P28J-005S6	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	1.5	1	SCH80S	SCH80S	P28J-005S7	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	2	0.75	SCH10S	SCH80S	P28J-005SL	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	2	1	SCH10S	SCH80S	P28J-005SM	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	2	1.5	SCH10S	SCH80S	P28J-005SN	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	3	1.5	SCH10S	SCH80S	P28J-005SB	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	3	2	SCH10S	SCH10S	P28J-005SP	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	4	1.5	SCH10S	SCH80S	P28J-005SR	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	4	2	SCH10S	SCH10S	P28J-005SS	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	4	3	SCH10S	SCH10S	P28J-005ST	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	6	3	SCH10S	SCH10S	P28J-005SU	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	6	4	SCH10S	SCH10S	P28J-005SV	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	8	4	SCH10S	SCH10S	P28J-005SW	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	8	6	SCH10S	SCH10S	P28J-005SX	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	10	4	SCH10S	SCH10S	P28J-005SY	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	10	6	SCH10S	SCH10S	P28J-005SZ	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	10	8	SCH10S	SCH10S	P28J-005T0	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	12	6	SCH10S	SCH10S	P28J-005T2	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	12	8	SCH10S	SCH10S	P28J-005T3	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	12	10	SCH10S	SCH10S	P28J-005T1	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	14	6	SCH10S	SCH10S	P28J-005T6	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	14	8	SCH10S	SCH10S	P28J-005T7	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	14	10	SCH10S	SCH10S	P28J-005T4	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	14	12	SCH10S	SCH10S	P28J-005T5	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	16	8	SCH10S	SCH10S	P28J-005TB	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	16	10	SCH10S	SCH10S	P28J-005T8	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	16	12	SCH10S	SCH10S	P28J-005T9	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	16	14	SCH10S	SCH10S	P28J-005TA	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	18	10	SCH10S	SCH10S	P28J-005TC	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	18	12	SCH10S	SCH10S	P28J-005TD	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	18	14	SCH10S	SCH10S	P28J-005TE	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	18	16	SCH10S	SCH10S	P28J-005TF	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	20	12	SCH10S	SCH10S	P28J-005TG	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	20	14	SCH10S	SCH10S	P28J-005TH	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	20	16	SCH10S	SCH10S	P28J-005TJ	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	24	18	SCH10S	SCH10S	P28J-005TK	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	24	16	SCH10S	SCH10S	P28J-005TL	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	

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ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	24	18	SCH10S	SCH10S	P28J-005TM	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	24	20	SCH10S	SCH10S	P28J-005TN	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	30	20	SCH10S	SCH10S	P28J-0063A	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	30	24	SCH10S	SCH10S	P28J-0063B	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P29J-002KG	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	0.75		SCH80S		P29J-002KH	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	1		SCH80S		P29J-002KJ	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	1.5		SCH80S		P29J-002KK	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	2		SCH10S		P29J-002KX	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	3		SCH10S		P29J-002KM	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	4		SCH10S		P29J-002L1	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	6		SCH10S		P29J-002L2	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	8		SCH10S		P29J-002L3	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	10		SCH10S		P29J-002KS	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	12		SCH10S		P29J-002KT	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	14		SCH10S		P29J-002KU	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	16		SCH10S		P29J-002KV	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	18		SCH10S		P29J-002KW	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	20		SCH10S		P29J-002KY	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	24		SCH10S		P29J-002KZ	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	30		SCH10S		P29J-003W5	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
541	0.75				P29K-00048	Cap ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 NPT Moderate wet H2S service	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P41J-001TV	Straight nipple ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Moderate wet H2S service	
1	0.75		SCH80S		P41J-001TW	Straight nipple ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Moderate wet H2S service	
1	1		SCH80S		P41J-001TX	Straight nipple ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Moderate wet H2S service	
1	1.5		SCH80S		P41J-001TY	Straight nipple ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Moderate wet H2S service	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
541	1	0.75			P31K-00FM7	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 NPT Moderate wet H2S service	
541	1.5	0.75			P31K-00FM6	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 NPT Moderate wet H2S service	
541	2 - 2.5	0.75			P31K-00GFU	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 NPT Moderate wet H2S service	
541	3 - 5	0.75			P31K-00GFV	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 NPT Moderate wet H2S service	
541	6 - 12	0.75			P31K-00GFW	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 NPT Moderate wet H2S service	
541	14 - 36	0.75			P31K-00GGM	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 NPT Moderate wet H2S service	
1	2	0.75	SCH10S	SCH80S	P31K-00EJ2	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Moderate wet H2S service	
1	3	0.75	SCH10S	SCH80S	P31K-00EHM	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Moderate wet H2S service	
1	4	0.75	SCH10S	SCH80S	P31K-00EJ3	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Moderate wet H2S service	
1	6	0.75	SCH10S	SCH80S	P31K-00EJ6	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Moderate wet H2S service	
1	8	0.75	SCH10S	SCH80S	P31K-00EJA	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Moderate wet H2S service	
1	10	0.75	SCH10S	SCH80S	P31K-00EJF	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Moderate wet H2S service	
1	12	0.75	SCH10S	SCH80S	P31K-00EJL	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Moderate wet H2S service	
1	14	0.75	SCH10S	SCH80S	P31K-00EJT	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Moderate wet H2S service	
1	16	0.75	SCH10S	SCH80S	P31K-00EJZ	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Moderate wet H2S service	

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OUTLET (L)							
OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	18	0.75	SCH10S	SCH80S	P31K-00EK5	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Moderate wet H2S service	
1	20	0.75	SCH10S	SCH80S	P31K-00EKC	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Moderate wet H2S service	
1	24	0.75	SCH10S	SCH80S	P31K-00EKK	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Moderate wet H2S service	
1	30	0.75	SCH10S	SCH80S	P31K-00EYN	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Moderate wet H2S service	
1	3	1	SCH10S	SCH80S	P31K-00EHN	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Moderate wet H2S service	
1	4	1	SCH10S	SCH80S	P31K-00EJ4	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Moderate wet H2S service	
1	6	1	SCH10S	SCH80S	P31K-00EJ7	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Moderate wet H2S service	
1	8	1	SCH10S	SCH80S	P31K-00EJB	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Moderate wet H2S service	
1	10	1	SCH10S	SCH80S	P31K-00EJG	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Moderate wet H2S service	
1	12	1	SCH10S	SCH80S	P31K-00EJM	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Moderate wet H2S service	
1	14	1	SCH10S	SCH80S	P31K-00EJU	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Moderate wet H2S service	
1	16	1	SCH10S	SCH80S	P31K-00EK0	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Moderate wet H2S service	
1	18	1	SCH10S	SCH80S	P31K-00EK6	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Moderate wet H2S service	
1	20	1	SCH10S	SCH80S	P31K-00EKD	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Moderate wet H2S service	
1	24	1	SCH10S	SCH80S	P31K-00EKL	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Moderate wet H2S service	
1	30	1	SCH10S	SCH80S	P31K-00EYP	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Moderate wet H2S service	
1	4	1.5	SCH10S	SCH80S	P31K-00EJ5	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Moderate wet H2S service	
1	6	1.5	SCH10S	SCH80S	P31K-00EJ8	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Moderate wet H2S service	
1	8	1.5	SCH10S	SCH80S	P31K-00EJC	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Moderate wet H2S service	
1	10	1.5	SCH10S	SCH80S	P31K-00EJH	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Moderate wet H2S service	
1	12	1.5	SCH10S	SCH80S	P31K-00EJN	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Moderate wet H2S service	
1	14	1.5	SCH10S	SCH80S	P31K-00EJV	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Moderate wet H2S service	
1	16	1.5	SCH10S	SCH80S	P31K-00EK1	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Moderate wet H2S service	
1	18	1.5	SCH10S	SCH80S	P31K-00EK7	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Moderate wet H2S service	
1	20	1.5	SCH10S	SCH80S	P31K-00EKE	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Moderate wet H2S service	
1	24	1.5	SCH10S	SCH80S	P31K-00EKM	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Moderate wet H2S service	
1	30	1.5	SCH10S	SCH80S	P31K-00EYR	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Moderate wet H2S service	
1	6	2	SCH10S	SCH10S	P31K-00EJ9	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Moderate wet H2S service	
1	8	2	SCH10S	SCH10S	P31K-00EJD	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Moderate wet H2S service	
1	10	2	SCH10S	SCH10S	P31K-00EJJ	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Moderate wet H2S service	
1	12	2	SCH10S	SCH10S	P31K-00EJP	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Moderate wet H2S service	
1	14	2	SCH10S	SCH10S	P31K-00EJW	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Moderate wet H2S service	
1	16	2	SCH10S	SCH10S	P31K-00EK2	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Moderate wet H2S service	
1	18	2	SCH10S	SCH10S	P31K-00EK8	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Moderate wet H2S service	
1	20	2	SCH10S	SCH10S	P31K-00EKF	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Moderate wet H2S service	
1	24	2	SCH10S	SCH10S	P31K-00EKN	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Moderate wet H2S service	
1	30	2	SCH10S	SCH10S	P31K-00EYS	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Moderate wet H2S service	
1	8	3	SCH10S	SCH10S	P31K-00EJE	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Moderate wet H2S service	
1	10	3	SCH10S	SCH10S	P31K-00EJK	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Moderate wet H2S service	
1	12	3	SCH10S	SCH10S	P31K-00EJR	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Moderate wet H2S service	
1	14	3	SCH10S	SCH10S	P31K-00EJX	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Moderate wet H2S service	
1	16	3	SCH10S	SCH10S	P31K-00EK3	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Moderate wet H2S service	
1	18	3	SCH10S	SCH10S	P31K-00EK9	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Moderate wet H2S service	
1	20	3	SCH10S	SCH10S	P31K-00EKG	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Moderate wet H2S service	
1	24	3	SCH10S	SCH10S	P31K-00EKP	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Moderate wet H2S service	
1	30	3	SCH10S	SCH10S	P31K-00EYT	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Moderate wet H2S service	
1	12	4	SCH10S	SCH10S	P31K-00EJS	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Moderate wet H2S service	
1	14	4	SCH10S	SCH10S	P31K-00EJY	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Moderate wet H2S service	
1	16	4	SCH10S	SCH10S	P31K-00EK4	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Moderate wet H2S service	
1	18	4	SCH10S	SCH10S	P31K-00EKA	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Moderate wet H2S service	
1	20	4	SCH10S	SCH10S	P31K-00EKH	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Moderate wet H2S service	
1	24	4	SCH10S	SCH10S	P31K-00EKR	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Moderate wet H2S service	
1	30	4	SCH10S	SCH10S	P31K-00EYU	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Moderate wet H2S service	
1	18	6	SCH10S	SCH10S	P31K-00EKB	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Moderate wet H2S service	
1	20	6	SCH10S	SCH10S	P31K-00EKJ	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Moderate wet H2S service	
1	24	6	SCH10S	SCH10S	P31K-00EKS	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Moderate wet H2S service	
1	30	6	SCH10S	SCH10S	P31K-00EYV	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Moderate wet H2S service	

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PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30K-00055	Plug ASTM A182 Grade F316/F316L dual grade ASME B16.11 NPT Round head Moderate wet H2S service	
1	0.75				P30K-00056	Plug ASTM A182 Grade F316/F316L dual grade ASME B16.11 NPT Round head Moderate wet H2S service	
1	1				P30K-00057	Plug ASTM A182 Grade F316/F316L dual grade ASME B16.11 NPT Round head Moderate wet H2S service	
1	1.5				P30K-00058	Plug ASTM A182 Grade F316/F316L dual grade ASME B16.11 NPT Round head Moderate wet H2S service	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P61K-005C8	Flange WN ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Moderate wet H2S service	
1	0.75		SCH80S		P61K-005C9	Flange WN ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Moderate wet H2S service	
1	1		SCH80S		P61K-005CA	Flange WN ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Moderate wet H2S service	
1	1.5		SCH80S		P61K-005CB	Flange WN ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Moderate wet H2S service	
1	2		SCH10S		P61K-005CH	Flange WN ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Moderate wet H2S service	
1	3		SCH10S		P61K-005CL	Flange WN ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Moderate wet H2S service	
1	4		SCH10S		P61K-005CM	Flange WN ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Moderate wet H2S service	
1	6		SCH10S		P61K-005CN	Flange WN ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Moderate wet H2S service	
1	8		SCH10S		P61K-005CP	Flange WN ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Moderate wet H2S service	
1	10		SCH10S		P61K-005CC	Flange WN ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Moderate wet H2S service	
1	12		SCH10S		P61K-005CD	Flange WN ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Moderate wet H2S service	
1	14		SCH10S		P61K-005CE	Flange WN ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Moderate wet H2S service	
1	16		SCH10S		P61K-005CF	Flange WN ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Moderate wet H2S service	
1	18		SCH10S		P61K-005CG	Flange WN ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Moderate wet H2S service	
1	20		SCH10S		P61K-005CJ	Flange WN ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Moderate wet H2S service	
1	24		SCH10S		P61K-005CK	Flange WN ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Moderate wet H2S service	
1	30		SCH10S		P61K-005MG	Flange WN ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.47 Series B RF Moderate wet H2S service	
541	0.5				P61K-0069G	Flange NPT ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Moderate wet H2S service	
541	0.75				P61K-005ZY	Flange NPT ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Moderate wet H2S service	
773	0.5		SCH80S		P61K-005BE	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Moderate wet H2S service	
773	0.75		SCH80S		P61K-005BF	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Moderate wet H2S service	
773	1		SCH80S		P61K-005BG	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Moderate wet H2S service	
773	1.5		SCH80S		P61K-005BH	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Moderate wet H2S service	
773	2		SCH10S		P61K-005CX	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Moderate wet H2S service	
773	3		SCH10S		P61K-005BK	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Moderate wet H2S service	
773	4		SCH10S		P61K-005D0	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Moderate wet H2S service	
773	6		SCH10S		P61K-005D1	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Moderate wet H2S service	
773	8		SCH10S		P61K-005D2	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Moderate wet H2S service	
773	10		SCH10S		P61K-005CS	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Moderate wet H2S service	
773	12		SCH10S		P61K-005CT	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Moderate wet H2S service	
773	14		SCH10S		P61K-005CU	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Moderate wet H2S service	
773	16		SCH10S		P61K-005CV	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Moderate wet H2S service	
773	18		SCH10S		P61K-005CW	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Moderate wet H2S service	
773	20		SCH10S		P61K-005CY	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Moderate wet H2S service	
773	24		SCH10S		P61K-005CZ	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Moderate wet H2S service	
773	30		SCH10S		P61K-005MH	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.47 Series B RF Moderate wet H2S service	

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BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67K-001K2	Blind flange ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Moderate wet H2S service	
1	0.75				P67K-001K3	Blind flange ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Moderate wet H2S service	
1	1				P67K-001K4	Blind flange ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Moderate wet H2S service	
1	1.5				P67K-001K5	Blind flange ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Moderate wet H2S service	
1	2				P67K-001KB	Blind flange ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Moderate wet H2S service	
1	3				P67K-001KE	Blind flange ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Moderate wet H2S service	
1	4				P67K-001KF	Blind flange ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Moderate wet H2S service	
1	6				P67K-001KG	Blind flange ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Moderate wet H2S service	
1	8				P67K-001KH	Blind flange ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Moderate wet H2S service	
1	10				P67K-001K6	Blind flange ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Moderate wet H2S service	
1	12				P67K-001K7	Blind flange ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Moderate wet H2S service	
1	14				P67K-001K8	Blind flange ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Moderate wet H2S service	
1	16				P67K-001K9	Blind flange ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Moderate wet H2S service	
1	18				P67K-001KA	Blind flange ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Moderate wet H2S service	
1	20				P67K-001KC	Blind flange ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Moderate wet H2S service	
1	24				P67K-001KD	Blind flange ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Moderate wet H2S service	
1	30				P67K-001K1	Blind flange ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.47 Series B RF Moderate wet H2S service	

REDUCING FLANGE (FR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5		SCH80S	P62K-000CB	Reducing flange WN ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Moderate wet H2S service	
1	16	12		SCH10S	P62K-000CG	Reducing flange WN ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Moderate wet H2S service	
1	16	14		SCH10S	P62K-000CH	Reducing flange WN ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Moderate wet H2S service	
1	18	14		SCH10S	P62K-000CJ	Reducing flange WN ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Moderate wet H2S service	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000L8	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000L9	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000LA	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000LB	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000LH	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000LL	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000LM	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	6				P73T-000LN	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	8				P73T-000LP	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	10				P73T-000LC	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	12				P73T-000LD	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	14				P73T-000LE	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	16				P73T-000LF	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	18				P73T-000LG	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	20				P73T-000LJ	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	24				P73T-000LK	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	30				P73T-000LT	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
3001	1				P78U-00067	Insulation gasket kit Glass reinforced epoxy Class 150 Manufacturer-standard Flange ASME B16.5 RF	

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GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
773	0.5				P73T-000FT	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	0.75				P73T-000FU	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	3				P73T-000G5	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	4				P73T-000G6	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	6				P73T-000G7	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	8				P73T-000G8	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	10				P73T-000FX	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	12				P73T-000FY	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	14				P73T-000FZ	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	16				P73T-000G0	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	18				P73T-000G1	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	20				P73T-000G3	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	24				P73T-000G4	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	30				P73T-000H9	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-16				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	18-24				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
1	30				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
773	0.5-10				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
773	12-30				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81K-0010R	Gate valve ASTM A182 Grade F316/F316L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	0.75				P81K-0010S	Gate valve ASTM A182 Grade F316/F316L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	1				P81K-0010T	Gate valve ASTM A182 Grade F316/F316L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	1.5				P81K-0010U	Gate valve ASTM A182 Grade F316/F316L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	2				P81L-002B0	Gate valve ASTM A351 Grade CF8M Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	3				P81L-002B1	Gate valve ASTM A351 Grade CF8M Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	4				P81L-002B2	Gate valve ASTM A351 Grade CF8M Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	6				P81L-002B3	Gate valve ASTM A351 Grade CF8M Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	8				P81L-002B4	Gate valve ASTM A351 Grade CF8M Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	10				P81L-002AY	Gate valve ASTM A351 Grade CF8M Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	12				P81L-002AZ	Gate valve ASTM A351 Grade CF8M Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	14				P81L-002B5	Gate valve ASTM A351 Grade CF8M Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Moderate wet H2S service	
1	16				P81L-002B6	Gate valve ASTM A351 Grade CF8M Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Moderate wet H2S service	
1	18				P81L-002B7	Gate valve ASTM A351 Grade CF8M Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Moderate wet H2S service	
1	20				P81L-002B8	Gate valve ASTM A351 Grade CF8M Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Moderate wet H2S service	
1	24				P81L-002B9	Gate valve ASTM A351 Grade CF8M Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Moderate wet H2S service	
1	30				P81L-002BA	Gate valve ASTM A351 Grade CF8M Class 150 API 600 Flange ASME B16.47-B RF Trim number 12 BB-BG-OS&Y Gear operated Moderate wet H2S service	

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GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
4608	0.75				P81K-001P8	Gate valve ASTM A182 Grade F316/F316L dual grade Class 150 API 602 BW both sides w/ nipples BE - NPT ASTM A312-TP316(L) dual grade Seamless Sch80S-nipple Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
773	1				P81K-00119	Gate valve ASTM A182 Grade F316/F316L dual grade Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
773	2				P81L-0029Z	Gate valve ASTM A351 Grade CF8M Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82K-000NZ	Globe valve ASTM A182 Grade F316/F316L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	0.75				P82K-000P0	Globe valve ASTM A182 Grade F316/F316L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	1				P82K-000P1	Globe valve ASTM A182 Grade F316/F316L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	1.5				P82K-000P2	Globe valve ASTM A182 Grade F316/F316L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	2				P82L-001A0	Globe valve ASTM A351 Grade CF8M Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	3				P82L-001A1	Globe valve ASTM A351 Grade CF8M Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	4				P82L-001A2	Globe valve ASTM A351 Grade CF8M Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	6				P82L-001A3	Globe valve ASTM A351 Grade CF8M Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	8				P82L-001A4	Globe valve ASTM A351 Grade CF8M Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83K-000M0	Check valve ASTM A182 Grade F316/F316L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Moderate wet H2S service	
1	0.75				P83K-000M1	Check valve ASTM A182 Grade F316/F316L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Moderate wet H2S service	
1	1				P83K-000M2	Check valve ASTM A182 Grade F316/F316L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Moderate wet H2S service	
1	1.5				P83K-000M3	Check valve ASTM A182 Grade F316/F316L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Moderate wet H2S service	
1	2				P83L-0019Y	Check valve ASTM A351 Grade CF8M Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Moderate wet H2S service	
1	3				P83L-0019Z	Check valve ASTM A351 Grade CF8M Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Moderate wet H2S service	
1	4				P83L-001A0	Check valve ASTM A351 Grade CF8M Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Moderate wet H2S service	
1	6				P83L-001A1	Check valve ASTM A351 Grade CF8M Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Moderate wet H2S service	
1	8				P83L-001A2	Check valve ASTM A351 Grade CF8M Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Moderate wet H2S service	
1	10				P83L-0019W	Check valve ASTM A351 Grade CF8M Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Moderate wet H2S service	
1	12				P83L-0019X	Check valve ASTM A351 Grade CF8M Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Moderate wet H2S service	
1	14				P83L-001FH	Check valve ASTM A351 Grade CF8M Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Moderate wet H2S service	
1	16				P83L-001FJ	Check valve ASTM A351 Grade CF8M Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Moderate wet H2S service	

BUTTERFLY VALVE (H)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	10				P86L-000VU	Offset design butterfly valve ASTM A351 Grade CF8M Class 150 API 609 Category B Lug-type ASME B16.5 RF Disc SS316 Seat Stellite-6 Trim SS316 Triple eccentric design BG Gear operated Moderate wet H2S service	
1	12				P86L-000VV	Offset design butterfly valve ASTM A351 Grade CF8M Class 150 API 609 Category B Lug-type ASME B16.5 RF Disc SS316 Seat Stellite-6 Trim SS316 Triple eccentric design BG Gear operated Moderate wet H2S service	
1	14				P86L-000VW	Offset design butterfly valve ASTM A351 Grade CF8M Class 150 API 609 Category B Lug-type ASME B16.5 RF Disc SS316 Seat Stellite-6 Trim SS316 Triple eccentric design BG Gear operated Moderate wet H2S service	
1	16				P86L-000VX	Offset design butterfly valve ASTM A351 Grade CF8M Class 150 API 609 Category B Lug-type ASME B16.5 RF Disc SS316 Seat Stellite-6 Trim SS316 Triple eccentric design BG Gear operated Moderate wet H2S service	
1	18				P86L-000VY	Offset design butterfly valve ASTM A351 Grade CF8M Class 150 API 609 Category B Lug-type ASME B16.5 RF Disc SS316 Seat Stellite-6 Trim SS316 Triple eccentric design BG Gear operated Moderate wet H2S service	

ORIFICE FLANGE (FO)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2		SCH10S		P66K-003TP	Orifice flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Moderate wet H2S service	

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ORIFICE FLANGE (FO)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3		SCH10S		P66K-003TR	Orifice flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Moderate wet H2S service	
1	4		SCH10S		P66K-003TS	Orifice flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Moderate wet H2S service	
1	6		SCH10S		P66K-003TT	Orifice flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Moderate wet H2S service	
1	8		SCH10S		P66K-003TU	Orifice flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Moderate wet H2S service	
1	10		SCH10S		P66K-003TK	Orifice flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Moderate wet H2S service	
1	12		SCH10S		P66K-003TL	Orifice flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Moderate wet H2S service	
1	14		SCH10S		P66K-003TM	Orifice flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Moderate wet H2S service	
1	16		SCH10S		P66K-003TN	Orifice flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Moderate wet H2S service	
200	2		SCH10S		P66K-003U1	Orifice flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Moderate wet H2S service with Jack screw	
200	3		SCH10S		P66K-003U2	Orifice flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Moderate wet H2S service with Jack screw	
200	4		SCH10S		P66K-003U3	Orifice flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Moderate wet H2S service with Jack screw	
200	6		SCH10S		P66K-003U4	Orifice flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Moderate wet H2S service with Jack screw	
200	8		SCH10S		P66K-003U5	Orifice flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Moderate wet H2S service with Jack screw	
200	10		SCH10S		P66K-003TX	Orifice flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Moderate wet H2S service with Jack screw	
200	12		SCH10S		P66K-003TY	Orifice flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Moderate wet H2S service with Jack screw	
200	14		SCH10S		P66K-003TZ	Orifice flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Moderate wet H2S service with Jack screw	
200	16		SCH10S		P66K-003U0	Orifice flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Moderate wet H2S service with Jack screw	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71K-000C4	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service	
1	0.75				P71K-000C5	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service	
1	1				P71K-000C6	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service	
1	1.5				P71K-000C7	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service	
1	2				P71K-000CA	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service	
1	3				P71K-000CB	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service	
1	4				P71K-000CC	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service	
1	6				P71K-000CD	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service	
1	8				P71K-000CE	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service	
1	10				P71K-000C8	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service	
1	12				P71K-000C9	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service	

PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72K-000B4	Paddle blank ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service	
1	16				P72K-000B5	Paddle blank ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service	
1	18				P72K-000B6	Paddle blank ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service	
1	20				P72K-000B7	Paddle blank ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service	
1	24				P72K-000B8	Paddle blank ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service	
1	30				P72K-000B9	Paddle blank ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.47-B RF Moderate wet H2S service	

PADDLE SPACER (PS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72K-000BA	Paddle spacer ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service	
1	16				P72K-000BB	Paddle spacer ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service	
1	18				P72K-000BC	Paddle spacer ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service	

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PADDLE SPACER (PS)							
OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	20				P72K-000BD	Paddle spacer ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service	
1	24				P72K-000BE	Paddle spacer ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service	
1	30				P72K-000BF	Paddle spacer ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.47-B RF Moderate wet H2S service	

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BOLT TABLE (B_A0LQ , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	60	P80S-008SY		
0.75	4	0.500	65	P80S-008SZ		
1	4	0.500	70	P80S-008T0		
1.5	4	0.500	75	P80S-008T1		
2	4	0.625	85	P80S-0090A		
3	4	0.625	95	P80S-0090C		
4	8	0.625	95	P80S-0090C		
6	8	0.750	105	P80S-0090E		
8	8	0.750	110	P80S-0090F		
10	12	0.875	120	P80S-005Z9		
12	12	0.875	120	P80S-005Z9		
14	12	1.000	135	P80S-00619		
16	16	1.000	140	P80S-0061A		
18	16	1.125	150	P80S-0064L		
20	20	1.125	160	P80S-0064N		
24	20	1.250	175	P80S-00686		
30	44	0.750	145	P80S-0090N		

BOLT TABLE (B_A0LQ_773 , STUD ASME RF, OPTION CODE 773)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-008T0		
0.75	4	0.625	75	P80S-00908		
1	4	0.625	80	P80S-00909		
1.5	4	0.750	95	P80S-005Z4		
2	8	0.625	90	P80S-0090B		
3	8	0.750	110	P80S-0090F		
4	8	0.750	115	P80S-0090G		
6	12	0.750	125	P80S-0090J		
8	12	0.875	140	P80S-005ZD		
10	16	1.000	160	P80S-0061E		
12	16	1.125	175	P80S-0064S		
14	20	1.125	180	P80S-0064T		
16	20	1.250	190	P80S-00689		
18	24	1.250	200	P80S-0068B		
20	24	1.250	210	P80S-0068D		
24	24	1.500	235	P80S-006LB		
30	36	1.375	285	P80S-006HY		

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BRANCH TABLE (T_A0LQ)

RUN PIPE SIZE (in) \ BRANCH SIZE (in)	0.5	0.75	1	1.5	2	3	4	6	8	10	12	14	16	18	20	24	30
0.5	TS																
0.75		TS															
1		TR	TS														
1.5		TR	TR	TS													
2		L	TR	TR	TS												
3		L	L	TR	TR	TS											
4	L	L	L	L	TR	TR	TS										
6	L	L	L	L	L	TR	TR	TS									
8		L	L	L	L	L	TR	TR	TS								
10		L	L	L	L	L	TR	TR	TR	TS							
12		L	L	L	L	L	L	TR	TR	TR	TS						
14		L	L	L	L	L	L	TR	TR	TR	TR	TS					
16		L	L	L	L	L	L	TR	TR	TR	TR	TR	TS				
18		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TS			
20		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TR	TS		
24		L	L	L	L	L	L	L	9PD	TR	TR	TR	TR	TR	TR	TS	
30		L	L	L	L	L	L	L	9PD	TR	TR	TR	TR	TR	TR	TR	TS

TR : REDUCING TEE
TS : STRAIGHT TEE
9PD : REINFORCING PAD 90 DEG
L : OUTLET

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PIPING CLASS

A0LQ03 REV NO. 2

Material : SS316L
Rating : ASME CLASS 150
Flange Face : RF
C.A.(mm) : 0.00
Gasket : Spiral Wound
Service : PROCESS -WET LOW SEVERITY SOUR SERVICE SUBJECT TO NACE
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
2	USE OF SOFT SEATED BALL, PLUG AND BUTTERFLY VALVES SHALL BE LIMITED TO MAXIMUM OF 204DEGC (400DEGF)
5	BOLTING CONFIRMING TO B7M / 2HM SHALL BE USED UNDER CONDITIONS (A) DIRECT EXPOSURE TO SOUR ENVIRONMENTS (B) WHEN THE BOLTING WILL BE BURIED OR INSULATED

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
200	WITH JACK SCREW (FO)
541	NPT(F) (CA,F,L)
773	CLASS 300 (B,F,G)
4608	VALVE WITH NIPPLES (V)

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PIPING CLASS
A0LQ03 REV NO. 2

PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P01J-002CY	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE Moderate wet H2S service	
1	0.75		SCH80S		P01J-002CZ	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE Moderate wet H2S service	
1	1		SCH80S		P01J-002D0	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE Moderate wet H2S service	
1	1.5		SCH80S		P01J-002D1	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE Moderate wet H2S service	
1	2		SCH10S		P01J-002D7	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M BE Moderate wet H2S service	
1	3		SCH10S		P01J-002D3	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M BE Moderate wet H2S service	
1	4		SCH10S		P01J-002D8	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M BE Moderate wet H2S service	
1	6		SCH10S		P01J-002D9	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M BE Moderate wet H2S service	
1	8		SCH10S		P01J-002DJ	Pipe ASTM A358 Grade 316/316L Class 1 dual grade EFW ASME B36.10M/B36.19M BE Moderate wet H2S service	
1	10		SCH10S		P01J-002DA	Pipe ASTM A358 Grade 316/316L Class 1 dual grade EFW ASME B36.10M/B36.19M BE Moderate wet H2S service	
1	12		SCH10S		P01J-002DB	Pipe ASTM A358 Grade 316/316L Class 1 dual grade EFW ASME B36.10M/B36.19M BE Moderate wet H2S service	
1	14		SCH10S		P01J-002DC	Pipe ASTM A358 Grade 316/316L Class 1 dual grade EFW ASME B36.10M/B36.19M BE Moderate wet H2S service	
1	16		SCH10S		P01J-002DD	Pipe ASTM A358 Grade 316/316L Class 1 dual grade EFW ASME B36.10M/B36.19M BE Moderate wet H2S service	
1	18		SCH10S		P01J-002DE	Pipe ASTM A358 Grade 316/316L Class 1 dual grade EFW ASME B36.10M/B36.19M BE Moderate wet H2S service	
1	20		SCH10S		P01J-002DF	Pipe ASTM A358 Grade 316/316L Class 1 dual grade EFW ASME B36.10M/B36.19M BE Moderate wet H2S service	
1	24		SCH10S		P01J-002DG	Pipe ASTM A358 Grade 316/316L Class 1 dual grade EFW ASME B36.10M/B36.19M BE Moderate wet H2S service	
1	30		SCH10S		P01J-002HG	Pipe ASTM A358 Grade 316/316L Class 1 dual grade EFW ASME B36.10M/B36.19M BE Moderate wet H2S service	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P02J-001WB	90 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Moderate wet H2S service	
1	0.75		SCH80S		P02J-001WC	90 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Moderate wet H2S service	
1	1		SCH80S		P02J-001WD	90 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Moderate wet H2S service	
1	1.5		SCH80S		P02J-001WE	90 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Moderate wet H2S service	
1	2		SCH10S		P02J-001WL	90 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Moderate wet H2S service	
1	3		SCH10S		P02J-001WG	90 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Moderate wet H2S service	
1	4		SCH10S		P02J-001WM	90 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Moderate wet H2S service	
1	6		SCH10S		P02J-001WN	90 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Moderate wet H2S service	
1	8		SCH10S		P02J-001WY	90 degree elbow ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Long radius Moderate wet H2S service	
1	10		SCH10S		P02J-001WP	90 degree elbow ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Long radius Moderate wet H2S service	
1	12		SCH10S		P02J-001WR	90 degree elbow ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Long radius Moderate wet H2S service	
1	14		SCH10S		P02J-001WS	90 degree elbow ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Long radius Moderate wet H2S service	
1	16		SCH10S		P02J-001WT	90 degree elbow ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Long radius Moderate wet H2S service	
1	18		SCH10S		P02J-001WU	90 degree elbow ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Long radius Moderate wet H2S service	
1	20		SCH10S		P02J-001WV	90 degree elbow ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Long radius Moderate wet H2S service	
1	24		SCH10S		P02J-001WW	90 degree elbow ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Long radius Moderate wet H2S service	
1	30		SCH10S		P02J-0020G	90 degree elbow ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Long radius Moderate wet H2S service	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P03J-001TT	45 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Moderate wet H2S service	
1	0.75		SCH80S		P03J-001TU	45 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Moderate wet H2S service	
1	1		SCH80S		P03J-001TV	45 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Moderate wet H2S service	
1	1.5		SCH80S		P03J-001TW	45 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Moderate wet H2S service	
1	2		SCH10S		P03J-001U2	45 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Moderate wet H2S service	

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45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3		SCH10S		P03J-001TY	45 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Moderate wet H2S service	
1	4		SCH10S		P03J-001U3	45 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Moderate wet H2S service	
1	6		SCH10S		P03J-001U4	45 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Moderate wet H2S service	
1	8		SCH10S		P03J-001UD	45 degree elbow ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Long radius Moderate wet H2S service	
1	10		SCH10S		P03J-001U5	45 degree elbow ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Long radius Moderate wet H2S service	
1	12		SCH10S		P03J-001U6	45 degree elbow ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Long radius Moderate wet H2S service	
1	14		SCH10S		P03J-001U7	45 degree elbow ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Long radius Moderate wet H2S service	
1	16		SCH10S		P03J-001U8	45 degree elbow ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Long radius Moderate wet H2S service	
1	18		SCH10S		P03J-001U9	45 degree elbow ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Long radius Moderate wet H2S service	
1	20		SCH10S		P03J-001UA	45 degree elbow ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Long radius Moderate wet H2S service	
1	24		SCH10S		P03J-001UB	45 degree elbow ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Long radius Moderate wet H2S service	
1	30		SCH10S		P03J-00209	45 degree elbow ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Long radius Moderate wet H2S service	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P21J-001KB	Straight tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	0.75		SCH80S		P21J-001KC	Straight tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	1		SCH80S		P21J-001KD	Straight tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	1.5		SCH80S		P21J-001KE	Straight tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	2		SCH10S		P21J-001KL	Straight tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	3		SCH10S		P21J-001KG	Straight tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	4		SCH10S		P21J-001KM	Straight tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	6		SCH10S		P21J-001KN	Straight tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	8		SCH10S		P21J-001KY	Straight tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	10		SCH10S		P21J-001KP	Straight tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	12		SCH10S		P21J-001KR	Straight tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	14		SCH10S		P21J-001KS	Straight tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	16		SCH10S		P21J-001KT	Straight tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	18		SCH10S		P21J-001KU	Straight tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	20		SCH10S		P21J-001KV	Straight tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	24		SCH10S		P21J-001KW	Straight tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	30		SCH10S		P21J-001PG	Straight tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75	SCH80S	SCH80S	P24J-006WG	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	1.5	0.75	SCH80S	SCH80S	P24J-006WH	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	1.5	1	SCH80S	SCH80S	P24J-006WJ	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	2	1	SCH10S	SCH80S	P24J-006WW	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	2	1.5	SCH10S	SCH80S	P24J-006WX	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	3	1.5	SCH10S	SCH80S	P24J-006WM	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	3	2	SCH10S	SCH10S	P24J-006WY	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	4	2	SCH10S	SCH10S	P24J-006WZ	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	4	3	SCH10S	SCH10S	P24J-006X0	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	6	3	SCH10S	SCH10S	P24J-006X1	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	

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REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	6	4	SCH10S	SCH10S	P24J-006X2	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	8	4	SCH10S	SCH10S	P24J-006X3	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	8	6	SCH10S	SCH10S	P24J-006X4	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	10	4	SCH10S	SCH10S	P24J-006X5	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	10	6	SCH10S	SCH10S	P24J-006X6	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	10	8	SCH10S	SCH10S	P24J-006X7	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	12	6	SCH10S	SCH10S	P24J-006X9	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	12	8	SCH10S	SCH10S	P24J-006XA	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	12	10	SCH10S	SCH10S	P24J-006X8	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	14	6	SCH10S	SCH10S	P24J-006XD	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	14	8	SCH10S	SCH10S	P24J-006XE	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	14	10	SCH10S	SCH10S	P24J-006XB	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	14	12	SCH10S	SCH10S	P24J-006XC	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	16	6	SCH10S	SCH10S	P24J-006XJ	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	16	8	SCH10S	SCH10S	P24J-006XK	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	16	10	SCH10S	SCH10S	P24J-006XF	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	16	12	SCH10S	SCH10S	P24J-006XG	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	16	14	SCH10S	SCH10S	P24J-006XH	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	18	8	SCH10S	SCH10S	P24J-006XR	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	18	10	SCH10S	SCH10S	P24J-006XL	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	18	12	SCH10S	SCH10S	P24J-006XM	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	18	14	SCH10S	SCH10S	P24J-006XN	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	18	16	SCH10S	SCH10S	P24J-006XP	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	20	8	SCH10S	SCH10S	P24J-006XX	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	20	10	SCH10S	SCH10S	P24J-006XS	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	20	12	SCH10S	SCH10S	P24J-006XT	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	20	14	SCH10S	SCH10S	P24J-006XU	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	20	16	SCH10S	SCH10S	P24J-006XV	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	20	18	SCH10S	SCH10S	P24J-006XW	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	24	10	SCH10S	SCH10S	P24J-006XY	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	24	12	SCH10S	SCH10S	P24J-006XZ	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	24	14	SCH10S	SCH10S	P24J-006Y0	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	24	16	SCH10S	SCH10S	P24J-006Y1	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	24	18	SCH10S	SCH10S	P24J-006Y2	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	24	20	SCH10S	SCH10S	P24J-006Y3	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	30	10	SCH10S	SCH10S	P24J-0077G	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	30	12	SCH10S	SCH10S	P24J-0077H	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	30	14	SCH10S	SCH10S	P24J-0077J	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	30	16	SCH10S	SCH10S	P24J-0077K	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	30	18	SCH10S	SCH10S	P24J-0077L	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	30	20	SCH10S	SCH10S	P24J-0077M	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	30	24	SCH10S	SCH10S	P24J-0077N	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	

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CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH80S	SCH80S	P27J-005R6	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	1	0.5	SCH80S	SCH80S	P27J-005R7	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	1	0.75	SCH80S	SCH80S	P27J-005R8	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	1.5	0.5	SCH80S	SCH80S	P27J-005R9	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	1.5	0.75	SCH80S	SCH80S	P27J-005RA	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	1.5	1	SCH80S	SCH80S	P27J-005RB	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	2	0.75	SCH10S	SCH80S	P27J-005RR	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	2	1	SCH10S	SCH80S	P27J-005RS	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	2	1.5	SCH10S	SCH80S	P27J-005RT	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	3	1.5	SCH10S	SCH80S	P27J-005RF	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	3	2	SCH10S	SCH10S	P27J-005RU	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	4	1.5	SCH10S	SCH80S	P27J-005RV	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	4	2	SCH10S	SCH10S	P27J-005RW	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	4	3	SCH10S	SCH10S	P27J-005RX	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	6	3	SCH10S	SCH10S	P27J-005RY	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	6	4	SCH10S	SCH10S	P27J-005RZ	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	8	4	SCH10S	SCH10S	P27J-005S0	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	8	6	SCH10S	SCH10S	P27J-005S1	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	10	4	SCH10S	SCH10S	P27J-005S2	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	10	6	SCH10S	SCH10S	P27J-005S3	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	10	8	SCH10S	SCH10S	P27J-005S4	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	12	6	SCH10S	SCH10S	P27J-005S6	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	12	8	SCH10S	SCH10S	P27J-005S7	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	12	10	SCH10S	SCH10S	P27J-005S5	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	14	6	SCH10S	SCH10S	P27J-005SA	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	14	8	SCH10S	SCH10S	P27J-005SB	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	14	10	SCH10S	SCH10S	P27J-005S8	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	14	12	SCH10S	SCH10S	P27J-005S9	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	16	8	SCH10S	SCH10S	P27J-005SF	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	16	10	SCH10S	SCH10S	P27J-005SC	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	16	12	SCH10S	SCH10S	P27J-005SD	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	16	14	SCH10S	SCH10S	P27J-005SE	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	18	10	SCH10S	SCH10S	P27J-005SG	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	18	12	SCH10S	SCH10S	P27J-005SH	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	18	14	SCH10S	SCH10S	P27J-005SJ	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	18	16	SCH10S	SCH10S	P27J-005SK	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	20	12	SCH10S	SCH10S	P27J-005SL	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	20	14	SCH10S	SCH10S	P27J-005SM	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	20	16	SCH10S	SCH10S	P27J-005SN	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	20	18	SCH10S	SCH10S	P27J-005SP	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	24	16	SCH10S	SCH10S	P27J-005SR	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	24	18	SCH10S	SCH10S	P27J-005SS	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	24	20	SCH10S	SCH10S	P27J-005ST	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	30	20	SCH10S	SCH10S	P27J-0062A	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	

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CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	30	24	SCH10S	SCH10S	P27J-0062B	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH80S	SCH80S	P28J-005S2	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	1	0.5	SCH80S	SCH80S	P28J-005S3	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	1	0.75	SCH80S	SCH80S	P28J-005S4	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	1.5	0.5	SCH80S	SCH80S	P28J-005S5	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	1.5	0.75	SCH80S	SCH80S	P28J-005S6	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	1.5	1	SCH80S	SCH80S	P28J-005S7	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	2	0.75	SCH10S	SCH80S	P28J-005SL	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	2	1	SCH10S	SCH80S	P28J-005SM	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	2	1.5	SCH10S	SCH80S	P28J-005SN	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	3	1.5	SCH10S	SCH80S	P28J-005SB	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	3	2	SCH10S	SCH10S	P28J-005SP	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	4	1.5	SCH10S	SCH80S	P28J-005SR	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	4	2	SCH10S	SCH10S	P28J-005SS	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	4	3	SCH10S	SCH10S	P28J-005ST	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	6	3	SCH10S	SCH10S	P28J-005SU	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	6	4	SCH10S	SCH10S	P28J-005SV	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	8	4	SCH10S	SCH10S	P28J-005SW	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	8	6	SCH10S	SCH10S	P28J-005SX	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	10	4	SCH10S	SCH10S	P28J-005SY	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	10	6	SCH10S	SCH10S	P28J-005SZ	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	10	8	SCH10S	SCH10S	P28J-005T0	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	12	6	SCH10S	SCH10S	P28J-005T2	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	12	8	SCH10S	SCH10S	P28J-005T3	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	12	10	SCH10S	SCH10S	P28J-005T1	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	14	6	SCH10S	SCH10S	P28J-005T6	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	14	8	SCH10S	SCH10S	P28J-005T7	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	14	10	SCH10S	SCH10S	P28J-005T4	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	14	12	SCH10S	SCH10S	P28J-005T5	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	16	8	SCH10S	SCH10S	P28J-005TB	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	16	10	SCH10S	SCH10S	P28J-005T8	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	16	12	SCH10S	SCH10S	P28J-005T9	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	16	14	SCH10S	SCH10S	P28J-005TA	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	18	10	SCH10S	SCH10S	P28J-005TC	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	18	12	SCH10S	SCH10S	P28J-005TD	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	18	14	SCH10S	SCH10S	P28J-005TE	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	18	16	SCH10S	SCH10S	P28J-005TF	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	20	12	SCH10S	SCH10S	P28J-005TG	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	20	14	SCH10S	SCH10S	P28J-005TH	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	20	16	SCH10S	SCH10S	P28J-005TJ	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	24	18	SCH10S	SCH10S	P28J-005TK	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	24	16	SCH10S	SCH10S	P28J-005TL	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	

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ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	24	18	SCH10S	SCH10S	P28J-005TM	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	24	20	SCH10S	SCH10S	P28J-005TN	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	30	20	SCH10S	SCH10S	P28J-0063A	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	30	24	SCH10S	SCH10S	P28J-0063B	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P29J-002KG	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	0.75		SCH80S		P29J-002KH	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	1		SCH80S		P29J-002KJ	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	1.5		SCH80S		P29J-002KK	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	2		SCH10S		P29J-002KX	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	3		SCH10S		P29J-002KM	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	4		SCH10S		P29J-002L1	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	6		SCH10S		P29J-002L2	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	8		SCH10S		P29J-002L3	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	10		SCH10S		P29J-002KS	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	12		SCH10S		P29J-002KT	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	14		SCH10S		P29J-002KU	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	16		SCH10S		P29J-002KV	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	18		SCH10S		P29J-002KW	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	20		SCH10S		P29J-002KY	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	24		SCH10S		P29J-002KZ	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	30		SCH10S		P29J-003W5	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
541	0.75				P29K-00048	Cap ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 NPT Moderate wet H2S service	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P41J-001TV	Straight nipple ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Moderate wet H2S service	
1	0.75		SCH80S		P41J-001TW	Straight nipple ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Moderate wet H2S service	
1	1		SCH80S		P41J-001TX	Straight nipple ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Moderate wet H2S service	
1	1.5		SCH80S		P41J-001TY	Straight nipple ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Moderate wet H2S service	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
541	1	0.75			P31K-00FM7	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 NPT Moderate wet H2S service	
541	1.5	0.75			P31K-00FM6	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 NPT Moderate wet H2S service	
541	2 - 2.5	0.75			P31K-00GFU	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 NPT Moderate wet H2S service	
541	3 - 5	0.75			P31K-00GFV	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 NPT Moderate wet H2S service	
541	6 - 12	0.75			P31K-00GFW	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 NPT Moderate wet H2S service	
541	14 - 36	0.75			P31K-00GGM	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 NPT Moderate wet H2S service	
1	2	0.75	SCH10S	SCH80S	P31K-00EJ2	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Moderate wet H2S service	
1	3	0.75	SCH10S	SCH80S	P31K-00EHM	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Moderate wet H2S service	
1	4	0.75	SCH10S	SCH80S	P31K-00EJ3	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Moderate wet H2S service	
1	6	0.75	SCH10S	SCH80S	P31K-00EJ6	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Moderate wet H2S service	
1	8	0.75	SCH10S	SCH80S	P31K-00EJA	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Moderate wet H2S service	
1	10	0.75	SCH10S	SCH80S	P31K-00EJF	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Moderate wet H2S service	
1	12	0.75	SCH10S	SCH80S	P31K-00EJL	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Moderate wet H2S service	
1	14	0.75	SCH10S	SCH80S	P31K-00EJT	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Moderate wet H2S service	
1	16	0.75	SCH10S	SCH80S	P31K-00EJZ	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Moderate wet H2S service	

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OUTLET (L)							
OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	18	0.75	SCH10S	SCH80S	P31K-00EK5	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Moderate wet H2S service	
1	20	0.75	SCH10S	SCH80S	P31K-00EKC	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Moderate wet H2S service	
1	24	0.75	SCH10S	SCH80S	P31K-00EKK	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Moderate wet H2S service	
1	30	0.75	SCH10S	SCH80S	P31K-00EYN	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Moderate wet H2S service	
1	3	1	SCH10S	SCH80S	P31K-00EHN	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Moderate wet H2S service	
1	4	1	SCH10S	SCH80S	P31K-00EJ4	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Moderate wet H2S service	
1	6	1	SCH10S	SCH80S	P31K-00EJ7	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Moderate wet H2S service	
1	8	1	SCH10S	SCH80S	P31K-00EJB	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Moderate wet H2S service	
1	10	1	SCH10S	SCH80S	P31K-00EJG	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Moderate wet H2S service	
1	12	1	SCH10S	SCH80S	P31K-00EJM	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Moderate wet H2S service	
1	14	1	SCH10S	SCH80S	P31K-00EJU	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Moderate wet H2S service	
1	16	1	SCH10S	SCH80S	P31K-00EK0	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Moderate wet H2S service	
1	18	1	SCH10S	SCH80S	P31K-00EK6	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Moderate wet H2S service	
1	20	1	SCH10S	SCH80S	P31K-00EKD	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Moderate wet H2S service	
1	24	1	SCH10S	SCH80S	P31K-00EKL	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Moderate wet H2S service	
1	30	1	SCH10S	SCH80S	P31K-00EYP	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Moderate wet H2S service	
1	4	1.5	SCH10S	SCH80S	P31K-00EJ5	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Moderate wet H2S service	
1	6	1.5	SCH10S	SCH80S	P31K-00EJ8	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Moderate wet H2S service	
1	8	1.5	SCH10S	SCH80S	P31K-00EJC	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Moderate wet H2S service	
1	10	1.5	SCH10S	SCH80S	P31K-00EJH	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Moderate wet H2S service	
1	12	1.5	SCH10S	SCH80S	P31K-00EJN	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Moderate wet H2S service	
1	14	1.5	SCH10S	SCH80S	P31K-00EJV	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Moderate wet H2S service	
1	16	1.5	SCH10S	SCH80S	P31K-00EK1	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Moderate wet H2S service	
1	18	1.5	SCH10S	SCH80S	P31K-00EK7	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Moderate wet H2S service	
1	20	1.5	SCH10S	SCH80S	P31K-00EKE	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Moderate wet H2S service	
1	24	1.5	SCH10S	SCH80S	P31K-00EKM	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Moderate wet H2S service	
1	30	1.5	SCH10S	SCH80S	P31K-00EYR	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Moderate wet H2S service	
1	6	2	SCH10S	SCH10S	P31K-00EJ9	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Moderate wet H2S service	
1	8	2	SCH10S	SCH10S	P31K-00EJD	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Moderate wet H2S service	
1	10	2	SCH10S	SCH10S	P31K-00EJJ	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Moderate wet H2S service	
1	12	2	SCH10S	SCH10S	P31K-00EJP	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Moderate wet H2S service	
1	14	2	SCH10S	SCH10S	P31K-00EJW	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Moderate wet H2S service	
1	16	2	SCH10S	SCH10S	P31K-00EK2	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Moderate wet H2S service	
1	18	2	SCH10S	SCH10S	P31K-00EK8	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Moderate wet H2S service	
1	20	2	SCH10S	SCH10S	P31K-00EKF	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Moderate wet H2S service	
1	24	2	SCH10S	SCH10S	P31K-00EKN	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Moderate wet H2S service	
1	30	2	SCH10S	SCH10S	P31K-00EYS	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Moderate wet H2S service	
1	8	3	SCH10S	SCH10S	P31K-00EJE	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Moderate wet H2S service	
1	10	3	SCH10S	SCH10S	P31K-00EJK	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Moderate wet H2S service	
1	12	3	SCH10S	SCH10S	P31K-00EJR	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Moderate wet H2S service	
1	14	3	SCH10S	SCH10S	P31K-00EJX	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Moderate wet H2S service	
1	16	3	SCH10S	SCH10S	P31K-00EK3	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Moderate wet H2S service	
1	18	3	SCH10S	SCH10S	P31K-00EK9	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Moderate wet H2S service	
1	20	3	SCH10S	SCH10S	P31K-00EKG	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Moderate wet H2S service	
1	24	3	SCH10S	SCH10S	P31K-00EKP	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Moderate wet H2S service	
1	30	3	SCH10S	SCH10S	P31K-00EYT	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Moderate wet H2S service	
1	12	4	SCH10S	SCH10S	P31K-00EJS	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Moderate wet H2S service	
1	14	4	SCH10S	SCH10S	P31K-00EJY	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Moderate wet H2S service	
1	16	4	SCH10S	SCH10S	P31K-00EK4	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Moderate wet H2S service	
1	18	4	SCH10S	SCH10S	P31K-00EKA	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Moderate wet H2S service	
1	20	4	SCH10S	SCH10S	P31K-00EKH	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Moderate wet H2S service	
1	24	4	SCH10S	SCH10S	P31K-00EKR	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Moderate wet H2S service	
1	30	4	SCH10S	SCH10S	P31K-00EYU	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Moderate wet H2S service	
1	18	6	SCH10S	SCH10S	P31K-00EKB	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Moderate wet H2S service	
1	20	6	SCH10S	SCH10S	P31K-00EKJ	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Moderate wet H2S service	
1	24	6	SCH10S	SCH10S	P31K-00EKS	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Moderate wet H2S service	
1	30	6	SCH10S	SCH10S	P31K-00EYV	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Moderate wet H2S service	

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PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30K-00055	Plug ASTM A182 Grade F316/F316L dual grade ASME B16.11 NPT Round head Moderate wet H2S service	
1	0.75				P30K-00056	Plug ASTM A182 Grade F316/F316L dual grade ASME B16.11 NPT Round head Moderate wet H2S service	
1	1				P30K-00057	Plug ASTM A182 Grade F316/F316L dual grade ASME B16.11 NPT Round head Moderate wet H2S service	
1	1.5				P30K-00058	Plug ASTM A182 Grade F316/F316L dual grade ASME B16.11 NPT Round head Moderate wet H2S service	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P61K-005C8	Flange WN ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Moderate wet H2S service	
1	0.75		SCH80S		P61K-005C9	Flange WN ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Moderate wet H2S service	
1	1		SCH80S		P61K-005CA	Flange WN ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Moderate wet H2S service	
1	1.5		SCH80S		P61K-005CB	Flange WN ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Moderate wet H2S service	
1	2		SCH10S		P61K-005CH	Flange WN ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Moderate wet H2S service	
1	3		SCH10S		P61K-005CL	Flange WN ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Moderate wet H2S service	
1	4		SCH10S		P61K-005CM	Flange WN ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Moderate wet H2S service	
1	6		SCH10S		P61K-005CN	Flange WN ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Moderate wet H2S service	
1	8		SCH10S		P61K-005CP	Flange WN ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Moderate wet H2S service	
1	10		SCH10S		P61K-005CC	Flange WN ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Moderate wet H2S service	
1	12		SCH10S		P61K-005CD	Flange WN ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Moderate wet H2S service	
1	14		SCH10S		P61K-005CE	Flange WN ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Moderate wet H2S service	
1	16		SCH10S		P61K-005CF	Flange WN ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Moderate wet H2S service	
1	18		SCH10S		P61K-005CG	Flange WN ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Moderate wet H2S service	
1	20		SCH10S		P61K-005CJ	Flange WN ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Moderate wet H2S service	
1	24		SCH10S		P61K-005CK	Flange WN ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Moderate wet H2S service	
1	30		SCH10S		P61K-005MG	Flange WN ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.47 Series B RF Moderate wet H2S service	
541	0.5				P61K-0069G	Flange NPT ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Moderate wet H2S service	
541	0.75				P61K-005ZY	Flange NPT ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Moderate wet H2S service	
773	0.5		SCH80S		P61K-005BE	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Moderate wet H2S service	
773	0.75		SCH80S		P61K-005BF	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Moderate wet H2S service	
773	1		SCH80S		P61K-005BG	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Moderate wet H2S service	
773	1.5		SCH80S		P61K-005BH	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Moderate wet H2S service	
773	2		SCH10S		P61K-005CX	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Moderate wet H2S service	
773	3		SCH10S		P61K-005BK	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Moderate wet H2S service	
773	4		SCH10S		P61K-005D0	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Moderate wet H2S service	
773	6		SCH10S		P61K-005D1	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Moderate wet H2S service	
773	8		SCH10S		P61K-005D2	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Moderate wet H2S service	
773	10		SCH10S		P61K-005CS	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Moderate wet H2S service	
773	12		SCH10S		P61K-005CT	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Moderate wet H2S service	
773	14		SCH10S		P61K-005CU	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Moderate wet H2S service	
773	16		SCH10S		P61K-005CV	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Moderate wet H2S service	
773	18		SCH10S		P61K-005CW	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Moderate wet H2S service	
773	20		SCH10S		P61K-005CY	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Moderate wet H2S service	
773	24		SCH10S		P61K-005CZ	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Moderate wet H2S service	
773	30		SCH10S		P61K-005MH	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.47 Series B RF Moderate wet H2S service	

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BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67K-001K2	Blind flange ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Moderate wet H2S service	
1	0.75				P67K-001K3	Blind flange ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Moderate wet H2S service	
1	1				P67K-001K4	Blind flange ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Moderate wet H2S service	
1	1.5				P67K-001K5	Blind flange ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Moderate wet H2S service	
1	2				P67K-001KB	Blind flange ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Moderate wet H2S service	
1	3				P67K-001KE	Blind flange ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Moderate wet H2S service	
1	4				P67K-001KF	Blind flange ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Moderate wet H2S service	
1	6				P67K-001KG	Blind flange ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Moderate wet H2S service	
1	8				P67K-001KH	Blind flange ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Moderate wet H2S service	
1	10				P67K-001K6	Blind flange ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Moderate wet H2S service	
1	12				P67K-001K7	Blind flange ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Moderate wet H2S service	
1	14				P67K-001K8	Blind flange ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Moderate wet H2S service	
1	16				P67K-001K9	Blind flange ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Moderate wet H2S service	
1	18				P67K-001KA	Blind flange ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Moderate wet H2S service	
1	20				P67K-001KC	Blind flange ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Moderate wet H2S service	
1	24				P67K-001KD	Blind flange ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Moderate wet H2S service	
1	30				P67K-001K1	Blind flange ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.47 Series B RF Moderate wet H2S service	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000L8	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000L9	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000LA	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000LB	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000LH	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000LL	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000LM	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	6				P73T-000LN	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	8				P73T-000LP	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	10				P73T-000LC	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	12				P73T-000LD	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	14				P73T-000LE	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	16				P73T-000LF	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	18				P73T-000LG	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	20				P73T-000LJ	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	24				P73T-000LK	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	30				P73T-000LT	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	0.5				P73T-000FT	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	0.75				P73T-000FU	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	3				P73T-000G5	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	4				P73T-000G6	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	6				P73T-000G7	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

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GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
773	8				P73T-000G8	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	10				P73T-000FX	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	12				P73T-000FY	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	14				P73T-000FZ	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	16				P73T-000G0	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	18				P73T-000G1	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	20				P73T-000G3	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	24				P73T-000G4	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	30				P73T-000H9	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-16				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	18-24				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
1	30				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
773	0.5-10				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
773	12-30				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81K-0010R	Gate valve ASTM A182 Grade F316/F316L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	0.75				P81K-0010S	Gate valve ASTM A182 Grade F316/F316L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	1				P81K-0010T	Gate valve ASTM A182 Grade F316/F316L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	1.5				P81K-0010U	Gate valve ASTM A182 Grade F316/F316L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	2				P81L-002B0	Gate valve ASTM A351 Grade CF8M Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	3				P81L-002B1	Gate valve ASTM A351 Grade CF8M Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	4				P81L-002B2	Gate valve ASTM A351 Grade CF8M Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	6				P81L-002B3	Gate valve ASTM A351 Grade CF8M Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
4608	0.75				P81K-001P8	Gate valve ASTM A182 Grade F316/F316L dual grade Class 150 API 602 BW both sides w/ nipples BE - NPT ASTM A312-TP316(L) dual grade Seamless Sch80S-nipple Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82K-000NZ	Globe valve ASTM A182 Grade F316/F316L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	0.75				P82K-000P0	Globe valve ASTM A182 Grade F316/F316L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	1				P82K-000P1	Globe valve ASTM A182 Grade F316/F316L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	1.5				P82K-000P2	Globe valve ASTM A182 Grade F316/F316L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	2				P82L-001A0	Globe valve ASTM A351 Grade CF8M Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	3				P82L-001A1	Globe valve ASTM A351 Grade CF8M Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	4				P82L-001A2	Globe valve ASTM A351 Grade CF8M Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	6				P82L-001A3	Globe valve ASTM A351 Grade CF8M Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83K-000M0	Check valve ASTM A182 Grade F316/F316L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Moderate wet H2S service	
1	0.75				P83K-000M1	Check valve ASTM A182 Grade F316/F316L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Moderate wet H2S service	
1	1				P83K-000M2	Check valve ASTM A182 Grade F316/F316L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Moderate wet H2S service	

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CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5				P83K-000M3	Check valve ASTM A182 Grade F316/F316L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Moderate wet H2S service	
1	2				P83L-0019Y	Check valve ASTM A351 Grade CF8M Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Moderate wet H2S service	
1	3				P83L-0019Z	Check valve ASTM A351 Grade CF8M Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Moderate wet H2S service	
1	4				P83L-001A0	Check valve ASTM A351 Grade CF8M Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Moderate wet H2S service	
1	6				P83L-001A1	Check valve ASTM A351 Grade CF8M Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Moderate wet H2S service	
1	8				P83L-001A2	Check valve ASTM A351 Grade CF8M Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Moderate wet H2S service	

NEEDLE VALVE (NV)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82K-00172	Needle valve ASTM A182 Grade F316/F316L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	

ORIFICE FLANGE (FO)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	4		SCH10S		P66K-003TS	Orifice flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Moderate wet H2S service	
200	4		SCH10S		P66K-003U3	Orifice flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Moderate wet H2S service with Jack screw	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71K-000C4	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service	
1	0.75				P71K-000C5	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service	
1	1				P71K-000C6	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service	
1	1.5				P71K-000C7	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service	
1	2				P71K-000CA	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service	
1	3				P71K-000CB	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service	
1	4				P71K-000CC	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service	
1	6				P71K-000CD	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service	
1	8				P71K-000CE	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service	
1	10				P71K-000C8	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service	
1	12				P71K-000C9	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service	

PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72K-000B4	Paddle blank ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service	
1	16				P72K-000B5	Paddle blank ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service	
1	18				P72K-000B6	Paddle blank ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service	
1	20				P72K-000B7	Paddle blank ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service	
1	24				P72K-000B8	Paddle blank ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service	
1	30				P72K-000B9	Paddle blank ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.47-B RF Moderate wet H2S service	

PADDLE SPACER (PS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72K-000BA	Paddle spacer ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service	
1	16				P72K-000BB	Paddle spacer ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service	
1	18				P72K-000BC	Paddle spacer ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service	
1	20				P72K-000BD	Paddle spacer ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service	
1	24				P72K-000BE	Paddle spacer ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service	
1	30				P72K-000BF	Paddle spacer ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.47-B RF Moderate wet H2S service	

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PIPING CLASS
A0LQ03 **REV NO. 2**

BOLT TABLE (B_A0LQ03 , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	60	P80S-008SY		
0.75	4	0.500	65	P80S-008SZ		
1	4	0.500	70	P80S-008T0		
1.5	4	0.500	75	P80S-008T1		
2	4	0.625	85	P80S-0090A		
3	4	0.625	95	P80S-0090C		
4	8	0.625	95	P80S-0090C		
6	8	0.750	105	P80S-0090E		
8	8	0.750	110	P80S-0090F		
10	12	0.875	120	P80S-005Z9		
12	12	0.875	120	P80S-005Z9		
14	12	1.000	135	P80S-00619		
16	16	1.000	140	P80S-0061A		
18	16	1.125	150	P80S-0064L		
20	20	1.125	160	P80S-0064N		
24	20	1.250	175	P80S-00686		
30	44	0.750	145	P80S-0090N		

BOLT TABLE (B_A0LQ03_773 , STUD ASME RF, OPTION CODE 773)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-008T0		
0.75	4	0.625	75	P80S-00908		
1	4	0.625	80	P80S-00909		
1.5	4	0.750	95	P80S-005Z4		
2	8	0.625	90	P80S-0090B		
3	8	0.750	110	P80S-0090F		
4	8	0.750	115	P80S-0090G		
6	12	0.750	125	P80S-0090J		
8	12	0.875	140	P80S-005ZD		
10	16	1.000	160	P80S-0061E		
12	16	1.125	175	P80S-0064S		
14	20	1.125	180	P80S-0064T		
16	20	1.250	190	P80S-00689		
18	24	1.250	200	P80S-0068B		
20	24	1.250	210	P80S-0068D		
24	24	1.500	235	P80S-006LB		
30	36	1.375	285	P80S-006HY		

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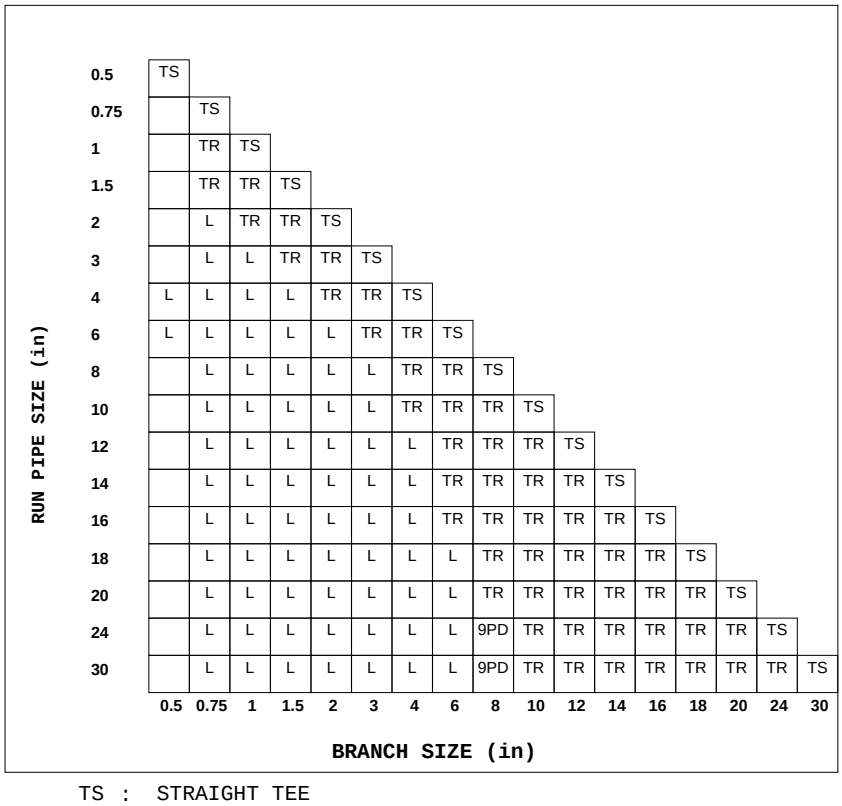
PIPING CLASS

A0LQ03 REV NO. 2

BRANCH TABLE (T_A0LQ03)



RUN PIPE SIZE (in) \ BRANCH SIZE (in)	0.5	0.75	1	1.5	2	3	4	6	8	10	12	14	16	18	20	24	30
0.5	TS																
0.75		TS															
1		TR	TS														
1.5		TR	TR	TS													
2		L	TR	TR	TS												
3		L	L	TR	TR	TS											
4	L	L	L	L	TR	TR	TS										
6	L	L	L	L	L	TR	TR	TS									
8		L	L	L	L	L	TR	TR	TS								
10		L	L	L	L	L	TR	TR	TR	TS							
12		L	L	L	L	L	L	TR	TR	TR	TS						
14		L	L	L	L	L	L	TR	TR	TR	TR	TS					
16		L	L	L	L	L	L	TR	TR	TR	TR	TR	TS				
18		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TS			
20		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TR	TS		
24		L	L	L	L	L	L	L	9PD	TR	TR	TR	TR	TR	TR	TS	
30		L	L	L	L	L	L	L	9PD	TR	TR	TR	TR	TR	TR	TR	TS

TS : STRAIGHT TEE
TR : REDUCING TEE
9PD : REINFORCING PAD 90 DEG
L : OUTLET

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PIPING CLASS

A0LR REV NO. 2

Material : SS316L
Rating : ASME CLASS 150
Flange Face : RF
C.A.(mm) : 0.00
Gasket : Spiral Wound
Service : PROCESS -WET SEVERE SOUR SERVICE SUBJECT TO NACE STD
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
5	BOLTING CONFIRMING TO B7M / 2HM SHALL BE USED UNDER CONDITIONS (A) DIRECT EXPOSURE TO SOUR ENVIRONMENTS (B) WHEN THE BOLTING WILL BE BURIED OR INSULATED
27	PWHT OF CARBON STEEL PIPING IN WET H2S, CAUSTIC AND AMINE SERVICES SHALL BE IN ACCORDANCE WITH SECTION 10.2, 10.3, AND 10.4 OF PROJECT SPECIFICATION 3550-8440-SP-0002 MATERIALS REQUIREMENTS FOR PRESSURISED EQUIPMENT AND PIPING. FOR CAUSTIC AND AMINE SERVICE THE FOLLOWING SHALL APPLY: - PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF ALL SITE PIPING FABRICATION WELDS IS REQUIRED FOR ALL WALL THICKNESSES. FOR MODERATE AND SEVERE WET H2S SERVICE THE FOLLOWING SHALL APPLY: PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF SITE FABRICATION CIRCUMFERENTIAL OR BRANCH WELDS IS NOT REQUIRED IF WELDS ARE MULTIPASS AND IN ACCORDANCE WITH PARA 10.2.12 OF PROJECT SPECIFICATION 3550-8440-SP-0002. FOR SERVICES MEETING THE WET H2S CRITERIA AND CAUSTIC OR AMINE CRITERIA THE MORE STRINGENT PWHT REQUIREMENT SHALL GOVERN.

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
200	WITH JACK SCREW (FO)
541	NPT(F) (CA,F,L)
773	CLASS 300 (B,F,G,V)
4608	VALVE WITH NIPPLES (V)

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PIPING CLASS
A0LR REV NO. 2

PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P01J-002ES	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE Severe wet H2S service	
1	0.75		SCH80S		P01J-002ET	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE Severe wet H2S service	
1	1		SCH80S		P01J-002EU	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE Severe wet H2S service	
1	1.5		SCH80S		P01J-002EV	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE Severe wet H2S service	
1	2		SCH10S		P01J-002EW	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M BE Severe wet H2S service	
1	3		SCH10S		P01J-002EX	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M BE Severe wet H2S service	
1	4		SCH10S		P01J-002EY	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M BE Severe wet H2S service	
1	6		SCH10S		P01J-002EZ	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M BE Severe wet H2S service	
1	8		SCH10S		P01J-002F8	Pipe ASTM A358 Grade 316/316L Class 1 dual grade EFW ASME B36.10M/B36.19M BE Severe wet H2S service	
1	10		SCH10S		P01J-002F0	Pipe ASTM A358 Grade 316/316L Class 1 dual grade EFW ASME B36.10M/B36.19M BE Severe wet H2S service	
1	12		SCH10S		P01J-002F1	Pipe ASTM A358 Grade 316/316L Class 1 dual grade EFW ASME B36.10M/B36.19M BE Severe wet H2S service	
1	14		SCH10S		P01J-002F2	Pipe ASTM A358 Grade 316/316L Class 1 dual grade EFW ASME B36.10M/B36.19M BE Severe wet H2S service	
1	16		SCH10S		P01J-002F3	Pipe ASTM A358 Grade 316/316L Class 1 dual grade EFW ASME B36.10M/B36.19M BE Severe wet H2S service	
1	18		SCH10S		P01J-002F4	Pipe ASTM A358 Grade 316/316L Class 1 dual grade EFW ASME B36.10M/B36.19M BE Severe wet H2S service	
1	20		SCH10S		P01J-002F5	Pipe ASTM A358 Grade 316/316L Class 1 dual grade EFW ASME B36.10M/B36.19M BE Severe wet H2S service	
1	24		SCH10S		P01J-002F6	Pipe ASTM A358 Grade 316/316L Class 1 dual grade EFW ASME B36.10M/B36.19M BE Severe wet H2S service	
1	30		SCH10S		P01J-002JP	Pipe ASTM A358 Grade 316/316L Class 1 dual grade EFW ASME B36.10M/B36.19M BE Severe wet H2S service	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P02J-001Y0	90 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	0.75		SCH80S		P02J-001Y1	90 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	1		SCH80S		P02J-001Y2	90 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	1.5		SCH80S		P02J-001Y3	90 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	2		SCH10S		P02J-001Y4	90 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	3		SCH10S		P02J-001Y5	90 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	4		SCH10S		P02J-001Y6	90 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	6		SCH10S		P02J-001Y7	90 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	8		SCH10S		P02J-001YG	90 degree elbow ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Long radius Severe wet H2S service	
1	10		SCH10S		P02J-001Y8	90 degree elbow ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Long radius Severe wet H2S service	
1	12		SCH10S		P02J-001Y9	90 degree elbow ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Long radius Severe wet H2S service	
1	14		SCH10S		P02J-001YA	90 degree elbow ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Long radius Severe wet H2S service	
1	16		SCH10S		P02J-001YB	90 degree elbow ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Long radius Severe wet H2S service	
1	18		SCH10S		P02J-001YC	90 degree elbow ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Long radius Severe wet H2S service	
1	20		SCH10S		P02J-001YD	90 degree elbow ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Long radius Severe wet H2S service	
1	24		SCH10S		P02J-001YE	90 degree elbow ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Long radius Severe wet H2S service	
1	30		SCH10S		P02J-0021K	90 degree elbow ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Long radius Severe wet H2S service	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P03J-001VR	45 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	0.75		SCH80S		P03J-001VS	45 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	1		SCH80S		P03J-001VT	45 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	1.5		SCH80S		P03J-001VU	45 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	2		SCH10S		P03J-001VV	45 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	

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45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3		SCH10S		P03J-001VW	45 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	4		SCH10S		P03J-001VX	45 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	6		SCH10S		P03J-001VY	45 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	8		SCH10S		P03J-001VP	45 degree elbow ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Long radius Severe wet H2S service	
1	10		SCH10S		P03J-001VF	45 degree elbow ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Long radius Severe wet H2S service	
1	12		SCH10S		P03J-001VG	45 degree elbow ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Long radius Severe wet H2S service	
1	14		SCH10S		P03J-001VH	45 degree elbow ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Long radius Severe wet H2S service	
1	16		SCH10S		P03J-001VJ	45 degree elbow ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Long radius Severe wet H2S service	
1	18		SCH10S		P03J-001VK	45 degree elbow ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Long radius Severe wet H2S service	
1	20		SCH10S		P03J-001VL	45 degree elbow ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Long radius Severe wet H2S service	
1	24		SCH10S		P03J-001VM	45 degree elbow ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Long radius Severe wet H2S service	
1	30		SCH10S		P03J-0021B	45 degree elbow ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Long radius Severe wet H2S service	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P21J-001M5	Straight tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	0.75		SCH80S		P21J-001M6	Straight tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1		SCH80S		P21J-001M7	Straight tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5		SCH80S		P21J-001M8	Straight tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	2		SCH10S		P21J-001M9	Straight tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	3		SCH10S		P21J-001MA	Straight tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	4		SCH10S		P21J-001MB	Straight tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	6		SCH10S		P21J-001MC	Straight tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	8		SCH10S		P21J-001MM	Straight tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	10		SCH10S		P21J-001MD	Straight tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	12		SCH10S		P21J-001ME	Straight tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	14		SCH10S		P21J-001MF	Straight tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	16		SCH10S		P21J-001MG	Straight tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	18		SCH10S		P21J-001MH	Straight tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	20		SCH10S		P21J-001MJ	Straight tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	24		SCH10S		P21J-001MK	Straight tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	30		SCH10S		P21J-001RH	Straight tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75	SCH80S	SCH80S	P24J-0070F	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5	0.75	SCH80S	SCH80S	P24J-0070J	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5	1	SCH80S	SCH80S	P24J-0070K	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	2	1	SCH10S	SCH80S	P24J-0070S	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	2	1.5	SCH10S	SCH80S	P24J-0070T	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	3	1.5	SCH10S	SCH80S	P24J-0070U	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	3	2	SCH10S	SCH10S	P24J-0070V	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	4	2	SCH10S	SCH10S	P24J-0070W	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	4	3	SCH10S	SCH10S	P24J-0070X	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	6	3	SCH10S	SCH10S	P24J-0070Y	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	

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PIPING CLASS
A0LR REV NO. 2

REDUCING TEE (TR)							
OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	6	4	SCH10S	SCH10S	P24J-0070Z	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	8	4	SCH10S	SCH10S	P24J-00710	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	8	6	SCH10S	SCH10S	P24J-00711	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	10	4	SCH10S	SCH10S	P24J-00712	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	10	6	SCH10S	SCH10S	P24J-00713	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	10	8	SCH10S	SCH10S	P24J-00714	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	12	6	SCH10S	SCH10S	P24J-00716	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	12	8	SCH10S	SCH10S	P24J-00717	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	12	10	SCH10S	SCH10S	P24J-00715	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	14	6	SCH10S	SCH10S	P24J-0071A	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	14	8	SCH10S	SCH10S	P24J-0071B	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	14	10	SCH10S	SCH10S	P24J-00718	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	14	12	SCH10S	SCH10S	P24J-00719	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	16	6	SCH10S	SCH10S	P24J-0071F	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	16	8	SCH10S	SCH10S	P24J-0071G	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	16	10	SCH10S	SCH10S	P24J-0071C	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	16	12	SCH10S	SCH10S	P24J-0071D	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	16	14	SCH10S	SCH10S	P24J-0071E	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	18	8	SCH10S	SCH10S	P24J-0071M	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	18	10	SCH10S	SCH10S	P24J-0071H	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	18	12	SCH10S	SCH10S	P24J-0071J	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	18	14	SCH10S	SCH10S	P24J-0071K	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	18	16	SCH10S	SCH10S	P24J-0071L	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	20	8	SCH10S	SCH10S	P24J-0071U	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	20	10	SCH10S	SCH10S	P24J-0071N	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	20	12	SCH10S	SCH10S	P24J-0071P	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	20	14	SCH10S	SCH10S	P24J-0071R	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	20	16	SCH10S	SCH10S	P24J-0071S	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	20	18	SCH10S	SCH10S	P24J-0071T	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	24	10	SCH10S	SCH10S	P24J-0071V	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	24	12	SCH10S	SCH10S	P24J-0071W	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	24	14	SCH10S	SCH10S	P24J-0071X	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	24	16	SCH10S	SCH10S	P24J-0071Y	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	24	18	SCH10S	SCH10S	P24J-0071Z	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	24	20	SCH10S	SCH10S	P24J-00720	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	30	10	SCH10S	SCH10S	P24J-007E9	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	30	12	SCH10S	SCH10S	P24J-007EA	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	30	14	SCH10S	SCH10S	P24J-007EB	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	30	16	SCH10S	SCH10S	P24J-007EC	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	30	18	SCH10S	SCH10S	P24J-007ED	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	30	20	SCH10S	SCH10S	P24J-007EE	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	30	24	SCH10S	SCH10S	P24J-007EF	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	

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PIPING CLASS
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CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH80S	SCH80S	P27J-005XP	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1	0.5	SCH80S	SCH80S	P27J-005V5	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1	0.75	SCH80S	SCH80S	P27J-005V6	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5	0.5	SCH80S	SCH80S	P27J-005V7	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5	0.75	SCH80S	SCH80S	P27J-005V8	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5	1	SCH80S	SCH80S	P27J-005V9	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	2	0.75	SCH10S	SCH80S	P27J-005VA	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	2	1	SCH10S	SCH80S	P27J-005VB	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	2	1.5	SCH10S	SCH80S	P27J-005VC	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	3	1.5	SCH10S	SCH80S	P27J-005VD	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	3	2	SCH10S	SCH10S	P27J-005VE	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	4	1.5	SCH10S	SCH80S	P27J-005VF	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	4	2	SCH10S	SCH10S	P27J-005VG	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	4	3	SCH10S	SCH10S	P27J-005VH	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	6	3	SCH10S	SCH10S	P27J-005VJ	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	6	4	SCH10S	SCH10S	P27J-005VK	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	8	4	SCH10S	SCH10S	P27J-005VL	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	8	6	SCH10S	SCH10S	P27J-005VM	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	10	4	SCH10S	SCH10S	P27J-005VN	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	10	6	SCH10S	SCH10S	P27J-005VP	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	10	8	SCH10S	SCH10S	P27J-005VR	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	12	6	SCH10S	SCH10S	P27J-005VT	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	12	8	SCH10S	SCH10S	P27J-005VU	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	12	10	SCH10S	SCH10S	P27J-005VS	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	14	6	SCH10S	SCH10S	P27J-005VX	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	14	8	SCH10S	SCH10S	P27J-005VY	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	14	10	SCH10S	SCH10S	P27J-005VV	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	14	12	SCH10S	SCH10S	P27J-005VW	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	16	8	SCH10S	SCH10S	P27J-005W2	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	16	10	SCH10S	SCH10S	P27J-005VZ	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	16	12	SCH10S	SCH10S	P27J-005W0	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	16	14	SCH10S	SCH10S	P27J-005W1	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	18	10	SCH10S	SCH10S	P27J-005W3	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	18	12	SCH10S	SCH10S	P27J-005W4	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	18	14	SCH10S	SCH10S	P27J-005W5	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	18	16	SCH10S	SCH10S	P27J-005W6	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	20	12	SCH10S	SCH10S	P27J-005W7	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	20	14	SCH10S	SCH10S	P27J-005W8	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	20	16	SCH10S	SCH10S	P27J-005W9	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	20	18	SCH10S	SCH10S	P27J-005WA	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	24	16	SCH10S	SCH10S	P27J-005WB	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	24	18	SCH10S	SCH10S	P27J-005WC	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	24	20	SCH10S	SCH10S	P27J-005WD	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	30	20	SCH10S	SCH10S	P27J-0067T	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	

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PIPING CLASS
A0LR **REV NO. 2**

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	30	24	SCH10S	SCH10S	P27J-0067U	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH80S	SCH80S	P28J-005YL	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1	0.5	SCH80S	SCH80S	P28J-005W1	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1	0.75	SCH80S	SCH80S	P28J-005W2	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5	0.5	SCH80S	SCH80S	P28J-005W3	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5	0.75	SCH80S	SCH80S	P28J-005W4	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5	1	SCH80S	SCH80S	P28J-005W5	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	2	0.75	SCH10S	SCH80S	P28J-005W6	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	2	1	SCH10S	SCH80S	P28J-005W7	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	2	1.5	SCH10S	SCH80S	P28J-005W8	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	3	1.5	SCH10S	SCH80S	P28J-005W9	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	3	2	SCH10S	SCH10S	P28J-005WA	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	4	1.5	SCH10S	SCH80S	P28J-005WB	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	4	2	SCH10S	SCH10S	P28J-005WC	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	4	3	SCH10S	SCH10S	P28J-005WD	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	6	3	SCH10S	SCH10S	P28J-005WE	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	6	4	SCH10S	SCH10S	P28J-005WF	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	8	4	SCH10S	SCH10S	P28J-005WG	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	8	6	SCH10S	SCH10S	P28J-005WH	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	10	4	SCH10S	SCH10S	P28J-005WJ	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	10	6	SCH10S	SCH10S	P28J-005WK	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	10	8	SCH10S	SCH10S	P28J-005WL	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	12	6	SCH10S	SCH10S	P28J-005WN	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	12	8	SCH10S	SCH10S	P28J-005WP	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	12	10	SCH10S	SCH10S	P28J-005WM	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	14	6	SCH10S	SCH10S	P28J-005WT	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	14	8	SCH10S	SCH10S	P28J-005WU	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	14	10	SCH10S	SCH10S	P28J-005WR	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	14	12	SCH10S	SCH10S	P28J-005WS	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	16	8	SCH10S	SCH10S	P28J-005WY	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	16	10	SCH10S	SCH10S	P28J-005WV	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	16	12	SCH10S	SCH10S	P28J-005WW	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	16	14	SCH10S	SCH10S	P28J-005WX	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	18	10	SCH10S	SCH10S	P28J-005WZ	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	18	12	SCH10S	SCH10S	P28J-005X0	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	18	14	SCH10S	SCH10S	P28J-005X1	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	18	16	SCH10S	SCH10S	P28J-005X2	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	20	12	SCH10S	SCH10S	P28J-005X3	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	20	14	SCH10S	SCH10S	P28J-005X4	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	20	16	SCH10S	SCH10S	P28J-005X5	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	24	18	SCH10S	SCH10S	P28J-005X6	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	24	16	SCH10S	SCH10S	P28J-005X7	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	

INDRA
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PIPING CLASS
A0LR REV NO. 2

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	24	18	SCH10S	SCH10S	P28J-005X8	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	24	20	SCH10S	SCH10S	P28J-005X9	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	30	20	SCH10S	SCH10S	P28J-00694	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	30	24	SCH10S	SCH10S	P28J-00695	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P29J-002M5	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	0.75		SCH80S		P29J-002M6	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1		SCH80S		P29J-002M7	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5		SCH80S		P29J-002M8	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	2		SCH10S		P29J-002ME	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	3		SCH10S		P29J-002MH	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	4		SCH10S		P29J-002MK	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	6		SCH10S		P29J-002ML	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	8		SCH10S		P29J-002MM	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	10		SCH10S		P29J-002M9	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	12		SCH10S		P29J-002MA	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	14		SCH10S		P29J-002MB	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	16		SCH10S		P29J-002MC	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	18		SCH10S		P29J-002MD	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	20		SCH10S		P29J-002MF	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	24		SCH10S		P29J-002MG	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	30		SCH10S		P29J-0038G	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
541	0.75				P29K-00049	Cap ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 NPT Severe wet H2S service	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P41J-001U7	Straight nipple ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Severe wet H2S service	
1	0.75		SCH80S		P41J-001U8	Straight nipple ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Severe wet H2S service	
1	1		SCH80S		P41J-001U9	Straight nipple ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Severe wet H2S service	
1	1.5		SCH80S		P41J-001UA	Straight nipple ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Severe wet H2S service	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
541	1	0.75			P31K-00FMB	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 NPT Severe wet H2S service	
541	1.5	0.75			P31K-00FMA	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 NPT Severe wet H2S service	
541	2 - 2.5	0.75			P31K-00GFX	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 NPT Severe wet H2S service	
541	3 - 5	0.75			P31K-00GFY	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 NPT Severe wet H2S service	
541	6 - 12	0.75			P31K-00GFZ	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 NPT Severe wet H2S service	
541	14 - 36	0.75			P31K-00GG0	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 NPT Severe wet H2S service	
1	2	0.75	SCH10S	SCH80S	P31K-00ENM	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	3	0.75	SCH10S	SCH80S	P31K-00ENS	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	4	0.75	SCH10S	SCH80S	P31K-00EP3	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	6	0.75	SCH10S	SCH80S	P31K-00EPB	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	8	0.75	SCH10S	SCH80S	P31K-00EPS	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	10	0.75	SCH10S	SCH80S	P31K-00EPX	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	12	0.75	SCH10S	SCH80S	P31K-00ER2	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	14	0.75	SCH10S	SCH80S	P31K-00ER8	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	16	0.75	SCH10S	SCH80S	P31K-00ERE	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	

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OUTLET (L)							
OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	18	0.75	SCH10S	SCH80S	P31K-00ERL	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	20	0.75	SCH10S	SCH80S	P31K-00ERU	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	24	0.75	SCH10S	SCH80S	P31K-00ES1	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	30	0.75	SCH10S	SCH80S	P31K-00F26	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	3	1	SCH10S	SCH80S	P31K-00ENT	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	4	1	SCH10S	SCH80S	P31K-00EP4	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	6	1	SCH10S	SCH80S	P31K-00EPC	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	8	1	SCH10S	SCH80S	P31K-00EPT	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	10	1	SCH10S	SCH80S	P31K-00EPY	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	12	1	SCH10S	SCH80S	P31K-00ER3	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	14	1	SCH10S	SCH80S	P31K-00ER9	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	16	1	SCH10S	SCH80S	P31K-00ERF	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	18	1	SCH10S	SCH80S	P31K-00ERM	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	20	1	SCH10S	SCH80S	P31K-00ERV	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	24	1	SCH10S	SCH80S	P31K-00ES2	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	30	1	SCH10S	SCH80S	P31K-00F27	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	4	1.5	SCH10S	SCH80S	P31K-00EP5	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	6	1.5	SCH10S	SCH80S	P31K-00EPD	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	8	1.5	SCH10S	SCH80S	P31K-00EPU	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	10	1.5	SCH10S	SCH80S	P31K-00EPZ	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	12	1.5	SCH10S	SCH80S	P31K-00ER4	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	14	1.5	SCH10S	SCH80S	P31K-00ERA	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	16	1.5	SCH10S	SCH80S	P31K-00ERG	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	18	1.5	SCH10S	SCH80S	P31K-00ERN	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	20	1.5	SCH10S	SCH80S	P31K-00ERW	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	24	1.5	SCH10S	SCH80S	P31K-00ES3	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	30	1.5	SCH10S	SCH80S	P31K-00F28	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	6	2	SCH10S	SCH10S	P31K-00EPE	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	8	2	SCH10S	SCH10S	P31K-00EPV	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	10	2	SCH10S	SCH10S	P31K-00ER0	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	12	2	SCH10S	SCH10S	P31K-00ER5	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	14	2	SCH10S	SCH10S	P31K-00ERB	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	16	2	SCH10S	SCH10S	P31K-00ERH	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	18	2	SCH10S	SCH10S	P31K-00ERP	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	20	2	SCH10S	SCH10S	P31K-00ERX	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	24	2	SCH10S	SCH10S	P31K-00ES4	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	30	2	SCH10S	SCH10S	P31K-00F29	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	8	3	SCH10S	SCH10S	P31K-00EPW	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	10	3	SCH10S	SCH10S	P31K-00ER1	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	12	3	SCH10S	SCH10S	P31K-00ER6	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	14	3	SCH10S	SCH10S	P31K-00ERC	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	16	3	SCH10S	SCH10S	P31K-00ERJ	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	18	3	SCH10S	SCH10S	P31K-00ERR	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	20	3	SCH10S	SCH10S	P31K-00ERY	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	24	3	SCH10S	SCH10S	P31K-00ES5	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	30	3	SCH10S	SCH10S	P31K-00F2A	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	12	4	SCH10S	SCH10S	P31K-00ER7	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	14	4	SCH10S	SCH10S	P31K-00ERD	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	16	4	SCH10S	SCH10S	P31K-00ERK	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	18	4	SCH10S	SCH10S	P31K-00ERS	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	20	4	SCH10S	SCH10S	P31K-00ERZ	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	24	4	SCH10S	SCH10S	P31K-00ES6	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	30	4	SCH10S	SCH10S	P31K-00F2B	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	18	6	SCH10S	SCH10S	P31K-00ERT	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	20	6	SCH10S	SCH10S	P31K-00ES0	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	24	6	SCH10S	SCH10S	P31K-00ES7	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	30	6	SCH10S	SCH10S	P31K-00F2C	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	

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PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30K-0005H	Plug ASTM A182 Grade F316/F316L dual grade ASME B16.11 NPT Round head Severe wet H2S service	
1	0.75				P30K-0005J	Plug ASTM A182 Grade F316/F316L dual grade ASME B16.11 NPT Round head Severe wet H2S service	
1	1				P30K-0005K	Plug ASTM A182 Grade F316/F316L dual grade ASME B16.11 NPT Round head Severe wet H2S service	
1	1.5				P30K-0005L	Plug ASTM A182 Grade F316/F316L dual grade ASME B16.11 NPT Round head Severe wet H2S service	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P61K-005FD	Flange WN ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	0.75		SCH80S		P61K-005FE	Flange WN ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	1		SCH80S		P61K-005FF	Flange WN ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	1.5		SCH80S		P61K-005FG	Flange WN ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	2		SCH10S		P61K-005FN	Flange WN ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	3		SCH10S		P61K-005FS	Flange WN ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	4		SCH10S		P61K-005FT	Flange WN ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	6		SCH10S		P61K-005FU	Flange WN ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	8		SCH10S		P61K-005FV	Flange WN ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	10		SCH10S		P61K-005FH	Flange WN ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	12		SCH10S		P61K-005FJ	Flange WN ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	14		SCH10S		P61K-005FK	Flange WN ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	16		SCH10S		P61K-005FL	Flange WN ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	18		SCH10S		P61K-005FM	Flange WN ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	20		SCH10S		P61K-005FP	Flange WN ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	24		SCH10S		P61K-005FR	Flange WN ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	30		SCH10S		P61K-005SU	Flange WN ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.47 Series B RF Severe wet H2S service	
541	0.5				P61K-0069H	Flange NPT ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
541	0.75				P61K-005ZZ	Flange NPT ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
773	0.5		SCH80S		P61K-005FX	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
773	0.75		SCH80S		P61K-005FY	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
773	1		SCH80S		P61K-005FZ	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
773	1.5		SCH80S		P61K-005G0	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
773	2		SCH10S		P61K-005G6	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
773	3		SCH10S		P61K-005G9	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
773	4		SCH10S		P61K-005GA	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
773	6		SCH10S		P61K-005GB	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
773	8		SCH10S		P61K-005GC	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
773	10		SCH10S		P61K-005G1	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
773	12		SCH10S		P61K-005G2	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
773	14		SCH10S		P61K-005G3	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
773	16		SCH10S		P61K-005G4	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
773	18		SCH10S		P61K-005G5	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
773	20		SCH10S		P61K-005G7	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
773	24		SCH10S		P61K-005G8	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
773	30		SCH10S		P61K-005SV	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.47 Series B RF Severe wet H2S service	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67K-001LJ	Blind flange ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	0.75				P67K-001LK	Blind flange ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	1				P67K-001LL	Blind flange ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	1.5				P67K-001LM	Blind flange ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	2				P67K-001LU	Blind flange ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	3				P67K-001LX	Blind flange ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	4				P67K-001LY	Blind flange ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	6				P67K-001LZ	Blind flange ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	8				P67K-001M0	Blind flange ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	10				P67K-001LN	Blind flange ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	12				P67K-001LP	Blind flange ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	14				P67K-001LR	Blind flange ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	

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BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	16				P67K-001LS	Blind flange ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	18				P67K-001LT	Blind flange ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	20				P67K-001LV	Blind flange ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	24				P67K-001LW	Blind flange ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	30				P67K-001M1	Blind flange ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.47 Series B RF Severe wet H2S service	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000L8	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000L9	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000LA	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000LB	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000LH	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000LL	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000LM	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	6				P73T-000LN	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	8				P73T-000LP	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	10				P73T-000LC	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	12				P73T-000LD	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	14				P73T-000LE	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	16				P73T-000LF	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	18				P73T-000LG	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	20				P73T-000LJ	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	24				P73T-000LK	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	30				P73T-000LT	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	0.5				P73T-000FT	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	0.75				P73T-000FU	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	3				P73T-000G5	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	4				P73T-000G6	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	6				P73T-000G7	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	8				P73T-000G8	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	10				P73T-000FX	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	12				P73T-000FY	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	14				P73T-000FZ	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	16				P73T-000G0	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	18				P73T-000G1	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	20				P73T-000G3	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	24				P73T-000G4	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	30				P73T-000H9	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-16				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	

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BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	18-24				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
1	30				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
773	0.5-10				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
773	12-30				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81K-0014F	Gate valve ASTM A182 Grade F316/F316L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	0.75				P81K-0014G	Gate valve ASTM A182 Grade F316/F316L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	1				P81K-0014H	Gate valve ASTM A182 Grade F316/F316L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	1.5				P81K-0014J	Gate valve ASTM A182 Grade F316/F316L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	2				P81L-002BE	Gate valve ASTM A351 Grade CF8M Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	3				P81L-002BF	Gate valve ASTM A351 Grade CF8M Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	4				P81L-002BG	Gate valve ASTM A351 Grade CF8M Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	6				P81L-002BH	Gate valve ASTM A351 Grade CF8M Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	8				P81L-002BJ	Gate valve ASTM A351 Grade CF8M Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	10				P81L-002BC	Gate valve ASTM A351 Grade CF8M Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	12				P81L-002BD	Gate valve ASTM A351 Grade CF8M Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	14				P81L-002BK	Gate valve ASTM A351 Grade CF8M Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Severe wet H2S service	
1	16				P81L-002BL	Gate valve ASTM A351 Grade CF8M Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Severe wet H2S service	
1	18				P81L-002BM	Gate valve ASTM A351 Grade CF8M Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Severe wet H2S service	
1	20				P81L-002BN	Gate valve ASTM A351 Grade CF8M Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Severe wet H2S service	
1	24				P81L-002BP	Gate valve ASTM A351 Grade CF8M Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Severe wet H2S service	
1	30				P81L-002BR	Gate valve ASTM A351 Grade CF8M Class 150 API 600 Flange ASME B16.47-B RF Trim number 12 BB-BG-OS&Y Gear operated Severe wet H2S service	
4608	0.75				P81K-001P9	Gate valve ASTM A182 Grade F316/F316L dual grade Class 150 API 602 BW both sides w/ nipples BE - NPT ASTM A312-TP316(L) dual grade Seamless Sch80S-nipple Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
4608	1.5				P81K-001TD	Gate valve ASTM A182 Grade F316/F316L dual grade Class 150 API 602 BW both sides w/ nipples BE - NPT ASTM A312-TP316(L) dual grade Seamless Sch80S-nipple Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
773	0.5				P81K-0015M	Gate valve ASTM A182 Grade F316/F316L dual grade Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
773	0.75				P81K-0015N	Gate valve ASTM A182 Grade F316/F316L dual grade Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
773	1				P81K-0015P	Gate valve ASTM A182 Grade F316/F316L dual grade Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
773	2				P81L-002CH	Gate valve ASTM A351 Grade CF8M Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82K-000RN	Globe valve ASTM A182 Grade F316/F316L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	0.75				P82K-000RP	Globe valve ASTM A182 Grade F316/F316L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	1				P82K-000RR	Globe valve ASTM A182 Grade F316/F316L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	1.5				P82K-000RS	Globe valve ASTM A182 Grade F316/F316L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	2				P82L-001A6	Globe valve ASTM A351 Grade CF8M Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	3				P82L-001A7	Globe valve ASTM A351 Grade CF8M Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	4				P82L-001A8	Globe valve ASTM A351 Grade CF8M Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	6				P82L-001A9	Globe valve ASTM A351 Grade CF8M Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	8				P82L-001AA	Globe valve ASTM A351 Grade CF8M Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	

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CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83K-000PA	Check valve ASTM A182 Grade F316/F316L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Severe wet H2S service	
1	0.75				P83K-000PB	Check valve ASTM A182 Grade F316/F316L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Severe wet H2S service	
1	1				P83K-000PC	Check valve ASTM A182 Grade F316/F316L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Severe wet H2S service	
1	1.5				P83K-000PD	Check valve ASTM A182 Grade F316/F316L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Severe wet H2S service	
1	2				P83L-001A5	Check valve ASTM A351 Grade CF8M Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service	
1	3				P83L-001A6	Check valve ASTM A351 Grade CF8M Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service	
1	4				P83L-001A7	Check valve ASTM A351 Grade CF8M Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service	
1	6				P83L-001A8	Check valve ASTM A351 Grade CF8M Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service	
1	8				P83L-001A9	Check valve ASTM A351 Grade CF8M Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service	
1	10				P83L-001A3	Check valve ASTM A351 Grade CF8M Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service	
1	12				P83L-001A4	Check valve ASTM A351 Grade CF8M Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service	

ORIFICE FLANGE (FO)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2		SCH10S		P66K-003U8	Orifice flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Severe wet H2S service	
1	3		SCH10S		P66K-003U9	Orifice flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Severe wet H2S service	
1	4		SCH10S		P66K-003UA	Orifice flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Severe wet H2S service	
1	6		SCH10S		P66K-003UB	Orifice flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Severe wet H2S service	
1	8		SCH10S		P66K-003UC	Orifice flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Severe wet H2S service	
200	2		SCH10S		P66K-003UF	Orifice flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Severe wet H2S service with Jack screw	
200	3		SCH10S		P66K-003UG	Orifice flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Severe wet H2S service with Jack screw	
200	4		SCH10S		P66K-003UH	Orifice flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Severe wet H2S service with Jack screw	
200	6		SCH10S		P66K-003UJ	Orifice flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Severe wet H2S service with Jack screw	
200	8		SCH10S		P66K-003UK	Orifice flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Severe wet H2S service with Jack screw	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71K-000D6	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	
1	0.75				P71K-000D7	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	
1	1				P71K-000D8	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	
1	1.5				P71K-000D9	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	
1	2				P71K-000DC	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	
1	3				P71K-000DD	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	
1	4				P71K-000DE	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	
1	6				P71K-000DF	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	
1	8				P71K-000DG	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	
1	10				P71K-000DA	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	
1	12				P71K-000DB	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	

PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72K-000C2	Paddle blank ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	
1	16				P72K-000C3	Paddle blank ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	
1	18				P72K-000C4	Paddle blank ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	
1	20				P72K-000C5	Paddle blank ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	
1	24				P72K-000C6	Paddle blank ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	

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PADDLE BLANK (PB)							
OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	30				P72K-000C1	Paddle blank ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.47-B RF Severe wet H2S service	

PADDLE SPACER (PS)							
OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72K-000C7	Paddle spacer ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	
1	16				P72K-000C8	Paddle spacer ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	
1	18				P72K-000C9	Paddle spacer ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	
1	20				P72K-000CA	Paddle spacer ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	
1	24				P72K-000CB	Paddle spacer ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	
1	30				P72K-000CC	Paddle spacer ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.47-B RF Severe wet H2S service	

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BOLT TABLE (B_A0LR , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	60	P80S-008SY		
0.75	4	0.500	65	P80S-008SZ		
1	4	0.500	70	P80S-008T0		
1.5	4	0.500	75	P80S-008T1		
2	4	0.625	85	P80S-0090A		
3	4	0.625	95	P80S-0090C		
4	8	0.625	95	P80S-0090C		
6	8	0.750	105	P80S-0090E		
8	8	0.750	110	P80S-0090F		
10	12	0.875	120	P80S-005Z9		
12	12	0.875	120	P80S-005Z9		
14	12	1.000	135	P80S-00619		
16	16	1.000	140	P80S-0061A		
18	16	1.125	150	P80S-0064L		
20	20	1.125	160	P80S-0064N		
24	20	1.250	175	P80S-00686		
30	44	0.750	145	P80S-0090N		

BOLT TABLE (B_A0LR_773 , STUD ASME RF, OPTION CODE 773)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-008T0		
0.75	4	0.625	75	P80S-00908		
1	4	0.625	80	P80S-00909		
1.5	4	0.750	95	P80S-005Z4		
2	8	0.625	90	P80S-0090B		
3	8	0.750	110	P80S-0090F		
4	8	0.750	115	P80S-0090G		
6	12	0.750	125	P80S-0090J		
8	12	0.875	140	P80S-005ZD		
10	16	1.000	160	P80S-0061E		
12	16	1.125	175	P80S-0064S		
14	20	1.125	180	P80S-0064T		
16	20	1.250	190	P80S-00689		
18	24	1.250	200	P80S-0068B		
20	24	1.250	210	P80S-0068D		
24	24	1.500	235	P80S-006LB		
30	36	1.375	285	P80S-006HY		

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PIPING CLASS

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BRANCH TABLE (T_A0LR)

RUN PIPE SIZE (in) \ BRANCH SIZE (in)	0.5	0.75	1	1.5	2	3	4	6	8	10	12	14	16	18	20	24	30
0.5	TS																
0.75		TS															
1		TR	TS														
1.5		TR	TR	TS													
2		L	TR	TR	TS												
3		L	L	TR	TR	TS											
4	L	L	L	L	TR	TR	TS										
6	L	L	L	L	L	TR	TR	TS									
8		L	L	L	L	L	TR	TR	TS								
10		L	L	L	L	L	TR	TR	TR	TS							
12		L	L	L	L	L	L	TR	TR	TR	TS						
14		L	L	L	L	L	L	TR	TR	TR	TR	TS					
16		L	L	L	L	L	L	TR	TR	TR	TR	TR	TS				
18		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TS			
20		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TR	TS		
24		L	L	L	L	L	L	L	9PD	TR	TR	TR	TR	TR	TR	TS	
30		L	L	L	L	L	L	L	9PD	TR	TR	TR	TR	TR	TR	TR	TS

9PD : REINFORCING PAD 90 DEG
L : OUTLET
TR : REDUCING TEE
TS : STRAIGHT TEE

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PIPING CLASS

A0LR01 REV NO. 2

Material : SS316L
Rating : ASME CLASS 150
Flange Face : RF
C.A.(mm) : 0.00
Gasket : Spiral Wound
Service : PROCESS - WET SEVERE SOUR SERVICE SUBJECT TO NACE + HIC STD.
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
5	BOLTING CONFIRMING TO B7M / 2HM SHALL BE USED UNDER CONDITIONS (A) DIRECT EXPOSURE TO SOUR ENVIRONMENTS (B) WHEN THE BOLTING WILL BE BURIED OR INSULATED
27	PWHT OF CARBON STEEL PIPING IN WET H2S, CAUSTIC AND AMINE SERVICES SHALL BE IN ACCORDANCE WITH SECTION 10.2, 10.3, AND 10.4 OF PROJECT SPECIFICATION 3550-8440-SP-0002 MATERIALS REQUIREMENTS FOR PRESSURISED EQUIPMENT AND PIPING. FOR CAUSTIC AND AMINE SERVICE THE FOLLOWING SHALL APPLY: - PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF ALL SITE PIPING FABRICATION WELDS IS REQUIRED FOR ALL WALL THICKNESSES. FOR MODERATE AND SEVERE WET H2S SERVICE THE FOLLOWING SHALL APPLY: PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF SITE FABRICATION CIRCUMFERENTIAL OR BRANCH WELDS IS NOT REQUIRED IF WELDS ARE MULTIPASS AND IN ACCORDANCE WITH PARA 10.2.12 OF PROJECT SPECIFICATION 3550-8440-SP-0002. FOR SERVICES MEETING THE WET H2S CRITERIA AND CAUSTIC OR AMINE CRITERIA THE MORE STRINGENT PWHT REQUIREMENT SHALL GOVERN.

DETAIL NOTES :

NO.	DESCRIPTION
38	TO BE USED FOR STAND PIPE

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
200	WITH JACK SCREW (FO)
541	NPT(F) (CA,F,L)
773	CLASS 300 (B,F,G)
4212	WELDOLET FOR STAND PIPE (L)
4608	VALVE WITH NIPPLES (V)

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PIPING CLASS
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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P01J-002ES	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE Severe wet H2S service	
1	0.75		SCH80S		P01J-002ET	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE Severe wet H2S service	
1	1		SCH80S		P01J-002EU	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE Severe wet H2S service	
1	1.5		SCH80S		P01J-002EV	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE Severe wet H2S service	
1	2		SCH10S		P01J-002EW	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M BE Severe wet H2S service	
1	3		SCH10S		P01J-002EX	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M BE Severe wet H2S service	
1	4		SCH10S		P01J-002EY	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M BE Severe wet H2S service	
1	6		SCH10S		P01J-002EZ	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M BE Severe wet H2S service	
1	8		SCH10S		P01J-002F8	Pipe ASTM A358 Grade 316/316L Class 1 dual grade EFW ASME B36.10M/B36.19M BE Severe wet H2S service	
1	10		SCH10S		P01J-002F0	Pipe ASTM A358 Grade 316/316L Class 1 dual grade EFW ASME B36.10M/B36.19M BE Severe wet H2S service	
1	12		SCH10S		P01J-002F1	Pipe ASTM A358 Grade 316/316L Class 1 dual grade EFW ASME B36.10M/B36.19M BE Severe wet H2S service	
1	14		SCH10S		P01J-002F2	Pipe ASTM A358 Grade 316/316L Class 1 dual grade EFW ASME B36.10M/B36.19M BE Severe wet H2S service	
1	16		SCH10S		P01J-002F3	Pipe ASTM A358 Grade 316/316L Class 1 dual grade EFW ASME B36.10M/B36.19M BE Severe wet H2S service	
1	18		SCH10S		P01J-002F4	Pipe ASTM A358 Grade 316/316L Class 1 dual grade EFW ASME B36.10M/B36.19M BE Severe wet H2S service	
1	20		SCH10S		P01J-002F5	Pipe ASTM A358 Grade 316/316L Class 1 dual grade EFW ASME B36.10M/B36.19M BE Severe wet H2S service	
1	24		SCH10S		P01J-002F6	Pipe ASTM A358 Grade 316/316L Class 1 dual grade EFW ASME B36.10M/B36.19M BE Severe wet H2S service	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P02J-001Y0	90 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	0.75		SCH80S		P02J-001Y1	90 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	1		SCH80S		P02J-001Y2	90 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	1.5		SCH80S		P02J-001Y3	90 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	2		SCH10S		P02J-001Y4	90 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	3		SCH10S		P02J-001Y5	90 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	4		SCH10S		P02J-001Y6	90 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	6		SCH10S		P02J-001Y7	90 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	8		SCH10S		P02J-001YG	90 degree elbow ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Long radius Severe wet H2S service	
1	10		SCH10S		P02J-001Y8	90 degree elbow ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Long radius Severe wet H2S service	
1	12		SCH10S		P02J-001Y9	90 degree elbow ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Long radius Severe wet H2S service	
1	14		SCH10S		P02J-001YA	90 degree elbow ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Long radius Severe wet H2S service	
1	16		SCH10S		P02J-001YB	90 degree elbow ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Long radius Severe wet H2S service	
1	18		SCH10S		P02J-001YC	90 degree elbow ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Long radius Severe wet H2S service	
1	20		SCH10S		P02J-001YD	90 degree elbow ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Long radius Severe wet H2S service	
1	24		SCH10S		P02J-001YE	90 degree elbow ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Long radius Severe wet H2S service	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P03J-001VR	45 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	0.75		SCH80S		P03J-001VS	45 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	1		SCH80S		P03J-001VT	45 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	1.5		SCH80S		P03J-001VU	45 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	2		SCH10S		P03J-001VV	45 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	3		SCH10S		P03J-001VW	45 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	4		SCH10S		P03J-001VX	45 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	

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45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	6		SCH10S		P03J-001VY	45 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	8		SCH10S		P03J-001VP	45 degree elbow ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Long radius Severe wet H2S service	
1	10		SCH10S		P03J-001VF	45 degree elbow ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Long radius Severe wet H2S service	
1	12		SCH10S		P03J-001VG	45 degree elbow ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Long radius Severe wet H2S service	
1	14		SCH10S		P03J-001VH	45 degree elbow ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Long radius Severe wet H2S service	
1	16		SCH10S		P03J-001VJ	45 degree elbow ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Long radius Severe wet H2S service	
1	18		SCH10S		P03J-001VK	45 degree elbow ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Long radius Severe wet H2S service	
1	20		SCH10S		P03J-001VL	45 degree elbow ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Long radius Severe wet H2S service	
1	24		SCH10S		P03J-001VM	45 degree elbow ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Long radius Severe wet H2S service	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P21J-001M5	Straight tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	0.75		SCH80S		P21J-001M6	Straight tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1		SCH80S		P21J-001M7	Straight tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5		SCH80S		P21J-001M8	Straight tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	2		SCH10S		P21J-001M9	Straight tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	3		SCH10S		P21J-001MA	Straight tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	4		SCH10S		P21J-001MB	Straight tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	6		SCH10S		P21J-001MC	Straight tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	8		SCH10S		P21J-001MM	Straight tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	10		SCH10S		P21J-001MD	Straight tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	12		SCH10S		P21J-001ME	Straight tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	14		SCH10S		P21J-001MF	Straight tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	16		SCH10S		P21J-001MG	Straight tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	18		SCH10S		P21J-001MH	Straight tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	20		SCH10S		P21J-001MJ	Straight tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	24		SCH10S		P21J-001MK	Straight tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75	SCH80S	SCH80S	P24J-0070F	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5	0.75	SCH80S	SCH80S	P24J-0070J	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5	1	SCH80S	SCH80S	P24J-0070K	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	2	1	SCH10S	SCH80S	P24J-0070S	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	2	1.5	SCH10S	SCH80S	P24J-0070T	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	3	1.5	SCH10S	SCH80S	P24J-0070U	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	3	2	SCH10S	SCH10S	P24J-0070V	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	4	2	SCH10S	SCH10S	P24J-0070W	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	4	3	SCH10S	SCH10S	P24J-0070X	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	6	3	SCH10S	SCH10S	P24J-0070Y	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	6	4	SCH10S	SCH10S	P24J-0070Z	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	8	4	SCH10S	SCH10S	P24J-00710	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	8	6	SCH10S	SCH10S	P24J-00711	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	10	4	SCH10S	SCH10S	P24J-00712	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	

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REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	10	6	SCH10S	SCH10S	P24J-00713	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	10	8	SCH10S	SCH10S	P24J-00714	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	12	6	SCH10S	SCH10S	P24J-00716	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	12	8	SCH10S	SCH10S	P24J-00717	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	12	10	SCH10S	SCH10S	P24J-00715	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	14	6	SCH10S	SCH10S	P24J-0071A	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	14	8	SCH10S	SCH10S	P24J-0071B	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	14	10	SCH10S	SCH10S	P24J-00718	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	14	12	SCH10S	SCH10S	P24J-00719	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	16	6	SCH10S	SCH10S	P24J-0071F	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	16	8	SCH10S	SCH10S	P24J-0071G	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	16	10	SCH10S	SCH10S	P24J-0071C	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	16	12	SCH10S	SCH10S	P24J-0071D	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	16	14	SCH10S	SCH10S	P24J-0071E	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	18	8	SCH10S	SCH10S	P24J-0071M	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	18	10	SCH10S	SCH10S	P24J-0071H	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	18	12	SCH10S	SCH10S	P24J-0071J	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	18	14	SCH10S	SCH10S	P24J-0071K	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	18	16	SCH10S	SCH10S	P24J-0071L	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	20	8	SCH10S	SCH10S	P24J-0071U	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	20	10	SCH10S	SCH10S	P24J-0071N	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	20	12	SCH10S	SCH10S	P24J-0071P	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	20	14	SCH10S	SCH10S	P24J-0071R	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	20	16	SCH10S	SCH10S	P24J-0071S	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	20	18	SCH10S	SCH10S	P24J-0071T	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	24	10	SCH10S	SCH10S	P24J-0071V	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	24	12	SCH10S	SCH10S	P24J-0071W	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	24	14	SCH10S	SCH10S	P24J-0071X	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	24	16	SCH10S	SCH10S	P24J-0071Y	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	24	18	SCH10S	SCH10S	P24J-0071Z	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	24	20	SCH10S	SCH10S	P24J-00720	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH80S	SCH80S	P27J-005XP	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1	0.5	SCH80S	SCH80S	P27J-005V5	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1	0.75	SCH80S	SCH80S	P27J-005V6	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5	0.5	SCH80S	SCH80S	P27J-005V7	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5	0.75	SCH80S	SCH80S	P27J-005V8	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5	1	SCH80S	SCH80S	P27J-005V9	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	2	0.75	SCH10S	SCH80S	P27J-005VA	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	2	1	SCH10S	SCH80S	P27J-005VB	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	2	1.5	SCH10S	SCH80S	P27J-005VC	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	3	1.5	SCH10S	SCH80S	P27J-005VD	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	3	2	SCH10S	SCH10S	P27J-005VE	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	4	1.5	SCH10S	SCH80S	P27J-005VF	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	4	2	SCH10S	SCH10S	P27J-005VG	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	4	3	SCH10S	SCH10S	P27J-005VH	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	6	3	SCH10S	SCH10S	P27J-005VJ	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	6	4	SCH10S	SCH10S	P27J-005VK	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	8	4	SCH10S	SCH10S	P27J-005VL	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	8	6	SCH10S	SCH10S	P27J-005VM	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	10	4	SCH10S	SCH10S	P27J-005VN	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	10	6	SCH10S	SCH10S	P27J-005VP	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	10	8	SCH10S	SCH10S	P27J-005VR	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	12	6	SCH10S	SCH10S	P27J-005VT	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	12	8	SCH10S	SCH10S	P27J-005VU	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	12	10	SCH10S	SCH10S	P27J-005VS	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	14	6	SCH10S	SCH10S	P27J-005VX	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	14	8	SCH10S	SCH10S	P27J-005VY	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	14	10	SCH10S	SCH10S	P27J-005VV	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	14	12	SCH10S	SCH10S	P27J-005VW	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	16	8	SCH10S	SCH10S	P27J-005W2	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	16	10	SCH10S	SCH10S	P27J-005VZ	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	16	12	SCH10S	SCH10S	P27J-005W0	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	16	14	SCH10S	SCH10S	P27J-005W1	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	18	10	SCH10S	SCH10S	P27J-005W3	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	18	12	SCH10S	SCH10S	P27J-005W4	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	18	14	SCH10S	SCH10S	P27J-005W5	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	18	16	SCH10S	SCH10S	P27J-005W6	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	20	12	SCH10S	SCH10S	P27J-005W7	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	20	14	SCH10S	SCH10S	P27J-005W8	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	20	16	SCH10S	SCH10S	P27J-005W9	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	20	18	SCH10S	SCH10S	P27J-005WA	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	24	16	SCH10S	SCH10S	P27J-005WB	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	24	18	SCH10S	SCH10S	P27J-005WC	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	24	20	SCH10S	SCH10S	P27J-005WD	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH80S	SCH80S	P28J-005YL	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1	0.5	SCH80S	SCH80S	P28J-005W1	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1	0.75	SCH80S	SCH80S	P28J-005W2	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5	0.5	SCH80S	SCH80S	P28J-005W3	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5	0.75	SCH80S	SCH80S	P28J-005W4	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5	1	SCH80S	SCH80S	P28J-005W5	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	2	0.75	SCH10S	SCH80S	P28J-005W6	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	2	1	SCH10S	SCH80S	P28J-005W7	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	3	1.5	SCH10S	SCH80S	P28J-005W8	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	3	1.5	SCH10S	SCH80S	P28J-005W9	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	SCH10S	SCH10S	P28J-005WA	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	4	1.5	SCH10S	SCH80S	P28J-005WB	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	4	2	SCH10S	SCH10S	P28J-005WC	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	4	3	SCH10S	SCH10S	P28J-005WD	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	6	3	SCH10S	SCH10S	P28J-005WE	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	6	4	SCH10S	SCH10S	P28J-005WF	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	8	4	SCH10S	SCH10S	P28J-005WG	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	8	6	SCH10S	SCH10S	P28J-005WH	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	10	4	SCH10S	SCH10S	P28J-005WJ	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	10	6	SCH10S	SCH10S	P28J-005WK	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	10	8	SCH10S	SCH10S	P28J-005WL	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	12	6	SCH10S	SCH10S	P28J-005WN	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	12	8	SCH10S	SCH10S	P28J-005WP	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	12	10	SCH10S	SCH10S	P28J-005WM	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	14	6	SCH10S	SCH10S	P28J-005WT	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	14	8	SCH10S	SCH10S	P28J-005WU	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	14	10	SCH10S	SCH10S	P28J-005WR	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	14	12	SCH10S	SCH10S	P28J-005WS	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	16	8	SCH10S	SCH10S	P28J-005WY	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	16	10	SCH10S	SCH10S	P28J-005WV	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	16	12	SCH10S	SCH10S	P28J-005WW	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	16	14	SCH10S	SCH10S	P28J-005WX	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	18	10	SCH10S	SCH10S	P28J-005WZ	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	18	12	SCH10S	SCH10S	P28J-005X0	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	18	14	SCH10S	SCH10S	P28J-005X1	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	18	16	SCH10S	SCH10S	P28J-005X2	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	20	12	SCH10S	SCH10S	P28J-005X3	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	20	14	SCH10S	SCH10S	P28J-005X4	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	20	16	SCH10S	SCH10S	P28J-005X5	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	20	18	SCH10S	SCH10S	P28J-005X6	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	24	16	SCH10S	SCH10S	P28J-005X7	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	24	18	SCH10S	SCH10S	P28J-005X8	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	24	20	SCH10S	SCH10S	P28J-005X9	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P29J-002M5	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	0.75		SCH80S		P29J-002M6	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1		SCH80S		P29J-002M7	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5		SCH80S		P29J-002M8	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	2		SCH10S		P29J-002ME	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	3		SCH10S		P29J-002MH	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	4		SCH10S		P29J-002MK	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	6		SCH10S		P29J-002ML	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	8		SCH10S		P29J-002MM	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	10		SCH10S		P29J-002M9	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	12		SCH10S		P29J-002MA	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	14		SCH10S		P29J-002MB	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	16		SCH10S		P29J-002MC	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	18		SCH10S		P29J-002MD	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	20		SCH10S		P29J-002MF	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	24		SCH10S		P29J-002MG	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
541	0.75				P29K-00049	Cap ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 NPT Severe wet H2S service	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P41J-001U7	Straight nipple ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Severe wet H2S service	
1	0.75		SCH80S		P41J-001U8	Straight nipple ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Severe wet H2S service	
1	1		SCH80S		P41J-001U9	Straight nipple ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Severe wet H2S service	
1	1.5		SCH80S		P41J-001UA	Straight nipple ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Severe wet H2S service	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
541	1	0.75			P31K-00FMB	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 NPT Severe wet H2S service	
541	1.5	0.75			P31K-00FMA	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 NPT Severe wet H2S service	
541	2 - 2.5	0.75			P31K-00GFX	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 NPT Severe wet H2S service	
541	3 - 5	0.75			P31K-00GFY	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 NPT Severe wet H2S service	
541	6 - 12	0.75			P31K-00GFZ	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 NPT Severe wet H2S service	
541	14 - 36	0.75			P31K-00GG0	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 NPT Severe wet H2S service	
1	2	0.75	SCH10S	SCH80S	P31K-00ENM	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	3	0.75	SCH10S	SCH80S	P31K-00ENS	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	4	0.75	SCH10S	SCH80S	P31K-00EP3	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	6	0.75	SCH10S	SCH80S	P31K-00EPB	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	8	0.75	SCH10S	SCH80S	P31K-00EPS	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	10	0.75	SCH10S	SCH80S	P31K-00EPX	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	12	0.75	SCH10S	SCH80S	P31K-00ER2	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	14	0.75	SCH10S	SCH80S	P31K-00ER8	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	16	0.75	SCH10S	SCH80S	P31K-00ERE	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	18	0.75	SCH10S	SCH80S	P31K-00ERL	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	20	0.75	SCH10S	SCH80S	P31K-00ERU	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	24	0.75	SCH10S	SCH80S	P31K-00ES1	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	3	1	SCH10S	SCH80S	P31K-00ENT	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	4	1	SCH10S	SCH80S	P31K-00EP4	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	6	1	SCH10S	SCH80S	P31K-00EPC	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	8	1	SCH10S	SCH80S	P31K-00EPT	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	10	1	SCH10S	SCH80S	P31K-00EPY	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	12	1	SCH10S	SCH80S	P31K-00ER3	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	14	1	SCH10S	SCH80S	P31K-00ER9	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	16	1	SCH10S	SCH80S	P31K-00ERF	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	18	1	SCH10S	SCH80S	P31K-00ERM	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	20	1	SCH10S	SCH80S	P31K-00ERV	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	24	1	SCH10S	SCH80S	P31K-00ES2	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	4	1.5	SCH10S	SCH80S	P31K-00EP5	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	6	1.5	SCH10S	SCH80S	P31K-00EPD	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	8	1.5	SCH10S	SCH80S	P31K-00EPU	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	10	1.5	SCH10S	SCH80S	P31K-00EPZ	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	12	1.5	SCH10S	SCH80S	P31K-00ER4	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	14	1.5	SCH10S	SCH80S	P31K-00ERA	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	16	1.5	SCH10S	SCH80S	P31K-00ERG	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	18	1.5	SCH10S	SCH80S	P31K-00ERN	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	

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OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	20	1.5	SCH10S	SCH80S	P31K-00ERW	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	24	1.5	SCH10S	SCH80S	P31K-00ES3	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	6	2	SCH10S	SCH10S	P31K-00EPE	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	8	2	SCH10S	SCH10S	P31K-00EPV	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	10	2	SCH10S	SCH10S	P31K-00ER0	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	12	2	SCH10S	SCH10S	P31K-00ER5	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	14	2	SCH10S	SCH10S	P31K-00ERB	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	16	2	SCH10S	SCH10S	P31K-00ERH	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	18	2	SCH10S	SCH10S	P31K-00ERP	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	20	2	SCH10S	SCH10S	P31K-00ERX	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	24	2	SCH10S	SCH10S	P31K-00ES4	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	8	3	SCH10S	SCH10S	P31K-00EPW	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	10	3	SCH10S	SCH10S	P31K-00ER1	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	12	3	SCH10S	SCH10S	P31K-00ER6	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	14	3	SCH10S	SCH10S	P31K-00ERC	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	16	3	SCH10S	SCH10S	P31K-00ERJ	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	18	3	SCH10S	SCH10S	P31K-00ERR	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	20	3	SCH10S	SCH10S	P31K-00ERY	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	24	3	SCH10S	SCH10S	P31K-00ES5	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	12	4	SCH10S	SCH10S	P31K-00ER7	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	14	4	SCH10S	SCH10S	P31K-00ERD	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	16	4	SCH10S	SCH10S	P31K-00ERK	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	18	4	SCH10S	SCH10S	P31K-00ERS	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	20	4	SCH10S	SCH10S	P31K-00ERZ	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	24	4	SCH10S	SCH10S	P31K-00ES6	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	18	6	SCH10S	SCH10S	P31K-00ERT	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	20	6	SCH10S	SCH10S	P31K-00ES0	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	24	6	SCH10S	SCH10S	P31K-00ES7	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
4212	3	2	SCH10S	SCH10S	P31K-00GN8	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	38

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30K-0005H	Plug ASTM A182 Grade F316/F316L dual grade ASME B16.11 NPT Round head Severe wet H2S service	
1	0.75				P30K-0005J	Plug ASTM A182 Grade F316/F316L dual grade ASME B16.11 NPT Round head Severe wet H2S service	
1	1				P30K-0005K	Plug ASTM A182 Grade F316/F316L dual grade ASME B16.11 NPT Round head Severe wet H2S service	
1	1.5				P30K-0005L	Plug ASTM A182 Grade F316/F316L dual grade ASME B16.11 NPT Round head Severe wet H2S service	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P61K-005FD	Flange WN ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	0.75		SCH80S		P61K-005FE	Flange WN ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	1		SCH80S		P61K-005FF	Flange WN ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	1.5		SCH80S		P61K-005FG	Flange WN ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	2		SCH10S		P61K-005FN	Flange WN ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	3		SCH10S		P61K-005FS	Flange WN ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	4		SCH10S		P61K-005FT	Flange WN ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	6		SCH10S		P61K-005FU	Flange WN ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	8		SCH10S		P61K-005FV	Flange WN ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	10		SCH10S		P61K-005FH	Flange WN ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	12		SCH10S		P61K-005FJ	Flange WN ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	14		SCH10S		P61K-005FK	Flange WN ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	16		SCH10S		P61K-005FL	Flange WN ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	18		SCH10S		P61K-005FM	Flange WN ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	20		SCH10S		P61K-005FP	Flange WN ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	24		SCH10S		P61K-005FR	Flange WN ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
541	0.5				P61K-0069H	Flange NPT ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
541	0.75				P61K-005ZZ	Flange NPT ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
773	0.5		SCH80S		P61K-005FX	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
773	0.75		SCH80S		P61K-005FY	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	

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FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
773	1		SCH80S		P61K-005FZ	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
773	1.5		SCH80S		P61K-005G0	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
773	2		SCH10S		P61K-005G6	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
773	3		SCH10S		P61K-005G9	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
773	4		SCH10S		P61K-005GA	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
773	6		SCH10S		P61K-005GB	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
773	8		SCH10S		P61K-005GC	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
773	10		SCH10S		P61K-005G1	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
773	12		SCH10S		P61K-005G2	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
773	14		SCH10S		P61K-005G3	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
773	16		SCH10S		P61K-005G4	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
773	18		SCH10S		P61K-005G5	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
773	20		SCH10S		P61K-005G7	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
773	24		SCH10S		P61K-005G8	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67K-001LJ	Blind flange ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	0.75				P67K-001LK	Blind flange ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	1				P67K-001LL	Blind flange ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	1.5				P67K-001LM	Blind flange ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	2				P67K-001LU	Blind flange ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	3				P67K-001LX	Blind flange ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	4				P67K-001LY	Blind flange ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	6				P67K-001LZ	Blind flange ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	8				P67K-001M0	Blind flange ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	10				P67K-001LN	Blind flange ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	12				P67K-001LP	Blind flange ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	14				P67K-001LR	Blind flange ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	16				P67K-001LS	Blind flange ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	18				P67K-001LT	Blind flange ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	20				P67K-001LV	Blind flange ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	24				P67K-001LW	Blind flange ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000L8	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000L9	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000LA	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000LB	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000LH	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000LL	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000LM	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	6				P73T-000LN	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	8				P73T-000LP	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	10				P73T-000LC	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	12				P73T-000LD	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	14				P73T-000LE	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	16				P73T-000LF	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	18				P73T-000LG	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	20				P73T-000LJ	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	24				P73T-000LK	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	0.5				P73T-000FT	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

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GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
773	0.75				P73T-000FU	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	3				P73T-000G5	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	4				P73T-000G6	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	6				P73T-000G7	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	8				P73T-000G8	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	10				P73T-000FX	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	12				P73T-000FY	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	14				P73T-000FZ	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	16				P73T-000G0	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	18				P73T-000G1	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	20				P73T-000G3	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	24				P73T-000G4	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-16				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	18-24				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
773	0.5-10				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
773	12-24				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81K-0014F	Gate valve ASTM A182 Grade F316/F316L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	0.75				P81K-0014G	Gate valve ASTM A182 Grade F316/F316L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	1				P81K-0014H	Gate valve ASTM A182 Grade F316/F316L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	1.5				P81K-0014J	Gate valve ASTM A182 Grade F316/F316L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	2				P81L-002BE	Gate valve ASTM A351 Grade CF8M Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	3				P81L-002BF	Gate valve ASTM A351 Grade CF8M Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	4				P81L-002BG	Gate valve ASTM A351 Grade CF8M Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	6				P81L-002BH	Gate valve ASTM A351 Grade CF8M Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	8				P81L-002BJ	Gate valve ASTM A351 Grade CF8M Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	10				P81L-002BC	Gate valve ASTM A351 Grade CF8M Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	12				P81L-002BD	Gate valve ASTM A351 Grade CF8M Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	14				P81L-002BK	Gate valve ASTM A351 Grade CF8M Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Severe wet H2S service	
1	16				P81L-002BL	Gate valve ASTM A351 Grade CF8M Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Severe wet H2S service	
1	18				P81L-002BM	Gate valve ASTM A351 Grade CF8M Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Severe wet H2S service	
1	20				P81L-002BN	Gate valve ASTM A351 Grade CF8M Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Severe wet H2S service	
1	24				P81L-002BP	Gate valve ASTM A351 Grade CF8M Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Severe wet H2S service	
4608	0.75				P81K-001P9	Gate valve ASTM A182 Grade F316/F316L dual grade Class 150 API 602 BW both sides w/ nipples BE - NPT ASTM A312-TP316(L) dual grade Seamless Sch80S-nipple Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	

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GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82K-000RN	Globe valve ASTM A182 Grade F316/F316L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	0.75				P82K-000RP	Globe valve ASTM A182 Grade F316/F316L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	1				P82K-000RR	Globe valve ASTM A182 Grade F316/F316L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	1.5				P82K-000RS	Globe valve ASTM A182 Grade F316/F316L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	2				P82L-001A6	Globe valve ASTM A351 Grade CF8M Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	3				P82L-001A7	Globe valve ASTM A351 Grade CF8M Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	4				P82L-001A8	Globe valve ASTM A351 Grade CF8M Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	6				P82L-001A9	Globe valve ASTM A351 Grade CF8M Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	8				P82L-001AA	Globe valve ASTM A351 Grade CF8M Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83K-000PA	Check valve ASTM A182 Grade F316/F316L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Severe wet H2S service	
1	0.75				P83K-000PB	Check valve ASTM A182 Grade F316/F316L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Severe wet H2S service	
1	1				P83K-000PC	Check valve ASTM A182 Grade F316/F316L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Severe wet H2S service	
1	1.5				P83K-000PD	Check valve ASTM A182 Grade F316/F316L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Severe wet H2S service	
1	2				P83L-001A5	Check valve ASTM A351 Grade CF8M Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service	
1	3				P83L-001A6	Check valve ASTM A351 Grade CF8M Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service	
1	4				P83L-001A7	Check valve ASTM A351 Grade CF8M Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service	
1	6				P83L-001A8	Check valve ASTM A351 Grade CF8M Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service	
1	8				P83L-001A9	Check valve ASTM A351 Grade CF8M Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service	
1	10				P83L-001A3	Check valve ASTM A351 Grade CF8M Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service	

ORIFICE FLANGE (FO)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2		SCH10S		P66K-003U8	Orifice flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Severe wet H2S service	
1	3		SCH10S		P66K-003U9	Orifice flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Severe wet H2S service	
1	4		SCH10S		P66K-003UA	Orifice flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Severe wet H2S service	
1	6		SCH10S		P66K-003UB	Orifice flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Severe wet H2S service	
1	8		SCH10S		P66K-003UC	Orifice flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Severe wet H2S service	
200	2		SCH10S		P66K-003UF	Orifice flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Severe wet H2S service with Jack screw	
200	3		SCH10S		P66K-003UG	Orifice flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Severe wet H2S service with Jack screw	
200	4		SCH10S		P66K-003UH	Orifice flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Severe wet H2S service with Jack screw	
200	6		SCH10S		P66K-003UJ	Orifice flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Severe wet H2S service with Jack screw	
200	8		SCH10S		P66K-003UK	Orifice flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Severe wet H2S service with Jack screw	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71K-000D6	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	
1	0.75				P71K-000D7	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	
1	1				P71K-000D8	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	
1	1.5				P71K-000D9	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	
1	2				P71K-000DC	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	
1	3				P71K-000DD	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	
1	4				P71K-000DE	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	
1	6				P71K-000DF	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	

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SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	8				P71K-000DG	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	
1	10				P71K-000DA	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	
1	12				P71K-000DB	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	

PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72K-000C2	Paddle blank ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	
1	16				P72K-000C3	Paddle blank ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	
1	18				P72K-000C4	Paddle blank ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	
1	20				P72K-000C5	Paddle blank ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	
1	24				P72K-000C6	Paddle blank ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	

PADDLE SPACER (PS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72K-000C7	Paddle spacer ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	
1	16				P72K-000C8	Paddle spacer ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	
1	18				P72K-000C9	Paddle spacer ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	
1	20				P72K-000CA	Paddle spacer ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	
1	24				P72K-000CB	Paddle spacer ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	

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BOLT TABLE (B_A0LR01 , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	60	P80S-008SY		
0.75	4	0.500	65	P80S-008SZ		
1	4	0.500	70	P80S-008T0		
1.5	4	0.500	75	P80S-008T1		
2	4	0.625	85	P80S-0090A		
3	4	0.625	95	P80S-0090C		
4	8	0.625	95	P80S-0090C		
6	8	0.750	105	P80S-0090E		
8	8	0.750	110	P80S-0090F		
10	12	0.875	120	P80S-005Z9		
12	12	0.875	120	P80S-005Z9		
14	12	1.000	135	P80S-00619		
16	16	1.000	140	P80S-0061A		
18	16	1.125	150	P80S-0064L		
20	20	1.125	160	P80S-0064N		
24	20	1.250	175	P80S-00686		

BOLT TABLE (B_A0LR01_773 , STUD ASME RF, OPTION CODE 773)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-008T0		
0.75	4	0.625	75	P80S-00908		
1	4	0.625	80	P80S-00909		
1.5	4	0.750	95	P80S-005Z4		
2	8	0.625	90	P80S-0090B		
3	8	0.750	110	P80S-0090F		
4	8	0.750	115	P80S-0090G		
6	12	0.750	125	P80S-0090J		
8	12	0.875	140	P80S-005ZD		
10	16	1.000	160	P80S-0061E		
12	16	1.125	175	P80S-0064S		
14	20	1.125	180	P80S-0064T		
16	20	1.250	190	P80S-00689		
18	24	1.250	200	P80S-0068B		
20	24	1.250	210	P80S-0068D		
24	24	1.500	235	P80S-006LB		

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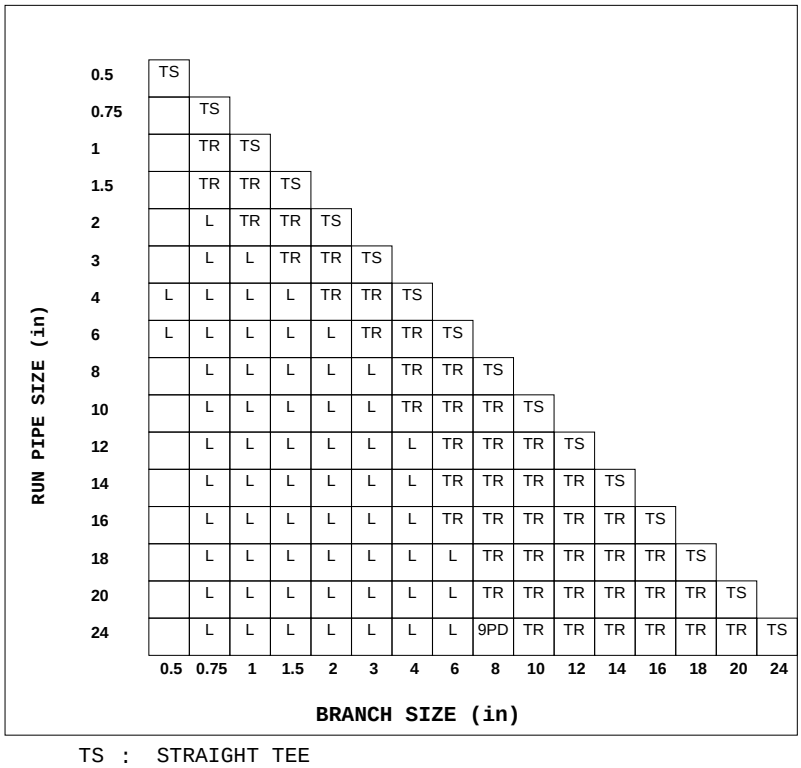
BRANCH TABLE (T_A0LR01)



TS : STRAIGHT TEE
L : OUTLET
TR : REDUCING TEE
9PD : REINFORCING PAD 90 DEG

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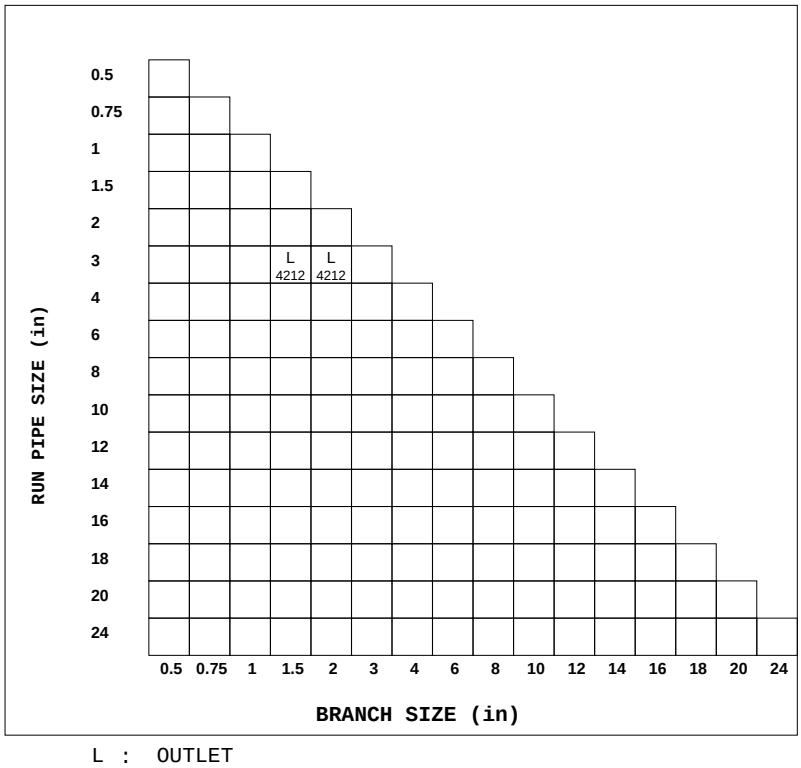
BRANCH TABLE (T_A0LR01_4)



L : OUTLET

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PIPING CLASS

A0LR03 REV NO. 2

Material : SS316L
Rating : ASME CLASS 150
Flange Face : RF
C.A.(mm) : 0.00
Gasket : Spiral Wound
Service : PROCESS - WET SEVERE SOUR SERVICE SUBJECT TO NACE + HIC STD.
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
5	BOLTING CONFIRMING TO B7M / 2HM SHALL BE USED UNDER CONDITIONS (A) DIRECT EXPOSURE TO SOUR ENVIRONMENTS (B) WHEN THE BOLTING WILL BE BURIED OR INSULATED
27	PWHT OF CARBON STEEL PIPING IN WET H2S, CAUSTIC AND AMINE SERVICES SHALL BE IN ACCORDANCE WITH SECTION 10.2, 10.3, AND 10.4 OF PROJECT SPECIFICATION 3550-8440-SP-0002 MATERIALS REQUIREMENTS FOR PRESSURISED EQUIPMENT AND PIPING. FOR CAUSTIC AND AMINE SERVICE THE FOLLOWING SHALL APPLY: - PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF ALL SITE PIPING FABRICATION WELDS IS REQUIRED FOR ALL WALL THICKNESSES. FOR MODERATE AND SEVERE WET H2S SERVICE THE FOLLOWING SHALL APPLY: PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF SITE FABRICATION CIRCUMFERENTIAL OR BRANCH WELDS IS NOT REQUIRED IF WELDS ARE MULTIPASS AND IN ACCORDANCE WITH PARA 10.2.12 OF PROJECT SPECIFICATION 3550-8440-SP-0002. FOR SERVICES MEETING THE WET H2S CRITERIA AND CAUSTIC OR AMINE CRITERIA THE MORE STRINGENT PWHT REQUIREMENT SHALL GOVERN.

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
200	WITH JACK SCREW (FO)
541	NPT(F) (CA,F,L)
773	CLASS 300 (B,F,G,V)
4608	VALVE WITH NIPPLES (V)

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PIPING CLASS
A0LR03 REV NO. 2

PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P01J-002ES	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE Severe wet H2S service	
1	0.75		SCH80S		P01J-002ET	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE Severe wet H2S service	
1	1		SCH80S		P01J-002EU	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE Severe wet H2S service	
1	1.5		SCH80S		P01J-002EV	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE Severe wet H2S service	
1	2		SCH10S		P01J-002EW	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M BE Severe wet H2S service	
1	3		SCH10S		P01J-002EX	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M BE Severe wet H2S service	
1	4		SCH10S		P01J-002EY	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M BE Severe wet H2S service	
1	6		SCH10S		P01J-002EZ	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M BE Severe wet H2S service	
1	8		SCH10S		P01J-002F8	Pipe ASTM A358 Grade 316/316L Class 1 dual grade EFW ASME B36.10M/B36.19M BE Severe wet H2S service	
1	10		SCH10S		P01J-002F0	Pipe ASTM A358 Grade 316/316L Class 1 dual grade EFW ASME B36.10M/B36.19M BE Severe wet H2S service	
1	12		SCH10S		P01J-002F1	Pipe ASTM A358 Grade 316/316L Class 1 dual grade EFW ASME B36.10M/B36.19M BE Severe wet H2S service	
1	14		SCH10S		P01J-002F2	Pipe ASTM A358 Grade 316/316L Class 1 dual grade EFW ASME B36.10M/B36.19M BE Severe wet H2S service	
1	16		SCH10S		P01J-002F3	Pipe ASTM A358 Grade 316/316L Class 1 dual grade EFW ASME B36.10M/B36.19M BE Severe wet H2S service	
1	18		SCH10S		P01J-002F4	Pipe ASTM A358 Grade 316/316L Class 1 dual grade EFW ASME B36.10M/B36.19M BE Severe wet H2S service	
1	20		SCH10S		P01J-002F5	Pipe ASTM A358 Grade 316/316L Class 1 dual grade EFW ASME B36.10M/B36.19M BE Severe wet H2S service	
1	24		SCH10S		P01J-002F6	Pipe ASTM A358 Grade 316/316L Class 1 dual grade EFW ASME B36.10M/B36.19M BE Severe wet H2S service	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P02J-001Y0	90 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	0.75		SCH80S		P02J-001Y1	90 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	1		SCH80S		P02J-001Y2	90 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	1.5		SCH80S		P02J-001Y3	90 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	2		SCH10S		P02J-001Y4	90 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	3		SCH10S		P02J-001Y5	90 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	4		SCH10S		P02J-001Y6	90 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	6		SCH10S		P02J-001Y7	90 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	8		SCH10S		P02J-001YG	90 degree elbow ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Long radius Severe wet H2S service	
1	10		SCH10S		P02J-001Y8	90 degree elbow ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Long radius Severe wet H2S service	
1	12		SCH10S		P02J-001Y9	90 degree elbow ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Long radius Severe wet H2S service	
1	14		SCH10S		P02J-001YA	90 degree elbow ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Long radius Severe wet H2S service	
1	16		SCH10S		P02J-001YB	90 degree elbow ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Long radius Severe wet H2S service	
1	18		SCH10S		P02J-001YC	90 degree elbow ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Long radius Severe wet H2S service	
1	20		SCH10S		P02J-001YD	90 degree elbow ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Long radius Severe wet H2S service	
1	24		SCH10S		P02J-001YE	90 degree elbow ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Long radius Severe wet H2S service	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P03J-001VR	45 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	0.75		SCH80S		P03J-001VS	45 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	1		SCH80S		P03J-001VT	45 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	1.5		SCH80S		P03J-001VU	45 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	2		SCH10S		P03J-001VV	45 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	3		SCH10S		P03J-001VW	45 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	4		SCH10S		P03J-001VX	45 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	

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45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	6		SCH10S		P03J-001VY	45 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	8		SCH10S		P03J-001VP	45 degree elbow ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Long radius Severe wet H2S service	
1	10		SCH10S		P03J-001VF	45 degree elbow ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Long radius Severe wet H2S service	
1	12		SCH10S		P03J-001VG	45 degree elbow ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Long radius Severe wet H2S service	
1	14		SCH10S		P03J-001VH	45 degree elbow ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Long radius Severe wet H2S service	
1	16		SCH10S		P03J-001VJ	45 degree elbow ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Long radius Severe wet H2S service	
1	18		SCH10S		P03J-001VK	45 degree elbow ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Long radius Severe wet H2S service	
1	20		SCH10S		P03J-001VL	45 degree elbow ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Long radius Severe wet H2S service	
1	24		SCH10S		P03J-001VM	45 degree elbow ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Long radius Severe wet H2S service	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P21J-001M5	Straight tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	0.75		SCH80S		P21J-001M6	Straight tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1		SCH80S		P21J-001M7	Straight tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5		SCH80S		P21J-001M8	Straight tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	2		SCH10S		P21J-001M9	Straight tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	3		SCH10S		P21J-001MA	Straight tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	4		SCH10S		P21J-001MB	Straight tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	6		SCH10S		P21J-001MC	Straight tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	8		SCH10S		P21J-001MM	Straight tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	10		SCH10S		P21J-001MD	Straight tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	12		SCH10S		P21J-001ME	Straight tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	14		SCH10S		P21J-001MF	Straight tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	16		SCH10S		P21J-001MG	Straight tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	18		SCH10S		P21J-001MH	Straight tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	20		SCH10S		P21J-001MJ	Straight tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	24		SCH10S		P21J-001MK	Straight tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75	SCH80S	SCH80S	P24J-0070F	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5	0.75	SCH80S	SCH80S	P24J-0070J	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5	1	SCH80S	SCH80S	P24J-0070K	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	2	1	SCH10S	SCH80S	P24J-0070S	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	2	1.5	SCH10S	SCH80S	P24J-0070T	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	3	1.5	SCH10S	SCH80S	P24J-0070U	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	3	2	SCH10S	SCH10S	P24J-0070V	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	4	2	SCH10S	SCH10S	P24J-0070W	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	4	3	SCH10S	SCH10S	P24J-0070X	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	6	3	SCH10S	SCH10S	P24J-0070Y	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	6	4	SCH10S	SCH10S	P24J-0070Z	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	8	4	SCH10S	SCH10S	P24J-00710	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	8	6	SCH10S	SCH10S	P24J-00711	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	10	4	SCH10S	SCH10S	P24J-00712	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	

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REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	10	6	SCH10S	SCH10S	P24J-00713	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	10	8	SCH10S	SCH10S	P24J-00714	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	12	6	SCH10S	SCH10S	P24J-00716	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	12	8	SCH10S	SCH10S	P24J-00717	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	12	10	SCH10S	SCH10S	P24J-00715	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	14	6	SCH10S	SCH10S	P24J-0071A	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	14	8	SCH10S	SCH10S	P24J-0071B	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	14	10	SCH10S	SCH10S	P24J-00718	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	14	12	SCH10S	SCH10S	P24J-00719	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	16	6	SCH10S	SCH10S	P24J-0071F	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	16	8	SCH10S	SCH10S	P24J-0071G	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	16	10	SCH10S	SCH10S	P24J-0071C	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	16	12	SCH10S	SCH10S	P24J-0071D	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	16	14	SCH10S	SCH10S	P24J-0071E	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	18	8	SCH10S	SCH10S	P24J-0071M	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	18	10	SCH10S	SCH10S	P24J-0071H	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	18	12	SCH10S	SCH10S	P24J-0071J	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	18	14	SCH10S	SCH10S	P24J-0071K	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	18	16	SCH10S	SCH10S	P24J-0071L	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	20	8	SCH10S	SCH10S	P24J-0071U	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	20	10	SCH10S	SCH10S	P24J-0071N	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	20	12	SCH10S	SCH10S	P24J-0071P	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	20	14	SCH10S	SCH10S	P24J-0071R	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	20	16	SCH10S	SCH10S	P24J-0071S	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	20	18	SCH10S	SCH10S	P24J-0071T	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	24	10	SCH10S	SCH10S	P24J-0071V	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	24	12	SCH10S	SCH10S	P24J-0071W	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	24	14	SCH10S	SCH10S	P24J-0071X	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	24	16	SCH10S	SCH10S	P24J-0071Y	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	24	18	SCH10S	SCH10S	P24J-0071Z	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	24	20	SCH10S	SCH10S	P24J-00720	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH80S	SCH80S	P27J-005XP	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1	0.5	SCH80S	SCH80S	P27J-005V5	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1	0.75	SCH80S	SCH80S	P27J-005V6	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5	0.5	SCH80S	SCH80S	P27J-005V7	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5	0.75	SCH80S	SCH80S	P27J-005V8	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5	1	SCH80S	SCH80S	P27J-005V9	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	2	0.75	SCH10S	SCH80S	P27J-005VA	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	2	1	SCH10S	SCH80S	P27J-005VB	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	2	1.5	SCH10S	SCH80S	P27J-005VC	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	3	1.5	SCH10S	SCH80S	P27J-005VD	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	3	2	SCH10S	SCH10S	P27J-005VE	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	

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CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	4	1.5	SCH10S	SCH80S	P27J-005VF	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	4	2	SCH10S	SCH10S	P27J-005VG	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	4	3	SCH10S	SCH10S	P27J-005VH	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	6	3	SCH10S	SCH10S	P27J-005VJ	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	6	4	SCH10S	SCH10S	P27J-005VK	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	8	4	SCH10S	SCH10S	P27J-005VL	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	8	6	SCH10S	SCH10S	P27J-005VM	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	10	4	SCH10S	SCH10S	P27J-005VN	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	10	6	SCH10S	SCH10S	P27J-005VP	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	10	8	SCH10S	SCH10S	P27J-005VR	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	12	6	SCH10S	SCH10S	P27J-005VT	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	12	8	SCH10S	SCH10S	P27J-005VU	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	12	10	SCH10S	SCH10S	P27J-005VS	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	14	6	SCH10S	SCH10S	P27J-005VX	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	14	8	SCH10S	SCH10S	P27J-005VY	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	14	10	SCH10S	SCH10S	P27J-005VV	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	14	12	SCH10S	SCH10S	P27J-005VW	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	16	8	SCH10S	SCH10S	P27J-005W2	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	16	10	SCH10S	SCH10S	P27J-005VZ	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	16	12	SCH10S	SCH10S	P27J-005W0	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	16	14	SCH10S	SCH10S	P27J-005W1	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	18	10	SCH10S	SCH10S	P27J-005W3	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	18	12	SCH10S	SCH10S	P27J-005W4	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	18	14	SCH10S	SCH10S	P27J-005W5	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	18	16	SCH10S	SCH10S	P27J-005W6	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	20	12	SCH10S	SCH10S	P27J-005W7	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	20	14	SCH10S	SCH10S	P27J-005W8	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	20	16	SCH10S	SCH10S	P27J-005W9	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	20	18	SCH10S	SCH10S	P27J-005WA	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	24	16	SCH10S	SCH10S	P27J-005WB	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	24	18	SCH10S	SCH10S	P27J-005WC	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	24	20	SCH10S	SCH10S	P27J-005WD	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH80S	SCH80S	P28J-005YL	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1	0.5	SCH80S	SCH80S	P28J-005W1	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1	0.75	SCH80S	SCH80S	P28J-005W2	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5	0.5	SCH80S	SCH80S	P28J-005W3	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5	0.75	SCH80S	SCH80S	P28J-005W4	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5	1	SCH80S	SCH80S	P28J-005W5	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	2	0.75	SCH10S	SCH80S	P28J-005W6	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	2	1	SCH10S	SCH80S	P28J-005W7	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	3	1.5	SCH10S	SCH80S	P28J-005W8	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	3	1.5	SCH10S	SCH80S	P28J-005W9	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	

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ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	SCH10S	SCH10S	P28J-005WA	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	4	1.5	SCH10S	SCH80S	P28J-005WB	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	4	2	SCH10S	SCH10S	P28J-005WC	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	4	3	SCH10S	SCH10S	P28J-005WD	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	6	3	SCH10S	SCH10S	P28J-005WE	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	6	4	SCH10S	SCH10S	P28J-005WF	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	8	4	SCH10S	SCH10S	P28J-005WG	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	8	6	SCH10S	SCH10S	P28J-005WH	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	10	4	SCH10S	SCH10S	P28J-005WJ	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	10	6	SCH10S	SCH10S	P28J-005WK	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	10	8	SCH10S	SCH10S	P28J-005WL	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	12	6	SCH10S	SCH10S	P28J-005WN	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	12	8	SCH10S	SCH10S	P28J-005WP	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	12	10	SCH10S	SCH10S	P28J-005WM	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	14	6	SCH10S	SCH10S	P28J-005WT	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	14	8	SCH10S	SCH10S	P28J-005WU	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	14	10	SCH10S	SCH10S	P28J-005WR	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	14	12	SCH10S	SCH10S	P28J-005WS	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	16	8	SCH10S	SCH10S	P28J-005WY	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	16	10	SCH10S	SCH10S	P28J-005WV	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	16	12	SCH10S	SCH10S	P28J-005WW	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	16	14	SCH10S	SCH10S	P28J-005WX	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	18	10	SCH10S	SCH10S	P28J-005WZ	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	18	12	SCH10S	SCH10S	P28J-005X0	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	18	14	SCH10S	SCH10S	P28J-005X1	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	18	16	SCH10S	SCH10S	P28J-005X2	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	20	12	SCH10S	SCH10S	P28J-005X3	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	20	14	SCH10S	SCH10S	P28J-005X4	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	20	16	SCH10S	SCH10S	P28J-005X5	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	20	18	SCH10S	SCH10S	P28J-005X6	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	24	16	SCH10S	SCH10S	P28J-005X7	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	24	18	SCH10S	SCH10S	P28J-005X8	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	24	20	SCH10S	SCH10S	P28J-005X9	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P29J-002M5	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	0.75		SCH80S		P29J-002M6	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1		SCH80S		P29J-002M7	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5		SCH80S		P29J-002M8	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	2		SCH10S		P29J-002ME	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	3		SCH10S		P29J-002MH	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	4		SCH10S		P29J-002MK	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	6		SCH10S		P29J-002ML	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	8		SCH10S		P29J-002MM	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	

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CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	10		SCH10S		P29J-002M9	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	12		SCH10S		P29J-002MA	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	14		SCH10S		P29J-002MB	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	16		SCH10S		P29J-002MC	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	18		SCH10S		P29J-002MD	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	20		SCH10S		P29J-002MF	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	24		SCH10S		P29J-002MG	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
541	0.75				P29K-00049	Cap ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 NPT Severe wet H2S service	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P41J-001U7	Straight nipple ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Severe wet H2S service	
1	0.75		SCH80S		P41J-001U8	Straight nipple ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Severe wet H2S service	
1	1		SCH80S		P41J-001U9	Straight nipple ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Severe wet H2S service	
1	1.5		SCH80S		P41J-001UA	Straight nipple ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Severe wet H2S service	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
541	1	0.75			P31K-00FMB	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 NPT Severe wet H2S service	
541	1.5	0.75			P31K-00FMA	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 NPT Severe wet H2S service	
541	2 - 2.5	0.75			P31K-00GFX	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 NPT Severe wet H2S service	
541	3 - 5	0.75			P31K-00GFY	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 NPT Severe wet H2S service	
541	6 - 12	0.75			P31K-00GFZ	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 NPT Severe wet H2S service	
541	14 - 36	0.75			P31K-00GG0	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 NPT Severe wet H2S service	
1	2	0.75	SCH10S	SCH80S	P31K-00ENM	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	3	0.75	SCH10S	SCH80S	P31K-00ENS	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	4	0.75	SCH10S	SCH80S	P31K-00EP3	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	6	0.75	SCH10S	SCH80S	P31K-00EPB	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	8	0.75	SCH10S	SCH80S	P31K-00EPS	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	10	0.75	SCH10S	SCH80S	P31K-00EPX	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	12	0.75	SCH10S	SCH80S	P31K-00ER2	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	14	0.75	SCH10S	SCH80S	P31K-00ER8	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	16	0.75	SCH10S	SCH80S	P31K-00ERE	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	18	0.75	SCH10S	SCH80S	P31K-00ERL	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	20	0.75	SCH10S	SCH80S	P31K-00ERU	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	24	0.75	SCH10S	SCH80S	P31K-00ES1	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	3	1	SCH10S	SCH80S	P31K-00ENT	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	4	1	SCH10S	SCH80S	P31K-00EP4	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	6	1	SCH10S	SCH80S	P31K-00EPC	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	8	1	SCH10S	SCH80S	P31K-00EPT	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	10	1	SCH10S	SCH80S	P31K-00EPY	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	12	1	SCH10S	SCH80S	P31K-00ER3	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	14	1	SCH10S	SCH80S	P31K-00ER9	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	16	1	SCH10S	SCH80S	P31K-00ERF	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	18	1	SCH10S	SCH80S	P31K-00ERM	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	20	1	SCH10S	SCH80S	P31K-00ERV	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	24	1	SCH10S	SCH80S	P31K-00ES2	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	4	1.5	SCH10S	SCH80S	P31K-00EP5	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	6	1.5	SCH10S	SCH80S	P31K-00EPD	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	8	1.5	SCH10S	SCH80S	P31K-00EPU	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	10	1.5	SCH10S	SCH80S	P31K-00EPZ	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	12	1.5	SCH10S	SCH80S	P31K-00ER4	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	14	1.5	SCH10S	SCH80S	P31K-00ERA	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	16	1.5	SCH10S	SCH80S	P31K-00ERG	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	18	1.5	SCH10S	SCH80S	P31K-00ERN	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	

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OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	20	1.5	SCH10S	SCH80S	P31K-00ERW	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	24	1.5	SCH10S	SCH80S	P31K-00ES3	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	6	2	SCH10S	SCH10S	P31K-00EPE	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	8	2	SCH10S	SCH10S	P31K-00EPV	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	10	2	SCH10S	SCH10S	P31K-00ER0	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	12	2	SCH10S	SCH10S	P31K-00ER5	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	14	2	SCH10S	SCH10S	P31K-00ERB	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	16	2	SCH10S	SCH10S	P31K-00ERH	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	18	2	SCH10S	SCH10S	P31K-00ERP	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	20	2	SCH10S	SCH10S	P31K-00ERX	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	24	2	SCH10S	SCH10S	P31K-00ES4	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	8	3	SCH10S	SCH10S	P31K-00EPW	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	10	3	SCH10S	SCH10S	P31K-00ER1	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	12	3	SCH10S	SCH10S	P31K-00ER6	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	14	3	SCH10S	SCH10S	P31K-00ERC	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	16	3	SCH10S	SCH10S	P31K-00ERJ	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	18	3	SCH10S	SCH10S	P31K-00ERR	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	20	3	SCH10S	SCH10S	P31K-00ERY	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	24	3	SCH10S	SCH10S	P31K-00ES5	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	12	4	SCH10S	SCH10S	P31K-00ER7	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	14	4	SCH10S	SCH10S	P31K-00ERD	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	16	4	SCH10S	SCH10S	P31K-00ERK	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	18	4	SCH10S	SCH10S	P31K-00ERS	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	20	4	SCH10S	SCH10S	P31K-00ERZ	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	24	4	SCH10S	SCH10S	P31K-00ES6	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	18	6	SCH10S	SCH10S	P31K-00ERT	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	20	6	SCH10S	SCH10S	P31K-00ES0	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	24	6	SCH10S	SCH10S	P31K-00ES7	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30K-0005H	Plug ASTM A182 Grade F316/F316L dual grade ASME B16.11 NPT Round head Severe wet H2S service	
1	0.75				P30K-0005J	Plug ASTM A182 Grade F316/F316L dual grade ASME B16.11 NPT Round head Severe wet H2S service	
1	1				P30K-0005K	Plug ASTM A182 Grade F316/F316L dual grade ASME B16.11 NPT Round head Severe wet H2S service	
1	1.5				P30K-0005L	Plug ASTM A182 Grade F316/F316L dual grade ASME B16.11 NPT Round head Severe wet H2S service	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P61K-005FD	Flange WN ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	0.75		SCH80S		P61K-005FE	Flange WN ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	1		SCH80S		P61K-005FF	Flange WN ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	1.5		SCH80S		P61K-005FG	Flange WN ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	2		SCH10S		P61K-005FN	Flange WN ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	3		SCH10S		P61K-005FS	Flange WN ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	4		SCH10S		P61K-005FT	Flange WN ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	6		SCH10S		P61K-005FU	Flange WN ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	8		SCH10S		P61K-005FV	Flange WN ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	10		SCH10S		P61K-005FH	Flange WN ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	12		SCH10S		P61K-005FJ	Flange WN ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	14		SCH10S		P61K-005FK	Flange WN ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	16		SCH10S		P61K-005FL	Flange WN ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	18		SCH10S		P61K-005FM	Flange WN ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	20		SCH10S		P61K-005FP	Flange WN ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	24		SCH10S		P61K-005FR	Flange WN ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
541	0.5				P61K-0069H	Flange NPT ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
541	0.75				P61K-005ZZ	Flange NPT ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
773	0.5		SCH80S		P61K-005FX	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
773	0.75		SCH80S		P61K-005FY	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
773	1		SCH80S		P61K-005FZ	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	

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FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
773	1.5		SCH80S		P61K-005G0	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
773	2		SCH10S		P61K-005G6	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
773	3		SCH10S		P61K-005G9	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
773	4		SCH10S		P61K-005GA	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
773	6		SCH10S		P61K-005GB	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
773	8		SCH10S		P61K-005GC	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
773	10		SCH10S		P61K-005G1	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
773	12		SCH10S		P61K-005G2	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
773	14		SCH10S		P61K-005G3	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
773	16		SCH10S		P61K-005G4	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
773	18		SCH10S		P61K-005G5	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
773	20		SCH10S		P61K-005G7	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
773	24		SCH10S		P61K-005G8	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67K-001LJ	Blind flange ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	0.75				P67K-001LK	Blind flange ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	1				P67K-001LL	Blind flange ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	1.5				P67K-001LM	Blind flange ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	2				P67K-001LU	Blind flange ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	3				P67K-001LX	Blind flange ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	4				P67K-001LY	Blind flange ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	6				P67K-001LZ	Blind flange ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	8				P67K-001M0	Blind flange ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	10				P67K-001LN	Blind flange ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	12				P67K-001LP	Blind flange ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	14				P67K-001LR	Blind flange ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	16				P67K-001LS	Blind flange ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	18				P67K-001LT	Blind flange ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	20				P67K-001LV	Blind flange ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	
1	24				P67K-001LW	Blind flange ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000L8	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000L9	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000LA	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000LB	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000LH	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000LL	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000LM	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	6				P73T-000LN	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	8				P73T-000LP	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	10				P73T-000LC	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	12				P73T-000LD	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	14				P73T-000LE	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	16				P73T-000LF	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	18				P73T-000LG	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	20				P73T-000LJ	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	24				P73T-000LK	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	0.5				P73T-000FT	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	0.75				P73T-000FU	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

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GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
773	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	3				P73T-000G5	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	4				P73T-000G6	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	6				P73T-000G7	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	8				P73T-000G8	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	10				P73T-000FX	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	12				P73T-000FY	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	14				P73T-000FZ	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	16				P73T-000G0	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	18				P73T-000G1	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	20				P73T-000G3	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	24				P73T-000G4	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-16				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	18-24				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
773	0.5-10				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
773	12-24				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81K-0014F	Gate valve ASTM A182 Grade F316/F316L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	0.75				P81K-0014G	Gate valve ASTM A182 Grade F316/F316L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	1				P81K-0014H	Gate valve ASTM A182 Grade F316/F316L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	1.5				P81K-0014J	Gate valve ASTM A182 Grade F316/F316L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	2				P81L-002BE	Gate valve ASTM A351 Grade CF8M Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	3				P81L-002BF	Gate valve ASTM A351 Grade CF8M Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	4				P81L-002BG	Gate valve ASTM A351 Grade CF8M Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	6				P81L-002BH	Gate valve ASTM A351 Grade CF8M Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	8				P81L-002BJ	Gate valve ASTM A351 Grade CF8M Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	10				P81L-002BC	Gate valve ASTM A351 Grade CF8M Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	12				P81L-002BD	Gate valve ASTM A351 Grade CF8M Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	14				P81L-002BK	Gate valve ASTM A351 Grade CF8M Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Severe wet H2S service	
1	16				P81L-002BL	Gate valve ASTM A351 Grade CF8M Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Severe wet H2S service	
1	18				P81L-002BM	Gate valve ASTM A351 Grade CF8M Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Severe wet H2S service	
1	20				P81L-002BN	Gate valve ASTM A351 Grade CF8M Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Severe wet H2S service	
1	24				P81L-002BP	Gate valve ASTM A351 Grade CF8M Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Severe wet H2S service	
4608	0.75				P81K-001P9	Gate valve ASTM A182 Grade F316/F316L dual grade Class 150 API 602 BW both sides w/ nipples BE - NPT ASTM A312-TP316(L) dual grade Seamless Sch80S-nipple Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
773	1				P81K-0015P	Gate valve ASTM A182 Grade F316/F316L dual grade Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
773	2				P81L-002CH	Gate valve ASTM A351 Grade CF8M Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	

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GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82K-000RN	Globe valve ASTM A182 Grade F316/F316L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	0.75				P82K-000RP	Globe valve ASTM A182 Grade F316/F316L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	1				P82K-000RR	Globe valve ASTM A182 Grade F316/F316L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	1.5				P82K-000RS	Globe valve ASTM A182 Grade F316/F316L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	2				P82L-001A6	Globe valve ASTM A351 Grade CF8M Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	3				P82L-001A7	Globe valve ASTM A351 Grade CF8M Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	4				P82L-001A8	Globe valve ASTM A351 Grade CF8M Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	6				P82L-001A9	Globe valve ASTM A351 Grade CF8M Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	8				P82L-001AA	Globe valve ASTM A351 Grade CF8M Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83K-000PA	Check valve ASTM A182 Grade F316/F316L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Severe wet H2S service	
1	0.75				P83K-000PB	Check valve ASTM A182 Grade F316/F316L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Severe wet H2S service	
1	1				P83K-000PC	Check valve ASTM A182 Grade F316/F316L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Severe wet H2S service	
1	1.5				P83K-000PD	Check valve ASTM A182 Grade F316/F316L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Severe wet H2S service	
1	2				P83L-001A5	Check valve ASTM A351 Grade CF8M Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service	
1	3				P83L-001A6	Check valve ASTM A351 Grade CF8M Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service	
1	4				P83L-001A7	Check valve ASTM A351 Grade CF8M Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service	
1	6				P83L-001A8	Check valve ASTM A351 Grade CF8M Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service	
1	8				P83L-001A9	Check valve ASTM A351 Grade CF8M Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service	
1	10				P83L-001A3	Check valve ASTM A351 Grade CF8M Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service	
1	12				P83L-001A4	Check valve ASTM A351 Grade CF8M Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service	

ORIFICE FLANGE (FO)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3		SCH10S		P66K-003U9	Orifice flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Severe wet H2S service	
1	4		SCH10S		P66K-003UA	Orifice flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Severe wet H2S service	
1	6		SCH10S		P66K-003UB	Orifice flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Severe wet H2S service	
1	8		SCH10S		P66K-003UC	Orifice flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Severe wet H2S service	
200	3		SCH10S		P66K-003UG	Orifice flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Severe wet H2S service with Jack screw	
200	4		SCH10S		P66K-003UH	Orifice flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Severe wet H2S service with Jack screw	
200	6		SCH10S		P66K-003UJ	Orifice flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Severe wet H2S service with Jack screw	
200	8		SCH10S		P66K-003UK	Orifice flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Severe wet H2S service with Jack screw	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71K-000D6	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	
1	0.75				P71K-000D7	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	
1	1				P71K-000D8	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	
1	1.5				P71K-000D9	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	
1	2				P71K-000DC	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	
1	3				P71K-000DD	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	
1	4				P71K-000DE	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	
1	6				P71K-000DF	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	
1	8				P71K-000DG	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	

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PIPING CLASS
A0LR03 REV NO. 2

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	10				P71K-000DA	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	
1	12				P71K-000DB	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	

PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72K-000C2	Paddle blank ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	
1	16				P72K-000C3	Paddle blank ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	
1	18				P72K-000C4	Paddle blank ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	
1	20				P72K-000C5	Paddle blank ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	
1	24				P72K-000C6	Paddle blank ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	

PADDLE SPACER (PS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72K-000C7	Paddle spacer ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	
1	16				P72K-000C8	Paddle spacer ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	
1	18				P72K-000C9	Paddle spacer ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	
1	20				P72K-000CA	Paddle spacer ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	
1	24				P72K-000CB	Paddle spacer ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	

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PIPING CLASS
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BOLT TABLE (B_A0LR03 , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	60	P80S-008SY		
0.75	4	0.500	65	P80S-008SZ		
1	4	0.500	70	P80S-008T0		
1.5	4	0.500	75	P80S-008T1		
2	4	0.625	85	P80S-0090A		
3	4	0.625	95	P80S-0090C		
4	8	0.625	95	P80S-0090C		
6	8	0.750	105	P80S-0090E		
8	8	0.750	110	P80S-0090F		
10	12	0.875	120	P80S-005Z9		
12	12	0.875	120	P80S-005Z9		
14	12	1.000	135	P80S-00619		
16	16	1.000	140	P80S-0061A		
18	16	1.125	150	P80S-0064L		
20	20	1.125	160	P80S-0064N		
24	20	1.250	175	P80S-00686		

BOLT TABLE (B_A0LR03_773 , STUD ASME RF, OPTION CODE 773)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-008T0		
0.75	4	0.625	75	P80S-00908		
1	4	0.625	80	P80S-00909		
1.5	4	0.750	95	P80S-005Z4		
2	8	0.625	90	P80S-0090B		
3	8	0.750	110	P80S-0090F		
4	8	0.750	115	P80S-0090G		
6	12	0.750	125	P80S-0090J		
8	12	0.875	140	P80S-005ZD		
10	16	1.000	160	P80S-0061E		
12	16	1.125	175	P80S-0064S		
14	20	1.125	180	P80S-0064T		
16	20	1.250	190	P80S-00689		
18	24	1.250	200	P80S-0068B		
20	24	1.250	210	P80S-0068D		
24	24	1.500	235	P80S-006LB		

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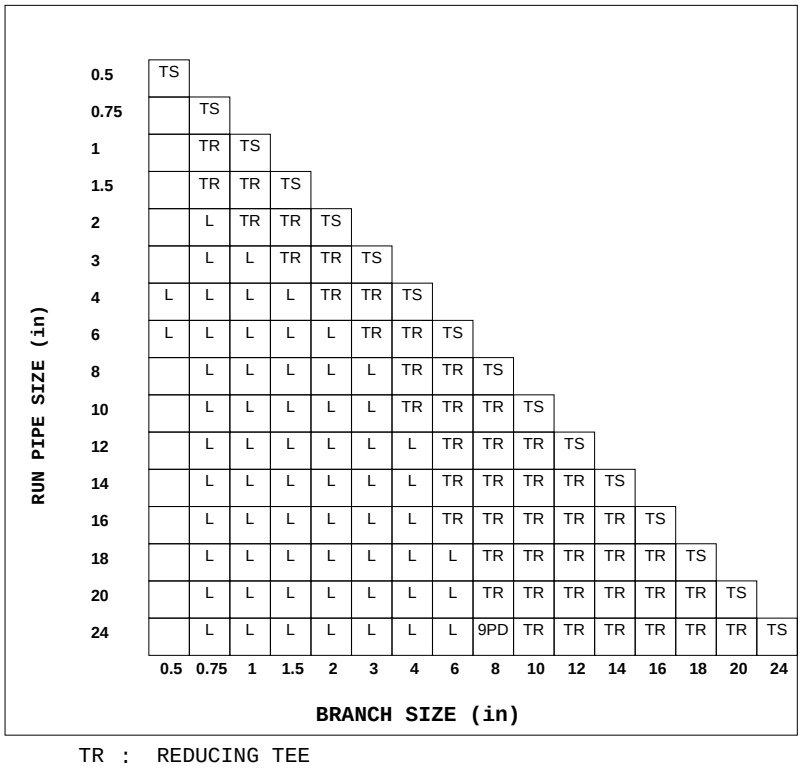
BRANCH TABLE (T_A0LR03)



TR : REDUCING TEE
TS : STRAIGHT TEE
L : OUTLET
9PD : REINFORCING PAD 90 DEG

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PIPING CLASS

A0LU REV NO. 2

Material : SS316L
Rating : ASME CLASS 150
Flange Face : RF
C.A.(mm) : 0.00
Gasket : Spiral Wound
Service : UTILITY - ABOVEGROUND FIRE WATER (FOAM CONCENTRATE) SERVICE.
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
2	USE OF SOFT SEATED BALL, PLUG AND BUTTERFLY VALVES SHALL BE LIMITED TO MAXIMUM OF 204DEGC (400DEGF)
29	FOR POTABLE WATER PIPING, THE MATERIAL SHALL BE SUITABLY CERTIFIED FOR USE WITH POTABLE WATER

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
541	NPT(F) (CA,L)
714	SW - NPT(F) (V)
773	CLASS 300 (B,F,G)
3001	INSULATION GASKET KIT AND BOLTS FOR FLANGE (G)

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PIPING CLASS
A0LU REV NO. 2

PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P01J-0014A	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE	
1	0.75		SCH80S		P01J-0014B	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE	
1	1		SCH80S		P01J-0014C	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE	
1	1.5		SCH80S		P01J-0014D	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE	
1	2		SCH10S		P01J-000CD	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M BE	
1	3		SCH10S		P01J-000CY	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M BE	
1	4		SCH10S		P01J-000DH	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M BE	
1	6		SCH10S		P01J-000DN	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M BE	
1	8		SCH10S		P01J-001FR	Pipe ASTM A358 Grade 316/316L Class 1 dual grade EFW ASME B36.10M/B36.19M BE	
1	10		SCH10S		P01J-000SR	Pipe ASTM A358 Grade 316/316L Class 1 dual grade EFW ASME B36.10M/B36.19M BE	
1	12		SCH10S		P01J-000SS	Pipe ASTM A358 Grade 316/316L Class 1 dual grade EFW ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P02K-0000G	90 degree elbow ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	0.75				P02K-0000H	90 degree elbow ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	1				P02K-0000J	90 degree elbow ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	1.5				P02K-0000K	90 degree elbow ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	2		SCH10S		P02J-00066	90 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	3		SCH10S		P02J-00068	90 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	4		SCH10S		P02J-0006A	90 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	6		SCH10S		P02J-0006D	90 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	8		SCH10S		P02J-0006K	90 degree elbow ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Long radius	
1	10		SCH10S		P02J-00067	90 degree elbow ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Long radius	
1	12		SCH10S		P02J-00069	90 degree elbow ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P03K-0000D	45 degree elbow ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	0.75				P03K-0000E	45 degree elbow ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	1				P03K-0000F	45 degree elbow ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	1.5				P03K-0000G	45 degree elbow ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	2		SCH10S		P03J-00066	45 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	3		SCH10S		P03J-00068	45 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	4		SCH10S		P03J-0006B	45 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	6		SCH10S		P03J-0006C	45 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	8		SCH10S		P03J-0006K	45 degree elbow ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Long radius	
1	10		SCH10S		P03J-00067	45 degree elbow ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Long radius	
1	12		SCH10S		P03J-00069	45 degree elbow ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P21K-0000G	Straight tee ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	0.75				P21K-0000H	Straight tee ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	1				P21K-0000J	Straight tee ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	1.5				P21K-0000K	Straight tee ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	2		SCH10S		P21J-0006F	Straight tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	3		SCH10S		P21J-0006H	Straight tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	4		SCH10S		P21J-0006L	Straight tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	6		SCH10S		P21J-0006N	Straight tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	8		SCH10S		P21J-0006V	Straight tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	10		SCH10S		P21J-0006G	Straight tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	12		SCH10S		P21J-0006J	Straight tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	

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REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75			P24K-0000M	Reducing tee ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	1.5	0.75			P24K-0000P	Reducing tee ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	1.5	1			P24K-0000R	Reducing tee ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	2	1	SCH10S	SCH80S	P24J-0065L	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	2	1.5	SCH10S	SCH80S	P24J-0064L	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	3	1.5	SCH10S	SCH80S	P24J-004TG	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	3	2	SCH10S	SCH10S	P24J-001EE	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	4	2	SCH10S	SCH10S	P24J-001EB	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	4	3	SCH10S	SCH10S	P24J-001EM	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	6	3	SCH10S	SCH10S	P24J-001EC	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	6	4	SCH10S	SCH10S	P24J-001EP	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	8	4	SCH10S	SCH10S	P24J-001E9	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	8	6	SCH10S	SCH10S	P24J-001ER	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	10	4	SCH10S	SCH10S	P24J-001E8	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	10	6	SCH10S	SCH10S	P24J-001EN	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	10	8	SCH10S	SCH10S	P24J-001EV	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	12	6	SCH10S	SCH10S	P24J-001ET	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	12	8	SCH10S	SCH10S	P24J-001F2	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	12	10	SCH10S	SCH10S	P24J-001ED	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	SCH10S	SCH10S	P27J-000T5	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	4	2	SCH10S	SCH10S	P27J-000T7	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	4	3	SCH10S	SCH10S	P27J-000TJ	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	6	3	SCH10S	SCH10S	P27J-000T3	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	6	4	SCH10S	SCH10S	P27J-000TD	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	8	4	SCH10S	SCH10S	P27J-000T1	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	8	6	SCH10S	SCH10S	P27J-000TF	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	10	4	SCH10S	SCH10S	P27J-000T4	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	10	6	SCH10S	SCH10S	P27J-000TM	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	10	8	SCH10S	SCH10S	P27J-000TL	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	12	6	SCH10S	SCH10S	P27J-000TK	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	12	8	SCH10S	SCH10S	P27J-000TT	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	12	10	SCH10S	SCH10S	P27J-000T2	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	SCH10S	SCH10S	P28J-000T7	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	4	2	SCH10S	SCH10S	P28J-000TA	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	4	3	SCH10S	SCH10S	P28J-000TJ	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	6	3	SCH10S	SCH10S	P28J-000T3	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	6	4	SCH10S	SCH10S	P28J-000TC	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	8	4	SCH10S	SCH10S	P28J-000T2	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	8	6	SCH10S	SCH10S	P28J-000TG	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	10	4	SCH10S	SCH10S	P28J-000T6	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	10	6	SCH10S	SCH10S	P28J-000TK	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	10	8	SCH10S	SCH10S	P28J-000TV	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	12	6	SCH10S	SCH10S	P28J-000TM	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	12	8	SCH10S	SCH10S	P28J-000TY	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	12	10	SCH10S	SCH10S	P28J-000T4	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P29K-00021	Cap ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	0.75				P29K-00022	Cap ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	1				P29K-00023	Cap ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	1.5				P29K-00024	Cap ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	2		SCH10S		P29J-0006F	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	

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CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3		SCH10S		P29J-00064	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	4		SCH10S		P29J-00066	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	6		SCH10S		P29J-00067	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	8		SCH10S		P29J-00068	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	10		SCH10S		P29J-00069	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	12		SCH10S		P29J-0006B	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
541	0.75				P29K-00002	Cap ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P41J-001CE	Straight nipple ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		SCH80S		P41J-001CF	Straight nipple ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		SCH80S		P41J-001CG	Straight nipple ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		SCH80S		P41J-001CH	Straight nipple ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

CON SWAGED NIPPLE (SNC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH80S	SCH80S	P42J-0008N	Concentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	SCH80S	SCH80S	P42J-0008M	Concentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	SCH80S	SCH80S	P42J-0008P	Concentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	SCH80S	SCH80S	P42J-0008R	Concentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	SCH80S	SCH80S	P42J-0008S	Concentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	SCH80S	SCH80S	P42J-0008T	Concentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	SCH10S	SCH80S	P42J-000FG	Concentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	SCH10S	SCH80S	P42J-000FH	Concentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	SCH10S	SCH80S	P42J-000FJ	Concentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	SCH10S	SCH80S	P42J-000FK	Concentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	SCH10S	SCH80S	P42J-000FW	Concentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	

ECC SWAGED NIPPLE (SNE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH80S	SCH80S	P43J-0008R	Eccentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	SCH80S	SCH80S	P43J-0008S	Eccentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	SCH80S	SCH80S	P43J-0008T	Eccentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	SCH80S	SCH80S	P43J-0008U	Eccentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	SCH80S	SCH80S	P43J-0008V	Eccentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	SCH80S	SCH80S	P43J-0008W	Eccentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	SCH10S	SCH80S	P43J-000CE	Eccentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	SCH10S	SCH80S	P43J-000CF	Eccentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	SCH10S	SCH80S	P43J-000CG	Eccentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	SCH10S	SCH80S	P43J-000CH	Eccentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	SCH10S	SCH80S	P43J-000CY	Eccentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	

COUPLING (CPS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P47K-0000G	Coupling ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW - SW	
1	0.75				P47K-0000H	Coupling ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW - SW	
1	1				P47K-0000J	Coupling ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW - SW	
1	1.5				P47K-0000K	Coupling ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW - SW	

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OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2 - 2.5	0.75			P31K-00GGG	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 SW	
1	3 - 5	0.75			P31K-00GGH	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 SW	
1	6 - 12	0.75			P31K-003VD	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 SW	
1	3	1			P31K-003UY	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 SW	
1	4 - 5	1			P31K-00GGJ	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 SW	
1	6 - 10	1			P31K-003UU	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 SW	
1	12 - 36	1			P31K-003V1	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 SW	
1	4	1.5			P31K-003UH	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 SW	
1	5 - 6	1.5			P31K-00GGN	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 SW	
1	8 - 12	1.5			P31K-003UB	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 SW	
541	1	0.75			P31K-001XH	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 NPT	
541	1.5	0.75			P31K-001XM	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 NPT	
541	2 - 2.5	0.75			P31K-00GGK	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 NPT	
541	3 - 5	0.75			P31K-00GGL	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 NPT	
541	6 - 12	0.75			P31K-003U1	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 NPT	
1	6	2	SCH10S	SCH10S	P31K-00335	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW	
1	8	2	SCH10S	SCH10S	P31K-00337	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW	
1	10	2	SCH10S	SCH10S	P31K-00334	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW	
1	12	2	SCH10S	SCH10S	P31K-00336	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW	
1	8	3	SCH10S	SCH10S	P31K-00330	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW	
1	10	3	SCH10S	SCH10S	P31K-002ZJ	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW	
1	12	3	SCH10S	SCH10S	P31K-002ZM	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW	
1	12	4	SCH10S	SCH10S	P31K-002Z2	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30K-0001L	Plug ASTM A182 Grade F316/F316L dual grade ASME B16.11 NPT Round head	
1	0.75				P30K-0001M	Plug ASTM A182 Grade F316/F316L dual grade ASME B16.11 NPT Round head	
1	1				P30K-0001N	Plug ASTM A182 Grade F316/F316L dual grade ASME B16.11 NPT Round head	
1	1.5				P30K-0001P	Plug ASTM A182 Grade F316/F316L dual grade ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P61K-003AF	Flange SW ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
1	0.75		SCH80S		P61K-003AG	Flange SW ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
1	1		SCH80S		P61K-003AH	Flange SW ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
1	1.5		SCH80S		P61K-003AJ	Flange SW ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
1	2		SCH10S		P61K-0017R	Flange WN ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
1	3		SCH10S		P61K-0017M	Flange WN ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
1	4		SCH10S		P61K-0017L	Flange WN ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
1	6		SCH10S		P61K-0017K	Flange WN ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
1	8		SCH10S		P61K-0017J	Flange WN ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
1	10		SCH10S		P61K-0017W	Flange WN ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
1	12		SCH10S		P61K-0017V	Flange WN ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
773	0.5		SCH80S		P61K-003AK	Flange SW ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF	
773	0.75		SCH80S		P61K-003AL	Flange SW ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF	
773	1		SCH80S		P61K-003AM	Flange SW ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF	
773	1.5		SCH80S		P61K-003AN	Flange SW ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF	
773	2		SCH10S		P61K-0018C	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF	
773	3		SCH10S		P61K-00189	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF	
773	4		SCH10S		P61K-00188	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF	
773	6		SCH10S		P61K-001C6	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF	
773	8		SCH10S		P61K-001C7	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF	
773	10		SCH10S		P61K-001BZ	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF	
773	12		SCH10S		P61K-001C0	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67K-0007A	Blind flange ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	

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BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75				P67K-00079	Blind flange ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
1	1				P67K-00078	Blind flange ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
1	1.5				P67K-00077	Blind flange ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
1	2				P67K-00071	Blind flange ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
1	3				P67K-0006Y	Blind flange ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
1	4				P67K-0006X	Blind flange ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
1	6				P67K-0006W	Blind flange ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
1	8				P67K-0006V	Blind flange ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
1	10				P67K-00076	Blind flange ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
1	12				P67K-00075	Blind flange ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000L8	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000L9	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000LA	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000LB	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000LH	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000LL	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000LM	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	6				P73T-000LN	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	8				P73T-000LP	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	10				P73T-000LC	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	12				P73T-000LD	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
3001	2				P78U-0004L	Insulation gasket kit Glass reinforced epoxy Class 150 Manufacturer-standard Flange ASME B16.5 RF	
773	0.5				P73T-000FT	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	0.75				P73T-000FU	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	3				P73T-000G5	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	4				P73T-000G6	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	6				P73T-000G7	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	8				P73T-000G8	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	10				P73T-000FX	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	12				P73T-000FY	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-12				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
773	0.5-10				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
773	12				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81K-0010V	Gate valve ASTM A182 Grade F316/F316L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	0.75				P81K-0010W	Gate valve ASTM A182 Grade F316/F316L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	1				P81K-0010X	Gate valve ASTM A182 Grade F316/F316L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	1.5				P81K-0010Y	Gate valve ASTM A182 Grade F316/F316L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	

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GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2				P81L-002AV	Gate valve ASTM A351 Grade CF8M Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	3				P81L-002AW	Gate valve ASTM A351 Grade CF8M Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	4				P81L-002AX	Gate valve ASTM A351 Grade CF8M Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	6				P81L-002BU	Gate valve ASTM A351 Grade CF8M Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	8				P81L-002BV	Gate valve ASTM A351 Grade CF8M Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	10				P81L-002BS	Gate valve ASTM A351 Grade CF8M Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	12				P81L-002BT	Gate valve ASTM A351 Grade CF8M Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
714	0.5				P81K-001LF	Gate valve ASTM A182 Grade F316/F316L dual grade Class 800 API 602 SW - NPT Trim number 12 BB-BG-OS&Y Handwheel operated	
714	0.75				P81K-001G3	Gate valve ASTM A182 Grade F316/F316L dual grade Class 800 API 602 SW - NPT Trim number 12 BB-BG-OS&Y Handwheel operated	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83K-000P6	Check valve ASTM A182 Grade F316/F316L dual grade Class 800 API 602 SW Trim number 12 Lift-type Bolted cover	
1	0.75				P83K-000P7	Check valve ASTM A182 Grade F316/F316L dual grade Class 800 API 602 SW Trim number 12 Lift-type Bolted cover	
1	1				P83K-000P8	Check valve ASTM A182 Grade F316/F316L dual grade Class 800 API 602 SW Trim number 12 Lift-type Bolted cover	
1	1.5				P83K-000P9	Check valve ASTM A182 Grade F316/F316L dual grade Class 800 API 602 SW Trim number 12 Lift-type Bolted cover	
1	2				P83L-000EC	Check valve ASTM A351 Grade CF8M Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	3				P83L-000EB	Check valve ASTM A351 Grade CF8M Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	4				P83L-000EA	Check valve ASTM A351 Grade CF8M Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	6				P83L-000E9	Check valve ASTM A351 Grade CF8M Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71K-0006P	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	0.75				P71K-0006R	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	1				P71K-0006S	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71K-0006T	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	2				P71K-0006U	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	3				P71K-0006V	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	4				P71K-0006W	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	6				P71K-0006Z	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	8				P71K-00070	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	10				P71K-0006X	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	12				P71K-0006Y	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	

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BOLT TABLE (B_A0LU , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	60	P80S-003V2		
0.75	4	0.500	65	P80S-003V3		
1	4	0.500	70	P80S-003V4		
1.5	4	0.500	75	P80S-003V5		
2	4	0.625	85	P80S-003XE		
3	4	0.625	95	P80S-003XG		
4	8	0.625	95	P80S-003XG		
6	8	0.750	105	P80S-003XJ		
8	8	0.750	110	P80S-003XK		
10	12	0.875	120	P80S-00419		
12	12	0.875	120	P80S-00419		

BOLT TABLE (B_A0LU_773 , STUD ASME RF, OPTION CODE 773)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-003V4		
0.75	4	0.625	75	P80S-003XC		
1	4	0.625	80	P80S-003XD		
1.5	4	0.750	95	P80S-00414		
2	8	0.625	90	P80S-003XF		
3	8	0.750	110	P80S-003XK		
4	8	0.750	115	P80S-003XL		
6	12	0.750	125	P80S-003XN		
8	12	0.875	140	P80S-0041D		
10	16	1.000	160	P80S-0043K		
12	16	1.125	175	P80S-0046S		

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BRANCH TABLE (T_A0LU)

RUN PIPE SIZE (in) \ BRANCH SIZE (in)	0.5	0.75	1	1.5	2	3	4	6	8	10	12
0.5	TS										
0.75		TS									
1		TR	TS								
1.5		TR	TR	TS							
2		L	TR	TR	TS						
3		L	L	TR	TR	TS					
4	L	L	L	L	TR	TR	TS				
6	L	L	L	L	L	TR	TR	TS			
8		L	L	L	L	L	TR	TR	TS		
10		L	L	L	L	L	TR	TR	TR	TS	
12		L	L	L	L	L	L	TR	TR	TR	TS

L : OUTLET
TS : STRAIGHT TEE
TR : REDUCING TEE

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PIPING CLASS

A0LW REV NO. 2

Material : SS316L
Rating : ASME CLASS 150
Flange Face : RF
C.A.(mm) : 0.00
Gasket : Spiral Wound
Service : UTILITY - WATER SERVICE : / POTABLE WATER / DRINKING WATER (A/G)

Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
2	USE OF SOFT SEATED BALL, PLUG AND BUTTERFLY VALVES SHALL BE LIMITED TO MAXIMUM OF 204DEGC (400DEGF)
29	FOR POTABLE WATER PIPING, THE MATERIAL SHALL BE SUITABLY CERTIFIED FOR USE WITH POTABLE WATER

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
24	FULL PORT (Q)
200	WITH JACK SCREW (FO)
541	NPT(F) (CA,L)
714	SW - NPT(F) (V,W)
773	CLASS 300 (B,F,G)

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PIPING CLASS
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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P01J-0014A	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE	
1	0.75		SCH80S		P01J-0014B	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE	
1	1		SCH80S		P01J-0014C	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE	
1	1.5		SCH80S		P01J-0014D	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE	
1	2		SCH10S		P01J-000CD	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M BE	
1	3		SCH10S		P01J-000CY	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M BE	
1	4		SCH10S		P01J-000DH	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M BE	
1	6		SCH10S		P01J-000DN	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M BE	
1	8		SCH10S		P01J-001FR	Pipe ASTM A358 Grade 316/316L Class 1 dual grade EFW ASME B36.10M/B36.19M BE	
1	10		SCH10S		P01J-000SR	Pipe ASTM A358 Grade 316/316L Class 1 dual grade EFW ASME B36.10M/B36.19M BE	
1	12		SCH10S		P01J-000SS	Pipe ASTM A358 Grade 316/316L Class 1 dual grade EFW ASME B36.10M/B36.19M BE	
1	14		SCH10S		P01J-000ST	Pipe ASTM A358 Grade 316/316L Class 1 dual grade EFW ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P02K-0000G	90 degree elbow ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	0.75				P02K-0000H	90 degree elbow ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	1				P02K-0000J	90 degree elbow ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	1.5				P02K-0000K	90 degree elbow ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	2		SCH10S		P02J-00066	90 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	3		SCH10S		P02J-00068	90 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	4		SCH10S		P02J-0006A	90 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	6		SCH10S		P02J-0006D	90 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	8		SCH10S		P02J-0006K	90 degree elbow ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Long radius	
1	10		SCH10S		P02J-00067	90 degree elbow ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Long radius	
1	12		SCH10S		P02J-00069	90 degree elbow ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Long radius	
1	14		SCH10S		P02J-0006B	90 degree elbow ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P03K-0000D	45 degree elbow ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	0.75				P03K-0000E	45 degree elbow ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	1				P03K-0000F	45 degree elbow ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	1.5				P03K-0000G	45 degree elbow ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	2		SCH10S		P03J-00066	45 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	3		SCH10S		P03J-00068	45 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	4		SCH10S		P03J-0006B	45 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	6		SCH10S		P03J-0006C	45 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	8		SCH10S		P03J-0006K	45 degree elbow ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Long radius	
1	10		SCH10S		P03J-00067	45 degree elbow ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Long radius	
1	12		SCH10S		P03J-00069	45 degree elbow ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Long radius	
1	14		SCH10S		P03J-0006A	45 degree elbow ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P21K-0000G	Straight tee ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	0.75				P21K-0000H	Straight tee ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	1				P21K-0000J	Straight tee ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	1.5				P21K-0000K	Straight tee ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	2		SCH10S		P21J-0006F	Straight tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	3		SCH10S		P21J-0006H	Straight tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	4		SCH10S		P21J-0006L	Straight tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	6		SCH10S		P21J-0006N	Straight tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	

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STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	8		SCH10S		P21J-0006V	Straight tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	10		SCH10S		P21J-0006G	Straight tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	12		SCH10S		P21J-0006J	Straight tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	14		SCH10S		P21J-0006K	Straight tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75			P24K-0000M	Reducing tee ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	1.5	0.75			P24K-0000P	Reducing tee ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	1.5	1			P24K-0000R	Reducing tee ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	2	1	SCH10S	SCH80S	P24J-0065L	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	2	1.5	SCH10S	SCH80S	P24J-0064L	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	3	1.5	SCH10S	SCH80S	P24J-004TG	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	3	2	SCH10S	SCH10S	P24J-001EE	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	4	2	SCH10S	SCH10S	P24J-001EB	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	4	3	SCH10S	SCH10S	P24J-001EM	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	6	3	SCH10S	SCH10S	P24J-001EC	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	6	4	SCH10S	SCH10S	P24J-001EP	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	8	4	SCH10S	SCH10S	P24J-001E9	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	8	6	SCH10S	SCH10S	P24J-001ER	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	10	4	SCH10S	SCH10S	P24J-001E8	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	10	6	SCH10S	SCH10S	P24J-001EN	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	10	8	SCH10S	SCH10S	P24J-001EV	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	12	6	SCH10S	SCH10S	P24J-001ET	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	12	8	SCH10S	SCH10S	P24J-001F2	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	12	10	SCH10S	SCH10S	P24J-001ED	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	14	6	SCH10S	SCH10S	P24J-001F3	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	14	8	SCH10S	SCH10S	P24J-001F8	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	14	10	SCH10S	SCH10S	P24J-001EJ	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	14	12	SCH10S	SCH10S	P24J-001EY	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	SCH10S	SCH10S	P27J-000T5	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	4	2	SCH10S	SCH10S	P27J-000T7	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	4	3	SCH10S	SCH10S	P27J-000TJ	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	6	3	SCH10S	SCH10S	P27J-000T3	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	6	4	SCH10S	SCH10S	P27J-000TD	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	8	4	SCH10S	SCH10S	P27J-000T1	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	8	6	SCH10S	SCH10S	P27J-000TF	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	10	4	SCH10S	SCH10S	P27J-000T4	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	10	6	SCH10S	SCH10S	P27J-000TM	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	10	8	SCH10S	SCH10S	P27J-000TL	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	12	6	SCH10S	SCH10S	P27J-000TK	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	12	8	SCH10S	SCH10S	P27J-000TT	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	12	10	SCH10S	SCH10S	P27J-000T2	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	14	6	SCH10S	SCH10S	P27J-000TW	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	14	8	SCH10S	SCH10S	P27J-000U1	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	14	10	SCH10S	SCH10S	P27J-000TA	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	14	12	SCH10S	SCH10S	P27J-000TP	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	SCH10S	SCH10S	P28J-000T7	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	4	2	SCH10S	SCH10S	P28J-000TA	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	4	3	SCH10S	SCH10S	P28J-000TJ	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	6	3	SCH10S	SCH10S	P28J-000T3	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	6	4	SCH10S	SCH10S	P28J-000TC	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	8	4	SCH10S	SCH10S	P28J-000T2	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	

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ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	8	6	SCH10S	SCH10S	P28J-000TG	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	10	4	SCH10S	SCH10S	P28J-000T6	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	10	6	SCH10S	SCH10S	P28J-000TK	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	10	8	SCH10S	SCH10S	P28J-000TV	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	12	6	SCH10S	SCH10S	P28J-000TM	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	12	8	SCH10S	SCH10S	P28J-000TY	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	12	10	SCH10S	SCH10S	P28J-000T4	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	14	6	SCH10S	SCH10S	P28J-000TW	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	14	8	SCH10S	SCH10S	P28J-000U1	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	14	10	SCH10S	SCH10S	P28J-000T9	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	14	12	SCH10S	SCH10S	P28J-000TP	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P29K-00021	Cap ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	0.75				P29K-00022	Cap ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	1				P29K-00023	Cap ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	1.5				P29K-00024	Cap ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	2		SCH10S		P29J-0006F	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	3		SCH10S		P29J-00064	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	4		SCH10S		P29J-00066	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	6		SCH10S		P29J-00067	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	8		SCH10S		P29J-00068	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	10		SCH10S		P29J-00069	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	12		SCH10S		P29J-0006B	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	14		SCH10S		P29J-0006C	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
541	0.75				P29K-00002	Cap ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P41J-001CE	Straight nipple ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		SCH80S		P41J-001CF	Straight nipple ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		SCH80S		P41J-001CG	Straight nipple ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		SCH80S		P41J-001CH	Straight nipple ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

CON SWAGED NIPPLE (SNC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH80S	SCH80S	P42J-0008N	Concentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	SCH80S	SCH80S	P42J-0008M	Concentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	SCH80S	SCH80S	P42J-0008P	Concentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	SCH80S	SCH80S	P42J-0008R	Concentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	SCH80S	SCH80S	P42J-0008S	Concentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	SCH80S	SCH80S	P42J-0008T	Concentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	SCH10S	SCH80S	P42J-000FG	Concentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	SCH10S	SCH80S	P42J-000FH	Concentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	SCH10S	SCH80S	P42J-000FJ	Concentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	SCH10S	SCH80S	P42J-000FK	Concentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	SCH10S	SCH80S	P42J-000FW	Concentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	

ECC SWAGED NIPPLE (SNE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH80S	SCH80S	P43J-0008R	Eccentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	

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ECC SWAGED NIPPLE (SNE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.5	SCH80S	SCH80S	P43J-0008S	Eccentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	SCH80S	SCH80S	P43J-0008T	Eccentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	SCH80S	SCH80S	P43J-0008U	Eccentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	SCH80S	SCH80S	P43J-0008V	Eccentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	SCH80S	SCH80S	P43J-0008W	Eccentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	SCH10S	SCH80S	P43J-000CE	Eccentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	SCH10S	SCH80S	P43J-000CF	Eccentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	SCH10S	SCH80S	P43J-000CG	Eccentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	SCH10S	SCH80S	P43J-000CH	Eccentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	SCH10S	SCH80S	P43J-000CY	Eccentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	

COUPLING (CPS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P47K-0000G	Coupling ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW - SW	
1	0.75				P47K-0000H	Coupling ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW - SW	
1	1				P47K-0000J	Coupling ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW - SW	
1	1.5				P47K-0000K	Coupling ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW - SW	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2 - 2.5	0.75			P31K-00GGG	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 SW	
1	3 - 5	0.75			P31K-00GGH	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 SW	
1	6 - 12	0.75			P31K-003VD	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 SW	
1	14 - 36	0.75			P31K-003VL	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 SW	
1	3	1			P31K-003UY	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 SW	
1	4 - 5	1			P31K-00GGJ	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 SW	
1	6 - 10	1			P31K-003UU	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 SW	
1	12 - 36	1			P31K-003V1	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 SW	
1	4	1.5			P31K-003UH	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 SW	
1	5 - 6	1.5			P31K-00GGN	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 SW	
1	8 - 12	1.5			P31K-003UB	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 SW	
1	14 - 24	1.5			P31K-003UP	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 SW	
541	1	0.75			P31K-001XH	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 NPT	
541	1.5	0.75			P31K-001XM	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 NPT	
541	2 - 2.5	0.75			P31K-00GGK	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 NPT	
541	3 - 5	0.75			P31K-00GGL	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 NPT	
541	6 - 12	0.75			P31K-003U1	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 NPT	
541	14 - 36	0.75			P31K-003U8	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 NPT	
1	6	2	SCH10S	SCH10S	P31K-00335	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW	
1	8	2	SCH10S	SCH10S	P31K-00337	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW	
1	10	2	SCH10S	SCH10S	P31K-00334	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW	
1	12	2	SCH10S	SCH10S	P31K-00336	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW	
1	14	2	SCH10S	SCH10S	P31K-00333	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW	
1	8	3	SCH10S	SCH10S	P31K-00330	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW	
1	10	3	SCH10S	SCH10S	P31K-002ZJ	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW	
1	12	3	SCH10S	SCH10S	P31K-002ZM	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW	
1	14	3	SCH10S	SCH10S	P31K-002ZP	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW	
1	12	4	SCH10S	SCH10S	P31K-002Z2	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW	
1	14	4	SCH10S	SCH10S	P31K-002Z1	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30K-0001L	Plug ASTM A182 Grade F316/F316L dual grade ASME B16.11 NPT Round head	
1	0.75				P30K-0001M	Plug ASTM A182 Grade F316/F316L dual grade ASME B16.11 NPT Round head	
1	1				P30K-0001N	Plug ASTM A182 Grade F316/F316L dual grade ASME B16.11 NPT Round head	

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PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5				P30K-0001P	Plug ASTM A182 Grade F316/F316L dual grade ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P61K-003AF	Flange SW ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
1	0.75		SCH80S		P61K-003AG	Flange SW ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
1	1		SCH80S		P61K-003AH	Flange SW ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
1	1.5		SCH80S		P61K-003AJ	Flange SW ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
1	2		SCH10S		P61K-0017R	Flange WN ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
1	3		SCH10S		P61K-0017M	Flange WN ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
1	4		SCH10S		P61K-0017L	Flange WN ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
1	6		SCH10S		P61K-0017K	Flange WN ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
1	8		SCH10S		P61K-0017J	Flange WN ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
1	10		SCH10S		P61K-0017W	Flange WN ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
1	12		SCH10S		P61K-0017V	Flange WN ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
1	14		SCH10S		P61K-0017U	Flange WN ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
773	0.5		SCH80S		P61K-003AK	Flange SW ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF	
773	0.75		SCH80S		P61K-003AL	Flange SW ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF	
773	1		SCH80S		P61K-003AM	Flange SW ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF	
773	1.5		SCH80S		P61K-003AN	Flange SW ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF	
773	2		SCH10S		P61K-0018C	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF	
773	3		SCH10S		P61K-00189	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF	
773	4		SCH10S		P61K-00188	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF	
773	6		SCH10S		P61K-001C6	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF	
773	8		SCH10S		P61K-001C7	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF	
773	10		SCH10S		P61K-001BZ	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF	
773	12		SCH10S		P61K-001C0	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF	
773	14		SCH10S		P61K-001C1	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67K-0007A	Blind flange ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
1	0.75				P67K-00079	Blind flange ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
1	1				P67K-00078	Blind flange ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
1	1.5				P67K-00077	Blind flange ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
1	2				P67K-00071	Blind flange ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
1	3				P67K-0006Y	Blind flange ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
1	4				P67K-0006X	Blind flange ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
1	6				P67K-0006W	Blind flange ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
1	8				P67K-0006V	Blind flange ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
1	10				P67K-00076	Blind flange ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
1	12				P67K-00075	Blind flange ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
1	14				P67K-00074	Blind flange ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000L8	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000L9	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000LA	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000LB	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000LH	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000LL	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000LM	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	6				P73T-000LN	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	8				P73T-000LP	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

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GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	10				P73T-000LC	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	12				P73T-000LD	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	14				P73T-000LE	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	0.5				P73T-000FT	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	0.75				P73T-000FU	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	3				P73T-000G5	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	4				P73T-000G6	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	6				P73T-000G7	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	8				P73T-000G8	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	10				P73T-000FX	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	12				P73T-000FY	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	14				P73T-000FZ	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-14				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
773	0.5-10				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
773	12-14				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81K-001B9	Gate valve ASTM A182 Grade F316/F316L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated Fluid-1	
1	0.75				P81K-001BA	Gate valve ASTM A182 Grade F316/F316L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated Fluid-1	
1	1				P81K-001BB	Gate valve ASTM A182 Grade F316/F316L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated Fluid-1	
1	1.5				P81K-001BC	Gate valve ASTM A182 Grade F316/F316L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated Fluid-1	
1	2				P81L-002RX	Gate valve ASTM A351 Grade CF8M Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Fluid-1	
1	3				P81L-002RY	Gate valve ASTM A351 Grade CF8M Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Fluid-1	
1	4				P81L-002RZ	Gate valve ASTM A351 Grade CF8M Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Fluid-1	
1	6				P81L-002S0	Gate valve ASTM A351 Grade CF8M Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Fluid-1	
1	8				P81L-002S1	Gate valve ASTM A351 Grade CF8M Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Fluid-1	
1	10				P81L-002RW	Gate valve ASTM A351 Grade CF8M Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Fluid-1	
1	12				P81L-002V1	Gate valve ASTM A351 Grade CF8M Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Fluid-1	
1	14				P81L-002V2	Gate valve ASTM A351 Grade CF8M Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Fluid-1	
714	0.5				P81K-001LG	Gate valve ASTM A182 Grade F316/F316L dual grade Class 800 API 602 SW - NPT Trim number 12 BB-BG-OS&Y Handwheel operated Fluid-1	
714	0.75				P81K-001G4	Gate valve ASTM A182 Grade F316/F316L dual grade Class 800 API 602 SW - NPT Trim number 12 BB-BG-OS&Y Handwheel operated Fluid-1	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
714	0.5				P82K-0013K	Globe valve ASTM A182 Grade F316/F316L dual grade Class 800 API 602 SW - NPT Trim number 12 BB-BG-OS&Y Handwheel operated Fluid-1	
714	0.75				P82K-0013L	Globe valve ASTM A182 Grade F316/F316L dual grade Class 800 API 602 SW - NPT Trim number 12 BB-BG-OS&Y Handwheel operated Fluid-1	

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CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83K-000P6	Check valve ASTM A182 Grade F316/F316L dual grade Class 800 API 602 SW Trim number 12 Lift-type Bolted cover	
1	0.75				P83K-000P7	Check valve ASTM A182 Grade F316/F316L dual grade Class 800 API 602 SW Trim number 12 Lift-type Bolted cover	
1	1				P83K-000P8	Check valve ASTM A182 Grade F316/F316L dual grade Class 800 API 602 SW Trim number 12 Lift-type Bolted cover	
1	1.5				P83K-000P9	Check valve ASTM A182 Grade F316/F316L dual grade Class 800 API 602 SW Trim number 12 Lift-type Bolted cover	
1	2				P83L-000EC	Check valve ASTM A351 Grade CF8M Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	3				P83L-000EB	Check valve ASTM A351 Grade CF8M Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	4				P83L-000EA	Check valve ASTM A351 Grade CF8M Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	6				P83L-000E9	Check valve ASTM A351 Grade CF8M Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	

BALL VALVE (Q)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P84K-000UF	Ball valve Long-pattern ASTM A182 Grade F316/F316L dual grade Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design Fluid-1	
1	0.75				P84K-000UG	Ball valve Long-pattern ASTM A182 Grade F316/F316L dual grade Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design Fluid-1	
1	1				P84K-000UH	Ball valve Long-pattern ASTM A182 Grade F316/F316L dual grade Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design Fluid-1	
1	1.5				P84K-000UJ	Ball valve Long-pattern ASTM A182 Grade F316/F316L dual grade Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design Fluid-1	
24	0.5				P84K-000UK	Ball valve Long-pattern ASTM A182 Grade F316/F316L dual grade Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design Fluid-1	
24	0.75				P84K-000UL	Ball valve Long-pattern ASTM A182 Grade F316/F316L dual grade Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design Fluid-1	
24	1				P84K-000UM	Ball valve Long-pattern ASTM A182 Grade F316/F316L dual grade Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design Fluid-1	
24	1.5				P84K-000UN	Ball valve Long-pattern ASTM A182 Grade F316/F316L dual grade Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design Fluid-1	

NEEDLE VALVE (NV)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82K-00104	Needle valve ASTM A182 Grade F316/F316L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated Fluid-1	
1	0.75				P82K-00105	Needle valve ASTM A182 Grade F316/F316L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated Fluid-1	
1	1				P82K-00106	Needle valve ASTM A182 Grade F316/F316L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated Fluid-1	
1	1.5				P82K-00107	Needle valve ASTM A182 Grade F316/F316L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated Fluid-1	

ORIFICE FLANGE (FO)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2		SCH10S		P66K-0031Y	Orifice flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	3		SCH10S		P66K-0031Z	Orifice flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	4		SCH10S		P66K-00320	Orifice flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	6		SCH10S		P66K-00321	Orifice flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	8		SCH10S		P66K-00322	Orifice flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
200	2		SCH10S		P66K-00329	Orifice flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	3		SCH10S		P66K-0032A	Orifice flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	4		SCH10S		P66K-0032B	Orifice flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	6		SCH10S		P66K-0032C	Orifice flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	8		SCH10S		P66K-0032D	Orifice flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	

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SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71K-0006P	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	0.75				P71K-0006R	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	1				P71K-0006S	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71K-0006T	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	2				P71K-0006U	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	3				P71K-0006V	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	4				P71K-0006W	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	6				P71K-0006Z	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	8				P71K-00070	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	10				P71K-0006X	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	12				P71K-0006Y	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	

PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72K-00043	Paddle blank ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	

PADDLE SPACER (PS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72K-00049	Paddle spacer ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	

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BOLT TABLE (B_A0LW , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	60	P80S-003V2		
0.75	4	0.500	65	P80S-003V3		
1	4	0.500	70	P80S-003V4		
1.5	4	0.500	75	P80S-003V5		
2	4	0.625	85	P80S-003XE		
3	4	0.625	95	P80S-003XG		
4	8	0.625	95	P80S-003XG		
6	8	0.750	105	P80S-003XJ		
8	8	0.750	110	P80S-003XK		
10	12	0.875	120	P80S-00419		
12	12	0.875	120	P80S-00419		
14	12	1.000	135	P80S-0043E		

BOLT TABLE (B_A0LW_773 , STUD ASME RF, OPTION CODE 773)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-003V4		
0.75	4	0.625	75	P80S-003XC		
1	4	0.625	80	P80S-003XD		
1.5	4	0.750	95	P80S-00414		
2	8	0.625	90	P80S-003XF		
3	8	0.750	110	P80S-003XK		
4	8	0.750	115	P80S-003XL		
6	12	0.750	125	P80S-003XN		
8	12	0.875	140	P80S-0041D		
10	16	1.000	160	P80S-0043K		
12	16	1.125	175	P80S-0046S		
14	20	1.125	180	P80S-0046T		

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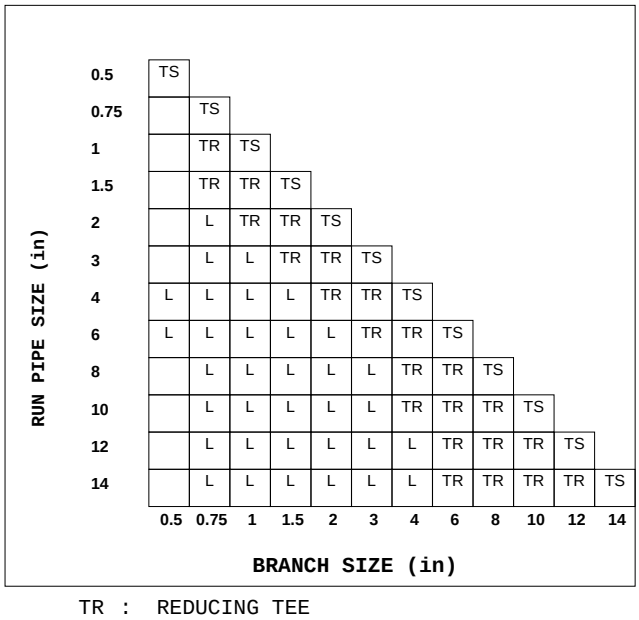
BRANCH TABLE (T_A0LW)



TR : REDUCING TEE
TS : STRAIGHT TEE
L : OUTLET

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Material : SS321
Rating : ASME CLASS 150
Flange Face : RF
C.A.(mm) : 0.80
Gasket : Spiral Wound
Service : PROCESS - GENERAL PROCESS, NON SOUR, NON CORROSIVE
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
541	NPT(F) (CA,L)
714	SW - NPT(F) (V)
773	CLASS 300 (B,F,G)

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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P01J-001FB	Pipe ASTM A312 Grade TP321 Seamless ASME B36.10M/B36.19M PE	
1	0.75		SCH80S		P01J-001FC	Pipe ASTM A312 Grade TP321 Seamless ASME B36.10M/B36.19M PE	
1	1		SCH80S		P01J-001FD	Pipe ASTM A312 Grade TP321 Seamless ASME B36.10M/B36.19M PE	
1	1.5		SCH80S		P01J-001FE	Pipe ASTM A312 Grade TP321 Seamless ASME B36.10M/B36.19M PE	
1	2		SCH10S		P01J-001T0	Pipe ASTM A312 Grade TP321 Seamless ASME B36.10M/B36.19M BE	
1	3		SCH10S		P01J-001T1	Pipe ASTM A312 Grade TP321 Seamless ASME B36.10M/B36.19M BE	
1	4		SCH10S		P01J-001T2	Pipe ASTM A312 Grade TP321 Seamless ASME B36.10M/B36.19M BE	
1	6		SCH10S		P01J-0028G	Pipe ASTM A312 Grade TP321 Seamless ASME B36.10M/B36.19M BE	
1	8		SCH10S		P01J-001TD	Pipe ASTM A358 Grade 321 Class 1 EFW ASME B36.10M/B36.19M BE	
1	10		SCH10S		P01J-001T3	Pipe ASTM A358 Grade 321 Class 1 EFW ASME B36.10M/B36.19M BE	
1	12		SCH10S		P01J-001T4	Pipe ASTM A358 Grade 321 Class 1 EFW ASME B36.10M/B36.19M BE	
1	14		SCH10S		P01J-001T5	Pipe ASTM A358 Grade 321 Class 1 EFW ASME B36.10M/B36.19M BE	
1	16		SCH10S		P01J-001T6	Pipe ASTM A358 Grade 321 Class 1 EFW ASME B36.10M/B36.19M BE	
1	18		SCH10S		P01J-001T7	Pipe ASTM A358 Grade 321 Class 1 EFW ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P02K-0002E	90 degree elbow ASTM A182 Grade F321 Class 3000 ASME B16.11 SW	
1	0.75				P02K-0002F	90 degree elbow ASTM A182 Grade F321 Class 3000 ASME B16.11 SW	
1	1				P02K-0002G	90 degree elbow ASTM A182 Grade F321 Class 3000 ASME B16.11 SW	
1	1.5				P02K-0002H	90 degree elbow ASTM A182 Grade F321 Class 3000 ASME B16.11 SW	
1	2		SCH10S		P02J-001RM	90 degree elbow ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Long radius	
1	3		SCH10S		P02J-001RN	90 degree elbow ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Long radius	
1	4		SCH10S		P02J-001RP	90 degree elbow ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Long radius	
1	6		SCH10S		P02J-001RR	90 degree elbow ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Long radius	
1	8		SCH10S		P02J-001NP	90 degree elbow ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Long radius	
1	10		SCH10S		P02J-001NG	90 degree elbow ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Long radius	
1	12		SCH10S		P02J-001RS	90 degree elbow ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Long radius	
1	14		SCH10S		P02J-001NJ	90 degree elbow ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Long radius	
1	16		SCH10S		P02J-001RT	90 degree elbow ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Long radius	
1	18		SCH10S		P02J-001RU	90 degree elbow ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P03K-0002B	45 degree elbow ASTM A182 Grade F321 Class 3000 ASME B16.11 SW	
1	0.75				P03K-0002C	45 degree elbow ASTM A182 Grade F321 Class 3000 ASME B16.11 SW	
1	1				P03K-0002D	45 degree elbow ASTM A182 Grade F321 Class 3000 ASME B16.11 SW	
1	1.5				P03K-0002E	45 degree elbow ASTM A182 Grade F321 Class 3000 ASME B16.11 SW	
1	2		SCH10S		P03J-001N1	45 degree elbow ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Long radius	
1	3		SCH10S		P03J-001N2	45 degree elbow ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Long radius	
1	4		SCH10S		P03J-001N3	45 degree elbow ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Long radius	
1	6		SCH10S		P03J-001N4	45 degree elbow ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Long radius	
1	8		SCH10S		P03J-001M2	45 degree elbow ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Long radius	
1	10		SCH10S		P03J-001LV	45 degree elbow ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Long radius	
1	12		SCH10S		P03J-001N5	45 degree elbow ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Long radius	
1	14		SCH10S		P03J-001LX	45 degree elbow ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Long radius	
1	16		SCH10S		P03J-001N6	45 degree elbow ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Long radius	
1	18		SCH10S		P03J-001N7	45 degree elbow ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P21K-0002D	Straight tee ASTM A182 Grade F321 Class 3000 ASME B16.11 SW	
1	0.75				P21K-0002E	Straight tee ASTM A182 Grade F321 Class 3000 ASME B16.11 SW	
1	1				P21K-0002F	Straight tee ASTM A182 Grade F321 Class 3000 ASME B16.11 SW	
1	1.5				P21K-0002G	Straight tee ASTM A182 Grade F321 Class 3000 ASME B16.11 SW	
1	2		SCH10S		P21J-001EH	Straight tee ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW	
1	3		SCH10S		P21J-001EJ	Straight tee ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW	
1	4		SCH10S		P21J-001EK	Straight tee ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW	
1	6		SCH10S		P21J-001EL	Straight tee ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW	

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STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	8		SCH10S		P21J-001DM	Straight tee ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW	
1	10		SCH10S		P21J-001DE	Straight tee ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW	
1	12		SCH10S		P21J-001EM	Straight tee ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW	
1	14		SCH10S		P21J-001DG	Straight tee ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW	
1	16		SCH10S		P21J-001EN	Straight tee ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW	
1	18		SCH10S		P21J-001EP	Straight tee ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75			P24K-0003B	Reducing tee ASTM A182 Grade F321 Class 3000 ASME B16.11 SW	
1	1.5	0.75			P24K-0003C	Reducing tee ASTM A182 Grade F321 Class 3000 ASME B16.11 SW	
1	1.5	1			P24K-0003D	Reducing tee ASTM A182 Grade F321 Class 3000 ASME B16.11 SW	
1	2	1	SCH10S	SCH80S	P24J-0065M	Reducing tee ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW	
1	2	1.5	SCH10S	SCH80S	P24J-0065N	Reducing tee ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW	
1	3	1.5	SCH10S	SCH80S	P24J-0065P	Reducing tee ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW	
1	3	2	SCH10S	SCH10S	P24J-0065R	Reducing tee ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW	
1	4	2	SCH10S	SCH10S	P24J-0065S	Reducing tee ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW	
1	4	3	SCH10S	SCH10S	P24J-0065T	Reducing tee ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW	
1	6	3	SCH10S	SCH10S	P24J-0065U	Reducing tee ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW	
1	6	4	SCH10S	SCH10S	P24J-0065V	Reducing tee ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW	
1	8	4	SCH10S	SCH10S	P24J-0065W	Reducing tee ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW	
1	8	6	SCH10S	SCH10S	P24J-0065X	Reducing tee ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW	
1	10	4	SCH10S	SCH10S	P24J-0065Y	Reducing tee ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW	
1	10	6	SCH10S	SCH10S	P24J-0065Z	Reducing tee ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW	
1	10	8	SCH10S	SCH10S	P24J-00613	Reducing tee ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW	
1	12	6	SCH10S	SCH10S	P24J-00661	Reducing tee ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW	
1	12	8	SCH10S	SCH10S	P24J-00662	Reducing tee ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW	
1	12	10	SCH10S	SCH10S	P24J-00660	Reducing tee ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW	
1	14	6	SCH10S	SCH10S	P24J-00664	Reducing tee ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW	
1	14	8	SCH10S	SCH10S	P24J-00665	Reducing tee ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW	
1	14	10	SCH10S	SCH10S	P24J-00614	Reducing tee ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW	
1	14	12	SCH10S	SCH10S	P24J-00663	Reducing tee ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW	
1	16	6	SCH10S	SCH10S	P24J-00669	Reducing tee ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW	
1	16	8	SCH10S	SCH10S	P24J-0066A	Reducing tee ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW	
1	16	10	SCH10S	SCH10S	P24J-00666	Reducing tee ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW	
1	16	12	SCH10S	SCH10S	P24J-00667	Reducing tee ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW	
1	16	14	SCH10S	SCH10S	P24J-00668	Reducing tee ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW	
1	18	8	SCH10S	SCH10S	P24J-0066F	Reducing tee ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW	
1	18	10	SCH10S	SCH10S	P24J-0066B	Reducing tee ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW	
1	18	12	SCH10S	SCH10S	P24J-0066C	Reducing tee ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW	
1	18	14	SCH10S	SCH10S	P24J-0066D	Reducing tee ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW	
1	18	16	SCH10S	SCH10S	P24J-0066E	Reducing tee ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	SCH10S	SCH10S	P27J-0054K	Concentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW	
1	4	2	SCH10S	SCH10S	P27J-0054L	Concentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW	
1	4	3	SCH10S	SCH10S	P27J-0054M	Concentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW	
1	6	3	SCH10S	SCH10S	P27J-0054N	Concentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW	
1	6	4	SCH10S	SCH10S	P27J-0054P	Concentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW	
1	8	4	SCH10S	SCH10S	P27J-0054R	Concentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW	
1	8	6	SCH10S	SCH10S	P27J-0054S	Concentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW	
1	10	4	SCH10S	SCH10S	P27J-0054T	Concentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW	
1	10	6	SCH10S	SCH10S	P27J-0054U	Concentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW	
1	10	8	SCH10S	SCH10S	P27J-0050T	Concentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW	
1	12	6	SCH10S	SCH10S	P27J-0054W	Concentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW	
1	12	8	SCH10S	SCH10S	P27J-0054X	Concentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW	
1	12	10	SCH10S	SCH10S	P27J-0054V	Concentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW	
1	14	6	SCH10S	SCH10S	P27J-0054Z	Concentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW	

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CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14	8	SCH10S	SCH10S	P27J-0050W	Concentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW	
1	14	10	SCH10S	SCH10S	P27J-0050U	Concentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW	
1	14	12	SCH10S	SCH10S	P27J-0054Y	Concentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW	
1	16	8	SCH10S	SCH10S	P27J-00553	Concentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW	
1	16	10	SCH10S	SCH10S	P27J-00550	Concentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW	
1	16	12	SCH10S	SCH10S	P27J-00551	Concentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW	
1	16	14	SCH10S	SCH10S	P27J-00552	Concentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW	
1	18	10	SCH10S	SCH10S	P27J-00554	Concentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW	
1	18	12	SCH10S	SCH10S	P27J-00555	Concentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW	
1	18	14	SCH10S	SCH10S	P27J-00556	Concentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW	
1	18	16	SCH10S	SCH10S	P27J-00557	Concentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	SCH10S	SCH10S	P28J-0055E	Eccentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW	
1	4	2	SCH10S	SCH10S	P28J-0055F	Eccentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW	
1	4	3	SCH10S	SCH10S	P28J-0055G	Eccentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW	
1	6	3	SCH10S	SCH10S	P28J-0055H	Eccentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW	
1	6	4	SCH10S	SCH10S	P28J-0055J	Eccentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW	
1	8	4	SCH10S	SCH10S	P28J-0055K	Eccentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW	
1	8	6	SCH10S	SCH10S	P28J-0055L	Eccentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW	
1	10	4	SCH10S	SCH10S	P28J-0055M	Eccentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW	
1	10	6	SCH10S	SCH10S	P28J-0055N	Eccentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW	
1	10	8	SCH10S	SCH10S	P28J-0051J	Eccentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW	
1	12	6	SCH10S	SCH10S	P28J-0055R	Eccentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW	
1	12	8	SCH10S	SCH10S	P28J-0055S	Eccentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW	
1	12	10	SCH10S	SCH10S	P28J-0055P	Eccentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW	
1	14	6	SCH10S	SCH10S	P28J-0055U	Eccentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW	
1	14	8	SCH10S	SCH10S	P28J-0051M	Eccentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW	
1	14	10	SCH10S	SCH10S	P28J-0051K	Eccentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW	
1	14	12	SCH10S	SCH10S	P28J-0055T	Eccentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW	
1	16	8	SCH10S	SCH10S	P28J-0055Y	Eccentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW	
1	16	10	SCH10S	SCH10S	P28J-0055V	Eccentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW	
1	16	12	SCH10S	SCH10S	P28J-0055W	Eccentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW	
1	16	14	SCH10S	SCH10S	P28J-0055X	Eccentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW	
1	18	10	SCH10S	SCH10S	P28J-0055Z	Eccentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW	
1	18	12	SCH10S	SCH10S	P28J-00560	Eccentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW	
1	18	14	SCH10S	SCH10S	P28J-00561	Eccentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW	
1	18	16	SCH10S	SCH10S	P28J-00562	Eccentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P29K-0002W	Cap ASTM A182 Grade F321 Class 3000 ASME B16.11 SW	
1	0.75				P29K-0002X	Cap ASTM A182 Grade F321 Class 3000 ASME B16.11 SW	
1	1				P29K-0002Y	Cap ASTM A182 Grade F321 Class 3000 ASME B16.11 SW	
1	1.5				P29K-0002Z	Cap ASTM A182 Grade F321 Class 3000 ASME B16.11 SW	
1	2		SCH10S		P29J-0019D	Cap ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW	
1	3		SCH10S		P29J-0019E	Cap ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW	
1	4		SCH10S		P29J-0019F	Cap ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW	
1	6		SCH10S		P29J-0019G	Cap ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW	
1	8		SCH10S		P29J-0018L	Cap ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW	
1	10		SCH10S		P29J-00189	Cap ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW	
1	12		SCH10S		P29J-0019A	Cap ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW	
1	14		SCH10S		P29J-0018B	Cap ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW	
1	16		SCH10S		P29J-0019B	Cap ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW	
1	18		SCH10S		P29J-0019C	Cap ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW	
1	0.75				P29K-0003U	Cap ASTM A182 Grade F321 Class 3000 ASME B16.11 NPT	

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STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P41J-001UB	Straight nipple ASTM A312 Grade TP321 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		SCH80S		P41J-001UC	Straight nipple ASTM A312 Grade TP321 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		SCH160		P41J-001V4	Straight nipple ASTM A312 Grade TP321 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		SCH80S		P41J-001UE	Straight nipple ASTM A312 Grade TP321 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

CON SWAGED NIPPLE (SNC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH80S	SCH80S	P42J-000AH	Concentric swaged nipple ASTM A403 Grade WP321 Class S Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	SCH80S	SCH80S	P42J-000AJ	Concentric swaged nipple ASTM A403 Grade WP321 Class S Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	SCH80S	SCH80S	P42J-000AK	Concentric swaged nipple ASTM A403 Grade WP321 Class S Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	SCH80S	SCH80S	P42J-000AL	Concentric swaged nipple ASTM A403 Grade WP321 Class S Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	SCH80S	SCH80S	P42J-000AM	Concentric swaged nipple ASTM A403 Grade WP321 Class S Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	SCH80S	SCH80S	P42J-000AN	Concentric swaged nipple ASTM A403 Grade WP321 Class S Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	SCH10S	SCH80S	P42J-000FX	Concentric swaged nipple ASTM A403 Grade WP321 Class S Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	SCH10S	SCH80S	P42J-000FY	Concentric swaged nipple ASTM A403 Grade WP321 Class S Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	SCH10S	SCH80S	P42J-000FZ	Concentric swaged nipple ASTM A403 Grade WP321 Class S Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	SCH10S	SCH80S	P42J-000G0	Concentric swaged nipple ASTM A403 Grade WP321 Class S Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	SCH10S	SCH80S	P42J-000G1	Concentric swaged nipple ASTM A403 Grade WP321 Class S Seamless MSS SP-95 BE(L) - PE(S)	

ECC SWAGED NIPPLE (SNE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH80S	SCH80S	P43J-0008X	Eccentric swaged nipple ASTM A403 Grade WP321 Class S Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	SCH80S	SCH80S	P43J-0008Y	Eccentric swaged nipple ASTM A403 Grade WP321 Class S Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	SCH80S	SCH80S	P43J-0008Z	Eccentric swaged nipple ASTM A403 Grade WP321 Class S Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	SCH80S	SCH80S	P43J-00090	Eccentric swaged nipple ASTM A403 Grade WP321 Class S Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	SCH80S	SCH80S	P43J-00091	Eccentric swaged nipple ASTM A403 Grade WP321 Class S Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	SCH80S	SCH80S	P43J-00092	Eccentric swaged nipple ASTM A403 Grade WP321 Class S Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	SCH10S	SCH80S	P43J-000CZ	Eccentric swaged nipple ASTM A403 Grade WP321 Class S Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	SCH10S	SCH80S	P43J-000D0	Eccentric swaged nipple ASTM A403 Grade WP321 Class S Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	SCH10S	SCH80S	P43J-000D1	Eccentric swaged nipple ASTM A403 Grade WP321 Class S Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	SCH10S	SCH80S	P43J-000D2	Eccentric swaged nipple ASTM A403 Grade WP321 Class S Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	SCH10S	SCH80S	P43J-000D3	Eccentric swaged nipple ASTM A403 Grade WP321 Class S Seamless MSS SP-95 BE(L) - PE(S)	

COUPLING (CPS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P47K-00048	Coupling ASTM A182 Grade F321 Class 3000 ASME B16.11 SW - SW	
1	0.75				P47K-00049	Coupling ASTM A182 Grade F321 Class 3000 ASME B16.11 SW - SW	
1	1				P47K-0004A	Coupling ASTM A182 Grade F321 Class 3000 ASME B16.11 SW - SW	
1	1.5				P47K-0004B	Coupling ASTM A182 Grade F321 Class 3000 ASME B16.11 SW - SW	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2 - 2.5	0.75			P31K-00GGP	Outlet ASTM A182 Grade F321 Class 3000 MSS SP-97 SW	
1	3 - 5	0.75			P31K-00GGR	Outlet ASTM A182 Grade F321 Class 3000 MSS SP-97 SW	
1	6 - 12	0.75			P31K-00GGS	Outlet ASTM A182 Grade F321 Class 3000 MSS SP-97 SW	
1	14 - 36	0.75			P31K-00GGT	Outlet ASTM A182 Grade F321 Class 3000 MSS SP-97 SW	
1	3	1			P31K-00GGU	Outlet ASTM A182 Grade F321 Class 3000 MSS SP-97 SW	
1	4 - 5	1			P31K-00GGV	Outlet ASTM A182 Grade F321 Class 3000 MSS SP-97 SW	
1	6 - 10	1			P31K-00GGW	Outlet ASTM A182 Grade F321 Class 3000 MSS SP-97 SW	
1	12 - 36	1			P31K-00GGX	Outlet ASTM A182 Grade F321 Class 3000 MSS SP-97 SW	
1	4	1.5			P31K-00DHR	Outlet ASTM A182 Grade F321 Class 3000 MSS SP-97 SW	
1	5 - 6	1.5			P31K-00GGY	Outlet ASTM A182 Grade F321 Class 3000 MSS SP-97 SW	
1	8 - 12	1.5			P31K-00GGZ	Outlet ASTM A182 Grade F321 Class 3000 MSS SP-97 SW	
1	14 - 24	1.5			P31K-00GH0	Outlet ASTM A182 Grade F321 Class 3000 MSS SP-97 SW	
541	1	0.75			P31K-00FN3	Outlet ASTM A182 Grade F321 Class 3000 MSS SP-97 NPT	
541	1.5	0.75			P31K-00FN2	Outlet ASTM A182 Grade F321 Class 3000 MSS SP-97 NPT	
541	2 - 2.5	0.75			P31K-00GH1	Outlet ASTM A182 Grade F321 Class 3000 MSS SP-97 NPT	
541	3 - 5	0.75			P31K-00GH2	Outlet ASTM A182 Grade F321 Class 3000 MSS SP-97 NPT	

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OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
541	6 - 12	0.75			P31K-00GH3	Outlet ASTM A182 Grade F321 Class 3000 MSS SP-97 NPT	
541	14 - 36	0.75			P31K-00GH4	Outlet ASTM A182 Grade F321 Class 3000 MSS SP-97 NPT	
1	6	2	SCH10S	SCH10S	P31K-00DMH	Outlet ASTM A182 Grade F321 MSS SP-97 BW	
1	8	2	SCH10S	SCH10S	P31K-00DMJ	Outlet ASTM A182 Grade F321 MSS SP-97 BW	
1	10	2	SCH10S	SCH10S	P31K-00DML	Outlet ASTM A182 Grade F321 MSS SP-97 BW	
1	12	2	SCH10S	SCH10S	P31K-00DMN	Outlet ASTM A182 Grade F321 MSS SP-97 BW	
1	14	2	SCH10S	SCH10S	P31K-00DMS	Outlet ASTM A182 Grade F321 MSS SP-97 BW	
1	16	2	SCH10S	SCH10S	P31K-00DMV	Outlet ASTM A182 Grade F321 MSS SP-97 BW	
1	18	2	SCH10S	SCH10S	P31K-00DMY	Outlet ASTM A182 Grade F321 MSS SP-97 BW	
1	8	3	SCH10S	SCH10S	P31K-00DMK	Outlet ASTM A182 Grade F321 MSS SP-97 BW	
1	10	3	SCH10S	SCH10S	P31K-00DMM	Outlet ASTM A182 Grade F321 MSS SP-97 BW	
1	12	3	SCH10S	SCH10S	P31K-00DMP	Outlet ASTM A182 Grade F321 MSS SP-97 BW	
1	14	3	SCH10S	SCH10S	P31K-00DMT	Outlet ASTM A182 Grade F321 MSS SP-97 BW	
1	16	3	SCH10S	SCH10S	P31K-00DMW	Outlet ASTM A182 Grade F321 MSS SP-97 BW	
1	18	3	SCH10S	SCH10S	P31K-00DMZ	Outlet ASTM A182 Grade F321 MSS SP-97 BW	
1	12	4	SCH10S	SCH10S	P31K-00DMR	Outlet ASTM A182 Grade F321 MSS SP-97 BW	
1	14	4	SCH10S	SCH10S	P31K-00DMU	Outlet ASTM A182 Grade F321 MSS SP-97 BW	
1	16	4	SCH10S	SCH10S	P31K-00DMX	Outlet ASTM A182 Grade F321 MSS SP-97 BW	
1	18	4	SCH10S	SCH10S	P31K-00DN0	Outlet ASTM A182 Grade F321 MSS SP-97 BW	
1	18	6	SCH10S	SCH10S	P31K-00DN1	Outlet ASTM A182 Grade F321 MSS SP-97 BW	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30K-0002L	Plug ASTM A182 Grade F321 ASME B16.11 NPT Round head	
1	0.75				P30K-0002M	Plug ASTM A182 Grade F321 ASME B16.11 NPT Round head	
1	1				P30K-0002N	Plug ASTM A182 Grade F321 ASME B16.11 NPT Round head	
1	1.5				P30K-0002P	Plug ASTM A182 Grade F321 ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P61K-004SR	Flange SW ASTM A182 Grade F321 Class 150 ASME B16.5 RF	
1	0.75		SCH80S		P61K-004SS	Flange SW ASTM A182 Grade F321 Class 150 ASME B16.5 RF	
1	1		SCH80S		P61K-004ST	Flange SW ASTM A182 Grade F321 Class 150 ASME B16.5 RF	
1	1.5		SCH80S		P61K-004SU	Flange SW ASTM A182 Grade F321 Class 150 ASME B16.5 RF	
1	2		SCH10S		P61K-004SY	Flange WN ASTM A182 Grade F321 Class 150 ASME B16.5 RF	
1	3		SCH10S		P61K-004SZ	Flange WN ASTM A182 Grade F321 Class 150 ASME B16.5 RF	
1	4		SCH10S		P61K-004T0	Flange WN ASTM A182 Grade F321 Class 150 ASME B16.5 RF	
1	6		SCH10S		P61K-004T1	Flange WN ASTM A182 Grade F321 Class 150 ASME B16.5 RF	
1	8		SCH10S		P61K-004NR	Flange WN ASTM A182 Grade F321 Class 150 ASME B16.5 RF	
1	10		SCH10S		P61K-004ND	Flange WN ASTM A182 Grade F321 Class 150 ASME B16.5 RF	
1	12		SCH10S		P61K-004SV	Flange WN ASTM A182 Grade F321 Class 150 ASME B16.5 RF	
1	14		SCH10S		P61K-004NF	Flange WN ASTM A182 Grade F321 Class 150 ASME B16.5 RF	
1	16		SCH10S		P61K-004SW	Flange WN ASTM A182 Grade F321 Class 150 ASME B16.5 RF	
1	18		SCH10S		P61K-004SX	Flange WN ASTM A182 Grade F321 Class 150 ASME B16.5 RF	
773	0.5		SCH80S		P61K-004P5	Flange SW ASTM A182 Grade F321 Class 300 ASME B16.5 RF	
773	0.75		SCH80S		P61K-004P6	Flange SW ASTM A182 Grade F321 Class 300 ASME B16.5 RF	
773	1		SCH80S		P61K-004T2	Flange SW ASTM A182 Grade F321 Class 300 ASME B16.5 RF	
773	1.5		SCH80S		P61K-004T3	Flange SW ASTM A182 Grade F321 Class 300 ASME B16.5 RF	
773	2		SCH10S		P61K-004T7	Flange WN ASTM A182 Grade F321 Class 300 ASME B16.5 RF	
773	3		SCH10S		P61K-004T8	Flange WN ASTM A182 Grade F321 Class 300 ASME B16.5 RF	
773	4		SCH10S		P61K-004T9	Flange WN ASTM A182 Grade F321 Class 300 ASME B16.5 RF	
773	6		SCH10S		P61K-004TA	Flange WN ASTM A182 Grade F321 Class 300 ASME B16.5 RF	
773	8		SCH10S		P61K-004PL	Flange WN ASTM A182 Grade F321 Class 300 ASME B16.5 RF	
773	10		SCH10S		P61K-004P9	Flange WN ASTM A182 Grade F321 Class 300 ASME B16.5 RF	
773	12		SCH10S		P61K-004T4	Flange WN ASTM A182 Grade F321 Class 300 ASME B16.5 RF	
773	14		SCH10S		P61K-004PB	Flange WN ASTM A182 Grade F321 Class 300 ASME B16.5 RF	
773	16		SCH10S		P61K-004T5	Flange WN ASTM A182 Grade F321 Class 300 ASME B16.5 RF	
773	18		SCH10S		P61K-004T6	Flange WN ASTM A182 Grade F321 Class 300 ASME B16.5 RF	

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BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67K-001DS	Blind flange ASTM A182 Grade F321 Class 150 ASME B16.5 RF	
1	0.75				P67K-001DT	Blind flange ASTM A182 Grade F321 Class 150 ASME B16.5 RF	
1	1				P67K-0014G	Blind flange ASTM A182 Grade F321 Class 150 ASME B16.5 RF	
1	1.5				P67K-0014H	Blind flange ASTM A182 Grade F321 Class 150 ASME B16.5 RF	
1	2				P67K-0014J	Blind flange ASTM A182 Grade F321 Class 150 ASME B16.5 RF	
1	3				P67K-0014K	Blind flange ASTM A182 Grade F321 Class 150 ASME B16.5 RF	
1	4				P67K-0014L	Blind flange ASTM A182 Grade F321 Class 150 ASME B16.5 RF	
1	6				P67K-0014M	Blind flange ASTM A182 Grade F321 Class 150 ASME B16.5 RF	
1	8				P67K-0014N	Blind flange ASTM A182 Grade F321 Class 150 ASME B16.5 RF	
1	10				P67K-0018P	Blind flange ASTM A182 Grade F321 Class 150 ASME B16.5 RF	
1	12				P67K-0018R	Blind flange ASTM A182 Grade F321 Class 150 ASME B16.5 RF	
1	14				P67K-001DU	Blind flange ASTM A182 Grade F321 Class 150 ASME B16.5 RF	
1	16				P67K-001DV	Blind flange ASTM A182 Grade F321 Class 150 ASME B16.5 RF	
1	18				P67K-001DW	Blind flange ASTM A182 Grade F321 Class 150 ASME B16.5 RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-003ZT	Spiral wound gasket SS321 winding / Graphite-mica filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS321	
1	0.75				P73T-003ZU	Spiral wound gasket SS321 winding / Graphite-mica filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS321	
1	1				P73T-003ZV	Spiral wound gasket SS321 winding / Graphite-mica filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS321	
1	1.5				P73T-003ZW	Spiral wound gasket SS321 winding / Graphite-mica filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS321	
1	2				P73T-00402	Spiral wound gasket SS321 winding / Graphite-mica filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS321	
1	3				P73T-00403	Spiral wound gasket SS321 winding / Graphite-mica filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS321	
1	4				P73T-00404	Spiral wound gasket SS321 winding / Graphite-mica filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS321	
1	6				P73T-00405	Spiral wound gasket SS321 winding / Graphite-mica filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS321	
1	8				P73T-00406	Spiral wound gasket SS321 winding / Graphite-mica filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS321	
1	10				P73T-003ZX	Spiral wound gasket SS321 winding / Graphite-mica filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS321	
1	12				P73T-003ZY	Spiral wound gasket SS321 winding / Graphite-mica filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS321	
1	14				P73T-003ZZ	Spiral wound gasket SS321 winding / Graphite-mica filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS321	
1	16				P73T-00400	Spiral wound gasket SS321 winding / Graphite-mica filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS321	
1	18				P73T-00401	Spiral wound gasket SS321 winding / Graphite-mica filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS321	
773	0.5				P73T-00407	Spiral wound gasket SS321 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS321	
773	0.75				P73T-00408	Spiral wound gasket SS321 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS321	
773	1				P73T-00409	Spiral wound gasket SS321 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS321	
773	1.5				P73T-0040A	Spiral wound gasket SS321 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS321	
773	2				P73T-0040G	Spiral wound gasket SS321 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS321	
773	3				P73T-0040H	Spiral wound gasket SS321 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS321	
773	4				P73T-0040J	Spiral wound gasket SS321 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS321	
773	6				P73T-0040K	Spiral wound gasket SS321 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS321	
773	8				P73T-0040L	Spiral wound gasket SS321 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS321	
773	10				P73T-0040B	Spiral wound gasket SS321 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS321	
773	12				P73T-0040C	Spiral wound gasket SS321 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS321	
773	14				P73T-0040D	Spiral wound gasket SS321 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS321	
773	16				P73T-0040E	Spiral wound gasket SS321 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS321	
773	18				P73T-0040F	Spiral wound gasket SS321 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS321	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-16				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	

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BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	18				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
773	0.5-10				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
773	12-18				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81K-001KB	Gate valve ASTM A182 Grade F321 Class 800 API 602 SW Trim SS347 BB-BG-OS&Y Handwheel operated Fluid-2	
1	0.75				P81K-001KC	Gate valve ASTM A182 Grade F321 Class 800 API 602 SW Trim SS347 BB-BG-OS&Y Handwheel operated Fluid-2	
1	1				P81K-001KD	Gate valve ASTM A182 Grade F321 Class 800 API 602 SW Trim SS347 BB-BG-OS&Y Handwheel operated Fluid-2	
1	1.5				P81K-001KE	Gate valve ASTM A182 Grade F321 Class 800 API 602 SW Trim SS347 BB-BG-OS&Y Handwheel operated Fluid-2	
1	2				P81L-0033R	Gate valve ASTM A351 Grade CF8C Class 150 API 600 Flange ASME B16.5 RF Trim SS347 BB-BG-OS&Y Handwheel operated Fluid-2	
1	3				P81L-0033S	Gate valve ASTM A351 Grade CF8C Class 150 API 600 Flange ASME B16.5 RF Trim SS347 BB-BG-OS&Y Handwheel operated Fluid-2	
1	4				P81L-0033T	Gate valve ASTM A351 Grade CF8C Class 150 API 600 Flange ASME B16.5 RF Trim SS347 BB-BG-OS&Y Handwheel operated Fluid-2	
1	6				P81L-0033U	Gate valve ASTM A351 Grade CF8C Class 150 API 600 Flange ASME B16.5 RF Trim SS347 BB-BG-OS&Y Handwheel operated Fluid-2	
1	8				P81L-0033V	Gate valve ASTM A351 Grade CF8C Class 150 API 600 Flange ASME B16.5 RF Trim SS347 BB-BG-OS&Y Handwheel operated Fluid-2	
1	10				P81L-0033N	Gate valve ASTM A351 Grade CF8C Class 150 API 600 Flange ASME B16.5 RF Trim SS347 BB-BG-OS&Y Handwheel operated Fluid-2	
1	12				P81L-0033P	Gate valve ASTM A351 Grade CF8C Class 150 API 600 Flange ASME B16.5 RF Trim SS347 BB-BG-OS&Y Handwheel operated Fluid-2	
714	0.5				P81K-001LH	Gate valve ASTM A182 Grade F321 Class 800 API 602 SW - NPT Trim SS347 BB-BG-OS&Y Handwheel operated Fluid-2	
714	0.75				P81K-001KF	Gate valve ASTM A182 Grade F321 Class 800 API 602 SW - NPT Trim SS347 BB-BG-OS&Y Handwheel operated Fluid-2	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82K-0012A	Globe valve ASTM A182 Grade F321 Class 800 API 602 SW Trim SS347 BB-BG-OS&Y Handwheel operated Fluid-2	
1	0.75				P82K-0012B	Globe valve ASTM A182 Grade F321 Class 800 API 602 SW Trim SS347 BB-BG-OS&Y Handwheel operated Fluid-2	
1	1				P82K-0012C	Globe valve ASTM A182 Grade F321 Class 800 API 602 SW Trim SS347 BB-BG-OS&Y Handwheel operated Fluid-2	
1	1.5				P82K-0012D	Globe valve ASTM A182 Grade F321 Class 800 API 602 SW Trim SS347 BB-BG-OS&Y Handwheel operated Fluid-2	
1	2				P82L-001PW	Globe valve ASTM A351 Grade CF8C Class 150 BS 1873 Flange ASME B16.5 RF Trim SS347 BB-BG-OS&Y Handwheel operated Fluid-2	
1	3				P82L-001PX	Globe valve ASTM A351 Grade CF8C Class 150 BS 1873 Flange ASME B16.5 RF Trim SS347 BB-BG-OS&Y Handwheel operated Fluid-2	
1	4				P82L-001PY	Globe valve ASTM A351 Grade CF8C Class 150 BS 1873 Flange ASME B16.5 RF Trim SS347 BB-BG-OS&Y Handwheel operated Fluid-2	
1	6				P82L-001PZ	Globe valve ASTM A351 Grade CF8C Class 150 BS 1873 Flange ASME B16.5 RF Trim SS347 BB-BG-OS&Y Handwheel operated Fluid-2	
1	8				P82L-001R0	Globe valve ASTM A351 Grade CF8C Class 150 BS 1873 Flange ASME B16.5 RF Trim SS347 BB-BG-OS&Y Handwheel operated Fluid-2	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83K-000PE	Check valve ASTM A182 Grade F321 Class 800 API 602 SW Trim SS347 Lift-type Bolted cover	
1	0.75				P83K-000PF	Check valve ASTM A182 Grade F321 Class 800 API 602 SW Trim SS347 Lift-type Bolted cover	
1	1				P83K-000PG	Check valve ASTM A182 Grade F321 Class 800 API 602 SW Trim SS347 Lift-type Bolted cover	
1	1.5				P83K-000PH	Check valve ASTM A182 Grade F321 Class 800 API 602 SW Trim SS347 Lift-type Bolted cover	
1	2				P83L-00133	Check valve ASTM A351 Grade CF8C Class 150 BS 1868 Flange ASME B16.5 RF Trim SS347 Swing-type Bolted cover	
1	3				P83L-00134	Check valve ASTM A351 Grade CF8C Class 150 BS 1868 Flange ASME B16.5 RF Trim SS347 Swing-type Bolted cover	
1	4				P83L-00135	Check valve ASTM A351 Grade CF8C Class 150 BS 1868 Flange ASME B16.5 RF Trim SS347 Swing-type Bolted cover	
1	6				P83L-00136	Check valve ASTM A351 Grade CF8C Class 150 BS 1868 Flange ASME B16.5 RF Trim SS347 Swing-type Bolted cover	
1	8				P83L-00137	Check valve ASTM A351 Grade CF8C Class 150 BS 1868 Flange ASME B16.5 RF Trim SS347 Swing-type Bolted cover	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71K-00071	Spectacle blank ASTM A182 Grade F321 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	0.75				P71K-00072	Spectacle blank ASTM A182 Grade F321 Class 150 Standard-drawing Flange ASME B16.5 RF	

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SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P71K-00073	Spectacle blank ASTM A182 Grade F321 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71K-00074	Spectacle blank ASTM A182 Grade F321 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	2				P71K-00077	Spectacle blank ASTM A182 Grade F321 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	3				P71K-00078	Spectacle blank ASTM A182 Grade F321 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	4				P71K-00079	Spectacle blank ASTM A182 Grade F321 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	6				P71K-0007A	Spectacle blank ASTM A182 Grade F321 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	8				P71K-0007B	Spectacle blank ASTM A182 Grade F321 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	10				P71K-00075	Spectacle blank ASTM A182 Grade F321 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	12				P71K-00076	Spectacle blank ASTM A182 Grade F321 Class 150 Standard-drawing Flange ASME B16.5 RF	

PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72K-0004F	Paddle blank ASTM A182 Grade F321 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	16				P72K-0004G	Paddle blank ASTM A182 Grade F321 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	18				P72K-0004H	Paddle blank ASTM A182 Grade F321 Class 150 Standard-drawing Flange ASME B16.5 RF	

PADDLE SPACER (PS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72K-0004J	Paddle spacer ASTM A182 Grade F321 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	16				P72K-0004K	Paddle spacer ASTM A182 Grade F321 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	18				P72K-0004L	Paddle spacer ASTM A182 Grade F321 Class 150 Standard-drawing Flange ASME B16.5 RF	

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BOLT TABLE (B_A0MP01 , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	60	P80S-003V2		
0.75	4	0.500	65	P80S-003V3		
1	4	0.500	70	P80S-003V4		
1.5	4	0.500	75	P80S-003V5		
2	4	0.625	85	P80S-003XE		
3	4	0.625	95	P80S-003XG		
4	8	0.625	95	P80S-003XG		
6	8	0.750	105	P80S-003XJ		
8	8	0.750	110	P80S-003XK		
10	12	0.875	120	P80S-00419		
12	12	0.875	120	P80S-00419		
14	12	1.000	135	P80S-0043E		
16	16	1.000	140	P80S-0043F		
18	16	1.125	150	P80S-0046K		

BOLT TABLE (B_A0MP01_773 , STUD ASME RF, OPTION CODE 773)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-003V4		
0.75	4	0.625	75	P80S-003XC		
1	4	0.625	80	P80S-003XD		
1.5	4	0.750	95	P80S-00414		
2	8	0.625	90	P80S-003XF		
3	8	0.750	110	P80S-003XK		
4	8	0.750	115	P80S-003XL		
6	12	0.750	125	P80S-003XN		
8	12	0.875	140	P80S-0041D		
10	16	1.000	160	P80S-0043K		
12	16	1.125	175	P80S-0046S		
14	20	1.125	180	P80S-0046T		
16	20	1.250	190	P80S-004AK		
18	24	1.250	200	P80S-004AM		

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BRANCH TABLE (T_A0MP01)

RUN PIPE SIZE (in) \ BRANCH SIZE (in)	0.5	0.75	1	1.5	2	3	4	6	8	10	12	14	16	18
0.5	TS													
0.75		TS												
1		TR	TS											
1.5		TR	TR	TS										
2		L	TR	TR	TS									
3		L	L	TR	TR	TS								
4	L	L	L	L	TR	TR	TS							
6	L	L	L	L	L	TR	TR	TS						
8		L	L	L	L	L	TR	TR	TS					
10		L	L	L	L	L	TR	TR	TR	TS				
12		L	L	L	L	L	L	TR	TR	TR	TS			
14		L	L	L	L	L	L	TR	TR	TR	TR	TS		
16		L	L	L	L	L	L	TR	TR	TR	TR	TR	TS	
18		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TS

TR : REDUCING TEE
TS : STRAIGHT TEE
L : OUTLET

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Material	:	FBE Coated CS
Rating	:	ASME CLASS 150
Flange Face	:	RF
C.A.(mm)	:	0.00
Gasket	:	Sheet
Service	:	UTILITY - CONTINUALLY OIL CONTAMINATED WASTE WATER, NON OILY WASTE WATER, WASTE SLUDGE, SANITARY WASTE WATER
Design Code	:	ASME B31.3
Heat Treatment	:	

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
999	HOLD ITEMS. ORDER PLACEMENT SHALL NOT BE DONE BEFORE RELEASING HOLD.

DETAIL NOTES :

NO.	DESCRIPTION
999	HOLD ITEMS. ORDER PLACEMENT SHALL NOT BE DONE BEFORE RELEASING HOLD.

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
211	FF (B,F,G,V)
773	CLASS 300 (B,F,G)

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PIPING CLASS
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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2		XS		P01A-008L4	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE FBE lined	999
1	3		STD		P01A-008L5	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE FBE lined	999
1	4		STD		P01A-008L6	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE FBE lined	999
1	6		STD		P01A-008L7	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE FBE lined	999
1	8		SCH20		P01A-008L8	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE FBE lined	999
1	10		SCH20		P01A-008L0	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE FBE lined	999
1	12		SCH20		P01A-008L1	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE FBE lined	999
1	14		SCH20		P01A-008L2	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE FBE lined	999
1	16		SCH20		P01A-008L3	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE FBE lined	999
1	18		SCH20		P01A-008L9	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE FBE lined	999
1	20		STD		P01A-008LA	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE FBE lined	999
1	24		STD		P01A-008LB	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE FBE lined	999

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2		XS		P02A-004E1	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW FBE lined Long radius	999
1	3		STD		P02A-004E2	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW FBE lined Long radius	999
1	4		STD		P02A-004E3	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW FBE lined Long radius	999
1	6		STD		P02A-004E4	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW FBE lined Long radius	999
1	8		SCH20		P02A-004E5	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW FBE lined Long radius	999
1	10		SCH20		P02A-004DX	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW FBE lined Long radius	999
1	12		SCH20		P02A-004DY	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW FBE lined Long radius	999
1	14		SCH20		P02A-004DZ	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW FBE lined Long radius	999
1	16		SCH20		P02A-004E0	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW FBE lined Long radius	999
1	18		SCH20		P02A-004HD	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW FBE lined Long radius	999
1	20		STD		P02A-004HE	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW FBE lined Long radius	999
1	24		STD		P02A-004HF	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW FBE lined Long radius	999

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2		XS		P03A-004B7	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW FBE lined Long radius	999
1	3		STD		P03A-004B8	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW FBE lined Long radius	999
1	4		STD		P03A-004B9	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW FBE lined Long radius	999
1	6		STD		P03A-004BA	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW FBE lined Long radius	999
1	8		SCH20		P03A-004BB	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW FBE lined Long radius	999
1	10		SCH20		P03A-004B3	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW FBE lined Long radius	999
1	12		SCH20		P03A-004B4	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW FBE lined Long radius	999
1	14		SCH20		P03A-004B5	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW FBE lined Long radius	999
1	16		SCH20		P03A-004B6	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW FBE lined Long radius	999
1	18		SCH20		P03A-004EZ	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW FBE lined Long radius	999
1	20		STD		P03A-004F0	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW FBE lined Long radius	999
1	24		STD		P03A-004F1	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW FBE lined Long radius	999

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2		XS		P21A-004W7	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW FBE lined	999
1	3		STD		P21A-004W8	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW FBE lined	999
1	4		STD		P21A-004W9	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW FBE lined	999
1	6		STD		P21A-004WA	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW FBE lined	999
1	8		SCH20		P21A-004WB	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW FBE lined	999
1	10		SCH20		P21A-004W3	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW FBE lined	999
1	12		SCH20		P21A-004W4	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW FBE lined	999
1	14		SCH20		P21A-004W5	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW FBE lined	999
1	16		SCH20		P21A-004W6	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW FBE lined	999
1	18		SCH20		P21A-004WC	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW FBE lined	999
1	20		STD		P21A-004WD	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW FBE lined	999
1	24		STD		P21A-004WE	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW FBE lined	999

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REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	STD	XS	P24A-00N8T	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW FBE lined	999
1	4	2	STD	XS	P24A-00N8U	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW FBE lined	999
1	4	3	STD	STD	P24A-00N8V	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW FBE lined	999
1	6	3	STD	STD	P24A-00N8W	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW FBE lined	999
1	6	4	STD	STD	P24A-00N8X	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW FBE lined	999
1	8	4	SCH20	STD	P24A-00N8Y	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW FBE lined	999
1	8	6	SCH20	STD	P24A-00N8Z	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW FBE lined	999
1	10	4	SCH20	STD	P24A-00N90	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW FBE lined	999
1	10	6	SCH20	STD	P24A-00N91	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW FBE lined	999
1	10	8	SCH20	SCH20	P24A-00N92	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW FBE lined	999
1	12	6	SCH20	STD	P24A-00N94	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW FBE lined	999
1	12	8	SCH20	SCH20	P24A-00N95	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW FBE lined	999
1	12	10	SCH20	SCH20	P24A-00N93	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW FBE lined	999
1	14	6	SCH20	STD	P24A-00N98	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW FBE lined	999
1	14	8	SCH20	SCH20	P24A-00N99	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW FBE lined	999
1	14	10	SCH20	SCH20	P24A-00N96	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW FBE lined	999
1	14	12	SCH20	SCH20	P24A-00N97	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW FBE lined	999
1	16	6	SCH20	STD	P24A-00N9D	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW FBE lined	999
1	16	8	SCH20	SCH20	P24A-00N9E	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW FBE lined	999
1	16	10	SCH20	SCH20	P24A-00N9A	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW FBE lined	999
1	16	12	SCH20	SCH20	P24A-00N9B	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW FBE lined	999
1	16	14	SCH20	SCH20	P24A-00N9C	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW FBE lined	999
1	18	8	SCH20	SCH20	P24A-00N9K	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW FBE lined	999
1	18	10	SCH20	SCH20	P24A-00N9F	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW FBE lined	999
1	18	12	SCH20	SCH20	P24A-00N9G	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW FBE lined	999
1	18	14	SCH20	SCH20	P24A-00N9H	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW FBE lined	999
1	18	16	SCH20	SCH20	P24A-00N9J	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW FBE lined	999
1	20	8	STD	SCH20	P24A-00N9S	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW FBE lined	999
1	20	10	STD	SCH20	P24A-00N9L	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW FBE lined	999
1	20	12	STD	SCH20	P24A-00N9M	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW FBE lined	999
1	20	14	STD	SCH20	P24A-00N9N	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW FBE lined	999
1	20	16	STD	SCH20	P24A-00N9P	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW FBE lined	999
1	20	18	STD	SCH20	P24A-00N9R	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW FBE lined	999
1	24	10	STD	SCH20	P24A-00N9T	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW FBE lined	999
1	24	12	STD	SCH20	P24A-00N9U	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW FBE lined	999
1	24	14	STD	SCH20	P24A-00N9V	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW FBE lined	999
1	24	16	STD	SCH20	P24A-00N9W	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW FBE lined	999
1	24	18	STD	SCH20	P24A-00N9X	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW FBE lined	999
1	24	20	STD	STD	P24A-00N9Y	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW FBE lined	999

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	STD	XS	P27A-00GZF	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW FBE lined	999
1	4	2	STD	XS	P27A-00GZG	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW FBE lined	999
1	4	3	STD	STD	P27A-00GZH	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW FBE lined	999
1	6	3	STD	STD	P27A-00GZJ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW FBE lined	999
1	6	4	STD	STD	P27A-00GZK	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW FBE lined	999
1	8	4	SCH20	STD	P27A-00GZL	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW FBE lined	999
1	8	6	SCH20	STD	P27A-00GZM	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW FBE lined	999
1	10	4	SCH20	STD	P27A-00GZN	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW FBE lined	999
1	10	6	SCH20	STD	P27A-00GZP	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW FBE lined	999
1	10	8	SCH20	SCH20	P27A-00GZR	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW FBE lined	999
1	12	6	SCH20	STD	P27A-00GZT	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW FBE lined	999
1	12	8	SCH20	SCH20	P27A-00GZU	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW FBE lined	999
1	12	10	SCH20	SCH20	P27A-00GZS	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW FBE lined	999
1	14	6	SCH20	STD	P27A-00GZX	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW FBE lined	999
1	14	8	SCH20	SCH20	P27A-00GZY	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW FBE lined	999
1	14	10	SCH20	SCH20	P27A-00GZV	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW FBE lined	999
1	14	12	SCH20	SCH20	P27A-00GZW	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW FBE lined	999

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CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	16	8	SCH20	SCH20	P27A-00H02	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW FBE lined	999
1	16	10	SCH20	SCH20	P27A-00GZZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW FBE lined	999
1	16	12	SCH20	SCH20	P27A-00H00	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW FBE lined	999
1	16	14	SCH20	SCH20	P27A-00H01	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW FBE lined	999
1	18	10	SCH20	SCH20	P27A-00H03	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW FBE lined	999
1	18	12	SCH20	SCH20	P27A-00H04	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW FBE lined	999
1	18	14	SCH20	SCH20	P27A-00H05	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW FBE lined	999
1	18	16	SCH20	SCH20	P27A-00H06	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW FBE lined	999
1	20	12	STD	SCH20	P27A-00H07	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW FBE lined	999
1	20	14	STD	SCH20	P27A-00H08	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW FBE lined	999
1	20	16	STD	SCH20	P27A-00H09	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW FBE lined	999
1	20	18	STD	SCH20	P27A-00H0A	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW FBE lined	999
1	24	16	STD	SCH20	P27A-00H0B	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW FBE lined	999
1	24	18	STD	SCH20	P27A-00H0C	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW FBE lined	999
1	24	20	STD	STD	P27A-00H0D	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW FBE lined	999

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	STD	XS	P28A-00E6N	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW FBE lined	999
1	4	2	STD	XS	P28A-00E6P	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW FBE lined	999
1	4	3	STD	STD	P28A-00E6R	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW FBE lined	999
1	6	3	STD	STD	P28A-00E6S	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW FBE lined	999
1	6	4	STD	STD	P28A-00E6T	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW FBE lined	999
1	8	4	SCH20	STD	P28A-00E6U	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW FBE lined	999
1	8	6	SCH20	STD	P28A-00E6V	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW FBE lined	999
1	10	4	SCH20	STD	P28A-00E6W	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW FBE lined	999
1	10	6	SCH20	STD	P28A-00E6X	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW FBE lined	999
1	10	8	SCH20	SCH20	P28A-00E6Y	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW FBE lined	999
1	12	6	SCH20	STD	P28A-00E70	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW FBE lined	999
1	12	8	SCH20	SCH20	P28A-00E71	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW FBE lined	999
1	12	10	SCH20	SCH20	P28A-00E6Z	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW FBE lined	999
1	14	6	SCH20	STD	P28A-00E74	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW FBE lined	999
1	14	8	SCH20	SCH20	P28A-00E75	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW FBE lined	999
1	14	10	SCH20	SCH20	P28A-00E72	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW FBE lined	999
1	14	12	SCH20	SCH20	P28A-00E73	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW FBE lined	999
1	16	8	SCH20	SCH20	P28A-00E79	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW FBE lined	999
1	16	10	SCH20	SCH20	P28A-00E76	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW FBE lined	999
1	16	12	SCH20	SCH20	P28A-00E77	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW FBE lined	999
1	16	14	SCH20	SCH20	P28A-00E78	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW FBE lined	999
1	18	10	SCH20	SCH20	P28A-00E7A	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW FBE lined	999
1	18	12	SCH20	SCH20	P28A-00E7B	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW FBE lined	999
1	18	14	SCH20	SCH20	P28A-00E7C	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW FBE lined	999
1	18	16	SCH20	SCH20	P28A-00E7D	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW FBE lined	999
1	20	12	STD	SCH20	P28A-00E7E	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW FBE lined	999
1	20	14	STD	SCH20	P28A-00E7F	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW FBE lined	999
1	20	16	STD	SCH20	P28A-00E7G	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW FBE lined	999
1	20	18	STD	SCH20	P28A-00E7H	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW FBE lined	999
1	24	16	STD	SCH20	P28A-00E7J	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW FBE lined	999
1	24	18	STD	SCH20	P28A-00E7K	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW FBE lined	999
1	24	20	STD	STD	P28A-00E7L	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW FBE lined	999

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2		XS		P29A-003PR	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW FBE lined	999
1	3		STD		P29A-003PU	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW FBE lined	999
1	4		STD		P29A-003PV	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW FBE lined	999
1	6		STD		P29A-003PW	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW FBE lined	999
1	8		SCH20		P29A-003PX	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW FBE lined	999
1	10		SCH20		P29A-003PK	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW FBE lined	999

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CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	12		SCH20		P29A-003PL	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW FBE lined	999
1	14		SCH20		P29A-003PM	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW FBE lined	999
1	16		SCH20		P29A-003PN	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW FBE lined	999
1	18		SCH20		P29A-003PP	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW FBE lined	999
1	20		STD		P29A-003PS	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW FBE lined	999
1	24		STD		P29A-003PT	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW FBE lined	999

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	6	2	STD	XS	P31B-010MX	Outlet ASTM A105 MSS SP-97 BW FBE lined	999
1	8	2	SCH20	XS	P31B-010MY	Outlet ASTM A105 MSS SP-97 BW FBE lined	999
1	10	2	SCH20	XS	P31B-010N0	Outlet ASTM A105 MSS SP-97 BW FBE lined	999
1	12	2	SCH20	XS	P31B-010N2	Outlet ASTM A105 MSS SP-97 BW FBE lined	999
1	14	2	SCH20	XS	P31B-010N5	Outlet ASTM A105 MSS SP-97 BW FBE lined	999
1	16	2	SCH20	XS	P31B-010N8	Outlet ASTM A105 MSS SP-97 BW FBE lined	999
1	18	2	SCH20	XS	P31B-010NB	Outlet ASTM A105 MSS SP-97 BW FBE lined	999
1	20	2	STD	XS	P31B-010NF	Outlet ASTM A105 MSS SP-97 BW FBE lined	999
1	24	2	STD	XS	P31B-010NK	Outlet ASTM A105 MSS SP-97 BW FBE lined	999
1	8	3	SCH20	STD	P31B-010MZ	Outlet ASTM A105 MSS SP-97 BW FBE lined	999
1	10	3	SCH20	STD	P31B-010N1	Outlet ASTM A105 MSS SP-97 BW FBE lined	999
1	12	3	SCH20	STD	P31B-010N3	Outlet ASTM A105 MSS SP-97 BW FBE lined	999
1	14	3	SCH20	STD	P31B-010N6	Outlet ASTM A105 MSS SP-97 BW FBE lined	999
1	16	3	SCH20	STD	P31B-010N9	Outlet ASTM A105 MSS SP-97 BW FBE lined	999
1	18	3	SCH20	STD	P31B-010NC	Outlet ASTM A105 MSS SP-97 BW FBE lined	999
1	20	3	STD	STD	P31B-010NG	Outlet ASTM A105 MSS SP-97 BW FBE lined	999
1	24	3	STD	STD	P31B-010NL	Outlet ASTM A105 MSS SP-97 BW FBE lined	999
1	12	4	SCH20	STD	P31B-010N4	Outlet ASTM A105 MSS SP-97 BW FBE lined	999
1	14	4	SCH20	STD	P31B-010N7	Outlet ASTM A105 MSS SP-97 BW FBE lined	999
1	16	4	SCH20	STD	P31B-010NA	Outlet ASTM A105 MSS SP-97 BW FBE lined	999
1	18	4	SCH20	STD	P31B-010ND	Outlet ASTM A105 MSS SP-97 BW FBE lined	999
1	20	4	STD	STD	P31B-010NH	Outlet ASTM A105 MSS SP-97 BW FBE lined	999
1	24	4	STD	STD	P31B-010NM	Outlet ASTM A105 MSS SP-97 BW FBE lined	999
1	18	6	SCH20	STD	P31B-010NE	Outlet ASTM A105 MSS SP-97 BW FBE lined	999
1	20	6	STD	STD	P31B-010NJ	Outlet ASTM A105 MSS SP-97 BW FBE lined	999
1	24	6	STD	STD	P31B-010NN	Outlet ASTM A105 MSS SP-97 BW FBE lined	999

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2		XS		P61B-00BMC	Flange WN ASTM A105 Class 150 ASME B16.5 RF FBE lined	999
1	3		STD		P61B-00BMF	Flange WN ASTM A105 Class 150 ASME B16.5 RF FBE lined	999
1	4		STD		P61B-00BMG	Flange WN ASTM A105 Class 150 ASME B16.5 RF FBE lined	999
1	6		STD		P61B-00BMH	Flange WN ASTM A105 Class 150 ASME B16.5 RF FBE lined	999
1	8		SCH20		P61B-00BMJ	Flange WN ASTM A105 Class 150 ASME B16.5 RF FBE lined	999
1	10		SCH20		P61B-00BM7	Flange WN ASTM A105 Class 150 ASME B16.5 RF FBE lined	999
1	12		SCH20		P61B-00BM8	Flange WN ASTM A105 Class 150 ASME B16.5 RF FBE lined	999
1	14		SCH20		P61B-00BM9	Flange WN ASTM A105 Class 150 ASME B16.5 RF FBE lined	999
1	16		SCH20		P61B-00BMA	Flange WN ASTM A105 Class 150 ASME B16.5 RF FBE lined	999
1	18		SCH20		P61B-00BMB	Flange WN ASTM A105 Class 150 ASME B16.5 RF FBE lined	999
1	20		STD		P61B-00BMD	Flange WN ASTM A105 Class 150 ASME B16.5 RF FBE lined	999
1	24		STD		P61B-00BME	Flange WN ASTM A105 Class 150 ASME B16.5 RF FBE lined	999
211	2		XS		P61B-00BMR	Flange WN ASTM A105 Class 150 ASME B16.5 FF FBE lined	999
211	3		STD		P61B-00BMU	Flange WN ASTM A105 Class 150 ASME B16.5 FF FBE lined	999
211	4		STD		P61B-00BMV	Flange WN ASTM A105 Class 150 ASME B16.5 FF FBE lined	999
211	6		STD		P61B-00BMW	Flange WN ASTM A105 Class 150 ASME B16.5 FF FBE lined	999
211	8		SCH20		P61B-00BMX	Flange WN ASTM A105 Class 150 ASME B16.5 FF FBE lined	999
211	10		SCH20		P61B-00BMK	Flange WN ASTM A105 Class 150 ASME B16.5 FF FBE lined	999
211	12		SCH20		P61B-00BML	Flange WN ASTM A105 Class 150 ASME B16.5 FF FBE lined	999
211	14		SCH20		P61B-00BMM	Flange WN ASTM A105 Class 150 ASME B16.5 FF FBE lined	999
211	16		SCH20		P61B-00BMN	Flange WN ASTM A105 Class 150 ASME B16.5 FF FBE lined	999

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
211	18		SCH20		P61B-00BMP	Flange WN ASTM A105 Class 150 ASME B16.5 FF FBE lined	999
211	20		STD		P61B-00BMS	Flange WN ASTM A105 Class 150 ASME B16.5 FF FBE lined	999
211	24		STD		P61B-00BMT	Flange WN ASTM A105 Class 150 ASME B16.5 FF FBE lined	999
773	2		XS		P61B-00BN3	Flange WN ASTM A105 Class 300 ASME B16.5 RF FBE lined	999
773	3		STD		P61B-00BN6	Flange WN ASTM A105 Class 300 ASME B16.5 RF FBE lined	999
773	4		STD		P61B-00BN7	Flange WN ASTM A105 Class 300 ASME B16.5 RF FBE lined	999
773	6		STD		P61B-00BN8	Flange WN ASTM A105 Class 300 ASME B16.5 RF FBE lined	999
773	8		SCH20		P61B-00BN9	Flange WN ASTM A105 Class 300 ASME B16.5 RF FBE lined	999
773	10		SCH20		P61B-00BMY	Flange WN ASTM A105 Class 300 ASME B16.5 RF FBE lined	999
773	12		SCH20		P61B-00BMZ	Flange WN ASTM A105 Class 300 ASME B16.5 RF FBE lined	999
773	14		SCH20		P61B-00BN0	Flange WN ASTM A105 Class 300 ASME B16.5 RF FBE lined	999
773	16		SCH20		P61B-00BN1	Flange WN ASTM A105 Class 300 ASME B16.5 RF FBE lined	999
773	18		SCH20		P61B-00BN2	Flange WN ASTM A105 Class 300 ASME B16.5 RF FBE lined	999
773	20		STD		P61B-00BN4	Flange WN ASTM A105 Class 300 ASME B16.5 RF FBE lined	999
773	24		STD		P61B-00BN5	Flange WN ASTM A105 Class 300 ASME B16.5 RF FBE lined	999

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2				P67B-002VA	Blind flange ASTM A105 Class 150 ASME B16.5 RF FBE lined	999
1	3				P67B-002VB	Blind flange ASTM A105 Class 150 ASME B16.5 RF FBE lined	999
1	4				P67B-002VC	Blind flange ASTM A105 Class 150 ASME B16.5 RF FBE lined	999
1	6				P67B-002VD	Blind flange ASTM A105 Class 150 ASME B16.5 RF FBE lined	999
1	8				P67B-002VE	Blind flange ASTM A105 Class 150 ASME B16.5 RF FBE lined	999
1	10				P67B-002V7	Blind flange ASTM A105 Class 150 ASME B16.5 RF FBE lined	999
1	12				P67B-002V8	Blind flange ASTM A105 Class 150 ASME B16.5 RF FBE lined	999
1	14				P67B-002V9	Blind flange ASTM A105 Class 150 ASME B16.5 RF FBE lined	999

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2				P74U-000VB	Sheet gasket Synthetic fiber Class 150 ASME B16.21 Flange ASME B16.5 RF 1.5mm-T	999
1	3				P74U-000VC	Sheet gasket Synthetic fiber Class 150 ASME B16.21 Flange ASME B16.5 RF 1.5mm-T	999
1	4				P74U-000VD	Sheet gasket Synthetic fiber Class 150 ASME B16.21 Flange ASME B16.5 RF 1.5mm-T	999
1	6				P74U-000VE	Sheet gasket Synthetic fiber Class 150 ASME B16.21 Flange ASME B16.5 RF 1.5mm-T	999
1	8				P74U-000VF	Sheet gasket Synthetic fiber Class 150 ASME B16.21 Flange ASME B16.5 RF 1.5mm-T	999
1	10				P74U-000VA	Sheet gasket Synthetic fiber Class 150 ASME B16.21 Flange ASME B16.5 RF 1.5mm-T	999
1	12				P74U-000W1	Sheet gasket Synthetic fiber Class 150 ASME B16.21 Flange ASME B16.5 RF 1.5mm-T	999
1	14				P74U-001DJ	Sheet gasket Synthetic fiber Class 150 ASME B16.21 Flange ASME B16.5 RF 1.5mm-T	999
1	16				P74U-001DK	Sheet gasket Synthetic fiber Class 150 ASME B16.21 Flange ASME B16.5 RF 1.5mm-T	999
1	18				P74U-001DL	Sheet gasket Synthetic fiber Class 150 ASME B16.21 Flange ASME B16.5 RF 1.5mm-T	999
1	20				P74U-001DM	Sheet gasket Synthetic fiber Class 150 ASME B16.21 Flange ASME B16.5 RF 1.5mm-T	999
1	24				P74U-001DN	Sheet gasket Synthetic fiber Class 150 ASME B16.21 Flange ASME B16.5 RF 1.5mm-T	999
211	2				P74U-000W8	Sheet gasket Synthetic fiber Class 150 ASME B16.21 Flange ASME B16.5 FF 1.5mm-T	999
211	3				P74U-000WB	Sheet gasket Synthetic fiber Class 150 ASME B16.21 Flange ASME B16.5 FF 1.5mm-T	999
211	4				P74U-000WC	Sheet gasket Synthetic fiber Class 150 ASME B16.21 Flange ASME B16.5 FF 1.5mm-T	999
211	6				P74U-000WD	Sheet gasket Synthetic fiber Class 150 ASME B16.21 Flange ASME B16.5 FF 1.5mm-T	999
211	8				P74U-000WE	Sheet gasket Synthetic fiber Class 150 ASME B16.21 Flange ASME B16.5 FF 1.5mm-T	999
211	10				P74U-000W3	Sheet gasket Synthetic fiber Class 150 ASME B16.21 Flange ASME B16.5 FF 1.5mm-T	999
211	12				P74U-000W4	Sheet gasket Synthetic fiber Class 150 ASME B16.21 Flange ASME B16.5 FF 1.5mm-T	999
211	14				P74U-000W5	Sheet gasket Synthetic fiber Class 150 ASME B16.21 Flange ASME B16.5 FF 1.5mm-T	999
211	16				P74U-000W6	Sheet gasket Synthetic fiber Class 150 ASME B16.21 Flange ASME B16.5 FF 1.5mm-T	999
211	18				P74U-000W7	Sheet gasket Synthetic fiber Class 150 ASME B16.21 Flange ASME B16.5 FF 1.5mm-T	999
211	20				P74U-000W9	Sheet gasket Synthetic fiber Class 150 ASME B16.21 Flange ASME B16.5 FF 1.5mm-T	999
211	24				P74U-000WA	Sheet gasket Synthetic fiber Class 150 ASME B16.21 Flange ASME B16.5 FF 1.5mm-T	999
773	2				P74U-000VM	Sheet gasket Synthetic fiber Class 300 ASME B16.21 Flange ASME B16.5 RF 1.5mm-T	999
773	3				P74U-000VN	Sheet gasket Synthetic fiber Class 300 ASME B16.21 Flange ASME B16.5 RF 1.5mm-T	999
773	4				P74U-000VP	Sheet gasket Synthetic fiber Class 300 ASME B16.21 Flange ASME B16.5 RF 1.5mm-T	999
773	6				P74U-000VR	Sheet gasket Synthetic fiber Class 300 ASME B16.21 Flange ASME B16.5 RF 1.5mm-T	999
773	8				P74U-000VS	Sheet gasket Synthetic fiber Class 300 ASME B16.21 Flange ASME B16.5 RF 1.5mm-T	999
773	10				P74U-000VL	Sheet gasket Synthetic fiber Class 300 ASME B16.21 Flange ASME B16.5 RF 1.5mm-T	999

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GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
773	12				P74U-000W2	Sheet gasket Synthetic fiber Class 300 ASME B16.21 Flange ASME B16.5 RF 1.5mm-T	999
773	14				P74U-001DD	Sheet gasket Synthetic fiber Class 300 ASME B16.21 Flange ASME B16.5 RF 1.5mm-T	999
773	16				P74U-001DE	Sheet gasket Synthetic fiber Class 300 ASME B16.21 Flange ASME B16.5 RF 1.5mm-T	999
773	18				P74U-001DF	Sheet gasket Synthetic fiber Class 300 ASME B16.21 Flange ASME B16.5 RF 1.5mm-T	999
773	20				P74U-001DG	Sheet gasket Synthetic fiber Class 300 ASME B16.21 Flange ASME B16.5 RF 1.5mm-T	999
773	24				P74U-001DH	Sheet gasket Synthetic fiber Class 300 ASME B16.21 Flange ASME B16.5 RF 1.5mm-T	999

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2-16				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	999
1	18-24				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	999
211	2-16				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	999
211	18-24				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	999
773	2-10				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	999
773	12-24				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	999

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2				P81D-0003D	Gate valve ASTM A395 Class 150 Manufacturer-standard Flange ASME B16.5 RF FBE lined Trim Aluminum-bronze BB-BG-OS&Y Handwheel operated	999
1	3				P81D-0003E	Gate valve ASTM A395 Class 150 Manufacturer-standard Flange ASME B16.5 RF FBE lined Trim Aluminum-bronze BB-BG-OS&Y Handwheel operated	999
1	4				P81D-0003F	Gate valve ASTM A395 Class 150 Manufacturer-standard Flange ASME B16.5 RF FBE lined Trim Aluminum-bronze BB-BG-OS&Y Handwheel operated	999
1	6				P81D-0003G	Gate valve ASTM A395 Class 150 Manufacturer-standard Flange ASME B16.5 RF FBE lined Trim Aluminum-bronze BB-BG-OS&Y Handwheel operated	999
1	8				P81D-0003H	Gate valve ASTM A395 Class 150 Manufacturer-standard Flange ASME B16.5 RF FBE lined Trim Aluminum-bronze BB-BG-OS&Y Handwheel operated	999
1	10				P81D-0003B	Gate valve ASTM A395 Class 150 Manufacturer-standard Flange ASME B16.5 RF FBE lined Trim Aluminum-bronze BB-BG-OS&Y Handwheel operated	999
1	12				P81D-0003C	Gate valve ASTM A395 Class 150 Manufacturer-standard Flange ASME B16.5 RF FBE lined Trim Aluminum-bronze BB-BG-OS&Y Handwheel operated	999
1	14				P81D-0003J	Gate valve ASTM A395 Class 150 Manufacturer-standard Flange ASME B16.5 RF FBE lined Trim Aluminum-bronze BB-BG-OS&Y Gear operated	999
211	3				P81D-00020	Gate valve ASTM A395 Class 150 Manufacturer-standard Flange ASME B16.5 FF FBE lined Trim Aluminum-bronze BB-BG-OS&Y Handwheel operated	999
211	6				P81D-00022	Gate valve ASTM A395 Class 150 Manufacturer-standard Flange ASME B16.5 FF FBE lined Trim Aluminum-bronze BB-BG-OS&Y Handwheel operated	999

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2				P82D-0000M	Globe valve ASTM A395 Class 150 Manufacturer-standard Flange ASME B16.5 RF FBE lined Trim Aluminum-bronze BB-BG-OS&Y Handwheel operated	999
1	3				P82D-0000N	Globe valve ASTM A395 Class 150 Manufacturer-standard Flange ASME B16.5 RF FBE lined Trim Aluminum-bronze BB-BG-OS&Y Handwheel operated	999
1	4				P82D-0000P	Globe valve ASTM A395 Class 150 Manufacturer-standard Flange ASME B16.5 RF FBE lined Trim Aluminum-bronze BB-BG-OS&Y Handwheel operated	999
1	6				P82D-0000R	Globe valve ASTM A395 Class 150 Manufacturer-standard Flange ASME B16.5 RF FBE lined Trim Aluminum-bronze BB-BG-OS&Y Handwheel operated	999
1	8				P82D-0000S	Globe valve ASTM A395 Class 150 Manufacturer-standard Flange ASME B16.5 RF FBE lined Trim Aluminum-bronze BB-BG-OS&Y Handwheel operated	999

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2				P83D-0001N	Check valve ASTM A395 Class 150 Manufacturer-standard Flange ASME B16.5 RF FBE lined Trim Aluminum-bronze Swing-type Bolted cover	999
1	3				P83D-0001P	Check valve ASTM A395 Class 150 Manufacturer-standard Flange ASME B16.5 RF FBE lined Trim Aluminum-bronze Swing-type Bolted cover	999
1	4				P83D-0001R	Check valve ASTM A395 Class 150 Manufacturer-standard Flange ASME B16.5 RF FBE lined Trim Aluminum-bronze Swing-type Bolted cover	999
1	6				P83D-0001S	Check valve ASTM A395 Class 150 Manufacturer-standard Flange ASME B16.5 RF FBE lined Trim Aluminum-bronze Swing-type Bolted cover	999
1	8				P83D-0001T	Check valve ASTM A395 Class 150 Manufacturer-standard Flange ASME B16.5 RF FBE lined Trim Aluminum-bronze Swing-type Bolted cover	999
1	10				P83D-0001K	Check valve ASTM A395 Class 150 Manufacturer-standard Flange ASME B16.5 RF FBE lined Trim Aluminum-bronze Swing-type Bolted cover	999
1	12				P83D-0001L	Check valve ASTM A395 Class 150 Manufacturer-standard Flange ASME B16.5 RF FBE lined Trim Aluminum-bronze Swing-type Bolted cover	999
1	14				P83D-0001M	Check valve ASTM A395 Class 150 Manufacturer-standard Flange ASME B16.5 RF FBE lined Trim Aluminum-bronze Swing-type Bolted cover	999

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SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2				P71B-000G3	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF FBE lined	999
1	3				P71B-000G4	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF FBE lined	999
1	4				P71B-000G5	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF FBE lined	999
1	6				P71B-000G6	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF FBE lined	999
1	8				P71B-000G7	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF FBE lined	999
1	10				P71B-000G1	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF FBE lined	999
1	12				P71B-000G2	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF FBE lined	999

PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000R1	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF FBE lined	999
1	16				P72B-000R2	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF FBE lined	999
1	18				P72B-000R3	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF FBE lined	999
1	20				P72B-000R4	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF FBE lined	999
1	24				P72B-000R5	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF FBE lined	999

PADDLE SPACER (PS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000R6	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF FBE lined	999
1	16				P72B-000R7	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF FBE lined	999
1	18				P72B-000R8	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF FBE lined	999
1	20				P72B-000R9	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF FBE lined	999
1	24				P72B-000RA	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF FBE lined	999

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BOLT TABLE (B_A0QP , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
2	4	0.625	85	P80S-003XE		
3	4	0.625	95	P80S-003XG		
4	8	0.625	95	P80S-003XG		
6	8	0.750	105	P80S-003XJ		
8	8	0.750	110	P80S-003XK		
10	12	0.875	120	P80S-00419		
12	12	0.875	120	P80S-00419		
14	12	1.000	135	P80S-0043E		
16	16	1.000	140	P80S-0043F		
18	16	1.125	150	P80S-0046K		
20	20	1.125	160	P80S-0046M		
24	20	1.250	175	P80S-004AG		

BOLT TABLE (B_A0QP_211 , MACHINE ASME FF, OPTION CODE 211)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
2	4	0.625	80	P80S-003XD		
3	4	0.625	90	P80S-003XF		
4	8	0.625	90	P80S-003XF		
6	8	0.750	100	P80S-003XH		
8	8	0.750	105	P80S-003XJ		
10	12	0.875	115	P80S-00418		
12	12	0.875	120	P80S-00419		
14	12	1.000	130	P80S-0043D		
16	16	1.000	135	P80S-0043E		
18	16	1.125	145	P80S-0046J		
20	20	1.125	155	P80S-0046L		
24	20	1.250	175	P80S-004AG		

BOLT TABLE (B_A0QP_773 , STUD ASME RF, OPTION CODE 773)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
2	8	0.625	90	P80S-003XF		
3	8	0.750	110	P80S-003XK		
4	8	0.750	115	P80S-003XL		
6	12	0.750	125	P80S-003XN		
8	12	0.875	140	P80S-0041D		
10	16	1.000	160	P80S-0043K		
12	16	1.125	175	P80S-0046S		
14	20	1.125	180	P80S-0046T		
16	20	1.250	190	P80S-004AK		
18	24	1.250	200	P80S-004AM		
20	24	1.250	210	P80S-004AP		
24	24	1.500	235	P80S-003F8		

BOLT TABLE (B_A0QP_781 , STUD ASME RF, OPTION CODE 781)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
2	8	0.625	110			
3	8	0.750	130			
4	8	0.875	150			
6	12	1.000	175			
8	12	1.125	195			
10	16	1.250	250			
12	20	1.250	255			
14	20	1.375	270			
16	20	1.500	295			
18	20	1.625	320			
20	24	1.625	335			
24	24	1.875	380			

BOLT TABLE (B_A0QP_789 , STUD ASME RJ, OPTION CODE 789)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
2	8	0.875	150		R24	
3	8	0.875	150		R31	
4	8	1.125	175		R37	
6	12	1.125	200		R45	

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PIPING CLASS
A0QP **REV NO. 2**

BOLT TABLE (B_A0QP_789 , STUD ASME RJ, OPTION CODE 789)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
8	12	1.375	260		R49	
10	16	1.375	275		R53	
12	20	1.375	295		R57	
14	20	1.500	325		R62	
16	20	1.625	340		R66	
18	20	1.875	390		R70	
20	20	2.000	415		R74	
24	20	2.500	525		R78	

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PIPING CLASS

A0QP REV NO. 2

BRANCH TABLE (T_A0QP)

RUN PIPE SIZE (in) \ BRANCH SIZE (in)	2	3	4	6	8	10	12	14	16	18	20	24
2	TS											
3	TR	TS										
4	TR	TR	TS									
6	L	TR	TR	TS								
8	L	L	TR	TR	TS							
10	L	L	TR	TR	TR	TS						
12	L	L	L	TR	TR	TR	TS					
14	L	L	L	TR	TR	TR	TR	TS				
16	L	L	L	TR	TR	TR	TR	TR	TS			
18	L	L	L	L	TR	TR	TR	TR	TR	TS		
20	L	L	L	L	TR	TR	TR	TR	TR	TR	TS	
24	L	L	L	L	9PD	TR	TR	TR	TR	TR	TR	TS

9PD : REINFORCING PAD 90 DEG
TR : REDUCING TEE
TS : STRAIGHT TEE
L : OUTLET

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PIPING CLASS

A0RA REV NO. 2

Material : Killed CS (Galv.)
Rating : ASME CLASS 150
Flange Face : RF
C.A.(mm) : 0.00
Gasket : Spiral Wound
Service : UTILITY - ABOVEGROUND FIRE WATER (DRY) SERVICE.
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
541	NPT(F) (4L,9L,CA,CPR,CPS,F,L)
714	SW - NPT(F) (CPS)
773	CLASS 300 (B,F,G)

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PIPING CLASS
A0RA REV NO. 2

PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P01A-008MD	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE Galvanized Fluid-3	
1	0.75		XS		P01A-008ME	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE Galvanized Fluid-3	
1	1		XS		P01A-008MF	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE Galvanized Fluid-3	
1	1.5		XS		P01A-008MG	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE Galvanized Fluid-3	
1	2		XS		P01A-004EG	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Galvanized	
1	3		STD		P01A-00110	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Galvanized	
1	4		STD		P01A-00112	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Galvanized	
1	6		STD		P01A-00114	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Galvanized	
1	8		SCH20		P01A-007K7	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Galvanized	
1	10		SCH20		P01A-003WC	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Galvanized	
1	12		SCH20		P01A-003WD	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Galvanized	
1	14		SCH20		P01A-003WE	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Galvanized	
1	16		SCH20		P01A-003WF	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Galvanized	
1	18		SCH20		P01A-007T3	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE Galvanized	
1	20		STD		P01A-007T4	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE Galvanized	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P02B-00080	90 degree elbow ASTM A105 Class 3000 ASME B16.11 SW Galvanized Fluid-3	
1	0.75				P02B-00081	90 degree elbow ASTM A105 Class 3000 ASME B16.11 SW Galvanized Fluid-3	
1	1				P02B-00082	90 degree elbow ASTM A105 Class 3000 ASME B16.11 SW Galvanized Fluid-3	
1	1.5				P02B-00083	90 degree elbow ASTM A105 Class 3000 ASME B16.11 SW Galvanized Fluid-3	
1	2		XS		P02A-002RZ	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Galvanized Long radius	
1	3		STD		P02A-000DL	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Galvanized Long radius	
1	4		STD		P02A-000C5	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Galvanized Long radius	
1	6		STD		P02A-000D2	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Galvanized Long radius	
1	8		SCH20		P02A-000TT	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Galvanized Long radius	
1	10		SCH20		P02A-000TU	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Galvanized Long radius	
1	12		SCH20		P02A-000TM	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Galvanized Long radius	
1	14		SCH20		P02A-002CD	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Galvanized Long radius	
1	16		SCH20		P02A-002CE	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Galvanized Long radius	
1	18		SCH20		P02A-002CF	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Galvanized Long radius	
1	20		STD		P02A-000D1	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Galvanized Long radius	
541	0.5				P02B-0001H	90 degree elbow ASTM A105 Class 3000 ASME B16.11 NPT Galvanized	
541	0.75				P02B-0001D	90 degree elbow ASTM A105 Class 3000 ASME B16.11 NPT Galvanized	
541	1				P02B-0001E	90 degree elbow ASTM A105 Class 3000 ASME B16.11 NPT Galvanized	
541	1.5				P02B-0001F	90 degree elbow ASTM A105 Class 3000 ASME B16.11 NPT Galvanized	
541	2				P02B-0001G	90 degree elbow ASTM A105 Class 3000 ASME B16.11 NPT Galvanized	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P03B-0007L	45 degree elbow ASTM A105 Class 3000 ASME B16.11 SW Galvanized Fluid-3	
1	0.75				P03B-0007M	45 degree elbow ASTM A105 Class 3000 ASME B16.11 SW Galvanized Fluid-3	
1	1				P03B-0007N	45 degree elbow ASTM A105 Class 3000 ASME B16.11 SW Galvanized Fluid-3	
1	1.5				P03B-0007P	45 degree elbow ASTM A105 Class 3000 ASME B16.11 SW Galvanized Fluid-3	
1	2		XS		P03A-002N9	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Galvanized Long radius	
1	3		STD		P03A-000CX	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Galvanized Long radius	
1	4		STD		P03A-000CZ	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Galvanized Long radius	
1	6		STD		P03A-000D1	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Galvanized Long radius	
1	8		SCH20		P03A-000R8	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Galvanized Long radius	
1	10		SCH20		P03A-000R2	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Galvanized Long radius	
1	12		SCH20		P03A-000R3	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Galvanized Long radius	
1	14		SCH20		P03A-0029U	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Galvanized Long radius	
1	16		SCH20		P03A-0029V	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Galvanized Long radius	
1	18		SCH20		P03A-0029W	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Galvanized Long radius	
1	20		STD		P03A-002NA	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Galvanized Long radius	
541	0.5				P03B-00012	45 degree elbow ASTM A105 Class 3000 ASME B16.11 NPT Galvanized	
541	0.75				P03B-00013	45 degree elbow ASTM A105 Class 3000 ASME B16.11 NPT Galvanized	
541	1				P03B-00014	45 degree elbow ASTM A105 Class 3000 ASME B16.11 NPT Galvanized	

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PIPING CLASS
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45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
541	1.5				P03B-00015	45 degree elbow ASTM A105 Class 3000 ASME B16.11 NPT Galvanized	
541	2				P03B-00016	45 degree elbow ASTM A105 Class 3000 ASME B16.11 NPT Galvanized	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P21B-0007L	Straight tee ASTM A105 Class 3000 ASME B16.11 SW Galvanized Fluid-3	
1	0.75				P21B-0007M	Straight tee ASTM A105 Class 3000 ASME B16.11 SW Galvanized Fluid-3	
1	1				P21B-0007N	Straight tee ASTM A105 Class 3000 ASME B16.11 SW Galvanized Fluid-3	
1	1.5				P21B-0007P	Straight tee ASTM A105 Class 3000 ASME B16.11 SW Galvanized Fluid-3	
1	2		XS		P21A-003NN	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Galvanized	
1	3		STD		P21A-001ZS	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Galvanized	
1	4		STD		P21A-001ZT	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Galvanized	
1	6		STD		P21A-001ZU	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Galvanized	
1	8		SCH20		P21A-002AC	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Galvanized	
1	10		SCH20		P21A-002AN	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Galvanized	
1	12		SCH20		P21A-002AM	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Galvanized	
1	14		SCH20		P21A-003E4	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Galvanized	
1	16		SCH20		P21A-003E5	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Galvanized	
1	18		SCH20		P21A-004N6	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Galvanized	
1	20		STD		P21A-004N7	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Galvanized	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75			P24B-000CM	Reducing tee ASTM A105 Class 3000 ASME B16.11 SW Galvanized Fluid-3	
1	1.5	0.75			P24B-000CN	Reducing tee ASTM A105 Class 3000 ASME B16.11 SW Galvanized Fluid-3	
1	1.5	1			P24B-000CP	Reducing tee ASTM A105 Class 3000 ASME B16.11 SW Galvanized Fluid-3	
1	2	1	XS	XS	P24A-00M1C	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Galvanized	
1	2	1.5	XS	XS	P24A-00M1D	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Galvanized	
1	3	1.5	STD	XS	P24A-002AA	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Galvanized	
1	3	2	STD	XS	P24A-002AB	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Galvanized	
1	4	2	STD	XS	P24A-001ZS	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Galvanized	
1	4	3	STD	STD	P24A-0020H	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Galvanized	
1	6	3	STD	STD	P24A-001ZT	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Galvanized	
1	6	4	STD	STD	P24A-0020E	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Galvanized	
1	8	4	SCH20	STD	P24A-00M1E	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Galvanized	
1	8	6	SCH20	STD	P24A-00M1F	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Galvanized	
1	10	4	SCH20	STD	P24A-00HMF	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Galvanized	
1	10	6	SCH20	STD	P24A-00HL9	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Galvanized	
1	10	8	SCH20	SCH20	P24A-0047J	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Galvanized	
1	12	6	SCH20	STD	P24A-00M1G	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Galvanized	
1	12	8	SCH20	SCH20	P24A-0047G	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Galvanized	
1	12	10	SCH20	SCH20	P24A-0047K	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Galvanized	
1	14	6	SCH20	STD	P24A-00M1H	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Galvanized	
1	14	8	SCH20	SCH20	P24A-00M1J	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Galvanized	
1	14	10	SCH20	SCH20	P24A-00GA0	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Galvanized	
1	14	12	SCH20	SCH20	P24A-00GA1	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Galvanized	
1	16	6	SCH20	STD	P24A-00M1K	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Galvanized	
1	16	8	SCH20	SCH20	P24A-00M1L	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Galvanized	
1	16	10	SCH20	SCH20	P24A-00GA3	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Galvanized	
1	16	12	SCH20	SCH20	P24A-00GA4	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Galvanized	
1	16	14	SCH20	SCH20	P24A-00GA5	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Galvanized	
1	18	8	SCH20	SCH20	P24A-00M1S	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Galvanized	
1	18	10	SCH20	SCH20	P24A-00M1M	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Galvanized	
1	18	12	SCH20	SCH20	P24A-00M1N	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Galvanized	
1	18	14	SCH20	SCH20	P24A-00M1P	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Galvanized	
1	18	16	SCH20	SCH20	P24A-00M1R	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Galvanized	
1	20	8	STD	SCH20	P24A-00M1Y	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Galvanized	
1	20	10	STD	SCH20	P24A-00M1T	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Galvanized	
1	20	12	STD	SCH20	P24A-00M1U	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Galvanized	

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PIPING CLASS
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REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	20	14	STD	SCH20	P24A-00M1V	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Galvanized	
1	20	16	STD	SCH20	P24A-00M1W	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Galvanized	
1	20	18	STD	SCH20	P24A-00M1X	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Galvanized	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	STD	XS	P27A-001A1	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Galvanized	
1	4	2	STD	XS	P27A-001A0	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Galvanized	
1	4	3	STD	STD	P27A-001MD	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Galvanized	
1	6	3	STD	STD	P27A-0019Z	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Galvanized	
1	6	4	STD	STD	P27A-001A5	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Galvanized	
1	8	4	SCH20	STD	P27A-00FJ7	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Galvanized	
1	8	6	SCH20	STD	P27A-00FJ8	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Galvanized	
1	10	4	SCH20	STD	P27A-00C81	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Galvanized	
1	10	6	SCH20	STD	P27A-00C82	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Galvanized	
1	10	8	SCH20	SCH20	P27A-002N7	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Galvanized	
1	12	6	SCH20	STD	P27A-00FJ9	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Galvanized	
1	12	8	SCH20	SCH20	P27A-002N5	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Galvanized	
1	12	10	SCH20	SCH20	P27A-002N8	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Galvanized	
1	14	6	SCH20	STD	P27A-00C87	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Galvanized	
1	14	8	SCH20	SCH20	P27A-00FJA	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Galvanized	
1	14	10	SCH20	SCH20	P27A-00B8H	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Galvanized	
1	14	12	SCH20	SCH20	P27A-00B8J	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Galvanized	
1	16	8	SCH20	SCH20	P27A-00G35	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Galvanized	
1	16	10	SCH20	SCH20	P27A-00B8M	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Galvanized	
1	16	12	SCH20	SCH20	P27A-00B8N	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Galvanized	
1	16	14	SCH20	SCH20	P27A-00B8P	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Galvanized	
1	18	10	SCH20	SCH20	P27A-00G36	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Galvanized	
1	18	12	SCH20	SCH20	P27A-00G37	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Galvanized	
1	18	14	SCH20	SCH20	P27A-00G38	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Galvanized	
1	18	16	SCH20	SCH20	P27A-00G39	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Galvanized	
1	20	12	STD	SCH20	P27A-00G3A	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Galvanized	
1	20	14	STD	SCH20	P27A-00G3B	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Galvanized	
1	20	16	STD	SCH20	P27A-00G3C	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Galvanized	
1	20	18	STD	SCH20	P27A-00G3D	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Galvanized	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	STD	XS	P28A-0019F	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Galvanized	
1	4	2	STD	XS	P28A-0019E	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Galvanized	
1	4	3	STD	STD	P28A-001MG	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Galvanized	
1	6	3	STD	STD	P28A-0019D	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Galvanized	
1	6	4	STD	STD	P28A-001MH	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Galvanized	
1	8	4	SCH20	STD	P28A-00CPK	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Galvanized	
1	8	6	SCH20	STD	P28A-00CPL	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Galvanized	
1	10	4	SCH20	STD	P28A-00972	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Galvanized	
1	10	6	SCH20	STD	P28A-00973	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Galvanized	
1	10	8	SCH20	SCH20	P28A-002NR	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Galvanized	
1	12	6	SCH20	STD	P28A-00CPM	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Galvanized	
1	12	8	SCH20	SCH20	P28A-002NM	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Galvanized	
1	12	10	SCH20	SCH20	P28A-002NS	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Galvanized	
1	14	6	SCH20	STD	P28A-00978	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Galvanized	
1	14	8	SCH20	SCH20	P28A-00CPN	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Galvanized	
1	14	10	SCH20	SCH20	P28A-00820	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Galvanized	
1	14	12	SCH20	SCH20	P28A-00821	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Galvanized	
1	16	8	SCH20	SCH20	P28A-00D9D	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Galvanized	
1	16	10	SCH20	SCH20	P28A-00824	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Galvanized	
1	16	12	SCH20	SCH20	P28A-00825	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Galvanized	
1	16	14	SCH20	SCH20	P28A-00826	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Galvanized	

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ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	18	10	SCH20	SCH20	P28A-00D9E	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Galvanized	
1	18	12	SCH20	SCH20	P28A-00D9F	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Galvanized	
1	18	14	SCH20	SCH20	P28A-00D9G	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Galvanized	
1	18	16	SCH20	SCH20	P28A-00D9H	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Galvanized	
1	20	12	STD	SCH20	P28A-00D9J	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Galvanized	
1	20	14	STD	SCH20	P28A-00D9K	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Galvanized	
1	20	16	STD	SCH20	P28A-00D9L	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Galvanized	
1	20	18	STD	SCH20	P28A-00D9M	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Galvanized	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P29B-00063	Cap ASTM A105 Class 3000 ASME B16.11 SW Galvanized Fluid-3	
1	0.75				P29B-00064	Cap ASTM A105 Class 3000 ASME B16.11 SW Galvanized Fluid-3	
1	1				P29B-00065	Cap ASTM A105 Class 3000 ASME B16.11 SW Galvanized Fluid-3	
1	1.5				P29B-00066	Cap ASTM A105 Class 3000 ASME B16.11 SW Galvanized Fluid-3	
1	2		XS		P29A-002SN	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Galvanized	
1	3		STD		P29A-000D3	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Galvanized	
1	4		STD		P29A-000D6	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Galvanized	
1	6		STD		P29A-000D9	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Galvanized	
1	8		SCH20		P29A-000TP	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Galvanized	
1	10		SCH20		P29A-000TK	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Galvanized	
1	12		SCH20		P29A-000TH	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Galvanized	
1	14		SCH20		P29A-003D3	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Galvanized	
1	16		SCH20		P29A-003G1	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Galvanized	
1	18		SCH20		P29A-003G2	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Galvanized	
1	20		STD		P29A-003G3	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Galvanized	
541	0.75				P29B-0001R	Cap ASTM A105 Class 3000 ASME B16.11 NPT Galvanized	
541	1				P29B-0001S	Cap ASTM A105 Class 3000 ASME B16.11 NPT Galvanized	
541	1.5				P29B-0001T	Cap ASTM A105 Class 3000 ASME B16.11 NPT Galvanized	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P41A-0019M	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT Galvanized L=100mm Fluid-3	
1	0.75		XS		P41A-0019N	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT Galvanized L=100mm Fluid-3	
1	1		XS		P41A-0019P	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT Galvanized L=100mm Fluid-3	
1	1.5		XS		P41A-0019R	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT Galvanized L=100mm Fluid-3	

CON SWAGED NIPPLE (SNC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	XS	XS	P42A-0010K	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S) Galvanized Fluid-3	
1	1	0.5	XS	XS	P42A-0010L	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S) Galvanized Fluid-3	
1	1	0.75	XS	XS	P42A-0010M	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S) Galvanized Fluid-3	
1	1.5	0.5	XS	XS	P42A-0010N	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S) Galvanized Fluid-3	
1	1.5	0.75	XS	XS	P42A-0010P	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S) Galvanized Fluid-3	
1	1.5	1	XS	XS	P42A-0010R	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S) Galvanized Fluid-3	
1	2	0.5	XS	XS	P42A-000ZR	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S) Galvanized	
1	2	0.75	XS	XS	P42A-000ZS	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S) Galvanized	
1	2	1	XS	XS	P42A-000ZT	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S) Galvanized	
1	2	1.5	XS	XS	P42A-000ZU	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S) Galvanized	
1	3	1.5	STD	XS	P42A-000ZV	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S) Galvanized	

ECC SWAGED NIPPLE (SNE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	XS	XS	P43A-000MD	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S) Galvanized Fluid-3	
1	1	0.5	XS	XS	P43A-000ME	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S) Galvanized Fluid-3	
1	1	0.75	XS	XS	P43A-000MF	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S) Galvanized Fluid-3	
1	1.5	0.5	XS	XS	P43A-000MG	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S) Galvanized Fluid-3	

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ECC SWAGED NIPPLE (SNE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5	0.75	XS	XS	P43A-000MH	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S) Galvanized Fluid-3	
1	1.5	1	XS	XS	P43A-000MJ	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S) Galvanized Fluid-3	
1	2	0.5	XS	XS	P43A-000LV	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S) Galvanized	
1	2	0.75	XS	XS	P43A-000LW	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S) Galvanized	
1	2	1	XS	XS	P43A-000LX	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S) Galvanized	
1	2	1.5	XS	XS	P43A-000LY	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S) Galvanized	
1	3	1.5	STD	XS	P43A-000LZ	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S) Galvanized	

COUPLING (CPS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P47B-0008P	Coupling ASTM A105 Class 3000 ASME B16.11 SW - SW Galvanized Fluid-3	
1	0.75				P47B-0008R	Coupling ASTM A105 Class 3000 ASME B16.11 SW - SW Galvanized Fluid-3	
1	1				P47B-0008S	Coupling ASTM A105 Class 3000 ASME B16.11 SW - SW Galvanized Fluid-3	
1	1.5				P47B-0008T	Coupling ASTM A105 Class 3000 ASME B16.11 SW - SW Galvanized Fluid-3	
541	1				P47B-00016	Coupling ASTM A105 Class 3000 ASME B16.11 NPT - NPT Galvanized	
714	0.5				P47B-00098	Coupling ASTM A105 Class 3000 ASME B16.11 SW - NPT Galvanized Fluid-3	
714	0.75				P47B-00099	Coupling ASTM A105 Class 3000 ASME B16.11 SW - NPT Galvanized Fluid-3	
714	1				P47B-0009A	Coupling ASTM A105 Class 3000 ASME B16.11 SW - NPT Galvanized Fluid-3	
714	1.5				P47B-0009B	Coupling ASTM A105 Class 3000 ASME B16.11 SW - NPT Galvanized Fluid-3	

REDUCING COUPLING (CPR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5			P48B-0009R	Reducing coupling ASTM A105 Class 3000 ASME B16.11 SW - SW Galvanized Fluid-3	
1	1	0.5			P48B-0009S	Reducing coupling ASTM A105 Class 3000 ASME B16.11 SW - SW Galvanized Fluid-3	
1	1	0.75			P48B-0009T	Reducing coupling ASTM A105 Class 3000 ASME B16.11 SW - SW Galvanized Fluid-3	
1	1.5	0.5			P48B-0009U	Reducing coupling ASTM A105 Class 3000 ASME B16.11 SW - SW Galvanized Fluid-3	
1	1.5	0.75			P48B-0009V	Reducing coupling ASTM A105 Class 3000 ASME B16.11 SW - SW Galvanized Fluid-3	
1	1.5	1			P48B-0009W	Reducing coupling ASTM A105 Class 3000 ASME B16.11 SW - SW Galvanized Fluid-3	
541	0.75	0.5			P48B-000B5	Reducing coupling ASTM A105 Class 3000 ASME B16.11 NPT - NPT Galvanized	
541	1	0.5			P48B-000B6	Reducing coupling ASTM A105 Class 3000 ASME B16.11 NPT - NPT Galvanized	
541	1	0.75			P48B-000B7	Reducing coupling ASTM A105 Class 3000 ASME B16.11 NPT - NPT Galvanized	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2 - 2.5	0.75			P31B-0136U	Outlet ASTM A105 Class 3000 MSS SP-97 SW Galvanized Fluid-3	
1	3 - 5	0.75			P31B-0136V	Outlet ASTM A105 Class 3000 MSS SP-97 SW Galvanized Fluid-3	
1	6 - 12	0.75			P31B-0136W	Outlet ASTM A105 Class 3000 MSS SP-97 SW Galvanized Fluid-3	
1	14 - 36	0.75			P31B-0136X	Outlet ASTM A105 Class 3000 MSS SP-97 SW Galvanized Fluid-3	
1	3	1			P31B-0136Y	Outlet ASTM A105 Class 3000 MSS SP-97 SW Galvanized Fluid-3	
1	4 - 5	1			P31B-0136Z	Outlet ASTM A105 Class 3000 MSS SP-97 SW Galvanized Fluid-3	
1	6 - 10	1			P31B-01370	Outlet ASTM A105 Class 3000 MSS SP-97 SW Galvanized Fluid-3	
1	12 - 36	1			P31B-01371	Outlet ASTM A105 Class 3000 MSS SP-97 SW Galvanized Fluid-3	
1	4	1.5			P31B-010T2	Outlet ASTM A105 Class 3000 MSS SP-97 SW Galvanized Fluid-3	
1	5 - 6	1.5			P31B-01385	Outlet ASTM A105 Class 3000 MSS SP-97 SW Galvanized Fluid-3	
1	8 - 12	1.5			P31B-01386	Outlet ASTM A105 Class 3000 MSS SP-97 SW Galvanized Fluid-3	
1	14 - 24	1.5			P31B-01387	Outlet ASTM A105 Class 3000 MSS SP-97 SW Galvanized Fluid-3	
541	1	0.75			P31B-0118H	Outlet ASTM A105 Class 3000 MSS SP-97 NPT Galvanized Fluid-3	
541	1.5	0.75			P31B-0118G	Outlet ASTM A105 Class 3000 MSS SP-97 NPT Galvanized Fluid-3	
541	2 - 2.5	0.75			P31B-01372	Outlet ASTM A105 Class 3000 MSS SP-97 NPT Galvanized Fluid-3	
541	3 - 5	0.75			P31B-01373	Outlet ASTM A105 Class 3000 MSS SP-97 NPT Galvanized Fluid-3	
541	6 - 12	0.75			P31B-01374	Outlet ASTM A105 Class 3000 MSS SP-97 NPT Galvanized Fluid-3	
541	14 - 36	0.75			P31B-01375	Outlet ASTM A105 Class 3000 MSS SP-97 NPT Galvanized Fluid-3	
1	6	2	STD	XS	P31B-00ZGA	Outlet ASTM A105 MSS SP-97 BW Galvanized	
1	8	2	SCH20	XS	P31B-00ZGB	Outlet ASTM A105 MSS SP-97 BW Galvanized	
1	10	2	SCH20	XS	P31B-00ZGD	Outlet ASTM A105 MSS SP-97 BW Galvanized	
1	12	2	SCH20	XS	P31B-00ZGF	Outlet ASTM A105 MSS SP-97 BW Galvanized	
1	14	2	SCH20	XS	P31B-00ZGJ	Outlet ASTM A105 MSS SP-97 BW Galvanized	
1	16	2	SCH20	XS	P31B-00ZGM	Outlet ASTM A105 MSS SP-97 BW Galvanized	
1	18	2	SCH20	XS	P31B-00ZGR	Outlet ASTM A105 MSS SP-97 BW Galvanized	

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OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	20	2	STD	XS	P31B-00ZGV	Outlet ASTM A105 MSS SP-97 BW Galvanized	
1	8	3	SCH20	STD	P31B-00ZGC	Outlet ASTM A105 MSS SP-97 BW Galvanized	
1	10	3	SCH20	STD	P31B-00ZGE	Outlet ASTM A105 MSS SP-97 BW Galvanized	
1	12	3	SCH20	STD	P31B-00ZGG	Outlet ASTM A105 MSS SP-97 BW Galvanized	
1	14	3	SCH20	STD	P31B-00ZGK	Outlet ASTM A105 MSS SP-97 BW Galvanized	
1	16	3	SCH20	STD	P31B-00ZGN	Outlet ASTM A105 MSS SP-97 BW Galvanized	
1	18	3	SCH20	STD	P31B-00ZGS	Outlet ASTM A105 MSS SP-97 BW Galvanized	
1	20	3	STD	STD	P31B-00ZGW	Outlet ASTM A105 MSS SP-97 BW Galvanized	
1	12	4	SCH20	STD	P31B-00ZGH	Outlet ASTM A105 MSS SP-97 BW Galvanized	
1	14	4	SCH20	STD	P31B-00ZGL	Outlet ASTM A105 MSS SP-97 BW Galvanized	
1	16	4	SCH20	STD	P31B-00ZGP	Outlet ASTM A105 MSS SP-97 BW Galvanized	
1	18	4	SCH20	STD	P31B-00ZGT	Outlet ASTM A105 MSS SP-97 BW Galvanized	
1	20	4	STD	STD	P31B-00ZGX	Outlet ASTM A105 MSS SP-97 BW Galvanized	
1	18	6	SCH20	STD	P31B-00ZGU	Outlet ASTM A105 MSS SP-97 BW Galvanized	
1	20	6	STD	STD	P31B-00ZGY	Outlet ASTM A105 MSS SP-97 BW Galvanized	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30B-0002H	Plug ASTM A105 ASME B16.11 NPT Galvanized Round head	
1	0.75				P30B-0002J	Plug ASTM A105 ASME B16.11 NPT Galvanized Round head	
1	1				P30B-0002K	Plug ASTM A105 ASME B16.11 NPT Galvanized Round head	
1	1.5				P30B-0002L	Plug ASTM A105 ASME B16.11 NPT Galvanized Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P61B-00BRM	Flange SW ASTM A105 Class 150 ASME B16.5 RF Galvanized Fluid-3	
1	0.75		XS		P61B-00BRN	Flange SW ASTM A105 Class 150 ASME B16.5 RF Galvanized Fluid-3	
1	1		XS		P61B-00BRP	Flange SW ASTM A105 Class 150 ASME B16.5 RF Galvanized Fluid-3	
1	1.5		XS		P61B-00BRR	Flange SW ASTM A105 Class 150 ASME B16.5 RF Galvanized Fluid-3	
1	2		XS		P61B-006ST	Flange WN ASTM A105 Class 150 ASME B16.5 RF Galvanized	
1	3		STD		P61B-001NH	Flange WN ASTM A105 Class 150 ASME B16.5 RF Galvanized	
1	4		STD		P61B-001NY	Flange WN ASTM A105 Class 150 ASME B16.5 RF Galvanized	
1	6		STD		P61B-001P5	Flange WN ASTM A105 Class 150 ASME B16.5 RF Galvanized	
1	8		SCH20		P61B-00B15	Flange WN ASTM A105 Class 150 ASME B16.5 RF Galvanized	
1	10		SCH20		P61B-005V9	Flange WN ASTM A105 Class 150 ASME B16.5 RF Galvanized	
1	12		SCH20		P61B-005VA	Flange WN ASTM A105 Class 150 ASME B16.5 RF Galvanized	
1	14		SCH20		P61B-005VB	Flange WN ASTM A105 Class 150 ASME B16.5 RF Galvanized	
1	16		SCH20		P61B-005VC	Flange WN ASTM A105 Class 150 ASME B16.5 RF Galvanized	
1	18		SCH20		P61B-005VD	Flange WN ASTM A105 Class 150 ASME B16.5 RF Galvanized	
1	20		STD		P61B-006SU	Flange WN ASTM A105 Class 150 ASME B16.5 RF Galvanized	
541	0.75				P61B-001J2	Flange NPT ASTM A105 Class 150 ASME B16.5 RF Galvanized	
773	0.5		XS		P61B-00BRS	Flange SW ASTM A105 Class 300 ASME B16.5 RF Galvanized Fluid-3	
773	0.75		XS		P61B-00BRT	Flange SW ASTM A105 Class 300 ASME B16.5 RF Galvanized Fluid-3	
773	1		XS		P61B-00BRU	Flange SW ASTM A105 Class 300 ASME B16.5 RF Galvanized Fluid-3	
773	1.5		XS		P61B-00BRV	Flange SW ASTM A105 Class 300 ASME B16.5 RF Galvanized Fluid-3	
773	2		XS		P61B-0092Z	Flange WN ASTM A105 Class 300 ASME B16.5 RF Galvanized	
773	3		STD		P61B-001KR	Flange WN ASTM A105 Class 300 ASME B16.5 RF Galvanized	
773	4		STD		P61B-001LR	Flange WN ASTM A105 Class 300 ASME B16.5 RF Galvanized	
773	6		STD		P61B-001MP	Flange WN ASTM A105 Class 300 ASME B16.5 RF Galvanized	
773	8		SCH20		P61B-00B1B	Flange WN ASTM A105 Class 300 ASME B16.5 RF Galvanized	
773	10		SCH20		P61B-006RY	Flange WN ASTM A105 Class 300 ASME B16.5 RF Galvanized	
773	12		SCH20		P61B-00B16	Flange WN ASTM A105 Class 300 ASME B16.5 RF Galvanized	
773	14		SCH20		P61B-00B17	Flange WN ASTM A105 Class 300 ASME B16.5 RF Galvanized	
773	16		SCH20		P61B-00B18	Flange WN ASTM A105 Class 300 ASME B16.5 RF Galvanized	
773	18		SCH20		P61B-00B19	Flange WN ASTM A105 Class 300 ASME B16.5 RF Galvanized	
773	20		STD		P61B-00B1A	Flange WN ASTM A105 Class 300 ASME B16.5 RF Galvanized	

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BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67B-000G6	Blind flange ASTM A105 Class 150 ASME B16.5 RF Galvanized	
1	0.75				P67B-000G7	Blind flange ASTM A105 Class 150 ASME B16.5 RF Galvanized	
1	1				P67B-000G8	Blind flange ASTM A105 Class 150 ASME B16.5 RF Galvanized	
1	1.5				P67B-000G9	Blind flange ASTM A105 Class 150 ASME B16.5 RF Galvanized	
1	2				P67B-000GC	Blind flange ASTM A105 Class 150 ASME B16.5 RF Galvanized	
1	3				P67B-000GD	Blind flange ASTM A105 Class 150 ASME B16.5 RF Galvanized	
1	4				P67B-000GE	Blind flange ASTM A105 Class 150 ASME B16.5 RF Galvanized	
1	6				P67B-000GF	Blind flange ASTM A105 Class 150 ASME B16.5 RF Galvanized	
1	8				P67B-000GG	Blind flange ASTM A105 Class 150 ASME B16.5 RF Galvanized	
1	10				P67B-000GA	Blind flange ASTM A105 Class 150 ASME B16.5 RF Galvanized	
1	12				P67B-000GB	Blind flange ASTM A105 Class 150 ASME B16.5 RF Galvanized	
1	14				P67B-0017Z	Blind flange ASTM A105 Class 150 ASME B16.5 RF Galvanized	
1	16				P67B-0018J	Blind flange ASTM A105 Class 150 ASME B16.5 RF Galvanized	
1	18				P67B-0018K	Blind flange ASTM A105 Class 150 ASME B16.5 RF Galvanized	
1	20				P67B-0018L	Blind flange ASTM A105 Class 150 ASME B16.5 RF Galvanized	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000L8	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000L9	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000LA	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000LB	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000LH	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000LL	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000LM	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	6				P73T-000LN	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	8				P73T-000LP	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	10				P73T-000LC	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	12				P73T-000LD	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	14				P73T-000LE	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	16				P73T-000LF	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	18				P73T-000LG	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	20				P73T-000LJ	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	0.5				P73T-000FT	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	0.75				P73T-000FU	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	3				P73T-000G5	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	4				P73T-000G6	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	6				P73T-000G7	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	8				P73T-000G8	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	10				P73T-000FX	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	12				P73T-000FY	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	14				P73T-000FZ	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	16				P73T-000G0	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	18				P73T-000G1	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	20				P73T-000G3	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

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BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-16				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 Galvanized UNC Stud-bolt with two Heavy HEX nuts	
1	18-20				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 Galvanized 8UN Stud-bolt with two Heavy HEX nuts	
773	0.5-10				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 Galvanized UNC Stud-bolt with two Heavy HEX nuts	
773	12-20				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 Galvanized 8UN Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81B-001K1	Gate valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	0.75				P81B-001K2	Gate valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	1				P81B-001K3	Gate valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	1.5				P81B-001K4	Gate valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	2				P81C-002DV	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	3				P81C-002DW	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	4				P81C-002DX	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	6				P81C-002DY	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	8				P81C-002DZ	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	10				P81C-002DT	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	12				P81C-002DU	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	14				P81C-00308	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated	
1	16				P81C-002E0	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated	
1	18				P81C-002E1	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated	
1	20				P81C-002E2	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82B-0019H	Globe valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	0.75				P82B-0019J	Globe valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	1				P82B-0019K	Globe valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	1.5				P82B-0019L	Globe valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	2				P82C-000N5	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	3				P82C-000N6	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	4				P82C-000N7	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	6				P82C-000N8	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	8				P82C-0026L	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83B-0011C	Check valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 8 Lift-type Bolted cover	
1	0.75				P83B-0011D	Check valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 8 Lift-type Bolted cover	
1	1				P83B-0011E	Check valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 8 Lift-type Bolted cover	
1	1.5				P83B-0011F	Check valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 8 Lift-type Bolted cover	
1	2				P83C-00144	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	3				P83C-00147	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	4				P83C-00148	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	6				P83C-00149	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	8				P83C-0014A	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	10				P83C-00140	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	

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CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	12				P83C-00141	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	14				P83C-0021E	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	16				P83C-00142	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	18				P83C-00143	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	20				P83C-00145	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	

BUTTERFLY VALVE (H)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3				P86C-002AB	Offset design butterfly valve ASTM A216 Grade WCB Class 150 API 609 Category B Lug-type ASME B16.5 RF Disc CS Seat Stellite-6 Trim 13Cr Triple eccentric design BG Gear operated	
1	4				P86C-0023Y	Offset design butterfly valve ASTM A216 Grade WCB Class 150 API 609 Category B Lug-type ASME B16.5 RF Disc CS Seat Stellite-6 Trim 13Cr Triple eccentric design BG Gear operated	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71B-000FU	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Galvanized	
1	0.75				P71B-000FV	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Galvanized	
1	1				P71B-000FW	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Galvanized	
1	1.5				P71B-000FX	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Galvanized	
1	2				P71B-000FN	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Galvanized	
1	3				P71B-000FP	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Galvanized	
1	4				P71B-000FR	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Galvanized	
1	6				P71B-000FS	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Galvanized	
1	8				P71B-000FT	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Galvanized	
1	10				P71B-000FL	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Galvanized	
1	12				P71B-000FM	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Galvanized	

PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000N9	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Galvanized	
1	16				P72B-000NA	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Galvanized	
1	18				P72B-000NB	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Galvanized	
1	20				P72B-000NC	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Galvanized	

PADDLE SPACER (PS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000N5	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Galvanized	
1	16				P72B-000N6	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Galvanized	
1	18				P72B-000N7	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Galvanized	
1	20				P72B-000N8	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Galvanized	

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BOLT TABLE (B_A0RA , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	60	P80S-017T2		
0.75	4	0.500	65	P80S-017T3		
1	4	0.500	70	P80S-017T4		
1.5	4	0.500	75	P80S-017T5		
2	4	0.625	85	P80S-017UU		
3	4	0.625	95	P80S-017UW		
4	8	0.625	95	P80S-017UW		
6	8	0.750	105	P80S-017UY		
8	8	0.750	110	P80S-017UZ		
10	12	0.875	120	P80S-017XU		
12	12	0.875	120	P80S-017XU		
14	12	1.000	135	P80S-017ZX		
16	16	1.000	140	P80S-017ZY		
18	16	1.125	150	P80S-018DK		
20	20	1.125	160	P80S-018DM		

BOLT TABLE (B_A0RA_773 , STUD ASME RF, OPTION CODE 773)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-017T4		
0.75	4	0.625	75	P80S-017US		
1	4	0.625	80	P80S-017UT		
1.5	4	0.750	95	P80S-017XN		
2	8	0.625	90	P80S-017UV		
3	8	0.750	110	P80S-017UZ		
4	8	0.750	115	P80S-017V0		
6	12	0.750	125	P80S-017V2		
8	12	0.875	140	P80S-017XY		
10	16	1.000	160	P80S-01802		
12	16	1.125	175	P80S-018DR		
14	20	1.125	180	P80S-018DS		
16	20	1.250	190	P80S-018H8		
18	24	1.250	200	P80S-018HA		
20	24	1.250	210	P80S-018HC		

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BRANCH TABLE (T_A0RA)

RUN PIPE SIZE (in) \ BRANCH SIZE (in)	0.5	0.75	1	1.5	2	3	4	6	8	10	12	14	16	18	20
0.5	TS														
0.75		TS													
1		TR	TS												
1.5		TR	TR	TS											
2		L	TR	TR	TS										
3		L	L	TR	TR	TS									
4	L	L	L	L	TR	TR	TS								
6	L	L	L	L	L	TR	TR	TS							
8		L	L	L	L	L	TR	TR	TS						
10		L	L	L	L	L	TR	TR	TR	TS					
12		L	L	L	L	L	L	TR	TR	TR	TS				
14		L	L	L	L	L	L	TR	TR	TR	TR	TS			
16		L	L	L	L	L	L	TR	TR	TR	TR	TR	TS		
18		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TS	
20		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TR	TS

TS : STRAIGHT TEE
TR : REDUCING TEE
L : OUTLET

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Material : Killed CS (Galv.)
Rating : ASME CLASS 150
Flange Face : RF
C.A.(mm) : 0.00
Gasket : Spiral Wound
Service : UTILITY - ABOVEGROUND FIRE WATER (WET) SERVICE.
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
200	WITH JACK SCREW (FO)
211	FF (B,F,G)
541	NPT(F) (L)
773	CLASS 300 (B,F,G)
3001	INSULATION GASKET KIT AND BOLTS FOR FLANGE (G)

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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P01A-000X3	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M NPT Galvanized	
1	0.75		XS		P01A-000X6	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M NPT Galvanized	
1	1		XS		P01A-000X7	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M NPT Galvanized	
1	1.5		XS		P01A-000XC	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M NPT Galvanized	
1	2		XS		P01A-000XE	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M NPT Galvanized	
1	3		STD		P01A-000YM	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	4		STD		P01A-000YU	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	6		STD		P01A-000Z3	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	8		SCH20		P01A-001AT	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	10		SCH20		P01A-0014Y	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	12		SCH30		P01A-0017K	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	14		SCH20		P01A-0017A	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	16		SCH20		P01A-0018E	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	18		SCH20		P01A-00438	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE	
1	20		STD		P01A-0042G	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE	
1	24		STD		P01A-0042H	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE	
1	30		STD		P01A-0042J	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE	
1	36		STD		P01A-00439	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE	
1	42		XS		P01A-0043G	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P02B-0001H	90 degree elbow ASTM A105 Class 3000 ASME B16.11 NPT Galvanized	
1	0.75				P02B-0001D	90 degree elbow ASTM A105 Class 3000 ASME B16.11 NPT Galvanized	
1	1				P02B-0001E	90 degree elbow ASTM A105 Class 3000 ASME B16.11 NPT Galvanized	
1	1.5				P02B-0001F	90 degree elbow ASTM A105 Class 3000 ASME B16.11 NPT Galvanized	
1	2				P02B-0001G	90 degree elbow ASTM A105 Class 3000 ASME B16.11 NPT Galvanized	
1	3		STD		P02A-000CU	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		STD		P02A-000CZ	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		STD		P02A-000D6	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		SCH20		P02A-000GZ	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	10		SCH20		P02A-000H1	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	12		SCH30		P02A-000M4	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	14		SCH20		P02A-000FX	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	16		SCH20		P02A-000GM	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	18		SCH20		P02A-000LT	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	20		STD		P02A-0010J	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	24		STD		P02A-0010K	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	30		STD		P02A-000F3	90 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius	
1	36		STD		P02A-001GL	90 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius	
1	42		XS		P02A-000FB	90 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P03B-00012	45 degree elbow ASTM A105 Class 3000 ASME B16.11 NPT Galvanized	
1	0.75				P03B-00013	45 degree elbow ASTM A105 Class 3000 ASME B16.11 NPT Galvanized	
1	1				P03B-00014	45 degree elbow ASTM A105 Class 3000 ASME B16.11 NPT Galvanized	
1	1.5				P03B-00015	45 degree elbow ASTM A105 Class 3000 ASME B16.11 NPT Galvanized	
1	2				P03B-00016	45 degree elbow ASTM A105 Class 3000 ASME B16.11 NPT Galvanized	
1	3		STD		P03A-000AX	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		STD		P03A-000B1	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		STD		P03A-000B9	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		SCH20		P03A-000EX	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	10		SCH20		P03A-000F0	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	12		SCH30		P03A-000JU	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	14		SCH20		P03A-000DW	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	16		SCH20		P03A-000EM	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	18		SCH20		P03A-001DX	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	20		STD		P03A-000X1	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	24		STD		P03A-000X2	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	30		STD		P03A-000D0	45 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius	
1	36		STD		P03A-001BS	45 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius	
1	42		XS		P03A-000DB	45 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P21B-0002D	Straight tee ASTM A105 Class 3000 ASME B16.11 NPT Galvanized	
1	0.75				P21B-0002E	Straight tee ASTM A105 Class 3000 ASME B16.11 NPT Galvanized	
1	1				P21B-0002F	Straight tee ASTM A105 Class 3000 ASME B16.11 NPT Galvanized	
1	1.5				P21B-0002G	Straight tee ASTM A105 Class 3000 ASME B16.11 NPT Galvanized	
1	2				P21B-0002V	Straight tee ASTM A105 Class 3000 ASME B16.11 NPT Galvanized	
1	3		STD		P21A-001CU	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		STD		P21A-001CW	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6		STD		P21A-001D2	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8		SCH20		P21A-00215	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10		SCH20		P21A-00219	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12		SCH30		P21A-0025A	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14		SCH20		P21A-00206	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16		SCH20		P21A-0020X	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18		SCH20		P21A-001PJ	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20		STD		P21A-001C7	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24		STD		P21A-001CC	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30		STD		P21A-001YC	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	36		STD		P21A-001G4	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	42		XS		P21A-001KS	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75			P24B-00028	Reducing tee ASTM A105 Class 3000 ASME B16.11 NPT Galvanized	
1	1.5	0.75			P24B-0002B	Reducing tee ASTM A105 Class 3000 ASME B16.11 NPT Galvanized	
1	1.5	1			P24B-0002C	Reducing tee ASTM A105 Class 3000 ASME B16.11 NPT Galvanized	
1	2	0.75			P24B-0002E	Reducing tee ASTM A105 Class 3000 ASME B16.11 NPT Galvanized	
1	2	1			P24B-00035	Reducing tee ASTM A105 Class 3000 ASME B16.11 NPT Galvanized	
1	2	1.5			P24B-00036	Reducing tee ASTM A105 Class 3000 ASME B16.11 NPT Galvanized	
1	4	3	STD	STD	P24A-0021K	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	STD	P24A-0021A	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P24A-00229	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH20	STD	P24A-00J21	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH20	STD	P24A-005J4	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	SCH20	STD	P24A-00HMB	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	SCH20	STD	P24A-00HKS	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	SCH20	SCH20	P24A-002YX	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	SCH30	STD	P24A-00HKT	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH30	SCH20	P24A-003XM	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH30	SCH20	P24A-003XL	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	SCH20	STD	P24A-00K0M	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	SCH20	SCH20	P24A-002U7	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	SCH20	SCH20	P24A-002YA	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	SCH20	SCH30	P24A-003ES	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	6	SCH20	STD	P24A-00GU4	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	SCH20	SCH20	P24A-002XW	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	SCH20	SCH20	P24A-002YH	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	SCH20	SCH30	P24A-003XN	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	SCH20	SCH20	P24A-002XF	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	8	SCH20	SCH20	P24A-002XC	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	10	SCH20	SCH20	P24A-002UX	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	12	SCH20	SCH30	P24A-00BH0	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	14	SCH20	SCH20	P24A-002WT	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	18	16	SCH20	SCH20	P24A-002X5	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	8	STD	SCH20	P24A-00K0N	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	10	STD	SCH20	P24A-00BT7	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	12	STD	SCH30	P24A-00BUT	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	14	STD	SCH20	P24A-00BWB	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	16	STD	SCH20	P24A-006W3	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	18	STD	SCH20	P24A-006WD	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	10	STD	SCH20	P24A-00KT6	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	12	STD	SCH30	P24A-00C7C	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	14	STD	SCH20	P24A-00K0C	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	16	STD	SCH20	P24A-00CAD	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	18	STD	SCH20	P24A-006WF	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	20	STD	STD	P24A-004SV	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	10	STD	SCH20	P24A-003VN	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	12	STD	SCH30	P24A-00CZ4	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	14	STD	SCH20	P24A-003VR	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	16	STD	SCH20	P24A-003VS	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	18	STD	SCH20	P24A-003VT	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	20	STD	STD	P24A-0087D	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	24	STD	STD	P24A-005XW	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	36	16	STD	SCH20	P24A-00GU6	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	36	18	STD	SCH20	P24A-0087J	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	36	20	STD	STD	P24A-0087K	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	36	24	STD	STD	P24A-00DVT	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	36	30	STD	STD	P24A-007WA	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	42	16	XS	SCH20	P24A-003VB	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	42	18	XS	SCH20	P24A-003VC	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	42	20	XS	STD	P24A-00EGT	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	42	24	XS	STD	P24A-00EHZ	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	42	30	XS	STD	P24A-003VF	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	42	36	XS	STD	P24A-00EMK	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	4	3	STD	STD	P27A-00189	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	STD	P27A-001AZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P27A-001GW	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH20	STD	P27A-003K2	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH20	STD	P27A-003K3	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	SCH20	STD	P27A-003K4	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	SCH20	STD	P27A-003K5	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	SCH20	SCH20	P27A-001UL	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	SCH30	STD	P27A-003MN	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH30	SCH20	P27A-002GG	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH30	SCH20	P27A-002GF	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	SCH20	STD	P27A-00518	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	SCH20	SCH20	P27A-001V4	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	SCH20	SCH20	P27A-001TG	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	SCH20	SCH30	P27A-0028H	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	SCH20	SCH20	P27A-001WX	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	SCH20	SCH20	P27A-001TW	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	SCH20	SCH30	P27A-002GH	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	SCH20	SCH20	P27A-001V2	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	10	SCH20	SCH20	P27A-001TJ	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	12	SCH20	SCH30	P27A-0084K	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	14	SCH20	SCH20	P27A-001UY	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	16	SCH20	SCH20	P27A-001WN	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	12	STD	SCH30	P27A-0082K	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	14	STD	SCH20	P27A-0082L	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	20	16	STD	SCH20	P27A-0082M	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	18	STD	SCH20	P27A-0084N	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	16	STD	SCH20	P27A-0084T	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	18	STD	SCH20	P27A-0084U	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	20	STD	STD	P27A-001A8	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	20	STD	STD	P27A-001S0	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	24	STD	STD	P27A-001M7	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	36	24	STD	STD	P27A-00BGR	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	36	30	STD	STD	P27A-00938	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	42	30	XS	STD	P27A-001N2	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	42	36	XS	STD	P27A-00BHB	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	4	3	STD	STD	P28A-0018B	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	STD	P28A-001AS	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P28A-00182	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH20	STD	P28A-003JU	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH20	STD	P28A-003JV	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	SCH20	STD	P28A-003JW	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	SCH20	STD	P28A-003JX	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	SCH20	SCH20	P28A-001V0	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	SCH30	STD	P28A-003MG	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH30	SCH20	P28A-002GA	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH30	SCH20	P28A-002G9	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	SCH20	STD	P28A-0096P	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	SCH20	SCH20	P28A-001WH	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	SCH20	SCH20	P28A-001TH	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	SCH20	SCH30	P28A-0027A	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	SCH20	SCH20	P28A-001T6	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	SCH20	SCH20	P28A-001TY	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	SCH20	SCH30	P28A-002GB	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	SCH20	SCH20	P28A-001WG	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	10	SCH20	SCH20	P28A-001TV	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	12	SCH20	SCH30	P28A-004UM	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	14	SCH20	SCH20	P28A-001WD	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	16	SCH20	SCH20	P28A-001T1	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	12	STD	SCH30	P28A-004SH	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	14	STD	SCH20	P28A-004SJ	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	16	STD	SCH20	P28A-004SK	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	18	STD	SCH20	P28A-004UN	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	16	STD	SCH20	P28A-004UR	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	18	STD	SCH20	P28A-004US	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	20	STD	STD	P28A-001AW	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	20	STD	STD	P28A-001LZ	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	24	STD	STD	P28A-001N1	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	36	24	STD	STD	P28A-008FS	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	36	30	STD	STD	P28A-005V7	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	42	30	XS	STD	P28A-001RM	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	42	36	XS	STD	P28A-008GR	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P29B-0001P	Cap ASTM A105 Class 3000 ASME B16.11 NPT Galvanized	
1	0.75				P29B-0001R	Cap ASTM A105 Class 3000 ASME B16.11 NPT Galvanized	
1	1				P29B-0001S	Cap ASTM A105 Class 3000 ASME B16.11 NPT Galvanized	
1	1.5				P29B-0001T	Cap ASTM A105 Class 3000 ASME B16.11 NPT Galvanized	
1	2				P29B-0002C	Cap ASTM A105 Class 3000 ASME B16.11 NPT Galvanized	
1	3		STD		P29A-000BK	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	4		STD		P29A-000A3	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6		STD		P29A-000A9	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8		SCH20		P29A-000EY	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10		SCH20		P29A-000E5	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12		SCH30		P29A-000PZ	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14		SCH20		P29A-000EA	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16		SCH20		P29A-000F3	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18		SCH20		P29A-000E0	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20		STD		P29A-000B2	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24		STD		P29A-000B8	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	30		STD		P29A-000DU	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	36		STD		P29A-001AF	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	42		XS		P29A-000CW	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P41A-000VA	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M NPT - NPT Galvanized L=100mm	
1	0.75		XS		P41A-000VB	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M NPT - NPT Galvanized L=100mm	
1	1		XS		P41A-000VC	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M NPT - NPT Galvanized L=100mm	
1	1.5		XS		P41A-000VD	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M NPT - NPT Galvanized L=100mm	
1	2		XS		P41A-000VE	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M NPT - NPT Galvanized L=100mm	

CON SWAGED NIPPLE (SNC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	XS	XS	P42A-0002J	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 NPT(L) - NPT(S) Galvanized	
1	1	0.5	XS	XS	P42A-0002E	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 NPT(L) - NPT(S) Galvanized	
1	1	0.75	XS	XS	P42A-0002K	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 NPT(L) - NPT(S) Galvanized	
1	1.5	0.5	XS	XS	P42A-0002M	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 NPT(L) - NPT(S) Galvanized	
1	1.5	0.75	XS	XS	P42A-0002T	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 NPT(L) - NPT(S) Galvanized	
1	1.5	1	XS	XS	P42A-0002W	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 NPT(L) - NPT(S) Galvanized	
1	2	0.5	XS	XS	P42A-0002P	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 NPT(L) - NPT(S) Galvanized	
1	2	0.75	XS	XS	P42A-0002Y	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 NPT(L) - NPT(S) Galvanized	
1	2	1	XS	XS	P42A-0002S	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 NPT(L) - NPT(S) Galvanized	
1	2	1.5	XS	XS	P42A-00030	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 NPT(L) - NPT(S) Galvanized	
1	3	1.5	STD	XS	P42A-000ZW	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - NPT(S)	
1	3	2	STD	XS	P42A-0010S	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - NPT(S)	

ECC SWAGED NIPPLE (SNE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	XS	XS	P43A-0004P	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 NPT(L) - NPT(S) Galvanized	
1	1	0.5	XS	XS	P43A-0004R	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 NPT(L) - NPT(S) Galvanized	
1	1	0.75	XS	XS	P43A-0004S	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 NPT(L) - NPT(S) Galvanized	
1	1.5	0.5	XS	XS	P43A-0004T	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 NPT(L) - NPT(S) Galvanized	
1	1.5	0.75	XS	XS	P43A-0004U	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 NPT(L) - NPT(S) Galvanized	
1	1.5	1	XS	XS	P43A-0004V	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 NPT(L) - NPT(S) Galvanized	
1	2	0.5	XS	XS	P43A-0004W	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 NPT(L) - NPT(S) Galvanized	
1	2	0.75	XS	XS	P43A-0004X	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 NPT(L) - NPT(S) Galvanized	
1	2	1	XS	XS	P43A-0004Y	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 NPT(L) - NPT(S) Galvanized	
1	2	1.5	XS	XS	P43A-0004Z	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 NPT(L) - NPT(S) Galvanized	
1	3	1.5	STD	XS	P43A-000M0	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - NPT(S)	
1	3	2	STD	XS	P43A-000MK	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - NPT(S)	

UNION (UN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P49B-0000B	Union ASTM A105 Class 3000 MSS SP-83 NPT Galvanized	
1	0.75				P49B-0000C	Union ASTM A105 Class 3000 MSS SP-83 NPT Galvanized	
1	1				P49B-0000D	Union ASTM A105 Class 3000 MSS SP-83 NPT Galvanized	
1	1.5				P49B-0000E	Union ASTM A105 Class 3000 MSS SP-83 NPT Galvanized	

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UNION (UN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2				P49B-0000F	Union ASTM A105 Class 3000 MSS SP-83 NPT Galvanized	

COUPLING (CPS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P47B-00014	Coupling ASTM A105 Class 3000 ASME B16.11 NPT - NPT Galvanized	
1	0.75				P47B-00015	Coupling ASTM A105 Class 3000 ASME B16.11 NPT - NPT Galvanized	
1	1				P47B-00016	Coupling ASTM A105 Class 3000 ASME B16.11 NPT - NPT Galvanized	
1	1.5				P47B-00017	Coupling ASTM A105 Class 3000 ASME B16.11 NPT - NPT Galvanized	
1	2				P47B-00018	Coupling ASTM A105 Class 3000 ASME B16.11 NPT - NPT Galvanized	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3 - 5	0.75			P31B-01376	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
1	6 - 12	0.75			P31B-007GR	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
1	14 - 36	0.75			P31B-007GY	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
1	38 and larger	0.75			P31B-00FFM	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
1	3	1			P31B-007GK	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
1	4 - 5	1			P31B-01377	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
1	6 - 10	1			P31B-007GG	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
1	12 - 36	1			P31B-007GP	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
1	38 and larger	1			P31B-00FFW	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
1	3	1.5			P31B-007G8	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
1	4	1.5			P31B-005U0	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
1	5 - 6	1.5			P31B-01378	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
1	8 - 12	1.5			P31B-007G1	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
1	14 - 24	1.5			P31B-007GC	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
1	26 - 36	1.5			P31B-01379	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
1	38 and larger	1.5			P31B-00FFC	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
1	3	2			P31B-0056J	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
1	4	2			P31B-0056M	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
1	6	2			P31B-00EBZ	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
1	8 - 10	2			P31B-0137A	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
1	12 - 18	2			P31B-0137B	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
1	20 - 36	2			P31B-0137C	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
1	38 and larger	2			P31B-00NJD	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
1	8	3	SCH20	STD	P31B-00P11	Outlet ASTM A105 MSS SP-97 BW	
1	10	3	SCH20	STD	P31B-00UPG	Outlet ASTM A105 MSS SP-97 BW	
1	12	3	SCH30	STD	P31B-00NYR	Outlet ASTM A105 MSS SP-97 BW	
1	14	3	SCH20	STD	P31B-00UPH	Outlet ASTM A105 MSS SP-97 BW	
1	16	3	SCH20	STD	P31B-00TU2	Outlet ASTM A105 MSS SP-97 BW	
1	18	3	SCH20	STD	P31B-00NZ4	Outlet ASTM A105 MSS SP-97 BW	
1	20	3	STD	STD	P31B-008FA	Outlet ASTM A105 MSS SP-97 BW	
1	24	3	STD	STD	P31B-00895	Outlet ASTM A105 MSS SP-97 BW	
1	30	3	STD	STD	P31B-007WY	Outlet ASTM A105 MSS SP-97 BW	
1	36	3	STD	STD	P31B-007P2	Outlet ASTM A105 MSS SP-97 BW	
1	42	3	XS	STD	P31B-00AGK	Outlet ASTM A105 MSS SP-97 BW	
1	12	4	SCH30	STD	P31B-00P1G	Outlet ASTM A105 MSS SP-97 BW	
1	14	4	SCH20	STD	P31B-00UPJ	Outlet ASTM A105 MSS SP-97 BW	
1	16	4	SCH20	STD	P31B-00TU3	Outlet ASTM A105 MSS SP-97 BW	
1	18	4	SCH20	STD	P31B-00P1V	Outlet ASTM A105 MSS SP-97 BW	
1	20	4	STD	STD	P31B-008D3	Outlet ASTM A105 MSS SP-97 BW	
1	24	4	STD	STD	P31B-0086X	Outlet ASTM A105 MSS SP-97 BW	
1	30	4	STD	STD	P31B-007US	Outlet ASTM A105 MSS SP-97 BW	
1	36	4	STD	STD	P31B-00AER	Outlet ASTM A105 MSS SP-97 BW	
1	42	4	XS	STD	P31B-00A8G	Outlet ASTM A105 MSS SP-97 BW	
1	18	6	SCH20	STD	P31B-00P48	Outlet ASTM A105 MSS SP-97 BW	
1	20	6	STD	STD	P31B-008PZ	Outlet ASTM A105 MSS SP-97 BW	
1	24	6	STD	STD	P31B-008JD	Outlet ASTM A105 MSS SP-97 BW	
1	30	6	STD	STD	P31B-008BS	Outlet ASTM A105 MSS SP-97 BW	

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OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	36	6	STD	STD	P31B-0085H	Outlet ASTM A105 MSS SP-97 BW	
1	42	6	XS	STD	P31B-007ZN	Outlet ASTM A105 MSS SP-97 BW	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30B-0002H	Plug ASTM A105 ASME B16.11 NPT Galvanized Round head	
1	0.75				P30B-0002J	Plug ASTM A105 ASME B16.11 NPT Galvanized Round head	
1	1				P30B-0002K	Plug ASTM A105 ASME B16.11 NPT Galvanized Round head	
1	1.5				P30B-0002L	Plug ASTM A105 ASME B16.11 NPT Galvanized Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P61B-001J1	Flange NPT ASTM A105 Class 150 ASME B16.5 RF Galvanized	
1	0.75				P61B-001J2	Flange NPT ASTM A105 Class 150 ASME B16.5 RF Galvanized	
1	1				P61B-001J3	Flange NPT ASTM A105 Class 150 ASME B16.5 RF Galvanized	
1	1.5				P61B-001J4	Flange NPT ASTM A105 Class 150 ASME B16.5 RF Galvanized	
1	2				P61B-001J5	Flange NPT ASTM A105 Class 150 ASME B16.5 RF Galvanized	
1	3		STD		P61B-001PW	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	4		STD		P61B-001R8	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	6		STD		P61B-001RT	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	8		SCH20		P61B-002BF	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	10		SCH20		P61B-002B4	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	12		SCH30		P61B-002TS	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	14		SCH20		P61B-002B6	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	16		SCH20		P61B-002B7	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	18		SCH20		P61B-002B8	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	20		STD		P61B-001JA	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	24		STD		P61B-001NJ	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	30		STD		P61B-001S8	Flange WN ASTM A105 Class 150 ASME B16.47 Series B RF	
1	36		STD		P61B-003M6	Flange WN ASTM A105 Class 150 ASME B16.47 Series B RF	
1	42		XS		P61B-001N1	Flange WN ASTM A105 Class 150 ASME B16.47 Series B RF	
211	0.5				P61B-002Z7	Flange NPT ASTM A105 Class 150 ASME B16.5 FF Galvanized	
211	0.75				P61B-002Z8	Flange NPT ASTM A105 Class 150 ASME B16.5 FF Galvanized	
211	1				P61B-002LK	Flange NPT ASTM A105 Class 150 ASME B16.5 FF Galvanized	
211	1.5				P61B-002LL	Flange NPT ASTM A105 Class 150 ASME B16.5 FF Galvanized	
211	2				P61B-002LM	Flange NPT ASTM A105 Class 150 ASME B16.5 FF Galvanized	
211	3		STD		P61B-003F9	Flange WN ASTM A105 Class 150 ASME B16.5 FF	
211	4		STD		P61B-003GL	Flange WN ASTM A105 Class 150 ASME B16.5 FF	
211	6		STD		P61B-003GH	Flange WN ASTM A105 Class 150 ASME B16.5 FF	
211	8		SCH20		P61B-002LZ	Flange WN ASTM A105 Class 150 ASME B16.5 FF	
211	10		SCH20		P61B-002LN	Flange WN ASTM A105 Class 150 ASME B16.5 FF	
211	12		SCH30		P61B-00ABY	Flange WN ASTM A105 Class 150 ASME B16.5 FF	
211	14		SCH20		P61B-002LR	Flange WN ASTM A105 Class 150 ASME B16.5 FF	
211	16		SCH20		P61B-002LS	Flange WN ASTM A105 Class 150 ASME B16.5 FF	
211	18		SCH20		P61B-002LT	Flange WN ASTM A105 Class 150 ASME B16.5 FF	
211	20		STD		P61B-003GR	Flange WN ASTM A105 Class 150 ASME B16.5 FF	
773	0.5				P61B-001VR	Flange NPT ASTM A105 Class 300 ASME B16.5 RF Galvanized	
773	0.75				P61B-001VC	Flange NPT ASTM A105 Class 300 ASME B16.5 RF Galvanized	
773	1				P61B-001VD	Flange NPT ASTM A105 Class 300 ASME B16.5 RF Galvanized	
773	1.5				P61B-001VE	Flange NPT ASTM A105 Class 300 ASME B16.5 RF Galvanized	
773	2				P61B-001VF	Flange NPT ASTM A105 Class 300 ASME B16.5 RF Galvanized	
773	3		STD		P61B-001LJ	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	4		STD		P61B-001MC	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	6		STD		P61B-001N2	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	8		SCH20		P61B-002LJ	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	10		SCH20		P61B-002LH	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	12		SCH30		P61B-002TV	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	14		SCH20		P61B-002MR	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	16		SCH20		P61B-002MS	Flange WN ASTM A105 Class 300 ASME B16.5 RF	

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FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
773	18		SCH20		P61B-002MT	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	20		STD		P61B-001NT	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	24		STD		P61B-001PA	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	30		STD		P61B-003SW	Flange WN ASTM A105 Class 300 ASME B16.47 Series B RF	
773	36		STD		P61B-004RB	Flange WN ASTM A105 Class 300 ASME B16.47 Series B RF	
773	42		XS		P61B-00673	Flange WN ASTM A105 Class 300 ASME B16.47 Series B RF	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67B-000G6	Blind flange ASTM A105 Class 150 ASME B16.5 RF Galvanized	
1	0.75				P67B-000G7	Blind flange ASTM A105 Class 150 ASME B16.5 RF Galvanized	
1	1				P67B-000G8	Blind flange ASTM A105 Class 150 ASME B16.5 RF Galvanized	
1	1.5				P67B-000G9	Blind flange ASTM A105 Class 150 ASME B16.5 RF Galvanized	
1	2				P67B-000GC	Blind flange ASTM A105 Class 150 ASME B16.5 RF Galvanized	
1	3				P67B-000FW	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	4				P67B-000FX	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	6				P67B-000FY	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	8				P67B-000FZ	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	10				P67B-000FM	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	12				P67B-000FN	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	14				P67B-000FP	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	16				P67B-000FR	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	18				P67B-000FS	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	20				P67B-000FU	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	24				P67B-000FV	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	30				P67B-000G2	Blind flange ASTM A105 Class 150 ASME B16.47 Series B RF	
1	36				P67B-000G5	Blind flange ASTM A105 Class 150 ASME B16.47 Series B RF	
1	42				P67B-000KZ	Blind flange ASTM A105 Class 150 ASME B16.47 Series B RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000L8	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000L9	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000LA	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000LB	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000LH	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000LL	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000LM	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	6				P73T-000LN	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	8				P73T-000LP	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	10				P73T-000LC	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	12				P73T-000LD	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	14				P73T-000LE	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	16				P73T-000LF	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	18				P73T-000LG	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	20				P73T-000LJ	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	24				P73T-000LK	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	30				P73T-000LT	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	36				P73T-000LW	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	42				P73T-000LZ	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
211	0.5				P74U-000VT	Sheet gasket Synthetic fiber Class 150 ASME B16.21 Flange ASME B16.5 FF 1.5mm-T	
211	0.75				P74U-000VU	Sheet gasket Synthetic fiber Class 150 ASME B16.21 Flange ASME B16.5 FF 1.5mm-T	

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GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
211	1				P74U-000VV	Sheet gasket Synthetic fiber Class 150 ASME B16.21 Flange ASME B16.5 FF 1.5mm-T	
211	1.5				P74U-000VW	Sheet gasket Synthetic fiber Class 150 ASME B16.21 Flange ASME B16.5 FF 1.5mm-T	
211	2				P74U-000W8	Sheet gasket Synthetic fiber Class 150 ASME B16.21 Flange ASME B16.5 FF 1.5mm-T	
211	3				P74U-000WB	Sheet gasket Synthetic fiber Class 150 ASME B16.21 Flange ASME B16.5 FF 1.5mm-T	
211	4				P74U-000WC	Sheet gasket Synthetic fiber Class 150 ASME B16.21 Flange ASME B16.5 FF 1.5mm-T	
211	6				P74U-000WD	Sheet gasket Synthetic fiber Class 150 ASME B16.21 Flange ASME B16.5 FF 1.5mm-T	
211	8				P74U-000WE	Sheet gasket Synthetic fiber Class 150 ASME B16.21 Flange ASME B16.5 FF 1.5mm-T	
211	10				P74U-000W3	Sheet gasket Synthetic fiber Class 150 ASME B16.21 Flange ASME B16.5 FF 1.5mm-T	
211	12				P74U-000W4	Sheet gasket Synthetic fiber Class 150 ASME B16.21 Flange ASME B16.5 FF 1.5mm-T	
211	14				P74U-000W5	Sheet gasket Synthetic fiber Class 150 ASME B16.21 Flange ASME B16.5 FF 1.5mm-T	
211	16				P74U-000W6	Sheet gasket Synthetic fiber Class 150 ASME B16.21 Flange ASME B16.5 FF 1.5mm-T	
211	18				P74U-000W7	Sheet gasket Synthetic fiber Class 150 ASME B16.21 Flange ASME B16.5 FF 1.5mm-T	
211	20				P74U-000W9	Sheet gasket Synthetic fiber Class 150 ASME B16.21 Flange ASME B16.5 FF 1.5mm-T	
3001	3				P78U-0004P	Insulation gasket kit Glass reinforced epoxy Class 150 Manufacturer-standard Flange ASME B16.5 RF	
3001	4				P78U-0004R	Insulation gasket kit Glass reinforced epoxy Class 150 Manufacturer-standard Flange ASME B16.5 RF	
3001	6				P78U-0004S	Insulation gasket kit Glass reinforced epoxy Class 150 Manufacturer-standard Flange ASME B16.5 RF	
3001	8				P78U-0004T	Insulation gasket kit Glass reinforced epoxy Class 150 Manufacturer-standard Flange ASME B16.5 RF	
3001	10				P78U-0004F	Insulation gasket kit Glass reinforced epoxy Class 150 Manufacturer-standard Flange ASME B16.5 RF	
3001	12				P78U-0004G	Insulation gasket kit Glass reinforced epoxy Class 150 Manufacturer-standard Flange ASME B16.5 RF	
3001	14				P78U-0004H	Insulation gasket kit Glass reinforced epoxy Class 150 Manufacturer-standard Flange ASME B16.5 RF	
3001	16				P78U-0004J	Insulation gasket kit Glass reinforced epoxy Class 150 Manufacturer-standard Flange ASME B16.5 RF	
3001	18				P78U-0004K	Insulation gasket kit Glass reinforced epoxy Class 150 Manufacturer-standard Flange ASME B16.5 RF	
3001	20				P78U-0004M	Insulation gasket kit Glass reinforced epoxy Class 150 Manufacturer-standard Flange ASME B16.5 RF	
3001	24				P78U-0004N	Insulation gasket kit Glass reinforced epoxy Class 150 Manufacturer-standard Flange ASME B16.5 RF	
773	0.5				P73T-000FT	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	0.75				P73T-000FU	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	3				P73T-000G5	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	4				P73T-000G6	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	6				P73T-000G7	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	8				P73T-000G8	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	10				P73T-000FX	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	12				P73T-000FY	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	14				P73T-000FZ	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	16				P73T-000G0	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	18				P73T-000G1	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	20				P73T-000G3	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	24				P73T-000G4	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	30				P73T-000H9	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	36				P73T-000HC	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	42				P73T-000KM	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-16				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 Galvanized UNC Stud-bolt with two Heavy HEX nuts	
1	18-24				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 Galvanized 8UN Stud-bolt with two Heavy HEX nuts	
1	30-42				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 Galvanized UNC Stud-bolt with two Heavy HEX nuts	
211	0.5-16				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 Galvanized UNC Stud-bolt with two Heavy HEX nuts	
211	18-24				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 Galvanized 8UN Stud-bolt with two Heavy HEX nuts	

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BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
211	30-42				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 Galvanized UNC Stud-bolt with two Heavy HEX nuts	
773	0.5-10				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 Galvanized UNC Stud-bolt with two Heavy HEX nuts	
773	12-42				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 Galvanized 8UN Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81B-000W9	Gate valve ASTM A105 Class 800 API 602 NPT Trim number 8 BB-BG-OS&Y Handwheel operated	
1	0.75				P81B-000WA	Gate valve ASTM A105 Class 800 API 602 NPT Trim number 8 BB-BG-OS&Y Handwheel operated	
1	1				P81B-000WB	Gate valve ASTM A105 Class 800 API 602 NPT Trim number 8 BB-BG-OS&Y Handwheel operated	
1	1.5				P81B-000WC	Gate valve ASTM A105 Class 800 API 602 NPT Trim number 8 BB-BG-OS&Y Handwheel operated	
1	2				P81C-002DV	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	3				P81C-002DW	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	4				P81C-002DX	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	6				P81C-002DY	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	8				P81C-002DZ	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	10				P81C-002DT	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	12				P81C-002DU	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	14				P81C-00308	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated	
1	16				P81C-002E0	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated	
1	18				P81C-002E1	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated	
1	20				P81C-002E2	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated	
1	24				P81C-002E3	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated	
1	30				P81C-004D8	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.47-B RF Trim number 8 BB-BG-OS&Y Gear operated	
1	36				P81C-004D9	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.47-B RF Trim number 8 BB-BG-OS&Y Gear operated	
1	42				P81C-004E4	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.47-B RF Trim number 8 BB-BG-OS&Y Gear operated	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82B-000NK	Globe valve ASTM A105 Class 800 API 602 NPT Trim number 8 BB-BG-OS&Y Handwheel operated	
1	0.75				P82B-000NL	Globe valve ASTM A105 Class 800 API 602 NPT Trim number 8 BB-BG-OS&Y Handwheel operated	
1	1				P82B-000NM	Globe valve ASTM A105 Class 800 API 602 NPT Trim number 8 BB-BG-OS&Y Handwheel operated	
1	1.5				P82B-000NN	Globe valve ASTM A105 Class 800 API 602 NPT Trim number 8 BB-BG-OS&Y Handwheel operated	
1	2				P82C-000N5	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	3				P82C-000N6	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	4				P82C-000N7	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	6				P82C-000N8	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	8				P82C-0026L	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83B-0013G	Check valve ASTM A105 Class 800 API 602 NPT Trim number 8 Lift-type Bolted cover	
1	0.75				P83B-0013H	Check valve ASTM A105 Class 800 API 602 NPT Trim number 8 Lift-type Bolted cover	
1	1				P83B-0013J	Check valve ASTM A105 Class 800 API 602 NPT Trim number 8 Lift-type Bolted cover	
1	1.5				P83B-0013K	Check valve ASTM A105 Class 800 API 602 NPT Trim number 8 Lift-type Bolted cover	
1	2				P83C-00144	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	3				P83C-00147	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	4				P83C-00148	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	6				P83C-00149	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	8				P83C-0014A	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	

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CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	10				P83C-00140	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	12				P83C-00141	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	14				P83C-0021E	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	16				P83C-00142	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	18				P83C-00143	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	20				P83C-00145	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	24				P83C-00146	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	

BUTTERFLY VALVE (H)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	4				P86C-0023Y	Offset design butterfly valve ASTM A216 Grade WCB Class 150 API 609 Category B Lug-type ASME B16.5 RF Disc CS Seat Stellite-6 Trim 13Cr Triple eccentric design BG Gear operated	
1	24				P86C-001AZ	Offset design butterfly valve ASTM A216 Grade WCB Class 150 API 609 Category B Double flanged ASME B16.5 RF Disc CS Seat Stellite-6 Trim 13Cr Triple eccentric design BG Gear operated	

ORIFICE FLANGE (FO)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	16		SCH20		P66B-008PW	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 NPT tap x 1	
200	16		SCH20		P66B-008PV	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 NPT tap x 1 with Jack screw	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71B-000FU	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Galvanized	
1	0.75				P71B-000FV	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Galvanized	
1	1				P71B-000FW	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Galvanized	
1	1.5				P71B-000FX	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Galvanized	
1	2				P71B-000FN	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Galvanized	
1	3				P71B-0000N	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	4				P71B-0000M	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	6				P71B-0000L	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	8				P71B-0000R	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	10				P71B-0000K	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	12				P71B-0000J	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	

PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000AH	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	16				P72B-0000C	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	18				P72B-000AJ	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	20				P72B-000AK	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	24				P72B-000AL	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	30				P72B-000AM	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	36				P72B-000AN	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	42				P72B-000AP	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	

PADDLE SPACER (PS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000AT	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	16				P72B-0000B	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	18				P72B-000AU	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	20				P72B-000AV	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	24				P72B-000AW	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	30				P72B-000AX	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	36				P72B-000AY	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	42				P72B-000AZ	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	

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BOLT TABLE (B_A0RU , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	60	P80S-017T2		
0.75	4	0.500	65	P80S-017T3		
1	4	0.500	70	P80S-017T4		
1.5	4	0.500	75	P80S-017T5		
2	4	0.625	85	P80S-017UU		
3	4	0.625	95	P80S-017UW		
4	8	0.625	95	P80S-017UW		
6	8	0.750	105	P80S-017UY		
8	8	0.750	110	P80S-017UZ		
10	12	0.875	120	P80S-017XU		
12	12	0.875	120	P80S-017XU		
14	12	1.000	135	P80S-017ZX		
16	16	1.000	140	P80S-017ZY		
18	16	1.125	150	P80S-018DK		
20	20	1.125	160	P80S-018DM		
24	20	1.250	175	P80S-018H5		
30	44	0.750	145	P80S-017V6		
36	44	0.875	175	P80S-017Y5		
42	48	1.000	190	P80S-01808		

BOLT TABLE (B_A0RU_211 , MACHINE ASME FF, OPTION CODE 211)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	60	P80S-017T2		
0.75	4	0.500	60	P80S-017T2		
1	4	0.500	65	P80S-017T3		
1.5	4	0.500	70	P80S-017T4		
2	4	0.625	80	P80S-017UT		
3	4	0.625	90	P80S-017UV		
4	8	0.625	90	P80S-017UV		
6	8	0.750	100	P80S-017UX		
8	8	0.750	105	P80S-017UY		
10	12	0.875	115	P80S-017XT		
12	12	0.875	120	P80S-017XU		
14	12	1.000	130	P80S-017ZW		
16	16	1.000	135	P80S-017ZX		
18	16	1.125	145	P80S-018DJ		
20	20	1.125	155	P80S-018DL		
24	20	1.250	175	P80S-018H5		
30	44	0.750	140	P80S-017V5		
36	44	0.875	170	P80S-017Y4		
42	48	1.000	190	P80S-01808		

BOLT TABLE (B_A0RU_773 , STUD ASME RF, OPTION CODE 773)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-017T4		
0.75	4	0.625	75	P80S-017US		
1	4	0.625	80	P80S-017UT		
1.5	4	0.750	95	P80S-017XN		
2	8	0.625	90	P80S-017UV		
3	8	0.750	110	P80S-017UZ		
4	8	0.750	115	P80S-017V0		
6	12	0.750	125	P80S-017V2		
8	12	0.875	140	P80S-017XY		
10	16	1.000	160	P80S-01802		
12	16	1.125	175	P80S-018DR		
14	20	1.125	180	P80S-018DS		
16	20	1.250	190	P80S-018H8		
18	24	1.250	200	P80S-018HA		
20	24	1.250	210	P80S-018HC		
24	24	1.500	235	P80S-018P0		
30	36	1.375	285	P80S-018LL		
36	32	1.625	320	P80S-018TZ		
42	36	1.750	355	P80S-01E25		

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BRANCH TABLE (T_A0RU)

RUN PIPE SIZE (in) \ BRANCH SIZE (in)	0.5	0.75	1	1.5	2	3	4	6	8	10	12	14	16	18	20	24	30	36	42
0.5	TS																		
0.75		TS																	
1		TR	TS																
1.5		TR	TR	TS															
2		TR	TR	TR	TS														
3		L	L	L	L	TS													
4		L	L	L	L	TR	TS												
6		L	L	L	L	TR	TR	TS											
8		L	L	L	L	L	TR	TR	TS										
10		L	L	L	L	L	TR	TR	TR	TS									
12		L	L	L	L	L	L	TR	TR	TR	TS								
14		L	L	L	L	L	L	TR	TR	TR	TR	TS							
16		L	L	L	L	L	L	TR	TR	TR	TR	TR	TS						
18		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TS					
20		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TR	TS				
24		L	L	L	L	L	L	L	9PD	TR	TR	TR	TR	TR	TR	TS			
30		L	L	L	L	L	L	L	9PD	TR	TR	TR	TR	TR	TR	TR	TS		
36		L	L	L	L	L	L	L	9PD	9PD	9PD	9PD	TR	TR	TR	TR	TR	TS	
42		L	L	L	L	L	L	L	9PD	9PD	9PD	9PD	TR	TR	TR	TR	TR	TR	TS

9PD : REINFORCING PAD 90 DEG
L : OUTLET
TR : REDUCING TEE
TS : STRAIGHT TEE

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PIPING CLASS

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Material : INCONEL 625
Rating : ASME CLASS 150
Flange Face : RF
C.A.(mm) : 0.00
Gasket : Spiral Wound
Service : PROCESS -WET SOUR SERVICE SUBJECT TO NACE STD. : / PROCESS WITH HYDROGEN
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
5	BOLTING CONFIRMING TO B7M / 2HM SHALL BE USED UNDER CONDITIONS (A) DIRECT EXPOSURE TO SOUR ENVIRONMENTS (B) WHEN THE BOLTING WILL BE BURIED OR INSULATED
13	ALL INCONEL 625 (ALLOY UNS N06625) MATERIAL SHALL BE SUPPLIED IN ANNEALED CONDITION

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
541	NPT(F) (CA,F,L)
773	CLASS 300 (B,F,G)
4608	VALVE WITH NIPPLES (V)

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PIPING CLASS
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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P01M-0005D	Pipe ASTM B444 UNS N06625 Grade 1 Seamless ASME B36.10M/B36.19M PE	
1	0.75		SCH80S		P01M-0005E	Pipe ASTM B444 UNS N06625 Grade 1 Seamless ASME B36.10M/B36.19M PE	
1	1		SCH80S		P01M-0005F	Pipe ASTM B444 UNS N06625 Grade 1 Seamless ASME B36.10M/B36.19M PE	
1	1.5		SCH80S		P01M-0005G	Pipe ASTM B444 UNS N06625 Grade 1 Seamless ASME B36.10M/B36.19M PE	
1	2		SCH10S		P01M-0003H	Pipe ASTM B444 UNS N06625 Grade 1 Seamless ASME B36.10M/B36.19M BE	
1	3		SCH10S		P01M-00089	Pipe ASTM B444 UNS N06625 Grade 1 Seamless ASME B36.10M/B36.19M BE	
1	4		SCH10S		P01M-0008A	Pipe ASTM B444 UNS N06625 Grade 1 Seamless ASME B36.10M/B36.19M BE	
1	6		SCH10S		P01M-0008B	Pipe ASTM B444 UNS N06625 Grade 1 Seamless ASME B36.10M/B36.19M BE	
1	8		SCH10S		P01M-000D9	Pipe ASTM B705 UNS N06625 Weld ASME B36.10M/B36.19M BE	
1	10		SCH10S		P01M-000D2	Pipe ASTM B705 UNS N06625 Weld ASME B36.10M/B36.19M BE	
1	12		SCH10S		P01M-000D3	Pipe ASTM B705 UNS N06625 Weld ASME B36.10M/B36.19M BE	
1	14		SCH10S		P01M-000D4	Pipe ASTM B705 UNS N06625 Weld ASME B36.10M/B36.19M BE	
1	16		SCH10S		P01M-000D5	Pipe ASTM B705 UNS N06625 Weld ASME B36.10M/B36.19M BE	
1	18		SCH10S		P01M-000D6	Pipe ASTM B705 UNS N06625 Weld ASME B36.10M/B36.19M BE	
1	20		SCH10S		P01M-000D7	Pipe ASTM B705 UNS N06625 Weld ASME B36.10M/B36.19M BE	
1	24		SCH10S		P01M-000D8	Pipe ASTM B705 UNS N06625 Weld ASME B36.10M/B36.19M BE	
1	30		SCH10S		P01M-000EK	Pipe ASTM B705 UNS N06625 Weld ASME B36.10M/B36.19M BE	
1	36		SCH10		P01M-000EL	Pipe ASTM B705 UNS N06625 Weld ASME B36.10M/B36.19M BE	
1	42		STD		P01M-000EM	Pipe ASTM B705 UNS N06625 Weld ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P02M-0008C	90 degree elbow ASTM B366 Grade WPNCMC Grade 1 Class S Seamless ASME B16.9 BW Long radius	
1	0.75		SCH80S		P02M-0008D	90 degree elbow ASTM B366 Grade WPNCMC Grade 1 Class S Seamless ASME B16.9 BW Long radius	
1	1		SCH80S		P02M-0008E	90 degree elbow ASTM B366 Grade WPNCMC Grade 1 Class S Seamless ASME B16.9 BW Long radius	
1	1.5		SCH80S		P02M-0008F	90 degree elbow ASTM B366 Grade WPNCMC Grade 1 Class S Seamless ASME B16.9 BW Long radius	
1	2		SCH10S		P02M-000BT	90 degree elbow ASTM B366 Grade WPNCMC Grade 1 Class S Seamless ASME B16.9 BW Long radius	
1	3		SCH10S		P02M-0008H	90 degree elbow ASTM B366 Grade WPNCMC Grade 1 Class S Seamless ASME B16.9 BW Long radius	
1	4		SCH10S		P02M-0008J	90 degree elbow ASTM B366 Grade WPNCMC Grade 1 Class S Seamless ASME B16.9 BW Long radius	
1	6		SCH10S		P02M-0008K	90 degree elbow ASTM B366 Grade WPNCMC Grade 1 Class S Seamless ASME B16.9 BW Long radius	
1	8		SCH10S		P02M-0009Y	90 degree elbow ASTM B366 Grade WPNCMC Class WX Weld ASME B16.9 BW Long radius	
1	10		SCH10S		P02M-0009X	90 degree elbow ASTM B366 Grade WPNCMC Class WX Weld ASME B16.9 BW Long radius	
1	12		SCH10S		P02M-00043	90 degree elbow ASTM B366 Grade WPNCMC Class WX Weld ASME B16.9 BW Long radius	
1	14		SCH10S		P02M-0007K	90 degree elbow ASTM B366 Grade WPNCMC Class WX Weld ASME B16.9 BW Long radius	
1	16		SCH10S		P02M-0007L	90 degree elbow ASTM B366 Grade WPNCMC Class WX Weld ASME B16.9 BW Long radius	
1	18		SCH10S		P02M-0007M	90 degree elbow ASTM B366 Grade WPNCMC Class WX Weld ASME B16.9 BW Long radius	
1	20		SCH10S		P02M-000BU	90 degree elbow ASTM B366 Grade WPNCMC Class WX Weld ASME B16.9 BW Long radius	
1	24		SCH10S		P02M-000BV	90 degree elbow ASTM B366 Grade WPNCMC Class WX Weld ASME B16.9 BW Long radius	
1	30		SCH10S		P02M-000D5	90 degree elbow ASTM B366 Grade WPNCMC Class WX Weld ASME B16.9 BW Long radius	
1	36		SCH10		P02M-000D6	90 degree elbow ASTM B366 Grade WPNCMC Class WX Weld ASME B16.9 BW Long radius	
1	42		STD		P02M-000D7	90 degree elbow ASTM B366 Grade WPNCMC Class WX Weld ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P03M-001A4	45 degree elbow ASTM B366 Grade WPNCMC Grade 1 Class S Seamless ASME B16.9 BW Long radius	
1	0.75		SCH80S		P03M-001A5	45 degree elbow ASTM B366 Grade WPNCMC Grade 1 Class S Seamless ASME B16.9 BW Long radius	
1	1		SCH80S		P03M-001A6	45 degree elbow ASTM B366 Grade WPNCMC Grade 1 Class S Seamless ASME B16.9 BW Long radius	
1	1.5		SCH80S		P03M-001A7	45 degree elbow ASTM B366 Grade WPNCMC Grade 1 Class S Seamless ASME B16.9 BW Long radius	
1	2		SCH10S		P03M-001CU	45 degree elbow ASTM B366 Grade WPNCMC Grade 1 Class S Seamless ASME B16.9 BW Long radius	
1	3		SCH10S		P03M-001A9	45 degree elbow ASTM B366 Grade WPNCMC Grade 1 Class S Seamless ASME B16.9 BW Long radius	
1	4		SCH10S		P03M-001AA	45 degree elbow ASTM B366 Grade WPNCMC Grade 1 Class S Seamless ASME B16.9 BW Long radius	
1	6		SCH10S		P03M-001AB	45 degree elbow ASTM B366 Grade WPNCMC Grade 1 Class S Seamless ASME B16.9 BW Long radius	
1	8		SCH10S		P03M-001B0	45 degree elbow ASTM B366 Grade WPNCMC Class WX Weld ASME B16.9 BW Long radius	
1	10		SCH10S		P03M-001AZ	45 degree elbow ASTM B366 Grade WPNCMC Class WX Weld ASME B16.9 BW Long radius	
1	12		SCH10S		P03M-000BF	45 degree elbow ASTM B366 Grade WPNCMC Class WX Weld ASME B16.9 BW Long radius	
1	14		SCH10S		P03M-0019Y	45 degree elbow ASTM B366 Grade WPNCMC Class WX Weld ASME B16.9 BW Long radius	
1	16		SCH10S		P03M-0019Z	45 degree elbow ASTM B366 Grade WPNCMC Class WX Weld ASME B16.9 BW Long radius	
1	18		SCH10S		P03M-001A0	45 degree elbow ASTM B366 Grade WPNCMC Class WX Weld ASME B16.9 BW Long radius	
1	20		SCH10S		P03M-001CV	45 degree elbow ASTM B366 Grade WPNCMC Class WX Weld ASME B16.9 BW Long radius	

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45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	24		SCH10S		P03M-001CW	45 degree elbow ASTM B366 Grade WPNCMC Class WX Weld ASME B16.9 BW Long radius	
1	30		SCH10S		P03M-001E1	45 degree elbow ASTM B366 Grade WPNCMC Class WX Weld ASME B16.9 BW Long radius	
1	36		SCH10		P03M-001E2	45 degree elbow ASTM B366 Grade WPNCMC Class WX Weld ASME B16.9 BW Long radius	
1	42		STD		P03M-001E3	45 degree elbow ASTM B366 Grade WPNCMC Class WX Weld ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P21M-0007E	Straight tee ASTM B366 Grade WPNCMC Grade 1 Class S Seamless ASME B16.9 BW	
1	0.75		SCH80S		P21M-0007F	Straight tee ASTM B366 Grade WPNCMC Grade 1 Class S Seamless ASME B16.9 BW	
1	1		SCH80S		P21M-0007G	Straight tee ASTM B366 Grade WPNCMC Grade 1 Class S Seamless ASME B16.9 BW	
1	1.5		SCH80S		P21M-0007H	Straight tee ASTM B366 Grade WPNCMC Grade 1 Class S Seamless ASME B16.9 BW	
1	2		SCH10S		P21M-000A8	Straight tee ASTM B366 Grade WPNCMC Grade 1 Class S Seamless ASME B16.9 BW	
1	3		SCH10S		P21M-0007K	Straight tee ASTM B366 Grade WPNCMC Grade 1 Class S Seamless ASME B16.9 BW	
1	4		SCH10S		P21M-0007L	Straight tee ASTM B366 Grade WPNCMC Grade 1 Class S Seamless ASME B16.9 BW	
1	6		SCH10S		P21M-0007M	Straight tee ASTM B366 Grade WPNCMC Grade 1 Class S Seamless ASME B16.9 BW	
1	8		SCH10S		P21M-0008L	Straight tee ASTM B366 Grade WPNCMC Class WX Weld ASME B16.9 BW	
1	10		SCH10S		P21M-0008K	Straight tee ASTM B366 Grade WPNCMC Class WX Weld ASME B16.9 BW	
1	12		SCH10S		P21M-0004P	Straight tee ASTM B366 Grade WPNCMC Class WX Weld ASME B16.9 BW	
1	14		SCH10S		P21M-00078	Straight tee ASTM B366 Grade WPNCMC Class WX Weld ASME B16.9 BW	
1	16		SCH10S		P21M-00079	Straight tee ASTM B366 Grade WPNCMC Class WX Weld ASME B16.9 BW	
1	18		SCH10S		P21M-0007A	Straight tee ASTM B366 Grade WPNCMC Class WX Weld ASME B16.9 BW	
1	20		SCH10S		P21M-0008Z	Straight tee ASTM B366 Grade WPNCMC Class WX Weld ASME B16.9 BW	
1	24		SCH10S		P21M-00090	Straight tee ASTM B366 Grade WPNCMC Class WX Weld ASME B16.9 BW	
1	30		SCH10S		P21M-000BH	Straight tee ASTM B366 Grade WPNCMC Class WX Weld ASME B16.9 BW	
1	36		SCH10		P21M-000BJ	Straight tee ASTM B366 Grade WPNCMC Class WX Weld ASME B16.9 BW	
1	42		STD		P21M-000BK	Straight tee ASTM B366 Grade WPNCMC Class WX Weld ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75	SCH80S	SCH80S	P24M-000K1	Reducing tee ASTM B366 Grade WPNCMC Grade 1 Class S Seamless ASME B16.9 BW	
1	1.5	0.75	SCH80S	SCH80S	P24M-000K2	Reducing tee ASTM B366 Grade WPNCMC Grade 1 Class S Seamless ASME B16.9 BW	
1	1.5	1	SCH80S	SCH80S	P24M-000K3	Reducing tee ASTM B366 Grade WPNCMC Grade 1 Class S Seamless ASME B16.9 BW	
1	2	1	SCH10S	SCH80S	P24M-000U2	Reducing tee ASTM B366 Grade WPNCMC Grade 1 Class S Seamless ASME B16.9 BW	
1	2	1.5	SCH10S	SCH80S	P24M-000U3	Reducing tee ASTM B366 Grade WPNCMC Grade 1 Class S Seamless ASME B16.9 BW	
1	3	1.5	SCH10S	SCH80S	P24M-000K6	Reducing tee ASTM B366 Grade WPNCMC Grade 1 Class S Seamless ASME B16.9 BW	
1	3	2	SCH10S	SCH10S	P24M-000U4	Reducing tee ASTM B366 Grade WPNCMC Grade 1 Class S Seamless ASME B16.9 BW	
1	4	2	SCH10S	SCH10S	P24M-000U5	Reducing tee ASTM B366 Grade WPNCMC Grade 1 Class S Seamless ASME B16.9 BW	
1	4	3	SCH10S	SCH10S	P24M-000K9	Reducing tee ASTM B366 Grade WPNCMC Grade 1 Class S Seamless ASME B16.9 BW	
1	6	3	SCH10S	SCH10S	P24M-000KA	Reducing tee ASTM B366 Grade WPNCMC Grade 1 Class S Seamless ASME B16.9 BW	
1	6	4	SCH10S	SCH10S	P24M-000KB	Reducing tee ASTM B366 Grade WPNCMC Grade 1 Class S Seamless ASME B16.9 BW	
1	8	4	SCH10S	SCH10S	P24M-000N3	Reducing tee ASTM B366 Grade WPNCMC Class WX Weld ASME B16.9 BW	
1	8	6	SCH10S	SCH10S	P24M-000N4	Reducing tee ASTM B366 Grade WPNCMC Class WX Weld ASME B16.9 BW	
1	10	4	SCH10S	SCH10S	P24M-000N5	Reducing tee ASTM B366 Grade WPNCMC Class WX Weld ASME B16.9 BW	
1	10	6	SCH10S	SCH10S	P24M-000N6	Reducing tee ASTM B366 Grade WPNCMC Class WX Weld ASME B16.9 BW	
1	10	8	SCH10S	SCH10S	P24M-000N7	Reducing tee ASTM B366 Grade WPNCMC Class WX Weld ASME B16.9 BW	
1	12	6	SCH10S	SCH10S	P24M-000N9	Reducing tee ASTM B366 Grade WPNCMC Class WX Weld ASME B16.9 BW	
1	12	8	SCH10S	SCH10S	P24M-000NA	Reducing tee ASTM B366 Grade WPNCMC Class WX Weld ASME B16.9 BW	
1	12	10	SCH10S	SCH10S	P24M-000N8	Reducing tee ASTM B366 Grade WPNCMC Class WX Weld ASME B16.9 BW	
1	14	6	SCH10S	SCH10S	P24M-000PJ	Reducing tee ASTM B366 Grade WPNCMC Class WX Weld ASME B16.9 BW	
1	14	8	SCH10S	SCH10S	P24M-000JN	Reducing tee ASTM B366 Grade WPNCMC Class WX Weld ASME B16.9 BW	
1	14	10	SCH10S	SCH10S	P24M-000JL	Reducing tee ASTM B366 Grade WPNCMC Class WX Weld ASME B16.9 BW	
1	14	12	SCH10S	SCH10S	P24M-000JM	Reducing tee ASTM B366 Grade WPNCMC Class WX Weld ASME B16.9 BW	
1	16	6	SCH10S	SCH10S	P24M-000PK	Reducing tee ASTM B366 Grade WPNCMC Class WX Weld ASME B16.9 BW	
1	16	8	SCH10S	SCH10S	P24M-000JT	Reducing tee ASTM B366 Grade WPNCMC Class WX Weld ASME B16.9 BW	
1	16	10	SCH10S	SCH10S	P24M-000JP	Reducing tee ASTM B366 Grade WPNCMC Class WX Weld ASME B16.9 BW	
1	16	12	SCH10S	SCH10S	P24M-000JR	Reducing tee ASTM B366 Grade WPNCMC Class WX Weld ASME B16.9 BW	
1	16	14	SCH10S	SCH10S	P24M-000JS	Reducing tee ASTM B366 Grade WPNCMC Class WX Weld ASME B16.9 BW	
1	18	8	SCH10S	SCH10S	P24M-000PL	Reducing tee ASTM B366 Grade WPNCMC Class WX Weld ASME B16.9 BW	
1	18	10	SCH10S	SCH10S	P24M-000JU	Reducing tee ASTM B366 Grade WPNCMC Class WX Weld ASME B16.9 BW	

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A0YQ REV NO. 2

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	18	12	SCH10S	SCH10S	P24M-000JV	Reducing tee ASTM B366 Grade WPNCMC Class WX Weld ASME B16.9 BW	
1	18	14	SCH10S	SCH10S	P24M-000JW	Reducing tee ASTM B366 Grade WPNCMC Class WX Weld ASME B16.9 BW	
1	18	16	SCH10S	SCH10S	P24M-000JX	Reducing tee ASTM B366 Grade WPNCMC Class WX Weld ASME B16.9 BW	
1	20	8	SCH10S	SCH10S	P24M-000PT	Reducing tee ASTM B366 Grade WPNCMC Class WX Weld ASME B16.9 BW	
1	20	10	SCH10S	SCH10S	P24M-000PM	Reducing tee ASTM B366 Grade WPNCMC Class WX Weld ASME B16.9 BW	
1	20	12	SCH10S	SCH10S	P24M-000PN	Reducing tee ASTM B366 Grade WPNCMC Class WX Weld ASME B16.9 BW	
1	20	14	SCH10S	SCH10S	P24M-000PP	Reducing tee ASTM B366 Grade WPNCMC Class WX Weld ASME B16.9 BW	
1	20	16	SCH10S	SCH10S	P24M-000PR	Reducing tee ASTM B366 Grade WPNCMC Class WX Weld ASME B16.9 BW	
1	20	18	SCH10S	SCH10S	P24M-000PS	Reducing tee ASTM B366 Grade WPNCMC Class WX Weld ASME B16.9 BW	
1	24	10	SCH10S	SCH10S	P24M-000PU	Reducing tee ASTM B366 Grade WPNCMC Class WX Weld ASME B16.9 BW	
1	24	12	SCH10S	SCH10S	P24M-000PV	Reducing tee ASTM B366 Grade WPNCMC Class WX Weld ASME B16.9 BW	
1	24	14	SCH10S	SCH10S	P24M-000PW	Reducing tee ASTM B366 Grade WPNCMC Class WX Weld ASME B16.9 BW	
1	24	16	SCH10S	SCH10S	P24M-000PX	Reducing tee ASTM B366 Grade WPNCMC Class WX Weld ASME B16.9 BW	
1	24	18	SCH10S	SCH10S	P24M-000PY	Reducing tee ASTM B366 Grade WPNCMC Class WX Weld ASME B16.9 BW	
1	24	20	SCH10S	SCH10S	P24M-000PZ	Reducing tee ASTM B366 Grade WPNCMC Class WX Weld ASME B16.9 BW	
1	30	10	SCH10S	SCH10S	P24M-000WU	Reducing tee ASTM B366 Grade WPNCMC Class WX Weld ASME B16.9 BW	
1	30	12	SCH10S	SCH10S	P24M-000WV	Reducing tee ASTM B366 Grade WPNCMC Class WX Weld ASME B16.9 BW	
1	30	14	SCH10S	SCH10S	P24M-000WW	Reducing tee ASTM B366 Grade WPNCMC Class WX Weld ASME B16.9 BW	
1	30	16	SCH10S	SCH10S	P24M-000WX	Reducing tee ASTM B366 Grade WPNCMC Class WX Weld ASME B16.9 BW	
1	30	18	SCH10S	SCH10S	P24M-000WY	Reducing tee ASTM B366 Grade WPNCMC Class WX Weld ASME B16.9 BW	
1	30	20	SCH10S	SCH10S	P24M-000WZ	Reducing tee ASTM B366 Grade WPNCMC Class WX Weld ASME B16.9 BW	
1	30	24	SCH10S	SCH10S	P24M-000X0	Reducing tee ASTM B366 Grade WPNCMC Class WX Weld ASME B16.9 BW	
1	36	16	SCH10	SCH10S	P24M-000X1	Reducing tee ASTM B366 Grade WPNCMC Class WX Weld ASME B16.9 BW	
1	36	18	SCH10	SCH10S	P24M-000X2	Reducing tee ASTM B366 Grade WPNCMC Class WX Weld ASME B16.9 BW	
1	36	20	SCH10	SCH10S	P24M-000X3	Reducing tee ASTM B366 Grade WPNCMC Class WX Weld ASME B16.9 BW	
1	36	24	SCH10	SCH10S	P24M-000X4	Reducing tee ASTM B366 Grade WPNCMC Class WX Weld ASME B16.9 BW	
1	36	30	SCH10	SCH10S	P24M-000X5	Reducing tee ASTM B366 Grade WPNCMC Class WX Weld ASME B16.9 BW	
1	42	16	STD	SCH10S	P24M-000X6	Reducing tee ASTM B366 Grade WPNCMC Class WX Weld ASME B16.9 BW	
1	42	18	STD	SCH10S	P24M-000X7	Reducing tee ASTM B366 Grade WPNCMC Class WX Weld ASME B16.9 BW	
1	42	20	STD	SCH10S	P24M-000X8	Reducing tee ASTM B366 Grade WPNCMC Class WX Weld ASME B16.9 BW	
1	42	24	STD	SCH10S	P24M-000X9	Reducing tee ASTM B366 Grade WPNCMC Class WX Weld ASME B16.9 BW	
1	42	30	STD	SCH10S	P24M-000XA	Reducing tee ASTM B366 Grade WPNCMC Class WX Weld ASME B16.9 BW	
1	42	36	STD	SCH10	P24M-000XB	Reducing tee ASTM B366 Grade WPNCMC Class WX Weld ASME B16.9 BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH80S	SCH80S	P27M-000L1	Concentric reducer ASTM B366 Grade WPNCMC Grade 1 Class S Seamless ASME B16.9 BW	
1	1	0.5	SCH80S	SCH80S	P27M-000L2	Concentric reducer ASTM B366 Grade WPNCMC Grade 1 Class S Seamless ASME B16.9 BW	
1	1	0.75	SCH80S	SCH80S	P27M-000L3	Concentric reducer ASTM B366 Grade WPNCMC Grade 1 Class S Seamless ASME B16.9 BW	
1	1.5	0.5	SCH80S	SCH80S	P27M-000L4	Concentric reducer ASTM B366 Grade WPNCMC Grade 1 Class S Seamless ASME B16.9 BW	
1	1.5	0.75	SCH80S	SCH80S	P27M-000L5	Concentric reducer ASTM B366 Grade WPNCMC Grade 1 Class S Seamless ASME B16.9 BW	
1	1.5	1	SCH80S	SCH80S	P27M-000L6	Concentric reducer ASTM B366 Grade WPNCMC Grade 1 Class S Seamless ASME B16.9 BW	
1	2	0.75	SCH10S	SCH80S	P27M-000T5	Concentric reducer ASTM B366 Grade WPNCMC Grade 1 Class S Seamless ASME B16.9 BW	
1	2	1	SCH10S	SCH80S	P27M-000T6	Concentric reducer ASTM B366 Grade WPNCMC Grade 1 Class S Seamless ASME B16.9 BW	
1	2	1.5	SCH10S	SCH80S	P27M-000T7	Concentric reducer ASTM B366 Grade WPNCMC Grade 1 Class S Seamless ASME B16.9 BW	
1	3	1.5	SCH10S	SCH80S	P27M-000LA	Concentric reducer ASTM B366 Grade WPNCMC Grade 1 Class S Seamless ASME B16.9 BW	
1	3	2	SCH10S	SCH10S	P27M-000T8	Concentric reducer ASTM B366 Grade WPNCMC Grade 1 Class S Seamless ASME B16.9 BW	
1	4	1.5	SCH10S	SCH80S	P27M-000LC	Concentric reducer ASTM B366 Grade WPNCMC Grade 1 Class S Seamless ASME B16.9 BW	
1	4	2	SCH10S	SCH10S	P27M-000T9	Concentric reducer ASTM B366 Grade WPNCMC Grade 1 Class S Seamless ASME B16.9 BW	
1	4	3	SCH10S	SCH10S	P27M-000LE	Concentric reducer ASTM B366 Grade WPNCMC Grade 1 Class S Seamless ASME B16.9 BW	
1	6	3	SCH10S	SCH10S	P27M-000LF	Concentric reducer ASTM B366 Grade WPNCMC Grade 1 Class S Seamless ASME B16.9 BW	
1	6	4	SCH10S	SCH10S	P27M-000LG	Concentric reducer ASTM B366 Grade WPNCMC Grade 1 Class S Seamless ASME B16.9 BW	
1	8	4	SCH10S	SCH10S	P27M-000NU	Concentric reducer ASTM B366 Grade WPNCMC Class WX Weld ASME B16.9 BW	
1	8	6	SCH10S	SCH10S	P27M-000NV	Concentric reducer ASTM B366 Grade WPNCMC Class WX Weld ASME B16.9 BW	
1	10	4	SCH10S	SCH10S	P27M-000NW	Concentric reducer ASTM B366 Grade WPNCMC Class WX Weld ASME B16.9 BW	
1	10	6	SCH10S	SCH10S	P27M-000NX	Concentric reducer ASTM B366 Grade WPNCMC Class WX Weld ASME B16.9 BW	
1	10	8	SCH10S	SCH10S	P27M-000NY	Concentric reducer ASTM B366 Grade WPNCMC Class WX Weld ASME B16.9 BW	
1	12	6	SCH10S	SCH10S	P27M-000P0	Concentric reducer ASTM B366 Grade WPNCMC Class WX Weld ASME B16.9 BW	
1	12	8	SCH10S	SCH10S	P27M-000P1	Concentric reducer ASTM B366 Grade WPNCMC Class WX Weld ASME B16.9 BW	

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PIPING CLASS
A0YQ REV NO. 2

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	12	10	SCH10S	SCH10S	P27M-000NZ	Concentric reducer ASTM B366 Grade WPNCMC Class WX Weld ASME B16.9 BW	
1	14	6	SCH10S	SCH10S	P27M-000KK	Concentric reducer ASTM B366 Grade WPNCMC Class WX Weld ASME B16.9 BW	
1	14	8	SCH10S	SCH10S	P27M-000KL	Concentric reducer ASTM B366 Grade WPNCMC Class WX Weld ASME B16.9 BW	
1	14	10	SCH10S	SCH10S	P27M-000KH	Concentric reducer ASTM B366 Grade WPNCMC Class WX Weld ASME B16.9 BW	
1	14	12	SCH10S	SCH10S	P27M-000KJ	Concentric reducer ASTM B366 Grade WPNCMC Class WX Weld ASME B16.9 BW	
1	16	8	SCH10S	SCH10S	P27M-000KR	Concentric reducer ASTM B366 Grade WPNCMC Class WX Weld ASME B16.9 BW	
1	16	10	SCH10S	SCH10S	P27M-000KM	Concentric reducer ASTM B366 Grade WPNCMC Class WX Weld ASME B16.9 BW	
1	16	12	SCH10S	SCH10S	P27M-000KN	Concentric reducer ASTM B366 Grade WPNCMC Class WX Weld ASME B16.9 BW	
1	16	14	SCH10S	SCH10S	P27M-000KP	Concentric reducer ASTM B366 Grade WPNCMC Class WX Weld ASME B16.9 BW	
1	18	10	SCH10S	SCH10S	P27M-000KS	Concentric reducer ASTM B366 Grade WPNCMC Class WX Weld ASME B16.9 BW	
1	18	12	SCH10S	SCH10S	P27M-000KT	Concentric reducer ASTM B366 Grade WPNCMC Class WX Weld ASME B16.9 BW	
1	18	14	SCH10S	SCH10S	P27M-000KU	Concentric reducer ASTM B366 Grade WPNCMC Class WX Weld ASME B16.9 BW	
1	18	16	SCH10S	SCH10S	P27M-000KV	Concentric reducer ASTM B366 Grade WPNCMC Class WX Weld ASME B16.9 BW	
1	20	12	SCH10S	SCH10S	P27M-000PF	Concentric reducer ASTM B366 Grade WPNCMC Class WX Weld ASME B16.9 BW	
1	20	14	SCH10S	SCH10S	P27M-000PG	Concentric reducer ASTM B366 Grade WPNCMC Class WX Weld ASME B16.9 BW	
1	20	16	SCH10S	SCH10S	P27M-000P5	Concentric reducer ASTM B366 Grade WPNCMC Class WX Weld ASME B16.9 BW	
1	20	18	SCH10S	SCH10S	P27M-000PH	Concentric reducer ASTM B366 Grade WPNCMC Class WX Weld ASME B16.9 BW	
1	24	16	SCH10S	SCH10S	P27M-000PJ	Concentric reducer ASTM B366 Grade WPNCMC Class WX Weld ASME B16.9 BW	
1	24	18	SCH10S	SCH10S	P27M-000PK	Concentric reducer ASTM B366 Grade WPNCMC Class WX Weld ASME B16.9 BW	
1	24	20	SCH10S	SCH10S	P27M-000P6	Concentric reducer ASTM B366 Grade WPNCMC Class WX Weld ASME B16.9 BW	
1	30	20	SCH10S	SCH10S	P27M-000VT	Concentric reducer ASTM B366 Grade WPNCMC Class WX Weld ASME B16.9 BW	
1	30	24	SCH10S	SCH10S	P27M-000VU	Concentric reducer ASTM B366 Grade WPNCMC Class WX Weld ASME B16.9 BW	
1	36	24	SCH10	SCH10S	P27M-000VV	Concentric reducer ASTM B366 Grade WPNCMC Class WX Weld ASME B16.9 BW	
1	36	30	SCH10	SCH10S	P27M-000VW	Concentric reducer ASTM B366 Grade WPNCMC Class WX Weld ASME B16.9 BW	
1	42	30	STD	SCH10S	P27M-000VX	Concentric reducer ASTM B366 Grade WPNCMC Class WX Weld ASME B16.9 BW	
1	42	36	STD	SCH10	P27M-000VY	Concentric reducer ASTM B366 Grade WPNCMC Class WX Weld ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH80S	SCH80S	P28M-000L7	Eccentric reducer ASTM B366 Grade WPNCMC Grade 1 Class S Seamless ASME B16.9 BW	
1	1	0.5	SCH80S	SCH80S	P28M-000L8	Eccentric reducer ASTM B366 Grade WPNCMC Grade 1 Class S Seamless ASME B16.9 BW	
1	1	0.75	SCH80S	SCH80S	P28M-000L9	Eccentric reducer ASTM B366 Grade WPNCMC Grade 1 Class S Seamless ASME B16.9 BW	
1	1.5	0.5	SCH80S	SCH80S	P28M-000LA	Eccentric reducer ASTM B366 Grade WPNCMC Grade 1 Class S Seamless ASME B16.9 BW	
1	1.5	0.75	SCH80S	SCH80S	P28M-000LB	Eccentric reducer ASTM B366 Grade WPNCMC Grade 1 Class S Seamless ASME B16.9 BW	
1	1.5	1	SCH80S	SCH80S	P28M-000LC	Eccentric reducer ASTM B366 Grade WPNCMC Grade 1 Class S Seamless ASME B16.9 BW	
1	2	0.75	SCH10S	SCH80S	P28M-000U6	Eccentric reducer ASTM B366 Grade WPNCMC Grade 1 Class S Seamless ASME B16.9 BW	
1	2	1	SCH10S	SCH80S	P28M-000U7	Eccentric reducer ASTM B366 Grade WPNCMC Grade 1 Class S Seamless ASME B16.9 BW	
1	2	1.5	SCH10S	SCH80S	P28M-000U8	Eccentric reducer ASTM B366 Grade WPNCMC Grade 1 Class S Seamless ASME B16.9 BW	
1	3	1.5	SCH10S	SCH80S	P28M-000LG	Eccentric reducer ASTM B366 Grade WPNCMC Grade 1 Class S Seamless ASME B16.9 BW	
1	3	2	SCH10S	SCH10S	P28M-000U9	Eccentric reducer ASTM B366 Grade WPNCMC Grade 1 Class S Seamless ASME B16.9 BW	
1	4	1.5	SCH10S	SCH80S	P28M-000LJ	Eccentric reducer ASTM B366 Grade WPNCMC Grade 1 Class S Seamless ASME B16.9 BW	
1	4	2	SCH10S	SCH10S	P28M-000UA	Eccentric reducer ASTM B366 Grade WPNCMC Grade 1 Class S Seamless ASME B16.9 BW	
1	4	3	SCH10S	SCH10S	P28M-000LL	Eccentric reducer ASTM B366 Grade WPNCMC Grade 1 Class S Seamless ASME B16.9 BW	
1	6	3	SCH10S	SCH10S	P28M-000LM	Eccentric reducer ASTM B366 Grade WPNCMC Grade 1 Class S Seamless ASME B16.9 BW	
1	6	4	SCH10S	SCH10S	P28M-000LN	Eccentric reducer ASTM B366 Grade WPNCMC Grade 1 Class S Seamless ASME B16.9 BW	
1	8	4	SCH10S	SCH10S	P28M-000P0	Eccentric reducer ASTM B366 Grade WPNCMC Class WX Weld ASME B16.9 BW	
1	8	6	SCH10S	SCH10S	P28M-000P1	Eccentric reducer ASTM B366 Grade WPNCMC Class WX Weld ASME B16.9 BW	
1	10	4	SCH10S	SCH10S	P28M-000P2	Eccentric reducer ASTM B366 Grade WPNCMC Class WX Weld ASME B16.9 BW	
1	10	6	SCH10S	SCH10S	P28M-000P3	Eccentric reducer ASTM B366 Grade WPNCMC Class WX Weld ASME B16.9 BW	
1	10	8	SCH10S	SCH10S	P28M-000P4	Eccentric reducer ASTM B366 Grade WPNCMC Class WX Weld ASME B16.9 BW	
1	12	6	SCH10S	SCH10S	P28M-000P6	Eccentric reducer ASTM B366 Grade WPNCMC Class WX Weld ASME B16.9 BW	
1	12	8	SCH10S	SCH10S	P28M-000P7	Eccentric reducer ASTM B366 Grade WPNCMC Class WX Weld ASME B16.9 BW	
1	12	10	SCH10S	SCH10S	P28M-000P5	Eccentric reducer ASTM B366 Grade WPNCMC Class WX Weld ASME B16.9 BW	
1	14	6	SCH10S	SCH10S	P28M-000KS	Eccentric reducer ASTM B366 Grade WPNCMC Class WX Weld ASME B16.9 BW	
1	14	8	SCH10S	SCH10S	P28M-000KT	Eccentric reducer ASTM B366 Grade WPNCMC Class WX Weld ASME B16.9 BW	
1	14	10	SCH10S	SCH10S	P28M-000KP	Eccentric reducer ASTM B366 Grade WPNCMC Class WX Weld ASME B16.9 BW	
1	14	12	SCH10S	SCH10S	P28M-000KR	Eccentric reducer ASTM B366 Grade WPNCMC Class WX Weld ASME B16.9 BW	
1	16	8	SCH10S	SCH10S	P28M-000KX	Eccentric reducer ASTM B366 Grade WPNCMC Class WX Weld ASME B16.9 BW	
1	16	10	SCH10S	SCH10S	P28M-000KU	Eccentric reducer ASTM B366 Grade WPNCMC Class WX Weld ASME B16.9 BW	

INDRA
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PIPING CLASS
A0YQ REV NO. 2

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	16	12	SCH10S	SCH10S	P28M-000KV	Eccentric reducer ASTM B366 Grade WPNCMC Class WX Weld ASME B16.9 BW	
1	16	14	SCH10S	SCH10S	P28M-000KW	Eccentric reducer ASTM B366 Grade WPNCMC Class WX Weld ASME B16.9 BW	
1	18	10	SCH10S	SCH10S	P28M-000KY	Eccentric reducer ASTM B366 Grade WPNCMC Class WX Weld ASME B16.9 BW	
1	18	12	SCH10S	SCH10S	P28M-000KZ	Eccentric reducer ASTM B366 Grade WPNCMC Class WX Weld ASME B16.9 BW	
1	18	14	SCH10S	SCH10S	P28M-000L0	Eccentric reducer ASTM B366 Grade WPNCMC Class WX Weld ASME B16.9 BW	
1	18	16	SCH10S	SCH10S	P28M-000L1	Eccentric reducer ASTM B366 Grade WPNCMC Class WX Weld ASME B16.9 BW	
1	20	12	SCH10S	SCH10S	P28M-000PL	Eccentric reducer ASTM B366 Grade WPNCMC Class WX Weld ASME B16.9 BW	
1	20	14	SCH10S	SCH10S	P28M-000PM	Eccentric reducer ASTM B366 Grade WPNCMC Class WX Weld ASME B16.9 BW	
1	20	16	SCH10S	SCH10S	P28M-000PA	Eccentric reducer ASTM B366 Grade WPNCMC Class WX Weld ASME B16.9 BW	
1	20	18	SCH10S	SCH10S	P28M-000PN	Eccentric reducer ASTM B366 Grade WPNCMC Class WX Weld ASME B16.9 BW	
1	24	16	SCH10S	SCH10S	P28M-000PP	Eccentric reducer ASTM B366 Grade WPNCMC Class WX Weld ASME B16.9 BW	
1	24	18	SCH10S	SCH10S	P28M-000PR	Eccentric reducer ASTM B366 Grade WPNCMC Class WX Weld ASME B16.9 BW	
1	24	20	SCH10S	SCH10S	P28M-000PB	Eccentric reducer ASTM B366 Grade WPNCMC Class WX Weld ASME B16.9 BW	
1	30	20	SCH10S	SCH10S	P28M-000XR	Eccentric reducer ASTM B366 Grade WPNCMC Class WX Weld ASME B16.9 BW	
1	30	24	SCH10S	SCH10S	P28M-000XS	Eccentric reducer ASTM B366 Grade WPNCMC Class WX Weld ASME B16.9 BW	
1	36	24	SCH10	SCH10S	P28M-000XT	Eccentric reducer ASTM B366 Grade WPNCMC Class WX Weld ASME B16.9 BW	
1	36	30	SCH10	SCH10S	P28M-000XU	Eccentric reducer ASTM B366 Grade WPNCMC Class WX Weld ASME B16.9 BW	
1	42	30	STD	SCH10S	P28M-000XV	Eccentric reducer ASTM B366 Grade WPNCMC Class WX Weld ASME B16.9 BW	
1	42	36	STD	SCH10	P28M-000XW	Eccentric reducer ASTM B366 Grade WPNCMC Class WX Weld ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P29M-0005X	Cap ASTM B366 Grade WPNCMC Grade 1 Class S Seamless ASME B16.9 BW	
1	0.75		SCH80S		P29M-0005Y	Cap ASTM B366 Grade WPNCMC Grade 1 Class S Seamless ASME B16.9 BW	
1	1		SCH80S		P29M-0005Z	Cap ASTM B366 Grade WPNCMC Grade 1 Class S Seamless ASME B16.9 BW	
1	1.5		SCH80S		P29M-00060	Cap ASTM B366 Grade WPNCMC Grade 1 Class S Seamless ASME B16.9 BW	
1	2		SCH10S		P29M-0008P	Cap ASTM B366 Grade WPNCMC Grade 1 Class S Seamless ASME B16.9 BW	
1	3		SCH10S		P29M-00062	Cap ASTM B366 Grade WPNCMC Grade 1 Class S Seamless ASME B16.9 BW	
1	4		SCH10S		P29M-00063	Cap ASTM B366 Grade WPNCMC Grade 1 Class S Seamless ASME B16.9 BW	
1	6		SCH10S		P29M-00064	Cap ASTM B366 Grade WPNCMC Grade 1 Class S Seamless ASME B16.9 BW	
1	8		SCH10S		P29M-0008T	Cap ASTM B366 Grade WPNCMC Grade 1 Class S Seamless ASME B16.9 BW	
1	10		SCH10S		P29M-0008J	Cap ASTM B366 Grade WPNCMC Grade 1 Class S Seamless ASME B16.9 BW	
1	12		SCH10S		P29M-0008K	Cap ASTM B366 Grade WPNCMC Grade 1 Class S Seamless ASME B16.9 BW	
1	14		SCH10S		P29M-0008L	Cap ASTM B366 Grade WPNCMC Grade 1 Class S Seamless ASME B16.9 BW	
1	16		SCH10S		P29M-0008M	Cap ASTM B366 Grade WPNCMC Grade 1 Class S Seamless ASME B16.9 BW	
1	18		SCH10S		P29M-0008N	Cap ASTM B366 Grade WPNCMC Grade 1 Class S Seamless ASME B16.9 BW	
1	20		SCH10S		P29M-0008R	Cap ASTM B366 Grade WPNCMC Grade 1 Class S Seamless ASME B16.9 BW	
1	24		SCH10S		P29M-0008S	Cap ASTM B366 Grade WPNCMC Grade 1 Class S Seamless ASME B16.9 BW	
1	30		SCH10S		P29M-0009E	Cap ASTM B366 Grade WPNCMC Grade 1 Class S Seamless ASME B16.9 BW	
1	36		SCH10		P29M-0009F	Cap ASTM B366 Grade WPNCMC Grade 1 Class S Seamless ASME B16.9 BW	
1	42		STD		P29M-0009G	Cap ASTM B366 Grade WPNCMC Grade 1 Class S Seamless ASME B16.9 BW	
541	0.75				P29P-00016	Cap ASTM B564 UNS N06625 Class 3000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P41M-0009K	Straight nipple ASTM B444 UNS N06625 Grade 1 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		SCH80S		P41M-0009L	Straight nipple ASTM B444 UNS N06625 Grade 1 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		SCH80S		P41M-0009M	Straight nipple ASTM B444 UNS N06625 Grade 1 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		SCH80S		P41M-0009N	Straight nipple ASTM B444 UNS N06625 Grade 1 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
541	1	0.75			P31P-0025C	Outlet ASTM B564 UNS N06625 Class 3000 MSS SP-97 NPT	
541	1.5	0.75			P31P-0025B	Outlet ASTM B564 UNS N06625 Class 3000 MSS SP-97 NPT	
541	2 - 2.5	0.75			P31P-002AY	Outlet ASTM B564 UNS N06625 Class 3000 MSS SP-97 NPT	
541	3 - 5	0.75			P31P-002AZ	Outlet ASTM B564 UNS N06625 Class 3000 MSS SP-97 NPT	
541	6 - 12	0.75			P31P-002B0	Outlet ASTM B564 UNS N06625 Class 3000 MSS SP-97 NPT	
541	14 - 36	0.75			P31P-002B1	Outlet ASTM B564 UNS N06625 Class 3000 MSS SP-97 NPT	
541	38 and larger	0.75			P31P-002B2	Outlet ASTM B564 UNS N06625 Class 3000 MSS SP-97 NPT	

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OUTLET (L)							
OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2	0.75	SCH10S	SCH80S	P31P-0021D	Outlet ASTM B564 UNS N06625 MSS SP-97 BW	
1	3	0.75	SCH10S	SCH80S	P31P-001TK	Outlet ASTM B564 UNS N06625 MSS SP-97 BW	
1	4	0.75	SCH10S	SCH80S	P31P-001TM	Outlet ASTM B564 UNS N06625 MSS SP-97 BW	
1	6	0.75	SCH10S	SCH80S	P31P-001TD	Outlet ASTM B564 UNS N06625 MSS SP-97 BW	
1	8	0.75	SCH10S	SCH80S	P31P-0021E	Outlet ASTM B564 UNS N06625 MSS SP-97 BW	
1	10	0.75	SCH10S	SCH80S	P31P-0021H	Outlet ASTM B564 UNS N06625 MSS SP-97 BW	
1	12	0.75	SCH10S	SCH80S	P31P-001G2	Outlet ASTM B564 UNS N06625 MSS SP-97 BW	
1	14	0.75	SCH10S	SCH80S	P31P-0021L	Outlet ASTM B564 UNS N06625 MSS SP-97 BW	
1	16	0.75	SCH10S	SCH80S	P31P-0021P	Outlet ASTM B564 UNS N06625 MSS SP-97 BW	
1	18	0.75	SCH10S	SCH80S	P31P-0021T	Outlet ASTM B564 UNS N06625 MSS SP-97 BW	
1	20	0.75	SCH10S	SCH80S	P31P-0021W	Outlet ASTM B564 UNS N06625 MSS SP-97 BW	
1	24	0.75	SCH10S	SCH80S	P31P-00223	Outlet ASTM B564 UNS N06625 MSS SP-97 BW	
1	30	0.75	SCH10S	SCH80S	P31P-0024A	Outlet ASTM B564 UNS N06625 MSS SP-97 BW	
1	36	0.75	SCH10	SCH80S	P31P-0024H	Outlet ASTM B564 UNS N06625 MSS SP-97 BW	
1	42	0.75	STD	SCH80S	P31P-0024Z	Outlet ASTM B564 UNS N06625 MSS SP-97 BW	
1	3	1	SCH10S	SCH80S	P31P-001TL	Outlet ASTM B564 UNS N06625 MSS SP-97 BW	
1	4	1	SCH10S	SCH80S	P31P-001TN	Outlet ASTM B564 UNS N06625 MSS SP-97 BW	
1	6	1	SCH10S	SCH80S	P31P-001TE	Outlet ASTM B564 UNS N06625 MSS SP-97 BW	
1	8	1	SCH10S	SCH80S	P31P-0021F	Outlet ASTM B564 UNS N06625 MSS SP-97 BW	
1	10	1	SCH10S	SCH80S	P31P-0021J	Outlet ASTM B564 UNS N06625 MSS SP-97 BW	
1	12	1	SCH10S	SCH80S	P31P-001G3	Outlet ASTM B564 UNS N06625 MSS SP-97 BW	
1	14	1	SCH10S	SCH80S	P31P-0021M	Outlet ASTM B564 UNS N06625 MSS SP-97 BW	
1	16	1	SCH10S	SCH80S	P31P-0021R	Outlet ASTM B564 UNS N06625 MSS SP-97 BW	
1	18	1	SCH10S	SCH80S	P31P-0021U	Outlet ASTM B564 UNS N06625 MSS SP-97 BW	
1	20	1	SCH10S	SCH80S	P31P-0021X	Outlet ASTM B564 UNS N06625 MSS SP-97 BW	
1	24	1	SCH10S	SCH80S	P31P-00224	Outlet ASTM B564 UNS N06625 MSS SP-97 BW	
1	30	1	SCH10S	SCH80S	P31P-0024B	Outlet ASTM B564 UNS N06625 MSS SP-97 BW	
1	36	1	SCH10	SCH80S	P31P-0024J	Outlet ASTM B564 UNS N06625 MSS SP-97 BW	
1	42	1	STD	SCH80S	P31P-00250	Outlet ASTM B564 UNS N06625 MSS SP-97 BW	
1	4	1.5	SCH10S	SCH80S	P31P-001TP	Outlet ASTM B564 UNS N06625 MSS SP-97 BW	
1	6	1.5	SCH10S	SCH80S	P31P-001TF	Outlet ASTM B564 UNS N06625 MSS SP-97 BW	
1	8	1.5	SCH10S	SCH80S	P31P-0021G	Outlet ASTM B564 UNS N06625 MSS SP-97 BW	
1	10	1.5	SCH10S	SCH80S	P31P-0021K	Outlet ASTM B564 UNS N06625 MSS SP-97 BW	
1	12	1.5	SCH10S	SCH80S	P31P-001G4	Outlet ASTM B564 UNS N06625 MSS SP-97 BW	
1	14	1.5	SCH10S	SCH80S	P31P-0021N	Outlet ASTM B564 UNS N06625 MSS SP-97 BW	
1	16	1.5	SCH10S	SCH80S	P31P-0021S	Outlet ASTM B564 UNS N06625 MSS SP-97 BW	
1	18	1.5	SCH10S	SCH80S	P31P-0021V	Outlet ASTM B564 UNS N06625 MSS SP-97 BW	
1	20	1.5	SCH10S	SCH80S	P31P-0021Y	Outlet ASTM B564 UNS N06625 MSS SP-97 BW	
1	24	1.5	SCH10S	SCH80S	P31P-00225	Outlet ASTM B564 UNS N06625 MSS SP-97 BW	
1	30	1.5	SCH10S	SCH80S	P31P-0024C	Outlet ASTM B564 UNS N06625 MSS SP-97 BW	
1	36	1.5	SCH10	SCH80S	P31P-0024K	Outlet ASTM B564 UNS N06625 MSS SP-97 BW	
1	42	1.5	STD	SCH80S	P31P-00251	Outlet ASTM B564 UNS N06625 MSS SP-97 BW	
1	6	2	SCH10S	SCH10S	P31P-001RS	Outlet ASTM B564 UNS N06625 MSS SP-97 BW	
1	8	2	SCH10S	SCH10S	P31P-001RX	Outlet ASTM B564 UNS N06625 MSS SP-97 BW	
1	10	2	SCH10S	SCH10S	P31P-001S3	Outlet ASTM B564 UNS N06625 MSS SP-97 BW	
1	12	2	SCH10S	SCH10S	P31P-0019U	Outlet ASTM B564 UNS N06625 MSS SP-97 BW	
1	14	2	SCH10S	SCH10S	P31P-001SD	Outlet ASTM B564 UNS N06625 MSS SP-97 BW	
1	16	2	SCH10S	SCH10S	P31P-001SM	Outlet ASTM B564 UNS N06625 MSS SP-97 BW	
1	18	2	SCH10S	SCH10S	P31P-001SW	Outlet ASTM B564 UNS N06625 MSS SP-97 BW	
1	20	2	SCH10S	SCH10S	P31P-0021Z	Outlet ASTM B564 UNS N06625 MSS SP-97 BW	
1	24	2	SCH10S	SCH10S	P31P-00226	Outlet ASTM B564 UNS N06625 MSS SP-97 BW	
1	30	2	SCH10S	SCH10S	P31P-0024D	Outlet ASTM B564 UNS N06625 MSS SP-97 BW	
1	36	2	SCH10	SCH10S	P31P-0024L	Outlet ASTM B564 UNS N06625 MSS SP-97 BW	
1	42	2	STD	SCH10S	P31P-0024R	Outlet ASTM B564 UNS N06625 MSS SP-97 BW	
1	8	3	SCH10S	SCH10S	P31P-001RY	Outlet ASTM B564 UNS N06625 MSS SP-97 BW	
1	10	3	SCH10S	SCH10S	P31P-001S4	Outlet ASTM B564 UNS N06625 MSS SP-97 BW	
1	12	3	SCH10S	SCH10S	P31P-001S7	Outlet ASTM B564 UNS N06625 MSS SP-97 BW	
1	14	3	SCH10S	SCH10S	P31P-001SE	Outlet ASTM B564 UNS N06625 MSS SP-97 BW	
1	16	3	SCH10S	SCH10S	P31P-001SN	Outlet ASTM B564 UNS N06625 MSS SP-97 BW	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	18	3	SCH10S	SCH10S	P31P-001SX	Outlet ASTM B564 UNS N06625 MSS SP-97 BW	
1	20	3	SCH10S	SCH10S	P31P-00220	Outlet ASTM B564 UNS N06625 MSS SP-97 BW	
1	24	3	SCH10S	SCH10S	P31P-00227	Outlet ASTM B564 UNS N06625 MSS SP-97 BW	
1	30	3	SCH10S	SCH10S	P31P-0024E	Outlet ASTM B564 UNS N06625 MSS SP-97 BW	
1	36	3	SCH10	SCH10S	P31P-0024M	Outlet ASTM B564 UNS N06625 MSS SP-97 BW	
1	42	3	STD	SCH10S	P31P-0024S	Outlet ASTM B564 UNS N06625 MSS SP-97 BW	
1	12	4	SCH10S	SCH10S	P31P-001S8	Outlet ASTM B564 UNS N06625 MSS SP-97 BW	
1	14	4	SCH10S	SCH10S	P31P-001SF	Outlet ASTM B564 UNS N06625 MSS SP-97 BW	
1	16	4	SCH10S	SCH10S	P31P-001SP	Outlet ASTM B564 UNS N06625 MSS SP-97 BW	
1	18	4	SCH10S	SCH10S	P31P-001SY	Outlet ASTM B564 UNS N06625 MSS SP-97 BW	
1	20	4	SCH10S	SCH10S	P31P-00221	Outlet ASTM B564 UNS N06625 MSS SP-97 BW	
1	24	4	SCH10S	SCH10S	P31P-00228	Outlet ASTM B564 UNS N06625 MSS SP-97 BW	
1	30	4	SCH10S	SCH10S	P31P-0024F	Outlet ASTM B564 UNS N06625 MSS SP-97 BW	
1	36	4	SCH10	SCH10S	P31P-0024N	Outlet ASTM B564 UNS N06625 MSS SP-97 BW	
1	42	4	STD	SCH10S	P31P-0024T	Outlet ASTM B564 UNS N06625 MSS SP-97 BW	
1	18	6	SCH10S	SCH10S	P31P-001SZ	Outlet ASTM B564 UNS N06625 MSS SP-97 BW	
1	20	6	SCH10S	SCH10S	P31P-00222	Outlet ASTM B564 UNS N06625 MSS SP-97 BW	
1	24	6	SCH10S	SCH10S	P31P-00229	Outlet ASTM B564 UNS N06625 MSS SP-97 BW	
1	30	6	SCH10S	SCH10S	P31P-0024G	Outlet ASTM B564 UNS N06625 MSS SP-97 BW	
1	36	6	SCH10	SCH10S	P31P-0024P	Outlet ASTM B564 UNS N06625 MSS SP-97 BW	
1	42	6	STD	SCH10S	P31P-0024U	Outlet ASTM B564 UNS N06625 MSS SP-97 BW	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30P-0000F	Plug ASTM B564 UNS N06625 ASME B16.11 NPT Round head	
1	0.75				P30P-0000G	Plug ASTM B564 UNS N06625 ASME B16.11 NPT Round head	
1	1				P30P-0000H	Plug ASTM B564 UNS N06625 ASME B16.11 NPT Round head	
1	1.5				P30P-0000J	Plug ASTM B564 UNS N06625 ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P61P-000LR	Flange WN ASTM B564 UNS N06625 Class 150 ASME B16.5 RF	
1	0.75		SCH80S		P61P-000LS	Flange WN ASTM B564 UNS N06625 Class 150 ASME B16.5 RF	
1	1		SCH80S		P61P-000LT	Flange WN ASTM B564 UNS N06625 Class 150 ASME B16.5 RF	
1	1.5		SCH80S		P61P-000LU	Flange WN ASTM B564 UNS N06625 Class 150 ASME B16.5 RF	
1	2		SCH10S		P61P-000HS	Flange WN ASTM B564 UNS N06625 Class 150 ASME B16.5 RF	
1	3		SCH10S		P61P-000NP	Flange WN ASTM B564 UNS N06625 Class 150 ASME B16.5 RF	
1	4		SCH10S		P61P-000NR	Flange WN ASTM B564 UNS N06625 Class 150 ASME B16.5 RF	
1	6		SCH10S		P61P-000NS	Flange WN ASTM B564 UNS N06625 Class 150 ASME B16.5 RF	
1	8		SCH10S		P61P-000NT	Flange WN ASTM B564 UNS N06625 Class 150 ASME B16.5 RF	
1	10		SCH10S		P61P-000NK	Flange WN ASTM B564 UNS N06625 Class 150 ASME B16.5 RF	
1	12		SCH10S		P61P-000HR	Flange WN ASTM B564 UNS N06625 Class 150 ASME B16.5 RF	
1	14		SCH10S		P61P-000NL	Flange WN ASTM B564 UNS N06625 Class 150 ASME B16.5 RF	
1	16		SCH10S		P61P-000NM	Flange WN ASTM B564 UNS N06625 Class 150 ASME B16.5 RF	
1	18		SCH10S		P61P-000NN	Flange WN ASTM B564 UNS N06625 Class 150 ASME B16.5 RF	
1	20		SCH10S		P61P-000TJ	Flange WN ASTM B564 UNS N06625 Class 150 ASME B16.5 RF	
1	24		SCH10S		P61P-000TK	Flange WN ASTM B564 UNS N06625 Class 150 ASME B16.5 RF	
1	30		SCH10S		P61P-000ZH	Flange WN ASTM B564 UNS N06625 Class 150 ASME B16.47 Series B RF	
1	36		SCH10		P61P-000ZJ	Flange WN ASTM B564 UNS N06625 Class 150 ASME B16.47 Series B RF	
1	42		STD		P61P-000ZK	Flange WN ASTM B564 UNS N06625 Class 150 ASME B16.47 Series B RF	
541	0.5				P61P-000S1	Flange NPT ASTM B564 UNS N06625 Class 150 ASME B16.5 RF	
541	0.75				P61P-00103	Flange NPT ASTM B564 UNS N06625 Class 150 ASME B16.5 RF	
773	0.5		SCH80S		P61P-000LW	Flange WN ASTM B564 UNS N06625 Class 300 ASME B16.5 RF	
773	0.75		SCH80S		P61P-000LX	Flange WN ASTM B564 UNS N06625 Class 300 ASME B16.5 RF	
773	1		SCH80S		P61P-000LY	Flange WN ASTM B564 UNS N06625 Class 300 ASME B16.5 RF	
773	1.5		SCH80S		P61P-000LZ	Flange WN ASTM B564 UNS N06625 Class 300 ASME B16.5 RF	
773	2		SCH10S		P61P-000LA	Flange WN ASTM B564 UNS N06625 Class 300 ASME B16.5 RF	
773	3		SCH10S		P61P-000P1	Flange WN ASTM B564 UNS N06625 Class 300 ASME B16.5 RF	
773	4		SCH10S		P61P-000P2	Flange WN ASTM B564 UNS N06625 Class 300 ASME B16.5 RF	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
773	6		SCH10S		P61P-000P3	Flange WN ASTM B564 UNS N06625 Class 300 ASME B16.5 RF	
773	8		SCH10S		P61P-000P4	Flange WN ASTM B564 UNS N06625 Class 300 ASME B16.5 RF	
773	10		SCH10S		P61P-000NW	Flange WN ASTM B564 UNS N06625 Class 300 ASME B16.5 RF	
773	12		SCH10S		P61P-000NX	Flange WN ASTM B564 UNS N06625 Class 300 ASME B16.5 RF	
773	14		SCH10S		P61P-000NY	Flange WN ASTM B564 UNS N06625 Class 300 ASME B16.5 RF	
773	16		SCH10S		P61P-000NZ	Flange WN ASTM B564 UNS N06625 Class 300 ASME B16.5 RF	
773	18		SCH10S		P61P-000P0	Flange WN ASTM B564 UNS N06625 Class 300 ASME B16.5 RF	
773	20		SCH10S		P61P-000XL	Flange WN ASTM B564 UNS N06625 Class 300 ASME B16.5 RF	
773	24		SCH10S		P61P-000XM	Flange WN ASTM B564 UNS N06625 Class 300 ASME B16.5 RF	
773	30		SCH10S		P61P-000ZL	Flange WN ASTM B564 UNS N06625 Class 300 ASME B16.47 Series B RF	
773	36		SCH10		P61P-000ZM	Flange WN ASTM B564 UNS N06625 Class 300 ASME B16.47 Series B RF	
773	42		STD		P61P-000ZN	Flange WN ASTM B564 UNS N06625 Class 300 ASME B16.47 Series B RF	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67P-0002X	Blind flange ASTM B564 UNS N06625 Class 150 ASME B16.5 RF	
1	0.75				P67P-0002Y	Blind flange ASTM B564 UNS N06625 Class 150 ASME B16.5 RF	
1	1				P67P-0002Z	Blind flange ASTM B564 UNS N06625 Class 150 ASME B16.5 RF	
1	1.5				P67P-00030	Blind flange ASTM B564 UNS N06625 Class 150 ASME B16.5 RF	
1	2				P67P-00033	Blind flange ASTM B564 UNS N06625 Class 150 ASME B16.5 RF	
1	3				P67P-00034	Blind flange ASTM B564 UNS N06625 Class 150 ASME B16.5 RF	
1	4				P67P-00035	Blind flange ASTM B564 UNS N06625 Class 150 ASME B16.5 RF	
1	6				P67P-00036	Blind flange ASTM B564 UNS N06625 Class 150 ASME B16.5 RF	
1	8				P67P-00037	Blind flange ASTM B564 UNS N06625 Class 150 ASME B16.5 RF	
1	10				P67P-00031	Blind flange ASTM B564 UNS N06625 Class 150 ASME B16.5 RF	
1	12				P67P-00032	Blind flange ASTM B564 UNS N06625 Class 150 ASME B16.5 RF	
1	14				P67P-0005U	Blind flange ASTM B564 UNS N06625 Class 150 ASME B16.5 RF	
1	16				P67P-0005V	Blind flange ASTM B564 UNS N06625 Class 150 ASME B16.5 RF	
1	18				P67P-0007H	Blind flange ASTM B564 UNS N06625 Class 150 ASME B16.5 RF	
1	20				P67P-0009Z	Blind flange ASTM B564 UNS N06625 Class 150 ASME B16.5 RF	
1	24				P67P-000A0	Blind flange ASTM B564 UNS N06625 Class 150 ASME B16.5 RF	
1	30				P67P-000AR	Blind flange ASTM B564 UNS N06625 Class 150 ASME B16.47 Series B RF	
1	36				P67P-000AS	Blind flange ASTM B564 UNS N06625 Class 150 ASME B16.47 Series B RF	
1	42				P67P-000AT	Blind flange ASTM B564 UNS N06625 Class 150 ASME B16.47 Series B RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-002YC	Spiral wound gasket UNS N06625 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring UNS N06625	
1	0.75				P73T-002YD	Spiral wound gasket UNS N06625 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring UNS N06625	
1	1				P73T-002AC	Spiral wound gasket UNS N06625 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring UNS N06625	
1	1.5				P73T-002AD	Spiral wound gasket UNS N06625 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring UNS N06625	
1	2				P73T-002AE	Spiral wound gasket UNS N06625 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring UNS N06625	
1	3				P73T-002AF	Spiral wound gasket UNS N06625 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring UNS N06625	
1	4				P73T-002AG	Spiral wound gasket UNS N06625 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring UNS N06625	
1	6				P73T-002AH	Spiral wound gasket UNS N06625 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring UNS N06625	
1	8				P73T-002AJ	Spiral wound gasket UNS N06625 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring UNS N06625	
1	10				P73T-002BH	Spiral wound gasket UNS N06625 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring UNS N06625	
1	12				P73T-002BJ	Spiral wound gasket UNS N06625 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring UNS N06625	
1	14				P73T-002YE	Spiral wound gasket UNS N06625 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring UNS N06625	
1	16				P73T-002BK	Spiral wound gasket UNS N06625 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring UNS N06625	
1	18				P73T-002BL	Spiral wound gasket UNS N06625 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring UNS N06625	
1	20				P73T-002BM	Spiral wound gasket UNS N06625 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring UNS N06625	
1	24				P73T-002BN	Spiral wound gasket UNS N06625 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring UNS N06625	

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GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	30				P73T-003G8	Spiral wound gasket UNS N06625 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring UNS N06625	
1	36				P73T-003G9	Spiral wound gasket UNS N06625 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring UNS N06625	
1	42				P73T-003GA	Spiral wound gasket UNS N06625 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring UNS N06625	
773	0.5				P73T-002BF	Spiral wound gasket UNS N06625 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring UNS N06625	
773	0.75				P73T-002BG	Spiral wound gasket UNS N06625 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring UNS N06625	
773	1				P73T-002AT	Spiral wound gasket UNS N06625 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring UNS N06625	
773	1.5				P73T-002AU	Spiral wound gasket UNS N06625 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring UNS N06625	
773	2				P73T-002AV	Spiral wound gasket UNS N06625 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring UNS N06625	
773	3				P73T-002AW	Spiral wound gasket UNS N06625 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring UNS N06625	
773	4				P73T-002AX	Spiral wound gasket UNS N06625 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring UNS N06625	
773	6				P73T-002AY	Spiral wound gasket UNS N06625 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring UNS N06625	
773	8				P73T-002AZ	Spiral wound gasket UNS N06625 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring UNS N06625	
773	10				P73T-002BV	Spiral wound gasket UNS N06625 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring UNS N06625	
773	12				P73T-002DV	Spiral wound gasket UNS N06625 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring UNS N06625	
773	14				P73T-002YF	Spiral wound gasket UNS N06625 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring UNS N06625	
773	16				P73T-002DW	Spiral wound gasket UNS N06625 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring UNS N06625	
773	18				P73T-002DX	Spiral wound gasket UNS N06625 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring UNS N06625	
773	20				P73T-002DY	Spiral wound gasket UNS N06625 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring UNS N06625	
773	24				P73T-002DZ	Spiral wound gasket UNS N06625 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring UNS N06625	
773	30				P73T-003GB	Spiral wound gasket UNS N06625 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring UNS N06625	
773	36				P73T-003GC	Spiral wound gasket UNS N06625 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring UNS N06625	
773	42				P73T-003GD	Spiral wound gasket UNS N06625 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring UNS N06625	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-16				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	18-24				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
1	30-42				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
773	0.5-10				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
773	12-42				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81P-0002M	Gate valve ASTM B564 UNS N06625 Class 150 API 602 Flange ASME B16.5 RF Trim UNS N06625 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	0.75				P81P-0002N	Gate valve ASTM B564 UNS N06625 Class 150 API 602 Flange ASME B16.5 RF Trim UNS N06625 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	1				P81P-0002P	Gate valve ASTM B564 UNS N06625 Class 150 API 602 Flange ASME B16.5 RF Trim UNS N06625 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	1.5				P81P-0002R	Gate valve ASTM B564 UNS N06625 Class 150 API 602 Flange ASME B16.5 RF Trim UNS N06625 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	2				P81R-000CH	Gate valve ASTM A494 Grade CW6MC Class 150 API 600 Flange ASME B16.5 RF Trim UNS N06625 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	3				P81R-000CJ	Gate valve ASTM A494 Grade CW6MC Class 150 API 600 Flange ASME B16.5 RF Trim UNS N06625 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	4				P81R-000CK	Gate valve ASTM A494 Grade CW6MC Class 150 API 600 Flange ASME B16.5 RF Trim UNS N06625 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	6				P81R-000CL	Gate valve ASTM A494 Grade CW6MC Class 150 API 600 Flange ASME B16.5 RF Trim UNS N06625 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	8				P81R-000CM	Gate valve ASTM A494 Grade CW6MC Class 150 API 600 Flange ASME B16.5 RF Trim UNS N06625 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	10				P81R-000E1	Gate valve ASTM A494 Grade CW6MC Class 150 API 600 Flange ASME B16.5 RF Trim UNS N06625 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	12				P81R-000E2	Gate valve ASTM A494 Grade CW6MC Class 150 API 600 Flange ASME B16.5 RF Trim UNS N06625 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
4608	0.75				P81P-0004Z	Gate valve ASTM B564 UNS N06625 Class 150 API 602 BW both sides w/ nipples BE - NPT ASTM B444-N06625 Grade 1 Sch80S-nipple Trim UNS N06625 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	

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GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82P-00031	Globe valve ASTM B564 UNS N06625 Class 150 API 602 Flange ASME B16.5 RF Trim UNS N06625 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	0.75				P82P-00032	Globe valve ASTM B564 UNS N06625 Class 150 API 602 Flange ASME B16.5 RF Trim UNS N06625 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	1				P82P-00033	Globe valve ASTM B564 UNS N06625 Class 150 API 602 Flange ASME B16.5 RF Trim UNS N06625 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	1.5				P82P-00034	Globe valve ASTM B564 UNS N06625 Class 150 API 602 Flange ASME B16.5 RF Trim UNS N06625 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	2				P82R-0007T	Globe valve ASTM A494 Grade CW6MC Class 150 BS 1873 Flange ASME B16.5 RF Trim UNS N06625 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	3				P82R-0007U	Globe valve ASTM A494 Grade CW6MC Class 150 BS 1873 Flange ASME B16.5 RF Trim UNS N06625 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	4				P82R-0007V	Globe valve ASTM A494 Grade CW6MC Class 150 BS 1873 Flange ASME B16.5 RF Trim UNS N06625 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	6				P82R-0007W	Globe valve ASTM A494 Grade CW6MC Class 150 BS 1873 Flange ASME B16.5 RF Trim UNS N06625 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	8				P82R-0007X	Globe valve ASTM A494 Grade CW6MC Class 150 BS 1873 Flange ASME B16.5 RF Trim UNS N06625 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83P-0003A	Check valve ASTM B564 UNS N06625 Class 150 API 602 Flange ASME B16.5 RF Trim UNS N06625 Lift-type Bolted cover Moderate wet H2S service	
1	0.75				P83P-0003B	Check valve ASTM B564 UNS N06625 Class 150 API 602 Flange ASME B16.5 RF Trim UNS N06625 Lift-type Bolted cover Moderate wet H2S service	
1	1				P83P-0003C	Check valve ASTM B564 UNS N06625 Class 150 API 602 Flange ASME B16.5 RF Trim UNS N06625 Lift-type Bolted cover Moderate wet H2S service	
1	1.5				P83P-0003D	Check valve ASTM B564 UNS N06625 Class 150 API 602 Flange ASME B16.5 RF Trim UNS N06625 Lift-type Bolted cover Moderate wet H2S service	
1	2				P83R-00096	Check valve ASTM A494 Grade CW6MC Class 150 BS 1868 Flange ASME B16.5 RF Trim UNS N06625 Swing-type Bolted cover Moderate wet H2S service	
1	3				P83R-00097	Check valve ASTM A494 Grade CW6MC Class 150 BS 1868 Flange ASME B16.5 RF Trim UNS N06625 Swing-type Bolted cover Moderate wet H2S service	
1	4				P83R-00098	Check valve ASTM A494 Grade CW6MC Class 150 BS 1868 Flange ASME B16.5 RF Trim UNS N06625 Swing-type Bolted cover Moderate wet H2S service	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71P-0001J	Spectacle blank ASTM B564 UNS N06625 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	0.75				P71P-0001K	Spectacle blank ASTM B564 UNS N06625 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	1				P71P-0001L	Spectacle blank ASTM B564 UNS N06625 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71P-0001M	Spectacle blank ASTM B564 UNS N06625 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	2				P71P-0001R	Spectacle blank ASTM B564 UNS N06625 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	3				P71P-0001S	Spectacle blank ASTM B564 UNS N06625 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	4				P71P-0001T	Spectacle blank ASTM B564 UNS N06625 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	6				P71P-0001U	Spectacle blank ASTM B564 UNS N06625 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	8				P71P-0001V	Spectacle blank ASTM B564 UNS N06625 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	10				P71P-0001N	Spectacle blank ASTM B564 UNS N06625 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	12				P71P-0001P	Spectacle blank ASTM B564 UNS N06625 Class 150 Standard-drawing Flange ASME B16.5 RF	

PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72P-0000L	Paddle blank ASTM B564 UNS N06625 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	16				P72P-0000M	Paddle blank ASTM B564 UNS N06625 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	18				P72P-0000N	Paddle blank ASTM B564 UNS N06625 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	20				P72P-0000P	Paddle blank ASTM B564 UNS N06625 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	24				P72P-0000R	Paddle blank ASTM B564 UNS N06625 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	30				P72P-0002B	Paddle blank ASTM B564 UNS N06625 Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	36				P72P-0002C	Paddle blank ASTM B564 UNS N06625 Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	42				P72P-0002D	Paddle blank ASTM B564 UNS N06625 Class 150 Standard-drawing Flange ASME B16.47-B RF	

PADDLE SPACER (PS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72P-0000F	Paddle spacer ASTM B564 UNS N06625 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	16				P72P-0000G	Paddle spacer ASTM B564 UNS N06625 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	18				P72P-0000H	Paddle spacer ASTM B564 UNS N06625 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	20				P72P-0000J	Paddle spacer ASTM B564 UNS N06625 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	24				P72P-0000K	Paddle spacer ASTM B564 UNS N06625 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	30				P72P-0002E	Paddle spacer ASTM B564 UNS N06625 Class 150 Standard-drawing Flange ASME B16.47-B RF	

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PADDLE SPACER (PS)							
OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	36				P72P-0002F	Paddle spacer ASTM B564 UNS N06625 Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	42				P72P-0002G	Paddle spacer ASTM B564 UNS N06625 Class 150 Standard-drawing Flange ASME B16.47-B RF	

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BOLT TABLE (B_A0YQ , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	60	P80S-008SY		
0.75	4	0.500	65	P80S-008SZ		
1	4	0.500	70	P80S-008T0		
1.5	4	0.500	75	P80S-008T1		
2	4	0.625	85	P80S-0090A		
3	4	0.625	95	P80S-0090C		
4	8	0.625	95	P80S-0090C		
6	8	0.750	105	P80S-0090E		
8	8	0.750	110	P80S-0090F		
10	12	0.875	120	P80S-005Z9		
12	12	0.875	120	P80S-005Z9		
14	12	1.000	135	P80S-00619		
16	16	1.000	140	P80S-0061A		
18	16	1.125	150	P80S-0064L		
20	20	1.125	160	P80S-0064N		
24	20	1.250	175	P80S-00686		
30	44	0.750	145	P80S-0090N		
36	44	0.875	175	P80S-005ZL		
42	48	1.000	190	P80S-0061L		

BOLT TABLE (B_A0YQ_773 , STUD ASME RF, OPTION CODE 773)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-008T0		
0.75	4	0.625	75	P80S-00908		
1	4	0.625	80	P80S-00909		
1.5	4	0.750	95	P80S-005Z4		
2	8	0.625	90	P80S-0090B		
3	8	0.750	110	P80S-0090F		
4	8	0.750	115	P80S-0090G		
6	12	0.750	125	P80S-0090J		
8	12	0.875	140	P80S-005ZD		
10	16	1.000	160	P80S-0061E		
12	16	1.125	175	P80S-0064S		
14	20	1.125	180	P80S-0064T		
16	20	1.250	190	P80S-00689		
18	24	1.250	200	P80S-0068B		
20	24	1.250	210	P80S-0068D		
24	24	1.500	235	P80S-006LB		
30	36	1.375	285	P80S-006HY		
36	32	1.625	320	P80S-00A5E		
42	36	1.750	355	P80S-00AEJ		

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PIPING CLASS

A0YQ

REV NO. 2

BRANCH TABLE (T_A0YQ)

RUN PIPE SIZE (in) \ BRANCH SIZE (in)	0.5	0.75	1	1.5	2	3	4	6	8	10	12	14	16	18	20	24	30	36	42
0.5	TS																		
0.75		TS																	
1		TR	TS																
1.5		TR	TR	TS															
2		L	TR	TR	TS														
3		L	L	TR	TR	TS													
4	L	L	L	L	TR	TR	TS												
6	L	L	L	L	L	TR	TR	TS											
8		L	L	L	L	L	TR	TR	TS										
10		L	L	L	L	L	TR	TR	TR	TS									
12		L	L	L	L	L	L	TR	TR	TR	TS								
14		L	L	L	L	L	L	TR	TR	TR	TR	TS							
16		L	L	L	L	L	L	TR	TR	TR	TR	TR	TS						
18		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TS					
20		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TR	TS				
24		L	L	L	L	L	L	L	9PD	TR	TR	TR	TR	TR	TR	TS			
30		L	L	L	L	L	L	L	9PD	TR	TR	TR	TR	TR	TR	TR	TS		
36		L	L	L	L	L	L	L	9PD	9PD	9PD	9PD	TR	TR	TR	TR	TR	TS	
42		L	L	L	L	L	L	L	9PD	9PD	9PD	9PD	TR	TR	TR	TR	TR	TR	TS

TS : STRAIGHT TEE
TR : REDUCING TEE
L : OUTLET
9PD : REINFORCING PAD 90 DEG

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PIPING CLASS

A11A05 REV NO. 2

Material : Killed CS
Rating : ASME CLASS 150
Flange Face : RF
C.A.(mm) : 1.50
Gasket : Sheet
Service : CHILLED WATER, COOLING WATER, HOT WATER, JACKET WATER, SEERVICE WATER, REFINERY NITROGEN, LP NITROGEN, MP NITROGEN, PLANT AIR, VENT GAS
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED

DETAIL NOTES :

NO.	DESCRIPTION
38	TO BE USED FOR STAND PIPE

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
24	FULL PORT (Q)
200	WITH JACK SCREW (FO)
221	RF (V)
541	NPT(F) (CA,L)
714	SW - NPT(F) (V,W)
773	CLASS 300 (B,F,G)
781	CLASS 600 (B,F,G)
2499	ASME B16.47 SERIES A RF (B,F,G)
3001	INSULATION GASKET KIT AND BOLTS FOR FLANGE (G)
4212	WELDOLET FOR STAND PIPE (L)

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PIPING CLASS
A11A05 REV NO. 2

PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P01A-000XM	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	0.75		XS		P01A-000XN	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1		XS		P01A-000XP	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1.5		XS		P01A-000XV	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	2		XS		P01A-000YX	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	3		STD		P01A-000YM	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	4		STD		P01A-000YU	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	6		STD		P01A-000Z3	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	8		SCH20		P01A-001AT	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	10		SCH20		P01A-0014Y	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	12		SCH30		P01A-0017K	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	14		SCH20		P01A-0017A	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	16		SCH20		P01A-0018E	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	18		SCH20		P01A-00438	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE	
1	20		STD		P01A-0042G	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE	
1	24		STD		P01A-0042H	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE	
1	30		STD		P01A-0042J	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE	
1	36		STD		P01A-00439	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE	
1	42		XS		P01A-0043G	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE	
1	48		XS		P01A-0042L	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P02B-00014	90 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	0.75				P02B-00015	90 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	1				P02B-00016	90 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5				P02B-00017	90 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	2		XS		P02A-000CP	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		STD		P02A-000CU	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		STD		P02A-000CZ	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		STD		P02A-000D6	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		SCH20		P02A-000GZ	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	10		SCH20		P02A-000H1	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	12		SCH30		P02A-000M4	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	14		SCH20		P02A-000FX	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	16		SCH20		P02A-000GM	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	18		SCH20		P02A-000LT	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	20		STD		P02A-0010J	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	24		STD		P02A-0010K	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	30		STD		P02A-000F3	90 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius	
1	36		STD		P02A-001GL	90 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius	
1	42		XS		P02A-000FB	90 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius	
1	48		XS		P02A-0017R	90 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P03B-00017	45 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	0.75				P03B-00018	45 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	1				P03B-00019	45 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5				P03B-0001A	45 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	2		XS		P03A-000AS	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		STD		P03A-000AX	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		STD		P03A-000B1	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		STD		P03A-000B9	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		SCH20		P03A-000EX	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	10		SCH20		P03A-000F0	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	12		SCH30		P03A-000JU	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	14		SCH20		P03A-000DW	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	16		SCH20		P03A-000EM	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

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45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	18		SCH20		P03A-001DX	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	20		STD		P03A-000X1	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	24		STD		P03A-000X2	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	30		STD		P03A-000D0	45 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius	
1	36		STD		P03A-001BS	45 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius	
1	42		XS		P03A-000DB	45 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius	
1	48		XS		P03A-0013P	45 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P21B-00017	Straight tee ASTM A105 Class 3000 ASME B16.11 SW	
1	0.75				P21B-00018	Straight tee ASTM A105 Class 3000 ASME B16.11 SW	
1	1				P21B-00019	Straight tee ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5				P21B-0001A	Straight tee ASTM A105 Class 3000 ASME B16.11 SW	
1	2		XS		P21A-001CJ	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		STD		P21A-001CU	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		STD		P21A-001CW	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6		STD		P21A-001D2	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8		SCH20		P21A-00215	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10		SCH20		P21A-00219	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12		SCH30		P21A-0025A	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14		SCH20		P21A-00206	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16		SCH20		P21A-0020X	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18		SCH20		P21A-001PJ	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20		STD		P21A-001C7	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24		STD		P21A-001CC	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30		STD		P21A-001YC	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	36		STD		P21A-001G4	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	42		XS		P21A-001KS	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	48		XS		P21A-001RL	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5			P24B-0002J	Reducing tee ASTM A105 Class 3000 ASME B16.11 SW	
1	1	0.5			P24B-0002K	Reducing tee ASTM A105 Class 3000 ASME B16.11 SW	
1	1	0.75			P24B-0002L	Reducing tee ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5	0.5			P24B-0002M	Reducing tee ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5	0.75			P24B-0002N	Reducing tee ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5	1			P24B-0002P	Reducing tee ASTM A105 Class 3000 ASME B16.11 SW	
1	2	1	XS	XS	P24A-00238	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	XS	XS	P24A-0023H	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	STD	XS	P24A-00214	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	STD	XS	P24A-002HW	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P24A-002HY	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P24A-0021K	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	STD	P24A-0021A	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P24A-00229	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH20	STD	P24A-00J21	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH20	STD	P24A-005J4	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	SCH20	STD	P24A-00HMB	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	SCH20	STD	P24A-00HKS	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	SCH20	SCH20	P24A-002YX	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	SCH30	STD	P24A-00HKT	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH30	SCH20	P24A-003XM	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH30	SCH20	P24A-003XL	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	SCH20	STD	P24A-00K0M	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	SCH20	SCH20	P24A-002U7	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	SCH20	SCH20	P24A-002YA	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	SCH20	SCH30	P24A-003ES	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	16	6	SCH20	STD	P24A-00GU4	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	SCH20	SCH20	P24A-002XW	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	SCH20	SCH20	P24A-002YH	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	SCH20	SCH30	P24A-003XN	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	SCH20	SCH20	P24A-002XF	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	8	SCH20	SCH20	P24A-002XC	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	10	SCH20	SCH20	P24A-002UX	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	12	SCH20	SCH30	P24A-00BH0	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	14	SCH20	SCH20	P24A-002WT	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	16	SCH20	SCH20	P24A-002X5	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	8	STD	SCH20	P24A-00K0N	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	10	STD	SCH20	P24A-00BT7	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	12	STD	SCH30	P24A-00BUT	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	14	STD	SCH20	P24A-00BWB	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	16	STD	SCH20	P24A-006W3	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	18	STD	SCH20	P24A-006WD	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	10	STD	SCH20	P24A-00KT6	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	12	STD	SCH30	P24A-00C7C	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	14	STD	SCH20	P24A-00K0C	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	16	STD	SCH20	P24A-00CAD	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	18	STD	SCH20	P24A-006WF	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	20	STD	STD	P24A-004SV	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	10	STD	SCH20	P24A-003VN	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	12	STD	SCH30	P24A-00CZ4	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	14	STD	SCH20	P24A-003VR	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	16	STD	SCH20	P24A-003VS	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	18	STD	SCH20	P24A-003VT	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	20	STD	STD	P24A-0087D	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	24	STD	STD	P24A-005XW	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	36	16	STD	SCH20	P24A-00GU6	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	36	18	STD	SCH20	P24A-0087J	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	36	20	STD	STD	P24A-0087K	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	36	24	STD	STD	P24A-00DVT	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	36	30	STD	STD	P24A-007WA	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	42	16	XS	SCH20	P24A-003VB	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	42	18	XS	SCH20	P24A-003VC	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	42	20	XS	STD	P24A-00EGT	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	42	24	XS	STD	P24A-00EHZ	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	42	30	XS	STD	P24A-003VF	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	42	36	XS	STD	P24A-00EMK	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	48	24	XS	STD	P24A-006WP	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	48	30	XS	STD	P24A-006WR	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	48	36	XS	STD	P24A-007KS	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	48	42	XS	XS	P24A-00F5N	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	STD	XS	P27A-001MZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P27A-001N0	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P27A-00189	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	STD	P27A-001AZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P27A-001GW	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH20	STD	P27A-003K2	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH20	STD	P27A-003K3	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	SCH20	STD	P27A-003K4	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	SCH20	STD	P27A-003K5	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	SCH20	SCH20	P27A-001UL	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	SCH30	STD	P27A-003MN	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH30	SCH20	P27A-002GG	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	12	10	SCH30	SCH20	P27A-002GF	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	SCH20	STD	P27A-00518	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	SCH20	SCH20	P27A-001V4	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	SCH20	SCH20	P27A-001TG	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	SCH20	SCH30	P27A-0028H	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	SCH20	SCH20	P27A-001WX	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	SCH20	SCH20	P27A-001TW	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	SCH20	SCH30	P27A-002GH	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	SCH20	SCH20	P27A-001V2	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	10	SCH20	SCH20	P27A-001TJ	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	12	SCH20	SCH30	P27A-0084K	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	14	SCH20	SCH20	P27A-001UY	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	16	SCH20	SCH20	P27A-001WN	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	12	STD	SCH30	P27A-0082K	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	14	STD	SCH20	P27A-0082L	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	16	STD	SCH20	P27A-0082M	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	18	STD	SCH20	P27A-0084N	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	16	STD	SCH20	P27A-0084T	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	18	STD	SCH20	P27A-0084U	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	20	STD	STD	P27A-001A8	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	20	STD	STD	P27A-001S0	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	24	STD	STD	P27A-001M7	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	36	24	STD	STD	P27A-00BGR	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	36	30	STD	STD	P27A-00938	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	42	30	XS	STD	P27A-001N2	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	42	36	XS	STD	P27A-00BHB	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	48	42	XS	XS	P27A-00BHA	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	STD	XS	P28A-001N5	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P28A-001N6	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P28A-0018B	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	STD	P28A-001AS	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P28A-00182	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH20	STD	P28A-003JU	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH20	STD	P28A-003JV	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	SCH20	STD	P28A-003JW	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	SCH20	STD	P28A-003JX	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	SCH20	SCH20	P28A-001V0	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	SCH30	STD	P28A-003MG	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH30	SCH20	P28A-002GA	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH30	SCH20	P28A-002G9	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	SCH20	STD	P28A-0096P	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	SCH20	SCH20	P28A-001WH	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	SCH20	SCH20	P28A-001TH	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	SCH20	SCH30	P28A-0027A	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	SCH20	SCH20	P28A-001T6	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	SCH20	SCH20	P28A-001TY	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	SCH20	SCH30	P28A-002GB	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	SCH20	SCH20	P28A-001WG	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	10	SCH20	SCH20	P28A-001TV	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	12	SCH20	SCH30	P28A-004UM	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	14	SCH20	SCH20	P28A-001WD	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	16	SCH20	SCH20	P28A-001T1	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	12	STD	SCH30	P28A-004SH	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	14	STD	SCH20	P28A-004SJ	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	16	STD	SCH20	P28A-004SK	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	18	STD	SCH20	P28A-004UN	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	

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ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	24	16	STD	SCH20	P28A-004UR	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	18	STD	SCH20	P28A-004US	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	20	STD	STD	P28A-001AW	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	20	STD	STD	P28A-001LZ	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	24	STD	STD	P28A-001N1	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	36	24	STD	STD	P28A-008FS	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	36	30	STD	STD	P28A-005V7	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	42	30	XS	STD	P28A-001RM	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	42	36	XS	STD	P28A-008GR	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	48	42	XS	XS	P28A-008GJ	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P29B-0001J	Cap ASTM A105 Class 3000 ASME B16.11 SW	
1	0.75				P29B-0001F	Cap ASTM A105 Class 3000 ASME B16.11 SW	
1	1				P29B-0001G	Cap ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5				P29B-0001H	Cap ASTM A105 Class 3000 ASME B16.11 SW	
1	2		XS		P29A-000A1	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		STD		P29A-000BK	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		STD		P29A-000A3	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6		STD		P29A-000A9	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8		SCH20		P29A-000EY	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10		SCH20		P29A-000E5	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12		SCH30		P29A-000PZ	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14		SCH20		P29A-000EA	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16		SCH20		P29A-000F3	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18		SCH20		P29A-000E0	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20		STD		P29A-000B2	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24		STD		P29A-000B8	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	30		STD		P29A-000DU	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	36		STD		P29A-001AF	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	42		XS		P29A-000CW	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	48		XS		P29A-00136	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
541	0.5				P29B-0000B	Cap ASTM A105 Class 3000 ASME B16.11 NPT	
541	0.75				P29B-0000C	Cap ASTM A105 Class 3000 ASME B16.11 NPT	
541	1				P29B-0000D	Cap ASTM A105 Class 3000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P41A-000B5	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		SCH160		P41A-000B6	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		SCH160		P41A-000B7	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		SCH160		P41A-000B8	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

CON SWAGED NIPPLE (SNC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	XS	XS	P42A-00036	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	XS	XS	P42A-00038	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	XS	XS	P42A-0003B	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	XS	XS	P42A-00035	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	XS	XS	P42A-00039	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	XS	XS	P42A-0003C	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	XS	XS	P42A-0008C	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	XS	XS	P42A-0008D	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	XS	XS	P42A-0008E	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	XS	XS	P42A-0008F	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	STD	XS	P42A-0007V	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	

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ECC SWAGED NIPPLE (SNE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	XS	XS	P43A-00036	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	XS	XS	P43A-00037	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	XS	XS	P43A-00038	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	XS	XS	P43A-00039	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	XS	XS	P43A-0003A	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	XS	XS	P43A-0003B	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	XS	XS	P43A-00042	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	XS	XS	P43A-00043	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	XS	XS	P43A-00044	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	XS	XS	P43A-00045	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	STD	XS	P43A-0003J	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	

COUPLING (CPS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P47B-0001D	Coupling ASTM A105 Class 3000 ASME B16.11 SW - SW	
1	0.75				P47B-0001E	Coupling ASTM A105 Class 3000 ASME B16.11 SW - SW	
1	1				P47B-0001F	Coupling ASTM A105 Class 3000 ASME B16.11 SW - SW	
1	1.5				P47B-0001G	Coupling ASTM A105 Class 3000 ASME B16.11 SW - SW	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2 - 2.5	0.5			P31B-013J7	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	3 - 8	0.5			P31B-007AP	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	10 and larger	0.5			P31B-013J8	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	2 - 2.5	0.75			P31B-0137J	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	3 - 5	0.75			P31B-0137K	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	6 - 12	0.75			P31B-007AB	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	14 - 36	0.75			P31B-007AJ	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	38 and larger	0.75			P31B-00N1G	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	3	1			P31B-007A7	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	4 - 5	1			P31B-0138Z	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	6 - 10	1			P31B-007A4	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	12 - 36	1			P31B-007AA	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	38 and larger	1			P31B-00N0Y	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	4	1.5			P31B-005SN	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	5 - 6	1.5			P31B-01390	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	8 - 12	1.5			P31B-0079U	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	14 - 24	1.5			P31B-007A0	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	26 - 36	1.5			P31B-01391	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	38 and larger	1.5			P31B-00N17	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
541	1	0.75			P31B-00551	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
541	1.5	0.75			P31B-00555	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
541	2 - 2.5	0.75			P31B-0137H	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
541	3 - 5	0.75			P31B-01376	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
541	6 - 12	0.75			P31B-007GR	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
541	14 - 36	0.75			P31B-007GY	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
541	38 and larger	0.75			P31B-00FFM	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
1	6	2	STD	XS	P31B-007SH	Outlet ASTM A105 MSS SP-97 BW	
1	8	2	SCH20	XS	P31B-00NY2	Outlet ASTM A105 MSS SP-97 BW	
1	10	2	SCH20	XS	P31B-00TFB	Outlet ASTM A105 MSS SP-97 BW	
1	12	2	SCH30	XS	P31B-00NVL	Outlet ASTM A105 MSS SP-97 BW	
1	14	2	SCH20	XS	P31B-00TF9	Outlet ASTM A105 MSS SP-97 BW	
1	16	2	SCH20	XS	P31B-00TF8	Outlet ASTM A105 MSS SP-97 BW	
1	18	2	SCH20	XS	P31B-00NVX	Outlet ASTM A105 MSS SP-97 BW	
1	20	2	STD	XS	P31B-00994	Outlet ASTM A105 MSS SP-97 BW	
1	24	2	STD	XS	P31B-0092Z	Outlet ASTM A105 MSS SP-97 BW	
1	30	2	STD	XS	P31B-008P5	Outlet ASTM A105 MSS SP-97 BW	
1	36	2	STD	XS	P31B-00NX8	Outlet ASTM A105 MSS SP-97 BW	
1	42	2	XS	XS	P31B-0084J	Outlet ASTM A105 MSS SP-97 BW	

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OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	48	2	XS	XS	P31B-007YJ	Outlet ASTM A105 MSS SP-97 BW	
1	8	3	SCH20	STD	P31B-00P11	Outlet ASTM A105 MSS SP-97 BW	
1	10	3	SCH20	STD	P31B-00UPG	Outlet ASTM A105 MSS SP-97 BW	
1	12	3	SCH30	STD	P31B-00NYR	Outlet ASTM A105 MSS SP-97 BW	
1	14	3	SCH20	STD	P31B-00UPH	Outlet ASTM A105 MSS SP-97 BW	
1	16	3	SCH20	STD	P31B-00TU2	Outlet ASTM A105 MSS SP-97 BW	
1	18	3	SCH20	STD	P31B-00NZ4	Outlet ASTM A105 MSS SP-97 BW	
1	20	3	STD	STD	P31B-008FA	Outlet ASTM A105 MSS SP-97 BW	
1	24	3	STD	STD	P31B-00895	Outlet ASTM A105 MSS SP-97 BW	
1	30	3	STD	STD	P31B-007WY	Outlet ASTM A105 MSS SP-97 BW	
1	36	3	STD	STD	P31B-007P2	Outlet ASTM A105 MSS SP-97 BW	
1	42	3	XS	STD	P31B-00AGK	Outlet ASTM A105 MSS SP-97 BW	
1	48	3	XS	STD	P31B-00AFD	Outlet ASTM A105 MSS SP-97 BW	
1	12	4	SCH30	STD	P31B-00P1G	Outlet ASTM A105 MSS SP-97 BW	
1	14	4	SCH20	STD	P31B-00UPJ	Outlet ASTM A105 MSS SP-97 BW	
1	16	4	SCH20	STD	P31B-00TU3	Outlet ASTM A105 MSS SP-97 BW	
1	18	4	SCH20	STD	P31B-00P1V	Outlet ASTM A105 MSS SP-97 BW	
1	20	4	STD	STD	P31B-008D3	Outlet ASTM A105 MSS SP-97 BW	
1	24	4	STD	STD	P31B-0086X	Outlet ASTM A105 MSS SP-97 BW	
1	30	4	STD	STD	P31B-007US	Outlet ASTM A105 MSS SP-97 BW	
1	36	4	STD	STD	P31B-00AER	Outlet ASTM A105 MSS SP-97 BW	
1	42	4	XS	STD	P31B-00A8G	Outlet ASTM A105 MSS SP-97 BW	
1	48	4	XS	STD	P31B-00A2P	Outlet ASTM A105 MSS SP-97 BW	
1	18	6	SCH20	STD	P31B-00P48	Outlet ASTM A105 MSS SP-97 BW	
1	20	6	STD	STD	P31B-008PZ	Outlet ASTM A105 MSS SP-97 BW	
1	24	6	STD	STD	P31B-008JD	Outlet ASTM A105 MSS SP-97 BW	
1	30	6	STD	STD	P31B-008BS	Outlet ASTM A105 MSS SP-97 BW	
1	36	6	STD	STD	P31B-0085H	Outlet ASTM A105 MSS SP-97 BW	
1	42	6	XS	STD	P31B-007ZN	Outlet ASTM A105 MSS SP-97 BW	
1	48	6	XS	STD	P31B-007U6	Outlet ASTM A105 MSS SP-97 BW	
4212	3	2	STD	XS	P31B-00UUU	Outlet ASTM A105 MSS SP-97 BW	38

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30B-0002D	Plug ASTM A105 ASME B16.11 NPT Round head	
1	0.75				P30B-0002E	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1				P30B-0002F	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1.5				P30B-0002G	Plug ASTM A105 ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P61B-001R9	Flange SW ASTM A105 Class 150 ASME B16.5 RF	
1	0.75		XS		P61B-001RA	Flange SW ASTM A105 Class 150 ASME B16.5 RF	
1	1		XS		P61B-001RR	Flange SW ASTM A105 Class 150 ASME B16.5 RF	
1	1.5		XS		P61B-001RV	Flange SW ASTM A105 Class 150 ASME B16.5 RF	
1	2		XS		P61B-003NK	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	3		STD		P61B-001PW	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	4		STD		P61B-001R8	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	6		STD		P61B-001RT	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	8		SCH20		P61B-002BF	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	10		SCH20		P61B-002B4	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	12		SCH30		P61B-002TS	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	14		SCH20		P61B-002B6	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	16		SCH20		P61B-002B7	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	18		SCH20		P61B-002B8	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	20		STD		P61B-001JA	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	24		STD		P61B-001NJ	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	30		STD		P61B-001S8	Flange WN ASTM A105 Class 150 ASME B16.47 Series B RF	
1	36		STD		P61B-003M6	Flange WN ASTM A105 Class 150 ASME B16.47 Series B RF	

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FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	42		XS		P61B-001N1	Flange WN ASTM A105 Class 150 ASME B16.47 Series B RF	
1	48		XS		P61B-004CX	Flange WN ASTM A105 Class 150 ASME B16.47 Series B RF	
2499	42		XS		P61B-002NJ	Flange WN ASTM A105 Class 150 ASME B16.47 Series A RF	
773	0.5		XS		P61B-001HC	Flange SW ASTM A105 Class 300 ASME B16.5 RF	
773	0.75		XS		P61B-001HS	Flange SW ASTM A105 Class 300 ASME B16.5 RF	
773	1		XS		P61B-001EF	Flange SW ASTM A105 Class 300 ASME B16.5 RF	
773	1.5		XS		P61B-001F2	Flange SW ASTM A105 Class 300 ASME B16.5 RF	
773	2		XS		P61B-001HW	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	3		STD		P61B-001LJ	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	4		STD		P61B-001MC	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	6		STD		P61B-001N2	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	8		SCH20		P61B-002LJ	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	10		SCH20		P61B-002LH	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	12		SCH30		P61B-002TV	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	14		SCH20		P61B-002MR	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	16		SCH20		P61B-002MS	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	18		SCH20		P61B-002MT	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	20		STD		P61B-001NT	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	24		STD		P61B-001PA	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	30		STD		P61B-003SW	Flange WN ASTM A105 Class 300 ASME B16.47 Series B RF	
773	36		STD		P61B-004RB	Flange WN ASTM A105 Class 300 ASME B16.47 Series B RF	
773	42		XS		P61B-00673	Flange WN ASTM A105 Class 300 ASME B16.47 Series B RF	
773	48		XS		P61B-003TH	Flange WN ASTM A105 Class 300 ASME B16.47 Series B RF	
781	1		XS		P61B-001DR	Flange SW ASTM A105 Class 600 ASME B16.5 RF	
781	1.5		XS		P61B-001DV	Flange SW ASTM A105 Class 600 ASME B16.5 RF	
781	2		XS		P61B-001DH	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	3		STD		P61B-001TW	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	4		STD		P61B-001VV	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	6		STD		P61B-001JW	Flange WN ASTM A105 Class 600 ASME B16.5 RF	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67B-000FH	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	0.75				P67B-000FJ	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	1				P67B-000FK	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	1.5				P67B-000FL	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	2				P67B-000FT	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	3				P67B-000FW	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	4				P67B-000FX	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	6				P67B-000FY	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	8				P67B-000FZ	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	10				P67B-000FM	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	12				P67B-000FN	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	14				P67B-000FP	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	16				P67B-000FR	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	18				P67B-000FS	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	20				P67B-000FU	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	24				P67B-000FV	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	30				P67B-000G2	Blind flange ASTM A105 Class 150 ASME B16.47 Series B RF	
1	36				P67B-000G5	Blind flange ASTM A105 Class 150 ASME B16.47 Series B RF	
1	42				P67B-000KZ	Blind flange ASTM A105 Class 150 ASME B16.47 Series B RF	
1	48				P67B-000L2	Blind flange ASTM A105 Class 150 ASME B16.47 Series B RF	

REDUCING FLANGE (FR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2	0.75		XS	P62B-000NC	Reducing flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	2	1		XS	P62B-000K6	Reducing flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	2	1.5		XS	P62B-000K7	Reducing flange WN ASTM A105 Class 150 ASME B16.5 RF	

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GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P74U-001FZ	Sheet gasket Non-asbestos Class 150 ASME B16.21 Flange ASME B16.5 RF 1.5mm-T Licensor-5 Type-1	
1	0.75				P74U-001G0	Sheet gasket Non-asbestos Class 150 ASME B16.21 Flange ASME B16.5 RF 1.5mm-T Licensor-5 Type-1	
1	1				P74U-001G1	Sheet gasket Non-asbestos Class 150 ASME B16.21 Flange ASME B16.5 RF 1.5mm-T Licensor-5 Type-1	
1	1.5				P74U-001G2	Sheet gasket Non-asbestos Class 150 ASME B16.21 Flange ASME B16.5 RF 1.5mm-T Licensor-5 Type-1	
1	2				P74U-001G8	Sheet gasket Non-asbestos Class 150 ASME B16.21 Flange ASME B16.5 RF 1.5mm-T Licensor-5 Type-1	
1	3				P74U-001GB	Sheet gasket Non-asbestos Class 150 ASME B16.21 Flange ASME B16.5 RF 1.5mm-T Licensor-5 Type-1	
1	4				P74U-001GC	Sheet gasket Non-asbestos Class 150 ASME B16.21 Flange ASME B16.5 RF 1.5mm-T Licensor-5 Type-1	
1	6				P74U-001GD	Sheet gasket Non-asbestos Class 150 ASME B16.21 Flange ASME B16.5 RF 1.5mm-T Licensor-5 Type-1	
1	8				P74U-001GE	Sheet gasket Non-asbestos Class 150 ASME B16.21 Flange ASME B16.5 RF 1.5mm-T Licensor-5 Type-1	
1	10				P74U-001G3	Sheet gasket Non-asbestos Class 150 ASME B16.21 Flange ASME B16.5 RF 1.5mm-T Licensor-5 Type-1	
1	12				P74U-001G4	Sheet gasket Non-asbestos Class 150 ASME B16.21 Flange ASME B16.5 RF 1.5mm-T Licensor-5 Type-1	
1	14				P74U-001G5	Sheet gasket Non-asbestos Class 150 ASME B16.21 Flange ASME B16.5 RF 1.5mm-T Licensor-5 Type-1	
1	16				P74U-001G6	Sheet gasket Non-asbestos Class 150 ASME B16.21 Flange ASME B16.5 RF 1.5mm-T Licensor-5 Type-1	
1	18				P74U-001G7	Sheet gasket Non-asbestos Class 150 ASME B16.21 Flange ASME B16.5 RF 1.5mm-T Licensor-5 Type-1	
1	20				P74U-001G9	Sheet gasket Non-asbestos Class 150 ASME B16.21 Flange ASME B16.5 RF 1.5mm-T Licensor-5 Type-1	
1	24				P74U-001GA	Sheet gasket Non-asbestos Class 150 ASME B16.21 Flange ASME B16.5 RF 1.5mm-T Licensor-5 Type-1	
1	30				P74U-001GF	Sheet gasket Non-asbestos Class 150 ASME B16.21 Flange ASME B16.47-B RF 1.5mm-T Licensor-5 Type-1	
1	36				P74U-001GG	Sheet gasket Non-asbestos Class 150 ASME B16.21 Flange ASME B16.47-B RF 1.5mm-T Licensor-5 Type-1	
1	42				P74U-001GH	Sheet gasket Non-asbestos Class 150 ASME B16.21 Flange ASME B16.47-B RF 1.5mm-T Licensor-5 Type-1	
1	48				P74U-001GJ	Sheet gasket Non-asbestos Class 150 ASME B16.21 Flange ASME B16.47-B RF 1.5mm-T Licensor-5 Type-1	
2499	42				P74U-001PB	Sheet gasket Non-asbestos Class 150 ASME B16.21 Flange ASME B16.47-A RF 1.5mm-T Licensor-5 Type-1	
3001	42				P78U-00065	Insulation gasket kit Glass reinforced epoxy Class 150 Manufacturer-standard Flange ASME B16.47-B RF	
773	0.5				P74U-001GK	Sheet gasket Non-asbestos Class 300 ASME B16.21 Flange ASME B16.5 RF 1.5mm-T Licensor-5 Type-1	
773	0.75				P74U-001GL	Sheet gasket Non-asbestos Class 300 ASME B16.21 Flange ASME B16.5 RF 1.5mm-T Licensor-5 Type-1	
773	1				P74U-001GM	Sheet gasket Non-asbestos Class 300 ASME B16.21 Flange ASME B16.5 RF 1.5mm-T Licensor-5 Type-1	
773	1.5				P74U-001GN	Sheet gasket Non-asbestos Class 300 ASME B16.21 Flange ASME B16.5 RF 1.5mm-T Licensor-5 Type-1	
773	2				P74U-001GV	Sheet gasket Non-asbestos Class 300 ASME B16.21 Flange ASME B16.5 RF 1.5mm-T Licensor-5 Type-1	
773	3				P74U-001GY	Sheet gasket Non-asbestos Class 300 ASME B16.21 Flange ASME B16.5 RF 1.5mm-T Licensor-5 Type-1	
773	4				P74U-001GZ	Sheet gasket Non-asbestos Class 300 ASME B16.21 Flange ASME B16.5 RF 1.5mm-T Licensor-5 Type-1	
773	6				P74U-001H0	Sheet gasket Non-asbestos Class 300 ASME B16.21 Flange ASME B16.5 RF 1.5mm-T Licensor-5 Type-1	
773	8				P74U-001H1	Sheet gasket Non-asbestos Class 300 ASME B16.21 Flange ASME B16.5 RF 1.5mm-T Licensor-5 Type-1	
773	10				P74U-001GP	Sheet gasket Non-asbestos Class 300 ASME B16.21 Flange ASME B16.5 RF 1.5mm-T Licensor-5 Type-1	
773	12				P74U-001GR	Sheet gasket Non-asbestos Class 300 ASME B16.21 Flange ASME B16.5 RF 1.5mm-T Licensor-5 Type-1	
773	14				P74U-001GS	Sheet gasket Non-asbestos Class 300 ASME B16.21 Flange ASME B16.5 RF 1.5mm-T Licensor-5 Type-1	
773	16				P74U-001GT	Sheet gasket Non-asbestos Class 300 ASME B16.21 Flange ASME B16.5 RF 1.5mm-T Licensor-5 Type-1	
773	18				P74U-001GU	Sheet gasket Non-asbestos Class 300 ASME B16.21 Flange ASME B16.5 RF 1.5mm-T Licensor-5 Type-1	
773	20				P74U-001GW	Sheet gasket Non-asbestos Class 300 ASME B16.21 Flange ASME B16.5 RF 1.5mm-T Licensor-5 Type-1	
773	24				P74U-001GX	Sheet gasket Non-asbestos Class 300 ASME B16.21 Flange ASME B16.5 RF 1.5mm-T Licensor-5 Type-1	
773	30				P74U-001H2	Sheet gasket Non-asbestos Class 300 ASME B16.21 Flange ASME B16.47-B RF 1.5mm-T Licensor-5 Type-1	
773	36				P74U-001H3	Sheet gasket Non-asbestos Class 300 ASME B16.21 Flange ASME B16.47-B RF 1.5mm-T Licensor-5 Type-1	
773	42				P74U-001H4	Sheet gasket Non-asbestos Class 300 ASME B16.21 Flange ASME B16.47-B RF 1.5mm-T Licensor-5 Type-1	
773	48				P74U-001H5	Sheet gasket Non-asbestos Class 300 ASME B16.21 Flange ASME B16.47-B RF 1.5mm-T Licensor-5 Type-1	
781	1				P73T-0035G	Spiral wound gasket SS316 winding / Non-asbestos filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-6	
781	1.5				P73T-0035H	Spiral wound gasket SS316 winding / Non-asbestos filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-6	
781	2				P73T-0035J	Spiral wound gasket SS316 winding / Non-asbestos filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-6	
781	3				P73T-0035K	Spiral wound gasket SS316 winding / Non-asbestos filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-6	
781	4				P73T-0035L	Spiral wound gasket SS316 winding / Non-asbestos filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-6	
781	6				P73T-0035M	Spiral wound gasket SS316 winding / Non-asbestos filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-6	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-16				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	0.5-18-24				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	

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BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	30-42				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	48				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
2499	36-48				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
773	0.5-10				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
773	12-48				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
781	0.5-6				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81B-000P4	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	0.75				P81B-000NX	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	1				P81B-000NY	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	1.5				P81B-000NZ	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	2				P81C-002DV	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	3				P81C-002DW	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	4				P81C-002DX	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	6				P81C-002DY	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	8				P81C-002DZ	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	10				P81C-002DT	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	12				P81C-002DU	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	14				P81C-00308	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated	
1	16				P81C-002E0	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated	
1	18				P81C-002E1	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated	
1	20				P81C-002E2	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated	
1	24				P81C-002E3	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated	
1	30				P81C-004D8	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.47-B RF Trim number 8 BB-BG-OS&Y Gear operated	
1	36				P81C-004D9	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.47-B RF Trim number 8 BB-BG-OS&Y Gear operated	
1	42				P81C-004E4	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.47-B RF Trim number 8 BB-BG-OS&Y Gear operated	
1	48				P81C-005F1	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.47-B RF Trim number 8 BB-BG-OS&Y Gear operated	
221	0.75				P81B-001K2	Gate valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
714	0.5				P81B-0015L	Gate valve ASTM A105 Class 800 API 602 SW - NPT Trim number 8 BB-BG-OS&Y Handwheel operated	
714	0.75				P81B-002F4	Gate valve ASTM A105 Class 800 API 602 SW - NPT Trim number 8 BB-BG-OS&Y Handwheel operated	
714	1				P81B-002NH	Gate valve ASTM A105 Class 800 API 602 SW - NPT Trim number 8 BB-BG-OS&Y Handwheel operated	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82B-000K0	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	0.75				P82B-000HB	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	1				P82B-000HC	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	1.5				P82B-000HD	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	2				P82C-000N5	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	3				P82C-000N6	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	4				P82C-000N7	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	6				P82C-000N8	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	8				P82C-0026L	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
714	0.5				P82B-0005S	Globe valve ASTM A105 Class 800 API 602 SW - NPT Trim number 8 BB-BG-OS&Y Handwheel operated	
714	0.75				P82B-0005R	Globe valve ASTM A105 Class 800 API 602 SW - NPT Trim number 8 BB-BG-OS&Y Handwheel operated	

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CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83B-000FX	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover	
1	0.75				P83B-000ER	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover	
1	1				P83B-000ES	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover	
1	1.5				P83B-000ET	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover	
1	2				P83C-00144	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	3				P83C-00147	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	4				P83C-00148	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	6				P83C-00149	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	8				P83C-0014A	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	10				P83C-00140	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	12				P83C-00141	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	14				P83C-0021E	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	16				P83C-00142	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	18				P83C-00143	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	20				P83C-00145	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	24				P83C-00146	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	

BALL VALVE (Q)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P84B-0011T	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design	
1	0.75				P84B-0011U	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design	
1	1				P84B-0011V	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design	
1	1.5				P84B-0011W	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design	
1	2				P84C-005UD	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design	
1	3				P84C-005UE	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design	
1	4				P84C-005UF	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design	
1	6				P84C-005UG	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Reduced bore Fire tested design	
1	8				P84C-005UH	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Reduced bore Fire tested design	
1	10				P84C-006MS	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Reduced bore Fire tested design	
1	12				P84C-006MT	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Reduced bore Fire tested design	
1	14				P84C-006MU	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Reduced bore Fire tested design	
1	16				P84C-006MV	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Reduced bore Fire tested design	
1	18				P84C-006MW	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Reduced bore Fire tested design	
1	20				P84C-006MX	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Reduced bore Fire tested design	
1	24				P84C-006MY	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Reduced bore Fire tested design	
24	0.5				P84B-0011X	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	
24	0.75				P84B-0011Y	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	
24	1				P84B-0011Z	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	
24	1.5				P84B-00120	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	
24	2				P84C-005UJ	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	
24	3				P84C-005UK	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	
24	4				P84C-005UL	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	
24	6				P84C-005UM	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design	
24	8				P84C-005UN	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design	
24	10				P84C-006MZ	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design	
24	12				P84C-006N0	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design	

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BALL VALVE (Q)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
24	14				P84C-006N1	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design	
24	16				P84C-006N2	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design	
24	18				P84C-006N3	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design	
24	20				P84C-006N4	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design	
24	24				P84C-006N5	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design	

BUTTERFLY VALVE (H)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2				P86C-0029Z	Concentric butterfly valve ASTM A216 Grade WCB Class 150 API 609 Category A Lug-type ASME B16.5 RF FKM lined Disc 13Cr Trim 13Cr Wrench lever operated	
1	3				P86C-002A0	Concentric butterfly valve ASTM A216 Grade WCB Class 150 API 609 Category A Lug-type ASME B16.5 RF FKM lined Disc 13Cr Trim 13Cr Wrench lever operated	
1	4				P86C-0022H	Concentric butterfly valve ASTM A216 Grade WCB Class 150 API 609 Category A Lug-type ASME B16.5 RF FKM lined Disc 13Cr Trim 13Cr Wrench lever operated	
1	6				P86C-0022P	Concentric butterfly valve ASTM A216 Grade WCB Class 150 API 609 Category A Lug-type ASME B16.5 RF FKM lined Disc 13Cr Trim 13Cr Gear operated	
1	8				P86C-0022R	Concentric butterfly valve ASTM A216 Grade WCB Class 150 API 609 Category A Lug-type ASME B16.5 RF FKM lined Disc 13Cr Trim 13Cr Gear operated	
1	10				P86C-0022J	Concentric butterfly valve ASTM A216 Grade WCB Class 150 API 609 Category A Lug-type ASME B16.5 RF FKM lined Disc 13Cr Trim 13Cr Gear operated	
1	12				P86C-0022K	Concentric butterfly valve ASTM A216 Grade WCB Class 150 API 609 Category A Lug-type ASME B16.5 RF FKM lined Disc 13Cr Trim 13Cr Gear operated	
1	14				P86C-0022L	Concentric butterfly valve ASTM A216 Grade WCB Class 150 API 609 Category A Lug-type ASME B16.5 RF FKM lined Disc 13Cr Trim 13Cr Gear operated	
1	16				P86C-0022M	Concentric butterfly valve ASTM A216 Grade WCB Class 150 API 609 Category A Lug-type ASME B16.5 RF FKM lined Disc 13Cr Trim 13Cr Gear operated	
1	18				P86C-0022N	Concentric butterfly valve ASTM A216 Grade WCB Class 150 API 609 Category A Lug-type ASME B16.5 RF FKM lined Disc 13Cr Trim 13Cr Gear operated	
1	20				P86C-0022S	Concentric butterfly valve ASTM A216 Grade WCB Class 150 API 609 Category A Double flanged ASME B16.5 RF FKM lined Disc 13Cr Trim 13Cr Gear operated	
1	24				P86C-0022T	Concentric butterfly valve ASTM A216 Grade WCB Class 150 API 609 Category A Double flanged ASME B16.5 RF FKM lined Disc 13Cr Trim 13Cr Gear operated	

ORIFICE FLANGE (FO)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2		XS		P66B-0084B	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	3		STD		P66B-0084C	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	4		STD		P66B-0084D	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	6		STD		P66B-0084E	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	8		SCH20		P66B-0084F	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	10		SCH20		P66B-00848	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	12		SCH30		P66B-00849	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	14		SCH20		P66B-0084A	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	16		SCH20		P66B-0083Y	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
200	2		XS		P66B-00843	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	3		STD		P66B-00844	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	4		STD		P66B-00845	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	6		STD		P66B-00846	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	8		SCH20		P66B-00847	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	10		SCH20		P66B-00840	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	12		SCH30		P66B-00841	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	14		SCH20		P66B-00842	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	16		SCH20		P66B-0083Z	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71B-0008A	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	0.75				P71B-0008B	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	1				P71B-0008C	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71B-0008D	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	2				P71B-0000P	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	3				P71B-0000N	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	4				P71B-0000M	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	6				P71B-0000L	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	8				P71B-0000R	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	

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SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	10				P71B-0000K	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	12				P71B-0000J	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	

PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000AH	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	16				P72B-0000C	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	18				P72B-000AJ	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	20				P72B-000AK	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	24				P72B-000AL	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	30				P72B-000AM	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	36				P72B-000AN	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	42				P72B-000AP	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	48				P72B-000AR	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	

PADDLE SPACER (PS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000AT	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	16				P72B-0000B	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	18				P72B-000AU	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	20				P72B-000AV	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	24				P72B-000AW	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	30				P72B-000AX	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	36				P72B-000AY	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	42				P72B-000AZ	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	48				P72B-000B0	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	

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BOLT TABLE (B_A11A05 , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	60	P80S-003V2		
0.75	4	0.500	65	P80S-003V3		
1	4	0.500	70	P80S-003V4		
1.5	4	0.500	75	P80S-003V5		
2	4	0.625	85	P80S-003XE		
3	4	0.625	95	P80S-003XG		
4	8	0.625	95	P80S-003XG		
6	8	0.750	105	P80S-003XJ		
8	8	0.750	110	P80S-003XK		
10	12	0.875	120	P80S-00419		
12	12	0.875	120	P80S-00419		
14	12	1.000	135	P80S-0043E		
16	16	1.000	140	P80S-0043F		
18	16	1.125	150	P80S-0046K		
20	20	1.125	160	P80S-0046M		
24	20	1.250	175	P80S-004AG		
30	44	0.750	145	P80S-003ZK		
36	44	0.875	175	P80S-0041M		
42	48	1.000	190	P80S-0043T		
48	44	1.125	210	P80S-0046Z		

BOLT TABLE (B_A11A05_2499 , STUD ASME RF, OPTION CODE 2499)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
30	28	1.250	235			
36	32	1.500	285	P80S-003FJ		
42	36	1.500	300	P80S-003JX		
48	44	1.500	320	P80S-008N2		

BOLT TABLE (B_A11A05_773 , STUD ASME RF, OPTION CODE 773)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-003V4		
0.75	4	0.625	75	P80S-003XC		
1	4	0.625	80	P80S-003XD		
1.5	4	0.750	95	P80S-00414		
2	8	0.625	90	P80S-003XF		
3	8	0.750	110	P80S-003XK		
4	8	0.750	115	P80S-003XL		
6	12	0.750	125	P80S-003XN		
8	12	0.875	140	P80S-0041D		
10	16	1.000	160	P80S-0043K		
12	16	1.125	175	P80S-0046S		
14	20	1.125	180	P80S-0046T		
16	20	1.250	190	P80S-004AK		
18	24	1.250	200	P80S-004AM		
20	24	1.250	210	P80S-004AP		
24	24	1.500	235	P80S-003F8		
30	36	1.375	285	P80S-003EA		
36	32	1.625	320	P80S-005TT		
42	36	1.750	355	P80S-007B5		
48	40	1.875	380	P80S-008P4		

BOLT TABLE (B_A11A05_781 , STUD ASME RF, OPTION CODE 781)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	80	P80S-003V6		
0.75	4	0.625	90	P80S-003XF		
1	4	0.625	95	P80S-003XG		
1.5	4	0.750	110	P80S-003XK		
2	8	0.625	110	P80S-003VC		
3	8	0.750	130	P80S-003XP		
4	8	0.875	150	P80S-0041F		
6	12	1.000	175	P80S-0043P		
8	12	1.125	195			
10	16	1.250	250			
12	20	1.250	255			
14	20	1.375	270			
16	20	1.500	295			

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BOLT TABLE (B_A11A05_781 , STUD ASME RF, OPTION CODE 781)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
18	20	1.625	320			
20	24	1.625	335			
24	24	1.875	380			
30	28	1.875	435			
36	28	2.250	510			
42	28	2.500	575			
48	32	2.750	635			

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BRANCH TABLE (T_A11A05)

RUN PIPE SIZE (in) \ BRANCH SIZE (in)	0.5	0.75	1	1.5	2	3	4	6	8	10	12	14	16	18	20	24	30	36	42	48
0.5	TS																			
0.75	TR	TS																		
1	TR	TR	TS																	
1.5	TR	TR	TR	TS																
2	L	L	TR	TR	TS															
3	L	L	L	TR	TR	TS														
4	L	L	L	L	TR	TR	TS													
6	L	L	L	L	L	TR	TR	TS												
8	L	L	L	L	L	L	TR	TR	TS											
10	L	L	L	L	L	L	TR	TR	TR	TS										
12	L	L	L	L	L	L	L	TR	TR	TR	TS									
14		L	L	L	L	L	L	TR	TR	TR	TR	TS								
16		L	L	L	L	L	L	TR	TR	TR	TR	TR	TS							
18		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TS						
20	L	L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TR	TS					
24		L	L	L	L	L	L	L	9PD	TR	TR	TR	TR	TR	TR	TS				
30		L	L	L	L	L	L	L	9PD	TR	TR	TR	TR	TR	TR	TR	TS			
36		L	L	L	L	L	L	L	9PD	9PD	9PD	9PD	TR	TR	TR	TR	TR	TS		
42		L	L	L	L	L	L	L	9PD	9PD	9PD	9PD	TR	TR	TR	TR	TR	TR	TS	
48		L	L	L	L	L	L	L	9PD	9PD	9PD	9PD	9PD	9PD	9PD	TR	TR	TR	TR	TS

L : OUTLET
9PD : REINFORCING PAD 90 DEG
TR : REDUCING TEE
TS : STRAIGHT TEE

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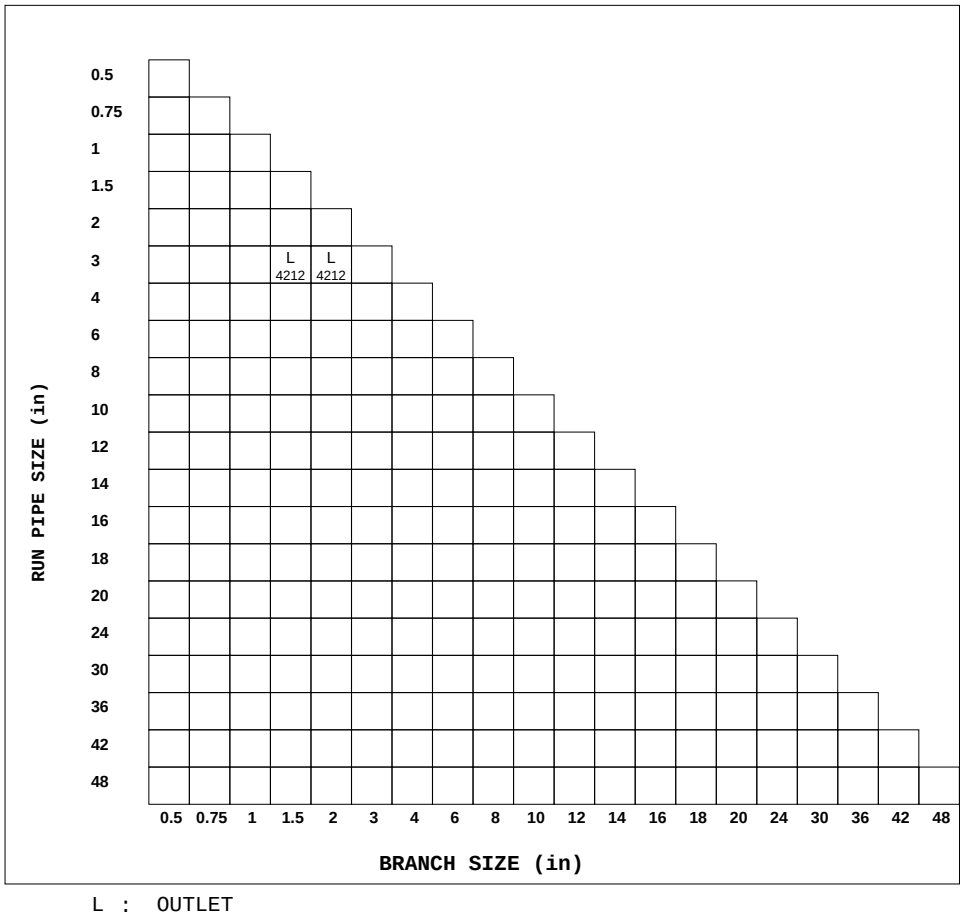
BRANCH TABLE (T_A11A05_4)



L : OUTLET

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PIPING CLASS

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Material : Killed CS
Rating : ASME CLASS 150
Flange Face : RF
C.A.(mm) : 3.00
Gasket : Spiral Wound
Service : LIQUID ADDITIVE, PROPYLENE, PROCESS WATER, WASTE OIL, WASTE WATER
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
2	USE OF SOFT SEATED BALL, PLUG AND BUTTERFLY VALVES SHALL BE LIMITED TO MAXIMUM OF 204DEGC (400DEGF)

DETAIL NOTES :

NO.	DESCRIPTION
38	TO BE USED FOR STAND PIPE
999	HOLD ITEMS. ORDER PLACEMENT SHALL NOT BE DONE BEFORE RELEASING HOLD.

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
24	FULL PORT (Q)
200	WITH JACK SCREW (FO)
221	RF (V)
541	NPT(F) (CA,L)
714	SW - NPT(F) (V)
773	CLASS 300 (B,F,G)
781	CLASS 600 (B,F,G)
4212	WELDOLET FOR STAND PIPE (L)
4403	CLASS 600 LARGE TONGUE FACE (B,F,G)

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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.25		3.60mm		P01A-00908	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	0.5		SCH160		P01A-0010P	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	0.75		SCH160		P01A-0010R	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1		SCH160		P01A-0014M	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1.5		SCH160		P01A-0015J	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	2		XS		P01A-000YX	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	3		STD		P01A-000YM	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	4		STD		P01A-000YU	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	6		STD		P01A-000Z3	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	8		SCH20		P01A-001AT	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	10		SCH20		P01A-0014Y	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	12		SCH30		P01A-0017K	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	14		SCH20		P01A-0017A	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	16		SCH20		P01A-0018E	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	18		SCH20		P01A-00438	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE	
1	20		STD		P01A-0042G	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE	
1	22		STD		P01A-008YC	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE	
1	24		STD		P01A-0042H	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.25				P02B-0008G	90 degree elbow ASTM A105 Class 6000 ASME B16.11 SW	
1	0.5				P02B-0001J	90 degree elbow ASTM A105 Class 6000 ASME B16.11 SW	
1	0.75				P02B-0001K	90 degree elbow ASTM A105 Class 6000 ASME B16.11 SW	
1	1				P02B-0002E	90 degree elbow ASTM A105 Class 6000 ASME B16.11 SW	
1	1.5				P02B-0002F	90 degree elbow ASTM A105 Class 6000 ASME B16.11 SW	
1	2		XS		P02A-000CP	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		STD		P02A-000CU	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		STD		P02A-000CZ	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		STD		P02A-000D6	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		SCH20		P02A-000GZ	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	10		SCH20		P02A-000H1	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	12		SCH30		P02A-000M4	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	14		SCH20		P02A-000FX	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	16		SCH20		P02A-000GM	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	18		SCH20		P02A-000LT	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	20		STD		P02A-0010J	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	22		STD		P02A-001KF	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	24		STD		P02A-0010K	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P03B-0001F	45 degree elbow ASTM A105 Class 6000 ASME B16.11 SW	
1	0.75				P03B-0001G	45 degree elbow ASTM A105 Class 6000 ASME B16.11 SW	
1	1				P03B-0002A	45 degree elbow ASTM A105 Class 6000 ASME B16.11 SW	
1	1.5				P03B-0002B	45 degree elbow ASTM A105 Class 6000 ASME B16.11 SW	
1	2		XS		P03A-000AS	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		STD		P03A-000AX	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		STD		P03A-000B1	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		STD		P03A-000B9	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		SCH20		P03A-000EX	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	10		SCH20		P03A-000F0	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	12		SCH30		P03A-000JU	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	14		SCH20		P03A-000DW	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	16		SCH20		P03A-000EM	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	18		SCH20		P03A-001DX	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	20		STD		P03A-000X1	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	22		STD		P03A-001EK	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	24		STD		P03A-000X2	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

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STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P21B-0001F	Straight tee ASTM A105 Class 6000 ASME B16.11 SW	
1	0.75				P21B-0001G	Straight tee ASTM A105 Class 6000 ASME B16.11 SW	
1	1				P21B-00026	Straight tee ASTM A105 Class 6000 ASME B16.11 SW	
1	1.5				P21B-00027	Straight tee ASTM A105 Class 6000 ASME B16.11 SW	
1	2		XS		P21A-001CJ	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		STD		P21A-001CU	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		STD		P21A-001CW	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6		STD		P21A-001D2	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8		SCH20		P21A-00215	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10		SCH20		P21A-00219	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12		SCH30		P21A-0025A	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14		SCH20		P21A-00206	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16		SCH20		P21A-0020X	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18		SCH20		P21A-001PJ	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20		STD		P21A-001C7	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	22		STD		P21A-002TK	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24		STD		P21A-001CC	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5			P24B-00033	Reducing tee ASTM A105 Class 6000 ASME B16.11 SW	
1	1	0.25			P24B-000DJ	Reducing tee ASTM A105 Class 6000 ASME B16.11 SW	
1	1	0.5			P24B-00034	Reducing tee ASTM A105 Class 6000 ASME B16.11 SW	
1	1	0.75			P24B-00030	Reducing tee ASTM A105 Class 6000 ASME B16.11 SW	
1	1.5	0.5			P24B-00031	Reducing tee ASTM A105 Class 6000 ASME B16.11 SW	
1	1.5	0.75			P24B-00032	Reducing tee ASTM A105 Class 6000 ASME B16.11 SW	
1	1.5	1			P24B-0004J	Reducing tee ASTM A105 Class 6000 ASME B16.11 SW	
1	2	1	XS	SCH160	P24A-00GMB	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	XS	SCH160	P24A-005K9	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	STD	SCH160	P24A-00GMC	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	STD	XS	P24A-002HW	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P24A-002HY	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P24A-0021K	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	STD	P24A-0021A	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P24A-00229	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH20	STD	P24A-00J21	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH20	STD	P24A-005J4	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	SCH20	STD	P24A-00HMB	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	SCH20	STD	P24A-00HKS	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	SCH20	SCH20	P24A-002YX	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	SCH30	STD	P24A-00HKT	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH30	SCH20	P24A-003XM	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH30	SCH20	P24A-003XL	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	SCH20	STD	P24A-00K0M	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	SCH20	SCH20	P24A-002U7	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	SCH20	SCH20	P24A-002YA	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	SCH20	SCH30	P24A-003ES	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	6	SCH20	STD	P24A-00GU4	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	SCH20	SCH20	P24A-002XW	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	SCH20	SCH20	P24A-002YH	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	SCH20	SCH30	P24A-003XN	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	SCH20	SCH20	P24A-002XF	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	8	SCH20	SCH20	P24A-002XC	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	10	SCH20	SCH20	P24A-002UX	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	12	SCH20	SCH30	P24A-00BH0	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	14	SCH20	SCH20	P24A-002WT	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	16	SCH20	SCH20	P24A-002X5	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	8	STD	SCH20	P24A-00K0N	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	10	STD	SCH20	P24A-00BT7	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	

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REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	20	12	STD	SCH30	P24A-00BUT	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	14	STD	SCH20	P24A-00BWB	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	16	STD	SCH20	P24A-006W3	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	18	STD	SCH20	P24A-006WD	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	22	10	STD	SCH20	P24A-00PSJ	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	22	12	STD	SCH30	P24A-00C2E	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	22	14	STD	SCH20	P24A-00C2W	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	22	16	STD	SCH20	P24A-00C3D	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	22	18	STD	SCH20	P24A-006WE	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	22	20	STD	STD	P24A-006W5	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	10	STD	SCH20	P24A-00KT6	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	12	STD	SCH30	P24A-00C7C	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	14	STD	SCH20	P24A-00K0C	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	16	STD	SCH20	P24A-00CAD	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	18	STD	SCH20	P24A-006WF	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	20	STD	STD	P24A-004SV	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	22	STD	STD	P24A-006WG	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	STD	XS	P27A-001MZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P27A-001N0	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2.5	STD	STD	P27A-0074B	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P27A-00189	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	2.5	STD	STD	P27A-00JPG	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	STD	P27A-001AZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P27A-001GW	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH20	STD	P27A-003K2	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH20	STD	P27A-003K3	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	SCH20	STD	P27A-003K4	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	SCH20	STD	P27A-003K5	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	SCH20	SCH20	P27A-001UL	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	SCH30	STD	P27A-003MN	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH30	SCH20	P27A-002GG	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH30	SCH20	P27A-002GF	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	SCH20	STD	P27A-00518	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	SCH20	SCH20	P27A-001V4	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	SCH20	SCH20	P27A-001TG	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	SCH20	SCH30	P27A-0028H	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	SCH20	SCH20	P27A-001WX	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	SCH20	SCH20	P27A-001TW	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	SCH20	SCH30	P27A-002GH	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	SCH20	SCH20	P27A-001V2	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	10	SCH20	SCH20	P27A-001TJ	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	12	SCH20	SCH30	P27A-0084K	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	14	SCH20	SCH20	P27A-001UY	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	16	SCH20	SCH20	P27A-001WN	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	12	STD	SCH30	P27A-0082K	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	14	STD	SCH20	P27A-0082L	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	16	STD	SCH20	P27A-0082M	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	18	STD	SCH20	P27A-0084N	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	16	STD	SCH20	P27A-0084T	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	18	STD	SCH20	P27A-0084U	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	20	STD	STD	P27A-001A8	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	STD	XS	P28A-001N5	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P28A-001N6	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	4	2.5	STD	STD	P28A-00G0N	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P28A-0018B	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	2.5	STD	STD	P28A-00G0P	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	STD	P28A-001AS	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P28A-00182	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH20	STD	P28A-003JU	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH20	STD	P28A-003JV	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	SCH20	STD	P28A-003JW	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	SCH20	STD	P28A-003JX	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	SCH20	SCH20	P28A-001V0	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	SCH30	STD	P28A-003MG	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH30	SCH20	P28A-002GA	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH30	SCH20	P28A-002G9	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	SCH20	STD	P28A-0096P	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	SCH20	SCH20	P28A-001WH	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	SCH20	SCH20	P28A-001TH	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	SCH20	SCH30	P28A-0027A	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	SCH20	SCH20	P28A-001T6	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	SCH20	SCH20	P28A-001TY	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	SCH20	SCH30	P28A-002GB	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	SCH20	SCH20	P28A-001WG	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	10	SCH20	SCH20	P28A-001TV	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	12	SCH20	SCH30	P28A-004UM	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	14	SCH20	SCH20	P28A-001WD	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	16	SCH20	SCH20	P28A-001T1	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	12	STD	SCH30	P28A-004SH	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	14	STD	SCH20	P28A-004SJ	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	16	STD	SCH20	P28A-004SK	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	18	STD	SCH20	P28A-004UN	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	16	STD	SCH20	P28A-004UR	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	18	STD	SCH20	P28A-004US	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	20	STD	STD	P28A-001AW	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P29B-0002F	Cap ASTM A105 Class 6000 ASME B16.11 SW	
1	0.75				P29B-0002G	Cap ASTM A105 Class 6000 ASME B16.11 SW	
1	1				P29B-0002D	Cap ASTM A105 Class 6000 ASME B16.11 SW	
1	1.5				P29B-0002E	Cap ASTM A105 Class 6000 ASME B16.11 SW	
1	2		XS		P29A-000A1	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		STD		P29A-000BK	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		STD		P29A-000A3	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6		STD		P29A-000A9	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8		SCH20		P29A-000EY	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10		SCH20		P29A-000E5	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12		SCH30		P29A-000PZ	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14		SCH20		P29A-000EA	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16		SCH20		P29A-000F3	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18		SCH20		P29A-000E0	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20		STD		P29A-000B2	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	22		STD		P29A-0010V	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24		STD		P29A-000B8	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
541	0.5				P29B-0000X	Cap ASTM A105 Class 6000 ASME B16.11 NPT	
541	0.75				P29B-0000Y	Cap ASTM A105 Class 6000 ASME B16.11 NPT	
541	1				P29B-0000Z	Cap ASTM A105 Class 6000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P41A-000B9	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

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STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75		XXS		P41A-000BA	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		XXS		P41A-000D8	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		XXS		P41A-000D9	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

CON SWAGED NIPPLE (SNC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5	0.25	SCH160	3.60mm	P42A-0012L	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	0.75	0.25	SCH160	3.60mm	P42A-0012M	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	0.75	0.5	SCH160	SCH160	P42A-00029	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.25	SCH160	3.60mm	P42A-0012N	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	SCH160	SCH160	P42A-0009T	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	SCH160	SCH160	P42A-0009U	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.25	SCH160	3.60mm	P42A-0012P	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	SCH160	SCH160	P42A-0009V	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	SCH160	SCH160	P42A-0009W	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	SCH160	SCH160	P42A-0009X	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.25	XS	3.60mm	P42A-0012R	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.5	XS	SCH160	P42A-000J6	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	XS	SCH160	P42A-000J7	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	XS	SCH160	P42A-000F8	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	XS	SCH160	P42A-000KZ	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	STD	SCH160	P42A-000L0	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	

ECC SWAGED NIPPLE (SNE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5	0.25	SCH160	3.60mm	P43A-000PU	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	0.75	0.25	SCH160	3.60mm	P43A-000PV	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	0.75	0.5	SCH160	SCH160	P43A-000AM	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.25	SCH160	3.60mm	P43A-000PW	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	SCH160	SCH160	P43A-000B4	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	SCH160	SCH160	P43A-000B5	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.25	SCH160	3.60mm	P43A-000PX	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	SCH160	SCH160	P43A-000B6	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	SCH160	SCH160	P43A-000B7	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	SCH160	SCH160	P43A-000B8	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.25	XS	3.60mm	P43A-000PY	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.5	XS	SCH160	P43A-000B2	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	XS	SCH160	P43A-000B3	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	XS	SCH160	P43A-000CZ	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	XS	SCH160	P43A-000D0	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	STD	SCH160	P43A-000D1	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	

COUPLING (CPS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.25				P47B-0008W	Coupling ASTM A105 Class 6000 ASME B16.11 SW - SW	
1	0.5				P47B-00013	Coupling ASTM A105 Class 6000 ASME B16.11 SW - SW	
1	0.75				P47B-00012	Coupling ASTM A105 Class 6000 ASME B16.11 SW - SW	
1	1				P47B-0002A	Coupling ASTM A105 Class 6000 ASME B16.11 SW - SW	
1	1.5				P47B-0002B	Coupling ASTM A105 Class 6000 ASME B16.11 SW - SW	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5 - 2	0.5			P31B-005SW	Outlet ASTM A105 Class 6000 MSS SP-97 SW	
1	2.5 - 6	0.5			P31B-01388	Outlet ASTM A105 Class 6000 MSS SP-97 SW	
1	8 and larger	0.5			P31B-01389	Outlet ASTM A105 Class 6000 MSS SP-97 SW	
1	1.5 - 2.5	0.75			P31B-0137D	Outlet ASTM A105 Class 6000 MSS SP-97 SW	
1	3 - 10	0.75			P31B-007LV	Outlet ASTM A105 Class 6000 MSS SP-97 SW	
1	12 and larger	0.75			P31B-0136N	Outlet ASTM A105 Class 6000 MSS SP-97 SW	

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OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3 - 10	1			P31B-007LN	Outlet ASTM A105 Class 6000 MSS SP-97 SW	
1	12 and larger	1			P31B-0136P	Outlet ASTM A105 Class 6000 MSS SP-97 SW	
1	4 - 5	1.5			P31B-004LE	Outlet ASTM A105 Class 6000 MSS SP-97 SW	
1	6 - 8	1.5			P31B-005T4	Outlet ASTM A105 Class 6000 MSS SP-97 SW	
1	10 - 18	1.5			P31B-007LF	Outlet ASTM A105 Class 6000 MSS SP-97 SW	
1	20 and larger	1.5			P31B-0137E	Outlet ASTM A105 Class 6000 MSS SP-97 SW	
541	1	0.75			P31B-005HL	Outlet ASTM A105 Class 6000 MSS SP-97 NPT	
541	1.5 - 2.5	0.75			P31B-0137F	Outlet ASTM A105 Class 6000 MSS SP-97 NPT	
541	3 - 10	0.75			P31B-007KP	Outlet ASTM A105 Class 6000 MSS SP-97 NPT	
541	12 and larger	0.75			P31B-0138A	Outlet ASTM A105 Class 6000 MSS SP-97 NPT	
1	6	2	STD	XS	P31B-007SH	Outlet ASTM A105 MSS SP-97 BW	
1	8	2	SCH20	XS	P31B-00NY2	Outlet ASTM A105 MSS SP-97 BW	
1	10	2	SCH20	XS	P31B-00TFB	Outlet ASTM A105 MSS SP-97 BW	
1	12	2	SCH30	XS	P31B-00NVL	Outlet ASTM A105 MSS SP-97 BW	
1	14	2	SCH20	XS	P31B-00TF9	Outlet ASTM A105 MSS SP-97 BW	
1	16	2	SCH20	XS	P31B-00TF8	Outlet ASTM A105 MSS SP-97 BW	
1	18	2	SCH20	XS	P31B-00NVX	Outlet ASTM A105 MSS SP-97 BW	
1	20	2	STD	XS	P31B-00994	Outlet ASTM A105 MSS SP-97 BW	
1	22	2	STD	XS	P31B-00NW7	Outlet ASTM A105 MSS SP-97 BW	
1	24	2	STD	XS	P31B-0092Z	Outlet ASTM A105 MSS SP-97 BW	
1	8	3	SCH20	STD	P31B-00P11	Outlet ASTM A105 MSS SP-97 BW	
1	10	3	SCH20	STD	P31B-00UPG	Outlet ASTM A105 MSS SP-97 BW	
1	12	3	SCH30	STD	P31B-00NYR	Outlet ASTM A105 MSS SP-97 BW	
1	14	3	SCH20	STD	P31B-00UPH	Outlet ASTM A105 MSS SP-97 BW	
1	16	3	SCH20	STD	P31B-00TU2	Outlet ASTM A105 MSS SP-97 BW	
1	18	3	SCH20	STD	P31B-00NZ4	Outlet ASTM A105 MSS SP-97 BW	
1	20	3	STD	STD	P31B-008FA	Outlet ASTM A105 MSS SP-97 BW	
1	22	3	STD	STD	P31B-00NZC	Outlet ASTM A105 MSS SP-97 BW	
1	24	3	STD	STD	P31B-00895	Outlet ASTM A105 MSS SP-97 BW	
1	12	4	SCH30	STD	P31B-00P1G	Outlet ASTM A105 MSS SP-97 BW	
1	14	4	SCH20	STD	P31B-00UPJ	Outlet ASTM A105 MSS SP-97 BW	
1	16	4	SCH20	STD	P31B-00TU3	Outlet ASTM A105 MSS SP-97 BW	
1	18	4	SCH20	STD	P31B-00P1V	Outlet ASTM A105 MSS SP-97 BW	
1	20	4	STD	STD	P31B-008D3	Outlet ASTM A105 MSS SP-97 BW	
1	22	4	STD	STD	P31B-00P24	Outlet ASTM A105 MSS SP-97 BW	
1	24	4	STD	STD	P31B-0086X	Outlet ASTM A105 MSS SP-97 BW	
1	18	6	SCH20	STD	P31B-00P48	Outlet ASTM A105 MSS SP-97 BW	
1	20	6	STD	STD	P31B-008PZ	Outlet ASTM A105 MSS SP-97 BW	
1	22	6	STD	STD	P31B-00P4H	Outlet ASTM A105 MSS SP-97 BW	
1	24	6	STD	STD	P31B-008JD	Outlet ASTM A105 MSS SP-97 BW	
4212	3	2	STD	XS	P31B-00UUU	Outlet ASTM A105 MSS SP-97 BW	38

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30B-0002D	Plug ASTM A105 ASME B16.11 NPT Round head	
1	0.75				P30B-0002E	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1				P30B-0002F	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1.5				P30B-0002G	Plug ASTM A105 ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P61B-002D4	Flange SW ASTM A105 Class 150 ASME B16.5 RF	
1	0.75		SCH160		P61B-002DE	Flange SW ASTM A105 Class 150 ASME B16.5 RF	
1	1		SCH160		P61B-002DU	Flange SW ASTM A105 Class 150 ASME B16.5 RF	
1	1.5		SCH160		P61B-002EM	Flange SW ASTM A105 Class 150 ASME B16.5 RF	
1	2		XS		P61B-003NK	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	2.5		STD		P61B-003JH	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	3		STD		P61B-001PW	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	4		STD		P61B-001R8	Flange WN ASTM A105 Class 150 ASME B16.5 RF	

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FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	6		STD		P61B-001RT	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	8		SCH20		P61B-002BF	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	10		SCH20		P61B-002B4	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	12		SCH30		P61B-002TS	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	14		SCH20		P61B-002B6	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	16		SCH20		P61B-002B7	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	18		SCH20		P61B-002B8	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	20		STD		P61B-001JA	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	22		STD		P61B-00BLL	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	24		STD		P61B-001NJ	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
4403	0.5		SCH160		P61B-00EW5	Flange SW ASTM A105 Class 600 ASME B16.5 Large tongue face	
773	0.5		SCH160		P61B-001H5	Flange SW ASTM A105 Class 300 ASME B16.5 RF	
773	0.75		SCH160		P61B-001HH	Flange SW ASTM A105 Class 300 ASME B16.5 RF	
773	1		SCH160		P61B-001E8	Flange SW ASTM A105 Class 300 ASME B16.5 RF	
773	1.5		SCH160		P61B-001ET	Flange SW ASTM A105 Class 300 ASME B16.5 RF	
773	2		XS		P61B-001HW	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	3		STD		P61B-001LJ	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	4		STD		P61B-001MC	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	6		STD		P61B-001N2	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	8		SCH20		P61B-002LJ	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	10		SCH20		P61B-002LH	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	12		SCH30		P61B-002TV	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	14		SCH20		P61B-002MR	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	16		SCH20		P61B-002MS	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	18		SCH20		P61B-002MT	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	20		STD		P61B-001NT	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	22		STD		P61B-00D2Z	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	24		STD		P61B-001PA	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
781	0.5		SCH160		P61B-001DZ	Flange SW ASTM A105 Class 600 ASME B16.5 RF	
781	0.75		SCH160		P61B-001DW	Flange SW ASTM A105 Class 600 ASME B16.5 RF	
781	1		SCH160		P61B-005X5	Flange SW ASTM A105 Class 600 ASME B16.5 RF	
781	1.5		SCH160		P61B-005X6	Flange SW ASTM A105 Class 600 ASME B16.5 RF	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67B-000FH	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	0.75				P67B-000FJ	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	1				P67B-000FK	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	1.5				P67B-000FL	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	2				P67B-000FT	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	3				P67B-000FW	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	4				P67B-000FX	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	6				P67B-000FY	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	8				P67B-000FZ	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	10				P67B-000FM	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	12				P67B-000FN	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	14				P67B-000FP	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	16				P67B-000FR	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	18				P67B-000FS	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	20				P67B-000FU	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	22				P67B-000VL	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	24				P67B-000FV	Blind flange ASTM A105 Class 150 ASME B16.5 RF	

REDUCING FLANGE (FR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2	0.75		SCH160	P62B-000NF	Reducing flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	2	1		SCH160	P62B-0006X	Reducing flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	2	1.5		SCH160	P62B-000K8	Reducing flange WN ASTM A105 Class 150 ASME B16.5 RF	

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GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-0033Y	Spiral wound gasket SS316 winding / Non-asbestos filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-5	
1	0.75				P73T-0033Z	Spiral wound gasket SS316 winding / Non-asbestos filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-5	
1	1				P73T-00340	Spiral wound gasket SS316 winding / Non-asbestos filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-5	
1	1.5				P73T-00341	Spiral wound gasket SS316 winding / Non-asbestos filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-5	
1	2				P73T-00342	Spiral wound gasket SS316 winding / Non-asbestos filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-5	
1	2.5				P73T-003MP	Spiral wound gasket SS316 winding / Non-asbestos filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-5	
1	3				P73T-00343	Spiral wound gasket SS316 winding / Non-asbestos filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-5	
1	4				P73T-00344	Spiral wound gasket SS316 winding / Non-asbestos filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-5	
1	6				P73T-00345	Spiral wound gasket SS316 winding / Non-asbestos filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-5	
1	8				P73T-00346	Spiral wound gasket SS316 winding / Non-asbestos filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-5	
1	10				P73T-0038B	Spiral wound gasket SS316 winding / Non-asbestos filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-5	
1	12				P73T-0038C	Spiral wound gasket SS316 winding / Non-asbestos filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-5	
1	14				P73T-0038D	Spiral wound gasket SS316 winding / Non-asbestos filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-5	
1	16				P73T-0038E	Spiral wound gasket SS316 winding / Non-asbestos filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-5	
1	18				P73T-0038F	Spiral wound gasket SS316 winding / Non-asbestos filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-5	
1	20				P73T-0038G	Spiral wound gasket SS316 winding / Non-asbestos filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-5	
1	22				P73T-003L7	Spiral wound gasket SS316 winding / Non-asbestos filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-5	
1	24				P73T-0038H	Spiral wound gasket SS316 winding / Non-asbestos filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-5	
4403	0.5				P76T-0004K	Grooved metal gasket Aluminum Class 600 Standard-drawing Flange ASME B16.5 Large tongue and groove face 3.0mm-T Licensor-5 Type-3	
773	0.5				P73T-00347	Spiral wound gasket SS316 winding / Non-asbestos filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-5	
773	0.75				P73T-00348	Spiral wound gasket SS316 winding / Non-asbestos filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-5	
773	1				P73T-00349	Spiral wound gasket SS316 winding / Non-asbestos filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-5	
773	1.5				P73T-0034A	Spiral wound gasket SS316 winding / Non-asbestos filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-5	
773	2				P73T-0034B	Spiral wound gasket SS316 winding / Non-asbestos filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-5	
773	3				P73T-0034C	Spiral wound gasket SS316 winding / Non-asbestos filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-5	
773	4				P73T-0034D	Spiral wound gasket SS316 winding / Non-asbestos filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-5	
773	6				P73T-0034E	Spiral wound gasket SS316 winding / Non-asbestos filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-5	
773	8				P73T-0034F	Spiral wound gasket SS316 winding / Non-asbestos filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-5	
773	10				P73T-0038K	Spiral wound gasket SS316 winding / Non-asbestos filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-5	
773	12				P73T-0038L	Spiral wound gasket SS316 winding / Non-asbestos filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-5	
773	14				P73T-0038M	Spiral wound gasket SS316 winding / Non-asbestos filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-5	
773	16				P73T-0038N	Spiral wound gasket SS316 winding / Non-asbestos filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-5	
773	18				P73T-0038P	Spiral wound gasket SS316 winding / Non-asbestos filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-5	
773	20				P73T-0038R	Spiral wound gasket SS316 winding / Non-asbestos filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-5	
773	22				P73T-003L8	Spiral wound gasket SS316 winding / Non-asbestos filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-5	
773	24				P73T-0038S	Spiral wound gasket SS316 winding / Non-asbestos filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-5	
781	0.5				P73T-003H5	Spiral wound gasket SS316 winding / Non-asbestos filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-5	
781	0.75				P73T-003H6	Spiral wound gasket SS316 winding / Non-asbestos filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-5	
781	1				P73T-003GR	Spiral wound gasket SS316 winding / Non-asbestos filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-5	
781	1.5				P73T-003GS	Spiral wound gasket SS316 winding / Non-asbestos filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-5	
781	2				P73T-003GT	Spiral wound gasket SS316 winding / Non-asbestos filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-5	
781	3				P73T-003S4	Spiral wound gasket SS316 winding / Non-asbestos filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-5	
781	4				P73T-003S5	Spiral wound gasket SS316 winding / Non-asbestos filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-5	
781	6				P73T-003S6	Spiral wound gasket SS316 winding / Non-asbestos filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-5	

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GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
781	8				P73T-003S7	Spiral wound gasket SS316 winding / Non-asbestos filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-5	
781	10				P73T-003RW	Spiral wound gasket SS316 winding / Non-asbestos filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-5	
781	12				P73T-003RX	Spiral wound gasket SS316 winding / Non-asbestos filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-5	
781	14				P73T-003RY	Spiral wound gasket SS316 winding / Non-asbestos filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-5	
781	16				P73T-003RZ	Spiral wound gasket SS316 winding / Non-asbestos filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-5	
781	18				P73T-003S0	Spiral wound gasket SS316 winding / Non-asbestos filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-5	
781	20				P73T-003S1	Spiral wound gasket SS316 winding / Non-asbestos filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-5	
781	22				P73T-003S2	Spiral wound gasket SS316 winding / Non-asbestos filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-5	
781	24				P73T-003S3	Spiral wound gasket SS316 winding / Non-asbestos filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-5	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-16				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	18-20				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
1	22-24				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	999
773	0.5-10				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
773	12-24				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
781	0.5-6				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81B-000P4	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	0.75				P81B-000NX	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	1				P81B-000NY	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	1.5				P81B-000NZ	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	2				P81C-002DV	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	3				P81C-002DW	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	4				P81C-002DX	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	6				P81C-002DY	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	8				P81C-002DZ	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	10				P81C-002DT	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	12				P81C-002DU	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	14				P81C-00308	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated	
1	16				P81C-002E0	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated	
1	18				P81C-002E1	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated	
1	20				P81C-002E2	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated	
1	22				P81C-006DC	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated	
1	24				P81C-002E3	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated	
221	0.75				P81B-001K2	Gate valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
221	1				P81B-001K3	Gate valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
221	1.5				P81B-001K4	Gate valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
714	0.5				P81B-0015L	Gate valve ASTM A105 Class 800 API 602 SW - NPT Trim number 8 BB-BG-OS&Y Handwheel operated	
714	0.75				P81B-002F4	Gate valve ASTM A105 Class 800 API 602 SW - NPT Trim number 8 BB-BG-OS&Y Handwheel operated	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82B-000K0	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	0.75				P82B-000HB	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	

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GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P82B-000HC	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	1.5				P82B-000HD	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	2				P82C-000N5	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	3				P82C-000N6	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	4				P82C-000N7	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	6				P82C-000N8	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	8				P82C-0026L	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83B-000FX	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover	
1	0.75				P83B-000ER	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover	
1	1				P83B-000ES	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover	
1	1.5				P83B-000ET	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover	
1	2				P83C-00144	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	3				P83C-00147	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	4				P83C-00148	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	6				P83C-00149	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	8				P83C-0014A	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	10				P83C-00140	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	12				P83C-00141	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	14				P83C-0021E	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	16				P83C-00142	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	18				P83C-00143	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	20				P83C-00145	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	22				P83C-003CJ	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	24				P83C-00146	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	

BALL VALVE (Q)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P84B-0011T	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design	
1	0.75				P84B-0011U	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design	
1	1				P84B-0011V	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design	
1	1.5				P84B-0011W	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design	
1	2				P84C-005UD	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design	
1	3				P84C-005UE	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design	
1	4				P84C-005UF	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design	
1	6				P84C-005UG	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Reduced bore Fire tested design	
1	8				P84C-005UH	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Reduced bore Fire tested design	
1	10				P84C-006MS	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Reduced bore Fire tested design	
1	12				P84C-006MT	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Reduced bore Fire tested design	
1	14				P84C-006MU	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Reduced bore Fire tested design	
1	16				P84C-006MV	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Reduced bore Fire tested design	
1	18				P84C-006MW	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Reduced bore Fire tested design	
1	20				P84C-006MX	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Reduced bore Fire tested design	
1	22				P84C-0079L	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Reduced bore Fire tested design	
1	24				P84C-006MY	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Reduced bore Fire tested design	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
24	0.5				P84B-0011X	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	
24	0.75				P84B-0011Y	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	
24	1				P84B-0011Z	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	
24	1.5				P84B-00120	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	
24	2				P84C-005UJ	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	
24	3				P84C-005UK	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	
24	4				P84C-005UL	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	
24	6				P84C-005UM	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design	
24	8				P84C-005UN	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design	
24	10				P84C-006MZ	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design	
24	12				P84C-006N0	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design	
24	14				P84C-006N1	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design	
24	16				P84C-006N2	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design	
24	18				P84C-006N3	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design	
24	20				P84C-006N4	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design	
24	22				P84C-0079M	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design	
24	24				P84C-006N5	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design	

BUTTERFLY VALVE (H)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	22				P86C-002A1	Offset design butterfly valve ASTM A216 Grade WCB Class 150 API 609 Category B Double flanged ASME B16.5 RF Disc CS Seat Stellite-6 Trim 13Cr Triple eccentric design BG Gear operated	
1	24				P86C-001AZ	Offset design butterfly valve ASTM A216 Grade WCB Class 150 API 609 Category B Double flanged ASME B16.5 RF Disc CS Seat Stellite-6 Trim 13Cr Triple eccentric design BG Gear operated	

NEEDLE VALVE (NV)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.25				P82B-001X1	Needle valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	0.5				P82B-001JU	Needle valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	

ORIFICE FLANGE (FO)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	4		STD		P66B-0084D	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	6		STD		P66B-0084E	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
200	4		STD		P66B-00845	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	6		STD		P66B-00846	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71B-0008A	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	0.75				P71B-0008B	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	1				P71B-0008C	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71B-0008D	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	2				P71B-0000P	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	3				P71B-0000N	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	4				P71B-0000M	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	6				P71B-0000L	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	8				P71B-0000R	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	10				P71B-0000K	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	12				P71B-0000J	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	

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PADDLE BLANK (PB)							
OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000AH	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	16				P72B-0000C	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	18				P72B-000AJ	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	20				P72B-000AK	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	22				P72B-000WV	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	24				P72B-000AL	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	

PADDLE SPACER (PS)							
OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000AT	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	16				P72B-0000B	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	18				P72B-000AU	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	20				P72B-000AV	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	22				P72B-000WW	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	24				P72B-000AW	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	

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BOLT TABLE (B_A11B05 , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	60	P80S-003V2		
0.75	4	0.500	65	P80S-003V3		
1	4	0.500	70	P80S-003V4		
1.5	4	0.500	75	P80S-003V5		
2	4	0.625	85	P80S-003XE		
2.5	4	0.625	90	P80S-003XF		
3	4	0.625	95	P80S-003XG		
4	8	0.625	95	P80S-003XG		
6	8	0.750	105	P80S-003XJ		
8	8	0.750	110	P80S-003XK		
10	12	0.875	120	P80S-00419		
12	12	0.875	120	P80S-00419		
14	12	1.000	135	P80S-0043E		
16	16	1.000	140	P80S-0043F		
18	16	1.125	150	P80S-0046K		
20	20	1.125	160	P80S-0046M		
22	20	1.250	175	P80S-004AG		
24	20	1.250	175	P80S-004AG		

BOLT TABLE (B_A11B05_773 , STUD ASME RF, OPTION CODE 773)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-003V4		
0.75	4	0.625	75	P80S-003XC		
1	4	0.625	80	P80S-003XD		
1.5	4	0.750	95	P80S-00414		
2	8	0.625	90	P80S-003XF		
2.5	8	0.750	105	P80S-003XJ		
3	8	0.750	110	P80S-003XK		
4	8	0.750	115	P80S-003XL		
6	12	0.750	125	P80S-003XN		
8	12	0.875	140	P80S-0041D		
10	16	1.000	160	P80S-0043K		
12	16	1.125	175	P80S-0046S		
14	20	1.125	180	P80S-0046T		
16	20	1.250	190	P80S-004AK		
18	24	1.250	200	P80S-004AM		
20	24	1.250	210	P80S-004AP		
22	24	1.500	235	P80S-003F8		
24	24	1.500	235	P80S-003F8		

BOLT TABLE (B_A11B05_781 , STUD ASME RF, OPTION CODE 781)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	80	P80S-003V6		
0.75	4	0.625	90	P80S-003XF		
1	4	0.625	95	P80S-003XG		
1.5	4	0.750	110	P80S-003XK		
2	8	0.625	110	P80S-003VC		
2.5			0			
3	8	0.750	130	P80S-003XP		
4	8	0.875	150	P80S-0041F		
6	12	1.000	175	P80S-0043P		
8	12	1.125	195			
10	16	1.250	250			
12	20	1.250	255			
14	20	1.375	270			
16	20	1.500	295			
18	20	1.625	320			
20	24	1.625	335			
22			0			
24	24	1.875	380			

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BRANCH TABLE (T_A11B05)

RUN PIPE SIZE (in) \ BRANCH SIZE (in)	0.25	0.5	0.75	1	1.5	2	2.5	3	4	6	8	10	12	14	16	18	20	22	24
0.25	TS																		
0.5		TS																	
0.75		TR	TS																
1	TR	TR	TR	TS															
1.5		TR	TR	TR	TS														
2		L	L	TR	TR	TS													
2.5			L																
3		L	L	L	TR	TR		TS											
4		L	L	L	L	TR		TR	TS										
6		L	L	L	L	L		TR	TR	TS									
8		L	L	L	L	L		L	TR	TR	TS								
10		L	L	L	L	L		L	TR	TR	TR	TS							
12		L	L	L	L	L		L	L	TR	TR	TR	TS						
14			L	L	L	L		L	L	TR	TR	TR	TR	TS					
16			L	L	L	L		L	L	TR	TR	TR	TR	TR	TS				
18			L	L	L	L		L	L	L	TR	TR	TR	TR	TR	TS			
20		L	L	L	L	L		L	L	L	TR	TR	TR	TR	TR	TR	TS		
22		L	L	L	L	L		L	L	L	9PD	TR	TR	TR	TR	TR	TR	TS	
24			L	L	L	L		L	L	L	9PD	TR	TR	TR	TR	TR	TR	TR	TS

TS : STRAIGHT TEE
L : OUTLET
TR : REDUCING TEE
9PD : REINFORCING PAD 90 DEG

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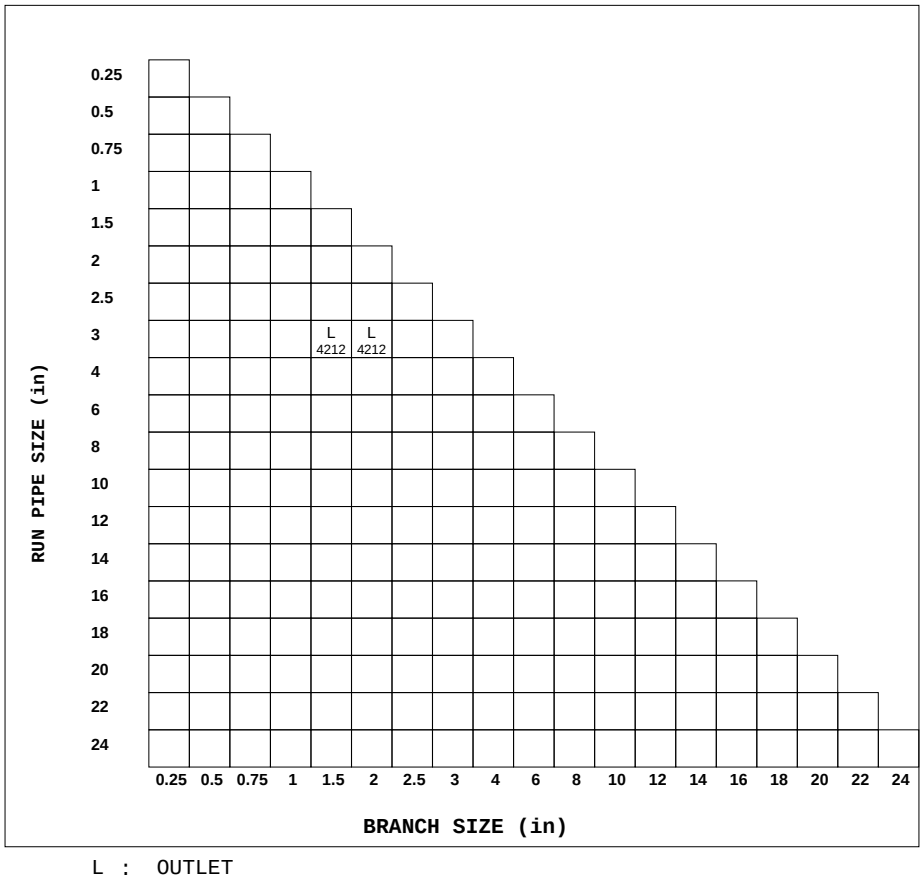
BRANCH TABLE (T_A11B05_4)



L : OUTLET

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Material : LTCS
Rating : ASME CLASS 150
Flange Face : RF
C.A.(mm) : 3.00
Gasket : Spiral Wound
Service : LP BLOW DOWN, EXHAUST TO FLARE STACK, WASTE OIL
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED

DETAIL NOTES :

NO.	DESCRIPTION
38	TO BE USED FOR STAND PIPE

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
24	FULL PORT (Q)
221	RF (V)
541	NPT(F) (CA,L)
714	SW - NPT(F) (V)
773	CLASS 300 (B,F,G)
781	CLASS 600 (B,F,G)
4212	WELDOLET FOR STAND PIPE (L)
4403	CLASS 600 LARGE TONGUE FACE (B,F,G)

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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P01A-00167	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE	
1	0.75		SCH160		P01A-0016P	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE	
1	1		SCH160		P01A-0011Z	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE	
1	1.5		SCH160		P01A-00127	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE	
1	2		XS		P01A-000XB	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	3		STD		P01A-000YL	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	4		STD		P01A-000YT	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	6		STD		P01A-000Z2	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	8		SCH20		P01A-001BN	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	10		SCH20		P01A-00171	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	12		SCH30		P01A-001XU	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	14		SCH20		P01A-0018X	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	16		SCH20		P01A-0019K	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	18		SCH20		P01A-007GS	Pipe ASTM A671 Grade CC60 Class 22 EFW ASME B36.10M/B36.19M BE	
1	20		STD		P01A-0042R	Pipe ASTM A671 Grade CC60 Class 22 EFW ASME B36.10M/B36.19M BE	
1	24		STD		P01A-0042S	Pipe ASTM A671 Grade CC60 Class 22 EFW ASME B36.10M/B36.19M BE	
1	30		STD		P01A-0042T	Pipe ASTM A671 Grade CC60 Class 22 EFW ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P02B-0001V	90 degree elbow ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW	
1	0.75				P02B-0001W	90 degree elbow ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW	
1	1				P02B-0001X	90 degree elbow ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW	
1	1.5				P02B-0001Y	90 degree elbow ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW	
1	2		XS		P02A-000B9	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	3		STD		P02A-000E7	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	4		STD		P02A-000E9	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	6		STD		P02A-000EC	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	8		SCH20		P02A-000GY	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	10		SCH20		P02A-000G4	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	12		SCH30		P02A-000RD	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	14		SCH20		P02A-000GE	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	16		SCH20		P02A-000GH	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	18		SCH20		P02A-001JY	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	20		STD		P02A-001JZ	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	24		STD		P02A-001K1	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	30		STD		P02A-000EA	90 degree elbow ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P03B-0001S	45 degree elbow ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW	
1	0.75				P03B-0001T	45 degree elbow ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW	
1	1				P03B-0001U	45 degree elbow ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW	
1	1.5				P03B-0001V	45 degree elbow ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW	
1	2		XS		P03A-0009Y	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	3		STD		P03A-000C4	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	4		STD		P03A-000C6	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	6		STD		P03A-000C9	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	8		SCH20		P03A-000EY	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	10		SCH20		P03A-000E3	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	12		SCH30		P03A-000N0	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	14		SCH20		P03A-000EE	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	16		SCH20		P03A-000EK	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	18		SCH20		P03A-001E2	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	20		STD		P03A-001E3	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	24		STD		P03A-001E5	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	30		STD		P03A-000C7	45 degree elbow ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Long radius	

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STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P21B-0001S	Straight tee ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW	
1	0.75				P21B-0001T	Straight tee ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW	
1	1				P21B-0001U	Straight tee ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW	
1	1.5				P21B-0001V	Straight tee ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW	
1	2		XS		P21A-001BR	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	3		STD		P21A-001FE	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	4		STD		P21A-001FF	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	6		STD		P21A-001FJ	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	8		SCH20		P21A-00216	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10		SCH20		P21A-0020F	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12		SCH30		P21A-0028D	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14		SCH20		P21A-0020N	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16		SCH20		P21A-0020U	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	18		SCH20		P21A-0020E	Straight tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	20		STD		P21A-001F4	Straight tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	24		STD		P21A-001F8	Straight tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	30		STD		P21A-001FG	Straight tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	

STRAIGHT LATERAL TEE (TLS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75				P22B-00007	Straight lateral-tee ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW 60 degree	
1	1				P22B-00008	Straight lateral-tee ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW 60 degree	
1	1.5				P22B-0000A	Straight lateral-tee ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW 60 degree	
1	2		XS		P22A-000DD	Straight lateral-tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW 60 degree	
1	3		STD		P22A-000DE	Straight lateral-tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW 60 degree	
1	4		STD		P22A-000DF	Straight lateral-tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW 60 degree	
1	6		STD		P22A-000DG	Straight lateral-tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW 60 degree	
1	8		SCH20		P22A-000DH	Straight lateral-tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW 60 degree	
1	10		SCH20		P22A-000DA	Straight lateral-tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW 60 degree	
1	12		SCH30		P22A-000DB	Straight lateral-tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW 60 degree	
1	14		SCH20		P22A-000DC	Straight lateral-tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW 60 degree	
1	16		SCH20		P22A-000E4	Straight lateral-tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW 60 degree	
1	18		SCH20		P22A-000G6	Straight lateral-tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW 60 degree	
1	20		STD		P22A-000G7	Straight lateral-tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW 60 degree	
1	24		STD		P22A-000G8	Straight lateral-tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW 60 degree	
1	30		STD		P22A-000G9	Straight lateral-tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW 60 degree	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5			P24B-0003K	Reducing tee ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW	
1	1	0.5			P24B-0003L	Reducing tee ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW	
1	1	0.75			P24B-0003M	Reducing tee ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW	
1	1.5	0.5			P24B-0003N	Reducing tee ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW	
1	1.5	0.75			P24B-0003P	Reducing tee ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW	
1	1.5	1			P24B-0003R	Reducing tee ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW	
1	2	1	XS	SCH160	P24A-00GMD	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	2	1.5	XS	SCH160	P24A-005NK	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	3	1.5	STD	SCH160	P24A-00GME	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	3	2	STD	XS	P24A-005M3	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	4	2	STD	XS	P24A-006CW	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	4	3	STD	STD	P24A-0028C	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	6	3	STD	STD	P24A-002AL	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	6	4	STD	STD	P24A-00289	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	8	4	SCH20	STD	P24A-006CX	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	8	6	SCH20	STD	P24A-005M4	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	4	SCH20	STD	P24A-00HMJ	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	6	SCH20	STD	P24A-00HLN	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	8	SCH20	SCH20	P24A-002WN	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	6	SCH30	STD	P24A-00HLP	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	

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REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	12	8	SCH30	SCH20	P24A-003Y5	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	10	SCH30	SCH20	P24A-003Y3	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	6	SCH20	STD	P24A-00KWM	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	8	SCH20	SCH20	P24A-002WZ	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	10	SCH20	SCH20	P24A-002V3	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	12	SCH20	SCH30	P24A-003Y6	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	6	SCH20	STD	P24A-00KWN	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	8	SCH20	SCH20	P24A-002XU	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	10	SCH20	SCH20	P24A-002VZ	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	12	SCH20	SCH30	P24A-003Y7	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	14	SCH20	SCH20	P24A-002X6	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	18	8	SCH20	SCH20	P24A-002Y9	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	18	10	SCH20	SCH20	P24A-002V5	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	18	12	SCH20	SCH30	P24A-00M0G	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	18	14	SCH20	SCH20	P24A-002X2	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	18	16	SCH20	SCH20	P24A-002XE	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	20	8	STD	SCH20	P24A-00KWT	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	20	10	STD	SCH20	P24A-00KWP	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	20	12	STD	SCH30	P24A-00M0H	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	20	14	STD	SCH20	P24A-00KWS	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	20	16	STD	SCH20	P24A-0071W	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	20	18	STD	SCH20	P24A-006D6	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	24	10	STD	SCH20	P24A-00KWU	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	24	12	STD	SCH30	P24A-00M0J	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	24	14	STD	SCH20	P24A-00KWW	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	24	16	STD	SCH20	P24A-00KWX	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	24	18	STD	SCH20	P24A-00799	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	24	20	STD	STD	P24A-0029L	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	30	10	STD	SCH20	P24A-00M0K	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	30	12	STD	SCH30	P24A-00M0L	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	30	14	STD	SCH20	P24A-00M0M	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	30	16	STD	SCH20	P24A-0071X	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	30	18	STD	SCH20	P24A-008EX	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	30	20	STD	STD	P24A-0029J	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	30	24	STD	STD	P24A-0029P	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	STD	XS	P27A-003PM	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	4	2	STD	XS	P27A-003PN	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	4	3	STD	STD	P27A-001BA	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	6	3	STD	STD	P27A-001H9	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	6	4	STD	STD	P27A-00181	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	8	4	SCH20	STD	P27A-003PP	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	8	6	SCH20	STD	P27A-003PR	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	4	SCH20	STD	P27A-003PS	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	6	SCH20	STD	P27A-003PT	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	8	SCH20	SCH20	P27A-001W8	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	6	SCH30	STD	P27A-003SB	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	8	SCH30	SCH20	P27A-002GW	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	10	SCH30	SCH20	P27A-002GU	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	6	SCH20	STD	P27A-003SC	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	8	SCH20	SCH20	P27A-001WA	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	10	SCH20	SCH20	P27A-001VH	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	12	SCH20	SCH30	P27A-002GX	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	8	SCH20	SCH20	P27A-001WH	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	10	SCH20	SCH20	P27A-001VS	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	12	SCH20	SCH30	P27A-002GY	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	14	SCH20	SCH20	P27A-001WD	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	

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CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	18	10	SCH20	SCH20	P27A-001VM	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	18	12	SCH20	SCH30	P27A-004DG	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	18	14	SCH20	SCH20	P27A-001WC	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	18	16	SCH20	SCH20	P27A-001WF	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	20	12	STD	SCH30	P27A-004DK	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	20	14	STD	SCH20	P27A-00CRB	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	20	16	STD	SCH20	P27A-008G9	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	20	18	STD	SCH20	P27A-004DM	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	24	16	STD	SCH20	P27A-008GB	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	24	18	STD	SCH20	P27A-008L9	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	24	20	STD	STD	P27A-001DF	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	30	20	STD	STD	P27A-001BF	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	30	24	STD	STD	P27A-001CT	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	STD	XS	P28A-003PL	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	4	2	STD	XS	P28A-003PM	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	4	3	STD	STD	P28A-001CF	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	6	3	STD	STD	P28A-001AL	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	6	4	STD	STD	P28A-001BL	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	8	4	SCH20	STD	P28A-003PN	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	8	6	SCH20	STD	P28A-003PP	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	4	SCH20	STD	P28A-003PR	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	6	SCH20	STD	P28A-003PS	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	8	SCH20	SCH20	P28A-001W3	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	6	SCH30	STD	P28A-003S7	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	8	SCH30	SCH20	P28A-002GP	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	10	SCH30	SCH20	P28A-002GM	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	6	SCH20	STD	P28A-003S8	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	8	SCH20	SCH20	P28A-001W9	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	10	SCH20	SCH20	P28A-001V9	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	12	SCH20	SCH30	P28A-002GR	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	8	SCH20	SCH20	P28A-001WC	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	10	SCH20	SCH20	P28A-001VL	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	12	SCH20	SCH30	P28A-002GS	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	14	SCH20	SCH20	P28A-001W7	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	18	10	SCH20	SCH20	P28A-001VD	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	18	12	SCH20	SCH30	P28A-004DA	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	18	14	SCH20	SCH20	P28A-001W6	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	18	16	SCH20	SCH20	P28A-001WA	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	20	12	STD	SCH30	P28A-004DD	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	20	14	STD	SCH20	P28A-009RD	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	20	16	STD	SCH20	P28A-0056E	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	20	18	STD	SCH20	P28A-004DF	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	24	16	STD	SCH20	P28A-0056G	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	24	18	STD	SCH20	P28A-005B4	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	24	20	STD	STD	P28A-001EB	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	30	20	STD	STD	P28A-001C6	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	30	24	STD	STD	P28A-001DL	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P29B-0002J	Cap ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW	
1	0.75				P29B-0002K	Cap ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW	
1	1				P29B-0002L	Cap ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW	
1	1.5				P29B-0002H	Cap ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW	
1	2		XS		P29A-000BG	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	3		STD		P29A-0009Y	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	

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CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	4		STD		P29A-000AH	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	6		STD		P29A-000DE	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	8		SCH20		P29A-000E4	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10		SCH20		P29A-000EF	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12		SCH30		P29A-000SJ	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14		SCH20		P29A-000EM	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16		SCH20		P29A-000ER	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	18		SCH20		P29A-000EU	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	20		STD		P29A-000BR	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	24		STD		P29A-0009T	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	30		STD		P29A-000A5	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
541	0.75				P29B-00015	Cap ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P41A-000DJ	Straight nipple ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		XXS		P41A-000DK	Straight nipple ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		XXS		P41A-000DZ	Straight nipple ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		XXS		P41A-000E0	Straight nipple ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

CON SWAGED NIPPLE (SNC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	SCH160	P42A-000A8	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	SCH160	SCH160	P42A-000A9	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	SCH160	SCH160	P42A-000A1	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	SCH160	SCH160	P42A-000AA	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	SCH160	SCH160	P42A-000A3	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	SCH160	SCH160	P42A-000A4	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	XS	SCH160	P42A-000L1	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	XS	SCH160	P42A-000L2	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	XS	SCH160	P42A-000L3	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	XS	SCH160	P42A-000L4	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	STD	SCH160	P42A-000L5	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 BE(L) - PE(S)	

ECC SWAGED NIPPLE (SNE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	SCH160	P43A-000D2	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	SCH160	SCH160	P43A-000D3	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	SCH160	SCH160	P43A-000D4	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	SCH160	SCH160	P43A-000D5	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	SCH160	SCH160	P43A-000D6	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	SCH160	SCH160	P43A-000D7	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	XS	SCH160	P43A-000D8	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	XS	SCH160	P43A-000D9	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	XS	SCH160	P43A-000DA	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	XS	SCH160	P43A-000DB	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	STD	SCH160	P43A-000DC	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 BE(L) - PE(S)	

COUPLING (CPS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P47B-0001S	Coupling ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW - SW	
1	0.75				P47B-0001T	Coupling ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW - SW	
1	1				P47B-0001U	Coupling ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW - SW	
1	1.5				P47B-0001V	Coupling ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW - SW	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5 - 2.5	0.75			P31B-0138C	Outlet ASTM A350 Grade LF2 Class 1 Class 6000 MSS SP-97 SW	

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OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3 - 10	0.75			P31B-007DK	Outlet ASTM A350 Grade LF2 Class 1 Class 6000 MSS SP-97 SW	
1	12 and larger	0.75			P31B-0138B	Outlet ASTM A350 Grade LF2 Class 1 Class 6000 MSS SP-97 SW	
1	3 - 10	1			P31B-007BL	Outlet ASTM A350 Grade LF2 Class 1 Class 6000 MSS SP-97 SW	
1	12 and larger	1			P31B-0138D	Outlet ASTM A350 Grade LF2 Class 1 Class 6000 MSS SP-97 SW	
1	4 - 5	1.5			P31B-00514	Outlet ASTM A350 Grade LF2 Class 1 Class 6000 MSS SP-97 SW	
1	6 - 8	1.5			P31B-007B0	Outlet ASTM A350 Grade LF2 Class 1 Class 6000 MSS SP-97 SW	
1	10 - 18	1.5			P31B-007BC	Outlet ASTM A350 Grade LF2 Class 1 Class 6000 MSS SP-97 SW	
1	20 and larger	1.5			P31B-0138E	Outlet ASTM A350 Grade LF2 Class 1 Class 6000 MSS SP-97 SW	
541	1	0.75			P31B-004HD	Outlet ASTM A350 Grade LF2 Class 1 Class 6000 MSS SP-97 NPT	
541	1.5 - 2.5	0.75			P31B-0138F	Outlet ASTM A350 Grade LF2 Class 1 Class 6000 MSS SP-97 NPT	
541	3 - 10	0.75			P31B-007CY	Outlet ASTM A350 Grade LF2 Class 1 Class 6000 MSS SP-97 NPT	
541	12 and larger	0.75			P31B-0138G	Outlet ASTM A350 Grade LF2 Class 1 Class 6000 MSS SP-97 NPT	
1	6	2	STD	XS	P31B-00MFB	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	8	2	SCH20	XS	P31B-00MFH	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	10	2	SCH20	XS	P31B-00TFX	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	12	2	SCH30	XS	P31B-00MJK	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	14	2	SCH20	XS	P31B-00TFU	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	16	2	SCH20	XS	P31B-00TFZ	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	18	2	SCH20	XS	P31B-00MJS	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	20	2	STD	XS	P31B-00MGK	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	24	2	STD	XS	P31B-00M4U	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	30	2	STD	XS	P31B-00M56	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	8	3	SCH20	STD	P31B-00MJF	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	10	3	SCH20	STD	P31B-00UPN	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	12	3	SCH30	STD	P31B-00MJL	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	14	3	SCH20	STD	P31B-00UPP	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	16	3	SCH20	STD	P31B-00UP2	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	18	3	SCH20	STD	P31B-00MJT	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	20	3	STD	STD	P31B-00E8N	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	24	3	STD	STD	P31B-00E8T	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	30	3	STD	STD	P31B-00E8U	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	12	4	SCH30	STD	P31B-00MJM	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	14	4	SCH20	STD	P31B-00UPR	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	16	4	SCH20	STD	P31B-00UP3	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	18	4	SCH20	STD	P31B-00MJU	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	20	4	STD	STD	P31B-00E88	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	24	4	STD	STD	P31B-00E8C	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	30	4	STD	STD	P31B-00E8B	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	18	6	SCH20	STD	P31B-00MJV	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	20	6	STD	STD	P31B-00E86	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	24	6	STD	STD	P31B-00E84	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	30	6	STD	STD	P31B-00E82	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
4212	3	2	STD	XS	P31B-00VA7	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	38

LATROLET (LL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5 - 2.5	0.75			P34B-001T3	Lateral-outlet ASTM A350 Grade LF2 Class 1 Class 6000 MSS SP-97 SW 45 degree	
1	3 - 10	0.75			P34B-001T2	Lateral-outlet ASTM A350 Grade LF2 Class 1 Class 6000 MSS SP-97 SW 45 degree	
1	12 and larger	0.75			P34B-001T4	Lateral-outlet ASTM A350 Grade LF2 Class 1 Class 6000 MSS SP-97 SW 45 degree	
1	3 - 10	1			P34B-001T5	Lateral-outlet ASTM A350 Grade LF2 Class 1 Class 6000 MSS SP-97 SW 45 degree	
1	12 and larger	1			P34B-001T6	Lateral-outlet ASTM A350 Grade LF2 Class 1 Class 6000 MSS SP-97 SW 45 degree	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30B-0002V	Plug ASTM A350 Grade LF2 Class 1 ASME B16.11 NPT Round head	
1	0.75				P30B-0002W	Plug ASTM A350 Grade LF2 Class 1 ASME B16.11 NPT Round head	
1	1				P30B-0002X	Plug ASTM A350 Grade LF2 Class 1 ASME B16.11 NPT Round head	
1	1.5				P30B-0002Y	Plug ASTM A350 Grade LF2 Class 1 ASME B16.11 NPT Round head	

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FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P61B-0064K	Flange SW ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	0.75		SCH160		P61B-0064L	Flange SW ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	1		SCH160		P61B-0064M	Flange SW ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	1.5		SCH160		P61B-0064N	Flange SW ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	2		XS		P61B-003R0	Flange WN ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	3		STD		P61B-001SY	Flange WN ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	4		STD		P61B-001VW	Flange WN ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	6		STD		P61B-001J0	Flange WN ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	8		SCH20		P61B-001X9	Flange WN ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	10		SCH20		P61B-0021J	Flange WN ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	12		SCH30		P61B-002TZ	Flange WN ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	14		SCH20		P61B-0022R	Flange WN ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	16		SCH20		P61B-00232	Flange WN ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	18		SCH20		P61B-0023B	Flange WN ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	20		STD		P61B-001S3	Flange WN ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	24		STD		P61B-001SW	Flange WN ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	30		STD		P61B-001PD	Flange WN ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.47 Series B RF	
4403	0.5		SCH160		P61B-00DNN	Flange SW ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 Large tongue face	
773	0.5		SCH160		P61B-001CU	Flange SW ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
773	0.75		SCH160		P61B-001D5	Flange SW ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
773	1		SCH160		P61B-001GC	Flange SW ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
773	1.5		SCH160		P61B-001GZ	Flange SW ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
773	2		XS		P61B-003R8	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
773	3		STD		P61B-001MB	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
773	4		STD		P61B-001N0	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
773	6		STD		P61B-001NM	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
773	8		SCH20		P61B-002RS	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
773	10		SCH20		P61B-002RJ	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
773	12		SCH30		P61B-002U4	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
773	14		SCH20		P61B-002RL	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
773	16		SCH20		P61B-002RM	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
773	18		SCH20		P61B-002RN	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
773	20		STD		P61B-001NB	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
773	24		STD		P61B-001P1	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
773	30		STD		P61B-001KC	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.47 Series B RF	
781	0.5		SCH160		P61B-001Y2	Flange SW ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
781	0.75		SCH160		P61B-001YD	Flange SW ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
781	1		SCH160		P61B-001YU	Flange SW ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
781	1.5		SCH160		P61B-001XN	Flange SW ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
781	2		XS		P61B-001FN	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67B-000K2	Blind flange ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	0.75				P67B-000K3	Blind flange ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	1				P67B-000K4	Blind flange ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	1.5				P67B-000K5	Blind flange ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	2				P67B-000KB	Blind flange ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	3				P67B-000KE	Blind flange ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	4				P67B-000KF	Blind flange ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	6				P67B-000KG	Blind flange ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	8				P67B-000KH	Blind flange ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	10				P67B-000K6	Blind flange ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	12				P67B-000K7	Blind flange ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	14				P67B-000K8	Blind flange ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	16				P67B-000K9	Blind flange ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	18				P67B-000KA	Blind flange ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	20				P67B-000KC	Blind flange ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	24				P67B-000KD	Blind flange ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	

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BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	30				P67B-00146	Blind flange ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.47 Series B RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-0034G	Spiral wound gasket SS316 winding / Non-asbestos filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-7	
1	0.75				P73T-0034H	Spiral wound gasket SS316 winding / Non-asbestos filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-7	
1	1				P73T-0034J	Spiral wound gasket SS316 winding / Non-asbestos filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-7	
1	1.5				P73T-0034K	Spiral wound gasket SS316 winding / Non-asbestos filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-7	
1	2				P73T-0037P	Spiral wound gasket SS316 winding / Non-asbestos filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-7	
1	3				P73T-0037T	Spiral wound gasket SS316 winding / Non-asbestos filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-7	
1	4				P73T-0037U	Spiral wound gasket SS316 winding / Non-asbestos filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-7	
1	6				P73T-0037V	Spiral wound gasket SS316 winding / Non-asbestos filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-7	
1	8				P73T-0037W	Spiral wound gasket SS316 winding / Non-asbestos filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-7	
1	10				P73T-0037J	Spiral wound gasket SS316 winding / Non-asbestos filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-7	
1	12				P73T-0037K	Spiral wound gasket SS316 winding / Non-asbestos filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-7	
1	14				P73T-0037L	Spiral wound gasket SS316 winding / Non-asbestos filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-7	
1	16				P73T-0037M	Spiral wound gasket SS316 winding / Non-asbestos filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-7	
1	18				P73T-0037N	Spiral wound gasket SS316 winding / Non-asbestos filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-7	
1	20				P73T-0037R	Spiral wound gasket SS316 winding / Non-asbestos filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-7	
1	24				P73T-0037S	Spiral wound gasket SS316 winding / Non-asbestos filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-7	
1	30				P73T-0037X	Spiral wound gasket SS316 winding / Non-asbestos filler Class 150 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-7	
4403	0.5				P76T-0004K	Grooved metal gasket Aluminum Class 600 Standard-drawing Flange ASME B16.5 Large tongue and groove face 3.0mm-T Licensor-5 Type-3	
773	0.5				P73T-0034L	Spiral wound gasket SS316 winding / Non-asbestos filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-7	
773	0.75				P73T-0034M	Spiral wound gasket SS316 winding / Non-asbestos filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-7	
773	1				P73T-0034N	Spiral wound gasket SS316 winding / Non-asbestos filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-7	
773	1.5				P73T-0034P	Spiral wound gasket SS316 winding / Non-asbestos filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-7	
773	2				P73T-00383	Spiral wound gasket SS316 winding / Non-asbestos filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-7	
773	3				P73T-00386	Spiral wound gasket SS316 winding / Non-asbestos filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-7	
773	4				P73T-00387	Spiral wound gasket SS316 winding / Non-asbestos filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-7	
773	6				P73T-00388	Spiral wound gasket SS316 winding / Non-asbestos filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-7	
773	8				P73T-00389	Spiral wound gasket SS316 winding / Non-asbestos filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-7	
773	10				P73T-0037Y	Spiral wound gasket SS316 winding / Non-asbestos filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-7	
773	12				P73T-0037Z	Spiral wound gasket SS316 winding / Non-asbestos filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-7	
773	14				P73T-00380	Spiral wound gasket SS316 winding / Non-asbestos filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-7	
773	16				P73T-00381	Spiral wound gasket SS316 winding / Non-asbestos filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-7	
773	18				P73T-00382	Spiral wound gasket SS316 winding / Non-asbestos filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-7	
773	20				P73T-00384	Spiral wound gasket SS316 winding / Non-asbestos filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-7	
773	24				P73T-00385	Spiral wound gasket SS316 winding / Non-asbestos filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-7	
773	30				P73T-0038A	Spiral wound gasket SS316 winding / Non-asbestos filler Class 300 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-7	
781	0.5				P73T-003GE	Spiral wound gasket SS316 winding / Non-asbestos filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-7	
781	0.75				P73T-003GF	Spiral wound gasket SS316 winding / Non-asbestos filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-7	
781	1				P73T-003GG	Spiral wound gasket SS316 winding / Non-asbestos filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-7	
781	1.5				P73T-003GH	Spiral wound gasket SS316 winding / Non-asbestos filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-7	
781	2				P73T-003GJ	Spiral wound gasket SS316 winding / Non-asbestos filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-7	

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BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-16				See Attached Bolt Table	Bolt and Nut ASTM A320 Grade L7 / A194 Grade 4 ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	18-24				See Attached Bolt Table	Bolt and Nut ASTM A320 Grade L7 / A194 Grade 4 ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
1	30				See Attached Bolt Table	Bolt and Nut ASTM A320 Grade L7 / A194 Grade 4 ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
773	0.5-10				See Attached Bolt Table	Bolt and Nut ASTM A320 Grade L7 / A194 Grade 4 ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
773	12-30				See Attached Bolt Table	Bolt and Nut ASTM A320 Grade L7 / A194 Grade 4 ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
781	0.5-3				See Attached Bolt Table	Bolt and Nut ASTM A320 Grade L7 / A194 Grade 4 ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81B-0018C	Gate valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	0.75				P81B-0018D	Gate valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	1				P81B-0018E	Gate valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	1.5				P81B-0018F	Gate valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	2				P81C-004DU	Gate valve ASTM A352 Grade LCC Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	3				P81C-004DV	Gate valve ASTM A352 Grade LCC Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	4				P81C-004DW	Gate valve ASTM A352 Grade LCC Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	6				P81C-004DX	Gate valve ASTM A352 Grade LCC Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	8				P81C-004DY	Gate valve ASTM A352 Grade LCC Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	10				P81C-004DS	Gate valve ASTM A352 Grade LCC Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	12				P81C-004DT	Gate valve ASTM A352 Grade LCC Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	14				P81C-004DZ	Gate valve ASTM A352 Grade LCC Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated	
1	16				P81C-004E0	Gate valve ASTM A352 Grade LCC Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated	
1	18				P81C-004E1	Gate valve ASTM A352 Grade LCC Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated	
1	20				P81C-004E2	Gate valve ASTM A352 Grade LCC Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated	
1	24				P81C-004E3	Gate valve ASTM A352 Grade LCC Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated	
1	30				P81C-004DP	Gate valve ASTM A352 Grade LCC Class 150 API 600 Flange ASME B16.47-B RF Trim number 12 BB-BG-OS&Y Gear operated	
221	0.5				P81B-002G1	Gate valve ASTM A350 Grade LF2 Class 1 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
221	0.75				P81B-002G2	Gate valve ASTM A350 Grade LF2 Class 1 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
221	1				P81B-002G3	Gate valve ASTM A350 Grade LF2 Class 1 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
221	1.5				P81B-002G4	Gate valve ASTM A350 Grade LF2 Class 1 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
714	0.5				P81B-002S4	Gate valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW - NPT Trim number 12 BB-BG-OS&Y Handwheel operated	
714	0.75				P81B-002FB	Gate valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW - NPT Trim number 12 BB-BG-OS&Y Handwheel operated	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82B-0011H	Globe valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	0.75				P82B-0011J	Globe valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	1				P82B-0011K	Globe valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	1.5				P82B-0011L	Globe valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	2				P82C-0026T	Globe valve ASTM A352 Grade LCC Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	3				P82C-0026U	Globe valve ASTM A352 Grade LCC Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	4				P82C-0026V	Globe valve ASTM A352 Grade LCC Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	6				P82C-0026W	Globe valve ASTM A352 Grade LCC Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	8				P82C-002P1	Globe valve ASTM A352 Grade LCC Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	

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CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83B-000TS	Check valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 12 Lift-type Bolted cover	
1	0.75				P83B-000TT	Check valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 12 Lift-type Bolted cover	
1	1				P83B-000TU	Check valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 12 Lift-type Bolted cover	
1	1.5				P83B-000TV	Check valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 12 Lift-type Bolted cover	
1	2				P83C-00226	Check valve ASTM A352 Grade LCC Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	3				P83C-00227	Check valve ASTM A352 Grade LCC Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	4				P83C-00228	Check valve ASTM A352 Grade LCC Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	6				P83C-00229	Check valve ASTM A352 Grade LCC Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	8				P83C-0022A	Check valve ASTM A352 Grade LCC Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	10				P83C-00221	Check valve ASTM A352 Grade LCC Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	12				P83C-00222	Check valve ASTM A352 Grade LCC Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	14				P83C-00223	Check valve ASTM A352 Grade LCC Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	16				P83C-00224	Check valve ASTM A352 Grade LCC Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	18				P83C-00225	Check valve ASTM A352 Grade LCC Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	20				P83C-002RK	Check valve ASTM A352 Grade LCC Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	24				P83C-002RL	Check valve ASTM A352 Grade LCC Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	

BALL VALVE (Q)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P84B-001D2	Ball valve Long-pattern ASTM A350 Grade LF2 Class 1 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design	
1	0.75				P84B-001D3	Ball valve Long-pattern ASTM A350 Grade LF2 Class 1 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design	
1	1				P84B-001D4	Ball valve Long-pattern ASTM A350 Grade LF2 Class 1 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design	
1	1.5				P84B-001D5	Ball valve Long-pattern ASTM A350 Grade LF2 Class 1 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design	
1	2				P84C-006K6	Ball valve Long-pattern ASTM A352 Grade LCC Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design	
1	3				P84C-006K7	Ball valve Long-pattern ASTM A352 Grade LCC Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design	
1	4				P84C-006K8	Ball valve Long-pattern ASTM A352 Grade LCC Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design	
1	6				P84C-006KG	Ball valve Long-pattern ASTM A352 Grade LCC Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Reduced bore Fire tested design	
1	8				P84C-006KH	Ball valve Long-pattern ASTM A352 Grade LCC Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Reduced bore Fire tested design	
1	10				P84C-006K9	Ball valve Long-pattern ASTM A352 Grade LCC Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Reduced bore Fire tested design	
1	12				P84C-006KA	Ball valve Long-pattern ASTM A352 Grade LCC Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Reduced bore Fire tested design	
1	14				P84C-006KB	Ball valve Long-pattern ASTM A352 Grade LCC Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Reduced bore Fire tested design	
1	16				P84C-006KC	Ball valve Long-pattern ASTM A352 Grade LCC Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Reduced bore Fire tested design	
1	18				P84C-006KD	Ball valve Long-pattern ASTM A352 Grade LCC Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Reduced bore Fire tested design	
1	20				P84C-006KE	Ball valve Long-pattern ASTM A352 Grade LCC Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Reduced bore Fire tested design	
1	24				P84C-006KF	Ball valve Long-pattern ASTM A352 Grade LCC Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Reduced bore Fire tested design	
24	0.5				P84B-001D6	Ball valve Long-pattern ASTM A350 Grade LF2 Class 1 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	
24	0.75				P84B-001D7	Ball valve Long-pattern ASTM A350 Grade LF2 Class 1 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	
24	1				P84B-001D8	Ball valve Long-pattern ASTM A350 Grade LF2 Class 1 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	
24	1.5				P84B-001D9	Ball valve Long-pattern ASTM A350 Grade LF2 Class 1 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	
24	2				P84C-006KJ	Ball valve Long-pattern ASTM A352 Grade LCC Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	
24	3				P84C-006KK	Ball valve Long-pattern ASTM A352 Grade LCC Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	
24	4				P84C-006KL	Ball valve Long-pattern ASTM A352 Grade LCC Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	

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BALL VALVE (Q)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
24	6				P84C-006KV	Ball valve Long-pattern ASTM A352 Grade LCC Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design	
24	8				P84C-006KW	Ball valve Long-pattern ASTM A352 Grade LCC Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design	
24	10				P84C-006KM	Ball valve Long-pattern ASTM A352 Grade LCC Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design	
24	12				P84C-006KN	Ball valve Long-pattern ASTM A352 Grade LCC Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design	
24	14				P84C-006KP	Ball valve Long-pattern ASTM A352 Grade LCC Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design	
24	16				P84C-006KR	Ball valve Long-pattern ASTM A352 Grade LCC Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design	
24	18				P84C-006KS	Ball valve Long-pattern ASTM A352 Grade LCC Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design	
24	20				P84C-006KT	Ball valve Long-pattern ASTM A352 Grade LCC Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design	
24	24				P84C-006KU	Ball valve Long-pattern ASTM A352 Grade LCC Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design	

BUTTERFLY VALVE (H)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	8				P86C-002EP	Offset design butterfly valve ASTM A352 Grade LCC Class 150 API 609 Category B Lug-type ASME B16.5 RF Disc LTCS Seat Stellite-6 Trim SS316 Triple eccentric design BG Gear operated	
1	10				P86C-002EJ	Offset design butterfly valve ASTM A352 Grade LCC Class 150 API 609 Category B Lug-type ASME B16.5 RF Disc LTCS Seat Stellite-6 Trim SS316 Triple eccentric design BG Gear operated	
1	12				P86C-002EK	Offset design butterfly valve ASTM A352 Grade LCC Class 150 API 609 Category B Lug-type ASME B16.5 RF Disc LTCS Seat Stellite-6 Trim SS316 Triple eccentric design BG Gear operated	
1	14				P86C-002EL	Offset design butterfly valve ASTM A352 Grade LCC Class 150 API 609 Category B Lug-type ASME B16.5 RF Disc LTCS Seat Stellite-6 Trim SS316 Triple eccentric design BG Gear operated	
1	16				P86C-002EM	Offset design butterfly valve ASTM A352 Grade LCC Class 150 API 609 Category B Lug-type ASME B16.5 RF Disc LTCS Seat Stellite-6 Trim SS316 Triple eccentric design BG Gear operated	
1	18				P86C-002EN	Offset design butterfly valve ASTM A352 Grade LCC Class 150 API 609 Category B Lug-type ASME B16.5 RF Disc LTCS Seat Stellite-6 Trim SS316 Triple eccentric design BG Gear operated	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71B-0008T	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	0.75				P71B-0008U	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	1				P71B-0008V	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71B-0008W	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	2				P71B-0008Z	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	3				P71B-00090	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	4				P71B-00091	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	6				P71B-00092	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	8				P71B-00093	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	10				P71B-0008X	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	12				P71B-0008Y	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF	

PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000CP	Paddle blank ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	16				P72B-000CR	Paddle blank ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	18				P72B-000CS	Paddle blank ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	20				P72B-000CT	Paddle blank ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	24				P72B-000CU	Paddle blank ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	30				P72B-0008S	Paddle blank ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.47-B RF	

PADDLE SPACER (PS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000CV	Paddle spacer ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	16				P72B-000CW	Paddle spacer ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	18				P72B-000CX	Paddle spacer ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	20				P72B-000CY	Paddle spacer ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	24				P72B-000CZ	Paddle spacer ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	30				P72B-0008K	Paddle spacer ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.47-B RF	

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BOLT TABLE (B_A11D05 , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	60	P80S-003VJ		
0.75	4	0.500	65	P80S-003VK		
1	4	0.500	70	P80S-003VL		
1.5	4	0.500	75	P80S-003VM		
2	4	0.625	85	P80S-003Z4		
3	4	0.625	95	P80S-003Z6		
4	8	0.625	95	P80S-003Z6		
6	8	0.750	105	P80S-003Z8		
8	8	0.750	110	P80S-003Z9		
10	12	0.875	120	P80S-00462		
12	12	0.875	120	P80S-00462		
14	12	1.000	135	P80S-004BC		
16	16	1.000	140	P80S-004BD		
18	16	1.125	150	P80S-004J1		
20	20	1.125	160	P80S-004J3		
24	20	1.250	175	P80S-004LF		
30	44	0.750	145	P80S-003ZG		

BOLT TABLE (B_A11D05_773 , STUD ASME RF, OPTION CODE 773)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-003VL		
0.75	4	0.625	75	P80S-003Z2		
1	4	0.625	80	P80S-003Z3		
1.5	4	0.750	95	P80S-0045X		
2	8	0.625	90	P80S-003Z5		
3	8	0.750	110	P80S-003Z9		
4	8	0.750	115	P80S-003ZA		
6	12	0.750	125	P80S-003ZC		
8	12	0.875	140	P80S-00466		
10	16	1.000	160	P80S-004BH		
12	16	1.125	175	P80S-004J7		
14	20	1.125	180	P80S-004J8		
16	20	1.250	190	P80S-004LJ		
18	24	1.250	200	P80S-004LL		
20	24	1.250	210	P80S-004LN		
24	24	1.500	235	P80S-003A7		
30	36	1.375	285	P80S-00399		

BOLT TABLE (B_A11D05_781 , STUD ASME RF, OPTION CODE 781)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	80	P80S-003VN		
0.75	4	0.625	90	P80S-003Z5		
1	4	0.625	95	P80S-003Z6		
1.5	4	0.750	110	P80S-003Z9		
2	8	0.625	110	P80S-003VV		
3	8	0.750	130	P80S-003ZD		
4	8	0.875	150			
6	12	1.000	175			
8	12	1.125	195			
10	16	1.250	250			
12	20	1.250	255			
14	20	1.375	270			
16	20	1.500	295			
18	20	1.625	320			
20	24	1.625	335			
24	24	1.875	380			
30	28	1.875	435			

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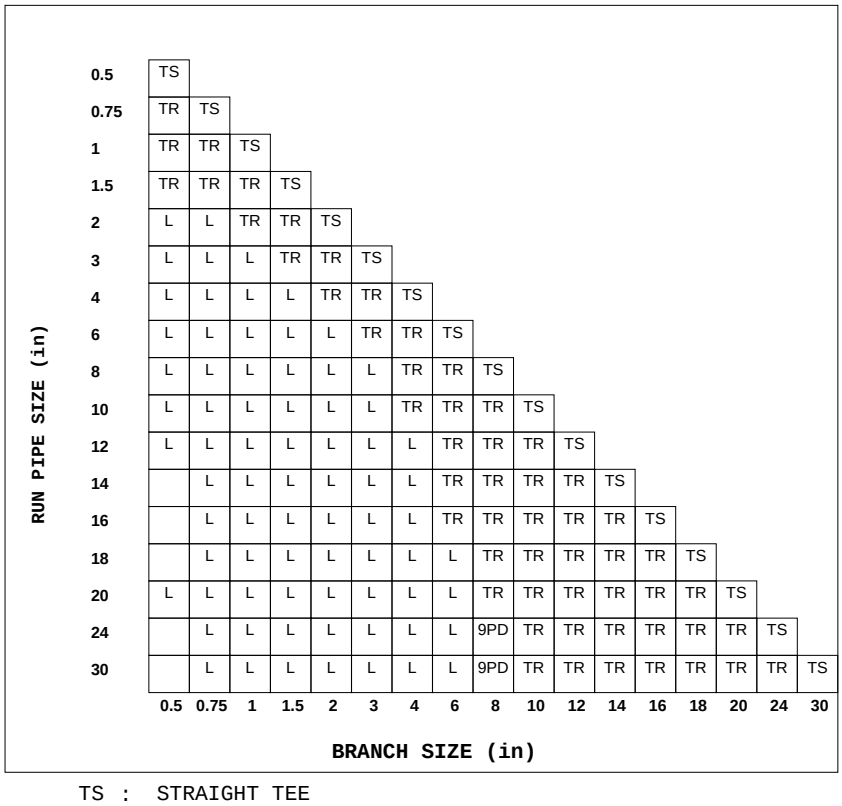
BRANCH TABLE (T_A11D05)



TS : STRAIGHT TEE
TR : REDUCING TEE
9PD : REINFORCING PAD 90 DEG
L : OUTLET

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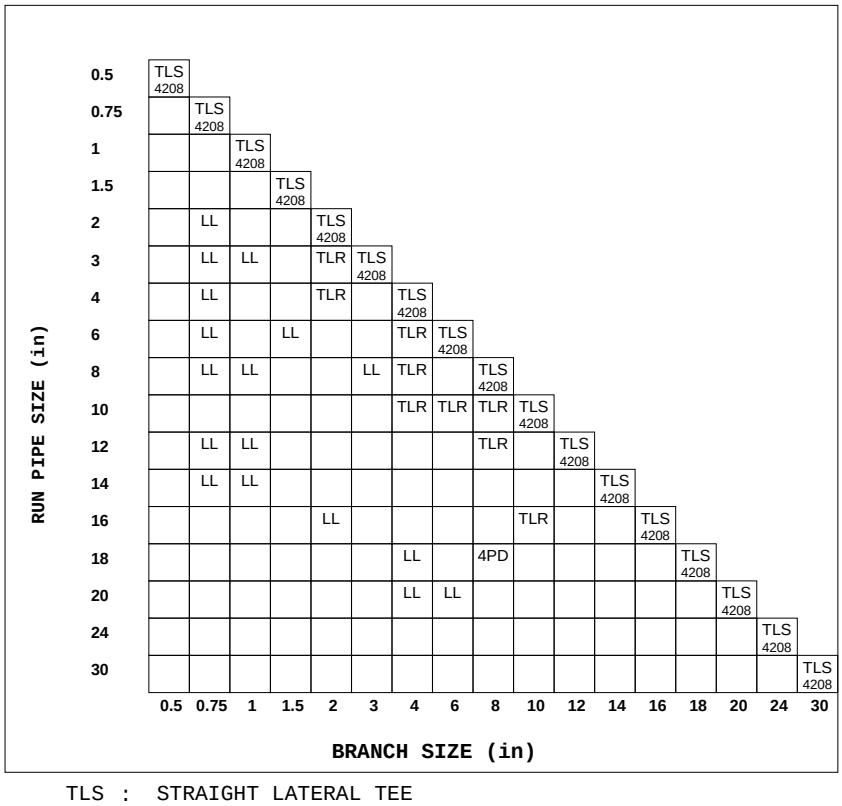
A11D05 REV NO. 2

BRANCH TABLE (T_A11D05_2)



RUN PIPE SIZE (in) \ BRANCH SIZE (in)	0.5	0.75	1	1.5	2	3	4	6	8	10	12	14	16	18	20	24	30
0.5	TLS 4208																
0.75		TLS 4208															
1			TLS 4208														
1.5				TLS 4208													
2		LL			TLS 4208												
3		LL	LL		TLR	TLS 4208											
4		LL			TLR		TLS 4208										
6		LL		LL			TLR	TLS 4208									
8		LL	LL			LL	TLR		TLS 4208								
10							TLR	TLR	TLR	TLS 4208							
12		LL	LL						TLR		TLS 4208						
14		LL	LL									TLS 4208					
16					LL					TLR			TLS 4208				
18							LL		4PD					TLS 4208			
20							LL	LL							TLS 4208		
24																TLS 4208	
30																	TLS 4208

TLS : STRAIGHT LATERAL TEE
TLR : REDUCING LATERAL TEE
4PD : REINFORCING PAD 45 DEG
LL : LATROLET

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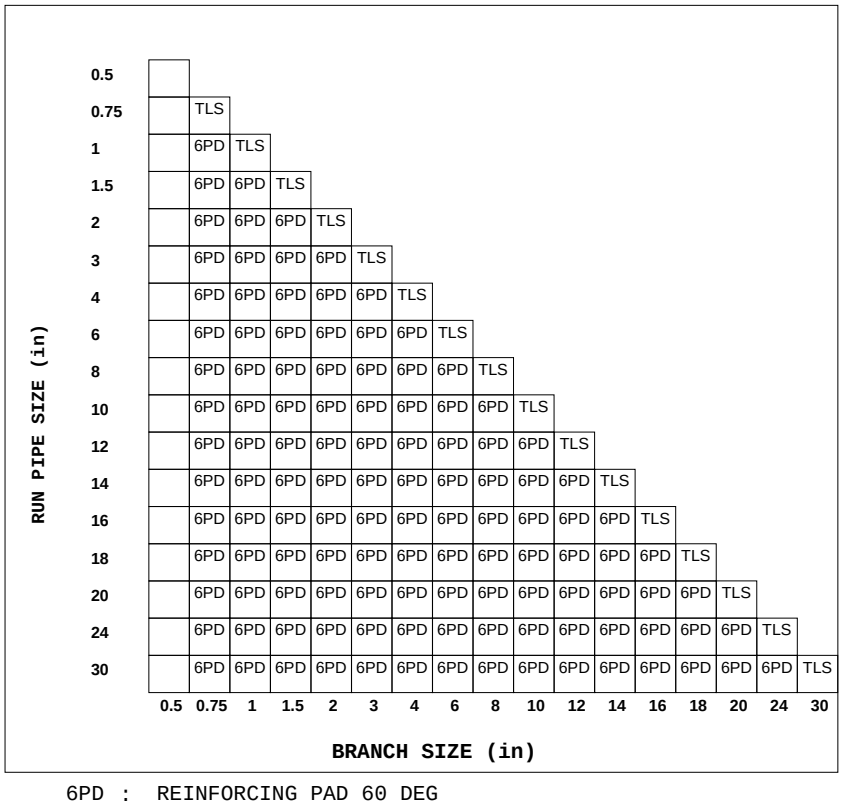
PIPING CLASS

A11D05 REV NO. 2

BRANCH TABLE (T_A11D05_3)



RUN PIPE SIZE (in)	0.5	0.75	1	1.5	2	3	4	6	8	10	12	14	16	18	20	24	30
0.5																	
0.75		TLS															
1		6PD	TLS														
1.5		6PD	6PD	TLS													
2		6PD	6PD	6PD	TLS												
3		6PD	6PD	6PD	6PD	TLS											
4		6PD	6PD	6PD	6PD	6PD	TLS										
6		6PD	6PD	6PD	6PD	6PD	6PD	TLS									
8		6PD	6PD	6PD	6PD	6PD	6PD	6PD	TLS								
10		6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	TLS							
12		6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	TLS						
14		6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	TLS					
16		6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	TLS				
18		6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	TLS			
20		6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	TLS		
24		6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	TLS	
30		6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	TLS

6PD : REINFORCING PAD 60 DEG
TLS : STRAIGHT LATERAL TEE

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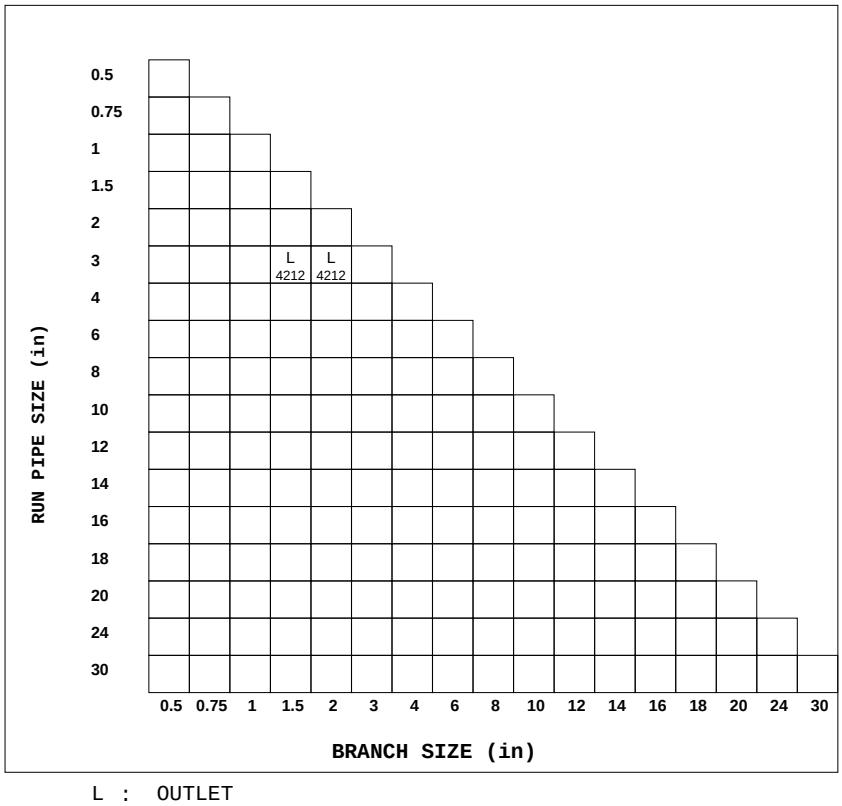
PIPING CLASS
A11D05 REV NO. 2

BRANCH TABLE (T_A11D05_4)



L : OUTLET

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PIPING CLASS

A11F05 REV NO. 2

Material	:	SS304L
Rating	:	ASME CLASS 150
Flange Face	:	RF
C.A.(mm)	:	0.00
Gasket	:	Spiral Wound
Service	:	DEMINERALISED WATER, CARBON DIOXIDE, ETHYLENE GYCOL, LIQUID ADDITIVE, LP NITROGEN, LIQUID STABILIZER, MP NITROGEN, MINERAL OIL, OF-CATALYST, PROCESS NITROGEN, PEROXIDE, PROPYLENE, SEAL OIL, VENT GAS
Design Code	:	ASME B31.3
Heat Treatment	:	

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
24	FULL PORT (Q,V)
200	WITH JACK SCREW (FO)
541	NPT(F) (CA,F,L)
773	CLASS 300 (B,F,G)
781	CLASS 600 (B,F,G)
4608	VALVE WITH NIPPLES (V)

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PIPING CLASS
A11F05 REV NO. 2

PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.25		SCH80S		P01J-002SG	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE	
1	0.5		SCH80S		P01J-000UC	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE	
1	0.75		SCH80S		P01J-000UD	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE	
1	1		SCH80S		P01J-000UE	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE	
1	1.5		SCH80S		P01J-000UF	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE	
1	2		SCH10S		P01J-000RD	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M BE	
1	3		SCH10S		P01J-000RE	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M BE	
1	4		SCH10S		P01J-000RF	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M BE	
1	6		SCH10S		P01J-000RG	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M BE	
1	8		SCH10S		P01J-001F7	Pipe ASTM A358 Grade 304/304L Class 1 dual grade EFW ASME B36.10M/B36.19M BE	
1	10		SCH10S		P01J-000S7	Pipe ASTM A358 Grade 304/304L Class 1 dual grade EFW ASME B36.10M/B36.19M BE	
1	12		SCH10S		P01J-000S8	Pipe ASTM A358 Grade 304/304L Class 1 dual grade EFW ASME B36.10M/B36.19M BE	
1	14		SCH10S		P01J-000S9	Pipe ASTM A358 Grade 304/304L Class 1 dual grade EFW ASME B36.10M/B36.19M BE	
1	16		SCH10S		P01J-000SA	Pipe ASTM A358 Grade 304/304L Class 1 dual grade EFW ASME B36.10M/B36.19M BE	
1	18		SCH10S		P01J-000SB	Pipe ASTM A358 Grade 304/304L Class 1 dual grade EFW ASME B36.10M/B36.19M BE	
1	20		SCH10S		P01J-000SC	Pipe ASTM A358 Grade 304/304L Class 1 dual grade EFW ASME B36.10M/B36.19M BE	
1	22		SCH10S		P01J-000SD	Pipe ASTM A358 Grade 304/304L Class 1 dual grade EFW ASME B36.10M/B36.19M BE	
1	24		SCH10S		P01J-000SE	Pipe ASTM A358 Grade 304/304L Class 1 dual grade EFW ASME B36.10M/B36.19M BE	
1	28		SCH10		P01J-000SG	Pipe ASTM A358 Grade 304/304L Class 1 dual grade EFW ASME B36.10M/B36.19M BE	
1	30		SCH10S		P01J-000SH	Pipe ASTM A358 Grade 304/304L Class 1 dual grade EFW ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.25		SCH80S		P02J-0025D	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	0.5		SCH80S		P02J-000VD	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	0.75		SCH80S		P02J-000VE	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	1		SCH80S		P02J-000VF	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	1.5		SCH80S		P02J-000VG	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	2		SCH10S		P02J-000J0	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	3		SCH10S		P02J-000J1	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	4		SCH10S		P02J-000J2	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	6		SCH10S		P02J-000J3	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	8		SCH10S		P02J-0017L	90 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius	
1	10		SCH10S		P02J-000JC	90 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius	
1	12		SCH10S		P02J-000JD	90 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius	
1	14		SCH10S		P02J-000JE	90 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius	
1	16		SCH10S		P02J-000JF	90 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius	
1	18		SCH10S		P02J-000JG	90 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius	
1	20		SCH10S		P02J-000JH	90 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius	
1	22		SCH10S		P02J-000JJ	90 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius	
1	24		SCH10S		P02J-000JK	90 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius	
1	28		SCH10		P02J-000JM	90 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius	
1	30		SCH10S		P02J-000JN	90 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P03J-000UW	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	0.75		SCH80S		P03J-000UX	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	1		SCH80S		P03J-000UY	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	1.5		SCH80S		P03J-000UZ	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	

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45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2		SCH10S		P03J-000HS	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	3		SCH10S		P03J-000HT	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	4		SCH10S		P03J-000HU	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	6		SCH10S		P03J-000HV	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	8		SCH10S		P03J-0016G	45 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius	
1	10		SCH10S		P03J-000J4	45 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius	
1	12		SCH10S		P03J-000J5	45 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius	
1	14		SCH10S		P03J-000J6	45 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius	
1	16		SCH10S		P03J-000J7	45 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius	
1	18		SCH10S		P03J-000J8	45 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius	
1	20		SCH10S		P03J-000J9	45 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius	
1	22		SCH10S		P03J-000JA	45 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius	
1	24		SCH10S		P03J-000JB	45 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius	
1	28		SCH10		P03J-000JD	45 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius	
1	30		SCH10S		P03J-000JE	45 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P21J-000V1	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	0.75		SCH80S		P21J-000V2	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	1		SCH80S		P21J-000V3	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	1.5		SCH80S		P21J-000V4	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	2		SCH10S		P21J-000HM	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	3		SCH10S		P21J-000HN	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	4		SCH10S		P21J-000HP	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	6		SCH10S		P21J-000HR	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	8		SCH10S		P21J-000ZZ	Straight tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	10		SCH10S		P21J-000J0	Straight tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	12		SCH10S		P21J-000J1	Straight tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	14		SCH10S		P21J-000J2	Straight tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	16		SCH10S		P21J-000J3	Straight tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	18		SCH10S		P21J-000J4	Straight tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	20		SCH10S		P21J-000J5	Straight tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	22		SCH10S		P21J-000J6	Straight tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	24		SCH10S		P21J-000J7	Straight tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	28		SCH10		P21J-000J9	Straight tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	30		SCH10S		P21J-000JA	Straight tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH80S	SCH80S	P24J-003NV	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	1	0.25	SCH80S	SCH80S	P24J-008XY	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	1	0.5	SCH80S	SCH80S	P24J-003NW	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	1	0.75	SCH80S	SCH80S	P24J-003NX	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	1.5	0.5	SCH80S	SCH80S	P24J-003NY	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	1.5	0.75	SCH80S	SCH80S	P24J-003NZ	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	1.5	1	SCH80S	SCH80S	P24J-003P0	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	2	1	SCH10S	SCH80S	P24J-0065A	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	2	1.5	SCH10S	SCH80S	P24J-0065B	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	3	1.5	SCH10S	SCH80S	P24J-004SV	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	3	2	SCH10S	SCH10S	P24J-002H7	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	4	2	SCH10S	SCH10S	P24J-002H8	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	4	3	SCH10S	SCH10S	P24J-002H9	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	6	3	SCH10S	SCH10S	P24J-002HA	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	

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REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	6	4	SCH10S	SCH10S	P24J-002HB	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	8	4	SCH10S	SCH10S	P24J-004SY	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	8	6	SCH10S	SCH10S	P24J-004SZ	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	10	4	SCH10S	SCH10S	P24J-004T0	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	10	6	SCH10S	SCH10S	P24J-004T1	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	10	8	SCH10S	SCH10S	P24J-004T2	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	12	6	SCH10S	SCH10S	P24J-004T3	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	12	8	SCH10S	SCH10S	P24J-004T4	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	12	10	SCH10S	SCH10S	P24J-002HT	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	14	6	SCH10S	SCH10S	P24J-004T5	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	14	8	SCH10S	SCH10S	P24J-004T6	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	14	10	SCH10S	SCH10S	P24J-002HU	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	14	12	SCH10S	SCH10S	P24J-002HV	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	16	6	SCH10S	SCH10S	P24J-004T7	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	16	8	SCH10S	SCH10S	P24J-004T8	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	16	10	SCH10S	SCH10S	P24J-002HW	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	16	12	SCH10S	SCH10S	P24J-002HX	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	16	14	SCH10S	SCH10S	P24J-002HY	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	18	8	SCH10S	SCH10S	P24J-004T9	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	18	10	SCH10S	SCH10S	P24J-002HZ	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	18	12	SCH10S	SCH10S	P24J-002J0	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	18	14	SCH10S	SCH10S	P24J-002J1	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	18	16	SCH10S	SCH10S	P24J-002J2	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	20	8	SCH10S	SCH10S	P24J-0065C	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	20	10	SCH10S	SCH10S	P24J-002J3	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	20	12	SCH10S	SCH10S	P24J-002J4	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	20	14	SCH10S	SCH10S	P24J-002J5	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	20	16	SCH10S	SCH10S	P24J-002J6	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	20	18	SCH10S	SCH10S	P24J-002J7	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	22	10	SCH10S	SCH10S	P24J-0086R	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	22	12	SCH10S	SCH10S	P24J-002J8	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	22	14	SCH10S	SCH10S	P24J-002J9	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	22	16	SCH10S	SCH10S	P24J-002JA	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	22	18	SCH10S	SCH10S	P24J-002JB	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	22	20	SCH10S	SCH10S	P24J-002JC	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	24	10	SCH10S	SCH10S	P24J-0065D	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	24	12	SCH10S	SCH10S	P24J-002P9	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	24	14	SCH10S	SCH10S	P24J-002JD	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	24	16	SCH10S	SCH10S	P24J-002JE	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	24	18	SCH10S	SCH10S	P24J-002JF	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	24	20	SCH10S	SCH10S	P24J-002JG	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	24	22	SCH10S	SCH10S	P24J-002JH	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	28	12	SCH10	SCH10S	P24J-0086S	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	28	14	SCH10	SCH10S	P24J-0086T	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	28	16	SCH10	SCH10S	P24J-002JP	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	28	18	SCH10	SCH10S	P24J-002JR	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	28	20	SCH10	SCH10S	P24J-002JS	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	28	22	SCH10	SCH10S	P24J-002LE	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	28	24	SCH10	SCH10S	P24J-002JT	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	30	10	SCH10S	SCH10S	P24J-00755	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	30	12	SCH10S	SCH10S	P24J-00756	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	30	14	SCH10S	SCH10S	P24J-002M4	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	30	16	SCH10S	SCH10S	P24J-002JV	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	30	18	SCH10S	SCH10S	P24J-002JW	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	30	20	SCH10S	SCH10S	P24J-002JX	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	30	22	SCH10S	SCH10S	P24J-002LF	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	30	24	SCH10S	SCH10S	P24J-002JY	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	30	28	SCH10S	SCH10	P24J-002K0	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	

INDRA
01-SEP-2014

PIPING CLASS
A11F05 REV NO. 2

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5	0.25	SCH80S	SCH80S	P27J-0070G	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	0.75	0.5	SCH80S	SCH80S	P27J-002R0	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	1	0.5	SCH80S	SCH80S	P27J-002R1	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	1	0.75	SCH80S	SCH80S	P27J-002R2	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	1.5	0.5	SCH80S	SCH80S	P27J-002R3	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	1.5	0.75	SCH80S	SCH80S	P27J-002R4	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	1.5	1	SCH80S	SCH80S	P27J-002R5	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	2	0.75	SCH10S	SCH80S	P27J-004KS	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	2	1	SCH10S	SCH80S	P27J-004J0	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	2	1.5	SCH10S	SCH80S	P27J-004J1	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	3	1.5	SCH10S	SCH80S	P27J-003LL	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	3	2	SCH10S	SCH10S	P27J-001PS	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	4	1.5	SCH10S	SCH80S	P27J-003LM	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	4	2	SCH10S	SCH10S	P27J-001PT	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	4	3	SCH10S	SCH10S	P27J-001PU	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	6	3	SCH10S	SCH10S	P27J-001PV	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	6	4	SCH10S	SCH10S	P27J-001PW	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	8	4	SCH10S	SCH10S	P27J-003L1	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	8	6	SCH10S	SCH10S	P27J-003L2	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	10	4	SCH10S	SCH10S	P27J-003L3	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	10	6	SCH10S	SCH10S	P27J-003L4	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	10	8	SCH10S	SCH10S	P27J-003L5	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	12	6	SCH10S	SCH10S	P27J-003L6	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	12	8	SCH10S	SCH10S	P27J-003L7	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	12	10	SCH10S	SCH10S	P27J-001RD	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	14	6	SCH10S	SCH10S	P27J-003L8	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	14	8	SCH10S	SCH10S	P27J-003L9	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	14	10	SCH10S	SCH10S	P27J-001RF	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	14	12	SCH10S	SCH10S	P27J-001RG	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	16	8	SCH10S	SCH10S	P27J-003LA	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	16	10	SCH10S	SCH10S	P27J-001RJ	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	16	12	SCH10S	SCH10S	P27J-001RK	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	16	14	SCH10S	SCH10S	P27J-001RL	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	18	10	SCH10S	SCH10S	P27J-001RM	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	18	12	SCH10S	SCH10S	P27J-001RN	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	18	14	SCH10S	SCH10S	P27J-001RP	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	18	16	SCH10S	SCH10S	P27J-001RR	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	20	12	SCH10S	SCH10S	P27J-001RS	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	20	14	SCH10S	SCH10S	P27J-001RT	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	20	16	SCH10S	SCH10S	P27J-001RU	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	20	18	SCH10S	SCH10S	P27J-001RV	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	24	16	SCH10S	SCH10S	P27J-001S0	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	24	18	SCH10S	SCH10S	P27J-001S1	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	24	20	SCH10S	SCH10S	P27J-001S2	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	28	18	SCH10	SCH10S	P27J-001S7	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	28	20	SCH10	SCH10S	P27J-001S8	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	28	24	SCH10	SCH10S	P27J-001S9	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	30	20	SCH10S	SCH10S	P27J-001SB	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	30	24	SCH10S	SCH10S	P27J-001SC	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5	0.25	SCH80S	SCH80S	P28J-0071Z	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	0.75	0.5	SCH80S	SCH80S	P28J-002NL	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	1	0.5	SCH80S	SCH80S	P28J-002NM	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	1	0.75	SCH80S	SCH80S	P28J-002NN	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	1.5	0.5	SCH80S	SCH80S	P28J-002NP	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	1.5	0.75	SCH80S	SCH80S	P28J-002NR	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	1.5	1	SCH80S	SCH80S	P28J-002NS	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	

INDRA 01-SEP-2014

PIPING CLASS
A11F05 REV NO. 2

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2	0.75	SCH10S	SCH80S	P28J-004L9	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	2	1	SCH10S	SCH80S	P28J-004JH	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	2	1.5	SCH10S	SCH80S	P28J-004JJ	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	3	1.5	SCH10S	SCH80S	P28J-003M9	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	3	2	SCH10S	SCH10S	P28J-001P8	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	4	1.5	SCH10S	SCH80S	P28J-003MA	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	4	2	SCH10S	SCH10S	P28J-001P9	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	4	3	SCH10S	SCH10S	P28J-001PA	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	6	3	SCH10S	SCH10S	P28J-001PB	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	6	4	SCH10S	SCH10S	P28J-001PC	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	8	4	SCH10S	SCH10S	P28J-003LP	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	8	6	SCH10S	SCH10S	P28J-003LR	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	10	4	SCH10S	SCH10S	P28J-003LS	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	10	6	SCH10S	SCH10S	P28J-003LT	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	10	8	SCH10S	SCH10S	P28J-003LU	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	12	6	SCH10S	SCH10S	P28J-003LV	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	12	8	SCH10S	SCH10S	P28J-003LW	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	12	10	SCH10S	SCH10S	P28J-001PW	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	14	6	SCH10S	SCH10S	P28J-003LX	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	14	8	SCH10S	SCH10S	P28J-003LY	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	14	10	SCH10S	SCH10S	P28J-001PY	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	14	12	SCH10S	SCH10S	P28J-001PZ	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	16	8	SCH10S	SCH10S	P28J-003LZ	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	16	10	SCH10S	SCH10S	P28J-001R1	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	16	12	SCH10S	SCH10S	P28J-001R2	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	16	14	SCH10S	SCH10S	P28J-001R3	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	18	10	SCH10S	SCH10S	P28J-001R4	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	18	12	SCH10S	SCH10S	P28J-001R5	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	18	14	SCH10S	SCH10S	P28J-001R6	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	18	16	SCH10S	SCH10S	P28J-001R7	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	20	12	SCH10S	SCH10S	P28J-001R8	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	20	14	SCH10S	SCH10S	P28J-001R9	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	20	16	SCH10S	SCH10S	P28J-001RA	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	20	18	SCH10S	SCH10S	P28J-001RB	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	24	16	SCH10S	SCH10S	P28J-001RG	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	24	18	SCH10S	SCH10S	P28J-001RH	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	24	20	SCH10S	SCH10S	P28J-001RJ	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	28	18	SCH10	SCH10S	P28J-001RP	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	28	20	SCH10	SCH10S	P28J-001RR	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	28	24	SCH10	SCH10S	P28J-001RS	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	30	20	SCH10S	SCH10S	P28J-001RU	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	30	24	SCH10S	SCH10S	P28J-001RV	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P29J-000T0	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	0.75		SCH80S		P29J-000T1	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	1		SCH80S		P29J-000T2	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	1.5		SCH80S		P29J-000T3	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	2		SCH10S		P29J-000G1	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	3		SCH10S		P29J-000G2	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	4		SCH10S		P29J-000G3	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	6		SCH10S		P29J-000G4	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	8		SCH10S		P29J-000X3	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	10		SCH10S		P29J-000GB	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	12		SCH10S		P29J-000GC	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	14		SCH10S		P29J-000GD	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	16		SCH10S		P29J-000GE	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	18		SCH10S		P29J-000GF	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	

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CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	20		SCH10S		P29J-000GG	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	22		SCH10S		P29J-000GH	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	24		SCH10S		P29J-000GJ	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	28		SCH10		P29J-000GL	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	30		SCH10S		P29J-000GN	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
541	0.75				P29K-00020	Cap ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P41J-001FS	Straight nipple ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		SCH80S		P41J-001FT	Straight nipple ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		SCH80S		P41J-001FU	Straight nipple ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		SCH80S		P41J-001FV	Straight nipple ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
541	1	0.75			P31K-00911	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 NPT	
541	1.5	0.75			P31K-00916	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 NPT	
541	2 - 2.5	0.75			P31K-00GFJ	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 NPT	
541	3 - 5	0.75			P31K-00GFK	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 NPT	
541	6 - 12	0.75			P31K-0091X	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 NPT	
541	14 - 36	0.75			P31K-0091B	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 NPT	
1	2	0.5	SCH10S	SCH80S	P31K-00EAX	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	3	0.5	SCH10S	SCH80S	P31K-00EAZ	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	4	0.5	SCH10S	SCH80S	P31K-00EB1	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	6	0.5	SCH10S	SCH80S	P31K-00EB2	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	8	0.5	SCH10S	SCH80S	P31K-00EB3	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	10	0.5	SCH10S	SCH80S	P31K-00EB4	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	12	0.5	SCH10S	SCH80S	P31K-00EB5	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	20	0.5	SCH10S	SCH80S	P31K-00G8T	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	22	0.5	SCH10S	SCH80S	P31K-00G8U	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	2	0.75	SCH10S	SCH80S	P31K-00DM8	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	3	0.75	SCH10S	SCH80S	P31K-00BWW	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	4	0.75	SCH10S	SCH80S	P31K-00BX1	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	6	0.75	SCH10S	SCH80S	P31K-00683	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	8	0.75	SCH10S	SCH80S	P31K-0068R	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	10	0.75	SCH10S	SCH80S	P31K-00645	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	12	0.75	SCH10S	SCH80S	P31K-0064D	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	14	0.75	SCH10S	SCH80S	P31K-00BUB	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	16	0.75	SCH10S	SCH80S	P31K-0064Z	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	18	0.75	SCH10S	SCH80S	P31K-0065A	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	20	0.75	SCH10S	SCH80S	P31K-0065U	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	22	0.75	SCH10S	SCH80S	P31K-00G4C	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	24	0.75	SCH10S	SCH80S	P31K-0066A	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	28	0.75	SCH10	SCH80S	P31K-00G4F	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	30	0.75	SCH10S	SCH80S	P31K-00EVH	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	3	1	SCH10S	SCH80S	P31K-00BWX	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	4	1	SCH10S	SCH80S	P31K-00BX2	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	6	1	SCH10S	SCH80S	P31K-006E7	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	8	1	SCH10S	SCH80S	P31K-006F3	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	10	1	SCH10S	SCH80S	P31K-00694	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	12	1	SCH10S	SCH80S	P31K-0069K	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	14	1	SCH10S	SCH80S	P31K-00BUC	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	16	1	SCH10S	SCH80S	P31K-006AA	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	18	1	SCH10S	SCH80S	P31K-006AV	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	20	1	SCH10S	SCH80S	P31K-006BF	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	22	1	SCH10S	SCH80S	P31K-00G4D	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	24	1	SCH10S	SCH80S	P31K-006C0	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	28	1	SCH10	SCH80S	P31K-00G4G	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	30	1	SCH10S	SCH80S	P31K-00EVJ	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	4	1.5	SCH10S	SCH80S	P31K-00BX3	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	6	1.5	SCH10S	SCH80S	P31K-006M2	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	8	1.5	SCH10S	SCH80S	P31K-006N0	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	10	1.5	SCH10S	SCH80S	P31K-006FM	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	12	1.5	SCH10S	SCH80S	P31K-006G6	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	14	1.5	SCH10S	SCH80S	P31K-00BUD	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	16	1.5	SCH10S	SCH80S	P31K-006H2	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	18	1.5	SCH10S	SCH80S	P31K-006HP	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	20	1.5	SCH10S	SCH80S	P31K-006JA	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	22	1.5	SCH10S	SCH80S	P31K-00G4E	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	24	1.5	SCH10S	SCH80S	P31K-006JW	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	28	1.5	SCH10	SCH80S	P31K-00G4H	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	30	1.5	SCH10S	SCH80S	P31K-00EVK	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	6	2	SCH10S	SCH10S	P31K-005AV	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	8	2	SCH10S	SCH10S	P31K-007G1	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	10	2	SCH10S	SCH10S	P31K-005JV	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	12	2	SCH10S	SCH10S	P31K-005JX	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	14	2	SCH10S	SCH10S	P31K-005K0	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	16	2	SCH10S	SCH10S	P31K-005K3	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	18	2	SCH10S	SCH10S	P31K-005K5	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	20	2	SCH10S	SCH10S	P31K-005K8	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	22	2	SCH10S	SCH10S	P31K-005L8	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	24	2	SCH10S	SCH10S	P31K-005B4	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	28	2	SCH10	SCH10S	P31K-005B8	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	30	2	SCH10S	SCH10S	P31K-005BA	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	8	3	SCH10S	SCH10S	P31K-007XV	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	10	3	SCH10S	SCH10S	P31K-007KK	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	12	3	SCH10S	SCH10S	P31K-007LF	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	14	3	SCH10S	SCH10S	P31K-007ME	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	16	3	SCH10S	SCH10S	P31K-007NJ	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	18	3	SCH10S	SCH10S	P31K-007PR	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	20	3	SCH10S	SCH10S	P31K-007RR	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	22	3	SCH10S	SCH10S	P31K-00G49	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	24	3	SCH10S	SCH10S	P31K-007SP	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	28	3	SCH10	SCH10S	P31K-007U2	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	30	3	SCH10S	SCH10S	P31K-007UJ	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	12	4	SCH10S	SCH10S	P31K-00812	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	14	4	SCH10S	SCH10S	P31K-00821	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	16	4	SCH10S	SCH10S	P31K-00837	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	18	4	SCH10S	SCH10S	P31K-0084E	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	20	4	SCH10S	SCH10S	P31K-0085E	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	22	4	SCH10S	SCH10S	P31K-00G4A	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	24	4	SCH10S	SCH10S	P31K-0086F	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	28	4	SCH10	SCH10S	P31K-0087U	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	30	4	SCH10S	SCH10S	P31K-00889	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	18	6	SCH10S	SCH10S	P31K-008EY	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	20	6	SCH10S	SCH10S	P31K-008FP	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	22	6	SCH10S	SCH10S	P31K-00G4B	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	24	6	SCH10S	SCH10S	P31K-008GG	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	28	6	SCH10	SCH10S	P31K-008HC	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	30	6	SCH10S	SCH10S	P31K-008HM	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30K-0001G	Plug ASTM A182 Grade F304/F304L dual grade ASME B16.11 NPT Round head	
2	0.75				P30K-0001H	Plug ASTM A182 Grade F304/F304L dual grade ASME B16.11 NPT Round head	

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PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P30K-0001J	Plug ASTM A182 Grade F304/F304L dual grade ASME B16.11 NPT Round head	
1	1.5				P30K-0001K	Plug ASTM A182 Grade F304/F304L dual grade ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.25		SCH80S		P61K-0069T	Flange WN ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	0.5		SCH80S		P61K-002K3	Flange WN ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	0.75		SCH80S		P61K-002K4	Flange WN ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	1		SCH80S		P61K-002K5	Flange WN ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	1.5		SCH80S		P61K-002K6	Flange WN ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	2				P63B-0001Y	Lap joint ASTM A105 Class 150 ASME B16.5	
1	3				P63B-00021	Lap joint ASTM A105 Class 150 ASME B16.5	
1	4				P63B-00022	Lap joint ASTM A105 Class 150 ASME B16.5	
1	6				P63B-00024	Lap joint ASTM A105 Class 150 ASME B16.5	
1	8				P63B-00023	Lap joint ASTM A105 Class 150 ASME B16.5	
1	10				P63B-0001T	Lap joint ASTM A105 Class 150 ASME B16.5	
1	12				P63B-0001U	Lap joint ASTM A105 Class 150 ASME B16.5	
1	14				P63B-0001V	Lap joint ASTM A105 Class 150 ASME B16.5	
1	16				P63B-0001W	Lap joint ASTM A105 Class 150 ASME B16.5	
1	18				P63B-0001X	Lap joint ASTM A105 Class 150 ASME B16.5	
1	20				P63B-0001Z	Lap joint ASTM A105 Class 150 ASME B16.5	
1	22				P63B-00075	Lap joint ASTM A105 Class 150 ASME B16.5	
1	24				P63B-00020	Lap joint ASTM A105 Class 150 ASME B16.5	
1	28				P63B-00073	Lap joint ASTM A105 Class 150 ASME B16.47 Series B	
1	30				P63B-00074	Lap joint ASTM A105 Class 150 ASME B16.47 Series B	
541	0.5				P61K-0052M	Flange NPT ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
541	0.75				P61K-005ZX	Flange NPT ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
773	0.5		SCH80S		P61K-0027N	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
773	0.75		SCH80S		P61K-0027P	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
773	1		SCH80S		P61K-0027R	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
773	1.5		SCH80S		P61K-0027S	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
773	2		SCH10S		P61K-0023W	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
773	3		SCH10S		P61K-0023X	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
773	4		SCH10S		P61K-0023Y	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
773	6		SCH10S		P61K-003AD	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
773	8		SCH10S		P61K-003AE	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
773	10		SCH10S		P61K-0024Y	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
773	12		SCH10S		P61K-0024Z	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
773	14		SCH10S		P61K-00250	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
773	16		SCH10S		P61K-00251	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
773	18		SCH10S		P61K-00252	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
773	20		SCH10S		P61K-00253	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
773	22		SCH10S		P61K-0061K	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
773	24		SCH10S		P61K-00258	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
773	30		SCH10S		P61K-00273	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.47 Series B RF	
781	0.5		SCH80S		P61K-002KH	Flange WN ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 RF	
781	0.75		SCH80S		P61K-002KJ	Flange WN ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 RF	
781	1		SCH80S		P61K-002KK	Flange WN ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 RF	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67K-000K9	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	0.75				P67K-000KA	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	1				P67K-000KB	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	1.5				P67K-000KC	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	2				P67K-000KD	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	3				P67K-000KE	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	4				P67K-000KF	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	6				P67K-000KG	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	

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BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	8				P67K-000L7	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	10				P67K-000L1	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	12				P67K-000L2	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	14				P67K-000L3	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	16				P67K-000L4	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	18				P67K-000L5	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	20				P67K-000L6	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	22				P67K-001AR	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	24				P67K-000L9	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	30				P67K-000LC	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.47 Series B RF	

REDUCING FLANGE (FR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2	0.75		SCH80S	P62K-000C0	Reducing flange WN ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	2	1		SCH80S	P62K-000C1	Reducing flange WN ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	2	1.5		SCH80S	P62K-000C2	Reducing flange WN ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	

STUB END (SE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2		SCH10S		P45J-0000G	Stub end Short-pattern ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	3		SCH10S		P45J-0000H	Stub end Short-pattern ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	4		SCH10S		P45J-0000J	Stub end Short-pattern ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	6		SCH10S		P45J-0000K	Stub end Short-pattern ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	8		SCH10S		P45J-0000T	Stub end Short-pattern ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	10		SCH10S		P45J-0000L	Stub end Short-pattern ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	12		SCH10S		P45J-0000M	Stub end Short-pattern ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	14		SCH10S		P45J-0000N	Stub end Short-pattern ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	16		SCH10S		P45J-0000P	Stub end Short-pattern ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	18		SCH10S		P45J-0000R	Stub end Short-pattern ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	20		SCH10S		P45J-0000S	Stub end Short-pattern ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	22		SCH10S		P45J-00019	Stub end Short-pattern ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	24		SCH10S		P45J-0000U	Stub end Short-pattern ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	28		SCH10		P45J-0001A	Stub end Short-pattern ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9-modified BW	
1	30		SCH10S		P45J-00013	Stub end Short-pattern ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9-modified BW	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-0033Y	Spiral wound gasket SS316 winding / Non-asbestos filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-5	
1	0.75				P73T-0033Z	Spiral wound gasket SS316 winding / Non-asbestos filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-5	
1	1				P73T-00340	Spiral wound gasket SS316 winding / Non-asbestos filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-5	
1	1.5				P73T-00341	Spiral wound gasket SS316 winding / Non-asbestos filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-5	
1	2				P73T-00342	Spiral wound gasket SS316 winding / Non-asbestos filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-5	
1	3				P73T-00343	Spiral wound gasket SS316 winding / Non-asbestos filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-5	
1	4				P73T-00344	Spiral wound gasket SS316 winding / Non-asbestos filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-5	
1	6				P73T-00345	Spiral wound gasket SS316 winding / Non-asbestos filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-5	
1	8				P73T-00346	Spiral wound gasket SS316 winding / Non-asbestos filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-5	
1	10				P73T-0038B	Spiral wound gasket SS316 winding / Non-asbestos filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-5	
1	12				P73T-0038C	Spiral wound gasket SS316 winding / Non-asbestos filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-5	
1	14				P73T-0038D	Spiral wound gasket SS316 winding / Non-asbestos filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-5	
1	16				P73T-0038E	Spiral wound gasket SS316 winding / Non-asbestos filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-5	
1	18				P73T-0038F	Spiral wound gasket SS316 winding / Non-asbestos filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-5	
1	20				P73T-0038G	Spiral wound gasket SS316 winding / Non-asbestos filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-5	

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GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	22				P73T-003L7	Spiral wound gasket SS316 winding / Non-asbestos filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-5	
1	24				P73T-0038H	Spiral wound gasket SS316 winding / Non-asbestos filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-5	
1	28				P73T-0041V	Spiral wound gasket SS316 winding / Non-asbestos filler Class 150 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-5	
1	30				P73T-0038J	Spiral wound gasket SS316 winding / Non-asbestos filler Class 150 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-5	
773	0.5				P73T-00347	Spiral wound gasket SS316 winding / Non-asbestos filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-5	
773	0.75				P73T-00348	Spiral wound gasket SS316 winding / Non-asbestos filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-5	
773	1				P73T-00349	Spiral wound gasket SS316 winding / Non-asbestos filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-5	
773	1.5				P73T-0034A	Spiral wound gasket SS316 winding / Non-asbestos filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-5	
773	2				P73T-0034B	Spiral wound gasket SS316 winding / Non-asbestos filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-5	
773	3				P73T-0034C	Spiral wound gasket SS316 winding / Non-asbestos filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-5	
773	4				P73T-0034D	Spiral wound gasket SS316 winding / Non-asbestos filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-5	
773	6				P73T-0034E	Spiral wound gasket SS316 winding / Non-asbestos filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-5	
773	8				P73T-0034F	Spiral wound gasket SS316 winding / Non-asbestos filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-5	
773	10				P73T-0038K	Spiral wound gasket SS316 winding / Non-asbestos filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-5	
773	12				P73T-0038L	Spiral wound gasket SS316 winding / Non-asbestos filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-5	
773	14				P73T-0038M	Spiral wound gasket SS316 winding / Non-asbestos filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-5	
773	16				P73T-0038N	Spiral wound gasket SS316 winding / Non-asbestos filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-5	
773	18				P73T-0038P	Spiral wound gasket SS316 winding / Non-asbestos filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-5	
773	20				P73T-0038R	Spiral wound gasket SS316 winding / Non-asbestos filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-5	
773	22				P73T-003L8	Spiral wound gasket SS316 winding / Non-asbestos filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-5	
773	24				P73T-0038S	Spiral wound gasket SS316 winding / Non-asbestos filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-5	
773	30				P73T-0038T	Spiral wound gasket SS316 winding / Non-asbestos filler Class 300 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-5	
781	0.5				P73T-003H5	Spiral wound gasket SS316 winding / Non-asbestos filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-5	
781	0.75				P73T-003H6	Spiral wound gasket SS316 winding / Non-asbestos filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-5	
781	1				P73T-003GR	Spiral wound gasket SS316 winding / Non-asbestos filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-5	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-16				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	18-24				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
1	28-30				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
773	0.5-10				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
773	12-30				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
781	0.5-2				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81K-0010G	Gate valve ASTM A182 Grade F304/F304L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	0.75				P81K-0010H	Gate valve ASTM A182 Grade F304/F304L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	1				P81K-0010J	Gate valve ASTM A182 Grade F304/F304L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	1.5				P81K-0010K	Gate valve ASTM A182 Grade F304/F304L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	2				P81L-00293	Gate valve ASTM A351 Grade CF8 Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	3				P81L-00294	Gate valve ASTM A351 Grade CF8 Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	4				P81L-00295	Gate valve ASTM A351 Grade CF8 Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	6				P81L-00296	Gate valve ASTM A351 Grade CF8 Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	

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GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	8				P81L-00297	Gate valve ASTM A351 Grade CF8 Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	10				P81L-002BX	Gate valve ASTM A351 Grade CF8 Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	12				P81L-002BY	Gate valve ASTM A351 Grade CF8 Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	14				P81L-002BZ	Gate valve ASTM A351 Grade CF8 Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated	
1	16				P81L-002C0	Gate valve ASTM A351 Grade CF8 Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated	
1	18				P81L-002C1	Gate valve ASTM A351 Grade CF8 Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated	
1	20				P81L-002C2	Gate valve ASTM A351 Grade CF8 Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated	
1	22				P81L-002Z4	Gate valve ASTM A351 Grade CF8 Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated	
1	24				P81L-002C3	Gate valve ASTM A351 Grade CF8 Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated	
1	30				P81L-002C4	Gate valve ASTM A351 Grade CF8 Class 150 API 600 Flange ASME B16.47-B RF Trim number 12 BB-BG-OS&Y Gear operated	
24	0.5				P81K-001TR	Gate valve ASTM A182 Grade F304/F304L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Full bore	
4608	0.75				P81K-001PA	Gate valve ASTM A182 Grade F304/F304L dual grade Class 150 API 602 BW both sides w/ nipples BE - NPT ASTM A312-TP304(L) dual grade Seamless Sch80S-nipple Trim number 12 BB-BG-OS&Y Handwheel operated	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82K-000TX	Globe valve ASTM A182 Grade F304/F304L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	0.75				P82K-000TY	Globe valve ASTM A182 Grade F304/F304L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	1				P82K-000TZ	Globe valve ASTM A182 Grade F304/F304L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	1.5				P82K-000U0	Globe valve ASTM A182 Grade F304/F304L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	2				P82L-00195	Globe valve ASTM A351 Grade CF8 Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	3				P82L-00196	Globe valve ASTM A351 Grade CF8 Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	4				P82L-00197	Globe valve ASTM A351 Grade CF8 Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	6				P82L-001AD	Globe valve ASTM A351 Grade CF8 Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	8				P82L-001AE	Globe valve ASTM A351 Grade CF8 Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83K-000SD	Check valve ASTM A182 Grade F304/F304L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover	
1	0.75				P83K-000SE	Check valve ASTM A182 Grade F304/F304L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover	
1	1				P83K-000SF	Check valve ASTM A182 Grade F304/F304L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover	
1	1.5				P83K-000SG	Check valve ASTM A182 Grade F304/F304L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover	
1	2				P83L-00196	Check valve ASTM A351 Grade CF8 Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	3				P83L-00197	Check valve ASTM A351 Grade CF8 Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	4				P83L-00198	Check valve ASTM A351 Grade CF8 Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	6				P83L-0019U	Check valve ASTM A351 Grade CF8 Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	8				P83L-0019V	Check valve ASTM A351 Grade CF8 Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	10				P83L-001AA	Check valve ASTM A351 Grade CF8 Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	12				P83L-001AB	Check valve ASTM A351 Grade CF8 Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	14				P83L-001AC	Check valve ASTM A351 Grade CF8 Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	16				P83L-001AD	Check valve ASTM A351 Grade CF8 Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	18				P83L-001AE	Check valve ASTM A351 Grade CF8 Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	20				P83L-001B6	Check valve ASTM A351 Grade CF8 Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	

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BALL VALVE (Q)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P84K-000R2	Ball valve Long-pattern ASTM A182 Grade F304/F304L dual grade Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design	
1	0.75				P84K-000R3	Ball valve Long-pattern ASTM A182 Grade F304/F304L dual grade Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design	
1	1				P84K-000R4	Ball valve Long-pattern ASTM A182 Grade F304/F304L dual grade Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design	
1	1.5				P84K-000R5	Ball valve Long-pattern ASTM A182 Grade F304/F304L dual grade Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design	
1	2				P84L-0034S	Ball valve Long-pattern ASTM A351 Grade CF8 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design	
1	3				P84L-0034T	Ball valve Long-pattern ASTM A351 Grade CF8 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design	
1	4				P84L-0034U	Ball valve Long-pattern ASTM A351 Grade CF8 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design	
1	6				P84L-0034V	Ball valve Long-pattern ASTM A351 Grade CF8 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Reduced bore Fire tested design	
1	8				P84L-0034W	Ball valve Long-pattern ASTM A351 Grade CF8 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Reduced bore Fire tested design	
1	10				P84L-00352	Ball valve Long-pattern ASTM A351 Grade CF8 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Reduced bore Fire tested design	
1	12				P84L-00353	Ball valve Long-pattern ASTM A351 Grade CF8 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Reduced bore Fire tested design	
1	14				P84L-00354	Ball valve Long-pattern ASTM A351 Grade CF8 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Reduced bore Fire tested design	
1	16				P84L-00355	Ball valve Long-pattern ASTM A351 Grade CF8 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Reduced bore Fire tested design	
1	18				P84L-00356	Ball valve Long-pattern ASTM A351 Grade CF8 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Reduced bore Fire tested design	
1	20				P84L-00357	Ball valve Long-pattern ASTM A351 Grade CF8 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Reduced bore Fire tested design	
1	22				P84L-003AX	Ball valve Long-pattern ASTM A351 Grade CF8 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Reduced bore Fire tested design	
1	24				P84L-00358	Ball valve Long-pattern ASTM A351 Grade CF8 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Reduced bore Fire tested design	
24	0.5				P84K-000R6	Ball valve Long-pattern ASTM A182 Grade F304/F304L dual grade Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	
24	0.75				P84K-000R7	Ball valve Long-pattern ASTM A182 Grade F304/F304L dual grade Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	
24	1				P84K-000R8	Ball valve Long-pattern ASTM A182 Grade F304/F304L dual grade Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	
24	1.5				P84K-000R9	Ball valve Long-pattern ASTM A182 Grade F304/F304L dual grade Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	
24	2				P84L-0034X	Ball valve Long-pattern ASTM A351 Grade CF8 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	
24	3				P84L-0034Y	Ball valve Long-pattern ASTM A351 Grade CF8 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	
24	4				P84L-0034Z	Ball valve Long-pattern ASTM A351 Grade CF8 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	
24	6				P84L-00350	Ball valve Long-pattern ASTM A351 Grade CF8 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design	
24	8				P84L-00351	Ball valve Long-pattern ASTM A351 Grade CF8 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design	
24	10				P84L-00359	Ball valve Long-pattern ASTM A351 Grade CF8 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design	
24	12				P84L-0035A	Ball valve Long-pattern ASTM A351 Grade CF8 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design	
24	14				P84L-0035B	Ball valve Long-pattern ASTM A351 Grade CF8 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design	
24	16				P84L-0035C	Ball valve Long-pattern ASTM A351 Grade CF8 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design	
24	18				P84L-0035D	Ball valve Long-pattern ASTM A351 Grade CF8 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design	
24	20				P84L-0035E	Ball valve Long-pattern ASTM A351 Grade CF8 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design	
24	22				P84L-003AY	Ball valve Long-pattern ASTM A351 Grade CF8 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design	
24	24				P84L-0035F	Ball valve Long-pattern ASTM A351 Grade CF8 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design	

BUTTERFLY VALVE (H)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	12				P86L-000Z9	Offset design butterfly valve ASTM A351 Grade CF8 Class 150 API 609 Category B Lug-type ASME B16.5 RF Disc SS316 Seat Stellite-6 Trim SS316 Triple eccentric design BG Gear operated	
1	14				P86L-000ZA	Offset design butterfly valve ASTM A351 Grade CF8 Class 150 API 609 Category B Lug-type ASME B16.5 RF Disc SS316 Seat Stellite-6 Trim SS316 Triple eccentric design BG Gear operated	
1	16				P86L-000ZB	Offset design butterfly valve ASTM A351 Grade CF8 Class 150 API 609 Category B Lug-type ASME B16.5 RF Disc SS316 Seat Stellite-6 Trim SS316 Triple eccentric design BG Gear operated	
1	18				P86L-000ZC	Offset design butterfly valve ASTM A351 Grade CF8 Class 150 API 609 Category B Lug-type ASME B16.5 RF Disc SS316 Seat Stellite-6 Trim SS316 Triple eccentric design BG Gear operated	

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BUTTERFLY VALVE (H)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	20				P86L-000ZD	Offset design butterfly valve ASTM A351 Grade CF8 Class 150 API 609 Category B Double flanged ASME B16.5 RF Disc SS316 Seat Stellite-6 Trim SS316 Triple eccentric design BG Gear operated	
1	22				P86L-0010E	Offset design butterfly valve ASTM A351 Grade CF8 Class 150 API 609 Category B Double flanged ASME B16.5 RF Disc SS316 Seat Stellite-6 Trim SS316 Triple eccentric design BG Gear operated	
1	24				P86L-000ZS	Offset design butterfly valve ASTM A351 Grade CF8 Class 150 API 609 Category B Double flanged ASME B16.5 RF Disc SS316 Seat Stellite-6 Trim SS316 Triple eccentric design BG Gear operated	

ORIFICE FLANGE (FO)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2		SCH10S		P66K-00312	Orifice flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
200	2		SCH10S		P66K-0031E	Orifice flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71K-00065	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	0.75				P71K-00066	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	1				P71K-00067	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71K-00068	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	2				P71K-0006A	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	3				P71K-0006B	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	4				P71K-0006C	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	6				P71K-0006D	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	8				P71K-0006E	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	10				P71K-00069	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	12				P71K-0006F	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	

PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72K-0003T	Paddle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	16				P72K-0003U	Paddle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	18				P72K-0003V	Paddle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	20				P72K-0003W	Paddle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	22				P72K-000HX	Paddle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	24				P72K-0003X	Paddle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	28				P72K-000KL	Paddle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	30				P72K-000E9	Paddle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.47-B RF	

PADDLE SPACER (PS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72K-0003Y	Paddle spacer ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	16				P72K-0003Z	Paddle spacer ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	18				P72K-00040	Paddle spacer ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	20				P72K-00041	Paddle spacer ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	22				P72K-000HY	Paddle spacer ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	24				P72K-00042	Paddle spacer ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	28				P72K-000KM	Paddle spacer ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	30				P72K-000EA	Paddle spacer ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.47-B RF	

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BOLT TABLE (B_A11F05 , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	60	P80S-003V2		
0.75	4	0.500	65	P80S-003V3		
1	4	0.500	70	P80S-003V4		
1.5	4	0.500	75	P80S-003V5		
2	4	0.625	90	P80S-003XF		
3	4	0.625	100	P80S-003VA		
4	8	0.625	100	P80S-003VA		
6	8	0.750	110	P80S-003XK		
8	8	0.750	120	P80S-003XM		
10	12	0.875	135	P80S-0041C		
12	12	0.875	135	P80S-0041C		
14	12	1.000	150	P80S-0043H		
16	16	1.000	155	P80S-0043J		
18	16	1.125	165	P80S-0046N		
20	20	1.125	175	P80S-0046S		
22	20	1.250	195	P80S-004AL		
24	20	1.250	195	P80S-004AL		
28	40	0.750	170	P80S-003ZS		
30	44	0.750	175	P80S-003ZT		

BOLT TABLE (B_A11F05_773 , STUD ASME RF, OPTION CODE 773)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-003V4		
0.75	4	0.625	75	P80S-003XC		
1	4	0.625	80	P80S-003XD		
1.5	4	0.750	95	P80S-00414		
2	8	0.625	90	P80S-003XF		
3	8	0.750	110	P80S-003XK		
4	8	0.750	115	P80S-003XL		
6	12	0.750	125	P80S-003XN		
8	12	0.875	140	P80S-0041D		
10	16	1.000	160	P80S-0043K		
12	16	1.125	175	P80S-0046S		
14	20	1.125	180	P80S-0046T		
16	20	1.250	190	P80S-004AK		
18	24	1.250	200	P80S-004AM		
20	24	1.250	210	P80S-004AP		
22	24	1.500	235	P80S-003F8		
24	24	1.500	235	P80S-003F8		
28	36	1.250	270	P80S-004B2		
30	36	1.375	285	P80S-003EA		

BOLT TABLE (B_A11F05_781 , STUD ASME RF, OPTION CODE 781)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	80	P80S-003V6		
0.75	4	0.625	90	P80S-003XF		
1	4	0.625	95	P80S-003XG		
1.5	4	0.750	110			
2	8	0.625	110	P80S-003VC		
3	8	0.750	130			
4	8	0.875	150			
6	12	1.000	175			
8	12	1.125	195			
10	16	1.250	250			
12	20	1.250	255			
14	20	1.375	270			
16	20	1.500	295			
18	20	1.625	320			
20	24	1.625	335			
22			0			
24	24	1.875	380			
28			0			
30	28	1.875	435			

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BRANCH TABLE (T_A11F05)

RUN PIPE SIZE (in) \ BRANCH SIZE (in)	0.25	0.5	0.75	1	1.5	2	3	4	6	8	10	12	14	16	18	20	22	24	28	30
0.25	TS																			
0.5		TS																		
0.75		TR	TS																	
1	TR	TR	TR	TS																
1.5		TR	TR	TR	TS															
2		L	L	TR	TR	TS														
3		L	L	L	TR	TR	TS													
4		L	L	L	L	TR	TR	TS												
6		L	L	L	L	L	TR	TR	TS											
8		L	L	L	L	L	L	TR	TR	TS										
10		L	L	L	L	L	L	TR	TR	TR	TS									
12		L	L	L	L	L	L	L	TR	TR	TR	TS								
14			L	L	L	L	L	L	TR	TR	TR	TR	TS							
16			L	L	L	L	L	L	TR	TR	TR	TR	TR	TS						
18			L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TS					
20		L	L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TR	TS				
22		L	L	L	L	L	L	L	L	9PD	TR	TR	TR	TR	TR	TR	TS			
24			L	L	L	L	L	L	L	9PD	TR	TR	TR	TR	TR	TR	TR	TS		
28			L	L	L	L	L	L	L	9PD	9PD	TR	TR	TR	TR	TR	TR	TR	TS	
30			L	L	L	L	L	L	L	9PD	TR	TR	TR	TR	TR	TR	TR	TR	TR	TS

TR : REDUCING TEE
TS : STRAIGHT TEE
L : OUTLET
9PD : REINFORCING PAD 90 DEG

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PIPING CLASS

A11X05 REV NO. 2

Material : Killed CS (Galv.)
Rating : ASME CLASS 150
Flange Face : RF
C.A.(mm) : 1.00
Gasket : Sheet
Service : INSTRUMENT AIR
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
12	GALVANISED COATING SHALL BE IN ACCORDANCE WITH PROJECT STANDARD 3550-8440-SP-0008

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
200	WITH JACK SCREW (FO)
211	FF (B,F,G)
773	CLASS 300 (B,F,G)

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PIPING CLASS
A11X05 REV NO. 2

PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P01A-00263	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M NPT Galvanized	
1	0.75		SCH160		P01A-0025S	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M NPT Galvanized	
1	1		SCH160		P01A-0025B	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M NPT Galvanized	
1	1.5		XS		P01A-000XC	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M NPT Galvanized	
1	2		XS		P01A-008T3	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Galvanized Fluid-3	
1	3		STD		P01A-008T4	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Galvanized Fluid-3	
1	4		STD		P01A-008T5	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Galvanized Fluid-3	
1	6		STD		P01A-008T6	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Galvanized Fluid-3	
1	8		SCH20		P01A-008T7	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Galvanized Fluid-3	
1	10		SCH20		P01A-008T2	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Galvanized Fluid-3	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P02B-0001H	90 degree elbow ASTM A105 Class 3000 ASME B16.11 NPT Galvanized	
1	0.75				P02B-0001D	90 degree elbow ASTM A105 Class 3000 ASME B16.11 NPT Galvanized	
1	1				P02B-0001E	90 degree elbow ASTM A105 Class 3000 ASME B16.11 NPT Galvanized	
1	1.5				P02B-0001F	90 degree elbow ASTM A105 Class 3000 ASME B16.11 NPT Galvanized	
1	2		XS		P02A-004M4	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Galvanized Long radius Fluid-3	
1	3		STD		P02A-004NX	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Galvanized Long radius Fluid-3	
1	4		STD		P02A-004RZ	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Galvanized Long radius Fluid-3	
1	6		STD		P02A-004U9	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Galvanized Long radius Fluid-3	
1	8		SCH20		P02A-004W0	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Galvanized Long radius Fluid-3	
1	10		SCH20		P02A-004KP	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Galvanized Long radius Fluid-3	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P03B-00012	45 degree elbow ASTM A105 Class 3000 ASME B16.11 NPT Galvanized	
1	0.75				P03B-00013	45 degree elbow ASTM A105 Class 3000 ASME B16.11 NPT Galvanized	
1	1				P03B-00014	45 degree elbow ASTM A105 Class 3000 ASME B16.11 NPT Galvanized	
1	1.5				P03B-00015	45 degree elbow ASTM A105 Class 3000 ASME B16.11 NPT Galvanized	
1	2		XS		P03A-004FP	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Galvanized Long radius Fluid-3	
1	3		STD		P03A-004FR	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Galvanized Long radius Fluid-3	
1	4		STD		P03A-004FS	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Galvanized Long radius Fluid-3	
1	6		STD		P03A-004FT	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Galvanized Long radius Fluid-3	
1	8		SCH20		P03A-004FU	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Galvanized Long radius Fluid-3	
1	10		SCH20		P03A-004FN	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Galvanized Long radius Fluid-3	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P21B-0002D	Straight tee ASTM A105 Class 3000 ASME B16.11 NPT Galvanized	
1	0.75				P21B-0002E	Straight tee ASTM A105 Class 3000 ASME B16.11 NPT Galvanized	
1	1				P21B-0002F	Straight tee ASTM A105 Class 3000 ASME B16.11 NPT Galvanized	
1	1.5				P21B-0002G	Straight tee ASTM A105 Class 3000 ASME B16.11 NPT Galvanized	
1	2		XS		P21A-00502	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Galvanized Fluid-3	
1	3		STD		P21A-00503	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Galvanized Fluid-3	
1	4		STD		P21A-00504	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Galvanized Fluid-3	
1	6		STD		P21A-00505	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Galvanized Fluid-3	
1	8		SCH20		P21A-00506	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Galvanized Fluid-3	
1	10		SCH20		P21A-00501	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Galvanized Fluid-3	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5			P24B-00029	Reducing tee ASTM A105 Class 3000 ASME B16.11 NPT Galvanized	
1	1	0.5			P24B-00027	Reducing tee ASTM A105 Class 3000 ASME B16.11 NPT Galvanized	
1	1	0.75			P24B-00028	Reducing tee ASTM A105 Class 3000 ASME B16.11 NPT Galvanized	
1	1.5	0.5			P24B-0002A	Reducing tee ASTM A105 Class 3000 ASME B16.11 NPT Galvanized	
1	1.5	0.75			P24B-0002B	Reducing tee ASTM A105 Class 3000 ASME B16.11 NPT Galvanized	
1	1.5	1			P24B-0002C	Reducing tee ASTM A105 Class 3000 ASME B16.11 NPT Galvanized	

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REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	STD	XS	P24A-00P2G	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Galvanized Fluid-3	
1	4	2	STD	XS	P24A-00P2R	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Galvanized Fluid-3	
1	4	3	STD	STD	P24A-00P2S	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Galvanized Fluid-3	
1	6	3	STD	STD	P24A-00P2N	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Galvanized Fluid-3	
1	6	4	STD	STD	P24A-00P2P	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Galvanized Fluid-3	
1	8	4	SCH20	STD	P24A-00P2L	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Galvanized Fluid-3	
1	8	6	SCH20	STD	P24A-00P2M	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Galvanized Fluid-3	
1	10	4	SCH20	STD	P24A-00P2H	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Galvanized Fluid-3	
1	10	6	SCH20	STD	P24A-00P2J	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Galvanized Fluid-3	
1	10	8	SCH20	SCH20	P24A-00P2K	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Galvanized Fluid-3	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	STD	XS	P27A-00HKR	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Galvanized Fluid-3	
1	4	2	STD	XS	P27A-00HKS	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Galvanized Fluid-3	
1	4	3	STD	STD	P27A-00HKT	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Galvanized Fluid-3	
1	6	3	STD	STD	P27A-00HKU	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Galvanized Fluid-3	
1	6	4	STD	STD	P27A-00HKV	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Galvanized Fluid-3	
1	8	4	SCH20	STD	P27A-00HN7	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Galvanized Fluid-3	
1	8	6	SCH20	STD	P27A-00HN8	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Galvanized Fluid-3	
1	10	4	SCH20	STD	P27A-00HKW	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Galvanized Fluid-3	
1	10	6	SCH20	STD	P27A-00HKX	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Galvanized Fluid-3	
1	10	8	SCH20	SCH20	P27A-00HKY	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Galvanized Fluid-3	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	STD	XS	P28A-00EVB	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Galvanized Fluid-3	
1	4	2	STD	XS	P28A-00EV9	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Galvanized Fluid-3	
1	4	3	STD	STD	P28A-00EVA	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Galvanized Fluid-3	
1	6	3	STD	STD	P28A-00EV7	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Galvanized Fluid-3	
1	6	4	STD	STD	P28A-00EV8	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Galvanized Fluid-3	
1	8	4	SCH20	STD	P28A-00EV5	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Galvanized Fluid-3	
1	8	6	SCH20	STD	P28A-00EV6	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Galvanized Fluid-3	
1	10	4	SCH20	STD	P28A-00EV2	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Galvanized Fluid-3	
1	10	6	SCH20	STD	P28A-00EV3	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Galvanized Fluid-3	
1	10	8	SCH20	SCH20	P28A-00EV4	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Galvanized Fluid-3	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P29B-0001P	Cap ASTM A105 Class 3000 ASME B16.11 NPT Galvanized	
1	0.75				P29B-0001R	Cap ASTM A105 Class 3000 ASME B16.11 NPT Galvanized	
1	1				P29B-0001S	Cap ASTM A105 Class 3000 ASME B16.11 NPT Galvanized	
1	1.5				P29B-0001T	Cap ASTM A105 Class 3000 ASME B16.11 NPT Galvanized	
1	2		XS		P29A-003W4	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Galvanized Fluid-3	
1	3		STD		P29A-003W5	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Galvanized Fluid-3	
1	4		STD		P29A-003W6	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Galvanized Fluid-3	
1	6		STD		P29A-003W7	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Galvanized Fluid-3	
1	8		SCH20		P29A-003W8	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Galvanized Fluid-3	
1	10		SCH20		P29A-003W3	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Galvanized Fluid-3	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P41A-000AR	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M NPT - NPT Galvanized L=100mm	
1	0.75		SCH160		P41A-000AS	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M NPT - NPT Galvanized L=100mm	
1	1		SCH160		P41A-000AT	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M NPT - NPT Galvanized L=100mm	
1	1.5		XS		P41A-000VD	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M NPT - NPT Galvanized L=100mm	

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CON SWAGED NIPPLE (SNC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	SCH160	P42A-0005Z	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 NPT(L) - NPT(S) Galvanized	
1	1	0.5	SCH160	SCH160	P42A-000FM	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 NPT(L) - NPT(S) Galvanized	
1	1	0.75	SCH160	SCH160	P42A-000FN	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 NPT(L) - NPT(S) Galvanized	
1	1.5	0.5	XS	SCH160	P42A-0010F	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 NPT(L) - NPT(S) Galvanized	
1	1.5	0.75	XS	SCH160	P42A-0010G	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 NPT(L) - NPT(S) Galvanized	
1	1.5	1	XS	SCH160	P42A-0010H	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 NPT(L) - NPT(S) Galvanized	
1	2	0.5	XS	SCH160	P42A-0010Z	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - NPT(S) Galvanized Fluid-3	
1	2	0.75	XS	SCH160	P42A-00110	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - NPT(S) Galvanized Fluid-3	
1	2	1	XS	SCH160	P42A-00111	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - NPT(S) Galvanized Fluid-3	
1	2	1.5	XS	XS	P42A-00112	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - NPT(S) Galvanized Fluid-3	
1	3	1.5	STD	XS	P42A-0010W	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - NPT(S) Galvanized Fluid-3	

ECC SWAGED NIPPLE (SNE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	SCH160	P43A-000DN	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 NPT(L) - NPT(S) Galvanized	
1	1	0.5	SCH160	SCH160	P43A-000DP	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 NPT(L) - NPT(S) Galvanized	
1	1	0.75	SCH160	SCH160	P43A-000DR	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 NPT(L) - NPT(S) Galvanized	
1	1.5	0.5	XS	SCH160	P43A-000M9	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 NPT(L) - NPT(S) Galvanized	
1	1.5	0.75	XS	SCH160	P43A-000MA	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 NPT(L) - NPT(S) Galvanized	
1	1.5	1	XS	SCH160	P43A-000MB	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 NPT(L) - NPT(S) Galvanized	
1	2	0.5	XS	SCH160	P43A-000MR	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - NPT(S) Galvanized Fluid-3	
1	2	0.75	XS	SCH160	P43A-000MS	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - NPT(S) Galvanized Fluid-3	
1	2	1	XS	SCH160	P43A-000MT	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - NPT(S) Galvanized Fluid-3	
1	2	1.5	XS	XS	P43A-000MU	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - NPT(S) Galvanized Fluid-3	
1	3	1.5	STD	XS	P43A-000MP	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - NPT(S) Galvanized Fluid-3	

UNION (UN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P49B-0000B	Union ASTM A105 Class 3000 MSS SP-83 NPT Galvanized	
1	0.75				P49B-0000C	Union ASTM A105 Class 3000 MSS SP-83 NPT Galvanized	
1	1				P49B-0000D	Union ASTM A105 Class 3000 MSS SP-83 NPT Galvanized	
1	1.5				P49B-0000E	Union ASTM A105 Class 3000 MSS SP-83 NPT Galvanized	

COUPLING (CPS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P47B-00014	Coupling ASTM A105 Class 3000 ASME B16.11 NPT - NPT Galvanized	
1	0.75				P47B-00015	Coupling ASTM A105 Class 3000 ASME B16.11 NPT - NPT Galvanized	
1	1				P47B-00016	Coupling ASTM A105 Class 3000 ASME B16.11 NPT - NPT Galvanized	
1	1.5				P47B-00017	Coupling ASTM A105 Class 3000 ASME B16.11 NPT - NPT Galvanized	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2 - 2.5	0.75			P31B-01381	Outlet ASTM A105 Class 3000 MSS SP-97 NPT Galvanized	
1	3 - 5	0.75			P31B-01382	Outlet ASTM A105 Class 3000 MSS SP-97 NPT Galvanized	
1	6 - 12	0.75			P31B-00E3W	Outlet ASTM A105 Class 3000 MSS SP-97 NPT Galvanized	
1	2	1			P31B-00DSD	Outlet ASTM A105 Class 3000 MSS SP-97 NPT Galvanized	
1	3	1			P31B-00E3S	Outlet ASTM A105 Class 3000 MSS SP-97 NPT Galvanized	
1	4 - 5	1			P31B-01383	Outlet ASTM A105 Class 3000 MSS SP-97 NPT Galvanized	
1	6 - 10	1			P31B-00E3N	Outlet ASTM A105 Class 3000 MSS SP-97 NPT Galvanized	
1	2	1.5			P31B-0058F	Outlet ASTM A105 Class 3000 MSS SP-97 NPT Galvanized	
1	3	1.5			P31B-00DSE	Outlet ASTM A105 Class 3000 MSS SP-97 NPT Galvanized	
1	4	1.5			P31B-005U5	Outlet ASTM A105 Class 3000 MSS SP-97 NPT Galvanized	
1	5 - 6	1.5			P31B-01384	Outlet ASTM A105 Class 3000 MSS SP-97 NPT Galvanized	
1	8 - 12	1.5			P31B-00E32	Outlet ASTM A105 Class 3000 MSS SP-97 NPT Galvanized	
1	6	2	STD	XS	P31B-0118L	Outlet ASTM A105 MSS SP-97 BW Galvanized Fluid-3	
1	8	2	SCH20	XS	P31B-011B3	Outlet ASTM A105 MSS SP-97 BW Galvanized Fluid-3	
1	10	2	SCH20	XS	P31B-0118M	Outlet ASTM A105 MSS SP-97 BW Galvanized Fluid-3	

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OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	8	3	SCH20	STD	P31B-011B4	Outlet ASTM A105 MSS SP-97 BW Galvanized Fluid-3	
1	10	3	SCH20	STD	P31B-0118N	Outlet ASTM A105 MSS SP-97 BW Galvanized Fluid-3	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30B-0002H	Plug ASTM A105 ASME B16.11 NPT Galvanized Round head	
1	0.75				P30B-0002J	Plug ASTM A105 ASME B16.11 NPT Galvanized Round head	
1	1				P30B-0002K	Plug ASTM A105 ASME B16.11 NPT Galvanized Round head	
1	1.5				P30B-0002L	Plug ASTM A105 ASME B16.11 NPT Galvanized Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P61B-001J1	Flange NPT ASTM A105 Class 150 ASME B16.5 RF Galvanized	
1	0.75				P61B-001J2	Flange NPT ASTM A105 Class 150 ASME B16.5 RF Galvanized	
1	1				P61B-001J3	Flange NPT ASTM A105 Class 150 ASME B16.5 RF Galvanized	
1	1.5				P61B-001J4	Flange NPT ASTM A105 Class 150 ASME B16.5 RF Galvanized	
1	2		XS		P61B-00CWH	Flange WN ASTM A105 Class 150 ASME B16.5 RF Galvanized Fluid-3	
1	3		STD		P61B-00CWJ	Flange WN ASTM A105 Class 150 ASME B16.5 RF Galvanized Fluid-3	
1	4		STD		P61B-00CWK	Flange WN ASTM A105 Class 150 ASME B16.5 RF Galvanized Fluid-3	
1	6		STD		P61B-00CWL	Flange WN ASTM A105 Class 150 ASME B16.5 RF Galvanized Fluid-3	
1	8		SCH20		P61B-00CWM	Flange WN ASTM A105 Class 150 ASME B16.5 RF Galvanized Fluid-3	
1	10		SCH20		P61B-00CWG	Flange WN ASTM A105 Class 150 ASME B16.5 RF Galvanized Fluid-3	
211	2		XS		P61B-00CWP	Flange WN ASTM A105 Class 150 ASME B16.5 FF Galvanized Fluid-3	
211	3		STD		P61B-00CWR	Flange WN ASTM A105 Class 150 ASME B16.5 FF Galvanized Fluid-3	
211	4		STD		P61B-00CWS	Flange WN ASTM A105 Class 150 ASME B16.5 FF Galvanized Fluid-3	
211	6		STD		P61B-00CWT	Flange WN ASTM A105 Class 150 ASME B16.5 FF Galvanized Fluid-3	
211	8		SCH20		P61B-00CWU	Flange WN ASTM A105 Class 150 ASME B16.5 FF Galvanized Fluid-3	
211	10		SCH20		P61B-00CWN	Flange WN ASTM A105 Class 150 ASME B16.5 FF Galvanized Fluid-3	
773	0.5				P61B-001VR	Flange NPT ASTM A105 Class 300 ASME B16.5 RF Galvanized	
773	0.75				P61B-001VC	Flange NPT ASTM A105 Class 300 ASME B16.5 RF Galvanized	
773	1				P61B-001VD	Flange NPT ASTM A105 Class 300 ASME B16.5 RF Galvanized	
773	1.5				P61B-001VE	Flange NPT ASTM A105 Class 300 ASME B16.5 RF Galvanized	
773	2		XS		P61B-00CWW	Flange WN ASTM A105 Class 300 ASME B16.5 RF Galvanized Fluid-3	
773	3		STD		P61B-00CWX	Flange WN ASTM A105 Class 300 ASME B16.5 RF Galvanized Fluid-3	
773	4		STD		P61B-00CWY	Flange WN ASTM A105 Class 300 ASME B16.5 RF Galvanized Fluid-3	
773	6		STD		P61B-00CWZ	Flange WN ASTM A105 Class 300 ASME B16.5 RF Galvanized Fluid-3	
773	8		SCH20		P61B-00CX0	Flange WN ASTM A105 Class 300 ASME B16.5 RF Galvanized Fluid-3	
773	10		SCH20		P61B-00CWV	Flange WN ASTM A105 Class 300 ASME B16.5 RF Galvanized Fluid-3	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67B-000G6	Blind flange ASTM A105 Class 150 ASME B16.5 RF Galvanized	
1	0.75				P67B-000G7	Blind flange ASTM A105 Class 150 ASME B16.5 RF Galvanized	
1	1				P67B-000G8	Blind flange ASTM A105 Class 150 ASME B16.5 RF Galvanized	
1	1.5				P67B-000G9	Blind flange ASTM A105 Class 150 ASME B16.5 RF Galvanized	
1	2				P67B-000GC	Blind flange ASTM A105 Class 150 ASME B16.5 RF Galvanized	
1	3				P67B-000GD	Blind flange ASTM A105 Class 150 ASME B16.5 RF Galvanized	
1	4				P67B-000GE	Blind flange ASTM A105 Class 150 ASME B16.5 RF Galvanized	
1	6				P67B-000GF	Blind flange ASTM A105 Class 150 ASME B16.5 RF Galvanized	
1	8				P67B-000GG	Blind flange ASTM A105 Class 150 ASME B16.5 RF Galvanized	
1	10				P67B-000GA	Blind flange ASTM A105 Class 150 ASME B16.5 RF Galvanized	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P74U-001FZ	Sheet gasket Non-asbestos Class 150 ASME B16.21 Flange ASME B16.5 RF 1.5mm-T Licensor-5 Type-1	
1	0.75				P74U-001G0	Sheet gasket Non-asbestos Class 150 ASME B16.21 Flange ASME B16.5 RF 1.5mm-T Licensor-5 Type-1	
1	1				P74U-001G1	Sheet gasket Non-asbestos Class 150 ASME B16.21 Flange ASME B16.5 RF 1.5mm-T Licensor-5 Type-1	
1	1.5				P74U-001G2	Sheet gasket Non-asbestos Class 150 ASME B16.21 Flange ASME B16.5 RF 1.5mm-T Licensor-5 Type-1	

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GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2				P74U-001G8	Sheet gasket Non-asbestos Class 150 ASME B16.21 Flange ASME B16.5 RF 1.5mm-T Licensor-5 Type-1	
1	3				P74U-001GB	Sheet gasket Non-asbestos Class 150 ASME B16.21 Flange ASME B16.5 RF 1.5mm-T Licensor-5 Type-1	
1	4				P74U-001GC	Sheet gasket Non-asbestos Class 150 ASME B16.21 Flange ASME B16.5 RF 1.5mm-T Licensor-5 Type-1	
1	6				P74U-001GD	Sheet gasket Non-asbestos Class 150 ASME B16.21 Flange ASME B16.5 RF 1.5mm-T Licensor-5 Type-1	
1	8				P74U-001GE	Sheet gasket Non-asbestos Class 150 ASME B16.21 Flange ASME B16.5 RF 1.5mm-T Licensor-5 Type-1	
1	10				P74U-001G3	Sheet gasket Non-asbestos Class 150 ASME B16.21 Flange ASME B16.5 RF 1.5mm-T Licensor-5 Type-1	
211	2				P74U-001HY	Sheet gasket Non-asbestos Class 150 ASME B16.21 Flange ASME B16.5 FF 1.5mm-T Licensor-5 Type-1	
211	3				P74U-001HZ	Sheet gasket Non-asbestos Class 150 ASME B16.21 Flange ASME B16.5 FF 1.5mm-T Licensor-5 Type-1	
211	4				P74U-001J0	Sheet gasket Non-asbestos Class 150 ASME B16.21 Flange ASME B16.5 FF 1.5mm-T Licensor-5 Type-1	
211	6				P74U-001J1	Sheet gasket Non-asbestos Class 150 ASME B16.21 Flange ASME B16.5 FF 1.5mm-T Licensor-5 Type-1	
211	8				P74U-001J2	Sheet gasket Non-asbestos Class 150 ASME B16.21 Flange ASME B16.5 FF 1.5mm-T Licensor-5 Type-1	
211	10				P74U-001HX	Sheet gasket Non-asbestos Class 150 ASME B16.21 Flange ASME B16.5 FF 1.5mm-T Licensor-5 Type-1	
773	0.5				P74U-001GK	Sheet gasket Non-asbestos Class 300 ASME B16.21 Flange ASME B16.5 RF 1.5mm-T Licensor-5 Type-1	
773	0.75				P74U-001GL	Sheet gasket Non-asbestos Class 300 ASME B16.21 Flange ASME B16.5 RF 1.5mm-T Licensor-5 Type-1	
773	1				P74U-001GM	Sheet gasket Non-asbestos Class 300 ASME B16.21 Flange ASME B16.5 RF 1.5mm-T Licensor-5 Type-1	
773	1.5				P74U-001GN	Sheet gasket Non-asbestos Class 300 ASME B16.21 Flange ASME B16.5 RF 1.5mm-T Licensor-5 Type-1	
773	2				P74U-001GV	Sheet gasket Non-asbestos Class 300 ASME B16.21 Flange ASME B16.5 RF 1.5mm-T Licensor-5 Type-1	
773	3				P74U-001GY	Sheet gasket Non-asbestos Class 300 ASME B16.21 Flange ASME B16.5 RF 1.5mm-T Licensor-5 Type-1	
773	4				P74U-001GZ	Sheet gasket Non-asbestos Class 300 ASME B16.21 Flange ASME B16.5 RF 1.5mm-T Licensor-5 Type-1	
773	6				P74U-001H0	Sheet gasket Non-asbestos Class 300 ASME B16.21 Flange ASME B16.5 RF 1.5mm-T Licensor-5 Type-1	
773	8				P74U-001H1	Sheet gasket Non-asbestos Class 300 ASME B16.21 Flange ASME B16.5 RF 1.5mm-T Licensor-5 Type-1	
773	10				P74U-001GP	Sheet gasket Non-asbestos Class 300 ASME B16.21 Flange ASME B16.5 RF 1.5mm-T Licensor-5 Type-1	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-10				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
211	0.5-10				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
773	0.5-10				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81B-000W9	Gate valve ASTM A105 Class 800 API 602 NPT Trim number 8 BB-BG-OS&Y Handwheel operated	
1	0.75				P81B-000WA	Gate valve ASTM A105 Class 800 API 602 NPT Trim number 8 BB-BG-OS&Y Handwheel operated	
1	1				P81B-000WB	Gate valve ASTM A105 Class 800 API 602 NPT Trim number 8 BB-BG-OS&Y Handwheel operated	
1	1.5				P81B-000WC	Gate valve ASTM A105 Class 800 API 602 NPT Trim number 8 BB-BG-OS&Y Handwheel operated	
1	2				P81C-002DV	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	3				P81C-002DW	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	4				P81C-002DX	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	6				P81C-002DY	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	8				P81C-002DZ	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	10				P81C-002DT	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82B-000NK	Globe valve ASTM A105 Class 800 API 602 NPT Trim number 8 BB-BG-OS&Y Handwheel operated	
1	0.75				P82B-000NL	Globe valve ASTM A105 Class 800 API 602 NPT Trim number 8 BB-BG-OS&Y Handwheel operated	
1	1				P82B-000NM	Globe valve ASTM A105 Class 800 API 602 NPT Trim number 8 BB-BG-OS&Y Handwheel operated	
1	1.5				P82B-000NN	Globe valve ASTM A105 Class 800 API 602 NPT Trim number 8 BB-BG-OS&Y Handwheel operated	
1	2				P82C-000N5	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	3				P82C-000N6	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	4				P82C-000N7	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	6				P82C-000N8	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	8				P82C-0026L	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	

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CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83B-0013G	Check valve ASTM A105 Class 800 API 602 NPT Trim number 8 Lift-type Bolted cover	
1	0.75				P83B-0013H	Check valve ASTM A105 Class 800 API 602 NPT Trim number 8 Lift-type Bolted cover	
1	1				P83B-0013J	Check valve ASTM A105 Class 800 API 602 NPT Trim number 8 Lift-type Bolted cover	
1	1.5				P83B-0013K	Check valve ASTM A105 Class 800 API 602 NPT Trim number 8 Lift-type Bolted cover	
1	2				P83C-00144	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	3				P83C-00147	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	4				P83C-00148	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	6				P83C-00149	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	8				P83C-0014A	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	10				P83C-00140	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	

BUTTERFLY VALVE (H)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	6				P86C-0022P	Concentric butterfly valve ASTM A216 Grade WCB Class 150 API 609 Category A Lug-type ASME B16.5 RF FKM lined Disc 13Cr Trim 13Cr Gear operated	
1	8				P86C-0022R	Concentric butterfly valve ASTM A216 Grade WCB Class 150 API 609 Category A Lug-type ASME B16.5 RF FKM lined Disc 13Cr Trim 13Cr Gear operated	
1	10				P86C-0022J	Concentric butterfly valve ASTM A216 Grade WCB Class 150 API 609 Category A Lug-type ASME B16.5 RF FKM lined Disc 13Cr Trim 13Cr Gear operated	

NEEDLE VALVE (NV)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82B-00205	Needle valve ASTM A105 Class 800 API 602 NPT Trim number 8 BB-BG-OS&Y Handwheel operated	
1	0.75				P82B-00206	Needle valve ASTM A105 Class 800 API 602 NPT Trim number 8 BB-BG-OS&Y Handwheel operated	
1	1				P82B-00207	Needle valve ASTM A105 Class 800 API 602 NPT Trim number 8 BB-BG-OS&Y Handwheel operated	
1	1.5				P82B-00208	Needle valve ASTM A105 Class 800 API 602 NPT Trim number 8 BB-BG-OS&Y Handwheel operated	

ORIFICE FLANGE (FO)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3		STD		P66B-008PX	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF Galvanized NPS1/2 NPT tap x 1 Fluid-3	
200	3		STD		P66B-008PY	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF Galvanized NPS1/2 NPT tap x 1 Fluid-3 with Jack screw	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71B-000FU	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Galvanized	
1	0.75				P71B-000FV	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Galvanized	
1	1				P71B-000FW	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Galvanized	
1	1.5				P71B-000FX	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Galvanized	
1	2				P71B-000FN	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Galvanized	
1	3				P71B-000FP	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Galvanized	
1	4				P71B-000FR	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Galvanized	
1	6				P71B-000FS	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Galvanized	
1	8				P71B-000FT	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Galvanized	
1	10				P71B-000FL	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Galvanized	

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BOLT TABLE (B_A11X05 , MACHINE ASME FF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	60	P80S-003V2		
0.75	4	0.500	65	P80S-003V3		
1	4	0.500	70	P80S-003V4		
1.5	4	0.500	75	P80S-003V5		
2	4	0.625	85	P80S-003XE		
3	4	0.625	95	P80S-003XG		
4	8	0.625	95	P80S-003XG		
6	8	0.750	105	P80S-003XJ		
8	8	0.750	110	P80S-003XK		
10	12	0.875	120	P80S-00419		

BOLT TABLE (B_A11X05_211 , MACHINE ASME FF, OPTION CODE 211)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	60	P80S-003V2		
0.75	4	0.500	60	P80S-003V2		
1	4	0.500	65	P80S-003V3		
1.5	4	0.500	70	P80S-003V4		
2	4	0.625	80	P80S-003XD		
3	4	0.625	90	P80S-003XF		
4	8	0.625	90	P80S-003XF		
6	8	0.750	100	P80S-003XH		
8	8	0.750	105	P80S-003XJ		
10	12	0.875	115	P80S-00418		

BOLT TABLE (B_A11X05_773 , MACHINE ASME FF, OPTION CODE 773)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-003V4		
0.75	4	0.625	75	P80S-003XC		
1	4	0.625	80	P80S-003XD		
1.5	4	0.750	95	P80S-00414		
2	8	0.625	90	P80S-003XF		
3	8	0.750	110	P80S-003XK		
4	8	0.750	115	P80S-003XL		
6	12	0.750	125	P80S-003XN		
8	12	0.875	140	P80S-0041D		
10	16	1.000	160	P80S-0043K		

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BRANCH TABLE (T_A11X05)

RUN PIPE SIZE (in) \ BRANCH SIZE (in)	0.5	0.75	1	1.5	2	3	4	6	8	10
0.5	TS									
0.75	TR	TS								
1	TR	TR	TS							
1.5	TR	TR	TR	TS						
2		L	L	L	TS					
3		L	L	L	TR	TS				
4		L	L	L	TR	TR	TS			
6		L	L	L	L	TR	TR	TS		
8		L	L	L	L	L	TR	TR	TS	
10		L	L	L	L	L	TR	TR	TR	TS

L : OUTLET
TR : REDUCING TEE
TS : STRAIGHT TEE

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Material : Duplex SS
Rating : ASME CLASS 150
Flange Face : RF
C.A.(mm) : 1.00
Gasket : Spiral Wound
Service : POWDER
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
541	NPT(F) (CA,L)
714	SW - NPT(F) (V)
773	CLASS 300 (B,F,G)

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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75		SCH80S		P01J-000LS	Pipe ASTM A790 UNS S31803 Seamless ASME B36.10M/B36.19M PE	
1	1		SCH80S		P01J-000LR	Pipe ASTM A790 UNS S31803 Seamless ASME B36.10M/B36.19M PE	
1	1.5		SCH80S		P01J-000LP	Pipe ASTM A790 UNS S31803 Seamless ASME B36.10M/B36.19M PE	
1	2		SCH40S		P01J-000LZ	Pipe ASTM A790 UNS S31803 Seamless ASME B36.10M/B36.19M BE	
1	3		SCH10S		P01J-000LY	Pipe ASTM A790 UNS S31803 Seamless ASME B36.10M/B36.19M BE	
1	4		SCH10S		P01J-000LX	Pipe ASTM A790 UNS S31803 Seamless ASME B36.10M/B36.19M BE	
1	6		SCH10S		P01J-000LW	Pipe ASTM A790 UNS S31803 Seamless ASME B36.10M/B36.19M BE	
1	8		SCH10S		P01J-000Z8	Pipe ASTM A790 UNS S31803 EFW ASME B36.10M/B36.19M BE	
1	10		SCH10S		P01J-000Z3	Pipe ASTM A790 UNS S31803 EFW ASME B36.10M/B36.19M BE	
1	12		SCH40S		P01J-000ZC	Pipe ASTM A790 UNS S31803 EFW ASME B36.10M/B36.19M BE	
1	14		SCH10S		P01J-000Z5	Pipe ASTM A790 UNS S31803 EFW ASME B36.10M/B36.19M BE	
1	16		SCH10S		P01J-000Z6	Pipe ASTM A790 UNS S31803 EFW ASME B36.10M/B36.19M BE	
1	18		SCH10S		P01J-000Z7	Pipe ASTM A790 UNS S31803 EFW ASME B36.10M/B36.19M BE	
1	20		SCH10S		P01J-002GF	Pipe ASTM A790 UNS S31803 EFW ASME B36.10M/B36.19M BE	
1	24		SCH10S		P01J-002GG	Pipe ASTM A790 UNS S31803 EFW ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75				P02K-00015	90 degree elbow ASTM A182 Grade F51 Class 3000 ASME B16.11 SW	
1	1				P02K-00014	90 degree elbow ASTM A182 Grade F51 Class 3000 ASME B16.11 SW	
1	1.5				P02K-00013	90 degree elbow ASTM A182 Grade F51 Class 3000 ASME B16.11 SW	
1	2		SCH40S		P02J-000ED	90 degree elbow ASTM A815 UNS S31803 Class WP-S Seamless ASME B16.9 BW Long radius	
1	3		SCH10S		P02J-000EC	90 degree elbow ASTM A815 UNS S31803 Class WP-S Seamless ASME B16.9 BW Long radius	
1	4		SCH10S		P02J-000EM	90 degree elbow ASTM A815 UNS S31803 Class WP-S Seamless ASME B16.9 BW Long radius	
1	6		SCH10S		P02J-000EL	90 degree elbow ASTM A815 UNS S31803 Class WP-S Seamless ASME B16.9 BW Long radius	
1	8		SCH10S		P02J-0016D	90 degree elbow ASTM A815 UNS S31803 Class WP-WX Weld ASME B16.9 BW Long radius	
1	10		SCH10S		P02J-000V9	90 degree elbow ASTM A815 UNS S31803 Class WP-WX Weld ASME B16.9 BW Long radius	
1	12		SCH40S		P02J-00167	90 degree elbow ASTM A815 UNS S31803 Class WP-WX Weld ASME B16.9 BW Long radius	
1	14		SCH10S		P02J-000KA	90 degree elbow ASTM A815 UNS S31803 Class WP-WX Weld ASME B16.9 BW Long radius	
1	16		SCH10S		P02J-000KB	90 degree elbow ASTM A815 UNS S31803 Class WP-WX Weld ASME B16.9 BW Long radius	
1	18		SCH10S		P02J-000KC	90 degree elbow ASTM A815 UNS S31803 Class WP-WX Weld ASME B16.9 BW Long radius	
1	20		SCH10S		P02J-000KD	90 degree elbow ASTM A815 UNS S31803 Class WP-WX Weld ASME B16.9 BW Long radius	
1	24		SCH10S		P02J-000KE	90 degree elbow ASTM A815 UNS S31803 Class WP-WX Weld ASME B16.9 BW Long radius	

90FACTORY-MADE BEND (9FM)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75		SCH80S		P08J-0006F	90 degree factory-made bend ASTM A815 UNS S31803 Class WP-S Seamless Standard-drawing BW 5DR Licensor-5	
1	1		SCH80S		P08J-0006G	90 degree factory-made bend ASTM A815 UNS S31803 Class WP-S Seamless Standard-drawing BW 5DR Licensor-5	
1	1.5		SCH80S		P08J-0006H	90 degree factory-made bend ASTM A815 UNS S31803 Class WP-S Seamless Standard-drawing BW 5DR Licensor-5	
1	2		SCH40S		P08J-0006J	90 degree factory-made bend ASTM A815 UNS S31803 Class WP-S Seamless Standard-drawing BW 5DR Licensor-5	
1	3		SCH10S		P08J-0006K	90 degree factory-made bend ASTM A815 UNS S31803 Class WP-S Seamless Standard-drawing BW 5DR Licensor-5	
1	4		SCH10S		P08J-0006L	90 degree factory-made bend ASTM A815 UNS S31803 Class WP-S Seamless Standard-drawing BW 5DR Licensor-5	
1	6		SCH10S		P08J-0006M	90 degree factory-made bend ASTM A815 UNS S31803 Class WP-S Seamless Standard-drawing BW 5DR Licensor-5	
1	8		SCH10S		P08J-0006T	90 degree factory-made bend ASTM A815 UNS S31803 Class WP-WX Weld Standard-drawing BW 5DR Licensor-5	
1	10		SCH10S		P08J-0006N	90 degree factory-made bend ASTM A815 UNS S31803 Class WP-WX Weld Standard-drawing BW 5DR Licensor-5	
1	12		SCH40S		P08J-00072	90 degree factory-made bend ASTM A815 UNS S31803 Class WP-WX Weld Standard-drawing BW 5DR Licensor-5	
1	14		SCH10S		P08J-0006R	90 degree factory-made bend ASTM A815 UNS S31803 Class WP-WX Weld Standard-drawing BW 5DR Licensor-5	
1	16		SCH10S		P08J-0006S	90 degree factory-made bend ASTM A815 UNS S31803 Class WP-WX Weld Standard-drawing BW 5DR Licensor-5	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75				P03K-00012	45 degree elbow ASTM A182 Grade F51 Class 3000 ASME B16.11 SW	
1	1				P03K-00011	45 degree elbow ASTM A182 Grade F51 Class 3000 ASME B16.11 SW	
1	1.5				P03K-00010	45 degree elbow ASTM A182 Grade F51 Class 3000 ASME B16.11 SW	

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45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2		SCH40S		P03J-000E5	45 degree elbow ASTM A815 UNS S31803 Class WP-S Seamless ASME B16.9 BW Long radius	
1	3		SCH10S		P03J-000E4	45 degree elbow ASTM A815 UNS S31803 Class WP-S Seamless ASME B16.9 BW Long radius	
1	4		SCH10S		P03J-000E3	45 degree elbow ASTM A815 UNS S31803 Class WP-S Seamless ASME B16.9 BW Long radius	
1	6		SCH10S		P03J-000EC	45 degree elbow ASTM A815 UNS S31803 Class WP-S Seamless ASME B16.9 BW Long radius	
1	8		SCH10S		P03J-00159	45 degree elbow ASTM A815 UNS S31803 Class WP-WX Weld ASME B16.9 BW Long radius	
1	10		SCH10S		P03J-000US	45 degree elbow ASTM A815 UNS S31803 Class WP-WX Weld ASME B16.9 BW Long radius	
1	12		SCH40S		P03J-00153	45 degree elbow ASTM A815 UNS S31803 Class WP-WX Weld ASME B16.9 BW Long radius	
1	14		SCH10S		P03J-000JZ	45 degree elbow ASTM A815 UNS S31803 Class WP-WX Weld ASME B16.9 BW Long radius	
1	16		SCH10S		P03J-000K0	45 degree elbow ASTM A815 UNS S31803 Class WP-WX Weld ASME B16.9 BW Long radius	
1	18		SCH10S		P03J-000K1	45 degree elbow ASTM A815 UNS S31803 Class WP-WX Weld ASME B16.9 BW Long radius	
1	20		SCH10S		P03J-000K2	45 degree elbow ASTM A815 UNS S31803 Class WP-WX Weld ASME B16.9 BW Long radius	
1	24		SCH10S		P03J-000K3	45 degree elbow ASTM A815 UNS S31803 Class WP-WX Weld ASME B16.9 BW Long radius	

45FACTORY-MADE BEND (4FM)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75		SCH80S		P09J-0006D	45 degree factory-made bend ASTM A815 UNS S31803 Class WP-S Seamless Standard-drawing BW 5DR Licensor-5	
1	1		SCH80S		P09J-0006E	45 degree factory-made bend ASTM A815 UNS S31803 Class WP-S Seamless Standard-drawing BW 5DR Licensor-5	
1	1.5		SCH80S		P09J-0006F	45 degree factory-made bend ASTM A815 UNS S31803 Class WP-S Seamless Standard-drawing BW 5DR Licensor-5	
1	2		SCH40S		P09J-0006G	45 degree factory-made bend ASTM A815 UNS S31803 Class WP-S Seamless Standard-drawing BW 5DR Licensor-5	
1	3		SCH10S		P09J-0006H	45 degree factory-made bend ASTM A815 UNS S31803 Class WP-S Seamless Standard-drawing BW 5DR Licensor-5	
1	4		SCH10S		P09J-0006J	45 degree factory-made bend ASTM A815 UNS S31803 Class WP-S Seamless Standard-drawing BW 5DR Licensor-5	
1	6		SCH10S		P09J-0006K	45 degree factory-made bend ASTM A815 UNS S31803 Class WP-S Seamless Standard-drawing BW 5DR Licensor-5	
1	8		SCH10S		P09J-0006R	45 degree factory-made bend ASTM A815 UNS S31803 Class WP-WX Weld Standard-drawing BW 5DR Licensor-5	
1	10		SCH10S		P09J-0006L	45 degree factory-made bend ASTM A815 UNS S31803 Class WP-WX Weld Standard-drawing BW 5DR Licensor-5	
1	12		SCH40S		P09J-0006Z	45 degree factory-made bend ASTM A815 UNS S31803 Class WP-WX Weld Standard-drawing BW 5DR Licensor-5	
1	14		SCH10S		P09J-0006N	45 degree factory-made bend ASTM A815 UNS S31803 Class WP-WX Weld Standard-drawing BW 5DR Licensor-5	
1	16		SCH10S		P09J-0006P	45 degree factory-made bend ASTM A815 UNS S31803 Class WP-WX Weld Standard-drawing BW 5DR Licensor-5	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75				P21K-00016	Straight tee ASTM A182 Grade F51 Class 3000 ASME B16.11 SW	
1	1				P21K-00015	Straight tee ASTM A182 Grade F51 Class 3000 ASME B16.11 SW	
1	1.5				P21K-00014	Straight tee ASTM A182 Grade F51 Class 3000 ASME B16.11 SW	
1	2		SCH40S		P21J-000E3	Straight tee ASTM A815 UNS S31803 Class WP-S Seamless ASME B16.9 BW	
1	3		SCH10S		P21J-000E2	Straight tee ASTM A815 UNS S31803 Class WP-S Seamless ASME B16.9 BW	
1	4		SCH10S		P21J-000E1	Straight tee ASTM A815 UNS S31803 Class WP-S Seamless ASME B16.9 BW	
1	6		SCH10S		P21J-000EA	Straight tee ASTM A815 UNS S31803 Class WP-S Seamless ASME B16.9 BW	
1	8		SCH10S		P21J-000YS	Straight tee ASTM A815 UNS S31803 Class WP-WX Weld ASME B16.9 BW	
1	10		SCH10S		P21J-000UX	Straight tee ASTM A815 UNS S31803 Class WP-WX Weld ASME B16.9 BW	
1	12		SCH40S		P21J-000YK	Straight tee ASTM A815 UNS S31803 Class WP-WX Weld ASME B16.9 BW	
1	14		SCH10S		P21J-000JY	Straight tee ASTM A815 UNS S31803 Class WP-WX Weld ASME B16.9 BW	
1	16		SCH10S		P21J-000JZ	Straight tee ASTM A815 UNS S31803 Class WP-WX Weld ASME B16.9 BW	
1	18		SCH10S		P21J-000K0	Straight tee ASTM A815 UNS S31803 Class WP-WX Weld ASME B16.9 BW	
1	20		SCH10S		P21J-000K1	Straight tee ASTM A815 UNS S31803 Class WP-WX Weld ASME B16.9 BW	
1	24		SCH10S		P21J-000K2	Straight tee ASTM A815 UNS S31803 Class WP-WX Weld ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75			P24K-0001F	Reducing tee ASTM A182 Grade F51 Class 3000 ASME B16.11 SW	
1	1.5	0.75			P24K-0001D	Reducing tee ASTM A182 Grade F51 Class 3000 ASME B16.11 SW	
1	1.5	1			P24K-0001C	Reducing tee ASTM A182 Grade F51 Class 3000 ASME B16.11 SW	
1	2	1	SCH40S	SCH80S	P24J-003N2	Reducing tee ASTM A815 UNS S31803 Class WP-S Seamless ASME B16.9 BW	
1	2	1.5	SCH40S	SCH80S	P24J-003N3	Reducing tee ASTM A815 UNS S31803 Class WP-S Seamless ASME B16.9 BW	
1	3	1.5	SCH10S	SCH80S	P24J-00757	Reducing tee ASTM A815 UNS S31803 Class WP-S Seamless ASME B16.9 BW	

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REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	SCH10S	SCH40S	P24J-00286	Reducing tee ASTM A815 UNS S31803 Class WP-S Seamless ASME B16.9 BW	
1	4	2	SCH10S	SCH40S	P24J-0028B	Reducing tee ASTM A815 UNS S31803 Class WP-S Seamless ASME B16.9 BW	
1	4	3	SCH10S	SCH10S	P24J-00288	Reducing tee ASTM A815 UNS S31803 Class WP-S Seamless ASME B16.9 BW	
1	6	3	SCH10S	SCH10S	P24J-0028C	Reducing tee ASTM A815 UNS S31803 Class WP-S Seamless ASME B16.9 BW	
1	6	4	SCH10S	SCH10S	P24J-00287	Reducing tee ASTM A815 UNS S31803 Class WP-S Seamless ASME B16.9 BW	
1	8	4	SCH10S	SCH10S	P24J-004LM	Reducing tee ASTM A815 UNS S31803 Class WP-WX Weld ASME B16.9 BW	
1	8	6	SCH10S	SCH10S	P24J-004LN	Reducing tee ASTM A815 UNS S31803 Class WP-WX Weld ASME B16.9 BW	
1	10	4	SCH10S	SCH10S	P24J-00758	Reducing tee ASTM A815 UNS S31803 Class WP-WX Weld ASME B16.9 BW	
1	10	6	SCH10S	SCH10S	P24J-004LP	Reducing tee ASTM A815 UNS S31803 Class WP-WX Weld ASME B16.9 BW	
1	10	8	SCH10S	SCH10S	P24J-004LR	Reducing tee ASTM A815 UNS S31803 Class WP-WX Weld ASME B16.9 BW	
1	12	6	SCH40S	SCH10S	P24J-008P4	Reducing tee ASTM A815 UNS S31803 Class WP-WX Weld ASME B16.9 BW	
1	12	8	SCH40S	SCH10S	P24J-008P3	Reducing tee ASTM A815 UNS S31803 Class WP-WX Weld ASME B16.9 BW	
1	12	10	SCH40S	SCH10S	P24J-008P2	Reducing tee ASTM A815 UNS S31803 Class WP-WX Weld ASME B16.9 BW	
1	14	6	SCH10S	SCH10S	P24J-004LU	Reducing tee ASTM A815 UNS S31803 Class WP-WX Weld ASME B16.9 BW	
1	14	8	SCH10S	SCH10S	P24J-004LV	Reducing tee ASTM A815 UNS S31803 Class WP-WX Weld ASME B16.9 BW	
1	14	10	SCH10S	SCH10S	P24J-003N9	Reducing tee ASTM A815 UNS S31803 Class WP-WX Weld ASME B16.9 BW	
1	14	12	SCH10S	SCH40S	P24J-008P5	Reducing tee ASTM A815 UNS S31803 Class WP-WX Weld ASME B16.9 BW	
1	16	6	SCH10S	SCH10S	P24J-004LW	Reducing tee ASTM A815 UNS S31803 Class WP-WX Weld ASME B16.9 BW	
1	16	8	SCH10S	SCH10S	P24J-004LX	Reducing tee ASTM A815 UNS S31803 Class WP-WX Weld ASME B16.9 BW	
1	16	10	SCH10S	SCH10S	P24J-003NA	Reducing tee ASTM A815 UNS S31803 Class WP-WX Weld ASME B16.9 BW	
1	16	12	SCH10S	SCH40S	P24J-008P6	Reducing tee ASTM A815 UNS S31803 Class WP-WX Weld ASME B16.9 BW	
1	16	14	SCH10S	SCH10S	P24J-002N9	Reducing tee ASTM A815 UNS S31803 Class WP-WX Weld ASME B16.9 BW	
1	18	8	SCH10S	SCH10S	P24J-004LY	Reducing tee ASTM A815 UNS S31803 Class WP-WX Weld ASME B16.9 BW	
1	18	10	SCH10S	SCH10S	P24J-003NB	Reducing tee ASTM A815 UNS S31803 Class WP-WX Weld ASME B16.9 BW	
1	18	12	SCH10S	SCH40S	P24J-008P7	Reducing tee ASTM A815 UNS S31803 Class WP-WX Weld ASME B16.9 BW	
1	18	14	SCH10S	SCH10S	P24J-002ND	Reducing tee ASTM A815 UNS S31803 Class WP-WX Weld ASME B16.9 BW	
1	18	16	SCH10S	SCH10S	P24J-002NE	Reducing tee ASTM A815 UNS S31803 Class WP-WX Weld ASME B16.9 BW	
1	20	8	SCH10S	SCH10S	P24J-00759	Reducing tee ASTM A815 UNS S31803 Class WP-WX Weld ASME B16.9 BW	
1	20	10	SCH10S	SCH10S	P24J-003NC	Reducing tee ASTM A815 UNS S31803 Class WP-WX Weld ASME B16.9 BW	
1	20	12	SCH10S	SCH40S	P24J-008P8	Reducing tee ASTM A815 UNS S31803 Class WP-WX Weld ASME B16.9 BW	
1	20	14	SCH10S	SCH10S	P24J-002NH	Reducing tee ASTM A815 UNS S31803 Class WP-WX Weld ASME B16.9 BW	
1	20	16	SCH10S	SCH10S	P24J-002NJ	Reducing tee ASTM A815 UNS S31803 Class WP-WX Weld ASME B16.9 BW	
1	20	18	SCH10S	SCH10S	P24J-002NK	Reducing tee ASTM A815 UNS S31803 Class WP-WX Weld ASME B16.9 BW	
1	24	10	SCH10S	SCH10S	P24J-003ND	Reducing tee ASTM A815 UNS S31803 Class WP-WX Weld ASME B16.9 BW	
1	24	12	SCH10S	SCH40S	P24J-008P9	Reducing tee ASTM A815 UNS S31803 Class WP-WX Weld ASME B16.9 BW	
1	24	14	SCH10S	SCH10S	P24J-002NN	Reducing tee ASTM A815 UNS S31803 Class WP-WX Weld ASME B16.9 BW	
1	24	16	SCH10S	SCH10S	P24J-002NP	Reducing tee ASTM A815 UNS S31803 Class WP-WX Weld ASME B16.9 BW	
1	24	18	SCH10S	SCH10S	P24J-002NR	Reducing tee ASTM A815 UNS S31803 Class WP-WX Weld ASME B16.9 BW	
1	24	20	SCH10S	SCH10S	P24J-002NS	Reducing tee ASTM A815 UNS S31803 Class WP-WX Weld ASME B16.9 BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	SCH10S	SCH40S	P27J-001FC	Concentric reducer ASTM A815 UNS S31803 Class WP-S Seamless ASME B16.9 BW	
1	4	2	SCH10S	SCH40S	P27J-001FH	Concentric reducer ASTM A815 UNS S31803 Class WP-S Seamless ASME B16.9 BW	
1	4	3	SCH10S	SCH10S	P27J-001FB	Concentric reducer ASTM A815 UNS S31803 Class WP-S Seamless ASME B16.9 BW	
1	6	3	SCH10S	SCH10S	P27J-001FK	Concentric reducer ASTM A815 UNS S31803 Class WP-S Seamless ASME B16.9 BW	
1	6	4	SCH10S	SCH10S	P27J-001FE	Concentric reducer ASTM A815 UNS S31803 Class WP-S Seamless ASME B16.9 BW	
1	8	4	SCH10S	SCH10S	P27J-003FT	Concentric reducer ASTM A815 UNS S31803 Class WP-WX Weld ASME B16.9 BW	
1	8	6	SCH10S	SCH10S	P27J-003FU	Concentric reducer ASTM A815 UNS S31803 Class WP-WX Weld ASME B16.9 BW	
1	10	4	SCH10S	SCH10S	P27J-003FV	Concentric reducer ASTM A815 UNS S31803 Class WP-WX Weld ASME B16.9 BW	
1	10	6	SCH10S	SCH10S	P27J-003FW	Concentric reducer ASTM A815 UNS S31803 Class WP-WX Weld ASME B16.9 BW	
1	10	8	SCH10S	SCH10S	P27J-003FX	Concentric reducer ASTM A815 UNS S31803 Class WP-WX Weld ASME B16.9 BW	
1	12	6	SCH40S	SCH10S	P27J-007A2	Concentric reducer ASTM A815 UNS S31803 Class WP-WX Weld ASME B16.9 BW	
1	12	8	SCH40S	SCH10S	P27J-007A1	Concentric reducer ASTM A815 UNS S31803 Class WP-WX Weld ASME B16.9 BW	
1	12	10	SCH40S	SCH10S	P27J-007A0	Concentric reducer ASTM A815 UNS S31803 Class WP-WX Weld ASME B16.9 BW	
1	14	6	SCH10S	SCH10S	P27J-003G0	Concentric reducer ASTM A815 UNS S31803 Class WP-WX Weld ASME B16.9 BW	
1	14	8	SCH10S	SCH10S	P27J-003G1	Concentric reducer ASTM A815 UNS S31803 Class WP-WX Weld ASME B16.9 BW	
1	14	10	SCH10S	SCH10S	P27J-002PK	Concentric reducer ASTM A815 UNS S31803 Class WP-WX Weld ASME B16.9 BW	
1	14	12	SCH10S	SCH40S	P27J-007A3	Concentric reducer ASTM A815 UNS S31803 Class WP-WX Weld ASME B16.9 BW	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	16	8	SCH10S	SCH10S	P27J-003G2	Concentric reducer ASTM A815 UNS S31803 Class WP-WX Weld ASME B16.9 BW	
1	16	10	SCH10S	SCH10S	P27J-002PL	Concentric reducer ASTM A815 UNS S31803 Class WP-WX Weld ASME B16.9 BW	
1	16	12	SCH10S	SCH40S	P27J-007A4	Concentric reducer ASTM A815 UNS S31803 Class WP-WX Weld ASME B16.9 BW	
1	16	14	SCH10S	SCH10S	P27J-001V3	Concentric reducer ASTM A815 UNS S31803 Class WP-WX Weld ASME B16.9 BW	
1	18	10	SCH10S	SCH10S	P27J-002PM	Concentric reducer ASTM A815 UNS S31803 Class WP-WX Weld ASME B16.9 BW	
1	18	12	SCH10S	SCH40S	P27J-007A5	Concentric reducer ASTM A815 UNS S31803 Class WP-WX Weld ASME B16.9 BW	
1	18	14	SCH10S	SCH10S	P27J-001V6	Concentric reducer ASTM A815 UNS S31803 Class WP-WX Weld ASME B16.9 BW	
1	18	16	SCH10S	SCH10S	P27J-001V7	Concentric reducer ASTM A815 UNS S31803 Class WP-WX Weld ASME B16.9 BW	
1	20	12	SCH10S	SCH40S	P27J-007A6	Concentric reducer ASTM A815 UNS S31803 Class WP-WX Weld ASME B16.9 BW	
1	20	14	SCH10S	SCH10S	P27J-001V9	Concentric reducer ASTM A815 UNS S31803 Class WP-WX Weld ASME B16.9 BW	
1	20	16	SCH10S	SCH10S	P27J-001VA	Concentric reducer ASTM A815 UNS S31803 Class WP-WX Weld ASME B16.9 BW	
1	20	18	SCH10S	SCH10S	P27J-001VB	Concentric reducer ASTM A815 UNS S31803 Class WP-WX Weld ASME B16.9 BW	
1	24	16	SCH10S	SCH10S	P27J-001VC	Concentric reducer ASTM A815 UNS S31803 Class WP-WX Weld ASME B16.9 BW	
1	24	18	SCH10S	SCH10S	P27J-001VD	Concentric reducer ASTM A815 UNS S31803 Class WP-WX Weld ASME B16.9 BW	
1	24	20	SCH10S	SCH10S	P27J-001VE	Concentric reducer ASTM A815 UNS S31803 Class WP-WX Weld ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	SCH10S	SCH40S	P28J-001EL	Eccentric reducer ASTM A815 UNS S31803 Class WP-S Seamless ASME B16.9 BW	
1	4	2	SCH10S	SCH40S	P28J-001ER	Eccentric reducer ASTM A815 UNS S31803 Class WP-S Seamless ASME B16.9 BW	
1	4	3	SCH10S	SCH10S	P28J-001EM	Eccentric reducer ASTM A815 UNS S31803 Class WP-S Seamless ASME B16.9 BW	
1	6	3	SCH10S	SCH10S	P28J-001F8	Eccentric reducer ASTM A815 UNS S31803 Class WP-S Seamless ASME B16.9 BW	
1	6	4	SCH10S	SCH10S	P28J-001F4	Eccentric reducer ASTM A815 UNS S31803 Class WP-S Seamless ASME B16.9 BW	
1	8	4	SCH10S	SCH10S	P28J-003FY	Eccentric reducer ASTM A815 UNS S31803 Class WP-WX Weld ASME B16.9 BW	
1	8	6	SCH10S	SCH10S	P28J-003FZ	Eccentric reducer ASTM A815 UNS S31803 Class WP-WX Weld ASME B16.9 BW	
1	10	4	SCH10S	SCH10S	P28J-003G0	Eccentric reducer ASTM A815 UNS S31803 Class WP-WX Weld ASME B16.9 BW	
1	10	6	SCH10S	SCH10S	P28J-003G1	Eccentric reducer ASTM A815 UNS S31803 Class WP-WX Weld ASME B16.9 BW	
1	10	8	SCH10S	SCH10S	P28J-003G2	Eccentric reducer ASTM A815 UNS S31803 Class WP-WX Weld ASME B16.9 BW	
1	12	6	SCH40S	SCH10S	P28J-007BH	Eccentric reducer ASTM A815 UNS S31803 Class WP-WX Weld ASME B16.9 BW	
1	12	8	SCH40S	SCH10S	P28J-007BJ	Eccentric reducer ASTM A815 UNS S31803 Class WP-WX Weld ASME B16.9 BW	
1	12	10	SCH40S	SCH10S	P28J-007BG	Eccentric reducer ASTM A815 UNS S31803 Class WP-WX Weld ASME B16.9 BW	
1	14	6	SCH10S	SCH10S	P28J-003G5	Eccentric reducer ASTM A815 UNS S31803 Class WP-WX Weld ASME B16.9 BW	
1	14	8	SCH10S	SCH10S	P28J-003G6	Eccentric reducer ASTM A815 UNS S31803 Class WP-WX Weld ASME B16.9 BW	
1	14	10	SCH10S	SCH10S	P28J-002N6	Eccentric reducer ASTM A815 UNS S31803 Class WP-WX Weld ASME B16.9 BW	
1	14	12	SCH10S	SCH40S	P28J-007BK	Eccentric reducer ASTM A815 UNS S31803 Class WP-WX Weld ASME B16.9 BW	
1	16	8	SCH10S	SCH10S	P28J-003G7	Eccentric reducer ASTM A815 UNS S31803 Class WP-WX Weld ASME B16.9 BW	
1	16	10	SCH10S	SCH10S	P28J-002N7	Eccentric reducer ASTM A815 UNS S31803 Class WP-WX Weld ASME B16.9 BW	
1	16	12	SCH10S	SCH40S	P28J-007BL	Eccentric reducer ASTM A815 UNS S31803 Class WP-WX Weld ASME B16.9 BW	
1	16	14	SCH10S	SCH10S	P28J-001UJ	Eccentric reducer ASTM A815 UNS S31803 Class WP-WX Weld ASME B16.9 BW	
1	18	10	SCH10S	SCH10S	P28J-002N8	Eccentric reducer ASTM A815 UNS S31803 Class WP-WX Weld ASME B16.9 BW	
1	18	12	SCH10S	SCH40S	P28J-007BM	Eccentric reducer ASTM A815 UNS S31803 Class WP-WX Weld ASME B16.9 BW	
1	18	14	SCH10S	SCH10S	P28J-001UM	Eccentric reducer ASTM A815 UNS S31803 Class WP-WX Weld ASME B16.9 BW	
1	18	16	SCH10S	SCH10S	P28J-001UN	Eccentric reducer ASTM A815 UNS S31803 Class WP-WX Weld ASME B16.9 BW	
1	20	12	SCH10S	SCH40S	P28J-007BN	Eccentric reducer ASTM A815 UNS S31803 Class WP-WX Weld ASME B16.9 BW	
1	20	14	SCH10S	SCH10S	P28J-001UR	Eccentric reducer ASTM A815 UNS S31803 Class WP-WX Weld ASME B16.9 BW	
1	20	16	SCH10S	SCH10S	P28J-001US	Eccentric reducer ASTM A815 UNS S31803 Class WP-WX Weld ASME B16.9 BW	
1	20	18	SCH10S	SCH10S	P28J-001UT	Eccentric reducer ASTM A815 UNS S31803 Class WP-WX Weld ASME B16.9 BW	
1	24	16	SCH10S	SCH10S	P28J-001UU	Eccentric reducer ASTM A815 UNS S31803 Class WP-WX Weld ASME B16.9 BW	
1	24	18	SCH10S	SCH10S	P28J-001UV	Eccentric reducer ASTM A815 UNS S31803 Class WP-WX Weld ASME B16.9 BW	
1	24	20	SCH10S	SCH10S	P28J-001UW	Eccentric reducer ASTM A815 UNS S31803 Class WP-WX Weld ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75				P29K-0001E	Cap ASTM A182 Grade F51 Class 3000 ASME B16.11 SW	
1	1				P29K-0001D	Cap ASTM A182 Grade F51 Class 3000 ASME B16.11 SW	
1	1.5				P29K-0001C	Cap ASTM A182 Grade F51 Class 3000 ASME B16.11 SW	
1	2		SCH40S		P29J-000D6	Cap ASTM A815 UNS S31803 Class WP-S Seamless ASME B16.9 BW	
1	3		SCH10S		P29J-000D5	Cap ASTM A815 UNS S31803 Class WP-S Seamless ASME B16.9 BW	
1	4		SCH10S		P29J-000D4	Cap ASTM A815 UNS S31803 Class WP-S Seamless ASME B16.9 BW	

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CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	6		SCH10S		P29J-000D3	Cap ASTM A815 UNS S31803 Class WP-S Seamless ASME B16.9 BW	
1	8		SCH10S		P29J-000D2	Cap ASTM A815 UNS S31803 Class WP-S Seamless ASME B16.9 BW	
1	10		SCH10S		P29J-000CX	Cap ASTM A815 UNS S31803 Class WP-S Seamless ASME B16.9 BW	
1	12		SCH40S		P29J-000DF	Cap ASTM A815 UNS S31803 Class WP-S Seamless ASME B16.9 BW	
1	14		SCH10S		P29J-000D0	Cap ASTM A815 UNS S31803 Class WP-S Seamless ASME B16.9 BW	
1	16		SCH10S		P29J-000CZ	Cap ASTM A815 UNS S31803 Class WP-S Seamless ASME B16.9 BW	
1	18		SCH10S		P29J-000CY	Cap ASTM A815 UNS S31803 Class WP-S Seamless ASME B16.9 BW	
1	20		SCH10S		P29J-000HA	Cap ASTM A815 UNS S31803 Class WP-S Seamless ASME B16.9 BW	
1	24		SCH10S		P29J-000HB	Cap ASTM A815 UNS S31803 Class WP-S Seamless ASME B16.9 BW	
541	0.75				P29K-00026	Cap ASTM A182 Grade F51 Class 3000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75		SCH160		P41J-001V5	Straight nipple ASTM A790 UNS S31803 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		SCH160		P41J-001V6	Straight nipple ASTM A790 UNS S31803 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		SCH80S		P41J-001E2	Straight nipple ASTM A790 UNS S31803 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

CON SWAGED NIPPLE (SNC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75	SCH80S	SCH80S	P42J-0003W	Concentric swaged nipple ASTM A815 UNS S31803 Class WP-S Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	SCH80S	SCH80S	P42J-0003Y	Concentric swaged nipple ASTM A815 UNS S31803 Class WP-S Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	SCH80S	SCH80S	P42J-0003Z	Concentric swaged nipple ASTM A815 UNS S31803 Class WP-S Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.75	SCH40S	SCH80S	P42J-000BP	Concentric swaged nipple ASTM A815 UNS S31803 Class WP-S Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	SCH40S	SCH80S	P42J-000J0	Concentric swaged nipple ASTM A815 UNS S31803 Class WP-S Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	SCH40S	SCH80S	P42J-000J1	Concentric swaged nipple ASTM A815 UNS S31803 Class WP-S Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	SCH10S	SCH80S	P42J-000J2	Concentric swaged nipple ASTM A815 UNS S31803 Class WP-S Seamless MSS SP-95 BE(L) - PE(S)	

ECC SWAGED NIPPLE (SNE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75	SCH80S	SCH80S	P43J-00037	Eccentric swaged nipple ASTM A815 UNS S31803 Class WP-S Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	SCH80S	SCH80S	P43J-00039	Eccentric swaged nipple ASTM A815 UNS S31803 Class WP-S Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	SCH80S	SCH80S	P43J-0003A	Eccentric swaged nipple ASTM A815 UNS S31803 Class WP-S Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.75	SCH40S	SCH80S	P43J-000DU	Eccentric swaged nipple ASTM A815 UNS S31803 Class WP-S Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	SCH40S	SCH80S	P43J-000DV	Eccentric swaged nipple ASTM A815 UNS S31803 Class WP-S Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	SCH40S	SCH80S	P43J-000DW	Eccentric swaged nipple ASTM A815 UNS S31803 Class WP-S Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	SCH10S	SCH80S	P43J-000DX	Eccentric swaged nipple ASTM A815 UNS S31803 Class WP-S Seamless MSS SP-95 BE(L) - PE(S)	

COUPLING (CPS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75				P47K-00028	Coupling ASTM A182 Grade F51 Class 3000 ASME B16.11 SW - SW	
1	1				P47K-00027	Coupling ASTM A182 Grade F51 Class 3000 ASME B16.11 SW - SW	
1	1.5				P47K-00026	Coupling ASTM A182 Grade F51 Class 3000 ASME B16.11 SW - SW	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2 - 2.5	0.75			P31K-00GHG	Outlet ASTM A182 Grade F51 Class 3000 MSS SP-97 SW	
1	3 - 5	0.75			P31K-00GHH	Outlet ASTM A182 Grade F51 Class 3000 MSS SP-97 SW	
1	6 - 12	0.75			P31K-005G5	Outlet ASTM A182 Grade F51 Class 3000 MSS SP-97 SW	
1	14 - 36	0.75			P31K-005FL	Outlet ASTM A182 Grade F51 Class 3000 MSS SP-97 SW	
1	3	1			P31K-005GN	Outlet ASTM A182 Grade F51 Class 3000 MSS SP-97 SW	
1	4 - 5	1			P31K-00GHJ	Outlet ASTM A182 Grade F51 Class 3000 MSS SP-97 SW	
1	6 - 10	1			P31K-005GZ	Outlet ASTM A182 Grade F51 Class 3000 MSS SP-97 SW	
1	12 - 36	1			P31K-005GD	Outlet ASTM A182 Grade F51 Class 3000 MSS SP-97 SW	
1	4	1.5			P31K-005J3	Outlet ASTM A182 Grade F51 Class 3000 MSS SP-97 SW	
1	5 - 6	1.5			P31K-00GHK	Outlet ASTM A182 Grade F51 Class 3000 MSS SP-97 SW	
1	8 - 12	1.5			P31K-005JD	Outlet ASTM A182 Grade F51 Class 3000 MSS SP-97 SW	
1	14 - 24	1.5			P31K-005HG	Outlet ASTM A182 Grade F51 Class 3000 MSS SP-97 SW	
541	1	0.75			P31K-00FNJ	Outlet ASTM A182 Grade F51 Class 3000 MSS SP-97 NPT	

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OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
541	1.5	0.75			P31K-00FNH	Outlet ASTM A182 Grade F51 Class 3000 MSS SP-97 NPT	
541	2 - 2.5	0.75			P31K-00GHL	Outlet ASTM A182 Grade F51 Class 3000 MSS SP-97 NPT	
541	3 - 5	0.75			P31K-00GHM	Outlet ASTM A182 Grade F51 Class 3000 MSS SP-97 NPT	
541	6 - 12	0.75			P31K-00GHN	Outlet ASTM A182 Grade F51 Class 3000 MSS SP-97 NPT	
541	14 - 36	0.75			P31K-00GHP	Outlet ASTM A182 Grade F51 Class 3000 MSS SP-97 NPT	
1	6	2	SCH10S	SCH40S	P31K-004UT	Outlet ASTM A182 Grade F51 MSS SP-97 BW	
1	8	2	SCH10S	SCH40S	P31K-004UU	Outlet ASTM A182 Grade F51 MSS SP-97 BW	
1	10	2	SCH10S	SCH40S	P31K-004UW	Outlet ASTM A182 Grade F51 MSS SP-97 BW	
1	12	2	SCH40S	SCH40S	P31K-004S9	Outlet ASTM A182 Grade F51 MSS SP-97 BW	
1	14	2	SCH10S	SCH40S	P31K-004V2	Outlet ASTM A182 Grade F51 MSS SP-97 BW	
1	16	2	SCH10S	SCH40S	P31K-004V5	Outlet ASTM A182 Grade F51 MSS SP-97 BW	
1	18	2	SCH10S	SCH40S	P31K-004V8	Outlet ASTM A182 Grade F51 MSS SP-97 BW	
1	20	2	SCH10S	SCH40S	P31K-00B02	Outlet ASTM A182 Grade F51 MSS SP-97 BW	
1	24	2	SCH10S	SCH40S	P31K-00B03	Outlet ASTM A182 Grade F51 MSS SP-97 BW	
1	8	3	SCH10S	SCH10S	P31K-004UV	Outlet ASTM A182 Grade F51 MSS SP-97 BW	
1	10	3	SCH10S	SCH10S	P31K-004UX	Outlet ASTM A182 Grade F51 MSS SP-97 BW	
1	12	3	SCH40S	SCH10S	P31K-004VN	Outlet ASTM A182 Grade F51 MSS SP-97 BW	
1	14	3	SCH10S	SCH10S	P31K-004V3	Outlet ASTM A182 Grade F51 MSS SP-97 BW	
1	16	3	SCH10S	SCH10S	P31K-004V6	Outlet ASTM A182 Grade F51 MSS SP-97 BW	
1	18	3	SCH10S	SCH10S	P31K-004V9	Outlet ASTM A182 Grade F51 MSS SP-97 BW	
1	20	3	SCH10S	SCH10S	P31K-0052A	Outlet ASTM A182 Grade F51 MSS SP-97 BW	
1	24	3	SCH10S	SCH10S	P31K-0052B	Outlet ASTM A182 Grade F51 MSS SP-97 BW	
1	12	4	SCH40S	SCH10S	P31K-004VP	Outlet ASTM A182 Grade F51 MSS SP-97 BW	
1	14	4	SCH10S	SCH10S	P31K-004V4	Outlet ASTM A182 Grade F51 MSS SP-97 BW	
1	16	4	SCH10S	SCH10S	P31K-004V7	Outlet ASTM A182 Grade F51 MSS SP-97 BW	
1	18	4	SCH10S	SCH10S	P31K-004VA	Outlet ASTM A182 Grade F51 MSS SP-97 BW	
1	20	4	SCH10S	SCH10S	P31K-0052G	Outlet ASTM A182 Grade F51 MSS SP-97 BW	
1	24	4	SCH10S	SCH10S	P31K-0052H	Outlet ASTM A182 Grade F51 MSS SP-97 BW	
1	18	6	SCH10S	SCH10S	P31K-004VB	Outlet ASTM A182 Grade F51 MSS SP-97 BW	
1	20	6	SCH10S	SCH10S	P31K-0052T	Outlet ASTM A182 Grade F51 MSS SP-97 BW	
1	24	6	SCH10S	SCH10S	P31K-0052U	Outlet ASTM A182 Grade F51 MSS SP-97 BW	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75				P30K-00016	Plug ASTM A182 Grade F51 ASME B16.11 NPT Round head	
1	1				P30K-00015	Plug ASTM A182 Grade F51 ASME B16.11 NPT Round head	
1	1.5				P30K-00014	Plug ASTM A182 Grade F51 ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75		SCH80S		P61K-005JD	Flange SW ASTM A182 Grade F51 Class 150 ASME B16.5 RF	
1	1		SCH80S		P61K-005JE	Flange SW ASTM A182 Grade F51 Class 150 ASME B16.5 RF	
1	1.5		SCH80S		P61K-005JF	Flange SW ASTM A182 Grade F51 Class 150 ASME B16.5 RF	
1	2		SCH40S		P61K-001XP	Flange WN ASTM A182 Grade F51 Class 150 ASME B16.5 RF	
1	3		SCH10S		P61K-001XN	Flange WN ASTM A182 Grade F51 Class 150 ASME B16.5 RF	
1	4		SCH10S		P61K-001XL	Flange WN ASTM A182 Grade F51 Class 150 ASME B16.5 RF	
1	6		SCH10S		P61K-001XH	Flange WN ASTM A182 Grade F51 Class 150 ASME B16.5 RF	
1	8		SCH10S		P61K-001XG	Flange WN ASTM A182 Grade F51 Class 150 ASME B16.5 RF	
1	10		SCH10S		P61K-001X7	Flange WN ASTM A182 Grade F51 Class 150 ASME B16.5 RF	
1	12		SCH40S		P61K-006SJ	Flange WN ASTM A182 Grade F51 Class 150 ASME B16.5 RF	
1	14		SCH10S		P61K-001X3	Flange WN ASTM A182 Grade F51 Class 150 ASME B16.5 RF	
1	16		SCH10S		P61K-001XV	Flange WN ASTM A182 Grade F51 Class 150 ASME B16.5 RF	
1	18		SCH10S		P61K-001XS	Flange WN ASTM A182 Grade F51 Class 150 ASME B16.5 RF	
1	20		SCH10S		P61K-00268	Flange WN ASTM A182 Grade F51 Class 150 ASME B16.5 RF	
1	24		SCH10S		P61K-00269	Flange WN ASTM A182 Grade F51 Class 150 ASME B16.5 RF	
773	0.75		SCH80S		P61K-005JG	Flange SW ASTM A182 Grade F51 Class 300 ASME B16.5 RF	
773	1		SCH80S		P61K-005JH	Flange SW ASTM A182 Grade F51 Class 300 ASME B16.5 RF	
773	1.5		SCH80S		P61K-005JJ	Flange SW ASTM A182 Grade F51 Class 300 ASME B16.5 RF	
773	2		SCH40S		P61K-001XT	Flange WN ASTM A182 Grade F51 Class 300 ASME B16.5 RF	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
773	3		SCH10S		P61K-001XR	Flange WN ASTM A182 Grade F51 Class 300 ASME B16.5 RF	
773	4		SCH10S		P61K-001XM	Flange WN ASTM A182 Grade F51 Class 300 ASME B16.5 RF	
773	6		SCH10S		P61K-001XK	Flange WN ASTM A182 Grade F51 Class 300 ASME B16.5 RF	
773	8		SCH10S		P61K-001XJ	Flange WN ASTM A182 Grade F51 Class 300 ASME B16.5 RF	
773	10		SCH10S		P61K-001XF	Flange WN ASTM A182 Grade F51 Class 300 ASME B16.5 RF	
773	12		SCH40S		P61K-006SK	Flange WN ASTM A182 Grade F51 Class 300 ASME B16.5 RF	
773	14		SCH10S		P61K-001X6	Flange WN ASTM A182 Grade F51 Class 300 ASME B16.5 RF	
773	16		SCH10S		P61K-001X4	Flange WN ASTM A182 Grade F51 Class 300 ASME B16.5 RF	
773	18		SCH10S		P61K-001XX	Flange WN ASTM A182 Grade F51 Class 300 ASME B16.5 RF	
773	20		SCH10S		P61K-002ZR	Flange WN ASTM A182 Grade F51 Class 300 ASME B16.5 RF	
773	24		SCH10S		P61K-002ZS	Flange WN ASTM A182 Grade F51 Class 300 ASME B16.5 RF	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75				P67K-000G0	Blind flange ASTM A182 Grade F51 Class 150 ASME B16.5 RF	
1	1				P67K-000FZ	Blind flange ASTM A182 Grade F51 Class 150 ASME B16.5 RF	
1	1.5				P67K-000FY	Blind flange ASTM A182 Grade F51 Class 150 ASME B16.5 RF	
1	2				P67K-000FS	Blind flange ASTM A182 Grade F51 Class 150 ASME B16.5 RF	
1	3				P67K-000FR	Blind flange ASTM A182 Grade F51 Class 150 ASME B16.5 RF	
1	4				P67K-000FP	Blind flange ASTM A182 Grade F51 Class 150 ASME B16.5 RF	
1	6				P67K-000FN	Blind flange ASTM A182 Grade F51 Class 150 ASME B16.5 RF	
1	8				P67K-000FM	Blind flange ASTM A182 Grade F51 Class 150 ASME B16.5 RF	
1	10				P67K-000FX	Blind flange ASTM A182 Grade F51 Class 150 ASME B16.5 RF	
1	12				P67K-000FW	Blind flange ASTM A182 Grade F51 Class 150 ASME B16.5 RF	
1	14				P67K-000FV	Blind flange ASTM A182 Grade F51 Class 150 ASME B16.5 RF	
1	16				P67K-000FU	Blind flange ASTM A182 Grade F51 Class 150 ASME B16.5 RF	
1	18				P67K-000FT	Blind flange ASTM A182 Grade F51 Class 150 ASME B16.5 RF	
1	20				P67K-000LS	Blind flange ASTM A182 Grade F51 Class 150 ASME B16.5 RF	
1	24				P67K-000LT	Blind flange ASTM A182 Grade F51 Class 150 ASME B16.5 RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75				P73T-0040N	Spiral wound gasket UNS S31803 winding / Non-asbestos filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring UNS S31803 Licensor-5 Type-9 Special ID	
1	1				P73T-0040P	Spiral wound gasket UNS S31803 winding / Non-asbestos filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring UNS S31803 Licensor-5 Type-9 Special ID	
1	1.5				P73T-0040R	Spiral wound gasket UNS S31803 winding / Non-asbestos filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring UNS S31803 Licensor-5 Type-9 Special ID	
1	2				P73T-0040X	Spiral wound gasket UNS S31803 winding / Non-asbestos filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring UNS S31803 Licensor-5 Type-9 Special ID	
1	3				P73T-00410	Spiral wound gasket UNS S31803 winding / Non-asbestos filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring UNS S31803 Licensor-5 Type-9 Special ID	
1	4				P73T-00411	Spiral wound gasket UNS S31803 winding / Non-asbestos filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring UNS S31803 Licensor-5 Type-9 Special ID	
1	6				P73T-00412	Spiral wound gasket UNS S31803 winding / Non-asbestos filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring UNS S31803 Licensor-5 Type-9 Special ID	
1	8				P73T-00413	Spiral wound gasket UNS S31803 winding / Non-asbestos filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring UNS S31803 Licensor-5 Type-9 Special ID	
1	10				P73T-0040S	Spiral wound gasket UNS S31803 winding / Non-asbestos filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring UNS S31803 Licensor-5 Type-9 Special ID	
1	12				P73T-0040T	Spiral wound gasket UNS S31803 winding / Non-asbestos filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring UNS S31803 Licensor-5 Type-9 Special ID	
1	14				P73T-0040U	Spiral wound gasket UNS S31803 winding / Non-asbestos filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring UNS S31803 Licensor-5 Type-9 Special ID	
1	16				P73T-0040V	Spiral wound gasket UNS S31803 winding / Non-asbestos filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring UNS S31803 Licensor-5 Type-9 Special ID	
1	18				P73T-0040W	Spiral wound gasket UNS S31803 winding / Non-asbestos filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring UNS S31803 Licensor-5 Type-9 Special ID	
1	20				P73T-0040Y	Spiral wound gasket UNS S31803 winding / Non-asbestos filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring UNS S31803 Licensor-5 Type-9 Special ID	
1	24				P73T-0040Z	Spiral wound gasket UNS S31803 winding / Non-asbestos filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring UNS S31803 Licensor-5 Type-9 Special ID	
773	0.75				P73T-00414	Spiral wound gasket UNS S31803 winding / Non-asbestos filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring UNS S31803 Licensor-5 Type-9 Special ID	
773	1				P73T-00415	Spiral wound gasket UNS S31803 winding / Non-asbestos filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring UNS S31803 Licensor-5 Type-9 Special ID	
773	1.5				P73T-00416	Spiral wound gasket UNS S31803 winding / Non-asbestos filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring UNS S31803 Licensor-5 Type-9 Special ID	
773	2				P73T-0041C	Spiral wound gasket UNS S31803 winding / Non-asbestos filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring UNS S31803 Licensor-5 Type-9 Special ID	
773	3				P73T-0041F	Spiral wound gasket UNS S31803 winding / Non-asbestos filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring UNS S31803 Licensor-5 Type-9 Special ID	

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GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
773	4				P73T-0041G	Spiral wound gasket UNS S31803 winding / Non-asbestos filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring UNS S31803 Licensor-5 Type-9 Special ID	
773	6				P73T-0041H	Spiral wound gasket UNS S31803 winding / Non-asbestos filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring UNS S31803 Licensor-5 Type-9 Special ID	
773	8				P73T-0041J	Spiral wound gasket UNS S31803 winding / Non-asbestos filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring UNS S31803 Licensor-5 Type-9 Special ID	
773	10				P73T-00417	Spiral wound gasket UNS S31803 winding / Non-asbestos filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring UNS S31803 Licensor-5 Type-9 Special ID	
773	12				P73T-00418	Spiral wound gasket UNS S31803 winding / Non-asbestos filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring UNS S31803 Licensor-5 Type-9 Special ID	
773	14				P73T-00419	Spiral wound gasket UNS S31803 winding / Non-asbestos filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring UNS S31803 Licensor-5 Type-9 Special ID	
773	16				P73T-0041A	Spiral wound gasket UNS S31803 winding / Non-asbestos filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring UNS S31803 Licensor-5 Type-9 Special ID	
773	18				P73T-0041B	Spiral wound gasket UNS S31803 winding / Non-asbestos filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring UNS S31803 Licensor-5 Type-9 Special ID	
773	20				P73T-0041D	Spiral wound gasket UNS S31803 winding / Non-asbestos filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring UNS S31803 Licensor-5 Type-9 Special ID	
773	24				P73T-0041E	Spiral wound gasket UNS S31803 winding / Non-asbestos filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring UNS S31803 Licensor-5 Type-9 Special ID	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75-16				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	18-24				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
773	0.75-10				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
773	12-24				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75				P81K-0017L	Gate valve ASTM A182 Grade F51 Class 800 API 602 SW Trim UNS S31803 Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated	
1	1				P81K-0017M	Gate valve ASTM A182 Grade F51 Class 800 API 602 SW Trim UNS S31803 Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated	
1	1.5				P81K-0017N	Gate valve ASTM A182 Grade F51 Class 800 API 602 SW Trim UNS S31803 Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated	
1	2				P81L-002C7	Gate valve ASTM A890 Grade 4A Class 150 API 600 Flange ASME B16.5 RF Trim UNS S31803 Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated	
1	3				P81L-002C8	Gate valve ASTM A890 Grade 4A Class 150 API 600 Flange ASME B16.5 RF Trim UNS S31803 Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated	
1	4				P81L-002C9	Gate valve ASTM A890 Grade 4A Class 150 API 600 Flange ASME B16.5 RF Trim UNS S31803 Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated	
1	6				P81L-002CA	Gate valve ASTM A890 Grade 4A Class 150 API 600 Flange ASME B16.5 RF Trim UNS S31803 Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated	
1	8				P81L-002CB	Gate valve ASTM A890 Grade 4A Class 150 API 600 Flange ASME B16.5 RF Trim UNS S31803 Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated	
1	10				P81L-002C5	Gate valve ASTM A890 Grade 4A Class 150 API 600 Flange ASME B16.5 RF Trim UNS S31803 Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated	
1	12				P81L-002C6	Gate valve ASTM A890 Grade 4A Class 150 API 600 Flange ASME B16.5 RF Trim UNS S31803 Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated	
1	14				P81L-002CC	Gate valve ASTM A890 Grade 4A Class 150 API 600 Flange ASME B16.5 RF Trim UNS S31803 Body and disc seats Stellite-6 BB-BG-OS&Y Gear operated	
1	16				P81L-002CD	Gate valve ASTM A890 Grade 4A Class 150 API 600 Flange ASME B16.5 RF Trim UNS S31803 Body and disc seats Stellite-6 BB-BG-OS&Y Gear operated	
1	18				P81L-002CE	Gate valve ASTM A890 Grade 4A Class 150 API 600 Flange ASME B16.5 RF Trim UNS S31803 Body and disc seats Stellite-6 BB-BG-OS&Y Gear operated	
1	20				P81L-002CF	Gate valve ASTM A890 Grade 4A Class 150 API 600 Flange ASME B16.5 RF Trim UNS S31803 Body and disc seats Stellite-6 BB-BG-OS&Y Gear operated	
1	24				P81L-002CG	Gate valve ASTM A890 Grade 4A Class 150 API 600 Flange ASME B16.5 RF Trim UNS S31803 Body and disc seats Stellite-6 BB-BG-OS&Y Gear operated	
714	0.75				P81K-001G7	Gate valve ASTM A182 Grade F51 Class 800 API 602 SW - NPT Trim UNS S31803 Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75				P82K-000UH	Globe valve ASTM A182 Grade F51 Class 800 API 602 SW Trim UNS S31803 Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated	
1	1				P82K-000UJ	Globe valve ASTM A182 Grade F51 Class 800 API 602 SW Trim UNS S31803 Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated	
1	1.5				P82K-000UK	Globe valve ASTM A182 Grade F51 Class 800 API 602 SW Trim UNS S31803 Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated	
1	2				P82L-001AF	Globe valve ASTM A890 Grade 4A Class 150 BS 1873 Flange ASME B16.5 RF Trim UNS S31803 Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated	
1	3				P82L-001AG	Globe valve ASTM A890 Grade 4A Class 150 BS 1873 Flange ASME B16.5 RF Trim UNS S31803 Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated	
1	4				P82L-001AH	Globe valve ASTM A890 Grade 4A Class 150 BS 1873 Flange ASME B16.5 RF Trim UNS S31803 Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated	
1	6				P82L-001AJ	Globe valve ASTM A890 Grade 4A Class 150 BS 1873 Flange ASME B16.5 RF Trim UNS S31803 Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated	

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GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	8				P82L-001AK	Globe valve ASTM A890 Grade 4A Class 150 BS 1873 Flange ASME B16.5 RF Trim UNS S31803 Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75				P83K-000SP	Check valve ASTM A182 Grade F51 Class 800 API 602 SW Trim UNS S31803 Body and disc seats Stellite-6 Lift-type Bolted cover	
1	1				P83K-000SR	Check valve ASTM A182 Grade F51 Class 800 API 602 SW Trim UNS S31803 Body and disc seats Stellite-6 Lift-type Bolted cover	
1	1.5				P83K-000SS	Check valve ASTM A182 Grade F51 Class 800 API 602 SW Trim UNS S31803 Body and disc seats Stellite-6 Lift-type Bolted cover	
1	2				P83L-001AL	Check valve ASTM A890 Grade 4A Class 150 BS 1868 Flange ASME B16.5 RF Trim UNS S31803 Body and disc seats Stellite-6 Swing-type Bolted cover	
1	3				P83L-001AP	Check valve ASTM A890 Grade 4A Class 150 BS 1868 Flange ASME B16.5 RF Trim UNS S31803 Body and disc seats Stellite-6 Swing-type Bolted cover	
1	4				P83L-001AR	Check valve ASTM A890 Grade 4A Class 150 BS 1868 Flange ASME B16.5 RF Trim UNS S31803 Body and disc seats Stellite-6 Swing-type Bolted cover	
1	6				P83L-001AS	Check valve ASTM A890 Grade 4A Class 150 BS 1868 Flange ASME B16.5 RF Trim UNS S31803 Body and disc seats Stellite-6 Swing-type Bolted cover	
1	8				P83L-001AT	Check valve ASTM A890 Grade 4A Class 150 BS 1868 Flange ASME B16.5 RF Trim UNS S31803 Body and disc seats Stellite-6 Swing-type Bolted cover	
1	10				P83L-001AF	Check valve ASTM A890 Grade 4A Class 150 BS 1868 Flange ASME B16.5 RF Trim UNS S31803 Body and disc seats Stellite-6 Swing-type Bolted cover	
1	12				P83L-001AG	Check valve ASTM A890 Grade 4A Class 150 BS 1868 Flange ASME B16.5 RF Trim UNS S31803 Body and disc seats Stellite-6 Swing-type Bolted cover	
1	14				P83L-001AH	Check valve ASTM A890 Grade 4A Class 150 BS 1868 Flange ASME B16.5 RF Trim UNS S31803 Body and disc seats Stellite-6 Swing-type Bolted cover	
1	16				P83L-001AJ	Check valve ASTM A890 Grade 4A Class 150 BS 1868 Flange ASME B16.5 RF Trim UNS S31803 Body and disc seats Stellite-6 Swing-type Bolted cover	
1	18				P83L-001AK	Check valve ASTM A890 Grade 4A Class 150 BS 1868 Flange ASME B16.5 RF Trim UNS S31803 Body and disc seats Stellite-6 Swing-type Bolted cover	
1	20				P83L-001AM	Check valve ASTM A890 Grade 4A Class 150 BS 1868 Flange ASME B16.5 RF Trim UNS S31803 Body and disc seats Stellite-6 Swing-type Bolted cover	
1	24				P83L-001AN	Check valve ASTM A890 Grade 4A Class 150 BS 1868 Flange ASME B16.5 RF Trim UNS S31803 Body and disc seats Stellite-6 Swing-type Bolted cover	

BALL VALVE (Q)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75				P84K-000SB	Ball valve Long-pattern ASTM A182 Grade F51 Class 150 API 608 Flange ASME B16.5 RF Ball UNS S31803 Seat R-PTFE Trim UNS S31803 Floating-type Side-entry Wrench lever operated Full bore Fire safe design Licensor-5	
1	1				P84K-000SC	Ball valve Long-pattern ASTM A182 Grade F51 Class 150 API 608 Flange ASME B16.5 RF Ball UNS S31803 Seat R-PTFE Trim UNS S31803 Floating-type Side-entry Wrench lever operated Full bore Fire safe design Licensor-5	
1	1.5				P84K-000SD	Ball valve Long-pattern ASTM A182 Grade F51 Class 150 API 608 Flange ASME B16.5 RF Ball UNS S31803 Seat R-PTFE Trim UNS S31803 Floating-type Side-entry Wrench lever operated Full bore Fire safe design Licensor-5	
1	2				P84L-0035G	Ball valve Long-pattern ASTM A890 Grade 4A Class 150 API 608 Flange ASME B16.5 RF Ball UNS S31803 Seat R-PTFE Trim UNS S31803 Floating-type Side-entry Wrench lever operated Full bore Fire safe design Licensor-5	
1	3				P84L-0035H	Ball valve Long-pattern ASTM A890 Grade 4A Class 150 API 608 Flange ASME B16.5 RF Ball UNS S31803 Seat R-PTFE Trim UNS S31803 Floating-type Side-entry Wrench lever operated Full bore Fire safe design Licensor-5	
1	4				P84L-0035J	Ball valve Long-pattern ASTM A890 Grade 4A Class 150 API 608 Flange ASME B16.5 RF Ball UNS S31803 Seat R-PTFE Trim UNS S31803 Floating-type Side-entry Wrench lever operated Full bore Fire safe design Licensor-5	
1	6				P84L-0035T	Ball valve Long-pattern ASTM A890 Grade 4A Class 150 API 608 Flange ASME B16.5 RF Ball UNS S31803 Seat R-PTFE Trim UNS S31803 Trunnion-type Side-entry Gear operated Full bore Fire safe design Licensor-5	
1	8				P84L-0035U	Ball valve Long-pattern ASTM A890 Grade 4A Class 150 API 608 Flange ASME B16.5 RF Ball UNS S31803 Seat R-PTFE Trim UNS S31803 Trunnion-type Side-entry Gear operated Full bore Fire safe design Licensor-5	
1	10				P84L-0035K	Ball valve Long-pattern ASTM A890 Grade 4A Class 150 API 608 Flange ASME B16.5 RF Ball UNS S31803 Seat R-PTFE Trim UNS S31803 Trunnion-type Side-entry Gear operated Full bore Fire safe design Licensor-5	
1	12				P84L-0035L	Ball valve Long-pattern ASTM A890 Grade 4A Class 150 API 608 Flange ASME B16.5 RF Ball UNS S31803 Seat R-PTFE Trim UNS S31803 Trunnion-type Side-entry Gear operated Full bore Fire safe design Licensor-5	
1	14				P84L-0035M	Ball valve Long-pattern ASTM A890 Grade 4A Class 150 API 608 Flange ASME B16.5 RF Ball UNS S31803 Seat R-PTFE Trim UNS S31803 Trunnion-type Side-entry Gear operated Full bore Fire safe design Licensor-5	
1	16				P84L-0035N	Ball valve Long-pattern ASTM A890 Grade 4A Class 150 API 608 Flange ASME B16.5 RF Ball UNS S31803 Seat R-PTFE Trim UNS S31803 Trunnion-type Side-entry Gear operated Full bore Fire safe design Licensor-5	
1	18				P84L-0035P	Ball valve Long-pattern ASTM A890 Grade 4A Class 150 API 608 Flange ASME B16.5 RF Ball UNS S31803 Seat R-PTFE Trim UNS S31803 Trunnion-type Side-entry Gear operated Full bore Fire safe design Licensor-5	
1	20				P84L-0035R	Ball valve Long-pattern ASTM A890 Grade 4A Class 150 API 608 Flange ASME B16.5 RF Ball UNS S31803 Seat R-PTFE Trim UNS S31803 Trunnion-type Side-entry Gear operated Full bore Fire safe design Licensor-5	
1	24				P84L-0035S	Ball valve Long-pattern ASTM A890 Grade 4A Class 150 API 608 Flange ASME B16.5 RF Ball UNS S31803 Seat R-PTFE Trim UNS S31803 Trunnion-type Side-entry Gear operated Full bore Fire safe design Licensor-5	

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SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75				P71K-000DH	Spectacle blank ASTM A182 Grade F51 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	1				P71K-000DJ	Spectacle blank ASTM A182 Grade F51 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71K-000DK	Spectacle blank ASTM A182 Grade F51 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	2				P71K-000DN	Spectacle blank ASTM A182 Grade F51 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	3				P71K-000DP	Spectacle blank ASTM A182 Grade F51 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	4				P71K-000DR	Spectacle blank ASTM A182 Grade F51 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	6				P71K-000DS	Spectacle blank ASTM A182 Grade F51 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	8				P71K-000DT	Spectacle blank ASTM A182 Grade F51 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	10				P71K-000DL	Spectacle blank ASTM A182 Grade F51 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	12				P71K-000DM	Spectacle blank ASTM A182 Grade F51 Class 150 Standard-drawing Flange ASME B16.5 RF	

PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72K-000EB	Paddle blank ASTM A182 Grade F51 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	16				P72K-000EC	Paddle blank ASTM A182 Grade F51 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	18				P72K-000ED	Paddle blank ASTM A182 Grade F51 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	20				P72K-000EE	Paddle blank ASTM A182 Grade F51 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	24				P72K-000EF	Paddle blank ASTM A182 Grade F51 Class 150 Standard-drawing Flange ASME B16.5 RF	

PADDLE SPACER (PS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72K-000EG	Paddle spacer ASTM A182 Grade F51 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	16				P72K-000EH	Paddle spacer ASTM A182 Grade F51 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	18				P72K-000EJ	Paddle spacer ASTM A182 Grade F51 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	20				P72K-000EK	Paddle spacer ASTM A182 Grade F51 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	24				P72K-000EL	Paddle spacer ASTM A182 Grade F51 Class 150 Standard-drawing Flange ASME B16.5 RF	

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BOLT TABLE (B_A16G05 , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.75	4	0.500	65	P80S-003V3		
1	4	0.500	70	P80S-003V4		
1.5	4	0.500	75	P80S-003V5		
2	4	0.625	85	P80S-003XE		
3	4	0.625	95	P80S-003XG		
4	8	0.625	95	P80S-003XG		
6	8	0.750	105	P80S-003XJ		
8	8	0.750	110	P80S-003XK		
10	12	0.875	120	P80S-00419		
12	12	0.875	120	P80S-00419		
14	12	1.000	135	P80S-0043E		
16	16	1.000	140	P80S-0043F		
18	16	1.125	150	P80S-0046K		
20	20	1.125	160	P80S-0046M		
24	20	1.250	175	P80S-004AG		

BOLT TABLE (B_A16G05_773 , STUD ASME RF, OPTION CODE 773)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.75	4	0.625	75	P80S-003XC		
1	4	0.625	80	P80S-003XD		
1.5	4	0.750	95	P80S-00414		
2	8	0.625	90	P80S-003XF		
3	8	0.750	110	P80S-003XK		
4	8	0.750	115	P80S-003XL		
6	12	0.750	125	P80S-003XN		
8	12	0.875	140	P80S-0041D		
10	16	1.000	160	P80S-0043K		
12	16	1.125	175	P80S-0046S		
14	20	1.125	180	P80S-0046T		
16	20	1.250	190	P80S-004AK		
18	24	1.250	200	P80S-004AM		
20	24	1.250	210	P80S-004AP		
24	24	1.500	235	P80S-003F8		

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BRANCH TABLE (T_A16G05)

RUN PIPE SIZE (in) \ BRANCH SIZE (in)	0.75	1	1.5	2	3	4	6	8	10	12	14	16	18	20	24
0.75	TS														
1	TR	TS													
1.5	TR	TR	TS												
2	L	TR	TR	TS											
3	L	L	TR	TR	TS										
4	L	L	L	TR	TR	TS									
6	L	L	L	L	TR	TR	TS								
8	L	L	L	L	L	TR	TR	TS							
10	L	L	L	L	L	TR	TR	TR	TS						
12	L	L	L	L	L	L	TR	TR	TR	TS					
14	L	L	L	L	L	L	TR	TR	TR	TR	TS				
16	L	L	L	L	L	L	TR	TR	TR	TR	TR	TS			
18	L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TS		
20	L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TR	TS	
24	L	L	L	L	L	L	L	9PD	TR	TR	TR	TR	TR	TR	TS

9PD : REINFORCING PAD 90 DEG
TS : STRAIGHT TEE
L : OUTLET
TR : REDUCING TEE

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PIPING CLASS

A1A201 REV NO. 2

Material : Killed CS
Rating : ASME CLASS 150
Flange Face : RF
C.A.(mm) : 1.50
Gasket : Spiral Wound
Service : PROCESS - VACUUM SERVICE
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
3	STIFFENER RINGS, IF NEEDED, SHALL BE PROVIDED AS PER ASME SEC.VIII, DIV.1 FOR FULL VACUUM CONDITION
4	VALVES TO BE TESTED FOR VACUUM AS PER ASME SEC.V, ART.10 (HOOD METHOD)

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
541	NPT(F) (CA,L)
714	SW - NPT(F) (V)
773	CLASS 300 (B,F,G)

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PIPING CLASS
A1A201 REV NO. 2

PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P01A-007AZ	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE Licensor-1	
1	0.75		XS		P01A-007B0	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE Licensor-1	
1	1		XS		P01A-007B1	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE Licensor-1	
1	1.5		XS		P01A-007B2	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE Licensor-1	
1	2		XS		P01A-0078Y	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Licensor-1	
1	3		STD		P01A-0078Z	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Licensor-1	
1	4		STD		P01A-007B3	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Licensor-1	
1	6		STD		P01A-007B8	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Licensor-1	
1	8		SCH20		P01A-007B9	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Licensor-1	
1	10		SCH20		P01A-007B4	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Licensor-1	
1	12		SCH20		P01A-007B5	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Licensor-1	
1	14		SCH20		P01A-007B6	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Licensor-1	
1	16		SCH20		P01A-007B7	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Licensor-1	
1	18		SCH20		P01A-007BA	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE Licensor-1	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P02B-0007G	90 degree elbow ASTM A105 Class 3000 ASME B16.11 SW Licensor-1	
1	0.75				P02B-0007H	90 degree elbow ASTM A105 Class 3000 ASME B16.11 SW Licensor-1	
1	1				P02B-0007J	90 degree elbow ASTM A105 Class 3000 ASME B16.11 SW Licensor-1	
1	1.5				P02B-0007K	90 degree elbow ASTM A105 Class 3000 ASME B16.11 SW Licensor-1	
1	2		XS		P02A-003R7	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	3		STD		P02A-003R8	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	4		STD		P02A-003T8	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	6		STD		P02A-003TG	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	8		SCH20		P02A-003TH	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	10		SCH20		P02A-003T9	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	12		SCH20		P02A-003TA	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	14		SCH20		P02A-003TB	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	16		SCH20		P02A-003TC	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	18		SCH20		P02A-003TD	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P03B-00074	45 degree elbow ASTM A105 Class 3000 ASME B16.11 SW Licensor-1	
1	0.75				P03B-00075	45 degree elbow ASTM A105 Class 3000 ASME B16.11 SW Licensor-1	
1	1				P03B-00076	45 degree elbow ASTM A105 Class 3000 ASME B16.11 SW Licensor-1	
1	1.5				P03B-00077	45 degree elbow ASTM A105 Class 3000 ASME B16.11 SW Licensor-1	
1	2		XS		P03A-003MW	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	3		STD		P03A-003MX	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	4		STD		P03A-003PX	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	6		STD		P03A-003R5	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	8		SCH20		P03A-003R6	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	10		SCH20		P03A-003PY	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	12		SCH20		P03A-003PZ	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	14		SCH20		P03A-003R0	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	16		SCH20		P03A-003R1	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	18		SCH20		P03A-003R2	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P21B-00074	Straight tee ASTM A105 Class 3000 ASME B16.11 SW Licensor-1	
1	0.75				P21B-00075	Straight tee ASTM A105 Class 3000 ASME B16.11 SW Licensor-1	
1	1				P21B-00076	Straight tee ASTM A105 Class 3000 ASME B16.11 SW Licensor-1	
1	1.5				P21B-00077	Straight tee ASTM A105 Class 3000 ASME B16.11 SW Licensor-1	
1	2		XS		P21A-0048L	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	3		STD		P21A-0048M	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	4		STD		P21A-004AL	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	6		STD		P21A-004AS	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	

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STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	8		SCH20		P21A-004AT	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	10		SCH20		P21A-004AM	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	12		SCH20		P21A-004AN	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	14		SCH20		P21A-004AP	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	16		SCH20		P21A-004AR	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	18		SCH20		P21A-004AU	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75			P24B-000BZ	Reducing tee ASTM A105 Class 3000 ASME B16.11 SW Licensor-1	
1	1.5	0.75			P24B-000C0	Reducing tee ASTM A105 Class 3000 ASME B16.11 SW Licensor-1	
1	1.5	1			P24B-000C1	Reducing tee ASTM A105 Class 3000 ASME B16.11 SW Licensor-1	
1	2	1	XS	XS	P24A-00K5U	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	2	1.5	XS	XS	P24A-00K5V	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	3	1.5	STD	XS	P24A-00K5W	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	3	2	STD	XS	P24A-00K0Y	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	4	2	STD	XS	P24A-00K5X	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	4	3	STD	STD	P24A-00K5Y	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	6	3	STD	STD	P24A-00K64	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	6	4	STD	STD	P24A-00K65	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	8	4	SCH20	STD	P24A-00K66	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	8	6	SCH20	STD	P24A-00K67	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	10	4	SCH20	STD	P24A-00K68	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	10	6	SCH20	STD	P24A-00K69	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	10	8	SCH20	SCH20	P24A-00K6A	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	12	6	SCH20	STD	P24A-00K6C	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	12	8	SCH20	SCH20	P24A-00K6D	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	12	10	SCH20	SCH20	P24A-00K6B	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	14	6	SCH20	STD	P24A-00K6G	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	14	8	SCH20	SCH20	P24A-00K6H	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	14	10	SCH20	SCH20	P24A-00K6E	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	14	12	SCH20	SCH20	P24A-00K6F	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	16	6	SCH20	STD	P24A-00K6M	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	16	8	SCH20	SCH20	P24A-00K6N	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	16	10	SCH20	SCH20	P24A-00K6J	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	16	12	SCH20	SCH20	P24A-00K6K	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	16	14	SCH20	SCH20	P24A-00K6L	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	18	8	SCH20	SCH20	P24A-00K6U	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	18	10	SCH20	SCH20	P24A-00K6P	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	18	12	SCH20	SCH20	P24A-00K6R	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	18	14	SCH20	SCH20	P24A-00K6S	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	18	16	SCH20	SCH20	P24A-00K6T	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	STD	XS	P27A-00EL1	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	4	2	STD	XS	P27A-00ES5	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	4	3	STD	STD	P27A-00ES6	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	6	3	STD	STD	P27A-00ES9	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	6	4	STD	STD	P27A-00ESA	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	8	4	SCH20	STD	P27A-00ESB	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	8	6	SCH20	STD	P27A-00ESC	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	10	4	SCH20	STD	P27A-00ESD	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	10	6	SCH20	STD	P27A-00ESE	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	10	8	SCH20	SCH20	P27A-00ESF	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	12	6	SCH20	STD	P27A-00ESH	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	12	8	SCH20	SCH20	P27A-00ESJ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	12	10	SCH20	SCH20	P27A-00ESG	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	14	6	SCH20	STD	P27A-00ESM	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14	8	SCH20	SCH20	P27A-00ESN	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	14	10	SCH20	SCH20	P27A-00ESK	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	14	12	SCH20	SCH20	P27A-00ESL	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	16	8	SCH20	SCH20	P27A-00EST	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	16	10	SCH20	SCH20	P27A-00ESP	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	16	12	SCH20	SCH20	P27A-00ESR	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	16	14	SCH20	SCH20	P27A-00ESS	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	18	10	SCH20	SCH20	P27A-00ESU	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	18	12	SCH20	SCH20	P27A-00ESV	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	18	14	SCH20	SCH20	P27A-00ESW	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	18	16	SCH20	SCH20	P27A-00ESX	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	STD	XS	P28A-00BPS	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	4	2	STD	XS	P28A-00BVZ	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	4	3	STD	STD	P28A-00BW0	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	6	3	STD	STD	P28A-00BW3	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	6	4	STD	STD	P28A-00BW4	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	8	4	SCH20	STD	P28A-00BW5	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	8	6	SCH20	STD	P28A-00BW6	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	10	4	SCH20	STD	P28A-00BW7	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	10	6	SCH20	STD	P28A-00BW8	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	10	8	SCH20	SCH20	P28A-00BW9	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	12	6	SCH20	STD	P28A-00BWB	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	12	8	SCH20	SCH20	P28A-00BWC	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	12	10	SCH20	SCH20	P28A-00BWA	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	14	6	SCH20	STD	P28A-00BWF	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	14	8	SCH20	SCH20	P28A-00BWG	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	14	10	SCH20	SCH20	P28A-00BWD	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	14	12	SCH20	SCH20	P28A-00BWE	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	16	8	SCH20	SCH20	P28A-00BWL	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	16	10	SCH20	SCH20	P28A-00BWH	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	16	12	SCH20	SCH20	P28A-00BWJ	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	16	14	SCH20	SCH20	P28A-00BWK	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	18	10	SCH20	SCH20	P28A-00BWM	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	18	12	SCH20	SCH20	P28A-00BWN	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	18	14	SCH20	SCH20	P28A-00BWP	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	18	16	SCH20	SCH20	P28A-00BWR	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P29B-0005L	Cap ASTM A105 Class 3000 ASME B16.11 SW Licensor-1	
1	0.75				P29B-0005M	Cap ASTM A105 Class 3000 ASME B16.11 SW Licensor-1	
1	1				P29B-0005N	Cap ASTM A105 Class 3000 ASME B16.11 SW Licensor-1	
1	1.5				P29B-0005P	Cap ASTM A105 Class 3000 ASME B16.11 SW Licensor-1	
1	2		XS		P29A-00326	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	3		STD		P29A-00327	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	4		STD		P29A-0034R	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	6		STD		P29A-00353	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	8		SCH20		P29A-00354	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	10		SCH20		P29A-0034S	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	12		SCH20		P29A-0034T	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	14		SCH20		P29A-0034U	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	16		SCH20		P29A-0034V	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	18		SCH20		P29A-0034W	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
541	0.75				P29B-00067	Cap ASTM A105 Class 3000 ASME B16.11 NPT Licensor-1	

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STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P41A-0017A	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Licensor-1	
1	0.75		SCH160		P41A-0017B	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Licensor-1	
1	1		SCH160		P41A-0017C	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Licensor-1	
1	1.5		SCH160		P41A-0017D	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Licensor-1	

CON SWAGED NIPPLE (SNC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	XS	XS	P42A-000UN	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S) Licensor-1	
1	1	0.5	XS	XS	P42A-000UP	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S) Licensor-1	
1	1	0.75	XS	XS	P42A-000UR	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S) Licensor-1	
1	1.5	0.5	XS	XS	P42A-000US	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S) Licensor-1	
1	1.5	0.75	XS	XS	P42A-000UT	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S) Licensor-1	
1	1.5	1	XS	XS	P42A-000UU	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S) Licensor-1	
1	2	0.5	XS	XS	P42A-000UV	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S) Licensor-1	
1	2	0.75	XS	XS	P42A-000UW	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S) Licensor-1	
1	2	1	XS	XS	P42A-000UX	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S) Licensor-1	
1	2	1.5	XS	XS	P42A-000UY	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S) Licensor-1	
1	3	1.5	STD	XS	P42A-000UZ	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S) Licensor-1	

ECC SWAGED NIPPLE (SNE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	XS	XS	P43A-000KS	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S) Licensor-1	
1	1	0.5	XS	XS	P43A-000KT	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S) Licensor-1	
1	1	0.75	XS	XS	P43A-000KU	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S) Licensor-1	
1	1.5	0.5	XS	XS	P43A-000KV	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S) Licensor-1	
1	1.5	0.75	XS	XS	P43A-000KW	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S) Licensor-1	
1	1.5	1	XS	XS	P43A-000KX	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S) Licensor-1	
1	2	0.5	XS	XS	P43A-000KY	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S) Licensor-1	
1	2	0.75	XS	XS	P43A-000KZ	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S) Licensor-1	
1	2	1	XS	XS	P43A-000L0	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S) Licensor-1	
1	2	1.5	XS	XS	P43A-000L1	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S) Licensor-1	
1	3	1.5	STD	XS	P43A-000L2	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S) Licensor-1	

COUPLING (CPS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P47B-0007V	Coupling ASTM A105 Class 3000 ASME B16.11 SW - SW Licensor-1	
1	0.75				P47B-0007W	Coupling ASTM A105 Class 3000 ASME B16.11 SW - SW Licensor-1	
1	1				P47B-0007X	Coupling ASTM A105 Class 3000 ASME B16.11 SW - SW Licensor-1	
1	1.5				P47B-0007Y	Coupling ASTM A105 Class 3000 ASME B16.11 SW - SW Licensor-1	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2 - 2.5	0.75			P31B-0138H	Outlet ASTM A105 Class 3000 MSS SP-97 SW Licensor-1	
1	3 - 5	0.75			P31B-0138J	Outlet ASTM A105 Class 3000 MSS SP-97 SW Licensor-1	
1	6 - 12	0.75			P31B-0138K	Outlet ASTM A105 Class 3000 MSS SP-97 SW Licensor-1	
1	14 - 36	0.75			P31B-0138L	Outlet ASTM A105 Class 3000 MSS SP-97 SW Licensor-1	
1	3	1			P31B-0138M	Outlet ASTM A105 Class 3000 MSS SP-97 SW Licensor-1	
1	4 - 5	1			P31B-0138N	Outlet ASTM A105 Class 3000 MSS SP-97 SW Licensor-1	
1	6 - 10	1			P31B-0138P	Outlet ASTM A105 Class 3000 MSS SP-97 SW Licensor-1	
1	12 - 36	1			P31B-0138R	Outlet ASTM A105 Class 3000 MSS SP-97 SW Licensor-1	
1	4	1.5			P31B-010L4	Outlet ASTM A105 Class 3000 MSS SP-97 SW Licensor-1	
1	5 - 6	1.5			P31B-0138S	Outlet ASTM A105 Class 3000 MSS SP-97 SW Licensor-1	
1	8 - 12	1.5			P31B-0138U	Outlet ASTM A105 Class 3000 MSS SP-97 SW Licensor-1	
1	14 - 24	1.5			P31B-0138T	Outlet ASTM A105 Class 3000 MSS SP-97 SW Licensor-1	
541	1	0.75			P31B-0118R	Outlet ASTM A105 Class 3000 MSS SP-97 NPT Licensor-1	
541	1.5	0.75			P31B-0118P	Outlet ASTM A105 Class 3000 MSS SP-97 NPT Licensor-1	
541	2 - 2.5	0.75			P31B-0138V	Outlet ASTM A105 Class 3000 MSS SP-97 NPT Licensor-1	
541	3 - 5	0.75			P31B-0138W	Outlet ASTM A105 Class 3000 MSS SP-97 NPT Licensor-1	

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OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
541	6 - 12	0.75			P31B-0138X	Outlet ASTM A105 Class 3000 MSS SP-97 NPT Licensor-1	
541	14 - 36	0.75			P31B-0138Y	Outlet ASTM A105 Class 3000 MSS SP-97 NPT Licensor-1	
1	6	2	STD	XS	P31B-00XMV	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	8	2	SCH20	XS	P31B-00XMW	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	10	2	SCH20	XS	P31B-00XMY	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	12	2	SCH20	XS	P31B-00XN0	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	14	2	SCH20	XS	P31B-00XN3	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	16	2	SCH20	XS	P31B-00XN6	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	18	2	SCH20	XS	P31B-00XN9	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	8	3	SCH20	STD	P31B-00XMX	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	10	3	SCH20	STD	P31B-00XMZ	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	12	3	SCH20	STD	P31B-00XN1	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	14	3	SCH20	STD	P31B-00XN4	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	16	3	SCH20	STD	P31B-00XN7	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	18	3	SCH20	STD	P31B-00XNA	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	12	4	SCH20	STD	P31B-00XN2	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	14	4	SCH20	STD	P31B-00XN5	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	16	4	SCH20	STD	P31B-00XN8	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	18	4	SCH20	STD	P31B-00XNB	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	18	6	SCH20	STD	P31B-00XNC	Outlet ASTM A105 MSS SP-97 BW Licensor-1	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30B-00067	Plug ASTM A105 ASME B16.11 NPT Round head Licensor-1	
1	0.75				P30B-00068	Plug ASTM A105 ASME B16.11 NPT Round head Licensor-1	
1	1				P30B-00069	Plug ASTM A105 ASME B16.11 NPT Round head Licensor-1	
1	1.5				P30B-0006A	Plug ASTM A105 ASME B16.11 NPT Round head Licensor-1	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P61B-009Z5	Flange SW ASTM A105 Class 150 ASME B16.5 RF Licensor-1	
1	0.75		XS		P61B-009Z6	Flange SW ASTM A105 Class 150 ASME B16.5 RF Licensor-1	
1	1		XS		P61B-009Z7	Flange SW ASTM A105 Class 150 ASME B16.5 RF Licensor-1	
1	1.5		XS		P61B-009Z8	Flange SW ASTM A105 Class 150 ASME B16.5 RF Licensor-1	
1	2		XS		P61B-009YN	Flange WN ASTM A105 Class 150 ASME B16.5 RF Licensor-1	
1	3		STD		P61B-009YP	Flange WN ASTM A105 Class 150 ASME B16.5 RF Licensor-1	
1	4		STD		P61B-009YR	Flange WN ASTM A105 Class 150 ASME B16.5 RF Licensor-1	
1	6		STD		P61B-009ZG	Flange WN ASTM A105 Class 150 ASME B16.5 RF Licensor-1	
1	8		SCH20		P61B-009ZH	Flange WN ASTM A105 Class 150 ASME B16.5 RF Licensor-1	
1	10		SCH20		P61B-009Z9	Flange WN ASTM A105 Class 150 ASME B16.5 RF Licensor-1	
1	12		SCH20		P61B-009ZA	Flange WN ASTM A105 Class 150 ASME B16.5 RF Licensor-1	
1	14		SCH20		P61B-009ZB	Flange WN ASTM A105 Class 150 ASME B16.5 RF Licensor-1	
1	16		SCH20		P61B-009ZC	Flange WN ASTM A105 Class 150 ASME B16.5 RF Licensor-1	
1	18		SCH20		P61B-009ZD	Flange WN ASTM A105 Class 150 ASME B16.5 RF Licensor-1	
773	0.5		XS		P61B-009ZW	Flange SW ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
773	0.75		XS		P61B-009ZX	Flange SW ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
773	1		XS		P61B-009ZY	Flange SW ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
773	1.5		XS		P61B-009ZZ	Flange SW ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
773	2		XS		P61B-009YW	Flange WN ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
773	3		STD		P61B-009YX	Flange WN ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
773	4		STD		P61B-009YY	Flange WN ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
773	6		STD		P61B-00A07	Flange WN ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
773	8		SCH20		P61B-00A08	Flange WN ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
773	10		SCH20		P61B-00A00	Flange WN ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
773	12		SCH20		P61B-00A01	Flange WN ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
773	14		SCH20		P61B-00A02	Flange WN ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
773	16		SCH20		P61B-00A03	Flange WN ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
773	18		SCH20		P61B-00A04	Flange WN ASTM A105 Class 300 ASME B16.5 RF Licensor-1	

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BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67B-002D6	Blind flange ASTM A105 Class 150 ASME B16.5 RF Licensor-1	
1	0.75				P67B-002D7	Blind flange ASTM A105 Class 150 ASME B16.5 RF Licensor-1	
1	1				P67B-002D8	Blind flange ASTM A105 Class 150 ASME B16.5 RF Licensor-1	
1	1.5				P67B-002D9	Blind flange ASTM A105 Class 150 ASME B16.5 RF Licensor-1	
1	2				P67B-002DB	Blind flange ASTM A105 Class 150 ASME B16.5 RF Licensor-1	
1	3				P67B-002DC	Blind flange ASTM A105 Class 150 ASME B16.5 RF Licensor-1	
1	4				P67B-002DD	Blind flange ASTM A105 Class 150 ASME B16.5 RF Licensor-1	
1	6				P67B-002DE	Blind flange ASTM A105 Class 150 ASME B16.5 RF Licensor-1	
1	8				P67B-002DF	Blind flange ASTM A105 Class 150 ASME B16.5 RF Licensor-1	
1	10				P67B-002DA	Blind flange ASTM A105 Class 150 ASME B16.5 RF Licensor-1	
1	12				P67B-002FK	Blind flange ASTM A105 Class 150 ASME B16.5 RF Licensor-1	
1	14				P67B-002FL	Blind flange ASTM A105 Class 150 ASME B16.5 RF Licensor-1	
1	16				P67B-002FM	Blind flange ASTM A105 Class 150 ASME B16.5 RF Licensor-1	
1	18				P67B-002FN	Blind flange ASTM A105 Class 150 ASME B16.5 RF Licensor-1	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000L8	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000L9	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000LA	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000LB	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000LH	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000LL	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000LM	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	6				P73T-000LN	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	8				P73T-000LP	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	10				P73T-000LC	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	12				P73T-000LD	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	14				P73T-000LE	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	16				P73T-000LF	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	18				P73T-000LG	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	0.5				P73T-000FT	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	0.75				P73T-000FU	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	3				P73T-000G5	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	4				P73T-000G6	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	6				P73T-000G7	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	8				P73T-000G8	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	10				P73T-000FX	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	12				P73T-000FY	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	14				P73T-000FZ	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	16				P73T-000G0	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	18				P73T-000G1	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-16				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	

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BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	18				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
773	0.5-10				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
773	12-18				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81B-001W0	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated Vacuum condition Licensor-1	
1	0.75				P81B-001W1	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated Vacuum condition Licensor-1	
1	1				P81B-001W2	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated Vacuum condition Licensor-1	
1	1.5				P81B-001W3	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated Vacuum condition Licensor-1	
1	2				P81C-0063K	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated Vacuum condition Licensor-1	
1	3				P81C-0063L	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated Vacuum condition Licensor-1	
1	4				P81C-0063M	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated Vacuum condition Licensor-1	
1	6				P81C-0063N	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated Vacuum condition Licensor-1	
1	8				P81C-0063P	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated Vacuum condition Licensor-1	
1	10				P81C-0063J	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated Vacuum condition Licensor-1	
714	0.5				P81B-002S9	Gate valve ASTM A105 Class 800 API 602 SW - NPT Trim number 8 BB-BG-OS&Y Handwheel operated Vacuum condition Licensor-1	
714	0.75				P81B-002FG	Gate valve ASTM A105 Class 800 API 602 SW - NPT Trim number 8 BB-BG-OS&Y Handwheel operated Vacuum condition Licensor-1	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82B-001GD	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated Vacuum condition Licensor-1	
1	0.75				P82B-001GE	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated Vacuum condition Licensor-1	
1	1				P82B-001GF	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated Vacuum condition Licensor-1	
1	1.5				P82B-001GG	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated Vacuum condition Licensor-1	
1	2				P82C-002ZS	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated Vacuum condition Licensor-1	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83B-00164	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover Vacuum condition Licensor-1	
1	0.75				P83B-00165	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover Vacuum condition Licensor-1	
1	1				P83B-00166	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover Vacuum condition Licensor-1	
1	1.5				P83B-00167	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover Vacuum condition Licensor-1	
1	2				P83C-002Z2	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover Vacuum condition Licensor-1	
1	3				P83C-002Z3	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover Vacuum condition Licensor-1	
1	4				P83C-002Z4	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover Vacuum condition Licensor-1	
1	6				P83C-002Z5	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover Vacuum condition Licensor-1	
1	8				P83C-002Z6	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover Vacuum condition Licensor-1	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71B-00080	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	0.75				P71B-00081	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	1				P71B-00082	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	1.5				P71B-00083	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	2				P71B-00085	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	3				P71B-00086	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	4				P71B-00087	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Licensor-1	

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SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	6				P71B-00088	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	8				P71B-00089	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	10				P71B-00084	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	12				P71B-0008S	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Licensor-1	

PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000BR	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	16				P72B-000BS	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	18				P72B-000BT	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Licensor-1	

PADDLE SPACER (PS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000C7	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	16				P72B-000C8	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	18				P72B-000C9	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Licensor-1	

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BOLT TABLE (B_A1A201 , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	60	P80S-003V2		
0.75	4	0.500	65	P80S-003V3		
1	4	0.500	70	P80S-003V4		
1.5	4	0.500	75	P80S-003V5		
2	4	0.625	85	P80S-003XE		
3	4	0.625	95	P80S-003XG		
4	8	0.625	95	P80S-003XG		
6	8	0.750	105	P80S-003XJ		
8	8	0.750	110	P80S-003XK		
10	12	0.875	120	P80S-00419		
12	12	0.875	120	P80S-00419		
14	12	1.000	135	P80S-0043E		
16	16	1.000	140	P80S-0043F		
18	16	1.125	150	P80S-0046K		

BOLT TABLE (B_A1A201_773 , STUD ASME RF, OPTION CODE 773)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-003V4		
0.75	4	0.625	75	P80S-003XC		
1	4	0.625	80	P80S-003XD		
1.5	4	0.750	95	P80S-00414		
2	8	0.625	90	P80S-003XF		
3	8	0.750	110	P80S-003XK		
4	8	0.750	115	P80S-003XL		
6	12	0.750	125	P80S-003XN		
8	12	0.875	140	P80S-0041D		
10	16	1.000	160	P80S-0043K		
12	16	1.125	175	P80S-0046S		
14	20	1.125	180	P80S-0046T		
16	20	1.250	190	P80S-004AK		
18	24	1.250	200	P80S-004AM		

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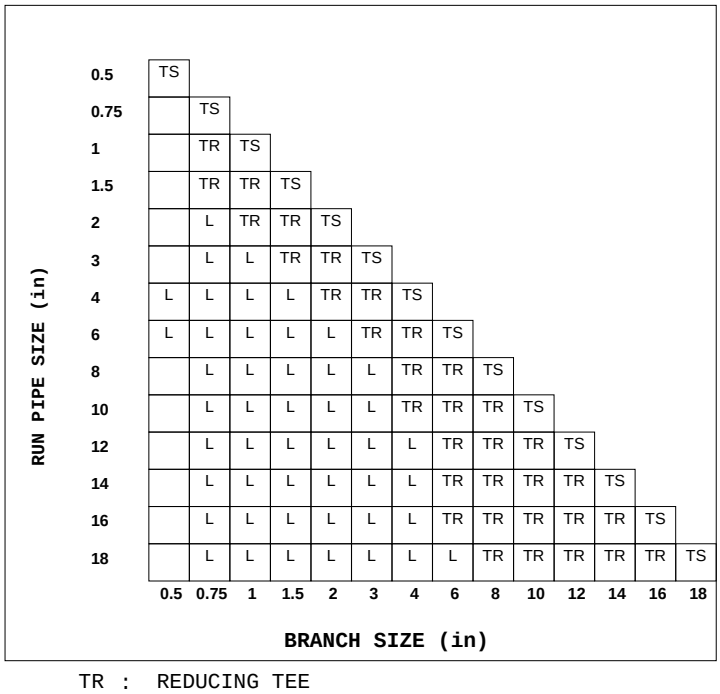
BRANCH TABLE (T_A1A201)



RUN PIPE SIZE (in) \ BRANCH SIZE (in)	0.5	0.75	1	1.5	2	3	4	6	8	10	12	14	16	18
0.5	TS													
0.75		TS												
1		TR	TS											
1.5		TR	TR	TS										
2		L	TR	TR	TS									
3		L	L	TR	TR	TS								
4	L	L	L	L	TR	TR	TS							
6	L	L	L	L	L	TR	TR	TS						
8		L	L	L	L	L	TR	TR	TS					
10		L	L	L	L	L	TR	TR	TR	TS				
12		L	L	L	L	L	L	TR	TR	TR	TS			
14		L	L	L	L	L	L	TR	TR	TR	TR	TS		
16		L	L	L	L	L	L	TR	TR	TR	TR	TR	TS	
18		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TS

TR : REDUCING TEE
TS : STRAIGHT TEE
L : OUTLET

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PIPING CLASS

A1A8 REV NO. 2

Material : Killed CS
Rating : ASME CLASS 150
Flange Face : RF
C.A.(mm) : 1.50
Gasket : Spiral Wound
Service : PROCESS - BENZENE SERVICE (CONTAINING 5WT% OR MORE BENZENE)
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
2	USE OF SOFT SEATED BALL, PLUG AND BUTTERFLY VALVES SHALL BE LIMITED TO MAXIMUM OF 204DEGC (400DEGF)

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
200	WITH JACK SCREW (FO)
541	NPT(F) (CA,L)
714	SW - NPT(F) (V)
773	CLASS 300 (B,F,G,SB)
781	CLASS 600 (B,F,G)

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PIPING CLASS
A1A8 REV NO. 2

PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P01A-000XM	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	0.75		XS		P01A-000XN	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1		XS		P01A-000XP	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1.5		XS		P01A-000XV	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	2		XS		P01A-000YX	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	3		STD		P01A-000YM	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	4		STD		P01A-000YU	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	6		STD		P01A-000Z3	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	8		SCH20		P01A-001AT	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	10		SCH20		P01A-0014Y	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	12		SCH20		P01A-0016H	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	14		SCH20		P01A-0017A	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	16		SCH20		P01A-0018E	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	18		SCH20		P01A-00438	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE	
1	20		STD		P01A-0042G	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE	
1	24		STD		P01A-0042H	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P02B-00014	90 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	0.75				P02B-00015	90 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	1				P02B-00016	90 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5				P02B-00017	90 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	2		XS		P02A-000CP	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		STD		P02A-000CU	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		STD		P02A-000CZ	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		STD		P02A-000D6	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		SCH20		P02A-000GZ	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	10		SCH20		P02A-000H1	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	12		SCH20		P02A-000H4	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	14		SCH20		P02A-000FX	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	16		SCH20		P02A-000GM	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	18		SCH20		P02A-000LT	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	20		STD		P02A-0010J	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	24		STD		P02A-0010K	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P03B-00017	45 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	0.75				P03B-00018	45 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	1				P03B-00019	45 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5				P03B-0001A	45 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	2		XS		P03A-000AS	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		STD		P03A-000AX	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		STD		P03A-000B1	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		STD		P03A-000B9	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		SCH20		P03A-000EX	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	10		SCH20		P03A-000F0	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	12		SCH20		P03A-000F2	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	14		SCH20		P03A-000DW	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	16		SCH20		P03A-000EM	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	18		SCH20		P03A-001DX	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	20		STD		P03A-000X1	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	24		STD		P03A-000X2	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P21B-00017	Straight tee ASTM A105 Class 3000 ASME B16.11 SW	
1	0.75				P21B-00018	Straight tee ASTM A105 Class 3000 ASME B16.11 SW	

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STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P21B-00019	Straight tee ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5				P21B-0001A	Straight tee ASTM A105 Class 3000 ASME B16.11 SW	
1	2		XS		P21A-001CJ	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		STD		P21A-001CU	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		STD		P21A-001CW	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6		STD		P21A-001D2	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8		SCH20		P21A-00215	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10		SCH20		P21A-00219	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12		SCH20		P21A-0021A	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14		SCH20		P21A-00206	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16		SCH20		P21A-0020X	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18		SCH20		P21A-001PJ	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20		STD		P21A-001C7	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24		STD		P21A-001CC	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75			P24B-0002L	Reducing tee ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5	0.75			P24B-0002N	Reducing tee ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5	1			P24B-0002P	Reducing tee ASTM A105 Class 3000 ASME B16.11 SW	
1	2	1	XS	XS	P24A-00238	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	XS	XS	P24A-0023H	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	STD	XS	P24A-00214	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	STD	XS	P24A-002HW	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P24A-002HY	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P24A-0021K	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	STD	P24A-0021A	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P24A-00229	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH20	STD	P24A-00J21	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH20	STD	P24A-005J4	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	SCH20	STD	P24A-00HMB	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	SCH20	STD	P24A-00HKS	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	SCH20	SCH20	P24A-002YX	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	SCH20	STD	P24A-00K0B	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH20	SCH20	P24A-002U4	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH20	SCH20	P24A-002YC	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	SCH20	STD	P24A-00K0M	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	SCH20	SCH20	P24A-002U7	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	SCH20	SCH20	P24A-002YA	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	SCH20	SCH20	P24A-002YR	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	6	SCH20	STD	P24A-00GU4	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	SCH20	SCH20	P24A-002XW	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	SCH20	SCH20	P24A-002YH	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	SCH20	SCH20	P24A-002U1	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	SCH20	SCH20	P24A-002XF	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	8	SCH20	SCH20	P24A-002XC	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	10	SCH20	SCH20	P24A-002UX	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	12	SCH20	SCH20	P24A-002W3	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	14	SCH20	SCH20	P24A-002WT	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	16	SCH20	SCH20	P24A-002X5	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	8	STD	SCH20	P24A-00K0N	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	10	STD	SCH20	P24A-00BT7	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	12	STD	SCH20	P24A-00BUS	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	14	STD	SCH20	P24A-00BWB	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	16	STD	SCH20	P24A-006W3	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	18	STD	SCH20	P24A-006WD	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	10	STD	SCH20	P24A-00KT6	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	12	STD	SCH20	P24A-00C7B	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	14	STD	SCH20	P24A-00K0C	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	

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REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	24	16	STD	SCH20	P24A-00CAD	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	18	STD	SCH20	P24A-006WF	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	20	STD	STD	P24A-004SV	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	STD	XS	P27A-001MZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P27A-001N0	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P27A-00189	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	STD	P27A-001AZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P27A-001GW	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH20	STD	P27A-003K2	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH20	STD	P27A-003K3	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	SCH20	STD	P27A-003K4	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	SCH20	STD	P27A-003K5	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	SCH20	SCH20	P27A-001UL	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	SCH20	STD	P27A-003K6	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH20	SCH20	P27A-001UU	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH20	SCH20	P27A-001TH	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	SCH20	STD	P27A-00518	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	SCH20	SCH20	P27A-001V4	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	SCH20	SCH20	P27A-001TG	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	SCH20	SCH20	P27A-001U1	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	SCH20	SCH20	P27A-001WX	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	SCH20	SCH20	P27A-001TW	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	SCH20	SCH20	P27A-001UF	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	SCH20	SCH20	P27A-001V2	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	10	SCH20	SCH20	P27A-001TJ	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	12	SCH20	SCH20	P27A-001UE	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	14	SCH20	SCH20	P27A-001UY	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	16	SCH20	SCH20	P27A-001WN	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	12	STD	SCH20	P27A-00CMZ	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	14	STD	SCH20	P27A-0082L	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	16	STD	SCH20	P27A-0082M	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	18	STD	SCH20	P27A-0084N	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	16	STD	SCH20	P27A-0084T	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	18	STD	SCH20	P27A-0084U	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	20	STD	STD	P27A-001A8	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	STD	XS	P28A-001N5	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P28A-001N6	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P28A-0018B	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	STD	P28A-001AS	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P28A-00182	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH20	STD	P28A-003JU	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH20	STD	P28A-003JV	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	SCH20	STD	P28A-003JW	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	SCH20	STD	P28A-003JX	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	SCH20	SCH20	P28A-001V0	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	SCH20	STD	P28A-003JY	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH20	SCH20	P28A-001V1	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH20	SCH20	P28A-001TJ	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	SCH20	STD	P28A-0096P	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	SCH20	SCH20	P28A-001WH	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	SCH20	SCH20	P28A-001TH	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	SCH20	SCH20	P28A-001UC	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	SCH20	SCH20	P28A-001T6	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	16	10	SCH20	SCH20	P28A-001TY	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	SCH20	SCH20	P28A-001UX	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	SCH20	SCH20	P28A-001WG	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	10	SCH20	SCH20	P28A-001TV	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	12	SCH20	SCH20	P28A-001UJ	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	14	SCH20	SCH20	P28A-001WD	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	16	SCH20	SCH20	P28A-001T1	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	12	STD	SCH20	P28A-009MM	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	14	STD	SCH20	P28A-004SJ	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	16	STD	SCH20	P28A-004SK	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	18	STD	SCH20	P28A-004UN	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	16	STD	SCH20	P28A-004UR	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	18	STD	SCH20	P28A-004US	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	20	STD	STD	P28A-001AW	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P29B-0001J	Cap ASTM A105 Class 3000 ASME B16.11 SW	
1	0.75				P29B-0001F	Cap ASTM A105 Class 3000 ASME B16.11 SW	
1	1				P29B-0001G	Cap ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5				P29B-0001H	Cap ASTM A105 Class 3000 ASME B16.11 SW	
1	2		XS		P29A-000A1	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		STD		P29A-000BK	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		STD		P29A-000A3	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6		STD		P29A-000A9	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8		SCH20		P29A-000EY	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10		SCH20		P29A-000E5	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12		SCH20		P29A-000E8	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14		SCH20		P29A-000EA	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16		SCH20		P29A-000F3	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18		SCH20		P29A-000E0	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20		STD		P29A-000B2	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24		STD		P29A-000B8	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
541	0.75				P29B-0000C	Cap ASTM A105 Class 3000 ASME B16.11 NPT	
541	1				P29B-0000D	Cap ASTM A105 Class 3000 ASME B16.11 NPT	
541	1.5				P29B-0000E	Cap ASTM A105 Class 3000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P41A-000B5	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		SCH160		P41A-000B6	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		SCH160		P41A-000B7	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		SCH160		P41A-000B8	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

CON SWAGED NIPPLE (SNC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	XS	XS	P42A-00036	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	XS	XS	P42A-00038	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	XS	XS	P42A-0003B	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	XS	XS	P42A-00035	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	XS	XS	P42A-00039	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	XS	XS	P42A-0003C	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	XS	XS	P42A-0008C	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	XS	XS	P42A-0008D	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	XS	XS	P42A-0008E	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	XS	XS	P42A-0008F	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	STD	XS	P42A-0007V	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	

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ECC SWAGED NIPPLE (SNE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	XS	XS	P43A-00036	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	XS	XS	P43A-00037	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	XS	XS	P43A-00038	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	XS	XS	P43A-00039	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	XS	XS	P43A-0003A	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	XS	XS	P43A-0003B	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	XS	XS	P43A-00042	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	XS	XS	P43A-00043	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	XS	XS	P43A-00044	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	XS	XS	P43A-00045	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	STD	XS	P43A-0003J	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	

COUPLING (CPS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P47B-0001D	Coupling ASTM A105 Class 3000 ASME B16.11 SW - SW	
1	0.75				P47B-0001E	Coupling ASTM A105 Class 3000 ASME B16.11 SW - SW	
1	1				P47B-0001F	Coupling ASTM A105 Class 3000 ASME B16.11 SW - SW	
1	1.5				P47B-0001G	Coupling ASTM A105 Class 3000 ASME B16.11 SW - SW	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2 - 2.5	0.75			P31B-0137J	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	3 - 5	0.75			P31B-0137K	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	6 - 12	0.75			P31B-007AB	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	14 - 36	0.75			P31B-007AJ	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	3	1			P31B-007A7	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	4 - 5	1			P31B-0138Z	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	6 - 10	1			P31B-007A4	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	12 - 36	1			P31B-007AA	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	4	1.5			P31B-005SN	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	5 - 6	1.5			P31B-01390	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	8 - 12	1.5			P31B-0079U	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	14 - 24	1.5			P31B-007A0	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
541	1	0.75			P31B-00551	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
541	1.5	0.75			P31B-00555	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
541	2 - 2.5	0.75			P31B-0137H	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
541	3 - 5	0.75			P31B-01376	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
541	6 - 12	0.75			P31B-007GR	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
541	14 - 36	0.75			P31B-007GY	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
1	6	2	STD	XS	P31B-007SH	Outlet ASTM A105 MSS SP-97 BW	
1	8	2	SCH20	XS	P31B-00NY2	Outlet ASTM A105 MSS SP-97 BW	
1	10	2	SCH20	XS	P31B-00TFB	Outlet ASTM A105 MSS SP-97 BW	
1	12	2	SCH20	XS	P31B-00TFA	Outlet ASTM A105 MSS SP-97 BW	
1	14	2	SCH20	XS	P31B-00TF9	Outlet ASTM A105 MSS SP-97 BW	
1	16	2	SCH20	XS	P31B-00TF8	Outlet ASTM A105 MSS SP-97 BW	
1	18	2	SCH20	XS	P31B-00NVX	Outlet ASTM A105 MSS SP-97 BW	
1	20	2	STD	XS	P31B-00994	Outlet ASTM A105 MSS SP-97 BW	
1	24	2	STD	XS	P31B-0092Z	Outlet ASTM A105 MSS SP-97 BW	
1	8	3	SCH20	STD	P31B-00P11	Outlet ASTM A105 MSS SP-97 BW	
1	10	3	SCH20	STD	P31B-00UPG	Outlet ASTM A105 MSS SP-97 BW	
1	12	3	SCH20	STD	P31B-00USE	Outlet ASTM A105 MSS SP-97 BW	
1	14	3	SCH20	STD	P31B-00UPH	Outlet ASTM A105 MSS SP-97 BW	
1	16	3	SCH20	STD	P31B-00TU2	Outlet ASTM A105 MSS SP-97 BW	
1	18	3	SCH20	STD	P31B-00NZ4	Outlet ASTM A105 MSS SP-97 BW	
1	20	3	STD	STD	P31B-008FA	Outlet ASTM A105 MSS SP-97 BW	
1	24	3	STD	STD	P31B-00895	Outlet ASTM A105 MSS SP-97 BW	
1	12	4	SCH20	STD	P31B-00USF	Outlet ASTM A105 MSS SP-97 BW	
1	14	4	SCH20	STD	P31B-00UPJ	Outlet ASTM A105 MSS SP-97 BW	
1	16	4	SCH20	STD	P31B-00TU3	Outlet ASTM A105 MSS SP-97 BW	

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OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	18	4	SCH20	STD	P31B-00P1V	Outlet ASTM A105 MSS SP-97 BW	
1	20	4	STD	STD	P31B-008D3	Outlet ASTM A105 MSS SP-97 BW	
1	24	4	STD	STD	P31B-0086X	Outlet ASTM A105 MSS SP-97 BW	
1	18	6	SCH20	STD	P31B-00P48	Outlet ASTM A105 MSS SP-97 BW	
1	20	6	STD	STD	P31B-008PZ	Outlet ASTM A105 MSS SP-97 BW	
1	24	6	STD	STD	P31B-008JD	Outlet ASTM A105 MSS SP-97 BW	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30B-0002D	Plug ASTM A105 ASME B16.11 NPT Round head	
1	0.75				P30B-0002E	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1				P30B-0002F	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1.5				P30B-0002G	Plug ASTM A105 ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P61B-001R9	Flange SW ASTM A105 Class 150 ASME B16.5 RF	
1	0.75		XS		P61B-001RA	Flange SW ASTM A105 Class 150 ASME B16.5 RF	
1	1		XS		P61B-001RR	Flange SW ASTM A105 Class 150 ASME B16.5 RF	
1	1.5		XS		P61B-001RV	Flange SW ASTM A105 Class 150 ASME B16.5 RF	
1	2		XS		P61B-003NK	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	3		STD		P61B-001PW	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	4		STD		P61B-001R8	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	6		STD		P61B-001RT	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	8		SCH20		P61B-002BF	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	10		SCH20		P61B-002B4	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	12		SCH20		P61B-002B5	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	14		SCH20		P61B-002B6	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	16		SCH20		P61B-002B7	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	18		SCH20		P61B-002B8	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	20		STD		P61B-001JA	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	24		STD		P61B-001NJ	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
773	0.5		XS		P61B-001HC	Flange SW ASTM A105 Class 300 ASME B16.5 RF	
773	0.75		XS		P61B-001HS	Flange SW ASTM A105 Class 300 ASME B16.5 RF	
773	1		XS		P61B-001EF	Flange SW ASTM A105 Class 300 ASME B16.5 RF	
773	1.5		XS		P61B-001F2	Flange SW ASTM A105 Class 300 ASME B16.5 RF	
773	2		XS		P61B-001HW	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	3		STD		P61B-001LJ	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	4		STD		P61B-001MC	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	6		STD		P61B-001N2	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	8		SCH20		P61B-002LJ	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	10		SCH20		P61B-002LH	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	12		SCH20		P61B-002MP	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	14		SCH20		P61B-002MR	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	16		SCH20		P61B-002MS	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	18		SCH20		P61B-002MT	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	20		STD		P61B-001NT	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	24		STD		P61B-001PA	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
781	0.5		XS		P61B-001FF	Flange SW ASTM A105 Class 600 ASME B16.5 RF	
781	0.75		XS		P61B-001FH	Flange SW ASTM A105 Class 600 ASME B16.5 RF	
781	1		XS		P61B-001DR	Flange SW ASTM A105 Class 600 ASME B16.5 RF	
781	1.5		XS		P61B-001DV	Flange SW ASTM A105 Class 600 ASME B16.5 RF	
781	2		XS		P61B-001DH	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	3		STD		P61B-001TW	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	4		STD		P61B-001VV	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	6		STD		P61B-001JW	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	8		SCH20		P61B-003F0	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	10		SCH20		P61B-00650	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	12		SCH20		P61B-00651	Flange WN ASTM A105 Class 600 ASME B16.5 RF	

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BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67B-000FH	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	0.75				P67B-000FJ	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	1				P67B-000FK	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	1.5				P67B-000FL	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	2				P67B-000FT	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	3				P67B-000FW	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	4				P67B-000FX	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	6				P67B-000FY	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	8				P67B-000FZ	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	10				P67B-000FM	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	12				P67B-000FN	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	14				P67B-000FP	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	16				P67B-000FR	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	18				P67B-000FS	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	20				P67B-000FU	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	24				P67B-000FV	Blind flange ASTM A105 Class 150 ASME B16.5 RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000L8	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000L9	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000LA	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000LB	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000LH	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000LL	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000LM	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	6				P73T-000LN	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	8				P73T-000LP	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	10				P73T-000LC	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	12				P73T-000LD	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	14				P73T-000LE	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	16				P73T-000LF	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	18				P73T-000LG	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	20				P73T-000LJ	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	24				P73T-000LK	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	0.5				P73T-000FT	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	0.75				P73T-000FU	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	3				P73T-000G5	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	4				P73T-000G6	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	6				P73T-000G7	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	8				P73T-000G8	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	10				P73T-000FX	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	12				P73T-000FY	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	14				P73T-000FZ	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	16				P73T-000G0	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	18				P73T-000G1	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

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GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
773	20				P73T-000G3	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	24				P73T-000G4	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	0.5				P73T-000J8	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	0.75				P73T-000J9	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1				P73T-000JA	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1.5				P73T-000JB	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	2				P73T-000JH	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	3				P73T-000JL	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	4				P73T-000JM	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	6				P73T-000JN	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	8				P73T-000JP	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	10				P73T-000JC	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	12				P73T-000JD	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-16				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	18-24				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
773	0.5-10				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
773	12-24				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
781	0.5-6				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
781	8-12				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81B-002G5	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated Benzene service	
1	0.75				P81B-002G6	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated Benzene service	
1	1				P81B-002G7	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated Benzene service	
1	1.5				P81B-002G8	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated Benzene service	
1	2				P81C-007N0	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated Benzene service	
1	3				P81C-007N1	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated Benzene service	
1	4				P81C-007N2	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated Benzene service	
1	6				P81C-007N3	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated Benzene service	
1	8				P81C-007N4	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated Benzene service	
1	10				P81C-007MY	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated Benzene service	
1	12				P81C-007MZ	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated Benzene service	
1	14				P81C-007N5	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated Benzene service	
1	16				P81C-007N6	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated Benzene service	
1	18				P81C-007N7	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated Benzene service	
1	20				P81C-007N8	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated Benzene service	
1	24				P81C-007N9	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated Benzene service	
714	0.5				P81B-002S8	Gate valve ASTM A105 Class 800 API 602 SW - NPT Trim number 8 BB-BG-OS&Y Handwheel operated Benzene service	
714	0.75				P81B-002G9	Gate valve ASTM A105 Class 800 API 602 SW - NPT Trim number 8 BB-BG-OS&Y Handwheel operated Benzene service	

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GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82B-001UP	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated Benzene service	
1	0.75				P82B-001UR	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated Benzene service	
1	1				P82B-001US	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated Benzene service	
1	1.5				P82B-001UT	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated Benzene service	
1	2				P82C-003VL	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated Benzene service	
1	3				P82C-003VM	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated Benzene service	
1	4				P82C-003VN	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated Benzene service	
1	6				P82C-003VP	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated Benzene service	
1	8				P82C-003VR	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated Benzene service	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83B-000FX	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover	
1	0.75				P83B-000ER	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover	
1	1				P83B-000ES	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover	
1	1.5				P83B-000ET	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover	
1	2				P83C-00144	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	3				P83C-00147	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	4				P83C-00148	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	6				P83C-00149	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	8				P83C-0014A	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	10				P83C-00140	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	12				P83C-00141	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	14				P83C-0021E	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	16				P83C-00142	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	18				P83C-00143	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	20				P83C-00145	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	24				P83C-00146	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	

ORIFICE FLANGE (FO)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2		XS		P66B-0084B	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	3		STD		P66B-0084C	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	4		STD		P66B-0084D	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	6		STD		P66B-0084E	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	8		SCH20		P66B-0084F	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	10		SCH20		P66B-00848	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	12		SCH20		P66B-0084L	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	14		SCH20		P66B-0084A	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	16		SCH20		P66B-0083Y	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
200	2		XS		P66B-00843	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	3		STD		P66B-00844	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	4		STD		P66B-00845	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	6		STD		P66B-00846	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	8		SCH20		P66B-00847	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	10		SCH20		P66B-00840	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	12		SCH20		P66B-0084P	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	14		SCH20		P66B-00842	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	16		SCH20		P66B-0083Z	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	

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SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71B-0008A	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	0.75				P71B-0008B	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	1				P71B-0008C	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71B-0008D	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	2				P71B-0000P	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	3				P71B-0000N	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	4				P71B-0000M	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	6				P71B-0000L	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	8				P71B-0000R	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	10				P71B-0000K	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	12				P71B-0000J	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
773	0.5				P71B-000B1	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
773	0.75				P71B-000B2	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
773	1				P71B-000B3	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
773	1.5				P71B-000B4	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
773	2				P71B-000B6	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
773	3				P71B-000B7	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
773	4				P71B-000B8	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
773	6				P71B-000B9	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
773	8				P71B-000BA	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
773	10				P71B-000B5	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
773	12				P71B-000BB	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	

PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000AH	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	16				P72B-0000C	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	18				P72B-000AJ	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	20				P72B-000AK	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	24				P72B-000AL	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	

PADDLE SPACER (PS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000AT	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	16				P72B-0000B	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	18				P72B-000AU	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	20				P72B-000AV	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	24				P72B-000AW	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	

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BOLT TABLE (B_A1A8 , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	60	P80S-003V2		
0.75	4	0.500	65	P80S-003V3		
1	4	0.500	70	P80S-003V4		
1.5	4	0.500	75	P80S-003V5		
2	4	0.625	85	P80S-003XE		
3	4	0.625	95	P80S-003XG		
4	8	0.625	95	P80S-003XG		
6	8	0.750	105	P80S-003XJ		
8	8	0.750	110	P80S-003XK		
10	12	0.875	120	P80S-00419		
12	12	0.875	120	P80S-00419		
14	12	1.000	135	P80S-0043E		
16	16	1.000	140	P80S-0043F		
18	16	1.125	150	P80S-0046K		
20	20	1.125	160	P80S-0046M		
24	20	1.250	175	P80S-004AG		

BOLT TABLE (B_A1A8_773 , STUD ASME RF, OPTION CODE 773)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-003V4		
0.75	4	0.625	75	P80S-003XC		
1	4	0.625	80	P80S-003XD		
1.5	4	0.750	95	P80S-00414		
2	8	0.625	90	P80S-003XF		
3	8	0.750	110	P80S-003XK		
4	8	0.750	115	P80S-003XL		
6	12	0.750	125	P80S-003XN		
8	12	0.875	140	P80S-0041D		
10	16	1.000	160	P80S-0043K		
12	16	1.125	175	P80S-0046S		
14	20	1.125	180	P80S-0046T		
16	20	1.250	190	P80S-004AK		
18	24	1.250	200	P80S-004AM		
20	24	1.250	210	P80S-004AP		
24	24	1.500	235	P80S-003F8		

BOLT TABLE (B_A1A8_781 , STUD ASME RF, OPTION CODE 781)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	80	P80S-003V6		
0.75	4	0.625	90	P80S-003XF		
1	4	0.625	95	P80S-003XG		
1.5	4	0.750	110	P80S-003XK		
2	8	0.625	110	P80S-003VC		
3	8	0.750	130	P80S-003XP		
4	8	0.875	150	P80S-0041F		
6	12	1.000	175	P80S-0043P		
8	12	1.125	195	P80S-0046W		
10	16	1.250	250	P80S-004AY		
12	20	1.250	255	P80S-004AZ		
14	20	1.375	270			
16	20	1.500	295			
18	20	1.625	320			
20	24	1.625	335			
24	24	1.875	380			

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PIPING CLASS

A1A8 REV NO. 2

BRANCH TABLE (T_A1A8)

RUN PIPE SIZE (in) \ BRANCH SIZE (in)	0.5	0.75	1	1.5	2	3	4	6	8	10	12	14	16	18	20	24
0.5	TS															
0.75		TS														
1		TR	TS													
1.5		TR	TR	TS												
2		L	TR	TR	TS											
3		L	L	TR	TR	TS										
4	L	L	L	L	TR	TR	TS									
6	L	L	L	L	L	TR	TR	TS								
8		L	L	L	L	L	TR	TR	TS							
10		L	L	L	L	L	TR	TR	TR	TS						
12		L	L	L	L	L	L	TR	TR	TR	TS					
14		L	L	L	L	L	L	TR	TR	TR	TR	TS				
16		L	L	L	L	L	L	TR	TR	TR	TR	TR	TS			
18		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TS		
20		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TR	TS	
24		L	L	L	L	L	L	L	9PD	TR	TR	TR	TR	TR	TR	TS

TS : STRAIGHT TEE
TR : REDUCING TEE
L : OUTLET
9PD : REINFORCING PAD 90 DEG

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PIPING CLASS

A1A804 REV NO. 2

Material	:	Killed CS
Rating	:	ASME CLASS 150
Flange Face	:	RF
C.A.(mm)	:	1.50
Gasket	:	Spiral Wound
Service	:	PROCESS - BENZENE SERVICE (5% WT)
Design Code	:	ASME B31.3
Heat Treatment	:	

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
200	WITH JACK SCREW (FO)
221	RF (V)
541	NPT(F) (CA,L)
714	SW - NPT(F) (V)
773	CLASS 300 (B,F,G,SB)
781	CLASS 600 (B,F,G)

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PIPING CLASS
A1A804 REV NO. 2

PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P01A-000XM	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	0.75		XS		P01A-000XN	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1		XS		P01A-000XP	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1.5		XS		P01A-000XV	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	2		XS		P01A-000YX	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	3		STD		P01A-000YM	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	4		STD		P01A-000YU	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	6		STD		P01A-000Z3	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	8		SCH20		P01A-001AT	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	10		SCH20		P01A-0014Y	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	12		SCH20		P01A-0016H	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	14		SCH20		P01A-0017A	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	16		SCH20		P01A-0018E	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	18		SCH20		P01A-00438	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE	
1	20		STD		P01A-0042G	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE	
1	24		STD		P01A-0042H	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE	
1	30		STD		P01A-0042J	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE	
1	36		STD		P01A-00439	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P02B-00014	90 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	0.75				P02B-00015	90 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	1				P02B-00016	90 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5				P02B-00017	90 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	2		XS		P02A-000CP	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		STD		P02A-000CU	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		STD		P02A-000CZ	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		STD		P02A-000D6	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		SCH20		P02A-000GZ	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	10		SCH20		P02A-000H1	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	12		SCH20		P02A-000H4	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	14		SCH20		P02A-000FX	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	16		SCH20		P02A-000GM	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	18		SCH20		P02A-000LT	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	20		STD		P02A-0010J	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	24		STD		P02A-0010K	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	30		STD		P02A-000F3	90 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius	
1	36		STD		P02A-001GL	90 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P03B-00017	45 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	0.75				P03B-00018	45 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	1				P03B-00019	45 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5				P03B-0001A	45 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	2		XS		P03A-000AS	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		STD		P03A-000AX	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		STD		P03A-000B1	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		STD		P03A-000B9	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		SCH20		P03A-000EX	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	10		SCH20		P03A-000F0	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	12		SCH20		P03A-000F2	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	14		SCH20		P03A-000DW	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	16		SCH20		P03A-000EM	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	18		SCH20		P03A-001DX	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	20		STD		P03A-000X1	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	24		STD		P03A-000X2	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	30		STD		P03A-000D0	45 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius	

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45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	36		STD		P03A-001BS	45 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P21B-00017	Straight tee ASTM A105 Class 3000 ASME B16.11 SW	
1	0.75				P21B-00018	Straight tee ASTM A105 Class 3000 ASME B16.11 SW	
1	1				P21B-00019	Straight tee ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5				P21B-0001A	Straight tee ASTM A105 Class 3000 ASME B16.11 SW	
1	2		XS		P21A-001CJ	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		STD		P21A-001CU	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		STD		P21A-001CW	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6		STD		P21A-001D2	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8		SCH20		P21A-00215	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10		SCH20		P21A-00219	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12		SCH20		P21A-0021A	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14		SCH20		P21A-00206	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16		SCH20		P21A-0020X	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18		SCH20		P21A-001PJ	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20		STD		P21A-001C7	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24		STD		P21A-001CC	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30		STD		P21A-001YC	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	36		STD		P21A-001G4	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75			P24B-0002L	Reducing tee ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5	0.75			P24B-0002N	Reducing tee ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5	1			P24B-0002P	Reducing tee ASTM A105 Class 3000 ASME B16.11 SW	
1	2	1	XS	XS	P24A-00238	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	XS	XS	P24A-0023H	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	STD	XS	P24A-00214	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	STD	XS	P24A-002HW	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P24A-002HY	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P24A-0021K	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	STD	P24A-0021A	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P24A-00229	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH20	STD	P24A-00J21	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH20	STD	P24A-005J4	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	SCH20	STD	P24A-00HMB	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	SCH20	STD	P24A-00HKS	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	SCH20	SCH20	P24A-002YX	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	SCH20	STD	P24A-00K0B	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH20	SCH20	P24A-002U4	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH20	SCH20	P24A-002YC	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	SCH20	STD	P24A-00K0M	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	SCH20	SCH20	P24A-002U7	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	SCH20	SCH20	P24A-002YA	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	SCH20	SCH20	P24A-002YR	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	6	SCH20	STD	P24A-00GU4	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	SCH20	SCH20	P24A-002XW	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	SCH20	SCH20	P24A-002YH	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	SCH20	SCH20	P24A-002U1	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	SCH20	SCH20	P24A-002XF	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	8	SCH20	SCH20	P24A-002XC	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	10	SCH20	SCH20	P24A-002UX	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	12	SCH20	SCH20	P24A-002W3	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	14	SCH20	SCH20	P24A-002WT	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	16	SCH20	SCH20	P24A-002X5	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	8	STD	SCH20	P24A-00K0N	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	

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REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	20	10	STD	SCH20	P24A-00BT7	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	12	STD	SCH20	P24A-00BUS	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	14	STD	SCH20	P24A-00BWB	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	16	STD	SCH20	P24A-006W3	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	18	STD	SCH20	P24A-006WD	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	10	STD	SCH20	P24A-00KT6	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	12	STD	SCH20	P24A-00C7B	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	14	STD	SCH20	P24A-00K0C	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	16	STD	SCH20	P24A-00CAD	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	18	STD	SCH20	P24A-006WF	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	20	STD	STD	P24A-004SV	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	10	STD	SCH20	P24A-003VN	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	12	STD	SCH20	P24A-003VP	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	14	STD	SCH20	P24A-003VR	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	16	STD	SCH20	P24A-003VS	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	18	STD	SCH20	P24A-003VT	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	20	STD	STD	P24A-0087D	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	24	STD	STD	P24A-005XW	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	36	16	STD	SCH20	P24A-00GU6	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	36	18	STD	SCH20	P24A-0087J	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	36	20	STD	STD	P24A-0087K	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	36	24	STD	STD	P24A-00DVT	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	36	30	STD	STD	P24A-007WA	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	STD	XS	P27A-001MZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P27A-001N0	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P27A-00189	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	STD	P27A-001AZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P27A-001GW	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH20	STD	P27A-003K2	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH20	STD	P27A-003K3	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	SCH20	STD	P27A-003K4	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	SCH20	STD	P27A-003K5	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	SCH20	SCH20	P27A-001UL	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	SCH20	STD	P27A-003K6	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH20	SCH20	P27A-001UU	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH20	SCH20	P27A-001TH	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	SCH20	STD	P27A-00518	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	SCH20	SCH20	P27A-001V4	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	SCH20	SCH20	P27A-001TG	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	SCH20	SCH20	P27A-001U1	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	SCH20	SCH20	P27A-001WX	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	SCH20	SCH20	P27A-001TW	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	SCH20	SCH20	P27A-001UF	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	SCH20	SCH20	P27A-001V2	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	10	SCH20	SCH20	P27A-001TJ	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	12	SCH20	SCH20	P27A-001UE	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	14	SCH20	SCH20	P27A-001UY	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	16	SCH20	SCH20	P27A-001WN	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	12	STD	SCH20	P27A-00CMZ	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	14	STD	SCH20	P27A-0082L	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	16	STD	SCH20	P27A-0082M	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	18	STD	SCH20	P27A-0084N	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	16	STD	SCH20	P27A-0084T	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	18	STD	SCH20	P27A-0084U	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	20	STD	STD	P27A-001A8	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	20	STD	STD	P27A-001S0	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	

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CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	30	24	STD	STD	P27A-001M7	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	36	24	STD	STD	P27A-00BGR	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	36	30	STD	STD	P27A-00938	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	STD	XS	P28A-001N5	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P28A-001N6	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P28A-0018B	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	STD	P28A-001AS	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P28A-00182	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH20	STD	P28A-003JU	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH20	STD	P28A-003JV	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	SCH20	STD	P28A-003JW	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	SCH20	STD	P28A-003JX	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	SCH20	SCH20	P28A-001V0	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	SCH20	STD	P28A-003JY	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH20	SCH20	P28A-001V1	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH20	SCH20	P28A-001TJ	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	SCH20	STD	P28A-0096P	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	SCH20	SCH20	P28A-001WH	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	SCH20	SCH20	P28A-001TH	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	SCH20	SCH20	P28A-001UC	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	SCH20	SCH20	P28A-001T6	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	SCH20	SCH20	P28A-001TY	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	SCH20	SCH20	P28A-001UX	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	SCH20	SCH20	P28A-001WG	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	10	SCH20	SCH20	P28A-001TV	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	12	SCH20	SCH20	P28A-001UJ	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	14	SCH20	SCH20	P28A-001WD	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	16	SCH20	SCH20	P28A-001T1	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	12	STD	SCH20	P28A-009MM	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	14	STD	SCH20	P28A-004SJ	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	16	STD	SCH20	P28A-004SK	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	18	STD	SCH20	P28A-004UN	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	16	STD	SCH20	P28A-004UR	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	18	STD	SCH20	P28A-004US	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	20	STD	STD	P28A-001AW	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	20	STD	STD	P28A-001LZ	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	24	STD	STD	P28A-001N1	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	36	24	STD	STD	P28A-008FS	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	36	30	STD	STD	P28A-005V7	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P29B-0001J	Cap ASTM A105 Class 3000 ASME B16.11 SW	
1	0.75				P29B-0001F	Cap ASTM A105 Class 3000 ASME B16.11 SW	
1	1				P29B-0001G	Cap ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5				P29B-0001H	Cap ASTM A105 Class 3000 ASME B16.11 SW	
1	2		XS		P29A-000A1	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		STD		P29A-000BK	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		STD		P29A-000A3	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6		STD		P29A-000A9	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8		SCH20		P29A-000EY	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10		SCH20		P29A-000E5	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12		SCH20		P29A-000E8	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14		SCH20		P29A-000EA	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16		SCH20		P29A-000F3	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18		SCH20		P29A-000E0	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	20		STD		P29A-000B2	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24		STD		P29A-000B8	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	30		STD		P29A-000DU	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	36		STD		P29A-001AF	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
541	0.75				P29B-0000C	Cap ASTM A105 Class 3000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P41A-000B5	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		SCH160		P41A-000B6	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		SCH160		P41A-000B7	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		SCH160		P41A-000B8	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

CON SWAGED NIPPLE (SNC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	XS	XS	P42A-00036	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	XS	XS	P42A-00038	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	XS	XS	P42A-0003B	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	XS	XS	P42A-00035	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	XS	XS	P42A-00039	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	XS	XS	P42A-0003C	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	XS	XS	P42A-0008C	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	XS	XS	P42A-0008D	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	XS	XS	P42A-0008E	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	XS	XS	P42A-0008F	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	STD	XS	P42A-0007V	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	

ECC SWAGED NIPPLE (SNE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	XS	XS	P43A-00036	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	XS	XS	P43A-00037	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	XS	XS	P43A-00038	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	XS	XS	P43A-00039	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	XS	XS	P43A-0003A	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	XS	XS	P43A-0003B	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	XS	XS	P43A-00042	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	XS	XS	P43A-00043	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	XS	XS	P43A-00044	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	XS	XS	P43A-00045	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	STD	XS	P43A-0003J	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	

COUPLING (CPS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P47B-0001D	Coupling ASTM A105 Class 3000 ASME B16.11 SW - SW	
1	0.75				P47B-0001E	Coupling ASTM A105 Class 3000 ASME B16.11 SW - SW	
1	1				P47B-0001F	Coupling ASTM A105 Class 3000 ASME B16.11 SW - SW	
1	1.5				P47B-0001G	Coupling ASTM A105 Class 3000 ASME B16.11 SW - SW	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2 - 2.5	0.75			P31B-0137J	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	3 - 5	0.75			P31B-0137K	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	6 - 12	0.75			P31B-007AB	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	14 - 36	0.75			P31B-007AJ	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	3	1			P31B-007A7	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	4 - 5	1			P31B-0138Z	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	6 - 10	1			P31B-007A4	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	12 - 36	1			P31B-007AA	Outlet ASTM A105 Class 3000 MSS SP-97 SW	

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OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	4	1.5			P31B-005SN	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	5 - 6	1.5			P31B-01390	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	8 - 12	1.5			P31B-0079U	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	14 - 24	1.5			P31B-007A0	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	26 - 36	1.5			P31B-01391	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
541	1	0.75			P31B-00551	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
541	1.5	0.75			P31B-00555	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
541	2 - 2.5	0.75			P31B-0137H	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
541	3 - 5	0.75			P31B-01376	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
541	6 - 12	0.75			P31B-007GR	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
541	14 - 36	0.75			P31B-007GY	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
1	6	2	STD	XS	P31B-007SH	Outlet ASTM A105 MSS SP-97 BW	
1	8	2	SCH20	XS	P31B-00NY2	Outlet ASTM A105 MSS SP-97 BW	
1	10	2	SCH20	XS	P31B-00TFB	Outlet ASTM A105 MSS SP-97 BW	
1	12	2	SCH20	XS	P31B-00TFA	Outlet ASTM A105 MSS SP-97 BW	
1	14	2	SCH20	XS	P31B-00TF9	Outlet ASTM A105 MSS SP-97 BW	
1	16	2	SCH20	XS	P31B-00TF8	Outlet ASTM A105 MSS SP-97 BW	
1	18	2	SCH20	XS	P31B-00NVX	Outlet ASTM A105 MSS SP-97 BW	
1	20	2	STD	XS	P31B-00994	Outlet ASTM A105 MSS SP-97 BW	
1	24	2	STD	XS	P31B-0092Z	Outlet ASTM A105 MSS SP-97 BW	
1	30	2	STD	XS	P31B-008P5	Outlet ASTM A105 MSS SP-97 BW	
1	36	2	STD	XS	P31B-00NX8	Outlet ASTM A105 MSS SP-97 BW	
1	8	3	SCH20	STD	P31B-00P11	Outlet ASTM A105 MSS SP-97 BW	
1	10	3	SCH20	STD	P31B-00UPG	Outlet ASTM A105 MSS SP-97 BW	
1	12	3	SCH20	STD	P31B-00USE	Outlet ASTM A105 MSS SP-97 BW	
1	14	3	SCH20	STD	P31B-00UPH	Outlet ASTM A105 MSS SP-97 BW	
1	16	3	SCH20	STD	P31B-00TU2	Outlet ASTM A105 MSS SP-97 BW	
1	18	3	SCH20	STD	P31B-00NZ4	Outlet ASTM A105 MSS SP-97 BW	
1	20	3	STD	STD	P31B-008FA	Outlet ASTM A105 MSS SP-97 BW	
1	24	3	STD	STD	P31B-00895	Outlet ASTM A105 MSS SP-97 BW	
1	30	3	STD	STD	P31B-007WY	Outlet ASTM A105 MSS SP-97 BW	
1	36	3	STD	STD	P31B-007P2	Outlet ASTM A105 MSS SP-97 BW	
1	12	4	SCH20	STD	P31B-00USF	Outlet ASTM A105 MSS SP-97 BW	
1	14	4	SCH20	STD	P31B-00UPJ	Outlet ASTM A105 MSS SP-97 BW	
1	16	4	SCH20	STD	P31B-00TU3	Outlet ASTM A105 MSS SP-97 BW	
1	18	4	SCH20	STD	P31B-00P1V	Outlet ASTM A105 MSS SP-97 BW	
1	20	4	STD	STD	P31B-008D3	Outlet ASTM A105 MSS SP-97 BW	
1	24	4	STD	STD	P31B-0086X	Outlet ASTM A105 MSS SP-97 BW	
1	30	4	STD	STD	P31B-007US	Outlet ASTM A105 MSS SP-97 BW	
1	36	4	STD	STD	P31B-00AER	Outlet ASTM A105 MSS SP-97 BW	
1	18	6	SCH20	STD	P31B-00P48	Outlet ASTM A105 MSS SP-97 BW	
1	20	6	STD	STD	P31B-008PZ	Outlet ASTM A105 MSS SP-97 BW	
1	24	6	STD	STD	P31B-008JD	Outlet ASTM A105 MSS SP-97 BW	
1	30	6	STD	STD	P31B-008BS	Outlet ASTM A105 MSS SP-97 BW	
1	36	6	STD	STD	P31B-0085H	Outlet ASTM A105 MSS SP-97 BW	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30B-0002D	Plug ASTM A105 ASME B16.11 NPT Round head	
1	0.75				P30B-0002E	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1				P30B-0002F	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1.5				P30B-0002G	Plug ASTM A105 ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P61B-001R9	Flange SW ASTM A105 Class 150 ASME B16.5 RF	
1	0.75		XS		P61B-001RA	Flange SW ASTM A105 Class 150 ASME B16.5 RF	
1	1		XS		P61B-001RR	Flange SW ASTM A105 Class 150 ASME B16.5 RF	
1	1.5		XS		P61B-001RV	Flange SW ASTM A105 Class 150 ASME B16.5 RF	

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FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2		XS		P61B-003NK	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	3		STD		P61B-001PW	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	4		STD		P61B-001R8	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	6		STD		P61B-001RT	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	8		SCH20		P61B-002BF	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	10		SCH20		P61B-002B4	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	12		SCH20		P61B-002B5	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	14		SCH20		P61B-002B6	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	16		SCH20		P61B-002B7	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	18		SCH20		P61B-002B8	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	20		STD		P61B-001JA	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	24		STD		P61B-001NJ	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	30		STD		P61B-001S8	Flange WN ASTM A105 Class 150 ASME B16.47 Series B RF	
1	36		STD		P61B-003M6	Flange WN ASTM A105 Class 150 ASME B16.47 Series B RF	
773	0.5		XS		P61B-001HC	Flange SW ASTM A105 Class 300 ASME B16.5 RF	
773	0.75		XS		P61B-001HS	Flange SW ASTM A105 Class 300 ASME B16.5 RF	
773	1		XS		P61B-001EF	Flange SW ASTM A105 Class 300 ASME B16.5 RF	
773	1.5		XS		P61B-001F2	Flange SW ASTM A105 Class 300 ASME B16.5 RF	
773	2		XS		P61B-001HW	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	3		STD		P61B-001LJ	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	4		STD		P61B-001MC	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	6		STD		P61B-001N2	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	8		SCH20		P61B-002LJ	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	10		SCH20		P61B-002LH	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	12		SCH20		P61B-002MP	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	14		SCH20		P61B-002MR	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	16		SCH20		P61B-002MS	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	18		SCH20		P61B-002MT	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	20		STD		P61B-001NT	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	24		STD		P61B-001PA	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	30		STD		P61B-003SW	Flange WN ASTM A105 Class 300 ASME B16.47 Series B RF	
773	36		STD		P61B-004RB	Flange WN ASTM A105 Class 300 ASME B16.47 Series B RF	
781	0.5		XS		P61B-001FF	Flange SW ASTM A105 Class 600 ASME B16.5 RF	
781	0.75		XS		P61B-001FH	Flange SW ASTM A105 Class 600 ASME B16.5 RF	
781	1		XS		P61B-001DR	Flange SW ASTM A105 Class 600 ASME B16.5 RF	
781	1.5		XS		P61B-001DV	Flange SW ASTM A105 Class 600 ASME B16.5 RF	
781	2		XS		P61B-001DH	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	3		STD		P61B-001TW	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	4		STD		P61B-001VV	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	6		STD		P61B-001JW	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	8		SCH20		P61B-003F0	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	10		SCH20		P61B-00650	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	12		SCH20		P61B-00651	Flange WN ASTM A105 Class 600 ASME B16.5 RF	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67B-000FH	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	0.75				P67B-000FJ	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	1				P67B-000FK	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	1.5				P67B-000FL	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	2				P67B-000FT	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	3				P67B-000FW	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	4				P67B-000FX	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	6				P67B-000FY	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	8				P67B-000FZ	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	10				P67B-000FM	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	12				P67B-000FN	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	14				P67B-000FP	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	16				P67B-000FR	Blind flange ASTM A105 Class 150 ASME B16.5 RF	

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BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	18				P67B-000FS	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	20				P67B-000FU	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	24				P67B-000FV	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	30				P67B-000G2	Blind flange ASTM A105 Class 150 ASME B16.47 Series B RF	
1	36				P67B-000G5	Blind flange ASTM A105 Class 150 ASME B16.47 Series B RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000L8	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000L9	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000LA	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000LB	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000LH	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000LL	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000LM	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	6				P73T-000LN	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	8				P73T-000LP	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	10				P73T-000LC	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	12				P73T-000LD	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	14				P73T-000LE	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	16				P73T-000LF	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	18				P73T-000LG	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	20				P73T-000LJ	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	24				P73T-000LK	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	30				P73T-000LT	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	36				P73T-000LW	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	0.5				P73T-000FT	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	0.75				P73T-000FU	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	3				P73T-000G5	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	4				P73T-000G6	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	6				P73T-000G7	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	8				P73T-000G8	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	10				P73T-000FX	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	12				P73T-000FY	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	14				P73T-000FZ	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	16				P73T-000G0	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	18				P73T-000G1	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	20				P73T-000G3	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	24				P73T-000G4	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	30				P73T-000H9	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	36				P73T-000HC	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	0.5				P73T-000J8	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	0.75				P73T-000J9	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

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GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
781	1				P73T-000JA	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1.5				P73T-000JB	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	2				P73T-000JH	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	3				P73T-000JL	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	4				P73T-000JM	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	6				P73T-000JN	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	8				P73T-000JP	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	10				P73T-000JC	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	12				P73T-000JD	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-16				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	18-24				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
1	30-36				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
773	0.5-10				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
773	12-36				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
781	0.5-6				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
781	8-12				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81B-002G5	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated Benzene service	
1	0.75				P81B-002G6	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated Benzene service	
1	1				P81B-002G7	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated Benzene service	
1	1.5				P81B-002G8	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated Benzene service	
1	2				P81C-007N0	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated Benzene service	
1	3				P81C-007N1	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated Benzene service	
1	4				P81C-007N2	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated Benzene service	
1	6				P81C-007N3	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated Benzene service	
1	8				P81C-007N4	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated Benzene service	
1	10				P81C-007MY	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated Benzene service	
1	12				P81C-007MZ	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated Benzene service	
1	14				P81C-007N5	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated Benzene service	
1	16				P81C-007N6	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated Benzene service	
1	18				P81C-007N7	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated Benzene service	
1	20				P81C-007N8	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated Benzene service	
1	24				P81C-007N9	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated Benzene service	
1	30				P81C-007NA	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.47-B RF Trim number 8 BB-BG-OS&Y Gear operated Benzene service	
1	36				P81C-007NB	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.47-B RF Trim number 8 BB-BG-OS&Y Gear operated Benzene service	
221	1				P81B-0038W	Gate valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated Benzene service	
714	0.5				P81B-002S8	Gate valve ASTM A105 Class 800 API 602 SW - NPT Trim number 8 BB-BG-OS&Y Handwheel operated Benzene service	
714	0.75				P81B-002G9	Gate valve ASTM A105 Class 800 API 602 SW - NPT Trim number 8 BB-BG-OS&Y Handwheel operated Benzene service	

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GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82B-001UP	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated Benzene service	
1	0.75				P82B-001UR	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated Benzene service	
1	1				P82B-001US	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated Benzene service	
1	1.5				P82B-001UT	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated Benzene service	
1	2				P82C-003VL	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated Benzene service	
1	3				P82C-003VM	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated Benzene service	
1	4				P82C-003VN	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated Benzene service	
1	6				P82C-003VP	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated Benzene service	
1	8				P82C-003VR	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated Benzene service	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83B-000FX	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover	
1	0.75				P83B-000ER	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover	
1	1				P83B-000ES	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover	
1	1.5				P83B-000ET	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover	
1	2				P83C-00144	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	3				P83C-00147	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	4				P83C-00148	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	6				P83C-00149	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	8				P83C-0014A	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	10				P83C-00140	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	12				P83C-00141	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	14				P83C-0021E	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	16				P83C-00142	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	18				P83C-00143	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	20				P83C-00145	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	24				P83C-00146	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	

DP CHECK VALVE (XDP)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	30				P88C-0023A	Dual plate check valve ASTM A216 Grade WCB Class 150 API 594 Wafer-type ASME B16.47-B RF Trim number 8 Internal wetted parts 13Cr Spring Inconel Retainerless-type	
1	36				P88C-0023B	Dual plate check valve ASTM A216 Grade WCB Class 150 API 594 Wafer-type ASME B16.47-B RF Trim number 8 Internal wetted parts 13Cr Spring Inconel Retainerless-type	

ORIFICE FLANGE (FO)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2		XS		P66B-0084B	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	3		STD		P66B-0084C	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	4		STD		P66B-0084D	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	6		STD		P66B-0084E	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	8		SCH20		P66B-0084F	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	10		SCH20		P66B-00848	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	12		SCH20		P66B-0084L	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	14		SCH20		P66B-0084A	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	16		SCH20		P66B-0083Y	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
200	2		XS		P66B-00843	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	3		STD		P66B-00844	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	4		STD		P66B-00845	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	6		STD		P66B-00846	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	8		SCH20		P66B-00847	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	10		SCH20		P66B-00840	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	

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ORIFICE FLANGE (FO)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
200	12		SCH20		P66B-0084P	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	14		SCH20		P66B-00842	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	16		SCH20		P66B-0083Z	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71B-0008A	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	0.75				P71B-0008B	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	1				P71B-0008C	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71B-0008D	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	2				P71B-0000P	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	3				P71B-0000N	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	4				P71B-0000M	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	6				P71B-0000L	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	8				P71B-0000R	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	10				P71B-0000K	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	12				P71B-0000J	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
773	0.5				P71B-000B1	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
773	0.75				P71B-000B2	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
773	1				P71B-000B3	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
773	1.5				P71B-000B4	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
773	2				P71B-000B6	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
773	3				P71B-000B7	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
773	4				P71B-000B8	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
773	6				P71B-000B9	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
773	8				P71B-000BA	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
773	10				P71B-000B5	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
773	12				P71B-000BB	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	

PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000AH	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	16				P72B-0000C	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	18				P72B-000AJ	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	20				P72B-000AK	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	24				P72B-000AL	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	30				P72B-000AM	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	36				P72B-000AN	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	

PADDLE SPACER (PS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000AT	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	16				P72B-0000B	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	18				P72B-000AU	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	20				P72B-000AV	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	24				P72B-000AW	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	30				P72B-000AX	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	36				P72B-000AY	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	

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BOLT TABLE (B_A1A804 , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	60	P80S-003V2		
0.75	4	0.500	65	P80S-003V3		
1	4	0.500	70	P80S-003V4		
1.5	4	0.500	75	P80S-003V5		
2	4	0.625	85	P80S-003XE		
3	4	0.625	95	P80S-003XG		
4	8	0.625	95	P80S-003XG		
6	8	0.750	105	P80S-003XJ		
8	8	0.750	110	P80S-003XK		
10	12	0.875	120	P80S-00419		
12	12	0.875	120	P80S-00419		
14	12	1.000	135	P80S-0043E		
16	16	1.000	140	P80S-0043F		
18	16	1.125	150	P80S-0046K		
20	20	1.125	160	P80S-0046M		
24	20	1.250	175	P80S-004AG		
30	44	0.750	145	P80S-003ZK		
36	44	0.875	175	P80S-0041M		

BOLT TABLE (B_A1A804_773 , STUD ASME RF, OPTION CODE 773)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-003V4		
0.75	4	0.625	75	P80S-003XC		
1	4	0.625	80	P80S-003XD		
1.5	4	0.750	95	P80S-00414		
2	8	0.625	90	P80S-003XF		
3	8	0.750	110	P80S-003XK		
4	8	0.750	115	P80S-003XL		
6	12	0.750	125	P80S-003XN		
8	12	0.875	140	P80S-0041D		
10	16	1.000	160	P80S-0043K		
12	16	1.125	175	P80S-0046S		
14	20	1.125	180	P80S-0046T		
16	20	1.250	190	P80S-004AK		
18	24	1.250	200	P80S-004AM		
20	24	1.250	210	P80S-004AP		
24	24	1.500	235	P80S-003F8		
30	36	1.375	285	P80S-003EA		
36	32	1.625	320	P80S-005TT		

BOLT TABLE (B_A1A804_781 , STUD ASME RF, OPTION CODE 781)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	80	P80S-003V6		
0.75	4	0.625	90	P80S-003XF		
1	4	0.625	95	P80S-003XG		
1.5	4	0.750	110	P80S-003XK		
2	8	0.625	110	P80S-003VC		
3	8	0.750	130	P80S-003XP		
4	8	0.875	150	P80S-0041F		
6	12	1.000	175	P80S-0043P		
8	12	1.125	195	P80S-0046W		
10	16	1.250	250	P80S-004AY		
12	20	1.250	255	P80S-004AZ		
14	20	1.375	270			
16	20	1.500	295			
18	20	1.625	320			
20	24	1.625	335			
24	24	1.875	380			
30	28	1.875	435			
36	28	2.250	510			

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BRANCH TABLE (T_A1A804)

RUN PIPE SIZE (in) \ BRANCH SIZE (in)	0.5	0.75	1	1.5	2	3	4	6	8	10	12	14	16	18	20	24	30	36
0.5	TS																	
0.75		TS																
1		TR	TS															
1.5		TR	TR	TS														
2		L	TR	TR	TS													
3		L	L	TR	TR	TS												
4	L	L	L	L	TR	TR	TS											
6	L	L	L	L	L	TR	TR	TS										
8		L	L	L	L	L	TR	TR	TS									
10		L	L	L	L	L	TR	TR	TR	TS								
12		L	L	L	L	L	L	TR	TR	TR	TS							
14		L	L	L	L	L	L	TR	TR	TR	TR	TS						
16		L	L	L	L	L	L	TR	TR	TR	TR	TR	TS					
18		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TS				
20		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TR	TS			
24		L	L	L	L	L	L	L	9PD	TR	TR	TR	TR	TR	TR	TS		
30		L	L	L	L	L	L	L	9PD	TR	TR	TR	TR	TR	TR	TR	TS	
36		L	L	L	L	L	L	L	9PD	9PD	9PD	9PD	TR	TR	TR	TR	TR	TS

TS : STRAIGHT TEE
TR : REDUCING TEE
L : OUTLET
9PD : REINFORCING PAD 90 DEG

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PIPING CLASS

A1A904 REV NO. 2

Material : Killed CS
Rating : ASME CLASS 150
Flange Face : RF
C.A.(mm) : 1.50
Gasket : Spiral Wound
Service : PROCESS - BENZENE SERVICE (5% WT) + HYDROGEN
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
2	USE OF SOFT SEATED BALL, PLUG AND BUTTERFLY VALVES SHALL BE LIMITED TO MAXIMUM OF 204DEGC (400DEGF)
16	PIPE CLASS SHALL BE USED WITHIN THE NORMAL OPERATING PRESSURE/TEMPERATURE LIMITS SPECIFIED IN API RP 941. PRESSURE / TEMPERATURE SPECIFIED IN THE PIPE CLASS EXCEEDING API RP 941 LIMITS SHOULD BE REGARDED AS UPSET CONDITIONS RATHER THAN FOR CONTINUOUS SERVICE

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
24	FULL PORT (Q)
200	WITH JACK SCREW (FO)
541	NPT(F) (CA,L)
714	SW - NPT(F) (V)
773	CLASS 300 (B,F,G)
781	CLASS 600 (B,F,G)

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PIPING CLASS
A1A904 REV NO. 2

PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P01A-000XM	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	0.75		XS		P01A-000XN	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1		XS		P01A-000XP	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1.5		XS		P01A-000XV	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	2		XS		P01A-000YX	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	3		STD		P01A-000YM	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	4		STD		P01A-000YU	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	6		STD		P01A-000Z3	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	8		SCH20		P01A-001AT	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	10		SCH20		P01A-0014Y	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	12		SCH20		P01A-0016H	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	14		SCH20		P01A-0017A	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	16		SCH20		P01A-0018E	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	18		SCH20		P01A-00438	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE	
1	20		STD		P01A-0042G	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE	
1	24		STD		P01A-0042H	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE	
1	30		STD		P01A-0042J	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE	
1	36		STD		P01A-00439	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P02B-00014	90 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	0.75				P02B-00015	90 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	1				P02B-00016	90 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5				P02B-00017	90 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	2		XS		P02A-000CP	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		STD		P02A-000CU	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		STD		P02A-000CZ	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		STD		P02A-000D6	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		SCH20		P02A-000GZ	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	10		SCH20		P02A-000H1	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	12		SCH20		P02A-000H4	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	14		SCH20		P02A-000FX	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	16		SCH20		P02A-000GM	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	18		SCH20		P02A-000LT	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	20		STD		P02A-0010J	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	24		STD		P02A-0010K	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	30		STD		P02A-000F3	90 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius	
1	36		STD		P02A-001GL	90 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P03B-00017	45 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	0.75				P03B-00018	45 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	1				P03B-00019	45 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5				P03B-0001A	45 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	2		XS		P03A-000AS	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		STD		P03A-000AX	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		STD		P03A-000B1	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		STD		P03A-000B9	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		SCH20		P03A-000EX	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	10		SCH20		P03A-000F0	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	12		SCH20		P03A-000F2	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	14		SCH20		P03A-000DW	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	16		SCH20		P03A-000EM	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	18		SCH20		P03A-001DX	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	20		STD		P03A-000X1	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	24		STD		P03A-000X2	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	30		STD		P03A-000D0	45 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius	

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45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	36		STD		P03A-001BS	45 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P21B-00017	Straight tee ASTM A105 Class 3000 ASME B16.11 SW	
1	0.75				P21B-00018	Straight tee ASTM A105 Class 3000 ASME B16.11 SW	
1	1				P21B-00019	Straight tee ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5				P21B-0001A	Straight tee ASTM A105 Class 3000 ASME B16.11 SW	
1	2		XS		P21A-001CJ	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		STD		P21A-001CU	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		STD		P21A-001CW	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6		STD		P21A-001D2	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8		SCH20		P21A-00215	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10		SCH20		P21A-00219	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12		SCH20		P21A-0021A	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14		SCH20		P21A-00206	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16		SCH20		P21A-0020X	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18		SCH20		P21A-001PJ	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20		STD		P21A-001C7	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24		STD		P21A-001CC	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30		STD		P21A-001YC	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	36		STD		P21A-001G4	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75			P24B-0002L	Reducing tee ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5	0.75			P24B-0002N	Reducing tee ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5	1			P24B-0002P	Reducing tee ASTM A105 Class 3000 ASME B16.11 SW	
1	2	1	XS	XS	P24A-00238	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	XS	XS	P24A-0023H	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	STD	XS	P24A-00214	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	STD	XS	P24A-002HW	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P24A-002HY	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P24A-0021K	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	STD	P24A-0021A	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P24A-00229	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH20	STD	P24A-00J21	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH20	STD	P24A-005J4	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	SCH20	STD	P24A-00HMB	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	SCH20	STD	P24A-00HKS	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	SCH20	SCH20	P24A-002YX	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	SCH20	STD	P24A-00K0B	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH20	SCH20	P24A-002U4	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH20	SCH20	P24A-002YC	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	SCH20	STD	P24A-00K0M	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	SCH20	SCH20	P24A-002U7	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	SCH20	SCH20	P24A-002YA	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	SCH20	SCH20	P24A-002YR	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	6	SCH20	STD	P24A-00GU4	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	SCH20	SCH20	P24A-002XW	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	SCH20	SCH20	P24A-002YH	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	SCH20	SCH20	P24A-002U1	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	SCH20	SCH20	P24A-002XF	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	8	SCH20	SCH20	P24A-002XC	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	10	SCH20	SCH20	P24A-002UX	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	12	SCH20	SCH20	P24A-002W3	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	14	SCH20	SCH20	P24A-002WT	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	16	SCH20	SCH20	P24A-002X5	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	8	STD	SCH20	P24A-00K0N	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	

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REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	20	10	STD	SCH20	P24A-00BT7	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	12	STD	SCH20	P24A-00BUS	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	14	STD	SCH20	P24A-00BWB	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	16	STD	SCH20	P24A-006W3	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	18	STD	SCH20	P24A-006WD	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	10	STD	SCH20	P24A-00KT6	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	12	STD	SCH20	P24A-00C7B	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	14	STD	SCH20	P24A-00K0C	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	16	STD	SCH20	P24A-00CAD	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	18	STD	SCH20	P24A-006WF	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	20	STD	STD	P24A-004SV	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	10	STD	SCH20	P24A-003VN	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	12	STD	SCH20	P24A-003VP	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	14	STD	SCH20	P24A-003VR	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	16	STD	SCH20	P24A-003VS	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	18	STD	SCH20	P24A-003VT	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	20	STD	STD	P24A-0087D	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	24	STD	STD	P24A-005XW	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	36	16	STD	SCH20	P24A-00GU6	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	36	18	STD	SCH20	P24A-0087J	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	36	20	STD	STD	P24A-0087K	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	36	24	STD	STD	P24A-00DVT	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	36	30	STD	STD	P24A-007WA	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	STD	XS	P27A-001MZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P27A-001N0	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P27A-00189	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	STD	P27A-001AZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P27A-001GW	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH20	STD	P27A-003K2	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH20	STD	P27A-003K3	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	SCH20	STD	P27A-003K4	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	SCH20	STD	P27A-003K5	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	SCH20	SCH20	P27A-001UL	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	SCH20	STD	P27A-003K6	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH20	SCH20	P27A-001UU	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH20	SCH20	P27A-001TH	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	SCH20	STD	P27A-00518	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	SCH20	SCH20	P27A-001V4	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	SCH20	SCH20	P27A-001TG	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	SCH20	SCH20	P27A-001U1	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	SCH20	SCH20	P27A-001WX	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	SCH20	SCH20	P27A-001TW	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	SCH20	SCH20	P27A-001UF	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	SCH20	SCH20	P27A-001V2	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	10	SCH20	SCH20	P27A-001TJ	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	12	SCH20	SCH20	P27A-001UE	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	14	SCH20	SCH20	P27A-001UY	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	16	SCH20	SCH20	P27A-001WN	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	12	STD	SCH20	P27A-00CMZ	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	14	STD	SCH20	P27A-0082L	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	16	STD	SCH20	P27A-0082M	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	18	STD	SCH20	P27A-0084N	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	16	STD	SCH20	P27A-0084T	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	18	STD	SCH20	P27A-0084U	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	20	STD	STD	P27A-001A8	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	20	STD	STD	P27A-001S0	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	30	24	STD	STD	P27A-001M7	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	36	24	STD	STD	P27A-00BGR	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	36	30	STD	STD	P27A-00938	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	42	30	STD	STD	P27A-003Z5	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	42	36	STD	STD	P27A-00DA1	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	STD	XS	P28A-001N5	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P28A-001N6	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P28A-0018B	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	STD	P28A-001AS	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P28A-00182	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH20	STD	P28A-003JU	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH20	STD	P28A-003JV	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	SCH20	STD	P28A-003JW	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	SCH20	STD	P28A-003JX	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	SCH20	SCH20	P28A-001V0	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	SCH20	STD	P28A-003JY	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH20	SCH20	P28A-001V1	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH20	SCH20	P28A-001TJ	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	SCH20	STD	P28A-0096P	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	SCH20	SCH20	P28A-001WH	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	SCH20	SCH20	P28A-001TH	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	SCH20	SCH20	P28A-001UC	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	SCH20	SCH20	P28A-001T6	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	SCH20	SCH20	P28A-001TY	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	SCH20	SCH20	P28A-001UX	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	SCH20	SCH20	P28A-001WG	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	10	SCH20	SCH20	P28A-001TV	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	12	SCH20	SCH20	P28A-001UJ	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	14	SCH20	SCH20	P28A-001WD	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	16	SCH20	SCH20	P28A-001T1	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	12	STD	SCH20	P28A-009MM	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	14	STD	SCH20	P28A-004SJ	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	16	STD	SCH20	P28A-004SK	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	18	STD	SCH20	P28A-004UN	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	16	STD	SCH20	P28A-004UR	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	18	STD	SCH20	P28A-004US	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	20	STD	STD	P28A-001AW	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	20	STD	STD	P28A-001LZ	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	24	STD	STD	P28A-001N1	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	36	24	STD	STD	P28A-008FS	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	36	30	STD	STD	P28A-005V7	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	42	30	STD	STD	P28A-003YZ	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	42	36	STD	STD	P28A-00AAR	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P29B-0001J	Cap ASTM A105 Class 3000 ASME B16.11 SW	
1	0.75				P29B-0001F	Cap ASTM A105 Class 3000 ASME B16.11 SW	
1	1				P29B-0001G	Cap ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5				P29B-0001H	Cap ASTM A105 Class 3000 ASME B16.11 SW	
1	2		XS		P29A-000A1	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		STD		P29A-000BK	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		STD		P29A-000A3	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6		STD		P29A-000A9	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8		SCH20		P29A-000EY	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10		SCH20		P29A-000E5	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	12		SCH20		P29A-000E8	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14		SCH20		P29A-000EA	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16		SCH20		P29A-000F3	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18		SCH20		P29A-000E0	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20		STD		P29A-000B2	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24		STD		P29A-000B8	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	30		STD		P29A-000DU	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	36		STD		P29A-001AF	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
541	0.75				P29B-0000C	Cap ASTM A105 Class 3000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P41A-000B5	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		SCH160		P41A-000B6	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		SCH160		P41A-000B7	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		SCH160		P41A-000B8	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

CON SWAGED NIPPLE (SNC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	XS	XS	P42A-00036	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	XS	XS	P42A-00038	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	XS	XS	P42A-0003B	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	XS	XS	P42A-00035	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	XS	XS	P42A-00039	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	XS	XS	P42A-0003C	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	XS	XS	P42A-0008C	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	XS	XS	P42A-0008D	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	XS	XS	P42A-0008E	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	XS	XS	P42A-0008F	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	STD	XS	P42A-0007V	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	

ECC SWAGED NIPPLE (SNE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	XS	XS	P43A-00036	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	XS	XS	P43A-00037	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	XS	XS	P43A-00038	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	XS	XS	P43A-00039	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	XS	XS	P43A-0003A	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	XS	XS	P43A-0003B	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	XS	XS	P43A-00042	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	XS	XS	P43A-00043	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	XS	XS	P43A-00044	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	XS	XS	P43A-00045	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	STD	XS	P43A-0003J	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	

COUPLING (CPS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P47B-0001D	Coupling ASTM A105 Class 3000 ASME B16.11 SW - SW	
1	0.75				P47B-0001E	Coupling ASTM A105 Class 3000 ASME B16.11 SW - SW	
1	1				P47B-0001F	Coupling ASTM A105 Class 3000 ASME B16.11 SW - SW	
1	1.5				P47B-0001G	Coupling ASTM A105 Class 3000 ASME B16.11 SW - SW	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2 - 2.5	0.75			P31B-0137J	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	3 - 5	0.75			P31B-0137K	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	6 - 12	0.75			P31B-007AB	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	14 - 36	0.75			P31B-007AJ	Outlet ASTM A105 Class 3000 MSS SP-97 SW	

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OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	38 and larger	0.75			P31B-00N1G	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	3	1			P31B-007A7	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	4 - 5	1			P31B-0138Z	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	6 - 10	1			P31B-007A4	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	12 - 36	1			P31B-007AA	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	38 and larger	1			P31B-00N0Y	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	4	1.5			P31B-005SN	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	5 - 6	1.5			P31B-01390	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	8 - 12	1.5			P31B-0079U	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	14 - 24	1.5			P31B-007A0	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	26 - 36	1.5			P31B-01391	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	38 and larger	1.5			P31B-00N17	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
541	1	0.75			P31B-00551	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
541	1.5	0.75			P31B-00555	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
1	6	2	STD	XS	P31B-007SH	Outlet ASTM A105 MSS SP-97 BW	
1	8	2	SCH20	XS	P31B-00NY2	Outlet ASTM A105 MSS SP-97 BW	
1	10	2	SCH20	XS	P31B-00TFB	Outlet ASTM A105 MSS SP-97 BW	
1	12	2	SCH20	XS	P31B-00TFA	Outlet ASTM A105 MSS SP-97 BW	
1	14	2	SCH20	XS	P31B-00TF9	Outlet ASTM A105 MSS SP-97 BW	
1	16	2	SCH20	XS	P31B-00TF8	Outlet ASTM A105 MSS SP-97 BW	
1	18	2	SCH20	XS	P31B-00NVX	Outlet ASTM A105 MSS SP-97 BW	
1	20	2	STD	XS	P31B-00994	Outlet ASTM A105 MSS SP-97 BW	
1	24	2	STD	XS	P31B-0092Z	Outlet ASTM A105 MSS SP-97 BW	
1	30	2	STD	XS	P31B-008P5	Outlet ASTM A105 MSS SP-97 BW	
1	36	2	STD	XS	P31B-00NX8	Outlet ASTM A105 MSS SP-97 BW	
1	42	2	STD	XS	P31B-00EVR	Outlet ASTM A105 MSS SP-97 BW	
1	8	3	SCH20	STD	P31B-00P11	Outlet ASTM A105 MSS SP-97 BW	
1	10	3	SCH20	STD	P31B-00UPG	Outlet ASTM A105 MSS SP-97 BW	
1	12	3	SCH20	STD	P31B-00USE	Outlet ASTM A105 MSS SP-97 BW	
1	14	3	SCH20	STD	P31B-00UPH	Outlet ASTM A105 MSS SP-97 BW	
1	16	3	SCH20	STD	P31B-00TU2	Outlet ASTM A105 MSS SP-97 BW	
1	18	3	SCH20	STD	P31B-00NZ4	Outlet ASTM A105 MSS SP-97 BW	
1	20	3	STD	STD	P31B-008FA	Outlet ASTM A105 MSS SP-97 BW	
1	24	3	STD	STD	P31B-00895	Outlet ASTM A105 MSS SP-97 BW	
1	30	3	STD	STD	P31B-007WY	Outlet ASTM A105 MSS SP-97 BW	
1	36	3	STD	STD	P31B-007P2	Outlet ASTM A105 MSS SP-97 BW	
1	42	3	STD	STD	P31B-00EVS	Outlet ASTM A105 MSS SP-97 BW	
1	12	4	SCH20	STD	P31B-00USF	Outlet ASTM A105 MSS SP-97 BW	
1	14	4	SCH20	STD	P31B-00UPJ	Outlet ASTM A105 MSS SP-97 BW	
1	16	4	SCH20	STD	P31B-00TU3	Outlet ASTM A105 MSS SP-97 BW	
1	18	4	SCH20	STD	P31B-00P1V	Outlet ASTM A105 MSS SP-97 BW	
1	20	4	STD	STD	P31B-008D3	Outlet ASTM A105 MSS SP-97 BW	
1	24	4	STD	STD	P31B-0086X	Outlet ASTM A105 MSS SP-97 BW	
1	30	4	STD	STD	P31B-007US	Outlet ASTM A105 MSS SP-97 BW	
1	36	4	STD	STD	P31B-00AER	Outlet ASTM A105 MSS SP-97 BW	
1	42	4	STD	STD	P31B-00EVT	Outlet ASTM A105 MSS SP-97 BW	
1	18	6	SCH20	STD	P31B-00P48	Outlet ASTM A105 MSS SP-97 BW	
1	20	6	STD	STD	P31B-008PZ	Outlet ASTM A105 MSS SP-97 BW	
1	24	6	STD	STD	P31B-008JD	Outlet ASTM A105 MSS SP-97 BW	
1	30	6	STD	STD	P31B-008BS	Outlet ASTM A105 MSS SP-97 BW	
1	36	6	STD	STD	P31B-0085H	Outlet ASTM A105 MSS SP-97 BW	
1	42	6	STD	STD	P31B-007ZP	Outlet ASTM A105 MSS SP-97 BW	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30B-0002D	Plug ASTM A105 ASME B16.11 NPT Round head	
1	0.75				P30B-0002E	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1				P30B-0002F	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1.5				P30B-0002G	Plug ASTM A105 ASME B16.11 NPT Round head	

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FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P61B-001R9	Flange SW ASTM A105 Class 150 ASME B16.5 RF	
1	0.75		XS		P61B-001RA	Flange SW ASTM A105 Class 150 ASME B16.5 RF	
1	1		XS		P61B-001RR	Flange SW ASTM A105 Class 150 ASME B16.5 RF	
1	1.5		XS		P61B-001RV	Flange SW ASTM A105 Class 150 ASME B16.5 RF	
1	2		XS		P61B-003NK	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	3		STD		P61B-001PW	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	4		STD		P61B-001R8	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	6		STD		P61B-001RT	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	8		SCH20		P61B-002BF	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	10		SCH20		P61B-002B4	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	12		SCH20		P61B-002B5	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	14		SCH20		P61B-002B6	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	16		SCH20		P61B-002B7	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	18		SCH20		P61B-002B8	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	20		STD		P61B-001JA	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	24		STD		P61B-001NJ	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	30		STD		P61B-001S8	Flange WN ASTM A105 Class 150 ASME B16.47 Series B RF	
1	36		STD		P61B-003M6	Flange WN ASTM A105 Class 150 ASME B16.47 Series B RF	
1	42		STD		P61B-003M9	Flange WN ASTM A105 Class 150 ASME B16.47 Series B RF	
773	0.5		XS		P61B-001HC	Flange SW ASTM A105 Class 300 ASME B16.5 RF	
773	0.75		XS		P61B-001HS	Flange SW ASTM A105 Class 300 ASME B16.5 RF	
773	1		XS		P61B-001EF	Flange SW ASTM A105 Class 300 ASME B16.5 RF	
773	1.5		XS		P61B-001F2	Flange SW ASTM A105 Class 300 ASME B16.5 RF	
773	2		XS		P61B-001HW	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	3		STD		P61B-001LJ	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	4		STD		P61B-001MC	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	6		STD		P61B-001N2	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	8		SCH20		P61B-002LJ	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	10		SCH20		P61B-002LH	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	12		SCH20		P61B-002MP	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	14		SCH20		P61B-002MR	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	16		SCH20		P61B-002MS	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	18		SCH20		P61B-002MT	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	20		STD		P61B-001NT	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	24		STD		P61B-001PA	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	30		STD		P61B-003SW	Flange WN ASTM A105 Class 300 ASME B16.47 Series B RF	
773	36		STD		P61B-004RB	Flange WN ASTM A105 Class 300 ASME B16.47 Series B RF	
781	6		STD		P61B-001JW	Flange WN ASTM A105 Class 600 ASME B16.5 RF	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67B-000FH	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	0.75				P67B-000FJ	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	1				P67B-000FK	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	1.5				P67B-000FL	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	2				P67B-000FT	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	3				P67B-000FW	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	4				P67B-000FX	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	6				P67B-000FY	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	8				P67B-000FZ	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	10				P67B-000FM	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	12				P67B-000FN	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	14				P67B-000FP	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	16				P67B-000FR	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	18				P67B-000FS	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	20				P67B-000FU	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	24				P67B-000FV	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	30				P67B-000G2	Blind flange ASTM A105 Class 150 ASME B16.47 Series B RF	
1	36				P67B-000G5	Blind flange ASTM A105 Class 150 ASME B16.47 Series B RF	

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GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000L8	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000L9	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000LA	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000LB	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000LH	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000LL	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000LM	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	6				P73T-000LN	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	8				P73T-000LP	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	10				P73T-000LC	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	12				P73T-000LD	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	14				P73T-000LE	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	16				P73T-000LF	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	18				P73T-000LG	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	20				P73T-000LJ	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	24				P73T-000LK	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	30				P73T-000LT	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	36				P73T-000LW	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	0.5				P73T-000FT	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	0.75				P73T-000FU	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	3				P73T-000G5	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	4				P73T-000G6	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	6				P73T-000G7	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	8				P73T-000G8	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	10				P73T-000FX	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	12				P73T-000FY	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	14				P73T-000FZ	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	16				P73T-000G0	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	18				P73T-000G1	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	20				P73T-000G3	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	24				P73T-000G4	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	30				P73T-000H9	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	36				P73T-000HC	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	6				P73T-000JN	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-16				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	18-24				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
1	30-42				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
773	0.5-10				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
773	12-42				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	

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BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
781	6				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81B-002G5	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated Benzene service	
1	0.75				P81B-002G6	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated Benzene service	
1	1				P81B-002G7	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated Benzene service	
1	1.5				P81B-002G8	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated Benzene service	
1	2				P81C-007N0	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated Benzene service	
1	3				P81C-007N1	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated Benzene service	
1	4				P81C-007N2	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated Benzene service	
1	6				P81C-007N3	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated Benzene service	
1	8				P81C-007N4	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated Benzene service	
1	10				P81C-007MY	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated Benzene service	
1	12				P81C-007MZ	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated Benzene service	
1	14				P81C-007N5	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated Benzene service	
1	16				P81C-007N6	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated Benzene service	
1	18				P81C-007N7	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated Benzene service	
1	20				P81C-007N8	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated Benzene service	
1	24				P81C-007N9	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated Benzene service	
1	30				P81C-007NA	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.47-B RF Trim number 8 BB-BG-OS&Y Gear operated Benzene service	
1	36				P81C-007NB	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.47-B RF Trim number 8 BB-BG-OS&Y Gear operated Benzene service	
714	0.5				P81B-002S8	Gate valve ASTM A105 Class 800 API 602 SW - NPT Trim number 8 BB-BG-OS&Y Handwheel operated Benzene service	
714	0.75				P81B-002G9	Gate valve ASTM A105 Class 800 API 602 SW - NPT Trim number 8 BB-BG-OS&Y Handwheel operated Benzene service	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82B-001UP	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated Benzene service	
1	0.75				P82B-001UR	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated Benzene service	
1	1				P82B-001US	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated Benzene service	
1	1.5				P82B-001UT	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated Benzene service	
1	2				P82C-003VL	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated Benzene service	
1	3				P82C-003VM	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated Benzene service	
1	4				P82C-003VN	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated Benzene service	
1	6				P82C-003VP	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated Benzene service	
1	8				P82C-003VR	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated Benzene service	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83B-000FX	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover	
1	0.75				P83B-000ER	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover	
1	1				P83B-000ES	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover	
1	1.5				P83B-000ET	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover	
1	2				P83C-00144	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	3				P83C-00147	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	4				P83C-00148	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	6				P83C-00149	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	

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CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	8				P83C-0014A	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	10				P83C-00140	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	12				P83C-00141	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	14				P83C-0021E	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	16				P83C-00142	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	18				P83C-00143	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	20				P83C-00145	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	24				P83C-00146	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	

DP CHECK VALVE (XDP)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	36				P88C-0023B	Dual plate check valve ASTM A216 Grade WCB Class 150 API 594 Wafer-type ASME B16.47-B RF Trim number 8 Internal wetted parts 13Cr Spring Inconel Retainerless-type	

BALL VALVE (Q)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P84B-001LK	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design Benzene service	
1	0.75				P84B-001LL	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design Benzene service	
1	1				P84B-001LM	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design Benzene service	
1	1.5				P84B-001LN	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design Benzene service	
1	2				P84C-007R4	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design Benzene service	
1	3				P84C-007R5	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design Benzene service	
1	4				P84C-007R6	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design Benzene service	
24	0.5				P84B-001LP	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design Benzene service	
24	0.75				P84B-001LR	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design Benzene service	
24	1				P84B-001LS	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design Benzene service	
24	1.5				P84B-001LT	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design Benzene service	
24	2				P84C-007R7	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design Benzene service	
24	3				P84C-007R8	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design Benzene service	
24	4				P84C-007R9	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design Benzene service	

ORIFICE FLANGE (FO)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2		XS		P66B-0084B	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	3		STD		P66B-0084C	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	4		STD		P66B-0084D	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	6		STD		P66B-0084E	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	8		SCH20		P66B-0084F	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	10		SCH20		P66B-00848	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	12		SCH20		P66B-0084L	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	14		SCH20		P66B-0084A	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	16		SCH20		P66B-0083Y	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	18		SCH20		P66B-0084R	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
200	2		XS		P66B-00843	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	3		STD		P66B-00844	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	

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ORIFICE FLANGE (FO)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
200	4		STD		P66B-00845	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	6		STD		P66B-00846	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	8		SCH20		P66B-00847	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	10		SCH20		P66B-00840	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	12		SCH20		P66B-0084P	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	14		SCH20		P66B-00842	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	16		SCH20		P66B-0083Z	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	18		SCH20		P66B-0084T	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71B-0008A	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	0.75				P71B-0008B	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	1				P71B-0008C	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71B-0008D	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	2				P71B-0000P	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	3				P71B-0000N	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	4				P71B-0000M	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	6				P71B-0000L	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	8				P71B-0000R	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	10				P71B-0000K	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	12				P71B-0000J	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	

PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000AH	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	16				P72B-0000C	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	18				P72B-000AJ	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	20				P72B-000AK	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	24				P72B-000AL	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	30				P72B-000AM	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	36				P72B-000AN	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	

PADDLE SPACER (PS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000AT	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	16				P72B-0000B	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	18				P72B-000AU	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	20				P72B-000AV	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	24				P72B-000AW	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	30				P72B-000AX	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	36				P72B-000AY	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	

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BOLT TABLE (B_A1A904 , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	60	P80S-003V2		
0.75	4	0.500	65	P80S-003V3		
1	4	0.500	70	P80S-003V4		
1.5	4	0.500	75	P80S-003V5		
2	4	0.625	85	P80S-003XE		
3	4	0.625	95	P80S-003XG		
4	8	0.625	95	P80S-003XG		
6	8	0.750	105	P80S-003XJ		
8	8	0.750	110	P80S-003XK		
10	12	0.875	120	P80S-00419		
12	12	0.875	120	P80S-00419		
14	12	1.000	135	P80S-0043E		
16	16	1.000	140	P80S-0043F		
18	16	1.125	150	P80S-0046K		
20	20	1.125	160	P80S-0046M		
24	20	1.250	175	P80S-004AG		
30	44	0.750	145	P80S-003ZK		
36	44	0.875	175	P80S-0041M		
42	48	1.000	190	P80S-0043T		

BOLT TABLE (B_A1A904_773 , STUD ASME RF, OPTION CODE 773)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-003V4		
0.75	4	0.625	75	P80S-003XC		
1	4	0.625	80	P80S-003XD		
1.5	4	0.750	95	P80S-00414		
2	8	0.625	90	P80S-003XF		
3	8	0.750	110	P80S-003XK		
4	8	0.750	115	P80S-003XL		
6	12	0.750	125	P80S-003XN		
8	12	0.875	140	P80S-0041D		
10	16	1.000	160	P80S-0043K		
12	16	1.125	175	P80S-0046S		
14	20	1.125	180	P80S-0046T		
16	20	1.250	190	P80S-004AK		
18	24	1.250	200	P80S-004AM		
20	24	1.250	210	P80S-004AP		
24	24	1.500	235	P80S-003F8		
30	36	1.375	285	P80S-003EA		
36	32	1.625	320	P80S-005TT		
42	36	1.750	355	P80S-007B5		

BOLT TABLE (B_A1A904_781 , STUD ASME RF, OPTION CODE 781)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	80			
0.75	4	0.625	90			
1	4	0.625	95			
1.5	4	0.750	110			
2	8	0.625	110			
3	8	0.750	130			
4	8	0.875	150			
6	12	1.000	175	P80S-0043P		
8	12	1.125	195			
10	16	1.250	250			
12	20	1.250	255			
14	20	1.375	270			
16	20	1.500	295			
18	20	1.625	320			
20	24	1.625	335			
24	24	1.875	380			
30	28	1.875	435			
36	28	2.250	510			
42	28	2.500	575			

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BRANCH TABLE (T_A1A904)

RUN PIPE SIZE (in) \ BRANCH SIZE (in)	0.5	0.75	1	1.5	2	3	4	6	8	10	12	14	16	18	20	24	30	36	42
0.5	TS																		
0.75		TS																	
1		TR	TS																
1.5		TR	TR	TS															
2		L	TR	TR	TS														
3		L	L	TR	TR	TS													
4	L	L	L	L	TR	TR	TS												
6	L	L	L	L	L	TR	TR	TS											
8		L	L	L	L	L	TR	TR	TS										
10		L	L	L	L	L	TR	TR	TR	TS									
12		L	L	L	L	L	L	TR	TR	TR	TS								
14		L	L	L	L	L	L	TR	TR	TR	TR	TS							
16		L	L	L	L	L	L	TR	TR	TR	TR	TR	TS						
18		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TS					
20		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TR	TS				
24		L	L	L	L	L	L	L	9PD	TR	TR	TR	TR	TR	TR	TS			
30		L	L	L	L	L	L	L	9PD	TR	TR	TR	TR	TR	TR	TR	TS		
36		L	L	L	L	L	L	L	9PD	9PD	9PD	9PD	TR	TR	TR	TR	TR	TS	
42		L	L	L	L	L	L	L	9PD	9PD	9PD	9PD	TR	TR	TR	TR	TR	TR	TS

TS : STRAIGHT TEE
TR : REDUCING TEE
L : OUTLET
9PD : REINFORCING PAD 90 DEG

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Material : Killed CS
Rating : ASME CLASS 150
Flange Face : RF
C.A.(mm) : 1.50
Gasket : Spiral Wound
Service : UTILITY - CATEGORY "D" FLUID : / DRY INSTRUMENT AIR >=2"NB

Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
24	FULL PORT (Q)
200	WITH JACK SCREW (FO)
541	NPT(F) (CA,L)
714	SW - NPT(F) (V)
773	CLASS 300 (B,F,G)
781	CLASS 600 (B,F,G)
789	CLASS 900 (B,F,G)
797	CLASS 1500 (B,F,G)
3001	INSULATION GASKET KIT AND BOLTS FOR FLANGE (G)

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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P01A-000XM	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	0.75		XS		P01A-000XN	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1		XS		P01A-000XP	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1.5		XS		P01A-000XV	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	2		XS		P01A-000YX	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	3		STD		P01A-000YM	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	4		STD		P01A-000YU	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	6		STD		P01A-000Z3	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	8		SCH20		P01A-001AT	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	10		SCH20		P01A-0014Y	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	12		SCH20		P01A-0016H	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	14		SCH20		P01A-0017A	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	16		SCH20		P01A-0018E	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	18		SCH20		P01A-00438	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE	
1	20		STD		P01A-0042G	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE	
1	24		STD		P01A-0042H	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE	
1	30		SCH10		P01A-0078N	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE	
1	36		STD		P01A-00439	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE	
1	42		STD		P01A-0078R	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE	
1	48		10.31mm		P01A-0078S	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE	
1	52		11.13mm		P01A-0078T	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P02B-00014	90 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	0.75				P02B-00015	90 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	1				P02B-00016	90 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5				P02B-00017	90 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	2		XS		P02A-000CP	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		STD		P02A-000CU	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		STD		P02A-000CZ	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		STD		P02A-000D6	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		SCH20		P02A-000GZ	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	10		SCH20		P02A-000H1	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	12		SCH20		P02A-000H4	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	14		SCH20		P02A-000FX	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	16		SCH20		P02A-000GM	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	18		SCH20		P02A-000LT	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	20		STD		P02A-0010J	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	24		STD		P02A-0010K	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	30		SCH10		P02A-0017Y	90 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius	
1	36		STD		P02A-001GL	90 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius	
1	42		STD		P02A-0014G	90 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius	
1	48		10.31mm		P02A-003R3	90 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius	
1	52		11.13mm		P02A-003R2	90 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P03B-00017	45 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	0.75				P03B-00018	45 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	1				P03B-00019	45 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5				P03B-0001A	45 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	2		XS		P03A-000AS	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		STD		P03A-000AX	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		STD		P03A-000B1	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		STD		P03A-000B9	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		SCH20		P03A-000EX	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	10		SCH20		P03A-000F0	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	12		SCH20		P03A-000F2	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

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45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14		SCH20		P03A-000DW	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	16		SCH20		P03A-000EM	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	18		SCH20		P03A-001DX	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	20		STD		P03A-000X1	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	24		STD		P03A-000X2	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	30		SCH10		P03A-0013X	45 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius	
1	36		STD		P03A-001BS	45 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius	
1	42		STD		P03A-0010P	45 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius	
1	48		10.31mm		P03A-003MS	45 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius	
1	52		11.13mm		P03A-003MR	45 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P21B-00017	Straight tee ASTM A105 Class 3000 ASME B16.11 SW	
1	0.75				P21B-00018	Straight tee ASTM A105 Class 3000 ASME B16.11 SW	
1	1				P21B-00019	Straight tee ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5				P21B-0001A	Straight tee ASTM A105 Class 3000 ASME B16.11 SW	
1	2		XS		P21A-001CJ	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		STD		P21A-001CU	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		STD		P21A-001CW	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6		STD		P21A-001D2	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8		SCH20		P21A-00215	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10		SCH20		P21A-00219	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12		SCH20		P21A-0021A	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14		SCH20		P21A-00206	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16		SCH20		P21A-0020X	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18		SCH20		P21A-001PJ	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20		STD		P21A-001C7	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24		STD		P21A-001CC	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30		SCH10		P21A-001Y7	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	36		STD		P21A-001G4	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	42		STD		P21A-001KR	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	48		10.31mm		P21A-001MJ	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	52		11.13mm		P21A-0048K	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75			P24B-0002L	Reducing tee ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5	0.75			P24B-0002N	Reducing tee ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5	1			P24B-0002P	Reducing tee ASTM A105 Class 3000 ASME B16.11 SW	
1	2	1	XS	XS	P24A-00238	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	XS	XS	P24A-0023H	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	STD	XS	P24A-00214	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	STD	XS	P24A-002HW	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P24A-002HY	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P24A-0021K	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	STD	P24A-0021A	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P24A-00229	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH20	STD	P24A-00J21	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH20	STD	P24A-005J4	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	SCH20	STD	P24A-00HMB	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	SCH20	STD	P24A-00HKS	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	SCH20	SCH20	P24A-002YX	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	SCH20	STD	P24A-00K0B	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH20	SCH20	P24A-002U4	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH20	SCH20	P24A-002YC	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	SCH20	STD	P24A-00K0M	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	SCH20	SCH20	P24A-002U7	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	SCH20	SCH20	P24A-002YA	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14	12	SCH20	SCH20	P24A-002YR	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	6	SCH20	STD	P24A-00GU4	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	SCH20	SCH20	P24A-002XW	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	SCH20	SCH20	P24A-002YH	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	SCH20	SCH20	P24A-002U1	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	SCH20	SCH20	P24A-002XF	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	8	SCH20	SCH20	P24A-002XC	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	10	SCH20	SCH20	P24A-002UX	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	12	SCH20	SCH20	P24A-002W3	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	14	SCH20	SCH20	P24A-002WT	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	16	SCH20	SCH20	P24A-002X5	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	8	STD	SCH20	P24A-00K0N	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	10	STD	SCH20	P24A-00BT7	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	12	STD	SCH20	P24A-00BUS	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	14	STD	SCH20	P24A-00BWB	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	16	STD	SCH20	P24A-006W3	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	18	STD	SCH20	P24A-006WD	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	10	STD	SCH20	P24A-00KT6	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	12	STD	SCH20	P24A-00C7B	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	14	STD	SCH20	P24A-00K0C	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	16	STD	SCH20	P24A-00CAD	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	18	STD	SCH20	P24A-006WF	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	20	STD	STD	P24A-004SV	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	10	SCH10	SCH20	P24A-00K9M	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	12	SCH10	SCH20	P24A-00K9N	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	14	SCH10	SCH20	P24A-00K9P	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	16	SCH10	SCH20	P24A-0076Z	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	18	SCH10	SCH20	P24A-008ED	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	20	SCH10	STD	P24A-008EE	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	24	SCH10	STD	P24A-00D89	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	36	16	STD	SCH20	P24A-00GU6	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	36	18	STD	SCH20	P24A-0087J	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	36	20	STD	STD	P24A-0087K	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	36	24	STD	STD	P24A-00DVT	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	36	30	STD	SCH10	P24A-007KA	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	42	16	STD	SCH20	P24A-00EFD	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	42	18	STD	SCH20	P24A-00EG0	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	42	20	STD	STD	P24A-00EGR	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	42	24	STD	STD	P24A-005H0	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	42	30	STD	SCH10	P24A-00EKT	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	42	36	STD	STD	P24A-00EMG	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	48	24	10.31mm	STD	P24A-00F0A	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	48	30	10.31mm	SCH10	P24A-00F1W	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	48	36	10.31mm	STD	P24A-00F3J	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	48	42	10.31mm	STD	P24A-00F52	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	52	30	11.13mm	SCH10	P24A-00KT8	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	52	36	11.13mm	STD	P24A-00NES	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	52	42	11.13mm	STD	P24A-00KTA	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	52	48	11.13mm	10.31mm	P24A-00KTB	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	STD	XS	P27A-001MZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P27A-001N0	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P27A-00189	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	STD	P27A-001AZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P27A-001GW	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH20	STD	P27A-003K2	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH20	STD	P27A-003K3	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	10	4	SCH20	STD	P27A-003K4	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	SCH20	STD	P27A-003K5	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	SCH20	SCH20	P27A-001UL	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	SCH20	STD	P27A-003K6	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH20	SCH20	P27A-001UU	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH20	SCH20	P27A-001TH	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	SCH20	STD	P27A-00518	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	SCH20	SCH20	P27A-001V4	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	SCH20	SCH20	P27A-001TG	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	SCH20	SCH20	P27A-001U1	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	SCH20	SCH20	P27A-001WX	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	SCH20	SCH20	P27A-001TW	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	SCH20	SCH20	P27A-001UF	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	SCH20	SCH20	P27A-001V2	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	10	SCH20	SCH20	P27A-001TJ	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	12	SCH20	SCH20	P27A-001UE	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	14	SCH20	SCH20	P27A-001UY	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	16	SCH20	SCH20	P27A-001WN	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	12	STD	SCH20	P27A-00CMZ	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	14	STD	SCH20	P27A-0082L	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	16	STD	SCH20	P27A-0082M	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	18	STD	SCH20	P27A-0084N	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	16	STD	SCH20	P27A-0084T	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	18	STD	SCH20	P27A-0084U	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	20	STD	STD	P27A-001A8	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	20	SCH10	STD	P27A-009HM	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	24	SCH10	STD	P27A-00EKM	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	36	24	STD	STD	P27A-00BGR	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	36	30	STD	SCH10	P27A-008W4	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	42	30	STD	SCH10	P27A-00EKP	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	42	36	STD	STD	P27A-00DA1	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	48	42	10.31mm	STD	P27A-00EKR	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	52	30	11.13mm	SCH10	P27A-00F7X	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	52	36	11.13mm	STD	P27A-00H45	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	52	42	11.13mm	STD	P27A-00F7Z	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	52	48	11.13mm	10.31mm	P27A-00EKS	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	STD	XS	P28A-001N5	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P28A-001N6	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P28A-0018B	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	STD	P28A-001AS	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P28A-00182	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH20	STD	P28A-003JU	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH20	STD	P28A-003JV	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	SCH20	STD	P28A-003JW	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	SCH20	STD	P28A-003JX	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	SCH20	SCH20	P28A-001V0	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	SCH20	STD	P28A-003JY	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH20	SCH20	P28A-001V1	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH20	SCH20	P28A-001TJ	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	SCH20	STD	P28A-0096P	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	SCH20	SCH20	P28A-001WH	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	SCH20	SCH20	P28A-001TH	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	SCH20	SCH20	P28A-001UC	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	SCH20	SCH20	P28A-001T6	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	SCH20	SCH20	P28A-001TY	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	SCH20	SCH20	P28A-001UX	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	16	14	SCH20	SCH20	P28A-001WG	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	10	SCH20	SCH20	P28A-001TV	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	12	SCH20	SCH20	P28A-001UJ	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	14	SCH20	SCH20	P28A-001WD	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	16	SCH20	SCH20	P28A-001T1	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	12	STD	SCH20	P28A-009MM	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	14	STD	SCH20	P28A-004SJ	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	16	STD	SCH20	P28A-004SK	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	18	STD	SCH20	P28A-004UN	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	16	STD	SCH20	P28A-004UR	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	18	STD	SCH20	P28A-004US	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	20	STD	STD	P28A-001AW	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	20	SCH10	STD	P28A-0069X	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	24	SCH10	STD	P28A-00BP7	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	36	24	STD	STD	P28A-008FS	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	36	30	STD	SCH10	P28A-005LP	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	42	30	STD	SCH10	P28A-00BP9	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	42	36	STD	STD	P28A-00AAR	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	48	42	10.31mm	STD	P28A-00BPA	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	52	30	11.13mm	SCH10	P28A-00CBY	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	52	36	11.13mm	STD	P28A-00EBC	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	52	42	11.13mm	STD	P28A-00CC0	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	52	48	11.13mm	10.31mm	P28A-00BPB	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P29B-0001J	Cap ASTM A105 Class 3000 ASME B16.11 SW	
1	0.75				P29B-0001F	Cap ASTM A105 Class 3000 ASME B16.11 SW	
1	1				P29B-0001G	Cap ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5				P29B-0001H	Cap ASTM A105 Class 3000 ASME B16.11 SW	
1	2		XS		P29A-000A1	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		STD		P29A-000BK	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		STD		P29A-000A3	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6		STD		P29A-000A9	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8		SCH20		P29A-000EY	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10		SCH20		P29A-000E5	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12		SCH20		P29A-000E8	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14		SCH20		P29A-000EA	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16		SCH20		P29A-000F3	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18		SCH20		P29A-000E0	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20		STD		P29A-000B2	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24		STD		P29A-000B8	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	30		SCH10		P29A-0013C	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	36		STD		P29A-001AF	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	42		STD		P29A-000X5	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	48		10.31mm		P29A-00325	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	52		11.13mm		P29A-00324	Cap ASTM A234 Grade WPB Seamless ASME B16.9-modified BW	
541	0.75				P29B-0000C	Cap ASTM A105 Class 3000 ASME B16.11 NPT	
541	1				P29B-0000D	Cap ASTM A105 Class 3000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P41A-000B5	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		SCH160		P41A-000B6	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		SCH160		P41A-000B7	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		SCH160		P41A-000B8	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

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CON SWAGED NIPPLE (SNC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	XS	XS	P42A-00036	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	XS	XS	P42A-00038	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	XS	XS	P42A-0003B	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	XS	XS	P42A-00035	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	XS	XS	P42A-00039	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	XS	XS	P42A-0003C	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	XS	XS	P42A-0008C	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	XS	XS	P42A-0008D	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	XS	XS	P42A-0008E	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	XS	XS	P42A-0008F	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	STD	XS	P42A-0007V	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	

ECC SWAGED NIPPLE (SNE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	XS	XS	P43A-00036	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	XS	XS	P43A-00037	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	XS	XS	P43A-00038	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	XS	XS	P43A-00039	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	XS	XS	P43A-0003A	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	XS	XS	P43A-0003B	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	XS	XS	P43A-00042	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	XS	XS	P43A-00043	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	XS	XS	P43A-00044	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	XS	XS	P43A-00045	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	STD	XS	P43A-0003J	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	

COUPLING (CPS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P47B-0001D	Coupling ASTM A105 Class 3000 ASME B16.11 SW - SW	
1	0.75				P47B-0001E	Coupling ASTM A105 Class 3000 ASME B16.11 SW - SW	
1	1				P47B-0001F	Coupling ASTM A105 Class 3000 ASME B16.11 SW - SW	
1	1.5				P47B-0001G	Coupling ASTM A105 Class 3000 ASME B16.11 SW - SW	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2 - 2.5	0.75			P31B-0137J	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	3 - 5	0.75			P31B-0137K	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	6 - 12	0.75			P31B-007AB	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	14 - 36	0.75			P31B-007AJ	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	38 and larger	0.75			P31B-00N1G	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	3	1			P31B-007A7	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	4 - 5	1			P31B-0138Z	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	6 - 10	1			P31B-007A4	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	12 - 36	1			P31B-007AA	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	38 and larger	1			P31B-00N0Y	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	4	1.5			P31B-005SN	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	5 - 6	1.5			P31B-01390	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	8 - 12	1.5			P31B-0079U	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	14 - 24	1.5			P31B-007A0	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	26 - 36	1.5			P31B-01391	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	38 and larger	1.5			P31B-00N17	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
541	1	0.75			P31B-00551	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
541	1.5	0.75			P31B-00555	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
541	2 - 2.5	0.75			P31B-0137H	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
541	3 - 5	0.75			P31B-01376	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
541	6 - 12	0.75			P31B-007GR	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
541	14 - 36	0.75			P31B-007GY	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
541	38 and larger	0.75			P31B-00FFM	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
541	1.5	1			P31B-0055F	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	

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OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
541	2	1			P31B-007GM	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
541	3	1			P31B-007GK	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
541	4 - 5	1			P31B-01377	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
541	6 - 10	1			P31B-007GG	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
541	12 - 36	1			P31B-007GP	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
541	38 and larger	1			P31B-00FFW	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
1	6	2	STD	XS	P31B-007SH	Outlet ASTM A105 MSS SP-97 BW	
1	8	2	SCH20	XS	P31B-00NY2	Outlet ASTM A105 MSS SP-97 BW	
1	10	2	SCH20	XS	P31B-00TFB	Outlet ASTM A105 MSS SP-97 BW	
1	12	2	SCH20	XS	P31B-00TFA	Outlet ASTM A105 MSS SP-97 BW	
1	14	2	SCH20	XS	P31B-00TF9	Outlet ASTM A105 MSS SP-97 BW	
1	16	2	SCH20	XS	P31B-00TF8	Outlet ASTM A105 MSS SP-97 BW	
1	18	2	SCH20	XS	P31B-00NVX	Outlet ASTM A105 MSS SP-97 BW	
1	20	2	STD	XS	P31B-00994	Outlet ASTM A105 MSS SP-97 BW	
1	24	2	STD	XS	P31B-0092Z	Outlet ASTM A105 MSS SP-97 BW	
1	30	2	SCH10	XS	P31B-00PJF	Outlet ASTM A105 MSS SP-97 BW	
1	36	2	STD	XS	P31B-00NX8	Outlet ASTM A105 MSS SP-97 BW	
1	42	2	STD	XS	P31B-00EVR	Outlet ASTM A105 MSS SP-97 BW	
1	48	2	10.31mm	XS	P31B-00Y96	Outlet ASTM A105 MSS SP-97 BW	
1	52	2	11.13mm	XS	P31B-00Y9A	Outlet ASTM A105 MSS SP-97 BW	
1	8	3	SCH20	STD	P31B-00P11	Outlet ASTM A105 MSS SP-97 BW	
1	10	3	SCH20	STD	P31B-00UPG	Outlet ASTM A105 MSS SP-97 BW	
1	12	3	SCH20	STD	P31B-00USE	Outlet ASTM A105 MSS SP-97 BW	
1	14	3	SCH20	STD	P31B-00UPH	Outlet ASTM A105 MSS SP-97 BW	
1	16	3	SCH20	STD	P31B-00TU2	Outlet ASTM A105 MSS SP-97 BW	
1	18	3	SCH20	STD	P31B-00NZ4	Outlet ASTM A105 MSS SP-97 BW	
1	20	3	STD	STD	P31B-008FA	Outlet ASTM A105 MSS SP-97 BW	
1	24	3	STD	STD	P31B-00895	Outlet ASTM A105 MSS SP-97 BW	
1	30	3	SCH10	STD	P31B-00PJG	Outlet ASTM A105 MSS SP-97 BW	
1	36	3	STD	STD	P31B-007P2	Outlet ASTM A105 MSS SP-97 BW	
1	42	3	STD	STD	P31B-00EVS	Outlet ASTM A105 MSS SP-97 BW	
1	48	3	10.31mm	STD	P31B-00Y97	Outlet ASTM A105 MSS SP-97 BW	
1	52	3	11.13mm	STD	P31B-00Y9B	Outlet ASTM A105 MSS SP-97 BW	
1	12	4	SCH20	STD	P31B-00USF	Outlet ASTM A105 MSS SP-97 BW	
1	14	4	SCH20	STD	P31B-00UPJ	Outlet ASTM A105 MSS SP-97 BW	
1	16	4	SCH20	STD	P31B-00TU3	Outlet ASTM A105 MSS SP-97 BW	
1	18	4	SCH20	STD	P31B-00P1V	Outlet ASTM A105 MSS SP-97 BW	
1	20	4	STD	STD	P31B-008D3	Outlet ASTM A105 MSS SP-97 BW	
1	24	4	STD	STD	P31B-0086X	Outlet ASTM A105 MSS SP-97 BW	
1	30	4	SCH10	STD	P31B-00PJH	Outlet ASTM A105 MSS SP-97 BW	
1	36	4	STD	STD	P31B-00AER	Outlet ASTM A105 MSS SP-97 BW	
1	42	4	STD	STD	P31B-00EVT	Outlet ASTM A105 MSS SP-97 BW	
1	48	4	10.31mm	STD	P31B-00Y98	Outlet ASTM A105 MSS SP-97 BW	
1	52	4	11.13mm	STD	P31B-00Y9C	Outlet ASTM A105 MSS SP-97 BW	
1	18	6	SCH20	STD	P31B-00P48	Outlet ASTM A105 MSS SP-97 BW	
1	20	6	STD	STD	P31B-008PZ	Outlet ASTM A105 MSS SP-97 BW	
1	24	6	STD	STD	P31B-008JD	Outlet ASTM A105 MSS SP-97 BW	
1	30	6	SCH10	STD	P31B-00PJJ	Outlet ASTM A105 MSS SP-97 BW	
1	36	6	STD	STD	P31B-0085H	Outlet ASTM A105 MSS SP-97 BW	
1	42	6	STD	STD	P31B-007ZP	Outlet ASTM A105 MSS SP-97 BW	
1	48	6	10.31mm	STD	P31B-00Y99	Outlet ASTM A105 MSS SP-97 BW	
1	52	6	11.13mm	STD	P31B-00Y9D	Outlet ASTM A105 MSS SP-97 BW	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30B-0002D	Plug ASTM A105 ASME B16.11 NPT Round head	
1	0.75				P30B-0002E	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1				P30B-0002F	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1.5				P30B-0002G	Plug ASTM A105 ASME B16.11 NPT Round head	

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FLANGE (F)							
OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P61B-001R9	Flange SW ASTM A105 Class 150 ASME B16.5 RF	
1	0.75		XS		P61B-001RA	Flange SW ASTM A105 Class 150 ASME B16.5 RF	
1	1		XS		P61B-001RR	Flange SW ASTM A105 Class 150 ASME B16.5 RF	
1	1.5		XS		P61B-001RV	Flange SW ASTM A105 Class 150 ASME B16.5 RF	
1	2		XS		P61B-003NK	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	3		STD		P61B-001PW	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	4		STD		P61B-001R8	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	6		STD		P61B-001RT	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	8		SCH20		P61B-002BF	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	10		SCH20		P61B-002B4	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	12		SCH20		P61B-002B5	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	14		SCH20		P61B-002B6	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	16		SCH20		P61B-002B7	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	18		SCH20		P61B-002B8	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	20		STD		P61B-001JA	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	24		STD		P61B-001NJ	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	30		SCH10		P61B-003UB	Flange WN ASTM A105 Class 150 ASME B16.47 Series B RF	
1	36		STD		P61B-003M6	Flange WN ASTM A105 Class 150 ASME B16.47 Series B RF	
1	42		STD		P61B-003M9	Flange WN ASTM A105 Class 150 ASME B16.47 Series B RF	
1	48		10.31mm		P61B-004BF	Flange WN ASTM A105 Class 150 ASME B16.47 Series B RF	
1	52		11.13mm		P61B-004D1	Flange WN ASTM A105 Class 150 ASME B16.47 Series B RF	
773	0.5		XS		P61B-001HC	Flange SW ASTM A105 Class 300 ASME B16.5 RF	
773	0.75		XS		P61B-001HS	Flange SW ASTM A105 Class 300 ASME B16.5 RF	
773	1		XS		P61B-001EF	Flange SW ASTM A105 Class 300 ASME B16.5 RF	
773	1.5		XS		P61B-001F2	Flange SW ASTM A105 Class 300 ASME B16.5 RF	
773	2		XS		P61B-001HW	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	3		STD		P61B-001LJ	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	4		STD		P61B-001MC	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	6		STD		P61B-001N2	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	8		SCH20		P61B-002LJ	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	10		SCH20		P61B-002LH	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	12		SCH20		P61B-002MP	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	14		SCH20		P61B-002MR	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	16		SCH20		P61B-002MS	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	18		SCH20		P61B-002MT	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	20		STD		P61B-001NT	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	24		STD		P61B-001PA	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	30		SCH10		P61B-004R8	Flange WN ASTM A105 Class 300 ASME B16.47 Series B RF	
773	36		STD		P61B-004RB	Flange WN ASTM A105 Class 300 ASME B16.47 Series B RF	
773	42		STD		P61B-003P8	Flange WN ASTM A105 Class 300 ASME B16.47 Series B RF	
773	48		10.31mm		P61B-009SR	Flange WN ASTM A105 Class 300 ASME B16.47 Series B RF	
773	52		11.13mm		P61B-009SS	Flange WN ASTM A105 Class 300 ASME B16.47 Series B RF	
781	0.5		XS		P61B-001FF	Flange SW ASTM A105 Class 600 ASME B16.5 RF	
781	0.75		XS		P61B-001FH	Flange SW ASTM A105 Class 600 ASME B16.5 RF	
781	1		XS		P61B-001DR	Flange SW ASTM A105 Class 600 ASME B16.5 RF	
781	1.5		XS		P61B-001DV	Flange SW ASTM A105 Class 600 ASME B16.5 RF	
781	2		XS		P61B-001DH	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	3		STD		P61B-001TW	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	4		STD		P61B-001VV	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	6		STD		P61B-001JW	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
789	6		STD		P61B-009W5	Flange WN ASTM A105 Class 900 ASME B16.5 RJ	
789	8		SCH20		P61B-00BLX	Flange WN ASTM A105 Class 900 ASME B16.5 RJ	
789	10		SCH20		P61B-00652	Flange WN ASTM A105 Class 900 ASME B16.5 RJ	
797	0.5		XS		P61B-009T3	Flange SW ASTM A105 Class 1500 ASME B16.5 RJ	
797	0.75		XS		P61B-009T4	Flange SW ASTM A105 Class 1500 ASME B16.5 RJ	
797	1		XS		P61B-009T5	Flange SW ASTM A105 Class 1500 ASME B16.5 RJ	
797	1.5		XS		P61B-009T6	Flange SW ASTM A105 Class 1500 ASME B16.5 RJ	
797	2		XS		P61B-0065C	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
797	3		STD		P61B-009W7	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	

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FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
797	4		STD		P61B-009W8	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67B-000FH	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	0.75				P67B-000FJ	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	1				P67B-000FK	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	1.5				P67B-000FL	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	2				P67B-000FT	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	3				P67B-000FW	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	4				P67B-000FX	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	6				P67B-000FY	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	8				P67B-000FZ	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	10				P67B-000FM	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	12				P67B-000FN	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	14				P67B-000FP	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	16				P67B-000FR	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	18				P67B-000FS	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	20				P67B-000FU	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	24				P67B-000FV	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	30				P67B-000G2	Blind flange ASTM A105 Class 150 ASME B16.47 Series B RF	
1	36				P67B-000G5	Blind flange ASTM A105 Class 150 ASME B16.47 Series B RF	
1	42				P67B-000KZ	Blind flange ASTM A105 Class 150 ASME B16.47 Series B RF	
1	48				P67B-000L2	Blind flange ASTM A105 Class 150 ASME B16.47 Series B RF	
1	52				P67B-0016N	Blind flange ASTM A105 Class 150 ASME B16.47 Series B RF	

REDUCING FLANGE (FR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2	0.75		XS	P62B-000NC	Reducing flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	2	1		XS	P62B-000K6	Reducing flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	2	1.5		XS	P62B-000K7	Reducing flange WN ASTM A105 Class 150 ASME B16.5 RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000L8	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000L9	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000LA	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000LB	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000LH	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000LL	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000LM	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	6				P73T-000LN	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	8				P73T-000LP	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	10				P73T-000LC	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	12				P73T-000LD	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	14				P73T-000LE	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	16				P73T-000LF	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	18				P73T-000LG	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	20				P73T-000LJ	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	24				P73T-000LK	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	30				P73T-000LT	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	36				P73T-000LW	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	

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GASKET (G)							
OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	42				P73T-000LZ	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	48				P73T-000M2	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	52				P73T-001E2	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
3001	4				P78U-0004R	Insulation gasket kit Glass reinforced epoxy Class 150 Manufacturer-standard Flange ASME B16.5 RF	
773	0.5				P73T-000FT	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	0.75				P73T-000FU	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	3				P73T-000G5	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	4				P73T-000G6	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	6				P73T-000G7	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	8				P73T-000G8	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	10				P73T-000FX	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	12				P73T-000FY	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	14				P73T-000FZ	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	16				P73T-000G0	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	18				P73T-000G1	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	20				P73T-000G3	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	24				P73T-000G4	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	30				P73T-000H9	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	36				P73T-000HC	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	42				P73T-000KM	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	48				P73T-000KR	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	52				P73T-0024N	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	0.5				P73T-000J8	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	0.75				P73T-000J9	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1				P73T-000JA	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1.5				P73T-000JB	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	2				P73T-000JH	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	3				P73T-000JL	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	4				P73T-000JM	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	6				P73T-000JN	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
789	6				P75T-000JR	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	8				P75T-000JS	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	10				P75T-000JL	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	0.5				P75T-000JT	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	0.75				P75T-000JU	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	1				P75T-000JV	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	1.5				P75T-000JW	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	2				P75T-0008A	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	3				P75T-0008E	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	4				P75T-0008D	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	

BOLT AND NUT (B)							
OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-16				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	

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BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	18-24				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
1	30-42				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	48-52				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
773	0.5-10				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
773	12-52				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
781	0.5-6				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
789	4-12				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
797	0.5-2				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
797	3-4				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81B-000P4	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	0.75				P81B-000NX	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	1				P81B-000NY	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	1.5				P81B-000NZ	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	2				P81C-002DV	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	3				P81C-002DW	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	4				P81C-002DX	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	6				P81C-002DY	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	8				P81C-002DZ	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	10				P81C-002DT	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	12				P81C-002DU	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	16				P81C-002E0	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated	
1	18				P81C-002E1	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated	
1	20				P81C-002E2	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated	
714	0.5				P81B-0015L	Gate valve ASTM A105 Class 800 API 602 SW - NPT Trim number 8 BB-BG-OS&Y Handwheel operated	
714	0.75				P81B-002F4	Gate valve ASTM A105 Class 800 API 602 SW - NPT Trim number 8 BB-BG-OS&Y Handwheel operated	
714	1				P81B-002NH	Gate valve ASTM A105 Class 800 API 602 SW - NPT Trim number 8 BB-BG-OS&Y Handwheel operated	
714	1.5				P81B-002NJ	Gate valve ASTM A105 Class 800 API 602 SW - NPT Trim number 8 BB-BG-OS&Y Handwheel operated	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82B-000K0	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	0.75				P82B-000HB	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	1				P82B-000HC	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	1.5				P82B-000HD	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	2				P82C-000N5	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	3				P82C-000N6	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	4				P82C-000N7	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	6				P82C-000N8	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83B-000FX	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover	
1	0.75				P83B-000ER	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover	
1	1				P83B-000ES	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover	
1	1.5				P83B-000ET	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover	
1	2				P83C-00144	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	3				P83C-00147	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	

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CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	4				P83C-00148	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	6				P83C-00149	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	8				P83C-0014A	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	10				P83C-00140	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	12				P83C-00141	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	

BALL VALVE (Q)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P84B-0011T	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design	
1	0.75				P84B-0011U	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design	
1	1				P84B-0011V	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design	
1	1.5				P84B-0011W	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design	
24	0.5				P84B-0011X	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	
24	0.75				P84B-0011Y	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	
24	1				P84B-0011Z	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	
24	1.5				P84B-00120	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	

NEEDLE VALVE (NV)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82B-001JU	Needle valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	0.75				P82B-000YB	Needle valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	1				P82B-000YC	Needle valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	1.5				P82B-000YD	Needle valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	2				P82C-0037A	Needle valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	

ORIFICE FLANGE (FO)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2		XS		P66B-0084B	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	3		STD		P66B-0084C	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	4		STD		P66B-0084D	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	6		STD		P66B-0084E	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	8		SCH20		P66B-0084F	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	10		SCH20		P66B-00848	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	12		SCH20		P66B-0084L	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	14		SCH20		P66B-0084A	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	16		SCH20		P66B-0083Y	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	18		SCH20		P66B-0084R	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	20		STD		P66B-0084S	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
200	2		XS		P66B-00843	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	3		STD		P66B-00844	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	4		STD		P66B-00845	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	6		STD		P66B-00846	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	8		SCH20		P66B-00847	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	10		SCH20		P66B-00840	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	12		SCH20		P66B-0084P	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	14		SCH20		P66B-00842	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	16		SCH20		P66B-0083Z	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	18		SCH20		P66B-0084T	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	20		STD		P66B-0084U	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71B-0008A	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	

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SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75				P71B-0008B	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	1				P71B-0008C	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71B-0008D	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	2				P71B-0000P	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	3				P71B-0000N	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	4				P71B-0000M	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	6				P71B-0000L	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	8				P71B-0000R	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	10				P71B-0000K	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	12				P71B-0000J	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	

PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000AH	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	16				P72B-0000C	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	18				P72B-000AJ	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	20				P72B-000AK	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	24				P72B-000AL	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	30				P72B-000AM	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	36				P72B-000AN	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	42				P72B-000AP	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	48				P72B-000AR	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	52				P72B-000AS	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	

PADDLE SPACER (PS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000AT	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	16				P72B-0000B	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	18				P72B-000AU	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	20				P72B-000AV	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	24				P72B-000AW	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	30				P72B-000AX	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	36				P72B-000AY	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	42				P72B-000AZ	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	48				P72B-000B0	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	52				P72B-000B1	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	

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BOLT TABLE (B_A1AA , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	60	P80S-003V2		
0.75	4	0.500	65	P80S-003V3		
1	4	0.500	70	P80S-003V4		
1.5	4	0.500	75	P80S-003V5		
2	4	0.625	85	P80S-003XE		
3	4	0.625	95	P80S-003XG		
4	8	0.625	95	P80S-003XG		
6	8	0.750	105	P80S-003XJ		
8	8	0.750	110	P80S-003XK		
10	12	0.875	120	P80S-00419		
12	12	0.875	120	P80S-00419		
14	12	1.000	135	P80S-0043E		
16	16	1.000	140	P80S-0043F		
18	16	1.125	150	P80S-0046K		
20	20	1.125	160	P80S-0046M		
24	20	1.250	175	P80S-004AG		
30	44	0.750	145	P80S-003ZK		
36	44	0.875	175	P80S-0041M		
42	48	1.000	190	P80S-0043T		
48	44	1.125	210	P80S-0046Z		
52	52	1.125	220	P80S-00471		

BOLT TABLE (B_A1AA_773 , STUD ASME RF, OPTION CODE 773)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-003V4		
0.75	4	0.625	75	P80S-003XC		
1	4	0.625	80	P80S-003XD		
1.5	4	0.750	95	P80S-00414		
2	8	0.625	90	P80S-003XF		
3	8	0.750	110	P80S-003XK		
4	8	0.750	115	P80S-003XL		
6	12	0.750	125	P80S-003XN		
8	12	0.875	140	P80S-0041D		
10	16	1.000	160	P80S-0043K		
12	16	1.125	175	P80S-0046S		
14	20	1.125	180	P80S-0046T		
16	20	1.250	190	P80S-004AK		
18	24	1.250	200	P80S-004AM		
20	24	1.250	210	P80S-004AP		
24	24	1.500	235	P80S-003F8		
30	36	1.375	285	P80S-003EA		
36	32	1.625	320	P80S-005TT		
42	36	1.750	355	P80S-007B5		
48	40	1.875	380	P80S-008P4		
52	48	1.875	410	P80S-008PA		

BOLT TABLE (B_A1AA_781 , STUD ASME RF, OPTION CODE 781)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	80	P80S-003V6		
0.75	4	0.625	90	P80S-003XF		
1	4	0.625	95	P80S-003XG		
1.5	4	0.750	110	P80S-003XK		
2	8	0.625	110	P80S-003VC		
3	8	0.750	130	P80S-003XP		
4	8	0.875	150	P80S-0041F		
6	12	1.000	175	P80S-0043P		
8	12	1.125	195			
10	16	1.250	250			
12	20	1.250	255			
14	20	1.375	270			
16	20	1.500	295			
18	20	1.625	320			
20	24	1.625	335			
24	24	1.875	380			
30	28	1.875	435			
36	28	2.250	510			
42	28	2.500	575			

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BOLT TABLE (B_A1AA_781 , STUD ASME RF, OPTION CODE 781)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
48	32	2.750	635			
52	32	3.000	680			

BOLT TABLE (B_A1AA_789 , STUD ASME RJ, OPTION CODE 789)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	110		R12	
0.75	4	0.750	115		R14	
1	4	0.875	130		R16	
1.5	4	1.000	140		R20	
2	8	0.875	150		R24	
3	8	0.875	150		R31	
4	8	1.125	175	P80S-0046S	R37	
6	12	1.125	200	P80S-0046X	R45	P75T-000JR
8	12	1.375	260	P80S-003E5	R49	P75T-000JS
10	16	1.375	275	P80S-003E8	R53	P75T-000JL
12	20	1.375	295	P80S-003EC	R57	
14	20	1.500	325		R62	
16	20	1.625	340		R66	
18	20	1.875	390		R70	
20	20	2.000	415		R74	
24	20	2.500	525		R78	
30	20	3.000	600		R102	
36	20	3.500	690		R105	

BOLT TABLE (B_A1AA_797 , STUD ASME RJ, OPTION CODE 797)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	110	P80S-003XK	R12	P75T-000JT
0.75	4	0.750	115	P80S-003XL	R14	P75T-000JU
1	4	0.875	130	P80S-0041B	R16	P75T-000JV
1.5	4	1.000	140	P80S-0043F	R20	P75T-000JW
2	8	0.875	150	P80S-0041F	R24	P75T-0008A
3	8	1.125	180	P80S-0046T	R35	P75T-0008E
4	8	1.250	230	P80S-004AU	R39	P75T-0008D
6	12	1.375	300		R46	
8	12	1.625	345		R50	
10	12	1.875	395		R54	
12	16	2.000	445		R58	
14	16	2.250	490		R63	
16	16	2.500	540		R67	
18	16	2.750	590		R71	
20	16	3.000	650		R75	
24	16	3.500	745		R79	

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BRANCH TABLE (T_A1AA)

RUN PIPE SIZE (in) \ BRANCH SIZE (in)	0.5	0.75	1	1.5	2	3	4	6	8	10	12	14	16	18	20	24	30	36	42	48	52
0.5	TS																				
0.75		TS																			
1		TR	TS																		
1.5		TR	TR	TS																	
2		L	TR	TR	TS																
3		L	L	TR	TR	TS															
4	L	L	L	L	TR	TR	TS														
6	L	L	L	L	L	TR	TR	TS													
8		L	L	L	L	L	TR	TR	TS												
10		L	L	L	L	L	TR	TR	TR	TS											
12		L	L	L	L	L	L	TR	TR	TR	TS										
14		L	L	L	L	L	L	TR	TR	TR	TR	TS									
16		L	L	L	L	L	L	TR	TR	TR	TR	TR	TS								
18		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TS							
20		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TR	TS						
24		L	L	L	L	L	L	L	9PD	TR	TR	TR	TR	TR	TR	TS					
30		L	L	L	L	L	L	L	9PD	TR	TR	TR	TR	TR	TR	TR	TS				
36		L	L	L	L	L	L	L	9PD	9PD	9PD	9PD	TR	TR	TR	TR	TR	TS			
42		L	L	L	L	L	L	L	9PD	9PD	9PD	9PD	TR	TR	TR	TR	TR	TR	TS		
48		L	L	L	L	L	L	L	9PD	9PD	9PD	9PD	9PD	9PD	9PD	TR	TR	TR	TR	TS	
52		L	L	L	L	L	L	L	9PD	9PD	9PD	9PD	9PD	9PD	9PD	9PD	TR	TR	TR	TR	TS

TS : STRAIGHT TEE
TR : REDUCING TEE
L : OUTLET
9PD : REINFORCING PAD 90 DEG

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PIPING CLASS

A1AC04 REV NO. 2

Material : Killed CS
Rating : ASME CLASS 150
Flange Face : RF
C.A.(mm) : 1.50
Gasket : Spiral Wound
Service : PROCESS - CATALYST : / CATALYST
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
2	USE OF SOFT SEATED BALL, PLUG AND BUTTERFLY VALVES SHALL BE LIMITED TO MAXIMUM OF 204DEGC (400DEGF)
6	PIPE THICKNESS CALCULATION TO INCLUDE CORROSION AND EROSION ALLOWANCES DUE TO THE PROCESS CATALYST FLOW, AS PER PROCESS LICENSOR SPECIFICATIONS

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
541	NPT(F) (L)
773	CLASS 300 (B,F,G)

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PIPING CLASS
A1AC04 REV NO. 2

PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P01A-000XM	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	0.75		XS		P01A-000XN	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1		XS		P01A-000XP	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1.5		XS		P01A-000XV	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	2		XS		P01A-000YX	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	3		STD		P01A-000YM	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	4		STD		P01A-000YU	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P02A-000UR	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	0.75		XS		P02A-000UN	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1		XS		P02A-000UL	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1.5		XS		P02A-000UJ	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	2		XS		P02A-000CP	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		STD		P02A-000CU	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		STD		P02A-000CZ	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P03A-0018K	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	0.75		XS		P03A-0018L	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1		XS		P03A-0018M	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1.5		XS		P03A-0018N	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	2		XS		P03A-000AS	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		STD		P03A-000AX	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		STD		P03A-000B1	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P21A-002TV	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	0.75		XS		P21A-002TW	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1		XS		P21A-002TX	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5		XS		P21A-002TY	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2		XS		P21A-001CJ	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		STD		P21A-001CU	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		STD		P21A-001CW	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75	XS	XS	P24A-006WW	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.75	XS	XS	P24A-006WY	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	1	XS	XS	P24A-006WZ	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	XS	XS	P24A-00238	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	XS	XS	P24A-0023H	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	STD	XS	P24A-00214	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	STD	XS	P24A-002HW	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P24A-002HY	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P24A-0021K	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	XS	XS	P27A-004M6	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.5	XS	XS	P27A-004ME	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.75	XS	XS	P27A-004MM	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.5	XS	XS	P27A-004N2	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.75	XS	XS	P27A-004NC	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	1	XS	XS	P27A-004NP	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2	0.75	XS	XS	P27A-001CZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	XS	XS	P27A-001DL	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	XS	XS	P27A-001E2	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	STD	XS	P27A-001AU	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	STD	XS	P27A-001MZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	1.5	STD	XS	P27A-001AW	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P27A-001N0	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P27A-00189	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	XS	XS	P28A-004V6	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.5	XS	XS	P28A-004V7	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.75	XS	XS	P28A-004V8	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.5	XS	XS	P28A-004V9	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.75	XS	XS	P28A-004VA	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	1	XS	XS	P28A-004VB	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	0.75	XS	XS	P28A-001CU	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	XS	XS	P28A-001DS	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	XS	XS	P28A-001EE	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	STD	XS	P28A-001A3	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	STD	XS	P28A-001N5	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	1.5	STD	XS	P28A-001A4	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P28A-001N6	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P28A-0018B	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P29A-002KS	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	0.75		XS		P29A-002KT	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1		XS		P29A-002KU	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5		XS		P29A-002KV	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2		XS		P29A-000A1	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		STD		P29A-000BK	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		STD		P29A-000A3	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P41A-000B5	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		SCH160		P41A-000B6	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		SCH160		P41A-000B7	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		SCH160		P41A-000B8	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
541	1	0.75			P31B-00551	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
541	1.5	0.75			P31B-00555	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
541	2 - 2.5	0.75			P31B-0137H	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
541	3 - 5	0.75			P31B-01376	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
1	2	0.75	XS	XS	P31B-00CP3	Outlet ASTM A105 MSS SP-97 BW	
1	3	0.75	STD	XS	P31B-00CMN	Outlet ASTM A105 MSS SP-97 BW	
1	4	0.75	STD	XS	P31B-00CLM	Outlet ASTM A105 MSS SP-97 BW	
1	3	1	STD	XS	P31B-00B4D	Outlet ASTM A105 MSS SP-97 BW	
1	4	1	STD	XS	P31B-00AYW	Outlet ASTM A105 MSS SP-97 BW	
1	4	1.5	STD	XS	P31B-00BNZ	Outlet ASTM A105 MSS SP-97 BW	

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PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30B-0002D	Plug ASTM A105 ASME B16.11 NPT Round head	
1	0.75				P30B-0002E	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1				P30B-0002F	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1.5				P30B-0002G	Plug ASTM A105 ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P61B-003ND	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	0.75		XS		P61B-003NE	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	1		XS		P61B-003NF	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	1.5		XS		P61B-003NG	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	2		XS		P61B-003NK	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	3		STD		P61B-001PW	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	4		STD		P61B-001R8	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
773	0.5		XS		P61B-0032Z	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	0.75		XS		P61B-0032X	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	1		XS		P61B-0032U	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	1.5		XS		P61B-0032S	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	2		XS		P61B-001HW	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	3		STD		P61B-001LJ	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	4		STD		P61B-001MC	Flange WN ASTM A105 Class 300 ASME B16.5 RF	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67B-000FH	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	0.75				P67B-000FJ	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	1				P67B-000FK	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	1.5				P67B-000FL	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	2				P67B-000FT	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	3				P67B-000FW	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	4				P67B-000FX	Blind flange ASTM A105 Class 150 ASME B16.5 RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000L8	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000L9	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000LA	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000LB	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000LH	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000LL	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000LM	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	0.5				P73T-000FT	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	0.75				P73T-000FU	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	3				P73T-000G5	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	4				P73T-000G6	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-4				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
773	0.5-4				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	

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BALL VALVE (Q)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P84B-0011X	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	
1	0.75				P84B-0011Y	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	
1	1				P84B-0011Z	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	
1	1.5				P84B-00120	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	
1	2				P84C-005UJ	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	
1	3				P84C-005UK	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	
1	4				P84C-005UL	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71B-0008A	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	0.75				P71B-0008B	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	1				P71B-0008C	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71B-0008D	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	2				P71B-0000P	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	3				P71B-0000N	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	4				P71B-0000M	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	

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BOLT TABLE (B_A1AC04 , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	60	P80S-003V2		
0.75	4	0.500	65	P80S-003V3		
1	4	0.500	70	P80S-003V4		
1.5	4	0.500	75	P80S-003V5		
2	4	0.625	85	P80S-003XE		
3	4	0.625	95	P80S-003XG		
4	8	0.625	95	P80S-003XG		

BOLT TABLE (B_A1AC04_773 , STUD ASME RF, OPTION CODE 773)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-003V4		
0.75	4	0.625	75	P80S-003XC		
1	4	0.625	80	P80S-003XD		
1.5	4	0.750	95	P80S-00414		
2	8	0.625	90	P80S-003XF		
3	8	0.750	110	P80S-003XK		
4	8	0.750	115	P80S-003XL		

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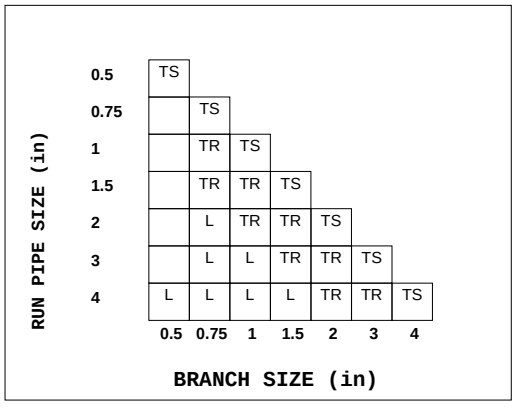
BRANCH TABLE (T_A1AC04)



TR : REDUCING TEE
L : OUTLET
TS : STRAIGHT TEE

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Material	:	Killed CS
Rating	:	ASME CLASS 150
Flange Face	:	RF
C.A.(mm)	:	1.50
Gasket	:	Spiral Wound
Service	:	UTILITY - HYDROCARBON : / FUEL OIL / FUEL GAS

Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
2	USE OF SOFT SEATED BALL, PLUG AND BUTTERFLY VALVES SHALL BE LIMITED TO MAXIMUM OF 204DEGC (400DEGF)

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
24	FULL PORT (Q)
200	WITH JACK SCREW (FO)
541	NPT(F) (CA,L)
714	SW - NPT(F) (V)
773	CLASS 300 (B,F,G,V)
797	CLASS 1500 (B,F,G)

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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P01A-000XM	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	0.75		XS		P01A-000XN	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1		XS		P01A-000XP	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1.5		XS		P01A-000XV	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	2		XS		P01A-000YX	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	3		STD		P01A-000YM	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	4		STD		P01A-000YU	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	6		STD		P01A-000Z3	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	8		SCH20		P01A-001AT	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	10		SCH20		P01A-0014Y	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	12		SCH20		P01A-0016H	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	14		SCH20		P01A-0017A	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	16		SCH20		P01A-0018E	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	18		SCH20		P01A-00438	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE	
1	20		STD		P01A-0042G	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P02B-00014	90 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	0.75				P02B-00015	90 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	1				P02B-00016	90 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5				P02B-00017	90 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	2		XS		P02A-000CP	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		STD		P02A-000CU	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		STD		P02A-000CZ	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		STD		P02A-000D6	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		SCH20		P02A-000GZ	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	10		SCH20		P02A-000H1	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	12		SCH20		P02A-000H4	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	14		SCH20		P02A-000FX	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	16		SCH20		P02A-000GM	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	18		SCH20		P02A-000LT	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	20		STD		P02A-0010J	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P03B-00017	45 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	0.75				P03B-00018	45 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	1				P03B-00019	45 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5				P03B-0001A	45 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	2		XS		P03A-000AS	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		STD		P03A-000AX	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		STD		P03A-000B1	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		STD		P03A-000B9	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		SCH20		P03A-000EX	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	10		SCH20		P03A-000F0	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	12		SCH20		P03A-000F2	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	14		SCH20		P03A-000DW	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	16		SCH20		P03A-000EM	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	18		SCH20		P03A-001DX	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	20		STD		P03A-000X1	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P21B-00017	Straight tee ASTM A105 Class 3000 ASME B16.11 SW	
1	0.75				P21B-00018	Straight tee ASTM A105 Class 3000 ASME B16.11 SW	
1	1				P21B-00019	Straight tee ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5				P21B-0001A	Straight tee ASTM A105 Class 3000 ASME B16.11 SW	
1	2		XS		P21A-001CJ	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3		STD		P21A-001CU	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		STD		P21A-001CW	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6		STD		P21A-001D2	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8		SCH20		P21A-00215	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10		SCH20		P21A-00219	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12		SCH20		P21A-0021A	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14		SCH20		P21A-00206	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16		SCH20		P21A-0020X	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18		SCH20		P21A-001PJ	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20		STD		P21A-001C7	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75			P24B-0002L	Reducing tee ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5	0.75			P24B-0002N	Reducing tee ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5	1			P24B-0002P	Reducing tee ASTM A105 Class 3000 ASME B16.11 SW	
1	2	1	XS	XS	P24A-00238	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	XS	XS	P24A-0023H	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	STD	XS	P24A-00214	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	STD	XS	P24A-002HW	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P24A-002HY	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P24A-0021K	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	STD	P24A-0021A	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P24A-00229	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH20	STD	P24A-00J21	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH20	STD	P24A-005J4	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	SCH20	STD	P24A-00HMB	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	SCH20	STD	P24A-00HKS	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	SCH20	SCH20	P24A-002YX	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	SCH20	STD	P24A-00K0B	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH20	SCH20	P24A-002U4	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH20	SCH20	P24A-002YC	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	SCH20	STD	P24A-00K0M	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	SCH20	SCH20	P24A-002U7	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	SCH20	SCH20	P24A-002YA	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	SCH20	SCH20	P24A-002YR	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	6	SCH20	STD	P24A-00GU4	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	SCH20	SCH20	P24A-002XW	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	SCH20	SCH20	P24A-002YH	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	SCH20	SCH20	P24A-002U1	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	SCH20	SCH20	P24A-002XF	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	8	SCH20	SCH20	P24A-002XC	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	10	SCH20	SCH20	P24A-002UX	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	12	SCH20	SCH20	P24A-002W3	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	14	SCH20	SCH20	P24A-002WT	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	16	SCH20	SCH20	P24A-002X5	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	8	STD	SCH20	P24A-00K0N	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	10	STD	SCH20	P24A-00BT7	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	12	STD	SCH20	P24A-00BUS	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	14	STD	SCH20	P24A-00BWB	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	16	STD	SCH20	P24A-006W3	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	18	STD	SCH20	P24A-006WD	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	STD	XS	P27A-001MZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P27A-001N0	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P27A-00189	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	STD	P27A-001AZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	6	4	STD	STD	P27A-001GW	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH20	STD	P27A-003K2	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH20	STD	P27A-003K3	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	SCH20	STD	P27A-003K4	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	SCH20	STD	P27A-003K5	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	SCH20	SCH20	P27A-001UL	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	SCH20	STD	P27A-003K6	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH20	SCH20	P27A-001UU	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH20	SCH20	P27A-001TH	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	SCH20	STD	P27A-00518	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	SCH20	SCH20	P27A-001V4	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	SCH20	SCH20	P27A-001TG	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	SCH20	SCH20	P27A-001U1	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	SCH20	SCH20	P27A-001WX	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	SCH20	SCH20	P27A-001TW	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	SCH20	SCH20	P27A-001UF	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	SCH20	SCH20	P27A-001V2	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	10	SCH20	SCH20	P27A-001TJ	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	12	SCH20	SCH20	P27A-001UE	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	14	SCH20	SCH20	P27A-001UY	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	16	SCH20	SCH20	P27A-001WN	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	12	STD	SCH20	P27A-00CMZ	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	14	STD	SCH20	P27A-0082L	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	16	STD	SCH20	P27A-0082M	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	18	STD	SCH20	P27A-0084N	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	STD	XS	P28A-001N5	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P28A-001N6	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P28A-0018B	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	STD	P28A-001AS	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P28A-00182	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH20	STD	P28A-003JU	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH20	STD	P28A-003JV	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	SCH20	STD	P28A-003JW	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	SCH20	STD	P28A-003JX	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	SCH20	SCH20	P28A-001V0	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	SCH20	STD	P28A-003JY	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH20	SCH20	P28A-001V1	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH20	SCH20	P28A-001TJ	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	SCH20	STD	P28A-0096P	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	SCH20	SCH20	P28A-001WH	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	SCH20	SCH20	P28A-001TH	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	SCH20	SCH20	P28A-001UC	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	SCH20	SCH20	P28A-001T6	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	SCH20	SCH20	P28A-001TY	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	SCH20	SCH20	P28A-001UX	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	SCH20	SCH20	P28A-001WG	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	10	SCH20	SCH20	P28A-001TV	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	12	SCH20	SCH20	P28A-001UJ	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	14	SCH20	SCH20	P28A-001WD	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	16	SCH20	SCH20	P28A-001T1	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	12	STD	SCH20	P28A-009MM	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	14	STD	SCH20	P28A-004SJ	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	16	STD	SCH20	P28A-004SK	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	18	STD	SCH20	P28A-004UN	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	

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CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P29B-0001J	Cap ASTM A105 Class 3000 ASME B16.11 SW	
1	0.75				P29B-0001F	Cap ASTM A105 Class 3000 ASME B16.11 SW	
1	1				P29B-0001G	Cap ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5				P29B-0001H	Cap ASTM A105 Class 3000 ASME B16.11 SW	
1	2		XS		P29A-000A1	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		STD		P29A-000BK	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		STD		P29A-000A3	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6		STD		P29A-000A9	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8		SCH20		P29A-000EY	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10		SCH20		P29A-000E5	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12		SCH20		P29A-000E8	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14		SCH20		P29A-000EA	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16		SCH20		P29A-000F3	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18		SCH20		P29A-000E0	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20		STD		P29A-000B2	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
541	0.75				P29B-0000C	Cap ASTM A105 Class 3000 ASME B16.11 NPT	
541	1				P29B-0000D	Cap ASTM A105 Class 3000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P41A-000B5	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		SCH160		P41A-000B6	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		SCH160		P41A-000B7	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		SCH160		P41A-000B8	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

CON SWAGED NIPPLE (SNC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	XS	XS	P42A-00036	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	XS	XS	P42A-00038	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	XS	XS	P42A-0003B	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	XS	XS	P42A-00035	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	XS	XS	P42A-00039	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	XS	XS	P42A-0003C	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	XS	XS	P42A-0008C	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	XS	XS	P42A-0008D	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	XS	XS	P42A-0008E	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	XS	XS	P42A-0008F	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	STD	XS	P42A-0007V	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	

ECC SWAGED NIPPLE (SNE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	XS	XS	P43A-00036	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	XS	XS	P43A-00037	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	XS	XS	P43A-00038	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	XS	XS	P43A-00039	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	XS	XS	P43A-0003A	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	XS	XS	P43A-0003B	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	XS	XS	P43A-00042	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	XS	XS	P43A-00043	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	XS	XS	P43A-00044	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	XS	XS	P43A-00045	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	STD	XS	P43A-0003J	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	

COUPLING (CPS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P47B-0001D	Coupling ASTM A105 Class 3000 ASME B16.11 SW - SW	
1	0.75				P47B-0001E	Coupling ASTM A105 Class 3000 ASME B16.11 SW - SW	
1	1				P47B-0001F	Coupling ASTM A105 Class 3000 ASME B16.11 SW - SW	

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COUPLING (CPS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5				P47B-0001G	Coupling ASTM A105 Class 3000 ASME B16.11 SW - SW	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2 - 2.5	0.75			P31B-0137J	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	3 - 5	0.75			P31B-0137K	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	6 - 12	0.75			P31B-007AB	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	14 - 36	0.75			P31B-007AJ	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	3	1			P31B-007A7	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	4 - 5	1			P31B-0138Z	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	6 - 10	1			P31B-007A4	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	12 - 36	1			P31B-007AA	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	4	1.5			P31B-005SN	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	5 - 6	1.5			P31B-01390	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	8 - 12	1.5			P31B-0079U	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	14 - 24	1.5			P31B-007A0	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
541	1	0.75			P31B-00551	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
541	1.5	0.75			P31B-00555	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
541	2 - 2.5	0.75			P31B-0137H	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
541	3 - 5	0.75			P31B-01376	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
541	6 - 12	0.75			P31B-007GR	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
541	14 - 36	0.75			P31B-007GY	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
1	6	2	STD	XS	P31B-007SH	Outlet ASTM A105 MSS SP-97 BW	
1	8	2	SCH20	XS	P31B-00NY2	Outlet ASTM A105 MSS SP-97 BW	
1	10	2	SCH20	XS	P31B-00TFB	Outlet ASTM A105 MSS SP-97 BW	
1	12	2	SCH20	XS	P31B-00TFA	Outlet ASTM A105 MSS SP-97 BW	
1	14	2	SCH20	XS	P31B-00TF9	Outlet ASTM A105 MSS SP-97 BW	
1	16	2	SCH20	XS	P31B-00TF8	Outlet ASTM A105 MSS SP-97 BW	
1	18	2	SCH20	XS	P31B-00NVX	Outlet ASTM A105 MSS SP-97 BW	
1	20	2	STD	XS	P31B-00994	Outlet ASTM A105 MSS SP-97 BW	
1	8	3	SCH20	STD	P31B-00P11	Outlet ASTM A105 MSS SP-97 BW	
1	10	3	SCH20	STD	P31B-00UPG	Outlet ASTM A105 MSS SP-97 BW	
1	12	3	SCH20	STD	P31B-00USE	Outlet ASTM A105 MSS SP-97 BW	
1	14	3	SCH20	STD	P31B-00UPH	Outlet ASTM A105 MSS SP-97 BW	
1	16	3	SCH20	STD	P31B-00TU2	Outlet ASTM A105 MSS SP-97 BW	
1	18	3	SCH20	STD	P31B-00NZ4	Outlet ASTM A105 MSS SP-97 BW	
1	20	3	STD	STD	P31B-008FA	Outlet ASTM A105 MSS SP-97 BW	
1	12	4	SCH20	STD	P31B-00USF	Outlet ASTM A105 MSS SP-97 BW	
1	14	4	SCH20	STD	P31B-00UPJ	Outlet ASTM A105 MSS SP-97 BW	
1	16	4	SCH20	STD	P31B-00TU3	Outlet ASTM A105 MSS SP-97 BW	
1	18	4	SCH20	STD	P31B-00P1V	Outlet ASTM A105 MSS SP-97 BW	
1	20	4	STD	STD	P31B-008D3	Outlet ASTM A105 MSS SP-97 BW	
1	18	6	SCH20	STD	P31B-00P48	Outlet ASTM A105 MSS SP-97 BW	
1	20	6	STD	STD	P31B-008PZ	Outlet ASTM A105 MSS SP-97 BW	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30B-0002D	Plug ASTM A105 ASME B16.11 NPT Round head	
1	0.75				P30B-0002E	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1				P30B-0002F	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1.5				P30B-0002G	Plug ASTM A105 ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P61B-001R9	Flange SW ASTM A105 Class 150 ASME B16.5 RF	
1	0.75		XS		P61B-001RA	Flange SW ASTM A105 Class 150 ASME B16.5 RF	
1	1		XS		P61B-001RR	Flange SW ASTM A105 Class 150 ASME B16.5 RF	
1	1.5		XS		P61B-001RV	Flange SW ASTM A105 Class 150 ASME B16.5 RF	
1	2		XS		P61B-003NK	Flange WN ASTM A105 Class 150 ASME B16.5 RF	

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FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3		STD		P61B-001PW	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	4		STD		P61B-001R8	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	6		STD		P61B-001RT	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	8		SCH20		P61B-002BF	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	10		SCH20		P61B-002B4	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	12		SCH20		P61B-002B5	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	14		SCH20		P61B-002B6	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	16		SCH20		P61B-002B7	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	18		SCH20		P61B-002B8	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	20		STD		P61B-001JA	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
773	0.5		XS		P61B-001HC	Flange SW ASTM A105 Class 300 ASME B16.5 RF	
773	0.75		XS		P61B-001HS	Flange SW ASTM A105 Class 300 ASME B16.5 RF	
773	1		XS		P61B-001EF	Flange SW ASTM A105 Class 300 ASME B16.5 RF	
773	1.5		XS		P61B-001F2	Flange SW ASTM A105 Class 300 ASME B16.5 RF	
773	2		XS		P61B-001HW	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	3		STD		P61B-001LJ	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	4		STD		P61B-001MC	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	6		STD		P61B-001N2	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	8		SCH20		P61B-002LJ	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	10		SCH20		P61B-002LH	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	12		SCH20		P61B-002MP	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	14		SCH20		P61B-002MR	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	16		SCH20		P61B-002MS	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	18		SCH20		P61B-002MT	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	20		STD		P61B-001NT	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
797	0.5		XS		P61B-009T3	Flange SW ASTM A105 Class 1500 ASME B16.5 RJ	
797	0.75		XS		P61B-009T4	Flange SW ASTM A105 Class 1500 ASME B16.5 RJ	
797	1		XS		P61B-009T5	Flange SW ASTM A105 Class 1500 ASME B16.5 RJ	
797	1.5		XS		P61B-009T6	Flange SW ASTM A105 Class 1500 ASME B16.5 RJ	
797	2		XS		P61B-0065C	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67B-000FH	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	0.75				P67B-000FJ	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	1				P67B-000FK	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	1.5				P67B-000FL	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	2				P67B-000FT	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	3				P67B-000FW	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	4				P67B-000FX	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	6				P67B-000FY	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	8				P67B-000FZ	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	10				P67B-000FM	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	12				P67B-000FN	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	14				P67B-000FP	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	16				P67B-000FR	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	18				P67B-000FS	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	20				P67B-000FU	Blind flange ASTM A105 Class 150 ASME B16.5 RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000L8	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000L9	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000LA	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000LB	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000LH	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000LL	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

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GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	4				P73T-000LM	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	6				P73T-000LN	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	8				P73T-000LP	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	10				P73T-000LC	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	12				P73T-000LD	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	14				P73T-000LE	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	16				P73T-000LF	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	18				P73T-000LG	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	20				P73T-000LJ	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	0.5				P73T-000FT	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	0.75				P73T-000FU	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	3				P73T-000G5	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	4				P73T-000G6	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	6				P73T-000G7	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	8				P73T-000G8	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	10				P73T-000FX	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	12				P73T-000FY	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	14				P73T-000FZ	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	16				P73T-000G0	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	18				P73T-000G1	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	20				P73T-000G3	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
797	0.5				P75T-000JT	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	0.75				P75T-000JU	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	1				P75T-000JV	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	1.5				P75T-000JW	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	2				P75T-0008A	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-16				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	18-20				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
773	0.5-10				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
773	12-20				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
797	0.5-2				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81B-000P4	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	0.75				P81B-000NX	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	1				P81B-000NY	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	1.5				P81B-000NZ	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	2				P81C-002DV	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	3				P81C-002DW	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	4				P81C-002DX	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	

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GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	6				P81C-002DY	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	8				P81C-002DZ	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	10				P81C-002DT	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	12				P81C-002DU	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	14				P81C-00308	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated	
1	16				P81C-002E0	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated	
1	18				P81C-002E1	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated	
1	20				P81C-002E2	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated	
714	0.5				P81B-0015L	Gate valve ASTM A105 Class 800 API 602 SW - NPT Trim number 8 BB-BG-OS&Y Handwheel operated	
714	0.75				P81B-002F4	Gate valve ASTM A105 Class 800 API 602 SW - NPT Trim number 8 BB-BG-OS&Y Handwheel operated	
773	2				P81C-002D6	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82B-000K0	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	0.75				P82B-000HB	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	1				P82B-000HC	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	1.5				P82B-000HD	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	2				P82C-000N5	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	3				P82C-000N6	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	4				P82C-000N7	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	6				P82C-000N8	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	8				P82C-0026L	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83B-000FX	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover	
1	0.75				P83B-000ER	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover	
1	1				P83B-000ES	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover	
1	1.5				P83B-000ET	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover	
1	2				P83C-00144	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	3				P83C-00147	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	4				P83C-00148	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	6				P83C-00149	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	8				P83C-0014A	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	10				P83C-00140	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	12				P83C-00141	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	

BALL VALVE (Q)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P84B-0011T	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design	
1	0.75				P84B-0011U	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design	
1	1				P84B-0011V	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design	
1	1.5				P84B-0011W	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design	
1	2				P84C-005UD	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design	
1	3				P84C-005UE	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design	
1	4				P84C-005UF	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design	
1	6				P84C-005UG	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Reduced bore Fire tested design	

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BALL VALVE (Q)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	8				P84C-005UH	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Reduced bore Fire tested design	
24	0.5				P84B-0011X	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	
24	0.75				P84B-0011Y	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	
24	1				P84B-0011Z	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	
24	1.5				P84B-00120	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	
24	2				P84C-005UJ	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	
24	3				P84C-005UK	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	
24	4				P84C-005UL	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	
24	6				P84C-005UM	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design	
24	8				P84C-005UN	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design	

BUTTERFLY VALVE (H)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	10				P86C-00230	Offset design butterfly valve ASTM A216 Grade WCB Class 150 API 609 Category B Lug-type ASME B16.5 RF Disc CS Seat Stellite-6 Trim 13Cr Triple eccentric design BG Gear operated	
1	12				P86C-00231	Offset design butterfly valve ASTM A216 Grade WCB Class 150 API 609 Category B Lug-type ASME B16.5 RF Disc CS Seat Stellite-6 Trim 13Cr Triple eccentric design BG Gear operated	
1	14				P86C-00232	Offset design butterfly valve ASTM A216 Grade WCB Class 150 API 609 Category B Lug-type ASME B16.5 RF Disc CS Seat Stellite-6 Trim 13Cr Triple eccentric design BG Gear operated	
1	16				P86C-00233	Offset design butterfly valve ASTM A216 Grade WCB Class 150 API 609 Category B Lug-type ASME B16.5 RF Disc CS Seat Stellite-6 Trim 13Cr Triple eccentric design BG Gear operated	

ORIFICE FLANGE (FO)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2		XS		P66B-0084B	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	3		STD		P66B-0084C	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	4		STD		P66B-0084D	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	6		STD		P66B-0084E	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	8		SCH20		P66B-0084F	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	10		SCH20		P66B-00848	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	12		SCH20		P66B-0084L	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	14		SCH20		P66B-0084A	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
200	2		XS		P66B-00843	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	3		STD		P66B-00844	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	4		STD		P66B-00845	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	6		STD		P66B-00846	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	8		SCH20		P66B-00847	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	10		SCH20		P66B-00840	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	12		SCH20		P66B-0084P	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	14		SCH20		P66B-00842	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71B-0008A	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	0.75				P71B-0008B	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	1				P71B-0008C	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71B-0008D	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	2				P71B-0000P	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	3				P71B-0000N	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	4				P71B-0000M	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	6				P71B-0000L	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	8				P71B-0000R	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	10				P71B-0000K	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	12				P71B-0000J	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	

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PADDLE BLANK (PB)							
OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000AH	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	16				P72B-0000C	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	18				P72B-000AJ	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	20				P72B-000AK	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	

PADDLE SPACER (PS)							
OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000AT	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	16				P72B-0000B	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	18				P72B-000AU	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	20				P72B-000AV	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	

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BOLT TABLE (B_A1AD , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	60	P80S-003V2		
0.75	4	0.500	65	P80S-003V3		
1	4	0.500	70	P80S-003V4		
1.5	4	0.500	75	P80S-003V5		
2	4	0.625	85	P80S-003XE		
3	4	0.625	95	P80S-003XG		
4	8	0.625	95	P80S-003XG		
6	8	0.750	105	P80S-003XJ		
8	8	0.750	110	P80S-003XK		
10	12	0.875	120	P80S-00419		
12	12	0.875	120	P80S-00419		
14	12	1.000	135	P80S-0043E		
16	16	1.000	140	P80S-0043F		
18	16	1.125	150	P80S-0046K		
20	20	1.125	160	P80S-0046M		

BOLT TABLE (B_A1AD_773 , STUD ASME RF, OPTION CODE 773)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-003V4		
0.75	4	0.625	75	P80S-003XC		
1	4	0.625	80	P80S-003XD		
1.5	4	0.750	95	P80S-00414		
2	8	0.625	90	P80S-003XF		
3	8	0.750	110	P80S-003XK		
4	8	0.750	115	P80S-003XL		
6	12	0.750	125	P80S-003XN		
8	12	0.875	140	P80S-0041D		
10	16	1.000	160	P80S-0043K		
12	16	1.125	175	P80S-0046S		
14	20	1.125	180	P80S-0046T		
16	20	1.250	190	P80S-004AK		
18	24	1.250	200	P80S-004AM		
20	24	1.250	210	P80S-004AP		

BOLT TABLE (B_A1AD_797 , STUD ASME RJ, OPTION CODE 797)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	110	P80S-003XK	R12	P75T-000JT
0.75	4	0.750	115	P80S-003XL	R14	P75T-000JU
1	4	0.875	130	P80S-0041B	R16	P75T-000JV
1.5	4	1.000	140	P80S-0043F	R20	P75T-000JW
2	8	0.875	150	P80S-0041F	R24	P75T-0008A
3	8	1.125	180		R35	
4	8	1.250	230		R39	
6	12	1.375	300		R46	
8	12	1.625	345		R50	
10	12	1.875	395		R54	
12	16	2.000	445		R58	
14	16	2.250	490		R63	
16	16	2.500	540		R67	
18	16	2.750	590		R71	
20	16	3.000	650		R75	

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BRANCH TABLE (T_A1AD)

RUN PIPE SIZE (in) \ BRANCH SIZE (in)	0.5	0.75	1	1.5	2	3	4	6	8	10	12	14	16	18	20
0.5	TS														
0.75		TS													
1		TR	TS												
1.5		TR	TR	TS											
2		L	TR	TR	TS										
3		L	L	TR	TR	TS									
4	L	L	L	L	TR	TR	TS								
6	L	L	L	L	L	TR	TR	TS							
8		L	L	L	L	L	TR	TR	TS						
10		L	L	L	L	L	TR	TR	TR	TS					
12		L	L	L	L	L	L	TR	TR	TR	TS				
14		L	L	L	L	L	L	TR	TR	TR	TR	TS			
16		L	L	L	L	L	L	TR	TR	TR	TR	TR	TS		
18		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TS	
20		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TR	TS

L : OUTLET
TR : REDUCING TEE
TS : STRAIGHT TEE

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Material : CS (ASME)
Rating : ASME CLASS 150
Flange Face : RF
C.A.(mm) : 1.50
Gasket : Spiral Wound
Service : UTILITY - POWER PIPING : / LOW PRESSURE STEAM / BOILER BLOW DOWN

Design Code : ASME B31.1
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
10	STEAM JACKETING BEYOND STEAM SUPPLY MANIFOLD ISOLATION VALVES

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
200	WITH JACK SCREW (FO)
541	NPT(F) (CA,L)
714	SW - NPT(F) (V)
773	CLASS 300 (B,F,G)
4206	SOCKOLET ON CAP (CAP=NPS8) (LC)

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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P01A-002RW	Pipe ASME SA106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	0.75		XS		P01A-002RX	Pipe ASME SA106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1		XS		P01A-002RY	Pipe ASME SA106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1.5		XS		P01A-002RZ	Pipe ASME SA106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	2		XS		P01A-002S2	Pipe ASME SA106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	3		STD		P01A-0042B	Pipe ASME SA106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	4		STD		P01A-0042C	Pipe ASME SA106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	6		STD		P01A-0042D	Pipe ASME SA106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	8		SCH20		P01A-00283	Pipe ASME SA106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	10		SCH20		P01A-0027Y	Pipe ASME SA106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	12		SCH20		P01A-0027X	Pipe ASME SA106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	14		SCH20		P01A-0027W	Pipe ASME SA106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	16		SCH20		P01A-0027V	Pipe ASME SA106 Grade B Seamless ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P02B-0002N	90 degree elbow ASME SA105 Class 3000 ASME B16.11 SW	
1	0.75				P02B-0002R	90 degree elbow ASME SA105 Class 3000 ASME B16.11 SW	
1	1				P02B-0002P	90 degree elbow ASME SA105 Class 3000 ASME B16.11 SW	
1	1.5				P02B-0002M	90 degree elbow ASME SA105 Class 3000 ASME B16.11 SW	
1	2		XS		P02A-002HF	90 degree elbow ASME SA234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		STD		P02A-002HG	90 degree elbow ASME SA234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		STD		P02A-002HH	90 degree elbow ASME SA234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		STD		P02A-002HJ	90 degree elbow ASME SA234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		SCH20		P02A-003R6	90 degree elbow ASME SA234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	10		SCH20		P02A-003R4	90 degree elbow ASME SA234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	12		SCH20		P02A-003R5	90 degree elbow ASME SA234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	14		SCH20		P02A-00527	90 degree elbow ASME SA234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	16		SCH20		P02A-00528	90 degree elbow ASME SA234 Grade WPB Seamless ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P03B-0002L	45 degree elbow ASME SA105 Class 3000 ASME B16.11 SW	
1	0.75				P03B-0002K	45 degree elbow ASME SA105 Class 3000 ASME B16.11 SW	
1	1				P03B-0002J	45 degree elbow ASME SA105 Class 3000 ASME B16.11 SW	
1	1.5				P03B-0002H	45 degree elbow ASME SA105 Class 3000 ASME B16.11 SW	
1	2		XS		P03A-002EZ	45 degree elbow ASME SA234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		STD		P03A-002F0	45 degree elbow ASME SA234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		STD		P03A-002F1	45 degree elbow ASME SA234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		STD		P03A-002F2	45 degree elbow ASME SA234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		SCH20		P03A-003MV	45 degree elbow ASME SA234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	10		SCH20		P03A-003MT	45 degree elbow ASME SA234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	12		SCH20		P03A-003MU	45 degree elbow ASME SA234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	14		SCH20		P03A-004N6	45 degree elbow ASME SA234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	16		SCH20		P03A-004N7	45 degree elbow ASME SA234 Grade WPB Seamless ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P21B-0002L	Straight tee ASME SA105 Class 3000 ASME B16.11 SW	
1	0.75				P21B-0002K	Straight tee ASME SA105 Class 3000 ASME B16.11 SW	
1	1				P21B-0002J	Straight tee ASME SA105 Class 3000 ASME B16.11 SW	
1	1.5				P21B-0002H	Straight tee ASME SA105 Class 3000 ASME B16.11 SW	
1	2		XS		P21A-002PV	Straight tee ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	3		STD		P21A-003G4	Straight tee ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	4		STD		P21A-003G5	Straight tee ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	6		STD		P21A-003G6	Straight tee ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	8		SCH20		P21A-002DA	Straight tee ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	10		SCH20		P21A-002D9	Straight tee ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	12		SCH20		P21A-002D7	Straight tee ASME SA234 Grade WPB Seamless ASME B16.9 BW	

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STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14		SCH20		P21A-002D6	Straight tee ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	16		SCH20		P21A-002D5	Straight tee ASME SA234 Grade WPB Seamless ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75			P24B-00051	Reducing tee ASME SA105 Class 3000 ASME B16.11 SW	
1	1.5	0.75			P24B-0004Z	Reducing tee ASME SA105 Class 3000 ASME B16.11 SW	
1	1.5	1			P24B-0004Y	Reducing tee ASME SA105 Class 3000 ASME B16.11 SW	
1	2	1	XS	XS	P24A-00K0D	Reducing tee ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	XS	XS	P24A-006AC	Reducing tee ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	STD	XS	P24A-00K0E	Reducing tee ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	STD	XS	P24A-00GLY	Reducing tee ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P24A-00GLZ	Reducing tee ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P24A-00GM0	Reducing tee ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	STD	P24A-00GM1	Reducing tee ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P24A-00GM2	Reducing tee ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH20	STD	P24A-00K0F	Reducing tee ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH20	STD	P24A-00K0G	Reducing tee ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	SCH20	STD	P24A-00K0H	Reducing tee ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	SCH20	STD	P24A-00K0J	Reducing tee ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	SCH20	SCH20	P24A-004JZ	Reducing tee ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	SCH20	STD	P24A-00K0K	Reducing tee ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH20	SCH20	P24A-004JW	Reducing tee ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH20	SCH20	P24A-004K7	Reducing tee ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	SCH20	STD	P24A-00PXY	Reducing tee ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	SCH20	SCH20	P24A-004JV	Reducing tee ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	SCH20	SCH20	P24A-004K8	Reducing tee ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	SCH20	SCH20	P24A-004K1	Reducing tee ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	16	6	SCH20	STD	P24A-00PYZ	Reducing tee ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	SCH20	SCH20	P24A-004JS	Reducing tee ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	SCH20	SCH20	P24A-004K3	Reducing tee ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	SCH20	SCH20	P24A-004JX	Reducing tee ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	SCH20	SCH20	P24A-004JU	Reducing tee ASME SA234 Grade WPB Seamless ASME B16.9 BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	STD	XS	P27A-00BFE	Concentric reducer ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P27A-00BFF	Concentric reducer ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P27A-00BFG	Concentric reducer ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	STD	P27A-00BFH	Concentric reducer ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P27A-00BFJ	Concentric reducer ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH20	STD	P27A-00EKT	Concentric reducer ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH20	STD	P27A-00EKU	Concentric reducer ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	SCH20	STD	P27A-00EKV	Concentric reducer ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	SCH20	STD	P27A-00EKW	Concentric reducer ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	SCH20	SCH20	P27A-002XW	Concentric reducer ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	SCH20	STD	P27A-00EKX	Concentric reducer ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH20	SCH20	P27A-002XX	Concentric reducer ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH20	SCH20	P27A-002YB	Concentric reducer ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	SCH20	STD	P27A-00J76	Concentric reducer ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	SCH20	SCH20	P27A-002XT	Concentric reducer ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	SCH20	SCH20	P27A-002YC	Concentric reducer ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	SCH20	SCH20	P27A-002Y3	Concentric reducer ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	SCH20	SCH20	P27A-002XR	Concentric reducer ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	SCH20	SCH20	P27A-002Y6	Concentric reducer ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	SCH20	SCH20	P27A-002XZ	Concentric reducer ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	SCH20	SCH20	P27A-002XU	Concentric reducer ASME SA234 Grade WPB Seamless ASME B16.9 BW	

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ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	STD	XS	P28A-008DX	Eccentric reducer ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P28A-008DY	Eccentric reducer ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P28A-008DZ	Eccentric reducer ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	STD	P28A-008E0	Eccentric reducer ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P28A-008E1	Eccentric reducer ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH20	STD	P28A-00BPC	Eccentric reducer ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH20	STD	P28A-00BPD	Eccentric reducer ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	SCH20	STD	P28A-00BPE	Eccentric reducer ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	SCH20	STD	P28A-00BPF	Eccentric reducer ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	SCH20	SCH20	P28A-002Z0	Eccentric reducer ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	SCH20	STD	P28A-00BPG	Eccentric reducer ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH20	SCH20	P28A-002Z1	Eccentric reducer ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH20	SCH20	P28A-002YN	Eccentric reducer ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	SCH20	STD	P28A-00FH7	Eccentric reducer ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	SCH20	SCH20	P28A-002Z3	Eccentric reducer ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	SCH20	SCH20	P28A-002YM	Eccentric reducer ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	SCH20	SCH20	P28A-002YV	Eccentric reducer ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	SCH20	SCH20	P28A-002YB	Eccentric reducer ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	SCH20	SCH20	P28A-002YS	Eccentric reducer ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	SCH20	SCH20	P28A-002YY	Eccentric reducer ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	SCH20	SCH20	P28A-002Z2	Eccentric reducer ASME SA234 Grade WPB Seamless ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P29B-00022	Cap ASME SA105 Class 3000 ASME B16.11 SW	
1	0.75				P29B-00021	Cap ASME SA105 Class 3000 ASME B16.11 SW	
1	1				P29B-00020	Cap ASME SA105 Class 3000 ASME B16.11 SW	
1	1.5				P29B-0001Z	Cap ASME SA105 Class 3000 ASME B16.11 SW	
1	2		XS		P29A-0015L	Cap ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	3		STD		P29A-001T5	Cap ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	4		STD		P29A-001T6	Cap ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	6		STD		P29A-001T7	Cap ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	8		SCH20		P29A-000VX	Cap ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	10		SCH20		P29A-000VU	Cap ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	12		SCH20		P29A-000VW	Cap ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	14		SCH20		P29A-000VY	Cap ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	16		SCH20		P29A-000VZ	Cap ASME SA234 Grade WPB Seamless ASME B16.9 BW	
541	0.75				P29B-0001X	Cap ASME SA105 Class 3000 ASME B16.11 NPT	
541	1				P29B-0001W	Cap ASME SA105 Class 3000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P41A-000J1	Straight nipple ASME SA106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		SCH160		P41A-000J0	Straight nipple ASME SA106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		SCH160		P41A-000HZ	Straight nipple ASME SA106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		SCH160		P41A-000HY	Straight nipple ASME SA106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

CON SWAGED NIPPLE (SNC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	XS	XS	P42A-000AB	Concentric swaged nipple ASME SA234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	XS	XS	P42A-000AC	Concentric swaged nipple ASME SA234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	XS	XS	P42A-000AD	Concentric swaged nipple ASME SA234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	XS	XS	P42A-000AE	Concentric swaged nipple ASME SA234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	XS	XS	P42A-000AF	Concentric swaged nipple ASME SA234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	XS	XS	P42A-000AG	Concentric swaged nipple ASME SA234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	XS	XS	P42A-000TU	Concentric swaged nipple ASME SA234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	XS	XS	P42A-000TV	Concentric swaged nipple ASME SA234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	XS	XS	P42A-000TW	Concentric swaged nipple ASME SA234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	XS	XS	P42A-000TX	Concentric swaged nipple ASME SA234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	

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CON SWAGED NIPPLE (SNC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	1.5	STD	XS	P42A-000TY	Concentric swaged nipple ASME SA234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	

ECC SWAGED NIPPLE (SNE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	XS	XS	P43A-000JS	Eccentric swaged nipple ASME SA234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	XS	XS	P43A-000JT	Eccentric swaged nipple ASME SA234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	XS	XS	P43A-000JU	Eccentric swaged nipple ASME SA234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	XS	XS	P43A-000JV	Eccentric swaged nipple ASME SA234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	XS	XS	P43A-000JW	Eccentric swaged nipple ASME SA234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	XS	XS	P43A-000JX	Eccentric swaged nipple ASME SA234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	XS	XS	P43A-000JY	Eccentric swaged nipple ASME SA234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	XS	XS	P43A-000JZ	Eccentric swaged nipple ASME SA234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	XS	XS	P43A-000K0	Eccentric swaged nipple ASME SA234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	XS	XS	P43A-000K1	Eccentric swaged nipple ASME SA234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	STD	XS	P43A-000K2	Eccentric swaged nipple ASME SA234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	

COUPLING (CPS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P47B-0002Z	Coupling ASME SA105 Class 3000 ASME B16.11 SW - SW	
1	0.75				P47B-0002Y	Coupling ASME SA105 Class 3000 ASME B16.11 SW - SW	
1	1				P47B-0002X	Coupling ASME SA105 Class 3000 ASME B16.11 SW - SW	
1	1.5				P47B-0002W	Coupling ASME SA105 Class 3000 ASME B16.11 SW - SW	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2 - 2.5	0.75			P31B-01392	Outlet ASME SA105 Class 3000 MSS SP-97 SW	
1	3 - 5	0.75			P31B-01393	Outlet ASME SA105 Class 3000 MSS SP-97 SW	
1	6 - 12	0.75			P31B-00DGW	Outlet ASME SA105 Class 3000 MSS SP-97 SW	
1	14 - 36	0.75			P31B-00DH8	Outlet ASME SA105 Class 3000 MSS SP-97 SW	
1	3	1			P31B-00DGE	Outlet ASME SA105 Class 3000 MSS SP-97 SW	
1	4 - 5	1			P31B-01394	Outlet ASME SA105 Class 3000 MSS SP-97 SW	
1	6 - 10	1			P31B-00DG7	Outlet ASME SA105 Class 3000 MSS SP-97 SW	
1	12 - 36	1			P31B-00DGM	Outlet ASME SA105 Class 3000 MSS SP-97 SW	
1	4	1.5			P31B-00DFE	Outlet ASME SA105 Class 3000 MSS SP-97 SW	
1	5 - 6	1.5			P31B-01395	Outlet ASME SA105 Class 3000 MSS SP-97 SW	
1	8 - 12	1.5			P31B-00DF3	Outlet ASME SA105 Class 3000 MSS SP-97 SW	
1	14 - 24	1.5			P31B-00DFV	Outlet ASME SA105 Class 3000 MSS SP-97 SW	
541	1	0.75			P31B-00DR2	Outlet ASME SA105 Class 3000 MSS SP-97 NPT	
541	1.5	0.75			P31B-00DPX	Outlet ASME SA105 Class 3000 MSS SP-97 NPT	
541	2 - 2.5	0.75			P31B-01396	Outlet ASME SA105 Class 3000 MSS SP-97 NPT	
541	3 - 5	0.75			P31B-01397	Outlet ASME SA105 Class 3000 MSS SP-97 NPT	
541	6 - 12	0.75			P31B-00DPE	Outlet ASME SA105 Class 3000 MSS SP-97 NPT	
541	14 - 36	0.75			P31B-00DPT	Outlet ASME SA105 Class 3000 MSS SP-97 NPT	
1	6	2	STD	XS	P31B-00TP9	Outlet ASME SA105 MSS SP-97 BW	
1	8	2	SCH20	XS	P31B-00XGB	Outlet ASME SA105 MSS SP-97 BW	
1	10	2	SCH20	XS	P31B-00XGD	Outlet ASME SA105 MSS SP-97 BW	
1	12	2	SCH20	XS	P31B-00XGF	Outlet ASME SA105 MSS SP-97 BW	
1	14	2	SCH20	XS	P31B-00XGV	Outlet ASME SA105 MSS SP-97 BW	
1	16	2	SCH20	XS	P31B-00XGS	Outlet ASME SA105 MSS SP-97 BW	
1	8	3	SCH20	STD	P31B-00XGC	Outlet ASME SA105 MSS SP-97 BW	
1	10	3	SCH20	STD	P31B-00XGE	Outlet ASME SA105 MSS SP-97 BW	
1	12	3	SCH20	STD	P31B-00XGG	Outlet ASME SA105 MSS SP-97 BW	
1	14	3	SCH20	STD	P31B-00XGW	Outlet ASME SA105 MSS SP-97 BW	
1	16	3	SCH20	STD	P31B-00XGT	Outlet ASME SA105 MSS SP-97 BW	
1	12	4	SCH20	STD	P31B-00XGH	Outlet ASME SA105 MSS SP-97 BW	
1	14	4	SCH20	STD	P31B-00XGX	Outlet ASME SA105 MSS SP-97 BW	
1	16	4	SCH20	STD	P31B-00XGU	Outlet ASME SA105 MSS SP-97 BW	

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OLET ON CAP (LC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
4206	0.75				P36B-000BD	Outlet on cap ASME SA105 Class 3000 MSS SP-97 SW Cap=NPS8	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30B-00034	Plug ASME SA105 ASME B16.11 NPT Round head	
1	0.75				P30B-00035	Plug ASME SA105 ASME B16.11 NPT Round head	
1	1				P30B-00036	Plug ASME SA105 ASME B16.11 NPT Round head	
1	1.5				P30B-00037	Plug ASME SA105 ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P61B-009ST	Flange SW ASME SA105 Class 150 ASME B16.5 RF	
1	0.75		XS		P61B-009SU	Flange SW ASME SA105 Class 150 ASME B16.5 RF	
1	1		XS		P61B-009SV	Flange SW ASME SA105 Class 150 ASME B16.5 RF	
1	1.5		XS		P61B-009SW	Flange SW ASME SA105 Class 150 ASME B16.5 RF	
1	2		XS		P61B-00642	Flange WN ASME SA105 Class 150 ASME B16.5 RF	
1	3		STD		P61B-00643	Flange WN ASME SA105 Class 150 ASME B16.5 RF	
1	4		STD		P61B-00644	Flange WN ASME SA105 Class 150 ASME B16.5 RF	
1	6		STD		P61B-00645	Flange WN ASME SA105 Class 150 ASME B16.5 RF	
1	8		SCH20		P61B-003BT	Flange WN ASME SA105 Class 150 ASME B16.5 RF	
1	10		SCH20		P61B-003BP	Flange WN ASME SA105 Class 150 ASME B16.5 RF	
1	12		SCH20		P61B-003BS	Flange WN ASME SA105 Class 150 ASME B16.5 RF	
1	14		SCH20		P61B-003BU	Flange WN ASME SA105 Class 150 ASME B16.5 RF	
1	16		SCH20		P61B-003BJ	Flange WN ASME SA105 Class 150 ASME B16.5 RF	
773	0.5		XS		P61B-009SX	Flange SW ASME SA105 Class 300 ASME B16.5 RF	
773	0.75		XS		P61B-009SY	Flange SW ASME SA105 Class 300 ASME B16.5 RF	
773	1		XS		P61B-009SZ	Flange SW ASME SA105 Class 300 ASME B16.5 RF	
773	1.5		XS		P61B-009T0	Flange SW ASME SA105 Class 300 ASME B16.5 RF	
773	2		XS		P61B-0064D	Flange WN ASME SA105 Class 300 ASME B16.5 RF	
773	3		STD		P61B-0064E	Flange WN ASME SA105 Class 300 ASME B16.5 RF	
773	4		STD		P61B-0064F	Flange WN ASME SA105 Class 300 ASME B16.5 RF	
773	6		STD		P61B-0064G	Flange WN ASME SA105 Class 300 ASME B16.5 RF	
773	8		SCH20		P61B-003B9	Flange WN ASME SA105 Class 300 ASME B16.5 RF	
773	10		SCH20		P61B-003B6	Flange WN ASME SA105 Class 300 ASME B16.5 RF	
773	12		SCH20		P61B-003B8	Flange WN ASME SA105 Class 300 ASME B16.5 RF	
773	14		SCH20		P61B-003BA	Flange WN ASME SA105 Class 300 ASME B16.5 RF	
773	16		SCH20		P61B-003B1	Flange WN ASME SA105 Class 300 ASME B16.5 RF	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67B-0012M	Blind flange ASME SA105 Class 150 ASME B16.5 RF	
1	0.75				P67B-0012N	Blind flange ASME SA105 Class 150 ASME B16.5 RF	
1	1				P67B-0012P	Blind flange ASME SA105 Class 150 ASME B16.5 RF	
1	1.5				P67B-0012R	Blind flange ASME SA105 Class 150 ASME B16.5 RF	
1	2				P67B-0012X	Blind flange ASME SA105 Class 150 ASME B16.5 RF	
1	3				P67B-0012Y	Blind flange ASME SA105 Class 150 ASME B16.5 RF	
1	4				P67B-0012Z	Blind flange ASME SA105 Class 150 ASME B16.5 RF	
1	6				P67B-00130	Blind flange ASME SA105 Class 150 ASME B16.5 RF	
1	8				P67B-00131	Blind flange ASME SA105 Class 150 ASME B16.5 RF	
1	10				P67B-0012S	Blind flange ASME SA105 Class 150 ASME B16.5 RF	
1	12				P67B-0012T	Blind flange ASME SA105 Class 150 ASME B16.5 RF	
1	14				P67B-0012U	Blind flange ASME SA105 Class 150 ASME B16.5 RF	
1	16				P67B-0012V	Blind flange ASME SA105 Class 150 ASME B16.5 RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000L8	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000L9	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

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GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P73T-000LA	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000LB	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000LH	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000LL	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000LM	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	6				P73T-000LN	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	8				P73T-000LP	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	10				P73T-000LC	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	12				P73T-000LD	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	14				P73T-000LE	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	16				P73T-000LF	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	0.5				P73T-000FT	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	0.75				P73T-000FU	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	3				P73T-000G5	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	4				P73T-000G6	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	6				P73T-000G7	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	8				P73T-000G8	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	10				P73T-000FX	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	12				P73T-000FY	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	14				P73T-000FZ	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	16				P73T-000G0	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-16				See Attached Bolt Table	Bolt and Nut ASME SA193 Grade B7 / SA194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
773	0.5-10				See Attached Bolt Table	Bolt and Nut ASME SA193 Grade B7 / SA194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
773	12-16				See Attached Bolt Table	Bolt and Nut ASME SA193 Grade B7 / SA194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81B-000RB	Gate valve ASME SA105 Class 800 API 602 SW Trim number 5 BB-BG-OS&Y Handwheel operated	
1	0.75				P81B-000RC	Gate valve ASME SA105 Class 800 API 602 SW Trim number 5 BB-BG-OS&Y Handwheel operated	
1	1				P81B-000RD	Gate valve ASME SA105 Class 800 API 602 SW Trim number 5 BB-BG-OS&Y Handwheel operated	
1	1.5				P81B-000RE	Gate valve ASME SA105 Class 800 API 602 SW Trim number 5 BB-BG-OS&Y Handwheel operated	
1	2				P81C-004CD	Gate valve ASME SA216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated	
1	3				P81C-004CE	Gate valve ASME SA216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated	
1	4				P81C-004CF	Gate valve ASME SA216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated	
1	6				P81C-004CG	Gate valve ASME SA216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated	
1	8				P81C-004CH	Gate valve ASME SA216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated	
1	10				P81C-004CC	Gate valve ASME SA216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated	
1	12				P81C-007M6	Gate valve ASME SA216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated	
1	16				P81C-008CV	Gate valve ASME SA216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Gear operated	
714	0.5				P81B-0015P	Gate valve ASME SA105 Class 800 API 602 SW - NPT Trim number 5 BB-BG-OS&Y Handwheel operated	
714	0.75				P81B-002F6	Gate valve ASME SA105 Class 800 API 602 SW - NPT Trim number 5 BB-BG-OS&Y Handwheel operated	

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GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82B-000KX	Globe valve ASME SA105 Class 800 API 602 SW Trim number 5 BB-BG-OS&Y Handwheel operated	
1	0.75				P82B-000KY	Globe valve ASME SA105 Class 800 API 602 SW Trim number 5 BB-BG-OS&Y Handwheel operated	
1	1				P82B-000KZ	Globe valve ASME SA105 Class 800 API 602 SW Trim number 5 BB-BG-OS&Y Handwheel operated	
1	1.5				P82B-000L0	Globe valve ASME SA105 Class 800 API 602 SW Trim number 5 BB-BG-OS&Y Handwheel operated	
1	2				P82C-0026F	Globe valve ASME SA216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated	
1	3				P82C-003X3	Globe valve ASME SA216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated	
1	4				P82C-003X4	Globe valve ASME SA216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated	
1	6				P82C-003X5	Globe valve ASME SA216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated	
1	8				P82C-003X6	Globe valve ASME SA216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83B-000GM	Check valve ASME SA105 Class 800 API 602 SW Trim number 5 Lift-type Bolted cover	
1	0.75				P83B-000GN	Check valve ASME SA105 Class 800 API 602 SW Trim number 5 Lift-type Bolted cover	
1	1				P83B-000GP	Check valve ASME SA105 Class 800 API 602 SW Trim number 5 Lift-type Bolted cover	
1	1.5				P83B-000GR	Check valve ASME SA105 Class 800 API 602 SW Trim number 5 Lift-type Bolted cover	
1	2				P83C-0021D	Check valve ASME SA216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 5 Swing-type Bolted cover	

ORIFICE FLANGE (FO)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2		XS		P66B-0084Z	Orifice flange WN ASME SA105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	3		STD		P66B-00850	Orifice flange WN ASME SA105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	4		STD		P66B-00851	Orifice flange WN ASME SA105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	6		STD		P66B-00852	Orifice flange WN ASME SA105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	8		SCH20		P66B-00853	Orifice flange WN ASME SA105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	10		SCH20		P66B-0084X	Orifice flange WN ASME SA105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	12		SCH20		P66B-0084Y	Orifice flange WN ASME SA105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
200	2		XS		P66B-00858	Orifice flange WN ASME SA105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	3		STD		P66B-00859	Orifice flange WN ASME SA105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	4		STD		P66B-0085A	Orifice flange WN ASME SA105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	6		STD		P66B-0085B	Orifice flange WN ASME SA105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	8		SCH20		P66B-0085C	Orifice flange WN ASME SA105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	10		SCH20		P66B-00856	Orifice flange WN ASME SA105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	12		SCH20		P66B-00857	Orifice flange WN ASME SA105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71B-0008E	Spectacle blank ASME SA105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	0.75				P71B-0008F	Spectacle blank ASME SA105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	1				P71B-0008G	Spectacle blank ASME SA105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71B-0008H	Spectacle blank ASME SA105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	2				P71B-0008L	Spectacle blank ASME SA105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	3				P71B-0008M	Spectacle blank ASME SA105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	4				P71B-0008N	Spectacle blank ASME SA105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	6				P71B-0008P	Spectacle blank ASME SA105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	8				P71B-0008R	Spectacle blank ASME SA105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	10				P71B-0008J	Spectacle blank ASME SA105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	12				P71B-0008K	Spectacle blank ASME SA105 Class 150 Standard-drawing Flange ASME B16.5 RF	

PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000B2	Paddle blank ASME SA105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	16				P72B-000B3	Paddle blank ASME SA105 Class 150 Standard-drawing Flange ASME B16.5 RF	

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PADDLE SPACER (PS)							
OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000B7	Paddle spacer ASME SA105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	16				P72B-000B8	Paddle spacer ASME SA105 Class 150 Standard-drawing Flange ASME B16.5 RF	

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BOLT TABLE (B_A1AG , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	60	P80S-00MEJ		
0.75	4	0.500	65	P80S-00MEH		
1	4	0.500	70	P80S-00MEG		
1.5	4	0.500	75	P80S-00MEF		
2	4	0.625	85	P80S-00MAN		
3	4	0.625	95	P80S-00MAL		
4	8	0.625	95	P80S-00MAL		
6	8	0.750	105	P80S-00MAJ		
8	8	0.750	110	P80S-00MAH		
10	12	0.875	120	P80S-00M32		
12	12	0.875	120	P80S-00M32		
14	12	1.000	135	P80S-00LYF		
16	16	1.000	140	P80S-00LYE		

BOLT TABLE (B_A1AG_773 , STUD ASME RF, OPTION CODE 773)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-00MEG		
0.75	4	0.625	75	P80S-00MAR		
1	4	0.625	80	P80S-00MAP		
1.5	4	0.750	95	P80S-00M37		
2	8	0.625	90	P80S-00MAM		
3	8	0.750	110	P80S-00MAH		
4	8	0.750	115	P80S-00M8C		
6	12	0.750	125	P80S-00M8A		
8	12	0.875	140	P80S-00M2Y		
10	16	1.000	160	P80S-00LYA		
12	16	1.125	175	P80S-00LNH		
14	20	1.125	180	P80S-00LNG		
16	20	1.250	190	P80S-00LCC		

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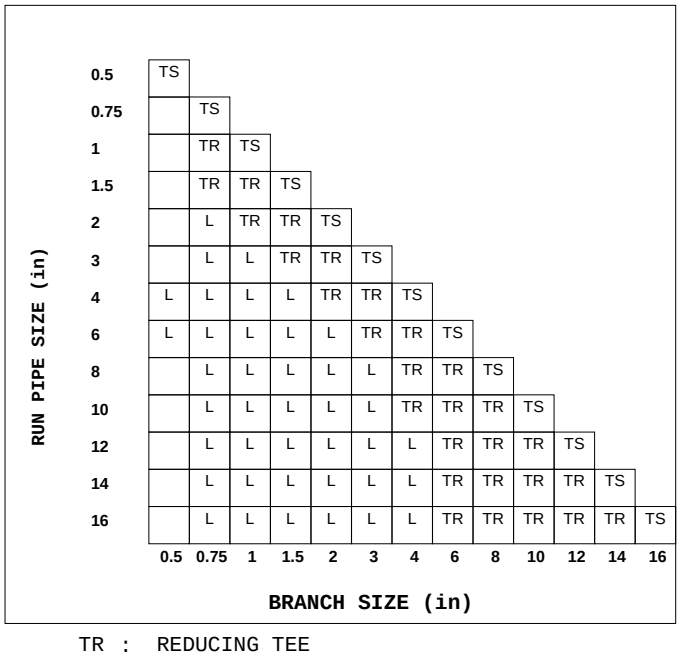
BRANCH TABLE (T_A1AG)



TR : REDUCING TEE
TS : STRAIGHT TEE
L : OUTLET

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Material : Killed CS
Rating : ASME CLASS 150
Flange Face : RF
C.A.(mm) : 1.50
Gasket : Spiral Wound
Service : PROCESS - HYDROGEN OR HYDROGEN RICH HYDROCARBON MIXTURE : / HYDROGEN / PROCESS WITH HYDROGEN

Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
2	USE OF SOFT SEATED BALL, PLUG AND BUTTERFLY VALVES SHALL BE LIMITED TO MAXIMUM OF 204DEGC (400DEGF)
16	PIPE CLASS SHALL BE USED WITHIN THE NORMAL OPERATING PRESSURE/TEMPERATURE LIMITS SPECIFIED IN API RP 941. PRESSURE / TEMPERATURE SPECIFIED IN THE PIPE CLASS EXCEEDING API RP 941 LIMITS SHOULD BE REGARDED AS UPSET CONDITIONS RATHER THAN FOR CONTINUOUS SERVICE

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
24	FULL PORT (Q)
541	NPT(F) (CA,L)
714	SW - NPT(F) (V)
773	CLASS 300 (B,F,G)
781	CLASS 600 (B,F,G)

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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P01A-000XM	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	0.75		XS		P01A-000XN	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1		XS		P01A-000XP	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1.5		XS		P01A-000XV	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	2		XS		P01A-000YX	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	3		STD		P01A-000YM	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	4		STD		P01A-000YU	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	6		STD		P01A-000Z3	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	8		SCH20		P01A-001AT	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	10		SCH20		P01A-0014Y	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	12		SCH20		P01A-0016H	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	14		SCH20		P01A-0017A	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	16		SCH20		P01A-0018E	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	18		SCH20		P01A-00438	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE	
1	20		STD		P01A-0042G	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE	
1	24		STD		P01A-0042H	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE	
1	30		STD		P01A-0042J	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE	
1	36		XS		P01A-0042K	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE	
1	42		STD		P01A-0078R	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE	
1	48		XS		P01A-0042L	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P02B-00014	90 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	0.75				P02B-00015	90 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	1				P02B-00016	90 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5				P02B-00017	90 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	2		XS		P02A-000CP	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		STD		P02A-000CU	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		STD		P02A-000CZ	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		STD		P02A-000D6	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		SCH20		P02A-000GZ	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	10		SCH20		P02A-000H1	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	12		SCH20		P02A-000H4	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	14		SCH20		P02A-000FX	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	16		SCH20		P02A-000GM	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	18		SCH20		P02A-000LT	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	20		STD		P02A-0010J	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	24		STD		P02A-0010K	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	30		STD		P02A-000F3	90 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius	
1	36		XS		P02A-000DH	90 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius	
1	42		STD		P02A-0014G	90 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius	
1	48		XS		P02A-0017R	90 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P03B-00017	45 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	0.75				P03B-00018	45 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	1				P03B-00019	45 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5				P03B-0001A	45 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	2		XS		P03A-000AS	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		STD		P03A-000AX	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		STD		P03A-000B1	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		STD		P03A-000B9	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		SCH20		P03A-000EX	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	10		SCH20		P03A-000F0	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	12		SCH20		P03A-000F2	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	14		SCH20		P03A-000DW	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	16		SCH20		P03A-000EM	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

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45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	18		SCH20		P03A-001DX	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	20		STD		P03A-000X1	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	24		STD		P03A-000X2	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	30		STD		P03A-000D0	45 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius	
1	36		XS		P03A-000BG	45 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius	
1	42		STD		P03A-0010P	45 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius	
1	48		XS		P03A-0013P	45 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P21B-00017	Straight tee ASTM A105 Class 3000 ASME B16.11 SW	
1	0.75				P21B-00018	Straight tee ASTM A105 Class 3000 ASME B16.11 SW	
1	1				P21B-00019	Straight tee ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5				P21B-0001A	Straight tee ASTM A105 Class 3000 ASME B16.11 SW	
1	2		XS		P21A-001CJ	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		STD		P21A-001CU	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		STD		P21A-001CW	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6		STD		P21A-001D2	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8		SCH20		P21A-00215	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10		SCH20		P21A-00219	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12		SCH20		P21A-0021A	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14		SCH20		P21A-00206	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16		SCH20		P21A-0020X	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18		SCH20		P21A-001PJ	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20		STD		P21A-001C7	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24		STD		P21A-001CC	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30		STD		P21A-001YC	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	36		XS		P21A-001D7	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	42		STD		P21A-001KR	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	48		XS		P21A-001RL	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75			P24B-0002L	Reducing tee ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5	0.75			P24B-0002N	Reducing tee ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5	1			P24B-0002P	Reducing tee ASTM A105 Class 3000 ASME B16.11 SW	
1	2	1	XS	XS	P24A-00238	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	XS	XS	P24A-0023H	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	STD	XS	P24A-00214	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	STD	XS	P24A-002HW	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P24A-002HY	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P24A-0021K	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	STD	P24A-0021A	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P24A-00229	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH20	STD	P24A-00J21	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH20	STD	P24A-005J4	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	SCH20	STD	P24A-00HMB	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	SCH20	STD	P24A-00HKS	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	SCH20	SCH20	P24A-002YX	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	SCH20	STD	P24A-00K0B	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH20	SCH20	P24A-002U4	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH20	SCH20	P24A-002YC	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	SCH20	STD	P24A-00K0M	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	SCH20	SCH20	P24A-002U7	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	SCH20	SCH20	P24A-002YA	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	SCH20	SCH20	P24A-002YR	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	6	SCH20	STD	P24A-00GU4	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	SCH20	SCH20	P24A-002XW	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	SCH20	SCH20	P24A-002YH	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	16	12	SCH20	SCH20	P24A-002U1	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	SCH20	SCH20	P24A-002XF	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	8	SCH20	SCH20	P24A-002XC	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	10	SCH20	SCH20	P24A-002UX	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	12	SCH20	SCH20	P24A-002W3	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	14	SCH20	SCH20	P24A-002WT	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	16	SCH20	SCH20	P24A-002X5	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	8	STD	SCH20	P24A-00K0N	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	10	STD	SCH20	P24A-00BT7	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	12	STD	SCH20	P24A-00BUS	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	14	STD	SCH20	P24A-00BWB	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	16	STD	SCH20	P24A-006W3	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	18	STD	SCH20	P24A-006WD	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	10	STD	SCH20	P24A-00KT6	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	12	STD	SCH20	P24A-00C7B	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	14	STD	SCH20	P24A-00K0C	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	16	STD	SCH20	P24A-00CAD	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	18	STD	SCH20	P24A-006WF	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	20	STD	STD	P24A-004SV	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	10	STD	SCH20	P24A-003VN	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	12	STD	SCH20	P24A-003VP	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	14	STD	SCH20	P24A-003VR	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	16	STD	SCH20	P24A-003VS	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	18	STD	SCH20	P24A-003VT	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	20	STD	STD	P24A-0087D	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	24	STD	STD	P24A-005XW	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	36	16	XS	SCH20	P24A-003VH	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	36	18	XS	SCH20	P24A-003VJ	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	36	20	XS	STD	P24A-004SS	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	36	24	XS	STD	P24A-004VX	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	36	30	XS	STD	P24A-003VM	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	42	16	STD	SCH20	P24A-00EFD	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	42	18	STD	SCH20	P24A-00EG0	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	42	20	STD	STD	P24A-00EGR	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	42	24	STD	STD	P24A-005H0	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	42	30	STD	STD	P24A-00EKU	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	42	36	STD	XS	P24A-005Y5	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	48	24	XS	STD	P24A-006WP	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	48	30	XS	STD	P24A-006WR	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	48	36	XS	XS	P24A-00F4B	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	48	42	XS	STD	P24A-0061H	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	STD	XS	P27A-001MZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P27A-001N0	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P27A-00189	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	STD	P27A-001AZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P27A-001GW	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH20	STD	P27A-003K2	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH20	STD	P27A-003K3	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	SCH20	STD	P27A-003K4	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	SCH20	STD	P27A-003K5	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	SCH20	SCH20	P27A-001UL	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	SCH20	STD	P27A-003K6	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH20	SCH20	P27A-001UU	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH20	SCH20	P27A-001TH	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	SCH20	STD	P27A-00518	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	SCH20	SCH20	P27A-001V4	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14	10	SCH20	SCH20	P27A-001TG	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	SCH20	SCH20	P27A-001U1	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	SCH20	SCH20	P27A-001WX	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	SCH20	SCH20	P27A-001TW	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	SCH20	SCH20	P27A-001UF	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	SCH20	SCH20	P27A-001V2	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	10	SCH20	SCH20	P27A-001TJ	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	12	SCH20	SCH20	P27A-001UE	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	14	SCH20	SCH20	P27A-001UY	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	16	SCH20	SCH20	P27A-001WN	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	12	STD	SCH20	P27A-00CMZ	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	14	STD	SCH20	P27A-0082L	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	16	STD	SCH20	P27A-0082M	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	18	STD	SCH20	P27A-0084N	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	16	STD	SCH20	P27A-0084T	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	18	STD	SCH20	P27A-0084U	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	20	STD	STD	P27A-001A8	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	20	STD	STD	P27A-001S0	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	24	STD	STD	P27A-001M7	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	36	24	XS	STD	P27A-001GY	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	36	30	XS	STD	P27A-001M9	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	42	30	STD	STD	P27A-003Z5	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	42	36	STD	XS	P27A-003Z7	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	48	42	XS	STD	P27A-0041V	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	STD	XS	P28A-001N5	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P28A-001N6	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P28A-0018B	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	STD	P28A-001AS	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P28A-00182	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH20	STD	P28A-003JU	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH20	STD	P28A-003JV	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	SCH20	STD	P28A-003JW	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	SCH20	STD	P28A-003JX	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	SCH20	SCH20	P28A-001V0	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	SCH20	STD	P28A-003JY	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH20	SCH20	P28A-001V1	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH20	SCH20	P28A-001TJ	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	SCH20	STD	P28A-0096P	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	SCH20	SCH20	P28A-001WH	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	SCH20	SCH20	P28A-001TH	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	SCH20	SCH20	P28A-001UC	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	SCH20	SCH20	P28A-001T6	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	SCH20	SCH20	P28A-001TY	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	SCH20	SCH20	P28A-001UX	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	SCH20	SCH20	P28A-001WG	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	10	SCH20	SCH20	P28A-001TV	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	12	SCH20	SCH20	P28A-001UJ	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	14	SCH20	SCH20	P28A-001WD	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	16	SCH20	SCH20	P28A-001T1	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	12	STD	SCH20	P28A-009MM	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	14	STD	SCH20	P28A-004SJ	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	16	STD	SCH20	P28A-004SK	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	18	STD	SCH20	P28A-004UN	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	16	STD	SCH20	P28A-004UR	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	18	STD	SCH20	P28A-004US	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	20	STD	STD	P28A-001AW	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	

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ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	30	20	STD	STD	P28A-001LZ	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	24	STD	STD	P28A-001N1	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	36	24	XS	STD	P28A-0017X	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	36	30	XS	STD	P28A-001ND	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	42	30	STD	STD	P28A-003YZ	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	42	36	STD	XS	P28A-003Z1	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	48	42	XS	STD	P28A-0041N	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P29B-0001J	Cap ASTM A105 Class 3000 ASME B16.11 SW	
1	0.75				P29B-0001F	Cap ASTM A105 Class 3000 ASME B16.11 SW	
1	1				P29B-0001G	Cap ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5				P29B-0001H	Cap ASTM A105 Class 3000 ASME B16.11 SW	
1	2		XS		P29A-000A1	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		STD		P29A-000BK	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		STD		P29A-000A3	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6		STD		P29A-000A9	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8		SCH20		P29A-000EY	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10		SCH20		P29A-000E5	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12		SCH20		P29A-000E8	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14		SCH20		P29A-000EA	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16		SCH20		P29A-000F3	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18		SCH20		P29A-000E0	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20		STD		P29A-000B2	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24		STD		P29A-000B8	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	30		STD		P29A-000DU	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	36		XS		P29A-000A2	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	42		STD		P29A-000X5	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	48		XS		P29A-00136	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
541	0.75				P29B-0000C	Cap ASTM A105 Class 3000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P41A-000B5	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		SCH160		P41A-000B6	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		SCH160		P41A-000B7	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		SCH160		P41A-000B8	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

CON SWAGED NIPPLE (SNC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	XS	XS	P42A-00036	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	XS	XS	P42A-00038	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	XS	XS	P42A-0003B	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	XS	XS	P42A-00035	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	XS	XS	P42A-00039	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	XS	XS	P42A-0003C	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	XS	XS	P42A-0008C	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	XS	XS	P42A-0008D	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	XS	XS	P42A-0008E	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	XS	XS	P42A-0008F	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	STD	XS	P42A-0007V	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	

ECC SWAGED NIPPLE (SNE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	XS	XS	P43A-00036	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	XS	XS	P43A-00037	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	XS	XS	P43A-00038	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	

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ECC SWAGED NIPPLE (SNE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5	0.5	XS	XS	P43A-00039	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	XS	XS	P43A-0003A	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	XS	XS	P43A-0003B	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	XS	XS	P43A-00042	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	XS	XS	P43A-00043	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	XS	XS	P43A-00044	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	XS	XS	P43A-00045	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	STD	XS	P43A-0003J	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	

COUPLING (CPS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P47B-0001D	Coupling ASTM A105 Class 3000 ASME B16.11 SW - SW	
1	0.75				P47B-0001E	Coupling ASTM A105 Class 3000 ASME B16.11 SW - SW	
1	1				P47B-0001F	Coupling ASTM A105 Class 3000 ASME B16.11 SW - SW	
1	1.5				P47B-0001G	Coupling ASTM A105 Class 3000 ASME B16.11 SW - SW	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2 - 2.5	0.75			P31B-0137J	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	3 - 5	0.75			P31B-0137K	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	6 - 12	0.75			P31B-007AB	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	14 - 36	0.75			P31B-007AJ	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	38 and larger	0.75			P31B-00N1G	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	3	1			P31B-007A7	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	4 - 5	1			P31B-0138Z	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	6 - 10	1			P31B-007A4	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	12 - 36	1			P31B-007AA	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	38 and larger	1			P31B-00N0Y	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	4	1.5			P31B-005SN	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	5 - 6	1.5			P31B-01390	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	8 - 12	1.5			P31B-0079U	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	14 - 24	1.5			P31B-007A0	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	26 - 36	1.5			P31B-01391	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	38 and larger	1.5			P31B-00N17	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
541	1	0.75			P31B-00551	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
541	1.5	0.75			P31B-00555	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
541	2 - 2.5	0.75			P31B-0137H	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
541	3 - 5	0.75			P31B-01376	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
541	6 - 12	0.75			P31B-007GR	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
541	14 - 36	0.75			P31B-007GY	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
541	38 and larger	0.75			P31B-00FFM	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
1	6	2	STD	XS	P31B-007SH	Outlet ASTM A105 MSS SP-97 BW	
1	8	2	SCH20	XS	P31B-00NY2	Outlet ASTM A105 MSS SP-97 BW	
1	10	2	SCH20	XS	P31B-00TFB	Outlet ASTM A105 MSS SP-97 BW	
1	12	2	SCH20	XS	P31B-00TFA	Outlet ASTM A105 MSS SP-97 BW	
1	14	2	SCH20	XS	P31B-00TF9	Outlet ASTM A105 MSS SP-97 BW	
1	16	2	SCH20	XS	P31B-00TF8	Outlet ASTM A105 MSS SP-97 BW	
1	18	2	SCH20	XS	P31B-00NVX	Outlet ASTM A105 MSS SP-97 BW	
1	20	2	STD	XS	P31B-00994	Outlet ASTM A105 MSS SP-97 BW	
1	24	2	STD	XS	P31B-0092Z	Outlet ASTM A105 MSS SP-97 BW	
1	30	2	STD	XS	P31B-008P5	Outlet ASTM A105 MSS SP-97 BW	
1	36	2	XS	XS	P31B-008BB	Outlet ASTM A105 MSS SP-97 BW	
1	42	2	STD	XS	P31B-00EVR	Outlet ASTM A105 MSS SP-97 BW	
1	48	2	XS	XS	P31B-007YJ	Outlet ASTM A105 MSS SP-97 BW	
1	8	3	SCH20	STD	P31B-00P11	Outlet ASTM A105 MSS SP-97 BW	
1	10	3	SCH20	STD	P31B-00UPG	Outlet ASTM A105 MSS SP-97 BW	
1	12	3	SCH20	STD	P31B-00USE	Outlet ASTM A105 MSS SP-97 BW	
1	14	3	SCH20	STD	P31B-00UPH	Outlet ASTM A105 MSS SP-97 BW	
1	16	3	SCH20	STD	P31B-00TU2	Outlet ASTM A105 MSS SP-97 BW	

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OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	18	3	SCH20	STD	P31B-00NZ4	Outlet ASTM A105 MSS SP-97 BW	
1	20	3	STD	STD	P31B-008FA	Outlet ASTM A105 MSS SP-97 BW	
1	24	3	STD	STD	P31B-00895	Outlet ASTM A105 MSS SP-97 BW	
1	30	3	STD	STD	P31B-007WY	Outlet ASTM A105 MSS SP-97 BW	
1	36	3	XS	STD	P31B-007P1	Outlet ASTM A105 MSS SP-97 BW	
1	42	3	STD	STD	P31B-00EVS	Outlet ASTM A105 MSS SP-97 BW	
1	48	3	XS	STD	P31B-00AFD	Outlet ASTM A105 MSS SP-97 BW	
1	12	4	SCH20	STD	P31B-00USF	Outlet ASTM A105 MSS SP-97 BW	
1	14	4	SCH20	STD	P31B-00UPJ	Outlet ASTM A105 MSS SP-97 BW	
1	16	4	SCH20	STD	P31B-00TU3	Outlet ASTM A105 MSS SP-97 BW	
1	18	4	SCH20	STD	P31B-00P1V	Outlet ASTM A105 MSS SP-97 BW	
1	20	4	STD	STD	P31B-008D3	Outlet ASTM A105 MSS SP-97 BW	
1	24	4	STD	STD	P31B-0086X	Outlet ASTM A105 MSS SP-97 BW	
1	30	4	STD	STD	P31B-007US	Outlet ASTM A105 MSS SP-97 BW	
1	36	4	XS	STD	P31B-00AEP	Outlet ASTM A105 MSS SP-97 BW	
1	42	4	STD	STD	P31B-00EVT	Outlet ASTM A105 MSS SP-97 BW	
1	48	4	XS	STD	P31B-00A2P	Outlet ASTM A105 MSS SP-97 BW	
1	18	6	SCH20	STD	P31B-00P48	Outlet ASTM A105 MSS SP-97 BW	
1	20	6	STD	STD	P31B-008PZ	Outlet ASTM A105 MSS SP-97 BW	
1	24	6	STD	STD	P31B-008JD	Outlet ASTM A105 MSS SP-97 BW	
1	30	6	STD	STD	P31B-008BS	Outlet ASTM A105 MSS SP-97 BW	
1	36	6	XS	STD	P31B-0085G	Outlet ASTM A105 MSS SP-97 BW	
1	42	6	STD	STD	P31B-007ZP	Outlet ASTM A105 MSS SP-97 BW	
1	48	6	XS	STD	P31B-007U6	Outlet ASTM A105 MSS SP-97 BW	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30B-0002D	Plug ASTM A105 ASME B16.11 NPT Round head	
1	0.75				P30B-0002E	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1				P30B-0002F	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1.5				P30B-0002G	Plug ASTM A105 ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P61B-001R9	Flange SW ASTM A105 Class 150 ASME B16.5 RF	
1	0.75		XS		P61B-001RA	Flange SW ASTM A105 Class 150 ASME B16.5 RF	
1	1		XS		P61B-001RR	Flange SW ASTM A105 Class 150 ASME B16.5 RF	
1	1.5		XS		P61B-001RV	Flange SW ASTM A105 Class 150 ASME B16.5 RF	
1	2		XS		P61B-003NK	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	3		STD		P61B-001PW	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	4		STD		P61B-001R8	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	6		STD		P61B-001RT	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	8		SCH20		P61B-002BF	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	10		SCH20		P61B-002B4	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	12		SCH20		P61B-002B5	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	14		SCH20		P61B-002B6	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	16		SCH20		P61B-002B7	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	18		SCH20		P61B-002B8	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	20		STD		P61B-001JA	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	24		STD		P61B-001NJ	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	30		STD		P61B-001S8	Flange WN ASTM A105 Class 150 ASME B16.47 Series B RF	
1	36		XS		P61B-001UE	Flange WN ASTM A105 Class 150 ASME B16.47 Series B RF	
1	42		STD		P61B-003M9	Flange WN ASTM A105 Class 150 ASME B16.47 Series B RF	
1	48		XS		P61B-004CX	Flange WN ASTM A105 Class 150 ASME B16.47 Series B RF	
773	0.5		XS		P61B-001HC	Flange SW ASTM A105 Class 300 ASME B16.5 RF	
773	0.75		XS		P61B-001HS	Flange SW ASTM A105 Class 300 ASME B16.5 RF	
773	1		XS		P61B-001EF	Flange SW ASTM A105 Class 300 ASME B16.5 RF	
773	1.5		XS		P61B-001F2	Flange SW ASTM A105 Class 300 ASME B16.5 RF	
773	2		XS		P61B-001HW	Flange WN ASTM A105 Class 300 ASME B16.5 RF	

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FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
773	3		STD		P61B-001LJ	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	4		STD		P61B-001MC	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	6		STD		P61B-001N2	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	8		SCH20		P61B-002LJ	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	10		SCH20		P61B-002LH	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	12		SCH20		P61B-002MP	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	14		SCH20		P61B-002MR	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	16		SCH20		P61B-002MS	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	18		SCH20		P61B-002MT	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	20		STD		P61B-001NT	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	24		STD		P61B-001PA	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	30		STD		P61B-003SW	Flange WN ASTM A105 Class 300 ASME B16.47 Series B RF	
773	36		XS		P61B-001N6	Flange WN ASTM A105 Class 300 ASME B16.47 Series B RF	
773	42		STD		P61B-003P8	Flange WN ASTM A105 Class 300 ASME B16.47 Series B RF	
773	48		XS		P61B-003TH	Flange WN ASTM A105 Class 300 ASME B16.47 Series B RF	
781	0.5		XS		P61B-001FF	Flange SW ASTM A105 Class 600 ASME B16.5 RF	
781	0.75		XS		P61B-001FH	Flange SW ASTM A105 Class 600 ASME B16.5 RF	
781	1		XS		P61B-001DR	Flange SW ASTM A105 Class 600 ASME B16.5 RF	
781	1.5		XS		P61B-001DV	Flange SW ASTM A105 Class 600 ASME B16.5 RF	
781	2		XS		P61B-001DH	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	3		STD		P61B-001TW	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	4		STD		P61B-001VV	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	6		STD		P61B-001JW	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	8		SCH20		P61B-003F0	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	10		SCH20		P61B-00650	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	12		SCH20		P61B-00651	Flange WN ASTM A105 Class 600 ASME B16.5 RF	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67B-000FH	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	0.75				P67B-000FJ	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	1				P67B-000FK	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	1.5				P67B-000FL	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	2				P67B-000FT	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	3				P67B-000FW	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	4				P67B-000FX	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	6				P67B-000FY	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	8				P67B-000FZ	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	10				P67B-000FM	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	12				P67B-000FN	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	14				P67B-000FP	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	16				P67B-000FR	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	18				P67B-000FS	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	20				P67B-000FU	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	24				P67B-000FV	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	30				P67B-000G2	Blind flange ASTM A105 Class 150 ASME B16.47 Series B RF	
1	36				P67B-000G5	Blind flange ASTM A105 Class 150 ASME B16.47 Series B RF	
1	42				P67B-000KZ	Blind flange ASTM A105 Class 150 ASME B16.47 Series B RF	
1	48				P67B-000L2	Blind flange ASTM A105 Class 150 ASME B16.47 Series B RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000L8	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000L9	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000LA	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000LB	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000LH	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3				P73T-000LL	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000LM	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	6				P73T-000LN	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	8				P73T-000LP	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	10				P73T-000LC	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	12				P73T-000LD	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	14				P73T-000LE	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	16				P73T-000LF	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	18				P73T-000LG	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	20				P73T-000LJ	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	24				P73T-000LK	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	30				P73T-000LT	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	36				P73T-000LW	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	42				P73T-000LZ	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	48				P73T-000M2	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	0.5				P73T-000FT	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	0.75				P73T-000FU	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	3				P73T-000G5	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	4				P73T-000G6	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	6				P73T-000G7	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	8				P73T-000G8	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	10				P73T-000FX	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	12				P73T-000FY	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	14				P73T-000FZ	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	16				P73T-000G0	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	18				P73T-000G1	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	20				P73T-000G3	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	24				P73T-000G4	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	30				P73T-000H9	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	36				P73T-000HC	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	42				P73T-000KM	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	48				P73T-000KR	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	0.5				P73T-000J8	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	0.75				P73T-000J9	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1				P73T-000JA	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1.5				P73T-000JB	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	2				P73T-000JH	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	3				P73T-000JL	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	4				P73T-000JM	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	6				P73T-000JN	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	8				P73T-000JP	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

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GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
781	10				P73T-000JC	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	12				P73T-000JD	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-16				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	18-24				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
1	30-42				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	48				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
773	0.5-10				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
773	12-48				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
781	0.5-6				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
781	8-12				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81B-000P4	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	0.75				P81B-000NX	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	1				P81B-000NY	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	1.5				P81B-000NZ	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	2				P81C-002DV	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	3				P81C-002DW	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	4				P81C-002DX	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	6				P81C-002DY	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	8				P81C-002DZ	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	10				P81C-002DT	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	12				P81C-002DU	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	14				P81C-00308	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated	
1	16				P81C-002E0	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated	
1	18				P81C-002E1	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated	
714	0.5				P81B-0015L	Gate valve ASTM A105 Class 800 API 602 SW - NPT Trim number 8 BB-BG-OS&Y Handwheel operated	
714	0.75				P81B-002F4	Gate valve ASTM A105 Class 800 API 602 SW - NPT Trim number 8 BB-BG-OS&Y Handwheel operated	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82B-000K0	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	0.75				P82B-000HB	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	1				P82B-000HC	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	1.5				P82B-000HD	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	2				P82C-000N5	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	3				P82C-000N6	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	4				P82C-000N7	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	6				P82C-000N8	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	8				P82C-0026L	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83B-000FX	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover	
1	0.75				P83B-000ER	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover	
1	1				P83B-000ES	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover	

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CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5				P83B-000ET	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover	
1	2				P83C-00144	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	3				P83C-00147	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	4				P83C-00148	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	6				P83C-00149	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	8				P83C-0014A	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	10				P83C-00140	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	12				P83C-00141	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	14				P83C-0021E	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	16				P83C-00142	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	18				P83C-00143	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	20				P83C-00145	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	24				P83C-00146	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	

DP CHECK VALVE (XDP)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	30				P88C-0023A	Dual plate check valve ASTM A216 Grade WCB Class 150 API 594 Wafer-type ASME B16.47-B RF Trim number 8 Internal wetted parts 13Cr Spring Inconel Retainerless-type	
1	36				P88C-0023B	Dual plate check valve ASTM A216 Grade WCB Class 150 API 594 Wafer-type ASME B16.47-B RF Trim number 8 Internal wetted parts 13Cr Spring Inconel Retainerless-type	

BALL VALVE (Q)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P84B-0011T	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design	
1	0.75				P84B-0011U	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design	
1	1				P84B-0011V	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design	
1	1.5				P84B-0011W	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design	
1	2				P84C-005UD	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design	
1	3				P84C-005UE	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design	
1	4				P84C-005UF	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design	
24	0.5				P84B-0011X	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	
24	0.75				P84B-0011Y	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	
24	1				P84B-0011Z	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	
24	1.5				P84B-00120	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	
24	2				P84C-005UJ	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	
24	3				P84C-005UK	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	
24	4				P84C-005UL	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	

BUTTERFLY VALVE (H)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	10				P86C-00230	Offset design butterfly valve ASTM A216 Grade WCB Class 150 API 609 Category B Lug-type ASME B16.5 RF Disc CS Seat Stellite-6 Trim 13Cr Triple eccentric design BG Gear operated	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71B-0008A	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	0.75				P71B-0008B	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	1				P71B-0008C	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71B-0008D	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	2				P71B-0000P	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	3				P71B-0000N	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	

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A1AH REV NO. 2

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	4				P71B-0000M	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	6				P71B-0000L	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	8				P71B-0000R	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	10				P71B-0000K	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	12				P71B-0000J	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	

PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000AH	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	16				P72B-0000C	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	18				P72B-000AJ	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	20				P72B-000AK	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	24				P72B-000AL	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	30				P72B-000AM	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	36				P72B-000AN	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	42				P72B-000AP	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	48				P72B-000AR	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	

PADDLE SPACER (PS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000AT	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	16				P72B-0000B	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	18				P72B-000AU	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	20				P72B-000AV	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	24				P72B-000AW	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	30				P72B-000AX	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	36				P72B-000AY	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	42				P72B-000AZ	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	48				P72B-000B0	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	

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BOLT TABLE (B_A1AH , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	60	P80S-003V2		
0.75	4	0.500	65	P80S-003V3		
1	4	0.500	70	P80S-003V4		
1.5	4	0.500	75	P80S-003V5		
2	4	0.625	85	P80S-003XE		
3	4	0.625	95	P80S-003XG		
4	8	0.625	95	P80S-003XG		
6	8	0.750	105	P80S-003XJ		
8	8	0.750	110	P80S-003XK		
10	12	0.875	120	P80S-00419		
12	12	0.875	120	P80S-00419		
14	12	1.000	135	P80S-0043E		
16	16	1.000	140	P80S-0043F		
18	16	1.125	150	P80S-0046K		
20	20	1.125	160	P80S-0046M		
24	20	1.250	175	P80S-004AG		
30	44	0.750	145	P80S-003ZK		
36	44	0.875	175	P80S-0041M		
42	48	1.000	190	P80S-0043T		
48	44	1.125	210	P80S-0046Z		

BOLT TABLE (B_A1AH_773 , STUD ASME RF, OPTION CODE 773)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-003V4		
0.75	4	0.625	75	P80S-003XC		
1	4	0.625	80	P80S-003XD		
1.5	4	0.750	95	P80S-00414		
2	8	0.625	90	P80S-003XF		
3	8	0.750	110	P80S-003XK		
4	8	0.750	115	P80S-003XL		
6	12	0.750	125	P80S-003XN		
8	12	0.875	140	P80S-0041D		
10	16	1.000	160	P80S-0043K		
12	16	1.125	175	P80S-0046S		
14	20	1.125	180	P80S-0046T		
16	20	1.250	190	P80S-004AK		
18	24	1.250	200	P80S-004AM		
20	24	1.250	210	P80S-004AP		
24	24	1.500	235	P80S-003F8		
30	36	1.375	285	P80S-003EA		
36	32	1.625	320	P80S-005TT		
42	36	1.750	355	P80S-007B5		
48	40	1.875	380	P80S-008P4		

BOLT TABLE (B_A1AH_781 , STUD ASME RF, OPTION CODE 781)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	80	P80S-003V6		
0.75	4	0.625	90	P80S-003XF		
1	4	0.625	95	P80S-003XG		
1.5	4	0.750	110	P80S-003XK		
2	8	0.625	110	P80S-003VC		
3	8	0.750	130	P80S-003XP		
4	8	0.875	150	P80S-0041F		
6	12	1.000	175	P80S-0043P		
8	12	1.125	195	P80S-0046W		
10	16	1.250	250	P80S-004AY		
12	20	1.250	255	P80S-004AZ		
14	20	1.375	270			
16	20	1.500	295			
18	20	1.625	320			
20	24	1.625	335			
24	24	1.875	380			
30	28	1.875	435			
36	28	2.250	510			
42	28	2.500	575			
48	32	2.750	635			

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BRANCH TABLE (T_A1AH)

RUN PIPE SIZE (in) \ BRANCH SIZE (in)	0.5	0.75	1	1.5	2	3	4	6	8	10	12	14	16	18	20	24	30	36	42	48
0.5	TS																			
0.75		TS																		
1		TR	TS																	
1.5		TR	TR	TS																
2		L	TR	TR	TS															
3		L	L	TR	TR	TS														
4	L	L	L	L	TR	TR	TS													
6	L	L	L	L	L	TR	TR	TS												
8		L	L	L	L	L	TR	TR	TS											
10		L	L	L	L	L	TR	TR	TR	TS										
12		L	L	L	L	L	L	TR	TR	TR	TS									
14		L	L	L	L	L	L	TR	TR	TR	TR	TS								
16		L	L	L	L	L	L	TR	TR	TR	TR	TR	TS							
18		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TS						
20		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TR	TS					
24		L	L	L	L	L	L	L	9PD	TR	TR	TR	TR	TR	TR	TS				
30		L	L	L	L	L	L	L	9PD	TR	TR	TR	TR	TR	TR	TR	TS			
36		L	L	L	L	L	L	L	9PD	9PD	9PD	9PD	TR	TR	TR	TR	TR	TS		
42		L	L	L	L	L	L	L	9PD	9PD	9PD	9PD	TR	TR	TR	TR	TR	TR	TS	
48		L	L	L	L	L	L	L	9PD	9PD	9PD	9PD	9PD	9PD	9PD	TR	TR	TR	TR	TS

TS : STRAIGHT TEE
L : OUTLET
TR : REDUCING TEE
9PD : REINFORCING PAD 90 DEG

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PIPING CLASS

A1AH

REV NO. 2

BRANCH TABLE (T_A1AH_3)

RUN PIPE SIZE (in) \ BRANCH SIZE (in)	0.5	0.75	1	1.5	2	3	4	6	8	10	12	14	16	18	20	24	30	36	42	48
0.5																				
0.75		TLS																		
1		6PD	TLS																	
1.5		6PD	6PD	TLS																
2		6PD	6PD	6PD	TLS															
3		6PD	6PD	6PD	6PD	TLS														
4		6PD	6PD	6PD	6PD	6PD	TLS													
6		6PD	6PD	6PD	6PD	6PD	6PD	TLS												
8		6PD	6PD	6PD	6PD	6PD	6PD	6PD	TLS											
10		6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	TLS										
12		6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	TLS									
14		6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	TLS								
16		6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	TLS							
18		6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	TLS						
20		6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	TLS					
24		6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	TLS				
30		6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	TLS			
36		6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	TLS		
42		6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	TLS	
48		6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	TLS

6PD : REINFORCING PAD 60 DEG
TLS : STRAIGHT LATERAL TEE

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PIPING CLASS

A1AH04 REV NO. 2

Material : Killed CS
Rating : ASME CLASS 150
Flange Face : RF
C.A.(mm) : 1.50
Gasket : Spiral Wound
Service : PROCESS - HYDROGEN OR HYDROGEN RICH HYDROCARBON MIXTURES
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
2	USE OF SOFT SEATED BALL, PLUG AND BUTTERFLY VALVES SHALL BE LIMITED TO MAXIMUM OF 204DEGC (400DEGF)
16	PIPE CLASS SHALL BE USED WITHIN THE NORMAL OPERATING PRESSURE/TEMPERATURE LIMITS SPECIFIED IN API RP 941. PRESSURE / TEMPERATURE SPECIFIED IN THE PIPE CLASS EXCEEDING API RP 941 LIMITS SHOULD BE REGARDED AS UPSET CONDITIONS RATHER THAN FOR CONTINUOUS SERVICE

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
24	FULL PORT (Q)
200	WITH JACK SCREW (FO)
541	NPT(F) (CA,L)
714	SW - NPT(F) (V)
773	CLASS 300 (B,F,G,SB)

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PIPING CLASS
A1AH04 REV NO. 2

PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P01A-000XM	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	0.75		XS		P01A-000XN	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1		XS		P01A-000XP	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1.5		XS		P01A-000XV	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	2		XS		P01A-000YX	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	3		STD		P01A-000YM	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	4		STD		P01A-000YU	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	6		STD		P01A-000Z3	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	8		SCH20		P01A-001AT	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	10		SCH20		P01A-0014Y	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	12		SCH20		P01A-0016H	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	14		SCH20		P01A-0017A	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	16		SCH20		P01A-0018E	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	18		SCH20		P01A-00438	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE	
1	20		STD		P01A-0042G	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE	
1	24		STD		P01A-0042H	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE	
1	30		STD		P01A-0042J	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE	
1	36		XS		P01A-0042K	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE	
1	42		XS		P01A-0043G	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P02B-00014	90 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	0.75				P02B-00015	90 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	1				P02B-00016	90 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5				P02B-00017	90 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	2		XS		P02A-000CP	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		STD		P02A-000CU	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		STD		P02A-000CZ	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		STD		P02A-000D6	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		SCH20		P02A-000GZ	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	10		SCH20		P02A-000H1	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	12		SCH20		P02A-000H4	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	14		SCH20		P02A-000FX	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	16		SCH20		P02A-000GM	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	18		SCH20		P02A-000LT	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	20		STD		P02A-0010J	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	24		STD		P02A-0010K	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	30		STD		P02A-000F3	90 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius	
1	36		XS		P02A-000DH	90 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P03B-00017	45 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	0.75				P03B-00018	45 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	1				P03B-00019	45 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5				P03B-0001A	45 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	2		XS		P03A-000AS	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		STD		P03A-000AX	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		STD		P03A-000B1	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		STD		P03A-000B9	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		SCH20		P03A-000EX	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	10		SCH20		P03A-000F0	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	12		SCH20		P03A-000F2	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	14		SCH20		P03A-000DW	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	16		SCH20		P03A-000EM	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	18		SCH20		P03A-001DX	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	20		STD		P03A-000X1	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	24		STD		P03A-000X2	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

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45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	30		STD		P03A-000D0	45 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius	
1	36		XS		P03A-000BG	45 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P21B-00017	Straight tee ASTM A105 Class 3000 ASME B16.11 SW	
1	0.75				P21B-00018	Straight tee ASTM A105 Class 3000 ASME B16.11 SW	
1	1				P21B-00019	Straight tee ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5				P21B-0001A	Straight tee ASTM A105 Class 3000 ASME B16.11 SW	
1	2		XS		P21A-001CJ	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		STD		P21A-001CU	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		STD		P21A-001CW	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6		STD		P21A-001D2	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8		SCH20		P21A-00215	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10		SCH20		P21A-00219	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12		SCH20		P21A-0021A	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14		SCH20		P21A-00206	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16		SCH20		P21A-0020X	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18		SCH20		P21A-001PJ	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20		STD		P21A-001C7	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24		STD		P21A-001CC	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30		STD		P21A-001YC	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	36		XS		P21A-001D7	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75			P24B-0002L	Reducing tee ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5	0.75			P24B-0002N	Reducing tee ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5	1			P24B-0002P	Reducing tee ASTM A105 Class 3000 ASME B16.11 SW	
1	2	1	XS	XS	P24A-00238	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	XS	XS	P24A-0023H	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	STD	XS	P24A-00214	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	STD	XS	P24A-002HW	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P24A-002HY	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P24A-0021K	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	STD	P24A-0021A	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P24A-00229	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH20	STD	P24A-00J21	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH20	STD	P24A-005J4	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	SCH20	STD	P24A-00HMB	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	SCH20	STD	P24A-00HKS	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	SCH20	SCH20	P24A-002YX	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	SCH20	STD	P24A-00K0B	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH20	SCH20	P24A-002U4	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH20	SCH20	P24A-002YC	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	SCH20	STD	P24A-00K0M	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	SCH20	SCH20	P24A-002U7	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	SCH20	SCH20	P24A-002YA	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	SCH20	SCH20	P24A-002YR	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	6	SCH20	STD	P24A-00GU4	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	SCH20	SCH20	P24A-002XW	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	SCH20	SCH20	P24A-002YH	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	SCH20	SCH20	P24A-002U1	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	SCH20	SCH20	P24A-002XF	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	8	SCH20	SCH20	P24A-002XC	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	10	SCH20	SCH20	P24A-002UX	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	12	SCH20	SCH20	P24A-002W3	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	14	SCH20	SCH20	P24A-002WT	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	16	SCH20	SCH20	P24A-002X5	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	

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REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	20	8	STD	SCH20	P24A-00K0N	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	10	STD	SCH20	P24A-00BT7	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	12	STD	SCH20	P24A-00BUS	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	14	STD	SCH20	P24A-00BWB	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	16	STD	SCH20	P24A-006W3	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	18	STD	SCH20	P24A-006WD	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	10	STD	SCH20	P24A-00KT6	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	12	STD	SCH20	P24A-00C7B	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	14	STD	SCH20	P24A-00K0C	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	16	STD	SCH20	P24A-00CAD	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	18	STD	SCH20	P24A-006WF	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	20	STD	STD	P24A-004SV	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	10	STD	SCH20	P24A-003VN	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	12	STD	SCH20	P24A-003VP	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	14	STD	SCH20	P24A-003VR	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	16	STD	SCH20	P24A-003VS	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	18	STD	SCH20	P24A-003VT	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	20	STD	STD	P24A-0087D	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	24	STD	STD	P24A-005XW	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	36	16	XS	SCH20	P24A-003VH	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	36	18	XS	SCH20	P24A-003VJ	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	36	20	XS	STD	P24A-004SS	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	36	24	XS	STD	P24A-004VX	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	36	30	XS	STD	P24A-003VM	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	STD	XS	P27A-001MZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P27A-001N0	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P27A-00189	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	STD	P27A-001AZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P27A-001GW	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH20	STD	P27A-003K2	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH20	STD	P27A-003K3	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	SCH20	STD	P27A-003K4	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	SCH20	STD	P27A-003K5	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	SCH20	SCH20	P27A-001UL	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	SCH20	STD	P27A-003K6	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH20	SCH20	P27A-001UU	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH20	SCH20	P27A-001TH	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	SCH20	STD	P27A-00518	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	SCH20	SCH20	P27A-001V4	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	SCH20	SCH20	P27A-001TG	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	SCH20	SCH20	P27A-001U1	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	SCH20	SCH20	P27A-001WX	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	SCH20	SCH20	P27A-001TW	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	SCH20	SCH20	P27A-001UF	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	SCH20	SCH20	P27A-001V2	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	10	SCH20	SCH20	P27A-001TJ	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	12	SCH20	SCH20	P27A-001UE	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	14	SCH20	SCH20	P27A-001UY	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	16	SCH20	SCH20	P27A-001WN	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	12	STD	SCH20	P27A-00CMZ	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	14	STD	SCH20	P27A-0082L	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	16	STD	SCH20	P27A-0082M	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	18	STD	SCH20	P27A-0084N	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	16	STD	SCH20	P27A-0084T	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	18	STD	SCH20	P27A-0084U	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	20	STD	STD	P27A-001A8	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	

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CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	30	20	STD	STD	P27A-001S0	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	24	STD	STD	P27A-001M7	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	36	24	XS	STD	P27A-001GY	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	36	30	XS	STD	P27A-001M9	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	42	30	XS	STD	P27A-001N2	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	42	36	XS	XS	P27A-001M6	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	STD	XS	P28A-001N5	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P28A-001N6	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P28A-0018B	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	STD	P28A-001AS	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P28A-00182	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH20	STD	P28A-003JU	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH20	STD	P28A-003JV	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	SCH20	STD	P28A-003JW	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	SCH20	STD	P28A-003JX	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	SCH20	SCH20	P28A-001V0	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	SCH20	STD	P28A-003JY	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH20	SCH20	P28A-001V1	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH20	SCH20	P28A-001TJ	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	SCH20	STD	P28A-0096P	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	SCH20	SCH20	P28A-001WH	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	SCH20	SCH20	P28A-001TH	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	SCH20	SCH20	P28A-001UC	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	SCH20	SCH20	P28A-001T6	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	SCH20	SCH20	P28A-001TY	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	SCH20	SCH20	P28A-001UX	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	SCH20	SCH20	P28A-001WG	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	10	SCH20	SCH20	P28A-001TV	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	12	SCH20	SCH20	P28A-001UJ	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	14	SCH20	SCH20	P28A-001WD	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	16	SCH20	SCH20	P28A-001T1	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	12	STD	SCH20	P28A-009MM	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	14	STD	SCH20	P28A-004SJ	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	16	STD	SCH20	P28A-004SK	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	18	STD	SCH20	P28A-004UN	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	16	STD	SCH20	P28A-004UR	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	18	STD	SCH20	P28A-004US	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	20	STD	STD	P28A-001AW	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	20	STD	STD	P28A-001LZ	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	24	STD	STD	P28A-001N1	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	36	24	XS	STD	P28A-0017X	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	36	30	XS	STD	P28A-001ND	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	42	30	XS	STD	P28A-001RM	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	42	36	XS	XS	P28A-001N0	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P29B-0001J	Cap ASTM A105 Class 3000 ASME B16.11 SW	
1	0.75				P29B-0001F	Cap ASTM A105 Class 3000 ASME B16.11 SW	
1	1				P29B-0001G	Cap ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5				P29B-0001H	Cap ASTM A105 Class 3000 ASME B16.11 SW	
1	2		XS		P29A-000A1	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		STD		P29A-000BK	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		STD		P29A-000A3	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6		STD		P29A-000A9	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8		SCH20		P29A-000EY	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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CAP (CA)

OPTION CODE	SIZE L / RUN	SIZE S / BRN	WALL THICKNESS (L)	WALL THICKNESS (S)	IDENT CODE	DESCRIPTION	NOTE
1	10		SCH20		P29A-000E5	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12		SCH20		P29A-000E8	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14		SCH20		P29A-000EA	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16		SCH20		P29A-000F3	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18		SCH20		P29A-000E0	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20		STD		P29A-000B2	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24		STD		P29A-000B8	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	30		STD		P29A-000DU	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	36		XS		P29A-000A2	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
541	0.75				P29B-0000C	Cap ASTM A105 Class 3000 ASME B16.11 NPT	
541	1				P29B-0000D	Cap ASTM A105 Class 3000 ASME B16.11 NPT	
541	1.5				P29B-0000E	Cap ASTM A105 Class 3000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE L / RUN	SIZE S / BRN	WALL THICKNESS (L)	WALL THICKNESS (S)	IDENT CODE	DESCRIPTION	NOTE
1	0.5		SCH160		P41A-000B5	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		SCH160		P41A-000B6	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		SCH160		P41A-000B7	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		SCH160		P41A-000B8	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

CON SWAGED NIPPLE (SNC)

OPTION CODE	SIZE L / RUN	SIZE S / BRN	WALL THICKNESS (L)	WALL THICKNESS (S)	IDENT CODE	DESCRIPTION	NOTE
1	0.75	0.5	XS	XS	P42A-00036	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	XS	XS	P42A-00038	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	XS	XS	P42A-0003B	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	XS	XS	P42A-00035	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	XS	XS	P42A-00039	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	XS	XS	P42A-0003C	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	XS	XS	P42A-0008C	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	XS	XS	P42A-0008D	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	XS	XS	P42A-0008E	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	XS	XS	P42A-0008F	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	STD	XS	P42A-0007V	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	

ECC SWAGED NIPPLE (SNE)

OPTION CODE	SIZE L / RUN	SIZE S / BRN	WALL THICKNESS (L)	WALL THICKNESS (S)	IDENT CODE	DESCRIPTION	NOTE
1	0.75	0.5	XS	XS	P43A-00036	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	XS	XS	P43A-00037	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	XS	XS	P43A-00038	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	XS	XS	P43A-00039	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	XS	XS	P43A-0003A	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	XS	XS	P43A-0003B	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	XS	XS	P43A-00042	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	XS	XS	P43A-00043	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	XS	XS	P43A-00044	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	XS	XS	P43A-00045	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	STD	XS	P43A-0003J	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	

COUPLING (CPS)

OPTION CODE	SIZE L / RUN	SIZE S / BRN	WALL THICKNESS (L)	WALL THICKNESS (S)	IDENT CODE	DESCRIPTION	NOTE
1	0.5				P47B-0001D	Coupling ASTM A105 Class 3000 ASME B16.11 SW - SW	
1	0.75				P47B-0001E	Coupling ASTM A105 Class 3000 ASME B16.11 SW - SW	
1	1				P47B-0001F	Coupling ASTM A105 Class 3000 ASME B16.11 SW - SW	
1	1.5				P47B-0001G	Coupling ASTM A105 Class 3000 ASME B16.11 SW - SW	

OUTLET (L)

OPTION CODE	SIZE L / RUN	SIZE S / BRN	WALL THICKNESS (L)	WALL THICKNESS (S)	IDENT CODE	DESCRIPTION	NOTE
1	2 - 2.5	0.75			P31B-0137J	Outlet ASTM A105 Class 3000 MSS SP-97 SW	

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OUTLET (L)							
OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3 - 5	0.75			P31B-0137K	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	6 - 12	0.75			P31B-007AB	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	14 - 36	0.75			P31B-007AJ	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	38 and larger	0.75			P31B-00N1G	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	3	1			P31B-007A7	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	4 - 5	1			P31B-0138Z	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	6 - 10	1			P31B-007A4	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	12 - 36	1			P31B-007AA	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	38 and larger	1			P31B-00N0Y	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	4	1.5			P31B-005SN	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	5 - 6	1.5			P31B-01390	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	8 - 12	1.5			P31B-0079U	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	14 - 24	1.5			P31B-007A0	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	26 - 36	1.5			P31B-01391	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	38 and larger	1.5			P31B-00N17	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
541	1	0.75			P31B-00551	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
541	1.5	0.75			P31B-00555	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
541	2 - 2.5	0.75			P31B-0137H	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
541	3 - 5	0.75			P31B-01376	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
541	6 - 12	0.75			P31B-007GR	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
541	14 - 36	0.75			P31B-007GY	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
541	38 and larger	0.75			P31B-00FFM	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
1	6	2	STD	XS	P31B-007SH	Outlet ASTM A105 MSS SP-97 BW	
1	8	2	SCH20	XS	P31B-00NY2	Outlet ASTM A105 MSS SP-97 BW	
1	10	2	SCH20	XS	P31B-00TFB	Outlet ASTM A105 MSS SP-97 BW	
1	12	2	SCH20	XS	P31B-00TFA	Outlet ASTM A105 MSS SP-97 BW	
1	14	2	SCH20	XS	P31B-00TF9	Outlet ASTM A105 MSS SP-97 BW	
1	16	2	SCH20	XS	P31B-00TF8	Outlet ASTM A105 MSS SP-97 BW	
1	18	2	SCH20	XS	P31B-00NVX	Outlet ASTM A105 MSS SP-97 BW	
1	20	2	STD	XS	P31B-00994	Outlet ASTM A105 MSS SP-97 BW	
1	24	2	STD	XS	P31B-0092Z	Outlet ASTM A105 MSS SP-97 BW	
1	30	2	STD	XS	P31B-008P5	Outlet ASTM A105 MSS SP-97 BW	
1	36	2	XS	XS	P31B-008BB	Outlet ASTM A105 MSS SP-97 BW	
1	42	2	XS	XS	P31B-0084J	Outlet ASTM A105 MSS SP-97 BW	
1	8	3	SCH20	STD	P31B-00P11	Outlet ASTM A105 MSS SP-97 BW	
1	10	3	SCH20	STD	P31B-00UPG	Outlet ASTM A105 MSS SP-97 BW	
1	12	3	SCH20	STD	P31B-00USE	Outlet ASTM A105 MSS SP-97 BW	
1	14	3	SCH20	STD	P31B-00UPH	Outlet ASTM A105 MSS SP-97 BW	
1	16	3	SCH20	STD	P31B-00TU2	Outlet ASTM A105 MSS SP-97 BW	
1	18	3	SCH20	STD	P31B-00NZ4	Outlet ASTM A105 MSS SP-97 BW	
1	20	3	STD	STD	P31B-008FA	Outlet ASTM A105 MSS SP-97 BW	
1	24	3	STD	STD	P31B-00895	Outlet ASTM A105 MSS SP-97 BW	
1	30	3	STD	STD	P31B-007WY	Outlet ASTM A105 MSS SP-97 BW	
1	36	3	XS	STD	P31B-007P1	Outlet ASTM A105 MSS SP-97 BW	
1	42	3	XS	STD	P31B-00AGK	Outlet ASTM A105 MSS SP-97 BW	
1	12	4	SCH20	STD	P31B-00USF	Outlet ASTM A105 MSS SP-97 BW	
1	14	4	SCH20	STD	P31B-00UPJ	Outlet ASTM A105 MSS SP-97 BW	
1	16	4	SCH20	STD	P31B-00TU3	Outlet ASTM A105 MSS SP-97 BW	
1	18	4	SCH20	STD	P31B-00P1V	Outlet ASTM A105 MSS SP-97 BW	
1	20	4	STD	STD	P31B-008D3	Outlet ASTM A105 MSS SP-97 BW	
1	24	4	STD	STD	P31B-0086X	Outlet ASTM A105 MSS SP-97 BW	
1	30	4	STD	STD	P31B-007US	Outlet ASTM A105 MSS SP-97 BW	
1	36	4	XS	STD	P31B-00AEP	Outlet ASTM A105 MSS SP-97 BW	
1	42	4	XS	STD	P31B-00A8G	Outlet ASTM A105 MSS SP-97 BW	
1	18	6	SCH20	STD	P31B-00P48	Outlet ASTM A105 MSS SP-97 BW	
1	20	6	STD	STD	P31B-008PZ	Outlet ASTM A105 MSS SP-97 BW	
1	24	6	STD	STD	P31B-008JD	Outlet ASTM A105 MSS SP-97 BW	
1	30	6	STD	STD	P31B-008BS	Outlet ASTM A105 MSS SP-97 BW	
1	36	6	XS	STD	P31B-0085G	Outlet ASTM A105 MSS SP-97 BW	

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OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	42	6	XS	STD	P31B-007ZN	Outlet ASTM A105 MSS SP-97 BW	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30B-0002D	Plug ASTM A105 ASME B16.11 NPT Round head	
1	0.75				P30B-0002E	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1				P30B-0002F	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1.5				P30B-0002G	Plug ASTM A105 ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P61B-001R9	Flange SW ASTM A105 Class 150 ASME B16.5 RF	
1	0.75		XS		P61B-001RA	Flange SW ASTM A105 Class 150 ASME B16.5 RF	
1	1		XS		P61B-001RR	Flange SW ASTM A105 Class 150 ASME B16.5 RF	
1	1.5		XS		P61B-001RV	Flange SW ASTM A105 Class 150 ASME B16.5 RF	
1	2		XS		P61B-003NK	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	3		STD		P61B-001PW	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	4		STD		P61B-001R8	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	6		STD		P61B-001RT	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	8		SCH20		P61B-002BF	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	10		SCH20		P61B-002B4	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	12		SCH20		P61B-002B5	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	14		SCH20		P61B-002B6	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	16		SCH20		P61B-002B7	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	18		SCH20		P61B-002B8	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	20		STD		P61B-001JA	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	24		STD		P61B-001NJ	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	30		STD		P61B-001S8	Flange WN ASTM A105 Class 150 ASME B16.47 Series B RF	
1	36		XS		P61B-001UE	Flange WN ASTM A105 Class 150 ASME B16.47 Series B RF	
1	42		XS		P61B-001N1	Flange WN ASTM A105 Class 150 ASME B16.47 Series B RF	
773	0.5		XS		P61B-001HC	Flange SW ASTM A105 Class 300 ASME B16.5 RF	
773	0.75		XS		P61B-001HS	Flange SW ASTM A105 Class 300 ASME B16.5 RF	
773	1		XS		P61B-001EF	Flange SW ASTM A105 Class 300 ASME B16.5 RF	
773	1.5		XS		P61B-001F2	Flange SW ASTM A105 Class 300 ASME B16.5 RF	
773	2		XS		P61B-001HW	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	3		STD		P61B-001LJ	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	4		STD		P61B-001MC	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	6		STD		P61B-001N2	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	8		SCH20		P61B-002LJ	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	10		SCH20		P61B-002LH	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	12		SCH20		P61B-002MP	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	14		SCH20		P61B-002MR	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	16		SCH20		P61B-002MS	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	18		SCH20		P61B-002MT	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	20		STD		P61B-001NT	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	24		STD		P61B-001PA	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	30		STD		P61B-003SW	Flange WN ASTM A105 Class 300 ASME B16.47 Series B RF	
773	36		XS		P61B-001N6	Flange WN ASTM A105 Class 300 ASME B16.47 Series B RF	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67B-000FH	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	0.75				P67B-000FJ	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	1				P67B-000FK	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	1.5				P67B-000FL	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	2				P67B-000FT	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	3				P67B-000FW	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	4				P67B-000FX	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	6				P67B-000FY	Blind flange ASTM A105 Class 150 ASME B16.5 RF	

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BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	8				P67B-000FZ	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	10				P67B-000FM	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	12				P67B-000FN	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	14				P67B-000FP	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	16				P67B-000FR	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	18				P67B-000FS	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	20				P67B-000FU	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	24				P67B-000FV	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	30				P67B-000G2	Blind flange ASTM A105 Class 150 ASME B16.47 Series B RF	
1	36				P67B-000G5	Blind flange ASTM A105 Class 150 ASME B16.47 Series B RF	
1	42				P67B-000KZ	Blind flange ASTM A105 Class 150 ASME B16.47 Series B RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000L8	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000L9	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000LA	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000LB	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000LH	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000LL	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000LM	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	6				P73T-000LN	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	8				P73T-000LP	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	10				P73T-000LC	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	12				P73T-000LD	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	14				P73T-000LE	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	16				P73T-000LF	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	18				P73T-000LG	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	20				P73T-000LJ	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	24				P73T-000LK	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	30				P73T-000LT	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	36				P73T-000LW	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	42				P73T-000LZ	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	0.5				P73T-000FT	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	0.75				P73T-000FU	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	3				P73T-000G5	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	4				P73T-000G6	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	6				P73T-000G7	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	8				P73T-000G8	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	10				P73T-000FX	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	12				P73T-000FY	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	14				P73T-000FZ	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	16				P73T-000G0	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	18				P73T-000G1	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

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GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
773	20				P73T-000G3	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	24				P73T-000G4	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	30				P73T-000H9	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	36				P73T-000HC	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	42				P73T-000KM	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-16				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	18-24				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
1	30-42				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
773	0.5-10				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
773	12-42				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81B-000P4	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	0.75				P81B-000NX	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	1				P81B-000NY	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	1.5				P81B-000NZ	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	2				P81C-002DV	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	3				P81C-002DW	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	4				P81C-002DX	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	6				P81C-002DY	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	8				P81C-002DZ	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	10				P81C-002DT	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	12				P81C-002DU	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	14				P81C-00308	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated	
1	16				P81C-002E0	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated	
1	18				P81C-002E1	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated	
1	20				P81C-002E2	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated	
1	24				P81C-002E3	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated	
1	30				P81C-004D8	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.47-B RF Trim number 8 BB-BG-OS&Y Gear operated	
1	36				P81C-004D9	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.47-B RF Trim number 8 BB-BG-OS&Y Gear operated	
714	0.5				P81B-0015L	Gate valve ASTM A105 Class 800 API 602 SW - NPT Trim number 8 BB-BG-OS&Y Handwheel operated	
714	0.75				P81B-002F4	Gate valve ASTM A105 Class 800 API 602 SW - NPT Trim number 8 BB-BG-OS&Y Handwheel operated	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82B-000K0	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	0.75				P82B-000HB	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	1				P82B-000HC	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	1.5				P82B-000HD	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	2				P82C-000N5	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	3				P82C-000N6	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	4				P82C-000N7	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	6				P82C-000N8	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	8				P82C-0026L	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	

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CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83B-000FX	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover	
1	0.75				P83B-000ER	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover	
1	1				P83B-000ES	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover	
1	1.5				P83B-000ET	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover	
1	2				P83C-00144	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	3				P83C-00147	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	4				P83C-00148	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	6				P83C-00149	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	8				P83C-0014A	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	10				P83C-00140	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	12				P83C-00141	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	14				P83C-0021E	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	16				P83C-00142	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	18				P83C-00143	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	20				P83C-00145	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	24				P83C-00146	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	

DP CHECK VALVE (XDP)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	36				P88C-0023B	Dual plate check valve ASTM A216 Grade WCB Class 150 API 594 Wafer-type ASME B16.47-B RF Trim number 8 Internal wetted parts 13Cr Spring Inconel Retainerless-type	

BALL VALVE (Q)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P84B-0011T	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design	
1	0.75				P84B-0011U	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design	
1	1				P84B-0011V	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design	
1	1.5				P84B-0011W	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design	
1	2				P84C-005UD	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design	
1	3				P84C-005UE	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design	
1	4				P84C-005UF	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design	
24	0.5				P84B-0011X	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	
24	0.75				P84B-0011Y	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	
24	1				P84B-0011Z	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	
24	1.5				P84B-00120	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	
24	2				P84C-005UJ	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	
24	3				P84C-005UK	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	
24	4				P84C-005UL	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	

NEEDLE VALVE (NV)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75				P82B-000YB	Needle valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	

ORIFICE FLANGE (FO)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2		XS		P66B-0084B	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	3		STD		P66B-0084C	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	4		STD		P66B-0084D	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	6		STD		P66B-0084E	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	8		SCH20		P66B-0084F	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	

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ORIFICE FLANGE (FO)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	10		SCH20		P66B-00848	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	12		SCH20		P66B-0084L	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	14		SCH20		P66B-0084A	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	16		SCH20		P66B-0083Y	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	18		SCH20		P66B-0084R	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
200	2		XS		P66B-00843	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	3		STD		P66B-00844	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	4		STD		P66B-00845	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	6		STD		P66B-00846	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	8		SCH20		P66B-00847	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	10		SCH20		P66B-00840	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	12		SCH20		P66B-0084P	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	14		SCH20		P66B-00842	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	16		SCH20		P66B-0083Z	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	18		SCH20		P66B-0084T	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71B-0008A	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	0.75				P71B-0008B	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	1				P71B-0008C	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71B-0008D	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	2				P71B-0000P	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	3				P71B-0000N	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	4				P71B-0000M	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	6				P71B-0000L	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	8				P71B-0000R	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	10				P71B-0000K	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	12				P71B-0000J	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
773	3				P71B-000B7	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	

PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000AH	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	16				P72B-0000C	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	18				P72B-000AJ	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	20				P72B-000AK	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	24				P72B-000AL	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	30				P72B-000AM	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	36				P72B-000AN	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	42				P72B-000AP	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	

PADDLE SPACER (PS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000AT	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	16				P72B-0000B	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	18				P72B-000AU	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	20				P72B-000AV	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	24				P72B-000AW	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	30				P72B-000AX	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	36				P72B-000AY	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	42				P72B-000AZ	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	

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BOLT TABLE (B_A1AH04 , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	60	P80S-003V2		
0.75	4	0.500	65	P80S-003V3		
1	4	0.500	70	P80S-003V4		
1.5	4	0.500	75	P80S-003V5		
2	4	0.625	85	P80S-003XE		
3	4	0.625	95	P80S-003XG		
4	8	0.625	95	P80S-003XG		
6	8	0.750	105	P80S-003XJ		
8	8	0.750	110	P80S-003XK		
10	12	0.875	120	P80S-00419		
12	12	0.875	120	P80S-00419		
14	12	1.000	135	P80S-0043E		
16	16	1.000	140	P80S-0043F		
18	16	1.125	150	P80S-0046K		
20	20	1.125	160	P80S-0046M		
24	20	1.250	175	P80S-004AG		
30	44	0.750	145	P80S-003ZK		
36	44	0.875	175	P80S-0041M		
42	48	1.000	190	P80S-0043T		

BOLT TABLE (B_A1AH04_773 , STUD ASME RF, OPTION CODE 773)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-003V4		
0.75	4	0.625	75	P80S-003XC		
1	4	0.625	80	P80S-003XD		
1.5	4	0.750	95	P80S-00414		
2	8	0.625	90	P80S-003XF		
3	8	0.750	110	P80S-003XK		
4	8	0.750	115	P80S-003XL		
6	12	0.750	125	P80S-003XN		
8	12	0.875	140	P80S-0041D		
10	16	1.000	160	P80S-0043K		
12	16	1.125	175	P80S-0046S		
14	20	1.125	180	P80S-0046T		
16	20	1.250	190	P80S-004AK		
18	24	1.250	200	P80S-004AM		
20	24	1.250	210	P80S-004AP		
24	24	1.500	235	P80S-003F8		
30	36	1.375	285	P80S-003EA		
36	32	1.625	320	P80S-005TT		
42	36	1.750	355	P80S-007B5		

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BRANCH TABLE (T_A1AH04)

RUN PIPE SIZE (in) \ BRANCH SIZE (in)	0.5	0.75	1	1.5	2	3	4	6	8	10	12	14	16	18	20	24	30	36	42
0.5	TS																		
0.75		TS																	
1		TR	TS																
1.5		TR	TR	TS															
2		L	TR	TR	TS														
3		L	L	TR	TR	TS													
4	L	L	L	L	TR	TR	TS												
6	L	L	L	L	L	TR	TR	TS											
8		L	L	L	L	L	TR	TR	TS										
10		L	L	L	L	L	TR	TR	TR	TS									
12		L	L	L	L	L	L	TR	TR	TR	TS								
14		L	L	L	L	L	L	TR	TR	TR	TR	TS							
16		L	L	L	L	L	L	TR	TR	TR	TR	TR	TS						
18		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TS					
20		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TR	TS				
24		L	L	L	L	L	L	L	9PD	TR	TR	TR	TR	TR	TR	TS			
30		L	L	L	L	L	L	L	9PD	TR	TR	TR	TR	TR	TR	TR	TS		
36		L	L	L	L	L	L	L	9PD	9PD	9PD	9PD	TR	TR	TR	TR	TR	TS	
42		L	L	L	L	L	L	L	9PD	9PD	9PD	9PD	TR	TR	TR	TR	TR	TR	TS

L : OUTLET
TR : REDUCING TEE
TS : STRAIGHT TEE
9PD : REINFORCING PAD 90 DEG

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PIPING CLASS

A1AL REV NO. 2

Material : Killed CS
Rating : ASME CLASS 150
Flange Face : RF
C.A.(mm) : 1.50
Gasket : Spiral Wound
Service : PROCESS - AMINES AND NON NACE SOUR (STRESS RELIEVED): / DHT GAS OIL FEED / DHDT PRODUCT STRIPPER BOTTOMS / WASTE GAS (NOTES :4, 5) / DHT DRIER RECYCLE (NOTES: 4, 5) / DIESEL PRODUCT / DHT DRIER OVHD (NOTES: 4, 5) / PROCESS

Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
2	USE OF SOFT SEATED BALL, PLUG AND BUTTERFLY VALVES SHALL BE LIMITED TO MAXIMUM OF 204DEGC (400DEGF)
27	PWHT OF CARBON STEEL PIPING IN WET H2S, CAUSTIC AND AMINE SERVICES SHALL BE IN ACCORDANCE WITH SECTION 10.2, 10.3, AND 10.4 OF PROJECT SPECIFICATION 3550-8440-SP-0002 MATERIALS REQUIREMENTS FOR PRESSURISED EQUIPMENT AND PIPING. FOR CAUSTIC AND AMINE SERVICE THE FOLLOWING SHALL APPLY: - PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF ALL SITE PIPING FABRICATION WELDS IS REQUIRED FOR ALL WALL THICKNESSES. FOR MODERATE AND SEVERE WET H2S SERVICE THE FOLLOWING SHALL APPLY: PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF SITE FABRICATION CIRCUMFERENTIAL OR BRANCH WELDS IS NOT REQUIRED IF WELDS ARE MULTIPASS AND IN ACCORDANCE WITH PARA 10.2.12 OF PROJECT SPECIFICATION 3550-8440-SP-0002. FOR SERVICES MEETING THE WET H2S CRITERIA AND CAUSTIC OR AMINE CRITERIA THE MORE STRINGENT PWHT REQUIREMENT SHALL GOVERN.

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
200	WITH JACK SCREW (FO)
541	NPT(F) (CA,F)
773	CLASS 300 (B,F,G)
4608	VALVE WITH NIPPLES (V)

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PIPING CLASS
A1AL REV NO. 2

PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P01A-000XM	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	0.75		XS		P01A-000XN	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1		XS		P01A-000XP	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1.5		XS		P01A-000XV	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	2		XS		P01A-000YX	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	3		STD		P01A-000YM	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	4		STD		P01A-000YU	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	6		STD		P01A-000Z3	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	8		SCH20		P01A-001AT	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	10		SCH20		P01A-0014Y	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	12		SCH20		P01A-0016H	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	14		SCH20		P01A-0017A	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	16		SCH20		P01A-0018E	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	18		SCH20		P01A-007BZ	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE Amine service	
1	20		STD		P01A-007C0	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE Amine service	
1	24		STD		P01A-007C1	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE Amine service	
1	30		STD		P01A-008MH	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE Amine service	
1	36		XS		P01A-008MJ	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE Amine service	
1	42		STD		P01A-008MK	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE Amine service	
1	48		XS		P01A-008ML	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE Amine service	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P02A-000UR	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	0.75		XS		P02A-000UN	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1		XS		P02A-000UL	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1.5		XS		P02A-000UJ	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	2		XS		P02A-000CP	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		STD		P02A-000CU	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		STD		P02A-000CZ	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		STD		P02A-000D6	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		SCH20		P02A-000GZ	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	10		SCH20		P02A-000H1	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	12		SCH20		P02A-000H4	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	14		SCH20		P02A-000FX	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	16		SCH20		P02A-000GM	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	18		SCH20		P02A-000LT	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	20		STD		P02A-0010J	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	24		STD		P02A-0010K	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	30		STD		P02A-004F2	90 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius Amine service	
1	36		XS		P02A-004F3	90 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius Amine service	
1	42		STD		P02A-004F4	90 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius Amine service	
1	48		XS		P02A-004F5	90 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius Amine service	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P03A-0018K	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	0.75		XS		P03A-0018L	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1		XS		P03A-0018M	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1.5		XS		P03A-0018N	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	2		XS		P03A-000AS	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		STD		P03A-000AX	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		STD		P03A-000B1	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		STD		P03A-000B9	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		SCH20		P03A-000EX	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	10		SCH20		P03A-000F0	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	12		SCH20		P03A-000F2	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	14		SCH20		P03A-000DW	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	16		SCH20		P03A-000EM	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

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45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	18		SCH20		P03A-001DX	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	20		STD		P03A-000X1	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	24		STD		P03A-000X2	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	30		STD		P03A-004C8	45 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius Amine service	
1	36		XS		P03A-004C9	45 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius Amine service	
1	42		STD		P03A-004CA	45 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius Amine service	
1	48		XS		P03A-004CB	45 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius Amine service	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P21A-002TV	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	0.75		XS		P21A-002TW	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1		XS		P21A-002TX	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5		XS		P21A-002TY	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2		XS		P21A-001CJ	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		STD		P21A-001CU	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		STD		P21A-001CW	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6		STD		P21A-001D2	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8		SCH20		P21A-00215	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10		SCH20		P21A-00219	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12		SCH20		P21A-0021A	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14		SCH20		P21A-00206	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16		SCH20		P21A-0020X	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18		SCH20		P21A-004BL	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Amine service	
1	20		STD		P21A-004BM	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Amine service	
1	24		STD		P21A-004BN	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Amine service	
1	30		STD		P21A-004XG	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Amine service	
1	36		XS		P21A-004XH	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Amine service	
1	42		STD		P21A-004XJ	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Amine service	
1	48		XS		P21A-004XK	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Amine service	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75	XS	XS	P24A-006WW	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.75	XS	XS	P24A-006WY	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	1	XS	XS	P24A-006WZ	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	XS	XS	P24A-00238	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	XS	XS	P24A-0023H	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	STD	XS	P24A-00214	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	STD	XS	P24A-002HW	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P24A-002HY	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P24A-0021K	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	STD	P24A-0021A	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P24A-00229	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH20	STD	P24A-00J21	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH20	STD	P24A-005J4	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	SCH20	STD	P24A-00HMB	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	SCH20	STD	P24A-00HKS	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	SCH20	SCH20	P24A-002YX	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	SCH20	STD	P24A-00K0B	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH20	SCH20	P24A-002U4	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH20	SCH20	P24A-002YC	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	SCH20	STD	P24A-00K0M	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	SCH20	SCH20	P24A-002U7	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	SCH20	SCH20	P24A-002YA	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	SCH20	SCH20	P24A-002YR	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	6	SCH20	STD	P24A-00GU4	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	SCH20	SCH20	P24A-002XW	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	SCH20	SCH20	P24A-002YH	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	16	12	SCH20	SCH20	P24A-002U1	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	SCH20	SCH20	P24A-002XF	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	8	SCH20	SCH20	P24A-00M2H	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Amine service	
1	18	10	SCH20	SCH20	P24A-00M2E	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Amine service	
1	18	12	SCH20	SCH20	P24A-00M2F	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Amine service	
1	18	14	SCH20	SCH20	P24A-00M2G	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Amine service	
1	18	16	SCH20	SCH20	P24A-00K97	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Amine service	
1	20	8	STD	SCH20	P24A-00M2M	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Amine service	
1	20	10	STD	SCH20	P24A-00M2J	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Amine service	
1	20	12	STD	SCH20	P24A-00M2K	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Amine service	
1	20	14	STD	SCH20	P24A-00M2L	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Amine service	
1	20	16	STD	SCH20	P24A-00K9C	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Amine service	
1	20	18	STD	SCH20	P24A-00K9D	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Amine service	
1	24	10	STD	SCH20	P24A-00M2N	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Amine service	
1	24	12	STD	SCH20	P24A-00M2P	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Amine service	
1	24	14	STD	SCH20	P24A-00M2R	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Amine service	
1	24	16	STD	SCH20	P24A-00K9J	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Amine service	
1	24	18	STD	SCH20	P24A-00K9K	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Amine service	
1	24	20	STD	STD	P24A-00K9L	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Amine service	
1	30	10	STD	SCH20	P24A-00NEW	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Amine service	
1	30	12	STD	SCH20	P24A-00NEX	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Amine service	
1	30	14	STD	SCH20	P24A-00NEY	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Amine service	
1	30	16	STD	SCH20	P24A-00NEZ	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Amine service	
1	30	18	STD	SCH20	P24A-00NF0	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Amine service	
1	30	20	STD	STD	P24A-00NF1	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Amine service	
1	30	24	STD	STD	P24A-00NF2	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Amine service	
1	36	16	XS	SCH20	P24A-00NF3	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Amine service	
1	36	18	XS	SCH20	P24A-00NF4	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Amine service	
1	36	20	XS	STD	P24A-00NF5	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Amine service	
1	36	24	XS	STD	P24A-00NF6	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Amine service	
1	36	30	XS	STD	P24A-00NF7	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Amine service	
1	42	16	STD	SCH20	P24A-00NF8	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Amine service	
1	42	18	STD	SCH20	P24A-00NF9	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Amine service	
1	42	20	STD	STD	P24A-00NFA	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Amine service	
1	42	24	STD	STD	P24A-00NFB	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Amine service	
1	42	30	STD	STD	P24A-00NFC	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Amine service	
1	42	36	STD	XS	P24A-00NFD	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Amine service	
1	48	24	XS	STD	P24A-00NFE	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Amine service	
1	48	30	XS	STD	P24A-00NFF	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Amine service	
1	48	36	XS	XS	P24A-00NFG	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Amine service	
1	48	42	XS	STD	P24A-00NFH	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Amine service	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	XS	XS	P27A-004M6	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.5	XS	XS	P27A-004ME	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.75	XS	XS	P27A-004MM	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.5	XS	XS	P27A-004N2	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.75	XS	XS	P27A-004NC	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	1	XS	XS	P27A-004NP	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	0.75	XS	XS	P27A-001CZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	XS	XS	P27A-001DL	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	XS	XS	P27A-001E2	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	STD	XS	P27A-001AU	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	STD	XS	P27A-001MZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	1.5	STD	XS	P27A-001AW	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P27A-001N0	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P27A-00189	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	STD	P27A-001AZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	6	4	STD	STD	P27A-001GW	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH20	STD	P27A-003K2	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH20	STD	P27A-003K3	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	SCH20	STD	P27A-003K4	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	SCH20	STD	P27A-003K5	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	SCH20	SCH20	P27A-001UL	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	SCH20	STD	P27A-003K6	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH20	SCH20	P27A-001UU	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH20	SCH20	P27A-001TH	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	SCH20	STD	P27A-00518	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	SCH20	SCH20	P27A-001V4	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	SCH20	SCH20	P27A-001TG	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	SCH20	SCH20	P27A-001U1	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	SCH20	SCH20	P27A-001WX	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	SCH20	SCH20	P27A-001TW	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	SCH20	SCH20	P27A-001UF	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	SCH20	SCH20	P27A-001V2	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	10	SCH20	SCH20	P27A-00G3H	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Amine service	
1	18	12	SCH20	SCH20	P27A-00G3J	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Amine service	
1	18	14	SCH20	SCH20	P27A-00G3K	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Amine service	
1	18	16	SCH20	SCH20	P27A-00EUR	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Amine service	
1	20	12	STD	SCH20	P27A-00G3L	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Amine service	
1	20	14	STD	SCH20	P27A-00G3M	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Amine service	
1	20	16	STD	SCH20	P27A-00EUU	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Amine service	
1	20	18	STD	SCH20	P27A-00EUV	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Amine service	
1	24	16	STD	SCH20	P27A-00EUW	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Amine service	
1	24	18	STD	SCH20	P27A-00EUX	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Amine service	
1	24	20	STD	STD	P27A-00EUY	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Amine service	
1	30	20	STD	STD	P27A-00H4B	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Amine service	
1	30	24	STD	STD	P27A-00H4C	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Amine service	
1	36	24	XS	STD	P27A-00H48	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Amine service	
1	36	30	XS	STD	P27A-00H49	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Amine service	
1	42	30	STD	STD	P27A-00H46	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Amine service	
1	42	36	STD	XS	P27A-00H47	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Amine service	
1	48	42	XS	STD	P27A-00H4A	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Amine service	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	XS	XS	P28A-004V6	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.5	XS	XS	P28A-004V7	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.75	XS	XS	P28A-004V8	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.5	XS	XS	P28A-004V9	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.75	XS	XS	P28A-004VA	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	1	XS	XS	P28A-004VB	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	0.75	XS	XS	P28A-001CU	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	XS	XS	P28A-001DS	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	XS	XS	P28A-001EE	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	STD	XS	P28A-001A3	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	STD	XS	P28A-001N5	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	1.5	STD	XS	P28A-001A4	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P28A-001N6	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P28A-0018B	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	STD	P28A-001AS	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P28A-00182	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH20	STD	P28A-003JU	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH20	STD	P28A-003JV	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	SCH20	STD	P28A-003JW	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	SCH20	STD	P28A-003JX	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	SCH20	SCH20	P28A-001V0	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	12	6	SCH20	STD	P28A-003JY	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH20	SCH20	P28A-001V1	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH20	SCH20	P28A-001TJ	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	SCH20	STD	P28A-0096P	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	SCH20	SCH20	P28A-001WH	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	SCH20	SCH20	P28A-001TH	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	SCH20	SCH20	P28A-001UC	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	SCH20	SCH20	P28A-001T6	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	SCH20	SCH20	P28A-001TY	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	SCH20	SCH20	P28A-001UX	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	SCH20	SCH20	P28A-001WG	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	10	SCH20	SCH20	P28A-00D9S	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Amine service	
1	18	12	SCH20	SCH20	P28A-00D9T	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Amine service	
1	18	14	SCH20	SCH20	P28A-00D9U	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Amine service	
1	18	16	SCH20	SCH20	P28A-00BYK	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Amine service	
1	20	12	STD	SCH20	P28A-00D9V	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Amine service	
1	20	14	STD	SCH20	P28A-00D9W	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Amine service	
1	20	16	STD	SCH20	P28A-00BYN	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Amine service	
1	20	18	STD	SCH20	P28A-00BYP	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Amine service	
1	24	16	STD	SCH20	P28A-00BYR	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Amine service	
1	24	18	STD	SCH20	P28A-00BYS	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Amine service	
1	24	20	STD	STD	P28A-00BYT	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Amine service	
1	30	20	STD	STD	P28A-00EBD	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Amine service	
1	30	24	STD	STD	P28A-00EBE	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Amine service	
1	36	24	XS	STD	P28A-00EBF	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Amine service	
1	36	30	XS	STD	P28A-00EBG	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Amine service	
1	42	30	STD	STD	P28A-00EBH	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Amine service	
1	42	36	STD	XS	P28A-00EBJ	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Amine service	
1	48	42	XS	STD	P28A-00EBK	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Amine service	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P29A-002KS	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	0.75		XS		P29A-002KT	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1		XS		P29A-002KU	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5		XS		P29A-002KV	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2		XS		P29A-000A1	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		STD		P29A-000BK	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		STD		P29A-000A3	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6		STD		P29A-000A9	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8		SCH20		P29A-000EY	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10		SCH20		P29A-000E5	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12		SCH20		P29A-000E8	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14		SCH20		P29A-000EA	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16		SCH20		P29A-000F3	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18		SCH20		P29A-000E0	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20		STD		P29A-000B2	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24		STD		P29A-000B8	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	30		STD		P29A-000DU	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	36		XS		P29A-000A2	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	42		STD		P29A-000X5	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	48		XS		P29A-00136	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
541	0.75				P29B-0000C	Cap ASTM A105 Class 3000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P41A-000B5	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		SCH160		P41A-000B6	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		SCH160		P41A-000B7	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

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STRAIGHT NIPPLE (STN)							
OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5		SCH160		P41A-000B8	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

OUTLET (L)							
OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2	0.75	XS	XS	P31B-00CP3	Outlet ASTM A105 MSS SP-97 BW	
1	3	0.75	STD	XS	P31B-00CMN	Outlet ASTM A105 MSS SP-97 BW	
1	4	0.75	STD	XS	P31B-00CLM	Outlet ASTM A105 MSS SP-97 BW	
1	6	0.75	STD	XS	P31B-00CKD	Outlet ASTM A105 MSS SP-97 BW	
1	8	0.75	SCH20	XS	P31B-00Y4E	Outlet ASTM A105 MSS SP-97 BW	
1	10	0.75	SCH20	XS	P31B-00Y47	Outlet ASTM A105 MSS SP-97 BW	
1	12	0.75	SCH20	XS	P31B-00Y48	Outlet ASTM A105 MSS SP-97 BW	
1	14	0.75	SCH20	XS	P31B-00Y49	Outlet ASTM A105 MSS SP-97 BW	
1	16	0.75	SCH20	XS	P31B-00Y4A	Outlet ASTM A105 MSS SP-97 BW	
1	18	0.75	SCH20	XS	P31B-00Y4B	Outlet ASTM A105 MSS SP-97 BW	
1	20	0.75	STD	XS	P31B-00CNN	Outlet ASTM A105 MSS SP-97 BW	
1	24	0.75	STD	XS	P31B-00CN4	Outlet ASTM A105 MSS SP-97 BW	
1	30	0.75	STD	XS	P31B-010T4	Outlet ASTM A105 MSS SP-97 BW	
1	36	0.75	XS	XS	P31B-010T5	Outlet ASTM A105 MSS SP-97 BW	
1	42	0.75	STD	XS	P31B-00YA6	Outlet ASTM A105 MSS SP-97 BW	
1	48	0.75	XS	XS	P31B-00YA3	Outlet ASTM A105 MSS SP-97 BW	
1	3	1	STD	XS	P31B-00B4D	Outlet ASTM A105 MSS SP-97 BW	
1	4	1	STD	XS	P31B-00AYW	Outlet ASTM A105 MSS SP-97 BW	
1	6	1	STD	XS	P31B-00AZ6	Outlet ASTM A105 MSS SP-97 BW	
1	8	1	SCH20	XS	P31B-00Y4N	Outlet ASTM A105 MSS SP-97 BW	
1	10	1	SCH20	XS	P31B-00Y4F	Outlet ASTM A105 MSS SP-97 BW	
1	12	1	SCH20	XS	P31B-00Y4G	Outlet ASTM A105 MSS SP-97 BW	
1	14	1	SCH20	XS	P31B-00Y4H	Outlet ASTM A105 MSS SP-97 BW	
1	16	1	SCH20	XS	P31B-00Y4J	Outlet ASTM A105 MSS SP-97 BW	
1	18	1	SCH20	XS	P31B-00Y4K	Outlet ASTM A105 MSS SP-97 BW	
1	20	1	STD	XS	P31B-00B8D	Outlet ASTM A105 MSS SP-97 BW	
1	24	1	STD	XS	P31B-00B4R	Outlet ASTM A105 MSS SP-97 BW	
1	30	1	STD	XS	P31B-010T6	Outlet ASTM A105 MSS SP-97 BW	
1	36	1	XS	XS	P31B-010T7	Outlet ASTM A105 MSS SP-97 BW	
1	42	1	STD	XS	P31B-00YA7	Outlet ASTM A105 MSS SP-97 BW	
1	48	1	XS	XS	P31B-00YA4	Outlet ASTM A105 MSS SP-97 BW	
1	4	1.5	STD	XS	P31B-00BNZ	Outlet ASTM A105 MSS SP-97 BW	
1	6	1.5	STD	XS	P31B-00BJB	Outlet ASTM A105 MSS SP-97 BW	
1	8	1.5	SCH20	XS	P31B-00Y4X	Outlet ASTM A105 MSS SP-97 BW	
1	10	1.5	SCH20	XS	P31B-00Y4P	Outlet ASTM A105 MSS SP-97 BW	
1	12	1.5	SCH20	XS	P31B-00Y4R	Outlet ASTM A105 MSS SP-97 BW	
1	14	1.5	SCH20	XS	P31B-00Y4S	Outlet ASTM A105 MSS SP-97 BW	
1	16	1.5	SCH20	XS	P31B-00Y4T	Outlet ASTM A105 MSS SP-97 BW	
1	18	1.5	SCH20	XS	P31B-00Y4U	Outlet ASTM A105 MSS SP-97 BW	
1	20	1.5	STD	XS	P31B-00C3L	Outlet ASTM A105 MSS SP-97 BW	
1	24	1.5	STD	XS	P31B-00BZ7	Outlet ASTM A105 MSS SP-97 BW	
1	30	1.5	STD	XS	P31B-010T8	Outlet ASTM A105 MSS SP-97 BW	
1	36	1.5	XS	XS	P31B-010T9	Outlet ASTM A105 MSS SP-97 BW	
1	42	1.5	STD	XS	P31B-00YA8	Outlet ASTM A105 MSS SP-97 BW	
1	48	1.5	XS	XS	P31B-00YA5	Outlet ASTM A105 MSS SP-97 BW	
1	6	2	STD	XS	P31B-007SH	Outlet ASTM A105 MSS SP-97 BW	
1	8	2	SCH20	XS	P31B-00NY2	Outlet ASTM A105 MSS SP-97 BW	
1	10	2	SCH20	XS	P31B-00TFB	Outlet ASTM A105 MSS SP-97 BW	
1	12	2	SCH20	XS	P31B-00TFA	Outlet ASTM A105 MSS SP-97 BW	
1	14	2	SCH20	XS	P31B-00TF9	Outlet ASTM A105 MSS SP-97 BW	
1	16	2	SCH20	XS	P31B-00TF8	Outlet ASTM A105 MSS SP-97 BW	
1	18	2	SCH20	XS	P31B-00NVX	Outlet ASTM A105 MSS SP-97 BW	
1	20	2	STD	XS	P31B-00994	Outlet ASTM A105 MSS SP-97 BW	
1	24	2	STD	XS	P31B-0092Z	Outlet ASTM A105 MSS SP-97 BW	
1	30	2	STD	XS	P31B-008P5	Outlet ASTM A105 MSS SP-97 BW	

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OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	36	2	XS	XS	P31B-008BB	Outlet ASTM A105 MSS SP-97 BW	
1	42	2	STD	XS	P31B-00EVR	Outlet ASTM A105 MSS SP-97 BW	
1	48	2	XS	XS	P31B-007YJ	Outlet ASTM A105 MSS SP-97 BW	
1	8	3	SCH20	STD	P31B-00P11	Outlet ASTM A105 MSS SP-97 BW	
1	10	3	SCH20	STD	P31B-00UPG	Outlet ASTM A105 MSS SP-97 BW	
1	12	3	SCH20	STD	P31B-00USE	Outlet ASTM A105 MSS SP-97 BW	
1	14	3	SCH20	STD	P31B-00UPH	Outlet ASTM A105 MSS SP-97 BW	
1	16	3	SCH20	STD	P31B-00TU2	Outlet ASTM A105 MSS SP-97 BW	
1	18	3	SCH20	STD	P31B-00NZ4	Outlet ASTM A105 MSS SP-97 BW	
1	20	3	STD	STD	P31B-008FA	Outlet ASTM A105 MSS SP-97 BW	
1	24	3	STD	STD	P31B-00895	Outlet ASTM A105 MSS SP-97 BW	
1	30	3	STD	STD	P31B-007WY	Outlet ASTM A105 MSS SP-97 BW	
1	36	3	XS	STD	P31B-007P1	Outlet ASTM A105 MSS SP-97 BW	
1	42	3	STD	STD	P31B-00EVS	Outlet ASTM A105 MSS SP-97 BW	
1	48	3	XS	STD	P31B-00AFD	Outlet ASTM A105 MSS SP-97 BW	
1	12	4	SCH20	STD	P31B-00USF	Outlet ASTM A105 MSS SP-97 BW	
1	14	4	SCH20	STD	P31B-00UPJ	Outlet ASTM A105 MSS SP-97 BW	
1	16	4	SCH20	STD	P31B-00TU3	Outlet ASTM A105 MSS SP-97 BW	
1	18	4	SCH20	STD	P31B-00P1V	Outlet ASTM A105 MSS SP-97 BW	
1	20	4	STD	STD	P31B-008D3	Outlet ASTM A105 MSS SP-97 BW	
1	24	4	STD	STD	P31B-0086X	Outlet ASTM A105 MSS SP-97 BW	
1	30	4	STD	STD	P31B-007US	Outlet ASTM A105 MSS SP-97 BW	
1	36	4	XS	STD	P31B-00AEP	Outlet ASTM A105 MSS SP-97 BW	
1	42	4	STD	STD	P31B-00EVT	Outlet ASTM A105 MSS SP-97 BW	
1	48	4	XS	STD	P31B-00A2P	Outlet ASTM A105 MSS SP-97 BW	
1	18	6	SCH20	STD	P31B-00P48	Outlet ASTM A105 MSS SP-97 BW	
1	20	6	STD	STD	P31B-008PZ	Outlet ASTM A105 MSS SP-97 BW	
1	24	6	STD	STD	P31B-008JD	Outlet ASTM A105 MSS SP-97 BW	
1	30	6	STD	STD	P31B-008BS	Outlet ASTM A105 MSS SP-97 BW	
1	36	6	XS	STD	P31B-0085G	Outlet ASTM A105 MSS SP-97 BW	
1	42	6	STD	STD	P31B-007ZP	Outlet ASTM A105 MSS SP-97 BW	
1	48	6	XS	STD	P31B-007U6	Outlet ASTM A105 MSS SP-97 BW	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30B-0002D	Plug ASTM A105 ASME B16.11 NPT Round head	
1	0.75				P30B-0002E	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1				P30B-0002F	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1.5				P30B-0002G	Plug ASTM A105 ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P61B-003ND	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	0.75		XS		P61B-003NE	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	1		XS		P61B-003NF	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	1.5		XS		P61B-003NG	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	2		XS		P61B-003NK	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	3		STD		P61B-001PW	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	4		STD		P61B-001R8	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	6		STD		P61B-001RT	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	8		SCH20		P61B-002BF	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	10		SCH20		P61B-002B4	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	12		SCH20		P61B-002B5	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	14		SCH20		P61B-002B6	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	16		SCH20		P61B-002B7	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	18		SCH20		P61B-002B8	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	20		STD		P61B-001JA	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	24		STD		P61B-001NJ	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	30		STD		P61B-001S8	Flange WN ASTM A105 Class 150 ASME B16.47 Series B RF	

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FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	36		XS		P61B-001UE	Flange WN ASTM A105 Class 150 ASME B16.47 Series B RF	
1	42		STD		P61B-003M9	Flange WN ASTM A105 Class 150 ASME B16.47 Series B RF	
1	48		XS		P61B-004CX	Flange WN ASTM A105 Class 150 ASME B16.47 Series B RF	
541	0.5				P61B-003TZ	Flange NPT ASTM A105 Class 150 ASME B16.5 RF	
541	0.75				P61B-003U0	Flange NPT ASTM A105 Class 150 ASME B16.5 RF	
773	0.5		XS		P61B-0032Z	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	0.75		XS		P61B-0032X	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	1		XS		P61B-0032U	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	1.5		XS		P61B-0032S	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	2		XS		P61B-001HW	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	3		STD		P61B-001LJ	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	4		STD		P61B-001MC	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	6		STD		P61B-001N2	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	8		SCH20		P61B-002LJ	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	10		SCH20		P61B-002LH	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	12		SCH20		P61B-002MP	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	14		SCH20		P61B-002MR	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	16		SCH20		P61B-002MS	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	18		SCH20		P61B-002MT	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	20		STD		P61B-001NT	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	24		STD		P61B-001PA	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	30		STD		P61B-003SW	Flange WN ASTM A105 Class 300 ASME B16.47 Series B RF	
773	36		XS		P61B-001N6	Flange WN ASTM A105 Class 300 ASME B16.47 Series B RF	
773	42		STD		P61B-003P8	Flange WN ASTM A105 Class 300 ASME B16.47 Series B RF	
773	48		XS		P61B-003TH	Flange WN ASTM A105 Class 300 ASME B16.47 Series B RF	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67B-000FH	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	0.75				P67B-000FJ	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	1				P67B-000FK	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	1.5				P67B-000FL	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	2				P67B-000FT	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	3				P67B-000FW	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	4				P67B-000FX	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	6				P67B-000FY	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	8				P67B-000FZ	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	10				P67B-000FM	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	12				P67B-000FN	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	14				P67B-000FP	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	16				P67B-000FR	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	18				P67B-000FS	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	20				P67B-000FU	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	24				P67B-000FV	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	30				P67B-000G2	Blind flange ASTM A105 Class 150 ASME B16.47 Series B RF	
1	36				P67B-000G5	Blind flange ASTM A105 Class 150 ASME B16.47 Series B RF	
1	42				P67B-000KZ	Blind flange ASTM A105 Class 150 ASME B16.47 Series B RF	
1	48				P67B-000L2	Blind flange ASTM A105 Class 150 ASME B16.47 Series B RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000L8	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000L9	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000LA	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000LB	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000LH	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000LL	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

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GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	4				P73T-000LM	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	6				P73T-000LN	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	8				P73T-000LP	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	10				P73T-000LC	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	12				P73T-000LD	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	14				P73T-000LE	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	16				P73T-000LF	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	18				P73T-000LG	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	20				P73T-000LJ	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	24				P73T-000LK	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	30				P73T-000LT	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	36				P73T-000LW	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	42				P73T-000LZ	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	48				P73T-000M2	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	0.5				P73T-000FT	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	0.75				P73T-000FU	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	3				P73T-000G5	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	4				P73T-000G6	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	6				P73T-000G7	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	8				P73T-000G8	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	10				P73T-000FX	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	12				P73T-000FY	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	14				P73T-000FZ	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	16				P73T-000G0	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	18				P73T-000G1	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	20				P73T-000G3	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	24				P73T-000G4	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	30				P73T-000H9	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	36				P73T-000HC	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	42				P73T-000KM	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	48				P73T-000KR	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-16				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	18-24				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
1	30-42				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	48				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
773	0.5-10				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
773	12-48				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	

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GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81B-001MM	Gate valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Amine service	
1	0.75				P81B-001MN	Gate valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Amine service	
1	1				P81B-001MP	Gate valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Amine service	
1	1.5				P81B-001MR	Gate valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Amine service	
1	2				P81C-005DC	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Amine service	
1	3				P81C-005DD	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Amine service	
1	4				P81C-0030Z	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Amine service	
1	6				P81C-003CN	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Amine service	
1	8				P81C-003CP	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Amine service	
1	10				P81C-005DA	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Amine service	
1	12				P81C-005DB	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Amine service	
1	14				P81C-005DE	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Amine service	
1	16				P81C-005DF	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Amine service	
1	18				P81C-005DG	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Amine service	
1	20				P81C-005DH	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Amine service	
1	24				P81C-005DJ	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Amine service	
1	30				P81C-005DK	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.47-B RF Trim number 12 BB-BG-OS&Y Gear operated Amine service	
1	36				P81C-005DL	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.47-B RF Trim number 12 BB-BG-OS&Y Gear operated Amine service	
4608	0.75				P81B-002XR	Gate valve ASTM A105 Class 150 API 602 BW both sides w/ nipples BE - NPT ASTM A106-B Sch160-nipple Trim number 12 BB-BG-OS&Y Handwheel operated Amine service	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82B-001C7	Globe valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Amine service	
1	0.75				P82B-001C8	Globe valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Amine service	
1	1				P82B-001C9	Globe valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Amine service	
1	1.5				P82B-001CA	Globe valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Amine service	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83B-0012M	Check valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Amine service	
1	0.75				P83B-0012N	Check valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Amine service	
1	1				P83B-0012P	Check valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Amine service	
1	1.5				P83B-0012R	Check valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Amine service	
1	2				P83C-002R6	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Amine service	
1	3				P83C-002R7	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Amine service	
1	4				P83C-002R8	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Amine service	
1	6				P83C-002R9	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Amine service	
1	8				P83C-002RU	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Amine service	
1	10				P83C-002RM	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Amine service	
1	12				P83C-002RN	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Amine service	
1	14				P83C-002RP	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Amine service	
1	16				P83C-002RR	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Amine service	
1	18				P83C-002RS	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Amine service	
1	20				P83C-002RT	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Amine service	
1	24				P83C-004D9	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Amine service	

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BUTTERFLY VALVE (H)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	10				P86C-00243	Offset design butterfly valve ASTM A216 Grade WCB Class 150 API 609 Category B Lug-type ASME B16.5 RF Disc CS Seat Stellite-6 Trim SS316 Triple eccentric design BG Gear operated Amine service	
1	12				P86C-00244	Offset design butterfly valve ASTM A216 Grade WCB Class 150 API 609 Category B Lug-type ASME B16.5 RF Disc CS Seat Stellite-6 Trim SS316 Triple eccentric design BG Gear operated Amine service	
1	14				P86C-00245	Offset design butterfly valve ASTM A216 Grade WCB Class 150 API 609 Category B Lug-type ASME B16.5 RF Disc CS Seat Stellite-6 Trim SS316 Triple eccentric design BG Gear operated Amine service	
1	16				P86C-00246	Offset design butterfly valve ASTM A216 Grade WCB Class 150 API 609 Category B Lug-type ASME B16.5 RF Disc CS Seat Stellite-6 Trim SS316 Triple eccentric design BG Gear operated Amine service	
1	18				P86C-00247	Offset design butterfly valve ASTM A216 Grade WCB Class 150 API 609 Category B Lug-type ASME B16.5 RF Disc CS Seat Stellite-6 Trim SS316 Triple eccentric design BG Gear operated Amine service	
1	20				P86C-00248	Offset design butterfly valve ASTM A216 Grade WCB Class 150 API 609 Category B Double flanged ASME B16.5 RF Disc CS Seat Stellite-6 Trim SS316 Triple eccentric design BG Gear operated Amine service	

ORIFICE FLANGE (FO)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2		XS		P66B-0084B	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	3		STD		P66B-0084C	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	4		STD		P66B-0084D	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	6		STD		P66B-0084E	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	8		SCH20		P66B-0084F	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	10		SCH20		P66B-00848	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	12		SCH20		P66B-0084L	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	14		SCH20		P66B-0084A	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	16		SCH20		P66B-0083Y	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	18		SCH20		P66B-0084R	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
200	2		XS		P66B-00843	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	3		STD		P66B-00844	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	4		STD		P66B-00845	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	6		STD		P66B-00846	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	8		SCH20		P66B-00847	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	10		SCH20		P66B-00840	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	12		SCH20		P66B-0084P	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	14		SCH20		P66B-00842	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	16		SCH20		P66B-0083Z	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	18		SCH20		P66B-0084T	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71B-0008A	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	0.75				P71B-0008B	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	1				P71B-0008C	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71B-0008D	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	2				P71B-0000P	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	3				P71B-0000N	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	4				P71B-0000M	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	6				P71B-0000L	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	8				P71B-0000R	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	10				P71B-0000K	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	12				P71B-0000J	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	

PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000AH	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	16				P72B-0000C	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	18				P72B-000AJ	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	20				P72B-000AK	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	24				P72B-000AL	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	30				P72B-000AM	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	36				P72B-000AN	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	42				P72B-000AP	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	48				P72B-000AR	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	

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PADDLE SPACER (PS)							
OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000AT	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	16				P72B-0000B	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	18				P72B-000AU	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	20				P72B-000AV	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	24				P72B-000AW	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	30				P72B-000AX	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	36				P72B-000AY	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	42				P72B-000AZ	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	48				P72B-000B0	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	

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BOLT TABLE (B_A1AL , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	60	P80S-003V2		
0.75	4	0.500	65	P80S-003V3		
1	4	0.500	70	P80S-003V4		
1.5	4	0.500	75	P80S-003V5		
2	4	0.625	85	P80S-003XE		
3	4	0.625	95	P80S-003XG		
4	8	0.625	95	P80S-003XG		
6	8	0.750	105	P80S-003XJ		
8	8	0.750	110	P80S-003XK		
10	12	0.875	120	P80S-00419		
12	12	0.875	120	P80S-00419		
14	12	1.000	135	P80S-0043E		
16	16	1.000	140	P80S-0043F		
18	16	1.125	150	P80S-0046K		
20	20	1.125	160	P80S-0046M		
24	20	1.250	175	P80S-004AG		
30	44	0.750	145	P80S-003ZK		
36	44	0.875	175	P80S-0041M		
42	48	1.000	190	P80S-0043T		
48	44	1.125	210	P80S-0046Z		

BOLT TABLE (B_A1AL_773 , STUD ASME RF, OPTION CODE 773)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-003V4		
0.75	4	0.625	75	P80S-003XC		
1	4	0.625	80	P80S-003XD		
1.5	4	0.750	95	P80S-00414		
2	8	0.625	90	P80S-003XF		
3	8	0.750	110	P80S-003XK		
4	8	0.750	115	P80S-003XL		
6	12	0.750	125	P80S-003XN		
8	12	0.875	140	P80S-0041D		
10	16	1.000	160	P80S-0043K		
12	16	1.125	175	P80S-0046S		
14	20	1.125	180	P80S-0046T		
16	20	1.250	190	P80S-004AK		
18	24	1.250	200	P80S-004AM		
20	24	1.250	210	P80S-004AP		
24	24	1.500	235	P80S-003F8		
30	36	1.375	285	P80S-003EA		
36	32	1.625	320	P80S-005TT		
42	36	1.750	355	P80S-007B5		
48	40	1.875	380	P80S-008P4		

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BRANCH TABLE (T_A1AL)

RUN PIPE SIZE (in) \ BRANCH SIZE (in)	0.5	0.75	1	1.5	2	3	4	6	8	10	12	14	16	18	20	24	30	36	42	48
0.5	TS																			
0.75		TS																		
1		TR	TS																	
1.5		TR	TR	TS																
2		L	TR	TR	TS															
3		L	L	TR	TR	TS														
4	L	L	L	L	TR	TR	TS													
6	L	L	L	L	L	TR	TR	TS												
8		L	L	L	L	L	TR	TR	TS											
10		L	L	L	L	L	TR	TR	TR	TS										
12		L	L	L	L	L	L	TR	TR	TR	TS									
14		L	L	L	L	L	L	TR	TR	TR	TR	TS								
16		L	L	L	L	L	L	TR	TR	TR	TR	TR	TS							
18		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TS						
20		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TR	TS					
24		L	L	L	L	L	L	L	9PD	TR	TR	TR	TR	TR	TR	TS				
30		L	L	L	L	L	L	L	9PD	TR	TR	TR	TR	TR	TR	TR	TS			
36		L	L	L	L	L	L	L	9PD	9PD	9PD	9PD	TR	TR	TR	TR	TR	TS		
42		L	L	L	L	L	L	L	9PD	9PD	9PD	9PD	TR	TR	TR	TR	TR	TR	TS	
48		L	L	L	L	L	L	L	9PD	9PD	9PD	9PD	9PD	9PD	9PD	TR	TR	TR	TR	TS

L : OUTLET
9PD : REINFORCING PAD 90 DEG
TS : STRAIGHT TEE
TR : REDUCING TEE

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PIPING CLASS

A1AL01 REV NO. 2

Material : Killed CS
Rating : ASME CLASS 150
Flange Face : RF
C.A.(mm) : 1.50
Gasket : Spiral Wound
Service : PROCESS - NON NACE MILD CORROSIVE SOUR SERVICE AND AMINES - STRESS RELIEVED
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
2	USE OF SOFT SEATED BALL, PLUG AND BUTTERFLY VALVES SHALL BE LIMITED TO MAXIMUM OF 204DEGC (400DEGF)
27	PWHT OF CARBON STEEL PIPING IN WET H2S, CAUSTIC AND AMINE SERVICES SHALL BE IN ACCORDANCE WITH SECTION 10.2, 10.3, AND 10.4 OF PROJECT SPECIFICATION 3550-8440-SP-0002 MATERIALS REQUIREMENTS FOR PRESSURISED EQUIPMENT AND PIPING. FOR CAUSTIC AND AMINE SERVICE THE FOLLOWING SHALL APPLY: - PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF ALL SITE PIPING FABRICATION WELDS IS REQUIRED FOR ALL WALL THICKNESSES. FOR MODERATE AND SEVERE WET H2S SERVICE THE FOLLOWING SHALL APPLY: PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF SITE FABRICATION CIRCUMFERENTIAL OR BRANCH WELDS IS NOT REQUIRED IF WELDS ARE MULTIPASS AND IN ACCORDANCE WITH PARA 10.2.12 OF PROJECT SPECIFICATION 3550-8440-SP-0002. FOR SERVICES MEETING THE WET H2S CRITERIA AND CAUSTIC OR AMINE CRITERIA THE MORE STRINGENT PWHT REQUIREMENT SHALL GOVERN.

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
541	NPT(F) (CA,F)
773	CLASS 300 (B,F,G)
4608	VALVE WITH NIPPLES (V)

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PIPING CLASS
A1AL01 REV NO. 2

PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P01A-007AZ	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE Licensor-1	
1	0.75		XS		P01A-007B0	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE Licensor-1	
1	1		XS		P01A-007B1	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE Licensor-1	
1	1.5		XS		P01A-007B2	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE Licensor-1	
1	2		XS		P01A-0078Y	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Licensor-1	
1	3		STD		P01A-0078Z	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Licensor-1	
1	4		STD		P01A-007B3	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Licensor-1	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P02A-003T4	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	0.75		XS		P02A-003T5	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	1		XS		P02A-003T6	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	1.5		XS		P02A-003T7	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	2		XS		P02A-003R7	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	3		STD		P02A-003R8	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	4		STD		P02A-003T8	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P03A-003PT	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	0.75		XS		P03A-003PU	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	1		XS		P03A-003PV	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	1.5		XS		P03A-003PW	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	2		XS		P03A-003MW	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	3		STD		P03A-003MX	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	4		STD		P03A-003PX	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P21A-004AG	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	0.75		XS		P21A-004AH	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	1		XS		P21A-004AJ	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	1.5		XS		P21A-004AK	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	2		XS		P21A-0048L	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	3		STD		P21A-0048M	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	4		STD		P21A-004AL	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75	XS	XS	P24A-00K5R	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	1.5	0.75	XS	XS	P24A-00K5S	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	1.5	1	XS	XS	P24A-00K5T	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	2	1	XS	XS	P24A-00K5U	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	2	1.5	XS	XS	P24A-00K5V	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	3	1.5	STD	XS	P24A-00K5W	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	3	2	STD	XS	P24A-00K0Y	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	4	2	STD	XS	P24A-00K5X	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	4	3	STD	STD	P24A-00K5Y	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	XS	XS	P27A-00ERU	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	1	0.5	XS	XS	P27A-00ERV	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	1	0.75	XS	XS	P27A-00ERW	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	1.5	0.5	XS	XS	P27A-00ERX	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	1.5	0.75	XS	XS	P27A-00ERY	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	1.5	1	XS	XS	P27A-00ERZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	

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CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2	0.75	XS	XS	P27A-00ES0	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	2	1	XS	XS	P27A-00ES1	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	2	1.5	XS	XS	P27A-00ES2	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	3	1.5	STD	XS	P27A-00ES3	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	3	2	STD	XS	P27A-00EL1	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	4	1.5	STD	XS	P27A-00ES4	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	4	2	STD	XS	P27A-00ES5	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	4	3	STD	STD	P27A-00ES6	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	XS	XS	P28A-00BVM	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	1	0.5	XS	XS	P28A-00BVN	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	1	0.75	XS	XS	P28A-00BVP	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	1.5	0.5	XS	XS	P28A-00BVR	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	1.5	0.75	XS	XS	P28A-00BVS	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	1.5	1	XS	XS	P28A-00BVT	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	2	0.75	XS	XS	P28A-00BVU	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	2	1	XS	XS	P28A-00BVV	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	2	1.5	XS	XS	P28A-00BVW	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	3	1.5	STD	XS	P28A-00BVX	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	3	2	STD	XS	P28A-00BPS	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	4	1.5	STD	XS	P28A-00BVY	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	4	2	STD	XS	P28A-00BVZ	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	4	3	STD	STD	P28A-00BW0	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P29A-0034L	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	0.75		XS		P29A-0034M	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	1		XS		P29A-0034N	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	1.5		XS		P29A-0034P	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	2		XS		P29A-00326	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	3		STD		P29A-00327	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	4		STD		P29A-0034R	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
541	0.75				P29B-00067	Cap ASTM A105 Class 3000 ASME B16.11 NPT Licensor-1	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P41A-0017A	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Licensor-1	
1	0.75		SCH160		P41A-0017B	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Licensor-1	
1	1		SCH160		P41A-0017C	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Licensor-1	
1	1.5		SCH160		P41A-0017D	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Licensor-1	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2	0.75	XS	XS	P31B-00XML	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	3	0.75	STD	XS	P31B-00XMM	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	4	0.75	STD	XS	P31B-00XMP	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	3	1	STD	XS	P31B-00XMN	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	4	1	STD	XS	P31B-00XMR	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	4	1.5	STD	XS	P31B-00XMS	Outlet ASTM A105 MSS SP-97 BW Licensor-1	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30B-00067	Plug ASTM A105 ASME B16.11 NPT Round head Licensor-1	
1	0.75				P30B-00068	Plug ASTM A105 ASME B16.11 NPT Round head Licensor-1	
1	1				P30B-00069	Plug ASTM A105 ASME B16.11 NPT Round head Licensor-1	

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PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5				P30B-0006A	Plug ASTM A105 ASME B16.11 NPT Round head Licensor-1	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P61B-009YJ	Flange WN ASTM A105 Class 150 ASME B16.5 RF Licensor-1	
1	0.75		XS		P61B-009YK	Flange WN ASTM A105 Class 150 ASME B16.5 RF Licensor-1	
1	1		XS		P61B-009YL	Flange WN ASTM A105 Class 150 ASME B16.5 RF Licensor-1	
1	1.5		XS		P61B-009YM	Flange WN ASTM A105 Class 150 ASME B16.5 RF Licensor-1	
1	2		XS		P61B-009YN	Flange WN ASTM A105 Class 150 ASME B16.5 RF Licensor-1	
1	3		STD		P61B-009YP	Flange WN ASTM A105 Class 150 ASME B16.5 RF Licensor-1	
1	4		STD		P61B-009YR	Flange WN ASTM A105 Class 150 ASME B16.5 RF Licensor-1	
541	0.5				P61B-00DLC	Flange NPT ASTM A105 Class 150 ASME B16.5 RF Licensor-1	
541	0.75				P61B-00CXL	Flange NPT ASTM A105 Class 150 ASME B16.5 RF Licensor-1	
773	0.5		XS		P61B-009YS	Flange WN ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
773	0.75		XS		P61B-009YT	Flange WN ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
773	1		XS		P61B-009YU	Flange WN ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
773	1.5		XS		P61B-009YV	Flange WN ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
773	2		XS		P61B-009YW	Flange WN ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
773	3		STD		P61B-009YX	Flange WN ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
773	4		STD		P61B-009YY	Flange WN ASTM A105 Class 300 ASME B16.5 RF Licensor-1	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67B-002D6	Blind flange ASTM A105 Class 150 ASME B16.5 RF Licensor-1	
1	0.75				P67B-002D7	Blind flange ASTM A105 Class 150 ASME B16.5 RF Licensor-1	
1	1				P67B-002D8	Blind flange ASTM A105 Class 150 ASME B16.5 RF Licensor-1	
1	1.5				P67B-002D9	Blind flange ASTM A105 Class 150 ASME B16.5 RF Licensor-1	
1	2				P67B-002DB	Blind flange ASTM A105 Class 150 ASME B16.5 RF Licensor-1	
1	3				P67B-002DC	Blind flange ASTM A105 Class 150 ASME B16.5 RF Licensor-1	
1	4				P67B-002DD	Blind flange ASTM A105 Class 150 ASME B16.5 RF Licensor-1	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000L8	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000L9	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000LA	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000LB	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000LH	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000LL	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000LM	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	0.5				P73T-000FT	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	0.75				P73T-000FU	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	3				P73T-000G5	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	4				P73T-000G6	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-4				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
773	0.5-4				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	

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GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81B-001MS	Gate valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Amine service Licensor-1	
1	0.75				P81B-001MT	Gate valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Amine service Licensor-1	
1	1				P81B-001MU	Gate valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Amine service Licensor-1	
1	1.5				P81B-001MV	Gate valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Amine service Licensor-1	
1	2				P81C-005DM	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Amine service Licensor-1	
1	3				P81C-005DN	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Amine service Licensor-1	
1	4				P81C-005DP	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Amine service Licensor-1	
4608	0.75				P81B-002XS	Gate valve ASTM A105 Class 150 API 602 BW both sides w/ nipples BE - NPT ASTM A106-B Sch160-nipple Trim number 12 BB-BG-OS&Y Handwheel operated Amine service Licensor-1	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82B-001CB	Globe valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Amine service Licensor-1	
1	0.75				P82B-001CC	Globe valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Amine service Licensor-1	
1	1				P82B-001CD	Globe valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Amine service Licensor-1	
1	1.5				P82B-001CE	Globe valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Amine service Licensor-1	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83B-0012H	Check valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Amine service Licensor-1	
1	0.75				P83B-0012J	Check valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Amine service Licensor-1	
1	1				P83B-0012K	Check valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Amine service Licensor-1	
1	1.5				P83B-0012L	Check valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Amine service Licensor-1	
1	2				P83C-002R3	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Amine service Licensor-1	
1	3				P83C-002R4	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Amine service Licensor-1	
1	4				P83C-002R5	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Amine service Licensor-1	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71B-00080	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	0.75				P71B-00081	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	1				P71B-00082	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	1.5				P71B-00083	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	2				P71B-00085	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	3				P71B-00086	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	4				P71B-00087	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Licensor-1	

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BOLT TABLE (B_A1AL01 , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	60	P80S-003V2		
0.75	4	0.500	65	P80S-003V3		
1	4	0.500	70	P80S-003V4		
1.5	4	0.500	75	P80S-003V5		
2	4	0.625	85	P80S-003XE		
3	4	0.625	95	P80S-003XG		
4	8	0.625	95	P80S-003XG		

BOLT TABLE (B_A1AL01_773 , STUD ASME RF, OPTION CODE 773)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-003V4		
0.75	4	0.625	75	P80S-003XC		
1	4	0.625	80	P80S-003XD		
1.5	4	0.750	95	P80S-00414		
2	8	0.625	90	P80S-003XF		
3	8	0.750	110	P80S-003XK		
4	8	0.750	115	P80S-003XL		

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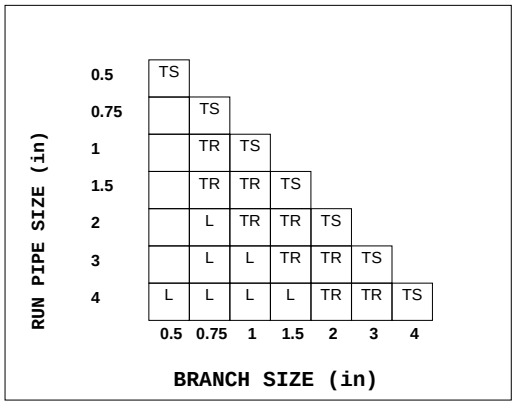
BRANCH TABLE (T_A1AL01)



TR : REDUCING TEE
TS : STRAIGHT TEE
L : OUTLET

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Material : Killed CS
Rating : ASME CLASS 150
Flange Face : RF
C.A.(mm) : 1.50
Gasket : Spiral Wound
Service : PROCESS - NON NACE MILD CORROSIVE SOUR SERVICE AND AMINES - STRESS RELIEVED
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
2	USE OF SOFT SEATED BALL, PLUG AND BUTTERFLY VALVES SHALL BE LIMITED TO MAXIMUM OF 204DEGC (400DEGF)
27	PWHT OF CARBON STEEL PIPING IN WET H2S, CAUSTIC AND AMINE SERVICES SHALL BE IN ACCORDANCE WITH SECTION 10.2, 10.3, AND 10.4 OF PROJECT SPECIFICATION 3550-8440-SP-0002 MATERIALS REQUIREMENTS FOR PRESSURISED EQUIPMENT AND PIPING. FOR CAUSTIC AND AMINE SERVICE THE FOLLOWING SHALL APPLY: - PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF ALL SITE PIPING FABRICATION WELDS IS REQUIRED FOR ALL WALL THICKNESSES. FOR MODERATE AND SEVERE WET H2S SERVICE THE FOLLOWING SHALL APPLY: PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF SITE FABRICATION CIRCUMFERENTIAL OR BRANCH WELDS IS NOT REQUIRED IF WELDS ARE MULTIPASS AND IN ACCORDANCE WITH PARA 10.2.12 OF PROJECT SPECIFICATION 3550-8440-SP-0002. FOR SERVICES MEETING THE WET H2S CRITERIA AND CAUSTIC OR AMINE CRITERIA THE MORE STRINGENT PWHT REQUIREMENT SHALL GOVERN.

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
541	NPT(F) (CA,F)
773	CLASS 300 (B,F,G)
4608	VALVE WITH NIPPLES (V)

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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P01A-000XM	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	0.75		XS		P01A-000XN	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1		XS		P01A-000XP	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1.5		XS		P01A-000XV	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	2		XS		P01A-000YX	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	3		STD		P01A-000YM	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	4		STD		P01A-000YU	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P02A-000UR	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	0.75		XS		P02A-000UN	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1		XS		P02A-000UL	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1.5		XS		P02A-000UJ	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	2		XS		P02A-000CP	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		STD		P02A-000CU	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		STD		P02A-000CZ	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P03A-0018K	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	0.75		XS		P03A-0018L	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1		XS		P03A-0018M	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1.5		XS		P03A-0018N	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	2		XS		P03A-000AS	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		STD		P03A-000AX	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		STD		P03A-000B1	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P21A-002TV	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	0.75		XS		P21A-002TW	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1		XS		P21A-002TX	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5		XS		P21A-002TY	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2		XS		P21A-001CJ	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		STD		P21A-001CU	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		STD		P21A-001CW	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75	XS	XS	P24A-006WW	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.75	XS	XS	P24A-006WY	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	1	XS	XS	P24A-006WZ	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	XS	XS	P24A-00238	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	XS	XS	P24A-0023H	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	STD	XS	P24A-00214	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	STD	XS	P24A-002HW	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P24A-002HY	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P24A-0021K	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	XS	XS	P27A-004M6	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.5	XS	XS	P27A-004ME	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.75	XS	XS	P27A-004MM	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.5	XS	XS	P27A-004N2	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.75	XS	XS	P27A-004NC	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	1	XS	XS	P27A-004NP	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2	0.75	XS	XS	P27A-001CZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	XS	XS	P27A-001DL	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	XS	XS	P27A-001E2	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	STD	XS	P27A-001AU	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	STD	XS	P27A-001MZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	1.5	STD	XS	P27A-001AW	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P27A-001N0	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P27A-00189	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	XS	XS	P28A-004V6	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.5	XS	XS	P28A-004V7	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.75	XS	XS	P28A-004V8	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.5	XS	XS	P28A-004V9	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.75	XS	XS	P28A-004VA	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	1	XS	XS	P28A-004VB	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	0.75	XS	XS	P28A-001CU	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	XS	XS	P28A-001DS	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	XS	XS	P28A-001EE	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	STD	XS	P28A-001A3	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	STD	XS	P28A-001N5	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	1.5	STD	XS	P28A-001A4	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P28A-001N6	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P28A-0018B	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P29A-002KS	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	0.75		XS		P29A-002KT	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1		XS		P29A-002KU	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5		XS		P29A-002KV	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2		XS		P29A-000A1	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		STD		P29A-000BK	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		STD		P29A-000A3	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
541	0.75				P29B-0000C	Cap ASTM A105 Class 3000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P41A-000B5	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		SCH160		P41A-000B6	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		SCH160		P41A-000B7	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		SCH160		P41A-000B8	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2	0.75	XS	XS	P31B-00CP3	Outlet ASTM A105 MSS SP-97 BW	
1	3	0.75	STD	XS	P31B-00CMN	Outlet ASTM A105 MSS SP-97 BW	
1	4	0.75	STD	XS	P31B-00CLM	Outlet ASTM A105 MSS SP-97 BW	
1	3	1	STD	XS	P31B-00B4D	Outlet ASTM A105 MSS SP-97 BW	
1	4	1	STD	XS	P31B-00AYW	Outlet ASTM A105 MSS SP-97 BW	
1	4	1.5	STD	XS	P31B-00BNZ	Outlet ASTM A105 MSS SP-97 BW	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30B-0002D	Plug ASTM A105 ASME B16.11 NPT Round head	
1	0.75				P30B-0002E	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1				P30B-0002F	Plug ASTM A105 ASME B16.11 NPT Round head	

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PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5				P30B-0002G	Plug ASTM A105 ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P61B-003ND	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	0.75		XS		P61B-003NE	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	1		XS		P61B-003NF	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	1.5		XS		P61B-003NG	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	2		XS		P61B-003NK	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	3		STD		P61B-001PW	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	4		STD		P61B-001R8	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
541	0.5				P61B-003TZ	Flange NPT ASTM A105 Class 150 ASME B16.5 RF	
541	0.75				P61B-003U0	Flange NPT ASTM A105 Class 150 ASME B16.5 RF	
773	0.5		XS		P61B-0032Z	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	0.75		XS		P61B-0032X	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	1		XS		P61B-0032U	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	1.5		XS		P61B-0032S	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	2		XS		P61B-001HW	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	3		STD		P61B-001LJ	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	4		STD		P61B-001MC	Flange WN ASTM A105 Class 300 ASME B16.5 RF	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67B-000FH	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	0.75				P67B-000FJ	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	1				P67B-000FK	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	1.5				P67B-000FL	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	2				P67B-000FT	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	3				P67B-000FW	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	4				P67B-000FX	Blind flange ASTM A105 Class 150 ASME B16.5 RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000L8	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000L9	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000LA	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000LB	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000LH	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000LL	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000LM	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	0.5				P73T-000FT	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	0.75				P73T-000FU	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	3				P73T-000G5	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	4				P73T-000G6	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-4				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
773	0.5-4				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	

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GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81B-001MM	Gate valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Amine service	
1	0.75				P81B-001MN	Gate valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Amine service	
1	1				P81B-001MP	Gate valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Amine service	
1	1.5				P81B-001MR	Gate valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Amine service	
1	2				P81C-005DC	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Amine service	
1	3				P81C-005DD	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Amine service	
1	4				P81C-0030Z	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Amine service	
4608	0.75				P81B-002XR	Gate valve ASTM A105 Class 150 API 602 BW both sides w/ nipples BE - NPT ASTM A106-B Sch160-nipple Trim number 12 BB-BG-OS&Y Handwheel operated Amine service	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82B-001C7	Globe valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Amine service	
1	0.75				P82B-001C8	Globe valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Amine service	
1	1				P82B-001C9	Globe valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Amine service	
1	1.5				P82B-001CA	Globe valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Amine service	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83B-0012M	Check valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Amine service	
1	0.75				P83B-0012N	Check valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Amine service	
1	1				P83B-0012P	Check valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Amine service	
1	1.5				P83B-0012R	Check valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Amine service	
1	2				P83C-002R6	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Amine service	
1	3				P83C-002R7	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Amine service	
1	4				P83C-002R8	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Amine service	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71B-0008A	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	0.75				P71B-0008B	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	1				P71B-0008C	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71B-0008D	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	2				P71B-0000P	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	3				P71B-0000N	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	4				P71B-0000M	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	

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BOLT TABLE (B_A1AL03 , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	60	P80S-003V2		
0.75	4	0.500	65	P80S-003V3		
1	4	0.500	70	P80S-003V4		
1.5	4	0.500	75	P80S-003V5		
2	4	0.625	85	P80S-003XE		
3	4	0.625	95	P80S-003XG		
4	8	0.625	95	P80S-003XG		

BOLT TABLE (B_A1AL03_773 , STUD ASME RF, OPTION CODE 773)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-003V4		
0.75	4	0.625	75	P80S-003XC		
1	4	0.625	80	P80S-003XD		
1.5	4	0.750	95	P80S-00414		
2	8	0.625	90	P80S-003XF		
3	8	0.750	110	P80S-003XK		
4	8	0.750	115	P80S-003XL		

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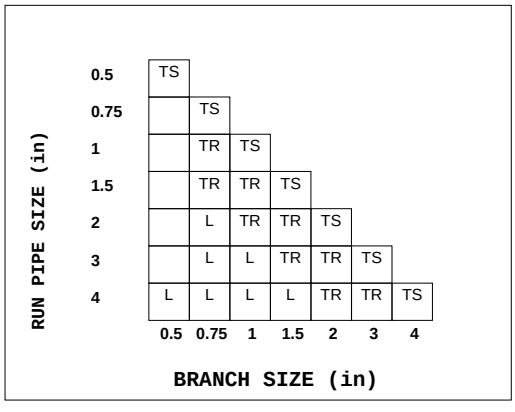
BRANCH TABLE (T_A1AL03)



TS : STRAIGHT TEE
L : OUTLET
TR : REDUCING TEE

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Material	:	Killed CS
Rating	:	ASME CLASS 150
Flange Face	:	RF
C.A.(mm)	:	1.50
Gasket	:	Spiral Wound
Service	:	AMMONIA WATER
Design Code	:	ASME B31.3
Heat Treatment	:	

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
541	NPT(F) (CA,L)
773	CLASS 300 (B,F,G)

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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P01A-000XM	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	0.75		XS		P01A-000XN	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1		XS		P01A-000XP	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1.5		XS		P01A-000XV	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	2		XS		P01A-000YX	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	3		STD		P01A-000YM	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P02B-00014	90 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	0.75				P02B-00015	90 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	1				P02B-00016	90 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5				P02B-00017	90 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	2		XS		P02A-000CP	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		STD		P02A-000CU	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P03B-00017	45 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	0.75				P03B-00018	45 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	1				P03B-00019	45 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5				P03B-0001A	45 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	2		XS		P03A-000AS	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		STD		P03A-000AX	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P21B-00017	Straight tee ASTM A105 Class 3000 ASME B16.11 SW	
1	0.75				P21B-00018	Straight tee ASTM A105 Class 3000 ASME B16.11 SW	
1	1				P21B-00019	Straight tee ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5				P21B-0001A	Straight tee ASTM A105 Class 3000 ASME B16.11 SW	
1	2		XS		P21A-001CJ	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		STD		P21A-001CU	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75			P24B-0002L	Reducing tee ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5	0.75			P24B-0002N	Reducing tee ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5	1			P24B-0002P	Reducing tee ASTM A105 Class 3000 ASME B16.11 SW	
1	2	1	XS	XS	P24A-00238	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	XS	XS	P24A-0023H	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	STD	XS	P24A-00214	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	STD	XS	P24A-002HW	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	STD	XS	P27A-001MZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	STD	XS	P28A-001N5	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P29B-0001J	Cap ASTM A105 Class 3000 ASME B16.11 SW	
1	0.75				P29B-0001F	Cap ASTM A105 Class 3000 ASME B16.11 SW	
1	1				P29B-0001G	Cap ASTM A105 Class 3000 ASME B16.11 SW	

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CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5				P29B-0001H	Cap ASTM A105 Class 3000 ASME B16.11 SW	
1	2		XS		P29A-000A1	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		STD		P29A-000BK	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
541	0.75				P29B-0000C	Cap ASTM A105 Class 3000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P41A-000B5	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		SCH160		P41A-000B6	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		SCH160		P41A-000B7	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		SCH160		P41A-000B8	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

CON SWAGED NIPPLE (SNC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	XS	XS	P42A-00036	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	XS	XS	P42A-00038	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	XS	XS	P42A-0003B	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	XS	XS	P42A-00035	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	XS	XS	P42A-00039	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	XS	XS	P42A-0003C	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	XS	XS	P42A-0008C	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	XS	XS	P42A-0008D	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	XS	XS	P42A-0008E	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	XS	XS	P42A-0008F	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	STD	XS	P42A-0007V	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	

ECC SWAGED NIPPLE (SNE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	XS	XS	P43A-00036	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	XS	XS	P43A-00037	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	XS	XS	P43A-00038	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	XS	XS	P43A-00039	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	XS	XS	P43A-0003A	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	XS	XS	P43A-0003B	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	XS	XS	P43A-00042	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	XS	XS	P43A-00043	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	XS	XS	P43A-00044	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	XS	XS	P43A-00045	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	STD	XS	P43A-0003J	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	

COUPLING (CPS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P47B-0001D	Coupling ASTM A105 Class 3000 ASME B16.11 SW - SW	
1	0.75				P47B-0001E	Coupling ASTM A105 Class 3000 ASME B16.11 SW - SW	
1	1				P47B-0001F	Coupling ASTM A105 Class 3000 ASME B16.11 SW - SW	
1	1.5				P47B-0001G	Coupling ASTM A105 Class 3000 ASME B16.11 SW - SW	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2 - 2.5	0.75			P31B-0137J	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	3 - 5	0.75			P31B-0137K	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	3	1			P31B-007A7	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
541	1	0.75			P31B-00551	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
541	1.5	0.75			P31B-00555	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
541	2 - 2.5	0.75			P31B-0137H	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
541	3 - 5	0.75			P31B-01376	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	

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PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30B-0002D	Plug ASTM A105 ASME B16.11 NPT Round head	
1	0.75				P30B-0002E	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1				P30B-0002F	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1.5				P30B-0002G	Plug ASTM A105 ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P61B-001R9	Flange SW ASTM A105 Class 150 ASME B16.5 RF	
1	0.75		XS		P61B-001RA	Flange SW ASTM A105 Class 150 ASME B16.5 RF	
1	1		XS		P61B-001RR	Flange SW ASTM A105 Class 150 ASME B16.5 RF	
1	1.5		XS		P61B-001RV	Flange SW ASTM A105 Class 150 ASME B16.5 RF	
1	2		XS		P61B-003NK	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	3		STD		P61B-001PW	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
773	0.5		XS		P61B-001HC	Flange SW ASTM A105 Class 300 ASME B16.5 RF	
773	0.75		XS		P61B-001HS	Flange SW ASTM A105 Class 300 ASME B16.5 RF	
773	1		XS		P61B-001EF	Flange SW ASTM A105 Class 300 ASME B16.5 RF	
773	1.5		XS		P61B-001F2	Flange SW ASTM A105 Class 300 ASME B16.5 RF	
773	2		XS		P61B-001HW	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	3		STD		P61B-001LJ	Flange WN ASTM A105 Class 300 ASME B16.5 RF	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67B-000FH	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	0.75				P67B-000FJ	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	1				P67B-000FK	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	1.5				P67B-000FL	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	2				P67B-000FT	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	3				P67B-000FW	Blind flange ASTM A105 Class 150 ASME B16.5 RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000L8	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000L9	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000LA	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000LB	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000LH	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000LL	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	0.5				P73T-000FT	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	0.75				P73T-000FU	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	3				P73T-000G5	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-3				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
773	0.5-3				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81B-000P4	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	0.75				P81B-000NX	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	

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GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P81B-000NY	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	1.5				P81B-000NZ	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	2				P81C-002DV	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	3				P81C-002DW	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82B-000K0	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	0.75				P82B-000HB	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	1				P82B-000HC	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	1.5				P82B-000HD	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	2				P82C-000N5	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	3				P82C-000N6	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83B-000FX	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover	
1	0.75				P83B-000ER	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover	
1	1				P83B-000ES	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover	
1	1.5				P83B-000ET	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover	
1	2				P83C-00144	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	3				P83C-00147	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71B-0008A	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	0.75				P71B-0008B	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	1				P71B-0008C	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71B-0008D	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	2				P71B-0000P	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	3				P71B-0000N	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	

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BOLT TABLE (B_A1AM , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	60	P80S-003V2		
0.75	4	0.500	65	P80S-003V3		
1	4	0.500	70	P80S-003V4		
1.5	4	0.500	75	P80S-003V5		
2	4	0.625	85	P80S-003XE		
3	4	0.625	95	P80S-003XG		

BOLT TABLE (B_A1AM_773 , STUD ASME RF, OPTION CODE 773)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-003V4		
0.75	4	0.625	75	P80S-003XC		
1	4	0.625	80	P80S-003XD		
1.5	4	0.750	95	P80S-00414		
2	8	0.625	90	P80S-003XF		
3	8	0.750	110	P80S-003XK		

BOLT TABLE (B_A1AM_781 , STUD ASME RF, OPTION CODE 781)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	80			
0.75	4	0.625	90			
1	4	0.625	95			
1.5	4	0.750	110			
2	8	0.625	110			
3	8	0.750	130			

BOLT TABLE (B_A1AM_789 , STUD ASME RJ, OPTION CODE 789)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	110		R12	
0.75	4	0.750	115		R14	
1	4	0.875	130		R16	
1.5	4	1.000	140		R20	
2	8	0.875	150		R24	
3	8	0.875	150		R31	

BOLT TABLE (B_A1AM_797 , STUD ASME RJ, OPTION CODE 797)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	110		R12	
0.75	4	0.750	115		R14	
1	4	0.875	130		R16	
1.5	4	1.000	140		R20	
2	8	0.875	150		R24	
3	8	1.125	180		R35	

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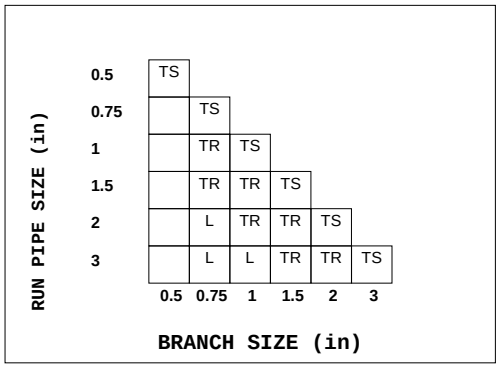
BRANCH TABLE (T_A1AM)



L : OUTLET
TS : STRAIGHT TEE
TR : REDUCING TEE

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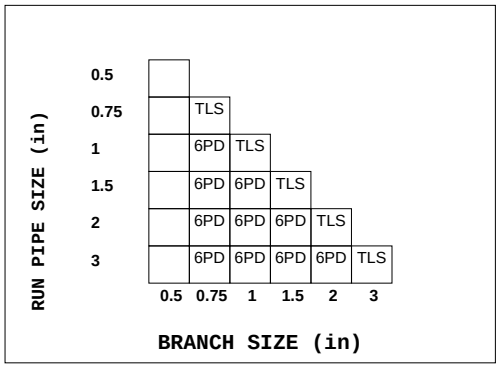
BRANCH TABLE (T_A1AM_3)



6PD : REINFORCING PAD 60 DEG
TLS : STRAIGHT LATERAL TEE

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Material	:	Killed CS
Rating	:	ASME CLASS 150
Flange Face	:	RF
C.A.(mm)	:	1.50
Gasket	:	Spiral Wound
Service	:	PROCESS - NON SOUR, NON CORROSIVE : / FLASHED CRUDE / STABILISED NAPHTHA / BLOWDOWN / ATMOSPHERIC VENT / HYDROCARBONS - WATER CONDENSATE / HYDROCARBONS - WATER VAPOUR / HYDROCARBONS / HOT WATER BLOWDOWN / NITROGEN / and other various services

Design Code : ASME B31.3

Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
2	USE OF SOFT SEATED BALL, PLUG AND BUTTERFLY VALVES SHALL BE LIMITED TO MAXIMUM OF 204DEGC (400DEGF)

DETAIL NOTES :

NO.	DESCRIPTION
999	HOLD ITEMS. ORDER PLACEMENT SHALL NOT BE DONE BEFORE RELEASING HOLD.

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
24	FULL PORT (Q)
200	WITH JACK SCREW (FO)
541	NPT(F) (CA,L)
714	SW - NPT(F) (V)
773	CLASS 300 (B,F,FR,G,V)
781	CLASS 600 (B,F,G)
789	CLASS 900 (B,F,G)
797	CLASS 1500 (B,F,G)
805	CLASS 2500 (B,F,G)
4602	DISSIMILAR TYPE CHECK VALVE (XDP)

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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P01A-000XM	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	0.75		XS		P01A-000XN	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1		XS		P01A-000XP	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1.5		XS		P01A-000XV	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	2		XS		P01A-000YX	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	3		STD		P01A-000YM	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	4		STD		P01A-000YU	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	6		STD		P01A-000Z3	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	8		SCH20		P01A-001AT	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	10		SCH20		P01A-0014Y	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	12		SCH20		P01A-0016H	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	14		SCH20		P01A-0017A	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	16		SCH20		P01A-0018E	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	18		SCH20		P01A-00438	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE	
1	20		STD		P01A-0042G	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE	
1	24		STD		P01A-0042H	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE	
1	30		STD		P01A-0042J	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE	
1	36		XS		P01A-0042K	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE	
1	42		STD		P01A-0078R	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE	
1	48		XS		P01A-0042L	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE	
1	52		11.13mm		P01A-0078T	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE	
1	56		11.91mm		P01A-007GG	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE	
1	60		12.70mm		P01A-007GH	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE	
1	64		12.70mm		P01A-007GJ	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE	
1	68		14.27mm		P01A-008MN	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE	
1	72		14.27mm		P01A-008MP	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE	
1	76		15.88mm		P01A-008MR	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE	
1	80		15.88mm		P01A-007GM	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P02B-00014	90 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	0.75				P02B-00015	90 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	1				P02B-00016	90 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5				P02B-00017	90 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	2		XS		P02A-000CP	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		STD		P02A-000CU	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		STD		P02A-000CZ	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		STD		P02A-000D6	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		SCH20		P02A-000GZ	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	10		SCH20		P02A-000H1	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	12		SCH20		P02A-000H4	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	14		SCH20		P02A-000FX	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	16		SCH20		P02A-000GM	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	18		SCH20		P02A-000LT	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	20		STD		P02A-0010J	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	24		STD		P02A-0010K	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	30		STD		P02A-000F3	90 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius	
1	36		XS		P02A-000DH	90 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius	
1	42		STD		P02A-0014G	90 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius	
1	48		XS		P02A-0017R	90 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius	
1	52		11.13mm		P02A-003R2	90 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Long radius	
1	56		11.91mm		P02A-003YG	90 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Long radius	
1	60		12.70mm		P02A-003YH	90 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Long radius	
1	64		12.70mm		P02A-003YJ	90 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Long radius	
1	68		14.27mm		P02A-004F6	90 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Long radius	
1	72		14.27mm		P02A-004F7	90 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Long radius	
1	76		15.88mm		P02A-004F8	90 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Long radius	
1	80		15.88mm		P02A-003YM	90 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Long radius	

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45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P03B-00017	45 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	0.75				P03B-00018	45 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	1				P03B-00019	45 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5				P03B-0001A	45 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	2		XS		P03A-000AS	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		STD		P03A-000AX	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		STD		P03A-000B1	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		STD		P03A-000B9	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		SCH20		P03A-000EX	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	10		SCH20		P03A-000F0	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	12		SCH20		P03A-000F2	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	14		SCH20		P03A-000DW	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	16		SCH20		P03A-000EM	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	18		SCH20		P03A-001DX	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	20		STD		P03A-000X1	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	24		STD		P03A-000X2	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	30		STD		P03A-000D0	45 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius	
1	36		XS		P03A-000BG	45 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius	
1	42		STD		P03A-0010P	45 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius	
1	48		XS		P03A-0013P	45 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius	
1	52		11.13mm		P03A-003MR	45 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Long radius	
1	56		11.91mm		P03A-003W5	45 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Long radius	
1	60		12.70mm		P03A-003W6	45 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Long radius	
1	64		12.70mm		P03A-003W7	45 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Long radius	
1	68		14.27mm		P03A-004CC	45 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Long radius	
1	72		14.27mm		P03A-004CD	45 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Long radius	
1	76		15.88mm		P03A-004CE	45 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Long radius	
1	80		15.88mm		P03A-003WA	45 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P21B-00017	Straight tee ASTM A105 Class 3000 ASME B16.11 SW	
1	0.75				P21B-00018	Straight tee ASTM A105 Class 3000 ASME B16.11 SW	
1	1				P21B-00019	Straight tee ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5				P21B-0001A	Straight tee ASTM A105 Class 3000 ASME B16.11 SW	
1	2		XS		P21A-001CJ	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		STD		P21A-001CU	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		STD		P21A-001CW	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6		STD		P21A-001D2	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8		SCH20		P21A-00215	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10		SCH20		P21A-00219	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12		SCH20		P21A-0021A	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14		SCH20		P21A-00206	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16		SCH20		P21A-0020X	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18		SCH20		P21A-001PJ	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20		STD		P21A-001C7	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24		STD		P21A-001CC	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30		STD		P21A-001YC	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	36		XS		P21A-001D7	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	42		STD		P21A-001KR	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	48		XS		P21A-001RL	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	52		11.13mm		P21A-0048K	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	56		11.91mm		P21A-004G0	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	60		12.70mm		P21A-004G1	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	64		12.70mm		P21A-00487	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	68		14.27mm		P21A-004XL	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	72		14.27mm		P21A-004XM	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	76		15.88mm		P21A-004XN	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	80		15.88mm		P21A-004G4	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	

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STRAIGHT LATERAL TEE (TLS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75				P22B-00003	Straight lateral-tee ASTM A105 Class 3000 ASME B16.11 SW 60 degree	
1	1				P22B-0000B	Straight lateral-tee ASTM A105 Class 3000 ASME B16.11 SW 60 degree	
1	1.5				P22B-0000C	Straight lateral-tee ASTM A105 Class 3000 ASME B16.11 SW 60 degree	
1	2		XS		P22A-000DW	Straight lateral-tee ASTM A234 Grade WPB Seamless ASME B16.9 BW 60 degree	
1	3		STD		P22A-000DJ	Straight lateral-tee ASTM A234 Grade WPB Seamless ASME B16.9 BW 60 degree	
1	4		STD		P22A-000DX	Straight lateral-tee ASTM A234 Grade WPB Seamless ASME B16.9 BW 60 degree	
1	6		STD		P22A-000DY	Straight lateral-tee ASTM A234 Grade WPB Seamless ASME B16.9 BW 60 degree	
1	8		SCH20		P22A-000GC	Straight lateral-tee ASTM A234 Grade WPB Seamless ASME B16.9 BW 60 degree	
1	10		SCH20		P22A-000GA	Straight lateral-tee ASTM A234 Grade WPB Seamless ASME B16.9 BW 60 degree	
1	12		SCH20		P22A-000GB	Straight lateral-tee ASTM A234 Grade WPB Seamless ASME B16.9 BW 60 degree	
1	14		SCH20		P22A-000DU	Straight lateral-tee ASTM A234 Grade WPB Seamless ASME B16.9 BW 60 degree	
1	16		SCH20		P22A-000DV	Straight lateral-tee ASTM A234 Grade WPB Seamless ASME B16.9 BW 60 degree	
1	18		SCH20		P22A-000FW	Straight lateral-tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW 60 degree	
1	20		STD		P22A-000FX	Straight lateral-tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW 60 degree	
1	24		STD		P22A-000GD	Straight lateral-tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW 60 degree	
1	30		STD		P22A-000GE	Straight lateral-tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW 60 degree	
1	36		XS		P22A-000GF	Straight lateral-tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW 60 degree	
1	42		STD		P22A-000GG	Straight lateral-tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW 60 degree	
1	48		XS		P22A-000GH	Straight lateral-tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW 60 degree	
1	52		11.13mm		P22A-000GJ	Straight lateral-tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW 60 degree	
1	56		11.91mm		P22A-000GK	Straight lateral-tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW 60 degree	
1	60		12.70mm		P22A-000GL	Straight lateral-tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW 60 degree	
1	64		12.70mm		P22A-000GM	Straight lateral-tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW 60 degree	
1	68		14.27mm		P22A-000GN	Straight lateral-tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW 60 degree	
1	76		15.88mm		P22A-000GR	Straight lateral-tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW 60 degree	
1	80		15.88mm		P22A-000GS	Straight lateral-tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW 60 degree	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75			P24B-0002L	Reducing tee ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5	0.75			P24B-0002N	Reducing tee ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5	1			P24B-0002P	Reducing tee ASTM A105 Class 3000 ASME B16.11 SW	
1	2	1	XS	XS	P24A-00238	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	XS	XS	P24A-0023H	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	STD	XS	P24A-00214	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	STD	XS	P24A-002HW	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P24A-002HY	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P24A-0021K	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	STD	P24A-0021A	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P24A-00229	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH20	STD	P24A-00J21	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH20	STD	P24A-005J4	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	SCH20	STD	P24A-00HMB	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	SCH20	STD	P24A-00HKS	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	SCH20	SCH20	P24A-002YX	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	SCH20	STD	P24A-00K0B	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH20	SCH20	P24A-002U4	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH20	SCH20	P24A-002YC	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	SCH20	STD	P24A-00K0M	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	SCH20	SCH20	P24A-002U7	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	SCH20	SCH20	P24A-002YA	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	SCH20	SCH20	P24A-002YR	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	6	SCH20	STD	P24A-00GU4	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	SCH20	SCH20	P24A-002XW	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	SCH20	SCH20	P24A-002YH	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	SCH20	SCH20	P24A-002U1	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	SCH20	SCH20	P24A-002XF	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	8	SCH20	SCH20	P24A-002XC	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	10	SCH20	SCH20	P24A-002UX	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	

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REDUCING TEE (TR)							
OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	18	12	SCH20	SCH20	P24A-002W3	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	14	SCH20	SCH20	P24A-002WT	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	16	SCH20	SCH20	P24A-002X5	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	8	STD	SCH20	P24A-00K0N	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	10	STD	SCH20	P24A-00BT7	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	12	STD	SCH20	P24A-00BUS	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	14	STD	SCH20	P24A-00BWB	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	16	STD	SCH20	P24A-006W3	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	18	STD	SCH20	P24A-006WD	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	10	STD	SCH20	P24A-00KT6	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	12	STD	SCH20	P24A-00C7B	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	14	STD	SCH20	P24A-00K0C	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	16	STD	SCH20	P24A-00CAD	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	18	STD	SCH20	P24A-006WF	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	20	STD	STD	P24A-004SV	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	10	STD	SCH20	P24A-003VN	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	12	STD	SCH20	P24A-003VP	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	14	STD	SCH20	P24A-003VR	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	16	STD	SCH20	P24A-003VS	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	18	STD	SCH20	P24A-003VT	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	20	STD	STD	P24A-0087D	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	24	STD	STD	P24A-005XW	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	36	16	XS	SCH20	P24A-003VH	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	36	18	XS	SCH20	P24A-003VJ	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	36	20	XS	STD	P24A-004SS	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	36	24	XS	STD	P24A-004VX	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	36	30	XS	STD	P24A-003VM	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	42	16	STD	SCH20	P24A-00EFD	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	42	18	STD	SCH20	P24A-00EG0	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	42	20	STD	STD	P24A-00EGR	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	42	24	STD	STD	P24A-005H0	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	42	30	STD	STD	P24A-00EKU	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	42	36	STD	XS	P24A-005Y5	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	48	24	XS	STD	P24A-006WP	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	48	30	XS	STD	P24A-006WR	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	48	36	XS	XS	P24A-00F4B	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	48	42	XS	STD	P24A-0061H	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	52	30	11.13mm	STD	P24A-00NFJ	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	52	36	11.13mm	XS	P24A-00NGB	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	52	42	11.13mm	STD	P24A-00KTA	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	52	48	11.13mm	XS	P24A-00KZ5	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	56	30	11.91mm	STD	P24A-00NFK	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	56	36	11.91mm	XS	P24A-00NGA	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	56	42	11.91mm	STD	P24A-00KZ8	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	56	48	11.91mm	XS	P24A-00KZ9	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	56	52	11.91mm	11.13mm	P24A-00KZA	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	60	30	12.70mm	STD	P24A-00NFL	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	60	36	12.70mm	XS	P24A-00NFM	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	60	42	12.70mm	STD	P24A-00KZD	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	60	48	12.70mm	XS	P24A-00KZE	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	60	52	12.70mm	11.13mm	P24A-00KZF	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	60	56	12.70mm	11.91mm	P24A-00KZG	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	64	36	12.70mm	XS	P24A-00NG9	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	64	42	12.70mm	STD	P24A-00KZJ	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	64	48	12.70mm	XS	P24A-00KZK	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	64	52	12.70mm	11.13mm	P24A-00KZL	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	64	56	12.70mm	11.91mm	P24A-00KZM	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	64	60	12.70mm	12.70mm	P24A-00KZN	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	68	36	14.27mm	XS	P24A-00NG2	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	

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REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	68	42	14.27mm	STD	P24A-00NG3	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	68	48	14.27mm	XS	P24A-00NG4	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	68	52	14.27mm	11.13mm	P24A-00NG5	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	68	56	14.27mm	11.91mm	P24A-00NG6	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	68	60	14.27mm	12.70mm	P24A-00NG7	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	68	64	14.27mm	12.70mm	P24A-00NG8	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	72	36	14.27mm	XS	P24A-00NFU	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	72	42	14.27mm	STD	P24A-00NFV	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	72	48	14.27mm	XS	P24A-00NFW	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	72	52	14.27mm	11.13mm	P24A-00NFX	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	72	56	14.27mm	11.91mm	P24A-00NFY	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	72	60	14.27mm	12.70mm	P24A-00NFZ	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	72	64	14.27mm	12.70mm	P24A-00NG0	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	72	68	14.27mm	14.27mm	P24A-00NG1	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	76	42	15.88mm	STD	P24A-00PC7	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	76	48	15.88mm	XS	P24A-00PC8	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	76	52	15.88mm	11.13mm	P24A-00PC9	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	76	56	15.88mm	11.91mm	P24A-00PCA	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	76	60	15.88mm	12.70mm	P24A-00PCB	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	76	64	15.88mm	12.70mm	P24A-00PCC	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	76	68	15.88mm	14.27mm	P24A-00PCD	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	76	72	15.88mm	14.27mm	P24A-00PCE	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	80	42	15.88mm	STD	P24A-00KZX	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	80	48	15.88mm	XS	P24A-00KZY	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	80	52	15.88mm	11.13mm	P24A-00KZZ	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	80	56	15.88mm	11.91mm	P24A-00L00	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	80	60	15.88mm	12.70mm	P24A-00L01	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	80	64	15.88mm	12.70mm	P24A-00L02	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	80	68	15.88mm	14.27mm	P24A-00NFS	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	80	72	15.88mm	14.27mm	P24A-00NFT	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	80	76	15.88mm	15.88mm	P24A-00PCF	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	STD	XS	P27A-001MZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P27A-001N0	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P27A-00189	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	STD	P27A-001AZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P27A-001GW	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH20	STD	P27A-003K2	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH20	STD	P27A-003K3	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	SCH20	STD	P27A-003K4	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	SCH20	STD	P27A-003K5	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	SCH20	SCH20	P27A-001UL	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	SCH20	STD	P27A-003K6	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH20	SCH20	P27A-001UU	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH20	SCH20	P27A-001TH	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	SCH20	STD	P27A-00518	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	SCH20	SCH20	P27A-001V4	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	SCH20	SCH20	P27A-001TG	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	SCH20	SCH20	P27A-001U1	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	SCH20	SCH20	P27A-001WX	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	SCH20	SCH20	P27A-001TW	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	SCH20	SCH20	P27A-001UF	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	SCH20	SCH20	P27A-001V2	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	10	SCH20	SCH20	P27A-001TJ	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	12	SCH20	SCH20	P27A-001UE	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	14	SCH20	SCH20	P27A-001UY	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	16	SCH20	SCH20	P27A-001WN	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	

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CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	20	12	STD	SCH20	P27A-00CMZ	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	14	STD	SCH20	P27A-0082L	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	16	STD	SCH20	P27A-0082M	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	18	STD	SCH20	P27A-0084N	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	16	STD	SCH20	P27A-0084T	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	18	STD	SCH20	P27A-0084U	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	20	STD	STD	P27A-001A8	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	20	STD	STD	P27A-001S0	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	24	STD	STD	P27A-001M7	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	36	24	XS	STD	P27A-001GY	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	36	30	XS	STD	P27A-001M9	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	42	30	STD	STD	P27A-003Z5	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	42	36	STD	XS	P27A-003Z7	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	48	42	XS	STD	P27A-0041V	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	52	30	11.13mm	STD	P27A-00H4E	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	52	36	11.13mm	XS	P27A-00H4F	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	52	42	11.13mm	STD	P27A-00F7Z	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	52	48	11.13mm	XS	P27A-00FAT	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	56	36	11.91mm	XS	P27A-00H4G	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	56	42	11.91mm	STD	P27A-00F8U	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	56	48	11.91mm	XS	P27A-00F8V	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	56	52	11.91mm	11.13mm	P27A-00FAU	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	60	36	12.70mm	XS	P27A-00H4H	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	60	42	12.70mm	STD	P27A-00F8P	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	60	48	12.70mm	XS	P27A-00F8R	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	60	52	12.70mm	11.13mm	P27A-00F83	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	60	56	12.70mm	11.91mm	P27A-00F8S	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	64	42	12.70mm	STD	P27A-00F8H	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	64	48	12.70mm	XS	P27A-00F8J	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	64	52	12.70mm	11.13mm	P27A-00F8K	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	64	56	12.70mm	11.91mm	P27A-00F8L	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	64	60	12.70mm	12.70mm	P27A-00F8M	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	68	48	14.27mm	XS	P27A-00H4J	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	68	52	14.27mm	11.13mm	P27A-00H4K	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	68	56	14.27mm	11.91mm	P27A-00H4L	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	68	60	14.27mm	12.70mm	P27A-00H4M	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	68	64	14.27mm	12.70mm	P27A-00H4N	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	72	48	14.27mm	XS	P27A-00H4P	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	72	52	14.27mm	11.13mm	P27A-00H4R	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	72	56	14.27mm	11.91mm	P27A-00H4S	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	72	60	14.27mm	12.70mm	P27A-00H4T	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	72	64	14.27mm	12.70mm	P27A-00H4U	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	72	68	14.27mm	14.27mm	P27A-00H4V	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	76	52	15.88mm	11.13mm	P27A-00HL0	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	76	56	15.88mm	11.91mm	P27A-00HL1	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	76	60	15.88mm	12.70mm	P27A-00HKZ	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	76	64	15.88mm	12.70mm	P27A-00HL2	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	76	68	15.88mm	14.27mm	P27A-00HMH	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	76	72	15.88mm	14.27mm	P27A-00HMJ	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	80	56	15.88mm	11.91mm	P27A-00F85	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	80	60	15.88mm	12.70mm	P27A-00F86	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	80	64	15.88mm	12.70mm	P27A-00F87	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	80	68	15.88mm	14.27mm	P27A-00H4W	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	80	72	15.88mm	14.27mm	P27A-00H4X	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	80	76	15.88mm	15.88mm	P27A-00HVN	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	STD	XS	P28A-001N5	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	4	2	STD	XS	P28A-001N6	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P28A-0018B	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	STD	P28A-001AS	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P28A-00182	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH20	STD	P28A-003JU	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH20	STD	P28A-003JV	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	SCH20	STD	P28A-003JW	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	SCH20	STD	P28A-003JX	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	SCH20	SCH20	P28A-001V0	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	SCH20	STD	P28A-003JY	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH20	SCH20	P28A-001V1	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH20	SCH20	P28A-001TJ	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	SCH20	STD	P28A-0096P	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	SCH20	SCH20	P28A-001WH	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	SCH20	SCH20	P28A-001TH	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	SCH20	SCH20	P28A-001UC	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	SCH20	SCH20	P28A-001T6	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	SCH20	SCH20	P28A-001TY	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	SCH20	SCH20	P28A-001UX	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	SCH20	SCH20	P28A-001WG	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	10	SCH20	SCH20	P28A-001TV	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	12	SCH20	SCH20	P28A-001UJ	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	14	SCH20	SCH20	P28A-001WD	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	16	SCH20	SCH20	P28A-001T1	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	12	STD	SCH20	P28A-009MM	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	14	STD	SCH20	P28A-004SJ	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	16	STD	SCH20	P28A-004SK	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	18	STD	SCH20	P28A-004UN	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	16	STD	SCH20	P28A-004UR	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	18	STD	SCH20	P28A-004US	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	20	STD	STD	P28A-001AW	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	20	STD	STD	P28A-001LZ	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	24	STD	STD	P28A-001N1	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	36	24	XS	STD	P28A-0017X	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	36	30	XS	STD	P28A-001ND	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	42	30	STD	STD	P28A-003YZ	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	42	36	STD	XS	P28A-003Z1	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	48	42	XS	STD	P28A-0041N	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	52	30	11.13mm	STD	P28A-00EBL	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	52	36	11.13mm	XS	P28A-00EBM	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	52	42	11.13mm	STD	P28A-00CC0	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	52	48	11.13mm	XS	P28A-00CEW	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	56	36	11.91mm	XS	P28A-00EBN	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	56	42	11.91mm	STD	P28A-00CCS	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	56	48	11.91mm	XS	P28A-00CCT	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	56	52	11.91mm	11.13mm	P28A-00CCU	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	60	36	12.70mm	XS	P28A-00EBR	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	60	42	12.70mm	STD	P28A-00CCL	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	60	48	12.70mm	XS	P28A-00CCM	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	60	52	12.70mm	11.13mm	P28A-00CCN	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	60	56	12.70mm	11.91mm	P28A-00CCP	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	64	42	12.70mm	STD	P28A-00CCE	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	64	48	12.70mm	XS	P28A-00CCF	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	64	52	12.70mm	11.13mm	P28A-00CCG	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	64	56	12.70mm	11.91mm	P28A-00CCH	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	64	60	12.70mm	12.70mm	P28A-00CCJ	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	68	48	14.27mm	XS	P28A-00EBS	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	68	52	14.27mm	11.13mm	P28A-00EBT	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	68	56	14.27mm	11.91mm	P28A-00EBU	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	

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ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	68	60	14.27mm	12.70mm	P28A-00EBV	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	68	64	14.27mm	12.70mm	P28A-00EBW	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	72	48	14.27mm	XS	P28A-00EBX	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	72	52	14.27mm	11.13mm	P28A-00EBY	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	72	56	14.27mm	11.91mm	P28A-00EBZ	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	72	60	14.27mm	12.70mm	P28A-00EC0	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	72	64	14.27mm	12.70mm	P28A-00EC1	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	72	68	14.27mm	14.27mm	P28A-00EC2	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	76	52	15.88mm	11.13mm	P28A-00EWY	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	76	56	15.88mm	11.91mm	P28A-00EWZ	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	76	60	15.88mm	12.70mm	P28A-00EX0	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	76	64	15.88mm	12.70mm	P28A-00EX1	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	76	68	15.88mm	14.27mm	P28A-00EX2	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	76	72	15.88mm	14.27mm	P28A-00EX3	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	80	56	15.88mm	11.91mm	P28A-00CC1	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	80	60	15.88mm	12.70mm	P28A-00CC2	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	80	64	15.88mm	12.70mm	P28A-00CC3	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	80	68	15.88mm	14.27mm	P28A-00EC3	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	80	72	15.88mm	14.27mm	P28A-00EC4	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	80	76	15.88mm	15.88mm	P28A-00F56	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P29B-0001J	Cap ASTM A105 Class 3000 ASME B16.11 SW	
1	0.75				P29B-0001F	Cap ASTM A105 Class 3000 ASME B16.11 SW	
1	1				P29B-0001G	Cap ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5				P29B-0001H	Cap ASTM A105 Class 3000 ASME B16.11 SW	
1	2		XS		P29A-000A1	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		STD		P29A-000BK	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		STD		P29A-000A3	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6		STD		P29A-000A9	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8		SCH20		P29A-000EY	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10		SCH20		P29A-000E5	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12		SCH20		P29A-000E8	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14		SCH20		P29A-000EA	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16		SCH20		P29A-000F3	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18		SCH20		P29A-000E0	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20		STD		P29A-000B2	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24		STD		P29A-000B8	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	30		STD		P29A-000DU	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	36		XS		P29A-000A2	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	42		STD		P29A-000X5	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	48		XS		P29A-00136	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	52		11.13mm		P29A-00324	Cap ASTM A234 Grade WPB Seamless ASME B16.9-modified BW	
1	56		11.91mm		P29A-003AX	Cap ASTM A234 Grade WPB Seamless ASME B16.9-modified BW	
1	60		12.70mm		P29A-003AY	Cap ASTM A234 Grade WPB Seamless ASME B16.9-modified BW	
1	64		12.70mm		P29A-003AZ	Cap ASTM A234 Grade WPB Seamless ASME B16.9-modified BW	
1	68		14.27mm		P29A-003S4	Cap ASTM A234 Grade WPB Seamless ASME B16.9-modified BW	
1	72		14.27mm		P29A-003S5	Cap ASTM A234 Grade WPB Seamless ASME B16.9-modified BW	
1	76		15.88mm		P29A-003S6	Cap ASTM A234 Grade WPB Seamless ASME B16.9-modified BW	
1	80		15.88mm		P29A-003B2	Cap ASTM A234 Grade WPB Seamless ASME B16.9-modified BW	
541	0.75				P29B-0000C	Cap ASTM A105 Class 3000 ASME B16.11 NPT	
541	1				P29B-0000D	Cap ASTM A105 Class 3000 ASME B16.11 NPT	
541	1.5				P29B-0000E	Cap ASTM A105 Class 3000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P41A-000B5	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		SCH160		P41A-000B6	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

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STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		SCH160		P41A-000B7	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		SCH160		P41A-000B8	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

CON SWAGED NIPPLE (SNC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	XS	XS	P42A-00036	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	XS	XS	P42A-00038	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	XS	XS	P42A-0003B	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	XS	XS	P42A-00035	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	XS	XS	P42A-00039	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	XS	XS	P42A-0003C	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	XS	XS	P42A-0008C	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	XS	XS	P42A-0008D	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	XS	XS	P42A-0008E	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	XS	XS	P42A-0008F	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	STD	XS	P42A-0007V	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	

ECC SWAGED NIPPLE (SNE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	XS	XS	P43A-00036	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	XS	XS	P43A-00037	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	XS	XS	P43A-00038	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	XS	XS	P43A-00039	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	XS	XS	P43A-0003A	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	XS	XS	P43A-0003B	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	XS	XS	P43A-00042	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	XS	XS	P43A-00043	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	XS	XS	P43A-00044	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	XS	XS	P43A-00045	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	STD	XS	P43A-0003J	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	

COUPLING (CPS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P47B-0001D	Coupling ASTM A105 Class 3000 ASME B16.11 SW - SW	
1	0.75				P47B-0001E	Coupling ASTM A105 Class 3000 ASME B16.11 SW - SW	
1	1				P47B-0001F	Coupling ASTM A105 Class 3000 ASME B16.11 SW - SW	
1	1.5				P47B-0001G	Coupling ASTM A105 Class 3000 ASME B16.11 SW - SW	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2 - 2.5	0.75			P31B-0137J	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	3 - 5	0.75			P31B-0137K	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	6 - 12	0.75			P31B-007AB	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	14 - 36	0.75			P31B-007AJ	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	38 and larger	0.75			P31B-00N1G	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	3	1			P31B-007A7	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	4 - 5	1			P31B-0138Z	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	6 - 10	1			P31B-007A4	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	12 - 36	1			P31B-007AA	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	38 and larger	1			P31B-00N0Y	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	4	1.5			P31B-005SN	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	5 - 6	1.5			P31B-01390	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	8 - 12	1.5			P31B-0079U	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	14 - 24	1.5			P31B-007A0	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	26 - 36	1.5			P31B-01391	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	38 and larger	1.5			P31B-00N17	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
541	1	0.75			P31B-00551	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
541	1.5	0.75			P31B-00555	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	

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OUTLET (L)							
OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
541	2 - 2.5	0.75			P31B-0137H	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
541	3 - 5	0.75			P31B-01376	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
541	6 - 12	0.75			P31B-007GR	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
541	14 - 36	0.75			P31B-007GY	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
541	38 and larger	0.75			P31B-00FFM	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
1	6	2	STD	XS	P31B-007SH	Outlet ASTM A105 MSS SP-97 BW	
1	8	2	SCH20	XS	P31B-00NY2	Outlet ASTM A105 MSS SP-97 BW	
1	10	2	SCH20	XS	P31B-00TFB	Outlet ASTM A105 MSS SP-97 BW	
1	12	2	SCH20	XS	P31B-00TFA	Outlet ASTM A105 MSS SP-97 BW	
1	14	2	SCH20	XS	P31B-00TF9	Outlet ASTM A105 MSS SP-97 BW	
1	16	2	SCH20	XS	P31B-00TF8	Outlet ASTM A105 MSS SP-97 BW	
1	18	2	SCH20	XS	P31B-00NVX	Outlet ASTM A105 MSS SP-97 BW	
1	20	2	STD	XS	P31B-00994	Outlet ASTM A105 MSS SP-97 BW	
1	24	2	STD	XS	P31B-0092Z	Outlet ASTM A105 MSS SP-97 BW	
1	30	2	STD	XS	P31B-008P5	Outlet ASTM A105 MSS SP-97 BW	
1	36	2	XS	XS	P31B-008BB	Outlet ASTM A105 MSS SP-97 BW	
1	42	2	STD	XS	P31B-00EVR	Outlet ASTM A105 MSS SP-97 BW	
1	48	2	XS	XS	P31B-007YJ	Outlet ASTM A105 MSS SP-97 BW	
1	52	2	11.13mm	XS	P31B-00Y9A	Outlet ASTM A105 MSS SP-97 BW	
1	56	2	11.91mm	XS	P31B-00Y9Z	Outlet ASTM A105 MSS SP-97 BW	
1	60	2	12.70mm	XS	P31B-00Y9V	Outlet ASTM A105 MSS SP-97 BW	
1	64	2	12.70mm	XS	P31B-00Y9R	Outlet ASTM A105 MSS SP-97 BW	
1	68	2	14.27mm	XS	P31B-010TA	Outlet ASTM A105 MSS SP-97 BW	
1	72	2	14.27mm	XS	P31B-010TE	Outlet ASTM A105 MSS SP-97 BW	
1	76	2	15.88mm	XS	P31B-011P0	Outlet ASTM A105 MSS SP-97 BW	
1	80	2	15.88mm	XS	P31B-00Y9E	Outlet ASTM A105 MSS SP-97 BW	
1	8	3	SCH20	STD	P31B-00P11	Outlet ASTM A105 MSS SP-97 BW	
1	10	3	SCH20	STD	P31B-00UPG	Outlet ASTM A105 MSS SP-97 BW	
1	12	3	SCH20	STD	P31B-00USE	Outlet ASTM A105 MSS SP-97 BW	
1	14	3	SCH20	STD	P31B-00UPH	Outlet ASTM A105 MSS SP-97 BW	
1	16	3	SCH20	STD	P31B-00TU2	Outlet ASTM A105 MSS SP-97 BW	
1	18	3	SCH20	STD	P31B-00NZ4	Outlet ASTM A105 MSS SP-97 BW	
1	20	3	STD	STD	P31B-008FA	Outlet ASTM A105 MSS SP-97 BW	
1	24	3	STD	STD	P31B-00895	Outlet ASTM A105 MSS SP-97 BW	
1	30	3	STD	STD	P31B-007WY	Outlet ASTM A105 MSS SP-97 BW	
1	36	3	XS	STD	P31B-007P1	Outlet ASTM A105 MSS SP-97 BW	
1	42	3	STD	STD	P31B-00EVS	Outlet ASTM A105 MSS SP-97 BW	
1	48	3	XS	STD	P31B-00AFD	Outlet ASTM A105 MSS SP-97 BW	
1	52	3	11.13mm	STD	P31B-00Y9B	Outlet ASTM A105 MSS SP-97 BW	
1	56	3	11.91mm	STD	P31B-00YA0	Outlet ASTM A105 MSS SP-97 BW	
1	60	3	12.70mm	STD	P31B-00Y9W	Outlet ASTM A105 MSS SP-97 BW	
1	64	3	12.70mm	STD	P31B-00Y9S	Outlet ASTM A105 MSS SP-97 BW	
1	68	3	14.27mm	STD	P31B-010TB	Outlet ASTM A105 MSS SP-97 BW	
1	72	3	14.27mm	STD	P31B-010TF	Outlet ASTM A105 MSS SP-97 BW	
1	76	3	15.88mm	STD	P31B-011P1	Outlet ASTM A105 MSS SP-97 BW	
1	80	3	15.88mm	STD	P31B-00Y9F	Outlet ASTM A105 MSS SP-97 BW	
1	12	4	SCH20	STD	P31B-00USF	Outlet ASTM A105 MSS SP-97 BW	
1	14	4	SCH20	STD	P31B-00UPJ	Outlet ASTM A105 MSS SP-97 BW	
1	16	4	SCH20	STD	P31B-00TU3	Outlet ASTM A105 MSS SP-97 BW	
1	18	4	SCH20	STD	P31B-00P1V	Outlet ASTM A105 MSS SP-97 BW	
1	20	4	STD	STD	P31B-008D3	Outlet ASTM A105 MSS SP-97 BW	
1	24	4	STD	STD	P31B-0086X	Outlet ASTM A105 MSS SP-97 BW	
1	30	4	STD	STD	P31B-007US	Outlet ASTM A105 MSS SP-97 BW	
1	36	4	XS	STD	P31B-00AEP	Outlet ASTM A105 MSS SP-97 BW	
1	42	4	STD	STD	P31B-00EVT	Outlet ASTM A105 MSS SP-97 BW	
1	48	4	XS	STD	P31B-00A2P	Outlet ASTM A105 MSS SP-97 BW	
1	52	4	11.13mm	STD	P31B-00Y9C	Outlet ASTM A105 MSS SP-97 BW	
1	56	4	11.91mm	STD	P31B-00YA1	Outlet ASTM A105 MSS SP-97 BW	
1	60	4	12.70mm	STD	P31B-00Y9X	Outlet ASTM A105 MSS SP-97 BW	

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OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	64	4	12.70mm	STD	P31B-00Y9T	Outlet ASTM A105 MSS SP-97 BW	
1	68	4	14.27mm	STD	P31B-010TC	Outlet ASTM A105 MSS SP-97 BW	
1	72	4	14.27mm	STD	P31B-010TG	Outlet ASTM A105 MSS SP-97 BW	
1	76	4	15.88mm	STD	P31B-011P2	Outlet ASTM A105 MSS SP-97 BW	
1	80	4	15.88mm	STD	P31B-00Y9G	Outlet ASTM A105 MSS SP-97 BW	
1	18	6	SCH20	STD	P31B-00P48	Outlet ASTM A105 MSS SP-97 BW	
1	20	6	STD	STD	P31B-008PZ	Outlet ASTM A105 MSS SP-97 BW	
1	24	6	STD	STD	P31B-008JD	Outlet ASTM A105 MSS SP-97 BW	
1	30	6	STD	STD	P31B-008BS	Outlet ASTM A105 MSS SP-97 BW	
1	36	6	XS	STD	P31B-0085G	Outlet ASTM A105 MSS SP-97 BW	
1	42	6	STD	STD	P31B-007ZP	Outlet ASTM A105 MSS SP-97 BW	
1	48	6	XS	STD	P31B-007U6	Outlet ASTM A105 MSS SP-97 BW	
1	52	6	11.13mm	STD	P31B-00Y9D	Outlet ASTM A105 MSS SP-97 BW	
1	56	6	11.91mm	STD	P31B-00YA2	Outlet ASTM A105 MSS SP-97 BW	
1	60	6	12.70mm	STD	P31B-00Y9Y	Outlet ASTM A105 MSS SP-97 BW	
1	64	6	12.70mm	STD	P31B-00Y9U	Outlet ASTM A105 MSS SP-97 BW	
1	68	6	14.27mm	STD	P31B-010TD	Outlet ASTM A105 MSS SP-97 BW	
1	72	6	14.27mm	STD	P31B-010TH	Outlet ASTM A105 MSS SP-97 BW	
1	76	6	15.88mm	STD	P31B-011P3	Outlet ASTM A105 MSS SP-97 BW	
1	80	6	15.88mm	STD	P31B-00Y9H	Outlet ASTM A105 MSS SP-97 BW	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30B-0002D	Plug ASTM A105 ASME B16.11 NPT Round head	
1	0.75				P30B-0002E	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1				P30B-0002F	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1.5				P30B-0002G	Plug ASTM A105 ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P61B-001R9	Flange SW ASTM A105 Class 150 ASME B16.5 RF	
1	0.75		XS		P61B-001RA	Flange SW ASTM A105 Class 150 ASME B16.5 RF	
1	1		XS		P61B-001RR	Flange SW ASTM A105 Class 150 ASME B16.5 RF	
1	1.5		XS		P61B-001RV	Flange SW ASTM A105 Class 150 ASME B16.5 RF	
1	2		XS		P61B-003NK	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	3		STD		P61B-001PW	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	4		STD		P61B-001R8	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	6		STD		P61B-001RT	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	8		SCH20		P61B-002BF	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	10		SCH20		P61B-002B4	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	12		SCH20		P61B-002B5	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	14		SCH20		P61B-002B6	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	16		SCH20		P61B-002B7	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	18		SCH20		P61B-002B8	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	20		STD		P61B-001JA	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	24		STD		P61B-001NJ	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	30		STD		P61B-001S8	Flange WN ASTM A105 Class 150 ASME B16.47 Series B RF	
1	36		XS		P61B-001UE	Flange WN ASTM A105 Class 150 ASME B16.47 Series B RF	
1	42		STD		P61B-003M9	Flange WN ASTM A105 Class 150 ASME B16.47 Series B RF	
1	48		XS		P61B-004CX	Flange WN ASTM A105 Class 150 ASME B16.47 Series B RF	
1	52		11.13mm		P61B-004D1	Flange WN ASTM A105 Class 150 ASME B16.47 Series B RF	
1	56		11.91mm		P61B-004DN	Flange WN ASTM A105 Class 150 ASME B16.47 Series B RF	
1	60		12.70mm		P61B-004EL	Flange WN ASTM A105 Class 150 ASME B16.47 Series B RF	
1	64		12.70mm		P61B-0093B	Flange WN ASTM A105 Class 150 Standard-drawing RF	
1	68		14.27mm		P61B-00BRY	Flange WN ASTM A105 Class 150 Standard-drawing RF	
1	72		14.27mm		P61B-00BRZ	Flange WN ASTM A105 Class 150 Standard-drawing RF	
1	76		15.88mm		P61B-00BS0	Flange WN ASTM A105 Class 150 Standard-drawing RF	
1	80		15.88mm		P61B-00ABC	Flange WN ASTM A105 Class 150 Standard-drawing RF	
1	0.5		XS		P61B-001HC	Flange SW ASTM A105 Class 300 ASME B16.5 RF	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
773	0.75		XS		P61B-001HS	Flange SW ASTM A105 Class 300 ASME B16.5 RF	
773	1		XS		P61B-001EF	Flange SW ASTM A105 Class 300 ASME B16.5 RF	
773	1.5		XS		P61B-001F2	Flange SW ASTM A105 Class 300 ASME B16.5 RF	
773	2		XS		P61B-001HW	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	3		STD		P61B-001LJ	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	4		STD		P61B-001MC	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	6		STD		P61B-001N2	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	8		SCH20		P61B-002LJ	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	10		SCH20		P61B-002LH	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	12		SCH20		P61B-002MP	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	14		SCH20		P61B-002MR	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	16		SCH20		P61B-002MS	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	18		SCH20		P61B-002MT	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	20		STD		P61B-001NT	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	24		STD		P61B-001PA	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	30		STD		P61B-003SW	Flange WN ASTM A105 Class 300 ASME B16.47 Series B RF	
773	36		XS		P61B-001N6	Flange WN ASTM A105 Class 300 ASME B16.47 Series B RF	
773	42		STD		P61B-003P8	Flange WN ASTM A105 Class 300 ASME B16.47 Series B RF	
773	48		XS		P61B-003TH	Flange WN ASTM A105 Class 300 ASME B16.47 Series B RF	
773	52		11.13mm		P61B-009SS	Flange WN ASTM A105 Class 300 ASME B16.47 Series B RF	
773	56		11.91mm		P61B-00ABD	Flange WN ASTM A105 Class 300 ASME B16.47 Series B RF	
773	60		12.70mm		P61B-00ABE	Flange WN ASTM A105 Class 300 ASME B16.47 Series B RF	
781	0.5		XS		P61B-001FF	Flange SW ASTM A105 Class 600 ASME B16.5 RF	
781	0.75		XS		P61B-001FH	Flange SW ASTM A105 Class 600 ASME B16.5 RF	
781	1		XS		P61B-001DR	Flange SW ASTM A105 Class 600 ASME B16.5 RF	
781	1.5		XS		P61B-001DV	Flange SW ASTM A105 Class 600 ASME B16.5 RF	
781	2		XS		P61B-001DH	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	3		STD		P61B-001TW	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	4		STD		P61B-001VV	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	6		STD		P61B-001JW	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
789	3		STD		P61B-006SP	Flange WN ASTM A105 Class 900 ASME B16.5 RJ	
789	4		STD		P61B-007A0	Flange WN ASTM A105 Class 900 ASME B16.5 RJ	
797	0.5		XS		P61B-009T3	Flange SW ASTM A105 Class 1500 ASME B16.5 RJ	
797	0.75		XS		P61B-009T4	Flange SW ASTM A105 Class 1500 ASME B16.5 RJ	
797	1		XS		P61B-009T5	Flange SW ASTM A105 Class 1500 ASME B16.5 RJ	
797	1.5		XS		P61B-009T6	Flange SW ASTM A105 Class 1500 ASME B16.5 RJ	
797	2		XS		P61B-0065C	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
797	3		STD		P61B-009W7	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
797	4		STD		P61B-009W8	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
805	12		SCH20		P61B-00EWK	Flange WN ASTM A105 Class 2500 ASME B16.5 RJ	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67B-000FH	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	0.75				P67B-000FJ	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	1				P67B-000FK	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	1.5				P67B-000FL	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	2				P67B-000FT	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	3				P67B-000FW	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	4				P67B-000FX	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	6				P67B-000FY	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	8				P67B-000FZ	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	10				P67B-000FM	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	12				P67B-000FN	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	14				P67B-000FP	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	16				P67B-000FR	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	18				P67B-000FS	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	20				P67B-000FU	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	24				P67B-000FV	Blind flange ASTM A105 Class 150 ASME B16.5 RF	

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BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	30				P67B-000G2	Blind flange ASTM A105 Class 150 ASME B16.47 Series B RF	
1	36				P67B-000G5	Blind flange ASTM A105 Class 150 ASME B16.47 Series B RF	
1	42				P67B-000KZ	Blind flange ASTM A105 Class 150 ASME B16.47 Series B RF	
1	48				P67B-000L2	Blind flange ASTM A105 Class 150 ASME B16.47 Series B RF	
1	52				P67B-0016N	Blind flange ASTM A105 Class 150 ASME B16.47 Series B RF	
1	56				P67B-0016R	Blind flange ASTM A105 Class 150 ASME B16.47 Series B RF	
1	60				P67B-0016T	Blind flange ASTM A105 Class 150 ASME B16.47 Series B RF	
1	64				P67B-0016V	Blind flange ASTM A105 Class 150 Standard-drawing RF	
1	68				P67B-0016X	Blind flange ASTM A105 Class 150 Standard-drawing RF	
1	72				P67B-00178	Blind flange ASTM A105 Class 150 Standard-drawing RF	
1	76				P67B-0017A	Blind flange ASTM A105 Class 150 Standard-drawing RF	
1	80				P67B-0017C	Blind flange ASTM A105 Class 150 Standard-drawing RF	

REDUCING FLANGE (FR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5		XS	P62B-000MV	Reducing flange SW ASTM A105 Class 150 ASME B16.5 RF	
1	2	0.75		XS	P62B-000NC	Reducing flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	2	1		XS	P62B-000K6	Reducing flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	2	1.5		XS	P62B-000K7	Reducing flange WN ASTM A105 Class 150 ASME B16.5 RF	
773	2	0.75		XS	P62B-000ND	Reducing flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	2	1		XS	P62B-000MA	Reducing flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	2	1.5		XS	P62B-000MB	Reducing flange WN ASTM A105 Class 300 ASME B16.5 RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000L8	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000L9	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000LA	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000LB	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000LH	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000LL	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000LM	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	6				P73T-000LN	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	8				P73T-000LP	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	10				P73T-000LC	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	12				P73T-000LD	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	14				P73T-000LE	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	16				P73T-000LF	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	18				P73T-000LG	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	20				P73T-000LJ	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	24				P73T-000LK	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	30				P73T-000LT	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	36				P73T-000LW	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	42				P73T-000LZ	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	48				P73T-000M2	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	52				P73T-001E2	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	56				P73T-0024L	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	60				P73T-001E5	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	64				P73T-003GZ	Spiral wound gasket SS316 winding / Graphite filler Class 150 Standard-drawing Flange Standard-drawing RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	68				P73T-003H0	Spiral wound gasket SS316 winding / Graphite filler Class 150 Standard-drawing Flange Standard-drawing RF 4.5mm-T Outer-ring CS Inner-ring SS316	

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GASKET (G)							
OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	72				P73T-003H1	Spiral wound gasket SS316 winding / Graphite filler Class 150 Standard-drawing Flange Standard-drawing RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	76				P73T-003H2	Spiral wound gasket SS316 winding / Graphite filler Class 150 Standard-drawing Flange Standard-drawing RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	80				P73T-003H3	Spiral wound gasket SS316 winding / Graphite filler Class 150 Standard-drawing Flange Standard-drawing RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	0.5				P73T-000FT	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	0.75				P73T-000FU	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	3				P73T-000G5	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	4				P73T-000G6	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	6				P73T-000G7	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	8				P73T-000G8	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	10				P73T-000FX	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	12				P73T-000FY	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	14				P73T-000FZ	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	16				P73T-000G0	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	18				P73T-000G1	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	20				P73T-000G3	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	24				P73T-000G4	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	30				P73T-000H9	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	36				P73T-000HC	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	42				P73T-000KM	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	48				P73T-000KR	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	52				P73T-0024N	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	56				P73T-0024M	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	60				P73T-0026H	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	0.5				P73T-000J8	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	0.75				P73T-000J9	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1				P73T-000JA	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1.5				P73T-000JB	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	2				P73T-000JH	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	3				P73T-000JL	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	4				P73T-000JM	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	6				P73T-000JN	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
789	3				P75T-000JN	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	4				P75T-000JP	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	0.5				P75T-000JT	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	0.75				P75T-000JU	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	1				P75T-000JV	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	1.5				P75T-000JW	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	2				P75T-0008A	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	3				P75T-0008E	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	4				P75T-0008D	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	12				P75T-000MB	Ring joint gasket Soft iron Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	

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BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-16				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	18-20				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
1	24				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	999
1	30-42				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	48-56				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
1	60-80				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	999
773	0.5-10				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
773	12-60				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
781	0.5-6				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
789	0.5-3				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
789	4-6				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
797	0.5-2				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
797	3-4				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
805	12				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81B-000P4	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	0.75				P81B-000NX	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	1				P81B-000NY	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	1.5				P81B-000NZ	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	2				P81C-002DV	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	3				P81C-002DW	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	4				P81C-002DX	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	6				P81C-002DY	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	8				P81C-002DZ	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	10				P81C-002DT	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	12				P81C-002DU	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	14				P81C-00308	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated	
1	16				P81C-002E0	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated	
1	18				P81C-002E1	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated	
1	20				P81C-002E2	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated	
1	24				P81C-002E3	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated	
1	30				P81C-004D8	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.47-B RF Trim number 8 BB-BG-OS&Y Gear operated	
1	36				P81C-004D9	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.47-B RF Trim number 8 BB-BG-OS&Y Gear operated	
1	42				P81C-004E4	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.47-B RF Trim number 8 BB-BG-OS&Y Gear operated	
1	48				P81C-005F1	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.47-B RF Trim number 8 BB-BG-OS&Y Gear operated	
714	0.5				P81B-0015L	Gate valve ASTM A105 Class 800 API 602 SW - NPT Trim number 8 BB-BG-OS&Y Handwheel operated	
714	0.75				P81B-002F4	Gate valve ASTM A105 Class 800 API 602 SW - NPT Trim number 8 BB-BG-OS&Y Handwheel operated	
773	2				P81C-002D6	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82B-000K0	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	0.75				P82B-000HB	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	1				P82B-000HC	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	1.5				P82B-000HD	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	2				P82C-000N5	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	

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GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3				P82C-000N6	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	4				P82C-000N7	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	6				P82C-000N8	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	8				P82C-0026L	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	10				P82C-002V6	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83B-000FX	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover	
1	0.75				P83B-000ER	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover	
1	1				P83B-000ES	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover	
1	1.5				P83B-000ET	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover	
1	2				P83C-00144	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	3				P83C-00147	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	4				P83C-00148	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	6				P83C-00149	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	8				P83C-0014A	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	10				P83C-00140	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	12				P83C-00141	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	14				P83C-0021E	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	16				P83C-00142	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	18				P83C-00143	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	20				P83C-00145	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	24				P83C-00146	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	

DP CHECK VALVE (XDP)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	30				P88C-0023A	Dual plate check valve ASTM A216 Grade WCB Class 150 API 594 Wafer-type ASME B16.47-B RF Trim number 8 Internal wetted parts 13Cr Spring Inconel Retainerless-type	
1	36				P88C-0023B	Dual plate check valve ASTM A216 Grade WCB Class 150 API 594 Wafer-type ASME B16.47-B RF Trim number 8 Internal wetted parts 13Cr Spring Inconel Retainerless-type	
1	42				P88C-0025X	Dual plate check valve ASTM A216 Grade WCB Class 150 API 594 Wafer-type ASME B16.47-B RF Trim number 8 Internal wetted parts 13Cr Spring Inconel Retainerless-type	
1	48				P88C-0023C	Dual plate check valve ASTM A216 Grade WCB Class 150 API 594 Wafer-type ASME B16.47-B RF Trim number 8 Internal wetted parts 13Cr Spring Inconel Retainerless-type	
1	52				P88C-00263	Dual plate check valve ASTM A216 Grade WCB Class 150 Manufacturer-standard Wafer-type ASME B16.47-B RF Trim number 8 Internal wetted parts 13Cr Spring Inconel Retainerless-type	
1	56				P88C-0023D	Dual plate check valve ASTM A216 Grade WCB Class 150 Manufacturer-standard Wafer-type ASME B16.47-B RF Trim number 8 Internal wetted parts 13Cr Spring Inconel Retainerless-type	
4602	12				P88C-0031S	Dual plate check valve ASTM A216 Grade WCB Class 150 API 594 Wafer-type ASME B16.5 RF Trim number 8 Internal wetted parts 13Cr Spring Inconel Retainerless-type	

BALL VALVE (Q)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P84B-0011T	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design	
1	0.75				P84B-0011U	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design	
1	1				P84B-0011V	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design	
1	1.5				P84B-0011W	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design	
1	2				P84C-005UD	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design	
24	0.5				P84B-0011X	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	
24	0.75				P84B-0011Y	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	
24	1				P84B-0011Z	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	
24	1.5				P84B-00120	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	
24	2				P84C-005UJ	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	

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BUTTERFLY VALVE (H)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	10				P86C-00230	Offset design butterfly valve ASTM A216 Grade WCB Class 150 API 609 Category B Lug-type ASME B16.5 RF Disc CS Seat Stellite-6 Trim 13Cr Triple eccentric design BG Gear operated	
1	12				P86C-00231	Offset design butterfly valve ASTM A216 Grade WCB Class 150 API 609 Category B Lug-type ASME B16.5 RF Disc CS Seat Stellite-6 Trim 13Cr Triple eccentric design BG Gear operated	
1	14				P86C-00232	Offset design butterfly valve ASTM A216 Grade WCB Class 150 API 609 Category B Lug-type ASME B16.5 RF Disc CS Seat Stellite-6 Trim 13Cr Triple eccentric design BG Gear operated	
1	16				P86C-00233	Offset design butterfly valve ASTM A216 Grade WCB Class 150 API 609 Category B Lug-type ASME B16.5 RF Disc CS Seat Stellite-6 Trim 13Cr Triple eccentric design BG Gear operated	
1	18				P86C-00234	Offset design butterfly valve ASTM A216 Grade WCB Class 150 API 609 Category B Lug-type ASME B16.5 RF Disc CS Seat Stellite-6 Trim 13Cr Triple eccentric design BG Gear operated	
1	20				P86C-001AY	Offset design butterfly valve ASTM A216 Grade WCB Class 150 API 609 Category B Double flanged ASME B16.5 RF Disc CS Seat Stellite-6 Trim 13Cr Triple eccentric design BG Gear operated	
1	24				P86C-001AZ	Offset design butterfly valve ASTM A216 Grade WCB Class 150 API 609 Category B Double flanged ASME B16.5 RF Disc CS Seat Stellite-6 Trim 13Cr Triple eccentric design BG Gear operated	
1	30				P86C-00235	Offset design butterfly valve ASTM A216 Grade WCB Class 150 API 609 Category B Double flanged ASME B16.47-B RF Disc CS Seat Stellite-6 Trim 13Cr Triple eccentric design BG Gear operated	

ORIFICE FLANGE (FO)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2		XS		P66B-0084B	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	3		STD		P66B-0084C	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	4		STD		P66B-0084D	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	6		STD		P66B-0084E	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	8		SCH20		P66B-0084F	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	10		SCH20		P66B-00848	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	12		SCH20		P66B-0084L	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	14		SCH20		P66B-0084A	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	16		SCH20		P66B-0083Y	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	18		SCH20		P66B-0084R	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	20		STD		P66B-0084S	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
200	2		XS		P66B-00843	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	3		STD		P66B-00844	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	4		STD		P66B-00845	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	6		STD		P66B-00846	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	8		SCH20		P66B-00847	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	10		SCH20		P66B-00840	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	12		SCH20		P66B-0084P	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	14		SCH20		P66B-00842	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	16		SCH20		P66B-0083Z	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	18		SCH20		P66B-0084T	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	20		STD		P66B-0084U	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71B-0008A	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	0.75				P71B-0008B	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	1				P71B-0008C	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71B-0008D	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	2				P71B-0000P	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	3				P71B-0000N	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	4				P71B-0000M	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	6				P71B-0000L	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	8				P71B-0000R	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	10				P71B-0000K	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	12				P71B-0000J	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	

PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000AH	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	16				P72B-0000C	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	18				P72B-000AJ	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	20				P72B-000AK	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	24				P72B-000AL	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	30				P72B-000AM	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	

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PADDLE BLANK (PB)							
OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	36				P72B-000AN	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	42				P72B-000AP	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	48				P72B-000AR	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	52				P72B-000AS	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	56				P72B-000BC	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	60				P72B-000BD	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	64				P72B-000BE	Paddle blank ASTM A105 Class 150 Standard-drawing Flange Standard-drawing RF	
1	68				P72B-000BF	Paddle blank ASTM A105 Class 150 Standard-drawing Flange Standard-drawing RF	
1	72				P72B-000BG	Paddle blank ASTM A105 Class 150 Standard-drawing Flange Standard-drawing RF	
1	76				P72B-000TU	Paddle blank ASTM A105 Class 150 Standard-drawing Flange Standard-drawing RF	
1	80				P72B-000BH	Paddle blank ASTM A105 Class 150 Standard-drawing Flange Standard-drawing RF	

PADDLE SPACER (PS)							
OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000AT	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	16				P72B-0000B	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	18				P72B-000AU	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	20				P72B-000AV	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	24				P72B-000AW	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	30				P72B-000AX	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	36				P72B-000AY	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	42				P72B-000AZ	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	48				P72B-000B0	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	52				P72B-000B1	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	56				P72B-000BJ	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	60				P72B-000BK	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	64				P72B-000BL	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange Standard-drawing RF	
1	68				P72B-000BM	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange Standard-drawing RF	
1	72				P72B-000BN	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange Standard-drawing RF	
1	76				P72B-000TV	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange Standard-drawing RF	
1	80				P72B-000BP	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange Standard-drawing RF	

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BOLT TABLE (B_A1AP , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	60	P80S-003V2		
0.75	4	0.500	65	P80S-003V3		
1	4	0.500	70	P80S-003V4		
1.5	4	0.500	75	P80S-003V5		
2	4	0.625	85	P80S-003XE		
3	4	0.625	95	P80S-003XG		
4	8	0.625	95	P80S-003XG		
6	8	0.750	105	P80S-003XJ		
8	8	0.750	110	P80S-003XK		
10	12	0.875	120	P80S-00419		
12	12	0.875	120	P80S-00419		
14	12	1.000	135	P80S-0043E		
16	16	1.000	140	P80S-0043F		
18	16	1.125	150	P80S-0046K		
20	20	1.125	160	P80S-0046M		
24	20	1.250	175	P80S-004AG		
30	44	0.750	145	P80S-003ZK		
36	44	0.875	175	P80S-0041M		
42	48	1.000	190	P80S-0043T		
48	44	1.125	210	P80S-0046Z		
52	52	1.125	220	P80S-00471		
56	60	1.125	225	P80S-00472		
60	52	1.250	240	P80S-004AW		
64	52	1.250	280	P80S-004B4		
68	52	1.250	290	P80S-004B6		
72	52	1.250	300	P80S-004DL		
76	52	1.250	310	P80S-004CW		
80	52	1.250	320	P80S-004CY		

BOLT TABLE (B_A1AP_773 , STUD ASME RF, OPTION CODE 773)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-003V4		
0.75	4	0.625	75	P80S-003XC		
1	4	0.625	80	P80S-003XD		
1.5	4	0.750	95	P80S-00414		
2	8	0.625	90	P80S-003XF		
3	8	0.750	110	P80S-003XK		
4	8	0.750	115	P80S-003XL		
6	12	0.750	125	P80S-003XN		
8	12	0.875	140	P80S-0041D		
10	16	1.000	160	P80S-0043K		
12	16	1.125	175	P80S-0046S		
14	20	1.125	180	P80S-0046T		
16	20	1.250	190	P80S-004AK		
18	24	1.250	200	P80S-004AM		
20	24	1.250	210	P80S-004AP		
24	24	1.500	235	P80S-003F8		
30	36	1.375	285	P80S-003EA		
36	32	1.625	320	P80S-005TT		
42	36	1.750	355	P80S-007B5		
48	40	1.875	380	P80S-008P4		
52	48	1.875	410	P80S-008PA		
56	36	2.250	450	P80S-00P4T		
60	40	2.250	445	P80S-00P4U		

BOLT TABLE (B_A1AP_781 , STUD ASME RF, OPTION CODE 781)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	80	P80S-003V6		
0.75	4	0.625	90	P80S-003XF		
1	4	0.625	95	P80S-003XG		
1.5	4	0.750	110	P80S-003XK		
2	8	0.625	110	P80S-003VC		
3	8	0.750	130	P80S-003XP		
4	8	0.875	150	P80S-0041F		
6	12	1.000	175	P80S-0043P		
8	12	1.125	195			
10	16	1.250	250			

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BOLT TABLE (B_A1AP_781 , STUD ASME RF, OPTION CODE 781)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
12	20	1.250	255			
14	20	1.375	270			
16	20	1.500	295			
18	20	1.625	320			
20	24	1.625	335			
24	24	1.875	380			
30	28	1.875	435			
36	28	2.250	510			
42	28	2.500	575			
48	32	2.750	635			
52	32	3.000	680			
56	32	3.250	730			
60	28	3.500	780			
64			0			
68			0			
72			0			
76			0			
80			0			

BOLT TABLE (B_A1AP_789 , STUD ASME RJ, OPTION CODE 789)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	110	P80S-003XK	R12	
0.75	4	0.750	115	P80S-003XL	R14	
1	4	0.875	130	P80S-0041B	R16	
1.5	4	1.000	140	P80S-0043F	R20	
2	8	0.875	150	P80S-0041F	R24	
3	8	0.875	150	P80S-0041F	R31	P75T-000JN
4	8	1.125	175	P80S-0046S	R37	P75T-000JP
6	12	1.125	200	P80S-0046X	R45	
8	12	1.375	260		R49	
10	16	1.375	275		R53	
12	20	1.375	295		R57	
14	20	1.500	325		R62	
16	20	1.625	340		R66	
18	20	1.875	390		R70	
20	20	2.000	415		R74	
24	20	2.500	525		R78	
30	20	3.000	600		R102	
36	20	3.500	690		R105	

BOLT TABLE (B_A1AP_797 , STUD ASME RJ, OPTION CODE 797)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	110	P80S-003XK	R12	P75T-000JT
0.75	4	0.750	115	P80S-003XL	R14	P75T-000JU
1	4	0.875	130	P80S-0041B	R16	P75T-000JV
1.5	4	1.000	140	P80S-0043F	R20	P75T-000JW
2	8	0.875	150	P80S-0041F	R24	P75T-0008A
3	8	1.125	180	P80S-0046T	R35	P75T-0008E
4	8	1.250	230	P80S-004AU	R39	P75T-0008D
6	12	1.375	300		R46	
8	12	1.625	345		R50	
10	12	1.875	395		R54	
12	16	2.000	445		R58	
14	16	2.250	490		R63	
16	16	2.500	540		R67	
18	16	2.750	590		R71	
20	16	3.000	650		R75	
24	16	3.500	745		R79	

BOLT TABLE (B_A1AP_805 , STUD ASME RJ, OPTION CODE 805)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	125		R13	
0.75	4	0.750	130		R16	
1	4	0.875	140		R18	
1.5	4	1.125	175		R23	
2	8	1.000	180		R26	

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BOLT TABLE (B_A1AP_805 , STUD ASME RJ, OPTION CODE 805)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
3	8	1.250	260		R32	
4	8	1.500	305		R38	
6	8	2.000	410		R47	
8	12	2.000	450		R51	
10	12	2.500	575		R55	
12	12	2.750	635	P80S-00PWW	R60	P75T-000MB
14	14	3.000	695		R64	
16	14	3.000	755		R68	
18	16	3.000	815		R72	
20	16	3.000	875		R76	
24	18	3.000	950		R81	

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BRANCH TABLE (T_A1AP)

RUN PIPE SIZE (in) \ BRANCH SIZE (in)	0.5	0.75	1	1.5	2	3	4	6	8	10	12	14	16	18	20	24	30	36	42	48	52	56	60	64	68	72	76	80
0.5	TS																											
0.75		TS																										
1		TR	TS																									
1.5		TR	TR	TS																								
2		L	TR	TR	TS																							
3		L	L	TR	TR	TS																						
4	L	L	L	L	TR	TR	TS																					
6	L	L	L	L	L	TR	TR	TS																				
8		L	L	L	L	L	TR	TR	TS																			
10		L	L	L	L	L	TR	TR	TR	TS																		
12		L	L	L	L	L	L	TR	TR	TR	TS																	
14		L	L	L	L	L	L	TR	TR	TR	TR	TS																
16		L	L	L	L	L	L	TR	TR	TR	TR	TR	TS															
18		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TS														
20		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TR	TS													
24		L	L	L	L	L	L	L	9PD	TR	TR	TR	TR	TR	TR	TS												
30		L	L	L	L	L	L	L	9PD	TR	TR	TR	TR	TR	TR	TR	TS											
36		L	L	L	L	L	L	L	9PD	9PD	9PD	9PD	TR	TR	TR	TR	TR	TS										
42		L	L	L	L	L	L	L	9PD	9PD	9PD	9PD	TR	TR	TR	TR	TR	TR	TS									
48		L	L	L	L	L	L	L	9PD	9PD	9PD	9PD	9PD	9PD	9PD	TR	TR	TR	TR	TS								
52		L	L	L	L	L	L	L	9PD	9PD	9PD	9PD	9PD	9PD	9PD	9PD	TR	TR	TR	TR	TS							
56		L	L	L	L	L	L	L	9PD	9PD	9PD	9PD	9PD	9PD	9PD	9PD	TR	TR	TR	TR	TR	TS						
60		L	L	L	L	L	L	L	9PD	9PD	9PD	9PD	9PD	9PD	9PD	9PD	TR	TR	TR	TR	TR	TR	TS					
64		L	L	L	L	L	L	L	9PD	9PD	9PD	9PD	9PD	9PD	9PD	9PD	9PD	TR	TR	TR	TR	TR	TR	TS				
68		L	L	L	L	L	L	L	9PD	9PD	9PD	9PD	9PD	9PD	9PD	9PD	9PD	TR	TR	TR	TR	TR	TR	TR	TS			
72		L	L	L	L	L	L	L	9PD	9PD	9PD	9PD	9PD	9PD	9PD	9PD	9PD	TR	TR	TR	TR	TR	TR	TR	TR	TS		
76		L	L	L	L	L	L	L	9PD	9PD	9PD	9PD	9PD	9PD	9PD	9PD	9PD	9PD	TR	TR	TR	TR	TR	TR	TR	TR	TS	
80		L	L	L	L	L	L	L	9PD	9PD	9PD	9PD	9PD	9PD	9PD	9PD	9PD	9PD	TR	TR	TR	TR	TR	TR	TR	TR	TR	TS

9PD : REINFORCING PAD 90 DEG
TS : STRAIGHT TEE
TR : REDUCING TEE
L : OUTLET

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PIPING CLASS

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BRANCH TABLE (T_A1AP_3)

RUN PIPE SIZE (in) \ BRANCH SIZE (in)	0.5	0.75	1	1.5	2	3	4	6	8	10	12	14	16	18	20	24	30	36	42	48	52	56	60	64	68	72	76	80
0.5																												
0.75		TLS																										
1		6PD	TLS																									
1.5		6PD	6PD	TLS																								
2		6PD	6PD	6PD	TLS																							
3		6PD	6PD	6PD	6PD	TLS																						
4		6PD	6PD	6PD	6PD	6PD	TLS																					
6		6PD	6PD	6PD	6PD	6PD	6PD	TLS																				
8		6PD	6PD	6PD	6PD	6PD	6PD	6PD	TLS																			
10		6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	TLS																		
12		6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	TLS																	
14		6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	TLS																
16		6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	TLS															
18		6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	TLS														
20		6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	TLS													
24		6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	TLS												
30		6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	TLS											
36		6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	TLS										
42		6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	TLS									
48		6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	TLS								
52		6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	TLS							
56		6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	TLS						
60		6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	TLS					
64		6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	TLS				
68		6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	TLS			
72																												
76		6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD		TLS	
80		6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD		6PD	TLS

TLS : STRAIGHT LATERAL TEE
6PD : REINFORCING PAD 60 DEG

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PIPING CLASS

A1AP01 REV NO. 2

Material : Killed CS
Rating : ASME CLASS 150
Flange Face : RF
C.A.(mm) : 1.50
Gasket : Spiral Wound
Service : PROCESS - GENERAL PROCESS NON SOUR, NON CORROSIVE
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
2	USE OF SOFT SEATED BALL, PLUG AND BUTTERFLY VALVES SHALL BE LIMITED TO MAXIMUM OF 204DEGC (400DEGF)

DETAIL NOTES :

NO.	DESCRIPTION
999	HOLD ITEMS. ORDER PLACEMENT SHALL NOT BE DONE BEFORE RELEASING HOLD.

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
24	FULL PORT (Q)
200	WITH JACK SCREW (FO)
541	NPT(F) (CA,L)
714	SW - NPT(F) (V)
773	CLASS 300 (B,F,G,SB,V)
781	CLASS 600 (B,F,G)

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PIPING CLASS
A1AP01 REV NO. 2

PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P01A-007AZ	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE Licensor-1	
1	0.75		XS		P01A-007B0	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE Licensor-1	
1	1		XS		P01A-007B1	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE Licensor-1	
1	1.5		XS		P01A-007B2	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE Licensor-1	
1	2		XS		P01A-0078Y	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Licensor-1	
1	3		STD		P01A-0078Z	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Licensor-1	
1	4		STD		P01A-007B3	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Licensor-1	
1	6		STD		P01A-007B8	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Licensor-1	
1	8		SCH20		P01A-007B9	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Licensor-1	
1	10		SCH20		P01A-007B4	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Licensor-1	
1	12		SCH20		P01A-007B5	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Licensor-1	
1	14		SCH20		P01A-007B6	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Licensor-1	
1	16		SCH20		P01A-007B7	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Licensor-1	
1	18		SCH20		P01A-007BA	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE Licensor-1	
1	20		STD		P01A-007BB	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE Licensor-1	
1	24		STD		P01A-007BC	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE Licensor-1	
1	30		STD		P01A-007TY	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE Licensor-1	
1	32		STD		P01A-008R4	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE Licensor-1	
1	36		XS		P01A-008MS	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE Licensor-1	
1	42		STD		P01A-007BF	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE Licensor-1	
1	48		XS		P01A-007BG	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE Licensor-1	
1	52		11.13mm		P01A-007BH	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE Licensor-1	
1	56		11.91mm		P01A-007BJ	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE Licensor-1	
1	60		12.70mm		P01A-007BK	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE Licensor-1	
1	64		12.70mm		P01A-007BL	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE Licensor-1	
1	68		14.27mm		P01A-008MT	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE Licensor-1	
1	72		14.27mm		P01A-008MU	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE Licensor-1	
1	76		15.88mm		P01A-008MV	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE Licensor-1	
1	80		15.88mm		P01A-007BP	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE Licensor-1	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P02B-0007G	90 degree elbow ASTM A105 Class 3000 ASME B16.11 SW Licensor-1	
1	0.75				P02B-0007H	90 degree elbow ASTM A105 Class 3000 ASME B16.11 SW Licensor-1	
1	1				P02B-0007J	90 degree elbow ASTM A105 Class 3000 ASME B16.11 SW Licensor-1	
1	1.5				P02B-0007K	90 degree elbow ASTM A105 Class 3000 ASME B16.11 SW Licensor-1	
1	2		XS		P02A-003R7	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	3		STD		P02A-003R8	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	4		STD		P02A-003T8	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	6		STD		P02A-003TG	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	8		SCH20		P02A-003TH	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	10		SCH20		P02A-003T9	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	12		SCH20		P02A-003TA	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	14		SCH20		P02A-003TB	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	16		SCH20		P02A-003TC	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	18		SCH20		P02A-003TD	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	20		STD		P02A-003TE	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	24		STD		P02A-003TF	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	30		STD		P02A-0045P	90 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius Licensor-1	
1	32		STD		P02A-004HG	90 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius Licensor-1	
1	36		XS		P02A-004F9	90 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius Licensor-1	
1	42		STD		P02A-003TL	90 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius Licensor-1	
1	48		XS		P02A-003TM	90 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius Licensor-1	
1	52		11.13mm		P02A-003TN	90 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Long radius Licensor-1	
1	56		11.91mm		P02A-003TP	90 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Long radius Licensor-1	
1	60		12.70mm		P02A-003TR	90 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Long radius Licensor-1	
1	64		12.70mm		P02A-003TS	90 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Long radius Licensor-1	
1	68		14.27mm		P02A-004FA	90 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Long radius Licensor-1	
1	72		14.27mm		P02A-004FB	90 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Long radius Licensor-1	

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90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	76		15.88mm		P02A-004FC	90 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Long radius Licensor-1	
1	80		15.88mm		P02A-003TV	90 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Long radius Licensor-1	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P03B-00074	45 degree elbow ASTM A105 Class 3000 ASME B16.11 SW Licensor-1	
1	0.75				P03B-00075	45 degree elbow ASTM A105 Class 3000 ASME B16.11 SW Licensor-1	
1	1				P03B-00076	45 degree elbow ASTM A105 Class 3000 ASME B16.11 SW Licensor-1	
1	1.5				P03B-00077	45 degree elbow ASTM A105 Class 3000 ASME B16.11 SW Licensor-1	
1	2		XS		P03A-003MW	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	3		STD		P03A-003MX	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	4		STD		P03A-003PX	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	6		STD		P03A-003R5	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	8		SCH20		P03A-003R6	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	10		SCH20		P03A-003PY	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	12		SCH20		P03A-003PZ	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	14		SCH20		P03A-003R0	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	16		SCH20		P03A-003R1	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	18		SCH20		P03A-003R2	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	20		STD		P03A-003R3	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	24		STD		P03A-003R4	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	30		STD		P03A-0043A	45 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius Licensor-1	
1	32		STD		P03A-004F2	45 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius Licensor-1	
1	36		XS		P03A-004CF	45 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius Licensor-1	
1	42		STD		P03A-003R9	45 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius Licensor-1	
1	48		XS		P03A-003RA	45 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius Licensor-1	
1	52		11.13mm		P03A-003RB	45 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Long radius Licensor-1	
1	56		11.91mm		P03A-003RC	45 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Long radius Licensor-1	
1	60		12.70mm		P03A-003RD	45 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Long radius Licensor-1	
1	64		12.70mm		P03A-003RE	45 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Long radius Licensor-1	
1	68		14.27mm		P03A-004CG	45 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Long radius Licensor-1	
1	72		14.27mm		P03A-004CH	45 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Long radius Licensor-1	
1	76		15.88mm		P03A-004CJ	45 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Long radius Licensor-1	
1	80		15.88mm		P03A-003RH	45 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Long radius Licensor-1	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P21B-00074	Straight tee ASTM A105 Class 3000 ASME B16.11 SW Licensor-1	
1	0.75				P21B-00075	Straight tee ASTM A105 Class 3000 ASME B16.11 SW Licensor-1	
1	1				P21B-00076	Straight tee ASTM A105 Class 3000 ASME B16.11 SW Licensor-1	
1	1.5				P21B-00077	Straight tee ASTM A105 Class 3000 ASME B16.11 SW Licensor-1	
1	2		XS		P21A-0048L	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	3		STD		P21A-0048M	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	4		STD		P21A-004AL	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	6		STD		P21A-004AS	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	8		SCH20		P21A-004AT	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	10		SCH20		P21A-004AM	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	12		SCH20		P21A-004AN	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	14		SCH20		P21A-004AP	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	16		SCH20		P21A-004AR	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	18		SCH20		P21A-004AU	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	20		STD		P21A-004AV	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	24		STD		P21A-004AW	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	30		STD		P21A-004NG	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	32		STD		P21A-00546	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	36		XS		P21A-004XP	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	42		STD		P21A-004AZ	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	48		XS		P21A-004B0	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	52		11.13mm		P21A-004B1	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Licensor-1	

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STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	56		11.91mm		P21A-004B2	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Licensor-1	
1	60		12.70mm		P21A-004B3	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Licensor-1	
1	64		12.70mm		P21A-004B4	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Licensor-1	
1	68		14.27mm		P21A-004XR	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Licensor-1	
1	72		14.27mm		P21A-004XS	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Licensor-1	
1	76		15.88mm		P21A-004XT	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Licensor-1	
1	80		15.88mm		P21A-004B7	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Licensor-1	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75			P24B-000BZ	Reducing tee ASTM A105 Class 3000 ASME B16.11 SW Licensor-1	
1	1.5	0.75			P24B-000C0	Reducing tee ASTM A105 Class 3000 ASME B16.11 SW Licensor-1	
1	1.5	1			P24B-000C1	Reducing tee ASTM A105 Class 3000 ASME B16.11 SW Licensor-1	
1	2	1	XS	XS	P24A-00K5U	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	2	1.5	XS	XS	P24A-00K5V	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	3	1.5	STD	XS	P24A-00K5W	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	3	2	STD	XS	P24A-00K0Y	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	4	2	STD	XS	P24A-00K5X	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	4	3	STD	STD	P24A-00K5Y	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	6	3	STD	STD	P24A-00K64	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	6	4	STD	STD	P24A-00K65	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	8	4	SCH20	STD	P24A-00K66	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	8	6	SCH20	STD	P24A-00K67	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	10	4	SCH20	STD	P24A-00K68	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	10	6	SCH20	STD	P24A-00K69	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	10	8	SCH20	SCH20	P24A-00K6A	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	12	6	SCH20	STD	P24A-00K6C	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	12	8	SCH20	SCH20	P24A-00K6D	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	12	10	SCH20	SCH20	P24A-00K6B	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	14	6	SCH20	STD	P24A-00K6G	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	14	8	SCH20	SCH20	P24A-00K6H	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	14	10	SCH20	SCH20	P24A-00K6E	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	14	12	SCH20	SCH20	P24A-00K6F	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	16	6	SCH20	STD	P24A-00K6M	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	16	8	SCH20	SCH20	P24A-00K6N	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	16	10	SCH20	SCH20	P24A-00K6J	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	16	12	SCH20	SCH20	P24A-00K6K	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	16	14	SCH20	SCH20	P24A-00K6L	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	18	8	SCH20	SCH20	P24A-00K6U	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	18	10	SCH20	SCH20	P24A-00K6P	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	18	12	SCH20	SCH20	P24A-00K6R	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	18	14	SCH20	SCH20	P24A-00K6S	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	18	16	SCH20	SCH20	P24A-00K6T	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	20	8	STD	SCH20	P24A-00K70	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	20	10	STD	SCH20	P24A-00K6V	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	20	12	STD	SCH20	P24A-00K6W	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	20	14	STD	SCH20	P24A-00K6X	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	20	16	STD	SCH20	P24A-00K6Y	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	20	18	STD	SCH20	P24A-00K6Z	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	24	10	STD	SCH20	P24A-00KXG	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	24	12	STD	SCH20	P24A-00K71	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	24	14	STD	SCH20	P24A-00K72	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	24	16	STD	SCH20	P24A-00K73	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	24	18	STD	SCH20	P24A-00K74	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	24	20	STD	STD	P24A-00K75	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	30	10	STD	SCH20	P24A-00M4H	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	30	12	STD	SCH20	P24A-00NGC	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	30	14	STD	SCH20	P24A-00M4K	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	30	16	STD	SCH20	P24A-00M4L	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	

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REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	30	18	STD	SCH20	P24A-00M4M	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	30	20	STD	STD	P24A-00M4N	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	30	24	STD	STD	P24A-00M4P	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	32	14	STD	SCH20	P24A-00PSK	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	32	16	STD	SCH20	P24A-00PSL	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	32	18	STD	SCH20	P24A-00PSM	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	32	20	STD	STD	P24A-00PSN	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	32	24	STD	STD	P24A-00PSP	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	32	30	STD	STD	P24A-00PSR	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	36	16	XS	SCH20	P24A-00NGD	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	36	18	XS	SCH20	P24A-00NGE	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	36	20	XS	STD	P24A-00NGF	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	36	24	XS	STD	P24A-00NGG	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	36	30	XS	STD	P24A-00NGH	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	36	32	XS	STD	P24A-00PSS	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	42	16	STD	SCH20	P24A-00K7E	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	42	18	STD	SCH20	P24A-00K7F	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	42	20	STD	STD	P24A-00K7G	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	42	24	STD	STD	P24A-00K7H	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	42	30	STD	STD	P24A-00NGJ	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	42	32	STD	STD	P24A-00PST	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	42	36	STD	XS	P24A-00NGK	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	42	40	STD	XS	P24A-00REA	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	48	24	XS	STD	P24A-00K7L	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	48	30	XS	STD	P24A-00NGL	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	48	32	XS	STD	P24A-00PSU	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	48	36	XS	XS	P24A-00NGM	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	48	40	XS	XS	P24A-00REB	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	48	42	XS	STD	P24A-00K7P	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	52	30	11.13mm	STD	P24A-00NGN	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Licensor-1	
1	52	32	11.13mm	STD	P24A-00PSV	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Licensor-1	
1	52	36	11.13mm	XS	P24A-00NGP	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Licensor-1	
1	52	40	11.13mm	XS	P24A-00REC	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Licensor-1	
1	52	42	11.13mm	STD	P24A-00KVX	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Licensor-1	
1	52	48	11.13mm	XS	P24A-00KVY	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Licensor-1	
1	56	30	11.91mm	STD	P24A-00NGR	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Licensor-1	
1	56	32	11.91mm	STD	P24A-00PSW	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Licensor-1	
1	56	36	11.91mm	XS	P24A-00NGS	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Licensor-1	
1	56	40	11.91mm	XS	P24A-00RED	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Licensor-1	
1	56	42	11.91mm	STD	P24A-00KVS	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Licensor-1	
1	56	48	11.91mm	XS	P24A-00KVT	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Licensor-1	
1	56	52	11.91mm	11.13mm	P24A-00KVU	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Licensor-1	
1	60	30	12.70mm	STD	P24A-00NGT	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Licensor-1	
1	60	32	12.70mm	STD	P24A-00PSX	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Licensor-1	
1	60	36	12.70mm	XS	P24A-00NGU	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Licensor-1	
1	60	40	12.70mm	XS	P24A-00REE	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Licensor-1	
1	60	42	12.70mm	STD	P24A-00K7R	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Licensor-1	
1	60	48	12.70mm	XS	P24A-00KVL	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Licensor-1	
1	60	52	12.70mm	11.13mm	P24A-00KVM	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Licensor-1	
1	60	56	12.70mm	11.91mm	P24A-00KVN	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Licensor-1	
1	64	32	12.70mm	STD	P24A-00PSY	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Licensor-1	
1	64	36	12.70mm	XS	P24A-00NGV	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Licensor-1	
1	64	40	12.70mm	XS	P24A-00REF	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Licensor-1	
1	64	42	12.70mm	STD	P24A-00KVD	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Licensor-1	
1	64	48	12.70mm	XS	P24A-00KVE	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Licensor-1	
1	64	52	12.70mm	11.13mm	P24A-00KVF	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Licensor-1	
1	64	56	12.70mm	11.91mm	P24A-00KVG	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Licensor-1	
1	64	60	12.70mm	12.70mm	P24A-00KVH	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Licensor-1	
1	68	36	14.27mm	XS	P24A-00NGW	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Licensor-1	

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REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	68	40	14.27mm	XS	P24A-00REG	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Licensor-1	
1	68	42	14.27mm	STD	P24A-00NGX	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Licensor-1	
1	68	48	14.27mm	XS	P24A-00NGY	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Licensor-1	
1	68	52	14.27mm	11.13mm	P24A-00NGZ	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Licensor-1	
1	68	56	14.27mm	11.91mm	P24A-00NH0	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Licensor-1	
1	68	60	14.27mm	12.70mm	P24A-00NH1	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Licensor-1	
1	68	64	14.27mm	12.70mm	P24A-00NH2	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Licensor-1	
1	72	36	14.27mm	XS	P24A-00NH3	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Licensor-1	
1	72	40	14.27mm	XS	P24A-00REH	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Licensor-1	
1	72	42	14.27mm	STD	P24A-00NH4	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Licensor-1	
1	72	48	14.27mm	XS	P24A-00NH5	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Licensor-1	
1	72	52	14.27mm	11.13mm	P24A-00NH6	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Licensor-1	
1	72	56	14.27mm	11.91mm	P24A-00NH7	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Licensor-1	
1	72	60	14.27mm	12.70mm	P24A-00NH8	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Licensor-1	
1	72	64	14.27mm	12.70mm	P24A-00NH9	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Licensor-1	
1	72	68	14.27mm	14.27mm	P24A-00NHA	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Licensor-1	
1	76	40	15.88mm	XS	P24A-00REJ	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Licensor-1	
1	76	42	15.88mm	STD	P24A-00PCG	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Licensor-1	
1	76	48	15.88mm	XS	P24A-00PCH	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Licensor-1	
1	76	52	15.88mm	11.13mm	P24A-00PCJ	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Licensor-1	
1	76	56	15.88mm	11.91mm	P24A-00PCK	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Licensor-1	
1	76	60	15.88mm	12.70mm	P24A-00PCL	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Licensor-1	
1	76	64	15.88mm	12.70mm	P24A-00PCM	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Licensor-1	
1	76	68	15.88mm	14.27mm	P24A-00PCN	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Licensor-1	
1	76	72	15.88mm	14.27mm	P24A-00PCP	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Licensor-1	
1	80	40	15.88mm	XS	P24A-00REK	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Licensor-1	
1	80	42	15.88mm	STD	P24A-00KUN	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Licensor-1	
1	80	48	15.88mm	XS	P24A-00KUP	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Licensor-1	
1	80	52	15.88mm	11.13mm	P24A-00KUR	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Licensor-1	
1	80	56	15.88mm	11.91mm	P24A-00KUS	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Licensor-1	
1	80	60	15.88mm	12.70mm	P24A-00KUT	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Licensor-1	
1	80	64	15.88mm	12.70mm	P24A-00KUU	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Licensor-1	
1	80	68	15.88mm	14.27mm	P24A-00NHB	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Licensor-1	
1	80	72	15.88mm	14.27mm	P24A-00NHC	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Licensor-1	
1	80	76	15.88mm	15.88mm	P24A-00PCR	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Licensor-1	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	STD	XS	P27A-00EL1	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	4	2	STD	XS	P27A-00ES5	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	4	3	STD	STD	P27A-00ES6	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	6	3	STD	STD	P27A-00ES9	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	6	4	STD	STD	P27A-00ESA	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	8	4	SCH20	STD	P27A-00ESB	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	8	6	SCH20	STD	P27A-00ESC	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	10	4	SCH20	STD	P27A-00ESD	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	10	6	SCH20	STD	P27A-00ESE	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	10	8	SCH20	SCH20	P27A-00ESF	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	12	6	SCH20	STD	P27A-00ESH	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	12	8	SCH20	SCH20	P27A-00ESJ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	12	10	SCH20	SCH20	P27A-00ESG	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	14	6	SCH20	STD	P27A-00ESM	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	14	8	SCH20	SCH20	P27A-00ESN	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	14	10	SCH20	SCH20	P27A-00ESK	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	14	12	SCH20	SCH20	P27A-00ESL	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	16	8	SCH20	SCH20	P27A-00EST	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	16	10	SCH20	SCH20	P27A-00ESP	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	16	12	SCH20	SCH20	P27A-00ESR	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	16	14	SCH20	SCH20	P27A-00ESS	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	

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CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	18	10	SCH20	SCH20	P27A-00ESU	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	18	12	SCH20	SCH20	P27A-00ESV	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	18	14	SCH20	SCH20	P27A-00ESW	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	18	16	SCH20	SCH20	P27A-00ESX	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	20	12	STD	SCH20	P27A-00ESY	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	20	14	STD	SCH20	P27A-00ESZ	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	20	16	STD	SCH20	P27A-00ET0	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	20	18	STD	SCH20	P27A-00ET1	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	24	16	STD	SCH20	P27A-00ET2	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	24	18	STD	SCH20	P27A-00ET3	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	24	20	STD	STD	P27A-00ET4	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	30	20	STD	STD	P27A-00GKG	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	30	24	STD	STD	P27A-00GKH	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	32	24	STD	STD	P27A-00J27	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	32	30	STD	STD	P27A-00J28	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	36	24	XS	STD	P27A-00H5F	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	36	30	XS	STD	P27A-00H5G	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	36	32	XS	STD	P27A-00HHN	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	42	30	STD	STD	P27A-00H5K	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	42	32	STD	STD	P27A-00HMK	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	42	36	STD	XS	P27A-00H5L	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	42	40	STD	XS	P27A-00JN7	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	48	40	XS	XS	P27A-00JN8	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	48	42	XS	STD	P27A-00ETB	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	52	30	11.13mm	STD	P27A-00H4Y	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Licensor-1	
1	52	36	11.13mm	XS	P27A-00H4Z	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Licensor-1	
1	52	42	11.13mm	STD	P27A-00FAZ	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Licensor-1	
1	52	48	11.13mm	XS	P27A-00FB0	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Licensor-1	
1	56	36	11.91mm	XS	P27A-00H50	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Licensor-1	
1	56	42	11.91mm	STD	P27A-00FB2	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Licensor-1	
1	56	48	11.91mm	XS	P27A-00FB3	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Licensor-1	
1	56	52	11.91mm	11.13mm	P27A-00FB4	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Licensor-1	
1	60	36	12.70mm	XS	P27A-00H51	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Licensor-1	
1	60	42	12.70mm	STD	P27A-00FB6	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Licensor-1	
1	60	48	12.70mm	XS	P27A-00FB7	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Licensor-1	
1	60	52	12.70mm	11.13mm	P27A-00ETC	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Licensor-1	
1	60	56	12.70mm	11.91mm	P27A-00FB8	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Licensor-1	
1	64	42	12.70mm	STD	P27A-00FB9	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Licensor-1	
1	64	48	12.70mm	XS	P27A-00FBA	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Licensor-1	
1	64	52	12.70mm	11.13mm	P27A-00FBB	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Licensor-1	
1	64	56	12.70mm	11.91mm	P27A-00FBC	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Licensor-1	
1	64	60	12.70mm	12.70mm	P27A-00FBD	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Licensor-1	
1	68	48	14.27mm	XS	P27A-00H52	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Licensor-1	
1	68	52	14.27mm	11.13mm	P27A-00H53	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Licensor-1	
1	68	56	14.27mm	11.91mm	P27A-00H54	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Licensor-1	
1	68	60	14.27mm	12.70mm	P27A-00H55	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Licensor-1	
1	68	64	14.27mm	12.70mm	P27A-00H56	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Licensor-1	
1	72	48	14.27mm	XS	P27A-00H57	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Licensor-1	
1	72	52	14.27mm	11.13mm	P27A-00H58	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Licensor-1	
1	72	56	14.27mm	11.91mm	P27A-00H59	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Licensor-1	
1	72	60	14.27mm	12.70mm	P27A-00H5A	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Licensor-1	
1	72	64	14.27mm	12.70mm	P27A-00H5B	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Licensor-1	
1	72	68	14.27mm	14.27mm	P27A-00H5C	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Licensor-1	
1	76	52	15.88mm	11.13mm	P27A-00HML	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Licensor-1	
1	76	56	15.88mm	11.91mm	P27A-00HMM	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Licensor-1	
1	76	60	15.88mm	12.70mm	P27A-00HMN	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Licensor-1	
1	76	64	15.88mm	12.70mm	P27A-00HMP	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Licensor-1	
1	76	68	15.88mm	14.27mm	P27A-00HMR	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Licensor-1	
1	76	72	15.88mm	14.27mm	P27A-00HMS	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Licensor-1	

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CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	80	56	15.88mm	11.91mm	P27A-00FBR	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Licensor-1	
1	80	60	15.88mm	12.70mm	P27A-00FBS	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Licensor-1	
1	80	64	15.88mm	12.70mm	P27A-00FBT	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Licensor-1	
1	80	68	15.88mm	14.27mm	P27A-00H5D	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Licensor-1	
1	80	72	15.88mm	14.27mm	P27A-00H5E	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Licensor-1	
1	80	76	15.88mm	15.88mm	P27A-00HVP	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Licensor-1	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	STD	XS	P28A-00BPS	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	4	2	STD	XS	P28A-00BVZ	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	4	3	STD	STD	P28A-00BW0	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	6	3	STD	STD	P28A-00BW3	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	6	4	STD	STD	P28A-00BW4	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	8	4	SCH20	STD	P28A-00BW5	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	8	6	SCH20	STD	P28A-00BW6	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	10	4	SCH20	STD	P28A-00BW7	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	10	6	SCH20	STD	P28A-00BW8	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	10	8	SCH20	SCH20	P28A-00BW9	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	12	6	SCH20	STD	P28A-00BWB	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	12	8	SCH20	SCH20	P28A-00BWC	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	12	10	SCH20	SCH20	P28A-00BWA	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	14	6	SCH20	STD	P28A-00BWF	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	14	8	SCH20	SCH20	P28A-00BWG	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	14	10	SCH20	SCH20	P28A-00BWD	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	14	12	SCH20	SCH20	P28A-00BWE	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	16	8	SCH20	SCH20	P28A-00BWL	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	16	10	SCH20	SCH20	P28A-00BWH	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	16	12	SCH20	SCH20	P28A-00BWJ	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	16	14	SCH20	SCH20	P28A-00BWK	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	18	10	SCH20	SCH20	P28A-00BWM	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	18	12	SCH20	SCH20	P28A-00BWN	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	18	14	SCH20	SCH20	P28A-00BWP	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	18	16	SCH20	SCH20	P28A-00BWR	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	20	12	STD	SCH20	P28A-00BWS	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	20	14	STD	SCH20	P28A-00BWT	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	20	16	STD	SCH20	P28A-00BWU	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	20	18	STD	SCH20	P28A-00BWV	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	24	16	STD	SCH20	P28A-00BWW	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	24	18	STD	SCH20	P28A-00BWX	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	24	20	STD	STD	P28A-00BWY	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	30	20	STD	STD	P28A-00DBD	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	30	24	STD	STD	P28A-00DBE	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	32	24	STD	STD	P28A-00FC0	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	32	30	STD	STD	P28A-00FC1	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	36	24	XS	STD	P28A-00EC5	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	36	30	XS	STD	P28A-00EC6	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	36	32	XS	STD	P28A-00ESD	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	42	30	STD	STD	P28A-00EC9	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	42	32	STD	STD	P28A-00EX4	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	42	36	STD	XS	P28A-00ECA	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	42	40	STD	XS	P28A-00FZD	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	48	40	XS	XS	P28A-00FZE	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	48	42	XS	STD	P28A-00BX5	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	52	30	11.13mm	STD	P28A-00ECD	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Licensor-1	
1	52	36	11.13mm	XS	P28A-00ECE	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Licensor-1	
1	52	42	11.13mm	STD	P28A-00CF2	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Licensor-1	
1	52	48	11.13mm	XS	P28A-00CF3	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Licensor-1	
1	56	36	11.91mm	XS	P28A-00ECH	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Licensor-1	

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ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	56	42	11.91mm	STD	P28A-00CF5	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Licensor-1	
1	56	48	11.91mm	XS	P28A-00CF6	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Licensor-1	
1	56	52	11.91mm	11.13mm	P28A-00CF7	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Licensor-1	
1	60	36	12.70mm	XS	P28A-00ECK	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Licensor-1	
1	60	42	12.70mm	STD	P28A-00CF9	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Licensor-1	
1	60	48	12.70mm	XS	P28A-00CFA	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Licensor-1	
1	60	52	12.70mm	11.13mm	P28A-00BX6	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Licensor-1	
1	60	56	12.70mm	11.91mm	P28A-00CFB	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Licensor-1	
1	64	42	12.70mm	STD	P28A-00CFC	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Licensor-1	
1	64	48	12.70mm	XS	P28A-00CFD	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Licensor-1	
1	64	52	12.70mm	11.13mm	P28A-00CFE	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Licensor-1	
1	64	56	12.70mm	11.91mm	P28A-00CFF	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Licensor-1	
1	64	60	12.70mm	12.70mm	P28A-00CFG	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Licensor-1	
1	68	48	14.27mm	XS	P28A-00ECM	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Licensor-1	
1	68	52	14.27mm	11.13mm	P28A-00ECN	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Licensor-1	
1	68	56	14.27mm	11.91mm	P28A-00ECP	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Licensor-1	
1	68	60	14.27mm	12.70mm	P28A-00ECR	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Licensor-1	
1	68	64	14.27mm	12.70mm	P28A-00ECS	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Licensor-1	
1	72	48	14.27mm	XS	P28A-00ECY	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Licensor-1	
1	72	52	14.27mm	11.13mm	P28A-00ECZ	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Licensor-1	
1	72	56	14.27mm	11.91mm	P28A-00ED0	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Licensor-1	
1	72	60	14.27mm	12.70mm	P28A-00ED1	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Licensor-1	
1	72	64	14.27mm	12.70mm	P28A-00ED2	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Licensor-1	
1	72	68	14.27mm	14.27mm	P28A-00ED3	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Licensor-1	
1	76	52	15.88mm	11.13mm	P28A-00EX5	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Licensor-1	
1	76	56	15.88mm	11.91mm	P28A-00EX6	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Licensor-1	
1	76	60	15.88mm	12.70mm	P28A-00EX7	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Licensor-1	
1	76	64	15.88mm	12.70mm	P28A-00EX8	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Licensor-1	
1	76	68	15.88mm	14.27mm	P28A-00EX9	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Licensor-1	
1	76	72	15.88mm	14.27mm	P28A-00EXA	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Licensor-1	
1	80	56	15.88mm	11.91mm	P28A-00CFU	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Licensor-1	
1	80	60	15.88mm	12.70mm	P28A-00CFV	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Licensor-1	
1	80	64	15.88mm	12.70mm	P28A-00CFW	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Licensor-1	
1	80	68	15.88mm	14.27mm	P28A-00EDA	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Licensor-1	
1	80	72	15.88mm	14.27mm	P28A-00EDB	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Licensor-1	
1	80	76	15.88mm	15.88mm	P28A-00F57	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Licensor-1	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P29B-0005L	Cap ASTM A105 Class 3000 ASME B16.11 SW Licensor-1	
1	0.75				P29B-0005M	Cap ASTM A105 Class 3000 ASME B16.11 SW Licensor-1	
1	1				P29B-0005N	Cap ASTM A105 Class 3000 ASME B16.11 SW Licensor-1	
1	1.5				P29B-0005P	Cap ASTM A105 Class 3000 ASME B16.11 SW Licensor-1	
1	2		XS		P29A-00326	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	3		STD		P29A-00327	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	4		STD		P29A-0034R	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	6		STD		P29A-00353	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	8		SCH20		P29A-00354	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	10		SCH20		P29A-0034S	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	12		SCH20		P29A-0034T	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	14		SCH20		P29A-0034U	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	16		SCH20		P29A-0034V	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	18		SCH20		P29A-0034W	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	20		STD		P29A-0034X	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	24		STD		P29A-0034Y	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	30		STD		P29A-003GG	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	32		STD		P29A-003V6	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	36		XS		P29A-003S7	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	42		STD		P29A-00351	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	

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CAP (CA)

OPTION CODE	SIZE L / RUN	SIZE S / BRN	WALL THICKNESS (L)	WALL THICKNESS (S)	IDENT CODE	DESCRIPTION	NOTE
1	48		XS		P29A-00352	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	52		11.13mm		P29A-00355	Cap ASTM A234 Grade WPB Seamless ASME B16.9-modified BW Licensor-1	
1	56		11.91mm		P29A-00356	Cap ASTM A234 Grade WPB Seamless ASME B16.9-modified BW Licensor-1	
1	60		12.70mm		P29A-00357	Cap ASTM A234 Grade WPB Seamless ASME B16.9-modified BW Licensor-1	
1	64		12.70mm		P29A-00358	Cap ASTM A234 Grade WPB Seamless ASME B16.9-modified BW Licensor-1	
1	68		14.27mm		P29A-003S8	Cap ASTM A234 Grade WPB Seamless ASME B16.9-modified BW Licensor-1	
1	72		14.27mm		P29A-003S9	Cap ASTM A234 Grade WPB Seamless ASME B16.9-modified BW Licensor-1	
1	76		15.88mm		P29A-003SA	Cap ASTM A234 Grade WPB Seamless ASME B16.9-modified BW Licensor-1	
1	80		15.88mm		P29A-0035B	Cap ASTM A234 Grade WPB Seamless ASME B16.9-modified BW Licensor-1	
541	0.75				P29B-00067	Cap ASTM A105 Class 3000 ASME B16.11 NPT Licensor-1	
541	1				P29B-0006J	Cap ASTM A105 Class 3000 ASME B16.11 NPT Licensor-1	
541	1.5				P29B-0006P	Cap ASTM A105 Class 3000 ASME B16.11 NPT Licensor-1	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE L / RUN	SIZE S / BRN	WALL THICKNESS (L)	WALL THICKNESS (S)	IDENT CODE	DESCRIPTION	NOTE
1	0.5		SCH160		P41A-0017A	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Licensor-1	
1	0.75		SCH160		P41A-0017B	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Licensor-1	
1	1		SCH160		P41A-0017C	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Licensor-1	
1	1.5		SCH160		P41A-0017D	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Licensor-1	

CON SWAGED NIPPLE (SNC)

OPTION CODE	SIZE L / RUN	SIZE S / BRN	WALL THICKNESS (L)	WALL THICKNESS (S)	IDENT CODE	DESCRIPTION	NOTE
1	0.75	0.5	XS	XS	P42A-000UN	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S) Licensor-1	
1	1	0.5	XS	XS	P42A-000UP	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S) Licensor-1	
1	1	0.75	XS	XS	P42A-000UR	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S) Licensor-1	
1	1.5	0.5	XS	XS	P42A-000US	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S) Licensor-1	
1	1.5	0.75	XS	XS	P42A-000UT	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S) Licensor-1	
1	1.5	1	XS	XS	P42A-000UU	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S) Licensor-1	
1	2	0.5	XS	XS	P42A-000UV	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S) Licensor-1	
1	2	0.75	XS	XS	P42A-000UW	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S) Licensor-1	
1	2	1	XS	XS	P42A-000UX	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S) Licensor-1	
1	2	1.5	XS	XS	P42A-000UY	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S) Licensor-1	
1	3	1.5	STD	XS	P42A-000UZ	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S) Licensor-1	

ECC SWAGED NIPPLE (SNE)

OPTION CODE	SIZE L / RUN	SIZE S / BRN	WALL THICKNESS (L)	WALL THICKNESS (S)	IDENT CODE	DESCRIPTION	NOTE
1	0.75	0.5	XS	XS	P43A-000KS	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S) Licensor-1	
1	1	0.5	XS	XS	P43A-000KT	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S) Licensor-1	
1	1	0.75	XS	XS	P43A-000KU	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S) Licensor-1	
1	1.5	0.5	XS	XS	P43A-000KV	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S) Licensor-1	
1	1.5	0.75	XS	XS	P43A-000KW	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S) Licensor-1	
1	1.5	1	XS	XS	P43A-000KX	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S) Licensor-1	
1	2	0.5	XS	XS	P43A-000KY	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S) Licensor-1	
1	2	0.75	XS	XS	P43A-000KZ	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S) Licensor-1	
1	2	1	XS	XS	P43A-000L0	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S) Licensor-1	
1	2	1.5	XS	XS	P43A-000L1	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S) Licensor-1	
1	3	1.5	STD	XS	P43A-000L2	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S) Licensor-1	

COUPLING (CPS)

OPTION CODE	SIZE L / RUN	SIZE S / BRN	WALL THICKNESS (L)	WALL THICKNESS (S)	IDENT CODE	DESCRIPTION	NOTE
1	0.5				P47B-0007V	Coupling ASTM A105 Class 3000 ASME B16.11 SW - SW Licensor-1	
1	0.75				P47B-0007W	Coupling ASTM A105 Class 3000 ASME B16.11 SW - SW Licensor-1	
1	1				P47B-0007X	Coupling ASTM A105 Class 3000 ASME B16.11 SW - SW Licensor-1	
1	1.5				P47B-0007Y	Coupling ASTM A105 Class 3000 ASME B16.11 SW - SW Licensor-1	

OUTLET (L)

OPTION CODE	SIZE L / RUN	SIZE S / BRN	WALL THICKNESS (L)	WALL THICKNESS (S)	IDENT CODE	DESCRIPTION	NOTE
1	2 - 2.5	0.75			P31B-0138H	Outlet ASTM A105 Class 3000 MSS SP-97 SW Licensor-1	

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OUTLET (L)							
OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3 - 5	0.75			P31B-0138J	Outlet ASTM A105 Class 3000 MSS SP-97 SW Licensor-1	
1	6 - 12	0.75			P31B-0138K	Outlet ASTM A105 Class 3000 MSS SP-97 SW Licensor-1	
1	14 - 36	0.75			P31B-0138L	Outlet ASTM A105 Class 3000 MSS SP-97 SW Licensor-1	
1	38 and larger	0.75			P31B-01398	Outlet ASTM A105 Class 3000 MSS SP-97 SW Licensor-1	
1	3	1			P31B-0138M	Outlet ASTM A105 Class 3000 MSS SP-97 SW Licensor-1	
1	4 - 5	1			P31B-0138N	Outlet ASTM A105 Class 3000 MSS SP-97 SW Licensor-1	
1	6 - 10	1			P31B-0138P	Outlet ASTM A105 Class 3000 MSS SP-97 SW Licensor-1	
1	12 - 36	1			P31B-0138R	Outlet ASTM A105 Class 3000 MSS SP-97 SW Licensor-1	
1	38 and larger	1			P31B-01399	Outlet ASTM A105 Class 3000 MSS SP-97 SW Licensor-1	
1	4	1.5			P31B-010L4	Outlet ASTM A105 Class 3000 MSS SP-97 SW Licensor-1	
1	5 - 6	1.5			P31B-0138S	Outlet ASTM A105 Class 3000 MSS SP-97 SW Licensor-1	
1	8 - 12	1.5			P31B-0138U	Outlet ASTM A105 Class 3000 MSS SP-97 SW Licensor-1	
1	14 - 24	1.5			P31B-0138T	Outlet ASTM A105 Class 3000 MSS SP-97 SW Licensor-1	
1	26 - 36	1.5			P31B-0139A	Outlet ASTM A105 Class 3000 MSS SP-97 SW Licensor-1	
1	38 and larger	1.5			P31B-0139B	Outlet ASTM A105 Class 3000 MSS SP-97 SW Licensor-1	
541	1	0.75			P31B-0118R	Outlet ASTM A105 Class 3000 MSS SP-97 NPT Licensor-1	
541	1.5	0.75			P31B-0118P	Outlet ASTM A105 Class 3000 MSS SP-97 NPT Licensor-1	
541	2 - 2.5	0.75			P31B-0138V	Outlet ASTM A105 Class 3000 MSS SP-97 NPT Licensor-1	
541	3 - 5	0.75			P31B-0138W	Outlet ASTM A105 Class 3000 MSS SP-97 NPT Licensor-1	
541	6 - 12	0.75			P31B-0138X	Outlet ASTM A105 Class 3000 MSS SP-97 NPT Licensor-1	
541	14 - 36	0.75			P31B-0138Y	Outlet ASTM A105 Class 3000 MSS SP-97 NPT Licensor-1	
541	38 and larger	0.75			P31B-0139C	Outlet ASTM A105 Class 3000 MSS SP-97 NPT Licensor-1	
1	6	2	STD	XS	P31B-00XMV	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	8	2	SCH20	XS	P31B-00XMW	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	10	2	SCH20	XS	P31B-00XMY	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	12	2	SCH20	XS	P31B-00XN0	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	14	2	SCH20	XS	P31B-00XN3	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	16	2	SCH20	XS	P31B-00XN6	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	18	2	SCH20	XS	P31B-00XN9	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	20	2	STD	XS	P31B-00XND	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	24	2	STD	XS	P31B-00XNH	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	30	2	STD	XS	P31B-00ZHA	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	32	2	STD	XS	P31B-012JP	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	36	2	XS	XS	P31B-010TM	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	42	2	STD	XS	P31B-00XNW	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	48	2	XS	XS	P31B-00XP0	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	52	2	11.13mm	XS	P31B-00YCG	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	56	2	11.91mm	XS	P31B-00YCL	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	60	2	12.70mm	XS	P31B-00YCR	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	64	2	12.70mm	XS	P31B-00YCV	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	68	2	14.27mm	XS	P31B-010TS	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	72	2	14.27mm	XS	P31B-010TW	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	76	2	15.88mm	XS	P31B-011P4	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	80	2	15.88mm	XS	P31B-00YD5	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	8	3	SCH20	STD	P31B-00XMX	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	10	3	SCH20	STD	P31B-00XMZ	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	12	3	SCH20	STD	P31B-00XN1	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	14	3	SCH20	STD	P31B-00XN4	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	16	3	SCH20	STD	P31B-00XN7	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	18	3	SCH20	STD	P31B-00XNA	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	20	3	STD	STD	P31B-00XNE	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	24	3	STD	STD	P31B-00XNJ	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	30	3	STD	STD	P31B-00ZHB	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	32	3	STD	STD	P31B-012JR	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	36	3	XS	STD	P31B-010TN	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	42	3	STD	STD	P31B-00XNX	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	48	3	XS	STD	P31B-00XP1	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	52	3	11.13mm	STD	P31B-00YCH	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	56	3	11.91mm	STD	P31B-00YCM	Outlet ASTM A105 MSS SP-97 BW Licensor-1	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	60	3	12.70mm	STD	P31B-00YCS	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	64	3	12.70mm	STD	P31B-00YCW	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	68	3	14.27mm	STD	P31B-010TT	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	72	3	14.27mm	STD	P31B-010TX	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	76	3	15.88mm	STD	P31B-011P5	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	80	3	15.88mm	STD	P31B-00YD6	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	12	4	SCH20	STD	P31B-00XN2	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	14	4	SCH20	STD	P31B-00XN5	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	16	4	SCH20	STD	P31B-00XN8	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	18	4	SCH20	STD	P31B-00XNB	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	20	4	STD	STD	P31B-00XNF	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	24	4	STD	STD	P31B-00XNK	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	30	4	STD	STD	P31B-00ZHC	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	32	4	STD	STD	P31B-012JS	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	36	4	XS	STD	P31B-010TP	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	42	4	STD	STD	P31B-00XNY	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	48	4	XS	STD	P31B-00XP2	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	52	4	11.13mm	STD	P31B-00YCJ	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	56	4	11.91mm	STD	P31B-00YCN	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	60	4	12.70mm	STD	P31B-00YCT	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	64	4	12.70mm	STD	P31B-00YCX	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	68	4	14.27mm	STD	P31B-010TU	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	72	4	14.27mm	STD	P31B-010TY	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	76	4	15.88mm	STD	P31B-011P6	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	80	4	15.88mm	STD	P31B-00YD7	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	18	6	SCH20	STD	P31B-00XNC	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	20	6	STD	STD	P31B-00XNG	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	24	6	STD	STD	P31B-00XNL	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	30	6	STD	STD	P31B-00ZHD	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	32	6	STD	STD	P31B-012JT	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	36	6	XS	STD	P31B-010TR	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	42	6	STD	STD	P31B-00XNZ	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	48	6	XS	STD	P31B-00XP3	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	52	6	11.13mm	STD	P31B-00YCK	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	56	6	11.91mm	STD	P31B-00YCP	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	60	6	12.70mm	STD	P31B-00YCU	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	64	6	12.70mm	STD	P31B-00YCY	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	68	6	14.27mm	STD	P31B-010TV	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	72	6	14.27mm	STD	P31B-010TZ	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	76	6	15.88mm	STD	P31B-011P7	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	80	6	15.88mm	STD	P31B-00YD8	Outlet ASTM A105 MSS SP-97 BW Licensor-1	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30B-00067	Plug ASTM A105 ASME B16.11 NPT Round head Licensor-1	
1	0.75				P30B-00068	Plug ASTM A105 ASME B16.11 NPT Round head Licensor-1	
1	1				P30B-00069	Plug ASTM A105 ASME B16.11 NPT Round head Licensor-1	
1	1.5				P30B-0006A	Plug ASTM A105 ASME B16.11 NPT Round head Licensor-1	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P61B-009Z5	Flange SW ASTM A105 Class 150 ASME B16.5 RF Licensor-1	
1	0.75		XS		P61B-009Z6	Flange SW ASTM A105 Class 150 ASME B16.5 RF Licensor-1	
1	1		XS		P61B-009Z7	Flange SW ASTM A105 Class 150 ASME B16.5 RF Licensor-1	
1	1.5		XS		P61B-009Z8	Flange SW ASTM A105 Class 150 ASME B16.5 RF Licensor-1	
1	2		XS		P61B-009YN	Flange WN ASTM A105 Class 150 ASME B16.5 RF Licensor-1	
1	3		STD		P61B-009YP	Flange WN ASTM A105 Class 150 ASME B16.5 RF Licensor-1	
1	4		STD		P61B-009YR	Flange WN ASTM A105 Class 150 ASME B16.5 RF Licensor-1	
1	6		STD		P61B-009ZG	Flange WN ASTM A105 Class 150 ASME B16.5 RF Licensor-1	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	8		SCH20		P61B-009ZH	Flange WN ASTM A105 Class 150 ASME B16.5 RF Licensor-1	
1	10		SCH20		P61B-009Z9	Flange WN ASTM A105 Class 150 ASME B16.5 RF Licensor-1	
1	12		SCH20		P61B-009ZA	Flange WN ASTM A105 Class 150 ASME B16.5 RF Licensor-1	
1	14		SCH20		P61B-009ZB	Flange WN ASTM A105 Class 150 ASME B16.5 RF Licensor-1	
1	16		SCH20		P61B-009ZC	Flange WN ASTM A105 Class 150 ASME B16.5 RF Licensor-1	
1	18		SCH20		P61B-009ZD	Flange WN ASTM A105 Class 150 ASME B16.5 RF Licensor-1	
1	20		STD		P61B-009ZE	Flange WN ASTM A105 Class 150 ASME B16.5 RF Licensor-1	
1	24		STD		P61B-009ZF	Flange WN ASTM A105 Class 150 ASME B16.5 RF Licensor-1	
1	30		STD		P61B-00B1N	Flange WN ASTM A105 Class 150 ASME B16.47 Series B RF Licensor-1	
1	32		STD		P61B-00BWT	Flange WN ASTM A105 Class 150 ASME B16.47 Series B RF Licensor-1	
1	36		XS		P61B-00BS1	Flange WN ASTM A105 Class 150 ASME B16.47 Series B RF Licensor-1	
1	40		XS		P61B-00DUT	Flange WN ASTM A105 Class 150 ASME B16.47 Series B RF Licensor-1	
1	42		STD		P61B-009ZL	Flange WN ASTM A105 Class 150 ASME B16.47 Series B RF Licensor-1	
1	48		XS		P61B-009ZM	Flange WN ASTM A105 Class 150 ASME B16.47 Series B RF Licensor-1	
1	52		11.13mm		P61B-009ZN	Flange WN ASTM A105 Class 150 ASME B16.47 Series B RF Licensor-1	
1	56		11.91mm		P61B-009ZP	Flange WN ASTM A105 Class 150 ASME B16.47 Series B RF Licensor-1	
1	60		12.70mm		P61B-009ZR	Flange WN ASTM A105 Class 150 ASME B16.47 Series B RF Licensor-1	
1	64		12.70mm		P61B-009ZS	Flange WN ASTM A105 Class 150 Standard-drawing RF Licensor-1	
1	68		14.27mm		P61B-00BS2	Flange WN ASTM A105 Class 150 Standard-drawing RF Licensor-1	
1	72		14.27mm		P61B-00BS3	Flange WN ASTM A105 Class 150 Standard-drawing RF Licensor-1	
1	76		15.88mm		P61B-00BS4	Flange WN ASTM A105 Class 150 Standard-drawing RF Licensor-1	
1	80		15.88mm		P61B-009ZV	Flange WN ASTM A105 Class 150 Standard-drawing RF Licensor-1	
773	0.5		XS		P61B-009ZW	Flange SW ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
773	0.75		XS		P61B-009ZX	Flange SW ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
773	1		XS		P61B-009ZY	Flange SW ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
773	1.5		XS		P61B-009ZZ	Flange SW ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
773	2		XS		P61B-009YW	Flange WN ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
773	3		STD		P61B-009YX	Flange WN ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
773	4		STD		P61B-009YY	Flange WN ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
773	6		STD		P61B-00A07	Flange WN ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
773	8		SCH20		P61B-00A08	Flange WN ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
773	10		SCH20		P61B-00A00	Flange WN ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
773	12		SCH20		P61B-00A01	Flange WN ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
773	14		SCH20		P61B-00A02	Flange WN ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
773	16		SCH20		P61B-00A03	Flange WN ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
773	18		SCH20		P61B-00A04	Flange WN ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
773	20		STD		P61B-00A05	Flange WN ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
773	24		STD		P61B-00A06	Flange WN ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
773	30		STD		P61B-00B1P	Flange WN ASTM A105 Class 300 ASME B16.47 Series B RF Licensor-1	
773	32		STD		P61B-00BWS	Flange WN ASTM A105 Class 300 ASME B16.47 Series B RF Licensor-1	
773	36		XS		P61B-00BS5	Flange WN ASTM A105 Class 300 ASME B16.47 Series B RF Licensor-1	
773	42		STD		P61B-00A0B	Flange WN ASTM A105 Class 300 ASME B16.47 Series B RF Licensor-1	
773	48		XS		P61B-00A0C	Flange WN ASTM A105 Class 300 ASME B16.47 Series B RF Licensor-1	
773	52		11.13mm		P61B-00A0D	Flange WN ASTM A105 Class 300 ASME B16.47 Series B RF Licensor-1	
773	56		11.91mm		P61B-00A0E	Flange WN ASTM A105 Class 300 ASME B16.47 Series B RF Licensor-1	
773	60		12.70mm		P61B-00A0F	Flange WN ASTM A105 Class 300 ASME B16.47 Series B RF Licensor-1	
781	12		SCH20		P61B-00DP9	Flange WN ASTM A105 Class 600 ASME B16.5 RF Licensor-1	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67B-002D6	Blind flange ASTM A105 Class 150 ASME B16.5 RF Licensor-1	
1	0.75				P67B-002D7	Blind flange ASTM A105 Class 150 ASME B16.5 RF Licensor-1	
1	1				P67B-002D8	Blind flange ASTM A105 Class 150 ASME B16.5 RF Licensor-1	
1	1.5				P67B-002D9	Blind flange ASTM A105 Class 150 ASME B16.5 RF Licensor-1	
1	2				P67B-002DB	Blind flange ASTM A105 Class 150 ASME B16.5 RF Licensor-1	
1	3				P67B-002DC	Blind flange ASTM A105 Class 150 ASME B16.5 RF Licensor-1	
1	4				P67B-002DD	Blind flange ASTM A105 Class 150 ASME B16.5 RF Licensor-1	
1	6				P67B-002DE	Blind flange ASTM A105 Class 150 ASME B16.5 RF Licensor-1	
1	8				P67B-002DF	Blind flange ASTM A105 Class 150 ASME B16.5 RF Licensor-1	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	10				P67B-002DA	Blind flange ASTM A105 Class 150 ASME B16.5 RF Licensor-1	
1	12				P67B-002FK	Blind flange ASTM A105 Class 150 ASME B16.5 RF Licensor-1	
1	14				P67B-002FL	Blind flange ASTM A105 Class 150 ASME B16.5 RF Licensor-1	
1	16				P67B-002FM	Blind flange ASTM A105 Class 150 ASME B16.5 RF Licensor-1	
1	18				P67B-002FN	Blind flange ASTM A105 Class 150 ASME B16.5 RF Licensor-1	
1	20				P67B-002FP	Blind flange ASTM A105 Class 150 ASME B16.5 RF Licensor-1	
1	24				P67B-002FR	Blind flange ASTM A105 Class 150 ASME B16.5 RF Licensor-1	
1	30				P67B-002FS	Blind flange ASTM A105 Class 150 ASME B16.47 Series B RF Licensor-1	
1	32				P67B-002WT	Blind flange ASTM A105 Class 150 ASME B16.47 Series B RF Licensor-1	
1	36				P67B-002FT	Blind flange ASTM A105 Class 150 ASME B16.47 Series B RF Licensor-1	
1	42				P67B-002FU	Blind flange ASTM A105 Class 150 ASME B16.47 Series B RF Licensor-1	
1	48				P67B-002FV	Blind flange ASTM A105 Class 150 ASME B16.47 Series B RF Licensor-1	
1	52				P67B-002FW	Blind flange ASTM A105 Class 150 ASME B16.47 Series B RF Licensor-1	
1	56				P67B-002FX	Blind flange ASTM A105 Class 150 ASME B16.47 Series B RF Licensor-1	
1	60				P67B-002FY	Blind flange ASTM A105 Class 150 ASME B16.47 Series B RF Licensor-1	
1	64				P67B-002FZ	Blind flange ASTM A105 Class 150 Standard-drawing RF Licensor-1	
1	68				P67B-002G0	Blind flange ASTM A105 Class 150 Standard-drawing RF Licensor-1	
1	72				P67B-002G1	Blind flange ASTM A105 Class 150 Standard-drawing RF Licensor-1	
1	76				P67B-002WN	Blind flange ASTM A105 Class 150 Standard-drawing RF Licensor-1	
1	80				P67B-002G2	Blind flange ASTM A105 Class 150 Standard-drawing RF Licensor-1	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000L8	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000L9	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000LA	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000LB	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000LH	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000LL	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000LM	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	6				P73T-000LN	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	8				P73T-000LP	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	10				P73T-000LC	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	12				P73T-000LD	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	14				P73T-000LE	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	16				P73T-000LF	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	18				P73T-000LG	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	20				P73T-000LJ	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	24				P73T-000LK	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	30				P73T-000LT	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	32				P73T-000LU	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	36				P73T-000LW	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	40				P73T-000LY	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	42				P73T-000LZ	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	48				P73T-000M2	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	52				P73T-001E2	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	56				P73T-0024L	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	60				P73T-001E5	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	64				P73T-003GZ	Spiral wound gasket SS316 winding / Graphite filler Class 150 Standard-drawing Flange Standard-drawing RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	68				P73T-003H0	Spiral wound gasket SS316 winding / Graphite filler Class 150 Standard-drawing Flange Standard-drawing RF 4.5mm-T Outer-ring CS Inner-ring SS316	

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GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	72				P73T-003H1	Spiral wound gasket SS316 winding / Graphite filler Class 150 Standard-drawing Flange Standard-drawing RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	76				P73T-003H2	Spiral wound gasket SS316 winding / Graphite filler Class 150 Standard-drawing Flange Standard-drawing RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	80				P73T-003H3	Spiral wound gasket SS316 winding / Graphite filler Class 150 Standard-drawing Flange Standard-drawing RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	0.5				P73T-000FT	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	0.75				P73T-000FU	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	3				P73T-000G5	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	4				P73T-000G6	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	6				P73T-000G7	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	8				P73T-000G8	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	10				P73T-000FX	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	12				P73T-000FY	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	14				P73T-000FZ	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	16				P73T-000G0	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	18				P73T-000G1	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	20				P73T-000G3	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	24				P73T-000G4	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	30				P73T-000H9	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	32				P73T-000HA	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	36				P73T-000HC	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	42				P73T-000KM	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	48				P73T-000KR	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	52				P73T-0024N	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	56				P73T-0024M	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	60				P73T-0026H	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	12				P73T-000JD	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-16				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	18-20				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
1	24				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	999
1	30-42				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	48-56				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
1	60-80				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	999
773	0.5-10				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
773	12-60				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
781	10-12				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81B-001CX	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated Licensor-1	
1	0.75				P81B-001CY	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated Licensor-1	

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GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P81B-001CZ	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated Licensor-1	
1	1.5				P81B-001D0	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated Licensor-1	
1	2				P81C-004TN	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated Licensor-1	
1	3				P81C-004TP	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated Licensor-1	
1	4				P81C-004TR	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated Licensor-1	
1	6				P81C-004TS	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated Licensor-1	
1	8				P81C-004TT	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated Licensor-1	
1	10				P81C-004TL	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated Licensor-1	
1	12				P81C-004TM	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated Licensor-1	
1	14				P81C-004TU	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated Licensor-1	
1	16				P81C-004TV	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated Licensor-1	
1	18				P81C-004TW	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated Licensor-1	
1	20				P81C-004TX	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated Licensor-1	
1	24				P81C-004TY	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated Licensor-1	
1	30				P81C-004TZ	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.47-B RF Trim number 8 BB-BG-OS&Y Gear operated Licensor-1	
1	32				P81C-006SL	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.47-B RF Trim number 8 BB-BG-OS&Y Gear operated Licensor-1	
1	36				P81C-004U0	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.47-B RF Trim number 8 BB-BG-OS&Y Gear operated Licensor-1	
714	0.5				P81B-002S7	Gate valve ASTM A105 Class 800 API 602 SW - NPT Trim number 8 BB-BG-OS&Y Handwheel operated Licensor-1	
714	0.75				P81B-002F5	Gate valve ASTM A105 Class 800 API 602 SW - NPT Trim number 8 BB-BG-OS&Y Handwheel operated Licensor-1	
773	1				P81B-0035Y	Gate valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated Licensor-1	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82B-0014L	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated Licensor-1	
1	0.75				P82B-0014M	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated Licensor-1	
1	1				P82B-0014N	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated Licensor-1	
1	1.5				P82B-0014P	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated Licensor-1	
1	2				P82C-002BH	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated Licensor-1	
1	3				P82C-002BJ	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated Licensor-1	
1	4				P82C-002BK	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated Licensor-1	
1	6				P82C-002BL	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated Licensor-1	
1	8				P82C-002BM	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated Licensor-1	
1	10				P82C-003UU	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated Licensor-1	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83B-000WE	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover Licensor-1	
1	0.75				P83B-000WF	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover Licensor-1	
1	1				P83B-000WG	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover Licensor-1	
1	1.5				P83B-000WH	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover Licensor-1	
1	2				P83C-00299	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover Licensor-1	
1	3				P83C-0029C	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover Licensor-1	
1	4				P83C-0029D	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover Licensor-1	
1	6				P83C-0029E	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover Licensor-1	
1	8				P83C-0029F	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover Licensor-1	
1	10				P83C-00294	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover Licensor-1	

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CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	12				P83C-00295	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover Licensor-1	
1	14				P83C-00296	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover Licensor-1	
1	16				P83C-00297	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover Licensor-1	
1	18				P83C-00298	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover Licensor-1	
1	20				P83C-0029A	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover Licensor-1	
1	24				P83C-0029B	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover Licensor-1	

DP CHECK VALVE (XDP)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	30				P88C-0025R	Dual plate check valve ASTM A216 Grade WCB Class 150 API 594 Wafer-type ASME B16.47-B RF Trim number 8 Internal wetted parts 13Cr Spring Inconel Retainerless-type Licensor-1	
1	32				P88C-002JT	Dual plate check valve ASTM A216 Grade WCB Class 150 API 594 Wafer-type ASME B16.47-B RF Trim number 8 Internal wetted parts 13Cr Spring Inconel Retainerless-type Licensor-1	
1	36				P88C-0025S	Dual plate check valve ASTM A216 Grade WCB Class 150 API 594 Wafer-type ASME B16.47-B RF Trim number 8 Internal wetted parts 13Cr Spring Inconel Retainerless-type Licensor-1	
1	42				P88C-0025T	Dual plate check valve ASTM A216 Grade WCB Class 150 API 594 Wafer-type ASME B16.47-B RF Trim number 8 Internal wetted parts 13Cr Spring Inconel Retainerless-type Licensor-1	
1	48				P88C-0025U	Dual plate check valve ASTM A216 Grade WCB Class 150 API 594 Wafer-type ASME B16.47-B RF Trim number 8 Internal wetted parts 13Cr Spring Inconel Retainerless-type Licensor-1	
1	52				P88C-0025V	Dual plate check valve ASTM A216 Grade WCB Class 150 Manufacturer-standard Wafer-type ASME B16.47-B RF Trim number 8 Internal wetted parts 13Cr Spring Inconel Retainerless-type Licensor-1	
1	56				P88C-0025W	Dual plate check valve ASTM A216 Grade WCB Class 150 Manufacturer-standard Wafer-type ASME B16.47-B RF Trim number 8 Internal wetted parts 13Cr Spring Inconel Retainerless-type Licensor-1	

BALL VALVE (Q)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P84B-00145	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design Licensor-1	
1	0.75				P84B-00146	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design Licensor-1	
1	1				P84B-00147	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design Licensor-1	
1	1.5				P84B-00148	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design Licensor-1	
1	2				P84C-005YK	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design Licensor-1	
24	0.5				P84B-00149	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design Licensor-1	
24	0.75				P84B-0014A	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design Licensor-1	
24	1				P84B-0014B	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design Licensor-1	
24	1.5				P84B-0014C	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design Licensor-1	
24	2				P84C-005YS	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design Licensor-1	

BUTTERFLY VALVE (H)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	10				P86C-00236	Offset design butterfly valve ASTM A216 Grade WCB Class 150 API 609 Category B Lug-type ASME B16.5 RF Disc CS Seat Stellite-6 Trim 13Cr Triple eccentric design BG Gear operated Licensor-1	
1	12				P86C-00237	Offset design butterfly valve ASTM A216 Grade WCB Class 150 API 609 Category B Lug-type ASME B16.5 RF Disc CS Seat Stellite-6 Trim 13Cr Triple eccentric design BG Gear operated Licensor-1	
1	14				P86C-00238	Offset design butterfly valve ASTM A216 Grade WCB Class 150 API 609 Category B Lug-type ASME B16.5 RF Disc CS Seat Stellite-6 Trim 13Cr Triple eccentric design BG Gear operated Licensor-1	
1	16				P86C-00239	Offset design butterfly valve ASTM A216 Grade WCB Class 150 API 609 Category B Lug-type ASME B16.5 RF Disc CS Seat Stellite-6 Trim 13Cr Triple eccentric design BG Gear operated Licensor-1	
1	18				P86C-0023A	Offset design butterfly valve ASTM A216 Grade WCB Class 150 API 609 Category B Lug-type ASME B16.5 RF Disc CS Seat Stellite-6 Trim 13Cr Triple eccentric design BG Gear operated Licensor-1	
1	20				P86C-0023B	Offset design butterfly valve ASTM A216 Grade WCB Class 150 API 609 Category B Double flanged ASME B16.5 RF Disc CS Seat Stellite-6 Trim 13Cr Triple eccentric design BG Gear operated Licensor-1	
1	24				P86C-0023C	Offset design butterfly valve ASTM A216 Grade WCB Class 150 API 609 Category B Double flanged ASME B16.5 RF Disc CS Seat Stellite-6 Trim 13Cr Triple eccentric design BG Gear operated Licensor-1	
1	30				P86C-0023D	Offset design butterfly valve ASTM A216 Grade WCB Class 150 API 609 Category B Double flanged ASME B16.47-B RF Disc CS Seat Stellite-6 Trim 13Cr Triple eccentric design BG Gear operated Licensor-1	

ORIFICE FLANGE (FO)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2		XS		P66B-0085G	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Licensor-1	
1	3		STD		P66B-0085H	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Licensor-1	
1	4		STD		P66B-0085J	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Licensor-1	

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ORIFICE FLANGE (FO)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	6		STD		P66B-0085K	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Licensor-1	
1	8		SCH20		P66B-0085L	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Licensor-1	
1	10		SCH20		P66B-0085F	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Licensor-1	
1	12		SCH20		P66B-008V6	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Licensor-1	
200	2		XS		P66B-0085R	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw Licensor-1	
200	3		STD		P66B-0085S	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw Licensor-1	
200	4		STD		P66B-0085T	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw Licensor-1	
200	6		STD		P66B-0085U	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw Licensor-1	
200	8		SCH20		P66B-0085V	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw Licensor-1	
200	10		SCH20		P66B-0085P	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw Licensor-1	
200	12		SCH20		P66B-008V7	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw Licensor-1	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71B-00080	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	0.75				P71B-00081	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	1				P71B-00082	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	1.5				P71B-00083	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	2				P71B-00085	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	3				P71B-00086	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	4				P71B-00087	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	6				P71B-00088	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	8				P71B-00089	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	10				P71B-00084	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	12				P71B-0008S	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Licensor-1	
773	10				P71B-000AV	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF Licensor-1	

PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000BR	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	16				P72B-000BS	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	18				P72B-000BT	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	20				P72B-000BU	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	24				P72B-000BV	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	30				P72B-000BW	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF Licensor-1	
1	32				P72B-000U2	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF Licensor-1	
1	36				P72B-000BX	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF Licensor-1	
1	42				P72B-000BY	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF Licensor-1	
1	48				P72B-000BZ	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF Licensor-1	
1	52				P72B-000C0	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF Licensor-1	
1	56				P72B-000C1	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF Licensor-1	
1	60				P72B-000C2	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF Licensor-1	
1	64				P72B-000C3	Paddle blank ASTM A105 Class 150 Standard-drawing Flange Standard-drawing RF Licensor-1	
1	68				P72B-000C4	Paddle blank ASTM A105 Class 150 Standard-drawing Flange Standard-drawing RF Licensor-1	
1	72				P72B-000C5	Paddle blank ASTM A105 Class 150 Standard-drawing Flange Standard-drawing RF Licensor-1	
1	76				P72B-000TS	Paddle blank ASTM A105 Class 150 Standard-drawing Flange Standard-drawing RF Licensor-1	
1	80				P72B-000C6	Paddle blank ASTM A105 Class 150 Standard-drawing Flange Standard-drawing RF Licensor-1	

PADDLE SPACER (PS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000C7	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	16				P72B-000C8	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	18				P72B-000C9	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	20				P72B-000CA	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	24				P72B-000CB	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	30				P72B-000CC	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF Licensor-1	
1	32				P72B-000U3	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF Licensor-1	
1	36				P72B-000CD	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF Licensor-1	
1	42				P72B-000CE	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF Licensor-1	

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PADDLE SPACER (PS)							
OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	48				P72B-000CF	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF Licensor-1	
1	52				P72B-000CG	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF Licensor-1	
1	56				P72B-000CH	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF Licensor-1	
1	60				P72B-000CJ	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF Licensor-1	
1	64				P72B-000CK	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange Standard-drawing RF Licensor-1	
1	68				P72B-000CL	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange Standard-drawing RF Licensor-1	
1	72				P72B-000CM	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange Standard-drawing RF Licensor-1	
1	76				P72B-000TT	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange Standard-drawing RF Licensor-1	
1	80				P72B-000CN	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange Standard-drawing RF Licensor-1	

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BOLT TABLE (B_A1AP01 , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	60	P80S-003V2		
0.75	4	0.500	65	P80S-003V3		
1	4	0.500	70	P80S-003V4		
1.5	4	0.500	75	P80S-003V5		
2	4	0.625	85	P80S-003XE		
3	4	0.625	95	P80S-003XG		
4	8	0.625	95	P80S-003XG		
6	8	0.750	105	P80S-003XJ		
8	8	0.750	110	P80S-003XK		
10	12	0.875	120	P80S-00419		
12	12	0.875	120	P80S-00419		
14	12	1.000	135	P80S-0043E		
16	16	1.000	140	P80S-0043F		
18	16	1.125	150	P80S-0046K		
20	20	1.125	160	P80S-0046M		
24	20	1.250	175	P80S-004AG		
30	44	0.750	145	P80S-003ZK		
32	48	0.750	150	P80S-003ZL		
36	44	0.875	175	P80S-0041M		
40	44	1.000	185	P80S-0043S		
42	48	1.000	190	P80S-0043T		
48	44	1.125	210	P80S-0046Z		
52	52	1.125	220	P80S-00471		
56	60	1.125	225	P80S-00472		
60	52	1.250	240	P80S-004AW		
64	52	1.250	280	P80S-004B4		
68	52	1.250	290	P80S-004B6		
72	52	1.250	300	P80S-004DL		
76	52	1.250	310	P80S-004CW		
80	52	1.250	320	P80S-004CY		

BOLT TABLE (B_A1AP01_773 , STUD ASME RF, OPTION CODE 773)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-003V4		
0.75	4	0.625	75	P80S-003XC		
1	4	0.625	80	P80S-003XD		
1.5	4	0.750	95	P80S-00414		
2	8	0.625	90	P80S-003XF		
3	8	0.750	110	P80S-003XK		
4	8	0.750	115	P80S-003XL		
6	12	0.750	125	P80S-003XN		
8	12	0.875	140	P80S-0041D		
10	16	1.000	160	P80S-0043K		
12	16	1.125	175	P80S-0046S		
14	20	1.125	180	P80S-0046T		
16	20	1.250	190	P80S-004AK		
18	24	1.250	200	P80S-004AM		
20	24	1.250	210	P80S-004AP		
24	24	1.500	235	P80S-003F8		
30	36	1.375	285	P80S-003EA		
32	32	1.500	310	P80S-008N0		
36	32	1.625	320	P80S-005TT		
40	40	1.625	345	P80S-005TY		
42	36	1.750	355	P80S-007B5		
48	40	1.875	380	P80S-008P4		
52	48	1.875	410	P80S-008PA		
56	36	2.250	450	P80S-00P4T		
60	40	2.250	445	P80S-00P4U		

BOLT TABLE (B_A1AP01_781 , STUD ASME RF, OPTION CODE 781)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	80			
0.75	4	0.625	90			
1	4	0.625	95			
1.5	4	0.750	110			
2	8	0.625	110			
3	8	0.750	130			

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BOLT TABLE (B_A1AP01_781 , STUD ASME RF, OPTION CODE 781)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
4	8	0.875	150			
6	12	1.000	175			
8	12	1.125	195			
10	16	1.250	250	P80S-004AY		
12	20	1.250	255	P80S-004AZ		
14	20	1.375	270			
16	20	1.500	295			
18	20	1.625	320			
20	24	1.625	335			
24	24	1.875	380			
30	28	1.875	435			
32			0			
36	28	2.250	510			
40			0			
42	28	2.500	575			
48	32	2.750	635			
52	32	3.000	680			
56	32	3.250	730			
60	28	3.500	780			
64			0			
68			0			
72			0			
76			0			
80			0			

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BRANCH TABLE (T_A1AP01)

RUN PIPE SIZE (in) \ BRANCH SIZE (in)	0.5	0.75	1	1.5	2	3	4	6	8	10	12	14	16	18	20	24	30	32	36	40	42	48	52	56	60	64	68	72	76	80
0.5	TS																													
0.75		TS																												
1		TR	TS																											
1.5		TR	TR	TS																										
2		L	TR	TR	TS																									
3		L	L	TR	TR	TS																								
4	L	L	L	L	TR	TR	TS																							
6	L	L	L	L	L	TR	TR	TS																						
8		L	L	L	L	L	TR	TR	TS																					
10		L	L	L	L	L	TR	TR	TR	TS																				
12		L	L	L	L	L	L	TR	TR	TR	TS																			
14		L	L	L	L	L	L	TR	TR	TR	TR	TS																		
16		L	L	L	L	L	L	TR	TR	TR	TR	TR	TS																	
18		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TS																
20		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TR	TS															
24		L	L	L	L	L	L	L	9PD	TR	TR	TR	TR	TR	TR	TS														
30		L	L	L	L	L	L	L	9PD	TR	TR	TR	TR	TR	TR	TR	TS													
32		L	L	L	L	L	L	L	9PD	9PD	9PD	TR	TR	TR	TR	TR	TR	TS												
36		L	L	L	L	L	L	L	9PD	9PD	9PD	9PD	TR	TR	TR	TR	TR	TR	TS											
40		L	L	L	L	L	L	L	9PD	9PD	9PD	9PD	9PD	TR	TR	TR	TR	TR	TR	TS										
42		L	L	L	L	L	L	L	9PD	9PD	9PD	9PD	TR	TR	TR	TR	TR	TR	TR	TR	TS									
48		L	L	L	L	L	L	L	9PD	9PD	9PD	9PD	9PD	9PD	9PD	TR	TR	TR	TR	TR	TR	TS								
52		L	L	L	L	L	L	L	9PD	9PD	9PD	9PD	9PD	9PD	9PD	9PD	TR	TR	TR	TR	TR	TR	TS							
56		L	L	L	L	L	L	L	9PD	9PD	9PD	9PD	9PD	9PD	9PD	9PD	TR	TR	TR	TR	TR	TR	TR	TS						
60		L	L	L	L	L	L	L	9PD	9PD	9PD	9PD	9PD	9PD	9PD	9PD	TR	TR	TR	TR	TR	TR	TR	TR	TS					
64		L	L	L	L	L	L	L	9PD	9PD	9PD	9PD	9PD	9PD	9PD	9PD	9PD	TR	TR	TR	TR	TR	TR	TR	TR	TS				
68		L	L	L	L	L	L	L	9PD	9PD	9PD	9PD	9PD	9PD	9PD	9PD	9PD	9PD	TR	TR	TR	TR	TR	TR	TR	TR	TS			
72		L	L	L	L	L	L	L	9PD	9PD	9PD	9PD	9PD	9PD	9PD	9PD	9PD	9PD	9PD	TR	TR	TR	TR	TR	TR	TR	TR	TS		
76		L	L	L	L	L	L	L	9PD	9PD	9PD	9PD	9PD	9PD	9PD	9PD	9PD	9PD	9PD	9PD	TR	TR	TR	TR	TR	TR	TR	TR	TS	
80		L	L	L	L	L	L	L	9PD	9PD	9PD	9PD	9PD	9PD	9PD	9PD	9PD	9PD	9PD	9PD	TR	TR	TR	TR	TR	TR	TR	TR	TR	TS

9PD : REINFORCING PAD 90 DEG
L : OUTLET
TR : REDUCING TEE
TS : STRAIGHT TEE

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PIPING CLASS

A1AP02 REV NO. 2

Material : Killed CS
Rating : ASME CLASS 150
Flange Face : RF
C.A.(mm) : 1.50
Gasket : Spiral Wound
Service : PROCESS - GENERAL PROCESS NON SOUR, NON CORROSIVE
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
2	USE OF SOFT SEATED BALL, PLUG AND BUTTERFLY VALVES SHALL BE LIMITED TO MAXIMUM OF 204DEGC (400DEGF)

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
200	WITH JACK SCREW (FO)
541	NPT(F) (CA,L)
714	SW - NPT(F) (V)
773	CLASS 300 (B,F,G,V)
781	CLASS 600 (B,F,G)
797	CLASS 1500 (B,F,G)

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PIPING CLASS
A1AP02 REV NO. 2

PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P01A-000XM	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	0.75		XS		P01A-000XN	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1		XS		P01A-000XP	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1.5		XS		P01A-000XV	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	2		XS		P01A-000YX	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	3		STD		P01A-000YM	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	4		STD		P01A-000YU	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	6		STD		P01A-000Z3	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	8		SCH20		P01A-001AT	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	10		SCH20		P01A-0014Y	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	12		SCH20		P01A-0016H	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	14		SCH20		P01A-0017A	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P02B-00014	90 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	0.75				P02B-00015	90 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	1				P02B-00016	90 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5				P02B-00017	90 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	2		XS		P02A-000CP	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		STD		P02A-000CU	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		STD		P02A-000CZ	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		STD		P02A-000D6	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		SCH20		P02A-000GZ	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	10		SCH20		P02A-000H1	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	12		SCH20		P02A-000H4	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	14		SCH20		P02A-000FX	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P03B-00017	45 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	0.75				P03B-00018	45 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	1				P03B-00019	45 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5				P03B-0001A	45 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	2		XS		P03A-000AS	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		STD		P03A-000AX	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		STD		P03A-000B1	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		STD		P03A-000B9	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		SCH20		P03A-000EX	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	10		SCH20		P03A-000F0	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	12		SCH20		P03A-000F2	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	14		SCH20		P03A-000DW	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P21B-00017	Straight tee ASTM A105 Class 3000 ASME B16.11 SW	
1	0.75				P21B-00018	Straight tee ASTM A105 Class 3000 ASME B16.11 SW	
1	1				P21B-00019	Straight tee ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5				P21B-0001A	Straight tee ASTM A105 Class 3000 ASME B16.11 SW	
1	2		XS		P21A-001CJ	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		STD		P21A-001CU	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		STD		P21A-001CW	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6		STD		P21A-001D2	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8		SCH20		P21A-00215	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10		SCH20		P21A-00219	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12		SCH20		P21A-0021A	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14		SCH20		P21A-00206	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75			P24B-0002L	Reducing tee ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5	0.75			P24B-0002N	Reducing tee ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5	1			P24B-0002P	Reducing tee ASTM A105 Class 3000 ASME B16.11 SW	
1	2	1	XS	XS	P24A-00238	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	XS	XS	P24A-0023H	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	STD	XS	P24A-00214	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	STD	XS	P24A-002HW	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P24A-002HY	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P24A-0021K	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	STD	P24A-0021A	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P24A-00229	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH20	STD	P24A-00J21	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH20	STD	P24A-005J4	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	SCH20	STD	P24A-00HMB	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	SCH20	STD	P24A-00HKS	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	SCH20	SCH20	P24A-002YX	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	SCH20	STD	P24A-00K0B	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH20	SCH20	P24A-002U4	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH20	SCH20	P24A-002YC	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	SCH20	STD	P24A-00K0M	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	SCH20	SCH20	P24A-002U7	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	SCH20	SCH20	P24A-002YA	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	SCH20	SCH20	P24A-002YR	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	STD	XS	P27A-001MZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P27A-001N0	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P27A-00189	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	STD	P27A-001AZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P27A-001GW	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH20	STD	P27A-003K2	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH20	STD	P27A-003K3	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	SCH20	STD	P27A-003K4	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	SCH20	STD	P27A-003K5	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	SCH20	SCH20	P27A-001UL	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	SCH20	STD	P27A-003K6	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH20	SCH20	P27A-001UU	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH20	SCH20	P27A-001TH	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	SCH20	STD	P27A-00518	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	SCH20	SCH20	P27A-001V4	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	SCH20	SCH20	P27A-001TG	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	SCH20	SCH20	P27A-001U1	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	STD	XS	P28A-001N5	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P28A-001N6	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P28A-0018B	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	STD	P28A-001AS	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P28A-00182	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH20	STD	P28A-003JU	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH20	STD	P28A-003JV	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	SCH20	STD	P28A-003JW	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	SCH20	STD	P28A-003JX	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	SCH20	SCH20	P28A-001V0	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	SCH20	STD	P28A-003JY	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH20	SCH20	P28A-001V1	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH20	SCH20	P28A-001TJ	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14	6	SCH20	STD	P28A-0096P	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	SCH20	SCH20	P28A-001WH	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	SCH20	SCH20	P28A-001TH	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	SCH20	SCH20	P28A-001UC	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P29B-0001J	Cap ASTM A105 Class 3000 ASME B16.11 SW	
1	0.75				P29B-0001F	Cap ASTM A105 Class 3000 ASME B16.11 SW	
1	1				P29B-0001G	Cap ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5				P29B-0001H	Cap ASTM A105 Class 3000 ASME B16.11 SW	
1	2		XS		P29A-000A1	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		STD		P29A-000BK	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		STD		P29A-000A3	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6		STD		P29A-000A9	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8		SCH20		P29A-000EY	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10		SCH20		P29A-000E5	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12		SCH20		P29A-000E8	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14		SCH20		P29A-000EA	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
541	0.75				P29B-0000C	Cap ASTM A105 Class 3000 ASME B16.11 NPT	
541	1				P29B-0000D	Cap ASTM A105 Class 3000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P41A-000B5	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		SCH160		P41A-000B6	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		SCH160		P41A-000B7	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		SCH160		P41A-000B8	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

CON SWAGED NIPPLE (SNC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	XS	XS	P42A-00036	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	XS	XS	P42A-00038	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	XS	XS	P42A-0003B	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	XS	XS	P42A-00035	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	XS	XS	P42A-00039	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	XS	XS	P42A-0003C	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	XS	XS	P42A-0008C	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	XS	XS	P42A-0008D	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	XS	XS	P42A-0008E	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	XS	XS	P42A-0008F	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	STD	XS	P42A-0007V	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	

ECC SWAGED NIPPLE (SNE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	XS	XS	P43A-00036	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	XS	XS	P43A-00037	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	XS	XS	P43A-00038	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	XS	XS	P43A-00039	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	XS	XS	P43A-0003A	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	XS	XS	P43A-0003B	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	XS	XS	P43A-00042	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	XS	XS	P43A-00043	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	XS	XS	P43A-00044	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	XS	XS	P43A-00045	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	STD	XS	P43A-0003J	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	

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COUPLING (CPS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P47B-0001D	Coupling ASTM A105 Class 3000 ASME B16.11 SW - SW	
1	0.75				P47B-0001E	Coupling ASTM A105 Class 3000 ASME B16.11 SW - SW	
1	1				P47B-0001F	Coupling ASTM A105 Class 3000 ASME B16.11 SW - SW	
1	1.5				P47B-0001G	Coupling ASTM A105 Class 3000 ASME B16.11 SW - SW	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2 - 2.5	0.75			P31B-0137J	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	3 - 5	0.75			P31B-0137K	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	6 - 12	0.75			P31B-007AB	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	14 - 36	0.75			P31B-007AJ	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	3	1			P31B-007A7	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	4 - 5	1			P31B-0138Z	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	6 - 10	1			P31B-007A4	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	12 - 36	1			P31B-007AA	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	4	1.5			P31B-005SN	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	5 - 6	1.5			P31B-01390	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	8 - 12	1.5			P31B-0079U	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	14 - 24	1.5			P31B-007A0	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
541	1	0.75			P31B-00551	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
541	1.5	0.75			P31B-00555	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
541	2 - 2.5	0.75			P31B-0137H	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
541	3 - 5	0.75			P31B-01376	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
541	6 - 12	0.75			P31B-007GR	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
541	14 - 36	0.75			P31B-007GY	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
1	6	2	STD	XS	P31B-007SH	Outlet ASTM A105 MSS SP-97 BW	
1	8	2	SCH20	XS	P31B-00NY2	Outlet ASTM A105 MSS SP-97 BW	
1	10	2	SCH20	XS	P31B-00TFB	Outlet ASTM A105 MSS SP-97 BW	
1	12	2	SCH20	XS	P31B-00TFA	Outlet ASTM A105 MSS SP-97 BW	
1	14	2	SCH20	XS	P31B-00TF9	Outlet ASTM A105 MSS SP-97 BW	
1	8	3	SCH20	STD	P31B-00P11	Outlet ASTM A105 MSS SP-97 BW	
1	10	3	SCH20	STD	P31B-00UPG	Outlet ASTM A105 MSS SP-97 BW	
1	12	3	SCH20	STD	P31B-00USE	Outlet ASTM A105 MSS SP-97 BW	
1	14	3	SCH20	STD	P31B-00UPH	Outlet ASTM A105 MSS SP-97 BW	
1	12	4	SCH20	STD	P31B-00USF	Outlet ASTM A105 MSS SP-97 BW	
1	14	4	SCH20	STD	P31B-00UPJ	Outlet ASTM A105 MSS SP-97 BW	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30B-0002D	Plug ASTM A105 ASME B16.11 NPT Round head	
1	0.75				P30B-0002E	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1				P30B-0002F	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1.5				P30B-0002G	Plug ASTM A105 ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P61B-001R9	Flange SW ASTM A105 Class 150 ASME B16.5 RF	
1	0.75		XS		P61B-001RA	Flange SW ASTM A105 Class 150 ASME B16.5 RF	
1	1		XS		P61B-001RR	Flange SW ASTM A105 Class 150 ASME B16.5 RF	
1	1.5		XS		P61B-001RV	Flange SW ASTM A105 Class 150 ASME B16.5 RF	
1	2		XS		P61B-003NK	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	3		STD		P61B-001PW	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	4		STD		P61B-001R8	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	6		STD		P61B-001RT	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	8		SCH20		P61B-002BF	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	10		SCH20		P61B-002B4	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	12		SCH20		P61B-002B5	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	14		SCH20		P61B-002B6	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
773	0.5		XS		P61B-001HC	Flange SW ASTM A105 Class 300 ASME B16.5 RF	

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FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
773	0.75		XS		P61B-001HS	Flange SW ASTM A105 Class 300 ASME B16.5 RF	
773	1		XS		P61B-001EF	Flange SW ASTM A105 Class 300 ASME B16.5 RF	
773	1.5		XS		P61B-001F2	Flange SW ASTM A105 Class 300 ASME B16.5 RF	
773	2		XS		P61B-001HW	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	3		STD		P61B-001LJ	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	4		STD		P61B-001MC	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	6		STD		P61B-001N2	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	8		SCH20		P61B-002LJ	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	10		SCH20		P61B-002LH	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	12		SCH20		P61B-002MP	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	14		SCH20		P61B-002MR	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
781	0.5		XS		P61B-001FF	Flange SW ASTM A105 Class 600 ASME B16.5 RF	
781	0.75		XS		P61B-001FH	Flange SW ASTM A105 Class 600 ASME B16.5 RF	
781	1		XS		P61B-001DR	Flange SW ASTM A105 Class 600 ASME B16.5 RF	
781	1.5		XS		P61B-001DV	Flange SW ASTM A105 Class 600 ASME B16.5 RF	
781	2		XS		P61B-001DH	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	3		STD		P61B-001TW	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	4		STD		P61B-001VV	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	6		STD		P61B-001JW	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	8		SCH20		P61B-003F0	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	10		SCH20		P61B-00650	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	12		SCH20		P61B-00651	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
797	2		XS		P61B-0065C	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67B-000FH	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	0.75				P67B-000FJ	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	1				P67B-000FK	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	1.5				P67B-000FL	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	2				P67B-000FT	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	3				P67B-000FW	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	4				P67B-000FX	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	6				P67B-000FY	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	8				P67B-000FZ	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	10				P67B-000FM	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	12				P67B-000FN	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	14				P67B-000FP	Blind flange ASTM A105 Class 150 ASME B16.5 RF	

REDUCING FLANGE (FR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5	0.5		XS	P62B-000KK	Reducing flange SW ASTM A105 Class 150 ASME B16.5 RF	
1	1.5	0.75		XS	P62B-000KP	Reducing flange SW ASTM A105 Class 150 ASME B16.5 RF	
1	2	0.75		XS	P62B-000NC	Reducing flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	2	1		XS	P62B-000K6	Reducing flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	2	1.5		XS	P62B-000K7	Reducing flange WN ASTM A105 Class 150 ASME B16.5 RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000L8	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000L9	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000LA	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000LB	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000LH	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000LL	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000LM	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

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GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	6				P73T-000LN	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	8				P73T-000LP	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	10				P73T-000LC	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	12				P73T-000LD	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	14				P73T-000LE	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	0.5				P73T-000FT	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	0.75				P73T-000FU	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	3				P73T-000G5	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	4				P73T-000G6	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	6				P73T-000G7	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	8				P73T-000G8	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	10				P73T-000FX	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	12				P73T-000FY	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	14				P73T-000FZ	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	0.5				P73T-000J8	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	0.75				P73T-000J9	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1				P73T-000JA	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1.5				P73T-000JB	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	2				P73T-000JH	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	3				P73T-000JL	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	4				P73T-000JM	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	6				P73T-000JN	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	8				P73T-000JP	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	10				P73T-000JC	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	12				P73T-000JD	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
797	2				P75T-0008A	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-14				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
773	0.5-10				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
773	12-14				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
781	0.5-6				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
781	8-12				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
797	0.5-2				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81B-000P4	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	0.75				P81B-000NX	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	1				P81B-000NY	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	1.5				P81B-000NZ	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	2				P81C-002DV	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	

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GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3				P81C-002DW	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	4				P81C-002DX	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	6				P81C-002DY	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	8				P81C-002DZ	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	10				P81C-002DT	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	12				P81C-002DU	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	14				P81C-00308	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated	
714	0.5				P81B-0015L	Gate valve ASTM A105 Class 800 API 602 SW - NPT Trim number 8 BB-BG-OS&Y Handwheel operated	
714	0.75				P81B-002F4	Gate valve ASTM A105 Class 800 API 602 SW - NPT Trim number 8 BB-BG-OS&Y Handwheel operated	
773	2				P81C-002D6	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82B-000K0	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	0.75				P82B-000HB	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	1				P82B-000HC	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	1.5				P82B-000HD	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	2				P82C-000N5	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	3				P82C-000N6	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	4				P82C-000N7	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	6				P82C-000N8	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	8				P82C-0026L	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83B-000FX	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover	
1	0.75				P83B-000ER	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover	
1	1				P83B-000ES	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover	
1	1.5				P83B-000ET	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover	
1	2				P83C-00144	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	3				P83C-00147	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	4				P83C-00148	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	6				P83C-00149	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	8				P83C-0014A	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	10				P83C-00140	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	12				P83C-00141	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	14				P83C-0021E	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	

NEEDLE VALVE (NV)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82B-001JU	Needle valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	0.75				P82B-000YB	Needle valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	1				P82B-000YC	Needle valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	1.5				P82B-000YD	Needle valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	

ORIFICE FLANGE (FO)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2		XS		P66B-0084B	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	3		STD		P66B-0084C	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	4		STD		P66B-0084D	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	6		STD		P66B-0084E	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	

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ORIFICE FLANGE (FO)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	8		SCH20		P66B-0084F	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	10		SCH20		P66B-00848	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
200	2		XS		P66B-00843	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	3		STD		P66B-00844	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	4		STD		P66B-00845	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	6		STD		P66B-00846	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	8		SCH20		P66B-00847	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	10		SCH20		P66B-00840	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71B-0008A	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	0.75				P71B-0008B	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	1				P71B-0008C	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71B-0008D	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	2				P71B-0000P	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	3				P71B-0000N	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	4				P71B-0000M	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	6				P71B-0000L	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	8				P71B-0000R	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	10				P71B-0000K	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	12				P71B-0000J	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	

PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000AH	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	

PADDLE SPACER (PS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000AT	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	

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BOLT TABLE (B_A1AP02 , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	60	P80S-003V2		
0.75	4	0.500	65	P80S-003V3		
1	4	0.500	70	P80S-003V4		
1.5	4	0.500	75	P80S-003V5		
2	4	0.625	85	P80S-003XE		
3	4	0.625	95	P80S-003XG		
4	8	0.625	95	P80S-003XG		
6	8	0.750	105	P80S-003XJ		
8	8	0.750	110	P80S-003XK		
10	12	0.875	120	P80S-00419		
12	12	0.875	120	P80S-00419		
14	12	1.000	135	P80S-0043E		

BOLT TABLE (B_A1AP02_773 , STUD ASME RF, OPTION CODE 773)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-003V4		
0.75	4	0.625	75	P80S-003XC		
1	4	0.625	80	P80S-003XD		
1.5	4	0.750	95	P80S-00414		
2	8	0.625	90	P80S-003XF		
3	8	0.750	110	P80S-003XK		
4	8	0.750	115	P80S-003XL		
6	12	0.750	125	P80S-003XN		
8	12	0.875	140	P80S-0041D		
10	16	1.000	160	P80S-0043K		
12	16	1.125	175	P80S-0046S		
14	20	1.125	180	P80S-0046T		

BOLT TABLE (B_A1AP02_781 , STUD ASME RF, OPTION CODE 781)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	80	P80S-003V6		
0.75	4	0.625	90	P80S-003XF		
1	4	0.625	95	P80S-003XG		
1.5	4	0.750	110	P80S-003XK		
2	8	0.625	110	P80S-003VC		
3	8	0.750	130	P80S-003XP		
4	8	0.875	150	P80S-0041F		
6	12	1.000	175	P80S-0043P		
8	12	1.125	195	P80S-0046W		
10	16	1.250	250	P80S-004AY		
12	20	1.250	255	P80S-004AZ		
14	20	1.375	270			

BOLT TABLE (B_A1AP02_797 , STUD ASME RJ, OPTION CODE 797)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	110	P80S-003XK	R12	
0.75	4	0.750	115	P80S-003XL	R14	
1	4	0.875	130	P80S-0041B	R16	
1.5	4	1.000	140	P80S-0043F	R20	
2	8	0.875	150	P80S-0041F	R24	P75T-0008A
3	8	1.125	180		R35	
4	8	1.250	230		R39	
6	12	1.375	300		R46	
8	12	1.625	345		R50	
10	12	1.875	395		R54	
12	16	2.000	445		R58	
14	16	2.250	490		R63	

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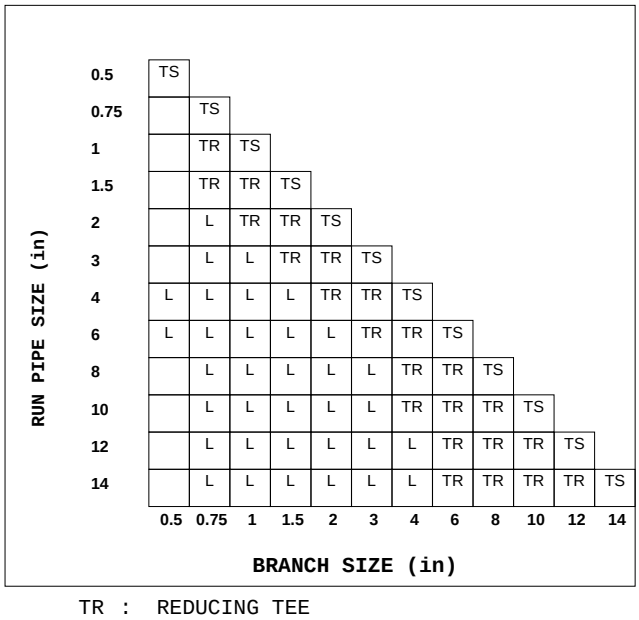
BRANCH TABLE (T_A1AP02)



TR : REDUCING TEE
L : OUTLET
TS : STRAIGHT TEE

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Material : Killed CS
Rating : ASME CLASS 150
Flange Face : RF
C.A.(mm) : 1.50
Gasket : Spiral Wound
Service : PROCESS - GENERAL PROCESS NON SOUR, NON CORROSIVE
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
2	USE OF SOFT SEATED BALL, PLUG AND BUTTERFLY VALVES SHALL BE LIMITED TO MAXIMUM OF 204DEGC (400DEGF)

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
24	FULL PORT (Q)
200	WITH JACK SCREW (FO)
541	NPT(F) (CA,L)
714	SW - NPT(F) (V)
773	CLASS 300 (B,F,G,V)
781	CLASS 600 (B,F,G)

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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P01A-000XM	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	0.75		XS		P01A-000XN	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1		XS		P01A-000XP	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1.5		XS		P01A-000XV	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	2		XS		P01A-000YX	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	3		STD		P01A-000YM	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	4		STD		P01A-000YU	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	6		STD		P01A-000Z3	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	8		SCH20		P01A-001AT	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	10		SCH20		P01A-0014Y	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	12		SCH20		P01A-0016H	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	14		SCH20		P01A-0017A	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	16		SCH20		P01A-0018E	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	18		SCH20		P01A-00438	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE	
1	20		STD		P01A-0042G	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE	
1	24		STD		P01A-0042H	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE	
1	30		STD		P01A-0042J	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE	
1	36		XS		P01A-0042K	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE	
1	42		XS		P01A-0043G	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE	
1	48		XS		P01A-0042L	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE	
1	52		11.13mm		P01A-0078T	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P02B-00014	90 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	0.75				P02B-00015	90 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	1				P02B-00016	90 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5				P02B-00017	90 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	2		XS		P02A-000CP	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		STD		P02A-000CU	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		STD		P02A-000CZ	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		STD		P02A-000D6	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		SCH20		P02A-000GZ	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	10		SCH20		P02A-000H1	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	12		SCH20		P02A-000H4	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	14		SCH20		P02A-000FX	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	16		SCH20		P02A-000GM	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	18		SCH20		P02A-000LT	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	20		STD		P02A-0010J	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	24		STD		P02A-0010K	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	30		STD		P02A-000F3	90 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius	
1	36		XS		P02A-000DH	90 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius	
1	42		XS		P02A-000FB	90 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius	
1	48		XS		P02A-0017R	90 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius	
1	52		11.13mm		P02A-003R2	90 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P03B-00017	45 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	0.75				P03B-00018	45 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	1				P03B-00019	45 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5				P03B-0001A	45 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	2		XS		P03A-000AS	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		STD		P03A-000AX	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		STD		P03A-000B1	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		STD		P03A-000B9	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		SCH20		P03A-000EX	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	10		SCH20		P03A-000F0	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	12		SCH20		P03A-000F2	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

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45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14		SCH20		P03A-000DW	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	16		SCH20		P03A-000EM	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	18		SCH20		P03A-001DX	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	20		STD		P03A-000X1	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	24		STD		P03A-000X2	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	30		STD		P03A-000D0	45 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius	
1	36		XS		P03A-000BG	45 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius	
1	42		XS		P03A-000DB	45 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius	
1	48		XS		P03A-0013P	45 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius	
1	52		11.13mm		P03A-003MR	45 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P21B-00017	Straight tee ASTM A105 Class 3000 ASME B16.11 SW	
1	0.75				P21B-00018	Straight tee ASTM A105 Class 3000 ASME B16.11 SW	
1	1				P21B-00019	Straight tee ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5				P21B-0001A	Straight tee ASTM A105 Class 3000 ASME B16.11 SW	
1	2		XS		P21A-001CJ	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		STD		P21A-001CU	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		STD		P21A-001CW	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6		STD		P21A-001D2	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8		SCH20		P21A-00215	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10		SCH20		P21A-00219	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12		SCH20		P21A-0021A	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14		SCH20		P21A-00206	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16		SCH20		P21A-0020X	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18		SCH20		P21A-001PJ	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20		STD		P21A-001C7	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24		STD		P21A-001CC	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30		STD		P21A-001YC	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	36		XS		P21A-001D7	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	42		XS		P21A-001KS	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	48		XS		P21A-001RL	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	52		11.13mm		P21A-0048K	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75			P24B-0002L	Reducing tee ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5	0.75			P24B-0002N	Reducing tee ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5	1			P24B-0002P	Reducing tee ASTM A105 Class 3000 ASME B16.11 SW	
1	2	1	XS	XS	P24A-00238	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	XS	XS	P24A-0023H	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	STD	XS	P24A-00214	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	STD	XS	P24A-002HW	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P24A-002HY	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P24A-0021K	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	STD	P24A-0021A	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P24A-00229	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH20	STD	P24A-00J21	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH20	STD	P24A-005J4	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	SCH20	STD	P24A-00HMB	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	SCH20	STD	P24A-00HKS	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	SCH20	SCH20	P24A-002YX	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	SCH20	STD	P24A-00K0B	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH20	SCH20	P24A-002U4	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH20	SCH20	P24A-002YC	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	SCH20	STD	P24A-00K0M	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	SCH20	SCH20	P24A-002U7	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	SCH20	SCH20	P24A-002YA	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14	12	SCH20	SCH20	P24A-002YR	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	6	SCH20	STD	P24A-00GU4	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	SCH20	SCH20	P24A-002XW	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	SCH20	SCH20	P24A-002YH	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	SCH20	SCH20	P24A-002U1	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	SCH20	SCH20	P24A-002XF	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	8	SCH20	SCH20	P24A-002XC	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	10	SCH20	SCH20	P24A-002UX	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	12	SCH20	SCH20	P24A-002W3	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	14	SCH20	SCH20	P24A-002WT	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	16	SCH20	SCH20	P24A-002X5	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	8	STD	SCH20	P24A-00K0N	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	10	STD	SCH20	P24A-00BT7	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	12	STD	SCH20	P24A-00BUS	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	14	STD	SCH20	P24A-00BWB	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	16	STD	SCH20	P24A-006W3	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	18	STD	SCH20	P24A-006WD	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	10	STD	SCH20	P24A-00KT6	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	12	STD	SCH20	P24A-00C7B	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	14	STD	SCH20	P24A-00K0C	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	16	STD	SCH20	P24A-00CAD	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	18	STD	SCH20	P24A-006WF	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	20	STD	STD	P24A-004SV	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	10	STD	SCH20	P24A-003VN	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	12	STD	SCH20	P24A-003VP	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	14	STD	SCH20	P24A-003VR	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	16	STD	SCH20	P24A-003VS	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	18	STD	SCH20	P24A-003VT	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	20	STD	STD	P24A-0087D	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	24	STD	STD	P24A-005XW	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	36	16	XS	SCH20	P24A-003VH	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	36	18	XS	SCH20	P24A-003VJ	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	36	20	XS	STD	P24A-004SS	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	36	24	XS	STD	P24A-004VX	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	36	30	XS	STD	P24A-003VM	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	42	16	XS	SCH20	P24A-003VB	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	42	18	XS	SCH20	P24A-003VC	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	42	20	XS	STD	P24A-00EGT	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	42	24	XS	STD	P24A-00EHZ	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	42	30	XS	STD	P24A-003VF	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	42	36	XS	XS	P24A-003VG	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	48	24	XS	STD	P24A-006WP	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	48	30	XS	STD	P24A-006WR	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	48	36	XS	XS	P24A-00F4B	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	48	42	XS	XS	P24A-00F5N	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	52	30	11.13mm	STD	P24A-00NFJ	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	52	36	11.13mm	XS	P24A-00NGB	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	52	42	11.13mm	XS	P24A-00NHD	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	52	48	11.13mm	XS	P24A-00KZ5	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	STD	XS	P27A-001MZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P27A-001N0	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P27A-00189	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	STD	P27A-001AZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P27A-001GW	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH20	STD	P27A-003K2	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH20	STD	P27A-003K3	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	10	4	SCH20	STD	P27A-003K4	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	SCH20	STD	P27A-003K5	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	SCH20	SCH20	P27A-001UL	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	SCH20	STD	P27A-003K6	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH20	SCH20	P27A-001UU	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH20	SCH20	P27A-001TH	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	SCH20	STD	P27A-00518	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	SCH20	SCH20	P27A-001V4	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	SCH20	SCH20	P27A-001TG	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	SCH20	SCH20	P27A-001U1	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	SCH20	SCH20	P27A-001WX	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	SCH20	SCH20	P27A-001TW	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	SCH20	SCH20	P27A-001UF	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	SCH20	SCH20	P27A-001V2	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	10	SCH20	SCH20	P27A-001TJ	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	12	SCH20	SCH20	P27A-001UE	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	14	SCH20	SCH20	P27A-001UY	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	16	SCH20	SCH20	P27A-001WN	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	12	STD	SCH20	P27A-00CMZ	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	14	STD	SCH20	P27A-0082L	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	16	STD	SCH20	P27A-0082M	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	18	STD	SCH20	P27A-0084N	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	16	STD	SCH20	P27A-0084T	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	18	STD	SCH20	P27A-0084U	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	20	STD	STD	P27A-001A8	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	20	STD	STD	P27A-001S0	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	24	STD	STD	P27A-001M7	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	36	24	XS	STD	P27A-001GY	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	36	30	XS	STD	P27A-001M9	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	42	30	XS	STD	P27A-001N2	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	42	36	XS	XS	P27A-001M6	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	48	42	XS	XS	P27A-00BHA	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	52	30	11.13mm	STD	P27A-00H4E	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	52	36	11.13mm	XS	P27A-00H4F	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	52	42	11.13mm	XS	P27A-00H5P	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	52	48	11.13mm	XS	P27A-00FAT	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	STD	XS	P28A-001N5	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P28A-001N6	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P28A-0018B	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	STD	P28A-001AS	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P28A-00182	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH20	STD	P28A-003JU	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH20	STD	P28A-003JV	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	SCH20	STD	P28A-003JW	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	SCH20	STD	P28A-003JX	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	SCH20	SCH20	P28A-001V0	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	SCH20	STD	P28A-003JY	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH20	SCH20	P28A-001V1	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH20	SCH20	P28A-001TJ	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	SCH20	STD	P28A-0096P	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	SCH20	SCH20	P28A-001WH	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	SCH20	SCH20	P28A-001TH	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	SCH20	SCH20	P28A-001UC	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	SCH20	SCH20	P28A-001T6	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	SCH20	SCH20	P28A-001TY	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	SCH20	SCH20	P28A-001UX	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	16	14	SCH20	SCH20	P28A-001WG	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	10	SCH20	SCH20	P28A-001TV	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	12	SCH20	SCH20	P28A-001UJ	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	14	SCH20	SCH20	P28A-001WD	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	16	SCH20	SCH20	P28A-001T1	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	12	STD	SCH20	P28A-009MM	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	14	STD	SCH20	P28A-004SJ	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	16	STD	SCH20	P28A-004SK	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	18	STD	SCH20	P28A-004UN	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	16	STD	SCH20	P28A-004UR	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	18	STD	SCH20	P28A-004US	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	20	STD	STD	P28A-001AW	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	20	STD	STD	P28A-001LZ	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	24	STD	STD	P28A-001N1	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	36	24	XS	STD	P28A-0017X	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	36	30	XS	STD	P28A-001ND	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	42	30	XS	STD	P28A-001RM	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	42	36	XS	XS	P28A-001N0	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	48	42	XS	XS	P28A-008GJ	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	52	30	11.13mm	STD	P28A-00EBL	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	52	36	11.13mm	XS	P28A-00EBM	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	52	42	11.13mm	XS	P28A-00EDC	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	52	48	11.13mm	XS	P28A-00CEW	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P29B-0001J	Cap ASTM A105 Class 3000 ASME B16.11 SW	
1	0.75				P29B-0001F	Cap ASTM A105 Class 3000 ASME B16.11 SW	
1	1				P29B-0001G	Cap ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5				P29B-0001H	Cap ASTM A105 Class 3000 ASME B16.11 SW	
1	2		XS		P29A-000A1	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		STD		P29A-000BK	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		STD		P29A-000A3	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6		STD		P29A-000A9	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8		SCH20		P29A-000EY	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10		SCH20		P29A-000E5	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12		SCH20		P29A-000E8	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14		SCH20		P29A-000EA	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16		SCH20		P29A-000F3	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18		SCH20		P29A-000E0	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20		STD		P29A-000B2	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24		STD		P29A-000B8	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	30		STD		P29A-000DU	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	36		XS		P29A-000A2	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	42		XS		P29A-000CW	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	48		XS		P29A-00136	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	52		11.13mm		P29A-00324	Cap ASTM A234 Grade WPB Seamless ASME B16.9-modified BW	
541	0.75				P29B-0000C	Cap ASTM A105 Class 3000 ASME B16.11 NPT	
541	1				P29B-0000D	Cap ASTM A105 Class 3000 ASME B16.11 NPT	
541	1.5				P29B-0000E	Cap ASTM A105 Class 3000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P41A-000B5	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		SCH160		P41A-000B6	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		SCH160		P41A-000B7	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		SCH160		P41A-000B8	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

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CON SWAGED NIPPLE (SNC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	XS	XS	P42A-00036	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	XS	XS	P42A-00038	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	XS	XS	P42A-0003B	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	XS	XS	P42A-00035	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	XS	XS	P42A-00039	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	XS	XS	P42A-0003C	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	XS	XS	P42A-0008C	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	XS	XS	P42A-0008D	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	XS	XS	P42A-0008E	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	XS	XS	P42A-0008F	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	STD	XS	P42A-0007V	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	

ECC SWAGED NIPPLE (SNE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	XS	XS	P43A-00036	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	XS	XS	P43A-00037	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	XS	XS	P43A-00038	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	XS	XS	P43A-00039	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	XS	XS	P43A-0003A	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	XS	XS	P43A-0003B	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	XS	XS	P43A-00042	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	XS	XS	P43A-00043	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	XS	XS	P43A-00044	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	XS	XS	P43A-00045	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	STD	XS	P43A-0003J	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	

COUPLING (CPS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P47B-0001D	Coupling ASTM A105 Class 3000 ASME B16.11 SW - SW	
1	0.75				P47B-0001E	Coupling ASTM A105 Class 3000 ASME B16.11 SW - SW	
1	1				P47B-0001F	Coupling ASTM A105 Class 3000 ASME B16.11 SW - SW	
1	1.5				P47B-0001G	Coupling ASTM A105 Class 3000 ASME B16.11 SW - SW	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2 - 2.5	0.75			P31B-0137J	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	3 - 5	0.75			P31B-0137K	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	6 - 12	0.75			P31B-007AB	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	14 - 36	0.75			P31B-007AJ	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	38 and larger	0.75			P31B-00N1G	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	3	1			P31B-007A7	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	4 - 5	1			P31B-0138Z	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	6 - 10	1			P31B-007A4	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	12 - 36	1			P31B-007AA	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	38 and larger	1			P31B-00N0Y	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	4	1.5			P31B-005SN	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	5 - 6	1.5			P31B-01390	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	8 - 12	1.5			P31B-0079U	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	14 - 24	1.5			P31B-007A0	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	26 - 36	1.5			P31B-01391	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	38 and larger	1.5			P31B-00N17	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
541	1	0.75			P31B-00551	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
541	1.5	0.75			P31B-00555	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
541	2 - 2.5	0.75			P31B-0137H	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
541	3 - 5	0.75			P31B-01376	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
541	6 - 12	0.75			P31B-007GR	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
541	14 - 36	0.75			P31B-007GY	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
541	38 and larger	0.75			P31B-00FFM	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
1	6	2	STD	XS	P31B-007SH	Outlet ASTM A105 MSS SP-97 BW	

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OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	8	2	SCH20	XS	P31B-00NY2	Outlet ASTM A105 MSS SP-97 BW	
1	10	2	SCH20	XS	P31B-00TFB	Outlet ASTM A105 MSS SP-97 BW	
1	12	2	SCH20	XS	P31B-00TFA	Outlet ASTM A105 MSS SP-97 BW	
1	14	2	SCH20	XS	P31B-00TF9	Outlet ASTM A105 MSS SP-97 BW	
1	16	2	SCH20	XS	P31B-00TF8	Outlet ASTM A105 MSS SP-97 BW	
1	18	2	SCH20	XS	P31B-00NVX	Outlet ASTM A105 MSS SP-97 BW	
1	20	2	STD	XS	P31B-00994	Outlet ASTM A105 MSS SP-97 BW	
1	24	2	STD	XS	P31B-0092Z	Outlet ASTM A105 MSS SP-97 BW	
1	30	2	STD	XS	P31B-008P5	Outlet ASTM A105 MSS SP-97 BW	
1	36	2	XS	XS	P31B-008BB	Outlet ASTM A105 MSS SP-97 BW	
1	42	2	XS	XS	P31B-0084J	Outlet ASTM A105 MSS SP-97 BW	
1	48	2	XS	XS	P31B-007YJ	Outlet ASTM A105 MSS SP-97 BW	
1	52	2	11.13mm	XS	P31B-00Y9A	Outlet ASTM A105 MSS SP-97 BW	
1	8	3	SCH20	STD	P31B-00P11	Outlet ASTM A105 MSS SP-97 BW	
1	10	3	SCH20	STD	P31B-00UPG	Outlet ASTM A105 MSS SP-97 BW	
1	12	3	SCH20	STD	P31B-00USE	Outlet ASTM A105 MSS SP-97 BW	
1	14	3	SCH20	STD	P31B-00UPH	Outlet ASTM A105 MSS SP-97 BW	
1	16	3	SCH20	STD	P31B-00TU2	Outlet ASTM A105 MSS SP-97 BW	
1	18	3	SCH20	STD	P31B-00NZ4	Outlet ASTM A105 MSS SP-97 BW	
1	20	3	STD	STD	P31B-008FA	Outlet ASTM A105 MSS SP-97 BW	
1	24	3	STD	STD	P31B-00895	Outlet ASTM A105 MSS SP-97 BW	
1	30	3	STD	STD	P31B-007WY	Outlet ASTM A105 MSS SP-97 BW	
1	36	3	XS	STD	P31B-007P1	Outlet ASTM A105 MSS SP-97 BW	
1	42	3	XS	STD	P31B-00AGK	Outlet ASTM A105 MSS SP-97 BW	
1	48	3	XS	STD	P31B-00AFD	Outlet ASTM A105 MSS SP-97 BW	
1	52	3	11.13mm	STD	P31B-00Y9B	Outlet ASTM A105 MSS SP-97 BW	
1	12	4	SCH20	STD	P31B-00USF	Outlet ASTM A105 MSS SP-97 BW	
1	14	4	SCH20	STD	P31B-00UPJ	Outlet ASTM A105 MSS SP-97 BW	
1	16	4	SCH20	STD	P31B-00TU3	Outlet ASTM A105 MSS SP-97 BW	
1	18	4	SCH20	STD	P31B-00P1V	Outlet ASTM A105 MSS SP-97 BW	
1	20	4	STD	STD	P31B-008D3	Outlet ASTM A105 MSS SP-97 BW	
1	24	4	STD	STD	P31B-0086X	Outlet ASTM A105 MSS SP-97 BW	
1	30	4	STD	STD	P31B-007US	Outlet ASTM A105 MSS SP-97 BW	
1	36	4	XS	STD	P31B-00AEP	Outlet ASTM A105 MSS SP-97 BW	
1	42	4	XS	STD	P31B-00A8G	Outlet ASTM A105 MSS SP-97 BW	
1	48	4	XS	STD	P31B-00A2P	Outlet ASTM A105 MSS SP-97 BW	
1	52	4	11.13mm	STD	P31B-00Y9C	Outlet ASTM A105 MSS SP-97 BW	
1	18	6	SCH20	STD	P31B-00P48	Outlet ASTM A105 MSS SP-97 BW	
1	20	6	STD	STD	P31B-008PZ	Outlet ASTM A105 MSS SP-97 BW	
1	24	6	STD	STD	P31B-008JD	Outlet ASTM A105 MSS SP-97 BW	
1	30	6	STD	STD	P31B-008BS	Outlet ASTM A105 MSS SP-97 BW	
1	36	6	XS	STD	P31B-0085G	Outlet ASTM A105 MSS SP-97 BW	
1	42	6	XS	STD	P31B-007ZN	Outlet ASTM A105 MSS SP-97 BW	
1	48	6	XS	STD	P31B-007U6	Outlet ASTM A105 MSS SP-97 BW	
1	52	6	11.13mm	STD	P31B-00Y9D	Outlet ASTM A105 MSS SP-97 BW	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30B-0002D	Plug ASTM A105 ASME B16.11 NPT Round head	
1	0.75				P30B-0002E	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1				P30B-0002F	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1.5				P30B-0002G	Plug ASTM A105 ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P61B-001R9	Flange SW ASTM A105 Class 150 ASME B16.5 RF	
1	0.75		XS		P61B-001RA	Flange SW ASTM A105 Class 150 ASME B16.5 RF	
1	1		XS		P61B-001RR	Flange SW ASTM A105 Class 150 ASME B16.5 RF	
1	1.5		XS		P61B-001RV	Flange SW ASTM A105 Class 150 ASME B16.5 RF	

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FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2		XS		P61B-003NK	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	3		STD		P61B-001PW	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	4		STD		P61B-001R8	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	6		STD		P61B-001RT	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	8		SCH20		P61B-002BF	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	10		SCH20		P61B-002B4	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	12		SCH20		P61B-002B5	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	14		SCH20		P61B-002B6	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	16		SCH20		P61B-002B7	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	18		SCH20		P61B-002B8	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	20		STD		P61B-001JA	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	24		STD		P61B-001NJ	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	30		STD		P61B-001S8	Flange WN ASTM A105 Class 150 ASME B16.47 Series B RF	
1	36		XS		P61B-001UE	Flange WN ASTM A105 Class 150 ASME B16.47 Series B RF	
1	42		XS		P61B-001N1	Flange WN ASTM A105 Class 150 ASME B16.47 Series B RF	
1	48		XS		P61B-004CX	Flange WN ASTM A105 Class 150 ASME B16.47 Series B RF	
1	52		11.13mm		P61B-004D1	Flange WN ASTM A105 Class 150 ASME B16.47 Series B RF	
773	0.5		XS		P61B-001HC	Flange SW ASTM A105 Class 300 ASME B16.5 RF	
773	0.75		XS		P61B-001HS	Flange SW ASTM A105 Class 300 ASME B16.5 RF	
773	1		XS		P61B-001EF	Flange SW ASTM A105 Class 300 ASME B16.5 RF	
773	1.5		XS		P61B-001F2	Flange SW ASTM A105 Class 300 ASME B16.5 RF	
773	2		XS		P61B-001HW	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	3		STD		P61B-001LJ	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	4		STD		P61B-001MC	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	6		STD		P61B-001N2	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	8		SCH20		P61B-002LJ	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	10		SCH20		P61B-002LH	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	12		SCH20		P61B-002MP	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	14		SCH20		P61B-002MR	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	16		SCH20		P61B-002MS	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	18		SCH20		P61B-002MT	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	20		STD		P61B-001NT	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	24		STD		P61B-001PA	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	30		STD		P61B-003SW	Flange WN ASTM A105 Class 300 ASME B16.47 Series B RF	
773	36		XS		P61B-001N6	Flange WN ASTM A105 Class 300 ASME B16.47 Series B RF	
773	42		XS		P61B-00673	Flange WN ASTM A105 Class 300 ASME B16.47 Series B RF	
773	48		XS		P61B-003TH	Flange WN ASTM A105 Class 300 ASME B16.47 Series B RF	
773	52		11.13mm		P61B-009SS	Flange WN ASTM A105 Class 300 ASME B16.47 Series B RF	
781	16		SCH20		P61B-00798	Flange WN ASTM A105 Class 600 ASME B16.5 RF	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67B-000FH	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	0.75				P67B-000FJ	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	1				P67B-000FK	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	1.5				P67B-000FL	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	2				P67B-000FT	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	3				P67B-000FW	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	4				P67B-000FX	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	6				P67B-000FY	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	8				P67B-000FZ	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	10				P67B-000FM	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	12				P67B-000FN	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	14				P67B-000FP	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	16				P67B-000FR	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	18				P67B-000FS	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	20				P67B-000FU	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	24				P67B-000FV	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	30				P67B-000G2	Blind flange ASTM A105 Class 150 ASME B16.47 Series B RF	

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BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	36				P67B-000G5	Blind flange ASTM A105 Class 150 ASME B16.47 Series B RF	
1	42				P67B-000KZ	Blind flange ASTM A105 Class 150 ASME B16.47 Series B RF	
1	48				P67B-000L2	Blind flange ASTM A105 Class 150 ASME B16.47 Series B RF	
1	52				P67B-0016N	Blind flange ASTM A105 Class 150 ASME B16.47 Series B RF	

REDUCING FLANGE (FR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	1.5		XS	P62B-000JX	Reducing flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	3	2		XS	P62B-0006B	Reducing flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	4	2		XS	P62B-00098	Reducing flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	4	3		STD	P62B-0006D	Reducing flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	6	3		STD	P62B-000JY	Reducing flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	6	4		STD	P62B-000JZ	Reducing flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	8	6		STD	P62B-0006E	Reducing flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	10	4		STD	P62B-000K0	Reducing flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	10	8		SCH20	P62B-000K1	Reducing flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	12	6		STD	P62B-000K2	Reducing flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	12	10		SCH20	P62B-000KR	Reducing flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	14	10		SCH20	P62B-000K3	Reducing flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	16	12		SCH20	P62B-000K4	Reducing flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	16	14		SCH20	P62B-000PG	Reducing flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	18	14		SCH20	P62B-000L9	Reducing flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	20	16		SCH20	P62B-000K5	Reducing flange WN ASTM A105 Class 150 ASME B16.5 RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000L8	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000L9	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000LA	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000LB	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000LH	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000LL	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000LM	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	6				P73T-000LN	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	8				P73T-000LP	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	10				P73T-000LC	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	12				P73T-000LD	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	14				P73T-000LE	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	16				P73T-000LF	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	18				P73T-000LG	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	20				P73T-000LJ	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	24				P73T-000LK	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	30				P73T-000LT	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	36				P73T-000LW	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	42				P73T-000LZ	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	48				P73T-000M2	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	52				P73T-001E2	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	0.5				P73T-000FT	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	0.75				P73T-000FU	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

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GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
773	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	3				P73T-000G5	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	4				P73T-000G6	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	6				P73T-000G7	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	8				P73T-000G8	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	10				P73T-000FX	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	12				P73T-000FY	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	14				P73T-000FZ	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	16				P73T-000G0	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	18				P73T-000G1	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	20				P73T-000G3	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	24				P73T-000G4	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	30				P73T-000H9	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	36				P73T-000HC	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	42				P73T-000KM	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	48				P73T-000KR	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	52				P73T-0024N	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	16				P73T-000JF	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-16				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	18-24				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
1	30-42				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	48-52				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
773	0.5-10				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
773	12-52				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
781	16				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81B-000P4	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	0.75				P81B-000NX	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	1				P81B-000NY	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	1.5				P81B-000NZ	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	2				P81C-002DV	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	3				P81C-002DW	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	4				P81C-002DX	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	6				P81C-002DY	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	8				P81C-002DZ	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	10				P81C-002DT	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	12				P81C-002DU	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	14				P81C-00308	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated	
1	16				P81C-002E0	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated	
1	18				P81C-002E1	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated	

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GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	20				P81C-002E2	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated	
1	24				P81C-002E3	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated	
1	30				P81C-004D8	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.47-B RF Trim number 8 BB-BG-OS&Y Gear operated	
1	36				P81C-004D9	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.47-B RF Trim number 8 BB-BG-OS&Y Gear operated	
714	0.5				P81B-0015L	Gate valve ASTM A105 Class 800 API 602 SW - NPT Trim number 8 BB-BG-OS&Y Handwheel operated	
714	0.75				P81B-002F4	Gate valve ASTM A105 Class 800 API 602 SW - NPT Trim number 8 BB-BG-OS&Y Handwheel operated	
773	2				P81C-002D6	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82B-000K0	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	0.75				P82B-000HB	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	1				P82B-000HC	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	1.5				P82B-000HD	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	2				P82C-000N5	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	3				P82C-000N6	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	4				P82C-000N7	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	6				P82C-000N8	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	8				P82C-0026L	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83B-000FX	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover	
1	0.75				P83B-000ER	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover	
1	1				P83B-000ES	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover	
1	1.5				P83B-000ET	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover	
1	2				P83C-00144	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	3				P83C-00147	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	4				P83C-00148	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	6				P83C-00149	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	8				P83C-0014A	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	10				P83C-00140	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	12				P83C-00141	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	14				P83C-0021E	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	16				P83C-00142	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	18				P83C-00143	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	20				P83C-00145	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	24				P83C-00146	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	

DP CHECK VALVE (XDP)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	30				P88C-0023A	Dual plate check valve ASTM A216 Grade WCB Class 150 API 594 Wafer-type ASME B16.47-B RF Trim number 8 Internal wetted parts 13Cr Spring Inconel Retainerless-type	
1	36				P88C-0023B	Dual plate check valve ASTM A216 Grade WCB Class 150 API 594 Wafer-type ASME B16.47-B RF Trim number 8 Internal wetted parts 13Cr Spring Inconel Retainerless-type	
1	42				P88C-0025X	Dual plate check valve ASTM A216 Grade WCB Class 150 API 594 Wafer-type ASME B16.47-B RF Trim number 8 Internal wetted parts 13Cr Spring Inconel Retainerless-type	
1	48				P88C-0023C	Dual plate check valve ASTM A216 Grade WCB Class 150 API 594 Wafer-type ASME B16.47-B RF Trim number 8 Internal wetted parts 13Cr Spring Inconel Retainerless-type	

BALL VALVE (Q)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P84B-0011T	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design	

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BALL VALVE (Q)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75				P84B-0011U	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design	
1	1				P84B-0011V	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design	
1	1.5				P84B-0011W	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design	
1	2				P84C-005UD	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design	
24	0.5				P84B-0011X	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	
24	0.75				P84B-0011Y	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	
24	1				P84B-0011Z	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	
24	1.5				P84B-00120	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	
24	2				P84C-005UJ	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	

BUTTERFLY VALVE (H)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	10				P86C-00230	Offset design butterfly valve ASTM A216 Grade WCB Class 150 API 609 Category B Lug-type ASME B16.5 RF Disc CS Seat Stellite-6 Trim 13Cr Triple eccentric design BG Gear operated	
1	12				P86C-00231	Offset design butterfly valve ASTM A216 Grade WCB Class 150 API 609 Category B Lug-type ASME B16.5 RF Disc CS Seat Stellite-6 Trim 13Cr Triple eccentric design BG Gear operated	
1	14				P86C-00232	Offset design butterfly valve ASTM A216 Grade WCB Class 150 API 609 Category B Lug-type ASME B16.5 RF Disc CS Seat Stellite-6 Trim 13Cr Triple eccentric design BG Gear operated	
1	16				P86C-00233	Offset design butterfly valve ASTM A216 Grade WCB Class 150 API 609 Category B Lug-type ASME B16.5 RF Disc CS Seat Stellite-6 Trim 13Cr Triple eccentric design BG Gear operated	
1	18				P86C-00234	Offset design butterfly valve ASTM A216 Grade WCB Class 150 API 609 Category B Lug-type ASME B16.5 RF Disc CS Seat Stellite-6 Trim 13Cr Triple eccentric design BG Gear operated	
1	20				P86C-001AY	Offset design butterfly valve ASTM A216 Grade WCB Class 150 API 609 Category B Double flanged ASME B16.5 RF Disc CS Seat Stellite-6 Trim 13Cr Triple eccentric design BG Gear operated	
1	24				P86C-001AZ	Offset design butterfly valve ASTM A216 Grade WCB Class 150 API 609 Category B Double flanged ASME B16.5 RF Disc CS Seat Stellite-6 Trim 13Cr Triple eccentric design BG Gear operated	
1	30				P86C-00235	Offset design butterfly valve ASTM A216 Grade WCB Class 150 API 609 Category B Double flanged ASME B16.47-B RF Disc CS Seat Stellite-6 Trim 13Cr Triple eccentric design BG Gear operated	

ORIFICE FLANGE (FO)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2		XS		P66B-0084B	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	3		STD		P66B-0084C	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	4		STD		P66B-0084D	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	6		STD		P66B-0084E	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	8		SCH20		P66B-0084F	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	10		SCH20		P66B-00848	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	12		SCH20		P66B-0084L	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	14		SCH20		P66B-0084A	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	16		SCH20		P66B-0083Y	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	18		SCH20		P66B-0084R	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	20		STD		P66B-0084S	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	24		STD		P66B-0085W	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
200	2		XS		P66B-00843	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	3		STD		P66B-00844	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	4		STD		P66B-00845	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	6		STD		P66B-00846	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	8		SCH20		P66B-00847	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	10		SCH20		P66B-00840	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	12		SCH20		P66B-0084P	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	14		SCH20		P66B-00842	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	16		SCH20		P66B-0083Z	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	18		SCH20		P66B-0084T	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	20		STD		P66B-0084U	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	24		STD		P66B-0085X	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71B-0008A	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	0.75				P71B-0008B	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	1				P71B-0008C	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	

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SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5				P71B-0008D	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	2				P71B-0000P	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	3				P71B-0000N	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	4				P71B-0000M	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	6				P71B-0000L	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	8				P71B-0000R	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	10				P71B-0000K	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	12				P71B-0000J	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	

PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000AH	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	16				P72B-0000C	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	18				P72B-000AJ	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	20				P72B-000AK	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	24				P72B-000AL	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	30				P72B-000AM	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	36				P72B-000AN	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	42				P72B-000AP	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	48				P72B-000AR	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	52				P72B-000AS	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	

PADDLE SPACER (PS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000AT	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	16				P72B-0000B	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	18				P72B-000AU	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	20				P72B-000AV	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	24				P72B-000AW	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	30				P72B-000AX	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	36				P72B-000AY	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	42				P72B-000AZ	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	48				P72B-000B0	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	52				P72B-000B1	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	

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BOLT TABLE (B_A1AP03 , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	60	P80S-003V2		
0.75	4	0.500	65	P80S-003V3		
1	4	0.500	70	P80S-003V4		
1.5	4	0.500	75	P80S-003V5		
2	4	0.625	85	P80S-003XE		
3	4	0.625	95	P80S-003XG		
4	8	0.625	95	P80S-003XG		
6	8	0.750	105	P80S-003XJ		
8	8	0.750	110	P80S-003XK		
10	12	0.875	120	P80S-00419		
12	12	0.875	120	P80S-00419		
14	12	1.000	135	P80S-0043E		
16	16	1.000	140	P80S-0043F		
18	16	1.125	150	P80S-0046K		
20	20	1.125	160	P80S-0046M		
24	20	1.250	175	P80S-004AG		
30	44	0.750	145	P80S-003ZK		
36	44	0.875	175	P80S-0041M		
42	48	1.000	190	P80S-0043T		
48	44	1.125	210	P80S-0046Z		
52	52	1.125	220	P80S-00471		

BOLT TABLE (B_A1AP03_773 , STUD ASME RF, OPTION CODE 773)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-003V4		
0.75	4	0.625	75	P80S-003XC		
1	4	0.625	80	P80S-003XD		
1.5	4	0.750	95	P80S-00414		
2	8	0.625	90	P80S-003XF		
3	8	0.750	110	P80S-003XK		
4	8	0.750	115	P80S-003XL		
6	12	0.750	125	P80S-003XN		
8	12	0.875	140	P80S-0041D		
10	16	1.000	160	P80S-0043K		
12	16	1.125	175	P80S-0046S		
14	20	1.125	180	P80S-0046T		
16	20	1.250	190	P80S-004AK		
18	24	1.250	200	P80S-004AM		
20	24	1.250	210	P80S-004AP		
24	24	1.500	235	P80S-003F8		
30	36	1.375	285	P80S-003EA		
36	32	1.625	320	P80S-005TT		
42	36	1.750	355	P80S-007B5		
48	40	1.875	380	P80S-008P4		
52	48	1.875	410	P80S-008PA		

BOLT TABLE (B_A1AP03_781 , STUD ASME RF, OPTION CODE 781)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	80			
0.75	4	0.625	90			
1	4	0.625	95			
1.5	4	0.750	110			
2	8	0.625	110			
3	8	0.750	130			
4	8	0.875	150			
6	12	1.000	175			
8	12	1.125	195			
10	16	1.250	250			
12	20	1.250	255			
14	20	1.375	270			
16	20	1.500	295	P80S-003FL		
18	20	1.625	320			
20	24	1.625	335			
24	24	1.875	380			
30	28	1.875	435			
36	28	2.250	510			
42	28	2.500	575			

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PIPING CLASS
A1AP03 REV NO. 2

BOLT TABLE (B_A1AP03_781 , STUD ASME RF, OPTION CODE 781)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
48	32	2.750	635			
52	32	3.000	680			

INDRA
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PIPING CLASS

A1AP03 REV NO. 2

BRANCH TABLE (T_A1AP03)

RUN PIPE SIZE (in) \ BRANCH SIZE (in)	0.5	0.75	1	1.5	2	3	4	6	8	10	12	14	16	18	20	24	30	36	42	48	52
0.5	TS																				
0.75		TS																			
1		TR	TS																		
1.5		TR	TR	TS																	
2		L	TR	TR	TS																
3		L	L	TR	TR	TS															
4	L	L	L	L	TR	TR	TS														
6	L	L	L	L	L	TR	TR	TS													
8		L	L	L	L	L	TR	TR	TS												
10		L	L	L	L	L	TR	TR	TR	TS											
12		L	L	L	L	L	L	TR	TR	TR	TS										
14		L	L	L	L	L	L	TR	TR	TR	TR	TS									
16		L	L	L	L	L	L	TR	TR	TR	TR	TR	TS								
18		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TS							
20		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TR	TS						
24		L	L	L	L	L	L	L	9PD	TR	TR	TR	TR	TR	TR	TS					
30		L	L	L	L	L	L	L	9PD	TR	TR	TR	TR	TR	TR	TR	TS				
36		L	L	L	L	L	L	L	9PD	9PD	9PD	9PD	TR	TR	TR	TR	TR	TS			
42		L	L	L	L	L	L	L	9PD	9PD	9PD	9PD	TR	TR	TR	TR	TR	TR	TS		
48		L	L	L	L	L	L	L	9PD	9PD	9PD	9PD	9PD	9PD	9PD	TR	TR	TR	TR	TS	
52		L	L	L	L	L	L	L	9PD	9PD	9PD	9PD	9PD	9PD	9PD	9PD	TR	TR	TR	TR	TS

L : OUTLET
9PD : REINFORCING PAD 90 DEG
TS : STRAIGHT TEE
TR : REDUCING TEE

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PIPING CLASS

A1AP04 REV NO. 2

Material : Killed CS
Rating : ASME CLASS 150
Flange Face : RF
C.A.(mm) : 1.50
Gasket : Spiral Wound
Service : PROCESS - GENERAL PROCESS NON SOUR, NON CORROSIVE
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
2	USE OF SOFT SEATED BALL, PLUG AND BUTTERFLY VALVES SHALL BE LIMITED TO MAXIMUM OF 204DEGC (400DEGF)

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
24	FULL PORT (Q)
200	WITH JACK SCREW (FO)
221	RF (V)
541	NPT(F) (CA,L)
714	SW - NPT(F) (V)
773	CLASS 300 (B,F,G,SB,V)
781	CLASS 600 (B,F,G)
3001	INSULATION GASKET KIT AND BOLTS FOR FLANGE (G)
4208	45 DEGREE LATERAL STRAIGHT TEE (TLS)
4213	WELDOLET ON ELBOW (ELBOW=NPS24) (LE)

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PIPING CLASS
A1AP04 REV NO. 2

PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P01A-000XM	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	0.75		XS		P01A-000XN	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1		XS		P01A-000XP	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1.5		XS		P01A-000XV	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	2		XS		P01A-000YX	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	3		STD		P01A-000YM	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	4		STD		P01A-000YU	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	6		STD		P01A-000Z3	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	8		SCH20		P01A-001AT	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	10		SCH20		P01A-0014Y	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	12		SCH20		P01A-0016H	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	14		SCH20		P01A-0017A	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	16		SCH20		P01A-0018E	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	18		SCH20		P01A-00438	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE	
1	20		STD		P01A-0042G	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE	
1	24		STD		P01A-0042H	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE	
1	26		STD		P01A-0090C	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE	
1	28		STD		P01A-008V4	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE	
1	30		STD		P01A-0042J	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE	
1	32		XS		P01A-0090G	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE	
1	34		XS		P01A-0090H	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE	
1	36		XS		P01A-0042K	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE	
1	42		STD		P01A-0078R	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE	
1	44		XS		P01A-008V5	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE	
1	48		XS		P01A-0042L	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P02B-00014	90 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	0.75				P02B-00015	90 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	1				P02B-00016	90 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5				P02B-00017	90 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	2		XS		P02A-000CP	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		STD		P02A-000CU	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		STD		P02A-000CZ	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		STD		P02A-000D6	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		SCH20		P02A-000GZ	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	10		SCH20		P02A-000H1	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	12		SCH20		P02A-000H4	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	14		SCH20		P02A-000FX	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	16		SCH20		P02A-000GM	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	18		SCH20		P02A-000LT	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	20		STD		P02A-0010J	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	24		STD		P02A-0010K	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	26		STD		P02A-000F0	90 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius	
1	28		STD		P02A-000F2	90 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius	
1	30		STD		P02A-000F3	90 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius	
1	32		XS		P02A-000D5	90 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius	
1	34		XS		P02A-000DD	90 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius	
1	36		XS		P02A-000DH	90 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius	
1	42		STD		P02A-0014G	90 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius	
1	44		XS		P02A-000FD	90 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius	
1	48		XS		P02A-0017R	90 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P03B-00017	45 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	0.75				P03B-00018	45 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	1				P03B-00019	45 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	

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45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5				P03B-0001A	45 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	2		XS		P03A-000AS	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		STD		P03A-000AX	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		STD		P03A-000B1	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		STD		P03A-000B9	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		SCH20		P03A-000EX	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	10		SCH20		P03A-000F0	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	12		SCH20		P03A-000F2	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	14		SCH20		P03A-000DW	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	16		SCH20		P03A-000EM	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	18		SCH20		P03A-001DX	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	20		STD		P03A-000X1	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	24		STD		P03A-000X2	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	26		STD		P03A-000CW	45 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius	
1	28		STD		P03A-000CY	45 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius	
1	30		STD		P03A-000D0	45 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius	
1	32		XS		P03A-000B6	45 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius	
1	34		XS		P03A-000BA	45 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius	
1	36		XS		P03A-000BG	45 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius	
1	42		STD		P03A-0010P	45 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius	
1	44		XS		P03A-000DD	45 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius	
1	48		XS		P03A-0013P	45 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P21B-00017	Straight tee ASTM A105 Class 3000 ASME B16.11 SW	
1	0.75				P21B-00018	Straight tee ASTM A105 Class 3000 ASME B16.11 SW	
1	1				P21B-00019	Straight tee ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5				P21B-0001A	Straight tee ASTM A105 Class 3000 ASME B16.11 SW	
1	2		XS		P21A-001CJ	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		STD		P21A-001CU	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		STD		P21A-001CW	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6		STD		P21A-001D2	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8		SCH20		P21A-00215	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10		SCH20		P21A-00219	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12		SCH20		P21A-0021A	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14		SCH20		P21A-00206	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16		SCH20		P21A-0020X	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18		SCH20		P21A-001PJ	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20		STD		P21A-001C7	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24		STD		P21A-001CC	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	26		STD		P21A-001VH	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	28		STD		P21A-001WE	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30		STD		P21A-001YC	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	32		XS		P21A-001CY	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	34		XS		P21A-001D3	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	36		XS		P21A-001D7	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	42		STD		P21A-001KR	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	44		XS		P21A-001LJ	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	48		XS		P21A-001RL	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	

STRAIGHT LATERAL TEE (TLS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75				P22B-00003	Straight lateral-tee ASTM A105 Class 3000 ASME B16.11 SW 60 degree	
1	1				P22B-0000B	Straight lateral-tee ASTM A105 Class 3000 ASME B16.11 SW 60 degree	
1	1.5				P22B-0000C	Straight lateral-tee ASTM A105 Class 3000 ASME B16.11 SW 60 degree	
1	2		XS		P22A-000DW	Straight lateral-tee ASTM A234 Grade WPB Seamless ASME B16.9 BW 60 degree	
1	3		STD		P22A-000DJ	Straight lateral-tee ASTM A234 Grade WPB Seamless ASME B16.9 BW 60 degree	
1	4		STD		P22A-000DX	Straight lateral-tee ASTM A234 Grade WPB Seamless ASME B16.9 BW 60 degree	

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STRAIGHT LATERAL TEE (TLS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	6		STD		P22A-000DY	Straight lateral-tee ASTM A234 Grade WPB Seamless ASME B16.9 BW 60 degree	
1	8		SCH20		P22A-000GC	Straight lateral-tee ASTM A234 Grade WPB Seamless ASME B16.9 BW 60 degree	
1	10		SCH20		P22A-000GA	Straight lateral-tee ASTM A234 Grade WPB Seamless ASME B16.9 BW 60 degree	
1	12		SCH20		P22A-000GB	Straight lateral-tee ASTM A234 Grade WPB Seamless ASME B16.9 BW 60 degree	
1	14		SCH20		P22A-000DU	Straight lateral-tee ASTM A234 Grade WPB Seamless ASME B16.9 BW 60 degree	
1	16		SCH20		P22A-000DV	Straight lateral-tee ASTM A234 Grade WPB Seamless ASME B16.9 BW 60 degree	
1	18		SCH20		P22A-000FW	Straight lateral-tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW 60 degree	
1	20		STD		P22A-000FX	Straight lateral-tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW 60 degree	
1	24		STD		P22A-000GD	Straight lateral-tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW 60 degree	
1	30		STD		P22A-000GE	Straight lateral-tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW 60 degree	
1	36		XS		P22A-000GF	Straight lateral-tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW 60 degree	
1	42		STD		P22A-000GG	Straight lateral-tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW 60 degree	
1	48		XS		P22A-000GH	Straight lateral-tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW 60 degree	
4208	6		STD		P22A-000C4	Straight lateral-tee ASTM A234 Grade WPB Seamless ASME B16.9 BW 45 degree	
4208	8		SCH20		P22A-000D7	Straight lateral-tee ASTM A234 Grade WPB Seamless ASME B16.9 BW 45 degree	
4208	10		SCH20		P22A-000D6	Straight lateral-tee ASTM A234 Grade WPB Seamless ASME B16.9 BW 45 degree	
4208	16		SCH20		P22A-000EB	Straight lateral-tee ASTM A234 Grade WPB Seamless ASME B16.9 BW 45 degree	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75			P24B-0002L	Reducing tee ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5	0.75			P24B-0002N	Reducing tee ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5	1			P24B-0002P	Reducing tee ASTM A105 Class 3000 ASME B16.11 SW	
1	2	1	XS	XS	P24A-00238	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	XS	XS	P24A-0023H	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	STD	XS	P24A-00214	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	STD	XS	P24A-002HW	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P24A-002HY	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P24A-0021K	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	STD	P24A-0021A	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P24A-00229	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH20	STD	P24A-00J21	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH20	STD	P24A-005J4	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	SCH20	STD	P24A-00HMB	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	SCH20	STD	P24A-00HKS	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	SCH20	SCH20	P24A-002YX	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	SCH20	STD	P24A-00K0B	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH20	SCH20	P24A-002U4	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH20	SCH20	P24A-002YC	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	SCH20	STD	P24A-00K0M	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	SCH20	SCH20	P24A-002U7	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	SCH20	SCH20	P24A-002YA	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	SCH20	SCH20	P24A-002YR	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	6	SCH20	STD	P24A-00GU4	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	SCH20	SCH20	P24A-002XW	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	SCH20	SCH20	P24A-002YH	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	SCH20	SCH20	P24A-002U1	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	SCH20	SCH20	P24A-002XF	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	8	SCH20	SCH20	P24A-002XC	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	10	SCH20	SCH20	P24A-002UX	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	12	SCH20	SCH20	P24A-002W3	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	14	SCH20	SCH20	P24A-002WT	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	16	SCH20	SCH20	P24A-002X5	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	8	STD	SCH20	P24A-00K0N	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	10	STD	SCH20	P24A-00BT7	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	12	STD	SCH20	P24A-00BUS	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	14	STD	SCH20	P24A-00BWB	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	16	STD	SCH20	P24A-006W3	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	18	STD	SCH20	P24A-006WD	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	24	10	STD	SCH20	P24A-00KT6	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	12	STD	SCH20	P24A-00C7B	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	14	STD	SCH20	P24A-00K0C	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	16	STD	SCH20	P24A-00CAD	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	18	STD	SCH20	P24A-006WF	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	20	STD	STD	P24A-004SV	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	26	12	STD	SCH20	P24A-00CFB	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	26	14	STD	SCH20	P24A-00CG5	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	26	16	STD	SCH20	P24A-00CH1	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	26	18	STD	SCH20	P24A-00AHK	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	26	20	STD	STD	P24A-005G0	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	26	24	STD	STD	P24A-005G1	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	28	12	STD	SCH20	P24A-004AA	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	28	14	STD	SCH20	P24A-004A7	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	28	16	STD	SCH20	P24A-004A5	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	28	18	STD	SCH20	P24A-004A4	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	28	20	STD	STD	P24A-00CSR	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	28	24	STD	STD	P24A-005G2	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	28	26	STD	STD	P24A-005G3	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	10	STD	SCH20	P24A-003VN	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	12	STD	SCH20	P24A-003VP	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	14	STD	SCH20	P24A-003VR	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	16	STD	SCH20	P24A-003VS	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	18	STD	SCH20	P24A-003VT	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	20	STD	STD	P24A-0087D	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	24	STD	STD	P24A-005XW	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	26	STD	STD	P24A-007VX	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	28	STD	STD	P24A-007VY	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	32	14	XS	SCH20	P24A-004AF	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	32	16	XS	SCH20	P24A-004AE	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	32	18	XS	SCH20	P24A-004AD	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	32	20	XS	STD	P24A-004WM	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	32	24	XS	STD	P24A-004VZ	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	32	26	XS	STD	P24A-00AGD	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	32	28	XS	STD	P24A-0049Z	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	32	30	XS	STD	P24A-00DHB	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	34	16	XS	SCH20	P24A-00PTA	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	34	18	XS	SCH20	P24A-00PTB	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	34	20	XS	STD	P24A-004WS	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	34	24	XS	STD	P24A-004WD	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	34	26	XS	STD	P24A-00AGE	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	34	28	XS	STD	P24A-0060S	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	34	30	XS	STD	P24A-005Y1	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	34	32	XS	XS	P24A-004U6	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	36	16	XS	SCH20	P24A-003VH	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	36	18	XS	SCH20	P24A-003VJ	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	36	20	XS	STD	P24A-004SS	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	36	24	XS	STD	P24A-004VX	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	36	26	XS	STD	P24A-00AGG	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	36	28	XS	STD	P24A-00DXE	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	36	30	XS	STD	P24A-003VM	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	36	32	XS	XS	P24A-004VR	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	36	34	XS	XS	P24A-004VJ	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	42	16	STD	SCH20	P24A-00EFD	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	42	18	STD	SCH20	P24A-00EG0	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	42	20	STD	STD	P24A-00EGR	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	42	24	STD	STD	P24A-005H0	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	42	26	STD	STD	P24A-005H1	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	42	28	STD	STD	P24A-005H2	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	42	30	STD	STD	P24A-00EKU	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	42	32	STD	XS	P24A-0077C	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	42	34	STD	XS	P24A-0077D	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	42	36	STD	XS	P24A-005Y5	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	44	20	XS	STD	P24A-00EPM	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	44	24	XS	STD	P24A-00ER8	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	44	26	XS	STD	P24A-00ERK	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	44	28	XS	STD	P24A-00ERX	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	44	30	XS	STD	P24A-00ESC	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	44	32	XS	XS	P24A-00ESS	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	44	34	XS	XS	P24A-00ET1	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	44	36	XS	XS	P24A-00ETD	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	44	42	XS	STD	P24A-0061E	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	48	24	XS	STD	P24A-006WP	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	48	26	XS	STD	P24A-006Z5	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	48	28	XS	STD	P24A-006Z6	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	48	30	XS	STD	P24A-006WR	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	48	32	XS	XS	P24A-00F33	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	48	34	XS	XS	P24A-00F3E	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	48	36	XS	XS	P24A-00F4B	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	48	42	XS	STD	P24A-0061H	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	48	44	XS	XS	P24A-0060U	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	

REDUCING LATERAL TEE (TLR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	6	4	STD	STD	P25A-002T9	Reducing lateral-tee ASTM A234 Grade WPB Seamless ASME B16.9 BW 45 degree	
1	8	4	SCH20	STD	P25A-002TA	Reducing lateral-tee ASTM A234 Grade WPB Seamless ASME B16.9 BW 45 degree	
1	10	4	SCH20	STD	P25A-002T8	Reducing lateral-tee ASTM A234 Grade WPB Seamless ASME B16.9 BW 45 degree	
1	10	6	SCH20	STD	P25A-002TJ	Reducing lateral-tee ASTM A234 Grade WPB Seamless ASME B16.9 BW 45 degree	
1	10	8	SCH20	SCH20	P25A-002TK	Reducing lateral-tee ASTM A234 Grade WPB Seamless ASME B16.9 BW 45 degree	
1	12	8	SCH20	SCH20	P25A-002TD	Reducing lateral-tee ASTM A234 Grade WPB Seamless ASME B16.9 BW 45 degree	
1	16	10	SCH20	SCH20	P25A-002T3	Reducing lateral-tee ASTM A234 Grade WPB Seamless ASME B16.9 BW 45 degree	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	STD	XS	P27A-001MZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P27A-001N0	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P27A-00189	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	STD	P27A-001AZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P27A-001GW	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH20	STD	P27A-003K2	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH20	STD	P27A-003K3	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	SCH20	STD	P27A-003K4	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	SCH20	STD	P27A-003K5	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	SCH20	SCH20	P27A-001UL	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	SCH20	STD	P27A-003K6	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH20	SCH20	P27A-001UU	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH20	SCH20	P27A-001TH	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	SCH20	STD	P27A-00518	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	SCH20	SCH20	P27A-001V4	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	SCH20	SCH20	P27A-001TG	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	SCH20	SCH20	P27A-001U1	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	SCH20	SCH20	P27A-001WX	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	SCH20	SCH20	P27A-001TW	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	SCH20	SCH20	P27A-001UF	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	SCH20	SCH20	P27A-001V2	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	10	SCH20	SCH20	P27A-001TJ	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	12	SCH20	SCH20	P27A-001UE	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	14	SCH20	SCH20	P27A-001UY	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	18	16	SCH20	SCH20	P27A-001WN	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	12	STD	SCH20	P27A-00CMZ	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	14	STD	SCH20	P27A-0082L	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	16	STD	SCH20	P27A-0082M	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	18	STD	SCH20	P27A-0084N	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	16	STD	SCH20	P27A-0084T	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	18	STD	SCH20	P27A-0084U	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	20	STD	STD	P27A-001A8	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	26	18	STD	SCH20	P27A-003KL	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	26	20	STD	STD	P27A-001RZ	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	26	24	STD	STD	P27A-001M5	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	28	20	STD	STD	P27A-001N6	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	28	24	STD	STD	P27A-001SB	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	28	26	STD	STD	P27A-001SJ	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	20	STD	STD	P27A-001S0	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	24	STD	STD	P27A-001M7	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	26	STD	STD	P27A-001MV	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	28	STD	STD	P27A-001MW	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	32	24	XS	STD	P27A-001AY	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	32	26	XS	STD	P27A-001N5	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	32	28	XS	STD	P27A-001RR	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	32	30	XS	STD	P27A-001SC	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	34	24	XS	STD	P27A-001AV	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	34	26	XS	STD	P27A-001MS	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	34	30	XS	STD	P27A-001NC	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	34	32	XS	XS	P27A-0018J	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	36	24	XS	STD	P27A-001GY	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	36	26	XS	STD	P27A-001SF	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	36	30	XS	STD	P27A-001M9	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	36	32	XS	XS	P27A-001A6	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	36	34	XS	XS	P27A-001AA	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	42	30	STD	STD	P27A-003Z5	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	42	32	STD	XS	P27A-0042E	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	42	34	STD	XS	P27A-003ZD	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	42	36	STD	XS	P27A-003Z7	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	44	36	XS	XS	P27A-001MK	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	44	42	XS	STD	P27A-0041S	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	48	42	XS	STD	P27A-0041V	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	48	44	XS	XS	P27A-0041W	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	STD	XS	P28A-001N5	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P28A-001N6	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P28A-0018B	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	STD	P28A-001AS	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P28A-00182	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH20	STD	P28A-003JU	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH20	STD	P28A-003JV	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	SCH20	STD	P28A-003JW	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	SCH20	STD	P28A-003JX	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	SCH20	SCH20	P28A-001V0	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	SCH20	STD	P28A-003JY	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH20	SCH20	P28A-001V1	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH20	SCH20	P28A-001TJ	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	SCH20	STD	P28A-0096P	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	SCH20	SCH20	P28A-001WH	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	SCH20	SCH20	P28A-001TH	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	SCH20	SCH20	P28A-001UC	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	16	8	SCH20	SCH20	P28A-001T6	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	SCH20	SCH20	P28A-001TY	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	SCH20	SCH20	P28A-001UX	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	SCH20	SCH20	P28A-001WG	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	10	SCH20	SCH20	P28A-001TV	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	12	SCH20	SCH20	P28A-001UJ	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	14	SCH20	SCH20	P28A-001WD	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	16	SCH20	SCH20	P28A-001T1	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	12	STD	SCH20	P28A-009MM	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	14	STD	SCH20	P28A-004SJ	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	16	STD	SCH20	P28A-004SK	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	18	STD	SCH20	P28A-004UN	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	16	STD	SCH20	P28A-004UR	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	18	STD	SCH20	P28A-004US	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	20	STD	STD	P28A-001AW	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	26	18	STD	SCH20	P28A-003KC	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	26	20	STD	STD	P28A-001M3	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	26	24	STD	STD	P28A-001MW	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	28	20	STD	STD	P28A-001RE	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	28	24	STD	STD	P28A-001M5	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	28	26	STD	STD	P28A-001MY	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	20	STD	STD	P28A-001LZ	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	24	STD	STD	P28A-001N1	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	26	STD	STD	P28A-001NA	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	28	STD	STD	P28A-001NC	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	32	24	XS	STD	P28A-001AP	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	32	26	XS	STD	P28A-001RH	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	32	28	XS	STD	P28A-001LU	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	32	30	XS	STD	P28A-001M8	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	34	24	XS	STD	P28A-001A2	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	34	26	XS	STD	P28A-001N8	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	34	30	XS	STD	P28A-001MA	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	34	32	XS	XS	P28A-0018J	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	36	24	XS	STD	P28A-0017X	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	36	26	XS	STD	P28A-001M9	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	36	30	XS	STD	P28A-001ND	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	36	32	XS	XS	P28A-0019S	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	36	34	XS	XS	P28A-001A7	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	42	30	STD	STD	P28A-003YZ	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	42	32	STD	XS	P28A-00428	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	42	34	STD	XS	P28A-003Z7	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	42	36	STD	XS	P28A-003Z1	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	44	36	XS	XS	P28A-001MM	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	44	42	XS	STD	P28A-0041K	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	48	42	XS	STD	P28A-0041N	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	48	44	XS	XS	P28A-0041P	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P29B-0001J	Cap ASTM A105 Class 3000 ASME B16.11 SW	
1	0.75				P29B-0001F	Cap ASTM A105 Class 3000 ASME B16.11 SW	
1	1				P29B-0001G	Cap ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5				P29B-0001H	Cap ASTM A105 Class 3000 ASME B16.11 SW	
1	2		XS		P29A-000A1	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		STD		P29A-000BK	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		STD		P29A-000A3	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6		STD		P29A-000A9	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8		SCH20		P29A-000EY	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10		SCH20		P29A-000E5	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	12		SCH20		P29A-000E8	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14		SCH20		P29A-000EA	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16		SCH20		P29A-000F3	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18		SCH20		P29A-000E0	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20		STD		P29A-000B2	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24		STD		P29A-000B8	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	26		STD		P29A-000DN	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	28		STD		P29A-000DP	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	30		STD		P29A-000DU	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	32		XS		P29A-000BT	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	34		XS		P29A-0009S	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	36		XS		P29A-000A2	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	42		STD		P29A-000X5	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	44		XS		P29A-000CX	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	48		XS		P29A-00136	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
541	0.75				P29B-0000C	Cap ASTM A105 Class 3000 ASME B16.11 NPT	
541	1				P29B-0000D	Cap ASTM A105 Class 3000 ASME B16.11 NPT	
541	1.5				P29B-0000E	Cap ASTM A105 Class 3000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P41A-000B5	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		SCH160		P41A-000B6	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		SCH160		P41A-000B7	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		SCH160		P41A-000B8	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

CON SWAGED NIPPLE (SNC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	XS	XS	P42A-00036	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	XS	XS	P42A-00038	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	XS	XS	P42A-0003B	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	XS	XS	P42A-00035	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	XS	XS	P42A-00039	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	XS	XS	P42A-0003C	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	XS	XS	P42A-0008C	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	XS	XS	P42A-0008D	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	XS	XS	P42A-0008E	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	XS	XS	P42A-0008F	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	STD	XS	P42A-0007V	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	

ECC SWAGED NIPPLE (SNE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	XS	XS	P43A-00036	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	XS	XS	P43A-00037	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	XS	XS	P43A-00038	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	XS	XS	P43A-00039	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	XS	XS	P43A-0003A	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	XS	XS	P43A-0003B	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	XS	XS	P43A-00042	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	XS	XS	P43A-00043	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	XS	XS	P43A-00044	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	XS	XS	P43A-00045	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	STD	XS	P43A-0003J	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	

COUPLING (CPS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P47B-0001D	Coupling ASTM A105 Class 3000 ASME B16.11 SW - SW	
1	0.75				P47B-0001E	Coupling ASTM A105 Class 3000 ASME B16.11 SW - SW	

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COUPLING (CPS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P47B-0001F	Coupling ASTM A105 Class 3000 ASME B16.11 SW - SW	
1	1.5				P47B-0001G	Coupling ASTM A105 Class 3000 ASME B16.11 SW - SW	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2 - 2.5	0.75			P31B-0137J	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	3 - 5	0.75			P31B-0137K	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	6 - 12	0.75			P31B-007AB	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	14 - 36	0.75			P31B-007AJ	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	38 and larger	0.75			P31B-00N1G	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	3	1			P31B-007A7	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	4 - 5	1			P31B-0138Z	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	6 - 10	1			P31B-007A4	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	12 - 36	1			P31B-007AA	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	38 and larger	1			P31B-00N0Y	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	4	1.5			P31B-005SN	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	5 - 6	1.5			P31B-01390	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	8 - 12	1.5			P31B-0079U	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	14 - 24	1.5			P31B-007A0	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	26 - 36	1.5			P31B-01391	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	38 and larger	1.5			P31B-00N17	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
541	1	0.75			P31B-00551	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
541	1.5	0.75			P31B-00555	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
541	2 - 2.5	0.75			P31B-0137H	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
541	3 - 5	0.75			P31B-01376	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
541	6 - 12	0.75			P31B-007GR	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
541	14 - 36	0.75			P31B-007GY	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
541	38 and larger	0.75			P31B-00FFM	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
1	6	2	STD	XS	P31B-007SH	Outlet ASTM A105 MSS SP-97 BW	
1	8	2	SCH20	XS	P31B-00NY2	Outlet ASTM A105 MSS SP-97 BW	
1	10	2	SCH20	XS	P31B-00TFB	Outlet ASTM A105 MSS SP-97 BW	
1	12	2	SCH20	XS	P31B-00TFA	Outlet ASTM A105 MSS SP-97 BW	
1	14	2	SCH20	XS	P31B-00TF9	Outlet ASTM A105 MSS SP-97 BW	
1	16	2	SCH20	XS	P31B-00TF8	Outlet ASTM A105 MSS SP-97 BW	
1	18	2	SCH20	XS	P31B-00NVX	Outlet ASTM A105 MSS SP-97 BW	
1	20	2	STD	XS	P31B-00994	Outlet ASTM A105 MSS SP-97 BW	
1	24	2	STD	XS	P31B-0092Z	Outlet ASTM A105 MSS SP-97 BW	
1	26	2	STD	XS	P31B-0091X	Outlet ASTM A105 MSS SP-97 BW	
1	28	2	STD	XS	P31B-008WJ	Outlet ASTM A105 MSS SP-97 BW	
1	30	2	STD	XS	P31B-008P5	Outlet ASTM A105 MSS SP-97 BW	
1	32	2	XS	XS	P31B-00F9M	Outlet ASTM A105 MSS SP-97 BW	
1	34	2	XS	XS	P31B-00F9K	Outlet ASTM A105 MSS SP-97 BW	
1	36	2	XS	XS	P31B-008BB	Outlet ASTM A105 MSS SP-97 BW	
1	42	2	STD	XS	P31B-00EVR	Outlet ASTM A105 MSS SP-97 BW	
1	44	2	XS	XS	P31B-00F9L	Outlet ASTM A105 MSS SP-97 BW	
1	48	2	XS	XS	P31B-007YJ	Outlet ASTM A105 MSS SP-97 BW	
1	8	3	SCH20	STD	P31B-00P11	Outlet ASTM A105 MSS SP-97 BW	
1	10	3	SCH20	STD	P31B-00UPG	Outlet ASTM A105 MSS SP-97 BW	
1	12	3	SCH20	STD	P31B-00USE	Outlet ASTM A105 MSS SP-97 BW	
1	14	3	SCH20	STD	P31B-00UPH	Outlet ASTM A105 MSS SP-97 BW	
1	16	3	SCH20	STD	P31B-00TU2	Outlet ASTM A105 MSS SP-97 BW	
1	18	3	SCH20	STD	P31B-00NZ4	Outlet ASTM A105 MSS SP-97 BW	
1	20	3	STD	STD	P31B-008FA	Outlet ASTM A105 MSS SP-97 BW	
1	24	3	STD	STD	P31B-00895	Outlet ASTM A105 MSS SP-97 BW	
1	26	3	STD	STD	P31B-0083K	Outlet ASTM A105 MSS SP-97 BW	
1	28	3	STD	STD	P31B-0082W	Outlet ASTM A105 MSS SP-97 BW	
1	30	3	STD	STD	P31B-007WY	Outlet ASTM A105 MSS SP-97 BW	
1	32	3	XS	STD	P31B-007W7	Outlet ASTM A105 MSS SP-97 BW	
1	34	3	XS	STD	P31B-007R4	Outlet ASTM A105 MSS SP-97 BW	

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OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	36	3	XS	STD	P31B-007P1	Outlet ASTM A105 MSS SP-97 BW	
1	42	3	STD	STD	P31B-00EVS	Outlet ASTM A105 MSS SP-97 BW	
1	44	3	XS	STD	P31B-00AGA	Outlet ASTM A105 MSS SP-97 BW	
1	48	3	XS	STD	P31B-00AFD	Outlet ASTM A105 MSS SP-97 BW	
1	12	4	SCH20	STD	P31B-00USF	Outlet ASTM A105 MSS SP-97 BW	
1	14	4	SCH20	STD	P31B-00UPJ	Outlet ASTM A105 MSS SP-97 BW	
1	16	4	SCH20	STD	P31B-00TU3	Outlet ASTM A105 MSS SP-97 BW	
1	18	4	SCH20	STD	P31B-00P1V	Outlet ASTM A105 MSS SP-97 BW	
1	20	4	STD	STD	P31B-008D3	Outlet ASTM A105 MSS SP-97 BW	
1	24	4	STD	STD	P31B-0086X	Outlet ASTM A105 MSS SP-97 BW	
1	26	4	STD	STD	P31B-0081E	Outlet ASTM A105 MSS SP-97 BW	
1	28	4	STD	STD	P31B-0080R	Outlet ASTM A105 MSS SP-97 BW	
1	30	4	STD	STD	P31B-007US	Outlet ASTM A105 MSS SP-97 BW	
1	32	4	XS	STD	P31B-00ALX	Outlet ASTM A105 MSS SP-97 BW	
1	34	4	XS	STD	P31B-00ALD	Outlet ASTM A105 MSS SP-97 BW	
1	36	4	XS	STD	P31B-00AEP	Outlet ASTM A105 MSS SP-97 BW	
1	42	4	STD	STD	P31B-00EVT	Outlet ASTM A105 MSS SP-97 BW	
1	44	4	XS	STD	P31B-00A87	Outlet ASTM A105 MSS SP-97 BW	
1	48	4	XS	STD	P31B-00A2P	Outlet ASTM A105 MSS SP-97 BW	
1	18	6	SCH20	STD	P31B-00P48	Outlet ASTM A105 MSS SP-97 BW	
1	20	6	STD	STD	P31B-008PZ	Outlet ASTM A105 MSS SP-97 BW	
1	24	6	STD	STD	P31B-008JD	Outlet ASTM A105 MSS SP-97 BW	
1	26	6	STD	STD	P31B-008HU	Outlet ASTM A105 MSS SP-97 BW	
1	28	6	STD	STD	P31B-008CL	Outlet ASTM A105 MSS SP-97 BW	
1	30	6	STD	STD	P31B-008BS	Outlet ASTM A105 MSS SP-97 BW	
1	32	6	XS	STD	P31B-0086L	Outlet ASTM A105 MSS SP-97 BW	
1	34	6	XS	STD	P31B-00866	Outlet ASTM A105 MSS SP-97 BW	
1	36	6	XS	STD	P31B-0085G	Outlet ASTM A105 MSS SP-97 BW	
1	42	6	STD	STD	P31B-007ZP	Outlet ASTM A105 MSS SP-97 BW	
1	44	6	XS	STD	P31B-007ZF	Outlet ASTM A105 MSS SP-97 BW	
1	48	6	XS	STD	P31B-007U6	Outlet ASTM A105 MSS SP-97 BW	

ELBOLET (LE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2		XS		P35B-0000H	Outlet on elbow ASTM A105 MSS SP-97 BW Long radius Elbow=NPS8 (SCH20)	
4213	2		XS		P35B-0000J	Outlet on elbow ASTM A105 MSS SP-97 BW Long radius Elbow=NPS24 (STD)	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30B-0002D	Plug ASTM A105 ASME B16.11 NPT Round head	
1	0.75				P30B-0002E	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1				P30B-0002F	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1.5				P30B-0002G	Plug ASTM A105 ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P61B-001R9	Flange SW ASTM A105 Class 150 ASME B16.5 RF	
1	0.75		XS		P61B-001RA	Flange SW ASTM A105 Class 150 ASME B16.5 RF	
1	1		XS		P61B-001RR	Flange SW ASTM A105 Class 150 ASME B16.5 RF	
1	1.5		XS		P61B-001RV	Flange SW ASTM A105 Class 150 ASME B16.5 RF	
1	2		XS		P61B-003NK	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	3		STD		P61B-001PW	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	4		STD		P61B-001R8	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	6		STD		P61B-001RT	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	8		SCH20		P61B-002BF	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	10		SCH20		P61B-002B4	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	12		SCH20		P61B-002B5	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	14		SCH20		P61B-002B6	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	16		SCH20		P61B-002B7	Flange WN ASTM A105 Class 150 ASME B16.5 RF	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	18		SCH20		P61B-002B8	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	20		STD		P61B-001JA	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	24		STD		P61B-001NJ	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	26		STD		P61B-001RB	Flange WN ASTM A105 Class 150 ASME B16.47 Series B RF	
1	28		STD		P61B-001RU	Flange WN ASTM A105 Class 150 ASME B16.47 Series B RF	
1	30		STD		P61B-001S8	Flange WN ASTM A105 Class 150 ASME B16.47 Series B RF	
1	32		XS		P61B-001SK	Flange WN ASTM A105 Class 150 ASME B16.47 Series B RF	
1	34		XS		P61B-001SZ	Flange WN ASTM A105 Class 150 ASME B16.47 Series B RF	
1	36		XS		P61B-001UE	Flange WN ASTM A105 Class 150 ASME B16.47 Series B RF	
1	42		STD		P61B-003M9	Flange WN ASTM A105 Class 150 ASME B16.47 Series B RF	
1	44		XS		P61B-001N3	Flange WN ASTM A105 Class 150 ASME B16.47 Series B RF	
1	48		XS		P61B-004CX	Flange WN ASTM A105 Class 150 ASME B16.47 Series B RF	
773	0.5		XS		P61B-001HC	Flange SW ASTM A105 Class 300 ASME B16.5 RF	
773	0.75		XS		P61B-001HS	Flange SW ASTM A105 Class 300 ASME B16.5 RF	
773	1		XS		P61B-001EF	Flange SW ASTM A105 Class 300 ASME B16.5 RF	
773	1.5		XS		P61B-001F2	Flange SW ASTM A105 Class 300 ASME B16.5 RF	
773	2		XS		P61B-001HW	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	3		STD		P61B-001LJ	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	4		STD		P61B-001MC	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	6		STD		P61B-001N2	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	8		SCH20		P61B-002LJ	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	10		SCH20		P61B-002LH	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	12		SCH20		P61B-002MP	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	14		SCH20		P61B-002MR	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	16		SCH20		P61B-002MS	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	18		SCH20		P61B-002MT	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	20		STD		P61B-001NT	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	24		STD		P61B-001PA	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	30		STD		P61B-003SW	Flange WN ASTM A105 Class 300 ASME B16.47 Series B RF	
773	32		XS		P61B-001LN	Flange WN ASTM A105 Class 300 ASME B16.47 Series B RF	
773	34		XS		P61B-001MG	Flange WN ASTM A105 Class 300 ASME B16.47 Series B RF	
773	36		XS		P61B-001N6	Flange WN ASTM A105 Class 300 ASME B16.47 Series B RF	
773	42		STD		P61B-003P8	Flange WN ASTM A105 Class 300 ASME B16.47 Series B RF	
773	44		XS		P61B-003TF	Flange WN ASTM A105 Class 300 ASME B16.47 Series B RF	
773	48		XS		P61B-003TH	Flange WN ASTM A105 Class 300 ASME B16.47 Series B RF	
781	0.5		XS		P61B-001FF	Flange SW ASTM A105 Class 600 ASME B16.5 RF	
781	0.75		XS		P61B-001FH	Flange SW ASTM A105 Class 600 ASME B16.5 RF	
781	1		XS		P61B-001DR	Flange SW ASTM A105 Class 600 ASME B16.5 RF	
781	1.5		XS		P61B-001DV	Flange SW ASTM A105 Class 600 ASME B16.5 RF	
781	2		XS		P61B-001DH	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	3		STD		P61B-001TW	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	4		STD		P61B-001VV	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	6		STD		P61B-001JW	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	8		SCH20		P61B-003F0	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	10		SCH20		P61B-00650	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	12		SCH20		P61B-00651	Flange WN ASTM A105 Class 600 ASME B16.5 RF	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67B-000FH	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	0.75				P67B-000FJ	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	1				P67B-000FK	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	1.5				P67B-000FL	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	2				P67B-000FT	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	3				P67B-000FW	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	4				P67B-000FX	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	6				P67B-000FY	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	8				P67B-000FZ	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	10				P67B-000FM	Blind flange ASTM A105 Class 150 ASME B16.5 RF	

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BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	12				P67B-000FN	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	14				P67B-000FP	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	16				P67B-000FR	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	18				P67B-000FS	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	20				P67B-000FU	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	24				P67B-000FV	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	30				P67B-000G2	Blind flange ASTM A105 Class 150 ASME B16.47 Series B RF	
1	32				P67B-000G3	Blind flange ASTM A105 Class 150 ASME B16.47 Series B RF	
1	34				P67B-000G4	Blind flange ASTM A105 Class 150 ASME B16.47 Series B RF	
1	36				P67B-000G5	Blind flange ASTM A105 Class 150 ASME B16.47 Series B RF	
1	42				P67B-000KZ	Blind flange ASTM A105 Class 150 ASME B16.47 Series B RF	
1	44				P67B-000L0	Blind flange ASTM A105 Class 150 ASME B16.47 Series B RF	
1	48				P67B-000L2	Blind flange ASTM A105 Class 150 ASME B16.47 Series B RF	

REDUCING FLANGE (FR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5		XS	P62B-000MV	Reducing flange SW ASTM A105 Class 150 ASME B16.5 RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000L8	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000L9	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000LA	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000LB	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000LH	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000LL	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000LM	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	6				P73T-000LN	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	8				P73T-000LP	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	10				P73T-000LC	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	12				P73T-000LD	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	14				P73T-000LE	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	16				P73T-000LF	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	18				P73T-000LG	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	20				P73T-000LJ	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	24				P73T-000LK	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	26				P73T-000LR	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	28				P73T-000LS	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	30				P73T-000LT	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	32				P73T-000LU	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	34				P73T-000LV	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	36				P73T-000LW	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	42				P73T-000LZ	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	44				P73T-000M0	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	48				P73T-000M2	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
3001	1.5				P78U-00066	Insulation gasket kit Glass reinforced epoxy Class 150 Manufacturer-standard Flange ASME B16.5 RF	
773	0.5				P73T-000FT	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	0.75				P73T-000FU	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

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GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
773	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	3				P73T-000G5	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	4				P73T-000G6	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	6				P73T-000G7	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	8				P73T-000G8	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	10				P73T-000FX	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	12				P73T-000FY	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	14				P73T-000FZ	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	16				P73T-000G0	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	18				P73T-000G1	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	20				P73T-000G3	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	24				P73T-000G4	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	30				P73T-000H9	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	32				P73T-000HA	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	34				P73T-000HB	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	36				P73T-000HC	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	42				P73T-000KM	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	44				P73T-000KN	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	48				P73T-000KR	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	0.5				P73T-000J8	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	0.75				P73T-000J9	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1				P73T-000JA	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1.5				P73T-000JB	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	2				P73T-000JH	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	3				P73T-000JL	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	4				P73T-000JM	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	6				P73T-000JN	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	8				P73T-000JP	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	10				P73T-000JC	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	12				P73T-000JD	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-16				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	18-24				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
1	26-44				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	48				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
773	0.5-10				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
773	12-48				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
781	0.5-6				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
781	8-12				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	

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GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81B-000P4	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	0.75				P81B-000NX	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	1				P81B-000NY	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	1.5				P81B-000NZ	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	2				P81C-002DV	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	3				P81C-002DW	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	4				P81C-002DX	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	6				P81C-002DY	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	8				P81C-002DZ	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	10				P81C-002DT	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	12				P81C-002DU	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	14				P81C-00308	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated	
1	16				P81C-002E0	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated	
1	18				P81C-002E1	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated	
1	20				P81C-002E2	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated	
1	24				P81C-002E3	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated	
1	30				P81C-004D8	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.47-B RF Trim number 8 BB-BG-OS&Y Gear operated	
1	32				P81C-0089D	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.47-B RF Trim number 8 BB-BG-OS&Y Gear operated	
1	34				P81C-0089E	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.47-B RF Trim number 8 BB-BG-OS&Y Gear operated	
1	36				P81C-004D9	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.47-B RF Trim number 8 BB-BG-OS&Y Gear operated	
1	42				P81C-004E4	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.47-B RF Trim number 8 BB-BG-OS&Y Gear operated	
1	44				P81C-0089F	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.47-B RF Trim number 8 BB-BG-OS&Y Gear operated	
1	48				P81C-005F1	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.47-B RF Trim number 8 BB-BG-OS&Y Gear operated	
221	1				P81B-001K3	Gate valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
714	0.5				P81B-0015L	Gate valve ASTM A105 Class 800 API 602 SW - NPT Trim number 8 BB-BG-OS&Y Handwheel operated	
714	0.75				P81B-002F4	Gate valve ASTM A105 Class 800 API 602 SW - NPT Trim number 8 BB-BG-OS&Y Handwheel operated	
714	1				P81B-002NH	Gate valve ASTM A105 Class 800 API 602 SW - NPT Trim number 8 BB-BG-OS&Y Handwheel operated	
714	1.5				P81B-002NJ	Gate valve ASTM A105 Class 800 API 602 SW - NPT Trim number 8 BB-BG-OS&Y Handwheel operated	
773	2				P81C-002D6	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82B-000K0	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	0.75				P82B-000HB	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	1				P82B-000HC	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	1.5				P82B-000HD	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	2				P82C-000N5	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	3				P82C-000N6	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	4				P82C-000N7	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	6				P82C-000N8	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	8				P82C-0026L	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83B-000FX	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover	
1	0.75				P83B-000ER	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover	
1	1				P83B-000ES	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover	
1	1.5				P83B-000ET	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover	
1	2				P83C-00144	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	

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CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3				P83C-00147	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	4				P83C-00148	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	6				P83C-00149	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	8				P83C-0014A	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	10				P83C-00140	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	12				P83C-00141	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	14				P83C-0021E	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	16				P83C-00142	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	18				P83C-00143	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	20				P83C-00145	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	24				P83C-00146	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	

DP CHECK VALVE (XDP)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	30				P88C-0023A	Dual plate check valve ASTM A216 Grade WCB Class 150 API 594 Wafer-type ASME B16.47-B RF Trim number 8 Internal wetted parts 13Cr Spring Inconel Retainerless-type	
1	32				P88C-00354	Dual plate check valve ASTM A216 Grade WCB Class 150 API 594 Wafer-type ASME B16.47-B RF Trim number 8 Internal wetted parts 13Cr Spring Inconel Retainerless-type	
1	34				P88C-00355	Dual plate check valve ASTM A216 Grade WCB Class 150 API 594 Wafer-type ASME B16.47-B RF Trim number 8 Internal wetted parts 13Cr Spring Inconel Retainerless-type	
1	36				P88C-0023B	Dual plate check valve ASTM A216 Grade WCB Class 150 API 594 Wafer-type ASME B16.47-B RF Trim number 8 Internal wetted parts 13Cr Spring Inconel Retainerless-type	
1	42				P88C-0025X	Dual plate check valve ASTM A216 Grade WCB Class 150 API 594 Wafer-type ASME B16.47-B RF Trim number 8 Internal wetted parts 13Cr Spring Inconel Retainerless-type	
1	44				P88C-00356	Dual plate check valve ASTM A216 Grade WCB Class 150 API 594 Wafer-type ASME B16.47-B RF Trim number 8 Internal wetted parts 13Cr Spring Inconel Retainerless-type	
1	48				P88C-0023C	Dual plate check valve ASTM A216 Grade WCB Class 150 API 594 Wafer-type ASME B16.47-B RF Trim number 8 Internal wetted parts 13Cr Spring Inconel Retainerless-type	

BALL VALVE (Q)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P84B-0011T	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design	
1	0.75				P84B-0011U	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design	
1	1				P84B-0011V	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design	
1	1.5				P84B-0011W	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design	
1	2				P84C-005UD	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design	
24	0.5				P84B-0011X	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	
24	0.75				P84B-0011Y	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	
24	1				P84B-0011Z	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	
24	1.5				P84B-00120	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	
24	2				P84C-005UJ	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	

BUTTERFLY VALVE (H)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	10				P86C-00230	Offset design butterfly valve ASTM A216 Grade WCB Class 150 API 609 Category B Lug-type ASME B16.5 RF Disc CS Seat Stellite-6 Trim 13Cr Triple eccentric design BG Gear operated	
1	12				P86C-00231	Offset design butterfly valve ASTM A216 Grade WCB Class 150 API 609 Category B Lug-type ASME B16.5 RF Disc CS Seat Stellite-6 Trim 13Cr Triple eccentric design BG Gear operated	
1	14				P86C-00232	Offset design butterfly valve ASTM A216 Grade WCB Class 150 API 609 Category B Lug-type ASME B16.5 RF Disc CS Seat Stellite-6 Trim 13Cr Triple eccentric design BG Gear operated	
1	16				P86C-00233	Offset design butterfly valve ASTM A216 Grade WCB Class 150 API 609 Category B Lug-type ASME B16.5 RF Disc CS Seat Stellite-6 Trim 13Cr Triple eccentric design BG Gear operated	
1	18				P86C-00234	Offset design butterfly valve ASTM A216 Grade WCB Class 150 API 609 Category B Lug-type ASME B16.5 RF Disc CS Seat Stellite-6 Trim 13Cr Triple eccentric design BG Gear operated	
1	20				P86C-001AY	Offset design butterfly valve ASTM A216 Grade WCB Class 150 API 609 Category B Double flanged ASME B16.5 RF Disc CS Seat Stellite-6 Trim 13Cr Triple eccentric design BG Gear operated	
1	24				P86C-001AZ	Offset design butterfly valve ASTM A216 Grade WCB Class 150 API 609 Category B Double flanged ASME B16.5 RF Disc CS Seat Stellite-6 Trim 13Cr Triple eccentric design BG Gear operated	
1	30				P86C-00235	Offset design butterfly valve ASTM A216 Grade WCB Class 150 API 609 Category B Double flanged ASME B16.47-B RF Disc CS Seat Stellite-6 Trim 13Cr Triple eccentric design BG Gear operated	

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NEEDLE VALVE (NV)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82B-001JU	Needle valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	0.75				P82B-000YB	Needle valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	1				P82B-000YC	Needle valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	1.5				P82B-000YD	Needle valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	

ORIFICE FLANGE (FO)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2		XS		P66B-0084B	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	3		STD		P66B-0084C	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	4		STD		P66B-0084D	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	6		STD		P66B-0084E	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	8		SCH20		P66B-0084F	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	10		SCH20		P66B-00848	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	12		SCH20		P66B-0084L	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	14		SCH20		P66B-0084A	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	16		SCH20		P66B-0083Y	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
200	2		XS		P66B-00843	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	3		STD		P66B-00844	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	4		STD		P66B-00845	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	6		STD		P66B-00846	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	8		SCH20		P66B-00847	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	10		SCH20		P66B-00840	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	12		SCH20		P66B-0084P	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	14		SCH20		P66B-00842	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	16		SCH20		P66B-0083Z	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71B-0008A	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	0.75				P71B-0008B	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	1				P71B-0008C	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71B-0008D	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	2				P71B-0000P	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	3				P71B-0000N	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	4				P71B-0000M	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	6				P71B-0000L	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	8				P71B-0000R	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	10				P71B-0000K	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	12				P71B-0000J	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
773	0.5				P71B-000B1	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
773	0.75				P71B-000B2	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
773	1				P71B-000B3	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
773	1.5				P71B-000B4	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
773	2				P71B-000B6	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
773	3				P71B-000B7	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
773	4				P71B-000B8	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
773	6				P71B-000B9	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
773	8				P71B-000BA	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
773	10				P71B-000B5	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
773	12				P71B-000BB	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	

PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000AH	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	16				P72B-0000C	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	18				P72B-000AJ	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	20				P72B-000AK	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	24				P72B-000AL	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	26				P72B-000XM	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	

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PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	28				P72B-000XN	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	30				P72B-000AM	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	32				P72B-000XP	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	34				P72B-000XR	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	36				P72B-000AN	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	42				P72B-000AP	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	44				P72B-000VA	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	48				P72B-000AR	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	

PADDLE SPACER (PS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000AT	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	16				P72B-0000B	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	18				P72B-000AU	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	20				P72B-000AV	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	24				P72B-000AW	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	26				P72B-000XS	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	28				P72B-000XT	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	30				P72B-000AX	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	32				P72B-000XU	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	34				P72B-000XV	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	36				P72B-000AY	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	42				P72B-000AZ	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	44				P72B-000VB	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	48				P72B-000B0	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	

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BOLT TABLE (B_A1AP04 , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	60	P80S-003V2		
0.75	4	0.500	65	P80S-003V3		
1	4	0.500	70	P80S-003V4		
1.5	4	0.500	75	P80S-003V5		
2	4	0.625	85	P80S-003XE		
3	4	0.625	95	P80S-003XG		
4	8	0.625	95	P80S-003XG		
6	8	0.750	105	P80S-003XJ		
8	8	0.750	110	P80S-003XK		
10	12	0.875	120	P80S-00419		
12	12	0.875	120	P80S-00419		
14	12	1.000	135	P80S-0043E		
16	16	1.000	140	P80S-0043F		
18	16	1.125	150	P80S-0046K		
20	20	1.125	160	P80S-0046M		
24	20	1.250	175	P80S-004AG		
26	36	0.750	140	P80S-003ZJ		
28	40	0.750	145	P80S-003ZK		
30	44	0.750	145	P80S-003ZK		
32	48	0.750	150	P80S-003ZL		
34	40	0.875	160	P80S-0041H		
36	44	0.875	175	P80S-0041M		
42	48	1.000	190	P80S-0043T		
44	52	1.000	195	P80S-0043U		
48	44	1.125	210	P80S-0046Z		

BOLT TABLE (B_A1AP04_773 , STUD ASME RF, OPTION CODE 773)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-003V4		
0.75	4	0.625	75	P80S-003XC		
1	4	0.625	80	P80S-003XD		
1.5	4	0.750	95	P80S-00414		
2	8	0.625	90	P80S-003XF		
3	8	0.750	110	P80S-003XK		
4	8	0.750	115	P80S-003XL		
6	12	0.750	125	P80S-003XN		
8	12	0.875	140	P80S-0041D		
10	16	1.000	160	P80S-0043K		
12	16	1.125	175	P80S-0046S		
14	20	1.125	180	P80S-0046T		
16	20	1.250	190	P80S-004AK		
18	24	1.250	200	P80S-004AM		
20	24	1.250	210	P80S-004AP		
24	24	1.500	235	P80S-003F8		
26	32	1.250	270	P80S-004B2		
28	36	1.250	270	P80S-004B2		
30	36	1.375	285	P80S-003EA		
32	32	1.500	310	P80S-008N0		
34	36	1.500	310	P80S-008N0		
36	32	1.625	320	P80S-005TT		
42	36	1.750	355	P80S-007B5		
44	40	1.750	370	P80S-007B8		
48	40	1.875	380	P80S-008P4		

BOLT TABLE (B_A1AP04_781 , STUD ASME RF, OPTION CODE 781)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	80	P80S-003V6		
0.75	4	0.625	90	P80S-003XF		
1	4	0.625	95	P80S-003XG		
1.5	4	0.750	110	P80S-003XK		
2	8	0.625	110	P80S-003VC		
3	8	0.750	130	P80S-003XP		
4	8	0.875	150	P80S-0041F		
6	12	1.000	175	P80S-0043P		
8	12	1.125	195	P80S-0046W		
10	16	1.250	250	P80S-004AY		
12	20	1.250	255	P80S-004AZ		

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BOLT TABLE (B_A1AP04_781 , STUD ASME RF, OPTION CODE 781)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
14	20	1.375	270			
16	20	1.500	295			
18	20	1.625	320			
20	24	1.625	335			
24	24	1.875	380			
26			0			
28			0			
30	28	1.875	435			
32			0			
34			0			
36	28	2.250	510			
42	28	2.500	575			
44			0			
48	32	2.750	635			

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PIPING CLASS

A1AP04 REV NO. 2

BRANCH TABLE (T_A1AP04)

RUN PIPE SIZE (in)	0.5	0.75	1	1.5	2	3	4	6	8	10	12	14	16	18	20	24	26	28	30	32	34	36	42	44	48
0.5	TS																								
0.75		TS																							
1		TR	TS																						
1.5		TR	TR	TS																					
2		L	TR	TR	TS																				
3		L	L	TR	TR	TS																			
4	L	L	L	L	TR	TR	TS																		
6	L	L	L	L	L	TR	TR	TS																	
8		L	L	L	L	L	TR	TR	TS																
10		L	L	L	L	L	TR	TR	TR	TS															
12		L	L	L	L	L	L	TR	TR	TR	TS														
14		L	L	L	L	L	L	TR	TR	TR	TR	TS													
16		L	L	L	L	L	L	TR	TR	TR	TR	TR	TS												
18		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TS											
20		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TR	TS										
24		L	L	L	L	L	L	L	9PD	TR	TR	TR	TR	TR	TR	TS									
26		L	L	L	L	L	L	L	9PD	9PD	TR	TR	TR	TR	TR	TR	TS								
28		L	L	L	L	L	L	L	9PD	9PD	TR	TR	TR	TR	TR	TR	TR	TS							
30		L	L	L	L	L	L	L	9PD	TR	TR	TR	TR	TR	TR	TR	TR	TR	TS						
32		L	L	L	L	L	L	L	9PD	9PD	9PD	TR	TR	TR	TR	TR	TR	TR	TR	TS					
34		L	L	L	L	L	L	L	9PD	9PD	9PD	9PD	TR	TR	TR	TR	TR	TR	TR	TR	TS				
36		L	L	L	L	L	L	L	9PD	9PD	9PD	9PD	TR	TR	TR	TR	TR	TR	TR	TR	TR	TS			
42		L	L	L	L	L	L	L	9PD	9PD	9PD	9PD	TR	TR	TR	TR	TR	TR	TR	TR	TR	TR	TS		
44		L	L	L	L	L	L	L	9PD	9PD	9PD	9PD	9PD	9PD	TR	TR	TR	TR	TR	TR	TR	TR	TR	TS	
48		L	L	L	L	L	L	L	9PD	9PD	9PD	9PD	9PD	9PD	9PD	TR	TR	TR	TR	TR	TR	TR	TR	TR	TS

BRANCH SIZE (in)

L : OUTLET
9PD : REINFORCING PAD 90 DEG
TR : REDUCING TEE
TS : STRAIGHT TEE

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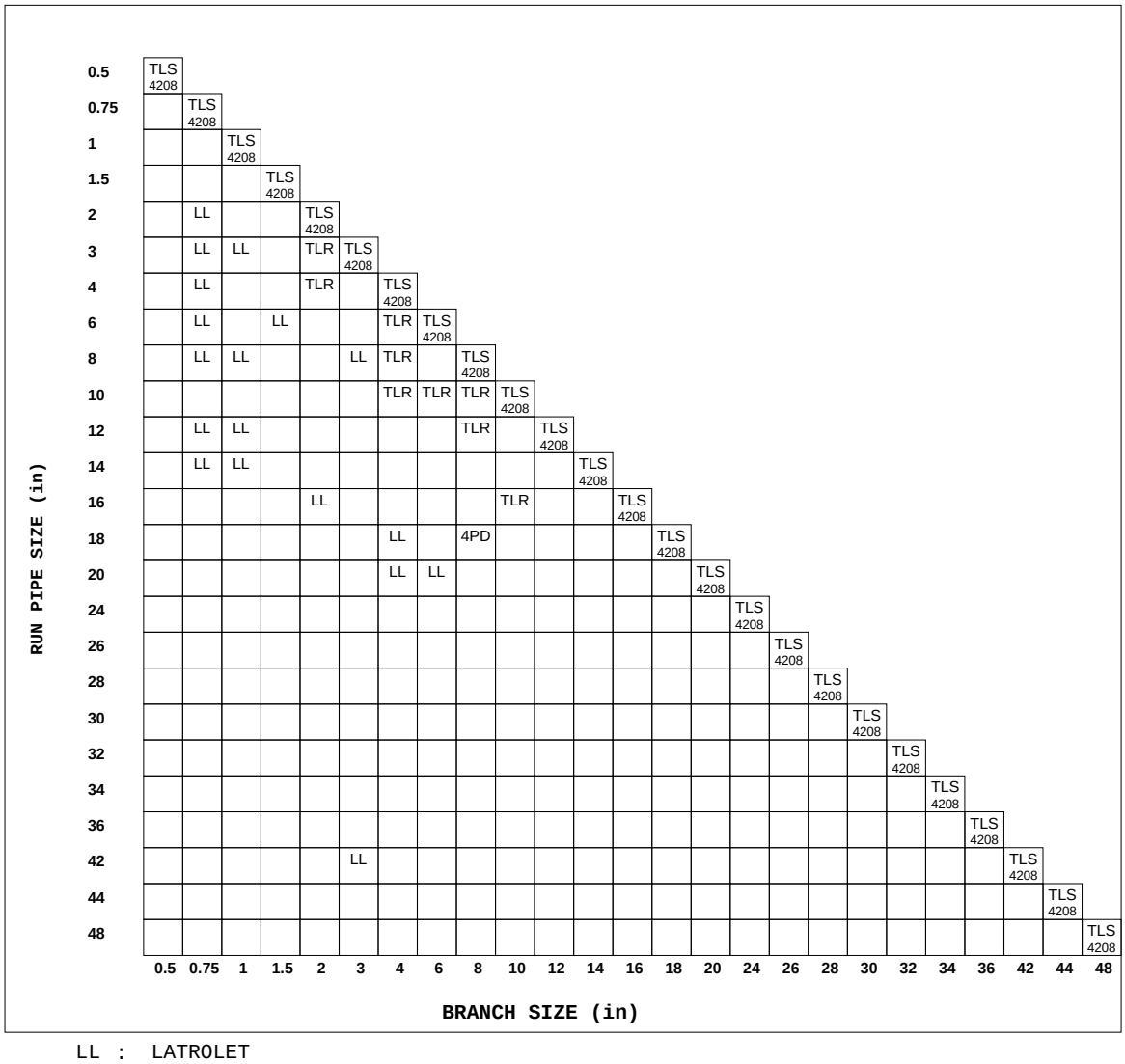
PIPING CLASS

A1AP04 REV NO. 2

BRANCH TABLE (T_A1AP04_2)



LL : LATROLET
TLR : REDUCING LATERAL TEE
4PD : REINFORCING PAD 45 DEG
TLS : STRAIGHT LATERAL TEE

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PIPING CLASS
A1AP04 REV NO. 2

BRANCH TABLE (T_A1AP04_3)

RUN PIPE SIZE (in) \ BRANCH SIZE (in)	0.5	0.75	1	1.5	2	3	4	6	8	10	12	14	16	18	20	24	26	28	30	32	34	36	42	44	48
0.5																									
0.75		TLS																							
1		6PD	TLS																						
1.5		6PD	6PD	TLS																					
2		6PD	6PD	6PD	TLS																				
3		6PD	6PD	6PD	6PD	TLS																			
4		6PD	6PD	6PD	6PD	6PD	TLS																		
6		6PD	6PD	6PD	6PD	6PD	6PD	TLS																	
8		6PD	6PD	6PD	6PD	6PD	6PD	6PD	TLS																
10		6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	TLS															
12		6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	TLS														
14		6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	TLS													
16		6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	TLS												
18		6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	TLS											
20		6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	TLS										
24		6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	TLS									
26																									
28																									
30		6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD			TLS						
32																									
34																									
36		6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD			6PD			TLS			
42		6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD			6PD			6PD	TLS		
44																									
48		6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD			6PD			6PD	6PD		TLS

6PD : REINFORCING PAD 60 DEG
TLS : STRAIGHT LATERAL TEE

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PIPING CLASS

A1APCL REV NO. 2

Material : Killed CS
Rating : ASME CLASS 150
Flange Face : RF
C.A.(mm) : 1.50
Gasket : Spiral Wound
Service : PROCESS - GENERAL PROCESS NON SOUR, NON CORROSIVE
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
2	USE OF SOFT SEATED BALL, PLUG AND BUTTERFLY VALVES SHALL BE LIMITED TO MAXIMUM OF 204DEGC (400DEGF)

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
200	WITH JACK SCREW (FO)
541	NPT(F) (CA,L)
773	CLASS 300 (B,F,G)
781	CLASS 600 (B,F,FR,G)
4610	JACKETED VALVE (1.5" X 0.75") (PV)
4611	JACKETED VALVE (3" X 2") (PV)

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PIPING CLASS
A1APCL REV NO. 2

PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P01A-000XM	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	0.75		XS		P01A-000XN	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1		XS		P01A-000XP	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1.5		XS		P01A-000XV	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	2		XS		P01A-000YX	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	3		STD		P01A-000YM	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	4		STD		P01A-000YU	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	6		STD		P01A-000Z3	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	8		SCH20		P01A-001AT	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	10		SCH20		P01A-0014Y	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	12		SCH20		P01A-0016H	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	14		SCH20		P01A-0017A	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	16		SCH20		P01A-0018E	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P02B-00014	90 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	0.75				P02B-00015	90 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	1				P02B-00016	90 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5				P02B-00017	90 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	2		XS		P02A-000CP	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		STD		P02A-000CU	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		STD		P02A-000CZ	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		STD		P02A-000D6	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		SCH20		P02A-000GZ	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	10		SCH20		P02A-000H1	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	12		SCH20		P02A-000H4	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	14		SCH20		P02A-000FX	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	16		SCH20		P02A-000GM	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P03B-00017	45 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	0.75				P03B-00018	45 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	1				P03B-00019	45 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5				P03B-0001A	45 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	2		XS		P03A-000AS	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		STD		P03A-000AX	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		STD		P03A-000B1	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		STD		P03A-000B9	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		SCH20		P03A-000EX	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	10		SCH20		P03A-000F0	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	12		SCH20		P03A-000F2	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	14		SCH20		P03A-000DW	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	16		SCH20		P03A-000EM	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P21B-00017	Straight tee ASTM A105 Class 3000 ASME B16.11 SW	
1	0.75				P21B-00018	Straight tee ASTM A105 Class 3000 ASME B16.11 SW	
1	1				P21B-00019	Straight tee ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5				P21B-0001A	Straight tee ASTM A105 Class 3000 ASME B16.11 SW	
1	2		XS		P21A-001CJ	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		STD		P21A-001CU	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		STD		P21A-001CW	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6		STD		P21A-001D2	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8		SCH20		P21A-00215	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10		SCH20		P21A-00219	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12		SCH20		P21A-0021A	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14		SCH20		P21A-00206	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16		SCH20		P21A-0020X	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75			P24B-0002L	Reducing tee ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5	0.75			P24B-0002N	Reducing tee ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5	1			P24B-0002P	Reducing tee ASTM A105 Class 3000 ASME B16.11 SW	
1	2	1	XS	XS	P24A-00238	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	XS	XS	P24A-0023H	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	STD	XS	P24A-00214	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	STD	XS	P24A-002HW	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P24A-002HY	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P24A-0021K	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	STD	P24A-0021A	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P24A-00229	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH20	STD	P24A-00J21	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH20	STD	P24A-005J4	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	SCH20	STD	P24A-00HMB	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	SCH20	STD	P24A-00HKS	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	SCH20	SCH20	P24A-002YX	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	SCH20	STD	P24A-00K0B	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH20	SCH20	P24A-002U4	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH20	SCH20	P24A-002YC	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	SCH20	STD	P24A-00K0M	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	SCH20	SCH20	P24A-002U7	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	SCH20	SCH20	P24A-002YA	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	SCH20	SCH20	P24A-002YR	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	6	SCH20	STD	P24A-00GU4	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	SCH20	SCH20	P24A-002XW	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	SCH20	SCH20	P24A-002YH	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	SCH20	SCH20	P24A-002U1	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	SCH20	SCH20	P24A-002XF	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	STD	XS	P27A-001MZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P27A-001N0	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P27A-00189	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	STD	P27A-001AZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P27A-001GW	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH20	STD	P27A-003K2	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH20	STD	P27A-003K3	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	SCH20	STD	P27A-003K4	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	SCH20	STD	P27A-003K5	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	SCH20	SCH20	P27A-001UL	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	SCH20	STD	P27A-003K6	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH20	SCH20	P27A-001UU	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH20	SCH20	P27A-001TH	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	SCH20	STD	P27A-00518	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	SCH20	SCH20	P27A-001V4	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	SCH20	SCH20	P27A-001TG	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	SCH20	SCH20	P27A-001U1	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	SCH20	SCH20	P27A-001WX	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	SCH20	SCH20	P27A-001TW	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	SCH20	SCH20	P27A-001UF	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	SCH20	SCH20	P27A-001V2	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	STD	XS	P28A-001N5	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P28A-001N6	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P28A-0018B	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	STD	P28A-001AS	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P28A-00182	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH20	STD	P28A-003JU	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH20	STD	P28A-003JV	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	SCH20	STD	P28A-003JW	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	SCH20	STD	P28A-003JX	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	SCH20	SCH20	P28A-001V0	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	SCH20	STD	P28A-003JY	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH20	SCH20	P28A-001V1	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH20	SCH20	P28A-001TJ	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	SCH20	STD	P28A-0096P	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	SCH20	SCH20	P28A-001WH	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	SCH20	SCH20	P28A-001TH	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	SCH20	SCH20	P28A-001UC	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	SCH20	SCH20	P28A-001T6	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	SCH20	SCH20	P28A-001TY	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	SCH20	SCH20	P28A-001UX	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	SCH20	SCH20	P28A-001WG	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P29B-0001J	Cap ASTM A105 Class 3000 ASME B16.11 SW	
1	0.75				P29B-0001F	Cap ASTM A105 Class 3000 ASME B16.11 SW	
1	1				P29B-0001G	Cap ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5				P29B-0001H	Cap ASTM A105 Class 3000 ASME B16.11 SW	
1	2		XS		P29A-000A1	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		STD		P29A-000BK	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		STD		P29A-000A3	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6		STD		P29A-000A9	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8		SCH20		P29A-000EY	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10		SCH20		P29A-000E5	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12		SCH20		P29A-000E8	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14		SCH20		P29A-000EA	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16		SCH20		P29A-000F3	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
541	0.75				P29B-0000C	Cap ASTM A105 Class 3000 ASME B16.11 NPT	
541	1				P29B-0000D	Cap ASTM A105 Class 3000 ASME B16.11 NPT	
541	1.5				P29B-0000E	Cap ASTM A105 Class 3000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P41A-000B5	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		SCH160		P41A-000B6	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		SCH160		P41A-000B7	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		SCH160		P41A-000B8	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

CON SWAGED NIPPLE (SNC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	XS	XS	P42A-00036	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	XS	XS	P42A-00038	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	XS	XS	P42A-0003B	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	XS	XS	P42A-00035	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	XS	XS	P42A-00039	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	XS	XS	P42A-0003C	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	XS	XS	P42A-0008C	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	XS	XS	P42A-0008D	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	XS	XS	P42A-0008E	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	

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CON SWAGED NIPPLE (SNC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2	1.5	XS	XS	P42A-0008F	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	STD	XS	P42A-0007V	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	

ECC SWAGED NIPPLE (SNE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	XS	XS	P43A-00036	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	XS	XS	P43A-00037	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	XS	XS	P43A-00038	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	XS	XS	P43A-00039	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	XS	XS	P43A-0003A	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	XS	XS	P43A-0003B	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	XS	XS	P43A-00042	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	XS	XS	P43A-00043	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	XS	XS	P43A-00044	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	XS	XS	P43A-00045	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	STD	XS	P43A-0003J	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	

COUPLING (CPS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P47B-0001D	Coupling ASTM A105 Class 3000 ASME B16.11 SW - SW	
1	0.75				P47B-0001E	Coupling ASTM A105 Class 3000 ASME B16.11 SW - SW	
1	1				P47B-0001F	Coupling ASTM A105 Class 3000 ASME B16.11 SW - SW	
1	1.5				P47B-0001G	Coupling ASTM A105 Class 3000 ASME B16.11 SW - SW	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2 - 2.5	0.75			P31B-0137J	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	3 - 5	0.75			P31B-0137K	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	6 - 12	0.75			P31B-007AB	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	14 - 36	0.75			P31B-007AJ	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	3	1			P31B-007A7	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	4 - 5	1			P31B-0138Z	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	6 - 10	1			P31B-007A4	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	12 - 36	1			P31B-007AA	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	4	1.5			P31B-005SN	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	5 - 6	1.5			P31B-01390	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	8 - 12	1.5			P31B-0079U	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	14 - 24	1.5			P31B-007A0	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
541	1	0.75			P31B-00551	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
541	1.5	0.75			P31B-00555	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
541	2 - 2.5	0.75			P31B-0137H	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
541	3 - 5	0.75			P31B-01376	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
541	6 - 12	0.75			P31B-007GR	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
541	14 - 36	0.75			P31B-007GY	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
1	6	2	STD	XS	P31B-007SH	Outlet ASTM A105 MSS SP-97 BW	
1	8	2	SCH20	XS	P31B-00NY2	Outlet ASTM A105 MSS SP-97 BW	
1	10	2	SCH20	XS	P31B-00TFB	Outlet ASTM A105 MSS SP-97 BW	
1	12	2	SCH20	XS	P31B-00TFA	Outlet ASTM A105 MSS SP-97 BW	
1	14	2	SCH20	XS	P31B-00TF9	Outlet ASTM A105 MSS SP-97 BW	
1	16	2	SCH20	XS	P31B-00TF8	Outlet ASTM A105 MSS SP-97 BW	
1	18	2	SCH20	XS	P31B-00NVX	Outlet ASTM A105 MSS SP-97 BW	
1	20	2	STD	XS	P31B-00994	Outlet ASTM A105 MSS SP-97 BW	
1	8	3	SCH20	STD	P31B-00P11	Outlet ASTM A105 MSS SP-97 BW	
1	10	3	SCH20	STD	P31B-00UPG	Outlet ASTM A105 MSS SP-97 BW	
1	12	3	SCH20	STD	P31B-00USE	Outlet ASTM A105 MSS SP-97 BW	
1	14	3	SCH20	STD	P31B-00UPH	Outlet ASTM A105 MSS SP-97 BW	
1	16	3	SCH20	STD	P31B-00TU2	Outlet ASTM A105 MSS SP-97 BW	
1	18	3	SCH20	STD	P31B-00NZ4	Outlet ASTM A105 MSS SP-97 BW	
1	20	3	STD	STD	P31B-008FA	Outlet ASTM A105 MSS SP-97 BW	

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OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	12	4	SCH20	STD	P31B-00USF	Outlet ASTM A105 MSS SP-97 BW	
1	14	4	SCH20	STD	P31B-00UPJ	Outlet ASTM A105 MSS SP-97 BW	
1	16	4	SCH20	STD	P31B-00TU3	Outlet ASTM A105 MSS SP-97 BW	
1	18	4	SCH20	STD	P31B-00P1V	Outlet ASTM A105 MSS SP-97 BW	
1	20	4	STD	STD	P31B-008D3	Outlet ASTM A105 MSS SP-97 BW	
1	18	6	SCH20	STD	P31B-00P48	Outlet ASTM A105 MSS SP-97 BW	
1	20	6	STD	STD	P31B-008PZ	Outlet ASTM A105 MSS SP-97 BW	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30B-0002D	Plug ASTM A105 ASME B16.11 NPT Round head	
1	0.75				P30B-0002E	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1				P30B-0002F	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1.5				P30B-0002G	Plug ASTM A105 ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P61B-001R9	Flange SW ASTM A105 Class 150 ASME B16.5 RF	
1	0.75		XS		P61B-001RA	Flange SW ASTM A105 Class 150 ASME B16.5 RF	
1	1		XS		P61B-001RR	Flange SW ASTM A105 Class 150 ASME B16.5 RF	
1	1.5		XS		P61B-001RV	Flange SW ASTM A105 Class 150 ASME B16.5 RF	
1	2		XS		P61B-003NK	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	3		STD		P61B-001PW	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	4		STD		P61B-001R8	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	6		STD		P61B-001RT	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	8		SCH20		P61B-002BF	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	10		SCH20		P61B-002B4	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	12		SCH20		P61B-002B5	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	14		SCH20		P61B-002B6	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	16		SCH20		P61B-002B7	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
773	0.5		XS		P61B-001HC	Flange SW ASTM A105 Class 300 ASME B16.5 RF	
773	0.75		XS		P61B-001HS	Flange SW ASTM A105 Class 300 ASME B16.5 RF	
773	1		XS		P61B-001EF	Flange SW ASTM A105 Class 300 ASME B16.5 RF	
773	1.5		XS		P61B-001F2	Flange SW ASTM A105 Class 300 ASME B16.5 RF	
773	2		XS		P61B-001HW	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	3		STD		P61B-001LJ	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	4		STD		P61B-001MC	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	6		STD		P61B-001N2	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	8		SCH20		P61B-002LJ	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	10		SCH20		P61B-002LH	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	12		SCH20		P61B-002MP	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	14		SCH20		P61B-002MR	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	16		SCH20		P61B-002MS	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
781	16		SCH20		P61B-00798	Flange WN ASTM A105 Class 600 ASME B16.5 RF	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67B-000FH	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	0.75				P67B-000FJ	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	1				P67B-000FK	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	1.5				P67B-000FL	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	2				P67B-000FT	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	3				P67B-000FW	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	4				P67B-000FX	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	6				P67B-000FY	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	8				P67B-000FZ	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	10				P67B-000FM	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	12				P67B-000FN	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	14				P67B-000FP	Blind flange ASTM A105 Class 150 ASME B16.5 RF	

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BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	16				P67B-000FR	Blind flange ASTM A105 Class 150 ASME B16.5 RF	

REDUCING FLANGE (FR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5		XS	P62B-000MV	Reducing flange SW ASTM A105 Class 150 ASME B16.5 RF	
1	1.5	0.5		XS	P62B-000KK	Reducing flange SW ASTM A105 Class 150 ASME B16.5 RF	
1	1.5	0.75		XS	P62B-000KP	Reducing flange SW ASTM A105 Class 150 ASME B16.5 RF	
1	2	0.75		XS	P62B-000NC	Reducing flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	2	1		XS	P62B-000K6	Reducing flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	2	1.5		XS	P62B-000K7	Reducing flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	3	1.5		XS	P62B-000JX	Reducing flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	3	2		XS	P62B-0006B	Reducing flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	4	2		XS	P62B-00098	Reducing flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	4	3		STD	P62B-0006D	Reducing flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	6	3		STD	P62B-000JY	Reducing flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	6	4		STD	P62B-000JZ	Reducing flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	8	6		STD	P62B-0006E	Reducing flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	10	4		STD	P62B-000K0	Reducing flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	10	8		SCH20	P62B-000K1	Reducing flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	12	6		STD	P62B-000K2	Reducing flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	12	10		SCH20	P62B-000KR	Reducing flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	14	10		SCH20	P62B-000K3	Reducing flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	16	12		SCH20	P62B-000K4	Reducing flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	16	14		SCH20	P62B-000PG	Reducing flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	18	14		SCH20	P62B-000L9	Reducing flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	20	16		SCH20	P62B-000K5	Reducing flange WN ASTM A105 Class 150 ASME B16.5 RF	
781	12	6		STD	P62B-000PR	Reducing flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	12	10		SCH20	P62B-000PS	Reducing flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	20	16		SCH20	P62B-000M3	Reducing flange WN ASTM A105 Class 600 ASME B16.5 RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000L8	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000L9	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000LA	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000LB	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000LH	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000LL	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000LM	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	6				P73T-000LN	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	8				P73T-000LP	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	10				P73T-000LC	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	12				P73T-000LD	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	14				P73T-000LE	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	16				P73T-000LF	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	18				P73T-000LG	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	20				P73T-000LJ	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	0.5				P73T-000FT	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	0.75				P73T-000FU	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

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GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
773	3				P73T-000G5	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	4				P73T-000G6	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	6				P73T-000G7	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	8				P73T-000G8	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	10				P73T-000FX	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	12				P73T-000FY	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	14				P73T-000FZ	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	16				P73T-000G0	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	12				P73T-000JD	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	14				P73T-000JE	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	16				P73T-000JF	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	18				P73T-000JG	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	20				P73T-000JJ	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-16				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	18-20				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
773	0.5-10				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
773	12-20				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
781	8-20				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5	0.5			P83B-001H4	Jacketed check valve ASTM A105 Class 150 API 600-modified Flange ASME B16.5 RF Trim number 8 Lift-type Bolted cover Full jacketed	
1	2	1			P83C-003P7	Jacketed check valve ASTM A216 Grade WCB Class 150 API 600-modified Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover Full jacketed	
1	3	1.5			P83C-003P8	Jacketed check valve ASTM A216 Grade WCB Class 150 API 600-modified Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover Full jacketed	
1	4	3			P83C-003P9	Jacketed check valve ASTM A216 Grade WCB Class 150 API 600-modified Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover Full jacketed	
1	6	4			P83C-003PA	Jacketed check valve ASTM A216 Grade WCB Class 150 API 600-modified Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover Full jacketed	
1	8	6			P83C-003PB	Jacketed check valve ASTM A216 Grade WCB Class 150 API 600-modified Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover Full jacketed	
1	10	8			P83C-003PC	Jacketed check valve ASTM A216 Grade WCB Class 150 API 600-modified Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover Full jacketed	
1	12	10			P83C-003PD	Jacketed check valve ASTM A216 Grade WCB Class 150 API 600-modified Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover Full jacketed	
1	16	12			P83C-003PE	Jacketed check valve ASTM A216 Grade WCB Class 150 API 600-modified Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover Full jacketed	
1	18	14			P83C-003PF	Jacketed check valve ASTM A216 Grade WCB Class 150 API 600-modified Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover Full jacketed	
1	20	16			P83C-003PG	Jacketed check valve ASTM A216 Grade WCB Class 150 API 600-modified Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover Full jacketed	

PLUG VALVE (PV)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5	0.5			P85B-0000J	Jacketed plug valve Short-pattern ASTM A105 Class 150 API 599 Flange ASME B16.5 RF Plug SS316 Seat PTFE Trim SS316 Nonlubricated taper plug BC-BG Wrench lever operated Regular port Full jacketed	
1	2	1			P85C-0007D	Jacketed plug valve Short-pattern ASTM A216 Grade WCB Class 150 API 599 Flange ASME B16.5 RF Plug SS316 Seat PTFE Trim SS316 Nonlubricated taper plug BC-BG Wrench lever operated Regular port Full jacketed	
1	3	1.5			P85C-0007E	Jacketed plug valve Short-pattern ASTM A216 Grade WCB Class 150 API 599 Flange ASME B16.5 RF Plug SS316 Seat PTFE Trim SS316 Nonlubricated taper plug BC-BG Wrench lever operated Regular port Full jacketed	
1	4	3			P85C-0007F	Jacketed plug valve Short-pattern ASTM A216 Grade WCB Class 150 API 599 Flange ASME B16.5 RF Plug SS316 Seat PTFE Trim SS316 Nonlubricated taper plug BC-BG Wrench lever operated Regular port Full jacketed	
1	6	4			P85C-0007H	Jacketed plug valve Short-pattern ASTM A216 Grade WCB Class 150 API 599 Flange ASME B16.5 RF Plug SS316 Seat PTFE Trim SS316 Nonlubricated taper plug BC-BG Gear operated Regular port Full jacketed	
1	8	6			P85C-0007J	Jacketed plug valve Short-pattern ASTM A216 Grade WCB Class 150 API 599 Flange ASME B16.5 RF Plug SS316 Seat PTFE Trim SS316 Nonlubricated taper plug BC-BG Gear operated Regular port Full jacketed	

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PLUG VALVE (PV)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	10	8			P85C-0007K	Jacketed plug valve Short-pattern ASTM A216 Grade WCB Class 150 API 599 Flange ASME B16.5 RF Plug SS316 Seat PTFE Trim SS316 Nonlubricated taper plug BC-BG Gear operated Regular port Full jacketed	
1	12	10			P85C-0007L	Jacketed plug valve Short-pattern ASTM A216 Grade WCB Class 150 API 599 Flange ASME B16.5 RF Plug SS316 Seat PTFE Trim SS316 Nonlubricated taper plug BC-BG Gear operated Regular port Full jacketed	
1	16	12			P85C-0007S	Jacketed plug valve Regular-pattern ASTM A216 Grade WCB Class 150 API 599 Flange ASME B16.5 RF Plug SS316 Seat PTFE Trim SS316 Nonlubricated taper plug BC-BG Gear operated Regular port Full jacketed	
1	18	14			P85C-0007T	Jacketed plug valve Regular-pattern ASTM A216 Grade WCB Class 150 API 599 Flange ASME B16.5 RF Plug SS316 Seat PTFE Trim SS316 Nonlubricated taper plug BC-BG Gear operated Regular port Full jacketed	
1	20	16			P85C-0007U	Jacketed plug valve Regular-pattern ASTM A216 Grade WCB Class 150 API 599 Flange ASME B16.5 RF Plug SS316 Seat PTFE Trim SS316 Nonlubricated taper plug BC-BG Gear operated Regular port Full jacketed	
4610	1.5	0.75			P85B-0000Y	Jacketed plug valve Short-pattern ASTM A105 Class 150 API 599 Flange ASME B16.5 RF Plug SS316 Seat PTFE Trim SS316 Nonlubricated taper plug BC-BG Wrench lever operated Regular port Full jacketed Type-10	
4611	3	2			P85C-000AS	Jacketed plug valve Short-pattern ASTM A216 Grade WCB Class 150 API 599 Flange ASME B16.5 RF Plug SS316 Seat PTFE Trim SS316 Nonlubricated taper plug BC-BG Wrench lever operated Regular port Full jacketed Type-10	

ORIFICE FLANGE (FO)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2		XS		P66B-0084B	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	3		STD		P66B-0084C	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	4		STD		P66B-0084D	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	6		STD		P66B-0084E	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	8		SCH20		P66B-0084F	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	10		SCH20		P66B-00848	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	12		SCH20		P66B-0084L	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	14		SCH20		P66B-0084A	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	16		SCH20		P66B-0083Y	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
200	2		XS		P66B-00843	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	3		STD		P66B-00844	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	4		STD		P66B-00845	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	6		STD		P66B-00846	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	8		SCH20		P66B-00847	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	10		SCH20		P66B-00840	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	12		SCH20		P66B-0084P	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	14		SCH20		P66B-00842	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	16		SCH20		P66B-0083Z	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71B-0008A	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	0.75				P71B-0008B	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	1				P71B-0008C	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71B-0008D	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	2				P71B-0000P	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	3				P71B-0000N	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	4				P71B-0000M	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	6				P71B-0000L	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	8				P71B-0000R	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	10				P71B-0000K	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	12				P71B-0000J	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	

PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000AH	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	16				P72B-0000C	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	

PADDLE SPACER (PS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000AT	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	16				P72B-0000B	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	

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BOLT TABLE (B_A1APCL , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	60	P80S-003V2		
0.75	4	0.500	65	P80S-003V3		
1	4	0.500	70	P80S-003V4		
1.5	4	0.500	75	P80S-003V5		
2	4	0.625	85	P80S-003XE		
3	4	0.625	95	P80S-003XG		
4	8	0.625	95	P80S-003XG		
6	8	0.750	105	P80S-003XJ		
8	8	0.750	110	P80S-003XK		
10	12	0.875	120	P80S-00419		
12	12	0.875	120	P80S-00419		
14	12	1.000	135	P80S-0043E		
16	16	1.000	140	P80S-0043F		
18	16	1.125	150	P80S-0046K		
20	20	1.125	160	P80S-0046M		

BOLT TABLE (B_A1APCL_773 , STUD ASME RF, OPTION CODE 773)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-003V4		
0.75	4	0.625	75	P80S-003XC		
1	4	0.625	80	P80S-003XD		
1.5	4	0.750	95	P80S-00414		
2	8	0.625	90	P80S-003XF		
3	8	0.750	110	P80S-003XK		
4	8	0.750	115	P80S-003XL		
6	12	0.750	125	P80S-003XN		
8	12	0.875	140	P80S-0041D		
10	16	1.000	160	P80S-0043K		
12	16	1.125	175	P80S-0046S		
14	20	1.125	180	P80S-0046T		
16	20	1.250	190	P80S-004AK		
18	24	1.250	200	P80S-004AM		
20	24	1.250	210	P80S-004AP		

BOLT TABLE (B_A1APCL_781 , STUD ASME RF, OPTION CODE 781)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	80			
0.75	4	0.625	90			
1	4	0.625	95			
1.5	4	0.750	110			
2	8	0.625	110			
3	8	0.750	130			
4	8	0.875	150			
6	12	1.000	175			
8	12	1.125	195	P80S-0046W		
10	16	1.250	250	P80S-004AY		
12	20	1.250	255	P80S-004AZ		
14	20	1.375	270	P80S-003E7		
16	20	1.500	295	P80S-003FL		
18	20	1.625	320	P80S-005TT		
20	24	1.625	335	P80S-005TW		

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BRANCH TABLE (T_A1APCL)

RUN PIPE SIZE (in) \ BRANCH SIZE (in)	0.5	0.75	1	1.5	2	3	4	6	8	10	12	14	16	18	20
0.5	TS														
0.75		TS													
1		TR	TS												
1.5		TR	TR	TS											
2		L	TR	TR	TS										
3		L	L	TR	TR	TS									
4	L	L	L	L	TR	TR	TS								
6	L	L	L	L	L	TR	TR	TS							
8		L	L	L	L	L	TR	TR	TS						
10		L	L	L	L	L	TR	TR	TR	TS					
12		L	L	L	L	L	L	TR	TR	TR	TS				
14		L	L	L	L	L	L	TR	TR	TR	TR	TS			
16		L	L	L	L	L	L	TR	TR	TR	TR	TR	TS		
18		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TS	
20		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TR	TS

L : OUTLET
TR : REDUCING TEE
TS : STRAIGHT TEE

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Material : Killed CS
Rating : ASME CLASS 150
Flange Face : RF
C.A.(mm) : 1.50
Gasket : Spiral Wound
Service : PROCESS - GENERAL PROCESS NON SOUR, NON CORROSIVE
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
2	USE OF SOFT SEATED BALL, PLUG AND BUTTERFLY VALVES SHALL BE LIMITED TO MAXIMUM OF 204DEGC (400DEGF)

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
200	WITH JACK SCREW (FO)
541	NPT(F) (CA,L)
773	CLASS 300 (B,F,G)
781	CLASS 600 (B,FR,G)
4610	JACKETED VALVE (1.5" X 0.75") (PV)
4611	JACKETED VALVE (3" X 2") (PV)
4612	CLASS 300 JACKETED VALVE (3" X 2") (PV)

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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P01A-000XM	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	0.75		XS		P01A-000XN	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1		XS		P01A-000XP	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1.5		XS		P01A-000XV	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	2		XS		P01A-000YX	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	3		STD		P01A-000YM	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	4		STD		P01A-000YU	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	6		STD		P01A-000Z3	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	8		SCH20		P01A-001AT	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	10		SCH20		P01A-0014Y	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	12		SCH20		P01A-0016H	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	14		SCH20		P01A-0017A	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	16		SCH20		P01A-0018E	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	18		SCH20		P01A-00438	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE	
1	20		STD		P01A-0042G	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE	
1	24		STD		P01A-0042H	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE	
1	30		STD		P01A-0042J	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE	
1	36		XS		P01A-0042K	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE	
1	42		XS		P01A-0043G	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE	
1	48		XS		P01A-0042L	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P02B-00014	90 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	0.75				P02B-00015	90 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	1				P02B-00016	90 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5				P02B-00017	90 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	2		XS		P02A-000CP	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		STD		P02A-000CU	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		STD		P02A-000CZ	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		STD		P02A-000D6	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		SCH20		P02A-000GZ	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	10		SCH20		P02A-000H1	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	12		SCH20		P02A-000H4	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	14		SCH20		P02A-000FX	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	16		SCH20		P02A-000GM	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	18		SCH20		P02A-000LT	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	20		STD		P02A-0010J	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	24		STD		P02A-0010K	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	30		STD		P02A-000F3	90 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius	
1	36		XS		P02A-000DH	90 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius	
1	42		XS		P02A-000FB	90 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius	
1	48		XS		P02A-0017R	90 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P03B-00017	45 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	0.75				P03B-00018	45 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	1				P03B-00019	45 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5				P03B-0001A	45 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	2		XS		P03A-000AS	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		STD		P03A-000AX	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		STD		P03A-000B1	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		STD		P03A-000B9	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		SCH20		P03A-000EX	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	10		SCH20		P03A-000F0	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	12		SCH20		P03A-000F2	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	14		SCH20		P03A-000DW	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	16		SCH20		P03A-000EM	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

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45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	18		SCH20		P03A-001DX	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	20		STD		P03A-000X1	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	24		STD		P03A-000X2	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	30		STD		P03A-000D0	45 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius	
1	36		XS		P03A-000BG	45 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius	
1	42		XS		P03A-000DB	45 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius	
1	48		XS		P03A-0013P	45 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P21B-00017	Straight tee ASTM A105 Class 3000 ASME B16.11 SW	
1	0.75				P21B-00018	Straight tee ASTM A105 Class 3000 ASME B16.11 SW	
1	1				P21B-00019	Straight tee ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5				P21B-0001A	Straight tee ASTM A105 Class 3000 ASME B16.11 SW	
1	2		XS		P21A-001CJ	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		STD		P21A-001CU	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		STD		P21A-001CW	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6		STD		P21A-001D2	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8		SCH20		P21A-00215	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10		SCH20		P21A-00219	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12		SCH20		P21A-0021A	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14		SCH20		P21A-00206	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16		SCH20		P21A-0020X	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18		SCH20		P21A-001PJ	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20		STD		P21A-001C7	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24		STD		P21A-001CC	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30		STD		P21A-001YC	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	36		XS		P21A-001D7	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	42		XS		P21A-001KS	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	48		XS		P21A-001RL	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75			P24B-0002L	Reducing tee ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5	0.75			P24B-0002N	Reducing tee ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5	1			P24B-0002P	Reducing tee ASTM A105 Class 3000 ASME B16.11 SW	
1	2	1	XS	XS	P24A-00238	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	XS	XS	P24A-0023H	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	STD	XS	P24A-00214	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	STD	XS	P24A-002HW	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P24A-002HY	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P24A-0021K	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	STD	P24A-0021A	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P24A-00229	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH20	STD	P24A-00J21	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH20	STD	P24A-005J4	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	SCH20	STD	P24A-00HMB	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	SCH20	STD	P24A-00HKS	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	SCH20	SCH20	P24A-002YX	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	SCH20	STD	P24A-00K0B	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH20	SCH20	P24A-002U4	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH20	SCH20	P24A-002YC	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	SCH20	STD	P24A-00K0M	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	SCH20	SCH20	P24A-002U7	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	SCH20	SCH20	P24A-002YA	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	SCH20	SCH20	P24A-002YR	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	6	SCH20	STD	P24A-00GU4	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	SCH20	SCH20	P24A-002XW	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	SCH20	SCH20	P24A-002YH	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	16	12	SCH20	SCH20	P24A-002U1	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	SCH20	SCH20	P24A-002XF	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	8	SCH20	SCH20	P24A-002XC	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	10	SCH20	SCH20	P24A-002UX	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	12	SCH20	SCH20	P24A-002W3	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	14	SCH20	SCH20	P24A-002WT	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	16	SCH20	SCH20	P24A-002X5	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	8	STD	SCH20	P24A-00K0N	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	10	STD	SCH20	P24A-00BT7	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	12	STD	SCH20	P24A-00BUS	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	14	STD	SCH20	P24A-00BWB	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	16	STD	SCH20	P24A-006W3	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	18	STD	SCH20	P24A-006WD	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	10	STD	SCH20	P24A-00KT6	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	12	STD	SCH20	P24A-00C7B	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	14	STD	SCH20	P24A-00K0C	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	16	STD	SCH20	P24A-00CAD	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	18	STD	SCH20	P24A-006WF	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	20	STD	STD	P24A-004SV	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	10	STD	SCH20	P24A-003VN	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	12	STD	SCH20	P24A-003VP	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	14	STD	SCH20	P24A-003VR	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	16	STD	SCH20	P24A-003VS	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	18	STD	SCH20	P24A-003VT	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	20	STD	STD	P24A-0087D	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	24	STD	STD	P24A-005XW	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	36	16	XS	SCH20	P24A-003VH	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	36	18	XS	SCH20	P24A-003VJ	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	36	20	XS	STD	P24A-004SS	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	36	24	XS	STD	P24A-004VX	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	36	30	XS	STD	P24A-003VM	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	42	16	XS	SCH20	P24A-003VB	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	42	18	XS	SCH20	P24A-003VC	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	42	20	XS	STD	P24A-00EGT	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	42	24	XS	STD	P24A-00EHZ	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	42	30	XS	STD	P24A-003VF	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	42	36	XS	XS	P24A-003VG	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	48	24	XS	STD	P24A-006WP	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	48	30	XS	STD	P24A-006WR	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	48	36	XS	XS	P24A-00F4B	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	48	42	XS	XS	P24A-00F5N	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	STD	XS	P27A-001MZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P27A-001N0	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P27A-00189	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	STD	P27A-001AZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P27A-001GW	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH20	STD	P27A-003K2	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH20	STD	P27A-003K3	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	SCH20	STD	P27A-003K4	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	SCH20	STD	P27A-003K5	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	SCH20	SCH20	P27A-001UL	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	SCH20	STD	P27A-003K6	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH20	SCH20	P27A-001UU	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH20	SCH20	P27A-001TH	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	SCH20	STD	P27A-00518	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	SCH20	SCH20	P27A-001V4	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14	10	SCH20	SCH20	P27A-001TG	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	SCH20	SCH20	P27A-001U1	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	SCH20	SCH20	P27A-001WX	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	SCH20	SCH20	P27A-001TW	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	SCH20	SCH20	P27A-001UF	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	SCH20	SCH20	P27A-001V2	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	10	SCH20	SCH20	P27A-001TJ	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	12	SCH20	SCH20	P27A-001UE	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	14	SCH20	SCH20	P27A-001UY	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	16	SCH20	SCH20	P27A-001WN	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	12	STD	SCH20	P27A-00CMZ	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	14	STD	SCH20	P27A-0082L	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	16	STD	SCH20	P27A-0082M	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	18	STD	SCH20	P27A-0084N	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	16	STD	SCH20	P27A-0084T	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	18	STD	SCH20	P27A-0084U	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	20	STD	STD	P27A-001A8	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	20	STD	STD	P27A-001S0	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	24	STD	STD	P27A-001M7	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	36	24	XS	STD	P27A-001GY	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	36	30	XS	STD	P27A-001M9	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	42	30	XS	STD	P27A-001N2	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	42	36	XS	XS	P27A-001M6	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	48	42	XS	XS	P27A-00BHA	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	STD	XS	P28A-001N5	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P28A-001N6	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P28A-0018B	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	STD	P28A-001AS	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P28A-00182	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH20	STD	P28A-003JU	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH20	STD	P28A-003JV	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	SCH20	STD	P28A-003JW	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	SCH20	STD	P28A-003JX	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	SCH20	SCH20	P28A-001V0	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	SCH20	STD	P28A-003JY	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH20	SCH20	P28A-001V1	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH20	SCH20	P28A-001TJ	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	SCH20	STD	P28A-0096P	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	SCH20	SCH20	P28A-001WH	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	SCH20	SCH20	P28A-001TH	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	SCH20	SCH20	P28A-001UC	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	SCH20	SCH20	P28A-001T6	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	SCH20	SCH20	P28A-001TY	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	SCH20	SCH20	P28A-001UX	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	SCH20	SCH20	P28A-001WG	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	10	SCH20	SCH20	P28A-001TV	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	12	SCH20	SCH20	P28A-001UJ	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	14	SCH20	SCH20	P28A-001WD	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	16	SCH20	SCH20	P28A-001T1	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	12	STD	SCH20	P28A-009MM	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	14	STD	SCH20	P28A-004SJ	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	16	STD	SCH20	P28A-004SK	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	18	STD	SCH20	P28A-004UN	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	16	STD	SCH20	P28A-004UR	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	18	STD	SCH20	P28A-004US	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	20	STD	STD	P28A-001AW	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	

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ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	30	20	STD	STD	P28A-001LZ	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	24	STD	STD	P28A-001N1	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	36	24	XS	STD	P28A-0017X	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	36	30	XS	STD	P28A-001ND	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	42	30	XS	STD	P28A-001RM	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	42	36	XS	XS	P28A-001N0	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	48	42	XS	XS	P28A-008GJ	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P29B-0001J	Cap ASTM A105 Class 3000 ASME B16.11 SW	
1	0.75				P29B-0001F	Cap ASTM A105 Class 3000 ASME B16.11 SW	
1	1				P29B-0001G	Cap ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5				P29B-0001H	Cap ASTM A105 Class 3000 ASME B16.11 SW	
1	2		XS		P29A-000A1	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		STD		P29A-000BK	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		STD		P29A-000A3	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6		STD		P29A-000A9	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8		SCH20		P29A-000EY	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10		SCH20		P29A-000E5	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12		SCH20		P29A-000E8	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14		SCH20		P29A-000EA	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16		SCH20		P29A-000F3	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18		SCH20		P29A-000E0	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20		STD		P29A-000B2	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24		STD		P29A-000B8	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	30		STD		P29A-000DU	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	36		XS		P29A-000A2	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	42		XS		P29A-000CW	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	48		XS		P29A-00136	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
541	0.75				P29B-0000C	Cap ASTM A105 Class 3000 ASME B16.11 NPT	
541	1				P29B-0000D	Cap ASTM A105 Class 3000 ASME B16.11 NPT	
541	1.5				P29B-0000E	Cap ASTM A105 Class 3000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P41A-000B5	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		SCH160		P41A-000B6	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		SCH160		P41A-000B7	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		SCH160		P41A-000B8	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

CON SWAGED NIPPLE (SNC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	XS	XS	P42A-00036	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	XS	XS	P42A-00038	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	XS	XS	P42A-0003B	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	XS	XS	P42A-00035	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	XS	XS	P42A-00039	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	XS	XS	P42A-0003C	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	XS	XS	P42A-0008C	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	XS	XS	P42A-0008D	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	XS	XS	P42A-0008E	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	XS	XS	P42A-0008F	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	STD	XS	P42A-0007V	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	

ECC SWAGED NIPPLE (SNE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	XS	XS	P43A-00036	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	

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ECC SWAGED NIPPLE (SNE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.5	XS	XS	P43A-00037	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	XS	XS	P43A-00038	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	XS	XS	P43A-00039	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	XS	XS	P43A-0003A	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	XS	XS	P43A-0003B	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	XS	XS	P43A-00042	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	XS	XS	P43A-00043	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	XS	XS	P43A-00044	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	XS	XS	P43A-00045	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	STD	XS	P43A-0003J	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	

COUPLING (CPS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P47B-0001D	Coupling ASTM A105 Class 3000 ASME B16.11 SW - SW	
1	0.75				P47B-0001E	Coupling ASTM A105 Class 3000 ASME B16.11 SW - SW	
1	1				P47B-0001F	Coupling ASTM A105 Class 3000 ASME B16.11 SW - SW	
1	1.5				P47B-0001G	Coupling ASTM A105 Class 3000 ASME B16.11 SW - SW	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2 - 2.5	0.75			P31B-0137J	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	3 - 5	0.75			P31B-0137K	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	6 - 12	0.75			P31B-007AB	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	14 - 36	0.75			P31B-007AJ	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	38 and larger	0.75			P31B-00N1G	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	3	1			P31B-007A7	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	4 - 5	1			P31B-0138Z	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	6 - 10	1			P31B-007A4	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	12 - 36	1			P31B-007AA	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	38 and larger	1			P31B-00N0Y	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	4	1.5			P31B-005SN	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	5 - 6	1.5			P31B-01390	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	8 - 12	1.5			P31B-0079U	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	14 - 24	1.5			P31B-007A0	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	26 - 36	1.5			P31B-01391	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	38 and larger	1.5			P31B-00N17	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
541	1	0.75			P31B-00551	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
541	1.5	0.75			P31B-00555	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
541	2 - 2.5	0.75			P31B-0137H	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
541	3 - 5	0.75			P31B-01376	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
541	6 - 12	0.75			P31B-007GR	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
541	14 - 36	0.75			P31B-007GY	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
541	38 and larger	0.75			P31B-00FFM	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
1	6	2	STD	XS	P31B-007SH	Outlet ASTM A105 MSS SP-97 BW	
1	8	2	SCH20	XS	P31B-00NY2	Outlet ASTM A105 MSS SP-97 BW	
1	10	2	SCH20	XS	P31B-00TFB	Outlet ASTM A105 MSS SP-97 BW	
1	12	2	SCH20	XS	P31B-00TFA	Outlet ASTM A105 MSS SP-97 BW	
1	14	2	SCH20	XS	P31B-00TF9	Outlet ASTM A105 MSS SP-97 BW	
1	16	2	SCH20	XS	P31B-00TF8	Outlet ASTM A105 MSS SP-97 BW	
1	18	2	SCH20	XS	P31B-00NVX	Outlet ASTM A105 MSS SP-97 BW	
1	20	2	STD	XS	P31B-00994	Outlet ASTM A105 MSS SP-97 BW	
1	24	2	STD	XS	P31B-0092Z	Outlet ASTM A105 MSS SP-97 BW	
1	30	2	STD	XS	P31B-008P5	Outlet ASTM A105 MSS SP-97 BW	
1	36	2	XS	XS	P31B-008BB	Outlet ASTM A105 MSS SP-97 BW	
1	42	2	XS	XS	P31B-0084J	Outlet ASTM A105 MSS SP-97 BW	
1	48	2	XS	XS	P31B-007YJ	Outlet ASTM A105 MSS SP-97 BW	
1	56	2	11.91mm	XS	P31B-00Y9Z	Outlet ASTM A105 MSS SP-97 BW	
1	8	3	SCH20	STD	P31B-00P11	Outlet ASTM A105 MSS SP-97 BW	
1	10	3	SCH20	STD	P31B-00UPG	Outlet ASTM A105 MSS SP-97 BW	

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OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	12	3	SCH20	STD	P31B-00USE	Outlet ASTM A105 MSS SP-97 BW	
1	14	3	SCH20	STD	P31B-00UPH	Outlet ASTM A105 MSS SP-97 BW	
1	16	3	SCH20	STD	P31B-00TU2	Outlet ASTM A105 MSS SP-97 BW	
1	18	3	SCH20	STD	P31B-00NZ4	Outlet ASTM A105 MSS SP-97 BW	
1	20	3	STD	STD	P31B-008FA	Outlet ASTM A105 MSS SP-97 BW	
1	24	3	STD	STD	P31B-00895	Outlet ASTM A105 MSS SP-97 BW	
1	30	3	STD	STD	P31B-007WY	Outlet ASTM A105 MSS SP-97 BW	
1	36	3	XS	STD	P31B-007P1	Outlet ASTM A105 MSS SP-97 BW	
1	42	3	XS	STD	P31B-00AGK	Outlet ASTM A105 MSS SP-97 BW	
1	48	3	XS	STD	P31B-00AFD	Outlet ASTM A105 MSS SP-97 BW	
1	56	3	11.91mm	STD	P31B-00YA0	Outlet ASTM A105 MSS SP-97 BW	
1	12	4	SCH20	STD	P31B-00USF	Outlet ASTM A105 MSS SP-97 BW	
1	14	4	SCH20	STD	P31B-00UPJ	Outlet ASTM A105 MSS SP-97 BW	
1	16	4	SCH20	STD	P31B-00TU3	Outlet ASTM A105 MSS SP-97 BW	
1	18	4	SCH20	STD	P31B-00P1V	Outlet ASTM A105 MSS SP-97 BW	
1	20	4	STD	STD	P31B-008D3	Outlet ASTM A105 MSS SP-97 BW	
1	24	4	STD	STD	P31B-0086X	Outlet ASTM A105 MSS SP-97 BW	
1	30	4	STD	STD	P31B-007US	Outlet ASTM A105 MSS SP-97 BW	
1	36	4	XS	STD	P31B-00AEP	Outlet ASTM A105 MSS SP-97 BW	
1	42	4	XS	STD	P31B-00A8G	Outlet ASTM A105 MSS SP-97 BW	
1	48	4	XS	STD	P31B-00A2P	Outlet ASTM A105 MSS SP-97 BW	
1	56	4	11.91mm	STD	P31B-00YA1	Outlet ASTM A105 MSS SP-97 BW	
1	18	6	SCH20	STD	P31B-00P48	Outlet ASTM A105 MSS SP-97 BW	
1	20	6	STD	STD	P31B-008PZ	Outlet ASTM A105 MSS SP-97 BW	
1	24	6	STD	STD	P31B-008JD	Outlet ASTM A105 MSS SP-97 BW	
1	30	6	STD	STD	P31B-008BS	Outlet ASTM A105 MSS SP-97 BW	
1	36	6	XS	STD	P31B-0085G	Outlet ASTM A105 MSS SP-97 BW	
1	42	6	XS	STD	P31B-007ZN	Outlet ASTM A105 MSS SP-97 BW	
1	48	6	XS	STD	P31B-007U6	Outlet ASTM A105 MSS SP-97 BW	
1	56	6	11.91mm	STD	P31B-00YA2	Outlet ASTM A105 MSS SP-97 BW	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30B-0002D	Plug ASTM A105 ASME B16.11 NPT Round head	
1	0.75				P30B-0002E	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1				P30B-0002F	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1.5				P30B-0002G	Plug ASTM A105 ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P61B-001R9	Flange SW ASTM A105 Class 150 ASME B16.5 RF	
1	0.75		XS		P61B-001RA	Flange SW ASTM A105 Class 150 ASME B16.5 RF	
1	1		XS		P61B-001RR	Flange SW ASTM A105 Class 150 ASME B16.5 RF	
1	1.5		XS		P61B-001RV	Flange SW ASTM A105 Class 150 ASME B16.5 RF	
1	2		XS		P61B-003NK	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	3		STD		P61B-001PW	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	4		STD		P61B-001R8	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	6		STD		P61B-001RT	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	8		SCH20		P61B-002BF	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	10		SCH20		P61B-002B4	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	12		SCH20		P61B-002B5	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	14		SCH20		P61B-002B6	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	16		SCH20		P61B-002B7	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	18		SCH20		P61B-002B8	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	20		STD		P61B-001JA	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	24		STD		P61B-001NJ	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	30		STD		P61B-001S8	Flange WN ASTM A105 Class 150 ASME B16.47 Series B RF	
1	36		XS		P61B-001UE	Flange WN ASTM A105 Class 150 ASME B16.47 Series B RF	
1	42		XS		P61B-001N1	Flange WN ASTM A105 Class 150 ASME B16.47 Series B RF	

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FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	48		XS		P61B-004CX	Flange WN ASTM A105 Class 150 ASME B16.47 Series B RF	
773	0.5		XS		P61B-001HC	Flange SW ASTM A105 Class 300 ASME B16.5 RF	
773	0.75		XS		P61B-001HS	Flange SW ASTM A105 Class 300 ASME B16.5 RF	
773	1		XS		P61B-001EF	Flange SW ASTM A105 Class 300 ASME B16.5 RF	
773	1.5		XS		P61B-001F2	Flange SW ASTM A105 Class 300 ASME B16.5 RF	
773	2		XS		P61B-001HW	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	3		STD		P61B-001LJ	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	4		STD		P61B-001MC	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	6		STD		P61B-001N2	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	8		SCH20		P61B-002LJ	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	10		SCH20		P61B-002LH	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	12		SCH20		P61B-002MP	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	14		SCH20		P61B-002MR	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	16		SCH20		P61B-002MS	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	18		SCH20		P61B-002MT	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	20		STD		P61B-001NT	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	24		STD		P61B-001PA	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	30		STD		P61B-003SW	Flange WN ASTM A105 Class 300 ASME B16.47 Series B RF	
773	36		XS		P61B-001N6	Flange WN ASTM A105 Class 300 ASME B16.47 Series B RF	
773	42		XS		P61B-00673	Flange WN ASTM A105 Class 300 ASME B16.47 Series B RF	
773	48		XS		P61B-003TH	Flange WN ASTM A105 Class 300 ASME B16.47 Series B RF	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67B-000FH	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	0.75				P67B-000FJ	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	1				P67B-000FK	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	1.5				P67B-000FL	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	2				P67B-000FT	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	3				P67B-000FW	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	4				P67B-000FX	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	6				P67B-000FY	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	8				P67B-000FZ	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	10				P67B-000FM	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	12				P67B-000FN	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	14				P67B-000FP	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	16				P67B-000FR	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	18				P67B-000FS	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	20				P67B-000FU	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	24				P67B-000FV	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	30				P67B-000G2	Blind flange ASTM A105 Class 150 ASME B16.47 Series B RF	
1	36				P67B-000G5	Blind flange ASTM A105 Class 150 ASME B16.47 Series B RF	
1	42				P67B-000KZ	Blind flange ASTM A105 Class 150 ASME B16.47 Series B RF	
1	48				P67B-000L2	Blind flange ASTM A105 Class 150 ASME B16.47 Series B RF	

REDUCING FLANGE (FR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5		XS	P62B-000MV	Reducing flange SW ASTM A105 Class 150 ASME B16.5 RF	
1	1.5	0.5		XS	P62B-000KK	Reducing flange SW ASTM A105 Class 150 ASME B16.5 RF	
1	1.5	0.75		XS	P62B-000KP	Reducing flange SW ASTM A105 Class 150 ASME B16.5 RF	
1	2	0.75		XS	P62B-000NC	Reducing flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	2	1		XS	P62B-000K6	Reducing flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	2	1.5		XS	P62B-000K7	Reducing flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	3	1.5		XS	P62B-000JX	Reducing flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	3	2		XS	P62B-0006B	Reducing flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	4	2		XS	P62B-00098	Reducing flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	4	3		STD	P62B-0006D	Reducing flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	6	3		STD	P62B-000JY	Reducing flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	6	4		STD	P62B-000JZ	Reducing flange WN ASTM A105 Class 150 ASME B16.5 RF	

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REDUCING FLANGE (FR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	8	6		STD	P62B-0006E	Reducing flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	10	4		STD	P62B-000K0	Reducing flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	10	8		SCH20	P62B-000K1	Reducing flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	12	6		STD	P62B-000K2	Reducing flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	12	10		SCH20	P62B-000KR	Reducing flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	14	10		SCH20	P62B-000K3	Reducing flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	16	12		SCH20	P62B-000K4	Reducing flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	16	14		SCH20	P62B-000PG	Reducing flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	18	14		SCH20	P62B-000L9	Reducing flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	20	16		SCH20	P62B-000K5	Reducing flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	24	16		SCH20	P62B-000PT	Reducing flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	24	18		SCH20	P62B-00074	Reducing flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	24	20		STD	P62B-000LA	Reducing flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	30	24		STD	P62B-000LB	Reducing flange WN ASTM A105 Class 150 ASME B16.47 Series B RF	
1	36	30		STD	P62B-000LC	Reducing flange WN ASTM A105 Class 150 ASME B16.47 Series B RF	
1	42	36		XS	P62B-000LD	Reducing flange WN ASTM A105 Class 150 ASME B16.47 Series B RF	
1	48	42		XS	P62B-000LE	Reducing flange WN ASTM A105 Class 150 ASME B16.47 Series B RF	
1	56	48		XS	P62B-000M8	Reducing flange WN ASTM A105 Class 150 ASME B16.47 Series B RF	
781	6	4		STD	P62B-000R5	Reducing flange WN ASTM A105 Class 600 ASME B16.5 RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000L8	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000L9	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000LA	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000LB	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000LH	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000LL	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000LM	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	6				P73T-000LN	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	8				P73T-000LP	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	10				P73T-000LC	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	12				P73T-000LD	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	14				P73T-000LE	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	16				P73T-000LF	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	18				P73T-000LG	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	20				P73T-000LJ	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	24				P73T-000LK	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	30				P73T-000LT	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	36				P73T-000LW	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	42				P73T-000LZ	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	48				P73T-000M2	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	56				P73T-0024L	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	0.5				P73T-000FT	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	0.75				P73T-000FU	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	3				P73T-000G5	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

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GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
773	4				P73T-000G6	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	6				P73T-000G7	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	8				P73T-000G8	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	10				P73T-000FX	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	12				P73T-000FY	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	14				P73T-000FZ	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	16				P73T-000G0	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	18				P73T-000G1	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	20				P73T-000G3	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	24				P73T-000G4	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	30				P73T-000H9	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	36				P73T-000HC	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	42				P73T-000KM	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	48				P73T-000KR	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	6				P73T-000JN	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-16				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	18-24				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
1	30-42				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	48-56				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
773	0.5-10				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
773	12-48				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
781	6				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5	0.5			P83B-001H4	Jacketed check valve ASTM A105 Class 150 API 600-modified Flange ASME B16.5 RF Trim number 8 Lift-type Bolted cover Full jacketed	
1	2	1			P83C-003P7	Jacketed check valve ASTM A216 Grade WCB Class 150 API 600-modified Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover Full jacketed	
1	3	1.5			P83C-003P8	Jacketed check valve ASTM A216 Grade WCB Class 150 API 600-modified Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover Full jacketed	
1	4	3			P83C-003P9	Jacketed check valve ASTM A216 Grade WCB Class 150 API 600-modified Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover Full jacketed	
1	6	4			P83C-003PA	Jacketed check valve ASTM A216 Grade WCB Class 150 API 600-modified Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover Full jacketed	
1	8	6			P83C-003PB	Jacketed check valve ASTM A216 Grade WCB Class 150 API 600-modified Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover Full jacketed	
1	10	8			P83C-003PC	Jacketed check valve ASTM A216 Grade WCB Class 150 API 600-modified Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover Full jacketed	
1	12	10			P83C-003PD	Jacketed check valve ASTM A216 Grade WCB Class 150 API 600-modified Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover Full jacketed	
1	16	12			P83C-003PE	Jacketed check valve ASTM A216 Grade WCB Class 150 API 600-modified Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover Full jacketed	
1	18	14			P83C-003PF	Jacketed check valve ASTM A216 Grade WCB Class 150 API 600-modified Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover Full jacketed	
1	20	16			P83C-003PG	Jacketed check valve ASTM A216 Grade WCB Class 150 API 600-modified Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover Full jacketed	
1	24	18			P83C-003PH	Jacketed check valve ASTM A216 Grade WCB Class 150 API 600-modified Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover Full jacketed	

BUTTERFLY VALVE (H)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	30	24			P86C-002SE	Jacketed offset design butterfly valve ASTM A216 Grade WCB Class 150 API 609 Category B-modified Double flanged ASME B16.47-B RF Disc CS Seat Stellite-6 Trim 13Cr Triple eccentric design BG Gear operated Full jacketed	

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PLUG VALVE (PV)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5	0.5			P85B-0000J	Jacketed plug valve Short-pattern ASTM A105 Class 150 API 599 Flange ASME B16.5 RF Plug SS316 Seat PTFE Trim SS316 Nonlubricated taper plug BC-BG Wrench lever operated Regular port Full jacketed	
1	2	1			P85C-0007D	Jacketed plug valve Short-pattern ASTM A216 Grade WCB Class 150 API 599 Flange ASME B16.5 RF Plug SS316 Seat PTFE Trim SS316 Nonlubricated taper plug BC-BG Wrench lever operated Regular port Full jacketed	
1	3	1.5			P85C-0007E	Jacketed plug valve Short-pattern ASTM A216 Grade WCB Class 150 API 599 Flange ASME B16.5 RF Plug SS316 Seat PTFE Trim SS316 Nonlubricated taper plug BC-BG Wrench lever operated Regular port Full jacketed	
1	4	3			P85C-0007F	Jacketed plug valve Short-pattern ASTM A216 Grade WCB Class 150 API 599 Flange ASME B16.5 RF Plug SS316 Seat PTFE Trim SS316 Nonlubricated taper plug BC-BG Wrench lever operated Regular port Full jacketed	
1	6	4			P85C-0007H	Jacketed plug valve Short-pattern ASTM A216 Grade WCB Class 150 API 599 Flange ASME B16.5 RF Plug SS316 Seat PTFE Trim SS316 Nonlubricated taper plug BC-BG Gear operated Regular port Full jacketed	
1	8	6			P85C-0007J	Jacketed plug valve Short-pattern ASTM A216 Grade WCB Class 150 API 599 Flange ASME B16.5 RF Plug SS316 Seat PTFE Trim SS316 Nonlubricated taper plug BC-BG Gear operated Regular port Full jacketed	
1	10	8			P85C-0007K	Jacketed plug valve Short-pattern ASTM A216 Grade WCB Class 150 API 599 Flange ASME B16.5 RF Plug SS316 Seat PTFE Trim SS316 Nonlubricated taper plug BC-BG Gear operated Regular port Full jacketed	
1	12	10			P85C-0007L	Jacketed plug valve Short-pattern ASTM A216 Grade WCB Class 150 API 599 Flange ASME B16.5 RF Plug SS316 Seat PTFE Trim SS316 Nonlubricated taper plug BC-BG Gear operated Regular port Full jacketed	
1	16	12			P85C-0007S	Jacketed plug valve Regular-pattern ASTM A216 Grade WCB Class 150 API 599 Flange ASME B16.5 RF Plug SS316 Seat PTFE Trim SS316 Nonlubricated taper plug BC-BG Gear operated Regular port Full jacketed	
1	18	14			P85C-0007T	Jacketed plug valve Regular-pattern ASTM A216 Grade WCB Class 150 API 599 Flange ASME B16.5 RF Plug SS316 Seat PTFE Trim SS316 Nonlubricated taper plug BC-BG Gear operated Regular port Full jacketed	
1	20	16			P85C-0007U	Jacketed plug valve Regular-pattern ASTM A216 Grade WCB Class 150 API 599 Flange ASME B16.5 RF Plug SS316 Seat PTFE Trim SS316 Nonlubricated taper plug BC-BG Gear operated Regular port Full jacketed	
1	24	18			P85C-0007V	Jacketed plug valve Regular-pattern ASTM A216 Grade WCB Class 150 API 599 Flange ASME B16.5 RF Plug SS316 Seat PTFE Trim SS316 Nonlubricated taper plug BC-BG Gear operated Regular port Full jacketed	
1	30	24			P85C-0007M	Jacketed plug valve Regular-pattern ASTM A216 Grade WCB Class 150 API 599 Flange ASME B16.47-B RF Plug SS316 Seat PTFE Trim SS316 Nonlubricated taper plug BC-BG Gear operated Regular port Full jacketed	
1	36	30			P85C-0007N	Jacketed plug valve Regular-pattern ASTM A216 Grade WCB Class 150 API 599 Flange ASME B16.47-B RF Plug SS316 Seat PTFE Trim SS316 Nonlubricated taper plug BC-BG Gear operated Regular port Full jacketed	
1	42	36			P85C-0007P	Jacketed plug valve Regular-pattern ASTM A216 Grade WCB Class 150 API 599 Flange ASME B16.47-B RF Plug SS316 Seat PTFE Trim SS316 Nonlubricated taper plug BC-BG Gear operated Regular port Full jacketed	
1	48	42			P85C-0007R	Jacketed plug valve Regular-pattern ASTM A216 Grade WCB Class 150 API 599 Flange ASME B16.47-B RF Plug SS316 Seat PTFE Trim SS316 Nonlubricated taper plug BC-BG Gear operated Regular port Full jacketed	
4610	1.5	0.75			P85B-0000Y	Jacketed plug valve Short-pattern ASTM A105 Class 150 API 599 Flange ASME B16.5 RF Plug SS316 Seat PTFE Trim SS316 Nonlubricated taper plug BC-BG Wrench lever operated Regular port Full jacketed Type-10	
4611	3	2			P85C-000AS	Jacketed plug valve Short-pattern ASTM A216 Grade WCB Class 150 API 599 Flange ASME B16.5 RF Plug SS316 Seat PTFE Trim SS316 Nonlubricated taper plug BC-BG Wrench lever operated Regular port Full jacketed Type-10	
4612	3	2			P85C-000AT	Jacketed plug valve Short-pattern ASTM A216 Grade WCB Class 300 API 599 Flange ASME B16.5 RF Plug SS316 Seat PTFE Trim SS316 Nonlubricated taper plug BC-BG Wrench lever operated Regular port Full jacketed Type-10	

ORIFICE FLANGE (FO)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2		XS		P66B-0084B	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	3		STD		P66B-0084C	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	4		STD		P66B-0084D	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	6		STD		P66B-0084E	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	8		SCH20		P66B-0084F	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	10		SCH20		P66B-00848	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	12		SCH20		P66B-0084L	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	14		SCH20		P66B-0084A	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	16		SCH20		P66B-0083Y	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	18		SCH20		P66B-0084R	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	20		STD		P66B-0084S	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	24		STD		P66B-0085W	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
200	2		XS		P66B-00843	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	3		STD		P66B-00844	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	4		STD		P66B-00845	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	6		STD		P66B-00846	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	8		SCH20		P66B-00847	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	10		SCH20		P66B-00840	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	12		SCH20		P66B-0084P	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	14		SCH20		P66B-00842	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	16		SCH20		P66B-0083Z	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	18		SCH20		P66B-0084T	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	

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PIPING CLASS
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ORIFICE FLANGE (FO)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
200	20		STD		P66B-0084U	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	24		STD		P66B-0085X	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71B-0008A	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	0.75				P71B-0008B	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	1				P71B-0008C	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71B-0008D	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	2				P71B-0000P	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	3				P71B-0000N	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	4				P71B-0000M	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	6				P71B-0000L	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	8				P71B-0000R	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	10				P71B-0000K	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	12				P71B-0000J	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	

PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000AH	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	16				P72B-0000C	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	18				P72B-000AJ	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	20				P72B-000AK	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	24				P72B-000AL	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	30				P72B-000AM	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	36				P72B-000AN	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	42				P72B-000AP	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	48				P72B-000AR	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	

PADDLE SPACER (PS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000AT	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	16				P72B-0000B	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	18				P72B-000AU	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	20				P72B-000AV	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	24				P72B-000AW	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	30				P72B-000AX	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	36				P72B-000AY	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	42				P72B-000AZ	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	48				P72B-000B0	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	

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BOLT TABLE (B_A1APCM , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	60	P80S-003V2		
0.75	4	0.500	65	P80S-003V3		
1	4	0.500	70	P80S-003V4		
1.5	4	0.500	75	P80S-003V5		
2	4	0.625	85	P80S-003XE		
3	4	0.625	95	P80S-003XG		
4	8	0.625	95	P80S-003XG		
6	8	0.750	105	P80S-003XJ		
8	8	0.750	110	P80S-003XK		
10	12	0.875	120	P80S-00419		
12	12	0.875	120	P80S-00419		
14	12	1.000	135	P80S-0043E		
16	16	1.000	140	P80S-0043F		
18	16	1.125	150	P80S-0046K		
20	20	1.125	160	P80S-0046M		
24	20	1.250	175	P80S-004AG		
30	44	0.750	145	P80S-003ZK		
36	44	0.875	175	P80S-0041M		
42	48	1.000	190	P80S-0043T		
48	44	1.125	210	P80S-0046Z		
56	60	1.125	225	P80S-00472		

BOLT TABLE (B_A1APCM_773 , STUD ASME RF, OPTION CODE 773)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-003V4		
0.75	4	0.625	75	P80S-003XC		
1	4	0.625	80	P80S-003XD		
1.5	4	0.750	95	P80S-00414		
2	8	0.625	90	P80S-003XF		
3	8	0.750	110	P80S-003XK		
4	8	0.750	115	P80S-003XL		
6	12	0.750	125	P80S-003XN		
8	12	0.875	140	P80S-0041D		
10	16	1.000	160	P80S-0043K		
12	16	1.125	175	P80S-0046S		
14	20	1.125	180	P80S-0046T		
16	20	1.250	190	P80S-004AK		
18	24	1.250	200	P80S-004AM		
20	24	1.250	210	P80S-004AP		
24	24	1.500	235	P80S-003F8		
30	36	1.375	285	P80S-003EA		
36	32	1.625	320	P80S-005TT		
42	36	1.750	355	P80S-007B5		
48	40	1.875	380	P80S-008P4		
56	36	2.250	450			

BOLT TABLE (B_A1APCM_781 , STUD ASME RF, OPTION CODE 781)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	80			
0.75	4	0.625	90			
1	4	0.625	95			
1.5	4	0.750	110			
2	8	0.625	110			
3	8	0.750	130			
4	8	0.875	150			
6	12	1.000	175	P80S-0043P		
8	12	1.125	195			
10	16	1.250	250			
12	20	1.250	255			
14	20	1.375	270			
16	20	1.500	295			
18	20	1.625	320			
20	24	1.625	335			
24	24	1.875	380			
30	28	1.875	435			
36	28	2.250	510			
42	28	2.500	575			

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BOLT TABLE (B_A1APCM_781 , STUD ASME RF, OPTION CODE 781)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
48	32	2.750	635			
56	32	3.250	730			

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BRANCH TABLE (T_A1APCM)

RUN PIPE SIZE (in) \ BRANCH SIZE (in)	0.5	0.75	1	1.5	2	3	4	6	8	10	12	14	16	18	20	24	30	36	42	48	56
0.5	TS																				
0.75		TS																			
1		TR	TS																		
1.5		TR	TR	TS																	
2		L	TR	TR	TS																
3		L	L	TR	TR	TS															
4	L	L	L	L	TR	TR	TS														
6	L	L	L	L	L	TR	TR	TS													
8		L	L	L	L	L	TR	TR	TS												
10		L	L	L	L	L	TR	TR	TR	TS											
12		L	L	L	L	L	L	TR	TR	TR	TS										
14		L	L	L	L	L	L	TR	TR	TR	TR	TS									
16		L	L	L	L	L	L	TR	TR	TR	TR	TR	TS								
18		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TS							
20		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TR	TS						
24		L	L	L	L	L	L	L	9PD	TR	TR	TR	TR	TR	TR	TS					
30		L	L	L	L	L	L	L	9PD	TR	TR	TR	TR	TR	TR	TR	TS				
36		L	L	L	L	L	L	L	9PD	9PD	9PD	9PD	TR	TR	TR	TR	TR	TS			
42		L	L	L	L	L	L	L	9PD	9PD	9PD	9PD	TR	TR	TR	TR	TR	TR	TS		
48		L	L	L	L	L	L	L	9PD	9PD	9PD	9PD	9PD	9PD	9PD	TR	TR	TR	TR	TS	
56		L	L	L	L	L	L	L	9PD	9PD	9PD	9PD	9PD	9PD	9PD	9PD	TR	TR	TR	TR	TS

TR : REDUCING TEE
TS : STRAIGHT TEE
L : OUTLET
9PD : REINFORCING PAD 90 DEG

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PIPING CLASS

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Material	:	Killed CS
Rating	:	ASME CLASS 150
Flange Face	:	RF
C.A.(mm)	:	1.50
Gasket	:	Spiral Wound
Service	:	PROCESS - AIV / NON SOUR, NON CORROSIVE : / FLASHED CRUDE / STABILISED NAPHTHA / BLOWDOWN / ATMOSPHERIC VENT / HYDROCARBONS - WATER CONDENSATE / HYDROCARBONS - WATER VAPOUR / HYDROCARBONS / HOT WATER BLOWDOWN / NITROGEN / and other various services
Design Code	:	ASME B31.3
Heat Treatment	:	

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
2	USE OF SOFT SEATED BALL, PLUG AND BUTTERFLY VALVES SHALL BE LIMITED TO MAXIMUM OF 204DEGC (400DEGF)

DETAIL NOTES :

NO.	DESCRIPTION
999	HOLD ITEMS. ORDER PLACEMENT SHALL NOT BE DONE BEFORE RELEASING HOLD.

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
24	FULL PORT (Q)
200	WITH JACK SCREW (FO)
541	NPT(F) (CA)
714	SW - NPT(F) (V)
773	CLASS 300 (B,F,G)
781	CLASS 600 (B,F,G)
789	CLASS 900 (B,F,G)
797	CLASS 1500 (B,F,G)
4602	DISSIMILAR TYPE CHECK VALVE (XDP)

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PIPING CLASS
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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P01A-00143	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	0.75		XXS		P01A-0014D	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1		XXS		P01A-0014U	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1.5		XXS		P01A-00162	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	2		XXS		P01A-001R0	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	3		XXS		P01A-001SB	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	4		SCH160		P01A-001TN	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	6		SCH120		P01A-001VC	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	8		XS		P01A-000ZJ	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	10		XS		P01A-000Y2	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	12		XS		P01A-000YB	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	14		XS		P01A-000YJ	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	16		XS		P01A-000YS	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	18		XS		P01A-0043W	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE	
1	20		XS		P01A-00445	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE	
1	24		XS		P01A-0043X	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE	
1	30		XS		P01A-008MM	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE	
1	36		XS		P01A-0042K	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE	
1	42		XS		P01A-0043G	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE	
1	48		XS		P01A-0042L	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE	
1	52		12.70mm		P01A-00437	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE	
1	56		12.70mm		P01A-0042M	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE	
1	60		12.70mm		P01A-007GH	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE	
1	64		12.70mm		P01A-007GJ	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE	
1	68		14.27mm		P01A-008MN	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE	
1	72		14.27mm		P01A-008MP	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE	
1	76		15.88mm		P01A-008MR	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE	
1	80		15.88mm		P01A-007GM	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P02B-0002A	90 degree elbow ASTM A105 Class 9000 ASME B16.11 SW	
1	0.75				P02B-0002B	90 degree elbow ASTM A105 Class 9000 ASME B16.11 SW	
1	1				P02B-0002C	90 degree elbow ASTM A105 Class 9000 ASME B16.11 SW	
1	1.5				P02B-0002D	90 degree elbow ASTM A105 Class 9000 ASME B16.11 SW	
1	2		XXS		P02A-00111	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		XXS		P02A-002JA	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		SCH160		P02A-002JE	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		SCH120		P02A-000UB	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		XS		P02A-000DG	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	10		XS		P02A-000BN	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	12		XS		P02A-000BX	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	14		XS		P02A-000C7	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	16		XS		P02A-000CE	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	18		XS		P02A-000M9	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	20		XS		P02A-001JX	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	24		XS		P02A-000MB	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	30		XS		P02A-000D0	90 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius	
1	36		XS		P02A-000DH	90 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius	
1	42		XS		P02A-000FB	90 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius	
1	48		XS		P02A-0017R	90 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius	
1	52		12.70mm		P02A-002J0	90 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Long radius	
1	56		12.70mm		P02A-002HL	90 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Long radius	
1	60		12.70mm		P02A-003YH	90 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Long radius	
1	64		12.70mm		P02A-003YJ	90 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Long radius	
1	68		14.27mm		P02A-004F6	90 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Long radius	
1	72		14.27mm		P02A-004F7	90 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Long radius	
1	76		15.88mm		P02A-004F8	90 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Long radius	
1	80		15.88mm		P02A-003YM	90 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Long radius	

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PIPING CLASS
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45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P03B-00026	45 degree elbow ASTM A105 Class 9000 ASME B16.11 SW	
1	0.75				P03B-00027	45 degree elbow ASTM A105 Class 9000 ASME B16.11 SW	
1	1				P03B-00028	45 degree elbow ASTM A105 Class 9000 ASME B16.11 SW	
1	1.5				P03B-00029	45 degree elbow ASTM A105 Class 9000 ASME B16.11 SW	
1	2		XXS		P03A-000XH	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		XXS		P03A-002FU	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		SCH160		P03A-002FY	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		SCH120		P03A-000RD	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		XS		P03A-000BC	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	10		XS		P03A-000A3	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	12		XS		P03A-000A8	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	14		XS		P03A-000AF	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	16		XS		P03A-000AP	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	18		XS		P03A-001DZ	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	20		XS		P03A-001E0	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	24		XS		P03A-001E1	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	30		XS		P03A-000B5	45 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius	
1	36		XS		P03A-000BG	45 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius	
1	42		XS		P03A-000DB	45 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius	
1	48		XS		P03A-0013P	45 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius	
1	52		12.70mm		P03A-002FH	45 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Long radius	
1	56		12.70mm		P03A-002F4	45 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Long radius	
1	60		12.70mm		P03A-003W6	45 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Long radius	
1	64		12.70mm		P03A-003W7	45 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Long radius	
1	68		14.27mm		P03A-004CC	45 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Long radius	
1	72		14.27mm		P03A-004CD	45 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Long radius	
1	76		15.88mm		P03A-004CE	45 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Long radius	
1	80		15.88mm		P03A-003WA	45 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Long radius	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	XXS	XXS	P27A-006C9	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	SCH160	XXS	P27A-00747	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	SCH160	XXS	P27A-0074P	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	SCH120	XXS	P27A-00DJD	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	SCH120	SCH160	P27A-007PN	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	XS	SCH160	P27A-007WE	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	XS	SCH120	P27A-004KE	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	XS	SCH160	P27A-004PZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	XS	SCH120	P27A-004S9	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	XS	XS	P27A-001FR	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	XS	SCH120	P27A-004WC	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	XS	XS	P27A-001G5	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	XS	XS	P27A-001EA	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	XS	SCH120	P27A-0051M	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	XS	XS	P27A-001GE	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	XS	XS	P27A-001E9	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	XS	XS	P27A-001F1	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	XS	XS	P27A-001GV	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	XS	XS	P27A-001EN	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	XS	XS	P27A-001FN	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	XS	XS	P27A-001GF	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	10	XS	XS	P27A-00CKU	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	12	XS	XS	P27A-00CKV	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	14	XS	XS	P27A-00D56	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	16	XS	XS	P27A-001SK	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	12	XS	XS	P27A-00CKW	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	14	XS	XS	P27A-00D57	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	16	XS	XS	P27A-00BJS	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	20	18	XS	XS	P27A-00BJT	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	16	XS	XS	P27A-002KP	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	18	XS	XS	P27A-002A4	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	20	XS	XS	P27A-00CKX	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	20	XS	XS	P27A-00CKY	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	24	XS	XS	P27A-003NT	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	36	24	XS	XS	P27A-003NW	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	36	30	XS	XS	P27A-0019M	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	42	30	XS	XS	P27A-001MC	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	42	36	XS	XS	P27A-001M6	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	48	42	XS	XS	P27A-00BHA	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	52	30	12.70mm	XS	P27A-00J7D	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	52	36	12.70mm	XS	P27A-00J7E	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	52	42	12.70mm	XS	P27A-00J77	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	52	48	12.70mm	XS	P27A-00J78	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	56	36	12.70mm	XS	P27A-00BKD	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	56	42	12.70mm	XS	P27A-00J79	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	56	48	12.70mm	XS	P27A-00BKE	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	56	52	12.70mm	12.70mm	P27A-00J7F	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	60	36	12.70mm	XS	P27A-00H4H	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	60	42	12.70mm	XS	P27A-00J7G	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	60	48	12.70mm	XS	P27A-00F8R	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	60	52	12.70mm	12.70mm	P27A-00J7H	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	60	56	12.70mm	12.70mm	P27A-00J7J	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	64	42	12.70mm	XS	P27A-00J7K	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	64	48	12.70mm	XS	P27A-00F8J	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	64	52	12.70mm	12.70mm	P27A-00J7L	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	64	56	12.70mm	12.70mm	P27A-00J7A	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	64	60	12.70mm	12.70mm	P27A-00F8M	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	68	48	14.27mm	XS	P27A-00H4J	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	68	52	14.27mm	12.70mm	P27A-00J7M	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	68	56	14.27mm	12.70mm	P27A-00J7N	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	68	60	14.27mm	12.70mm	P27A-00H4M	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	68	64	14.27mm	12.70mm	P27A-00H4N	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	72	48	14.27mm	XS	P27A-00H4P	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	72	52	14.27mm	12.70mm	P27A-00J7P	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	72	56	14.27mm	12.70mm	P27A-00J7B	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	72	60	14.27mm	12.70mm	P27A-00H4T	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	72	64	14.27mm	12.70mm	P27A-00H4U	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	72	68	14.27mm	14.27mm	P27A-00H4V	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	76	52	15.88mm	12.70mm	P27A-00J7R	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	76	56	15.88mm	12.70mm	P27A-00J7C	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	76	60	15.88mm	12.70mm	P27A-00HKZ	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	76	64	15.88mm	12.70mm	P27A-00HL2	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	76	68	15.88mm	14.27mm	P27A-00HMH	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	76	72	15.88mm	14.27mm	P27A-00HMJ	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	80	56	15.88mm	12.70mm	P27A-00J7S	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	80	60	15.88mm	12.70mm	P27A-00F86	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	80	64	15.88mm	12.70mm	P27A-00F87	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	80	68	15.88mm	14.27mm	P27A-00H4W	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	80	72	15.88mm	14.27mm	P27A-00H4X	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	80	76	15.88mm	15.88mm	P27A-00HVN	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	XXS	XXS	P28A-008GE	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	SCH160	XXS	P28A-00AVE	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	SCH160	XXS	P28A-00AKB	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	SCH120	XXS	P28A-00AKC	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	6	4	SCH120	SCH160	P28A-00AKD	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	XS	SCH160	P28A-008J3	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	XS	SCH120	P28A-004KT	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	XS	SCH160	P28A-00FH2	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	XS	SCH120	P28A-00EUB	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	XS	XS	P28A-001GT	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	XS	SCH120	P28A-00AKK	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	XS	XS	P28A-001GW	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	XS	XS	P28A-001EP	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	XS	SCH120	P28A-00AKN	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	XS	XS	P28A-001H9	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	XS	XS	P28A-001EN	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	XS	XS	P28A-001FY	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	XS	XS	P28A-0018A	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	XS	XS	P28A-001F9	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	XS	XS	P28A-001GS	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	XS	XS	P28A-001H5	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	10	XS	XS	P28A-009K9	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	12	XS	XS	P28A-009KA	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	14	XS	XS	P28A-00A5K	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	16	XS	XS	P28A-001NJ	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	12	XS	XS	P28A-009KB	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	14	XS	XS	P28A-00A5L	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	16	XS	XS	P28A-008JR	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	18	XS	XS	P28A-008JS	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	16	XS	XS	P28A-002L4	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	18	XS	XS	P28A-002F4	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	20	XS	XS	P28A-009KC	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	20	XS	XS	P28A-009KD	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	24	XS	XS	P28A-003NL	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	36	24	XS	XS	P28A-003NP	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	36	30	XS	XS	P28A-0019M	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	42	30	XS	XS	P28A-001ME	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	42	36	XS	XS	P28A-001N0	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	48	42	XS	XS	P28A-008GJ	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	52	30	12.70mm	XS	P28A-00FHE	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	52	36	12.70mm	XS	P28A-00FHF	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	52	42	12.70mm	XS	P28A-00FH8	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	52	48	12.70mm	XS	P28A-00FH9	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	56	36	12.70mm	XS	P28A-008KN	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	56	42	12.70mm	XS	P28A-00FHA	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	56	48	12.70mm	XS	P28A-008KP	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	56	52	12.70mm	12.70mm	P28A-00FHG	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	60	36	12.70mm	XS	P28A-00EBR	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	60	42	12.70mm	XS	P28A-00FHH	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	60	48	12.70mm	XS	P28A-00CCM	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	60	52	12.70mm	12.70mm	P28A-00FHJ	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	60	56	12.70mm	12.70mm	P28A-00FHK	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	64	42	12.70mm	XS	P28A-00FHL	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	64	48	12.70mm	XS	P28A-00CCF	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	64	52	12.70mm	12.70mm	P28A-00FHM	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	64	56	12.70mm	12.70mm	P28A-00FHB	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	64	60	12.70mm	12.70mm	P28A-00CCJ	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	68	48	14.27mm	XS	P28A-00EBS	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	68	52	14.27mm	12.70mm	P28A-00FHN	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	68	56	14.27mm	12.70mm	P28A-00FHP	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	68	60	14.27mm	12.70mm	P28A-00EBV	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	68	64	14.27mm	12.70mm	P28A-00EBW	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	72	48	14.27mm	XS	P28A-00EBX	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	72	52	14.27mm	12.70mm	P28A-00FHR	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	72	56	14.27mm	12.70mm	P28A-00FHC	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	72	60	14.27mm	12.70mm	P28A-00EC0	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	72	64	14.27mm	12.70mm	P28A-00EC1	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	72	68	14.27mm	14.27mm	P28A-00EC2	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	76	52	15.88mm	12.70mm	P28A-00FHS	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	76	56	15.88mm	12.70mm	P28A-00FHD	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	76	60	15.88mm	12.70mm	P28A-00EX0	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	76	64	15.88mm	12.70mm	P28A-00EX1	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	76	68	15.88mm	14.27mm	P28A-00EX2	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	76	72	15.88mm	14.27mm	P28A-00EX3	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	80	56	15.88mm	12.70mm	P28A-00FHT	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	80	60	15.88mm	12.70mm	P28A-00CC2	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	80	64	15.88mm	12.70mm	P28A-00CC3	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	80	68	15.88mm	14.27mm	P28A-00EC3	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	80	72	15.88mm	14.27mm	P28A-00EC4	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	80	76	15.88mm	15.88mm	P28A-00F56	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P29B-0001K	Cap ASTM A105 Class 9000 ASME B16.11 SW	
1	0.75				P29B-0001L	Cap ASTM A105 Class 9000 ASME B16.11 SW	
1	1				P29B-0001M	Cap ASTM A105 Class 9000 ASME B16.11 SW	
1	1.5				P29B-0001N	Cap ASTM A105 Class 9000 ASME B16.11 SW	
1	2		XXS		P29A-000YP	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		XXS		P29A-000L4	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		SCH160		P29A-000LZ	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6		SCH120		P29A-000N4	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8		XS		P29A-000BL	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10		XS		P29A-000BD	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12		XS		P29A-000BJ	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14		XS		P29A-000BS	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16		XS		P29A-0009R	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18		XS		P29A-000DB	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20		XS		P29A-000VA	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24		XS		P29A-000R5	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	30		XS		P29A-000BP	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	36		XS		P29A-000A2	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	42		XS		P29A-000CW	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	48		XS		P29A-00136	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	52		12.70mm		P29A-001UC	Cap ASTM A234 Grade WPB Seamless ASME B16.9-modified BW	
1	56		12.70mm		P29A-001T9	Cap ASTM A234 Grade WPB Seamless ASME B16.9-modified BW	
1	60		12.70mm		P29A-003AY	Cap ASTM A234 Grade WPB Seamless ASME B16.9-modified BW	
1	64		12.70mm		P29A-003AZ	Cap ASTM A234 Grade WPB Seamless ASME B16.9-modified BW	
1	68		14.27mm		P29A-003S4	Cap ASTM A234 Grade WPB Seamless ASME B16.9-modified BW	
1	72		14.27mm		P29A-003S5	Cap ASTM A234 Grade WPB Seamless ASME B16.9-modified BW	
1	76		15.88mm		P29A-003S6	Cap ASTM A234 Grade WPB Seamless ASME B16.9-modified BW	
1	80		15.88mm		P29A-003B2	Cap ASTM A234 Grade WPB Seamless ASME B16.9-modified BW	
541	0.75				P29B-0000Y	Cap ASTM A105 Class 6000 ASME B16.11 NPT	
541	1				P29B-0000Z	Cap ASTM A105 Class 6000 ASME B16.11 NPT	
541	1.5				P29B-00010	Cap ASTM A105 Class 6000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P41A-000B9	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		XXS		P41A-000BA	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		XXS		P41A-000D8	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		XXS		P41A-000D9	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

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CON SWAGED NIPPLE (SNC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	XXS	XXS	P42A-00087	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	XXS	XXS	P42A-00088	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	XXS	XXS	P42A-0007Z	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	XXS	XXS	P42A-00089	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	XXS	XXS	P42A-00080	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	XXS	XXS	P42A-00081	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	XXS	XXS	P42A-000CB	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	XXS	XXS	P42A-000CC	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	XXS	XXS	P42A-0008J	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	XXS	XXS	P42A-0008K	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	XXS	XXS	P42A-00130	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	

ECC SWAGED NIPPLE (SNE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	XXS	XXS	P43A-0003X	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	XXS	XXS	P43A-0003Y	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	XXS	XXS	P43A-0003N	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	XXS	XXS	P43A-0003Z	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	XXS	XXS	P43A-0003P	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	XXS	XXS	P43A-0003R	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	XXS	XXS	P43A-00068	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	XXS	XXS	P43A-00069	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	XXS	XXS	P43A-00048	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	XXS	XXS	P43A-00049	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	XXS	XXS	P43A-000R9	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	

COUPLING (CPS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P47B-00026	Coupling ASTM A105 Class 9000 ASME B16.11 SW - SW	
1	0.75				P47B-00027	Coupling ASTM A105 Class 9000 ASME B16.11 SW - SW	
1	1				P47B-00028	Coupling ASTM A105 Class 9000 ASME B16.11 SW - SW	
1	1.5				P47B-00029	Coupling ASTM A105 Class 9000 ASME B16.11 SW - SW	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30B-0002D	Plug ASTM A105 ASME B16.11 NPT Round head	
1	0.75				P30B-0002E	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1				P30B-0002F	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1.5				P30B-0002G	Plug ASTM A105 ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P61B-002DA	Flange SW ASTM A105 Class 150 ASME B16.5 RF	
1	0.75		XXS		P61B-002DL	Flange SW ASTM A105 Class 150 ASME B16.5 RF	
1	1		XXS		P61B-002E0	Flange SW ASTM A105 Class 150 ASME B16.5 RF	
1	1.5		XXS		P61B-002EW	Flange SW ASTM A105 Class 150 ASME B16.5 RF	
1	2		XXS		P61B-003MH	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	3		XXS		P61B-0090A	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	4		SCH160		P61B-0090B	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	6		SCH120		P61B-003ML	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	8		XS		P61B-003JG	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	10		XS		P61B-003MD	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	12		XS		P61B-003ME	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	14		XS		P61B-003MF	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	16		XS		P61B-003MG	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	18		XS		P61B-002EZ	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	20		XS		P61B-003A7	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	24		XS		P61B-002F2	Flange WN ASTM A105 Class 150 ASME B16.5 RF	

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FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	30		XS		P61B-001SJ	Flange WN ASTM A105 Class 150 ASME B16.47 Series B RF	
1	36		XS		P61B-001UE	Flange WN ASTM A105 Class 150 ASME B16.47 Series B RF	
1	42		XS		P61B-001N1	Flange WN ASTM A105 Class 150 ASME B16.47 Series B RF	
1	48		XS		P61B-004CX	Flange WN ASTM A105 Class 150 ASME B16.47 Series B RF	
1	52		12.70mm		P61B-004D3	Flange WN ASTM A105 Class 150 ASME B16.47 Series B RF	
1	56		12.70mm		P61B-004DP	Flange WN ASTM A105 Class 150 ASME B16.47 Series B RF	
1	60		12.70mm		P61B-004EL	Flange WN ASTM A105 Class 150 ASME B16.47 Series B RF	
1	64		12.70mm		P61B-0093B	Flange WN ASTM A105 Class 150 Standard-drawing RF	
1	68		14.27mm		P61B-00BRY	Flange WN ASTM A105 Class 150 Standard-drawing RF	
1	72		14.27mm		P61B-00BRZ	Flange WN ASTM A105 Class 150 Standard-drawing RF	
1	76		15.88mm		P61B-00BS0	Flange WN ASTM A105 Class 150 Standard-drawing RF	
1	80		15.88mm		P61B-00ABC	Flange WN ASTM A105 Class 150 Standard-drawing RF	
773	0.5		XXS		P61B-001HD	Flange SW ASTM A105 Class 300 ASME B16.5 RF	
773	0.75		XXS		P61B-001E1	Flange SW ASTM A105 Class 300 ASME B16.5 RF	
773	1		XXS		P61B-001EG	Flange SW ASTM A105 Class 300 ASME B16.5 RF	
773	1.5		XXS		P61B-001F3	Flange SW ASTM A105 Class 300 ASME B16.5 RF	
773	2		XXS		P61B-003MS	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	3		XXS		P61B-0090D	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	4		SCH160		P61B-0068D	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	6		SCH120		P61B-003MV	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	8		XS		P61B-001FV	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	10		XS		P61B-001FD	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	12		XS		P61B-001FU	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	14		XS		P61B-001GR	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	16		XS		P61B-001HU	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	18		XS		P61B-001T0	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	20		XS		P61B-003A5	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	24		XS		P61B-002RA	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	30		XS		P61B-001KT	Flange WN ASTM A105 Class 300 ASME B16.47 Series B RF	
773	36		XS		P61B-001N6	Flange WN ASTM A105 Class 300 ASME B16.47 Series B RF	
773	42		XS		P61B-00673	Flange WN ASTM A105 Class 300 ASME B16.47 Series B RF	
773	48		XS		P61B-003TH	Flange WN ASTM A105 Class 300 ASME B16.47 Series B RF	
773	52		12.70mm		P61B-0065S	Flange WN ASTM A105 Class 300 ASME B16.47 Series B RF	
773	56		12.70mm		P61B-0064J	Flange WN ASTM A105 Class 300 ASME B16.47 Series B RF	
773	60		12.70mm		P61B-00ABE	Flange WN ASTM A105 Class 300 ASME B16.47 Series B RF	
781	0.5		XXS		P61B-002ZE	Flange SW ASTM A105 Class 600 ASME B16.5 RF	
781	0.75		XXS		P61B-002ZD	Flange SW ASTM A105 Class 600 ASME B16.5 RF	
781	1		XXS		P61B-002ZC	Flange SW ASTM A105 Class 600 ASME B16.5 RF	
781	1.5		XXS		P61B-002ZF	Flange SW ASTM A105 Class 600 ASME B16.5 RF	
781	2		XXS		P61B-003JR	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	3		XXS		P61B-0092V	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	4		SCH160		P61B-0068E	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	6		SCH120		P61B-005X9	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
789	3		XXS		P61B-00DGN	Flange WN ASTM A105 Class 900 ASME B16.5 RJ	
789	4		SCH160		P61B-00DGP	Flange WN ASTM A105 Class 900 ASME B16.5 RJ	
797	0.5		XXS		P61B-0068C	Flange SW ASTM A105 Class 1500 ASME B16.5 RJ	
797	0.75		XXS		P61B-00DGV	Flange SW ASTM A105 Class 1500 ASME B16.5 RJ	
797	1		XXS		P61B-00DGW	Flange SW ASTM A105 Class 1500 ASME B16.5 RJ	
797	1.5		XXS		P61B-00DGX	Flange SW ASTM A105 Class 1500 ASME B16.5 RJ	
797	2		XXS		P61B-0066U	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
797	3		XXS		P61B-0066V	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
797	4		SCH160		P61B-00671	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67B-000FH	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	0.75				P67B-000FJ	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	1				P67B-000FK	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	1.5				P67B-000FL	Blind flange ASTM A105 Class 150 ASME B16.5 RF	

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BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2				P67B-000FT	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	3				P67B-000FW	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	4				P67B-000FX	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	6				P67B-000FY	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	8				P67B-000FZ	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	10				P67B-000FM	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	12				P67B-000FN	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	14				P67B-000FP	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	16				P67B-000FR	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	18				P67B-000FS	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	20				P67B-000FU	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	24				P67B-000FV	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	30				P67B-000G2	Blind flange ASTM A105 Class 150 ASME B16.47 Series B RF	
1	36				P67B-000G5	Blind flange ASTM A105 Class 150 ASME B16.47 Series B RF	
1	42				P67B-000KZ	Blind flange ASTM A105 Class 150 ASME B16.47 Series B RF	
1	48				P67B-000L2	Blind flange ASTM A105 Class 150 ASME B16.47 Series B RF	
1	52				P67B-0016N	Blind flange ASTM A105 Class 150 ASME B16.47 Series B RF	
1	56				P67B-0016R	Blind flange ASTM A105 Class 150 ASME B16.47 Series B RF	
1	60				P67B-0016T	Blind flange ASTM A105 Class 150 ASME B16.47 Series B RF	
1	64				P67B-0016V	Blind flange ASTM A105 Class 150 Standard-drawing RF	
1	68				P67B-0016X	Blind flange ASTM A105 Class 150 Standard-drawing RF	
1	72				P67B-00178	Blind flange ASTM A105 Class 150 Standard-drawing RF	
1	76				P67B-0017A	Blind flange ASTM A105 Class 150 Standard-drawing RF	
1	80				P67B-0017C	Blind flange ASTM A105 Class 150 Standard-drawing RF	

REDUCING FLANGE (FR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5		XXS	P62B-000C6	Reducing flange SW ASTM A105 Class 150 ASME B16.5 RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000L8	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000L9	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000LA	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000LB	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000LH	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000LL	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000LM	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	6				P73T-000LN	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	8				P73T-000LP	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	10				P73T-000LC	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	12				P73T-000LD	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	14				P73T-000LE	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	16				P73T-000LF	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	18				P73T-000LG	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	20				P73T-000LJ	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	24				P73T-000LK	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	30				P73T-000LT	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	36				P73T-000LW	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	42				P73T-000LZ	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	48				P73T-000M2	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	52				P73T-001E2	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	

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GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	56				P73T-0024L	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	60				P73T-001E5	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	64				P73T-003GZ	Spiral wound gasket SS316 winding / Graphite filler Class 150 Standard-drawing Flange Standard-drawing RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	68				P73T-003H0	Spiral wound gasket SS316 winding / Graphite filler Class 150 Standard-drawing Flange Standard-drawing RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	72				P73T-003H1	Spiral wound gasket SS316 winding / Graphite filler Class 150 Standard-drawing Flange Standard-drawing RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	76				P73T-003H2	Spiral wound gasket SS316 winding / Graphite filler Class 150 Standard-drawing Flange Standard-drawing RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	80				P73T-003H3	Spiral wound gasket SS316 winding / Graphite filler Class 150 Standard-drawing Flange Standard-drawing RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	0.5				P73T-000FT	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	0.75				P73T-000FU	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	3				P73T-000G5	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	4				P73T-000G6	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	6				P73T-000G7	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	8				P73T-000G8	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	10				P73T-000FX	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	12				P73T-000FY	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	14				P73T-000FZ	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	16				P73T-000G0	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	18				P73T-000G1	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	20				P73T-000G3	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	24				P73T-000G4	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	30				P73T-000H9	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	36				P73T-000HC	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	42				P73T-000KM	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	48				P73T-000KR	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	52				P73T-0024N	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	56				P73T-0024M	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	60				P73T-0026H	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	0.5				P73T-000J8	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	0.75				P73T-000J9	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1				P73T-000JA	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1.5				P73T-000JB	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	2				P73T-000JH	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	3				P73T-000JL	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	4				P73T-000JM	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	6				P73T-000JN	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
789	3				P75T-000JN	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	4				P75T-000JP	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	0.5				P75T-000JT	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	0.75				P75T-000JU	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	1				P75T-000JV	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	1.5				P75T-000JW	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	2				P75T-0008A	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	3				P75T-0008E	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	

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GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
797	4				P75T-0008D	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-16				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	18-20				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
1	24				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	999
1	30-42				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	48-56				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
1	60-80				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	999
773	0.5-10				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
773	12-60				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
781	0.5-6				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
789	0.5-3				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
789	4-6				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
797	0.5-2				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
797	3-4				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81B-0035Z	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated AIV service	
1	0.75				P81B-00360	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated AIV service	
1	1				P81B-00361	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated AIV service	
1	1.5				P81B-00362	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated AIV service	
1	2				P81C-009VS	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated AIV service	
1	3				P81C-009VT	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated AIV service	
1	4				P81C-009VU	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated AIV service	
1	6				P81C-009VV	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated AIV service	
1	8				P81C-009VW	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated AIV service	
1	10				P81C-009VP	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated AIV service	
1	12				P81C-009VR	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated AIV service	
1	14				P81C-009VJ	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated AIV service	
1	16				P81C-009VK	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated AIV service	
1	18				P81C-009VL	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated AIV service	
1	20				P81C-009VM	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated AIV service	
1	24				P81C-009VN	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated AIV service	
1	30				P81C-009VE	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.47-B RF Trim number 8 BB-BG-OS&Y Gear operated AIV service	
1	36				P81C-009VF	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.47-B RF Trim number 8 BB-BG-OS&Y Gear operated AIV service	
1	42				P81C-009VG	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.47-B RF Trim number 8 BB-BG-OS&Y Gear operated AIV service	
1	48				P81C-009VH	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.47-B RF Trim number 8 BB-BG-OS&Y Gear operated AIV service	
714	0.5				P81B-00363	Gate valve ASTM A105 Class 800 API 602 SW - NPT Trim number 8 BB-BG-OS&Y Handwheel operated AIV service	
714	0.75				P81B-00364	Gate valve ASTM A105 Class 800 API 602 SW - NPT Trim number 8 BB-BG-OS&Y Handwheel operated AIV service	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82B-00263	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated AIV service	

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GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75				P82B-00264	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated AIV service	
1	1				P82B-00265	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated AIV service	
1	1.5				P82B-00266	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated AIV service	
1	2				P82C-004KM	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated AIV service	
1	3				P82C-004KN	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated AIV service	
1	4				P82C-004KP	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated AIV service	
1	6				P82C-004KR	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated AIV service	
1	8				P82C-004KS	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated AIV service	
1	10				P82C-004KL	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated AIV service	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83B-001LU	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover AIV service	
1	0.75				P83B-001LV	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover AIV service	
1	1				P83B-001LW	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover AIV service	
1	1.5				P83B-001LX	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover AIV service	
1	2				P83C-004DF	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover AIV service	
1	3				P83C-004DJ	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover AIV service	
1	4				P83C-004DK	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover AIV service	
1	6				P83C-004DL	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover AIV service	
1	8				P83C-004DM	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover AIV service	
1	10				P83C-004DA	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover AIV service	
1	12				P83C-004DB	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover AIV service	
1	14				P83C-004DC	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover AIV service	
1	16				P83C-004DD	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover AIV service	
1	18				P83C-004DE	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover AIV service	
1	20				P83C-004DG	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover AIV service	
1	24				P83C-004DH	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover AIV service	

DP CHECK VALVE (XDP)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	30				P88C-003YH	Dual plate check valve ASTM A216 Grade WCB Class 150 API 594 Wafer-type ASME B16.47-B RF Trim number 8 Internal wetted parts 13Cr Spring Inconel Retainerless-type AIV service	
1	36				P88C-003YJ	Dual plate check valve ASTM A216 Grade WCB Class 150 API 594 Wafer-type ASME B16.47-B RF Trim number 8 Internal wetted parts 13Cr Spring Inconel Retainerless-type AIV service	
1	42				P88C-003YK	Dual plate check valve ASTM A216 Grade WCB Class 150 API 594 Wafer-type ASME B16.47-B RF Trim number 8 Internal wetted parts 13Cr Spring Inconel Retainerless-type AIV service	
1	48				P88C-003YL	Dual plate check valve ASTM A216 Grade WCB Class 150 API 594 Wafer-type ASME B16.47-B RF Trim number 8 Internal wetted parts 13Cr Spring Inconel Retainerless-type AIV service	
1	52				P88C-003YN	Dual plate check valve ASTM A216 Grade WCB Class 150 Manufacturer-standard Wafer-type ASME B16.47-B RF Trim number 8 Internal wetted parts 13Cr Spring Inconel Retainerless-type AIV service	
1	56				P88C-003YP	Dual plate check valve ASTM A216 Grade WCB Class 150 Manufacturer-standard Wafer-type ASME B16.47-B RF Trim number 8 Internal wetted parts 13Cr Spring Inconel Retainerless-type AIV service	
4602	12				P88C-003YM	Dual plate check valve ASTM A216 Grade WCB Class 150 API 594 Wafer-type ASME B16.5 RF Trim number 8 Internal wetted parts 13Cr Spring Inconel Retainerless-type AIV service	

BALL VALVE (Q)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P84B-001RW	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design AIV service	
1	0.75				P84B-001RX	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design AIV service	
1	1				P84B-001RY	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design AIV service	
1	1.5				P84B-001RZ	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design AIV service	
1	2				P84C-008NB	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design AIV service	

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BALL VALVE (Q)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
24	0.5				P84B-001RS	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design AIV service	
24	0.75				P84B-001RT	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design AIV service	
24	1				P84B-001RU	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design AIV service	
24	1.5				P84B-001RV	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design AIV service	
24	2				P84C-008NA	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design AIV service	

BUTTERFLY VALVE (H)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	10				P86C-002SL	Offset design butterfly valve ASTM A216 Grade WCB Class 150 API 609 Category B Lug-type ASME B16.5 RF Disc CS Seat Stellite-6 Trim 13Cr Triple eccentric design BG Gear operated AIV service	
1	12				P86C-002SM	Offset design butterfly valve ASTM A216 Grade WCB Class 150 API 609 Category B Lug-type ASME B16.5 RF Disc CS Seat Stellite-6 Trim 13Cr Triple eccentric design BG Gear operated AIV service	
1	14				P86C-002SN	Offset design butterfly valve ASTM A216 Grade WCB Class 150 API 609 Category B Lug-type ASME B16.5 RF Disc CS Seat Stellite-6 Trim 13Cr Triple eccentric design BG Gear operated AIV service	
1	16				P86C-002SP	Offset design butterfly valve ASTM A216 Grade WCB Class 150 API 609 Category B Lug-type ASME B16.5 RF Disc CS Seat Stellite-6 Trim 13Cr Triple eccentric design BG Gear operated AIV service	
1	18				P86C-002SR	Offset design butterfly valve ASTM A216 Grade WCB Class 150 API 609 Category B Lug-type ASME B16.5 RF Disc CS Seat Stellite-6 Trim 13Cr Triple eccentric design BG Gear operated AIV service	
1	20				P86C-002SJ	Offset design butterfly valve ASTM A216 Grade WCB Class 150 API 609 Category B Double flanged ASME B16.5 RF Disc CS Seat Stellite-6 Trim 13Cr Triple eccentric design BG Gear operated AIV service	
1	24				P86C-002SK	Offset design butterfly valve ASTM A216 Grade WCB Class 150 API 609 Category B Double flanged ASME B16.5 RF Disc CS Seat Stellite-6 Trim 13Cr Triple eccentric design BG Gear operated AIV service	
1	30				P86C-002SH	Offset design butterfly valve ASTM A216 Grade WCB Class 150 API 609 Category B Double flanged ASME B16.47-B RF Disc CS Seat Stellite-6 Trim 13Cr Triple eccentric design BG Gear operated AIV service	

ORIFICE FLANGE (FO)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2		XXS		P66B-008P8	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	3		XXS		P66B-008P9	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	4		SCH160		P66B-008PA	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	6		SCH120		P66B-008PB	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	8		XS		P66B-008DS	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	10		XS		P66B-00884	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	12		XS		P66B-008P6	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	14		XS		P66B-008P7	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	16		XS		P66B-00887	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
200	2		XXS		P66B-008PE	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	3		XXS		P66B-008PF	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	4		SCH160		P66B-008PG	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	6		SCH120		P66B-008PH	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	8		XS		P66B-008DW	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	10		XS		P66B-0088J	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	12		XS		P66B-008PC	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	14		XS		P66B-008PD	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	16		XS		P66B-0088M	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71B-0008A	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	0.75				P71B-0008B	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	1				P71B-0008C	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71B-0008D	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	2				P71B-0000P	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	3				P71B-0000N	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	4				P71B-0000M	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	6				P71B-0000L	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	8				P71B-0000R	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	10				P71B-0000K	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	12				P71B-0000J	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	

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PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000AH	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	16				P72B-0000C	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	18				P72B-000AJ	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	20				P72B-000AK	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	24				P72B-000AL	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	30				P72B-000AM	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	36				P72B-000AN	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	42				P72B-000AP	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	48				P72B-000AR	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	52				P72B-000AS	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	56				P72B-000BC	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	60				P72B-000BD	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	64				P72B-000BE	Paddle blank ASTM A105 Class 150 Standard-drawing Flange Standard-drawing RF	
1	68				P72B-000BF	Paddle blank ASTM A105 Class 150 Standard-drawing Flange Standard-drawing RF	
1	72				P72B-000BG	Paddle blank ASTM A105 Class 150 Standard-drawing Flange Standard-drawing RF	
1	76				P72B-000TU	Paddle blank ASTM A105 Class 150 Standard-drawing Flange Standard-drawing RF	
1	80				P72B-000BH	Paddle blank ASTM A105 Class 150 Standard-drawing Flange Standard-drawing RF	

PADDLE SPACER (PS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000AT	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	16				P72B-0000B	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	18				P72B-000AU	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	20				P72B-000AV	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	24				P72B-000AW	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	30				P72B-000AX	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	36				P72B-000AY	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	42				P72B-000AZ	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	48				P72B-000B0	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	52				P72B-000B1	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	56				P72B-000BJ	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	60				P72B-000BK	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	64				P72B-000BL	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange Standard-drawing RF	
1	68				P72B-000BM	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange Standard-drawing RF	
1	72				P72B-000BN	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange Standard-drawing RF	
1	76				P72B-000TV	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange Standard-drawing RF	
1	80				P72B-000BP	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange Standard-drawing RF	

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BOLT TABLE (B_A1APVV , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	60	P80S-003V2		
0.75	4	0.500	65	P80S-003V3		
1	4	0.500	70	P80S-003V4		
1.5	4	0.500	75	P80S-003V5		
2	4	0.625	85	P80S-003XE		
3	4	0.625	95	P80S-003XG		
4	8	0.625	95	P80S-003XG		
6	8	0.750	105	P80S-003XJ		
8	8	0.750	110	P80S-003XK		
10	12	0.875	120	P80S-00419		
12	12	0.875	120	P80S-00419		
14	12	1.000	135	P80S-0043E		
16	16	1.000	140	P80S-0043F		
18	16	1.125	150	P80S-0046K		
20	20	1.125	160	P80S-0046M		
24	20	1.250	175	P80S-004AG		
30	44	0.750	145	P80S-003ZK		
36	44	0.875	175	P80S-0041M		
42	48	1.000	190	P80S-0043T		
48	44	1.125	210	P80S-0046Z		
52	52	1.125	220	P80S-00471		
56	60	1.125	225	P80S-00472		
60	52	1.250	240	P80S-004AW		
64	52	1.250	280	P80S-004B4		
68	52	1.250	290	P80S-004B6		
72	52	1.250	300	P80S-004DL		
76	52	1.250	310	P80S-004CW		
80	52	1.250	320	P80S-004CY		

BOLT TABLE (B_A1APVV_773 , STUD ASME RF, OPTION CODE 773)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-003V4		
0.75	4	0.625	75	P80S-003XC		
1	4	0.625	80	P80S-003XD		
1.5	4	0.750	95	P80S-00414		
2	8	0.625	90	P80S-003XF		
3	8	0.750	110	P80S-003XK		
4	8	0.750	115	P80S-003XL		
6	12	0.750	125	P80S-003XN		
8	12	0.875	140	P80S-0041D		
10	16	1.000	160	P80S-0043K		
12	16	1.125	175	P80S-0046S		
14	20	1.125	180	P80S-0046T		
16	20	1.250	190	P80S-004AK		
18	24	1.250	200	P80S-004AM		
20	24	1.250	210	P80S-004AP		
24	24	1.500	235	P80S-003F8		
30	36	1.375	285	P80S-003EA		
36	32	1.625	320	P80S-005TT		
42	36	1.750	355	P80S-007B5		
48	40	1.875	380	P80S-008P4		
52	48	1.875	410	P80S-008PA		
56	36	2.250	450	P80S-00P4T		
60	40	2.250	445	P80S-00P4U		

BOLT TABLE (B_A1APVV_781 , STUD ASME RF, OPTION CODE 781)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	80	P80S-003V6		
0.75	4	0.625	90	P80S-003XF		
1	4	0.625	95	P80S-003XG		
1.5	4	0.750	110	P80S-003XK		
2	8	0.625	110	P80S-003VC		
3	8	0.750	130	P80S-003XP		
4	8	0.875	150	P80S-0041F		
6	12	1.000	175	P80S-0043P		
8	12	1.125	195			
10	16	1.250	250			

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BOLT TABLE (B_A1APVV_781 , STUD ASME RF, OPTION CODE 781)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
12	20	1.250	255			
14	20	1.375	270			
16	20	1.500	295			
18	20	1.625	320			
20	24	1.625	335			
24	24	1.875	380			
30	28	1.875	435			
36	28	2.250	510			
42	28	2.500	575			
48	32	2.750	635			
52	32	3.000	680			
56	32	3.250	730			
60	28	3.500	780			
64			0			
68			0			
72			0			
76			0			
80			0			

BOLT TABLE (B_A1APVV_789 , STUD ASME RJ, OPTION CODE 789)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	110	P80S-003XK	R12	
0.75	4	0.750	115	P80S-003XL	R14	
1	4	0.875	130	P80S-0041B	R16	
1.5	4	1.000	140	P80S-0043F	R20	
2	8	0.875	150	P80S-0041F	R24	
3	8	0.875	150	P80S-0041F	R31	P75T-000JN
4	8	1.125	175	P80S-0046S	R37	P75T-000JP
6	12	1.125	200	P80S-0046X	R45	
8	12	1.375	260		R49	
10	16	1.375	275		R53	
12	20	1.375	295		R57	
14	20	1.500	325		R62	
16	20	1.625	340		R66	
18	20	1.875	390		R70	
20	20	2.000	415		R74	
24	20	2.500	525		R78	
30	20	3.000	600		R102	
36	20	3.500	690		R105	

BOLT TABLE (B_A1APVV_797 , STUD ASME RJ, OPTION CODE 797)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	110	P80S-003XK	R12	P75T-000JT
0.75	4	0.750	115	P80S-003XL	R14	P75T-000JU
1	4	0.875	130	P80S-0041B	R16	P75T-000JV
1.5	4	1.000	140	P80S-0043F	R20	P75T-000JW
2	8	0.875	150	P80S-0041F	R24	P75T-0008A
3	8	1.125	180	P80S-0046T	R35	P75T-0008E
4	8	1.250	230	P80S-004AU	R39	P75T-0008D
6	12	1.375	300		R46	
8	12	1.625	345		R50	
10	12	1.875	395		R54	
12	16	2.000	445		R58	
14	16	2.250	490		R63	
16	16	2.500	540		R67	
18	16	2.750	590		R71	
20	16	3.000	650		R75	
24	16	3.500	745		R79	

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BRANCH TABLE (T_A1APVV)

RUN PIPE SIZE (in) \ BRANCH SIZE (in)	0.5	0.75	1	1.5	2	3	4	6	8	10	12	14	16	18	20	24	30	36	42	48	52	56	60	64	68	72	76	80
0.5	TS																											
0.75		TS																										
1		TR	TS																									
1.5		TR	TR	TS																								
2		L	TR	TR	TS																							
3		L	L	TR	TR	TS																						
4	L	L	L	L	TR	TR	TS																					
6	L	L	L	L	L	TR	TR	TS																				
8		L	L	L	L	L	TR	TR	TS																			
10		L	L	L	L	L	TR	TR	TR	TS																		
12		L	L	L	L	L	L	TR	TR	TR	TS																	
14		L	L	L	L	L	L	TR	TR	TR	TR	TS																
16		L	L	L	L	L	L	TR	TR	TR	TR	TR	TS															
18		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TS														
20		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TR	TS													
24		L	L	L	L	L	L	L	9PD	TR	TR	TR	TR	TR	TR	TS												
30		L	L	L	L	L	L	L	9PD	TR	TR	TR	TR	TR	TR	TR	TS											
36		L	L	L	L	L	L	L	9PD	9PD	9PD	9PD	TR	TR	TR	TR	TR	TS										
42		L	L	L	L	L	L	L	9PD	9PD	9PD	9PD	TR	TR	TR	TR	TR	TR	TS									
48		L	L	L	L	L	L	L	9PD	9PD	9PD	9PD	9PD	9PD	9PD	TR	TR	TR	TR	TS								
52		L	L	L	L	L	L	L	9PD	9PD	9PD	9PD	9PD	9PD	9PD	9PD	TR	TR	TR	TR	TS							
56		L	L	L	L	L	L	L	9PD	9PD	9PD	9PD	9PD	9PD	9PD	9PD	TR	TR	TR	TR	TR	TS						
60		L	L	L	L	L	L	L	9PD	9PD	9PD	9PD	9PD	9PD	9PD	9PD	TR	TR	TR	TR	TR	TR	TS					
64		L	L	L	L	L	L	L	9PD	9PD	9PD	9PD	9PD	9PD	9PD	9PD	9PD	TR	TR	TR	TR	TR	TR	TS				
68		L	L	L	L	L	L	L	9PD	9PD	9PD	9PD	9PD	9PD	9PD	9PD	9PD	TR	TR	TR	TR	TR	TR	TR	TS			
72		L	L	L	L	L	L	L	9PD	9PD	9PD	9PD	9PD	9PD	9PD	9PD	9PD	TR	TR	TR	TR	TR	TR	TR	TR	TS		
76		L	L	L	L	L	L	L	9PD	9PD	9PD	9PD	9PD	9PD	9PD	9PD	9PD	9PD	TR	TR	TR	TR	TR	TR	TR	TR	TS	
80		L	L	L	L	L	L	L	9PD	9PD	9PD	9PD	9PD	9PD	9PD	9PD	9PD	9PD	TR	TR	TR	TR	TR	TR	TR	TR	TR	TS

9PD : REINFORCING PAD 90 DEG
TS : STRAIGHT TEE
L : OUTLET
TR : REDUCING TEE

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BRANCH TABLE (T_A1APVV_3)

RUN PIPE SIZE (in) \ BRANCH SIZE (in)	0.5	0.75	1	1.5	2	3	4	6	8	10	12	14	16	18	20	24	30	36	42	48	52	56	60	64	68	72	76	80
0.5																												
0.75		TLS																										
1		6FP	TLS																									
1.5		6FP	6FP	TLS																								
2		6FP	6FP	6FP	TLS																							
3		6FP	6FP	6FP	6FP	TLS																						
4		6FP	6FP	6FP	6FP	6FP	TLS																					
6		6FP	6FP	6FP	6FP	6FP	6FP	TLS																				
8		6FP	6FP	6FP	6FP	6FP	6FP	6FP	TLS																			
10		6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	TLS																		
12		6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	TLS																	
14		6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	TLS																
16		6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	TLS															
18		6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	TLS														
20		6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	TLS													
24		6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	TLS												
30		6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	TLS											
36		6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	TLS										
42		6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	TLS									
48		6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	TLS								
52		6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	TLS							
56		6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	TLS						
60		6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	TLS					
64		6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	TLS				
68		6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	TLS			
72		6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	TLS		
76		6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	TLS	
80		6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	TLS

TLS : STRAIGHT LATERAL TEE
6FP : FULL PAD 60 DEG

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PIPING CLASS

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Material : Killed CS
Rating : ASME CLASS 150
Flange Face : RF
C.A.(mm) : 1.50
Gasket : Spiral Wound
Service : PROCESS -WET SOUR SERVICE SUBJECT TO NACE STD. : / DHT STRIPPER RECYCLE PUMP SUCTION
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
2	USE OF SOFT SEATED BALL, PLUG AND BUTTERFLY VALVES SHALL BE LIMITED TO MAXIMUM OF 204DEGC (400DEGF)
5	BOLTING CONFIRMING TO B7M / 2HM SHALL BE USED UNDER CONDITIONS (A) DIRECT EXPOSURE TO SOUR ENVIRONMENTS (B) WHEN THE BOLTING WILL BE BURIED OR INSULATED
27	PWHT OF CARBON STEEL PIPING IN WET H2S, CAUSTIC AND AMINE SERVICES SHALL BE IN ACCORDANCE WITH SECTION 10.2, 10.3, AND 10.4 OF PROJECT SPECIFICATION 3550-8440-SP-0002 MATERIALS REQUIREMENTS FOR PRESSURISED EQUIPMENT AND PIPING. FOR CAUSTIC AND AMINE SERVICE THE FOLLOWING SHALL APPLY: - PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF ALL SITE PIPING FABRICATION WELDS IS REQUIRED FOR ALL WALL THICKNESSES. FOR MODERATE AND SEVERE WET H2S SERVICE THE FOLLOWING SHALL APPLY: PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF SITE FABRICATION CIRCUMFERENTIAL OR BRANCH WELDS IS NOT REQUIRED IF WELDS ARE MULTIPASS AND IN ACCORDANCE WITH PARA 10.2.12 OF PROJECT SPECIFICATION 3550-8440-SP-0002. FOR SERVICES MEETING THE WET H2S CRITERIA AND CAUSTIC OR AMINE CRITERIA THE MORE STRINGENT PWHT REQUIREMENT SHALL GOVERN.

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
24	FULL PORT (Q)
541	NPT(F) (CA,F,L)
773	CLASS 300 (B,F,G)
4608	VALVE WITH NIPPLES (V)

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PIPING CLASS
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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P01A-000XM	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	0.75		XS		P01A-000XN	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1		XS		P01A-000XP	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1.5		XS		P01A-000XV	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	2		XS		P01A-000YX	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	3		STD		P01A-000YM	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	4		STD		P01A-000YU	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	6		STD		P01A-000Z3	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	8		SCH20		P01A-001AT	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	10		SCH20		P01A-0014Y	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	12		SCH20		P01A-0016H	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	14		SCH20		P01A-0017A	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	16		SCH20		P01A-0018E	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	18		SCH20		P01A-00370	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	20		STD		P01A-002CC	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	24		STD		P01A-002CD	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	30		SCH10		P01A-007BY	Pipe ASTM A671 Grade CC60 Class 22 EFW ASME B36.10M/B36.19M BE Moderate wet H2S service	
1	36		SCH10		P01A-007GN	Pipe ASTM A671 Grade CC60 Class 22 EFW ASME B36.10M/B36.19M BE Moderate wet H2S service	
1	42		STD		P01A-007GP	Pipe ASTM A671 Grade CC60 Class 22 EFW ASME B36.10M/B36.19M BE Moderate wet H2S service	
1	48		XS		P01A-007GR	Pipe ASTM A671 Grade CC60 Class 22 EFW ASME B36.10M/B36.19M BE Moderate wet H2S service	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P02A-000UR	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	0.75		XS		P02A-000UN	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1		XS		P02A-000UL	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1.5		XS		P02A-000UJ	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	2		XS		P02A-000CP	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		STD		P02A-000CU	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		STD		P02A-000CZ	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		STD		P02A-000D6	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		SCH20		P02A-000GZ	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	10		SCH20		P02A-000H1	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	12		SCH20		P02A-000H4	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	14		SCH20		P02A-000FX	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	16		SCH20		P02A-000GM	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	18		SCH20		P02A-000LT	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	20		STD		P02A-0010J	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	24		STD		P02A-0010K	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	30		SCH10		P02A-003U7	90 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius Moderate wet H2S service	
1	36		SCH10		P02A-003YR	90 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius Moderate wet H2S service	
1	42		STD		P02A-003YS	90 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius Moderate wet H2S service	
1	48		XS		P02A-003YT	90 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius Moderate wet H2S service	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P03A-0018K	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	0.75		XS		P03A-0018L	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1		XS		P03A-0018M	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1.5		XS		P03A-0018N	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	2		XS		P03A-000AS	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		STD		P03A-000AX	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		STD		P03A-000B1	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		STD		P03A-000B9	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		SCH20		P03A-000EX	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	10		SCH20		P03A-000F0	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	12		SCH20		P03A-000F2	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	14		SCH20		P03A-000DW	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	16		SCH20		P03A-000EM	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

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45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	18		SCH20		P03A-001DX	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	20		STD		P03A-000X1	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	24		STD		P03A-000X2	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	30		SCH10		P03A-003RW	45 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius Moderate wet H2S service	
1	36		SCH10		P03A-003WD	45 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius Moderate wet H2S service	
1	42		STD		P03A-003WE	45 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius Moderate wet H2S service	
1	48		XS		P03A-003WF	45 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius Moderate wet H2S service	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P21A-002TV	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	0.75		XS		P21A-002TW	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1		XS		P21A-002TX	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5		XS		P21A-002TY	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2		XS		P21A-001CJ	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		STD		P21A-001CU	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		STD		P21A-001CW	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6		STD		P21A-001D2	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8		SCH20		P21A-00215	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10		SCH20		P21A-00219	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12		SCH20		P21A-0021A	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14		SCH20		P21A-00206	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16		SCH20		P21A-0020X	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18		SCH20		P21A-002Y1	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20		STD		P21A-002FU	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24		STD		P21A-002FV	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	30		SCH10		P21A-004BK	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Moderate wet H2S service	
1	36		SCH10		P21A-004G5	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Moderate wet H2S service	
1	42		STD		P21A-004G6	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Moderate wet H2S service	
1	48		XS		P21A-004G7	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Moderate wet H2S service	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75	XS	XS	P24A-006WW	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.75	XS	XS	P24A-006WY	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	1	XS	XS	P24A-006WZ	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	XS	XS	P24A-00238	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	XS	XS	P24A-0023H	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	STD	XS	P24A-00214	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	STD	XS	P24A-002HW	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P24A-002HY	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P24A-0021K	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	STD	P24A-0021A	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P24A-00229	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH20	STD	P24A-00J21	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH20	STD	P24A-005J4	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	SCH20	STD	P24A-00HMB	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	SCH20	STD	P24A-00HKS	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	SCH20	SCH20	P24A-002YX	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	SCH20	STD	P24A-00K0B	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH20	SCH20	P24A-002U4	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH20	SCH20	P24A-002YC	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	SCH20	STD	P24A-00K0M	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	SCH20	SCH20	P24A-002U7	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	SCH20	SCH20	P24A-002YA	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	SCH20	SCH20	P24A-002YR	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	6	SCH20	STD	P24A-00GU4	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	SCH20	SCH20	P24A-002XW	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	SCH20	SCH20	P24A-002YH	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	16	12	SCH20	SCH20	P24A-002U1	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	SCH20	SCH20	P24A-002XF	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	8	SCH20	SCH20	P24A-00K8W	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	10	SCH20	SCH20	P24A-00GAF	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	12	SCH20	SCH20	P24A-00GAG	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	14	SCH20	SCH20	P24A-00GAH	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	16	SCH20	SCH20	P24A-00GAJ	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	8	STD	SCH20	P24A-00K8Y	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	10	STD	SCH20	P24A-00HKU	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	12	STD	SCH20	P24A-00K8X	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	14	STD	SCH20	P24A-00HKW	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	16	STD	SCH20	P24A-00HKX	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	18	STD	SCH20	P24A-0087A	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24	10	STD	SCH20	P24A-00KVZ	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24	12	STD	SCH20	P24A-00K8Z	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24	14	STD	SCH20	P24A-00HME	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24	16	STD	SCH20	P24A-00HKZ	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24	18	STD	SCH20	P24A-008A5	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24	20	STD	STD	P24A-002PM	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	30	10	SCH10	SCH20	P24A-00KW0	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Moderate wet H2S service	
1	30	12	SCH10	SCH20	P24A-00KW1	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Moderate wet H2S service	
1	30	14	SCH10	SCH20	P24A-00KW2	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Moderate wet H2S service	
1	30	16	SCH10	SCH20	P24A-00K90	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Moderate wet H2S service	
1	30	18	SCH10	SCH20	P24A-00K91	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Moderate wet H2S service	
1	30	20	SCH10	STD	P24A-00K92	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Moderate wet H2S service	
1	30	24	SCH10	STD	P24A-00K93	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Moderate wet H2S service	
1	36	16	SCH10	SCH20	P24A-00KW3	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Moderate wet H2S service	
1	36	18	SCH10	SCH20	P24A-00KW4	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Moderate wet H2S service	
1	36	20	SCH10	STD	P24A-00KW5	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Moderate wet H2S service	
1	36	24	SCH10	STD	P24A-00KW6	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Moderate wet H2S service	
1	36	30	SCH10	SCH10	P24A-00KW7	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Moderate wet H2S service	
1	42	16	STD	SCH20	P24A-00KW8	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Moderate wet H2S service	
1	42	18	STD	SCH20	P24A-00KW9	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Moderate wet H2S service	
1	42	20	STD	STD	P24A-00KWA	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Moderate wet H2S service	
1	42	24	STD	STD	P24A-00KWB	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Moderate wet H2S service	
1	42	30	STD	SCH10	P24A-00KWC	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Moderate wet H2S service	
1	42	36	STD	SCH10	P24A-00KWD	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Moderate wet H2S service	
1	48	24	XS	STD	P24A-00KWE	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Moderate wet H2S service	
1	48	30	XS	SCH10	P24A-00KWF	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Moderate wet H2S service	
1	48	36	XS	SCH10	P24A-00KWG	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Moderate wet H2S service	
1	48	42	XS	STD	P24A-00KWH	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Moderate wet H2S service	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	XS	XS	P27A-004M6	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.5	XS	XS	P27A-004ME	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.75	XS	XS	P27A-004MM	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.5	XS	XS	P27A-004N2	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.75	XS	XS	P27A-004NC	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	1	XS	XS	P27A-004NP	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	0.75	XS	XS	P27A-001CZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	XS	XS	P27A-001DL	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	XS	XS	P27A-001E2	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	STD	XS	P27A-001AU	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	STD	XS	P27A-001MZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	1.5	STD	XS	P27A-001AW	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P27A-001N0	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P27A-00189	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	STD	P27A-001AZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	6	4	STD	STD	P27A-001GW	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH20	STD	P27A-003K2	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH20	STD	P27A-003K3	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	SCH20	STD	P27A-003K4	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	SCH20	STD	P27A-003K5	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	SCH20	SCH20	P27A-001UL	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	SCH20	STD	P27A-003K6	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH20	SCH20	P27A-001UU	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH20	SCH20	P27A-001TH	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	SCH20	STD	P27A-00518	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	SCH20	SCH20	P27A-001V4	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	SCH20	SCH20	P27A-001TG	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	SCH20	SCH20	P27A-001U1	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	SCH20	SCH20	P27A-001WX	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	SCH20	SCH20	P27A-001TW	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	SCH20	SCH20	P27A-001UF	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	SCH20	SCH20	P27A-001V2	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	10	SCH20	SCH20	P27A-005AX	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	12	SCH20	SCH20	P27A-005D2	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	14	SCH20	SCH20	P27A-005F3	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	16	SCH20	SCH20	P27A-005H6	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	12	STD	SCH20	P27A-005LV	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	14	STD	SCH20	P27A-005NZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	16	STD	SCH20	P27A-005S7	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	18	STD	SCH20	P27A-005TW	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24	16	STD	SCH20	P27A-005Y6	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24	18	STD	SCH20	P27A-005ZV	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24	20	STD	STD	P27A-0037U	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	30	20	SCH10	STD	P27A-00EUK	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Moderate wet H2S service	
1	30	24	SCH10	STD	P27A-00EUL	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Moderate wet H2S service	
1	36	24	SCH10	STD	P27A-00F8X	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Moderate wet H2S service	
1	36	30	SCH10	SCH10	P27A-00F8Y	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Moderate wet H2S service	
1	42	30	STD	SCH10	P27A-00F8Z	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Moderate wet H2S service	
1	42	36	STD	SCH10	P27A-00F90	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Moderate wet H2S service	
1	48	42	XS	STD	P27A-00F91	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Moderate wet H2S service	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	XS	XS	P28A-004V6	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.5	XS	XS	P28A-004V7	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.75	XS	XS	P28A-004V8	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.5	XS	XS	P28A-004V9	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.75	XS	XS	P28A-004VA	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	1	XS	XS	P28A-004VB	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	0.75	XS	XS	P28A-001CU	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	XS	XS	P28A-001DS	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	XS	XS	P28A-001EE	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	STD	XS	P28A-001A3	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	STD	XS	P28A-001N5	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	1.5	STD	XS	P28A-001A4	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P28A-001N6	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P28A-0018B	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	STD	P28A-001AS	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P28A-00182	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH20	STD	P28A-003JU	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH20	STD	P28A-003JV	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	SCH20	STD	P28A-003JW	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	SCH20	STD	P28A-003JX	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	SCH20	SCH20	P28A-001V0	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	12	6	SCH20	STD	P28A-003JY	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH20	SCH20	P28A-001V1	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH20	SCH20	P28A-001TJ	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	SCH20	STD	P28A-0096P	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	SCH20	SCH20	P28A-001WH	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	SCH20	SCH20	P28A-001TH	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	SCH20	SCH20	P28A-001UC	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	SCH20	SCH20	P28A-001T6	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	SCH20	SCH20	P28A-001TY	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	SCH20	SCH20	P28A-001UX	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	SCH20	SCH20	P28A-001WG	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	10	SCH20	SCH20	P28A-0082H	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	12	SCH20	SCH20	P28A-0082J	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	14	SCH20	SCH20	P28A-0082K	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	16	SCH20	SCH20	P28A-0082L	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	12	STD	SCH20	P28A-00BYD	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	14	STD	SCH20	P28A-0096S	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	16	STD	SCH20	P28A-0096T	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	18	STD	SCH20	P28A-0063A	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24	16	STD	SCH20	P28A-0096U	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24	18	STD	SCH20	P28A-0066J	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24	20	STD	STD	P28A-0037A	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	30	20	SCH10	STD	P28A-00BYE	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Moderate wet H2S service	
1	30	24	SCH10	STD	P28A-00BYF	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Moderate wet H2S service	
1	36	24	SCH10	STD	P28A-00CCZ	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Moderate wet H2S service	
1	36	30	SCH10	SCH10	P28A-00CD0	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Moderate wet H2S service	
1	42	30	STD	SCH10	P28A-00CD1	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Moderate wet H2S service	
1	42	36	STD	SCH10	P28A-00CD2	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Moderate wet H2S service	
1	48	42	XS	STD	P28A-00CD3	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Moderate wet H2S service	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P29A-0035U	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	0.75		XS		P29A-0035V	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	1		XS		P29A-0035W	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	1.5		XS		P29A-0035X	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	2		XS		P29A-001VG	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	3		STD		P29A-001VK	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	4		STD		P29A-001VN	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	6		STD		P29A-001VS	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	8		SCH20		P29A-00364	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	10		SCH20		P29A-0035Y	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	12		SCH20		P29A-0035Z	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	14		SCH20		P29A-00360	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	16		SCH20		P29A-00361	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	18		SCH20		P29A-00362	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	20		STD		P29A-001VH	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	24		STD		P29A-001TM	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	30		SCH10		P29A-00363	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	36		SCH10		P29A-003BB	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	42		STD		P29A-003BC	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	48		XS		P29A-003BD	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
541	0.75				P29B-0000C	Cap ASTM A105 Class 3000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P41A-000B5	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		SCH160		P41A-000B6	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		SCH160		P41A-000B7	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

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STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5		SCH160		P41A-000B8	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
541	1	0.75			P31B-00551	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
541	1.5	0.75			P31B-00555	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
541	2 - 2.5	0.75			P31B-0137H	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
541	3 - 5	0.75			P31B-01376	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
541	6 - 12	0.75			P31B-007GR	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
541	14 - 36	0.75			P31B-007GY	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
541	38 and larger	0.75			P31B-00FFM	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
1	2	0.75	XS	XS	P31B-00CP3	Outlet ASTM A105 MSS SP-97 BW	
1	3	0.75	STD	XS	P31B-00CMN	Outlet ASTM A105 MSS SP-97 BW	
1	4	0.75	STD	XS	P31B-00CLM	Outlet ASTM A105 MSS SP-97 BW	
1	6	0.75	STD	XS	P31B-00CKD	Outlet ASTM A105 MSS SP-97 BW	
1	8	0.75	SCH20	XS	P31B-00Y4E	Outlet ASTM A105 MSS SP-97 BW	
1	10	0.75	SCH20	XS	P31B-00Y47	Outlet ASTM A105 MSS SP-97 BW	
1	12	0.75	SCH20	XS	P31B-00Y48	Outlet ASTM A105 MSS SP-97 BW	
1	14	0.75	SCH20	XS	P31B-00Y49	Outlet ASTM A105 MSS SP-97 BW	
1	16	0.75	SCH20	XS	P31B-00Y4A	Outlet ASTM A105 MSS SP-97 BW	
1	18	0.75	SCH20	XS	P31B-00Y4B	Outlet ASTM A105 MSS SP-97 BW	
1	20	0.75	STD	XS	P31B-00CNN	Outlet ASTM A105 MSS SP-97 BW	
1	24	0.75	STD	XS	P31B-00CN4	Outlet ASTM A105 MSS SP-97 BW	
1	30	0.75	SCH10	XS	P31B-00Y4C	Outlet ASTM A105 MSS SP-97 BW	
1	36	0.75	SCH10	XS	P31B-00Y4D	Outlet ASTM A105 MSS SP-97 BW	
1	42	0.75	STD	XS	P31B-00YA6	Outlet ASTM A105 MSS SP-97 BW	
1	48	0.75	XS	XS	P31B-00YA3	Outlet ASTM A105 MSS SP-97 BW	
1	3	1	STD	XS	P31B-00B4D	Outlet ASTM A105 MSS SP-97 BW	
1	4	1	STD	XS	P31B-00AYW	Outlet ASTM A105 MSS SP-97 BW	
1	6	1	STD	XS	P31B-00AZ6	Outlet ASTM A105 MSS SP-97 BW	
1	8	1	SCH20	XS	P31B-00Y4N	Outlet ASTM A105 MSS SP-97 BW	
1	10	1	SCH20	XS	P31B-00Y4F	Outlet ASTM A105 MSS SP-97 BW	
1	12	1	SCH20	XS	P31B-00Y4G	Outlet ASTM A105 MSS SP-97 BW	
1	14	1	SCH20	XS	P31B-00Y4H	Outlet ASTM A105 MSS SP-97 BW	
1	16	1	SCH20	XS	P31B-00Y4J	Outlet ASTM A105 MSS SP-97 BW	
1	18	1	SCH20	XS	P31B-00Y4K	Outlet ASTM A105 MSS SP-97 BW	
1	20	1	STD	XS	P31B-00B8D	Outlet ASTM A105 MSS SP-97 BW	
1	24	1	STD	XS	P31B-00B4R	Outlet ASTM A105 MSS SP-97 BW	
1	30	1	SCH10	XS	P31B-00Y4L	Outlet ASTM A105 MSS SP-97 BW	
1	36	1	SCH10	XS	P31B-00Y4M	Outlet ASTM A105 MSS SP-97 BW	
1	42	1	STD	XS	P31B-00YA7	Outlet ASTM A105 MSS SP-97 BW	
1	48	1	XS	XS	P31B-00YA4	Outlet ASTM A105 MSS SP-97 BW	
1	4	1.5	STD	XS	P31B-00BNZ	Outlet ASTM A105 MSS SP-97 BW	
1	6	1.5	STD	XS	P31B-00BJB	Outlet ASTM A105 MSS SP-97 BW	
1	8	1.5	SCH20	XS	P31B-00Y4X	Outlet ASTM A105 MSS SP-97 BW	
1	10	1.5	SCH20	XS	P31B-00Y4P	Outlet ASTM A105 MSS SP-97 BW	
1	12	1.5	SCH20	XS	P31B-00Y4R	Outlet ASTM A105 MSS SP-97 BW	
1	14	1.5	SCH20	XS	P31B-00Y4S	Outlet ASTM A105 MSS SP-97 BW	
1	16	1.5	SCH20	XS	P31B-00Y4T	Outlet ASTM A105 MSS SP-97 BW	
1	18	1.5	SCH20	XS	P31B-00Y4U	Outlet ASTM A105 MSS SP-97 BW	
1	20	1.5	STD	XS	P31B-00C3L	Outlet ASTM A105 MSS SP-97 BW	
1	24	1.5	STD	XS	P31B-00BZ7	Outlet ASTM A105 MSS SP-97 BW	
1	30	1.5	SCH10	XS	P31B-00Y4V	Outlet ASTM A105 MSS SP-97 BW	
1	36	1.5	SCH10	XS	P31B-00Y4W	Outlet ASTM A105 MSS SP-97 BW	
1	42	1.5	STD	XS	P31B-00YA8	Outlet ASTM A105 MSS SP-97 BW	
1	48	1.5	XS	XS	P31B-00YA5	Outlet ASTM A105 MSS SP-97 BW	
1	6	2	STD	XS	P31B-007SH	Outlet ASTM A105 MSS SP-97 BW	
1	8	2	SCH20	XS	P31B-00NY2	Outlet ASTM A105 MSS SP-97 BW	
1	10	2	SCH20	XS	P31B-00TFB	Outlet ASTM A105 MSS SP-97 BW	

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OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	12	2	SCH20	XS	P31B-00TFA	Outlet ASTM A105 MSS SP-97 BW	
1	14	2	SCH20	XS	P31B-00TF9	Outlet ASTM A105 MSS SP-97 BW	
1	16	2	SCH20	XS	P31B-00TF8	Outlet ASTM A105 MSS SP-97 BW	
1	18	2	SCH20	XS	P31B-00NVX	Outlet ASTM A105 MSS SP-97 BW	
1	20	2	STD	XS	P31B-00994	Outlet ASTM A105 MSS SP-97 BW	
1	24	2	STD	XS	P31B-0092Z	Outlet ASTM A105 MSS SP-97 BW	
1	30	2	SCH10	XS	P31B-00PJF	Outlet ASTM A105 MSS SP-97 BW	
1	36	2	SCH10	XS	P31B-00EVC	Outlet ASTM A105 MSS SP-97 BW	
1	42	2	STD	XS	P31B-00EVR	Outlet ASTM A105 MSS SP-97 BW	
1	48	2	XS	XS	P31B-007YJ	Outlet ASTM A105 MSS SP-97 BW	
1	8	3	SCH20	STD	P31B-00P11	Outlet ASTM A105 MSS SP-97 BW	
1	10	3	SCH20	STD	P31B-00UPG	Outlet ASTM A105 MSS SP-97 BW	
1	12	3	SCH20	STD	P31B-00USE	Outlet ASTM A105 MSS SP-97 BW	
1	14	3	SCH20	STD	P31B-00UPH	Outlet ASTM A105 MSS SP-97 BW	
1	16	3	SCH20	STD	P31B-00TU2	Outlet ASTM A105 MSS SP-97 BW	
1	18	3	SCH20	STD	P31B-00NZ4	Outlet ASTM A105 MSS SP-97 BW	
1	20	3	STD	STD	P31B-008FA	Outlet ASTM A105 MSS SP-97 BW	
1	24	3	STD	STD	P31B-00895	Outlet ASTM A105 MSS SP-97 BW	
1	30	3	SCH10	STD	P31B-00PJG	Outlet ASTM A105 MSS SP-97 BW	
1	36	3	SCH10	STD	P31B-00EVD	Outlet ASTM A105 MSS SP-97 BW	
1	42	3	STD	STD	P31B-00EVS	Outlet ASTM A105 MSS SP-97 BW	
1	48	3	XS	STD	P31B-00AFD	Outlet ASTM A105 MSS SP-97 BW	
1	12	4	SCH20	STD	P31B-00USF	Outlet ASTM A105 MSS SP-97 BW	
1	14	4	SCH20	STD	P31B-00UPJ	Outlet ASTM A105 MSS SP-97 BW	
1	16	4	SCH20	STD	P31B-00TU3	Outlet ASTM A105 MSS SP-97 BW	
1	18	4	SCH20	STD	P31B-00P1V	Outlet ASTM A105 MSS SP-97 BW	
1	20	4	STD	STD	P31B-008D3	Outlet ASTM A105 MSS SP-97 BW	
1	24	4	STD	STD	P31B-0086X	Outlet ASTM A105 MSS SP-97 BW	
1	30	4	SCH10	STD	P31B-00PJH	Outlet ASTM A105 MSS SP-97 BW	
1	36	4	SCH10	STD	P31B-00EVE	Outlet ASTM A105 MSS SP-97 BW	
1	42	4	STD	STD	P31B-00EVT	Outlet ASTM A105 MSS SP-97 BW	
1	48	4	XS	STD	P31B-00A2P	Outlet ASTM A105 MSS SP-97 BW	
1	18	6	SCH20	STD	P31B-00P48	Outlet ASTM A105 MSS SP-97 BW	
1	20	6	STD	STD	P31B-008PZ	Outlet ASTM A105 MSS SP-97 BW	
1	24	6	STD	STD	P31B-008JD	Outlet ASTM A105 MSS SP-97 BW	
1	30	6	SCH10	STD	P31B-00PJJ	Outlet ASTM A105 MSS SP-97 BW	
1	36	6	SCH10	STD	P31B-00EVF	Outlet ASTM A105 MSS SP-97 BW	
1	42	6	STD	STD	P31B-007ZP	Outlet ASTM A105 MSS SP-97 BW	
1	48	6	XS	STD	P31B-007U6	Outlet ASTM A105 MSS SP-97 BW	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30B-0002D	Plug ASTM A105 ASME B16.11 NPT Round head	
1	0.75				P30B-0002E	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1				P30B-0002F	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1.5				P30B-0002G	Plug ASTM A105 ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P61B-003ND	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	0.75		XS		P61B-003NE	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	1		XS		P61B-003NF	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	1.5		XS		P61B-003NG	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	2		XS		P61B-003NK	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	3		STD		P61B-001PW	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	4		STD		P61B-001R8	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	6		STD		P61B-001RT	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	8		SCH20		P61B-002BF	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	10		SCH20		P61B-002B4	Flange WN ASTM A105 Class 150 ASME B16.5 RF	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	12		SCH20		P61B-002B5	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	14		SCH20		P61B-002B6	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	16		SCH20		P61B-002B7	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	18		SCH20		P61B-002B8	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	20		STD		P61B-001JA	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	24		STD		P61B-001NJ	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	30		SCH10		P61B-003UB	Flange WN ASTM A105 Class 150 ASME B16.47 Series B RF	
1	36		SCH10		P61B-003NP	Flange WN ASTM A105 Class 150 ASME B16.47 Series B RF	
1	42		STD		P61B-003M9	Flange WN ASTM A105 Class 150 ASME B16.47 Series B RF	
1	48		XS		P61B-004CX	Flange WN ASTM A105 Class 150 ASME B16.47 Series B RF	
541	0.5				P61B-003TZ	Flange NPT ASTM A105 Class 150 ASME B16.5 RF	
541	0.75				P61B-003U0	Flange NPT ASTM A105 Class 150 ASME B16.5 RF	
773	0.5		XS		P61B-0032Z	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	0.75		XS		P61B-0032X	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	1		XS		P61B-0032U	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	1.5		XS		P61B-0032S	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	2		XS		P61B-001HW	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	3		STD		P61B-001LJ	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	4		STD		P61B-001MC	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	6		STD		P61B-001N2	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	8		SCH20		P61B-002LJ	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	10		SCH20		P61B-002LH	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	12		SCH20		P61B-002MP	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	14		SCH20		P61B-002MR	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	16		SCH20		P61B-002MS	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	18		SCH20		P61B-002MT	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	20		STD		P61B-001NT	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	24		STD		P61B-001PA	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	30		SCH10		P61B-004R8	Flange WN ASTM A105 Class 300 ASME B16.47 Series B RF	
773	36		SCH10		P61B-003P5	Flange WN ASTM A105 Class 300 ASME B16.47 Series B RF	
773	42		STD		P61B-003P8	Flange WN ASTM A105 Class 300 ASME B16.47 Series B RF	
773	48		XS		P61B-003TH	Flange WN ASTM A105 Class 300 ASME B16.47 Series B RF	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67B-000FH	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	0.75				P67B-000FJ	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	1				P67B-000FK	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	1.5				P67B-000FL	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	2				P67B-000FT	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	3				P67B-000FW	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	4				P67B-000FX	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	6				P67B-000FY	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	8				P67B-000FZ	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	10				P67B-000FM	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	12				P67B-000FN	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	14				P67B-000FP	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	16				P67B-000FR	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	18				P67B-000FS	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	20				P67B-000FU	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	24				P67B-000FV	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	30				P67B-000G2	Blind flange ASTM A105 Class 150 ASME B16.47 Series B RF	
1	36				P67B-000G5	Blind flange ASTM A105 Class 150 ASME B16.47 Series B RF	
1	42				P67B-000KZ	Blind flange ASTM A105 Class 150 ASME B16.47 Series B RF	
1	48				P67B-000L2	Blind flange ASTM A105 Class 150 ASME B16.47 Series B RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000L8	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

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GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75				P73T-000L9	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000LA	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000LB	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000LH	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000LL	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000LM	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	6				P73T-000LN	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	8				P73T-000LP	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	10				P73T-000LC	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	12				P73T-000LD	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	14				P73T-000LE	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	16				P73T-000LF	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	18				P73T-000LG	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	20				P73T-000LJ	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	24				P73T-000LK	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	30				P73T-000LT	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	36				P73T-000LW	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	42				P73T-000LZ	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	48				P73T-000M2	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	0.5				P73T-000FT	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	0.75				P73T-000FU	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	3				P73T-000G5	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	4				P73T-000G6	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	6				P73T-000G7	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	8				P73T-000G8	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	10				P73T-000FX	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	12				P73T-000FY	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	14				P73T-000FZ	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	16				P73T-000G0	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	18				P73T-000G1	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	20				P73T-000G3	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	24				P73T-000G4	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	30				P73T-000H9	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	36				P73T-000HC	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	42				P73T-000KM	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	48				P73T-000KR	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-16				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	18-24				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
1	30-42				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	

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BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	48				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
773	0.5-10				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
773	12-48				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81B-0018G	Gate valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	0.75				P81B-0018H	Gate valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	1				P81B-0018J	Gate valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	1.5				P81B-0018K	Gate valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	2				P81C-004EG	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	3				P81C-004EH	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	4				P81C-004EJ	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	6				P81C-004EK	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	8				P81C-004EL	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	10				P81C-004EE	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	12				P81C-004EF	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	14				P81C-004E9	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Moderate wet H2S service	
1	16				P81C-004EA	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Moderate wet H2S service	
1	18				P81C-004EB	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Moderate wet H2S service	
1	20				P81C-004EC	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Moderate wet H2S service	
1	24				P81C-004ED	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Moderate wet H2S service	
1	30				P81C-004E5	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.47-B RF Trim number 12 BB-BG-OS&Y Gear operated Moderate wet H2S service	
1	36				P81C-004E6	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.47-B RF Trim number 12 BB-BG-OS&Y Gear operated Moderate wet H2S service	
1	42				P81C-004E7	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.47-B RF Trim number 12 BB-BG-OS&Y Gear operated Moderate wet H2S service	
1	48				P81C-004E8	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.47-B RF Trim number 12 BB-BG-OS&Y Gear operated Moderate wet H2S service	
4608	0.75				P81B-002XT	Gate valve ASTM A105 Class 150 API 602 BW both sides w/ nipples BE - NPT ASTM A106-B Sch160-nipple Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82B-0011M	Globe valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	0.75				P82B-0011N	Globe valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	1				P82B-0011P	Globe valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	1.5				P82B-0011R	Globe valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	2				P82C-00270	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	3				P82C-00271	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	4				P82C-00272	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	6				P82C-00273	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	8				P82C-00274	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83B-000TW	Check valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Moderate wet H2S service	
1	0.75				P83B-000TX	Check valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Moderate wet H2S service	
1	1				P83B-000TY	Check valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Moderate wet H2S service	
1	1.5				P83B-000TZ	Check valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Moderate wet H2S service	

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CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2				P83C-0022G	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Moderate wet H2S service	
1	3				P83C-0022H	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Moderate wet H2S service	
1	4				P83C-0022J	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Moderate wet H2S service	
1	6				P83C-0022K	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Moderate wet H2S service	
1	8				P83C-0022L	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Moderate wet H2S service	
1	10				P83C-0022C	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Moderate wet H2S service	
1	12				P83C-0022D	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Moderate wet H2S service	
1	14				P83C-0022E	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Moderate wet H2S service	
1	16				P83C-0022F	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Moderate wet H2S service	

BALL VALVE (Q)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P84B-0012D	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design Moderate wet H2S service	
1	0.75				P84B-0012E	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design Moderate wet H2S service	
1	1				P84B-0012F	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design Moderate wet H2S service	
1	1.5				P84B-0012G	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design Moderate wet H2S service	
1	2				P84C-005UV	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design Moderate wet H2S service	
1	3				P84C-005UW	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design Moderate wet H2S service	
1	4				P84C-005UX	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design Moderate wet H2S service	
1	6				P84C-005VC	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Reduced bore Fire tested design Moderate wet H2S service	
1	8				P84C-005VD	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Reduced bore Fire tested design Moderate wet H2S service	
1	10				P84C-005V6	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Reduced bore Fire tested design Moderate wet H2S service	
1	12				P84C-005V7	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Reduced bore Fire tested design Moderate wet H2S service	
1	14				P84C-005V8	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Reduced bore Fire tested design Moderate wet H2S service	
1	16				P84C-005V9	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Reduced bore Fire tested design Moderate wet H2S service	
1	18				P84C-005VA	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Reduced bore Fire tested design Moderate wet H2S service	
1	20				P84C-005VB	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Reduced bore Fire tested design Moderate wet H2S service	
24	0.5				P84B-00129	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design Moderate wet H2S service	
24	0.75				P84B-0012A	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design Moderate wet H2S service	
24	1				P84B-0012B	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design Moderate wet H2S service	
24	1.5				P84B-0012C	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design Moderate wet H2S service	
24	2				P84C-005US	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design Moderate wet H2S service	
24	3				P84C-005UT	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design Moderate wet H2S service	
24	4				P84C-005UU	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design Moderate wet H2S service	

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BALL VALVE (Q)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
24	6				P84C-005V4	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design Moderate wet H2S service	
24	8				P84C-005V5	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design Moderate wet H2S service	
24	10				P84C-005UY	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design Moderate wet H2S service	
24	12				P84C-005UZ	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design Moderate wet H2S service	
24	14				P84C-005V0	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design Moderate wet H2S service	
24	16				P84C-005V1	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design Moderate wet H2S service	
24	18				P84C-005V2	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design Moderate wet H2S service	
24	20				P84C-005V3	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design Moderate wet H2S service	

BUTTERFLY VALVE (H)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	10				P86C-00249	Offset design butterfly valve ASTM A216 Grade WCB Class 150 API 609 Category B Lug-type ASME B16.5 RF Disc CS Seat Stellite-6 Trim SS316 Triple eccentric design BG Gear operated Moderate wet H2S service	
1	12				P86C-0024A	Offset design butterfly valve ASTM A216 Grade WCB Class 150 API 609 Category B Lug-type ASME B16.5 RF Disc CS Seat Stellite-6 Trim SS316 Triple eccentric design BG Gear operated Moderate wet H2S service	
1	14				P86C-0024B	Offset design butterfly valve ASTM A216 Grade WCB Class 150 API 609 Category B Lug-type ASME B16.5 RF Disc CS Seat Stellite-6 Trim SS316 Triple eccentric design BG Gear operated Moderate wet H2S service	
1	16				P86C-0024C	Offset design butterfly valve ASTM A216 Grade WCB Class 150 API 609 Category B Lug-type ASME B16.5 RF Disc CS Seat Stellite-6 Trim SS316 Triple eccentric design BG Gear operated Moderate wet H2S service	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71B-0008A	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	0.75				P71B-0008B	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	1				P71B-0008C	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71B-0008D	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	2				P71B-0000P	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	3				P71B-0000N	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	4				P71B-0000M	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	6				P71B-0000L	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	8				P71B-0000R	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	10				P71B-0000K	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	12				P71B-0000J	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	

PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000AH	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	16				P72B-0000C	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	18				P72B-000AJ	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	20				P72B-000AK	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	24				P72B-000AL	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	30				P72B-000AM	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	36				P72B-000AN	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	42				P72B-000AP	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	48				P72B-000AR	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	

PADDLE SPACER (PS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000AT	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	16				P72B-0000B	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	18				P72B-000AU	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	20				P72B-000AV	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	24				P72B-000AW	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	

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PADDLE SPACER (PS)							
OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	30				P72B-000AX	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	36				P72B-000AY	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	42				P72B-000AZ	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	48				P72B-000B0	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	

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BOLT TABLE (B_A1AQ , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	60	P80S-008SY		
0.75	4	0.500	65	P80S-008SZ		
1	4	0.500	70	P80S-008T0		
1.5	4	0.500	75	P80S-008T1		
2	4	0.625	85	P80S-0090A		
3	4	0.625	95	P80S-0090C		
4	8	0.625	95	P80S-0090C		
6	8	0.750	105	P80S-0090E		
8	8	0.750	110	P80S-0090F		
10	12	0.875	120	P80S-005Z9		
12	12	0.875	120	P80S-005Z9		
14	12	1.000	135	P80S-00619		
16	16	1.000	140	P80S-0061A		
18	16	1.125	150	P80S-0064L		
20	20	1.125	160	P80S-0064N		
24	20	1.250	175	P80S-00686		
30	44	0.750	145	P80S-0090N		
36	44	0.875	175	P80S-005ZL		
42	48	1.000	190	P80S-0061L		
48	44	1.125	210	P80S-0064Z		

BOLT TABLE (B_A1AQ_773 , STUD ASME RF, OPTION CODE 773)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-008T0		
0.75	4	0.625	75	P80S-00908		
1	4	0.625	80	P80S-00909		
1.5	4	0.750	95	P80S-005Z4		
2	8	0.625	90	P80S-0090B		
3	8	0.750	110	P80S-0090F		
4	8	0.750	115	P80S-0090G		
6	12	0.750	125	P80S-0090J		
8	12	0.875	140	P80S-005ZD		
10	16	1.000	160	P80S-0061E		
12	16	1.125	175	P80S-0064S		
14	20	1.125	180	P80S-0064T		
16	20	1.250	190	P80S-00689		
18	24	1.250	200	P80S-0068B		
20	24	1.250	210	P80S-0068D		
24	24	1.500	235	P80S-006LB		
30	36	1.375	285	P80S-006HY		
36	32	1.625	320	P80S-00A5E		
42	36	1.750	355	P80S-00AEJ		
48	40	1.875	380	P80S-00AW5		

BOLT TABLE (B_A1AQ_789 , STUD ASME RJ, OPTION CODE 789)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	110		R12	
0.75	4	0.750	115		R14	
1	4	0.875	130		R16	
1.5	4	1.000	140		R20	
2	8	0.875	150		R24	
3	8	0.875	150		R31	
4	8	1.125	175		R37	
6	12	1.125	200		R45	
8	12	1.375	260		R49	
10	16	1.375	275		R53	
12	20	1.375	295		R57	
14	20	1.500	325		R62	
16	20	1.625	340		R66	
18	20	1.875	390		R70	
20	20	2.000	415		R74	
24	20	2.500	525		R78	
30	20	3.000	600		R102	
36	20	3.500	690		R105	

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BRANCH TABLE (T_A1AQ)

RUN PIPE SIZE (in) \ BRANCH SIZE (in)	0.5	0.75	1	1.5	2	3	4	6	8	10	12	14	16	18	20	24	30	36	42	48
0.5	TS																			
0.75		TS																		
1		TR	TS																	
1.5		TR	TR	TS																
2		L	TR	TR	TS															
3		L	L	TR	TR	TS														
4	L	L	L	L	TR	TR	TS													
6	L	L	L	L	L	TR	TR	TS												
8		L	L	L	L	L	TR	TR	TS											
10		L	L	L	L	L	TR	TR	TR	TS										
12		L	L	L	L	L	L	TR	TR	TR	TS									
14		L	L	L	L	L	L	TR	TR	TR	TR	TS								
16		L	L	L	L	L	L	TR	TR	TR	TR	TR	TS							
18		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TS						
20		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TR	TS					
24		L	L	L	L	L	L	L	9PD	TR	TR	TR	TR	TR	TR	TS				
30		L	L	L	L	L	L	L	9PD	TR	TR	TR	TR	TR	TR	TR	TS			
36		L	L	L	L	L	L	L	9PD	9PD	9PD	9PD	TR	TR	TR	TR	TR	TS		
42		L	L	L	L	L	L	L	9PD	9PD	9PD	9PD	TR	TR	TR	TR	TR	TR	TS	
48		L	L	L	L	L	L	L	9PD	9PD	9PD	9PD	9PD	9PD	9PD	TR	TR	TR	TR	TS

TS : STRAIGHT TEE
9PD : REINFORCING PAD 90 DEG
TR : REDUCING TEE
L : OUTLET

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Material : Killed CS
Rating : ASME CLASS 150
Flange Face : RF
C.A.(mm) : 1.50
Gasket : Spiral Wound
Service : PROCESS -WET LOW SEVERITY SOUR SERVICE SUBJECT TO NACE
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
2	USE OF SOFT SEATED BALL, PLUG AND BUTTERFLY VALVES SHALL BE LIMITED TO MAXIMUM OF 204DEGC (400DEGF)
5	BOLTING CONFIRMING TO B7M / 2HM SHALL BE USED UNDER CONDITIONS (A) DIRECT EXPOSURE TO SOUR ENVIRONMENTS (B) WHEN THE BOLTING WILL BE BURIED OR INSULATED
27	PWHT OF CARBON STEEL PIPING IN WET H2S, CAUSTIC AND AMINE SERVICES SHALL BE IN ACCORDANCE WITH SECTION 10.2, 10.3, AND 10.4 OF PROJECT SPECIFICATION 3550-8440-SP-0002 MATERIALS REQUIREMENTS FOR PRESSURISED EQUIPMENT AND PIPING. FOR CAUSTIC AND AMINE SERVICE THE FOLLOWING SHALL APPLY: - PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF ALL SITE PIPING FABRICATION WELDS IS REQUIRED FOR ALL WALL THICKNESSES. FOR MODERATE AND SEVERE WET H2S SERVICE THE FOLLOWING SHALL APPLY: PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF SITE FABRICATION CIRCUMFERENTIAL OR BRANCH WELDS IS NOT REQUIRED IF WELDS ARE MULTIPASS AND IN ACCORDANCE WITH PARA 10.2.12 OF PROJECT SPECIFICATION 3550-8440-SP-0002. FOR SERVICES MEETING THE WET H2S CRITERIA AND CAUSTIC OR AMINE CRITERIA THE MORE STRINGENT PWHT REQUIREMENT SHALL GOVERN.

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
24	FULL PORT (Q)
200	WITH JACK SCREW (FO)
541	NPT(F) (CA,F)
773	CLASS 300 (B,F,G,V)
4608	VALVE WITH NIPPLES (V)

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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P01A-000XM	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	0.75		XS		P01A-000XN	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1		XS		P01A-000XP	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1.5		XS		P01A-000XV	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	2		XS		P01A-000YX	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	3		STD		P01A-000YM	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	4		STD		P01A-000YU	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	6		STD		P01A-000Z3	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	8		SCH20		P01A-001AT	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	10		SCH20		P01A-0014Y	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	12		SCH20		P01A-0016H	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	14		SCH20		P01A-0017A	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	16		SCH20		P01A-0018E	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	18		SCH20		P01A-00370	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	20		STD		P01A-002CC	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	24		STD		P01A-002CD	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	30		STD		P01A-007TC	Pipe ASTM A671 Grade CC60 Class 22 EFW ASME B36.10M/B36.19M BE Moderate wet H2S service	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P02A-000UR	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	0.75		XS		P02A-000UN	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1		XS		P02A-000UL	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1.5		XS		P02A-000UJ	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	2		XS		P02A-000CP	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		STD		P02A-000CU	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		STD		P02A-000CZ	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		STD		P02A-000D6	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		SCH20		P02A-000GZ	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	10		SCH20		P02A-000H1	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	12		SCH20		P02A-000H4	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	14		SCH20		P02A-000FX	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	16		SCH20		P02A-000GM	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	18		SCH20		P02A-000LT	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	20		STD		P02A-0010J	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	24		STD		P02A-0010K	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	30		STD		P02A-002JF	90 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius Moderate wet H2S service	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P03A-0018K	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	0.75		XS		P03A-0018L	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1		XS		P03A-0018M	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1.5		XS		P03A-0018N	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	2		XS		P03A-000AS	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		STD		P03A-000AX	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		STD		P03A-000B1	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		STD		P03A-000B9	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		SCH20		P03A-000EX	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	10		SCH20		P03A-000F0	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	12		SCH20		P03A-000F2	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	14		SCH20		P03A-000DW	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	16		SCH20		P03A-000EM	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	18		SCH20		P03A-001DX	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	20		STD		P03A-000X1	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	24		STD		P03A-000X2	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	30		STD		P03A-002FZ	45 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius Moderate wet H2S service	

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STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P21A-002TV	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	0.75		XS		P21A-002TW	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1		XS		P21A-002TX	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5		XS		P21A-002TY	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2		XS		P21A-001CJ	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		STD		P21A-001CU	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		STD		P21A-001CW	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6		STD		P21A-001D2	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8		SCH20		P21A-00215	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10		SCH20		P21A-00219	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12		SCH20		P21A-0021A	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14		SCH20		P21A-00206	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16		SCH20		P21A-0020X	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18		SCH20		P21A-002Y1	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20		STD		P21A-002FU	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24		STD		P21A-002FV	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	30		STD		P21A-003H1	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Moderate wet H2S service	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75	XS	XS	P24A-006WW	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.75	XS	XS	P24A-006WY	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	1	XS	XS	P24A-006WZ	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	XS	XS	P24A-00238	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	XS	XS	P24A-0023H	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	STD	XS	P24A-00214	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	STD	XS	P24A-002HW	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P24A-002HY	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P24A-0021K	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	STD	P24A-0021A	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P24A-00229	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH20	STD	P24A-00J21	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH20	STD	P24A-005J4	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	SCH20	STD	P24A-00HMB	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	SCH20	STD	P24A-00HKS	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	SCH20	SCH20	P24A-002YX	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	SCH20	STD	P24A-00K0B	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH20	SCH20	P24A-002U4	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH20	SCH20	P24A-002YC	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	SCH20	STD	P24A-00K0M	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	SCH20	SCH20	P24A-002U7	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	SCH20	SCH20	P24A-002YA	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	SCH20	SCH20	P24A-002YR	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	6	SCH20	STD	P24A-00GU4	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	SCH20	SCH20	P24A-002XW	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	SCH20	SCH20	P24A-002YH	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	SCH20	SCH20	P24A-002U1	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	SCH20	SCH20	P24A-002XF	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	8	SCH20	SCH20	P24A-00K8W	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	10	SCH20	SCH20	P24A-00GAF	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	12	SCH20	SCH20	P24A-00GAG	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	14	SCH20	SCH20	P24A-00GAH	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	16	SCH20	SCH20	P24A-00GAJ	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	8	STD	SCH20	P24A-00K8Y	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	10	STD	SCH20	P24A-00HKU	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	12	STD	SCH20	P24A-00K8X	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	14	STD	SCH20	P24A-00HKW	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	16	STD	SCH20	P24A-00HKX	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	18	STD	SCH20	P24A-0087A	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	24	10	STD	SCH20	P24A-00KVZ	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24	12	STD	SCH20	P24A-00K8Z	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24	14	STD	SCH20	P24A-00HME	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24	16	STD	SCH20	P24A-00HKZ	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24	18	STD	SCH20	P24A-008A5	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24	20	STD	STD	P24A-002PM	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	30	10	STD	SCH20	P24A-00KXH	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Moderate wet H2S service	
1	30	12	STD	SCH20	P24A-00NHE	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Moderate wet H2S service	
1	30	14	STD	SCH20	P24A-00KXK	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Moderate wet H2S service	
1	30	16	STD	SCH20	P24A-00KCM	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Moderate wet H2S service	
1	30	18	STD	SCH20	P24A-00KXL	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Moderate wet H2S service	
1	30	20	STD	STD	P24A-00GRF	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Moderate wet H2S service	
1	30	24	STD	STD	P24A-00KXM	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Moderate wet H2S service	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	XS	XS	P27A-004M6	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.5	XS	XS	P27A-004ME	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.75	XS	XS	P27A-004MM	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.5	XS	XS	P27A-004N2	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.75	XS	XS	P27A-004NC	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	1	XS	XS	P27A-004NP	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	0.75	XS	XS	P27A-001CZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	XS	XS	P27A-001DL	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	XS	XS	P27A-001E2	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	STD	XS	P27A-001AU	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	STD	XS	P27A-001MZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	1.5	STD	XS	P27A-001AW	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P27A-001N0	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P27A-00189	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	STD	P27A-001AZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P27A-001GW	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH20	STD	P27A-003K2	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH20	STD	P27A-003K3	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	SCH20	STD	P27A-003K4	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	SCH20	STD	P27A-003K5	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	SCH20	SCH20	P27A-001UL	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	SCH20	STD	P27A-003K6	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH20	SCH20	P27A-001UU	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH20	SCH20	P27A-001TH	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	SCH20	STD	P27A-00518	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	SCH20	SCH20	P27A-001V4	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	SCH20	SCH20	P27A-001TG	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	SCH20	SCH20	P27A-001U1	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	SCH20	SCH20	P27A-001WX	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	SCH20	SCH20	P27A-001TW	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	SCH20	SCH20	P27A-001UF	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	SCH20	SCH20	P27A-001V2	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	10	SCH20	SCH20	P27A-005AX	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	12	SCH20	SCH20	P27A-005D2	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	14	SCH20	SCH20	P27A-005F3	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	16	SCH20	SCH20	P27A-005H6	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	12	STD	SCH20	P27A-005LV	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	14	STD	SCH20	P27A-005NZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	16	STD	SCH20	P27A-005S7	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	18	STD	SCH20	P27A-005TW	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24	16	STD	SCH20	P27A-005Y6	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24	18	STD	SCH20	P27A-005ZV	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24	20	STD	STD	P27A-0037U	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	30	20	STD	STD	P27A-00BHM	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Moderate wet H2S service	
1	30	24	STD	STD	P27A-00F9C	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Moderate wet H2S service	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	XS	XS	P28A-004V6	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.5	XS	XS	P28A-004V7	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.75	XS	XS	P28A-004V8	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.5	XS	XS	P28A-004V9	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.75	XS	XS	P28A-004VA	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	1	XS	XS	P28A-004VB	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	0.75	XS	XS	P28A-001CU	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	XS	XS	P28A-001DS	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	XS	XS	P28A-001EE	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	STD	XS	P28A-001A3	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	STD	XS	P28A-001N5	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	1.5	STD	XS	P28A-001A4	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P28A-001N6	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P28A-0018B	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	STD	P28A-001AS	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P28A-00182	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH20	STD	P28A-003JU	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH20	STD	P28A-003JV	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	SCH20	STD	P28A-003JW	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	SCH20	STD	P28A-003JX	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	SCH20	SCH20	P28A-001V0	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	SCH20	STD	P28A-003JY	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH20	SCH20	P28A-001V1	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH20	SCH20	P28A-001TJ	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	SCH20	STD	P28A-0096P	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	SCH20	SCH20	P28A-001WH	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	SCH20	SCH20	P28A-001TH	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	SCH20	SCH20	P28A-001UC	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	SCH20	SCH20	P28A-001T6	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	SCH20	SCH20	P28A-001TY	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	SCH20	SCH20	P28A-001UX	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	SCH20	SCH20	P28A-001WG	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	10	SCH20	SCH20	P28A-0082H	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	12	SCH20	SCH20	P28A-0082J	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	14	SCH20	SCH20	P28A-0082K	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	16	SCH20	SCH20	P28A-0082L	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	12	STD	SCH20	P28A-00BYD	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	14	STD	SCH20	P28A-0096S	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	16	STD	SCH20	P28A-0096T	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	18	STD	SCH20	P28A-0063A	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24	16	STD	SCH20	P28A-0096U	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24	18	STD	SCH20	P28A-0066J	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24	20	STD	STD	P28A-0037A	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	30	20	STD	STD	P28A-008HB	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Moderate wet H2S service	
1	30	24	STD	STD	P28A-00CDD	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Moderate wet H2S service	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P29A-0035U	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	0.75		XS		P29A-0035V	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	1		XS		P29A-0035W	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	1.5		XS		P29A-0035X	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	2		XS		P29A-001VG	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	3		STD		P29A-001VK	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	

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CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	4		STD		P29A-001VN	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	6		STD		P29A-001VS	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	8		SCH20		P29A-00364	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	10		SCH20		P29A-0035Y	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	12		SCH20		P29A-0035Z	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	14		SCH20		P29A-00360	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	16		SCH20		P29A-00361	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	18		SCH20		P29A-00362	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	20		STD		P29A-001VH	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	24		STD		P29A-001TM	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	30		STD		P29A-001VL	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
541	0.75				P29B-0000C	Cap ASTM A105 Class 3000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P41A-000B5	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		SCH160		P41A-000B6	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		SCH160		P41A-000B7	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		SCH160		P41A-000B8	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2	0.75	XS	XS	P31B-00CP3	Outlet ASTM A105 MSS SP-97 BW	
1	3	0.75	STD	XS	P31B-00CMN	Outlet ASTM A105 MSS SP-97 BW	
1	4	0.75	STD	XS	P31B-00CLM	Outlet ASTM A105 MSS SP-97 BW	
1	6	0.75	STD	XS	P31B-00CKD	Outlet ASTM A105 MSS SP-97 BW	
1	8	0.75	SCH20	XS	P31B-00Y4E	Outlet ASTM A105 MSS SP-97 BW	
1	10	0.75	SCH20	XS	P31B-00Y47	Outlet ASTM A105 MSS SP-97 BW	
1	12	0.75	SCH20	XS	P31B-00Y48	Outlet ASTM A105 MSS SP-97 BW	
1	14	0.75	SCH20	XS	P31B-00Y49	Outlet ASTM A105 MSS SP-97 BW	
1	16	0.75	SCH20	XS	P31B-00Y4A	Outlet ASTM A105 MSS SP-97 BW	
1	18	0.75	SCH20	XS	P31B-00Y4B	Outlet ASTM A105 MSS SP-97 BW	
1	20	0.75	STD	XS	P31B-00CNN	Outlet ASTM A105 MSS SP-97 BW	
1	24	0.75	STD	XS	P31B-00CN4	Outlet ASTM A105 MSS SP-97 BW	
1	30	0.75	STD	XS	P31B-010T4	Outlet ASTM A105 MSS SP-97 BW	
1	3	1	STD	XS	P31B-00B4D	Outlet ASTM A105 MSS SP-97 BW	
1	4	1	STD	XS	P31B-00AYW	Outlet ASTM A105 MSS SP-97 BW	
1	6	1	STD	XS	P31B-00AZ6	Outlet ASTM A105 MSS SP-97 BW	
1	8	1	SCH20	XS	P31B-00Y4N	Outlet ASTM A105 MSS SP-97 BW	
1	10	1	SCH20	XS	P31B-00Y4F	Outlet ASTM A105 MSS SP-97 BW	
1	12	1	SCH20	XS	P31B-00Y4G	Outlet ASTM A105 MSS SP-97 BW	
1	14	1	SCH20	XS	P31B-00Y4H	Outlet ASTM A105 MSS SP-97 BW	
1	16	1	SCH20	XS	P31B-00Y4J	Outlet ASTM A105 MSS SP-97 BW	
1	18	1	SCH20	XS	P31B-00Y4K	Outlet ASTM A105 MSS SP-97 BW	
1	20	1	STD	XS	P31B-00B8D	Outlet ASTM A105 MSS SP-97 BW	
1	24	1	STD	XS	P31B-00B4R	Outlet ASTM A105 MSS SP-97 BW	
1	30	1	STD	XS	P31B-010T6	Outlet ASTM A105 MSS SP-97 BW	
1	4	1.5	STD	XS	P31B-00BNZ	Outlet ASTM A105 MSS SP-97 BW	
1	6	1.5	STD	XS	P31B-00BJB	Outlet ASTM A105 MSS SP-97 BW	
1	8	1.5	SCH20	XS	P31B-00Y4X	Outlet ASTM A105 MSS SP-97 BW	
1	10	1.5	SCH20	XS	P31B-00Y4P	Outlet ASTM A105 MSS SP-97 BW	
1	12	1.5	SCH20	XS	P31B-00Y4R	Outlet ASTM A105 MSS SP-97 BW	
1	14	1.5	SCH20	XS	P31B-00Y4S	Outlet ASTM A105 MSS SP-97 BW	
1	16	1.5	SCH20	XS	P31B-00Y4T	Outlet ASTM A105 MSS SP-97 BW	
1	18	1.5	SCH20	XS	P31B-00Y4U	Outlet ASTM A105 MSS SP-97 BW	
1	20	1.5	STD	XS	P31B-00C3L	Outlet ASTM A105 MSS SP-97 BW	
1	24	1.5	STD	XS	P31B-00BZ7	Outlet ASTM A105 MSS SP-97 BW	
1	30	1.5	STD	XS	P31B-010T8	Outlet ASTM A105 MSS SP-97 BW	
1	6	2	STD	XS	P31B-007SH	Outlet ASTM A105 MSS SP-97 BW	

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OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	8	2	SCH20	XS	P31B-00NY2	Outlet ASTM A105 MSS SP-97 BW	
1	10	2	SCH20	XS	P31B-00TFB	Outlet ASTM A105 MSS SP-97 BW	
1	12	2	SCH20	XS	P31B-00TFA	Outlet ASTM A105 MSS SP-97 BW	
1	14	2	SCH20	XS	P31B-00TF9	Outlet ASTM A105 MSS SP-97 BW	
1	16	2	SCH20	XS	P31B-00TF8	Outlet ASTM A105 MSS SP-97 BW	
1	18	2	SCH20	XS	P31B-00NVX	Outlet ASTM A105 MSS SP-97 BW	
1	20	2	STD	XS	P31B-00994	Outlet ASTM A105 MSS SP-97 BW	
1	24	2	STD	XS	P31B-0092Z	Outlet ASTM A105 MSS SP-97 BW	
1	30	2	STD	XS	P31B-008P5	Outlet ASTM A105 MSS SP-97 BW	
1	8	3	SCH20	STD	P31B-00P11	Outlet ASTM A105 MSS SP-97 BW	
1	10	3	SCH20	STD	P31B-00UPG	Outlet ASTM A105 MSS SP-97 BW	
1	12	3	SCH20	STD	P31B-00USE	Outlet ASTM A105 MSS SP-97 BW	
1	14	3	SCH20	STD	P31B-00UPH	Outlet ASTM A105 MSS SP-97 BW	
1	16	3	SCH20	STD	P31B-00TU2	Outlet ASTM A105 MSS SP-97 BW	
1	18	3	SCH20	STD	P31B-00NZ4	Outlet ASTM A105 MSS SP-97 BW	
1	20	3	STD	STD	P31B-008FA	Outlet ASTM A105 MSS SP-97 BW	
1	24	3	STD	STD	P31B-00895	Outlet ASTM A105 MSS SP-97 BW	
1	30	3	STD	STD	P31B-007WY	Outlet ASTM A105 MSS SP-97 BW	
1	12	4	SCH20	STD	P31B-00USF	Outlet ASTM A105 MSS SP-97 BW	
1	14	4	SCH20	STD	P31B-00UPJ	Outlet ASTM A105 MSS SP-97 BW	
1	16	4	SCH20	STD	P31B-00TU3	Outlet ASTM A105 MSS SP-97 BW	
1	18	4	SCH20	STD	P31B-00P1V	Outlet ASTM A105 MSS SP-97 BW	
1	20	4	STD	STD	P31B-008D3	Outlet ASTM A105 MSS SP-97 BW	
1	24	4	STD	STD	P31B-0086X	Outlet ASTM A105 MSS SP-97 BW	
1	30	4	STD	STD	P31B-007US	Outlet ASTM A105 MSS SP-97 BW	
1	18	6	SCH20	STD	P31B-00P48	Outlet ASTM A105 MSS SP-97 BW	
1	20	6	STD	STD	P31B-008PZ	Outlet ASTM A105 MSS SP-97 BW	
1	24	6	STD	STD	P31B-008JD	Outlet ASTM A105 MSS SP-97 BW	
1	30	6	STD	STD	P31B-008BS	Outlet ASTM A105 MSS SP-97 BW	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30B-0002D	Plug ASTM A105 ASME B16.11 NPT Round head	
1	0.75				P30B-0002E	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1				P30B-0002F	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1.5				P30B-0002G	Plug ASTM A105 ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P61B-003ND	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	0.75		XS		P61B-003NE	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	1		XS		P61B-003NF	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	1.5		XS		P61B-003NG	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	2		XS		P61B-003NK	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	3		STD		P61B-001PW	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	4		STD		P61B-001R8	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	6		STD		P61B-001RT	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	8		SCH20		P61B-002BF	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	10		SCH20		P61B-002B4	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	12		SCH20		P61B-002B5	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	14		SCH20		P61B-002B6	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	16		SCH20		P61B-002B7	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	18		SCH20		P61B-002B8	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	20		STD		P61B-001JA	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	24		STD		P61B-001NJ	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	30		STD		P61B-001S8	Flange WN ASTM A105 Class 150 ASME B16.47 Series B RF	
541	0.5				P61B-003TZ	Flange NPT ASTM A105 Class 150 ASME B16.5 RF	
541	0.75				P61B-003U0	Flange NPT ASTM A105 Class 150 ASME B16.5 RF	
773	0.5		XS		P61B-0032Z	Flange WN ASTM A105 Class 300 ASME B16.5 RF	

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FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
773	0.75		XS		P61B-0032X	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	1		XS		P61B-0032U	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	1.5		XS		P61B-0032S	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	2		XS		P61B-001HW	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	3		STD		P61B-001LJ	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	4		STD		P61B-001MC	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	6		STD		P61B-001N2	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	8		SCH20		P61B-002LJ	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	10		SCH20		P61B-002LH	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	12		SCH20		P61B-002MP	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	14		SCH20		P61B-002MR	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	16		SCH20		P61B-002MS	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	18		SCH20		P61B-002MT	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	20		STD		P61B-001NT	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	24		STD		P61B-001PA	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	30		STD		P61B-003SW	Flange WN ASTM A105 Class 300 ASME B16.47 Series B RF	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67B-000FH	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	0.75				P67B-000FJ	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	1				P67B-000FK	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	1.5				P67B-000FL	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	2				P67B-000FT	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	3				P67B-000FW	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	4				P67B-000FX	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	6				P67B-000FY	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	8				P67B-000FZ	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	10				P67B-000FM	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	12				P67B-000FN	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	14				P67B-000FP	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	16				P67B-000FR	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	18				P67B-000FS	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	20				P67B-000FU	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	24				P67B-000FV	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	30				P67B-000G2	Blind flange ASTM A105 Class 150 ASME B16.47 Series B RF	

REDUCING FLANGE (FR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2	0.75		XS	P62B-000NC	Reducing flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	2	1		XS	P62B-000K6	Reducing flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	2	1.5		XS	P62B-000K7	Reducing flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	3	1.5		XS	P62B-000JX	Reducing flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	3	2		XS	P62B-0006B	Reducing flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	4	2		XS	P62B-00098	Reducing flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	4	3		STD	P62B-0006D	Reducing flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	6	3		STD	P62B-000JY	Reducing flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	6	4		STD	P62B-000JZ	Reducing flange WN ASTM A105 Class 150 ASME B16.5 RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000L8	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000L9	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000LA	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000LB	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000LH	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

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GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3				P73T-000LL	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000LM	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	6				P73T-000LN	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	8				P73T-000LP	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	10				P73T-000LC	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	12				P73T-000LD	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	14				P73T-000LE	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	16				P73T-000LF	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	18				P73T-000LG	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	20				P73T-000LJ	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	24				P73T-000LK	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	30				P73T-000LT	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	0.5				P73T-000FT	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	0.75				P73T-000FU	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	3				P73T-000G5	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	4				P73T-000G6	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	6				P73T-000G7	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	8				P73T-000G8	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	10				P73T-000FX	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	12				P73T-000FY	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	14				P73T-000FZ	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	16				P73T-000G0	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	18				P73T-000G1	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	20				P73T-000G3	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	24				P73T-000G4	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	30				P73T-000H9	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-16				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	18-24				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
1	30				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
773	0.5-10				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
773	12-30				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81B-0018G	Gate valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	0.75				P81B-0018H	Gate valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	1				P81B-0018J	Gate valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	1.5				P81B-0018K	Gate valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	2				P81C-004EG	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	

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GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3				P81C-004EH	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	4				P81C-004EJ	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	6				P81C-004EK	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	8				P81C-004EL	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	10				P81C-004EE	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	12				P81C-004EF	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	14				P81C-004E9	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Moderate wet H2S service	
1	16				P81C-004EA	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Moderate wet H2S service	
1	18				P81C-004EB	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Moderate wet H2S service	
1	20				P81C-004EC	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Moderate wet H2S service	
1	24				P81C-004ED	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Moderate wet H2S service	
1	30				P81C-004E5	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.47-B RF Trim number 12 BB-BG-OS&Y Gear operated Moderate wet H2S service	
4608	0.75				P81B-002XT	Gate valve ASTM A105 Class 150 API 602 BW both sides w/ nipples BE - NPT ASTM A106-B Sch160-nipple Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
4608	1				P81B-0038E	Gate valve ASTM A105 Class 150 API 602 BW both sides w/ nipples BE - NPT ASTM A106-B Sch160-nipple Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
773	2				P81C-004HZ	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82B-0011M	Globe valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	0.75				P82B-0011N	Globe valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	1				P82B-0011P	Globe valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	1.5				P82B-0011R	Globe valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	2				P82C-00270	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	3				P82C-00271	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	4				P82C-00272	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	6				P82C-00273	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	8				P82C-00274	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	10				P82C-003UV	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	12				P82C-004CF	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Moderate wet H2S service	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83B-000TW	Check valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Moderate wet H2S service	
1	0.75				P83B-000TX	Check valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Moderate wet H2S service	
1	1				P83B-000TY	Check valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Moderate wet H2S service	
1	1.5				P83B-000TZ	Check valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Moderate wet H2S service	
1	2				P83C-0022G	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Moderate wet H2S service	
1	3				P83C-0022H	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Moderate wet H2S service	
1	4				P83C-0022J	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Moderate wet H2S service	
1	6				P83C-0022K	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Moderate wet H2S service	
1	8				P83C-0022L	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Moderate wet H2S service	
1	10				P83C-0022C	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Moderate wet H2S service	
1	12				P83C-0022D	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Moderate wet H2S service	
1	14				P83C-0022E	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Moderate wet H2S service	
1	16				P83C-0022F	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Moderate wet H2S service	

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BALL VALVE (Q)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P84B-0012D	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design Moderate wet H2S service	
1	0.75				P84B-0012E	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design Moderate wet H2S service	
1	1				P84B-0012F	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design Moderate wet H2S service	
1	1.5				P84B-0012G	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design Moderate wet H2S service	
1	2				P84C-005UV	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design Moderate wet H2S service	
1	3				P84C-005UW	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design Moderate wet H2S service	
1	4				P84C-005UX	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design Moderate wet H2S service	
1	6				P84C-005VC	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Reduced bore Fire tested design Moderate wet H2S service	
1	8				P84C-005VD	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Reduced bore Fire tested design Moderate wet H2S service	
1	10				P84C-005V6	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Reduced bore Fire tested design Moderate wet H2S service	
1	12				P84C-005V7	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Reduced bore Fire tested design Moderate wet H2S service	
1	14				P84C-005V8	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Reduced bore Fire tested design Moderate wet H2S service	
1	16				P84C-005V9	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Reduced bore Fire tested design Moderate wet H2S service	
1	18				P84C-005VA	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Reduced bore Fire tested design Moderate wet H2S service	
1	20				P84C-005VB	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Reduced bore Fire tested design Moderate wet H2S service	
24	0.5				P84B-00129	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design Moderate wet H2S service	
24	0.75				P84B-0012A	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design Moderate wet H2S service	
24	1				P84B-0012B	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design Moderate wet H2S service	
24	1.5				P84B-0012C	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design Moderate wet H2S service	
24	2				P84C-005US	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design Moderate wet H2S service	
24	3				P84C-005UT	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design Moderate wet H2S service	
24	4				P84C-005UU	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design Moderate wet H2S service	
24	6				P84C-005V4	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design Moderate wet H2S service	
24	8				P84C-005V5	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design Moderate wet H2S service	
24	10				P84C-005UY	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design Moderate wet H2S service	
24	12				P84C-005UZ	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design Moderate wet H2S service	
24	14				P84C-005V0	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design Moderate wet H2S service	
24	16				P84C-005V1	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design Moderate wet H2S service	
24	18				P84C-005V2	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design Moderate wet H2S service	
24	20				P84C-005V3	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design Moderate wet H2S service	

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PIPING CLASS
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BUTTERFLY VALVE (H)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	10				P86C-00249	Offset design butterfly valve ASTM A216 Grade WCB Class 150 API 609 Category B Lug-type ASME B16.5 RF Disc CS Seat Stellite-6 Trim SS316 Triple eccentric design BG Gear operated Moderate wet H2S service	
1	12				P86C-0024A	Offset design butterfly valve ASTM A216 Grade WCB Class 150 API 609 Category B Lug-type ASME B16.5 RF Disc CS Seat Stellite-6 Trim SS316 Triple eccentric design BG Gear operated Moderate wet H2S service	
1	14				P86C-0024B	Offset design butterfly valve ASTM A216 Grade WCB Class 150 API 609 Category B Lug-type ASME B16.5 RF Disc CS Seat Stellite-6 Trim SS316 Triple eccentric design BG Gear operated Moderate wet H2S service	
1	16				P86C-0024C	Offset design butterfly valve ASTM A216 Grade WCB Class 150 API 609 Category B Lug-type ASME B16.5 RF Disc CS Seat Stellite-6 Trim SS316 Triple eccentric design BG Gear operated Moderate wet H2S service	

ORIFICE FLANGE (FO)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	8		SCH20		P66B-0084F	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
200	8		SCH20		P66B-00847	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71B-0008A	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	0.75				P71B-0008B	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	1				P71B-0008C	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71B-0008D	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	2				P71B-0000P	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	3				P71B-0000N	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	4				P71B-0000M	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	6				P71B-0000L	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	8				P71B-0000R	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	10				P71B-0000K	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	12				P71B-0000J	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	

PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000AH	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	16				P72B-0000C	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	18				P72B-000AJ	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	20				P72B-000AK	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	24				P72B-000AL	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	30				P72B-000AM	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	

PADDLE SPACER (PS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000AT	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	16				P72B-0000B	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	18				P72B-000AU	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	20				P72B-000AV	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	24				P72B-000AW	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	30				P72B-000AX	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	

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BOLT TABLE (B_A1AQ03 , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	60	P80S-008SY		
0.75	4	0.500	65	P80S-008SZ		
1	4	0.500	70	P80S-008T0		
1.5	4	0.500	75	P80S-008T1		
2	4	0.625	85	P80S-0090A		
3	4	0.625	95	P80S-0090C		
4	8	0.625	95	P80S-0090C		
6	8	0.750	105	P80S-0090E		
8	8	0.750	110	P80S-0090F		
10	12	0.875	120	P80S-005Z9		
12	12	0.875	120	P80S-005Z9		
14	12	1.000	135	P80S-00619		
16	16	1.000	140	P80S-0061A		
18	16	1.125	150	P80S-0064L		
20	20	1.125	160	P80S-0064N		
24	20	1.250	175	P80S-00686		
30	44	0.750	145	P80S-0090N		

BOLT TABLE (B_A1AQ03_773 , STUD ASME RF, OPTION CODE 773)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-008T0		
0.75	4	0.625	75	P80S-00908		
1	4	0.625	80	P80S-00909		
1.5	4	0.750	95	P80S-005Z4		
2	8	0.625	90	P80S-0090B		
3	8	0.750	110	P80S-0090F		
4	8	0.750	115	P80S-0090G		
6	12	0.750	125	P80S-0090J		
8	12	0.875	140	P80S-005ZD		
10	16	1.000	160	P80S-0061E		
12	16	1.125	175	P80S-0064S		
14	20	1.125	180	P80S-0064T		
16	20	1.250	190	P80S-00689		
18	24	1.250	200	P80S-0068B		
20	24	1.250	210	P80S-0068D		
24	24	1.500	235	P80S-006LB		
30	36	1.375	285	P80S-006HY		

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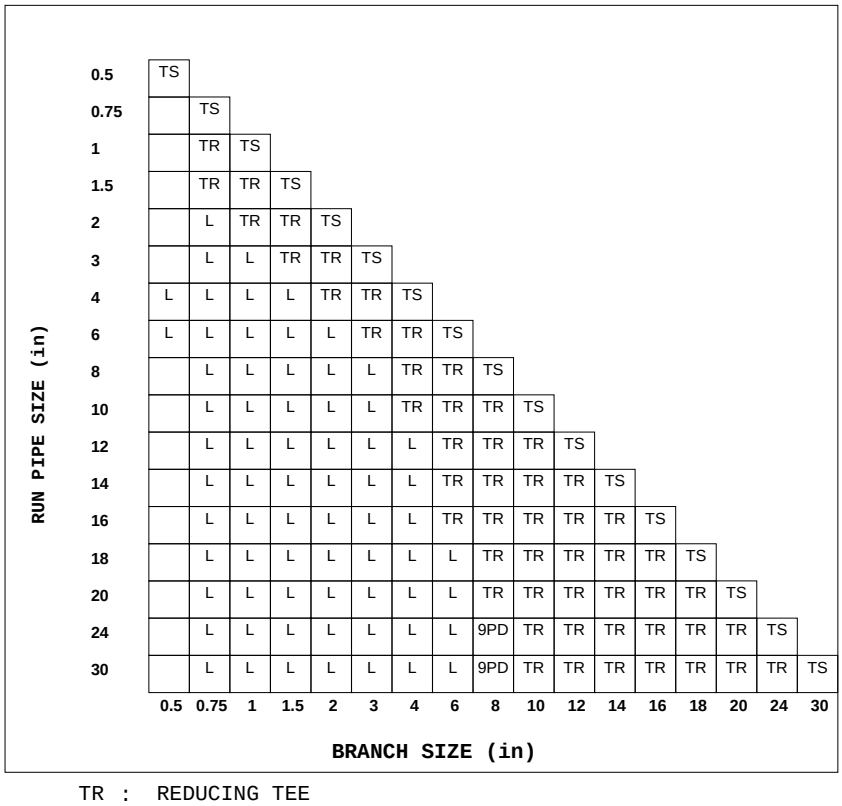
BRANCH TABLE (T_A1AQ03)



RUN PIPE SIZE (in)	0.5	0.75	1	1.5	2	3	4	6	8	10	12	14	16	18	20	24	30
0.5	TS																
0.75		TS															
1		TR	TS														
1.5		TR	TR	TS													
2		L	TR	TR	TS												
3		L	L	TR	TR	TS											
4	L	L	L	L	TR	TR	TS										
6	L	L	L	L	L	TR	TR	TS									
8		L	L	L	L	L	TR	TR	TS								
10		L	L	L	L	L	TR	TR	TR	TS							
12		L	L	L	L	L	L	TR	TR	TR	TS						
14		L	L	L	L	L	L	TR	TR	TR	TR	TS					
16		L	L	L	L	L	L	TR	TR	TR	TR	TR	TS				
18		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TS			
20		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TR	TS		
24		L	L	L	L	L	L	L	9PD	TR	TR	TR	TR	TR	TR	TS	
30		L	L	L	L	L	L	L	9PD	TR	TR	TR	TR	TR	TR	TR	TS

TR : REDUCING TEE
TS : STRAIGHT TEE
9PD : REINFORCING PAD 90 DEG
L : OUTLET

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PIPING CLASS

A1AQ04 REV NO. 2

Material : Killed CS
Rating : ASME CLASS 150
Flange Face : RF
C.A.(mm) : 1.50
Gasket : Spiral Wound
Service : PROCESS -WET LOW SEVERITY SOUR SERVICE SUBJECT TO NACE
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
2	USE OF SOFT SEATED BALL, PLUG AND BUTTERFLY VALVES SHALL BE LIMITED TO MAXIMUM OF 204DEGC (400DEGF)
5	BOLTING CONFIRMING TO B7M / 2HM SHALL BE USED UNDER CONDITIONS (A) DIRECT EXPOSURE TO SOUR ENVIRONMENTS (B) WHEN THE BOLTING WILL BE BURIED OR INSULATED
27	PWHT OF CARBON STEEL PIPING IN WET H2S, CAUSTIC AND AMINE SERVICES SHALL BE IN ACCORDANCE WITH SECTION 10.2, 10.3, AND 10.4 OF PROJECT SPECIFICATION 3550-8440-SP-0002 MATERIALS REQUIREMENTS FOR PRESSURISED EQUIPMENT AND PIPING. FOR CAUSTIC AND AMINE SERVICE THE FOLLOWING SHALL APPLY: - PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF ALL SITE PIPING FABRICATION WELDS IS REQUIRED FOR ALL WALL THICKNESSES. FOR MODERATE AND SEVERE WET H2S SERVICE THE FOLLOWING SHALL APPLY: PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF SITE FABRICATION CIRCUMFERENTIAL OR BRANCH WELDS IS NOT REQUIRED IF WELDS ARE MULTIPASS AND IN ACCORDANCE WITH PARA 10.2.12 OF PROJECT SPECIFICATION 3550-8440-SP-0002. FOR SERVICES MEETING THE WET H2S CRITERIA AND CAUSTIC OR AMINE CRITERIA THE MORE STRINGENT PWHT REQUIREMENT SHALL GOVERN.

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
24	FULL PORT (Q)
541	NPT(F) (CA,F)
773	CLASS 300 (B,F,G)
4608	VALVE WITH NIPPLES (V)

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PIPING CLASS
A1AQ04 REV NO. 2

PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P01A-000XM	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	0.75		XS		P01A-000XN	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1		XS		P01A-000XP	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1.5		XS		P01A-000XV	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	2		XS		P01A-000YX	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	3		STD		P01A-000YM	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	4		STD		P01A-000YU	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P02A-000UR	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	0.75		XS		P02A-000UN	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1		XS		P02A-000UL	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1.5		XS		P02A-000UJ	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	2		XS		P02A-000CP	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		STD		P02A-000CU	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		STD		P02A-000CZ	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P03A-0018K	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	0.75		XS		P03A-0018L	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1		XS		P03A-0018M	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1.5		XS		P03A-0018N	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	2		XS		P03A-000AS	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		STD		P03A-000AX	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		STD		P03A-000B1	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P21A-002TV	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	0.75		XS		P21A-002TW	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1		XS		P21A-002TX	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5		XS		P21A-002TY	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2		XS		P21A-001CJ	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		STD		P21A-001CU	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		STD		P21A-001CW	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75	XS	XS	P24A-006WW	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.75	XS	XS	P24A-006WY	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	1	XS	XS	P24A-006WZ	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	XS	XS	P24A-00238	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	XS	XS	P24A-0023H	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	STD	XS	P24A-00214	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	STD	XS	P24A-002HW	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P24A-002HY	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P24A-0021K	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	XS	XS	P27A-004M6	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.5	XS	XS	P27A-004ME	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.75	XS	XS	P27A-004MM	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.5	XS	XS	P27A-004N2	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.75	XS	XS	P27A-004NC	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	1	XS	XS	P27A-004NP	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2	0.75	XS	XS	P27A-001CZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	XS	XS	P27A-001DL	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	XS	XS	P27A-001E2	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	STD	XS	P27A-001AU	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	STD	XS	P27A-001MZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	1.5	STD	XS	P27A-001AW	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P27A-001N0	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P27A-00189	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	XS	XS	P28A-004V6	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.5	XS	XS	P28A-004V7	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.75	XS	XS	P28A-004V8	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.5	XS	XS	P28A-004V9	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.75	XS	XS	P28A-004VA	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	1	XS	XS	P28A-004VB	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	0.75	XS	XS	P28A-001CU	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	XS	XS	P28A-001DS	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	XS	XS	P28A-001EE	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	STD	XS	P28A-001A3	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	STD	XS	P28A-001N5	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	1.5	STD	XS	P28A-001A4	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P28A-001N6	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P28A-0018B	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P29A-0035U	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	0.75		XS		P29A-0035V	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	1		XS		P29A-0035W	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	1.5		XS		P29A-0035X	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	2		XS		P29A-001VG	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	3		STD		P29A-001VK	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	4		STD		P29A-001VN	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
541	0.75				P29B-0000C	Cap ASTM A105 Class 3000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P41A-000B5	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		SCH160		P41A-000B6	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		SCH160		P41A-000B7	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		SCH160		P41A-000B8	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2	0.75	XS	XS	P31B-00CP3	Outlet ASTM A105 MSS SP-97 BW	
1	3	0.75	STD	XS	P31B-00CMN	Outlet ASTM A105 MSS SP-97 BW	
1	4	0.75	STD	XS	P31B-00CLM	Outlet ASTM A105 MSS SP-97 BW	
1	3	1	STD	XS	P31B-00B4D	Outlet ASTM A105 MSS SP-97 BW	
1	4	1	STD	XS	P31B-00AYW	Outlet ASTM A105 MSS SP-97 BW	
1	4	1.5	STD	XS	P31B-00BNZ	Outlet ASTM A105 MSS SP-97 BW	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30B-0002D	Plug ASTM A105 ASME B16.11 NPT Round head	
1	0.75				P30B-0002E	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1				P30B-0002F	Plug ASTM A105 ASME B16.11 NPT Round head	

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PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5				P30B-0002G	Plug ASTM A105 ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P61B-003ND	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	0.75		XS		P61B-003NE	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	1		XS		P61B-003NF	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	1.5		XS		P61B-003NG	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	2		XS		P61B-003NK	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	3		STD		P61B-001PW	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	4		STD		P61B-001R8	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
541	0.5				P61B-003TZ	Flange NPT ASTM A105 Class 150 ASME B16.5 RF	
541	0.75				P61B-003U0	Flange NPT ASTM A105 Class 150 ASME B16.5 RF	
773	0.5		XS		P61B-0032Z	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	0.75		XS		P61B-0032X	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	1		XS		P61B-0032U	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	1.5		XS		P61B-0032S	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	2		XS		P61B-001HW	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	3		STD		P61B-001LJ	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	4		STD		P61B-001MC	Flange WN ASTM A105 Class 300 ASME B16.5 RF	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67B-000FH	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	0.75				P67B-000FJ	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	1				P67B-000FK	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	1.5				P67B-000FL	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	2				P67B-000FT	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	3				P67B-000FW	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	4				P67B-000FX	Blind flange ASTM A105 Class 150 ASME B16.5 RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000L8	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000L9	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000LA	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000LB	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000LH	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000LL	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000LM	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	0.5				P73T-000FT	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	0.75				P73T-000FU	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	3				P73T-000G5	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	4				P73T-000G6	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-4				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
773	0.5-4				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	

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GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81B-0018G	Gate valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	0.75				P81B-0018H	Gate valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	1				P81B-0018J	Gate valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	1.5				P81B-0018K	Gate valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	2				P81C-006MD	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Licensor-4	
1	3				P81C-006ME	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Licensor-4	
1	4				P81C-006MF	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Licensor-4	
4608	0.75				P81B-002XT	Gate valve ASTM A105 Class 150 API 602 BW both sides w/ nipples BE - NPT ASTM A106-B Sch160-nipple Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82B-0011M	Globe valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	0.75				P82B-0011N	Globe valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	1				P82B-0011P	Globe valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	1.5				P82B-0011R	Globe valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	2				P82C-0036V	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Licensor-4	
1	3				P82C-0036W	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Licensor-4	
1	4				P82C-0036X	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Licensor-4	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83B-000TW	Check valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Moderate wet H2S service	
1	0.75				P83B-000TX	Check valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Moderate wet H2S service	
1	1				P83B-000TY	Check valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Moderate wet H2S service	
1	1.5				P83B-000TZ	Check valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Moderate wet H2S service	
1	2				P83C-00336	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Moderate wet H2S service Licensor-4	
1	3				P83C-00337	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Moderate wet H2S service Licensor-4	
1	4				P83C-00338	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Moderate wet H2S service Licensor-4	

BALL VALVE (Q)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P84B-0012D	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design Moderate wet H2S service	
1	0.75				P84B-0012E	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design Moderate wet H2S service	
1	1				P84B-0012F	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design Moderate wet H2S service	
1	1.5				P84B-0012G	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design Moderate wet H2S service	
1	2				P84C-006S9	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design Moderate wet H2S service Licensor-4	
1	3				P84C-006SA	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design Moderate wet H2S service Licensor-4	
1	4				P84C-006SB	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design Moderate wet H2S service Licensor-4	
24	0.5				P84B-00129	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design Moderate wet H2S service	
24	0.75				P84B-0012A	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design Moderate wet H2S service	
24	1				P84B-0012B	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design Moderate wet H2S service	

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BALL VALVE (Q)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
24	1.5				P84B-0012C	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design Moderate wet H2S service	
24	2				P84C-006S6	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design Moderate wet H2S service Licensor-4	
24	3				P84C-006S7	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design Moderate wet H2S service Licensor-4	
24	4				P84C-006S8	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design Moderate wet H2S service Licensor-4	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71B-0008A	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	0.75				P71B-0008B	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	1				P71B-0008C	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71B-0008D	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	2				P71B-0000P	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	3				P71B-0000N	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	4				P71B-0000M	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	

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BOLT TABLE (B_A1AQ04 , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	60	P80S-008SY		
0.75	4	0.500	65	P80S-008SZ		
1	4	0.500	70	P80S-008T0		
1.5	4	0.500	75	P80S-008T1		
2	4	0.625	85	P80S-0090A		
3	4	0.625	95	P80S-0090C		
4	8	0.625	95	P80S-0090C		

BOLT TABLE (B_A1AQ04_773 , STUD ASME RF, OPTION CODE 773)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-008T0		
0.75	4	0.625	75	P80S-00908		
1	4	0.625	80	P80S-00909		
1.5	4	0.750	95	P80S-005Z4		
2	8	0.625	90	P80S-0090B		
3	8	0.750	110	P80S-0090F		
4	8	0.750	115	P80S-0090G		

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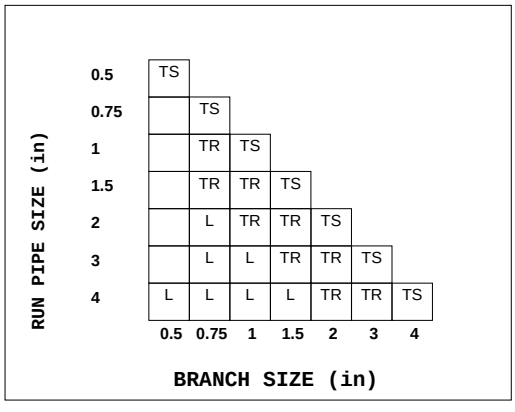
BRANCH TABLE (T_A1AQ04)



TS : STRAIGHT TEE
L : OUTLET
TR : REDUCING TEE

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PIPING CLASS

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Material : Killed CS
Rating : ASME CLASS 150
Flange Face : RF
C.A.(mm) : 1.50
Gasket : Spiral Wound
Service : PROCESS -WET LOW SEVERITY SOUR SERVICE SUBJECT TO NACE
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
2	USE OF SOFT SEATED BALL, PLUG AND BUTTERFLY VALVES SHALL BE LIMITED TO MAXIMUM OF 204DEGC (400DEGF)
5	BOLTING CONFIRMING TO B7M / 2HM SHALL BE USED UNDER CONDITIONS (A) DIRECT EXPOSURE TO SOUR ENVIRONMENTS (B) WHEN THE BOLTING WILL BE BURIED OR INSULATED
27	PWHT OF CARBON STEEL PIPING IN WET H2S, CAUSTIC AND AMINE SERVICES SHALL BE IN ACCORDANCE WITH SECTION 10.2, 10.3, AND 10.4 OF PROJECT SPECIFICATION 3550-8440-SP-0002 MATERIALS REQUIREMENTS FOR PRESSURISED EQUIPMENT AND PIPING. FOR CAUSTIC AND AMINE SERVICE THE FOLLOWING SHALL APPLY: - PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF ALL SITE PIPING FABRICATION WELDS IS REQUIRED FOR ALL WALL THICKNESSES. FOR MODERATE AND SEVERE WET H2S SERVICE THE FOLLOWING SHALL APPLY: PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF SITE FABRICATION CIRCUMFERENTIAL OR BRANCH WELDS IS NOT REQUIRED IF WELDS ARE MULTIPASS AND IN ACCORDANCE WITH PARA 10.2.12 OF PROJECT SPECIFICATION 3550-8440-SP-0002. FOR SERVICES MEETING THE WET H2S CRITERIA AND CAUSTIC OR AMINE CRITERIA THE MORE STRINGENT PWHT REQUIREMENT SHALL GOVERN.

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
541	NPT(F) (F)
773	CLASS 300 (B,F,FR,G)
4610	JACKETED VALVE (1.5" X 0.75") (PV)
4611	JACKETED VALVE (3" X 2") (PV,X)
4612	CLASS 300 JACKETED VALVE (3" X 2") (PV)

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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P01A-000XM	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	0.75		XS		P01A-000XN	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1		XS		P01A-000XP	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1.5		XS		P01A-000XV	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	2		XS		P01A-000YX	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	3		STD		P01A-000YM	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	4		STD		P01A-000YU	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	6		STD		P01A-000Z3	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	8		SCH20		P01A-001AT	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	10		SCH20		P01A-0014Y	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	12		SCH20		P01A-0016H	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	14		SCH20		P01A-0017A	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	16		SCH20		P01A-0018E	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	18		SCH20		P01A-00370	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	20		STD		P01A-002CC	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	24		STD		P01A-002CD	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	30		STD		P01A-007TC	Pipe ASTM A671 Grade CC60 Class 22 EFW ASME B36.10M/B36.19M BE Moderate wet H2S service	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P02A-000UR	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	0.75		XS		P02A-000UN	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1		XS		P02A-000UL	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1.5		XS		P02A-000UJ	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	2		XS		P02A-000CP	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		STD		P02A-000CU	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		STD		P02A-000CZ	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		STD		P02A-000D6	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		SCH20		P02A-000GZ	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	10		SCH20		P02A-000H1	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	12		SCH20		P02A-000H4	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	14		SCH20		P02A-000FX	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	16		SCH20		P02A-000GM	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	18		SCH20		P02A-000LT	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	20		STD		P02A-0010J	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	24		STD		P02A-0010K	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	30		STD		P02A-002JF	90 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius Moderate wet H2S service	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P03A-0018K	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	0.75		XS		P03A-0018L	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1		XS		P03A-0018M	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1.5		XS		P03A-0018N	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	2		XS		P03A-000AS	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		STD		P03A-000AX	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		STD		P03A-000B1	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		STD		P03A-000B9	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		SCH20		P03A-000EX	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	10		SCH20		P03A-000F0	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	12		SCH20		P03A-000F2	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	14		SCH20		P03A-000DW	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	16		SCH20		P03A-000EM	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	18		SCH20		P03A-001DX	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	20		STD		P03A-000X1	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	24		STD		P03A-000X2	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	30		STD		P03A-002FZ	45 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius Moderate wet H2S service	

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STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P21A-002TV	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	0.75		XS		P21A-002TW	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1		XS		P21A-002TX	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5		XS		P21A-002TY	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2		XS		P21A-001CJ	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		STD		P21A-001CU	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		STD		P21A-001CW	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6		STD		P21A-001D2	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8		SCH20		P21A-00215	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10		SCH20		P21A-00219	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12		SCH20		P21A-0021A	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14		SCH20		P21A-00206	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16		SCH20		P21A-0020X	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18		SCH20		P21A-002Y1	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20		STD		P21A-002FU	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24		STD		P21A-002FV	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	30		STD		P21A-003H1	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Moderate wet H2S service	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75	XS	XS	P24A-006WW	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.75	XS	XS	P24A-006WY	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	1	XS	XS	P24A-006WZ	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	XS	XS	P24A-00238	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	XS	XS	P24A-0023H	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	STD	XS	P24A-00214	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	STD	XS	P24A-002HW	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P24A-002HY	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P24A-0021K	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	STD	P24A-0021A	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P24A-00229	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH20	STD	P24A-00J21	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH20	STD	P24A-005J4	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	SCH20	STD	P24A-00HMB	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	SCH20	STD	P24A-00HKS	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	SCH20	SCH20	P24A-002YX	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	SCH20	STD	P24A-00K0B	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH20	SCH20	P24A-002U4	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH20	SCH20	P24A-002YC	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	SCH20	STD	P24A-00K0M	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	SCH20	SCH20	P24A-002U7	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	SCH20	SCH20	P24A-002YA	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	SCH20	SCH20	P24A-002YR	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	6	SCH20	STD	P24A-00GU4	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	SCH20	SCH20	P24A-002XW	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	SCH20	SCH20	P24A-002YH	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	SCH20	SCH20	P24A-002U1	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	SCH20	SCH20	P24A-002XF	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	8	SCH20	SCH20	P24A-00K8W	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	10	SCH20	SCH20	P24A-00GAF	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	12	SCH20	SCH20	P24A-00GAG	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	14	SCH20	SCH20	P24A-00GAH	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	16	SCH20	SCH20	P24A-00GAJ	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	8	STD	SCH20	P24A-00K8Y	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	10	STD	SCH20	P24A-00HKU	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	12	STD	SCH20	P24A-00K8X	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	14	STD	SCH20	P24A-00HKW	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	16	STD	SCH20	P24A-00HKX	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	18	STD	SCH20	P24A-0087A	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	24	10	STD	SCH20	P24A-00KVZ	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24	12	STD	SCH20	P24A-00K8Z	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24	14	STD	SCH20	P24A-00HME	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24	16	STD	SCH20	P24A-00HKZ	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24	18	STD	SCH20	P24A-008A5	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24	20	STD	STD	P24A-002PM	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	30	10	STD	SCH20	P24A-00KXH	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Moderate wet H2S service	
1	30	12	STD	SCH20	P24A-00NHE	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Moderate wet H2S service	
1	30	14	STD	SCH20	P24A-00KXK	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Moderate wet H2S service	
1	30	16	STD	SCH20	P24A-00KCM	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Moderate wet H2S service	
1	30	18	STD	SCH20	P24A-00KXL	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Moderate wet H2S service	
1	30	20	STD	STD	P24A-00GRF	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Moderate wet H2S service	
1	30	24	STD	STD	P24A-00KXM	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Moderate wet H2S service	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	XS	XS	P27A-004M6	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.5	XS	XS	P27A-004ME	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.75	XS	XS	P27A-004MM	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.5	XS	XS	P27A-004N2	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.75	XS	XS	P27A-004NC	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	1	XS	XS	P27A-004NP	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	0.75	XS	XS	P27A-001CZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	XS	XS	P27A-001DL	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	XS	XS	P27A-001E2	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	STD	XS	P27A-001AU	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	STD	XS	P27A-001MZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	1.5	STD	XS	P27A-001AW	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P27A-001N0	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P27A-00189	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	STD	P27A-001AZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P27A-001GW	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH20	STD	P27A-003K2	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH20	STD	P27A-003K3	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	SCH20	STD	P27A-003K4	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	SCH20	STD	P27A-003K5	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	SCH20	SCH20	P27A-001UL	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	SCH20	STD	P27A-003K6	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH20	SCH20	P27A-001UU	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH20	SCH20	P27A-001TH	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	SCH20	STD	P27A-00518	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	SCH20	SCH20	P27A-001V4	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	SCH20	SCH20	P27A-001TG	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	SCH20	SCH20	P27A-001U1	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	SCH20	SCH20	P27A-001WX	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	SCH20	SCH20	P27A-001TW	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	SCH20	SCH20	P27A-001UF	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	SCH20	SCH20	P27A-001V2	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	10	SCH20	SCH20	P27A-005AX	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	12	SCH20	SCH20	P27A-005D2	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	14	SCH20	SCH20	P27A-005F3	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	16	SCH20	SCH20	P27A-005H6	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	12	STD	SCH20	P27A-005LV	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	14	STD	SCH20	P27A-005NZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	16	STD	SCH20	P27A-005S7	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	18	STD	SCH20	P27A-005TW	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24	16	STD	SCH20	P27A-005Y6	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24	18	STD	SCH20	P27A-005ZV	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24	20	STD	STD	P27A-0037U	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	30	20	STD	STD	P27A-00BHM	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Moderate wet H2S service	
1	30	24	STD	STD	P27A-00F9C	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Moderate wet H2S service	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	XS	XS	P28A-004V6	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.5	XS	XS	P28A-004V7	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.75	XS	XS	P28A-004V8	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.5	XS	XS	P28A-004V9	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.75	XS	XS	P28A-004VA	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	1	XS	XS	P28A-004VB	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	0.75	XS	XS	P28A-001CU	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	XS	XS	P28A-001DS	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	XS	XS	P28A-001EE	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	STD	XS	P28A-001A3	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	STD	XS	P28A-001N5	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	1.5	STD	XS	P28A-001A4	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P28A-001N6	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P28A-0018B	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	STD	P28A-001AS	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P28A-00182	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH20	STD	P28A-003JU	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH20	STD	P28A-003JV	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	SCH20	STD	P28A-003JW	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	SCH20	STD	P28A-003JX	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	SCH20	SCH20	P28A-001V0	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	SCH20	STD	P28A-003JY	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH20	SCH20	P28A-001V1	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH20	SCH20	P28A-001TJ	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	SCH20	STD	P28A-0096P	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	SCH20	SCH20	P28A-001WH	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	SCH20	SCH20	P28A-001TH	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	SCH20	SCH20	P28A-001UC	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	SCH20	SCH20	P28A-001T6	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	SCH20	SCH20	P28A-001TY	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	SCH20	SCH20	P28A-001UX	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	SCH20	SCH20	P28A-001WG	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	10	SCH20	SCH20	P28A-0082H	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	12	SCH20	SCH20	P28A-0082J	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	14	SCH20	SCH20	P28A-0082K	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	16	SCH20	SCH20	P28A-0082L	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	12	STD	SCH20	P28A-00BYD	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	14	STD	SCH20	P28A-0096S	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	16	STD	SCH20	P28A-0096T	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	18	STD	SCH20	P28A-0063A	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24	16	STD	SCH20	P28A-0096U	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24	18	STD	SCH20	P28A-0066J	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24	20	STD	STD	P28A-0037A	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	30	20	STD	STD	P28A-008HB	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Moderate wet H2S service	
1	30	24	STD	STD	P28A-00CDD	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Moderate wet H2S service	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P29A-0035U	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	0.75		XS		P29A-0035V	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	1		XS		P29A-0035W	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	1.5		XS		P29A-0035X	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	2		XS		P29A-001VG	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	3		STD		P29A-001VK	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	

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CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	4		STD		P29A-001VN	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	6		STD		P29A-001VS	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	8		SCH20		P29A-00364	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	10		SCH20		P29A-0035Y	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	12		SCH20		P29A-0035Z	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	14		SCH20		P29A-00360	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	16		SCH20		P29A-00361	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	18		SCH20		P29A-00362	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	20		STD		P29A-001VH	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	24		STD		P29A-001TM	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	30		STD		P29A-001VL	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P41A-000B5	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		SCH160		P41A-000B6	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		SCH160		P41A-000B7	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		SCH160		P41A-000B8	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2	0.75	XS	XS	P31B-00CP3	Outlet ASTM A105 MSS SP-97 BW	
1	3	0.75	STD	XS	P31B-00CMN	Outlet ASTM A105 MSS SP-97 BW	
1	4	0.75	STD	XS	P31B-00CLM	Outlet ASTM A105 MSS SP-97 BW	
1	6	0.75	STD	XS	P31B-00CKD	Outlet ASTM A105 MSS SP-97 BW	
1	8	0.75	SCH20	XS	P31B-00Y4E	Outlet ASTM A105 MSS SP-97 BW	
1	10	0.75	SCH20	XS	P31B-00Y47	Outlet ASTM A105 MSS SP-97 BW	
1	12	0.75	SCH20	XS	P31B-00Y48	Outlet ASTM A105 MSS SP-97 BW	
1	14	0.75	SCH20	XS	P31B-00Y49	Outlet ASTM A105 MSS SP-97 BW	
1	16	0.75	SCH20	XS	P31B-00Y4A	Outlet ASTM A105 MSS SP-97 BW	
1	18	0.75	SCH20	XS	P31B-00Y4B	Outlet ASTM A105 MSS SP-97 BW	
1	20	0.75	STD	XS	P31B-00CNN	Outlet ASTM A105 MSS SP-97 BW	
1	24	0.75	STD	XS	P31B-00CN4	Outlet ASTM A105 MSS SP-97 BW	
1	30	0.75	STD	XS	P31B-010T4	Outlet ASTM A105 MSS SP-97 BW	
1	36	0.75	STD	XS	P31B-011VT	Outlet ASTM A105 MSS SP-97 BW	
1	3	1	STD	XS	P31B-00B4D	Outlet ASTM A105 MSS SP-97 BW	
1	4	1	STD	XS	P31B-00AYW	Outlet ASTM A105 MSS SP-97 BW	
1	6	1	STD	XS	P31B-00AZ6	Outlet ASTM A105 MSS SP-97 BW	
1	8	1	SCH20	XS	P31B-00Y4N	Outlet ASTM A105 MSS SP-97 BW	
1	10	1	SCH20	XS	P31B-00Y4F	Outlet ASTM A105 MSS SP-97 BW	
1	12	1	SCH20	XS	P31B-00Y4G	Outlet ASTM A105 MSS SP-97 BW	
1	14	1	SCH20	XS	P31B-00Y4H	Outlet ASTM A105 MSS SP-97 BW	
1	16	1	SCH20	XS	P31B-00Y4J	Outlet ASTM A105 MSS SP-97 BW	
1	18	1	SCH20	XS	P31B-00Y4K	Outlet ASTM A105 MSS SP-97 BW	
1	20	1	STD	XS	P31B-00B8D	Outlet ASTM A105 MSS SP-97 BW	
1	24	1	STD	XS	P31B-00B4R	Outlet ASTM A105 MSS SP-97 BW	
1	30	1	STD	XS	P31B-010T6	Outlet ASTM A105 MSS SP-97 BW	
1	36	1	STD	XS	P31B-011VU	Outlet ASTM A105 MSS SP-97 BW	
1	4	1.5	STD	XS	P31B-00BNZ	Outlet ASTM A105 MSS SP-97 BW	
1	6	1.5	STD	XS	P31B-00BJB	Outlet ASTM A105 MSS SP-97 BW	
1	8	1.5	SCH20	XS	P31B-00Y4X	Outlet ASTM A105 MSS SP-97 BW	
1	10	1.5	SCH20	XS	P31B-00Y4P	Outlet ASTM A105 MSS SP-97 BW	
1	12	1.5	SCH20	XS	P31B-00Y4R	Outlet ASTM A105 MSS SP-97 BW	
1	14	1.5	SCH20	XS	P31B-00Y4S	Outlet ASTM A105 MSS SP-97 BW	
1	16	1.5	SCH20	XS	P31B-00Y4T	Outlet ASTM A105 MSS SP-97 BW	
1	18	1.5	SCH20	XS	P31B-00Y4U	Outlet ASTM A105 MSS SP-97 BW	
1	20	1.5	STD	XS	P31B-00C3L	Outlet ASTM A105 MSS SP-97 BW	
1	24	1.5	STD	XS	P31B-00BZ7	Outlet ASTM A105 MSS SP-97 BW	
1	30	1.5	STD	XS	P31B-010T8	Outlet ASTM A105 MSS SP-97 BW	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	36	1.5	STD	XS	P31B-011VV	Outlet ASTM A105 MSS SP-97 BW	
1	6	2	STD	XS	P31B-007SH	Outlet ASTM A105 MSS SP-97 BW	
1	8	2	SCH20	XS	P31B-00NY2	Outlet ASTM A105 MSS SP-97 BW	
1	10	2	SCH20	XS	P31B-00TFB	Outlet ASTM A105 MSS SP-97 BW	
1	12	2	SCH20	XS	P31B-00TFA	Outlet ASTM A105 MSS SP-97 BW	
1	14	2	SCH20	XS	P31B-00TF9	Outlet ASTM A105 MSS SP-97 BW	
1	16	2	SCH20	XS	P31B-00TF8	Outlet ASTM A105 MSS SP-97 BW	
1	18	2	SCH20	XS	P31B-00NVX	Outlet ASTM A105 MSS SP-97 BW	
1	20	2	STD	XS	P31B-00994	Outlet ASTM A105 MSS SP-97 BW	
1	24	2	STD	XS	P31B-0092Z	Outlet ASTM A105 MSS SP-97 BW	
1	30	2	STD	XS	P31B-008P5	Outlet ASTM A105 MSS SP-97 BW	
1	36	2	STD	XS	P31B-00NX8	Outlet ASTM A105 MSS SP-97 BW	
1	8	3	SCH20	STD	P31B-00P11	Outlet ASTM A105 MSS SP-97 BW	
1	10	3	SCH20	STD	P31B-00UPG	Outlet ASTM A105 MSS SP-97 BW	
1	12	3	SCH20	STD	P31B-00USE	Outlet ASTM A105 MSS SP-97 BW	
1	14	3	SCH20	STD	P31B-00UPH	Outlet ASTM A105 MSS SP-97 BW	
1	16	3	SCH20	STD	P31B-00TU2	Outlet ASTM A105 MSS SP-97 BW	
1	18	3	SCH20	STD	P31B-00NZ4	Outlet ASTM A105 MSS SP-97 BW	
1	20	3	STD	STD	P31B-008FA	Outlet ASTM A105 MSS SP-97 BW	
1	24	3	STD	STD	P31B-00895	Outlet ASTM A105 MSS SP-97 BW	
1	30	3	STD	STD	P31B-007WY	Outlet ASTM A105 MSS SP-97 BW	
1	36	3	STD	STD	P31B-007P2	Outlet ASTM A105 MSS SP-97 BW	
1	12	4	SCH20	STD	P31B-00USF	Outlet ASTM A105 MSS SP-97 BW	
1	14	4	SCH20	STD	P31B-00UPJ	Outlet ASTM A105 MSS SP-97 BW	
1	16	4	SCH20	STD	P31B-00TU3	Outlet ASTM A105 MSS SP-97 BW	
1	18	4	SCH20	STD	P31B-00P1V	Outlet ASTM A105 MSS SP-97 BW	
1	20	4	STD	STD	P31B-008D3	Outlet ASTM A105 MSS SP-97 BW	
1	24	4	STD	STD	P31B-0086X	Outlet ASTM A105 MSS SP-97 BW	
1	30	4	STD	STD	P31B-007US	Outlet ASTM A105 MSS SP-97 BW	
1	36	4	STD	STD	P31B-00AER	Outlet ASTM A105 MSS SP-97 BW	
1	18	6	SCH20	STD	P31B-00P48	Outlet ASTM A105 MSS SP-97 BW	
1	20	6	STD	STD	P31B-008PZ	Outlet ASTM A105 MSS SP-97 BW	
1	24	6	STD	STD	P31B-008JD	Outlet ASTM A105 MSS SP-97 BW	
1	30	6	STD	STD	P31B-008BS	Outlet ASTM A105 MSS SP-97 BW	
1	36	6	STD	STD	P31B-0085H	Outlet ASTM A105 MSS SP-97 BW	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30B-0002D	Plug ASTM A105 ASME B16.11 NPT Round head	
1	0.75				P30B-0002E	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1				P30B-0002F	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1.5				P30B-0002G	Plug ASTM A105 ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P61B-003ND	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	0.75		XS		P61B-003NE	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	1		XS		P61B-003NF	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	1.5		XS		P61B-003NG	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	2		XS		P61B-003NK	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	3		STD		P61B-001PW	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	4		STD		P61B-001R8	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	6		STD		P61B-001RT	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	8		SCH20		P61B-002BF	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	10		SCH20		P61B-002B4	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	12		SCH20		P61B-002B5	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	14		SCH20		P61B-002B6	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	16		SCH20		P61B-002B7	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	18		SCH20		P61B-002B8	Flange WN ASTM A105 Class 150 ASME B16.5 RF	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	20		STD		P61B-001JA	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	24		STD		P61B-001NJ	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	30		STD		P61B-001S8	Flange WN ASTM A105 Class 150 ASME B16.47 Series B RF	
541	0.5				P61B-003TZ	Flange NPT ASTM A105 Class 150 ASME B16.5 RF	
541	0.75				P61B-003U0	Flange NPT ASTM A105 Class 150 ASME B16.5 RF	
773	0.5		XS		P61B-0032Z	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	0.75		XS		P61B-0032X	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	1		XS		P61B-0032U	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	1.5		XS		P61B-0032S	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	2		XS		P61B-001HW	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	3		STD		P61B-001LJ	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	4		STD		P61B-001MC	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	6		STD		P61B-001N2	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	8		SCH20		P61B-002LJ	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	10		SCH20		P61B-002LH	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	12		SCH20		P61B-002MP	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	14		SCH20		P61B-002MR	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	16		SCH20		P61B-002MS	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	18		SCH20		P61B-002MT	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	20		STD		P61B-001NT	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	24		STD		P61B-001PA	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	30		STD		P61B-003SW	Flange WN ASTM A105 Class 300 ASME B16.47 Series B RF	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67B-000FH	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	0.75				P67B-000FJ	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	1				P67B-000FK	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	1.5				P67B-000FL	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	2				P67B-000FT	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	3				P67B-000FW	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	4				P67B-000FX	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	6				P67B-000FY	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	8				P67B-000FZ	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	10				P67B-000FM	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	12				P67B-000FN	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	14				P67B-000FP	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	16				P67B-000FR	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	18				P67B-000FS	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	20				P67B-000FU	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	24				P67B-000FV	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	30				P67B-000G2	Blind flange ASTM A105 Class 150 ASME B16.47 Series B RF	

REDUCING FLANGE (FR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5		XS	P62B-000MW	Reducing flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	1.5	0.5		XS	P62B-000NE	Reducing flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	1.5	0.75		XS	P62B-000LF	Reducing flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	2	0.75		XS	P62B-000NC	Reducing flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	2	1		XS	P62B-000K6	Reducing flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	2	1.5		XS	P62B-000K7	Reducing flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	3	1.5		XS	P62B-000JX	Reducing flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	3	2		XS	P62B-0006B	Reducing flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	4	2		XS	P62B-00098	Reducing flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	4	3		STD	P62B-0006D	Reducing flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	6	3		STD	P62B-000JY	Reducing flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	6	4		STD	P62B-000JZ	Reducing flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	8	6		STD	P62B-0006E	Reducing flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	10	4		STD	P62B-000K0	Reducing flange WN ASTM A105 Class 150 ASME B16.5 RF	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	10	8		SCH20	P62B-000K1	Reducing flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	12	6		STD	P62B-000K2	Reducing flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	12	10		SCH20	P62B-000KR	Reducing flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	14	10		SCH20	P62B-000K3	Reducing flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	16	12		SCH20	P62B-000K4	Reducing flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	16	14		SCH20	P62B-000PG	Reducing flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	18	14		SCH20	P62B-000L9	Reducing flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	20	16		SCH20	P62B-000K5	Reducing flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	24	16		SCH20	P62B-000PT	Reducing flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	24	18		SCH20	P62B-00074	Reducing flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	24	20		STD	P62B-000LA	Reducing flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	30	24		STD	P62B-000LB	Reducing flange WN ASTM A105 Class 150 ASME B16.47 Series B RF	
1	36	30		STD	P62B-000LC	Reducing flange WN ASTM A105 Class 150 ASME B16.47 Series B RF	
773	3	2		XS	P62B-000MD	Reducing flange WN ASTM A105 Class 300 ASME B16.5 RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000L8	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000L9	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000LA	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000LB	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000LH	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000LL	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000LM	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	6				P73T-000LN	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	8				P73T-000LP	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	10				P73T-000LC	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	12				P73T-000LD	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	14				P73T-000LE	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	16				P73T-000LF	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	18				P73T-000LG	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	20				P73T-000LJ	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	24				P73T-000LK	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	30				P73T-000LT	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	0.5				P73T-000FT	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	0.75				P73T-000FU	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	3				P73T-000G5	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	4				P73T-000G6	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	6				P73T-000G7	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	8				P73T-000G8	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	10				P73T-000FX	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	12				P73T-000FY	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	14				P73T-000FZ	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	16				P73T-000G0	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	18				P73T-000G1	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

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GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
773	20				P73T-000G3	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	24				P73T-000G4	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	30				P73T-000H9	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-16				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	18-24				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
1	30-36				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
773	0.5-10				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
773	12-30				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5	0.5			P83B-001H6	Jacketed check valve ASTM A105 Class 150 API 600-modified Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Full jacketed Moderate wet H2S service	
1	2	1			P83C-003PM	Jacketed check valve ASTM A216 Grade WCB Class 150 API 600-modified Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Full jacketed Moderate wet H2S service	
1	3	1.5			P83C-003PN	Jacketed check valve ASTM A216 Grade WCB Class 150 API 600-modified Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Full jacketed Moderate wet H2S service	
1	4	3			P83C-003PP	Jacketed check valve ASTM A216 Grade WCB Class 150 API 600-modified Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Full jacketed Moderate wet H2S service	
1	6	4			P83C-003PY	Jacketed check valve ASTM A216 Grade WCB Class 150 API 600-modified Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Full jacketed Moderate wet H2S service	
1	8	6			P83C-003PX	Jacketed check valve ASTM A216 Grade WCB Class 150 API 600-modified Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Full jacketed Moderate wet H2S service	
1	10	8			P83C-003PW	Jacketed check valve ASTM A216 Grade WCB Class 150 API 600-modified Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Full jacketed Moderate wet H2S service	
1	12	10			P83C-003PV	Jacketed check valve ASTM A216 Grade WCB Class 150 API 600-modified Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Full jacketed Moderate wet H2S service	
1	16	12			P83C-003PU	Jacketed check valve ASTM A216 Grade WCB Class 150 API 600-modified Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Full jacketed Moderate wet H2S service	
1	18	14			P83C-003PT	Jacketed check valve ASTM A216 Grade WCB Class 150 API 600-modified Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Full jacketed Moderate wet H2S service	
1	20	16			P83C-003PS	Jacketed check valve ASTM A216 Grade WCB Class 150 API 600-modified Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Full jacketed Moderate wet H2S service	
1	24	18			P83C-003PR	Jacketed check valve ASTM A216 Grade WCB Class 150 API 600-modified Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Full jacketed Moderate wet H2S service	
4611	3	2			P83C-004F6	Jacketed check valve ASTM A216 Grade WCB Class 150 API 600-modified Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Full jacketed Moderate wet H2S service Type-10	

PLUG VALVE (PV)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5	0.5			P85B-0000M	Jacketed plug valve Short-pattern ASTM A105 Class 150 API 599 Flange ASME B16.5 RF Plug SS316 Seat PTFE Trim SS316 Nonlubricated taper plug BC-BG Wrench lever operated Regular port Full jacketed Moderate wet H2S service	
1	2	1			P85C-0007Z	Jacketed plug valve Short-pattern ASTM A216 Grade WCB Class 150 API 599 Flange ASME B16.5 RF Plug SS316 Seat PTFE Trim SS316 Nonlubricated taper plug BC-BG Wrench lever operated Regular port Full jacketed Moderate wet H2S service	
1	3	1.5			P85C-00080	Jacketed plug valve Short-pattern ASTM A216 Grade WCB Class 150 API 599 Flange ASME B16.5 RF Plug SS316 Seat PTFE Trim SS316 Nonlubricated taper plug BC-BG Wrench lever operated Regular port Full jacketed Moderate wet H2S service	
1	4	3			P85C-00081	Jacketed plug valve Short-pattern ASTM A216 Grade WCB Class 150 API 599 Flange ASME B16.5 RF Plug SS316 Seat PTFE Trim SS316 Nonlubricated taper plug BC-BG Wrench lever operated Regular port Full jacketed Moderate wet H2S service	
1	6	4			P85C-00082	Jacketed plug valve Short-pattern ASTM A216 Grade WCB Class 150 API 599 Flange ASME B16.5 RF Plug SS316 Seat PTFE Trim SS316 Nonlubricated taper plug BC-BG Gear operated Regular port Full jacketed Moderate wet H2S service	
1	8	6			P85C-00083	Jacketed plug valve Short-pattern ASTM A216 Grade WCB Class 150 API 599 Flange ASME B16.5 RF Plug SS316 Seat PTFE Trim SS316 Nonlubricated taper plug BC-BG Gear operated Regular port Full jacketed Moderate wet H2S service	
1	10	8			P85C-00084	Jacketed plug valve Short-pattern ASTM A216 Grade WCB Class 150 API 599 Flange ASME B16.5 RF Plug SS316 Seat PTFE Trim SS316 Nonlubricated taper plug BC-BG Gear operated Regular port Full jacketed Moderate wet H2S service	
1	12	10			P85C-00085	Jacketed plug valve Short-pattern ASTM A216 Grade WCB Class 150 API 599 Flange ASME B16.5 RF Plug SS316 Seat PTFE Trim SS316 Nonlubricated taper plug BC-BG Gear operated Regular port Full jacketed Moderate wet H2S service	
1	16	12			P85C-00086	Jacketed plug valve Regular-pattern ASTM A216 Grade WCB Class 150 API 599 Flange ASME B16.5 RF Plug SS316 Seat PTFE Trim SS316 Nonlubricated taper plug BC-BG Gear operated Regular port Full jacketed Moderate wet H2S service	
1	18	14			P85C-00087	Jacketed plug valve Regular-pattern ASTM A216 Grade WCB Class 150 API 599 Flange ASME B16.5 RF Plug SS316 Seat PTFE Trim SS316 Nonlubricated taper plug BC-BG Gear operated Regular port Full jacketed Moderate wet H2S service	
1	20	16			P85C-00088	Jacketed plug valve Regular-pattern ASTM A216 Grade WCB Class 150 API 599 Flange ASME B16.5 RF Plug SS316 Seat PTFE Trim SS316 Nonlubricated taper plug BC-BG Gear operated Regular port Full jacketed Moderate wet H2S service	

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PLUG VALVE (PV)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	24	18			P85C-00089	Jacketed plug valve Regular-pattern ASTM A216 Grade WCB Class 150 API 599 Flange ASME B16.5 RF Plug SS316 Seat PTFE Trim SS316 Nonlubricated taper plug BC-BG Gear operated Regular port Full jacketed Moderate wet H2S service	
1	30	24			P85C-0008A	Jacketed plug valve Regular-pattern ASTM A216 Grade WCB Class 150 API 599 Flange ASME B16.47-B RF Plug SS316 Seat PTFE Trim SS316 Nonlubricated taper plug BC-BG Gear operated Regular port Full jacketed Moderate wet H2S service	
1	36	30			P85C-0008B	Jacketed plug valve Regular-pattern ASTM A216 Grade WCB Class 150 API 599 Flange ASME B16.47-B RF Plug SS316 Seat PTFE Trim SS316 Nonlubricated taper plug BC-BG Gear operated Regular port Full jacketed Moderate wet H2S service	
4610	1.5	0.75			P85B-0000Z	Jacketed plug valve Short-pattern ASTM A105 Class 150 API 599 Flange ASME B16.5 RF Plug SS316 Seat PTFE Trim SS316 Nonlubricated taper plug BC-BG Wrench lever operated Regular port Full jacketed Moderate wet H2S service Type-10	
4611	3	2			P85C-000AU	Jacketed plug valve Short-pattern ASTM A216 Grade WCB Class 150 API 599 Flange ASME B16.5 RF Plug SS316 Seat PTFE Trim SS316 Nonlubricated taper plug BC-BG Wrench lever operated Regular port Full jacketed Moderate wet H2S service Type-10	
4612	3	2			P85C-000AV	Jacketed plug valve Short-pattern ASTM A216 Grade WCB Class 300 API 599 Flange ASME B16.5 RF Plug SS316 Seat PTFE Trim SS316 Nonlubricated taper plug BC-BG Wrench lever operated Regular port Full jacketed Moderate wet H2S service Type-10	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71B-0008A	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	0.75				P71B-0008B	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	1				P71B-0008C	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71B-0008D	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	2				P71B-0000P	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	3				P71B-0000N	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	4				P71B-0000M	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	6				P71B-0000L	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	8				P71B-0000R	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	10				P71B-0000K	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	12				P71B-0000J	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	

PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000AH	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	16				P72B-0000C	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	18				P72B-000AJ	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	20				P72B-000AK	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	24				P72B-000AL	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	30				P72B-000AM	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	

PADDLE SPACER (PS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000AT	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	16				P72B-0000B	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	18				P72B-000AU	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	20				P72B-000AV	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	24				P72B-000AW	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	30				P72B-000AX	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	

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BOLT TABLE (B_A1AQCL , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	60	P80S-008SY		
0.75	4	0.500	65	P80S-008SZ		
1	4	0.500	70	P80S-008T0		
1.5	4	0.500	75	P80S-008T1		
2	4	0.625	85	P80S-0090A		
3	4	0.625	95	P80S-0090C		
4	8	0.625	95	P80S-0090C		
6	8	0.750	105	P80S-0090E		
8	8	0.750	110	P80S-0090F		
10	12	0.875	120	P80S-005Z9		
12	12	0.875	120	P80S-005Z9		
14	12	1.000	135	P80S-00619		
16	16	1.000	140	P80S-0061A		
18	16	1.125	150	P80S-0064L		
20	20	1.125	160	P80S-0064N		
24	20	1.250	175	P80S-00686		
30	44	0.750	145	P80S-0090N		
36	44	0.875	175	P80S-005ZL		

BOLT TABLE (B_A1AQCL_773 , STUD ASME RF, OPTION CODE 773)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-008T0		
0.75	4	0.625	75	P80S-00908		
1	4	0.625	80	P80S-00909		
1.5	4	0.750	95	P80S-005Z4		
2	8	0.625	90	P80S-0090B		
3	8	0.750	110	P80S-0090F		
4	8	0.750	115	P80S-0090G		
6	12	0.750	125	P80S-0090J		
8	12	0.875	140	P80S-005ZD		
10	16	1.000	160	P80S-0061E		
12	16	1.125	175	P80S-0064S		
14	20	1.125	180	P80S-0064T		
16	20	1.250	190	P80S-00689		
18	24	1.250	200	P80S-0068B		
20	24	1.250	210	P80S-0068D		
24	24	1.500	235	P80S-006LB		
30	36	1.375	285	P80S-006HY		
36	32	1.625	320			

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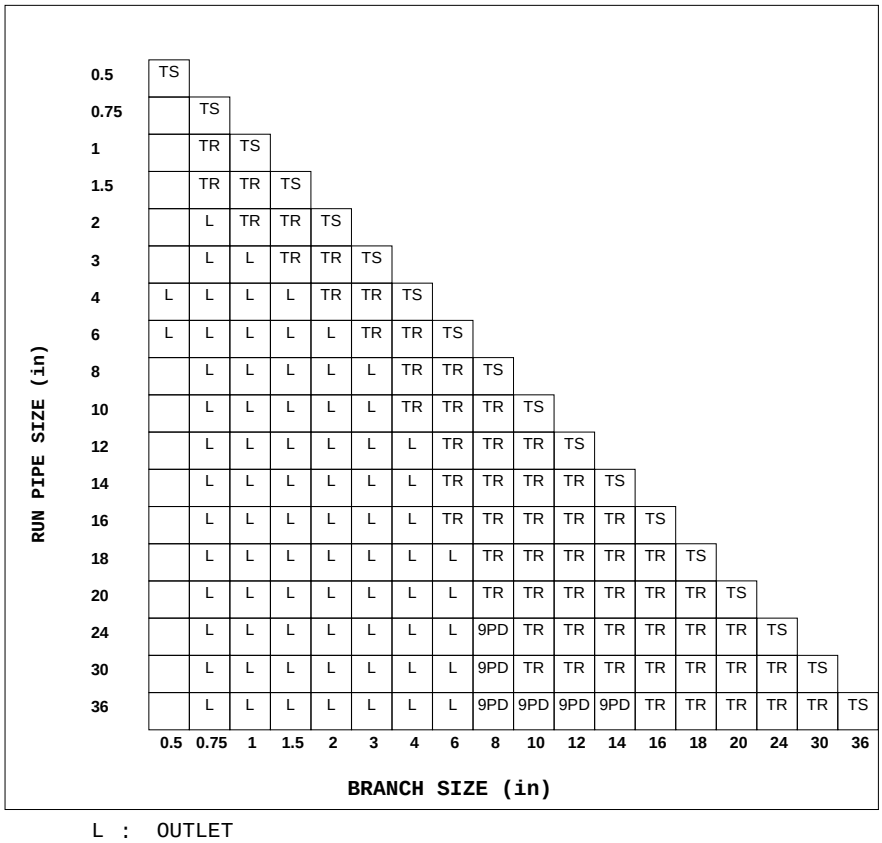
BRANCH TABLE (T_A1AQCL)



RUN PIPE SIZE (in) \ BRANCH SIZE (in)	0.5	0.75	1	1.5	2	3	4	6	8	10	12	14	16	18	20	24	30	36
0.5	TS																	
0.75		TS																
1		TR	TS															
1.5		TR	TR	TS														
2		L	TR	TR	TS													
3		L	L	TR	TR	TS												
4	L	L	L	L	TR	TR	TS											
6	L	L	L	L	L	TR	TR	TS										
8		L	L	L	L	L	TR	TR	TS									
10		L	L	L	L	L	TR	TR	TR	TS								
12		L	L	L	L	L	L	TR	TR	TR	TS							
14		L	L	L	L	L	L	TR	TR	TR	TR	TS						
16		L	L	L	L	L	L	TR	TR	TR	TR	TR	TS					
18		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TS				
20		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TR	TS			
24		L	L	L	L	L	L	L	9PD	TR	TR	TR	TR	TR	TR	TS		
30		L	L	L	L	L	L	L	9PD	TR	TR	TR	TR	TR	TR	TR	TS	
36		L	L	L	L	L	L	L	9PD	9PD	9PD	9PD	TR	TR	TR	TR	TR	TS

L : OUTLET
TS : STRAIGHT TEE
9PD : REINFORCING PAD 90 DEG
TR : REDUCING TEE

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PIPING CLASS

A1AS

REV NO. 2

Material	:	Killed CS
Rating	:	ASME CLASS 150
Flange Face	:	RF
C.A.(mm)	:	1.50
Gasket	:	Spiral Wound
Service	:	UTILITY : / LOW PRESSURE STEAM / LP SUPERHEATED STEAM / BLOWDOWN STEAM / HYDROCARBONS - WATER VAPOUR

Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
200	WITH JACK SCREW (FO)
541	NPT(F) (CA,L)
714	SW - NPT(F) (V)
773	CLASS 300 (B,F,G,SB)
781	CLASS 600 (B,F,G)
797	CLASS 1500 (B,F,G)
4204	SOCKOLET ON CAP (CAP=NPS4) (LC)
4205	SOCKOLET ON CAP (CAP=NPS6) (LC)
4206	SOCKOLET ON CAP (CAP=NPS8) (LC)
4207	SOCKOLETT ON CAP (CAP=NPS10 AND LARGER) (LC)
4208	45 DEGREE LATERAL STRAIGHT TEE (TLS)
4602	DISSIMILAR TYPE CHECK VALVE (XDP)

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PIPING CLASS
A1AS REV NO. 2

PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P01A-000XM	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	0.75		XS		P01A-000XN	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1		XS		P01A-000XP	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1.5		XS		P01A-000XV	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	2		XS		P01A-000YX	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	3		STD		P01A-000YM	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	4		STD		P01A-000YU	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	6		STD		P01A-000Z3	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	8		SCH20		P01A-001AT	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	10		SCH20		P01A-0014Y	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	12		SCH20		P01A-0016H	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	14		SCH20		P01A-0017A	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	16		SCH20		P01A-0018E	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	18		SCH20		P01A-00438	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE	
1	20		STD		P01A-0042G	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE	
1	24		STD		P01A-0042H	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE	
1	30		STD		P01A-0042J	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE	
1	36		XS		P01A-0042K	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE	
1	42		STD		P01A-0078R	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P02B-00014	90 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	0.75				P02B-00015	90 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	1				P02B-00016	90 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5				P02B-00017	90 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	2		XS		P02A-000CP	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		STD		P02A-000CU	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		STD		P02A-000CZ	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		STD		P02A-000D6	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		SCH20		P02A-000GZ	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	10		SCH20		P02A-000H1	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	12		SCH20		P02A-000H4	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	14		SCH20		P02A-000FX	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	16		SCH20		P02A-000GM	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	18		SCH20		P02A-000LT	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	20		STD		P02A-0010J	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	24		STD		P02A-0010K	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	30		STD		P02A-000F3	90 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius	
1	36		XS		P02A-000DH	90 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius	
1	42		STD		P02A-0014G	90 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P03B-00017	45 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	0.75				P03B-00018	45 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	1				P03B-00019	45 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5				P03B-0001A	45 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	2		XS		P03A-000AS	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		STD		P03A-000AX	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		STD		P03A-000B1	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		STD		P03A-000B9	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		SCH20		P03A-000EX	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	10		SCH20		P03A-000F0	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	12		SCH20		P03A-000F2	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	14		SCH20		P03A-000DW	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	16		SCH20		P03A-000EM	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	18		SCH20		P03A-001DX	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	20		STD		P03A-000X1	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

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45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	24		STD		P03A-000X2	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	30		STD		P03A-000D0	45 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius	
1	36		XS		P03A-000BG	45 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius	
1	42		STD		P03A-0010P	45 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P21B-00017	Straight tee ASTM A105 Class 3000 ASME B16.11 SW	
1	0.75				P21B-00018	Straight tee ASTM A105 Class 3000 ASME B16.11 SW	
1	1				P21B-00019	Straight tee ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5				P21B-0001A	Straight tee ASTM A105 Class 3000 ASME B16.11 SW	
1	2		XS		P21A-001CJ	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		STD		P21A-001CU	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		STD		P21A-001CW	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6		STD		P21A-001D2	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8		SCH20		P21A-00215	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10		SCH20		P21A-00219	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12		SCH20		P21A-0021A	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14		SCH20		P21A-00206	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16		SCH20		P21A-0020X	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18		SCH20		P21A-001PJ	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20		STD		P21A-001C7	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24		STD		P21A-001CC	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30		STD		P21A-001YC	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	36		XS		P21A-001D7	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	42		STD		P21A-001KR	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	

STRAIGHT LATERAL TEE (TLS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75				P22B-00003	Straight lateral-tee ASTM A105 Class 3000 ASME B16.11 SW 60 degree	
1	1				P22B-0000B	Straight lateral-tee ASTM A105 Class 3000 ASME B16.11 SW 60 degree	
1	1.5				P22B-0000C	Straight lateral-tee ASTM A105 Class 3000 ASME B16.11 SW 60 degree	
1	2		XS		P22A-000DW	Straight lateral-tee ASTM A234 Grade WPB Seamless ASME B16.9 BW 60 degree	
1	3		STD		P22A-000DJ	Straight lateral-tee ASTM A234 Grade WPB Seamless ASME B16.9 BW 60 degree	
1	4		STD		P22A-000DX	Straight lateral-tee ASTM A234 Grade WPB Seamless ASME B16.9 BW 60 degree	
1	6		STD		P22A-000DY	Straight lateral-tee ASTM A234 Grade WPB Seamless ASME B16.9 BW 60 degree	
1	8		SCH20		P22A-000GC	Straight lateral-tee ASTM A234 Grade WPB Seamless ASME B16.9 BW 60 degree	
1	10		SCH20		P22A-000GA	Straight lateral-tee ASTM A234 Grade WPB Seamless ASME B16.9 BW 60 degree	
1	12		SCH20		P22A-000GB	Straight lateral-tee ASTM A234 Grade WPB Seamless ASME B16.9 BW 60 degree	
1	14		SCH20		P22A-000DU	Straight lateral-tee ASTM A234 Grade WPB Seamless ASME B16.9 BW 60 degree	
1	16		SCH20		P22A-000DV	Straight lateral-tee ASTM A234 Grade WPB Seamless ASME B16.9 BW 60 degree	
1	18		SCH20		P22A-000FW	Straight lateral-tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW 60 degree	
1	20		STD		P22A-000FX	Straight lateral-tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW 60 degree	
1	24		STD		P22A-000GD	Straight lateral-tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW 60 degree	
1	30		STD		P22A-000GE	Straight lateral-tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW 60 degree	
1	36		XS		P22A-000GF	Straight lateral-tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW 60 degree	
1	42		STD		P22A-000GG	Straight lateral-tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW 60 degree	
4208	2		XS		P22A-000C1	Straight lateral-tee ASTM A234 Grade WPB Seamless ASME B16.9 BW 45 degree	
4208	3		STD		P22A-000C2	Straight lateral-tee ASTM A234 Grade WPB Seamless ASME B16.9 BW 45 degree	
4208	4		STD		P22A-000C3	Straight lateral-tee ASTM A234 Grade WPB Seamless ASME B16.9 BW 45 degree	
4208	6		STD		P22A-000C4	Straight lateral-tee ASTM A234 Grade WPB Seamless ASME B16.9 BW 45 degree	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75			P24B-0002L	Reducing tee ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5	0.75			P24B-0002N	Reducing tee ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5	1			P24B-0002P	Reducing tee ASTM A105 Class 3000 ASME B16.11 SW	
1	2	1	XS	XS	P24A-00238	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	XS	XS	P24A-0023H	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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REDUCING TEE (TR)							
OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	1.5	STD	XS	P24A-00214	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	STD	XS	P24A-002HW	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P24A-002HY	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P24A-0021K	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	STD	P24A-0021A	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P24A-00229	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH20	STD	P24A-00J21	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH20	STD	P24A-005J4	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	SCH20	STD	P24A-00HMB	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	SCH20	STD	P24A-00HKS	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	SCH20	SCH20	P24A-002YX	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	SCH20	STD	P24A-00K0B	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH20	SCH20	P24A-002U4	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH20	SCH20	P24A-002YC	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	SCH20	STD	P24A-00K0M	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	SCH20	SCH20	P24A-002U7	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	SCH20	SCH20	P24A-002YA	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	SCH20	SCH20	P24A-002YR	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	6	SCH20	STD	P24A-00GU4	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	SCH20	SCH20	P24A-002XW	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	SCH20	SCH20	P24A-002YH	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	SCH20	SCH20	P24A-002U1	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	SCH20	SCH20	P24A-002XF	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	8	SCH20	SCH20	P24A-002XC	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	10	SCH20	SCH20	P24A-002UX	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	12	SCH20	SCH20	P24A-002W3	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	14	SCH20	SCH20	P24A-002WT	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	16	SCH20	SCH20	P24A-002X5	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	8	STD	SCH20	P24A-00K0N	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	10	STD	SCH20	P24A-00BT7	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	12	STD	SCH20	P24A-00BUS	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	14	STD	SCH20	P24A-00BWB	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	16	STD	SCH20	P24A-006W3	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	18	STD	SCH20	P24A-006WD	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	10	STD	SCH20	P24A-00KT6	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	12	STD	SCH20	P24A-00C7B	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	14	STD	SCH20	P24A-00K0C	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	16	STD	SCH20	P24A-00CAD	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	18	STD	SCH20	P24A-006WF	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	20	STD	STD	P24A-004SV	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	10	STD	SCH20	P24A-003VN	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	12	STD	SCH20	P24A-003VP	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	14	STD	SCH20	P24A-003VR	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	16	STD	SCH20	P24A-003VS	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	18	STD	SCH20	P24A-003VT	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	20	STD	STD	P24A-0087D	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	24	STD	STD	P24A-005XW	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	36	16	XS	SCH20	P24A-003VH	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	36	18	XS	SCH20	P24A-003VJ	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	36	20	XS	STD	P24A-004SS	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	36	24	XS	STD	P24A-004VX	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	36	30	XS	STD	P24A-003VM	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	42	16	STD	SCH20	P24A-00EFD	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	42	18	STD	SCH20	P24A-00EG0	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	42	20	STD	STD	P24A-00EGR	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	42	24	STD	STD	P24A-005H0	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	42	30	STD	STD	P24A-00EKU	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	42	36	STD	XS	P24A-005Y5	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	

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CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	STD	XS	P27A-001MZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P27A-001N0	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P27A-00189	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	STD	P27A-001AZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P27A-001GW	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH20	STD	P27A-003K2	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH20	STD	P27A-003K3	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	SCH20	STD	P27A-003K4	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	SCH20	STD	P27A-003K5	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	SCH20	SCH20	P27A-001UL	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	SCH20	STD	P27A-003K6	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH20	SCH20	P27A-001UU	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH20	SCH20	P27A-001TH	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	SCH20	STD	P27A-00518	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	SCH20	SCH20	P27A-001V4	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	SCH20	SCH20	P27A-001TG	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	SCH20	SCH20	P27A-001U1	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	SCH20	SCH20	P27A-001WX	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	SCH20	SCH20	P27A-001TW	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	SCH20	SCH20	P27A-001UF	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	SCH20	SCH20	P27A-001V2	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	10	SCH20	SCH20	P27A-001TJ	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	12	SCH20	SCH20	P27A-001UE	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	14	SCH20	SCH20	P27A-001UY	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	16	SCH20	SCH20	P27A-001WN	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	12	STD	SCH20	P27A-00CMZ	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	14	STD	SCH20	P27A-0082L	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	16	STD	SCH20	P27A-0082M	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	18	STD	SCH20	P27A-0084N	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	16	STD	SCH20	P27A-0084T	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	18	STD	SCH20	P27A-0084U	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	20	STD	STD	P27A-001A8	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	20	STD	STD	P27A-001S0	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	24	STD	STD	P27A-001M7	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	36	24	XS	STD	P27A-001GY	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	36	30	XS	STD	P27A-001M9	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	42	30	STD	STD	P27A-003Z5	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	42	36	STD	XS	P27A-003Z7	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	STD	XS	P28A-001N5	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P28A-001N6	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P28A-0018B	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	STD	P28A-001AS	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P28A-00182	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH20	STD	P28A-003JU	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH20	STD	P28A-003JV	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	SCH20	STD	P28A-003JW	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	SCH20	STD	P28A-003JX	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	SCH20	SCH20	P28A-001V0	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	SCH20	STD	P28A-003JY	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH20	SCH20	P28A-001V1	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH20	SCH20	P28A-001TJ	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	SCH20	STD	P28A-0096P	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	SCH20	SCH20	P28A-001WH	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	SCH20	SCH20	P28A-001TH	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	SCH20	SCH20	P28A-001UC	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	SCH20	SCH20	P28A-001T6	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	16	10	SCH20	SCH20	P28A-001TY	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	SCH20	SCH20	P28A-001UX	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	SCH20	SCH20	P28A-001WG	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	10	SCH20	SCH20	P28A-001TV	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	12	SCH20	SCH20	P28A-001UJ	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	14	SCH20	SCH20	P28A-001WD	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	16	SCH20	SCH20	P28A-001T1	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	12	STD	SCH20	P28A-009MM	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	14	STD	SCH20	P28A-004SJ	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	16	STD	SCH20	P28A-004SK	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	18	STD	SCH20	P28A-004UN	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	16	STD	SCH20	P28A-004UR	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	18	STD	SCH20	P28A-004US	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	20	STD	STD	P28A-001AW	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	20	STD	STD	P28A-001LZ	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	24	STD	STD	P28A-001N1	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	36	24	XS	STD	P28A-0017X	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	36	30	XS	STD	P28A-001ND	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	42	30	STD	STD	P28A-003YZ	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	42	36	STD	XS	P28A-003Z1	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P29B-0001J	Cap ASTM A105 Class 3000 ASME B16.11 SW	
1	0.75				P29B-0001F	Cap ASTM A105 Class 3000 ASME B16.11 SW	
1	1				P29B-0001G	Cap ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5				P29B-0001H	Cap ASTM A105 Class 3000 ASME B16.11 SW	
1	2		XS		P29A-000A1	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		STD		P29A-000BK	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		STD		P29A-000A3	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6		STD		P29A-000A9	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8		SCH20		P29A-000EY	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10		SCH20		P29A-000E5	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12		SCH20		P29A-000E8	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14		SCH20		P29A-000EA	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16		SCH20		P29A-000F3	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18		SCH20		P29A-000E0	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20		STD		P29A-000B2	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24		STD		P29A-000B8	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	30		STD		P29A-000DU	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	36		XS		P29A-000A2	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	42		STD		P29A-000X5	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
541	0.5				P29B-0000B	Cap ASTM A105 Class 3000 ASME B16.11 NPT	
541	0.75				P29B-0000C	Cap ASTM A105 Class 3000 ASME B16.11 NPT	
541	1				P29B-0000D	Cap ASTM A105 Class 3000 ASME B16.11 NPT	
541	1.5				P29B-0000E	Cap ASTM A105 Class 3000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P41A-000B5	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		SCH160		P41A-000B6	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		SCH160		P41A-000B7	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		SCH160		P41A-000B8	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

CON SWAGED NIPPLE (SNC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	XS	XS	P42A-00036	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	XS	XS	P42A-00038	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	XS	XS	P42A-0003B	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	

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CON SWAGED NIPPLE (SNC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5	0.5	XS	XS	P42A-00035	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	XS	XS	P42A-00039	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	XS	XS	P42A-0003C	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	XS	XS	P42A-0008C	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	XS	XS	P42A-0008D	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	XS	XS	P42A-0008E	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	XS	XS	P42A-0008F	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	STD	XS	P42A-0007V	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	

ECC SWAGED NIPPLE (SNE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	XS	XS	P43A-00036	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	XS	XS	P43A-00037	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	XS	XS	P43A-00038	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	XS	XS	P43A-00039	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	XS	XS	P43A-0003A	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	XS	XS	P43A-0003B	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	XS	XS	P43A-00042	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	XS	XS	P43A-00043	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	XS	XS	P43A-00044	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	XS	XS	P43A-00045	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	STD	XS	P43A-0003J	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	

COUPLING (CPS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P47B-0001D	Coupling ASTM A105 Class 3000 ASME B16.11 SW - SW	
1	0.75				P47B-0001E	Coupling ASTM A105 Class 3000 ASME B16.11 SW - SW	
1	1				P47B-0001F	Coupling ASTM A105 Class 3000 ASME B16.11 SW - SW	
1	1.5				P47B-0001G	Coupling ASTM A105 Class 3000 ASME B16.11 SW - SW	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2 - 2.5	0.75			P31B-0137J	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	3 - 5	0.75			P31B-0137K	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	6 - 12	0.75			P31B-007AB	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	14 - 36	0.75			P31B-007AJ	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	38 and larger	0.75			P31B-00N1G	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	3	1			P31B-007A7	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	4 - 5	1			P31B-0138Z	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	6 - 10	1			P31B-007A4	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	12 - 36	1			P31B-007AA	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	38 and larger	1			P31B-00N0Y	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	4	1.5			P31B-005SN	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	5 - 6	1.5			P31B-01390	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	8 - 12	1.5			P31B-0079U	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	14 - 24	1.5			P31B-007A0	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	26 - 36	1.5			P31B-01391	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	38 and larger	1.5			P31B-00N17	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
541	1	0.75			P31B-00551	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
541	1.5	0.75			P31B-00555	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
541	2 - 2.5	0.75			P31B-0137H	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
541	3 - 5	0.75			P31B-01376	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
541	6 - 12	0.75			P31B-007GR	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
541	14 - 36	0.75			P31B-007GY	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
541	38 and larger	0.75			P31B-00FFM	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
1	6	2	STD	XS	P31B-007SH	Outlet ASTM A105 MSS SP-97 BW	
1	8	2	SCH20	XS	P31B-00NY2	Outlet ASTM A105 MSS SP-97 BW	
1	10	2	SCH20	XS	P31B-00TFB	Outlet ASTM A105 MSS SP-97 BW	
1	12	2	SCH20	XS	P31B-00TFA	Outlet ASTM A105 MSS SP-97 BW	

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OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14	2	SCH20	XS	P31B-00TF9	Outlet ASTM A105 MSS SP-97 BW	
1	16	2	SCH20	XS	P31B-00TF8	Outlet ASTM A105 MSS SP-97 BW	
1	18	2	SCH20	XS	P31B-00NVX	Outlet ASTM A105 MSS SP-97 BW	
1	20	2	STD	XS	P31B-00994	Outlet ASTM A105 MSS SP-97 BW	
1	24	2	STD	XS	P31B-0092Z	Outlet ASTM A105 MSS SP-97 BW	
1	30	2	STD	XS	P31B-008P5	Outlet ASTM A105 MSS SP-97 BW	
1	36	2	XS	XS	P31B-008BB	Outlet ASTM A105 MSS SP-97 BW	
1	42	2	STD	XS	P31B-00EVR	Outlet ASTM A105 MSS SP-97 BW	
1	8	3	SCH20	STD	P31B-00P11	Outlet ASTM A105 MSS SP-97 BW	
1	10	3	SCH20	STD	P31B-00UPG	Outlet ASTM A105 MSS SP-97 BW	
1	12	3	SCH20	STD	P31B-00USE	Outlet ASTM A105 MSS SP-97 BW	
1	14	3	SCH20	STD	P31B-00UPH	Outlet ASTM A105 MSS SP-97 BW	
1	16	3	SCH20	STD	P31B-00TU2	Outlet ASTM A105 MSS SP-97 BW	
1	18	3	SCH20	STD	P31B-00NZ4	Outlet ASTM A105 MSS SP-97 BW	
1	20	3	STD	STD	P31B-008FA	Outlet ASTM A105 MSS SP-97 BW	
1	24	3	STD	STD	P31B-00895	Outlet ASTM A105 MSS SP-97 BW	
1	30	3	STD	STD	P31B-007WY	Outlet ASTM A105 MSS SP-97 BW	
1	36	3	XS	STD	P31B-007P1	Outlet ASTM A105 MSS SP-97 BW	
1	42	3	STD	STD	P31B-00EVS	Outlet ASTM A105 MSS SP-97 BW	
1	12	4	SCH20	STD	P31B-00USF	Outlet ASTM A105 MSS SP-97 BW	
1	14	4	SCH20	STD	P31B-00UPJ	Outlet ASTM A105 MSS SP-97 BW	
1	16	4	SCH20	STD	P31B-00TU3	Outlet ASTM A105 MSS SP-97 BW	
1	18	4	SCH20	STD	P31B-00P1V	Outlet ASTM A105 MSS SP-97 BW	
1	20	4	STD	STD	P31B-008D3	Outlet ASTM A105 MSS SP-97 BW	
1	24	4	STD	STD	P31B-0086X	Outlet ASTM A105 MSS SP-97 BW	
1	30	4	STD	STD	P31B-007US	Outlet ASTM A105 MSS SP-97 BW	
1	36	4	XS	STD	P31B-00AEP	Outlet ASTM A105 MSS SP-97 BW	
1	42	4	STD	STD	P31B-00EVT	Outlet ASTM A105 MSS SP-97 BW	
1	18	6	SCH20	STD	P31B-00P48	Outlet ASTM A105 MSS SP-97 BW	
1	20	6	STD	STD	P31B-008PZ	Outlet ASTM A105 MSS SP-97 BW	
1	24	6	STD	STD	P31B-008JD	Outlet ASTM A105 MSS SP-97 BW	
1	30	6	STD	STD	P31B-008BS	Outlet ASTM A105 MSS SP-97 BW	
1	36	6	XS	STD	P31B-0085G	Outlet ASTM A105 MSS SP-97 BW	
1	42	6	STD	STD	P31B-007ZP	Outlet ASTM A105 MSS SP-97 BW	

OLET ON CAP (LC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75				P36B-0001R	Outlet on cap ASTM A105 Class 3000 MSS SP-97 SW Cap=NPS2	
4204	0.5				P36B-000AU	Outlet on cap ASTM A105 Class 3000 MSS SP-97 SW Cap=NPS4	
4204	0.75				P36B-0001M	Outlet on cap ASTM A105 Class 3000 MSS SP-97 SW Cap=NPS4	
4204	1				P36B-0008D	Outlet on cap ASTM A105 Class 3000 MSS SP-97 SW Cap=NPS4	
4204	1.5				P36B-000AV	Outlet on cap ASTM A105 Class 3000 MSS SP-97 SW Cap=NPS4	
4205	0.75				P36B-0001N	Outlet on cap ASTM A105 Class 3000 MSS SP-97 SW Cap=NPS6	
4206	0.75				P36B-0005S	Outlet on cap ASTM A105 Class 3000 MSS SP-97 SW Cap=NPS8	
4207	0.75				P36B-000AP	Outlet on cap ASTM A105 Class 3000 MSS SP-97 SW Cap=NPS10 and larger	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30B-0002D	Plug ASTM A105 ASME B16.11 NPT Round head	
1	0.75				P30B-0002E	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1				P30B-0002F	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1.5				P30B-0002G	Plug ASTM A105 ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P61B-001R9	Flange SW ASTM A105 Class 150 ASME B16.5 RF	
1	0.75		XS		P61B-001RA	Flange SW ASTM A105 Class 150 ASME B16.5 RF	
1	1		XS		P61B-001RR	Flange SW ASTM A105 Class 150 ASME B16.5 RF	
1	1.5		XS		P61B-001RV	Flange SW ASTM A105 Class 150 ASME B16.5 RF	

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FLANGE (F)							
OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2		XS		P61B-003NK	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	3		STD		P61B-001PW	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	4		STD		P61B-001R8	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	6		STD		P61B-001RT	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	8		SCH20		P61B-002BF	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	10		SCH20		P61B-002B4	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	12		SCH20		P61B-002B5	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	14		SCH20		P61B-002B6	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	16		SCH20		P61B-002B7	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	18		SCH20		P61B-002B8	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	20		STD		P61B-001JA	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	24		STD		P61B-001NJ	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	30		STD		P61B-001S8	Flange WN ASTM A105 Class 150 ASME B16.47 Series B RF	
1	36		XS		P61B-001UE	Flange WN ASTM A105 Class 150 ASME B16.47 Series B RF	
1	42		STD		P61B-003M9	Flange WN ASTM A105 Class 150 ASME B16.47 Series B RF	
773	0.5		XS		P61B-001HC	Flange SW ASTM A105 Class 300 ASME B16.5 RF	
773	0.75		XS		P61B-001HS	Flange SW ASTM A105 Class 300 ASME B16.5 RF	
773	1		XS		P61B-001EF	Flange SW ASTM A105 Class 300 ASME B16.5 RF	
773	1.5		XS		P61B-001F2	Flange SW ASTM A105 Class 300 ASME B16.5 RF	
773	2		XS		P61B-001HW	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	3		STD		P61B-001LJ	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	4		STD		P61B-001MC	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	6		STD		P61B-001N2	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	8		SCH20		P61B-002LJ	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	10		SCH20		P61B-002LH	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	12		SCH20		P61B-002MP	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	14		SCH20		P61B-002MR	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	16		SCH20		P61B-002MS	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	18		SCH20		P61B-002MT	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	20		STD		P61B-001NT	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	24		STD		P61B-001PA	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	30		STD		P61B-003SW	Flange WN ASTM A105 Class 300 ASME B16.47 Series B RF	
773	36		XS		P61B-001N6	Flange WN ASTM A105 Class 300 ASME B16.47 Series B RF	
773	42		STD		P61B-003P8	Flange WN ASTM A105 Class 300 ASME B16.47 Series B RF	
781	0.5		XS		P61B-001FF	Flange SW ASTM A105 Class 600 ASME B16.5 RF	
781	0.75		XS		P61B-001FH	Flange SW ASTM A105 Class 600 ASME B16.5 RF	
781	1		XS		P61B-001DR	Flange SW ASTM A105 Class 600 ASME B16.5 RF	
781	1.5		XS		P61B-001DV	Flange SW ASTM A105 Class 600 ASME B16.5 RF	
781	2		XS		P61B-001DH	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	3		STD		P61B-001TW	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	4		STD		P61B-001VV	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	6		STD		P61B-001JW	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	8		SCH20		P61B-003F0	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	10		SCH20		P61B-00650	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	12		SCH20		P61B-00651	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	14		SCH20		P61B-0079A	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	16		SCH20		P61B-00798	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	18		SCH20		P61B-003TP	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
797	0.5		XS		P61B-009T3	Flange SW ASTM A105 Class 1500 ASME B16.5 RJ	
797	0.75		XS		P61B-009T4	Flange SW ASTM A105 Class 1500 ASME B16.5 RJ	
797	1		XS		P61B-009T5	Flange SW ASTM A105 Class 1500 ASME B16.5 RJ	
797	1.5		XS		P61B-009T6	Flange SW ASTM A105 Class 1500 ASME B16.5 RJ	
797	2		XS		P61B-0065C	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
797	3		STD		P61B-009W7	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
797	4		STD		P61B-009W8	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
797	6		STD		P61B-009W9	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	

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BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67B-000FH	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	0.75				P67B-000FJ	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	1				P67B-000FK	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	1.5				P67B-000FL	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	2				P67B-000FT	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	3				P67B-000FW	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	4				P67B-000FX	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	6				P67B-000FY	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	8				P67B-000FZ	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	10				P67B-000FM	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	12				P67B-000FN	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	14				P67B-000FP	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	16				P67B-000FR	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	18				P67B-000FS	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	20				P67B-000FU	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	24				P67B-000FV	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	30				P67B-000G2	Blind flange ASTM A105 Class 150 ASME B16.47 Series B RF	
1	36				P67B-000G5	Blind flange ASTM A105 Class 150 ASME B16.47 Series B RF	
1	42				P67B-000KZ	Blind flange ASTM A105 Class 150 ASME B16.47 Series B RF	

REDUCING FLANGE (FR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2		XS	P62B-0006B	Reducing flange WN ASTM A105 Class 150 ASME B16.5 RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000L8	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000L9	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000LA	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000LB	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000LH	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000LL	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000LM	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	6				P73T-000LN	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	8				P73T-000LP	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	10				P73T-000LC	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	12				P73T-000LD	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	14				P73T-000LE	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	16				P73T-000LF	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	18				P73T-000LG	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	20				P73T-000LJ	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	24				P73T-000LK	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	30				P73T-000LT	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	36				P73T-000LW	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	42				P73T-000LZ	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	0.5				P73T-000FT	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	0.75				P73T-000FU	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

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GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
773	3				P73T-000G5	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	4				P73T-000G6	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	6				P73T-000G7	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	8				P73T-000G8	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	10				P73T-000FX	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	12				P73T-000FY	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	14				P73T-000FZ	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	16				P73T-000G0	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	18				P73T-000G1	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	20				P73T-000G3	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	24				P73T-000G4	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	30				P73T-000H9	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	36				P73T-000HC	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	42				P73T-000KM	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	0.5				P73T-000J8	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	0.75				P73T-000J9	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1				P73T-000JA	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1.5				P73T-000JB	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	2				P73T-000JH	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	3				P73T-000JL	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	4				P73T-000JM	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	6				P73T-000JN	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	8				P73T-000JP	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	10				P73T-000JC	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	12				P73T-000JD	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	14				P73T-000JE	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	16				P73T-000JF	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	18				P73T-000JG	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
797	0.5				P75T-000JT	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	0.75				P75T-000JU	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	1				P75T-000JV	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	1.5				P75T-000JW	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	2				P75T-0008A	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	3				P75T-0008E	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	4				P75T-0008D	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	6				P75T-0008C	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-16				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	18-24				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
1	30-42				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
773	0.5-10				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
773	12-42				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
781	0.5-6				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
781	8-20				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
797	0.5-2				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	

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BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
797	3-6				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81B-000RA	Gate valve ASTM A105 Class 800 API 602 SW Trim number 5 BB-BG-OS&Y Handwheel operated	
1	0.75				P81B-000P0	Gate valve ASTM A105 Class 800 API 602 SW Trim number 5 BB-BG-OS&Y Handwheel operated	
1	1				P81B-000P1	Gate valve ASTM A105 Class 800 API 602 SW Trim number 5 BB-BG-OS&Y Handwheel operated	
1	1.5				P81B-000P2	Gate valve ASTM A105 Class 800 API 602 SW Trim number 5 BB-BG-OS&Y Handwheel operated	
1	2				P81C-004DJ	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated	
1	3				P81C-004DK	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated	
1	4				P81C-004DL	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated	
1	6				P81C-004DM	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated	
1	8				P81C-004DN	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated	
1	10				P81C-004DG	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated	
1	12				P81C-004DH	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated	
1	14				P81C-004DB	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Gear operated	
1	16				P81C-004DC	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Gear operated	
1	18				P81C-004DD	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Gear operated	
1	20				P81C-004DE	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Gear operated	
1	24				P81C-004DF	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Gear operated	
1	30				P81C-004DA	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.47-B RF Trim number 5 BB-BG-OS&Y Gear operated	
1	36				P81C-007M9	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.47-B RF Trim number 5 BB-BG-OS&Y Gear operated	
714	0.5				P81B-0015N	Gate valve ASTM A105 Class 800 API 602 SW - NPT Trim number 5 BB-BG-OS&Y Handwheel operated	
714	0.75				P81B-002FC	Gate valve ASTM A105 Class 800 API 602 SW - NPT Trim number 5 BB-BG-OS&Y Handwheel operated	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82B-000KW	Globe valve ASTM A105 Class 800 API 602 SW Trim number 5 BB-BG-OS&Y Handwheel operated	
1	0.75				P82B-000HE	Globe valve ASTM A105 Class 800 API 602 SW Trim number 5 BB-BG-OS&Y Handwheel operated	
1	1				P82B-000HF	Globe valve ASTM A105 Class 800 API 602 SW Trim number 5 BB-BG-OS&Y Handwheel operated	
1	1.5				P82B-000HG	Globe valve ASTM A105 Class 800 API 602 SW Trim number 5 BB-BG-OS&Y Handwheel operated	
1	2				P82C-0026M	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated	
1	3				P82C-0026N	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated	
1	4				P82C-0026P	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated	
1	6				P82C-0026R	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated	
1	8				P82C-0026S	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83B-000GL	Check valve ASTM A105 Class 800 API 602 SW Trim number 5 Lift-type Bolted cover	
1	0.75				P83B-000EU	Check valve ASTM A105 Class 800 API 602 SW Trim number 5 Lift-type Bolted cover	
1	1				P83B-000EV	Check valve ASTM A105 Class 800 API 602 SW Trim number 5 Lift-type Bolted cover	
1	1.5				P83B-000EW	Check valve ASTM A105 Class 800 API 602 SW Trim number 5 Lift-type Bolted cover	
1	2				P83C-0021U	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 5 Swing-type Bolted cover	
1	3				P83C-0021X	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 5 Swing-type Bolted cover	
1	4				P83C-0021Y	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 5 Swing-type Bolted cover	
1	6				P83C-0021Z	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 5 Swing-type Bolted cover	
1	8				P83C-00220	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 5 Swing-type Bolted cover	
1	10				P83C-0021N	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 5 Swing-type Bolted cover	

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CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	12				P83C-0021P	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 5 Swing-type Bolted cover	
1	14				P83C-0021R	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 5 Swing-type Bolted cover	
1	16				P83C-0021S	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 5 Swing-type Bolted cover	
1	18				P83C-0021T	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 5 Swing-type Bolted cover	
1	20				P83C-0021V	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 5 Swing-type Bolted cover	
1	24				P83C-0021W	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 5 Swing-type Bolted cover	

DP CHECK VALVE (XDP)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
4602	6				P88C-00357	Dual plate check valve ASTM A216 Grade WCB Class 150 API 594 Wafer-type ASME B16.5 RF Trim number 5 Internal wetted parts 13Cr Spring Inconel Retainerless-type	
4602	8				P88C-00358	Dual plate check valve ASTM A216 Grade WCB Class 150 API 594 Wafer-type ASME B16.5 RF Trim number 5 Internal wetted parts 13Cr Spring Inconel Retainerless-type	

NEEDLE VALVE (NV)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82B-001K3	Needle valve ASTM A105 Class 800 API 602 SW Trim number 5 BB-BG-OS&Y Handwheel operated	
1	0.75				P82B-001K4	Needle valve ASTM A105 Class 800 API 602 SW Trim number 5 BB-BG-OS&Y Handwheel operated	
1	1				P82B-001K5	Needle valve ASTM A105 Class 800 API 602 SW Trim number 5 BB-BG-OS&Y Handwheel operated	
1	1.5				P82B-001K6	Needle valve ASTM A105 Class 800 API 602 SW Trim number 5 BB-BG-OS&Y Handwheel operated	

ORIFICE FLANGE (FO)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2		XS		P66B-0084B	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	3		STD		P66B-0084C	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	4		STD		P66B-0084D	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	6		STD		P66B-0084E	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	8		SCH20		P66B-0084F	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	10		SCH20		P66B-00848	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	12		SCH20		P66B-0084L	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	14		SCH20		P66B-0084A	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	16		SCH20		P66B-0083Y	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	18		SCH20		P66B-0084R	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	20		STD		P66B-0084S	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	24		STD		P66B-0085W	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
200	2		XS		P66B-00843	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	3		STD		P66B-00844	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	4		STD		P66B-00845	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	6		STD		P66B-00846	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	8		SCH20		P66B-00847	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	10		SCH20		P66B-00840	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	12		SCH20		P66B-0084P	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	14		SCH20		P66B-00842	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	16		SCH20		P66B-0083Z	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	18		SCH20		P66B-0084T	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	20		STD		P66B-0084U	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	24		STD		P66B-0085X	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71B-0008A	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	0.75				P71B-0008B	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	1				P71B-0008C	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71B-0008D	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	2				P71B-0000P	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	3				P71B-0000N	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	4				P71B-0000M	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	

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SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	6				P71B-0000L	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	8				P71B-0000R	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	10				P71B-0000K	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	12				P71B-0000J	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
773	0.5				P71B-000B1	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
773	0.75				P71B-000B2	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
773	1				P71B-000B3	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
773	1.5				P71B-000B4	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
773	2				P71B-000B6	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
773	3				P71B-000B7	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
773	4				P71B-000B8	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	

PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000AH	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	16				P72B-0000C	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	18				P72B-000AJ	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	20				P72B-000AK	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	24				P72B-000AL	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	30				P72B-000AM	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	36				P72B-000AN	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	

PADDLE SPACER (PS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000AT	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	16				P72B-0000B	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	18				P72B-000AU	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	20				P72B-000AV	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	24				P72B-000AW	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	30				P72B-000AX	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	36				P72B-000AY	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	

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BOLT TABLE (B_A1AS , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	60	P80S-003V2		
0.75	4	0.500	65	P80S-003V3		
1	4	0.500	70	P80S-003V4		
1.5	4	0.500	75	P80S-003V5		
2	4	0.625	85	P80S-003XE		
3	4	0.625	95	P80S-003XG		
4	8	0.625	95	P80S-003XG		
6	8	0.750	105	P80S-003XJ		
8	8	0.750	110	P80S-003XK		
10	12	0.875	120	P80S-00419		
12	12	0.875	120	P80S-00419		
14	12	1.000	135	P80S-0043E		
16	16	1.000	140	P80S-0043F		
18	16	1.125	150	P80S-0046K		
20	20	1.125	160	P80S-0046M		
24	20	1.250	175	P80S-004AG		
30	44	0.750	145	P80S-003ZK		
36	44	0.875	175	P80S-0041M		
42	48	1.000	190	P80S-0043T		

BOLT TABLE (B_A1AS_773 , STUD ASME RF, OPTION CODE 773)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-003V4		
0.75	4	0.625	75	P80S-003XC		
1	4	0.625	80	P80S-003XD		
1.5	4	0.750	95	P80S-00414		
2	8	0.625	90	P80S-003XF		
3	8	0.750	110	P80S-003XK		
4	8	0.750	115	P80S-003XL		
6	12	0.750	125	P80S-003XN		
8	12	0.875	140	P80S-0041D		
10	16	1.000	160	P80S-0043K		
12	16	1.125	175	P80S-0046S		
14	20	1.125	180	P80S-0046T		
16	20	1.250	190	P80S-004AK		
18	24	1.250	200	P80S-004AM		
20	24	1.250	210	P80S-004AP		
24	24	1.500	235	P80S-003F8		
30	36	1.375	285	P80S-003EA		
36	32	1.625	320	P80S-005TT		
42	36	1.750	355	P80S-007B5		

BOLT TABLE (B_A1AS_781 , STUD ASME RF, OPTION CODE 781)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	80	P80S-003V6		
0.75	4	0.625	90	P80S-003XF		
1	4	0.625	95	P80S-003XG		
1.5	4	0.750	110	P80S-003XK		
2	8	0.625	110	P80S-003VC		
3	8	0.750	130	P80S-003XP		
4	8	0.875	150	P80S-0041F		
6	12	1.000	175	P80S-0043P		
8	12	1.125	195	P80S-0046W		
10	16	1.250	250	P80S-004AY		
12	20	1.250	255	P80S-004AZ		
14	20	1.375	270	P80S-003E7		
16	20	1.500	295	P80S-003FL		
18	20	1.625	320	P80S-005TT		
20	24	1.625	335	P80S-005TW		
24	24	1.875	380			
30	28	1.875	435			
36	28	2.250	510			
42	28	2.500	575			

BOLT TABLE (B_A1AS_789 , STUD ASME RJ, OPTION CODE 789)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE

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BOLT TABLE (B_A1AS_789 , STUD ASME RJ, OPTION CODE 789)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	110		R12	
0.75	4	0.750	115		R14	
1	4	0.875	130		R16	
1.5	4	1.000	140		R20	
2	8	0.875	150		R24	
3	8	0.875	150		R31	
4	8	1.125	175		R37	
6	12	1.125	200		R45	
8	12	1.375	260		R49	
10	16	1.375	275		R53	
12	20	1.375	295		R57	
14	20	1.500	325		R62	
16	20	1.625	340		R66	
18	20	1.875	390		R70	
20	20	2.000	415		R74	
24	20	2.500	525		R78	
30	20	3.000	600		R102	
36	20	3.500	690		R105	

BOLT TABLE (B_A1AS_797 , STUD ASME RJ, OPTION CODE 797)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	110	P80S-003XK	R12	P75T-000JT
0.75	4	0.750	115	P80S-003XL	R14	P75T-000JU
1	4	0.875	130	P80S-0041B	R16	P75T-000JV
1.5	4	1.000	140	P80S-0043F	R20	P75T-000JW
2	8	0.875	150	P80S-0041F	R24	P75T-0008A
3	8	1.125	180	P80S-0046T	R35	P75T-0008E
4	8	1.250	230	P80S-004AU	R39	P75T-0008D
6	12	1.375	300	P80S-003ED	R46	P75T-0008C
8	12	1.625	345		R50	
10	12	1.875	395		R54	
12	16	2.000	445		R58	
14	16	2.250	490		R63	
16	16	2.500	540		R67	
18	16	2.750	590		R71	
20	16	3.000	650		R75	
24	16	3.500	745		R79	

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BRANCH TABLE (T_A1AS)

RUN PIPE SIZE (in) \ BRANCH SIZE (in)	0.5	0.75	1	1.5	2	3	4	6	8	10	12	14	16	18	20	24	30	36	42
0.5	TS																		
0.75		TS																	
1		TR	TS																
1.5		TR	TR	TS															
2		L	TR	TR	TS														
3		L	L	TR	TR	TS													
4	L	L	L	L	TR	TR	TS												
6	L	L	L	L	L	TR	TR	TS											
8		L	L	L	L	L	TR	TR	TS										
10		L	L	L	L	L	TR	TR	TR	TS									
12		L	L	L	L	L	L	TR	TR	TR	TS								
14		L	L	L	L	L	L	TR	TR	TR	TR	TS							
16		L	L	L	L	L	L	TR	TR	TR	TR	TR	TS						
18		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TS					
20		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TR	TS				
24		L	L	L	L	L	L	L	9PD	TR	TR	TR	TR	TR	TR	TS			
30		L	L	L	L	L	L	L	9PD	TR	TR	TR	TR	TR	TR	TR	TS		
36		L	L	L	L	L	L	L	9PD	9PD	9PD	9PD	TR	TR	TR	TR	TR	TS	
42		L	L	L	L	L	L	L	9PD	9PD	9PD	9PD	TR	TR	TR	TR	TR	TR	TS

L : OUTLET
TR : REDUCING TEE
9PD : REINFORCING PAD 90 DEG
TS : STRAIGHT TEE

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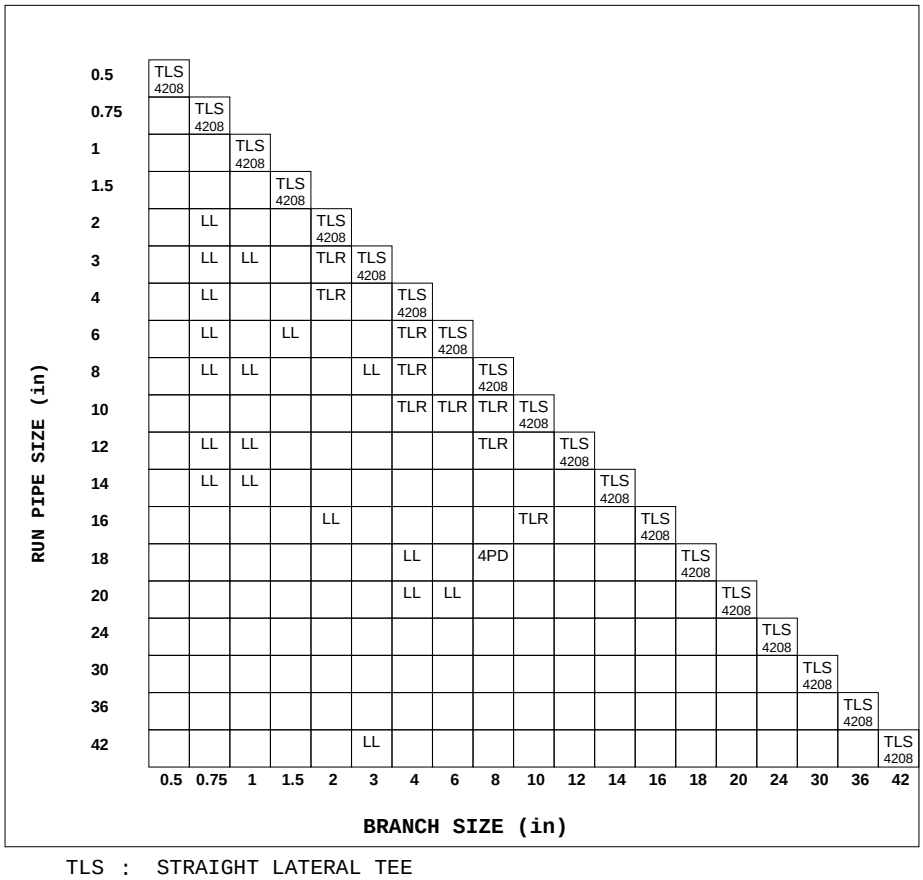
BRANCH TABLE (T_A1AS_2)



TLS : STRAIGHT LATERAL TEE
LL : LATROLET
4PD : REINFORCING PAD 45 DEG
TLR : REDUCING LATERAL TEE

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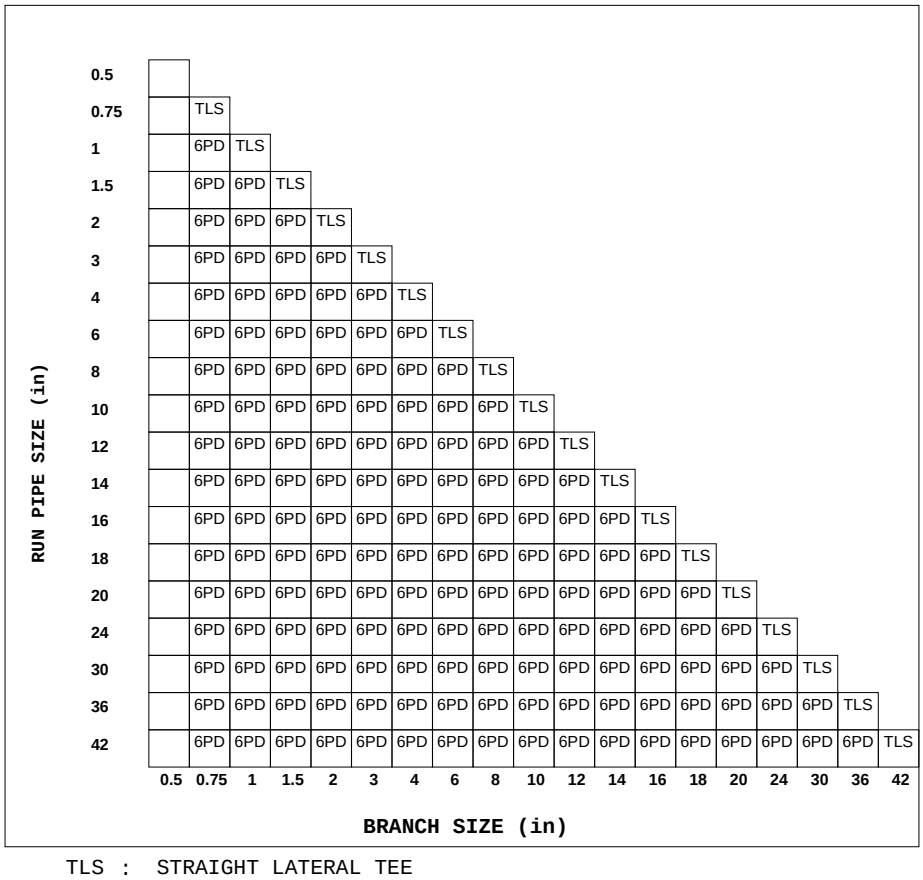
BRANCH TABLE (T_A1AS_3)



TLS : STRAIGHT LATERAL TEE
6PD : REINFORCING PAD 60 DEG

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Material : Killed CS
Rating : ASME CLASS 150
Flange Face : RF
C.A.(mm) : 1.50
Gasket : Spiral Wound
Service : CHEMICAL DOSING
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
24	FULL PORT (Q)
541	NPT(F) (CA,L)
714	SW - NPT(F) (V)
773	CLASS 300 (B,F,G)

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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P01A-000XM	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	0.75		XS		P01A-000XN	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1		XS		P01A-000XP	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1.5		XS		P01A-000XV	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	2		XS		P01A-000YX	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	3		STD		P01A-000YM	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	4		STD		P01A-000YU	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P02B-00014	90 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	0.75				P02B-00015	90 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	1				P02B-00016	90 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5				P02B-00017	90 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	2		XS		P02A-000CP	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		STD		P02A-000CU	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		STD		P02A-000CZ	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P03B-00017	45 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	0.75				P03B-00018	45 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	1				P03B-00019	45 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5				P03B-0001A	45 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	2		XS		P03A-000AS	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		STD		P03A-000AX	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		STD		P03A-000B1	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P21B-00017	Straight tee ASTM A105 Class 3000 ASME B16.11 SW	
1	0.75				P21B-00018	Straight tee ASTM A105 Class 3000 ASME B16.11 SW	
1	1				P21B-00019	Straight tee ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5				P21B-0001A	Straight tee ASTM A105 Class 3000 ASME B16.11 SW	
1	2		XS		P21A-001CJ	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		STD		P21A-001CU	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		STD		P21A-001CW	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75			P24B-0002L	Reducing tee ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5	0.75			P24B-0002N	Reducing tee ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5	1			P24B-0002P	Reducing tee ASTM A105 Class 3000 ASME B16.11 SW	
1	2	1	XS	XS	P24A-00238	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	XS	XS	P24A-0023H	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	STD	XS	P24A-00214	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	STD	XS	P24A-002HW	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P24A-002HY	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P24A-0021K	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	STD	XS	P27A-001MZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P27A-001N0	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P27A-00189	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	STD	XS	P28A-001N5	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P28A-001N6	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P28A-0018B	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P29B-0001J	Cap ASTM A105 Class 3000 ASME B16.11 SW	
1	0.75				P29B-0001F	Cap ASTM A105 Class 3000 ASME B16.11 SW	
1	1				P29B-0001G	Cap ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5				P29B-0001H	Cap ASTM A105 Class 3000 ASME B16.11 SW	
1	2		XS		P29A-000A1	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		STD		P29A-000BK	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		STD		P29A-000A3	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
541	0.75				P29B-0000C	Cap ASTM A105 Class 3000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P41A-000B5	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		SCH160		P41A-000B6	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		SCH160		P41A-000B7	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		SCH160		P41A-000B8	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

CON SWAGED NIPPLE (SNC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	XS	XS	P42A-00036	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	XS	XS	P42A-00038	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	XS	XS	P42A-0003B	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	XS	XS	P42A-00035	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	XS	XS	P42A-00039	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	XS	XS	P42A-0003C	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	XS	XS	P42A-0008C	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	XS	XS	P42A-0008D	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	XS	XS	P42A-0008E	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	XS	XS	P42A-0008F	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	STD	XS	P42A-0007V	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	

ECC SWAGED NIPPLE (SNE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	XS	XS	P43A-00036	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	XS	XS	P43A-00037	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	XS	XS	P43A-00038	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	XS	XS	P43A-00039	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	XS	XS	P43A-0003A	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	XS	XS	P43A-0003B	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	XS	XS	P43A-00042	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	XS	XS	P43A-00043	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	XS	XS	P43A-00044	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	XS	XS	P43A-00045	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	STD	XS	P43A-0003J	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	

COUPLING (CPS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P47B-0001D	Coupling ASTM A105 Class 3000 ASME B16.11 SW - SW	
1	0.75				P47B-0001E	Coupling ASTM A105 Class 3000 ASME B16.11 SW - SW	
1	1				P47B-0001F	Coupling ASTM A105 Class 3000 ASME B16.11 SW - SW	
1	1.5				P47B-0001G	Coupling ASTM A105 Class 3000 ASME B16.11 SW - SW	

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OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2 - 2.5	0.75			P31B-0137J	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	3 - 5	0.75			P31B-0137K	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	3	1			P31B-007A7	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	4 - 5	1			P31B-0138Z	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	4	1.5			P31B-005SN	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
541	1	0.75			P31B-00551	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
541	1.5	0.75			P31B-00555	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
541	2 - 2.5	0.75			P31B-0137H	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
541	3 - 5	0.75			P31B-01376	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30B-0002D	Plug ASTM A105 ASME B16.11 NPT Round head	
1	0.75				P30B-0002E	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1				P30B-0002F	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1.5				P30B-0002G	Plug ASTM A105 ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P61B-001R9	Flange SW ASTM A105 Class 150 ASME B16.5 RF	
1	0.75		XS		P61B-001RA	Flange SW ASTM A105 Class 150 ASME B16.5 RF	
1	1		XS		P61B-001RR	Flange SW ASTM A105 Class 150 ASME B16.5 RF	
1	1.5		XS		P61B-001RV	Flange SW ASTM A105 Class 150 ASME B16.5 RF	
1	2		XS		P61B-003NK	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	3		STD		P61B-001PW	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	4		STD		P61B-001R8	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
773	0.5		XS		P61B-001HC	Flange SW ASTM A105 Class 300 ASME B16.5 RF	
773	0.75		XS		P61B-001HS	Flange SW ASTM A105 Class 300 ASME B16.5 RF	
773	1		XS		P61B-001EF	Flange SW ASTM A105 Class 300 ASME B16.5 RF	
773	1.5		XS		P61B-001F2	Flange SW ASTM A105 Class 300 ASME B16.5 RF	
773	2		XS		P61B-001HW	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	3		STD		P61B-001LJ	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	4		STD		P61B-001MC	Flange WN ASTM A105 Class 300 ASME B16.5 RF	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67B-000FH	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	0.75				P67B-000FJ	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	1				P67B-000FK	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	1.5				P67B-000FL	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	2				P67B-000FT	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	3				P67B-000FW	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	4				P67B-000FX	Blind flange ASTM A105 Class 150 ASME B16.5 RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000L8	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000L9	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000LA	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000LB	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000LH	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000LL	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000LM	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	0.5				P73T-000FT	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	0.75				P73T-000FU	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

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GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
773	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	3				P73T-000G5	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	4				P73T-000G6	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-4				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
773	0.5-4				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81B-001ZN	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated Fluid-1	
1	0.75				P81B-001ZP	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated Fluid-1	
1	1				P81B-001ZR	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated Fluid-1	
1	1.5				P81B-001ZS	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated Fluid-1	
1	2				P81C-006H8	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated Fluid-1	
1	3				P81C-006H9	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated Fluid-1	
1	4				P81C-006HA	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated Fluid-1	
714	0.5				P81B-002SA	Gate valve ASTM A105 Class 800 API 602 SW - NPT Trim number 8 BB-BG-OS&Y Handwheel operated Fluid-1	
714	0.75				P81B-002FD	Gate valve ASTM A105 Class 800 API 602 SW - NPT Trim number 8 BB-BG-OS&Y Handwheel operated Fluid-1	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82B-001H8	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated Fluid-1	
1	0.75				P82B-001H9	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated Fluid-1	
1	1				P82B-001HA	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated Fluid-1	
1	1.5				P82B-001HB	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated Fluid-1	
1	2				P82C-0034V	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated Fluid-1	
1	3				P82C-0034W	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated Fluid-1	
1	4				P82C-0034X	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated Fluid-1	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83B-000FX	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover	
1	0.75				P83B-000ER	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover	
1	1				P83B-000ES	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover	
1	1.5				P83B-000ET	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover	
1	2				P83C-00144	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	3				P83C-00147	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	4				P83C-00148	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	

BALL VALVE (Q)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2				P84C-006SC	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design Fluid-1	
24	2				P84C-006SD	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design Fluid-1	

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SPECT BLANK (SB)							
OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71B-0008A	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	0.75				P71B-0008B	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	1				P71B-0008C	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71B-0008D	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	2				P71B-0000P	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	3				P71B-0000N	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	4				P71B-0000M	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	

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BOLT TABLE (B_A1AY , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	60	P80S-003V2		
0.75	4	0.500	65	P80S-003V3		
1	4	0.500	70	P80S-003V4		
1.5	4	0.500	75	P80S-003V5		
2	4	0.625	85	P80S-003XE		
3	4	0.625	95	P80S-003XG		
4	8	0.625	95	P80S-003XG		

BOLT TABLE (B_A1AY_773 , STUD ASME RF, OPTION CODE 773)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-003V4		
0.75	4	0.625	75	P80S-003XC		
1	4	0.625	80	P80S-003XD		
1.5	4	0.750	95	P80S-00414		
2	8	0.625	90	P80S-003XF		
3	8	0.750	110	P80S-003XK		
4	8	0.750	115	P80S-003XL		

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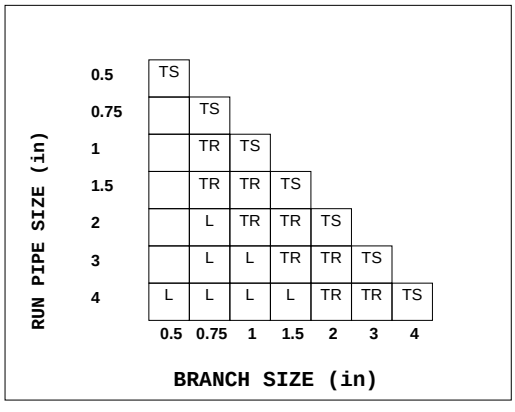
BRANCH TABLE (T_A1AY)



TR : REDUCING TEE
TS : STRAIGHT TEE
L : OUTLET

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Material : Killed CS
Rating : ASME CLASS 150
Flange Face : RF
C.A.(mm) : 1.50
Gasket : Spiral Wound
Service : CHEMICAL DOSING
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
2	USE OF SOFT SEATED BALL, PLUG AND BUTTERFLY VALVES SHALL BE LIMITED TO MAXIMUM OF 204DEGC (400DEGF)

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
24	FULL PORT (Q)
541	NPT(F) (CA,F,L)
714	SW - NPT(F) (V)
773	CLASS 300 (B,F,G)
4205	SOCKOLET ON CAP (CAP=NPS6) (LC)

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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P01A-000XM	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	0.75		XS		P01A-000XN	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1		XS		P01A-000XP	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1.5		XS		P01A-000XV	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	2		XS		P01A-000YX	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	3		STD		P01A-000YM	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	4		STD		P01A-000YU	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	6		STD		P01A-000Z3	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P02B-00014	90 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	0.75				P02B-00015	90 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	1				P02B-00016	90 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5				P02B-00017	90 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	2		XS		P02A-000CP	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		STD		P02A-000CU	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		STD		P02A-000CZ	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		STD		P02A-000D6	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P03B-00017	45 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	0.75				P03B-00018	45 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	1				P03B-00019	45 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5				P03B-0001A	45 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	2		XS		P03A-000AS	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		STD		P03A-000AX	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		STD		P03A-000B1	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		STD		P03A-000B9	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P21B-00017	Straight tee ASTM A105 Class 3000 ASME B16.11 SW	
1	0.75				P21B-00018	Straight tee ASTM A105 Class 3000 ASME B16.11 SW	
1	1				P21B-00019	Straight tee ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5				P21B-0001A	Straight tee ASTM A105 Class 3000 ASME B16.11 SW	
1	2		XS		P21A-001CJ	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		STD		P21A-001CU	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		STD		P21A-001CW	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6		STD		P21A-001D2	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75			P24B-0002L	Reducing tee ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5	0.75			P24B-0002N	Reducing tee ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5	1			P24B-0002P	Reducing tee ASTM A105 Class 3000 ASME B16.11 SW	
1	2	1	XS	XS	P24A-00238	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	XS	XS	P24A-0023H	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	STD	XS	P24A-00214	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	STD	XS	P24A-002HW	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P24A-002HY	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P24A-0021K	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	STD	P24A-0021A	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P24A-00229	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	STD	XS	P27A-001MZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P27A-001N0	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P27A-00189	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	STD	P27A-001AZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P27A-001GW	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	STD	XS	P28A-001N5	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P28A-001N6	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P28A-0018B	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	STD	P28A-001AS	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P28A-00182	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P29B-0001J	Cap ASTM A105 Class 3000 ASME B16.11 SW	
1	0.75				P29B-0001F	Cap ASTM A105 Class 3000 ASME B16.11 SW	
1	1				P29B-0001G	Cap ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5				P29B-0001H	Cap ASTM A105 Class 3000 ASME B16.11 SW	
1	2		XS		P29A-000A1	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		STD		P29A-000BK	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		STD		P29A-000A3	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6		STD		P29A-000A9	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
541	0.75				P29B-0000C	Cap ASTM A105 Class 3000 ASME B16.11 NPT	
541	1				P29B-0000D	Cap ASTM A105 Class 3000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P41A-000B5	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		SCH160		P41A-000B6	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		SCH160		P41A-000B7	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		SCH160		P41A-000B8	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

CON SWAGED NIPPLE (SNC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	XS	XS	P42A-00036	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	XS	XS	P42A-00038	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	XS	XS	P42A-0003B	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	XS	XS	P42A-00035	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	XS	XS	P42A-00039	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	XS	XS	P42A-0003C	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	XS	XS	P42A-0008C	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	XS	XS	P42A-0008D	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	XS	XS	P42A-0008E	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	XS	XS	P42A-0008F	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	STD	XS	P42A-0007V	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	

ECC SWAGED NIPPLE (SNE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	XS	XS	P43A-00036	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	XS	XS	P43A-00037	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	XS	XS	P43A-00038	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	XS	XS	P43A-00039	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	XS	XS	P43A-0003A	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	XS	XS	P43A-0003B	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	XS	XS	P43A-00042	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	XS	XS	P43A-00043	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	

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ECC SWAGED NIPPLE (SNE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2	1	XS	XS	P43A-00044	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	XS	XS	P43A-00045	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	STD	XS	P43A-0003J	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	

COUPLING (CPS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P47B-0001D	Coupling ASTM A105 Class 3000 ASME B16.11 SW - SW	
1	0.75				P47B-0001E	Coupling ASTM A105 Class 3000 ASME B16.11 SW - SW	
1	1				P47B-0001F	Coupling ASTM A105 Class 3000 ASME B16.11 SW - SW	
1	1.5				P47B-0001G	Coupling ASTM A105 Class 3000 ASME B16.11 SW - SW	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2 - 2.5	0.75			P31B-0137J	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	3 - 5	0.75			P31B-0137K	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	6 - 12	0.75			P31B-007AB	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	3	1			P31B-007A7	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	4 - 5	1			P31B-0138Z	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	6 - 10	1			P31B-007A4	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	4	1.5			P31B-005SN	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	5 - 6	1.5			P31B-01390	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
541	1	0.75			P31B-00551	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
541	1.5	0.75			P31B-00555	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
541	2 - 2.5	0.75			P31B-0137H	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
541	3 - 5	0.75			P31B-01376	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
541	6 - 12	0.75			P31B-007GR	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	

OLET ON CAP (LC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
4205	0.75				P36B-0001N	Outlet on cap ASTM A105 Class 3000 MSS SP-97 SW Cap=NPS6	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30B-0002D	Plug ASTM A105 ASME B16.11 NPT Round head	
1	0.75				P30B-0002E	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1				P30B-0002F	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1.5				P30B-0002G	Plug ASTM A105 ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P61B-001R9	Flange SW ASTM A105 Class 150 ASME B16.5 RF	
1	0.75		XS		P61B-001RA	Flange SW ASTM A105 Class 150 ASME B16.5 RF	
1	1		XS		P61B-001RR	Flange SW ASTM A105 Class 150 ASME B16.5 RF	
1	1.5		XS		P61B-001RV	Flange SW ASTM A105 Class 150 ASME B16.5 RF	
1	2		XS		P61B-003NK	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	3		STD		P61B-001PW	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	4		STD		P61B-001R8	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	6		STD		P61B-001RT	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
541	0.5				P61B-003TZ	Flange NPT ASTM A105 Class 150 ASME B16.5 RF	
541	0.75				P61B-003U0	Flange NPT ASTM A105 Class 150 ASME B16.5 RF	
773	0.5		XS		P61B-001HC	Flange SW ASTM A105 Class 300 ASME B16.5 RF	
773	0.75		XS		P61B-001HS	Flange SW ASTM A105 Class 300 ASME B16.5 RF	
773	1		XS		P61B-001EF	Flange SW ASTM A105 Class 300 ASME B16.5 RF	
773	1.5		XS		P61B-001F2	Flange SW ASTM A105 Class 300 ASME B16.5 RF	
773	2		XS		P61B-001HW	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	3		STD		P61B-001LJ	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	4		STD		P61B-001MC	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	6		STD		P61B-001N2	Flange WN ASTM A105 Class 300 ASME B16.5 RF	

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BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67B-000FH	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	0.75				P67B-000FJ	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	1				P67B-000FK	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	1.5				P67B-000FL	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	2				P67B-000FT	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	3				P67B-000FW	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	4				P67B-000FX	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	6				P67B-000FY	Blind flange ASTM A105 Class 150 ASME B16.5 RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000L8	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000L9	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000LA	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000LB	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000LH	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000LL	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000LM	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	6				P73T-000LN	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	0.5				P73T-000FT	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	0.75				P73T-000FU	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	3				P73T-000G5	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	4				P73T-000G6	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	6				P73T-000G7	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-6				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
773	0.5-6				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81B-001ZN	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated Fluid-1	
1	0.75				P81B-001ZP	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated Fluid-1	
1	1				P81B-001ZR	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated Fluid-1	
1	1.5				P81B-001ZS	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated Fluid-1	
1	2				P81C-006H8	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated Fluid-1	
1	3				P81C-006H9	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated Fluid-1	
1	4				P81C-006HA	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated Fluid-1	
714	0.5				P81B-002SA	Gate valve ASTM A105 Class 800 API 602 SW - NPT Trim number 8 BB-BG-OS&Y Handwheel operated Fluid-1	
714	0.75				P81B-002FD	Gate valve ASTM A105 Class 800 API 602 SW - NPT Trim number 8 BB-BG-OS&Y Handwheel operated Fluid-1	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82B-001H8	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated Fluid-1	
1	0.75				P82B-001H9	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated Fluid-1	
1	1				P82B-001HA	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated Fluid-1	

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GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5				P82B-001HB	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated Fluid-1	
1	2				P82C-0034V	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated Fluid-1	
1	3				P82C-0034W	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated Fluid-1	
1	4				P82C-0034X	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated Fluid-1	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83B-000FX	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover	
1	0.75				P83B-000ER	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover	
1	1				P83B-000ES	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover	
1	1.5				P83B-000ET	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover	
1	2				P83C-00144	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	3				P83C-00147	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	4				P83C-00148	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	

BALL VALVE (Q)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P84B-001HB	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design Fluid-1	
1	0.75				P84B-001HC	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design Fluid-1	
1	1				P84B-001HD	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design Fluid-1	
1	1.5				P84B-001HE	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design Fluid-1	
1	2				P84C-006SC	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design Fluid-1	
24	0.5				P84B-001HF	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design Fluid-1	
24	0.75				P84B-001HG	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design Fluid-1	
24	1				P84B-001HH	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design Fluid-1	
24	1.5				P84B-001HJ	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design Fluid-1	
24	2				P84C-006SD	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design Fluid-1	

PLUG VALVE (PV)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P85B-0000R	Plug valve Short-pattern ASTM A105 Class 150 API 599 Flange ASME B16.5 RF Plug SS316 Seat PTFE Trim SS316 Nonlubricated taper plug BC-BG Wrench lever operated Regular port Fluid-1	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71B-0008A	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	0.75				P71B-0008B	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	1				P71B-0008C	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71B-0008D	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	2				P71B-0000P	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	3				P71B-0000N	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	4				P71B-0000M	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	

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BOLT TABLE (B_A1AY04 , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	60	P80S-003V2		
0.75	4	0.500	65	P80S-003V3		
1	4	0.500	70	P80S-003V4		
1.5	4	0.500	75	P80S-003V5		
2	4	0.625	85	P80S-003XE		
3	4	0.625	95	P80S-003XG		
4	8	0.625	95	P80S-003XG		
6	8	0.750	105	P80S-003XJ		

BOLT TABLE (B_A1AY04_773 , STUD ASME RF, OPTION CODE 773)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-003V4		
0.75	4	0.625	75	P80S-003XC		
1	4	0.625	80	P80S-003XD		
1.5	4	0.750	95	P80S-00414		
2	8	0.625	90	P80S-003XF		
3	8	0.750	110	P80S-003XK		
4	8	0.750	115	P80S-003XL		
6	12	0.750	125	P80S-003XN		

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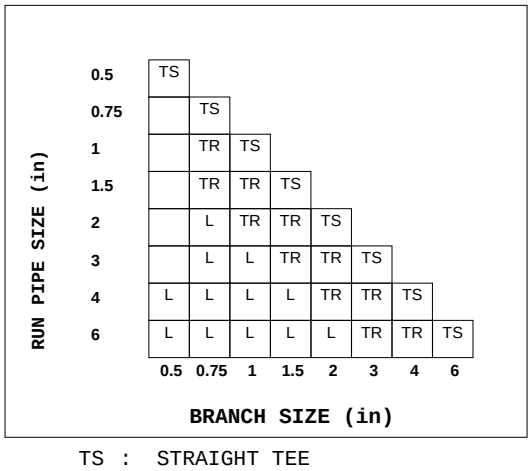
BRANCH TABLE (T_A1AY04)



TS : STRAIGHT TEE
TR : REDUCING TEE
L : OUTLET

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Material : 2-1/4Cr-1Mo
Rating : ASME CLASS 150
Flange Face : RF
C.A.(mm) : 1.50
Gasket : Spiral Wound
Service : PROCESS - HYDROGEN OR HYDROGEN RICH HYDROCARBON MIXTURE:PROCESS WITH HYDROGEN

Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
16	PIPE CLASS SHALL BE USED WITHIN THE NORMAL OPERATING PRESSURE/TEMPERATURE LIMITS SPECIFIED IN API RP 941. PRESSURE / TEMPERATURE SPECIFIED IN THE PIPE CLASS EXCEEDING API RP 941 LIMITS SHOULD BE REGARDED AS UPSET CONDITIONS RATHER THAN FOR CONTINUOUS SERVICE
24	FOR ALL RELEVANT PIPING CLASSES WITH LINE DESIGN TEMPERATURE ABOVE 427DEGC, IN SPIRAL WOUND GASKET, SUITABLE GASKET FILLER MATERIAL SUCH AS COMBINATION OF MICA LAYERS AND GRAPHITE FILLERS OR EQUIVALENT SHALL BE REVIEWED AND SELECTED OR AS DEFINED BY THE LICENSOR

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
541	NPT(F) (CA,L)
773	CLASS 300 (B,F,G)
789	CLASS 900 (B,F,G)
3001	INSULATION GASKET KIT AND BOLTS FOR FLANGE (G)
4608	VALVE WITH NIPPLES (V)

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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P01F-000C7	Pipe ASTM A335 Grade P22 Seamless ASME B36.10M/B36.19M PE	
1	0.75		XS		P01F-000C8	Pipe ASTM A335 Grade P22 Seamless ASME B36.10M/B36.19M PE	
1	1		XS		P01F-000C9	Pipe ASTM A335 Grade P22 Seamless ASME B36.10M/B36.19M PE	
1	1.5		XS		P01F-000CA	Pipe ASTM A335 Grade P22 Seamless ASME B36.10M/B36.19M PE	
1	2		XS		P01F-000CW	Pipe ASTM A335 Grade P22 Seamless ASME B36.10M/B36.19M BE	
1	3		STD		P01F-000CX	Pipe ASTM A335 Grade P22 Seamless ASME B36.10M/B36.19M BE	
1	4		STD		P01F-000CY	Pipe ASTM A335 Grade P22 Seamless ASME B36.10M/B36.19M BE	
1	6		STD		P01F-000CZ	Pipe ASTM A335 Grade P22 Seamless ASME B36.10M/B36.19M BE	
1	8		SCH20		P01F-000D0	Pipe ASTM A335 Grade P22 Seamless ASME B36.10M/B36.19M BE	
1	10		SCH20		P01F-000CV	Pipe ASTM A335 Grade P22 Seamless ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P02G-0001B	90 degree elbow ASTM A182 Grade F22 Class 1 Class 3000 ASME B16.11 SW	
1	0.75				P02G-0001C	90 degree elbow ASTM A182 Grade F22 Class 1 Class 3000 ASME B16.11 SW	
1	1				P02G-0001D	90 degree elbow ASTM A182 Grade F22 Class 1 Class 3000 ASME B16.11 SW	
1	1.5				P02G-0001E	90 degree elbow ASTM A182 Grade F22 Class 1 Class 3000 ASME B16.11 SW	
1	2		XS		P02F-000CP	90 degree elbow ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW Long radius	
1	3		STD		P02F-000CR	90 degree elbow ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW Long radius	
1	4		STD		P02F-000CS	90 degree elbow ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW Long radius	
1	6		STD		P02F-000CT	90 degree elbow ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW Long radius	
1	8		SCH20		P02F-000CU	90 degree elbow ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW Long radius	
1	10		SCH20		P02F-000CN	90 degree elbow ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P03G-0001B	45 degree elbow ASTM A182 Grade F22 Class 1 Class 3000 ASME B16.11 SW	
1	0.75				P03G-0001C	45 degree elbow ASTM A182 Grade F22 Class 1 Class 3000 ASME B16.11 SW	
1	1				P03G-0001D	45 degree elbow ASTM A182 Grade F22 Class 1 Class 3000 ASME B16.11 SW	
1	1.5				P03G-0001E	45 degree elbow ASTM A182 Grade F22 Class 1 Class 3000 ASME B16.11 SW	
1	2		XS		P03F-000CG	45 degree elbow ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW Long radius	
1	3		STD		P03F-000CH	45 degree elbow ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW Long radius	
1	4		STD		P03F-000CJ	45 degree elbow ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW Long radius	
1	6		STD		P03F-000CK	45 degree elbow ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW Long radius	
1	8		SCH20		P03F-000CL	45 degree elbow ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW Long radius	
1	10		SCH20		P03F-000CF	45 degree elbow ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P21G-0001B	Straight tee ASTM A182 Grade F22 Class 1 Class 3000 ASME B16.11 SW	
1	0.75				P21G-0001C	Straight tee ASTM A182 Grade F22 Class 1 Class 3000 ASME B16.11 SW	
1	1				P21G-0001D	Straight tee ASTM A182 Grade F22 Class 1 Class 3000 ASME B16.11 SW	
1	1.5				P21G-0001E	Straight tee ASTM A182 Grade F22 Class 1 Class 3000 ASME B16.11 SW	
1	2		XS		P21F-000CJ	Straight tee ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	3		STD		P21F-000CK	Straight tee ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	4		STD		P21F-000CL	Straight tee ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	6		STD		P21F-000CM	Straight tee ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	8		SCH20		P21F-000CN	Straight tee ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	10		SCH20		P21F-000CH	Straight tee ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75			P24G-0001J	Reducing tee ASTM A182 Grade F22 Class 1 Class 3000 ASME B16.11 SW	
1	1.5	0.75			P24G-0001G	Reducing tee ASTM A182 Grade F22 Class 1 Class 3000 ASME B16.11 SW	
1	1.5	1			P24G-0001H	Reducing tee ASTM A182 Grade F22 Class 1 Class 3000 ASME B16.11 SW	
1	2	1	XS	XS	P24F-0014E	Reducing tee ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	2	1.5	XS	XS	P24F-0014F	Reducing tee ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	3	1.5	STD	XS	P24F-0014C	Reducing tee ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW	

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REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	STD	XS	P24F-0014D	Reducing tee ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	4	2	STD	XS	P24F-0014A	Reducing tee ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	4	3	STD	STD	P24F-0014B	Reducing tee ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	6	3	STD	STD	P24F-00148	Reducing tee ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	6	4	STD	STD	P24F-00149	Reducing tee ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	8	4	SCH20	STD	P24F-00146	Reducing tee ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	8	6	SCH20	STD	P24F-00147	Reducing tee ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	10	4	SCH20	STD	P24F-00143	Reducing tee ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	10	6	SCH20	STD	P24F-00144	Reducing tee ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	10	8	SCH20	SCH20	P24F-00145	Reducing tee ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	STD	XS	P27F-000Y5	Concentric reducer ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	4	2	STD	XS	P27F-000Y6	Concentric reducer ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	4	3	STD	STD	P27F-000Y7	Concentric reducer ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	6	3	STD	STD	P27F-000Y8	Concentric reducer ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	6	4	STD	STD	P27F-000Y9	Concentric reducer ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	8	4	SCH20	STD	P27F-000YA	Concentric reducer ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	8	6	SCH20	STD	P27F-000YB	Concentric reducer ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	10	4	SCH20	STD	P27F-000YC	Concentric reducer ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	10	6	SCH20	STD	P27F-000YD	Concentric reducer ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	10	8	SCH20	SCH20	P27F-000YE	Concentric reducer ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	STD	XS	P28F-000Y5	Eccentric reducer ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	4	2	STD	XS	P28F-000Y6	Eccentric reducer ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	4	3	STD	STD	P28F-000Y7	Eccentric reducer ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	6	3	STD	STD	P28F-000Y8	Eccentric reducer ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	6	4	STD	STD	P28F-000Y9	Eccentric reducer ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	8	4	SCH20	STD	P28F-000YA	Eccentric reducer ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	8	6	SCH20	STD	P28F-000YB	Eccentric reducer ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	10	4	SCH20	STD	P28F-000YC	Eccentric reducer ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	10	6	SCH20	STD	P28F-000YD	Eccentric reducer ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	10	8	SCH20	SCH20	P28F-000YE	Eccentric reducer ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P29G-00016	Cap ASTM A182 Grade F22 Class 1 Class 3000 ASME B16.11 SW	
1	0.75				P29G-00017	Cap ASTM A182 Grade F22 Class 1 Class 3000 ASME B16.11 SW	
1	1				P29G-00018	Cap ASTM A182 Grade F22 Class 1 Class 3000 ASME B16.11 SW	
1	1.5				P29G-00019	Cap ASTM A182 Grade F22 Class 1 Class 3000 ASME B16.11 SW	
1	2		XS		P29F-000CC	Cap ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	3		STD		P29F-000CD	Cap ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	4		STD		P29F-000CE	Cap ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	6		STD		P29F-000CF	Cap ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	8		SCH20		P29F-000CG	Cap ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	10		SCH20		P29F-000CB	Cap ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
541	0.75				P29G-0001N	Cap ASTM A182 Grade F22 Class 1 Class 3000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P41F-00038	Straight nipple ASTM A335 Grade P22 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		SCH160		P41F-00039	Straight nipple ASTM A335 Grade P22 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		SCH160		P41F-0003A	Straight nipple ASTM A335 Grade P22 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		SCH160		P41F-0003B	Straight nipple ASTM A335 Grade P22 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

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CON SWAGED NIPPLE (SNC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	XS	XS	P42F-00051	Concentric swaged nipple ASTM A234 Grade WP22 Class 1 Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	XS	XS	P42F-0004Z	Concentric swaged nipple ASTM A234 Grade WP22 Class 1 Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	XS	XS	P42F-00050	Concentric swaged nipple ASTM A234 Grade WP22 Class 1 Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	XS	XS	P42F-0004Y	Concentric swaged nipple ASTM A234 Grade WP22 Class 1 Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	XS	XS	P42F-0004W	Concentric swaged nipple ASTM A234 Grade WP22 Class 1 Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	XS	XS	P42F-0004X	Concentric swaged nipple ASTM A234 Grade WP22 Class 1 Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	XS	XS	P42F-0004B	Concentric swaged nipple ASTM A234 Grade WP22 Class 1 Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	XS	XS	P42F-0004C	Concentric swaged nipple ASTM A234 Grade WP22 Class 1 Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	XS	XS	P42F-0004D	Concentric swaged nipple ASTM A234 Grade WP22 Class 1 Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	XS	XS	P42F-0004E	Concentric swaged nipple ASTM A234 Grade WP22 Class 1 Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	STD	XS	P42F-0004V	Concentric swaged nipple ASTM A234 Grade WP22 Class 1 Seamless MSS SP-95 BE(L) - PE(S)	

ECC SWAGED NIPPLE (SNE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	XS	XS	P43F-00046	Eccentric swaged nipple ASTM A234 Grade WP22 Class 1 Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	XS	XS	P43F-00044	Eccentric swaged nipple ASTM A234 Grade WP22 Class 1 Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	XS	XS	P43F-00045	Eccentric swaged nipple ASTM A234 Grade WP22 Class 1 Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	XS	XS	P43F-00041	Eccentric swaged nipple ASTM A234 Grade WP22 Class 1 Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	XS	XS	P43F-00042	Eccentric swaged nipple ASTM A234 Grade WP22 Class 1 Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	XS	XS	P43F-00043	Eccentric swaged nipple ASTM A234 Grade WP22 Class 1 Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	XS	XS	P43F-0003L	Eccentric swaged nipple ASTM A234 Grade WP22 Class 1 Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	XS	XS	P43F-0003M	Eccentric swaged nipple ASTM A234 Grade WP22 Class 1 Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	XS	XS	P43F-0003N	Eccentric swaged nipple ASTM A234 Grade WP22 Class 1 Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	XS	XS	P43F-0003P	Eccentric swaged nipple ASTM A234 Grade WP22 Class 1 Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	STD	XS	P43F-00040	Eccentric swaged nipple ASTM A234 Grade WP22 Class 1 Seamless MSS SP-95 BE(L) - PE(S)	

COUPLING (CPS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P47G-0001H	Coupling ASTM A182 Grade F22 Class 1 Class 3000 ASME B16.11 SW - SW	
1	0.75				P47G-0001J	Coupling ASTM A182 Grade F22 Class 1 Class 3000 ASME B16.11 SW - SW	
1	1				P47G-0001K	Coupling ASTM A182 Grade F22 Class 1 Class 3000 ASME B16.11 SW - SW	
1	1.5				P47G-0001L	Coupling ASTM A182 Grade F22 Class 1 Class 3000 ASME B16.11 SW - SW	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2 - 2.5	0.75			P31G-0036V	Outlet ASTM A182 Grade F22 Class 1 Class 3000 MSS SP-97 SW	
1	3 - 5	0.75			P31G-0036W	Outlet ASTM A182 Grade F22 Class 1 Class 3000 MSS SP-97 SW	
1	6 - 12	0.75			P31G-0036U	Outlet ASTM A182 Grade F22 Class 1 Class 3000 MSS SP-97 SW	
1	3	1			P31G-0036Y	Outlet ASTM A182 Grade F22 Class 1 Class 3000 MSS SP-97 SW	
1	4 - 5	1			P31G-0036Z	Outlet ASTM A182 Grade F22 Class 1 Class 3000 MSS SP-97 SW	
1	6 - 10	1			P31G-0036X	Outlet ASTM A182 Grade F22 Class 1 Class 3000 MSS SP-97 SW	
1	4	1.5			P31G-001HC	Outlet ASTM A182 Grade F22 Class 1 Class 3000 MSS SP-97 SW	
1	5 - 6	1.5			P31G-00370	Outlet ASTM A182 Grade F22 Class 1 Class 3000 MSS SP-97 SW	
1	8 - 12	1.5			P31G-00371	Outlet ASTM A182 Grade F22 Class 1 Class 3000 MSS SP-97 SW	
541	1	0.75			P31G-002MU	Outlet ASTM A182 Grade F22 Class 1 Class 3000 MSS SP-97 NPT	
541	1.5	0.75			P31G-002MT	Outlet ASTM A182 Grade F22 Class 1 Class 3000 MSS SP-97 NPT	
541	2 - 2.5	0.75			P31G-00372	Outlet ASTM A182 Grade F22 Class 1 Class 3000 MSS SP-97 NPT	
541	3 - 5	0.75			P31G-00373	Outlet ASTM A182 Grade F22 Class 1 Class 3000 MSS SP-97 NPT	
541	6 - 12	0.75			P31G-00374	Outlet ASTM A182 Grade F22 Class 1 Class 3000 MSS SP-97 NPT	
1	6	2	STD	XS	P31G-001HH	Outlet ASTM A182 Grade F22 Class 1 MSS SP-97 BW	
1	8	2	SCH20	XS	P31G-001HL	Outlet ASTM A182 Grade F22 Class 1 MSS SP-97 BW	
1	10	2	SCH20	XS	P31G-001HJ	Outlet ASTM A182 Grade F22 Class 1 MSS SP-97 BW	
1	8	3	SCH20	STD	P31G-001HM	Outlet ASTM A182 Grade F22 Class 1 MSS SP-97 BW	
1	10	3	SCH20	STD	P31G-001HK	Outlet ASTM A182 Grade F22 Class 1 MSS SP-97 BW	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30G-0001L	Plug ASTM A182 Grade F22 Class 1 ASME B16.11 NPT Round head	

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PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75				P30G-0001M	Plug ASTM A182 Grade F22 Class 1 ASME B16.11 NPT Round head	
1	1				P30G-0001N	Plug ASTM A182 Grade F22 Class 1 ASME B16.11 NPT Round head	
1	1.5				P30G-0001P	Plug ASTM A182 Grade F22 Class 1 ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P61G-000NY	Flange SW ASTM A182 Grade F22 Class 3 Class 150 ASME B16.5 RF	
1	0.75		XS		P61G-000NZ	Flange SW ASTM A182 Grade F22 Class 3 Class 150 ASME B16.5 RF	
1	1		XS		P61G-000P0	Flange SW ASTM A182 Grade F22 Class 3 Class 150 ASME B16.5 RF	
1	1.5		XS		P61G-000P1	Flange SW ASTM A182 Grade F22 Class 3 Class 150 ASME B16.5 RF	
1	2		XS		P61G-000P3	Flange WN ASTM A182 Grade F22 Class 3 Class 150 ASME B16.5 RF	
1	3		STD		P61G-000P4	Flange WN ASTM A182 Grade F22 Class 3 Class 150 ASME B16.5 RF	
1	4		STD		P61G-000P5	Flange WN ASTM A182 Grade F22 Class 3 Class 150 ASME B16.5 RF	
1	6		STD		P61G-000P6	Flange WN ASTM A182 Grade F22 Class 3 Class 150 ASME B16.5 RF	
1	8		SCH20		P61G-000P7	Flange WN ASTM A182 Grade F22 Class 3 Class 150 ASME B16.5 RF	
1	10		SCH20		P61G-000P2	Flange WN ASTM A182 Grade F22 Class 3 Class 150 ASME B16.5 RF	
773	0.5		XS		P61G-000PE	Flange SW ASTM A182 Grade F22 Class 3 Class 300 ASME B16.5 RF	
773	0.75		XS		P61G-000PF	Flange SW ASTM A182 Grade F22 Class 3 Class 300 ASME B16.5 RF	
773	1		XS		P61G-000PG	Flange SW ASTM A182 Grade F22 Class 3 Class 300 ASME B16.5 RF	
773	1.5		XS		P61G-000PH	Flange SW ASTM A182 Grade F22 Class 3 Class 300 ASME B16.5 RF	
773	2		XS		P61G-000P9	Flange WN ASTM A182 Grade F22 Class 3 Class 300 ASME B16.5 RF	
773	3		STD		P61G-000PA	Flange WN ASTM A182 Grade F22 Class 3 Class 300 ASME B16.5 RF	
773	4		STD		P61G-000PB	Flange WN ASTM A182 Grade F22 Class 3 Class 300 ASME B16.5 RF	
773	6		STD		P61G-000PC	Flange WN ASTM A182 Grade F22 Class 3 Class 300 ASME B16.5 RF	
773	8		SCH20		P61G-000PD	Flange WN ASTM A182 Grade F22 Class 3 Class 300 ASME B16.5 RF	
773	10		SCH20		P61G-000P8	Flange WN ASTM A182 Grade F22 Class 3 Class 300 ASME B16.5 RF	
789	10		SCH20		P61G-001EZ	Flange WN ASTM A182 Grade F22 Class 3 Class 900 ASME B16.5 RJ	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67G-00037	Blind flange ASTM A182 Grade F22 Class 3 Class 150 ASME B16.5 RF	
1	0.75				P67G-00038	Blind flange ASTM A182 Grade F22 Class 3 Class 150 ASME B16.5 RF	
1	1				P67G-00039	Blind flange ASTM A182 Grade F22 Class 3 Class 150 ASME B16.5 RF	
1	1.5				P67G-0003A	Blind flange ASTM A182 Grade F22 Class 3 Class 150 ASME B16.5 RF	
1	2				P67G-000B8	Blind flange ASTM A182 Grade F22 Class 3 Class 150 ASME B16.5 RF	
1	3				P67G-000B9	Blind flange ASTM A182 Grade F22 Class 3 Class 150 ASME B16.5 RF	
1	4				P67G-000BA	Blind flange ASTM A182 Grade F22 Class 3 Class 150 ASME B16.5 RF	
1	6				P67G-000BB	Blind flange ASTM A182 Grade F22 Class 3 Class 150 ASME B16.5 RF	
1	8				P67G-000BC	Blind flange ASTM A182 Grade F22 Class 3 Class 150 ASME B16.5 RF	
1	10				P67G-0003B	Blind flange ASTM A182 Grade F22 Class 3 Class 150 ASME B16.5 RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-003CR	Spiral wound gasket SS316 winding / Graphite-mica filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	0.75				P73T-003CS	Spiral wound gasket SS316 winding / Graphite-mica filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	1				P73T-003CT	Spiral wound gasket SS316 winding / Graphite-mica filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	1.5				P73T-003CU	Spiral wound gasket SS316 winding / Graphite-mica filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	2				P73T-003CW	Spiral wound gasket SS316 winding / Graphite-mica filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	3				P73T-003CX	Spiral wound gasket SS316 winding / Graphite-mica filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	4				P73T-003CY	Spiral wound gasket SS316 winding / Graphite-mica filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	6				P73T-003CZ	Spiral wound gasket SS316 winding / Graphite-mica filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	8				P73T-003D0	Spiral wound gasket SS316 winding / Graphite-mica filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	10				P73T-003CV	Spiral wound gasket SS316 winding / Graphite-mica filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
3001	1				P78U-0004F	Insulation gasket kit Glass reinforced epoxy Class 150 Manufacturer-standard Flange ASME B16.5 RF	
773	0.5				P73T-003AM	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	

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GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
773	0.75				P73T-003AN	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
773	1				P73T-003AP	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
773	1.5				P73T-003AR	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
773	2				P73T-003AX	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
773	3				P73T-003B0	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
773	4				P73T-003B1	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
773	6				P73T-003B2	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
773	8				P73T-003B3	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
773	10				P73T-003AS	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
789	10				P75T-000KN	Ring joint gasket 5Cr-1/2Mo Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-10				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B16 / A194 Grade 4 ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
773	0.5-10				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B16 / A194 Grade 4 ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
789	8-10				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B16 / A194 Grade 4 ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81G-000AU	Gate valve ASTM A182 Grade F22 Class 3 Class 150 API 602 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2	
1	0.75				P81G-000AV	Gate valve ASTM A182 Grade F22 Class 3 Class 150 API 602 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2	
1	1				P81G-000AW	Gate valve ASTM A182 Grade F22 Class 3 Class 150 API 602 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2	
1	1.5				P81G-000AX	Gate valve ASTM A182 Grade F22 Class 3 Class 150 API 602 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2	
1	2				P81H-00146	Gate valve ASTM A217 Grade WC9 Class 150 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2	
1	3				P81H-00147	Gate valve ASTM A217 Grade WC9 Class 150 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2	
1	4				P81H-00148	Gate valve ASTM A217 Grade WC9 Class 150 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2	
1	6				P81H-00149	Gate valve ASTM A217 Grade WC9 Class 150 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2	
1	8				P81H-0014A	Gate valve ASTM A217 Grade WC9 Class 150 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2	
1	10				P81H-00145	Gate valve ASTM A217 Grade WC9 Class 150 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2	
4608	0.75				P81G-000EL	Gate valve ASTM A182 Grade F22 Class 3 Class 800 API 602 SW both sides w/ nipples PE - NPT ASTM A335-P22 Sch160-nipple Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71G-00001	Spectacle blank ASTM A182 Grade F22 Class 3 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	0.75				P71G-00002	Spectacle blank ASTM A182 Grade F22 Class 3 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	1				P71G-00003	Spectacle blank ASTM A182 Grade F22 Class 3 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71G-00004	Spectacle blank ASTM A182 Grade F22 Class 3 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	2				P71G-00006	Spectacle blank ASTM A182 Grade F22 Class 3 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	3				P71G-00007	Spectacle blank ASTM A182 Grade F22 Class 3 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	4				P71G-00008	Spectacle blank ASTM A182 Grade F22 Class 3 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	6				P71G-00009	Spectacle blank ASTM A182 Grade F22 Class 3 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	8				P71G-0000A	Spectacle blank ASTM A182 Grade F22 Class 3 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	10				P71G-00005	Spectacle blank ASTM A182 Grade F22 Class 3 Class 150 Standard-drawing Flange ASME B16.5 RF	

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BOLT TABLE (B_A1EH , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	60	P80S-00GNA		
0.75	4	0.500	65	P80S-00GN9		
1	4	0.500	70	P80S-00GN8		
1.5	4	0.500	75	P80S-00GN7		
2	4	0.625	85	P80S-00GLJ		
3	4	0.625	95	P80S-00GLG		
4	8	0.625	95	P80S-00GLG		
6	8	0.750	105	P80S-00GLE		
8	8	0.750	110	P80S-00GLD		
10	12	0.875	120	P80S-00FV9		

BOLT TABLE (B_A1EH_773 , STUD ASME RF, OPTION CODE 773)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-00GN8		
0.75	4	0.625	75	P80S-00GLL		
1	4	0.625	80	P80S-00GLK		
1.5	4	0.750	95	P80S-00FVE		
2	8	0.625	90	P80S-00GLH		
3	8	0.750	110	P80S-00GLD		
4	8	0.750	115	P80S-00GLC		
6	12	0.750	125	P80S-00GLA		
8	12	0.875	140	P80S-00FV5		
10	16	1.000	160	P80S-00FR9		

BOLT TABLE (B_A1EH_789 , STUD ASME RJ, OPTION CODE 789)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	110		R12	
0.75	4	0.750	115		R14	
1	4	0.875	130		R16	
1.5	4	1.000	140		R20	
2	8	0.875	150		R24	
3	8	0.875	150		R31	
4	8	1.125	175		R37	
6	12	1.125	200		R45	
8	12	1.375	260	P80S-00F4V	R49	
10	16	1.375	275	P80S-00F4S	R53	P75T-000KN

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PIPING CLASS

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BRANCH TABLE (T_A1EH)

RUN PIPE SIZE (in) \ BRANCH SIZE (in)	0.5	0.75	1	1.5	2	3	4	6	8	10
0.5	TS									
0.75		TS								
1		TR	TS							
1.5		TR	TR	TS						
2		L	TR	TR	TS					
3		L	L	TR	TR	TS				
4	L	L	L	L	TR	TR	TS			
6	L	L	L	L	L	TR	TR	TS		
8		L	L	L	L	L	TR	TR	TS	
10		L	L	L	L	L	TR	TR	TR	TS

TR : REDUCING TEE
TS : STRAIGHT TEE
L : OUTLET

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PIPING CLASS

A1G804 REV NO. 2

Material : LTCS
Rating : ASME CLASS 150
Flange Face : RF
C.A.(mm) : 1.50
Gasket : Spiral Wound
Service : PROCESS - GENERAL PROCESS NON SOUR, NON CORROSIVE
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
2	USE OF SOFT SEATED BALL, PLUG AND BUTTERFLY VALVES SHALL BE LIMITED TO MAXIMUM OF 204DEGC (400DEGF)

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
200	WITH JACK SCREW (FO)
541	NPT(F) (CA,L)
714	SW - NPT(F) (V)
773	CLASS 300 (B,F,G)

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PIPING CLASS
A1G804 REV NO. 2

PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P01A-000XW	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE	
1	0.75		XS		P01A-000XX	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE	
1	1		XS		P01A-000XY	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE	
1	1.5		XS		P01A-000Y4	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE	
1	2		XS		P01A-000XB	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	3		STD		P01A-000YL	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	4		STD		P01A-000YT	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	6		STD		P01A-000Z2	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	8		SCH20		P01A-001BN	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	10		SCH20		P01A-00171	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	12		SCH20		P01A-0017M	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	14		SCH20		P01A-0018X	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	16		SCH20		P01A-0019K	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	18		SCH20		P01A-007GS	Pipe ASTM A671 Grade CC60 Class 22 EFW ASME B36.10M/B36.19M BE	
1	20		STD		P01A-0042R	Pipe ASTM A671 Grade CC60 Class 22 EFW ASME B36.10M/B36.19M BE	
1	24		STD		P01A-0042S	Pipe ASTM A671 Grade CC60 Class 22 EFW ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P02B-00019	90 degree elbow ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW	
1	0.75				P02B-0001A	90 degree elbow ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW	
1	1				P02B-0001B	90 degree elbow ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW	
1	1.5				P02B-0001C	90 degree elbow ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW	
1	2		XS		P02A-000B9	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	3		STD		P02A-000E7	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	4		STD		P02A-000E9	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	6		STD		P02A-000EC	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	8		SCH20		P02A-000GY	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	10		SCH20		P02A-000G4	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	12		SCH20		P02A-000GB	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	14		SCH20		P02A-000GE	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	16		SCH20		P02A-000GH	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	18		SCH20		P02A-001JY	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	20		STD		P02A-001JZ	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	24		STD		P02A-001K1	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P03B-0001B	45 degree elbow ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW	
1	0.75				P03B-0001C	45 degree elbow ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW	
1	1				P03B-0001D	45 degree elbow ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW	
1	1.5				P03B-0001E	45 degree elbow ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW	
1	2		XS		P03A-0009Y	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	3		STD		P03A-000C4	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	4		STD		P03A-000C6	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	6		STD		P03A-000C9	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	8		SCH20		P03A-000EY	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	10		SCH20		P03A-000E3	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	12		SCH20		P03A-000EA	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	14		SCH20		P03A-000EE	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	16		SCH20		P03A-000EK	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	18		SCH20		P03A-001E2	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	20		STD		P03A-001E3	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	24		STD		P03A-001E5	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P21B-0001B	Straight tee ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW	
1	0.75				P21B-0001C	Straight tee ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW	

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STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P21B-0001D	Straight tee ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW	
1	1.5				P21B-0001E	Straight tee ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW	
1	2		XS		P21A-001BR	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	3		STD		P21A-001FE	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	4		STD		P21A-001FF	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	6		STD		P21A-001FJ	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	8		SCH20		P21A-00216	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10		SCH20		P21A-0020F	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12		SCH20		P21A-0020K	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14		SCH20		P21A-0020N	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16		SCH20		P21A-0020U	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	18		SCH20		P21A-0020E	Straight tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	20		STD		P21A-001F4	Straight tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	24		STD		P21A-001F8	Straight tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75			P24B-0002T	Reducing tee ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW	
1	1.5	0.75			P24B-0002V	Reducing tee ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW	
1	1.5	1			P24B-0002W	Reducing tee ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW	
1	2	1	XS	XS	P24A-00264	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	2	1.5	XS	XS	P24A-0026U	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	3	1.5	STD	XS	P24A-002AC	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	3	2	STD	XS	P24A-005M3	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	4	2	STD	XS	P24A-006CW	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	4	3	STD	STD	P24A-0028C	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	6	3	STD	STD	P24A-002AL	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	6	4	STD	STD	P24A-00289	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	8	4	SCH20	STD	P24A-006CX	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	8	6	SCH20	STD	P24A-005M4	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	4	SCH20	STD	P24A-00HMJ	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	6	SCH20	STD	P24A-00HLN	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	8	SCH20	SCH20	P24A-002WN	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	6	SCH20	STD	P24A-00KWL	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	8	SCH20	SCH20	P24A-002WW	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	10	SCH20	SCH20	P24A-002V7	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	6	SCH20	STD	P24A-00KWM	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	8	SCH20	SCH20	P24A-002WZ	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	10	SCH20	SCH20	P24A-002V3	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	12	SCH20	SCH20	P24A-002WD	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	6	SCH20	STD	P24A-00KWN	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	8	SCH20	SCH20	P24A-002XU	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	10	SCH20	SCH20	P24A-002VZ	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	12	SCH20	SCH20	P24A-002WR	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	14	SCH20	SCH20	P24A-002X6	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	18	8	SCH20	SCH20	P24A-002Y9	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	18	10	SCH20	SCH20	P24A-002V5	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	18	12	SCH20	SCH20	P24A-002WK	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	18	14	SCH20	SCH20	P24A-002X2	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	18	16	SCH20	SCH20	P24A-002XE	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	20	8	STD	SCH20	P24A-00KWT	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	20	10	STD	SCH20	P24A-00KWP	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	20	12	STD	SCH20	P24A-00KWR	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	20	14	STD	SCH20	P24A-00KWS	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	20	16	STD	SCH20	P24A-0071W	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	20	18	STD	SCH20	P24A-006D6	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	24	10	STD	SCH20	P24A-00KWU	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	24	12	STD	SCH20	P24A-00KWV	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	24	14	STD	SCH20	P24A-00KWW	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	

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REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	24	16	STD	SCH20	P24A-00KWX	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	24	18	STD	SCH20	P24A-00799	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	24	20	STD	STD	P24A-0029L	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	STD	XS	P27A-003PM	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	4	2	STD	XS	P27A-003PN	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	4	3	STD	STD	P27A-001BA	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	6	3	STD	STD	P27A-001H9	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	6	4	STD	STD	P27A-00181	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	8	4	SCH20	STD	P27A-003PP	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	8	6	SCH20	STD	P27A-003PR	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	4	SCH20	STD	P27A-003PS	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	6	SCH20	STD	P27A-003PT	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	8	SCH20	SCH20	P27A-001W8	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	6	SCH20	STD	P27A-003PU	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	8	SCH20	SCH20	P27A-001W9	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	10	SCH20	SCH20	P27A-001VJ	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	6	SCH20	STD	P27A-003SC	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	8	SCH20	SCH20	P27A-001WA	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	10	SCH20	SCH20	P27A-001VH	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	12	SCH20	SCH20	P27A-001VX	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	8	SCH20	SCH20	P27A-001WH	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	10	SCH20	SCH20	P27A-001VS	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	12	SCH20	SCH20	P27A-001W5	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	14	SCH20	SCH20	P27A-001WD	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	18	10	SCH20	SCH20	P27A-001VM	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	18	12	SCH20	SCH20	P27A-001W3	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	18	14	SCH20	SCH20	P27A-001WC	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	18	16	SCH20	SCH20	P27A-001WF	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	20	12	STD	SCH20	P27A-003R7	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	20	14	STD	SCH20	P27A-00CRB	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	20	16	STD	SCH20	P27A-008G9	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	20	18	STD	SCH20	P27A-004DM	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	24	16	STD	SCH20	P27A-008GB	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	24	18	STD	SCH20	P27A-008L9	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	24	20	STD	STD	P27A-001DF	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	STD	XS	P28A-003PL	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	4	2	STD	XS	P28A-003PM	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	4	3	STD	STD	P28A-001CF	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	6	3	STD	STD	P28A-001AL	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	6	4	STD	STD	P28A-001BL	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	8	4	SCH20	STD	P28A-003PN	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	8	6	SCH20	STD	P28A-003PP	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	4	SCH20	STD	P28A-003PR	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	6	SCH20	STD	P28A-003PS	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	8	SCH20	SCH20	P28A-001W3	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	6	SCH20	STD	P28A-003PT	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	8	SCH20	SCH20	P28A-001W4	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	10	SCH20	SCH20	P28A-001VC	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	6	SCH20	STD	P28A-003S8	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	8	SCH20	SCH20	P28A-001W9	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	10	SCH20	SCH20	P28A-001V9	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	12	SCH20	SCH20	P28A-001VU	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	8	SCH20	SCH20	P28A-001WC	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	

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ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	16	10	SCH20	SCH20	P28A-001VL	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	12	SCH20	SCH20	P28A-001W1	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	14	SCH20	SCH20	P28A-001W7	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	18	10	SCH20	SCH20	P28A-001VD	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	18	12	SCH20	SCH20	P28A-001VZ	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	18	14	SCH20	SCH20	P28A-001W6	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	18	16	SCH20	SCH20	P28A-001WA	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	20	12	STD	SCH20	P28A-003R6	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	20	14	STD	SCH20	P28A-009RD	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	20	16	STD	SCH20	P28A-0056E	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	20	18	STD	SCH20	P28A-004DF	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	24	16	STD	SCH20	P28A-0056G	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	24	18	STD	SCH20	P28A-005B4	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	24	20	STD	STD	P28A-001EB	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P29B-00028	Cap ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW	
1	0.75				P29B-00029	Cap ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW	
1	1				P29B-0002A	Cap ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW	
1	1.5				P29B-0002B	Cap ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW	
1	2		XS		P29A-000BG	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	3		STD		P29A-0009Y	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	4		STD		P29A-000AH	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	6		STD		P29A-000DE	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	8		SCH20		P29A-000E4	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10		SCH20		P29A-000EF	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12		SCH20		P29A-000EJ	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14		SCH20		P29A-000EM	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16		SCH20		P29A-000ER	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	18		SCH20		P29A-000EU	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	20		STD		P29A-000BR	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	24		STD		P29A-0009T	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
541	0.75				P29B-0000G	Cap ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 NPT	
541	1				P29B-0000H	Cap ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 NPT	
541	1.5				P29B-0000J	Cap ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P41A-000AD	Straight nipple ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		SCH160		P41A-000BB	Straight nipple ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		SCH160		P41A-000AN	Straight nipple ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		SCH160		P41A-000AP	Straight nipple ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

CON SWAGED NIPPLE (SNC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	XS	XS	P42A-00032	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	XS	XS	P42A-00031	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	XS	XS	P42A-00034	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	XS	XS	P42A-00037	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	XS	XS	P42A-0003A	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	XS	XS	P42A-00033	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	XS	XS	P42A-0008M	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	XS	XS	P42A-0008N	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	XS	XS	P42A-0008P	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	XS	XS	P42A-0008R	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	STD	XS	P42A-000VB	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 BE(L) - PE(S)	

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ECC SWAGED NIPPLE (SNE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	XS	XS	P43A-0004B	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	XS	XS	P43A-0004C	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	XS	XS	P43A-0004D	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	XS	XS	P43A-0004E	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	XS	XS	P43A-0004F	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	XS	XS	P43A-0004G	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	XS	XS	P43A-0004H	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	XS	XS	P43A-0004J	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	XS	XS	P43A-0004K	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	XS	XS	P43A-0004L	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	STD	XS	P43A-000LE	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 BE(L) - PE(S)	

COUPLING (CPS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P47B-00019	Coupling ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW - SW	
1	0.75				P47B-0001A	Coupling ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW - SW	
1	1				P47B-0001B	Coupling ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW - SW	
1	1.5				P47B-0001C	Coupling ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW - SW	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2 - 2.5	0.75			P31B-0139D	Outlet ASTM A350 Grade LF2 Class 1 Class 3000 MSS SP-97 SW	
1	3 - 5	0.75			P31B-0139E	Outlet ASTM A350 Grade LF2 Class 1 Class 3000 MSS SP-97 SW	
1	6 - 12	0.75			P31B-007EA	Outlet ASTM A350 Grade LF2 Class 1 Class 3000 MSS SP-97 SW	
1	14 - 36	0.75			P31B-007EH	Outlet ASTM A350 Grade LF2 Class 1 Class 3000 MSS SP-97 SW	
1	3	1			P31B-007E6	Outlet ASTM A350 Grade LF2 Class 1 Class 3000 MSS SP-97 SW	
1	4 - 5	1			P31B-0139F	Outlet ASTM A350 Grade LF2 Class 1 Class 3000 MSS SP-97 SW	
1	6 - 10	1			P31B-007E3	Outlet ASTM A350 Grade LF2 Class 1 Class 3000 MSS SP-97 SW	
1	12 - 36	1			P31B-007E9	Outlet ASTM A350 Grade LF2 Class 1 Class 3000 MSS SP-97 SW	
1	4	1.5			P31B-005TT	Outlet ASTM A350 Grade LF2 Class 1 Class 3000 MSS SP-97 SW	
1	5 - 6	1.5			P31B-0139G	Outlet ASTM A350 Grade LF2 Class 1 Class 3000 MSS SP-97 SW	
1	8 - 12	1.5			P31B-007DT	Outlet ASTM A350 Grade LF2 Class 1 Class 3000 MSS SP-97 SW	
1	14 - 24	1.5			P31B-007DZ	Outlet ASTM A350 Grade LF2 Class 1 Class 3000 MSS SP-97 SW	
541	1	0.75			P31B-004MV	Outlet ASTM A350 Grade LF2 Class 1 Class 3000 MSS SP-97 NPT	
541	1.5	0.75			P31B-004MZ	Outlet ASTM A350 Grade LF2 Class 1 Class 3000 MSS SP-97 NPT	
541	2 - 2.5	0.75			P31B-0139H	Outlet ASTM A350 Grade LF2 Class 1 Class 3000 MSS SP-97 NPT	
541	3 - 5	0.75			P31B-0139J	Outlet ASTM A350 Grade LF2 Class 1 Class 3000 MSS SP-97 NPT	
541	6 - 12	0.75			P31B-007J5	Outlet ASTM A350 Grade LF2 Class 1 Class 3000 MSS SP-97 NPT	
541	14 - 36	0.75			P31B-007JC	Outlet ASTM A350 Grade LF2 Class 1 Class 3000 MSS SP-97 NPT	
1	6	2	STD	XS	P31B-00MFB	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	8	2	SCH20	XS	P31B-00MFH	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	10	2	SCH20	XS	P31B-00TFX	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	12	2	SCH20	XS	P31B-00TFY	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	14	2	SCH20	XS	P31B-00TFU	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	16	2	SCH20	XS	P31B-00TFZ	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	18	2	SCH20	XS	P31B-00MJS	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	20	2	STD	XS	P31B-00MGK	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	24	2	STD	XS	P31B-00M4U	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	8	3	SCH20	STD	P31B-00MJF	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	10	3	SCH20	STD	P31B-00UPN	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	12	3	SCH20	STD	P31B-00YAM	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	14	3	SCH20	STD	P31B-00UPP	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	16	3	SCH20	STD	P31B-00UP2	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	18	3	SCH20	STD	P31B-00MJT	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	20	3	STD	STD	P31B-00E8N	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	24	3	STD	STD	P31B-00E8T	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	12	4	SCH20	STD	P31B-00YAN	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	14	4	SCH20	STD	P31B-00UPR	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	16	4	SCH20	STD	P31B-00UP3	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	

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OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	18	4	SCH20	STD	P31B-00MJU	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	20	4	STD	STD	P31B-00E88	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	24	4	STD	STD	P31B-00E8C	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	18	6	SCH20	STD	P31B-00MJV	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	20	6	STD	STD	P31B-00E86	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	24	6	STD	STD	P31B-00E84	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30B-0002V	Plug ASTM A350 Grade LF2 Class 1 ASME B16.11 NPT Round head	
1	0.75				P30B-0002W	Plug ASTM A350 Grade LF2 Class 1 ASME B16.11 NPT Round head	
1	1				P30B-0002X	Plug ASTM A350 Grade LF2 Class 1 ASME B16.11 NPT Round head	
1	1.5				P30B-0002Y	Plug ASTM A350 Grade LF2 Class 1 ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P61B-001MS	Flange SW ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	0.75		XS		P61B-001MT	Flange SW ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	1		XS		P61B-001MV	Flange SW ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	1.5		XS		P61B-001NF	Flange SW ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	2		XS		P61B-003R0	Flange WN ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	3		STD		P61B-001SY	Flange WN ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	4		STD		P61B-001VW	Flange WN ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	6		STD		P61B-001J0	Flange WN ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	8		SCH20		P61B-001X9	Flange WN ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	10		SCH20		P61B-0021J	Flange WN ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	12		SCH20		P61B-00227	Flange WN ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	14		SCH20		P61B-0022R	Flange WN ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	16		SCH20		P61B-00232	Flange WN ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	18		SCH20		P61B-0023B	Flange WN ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	20		STD		P61B-001S3	Flange WN ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	24		STD		P61B-001SW	Flange WN ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
773	0.5		XS		P61B-001K3	Flange SW ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
773	0.75		XS		P61B-001K4	Flange SW ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
773	1		XS		P61B-001L7	Flange SW ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
773	1.5		XS		P61B-001LD	Flange SW ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
773	2		XS		P61B-003R8	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
773	3		STD		P61B-001MB	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
773	4		STD		P61B-001N0	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
773	6		STD		P61B-001NM	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
773	8		SCH20		P61B-002RS	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
773	10		SCH20		P61B-002RJ	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
773	12		SCH20		P61B-002RK	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
773	14		SCH20		P61B-002RL	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
773	16		SCH20		P61B-002RM	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
773	18		SCH20		P61B-002RN	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
773	20		STD		P61B-001NB	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
773	24		STD		P61B-001P1	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67B-000K2	Blind flange ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	0.75				P67B-000K3	Blind flange ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	1				P67B-000K4	Blind flange ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	1.5				P67B-000K5	Blind flange ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	2				P67B-000KB	Blind flange ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	3				P67B-000KE	Blind flange ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	4				P67B-000KF	Blind flange ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	6				P67B-000KG	Blind flange ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	

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BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	8				P67B-000KH	Blind flange ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	10				P67B-000K6	Blind flange ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	12				P67B-000K7	Blind flange ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	14				P67B-000K8	Blind flange ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	16				P67B-000K9	Blind flange ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	18				P67B-000KA	Blind flange ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	20				P67B-000KC	Blind flange ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	24				P67B-000KD	Blind flange ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000L8	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000L9	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000LA	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000LB	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000LH	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000LL	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000LM	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	6				P73T-000LN	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	8				P73T-000LP	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	10				P73T-000LC	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	12				P73T-000LD	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	14				P73T-000LE	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	16				P73T-000LF	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	18				P73T-000LG	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	20				P73T-000LJ	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	24				P73T-000LK	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	0.5				P73T-000FT	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	0.75				P73T-000FU	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	3				P73T-000G5	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	4				P73T-000G6	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	6				P73T-000G7	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	8				P73T-000G8	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	10				P73T-000FX	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	12				P73T-000FY	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	14				P73T-000FZ	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	16				P73T-000G0	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	18				P73T-000G1	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	20				P73T-000G3	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	24				P73T-000G4	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-16				See Attached Bolt Table	Bolt and Nut ASTM A320 Grade L7 / A194 Grade 4 ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	

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BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	18-24				See Attached Bolt Table	Bolt and Nut ASTM A320 Grade L7 / A194 Grade 4 ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
773	0.5-10				See Attached Bolt Table	Bolt and Nut ASTM A320 Grade L7 / A194 Grade 4 ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
773	12-24				See Attached Bolt Table	Bolt and Nut ASTM A320 Grade L7 / A194 Grade 4 ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81B-002KE	Gate valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated Benzene service	
1	0.75				P81B-002KF	Gate valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated Benzene service	
1	1				P81B-002KG	Gate valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated Benzene service	
1	1.5				P81B-002KH	Gate valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated Benzene service	
1	2				P81C-00843	Gate valve ASTM A352 Grade LCC Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Benzene service	
1	3				P81C-00844	Gate valve ASTM A352 Grade LCC Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Benzene service	
1	4				P81C-00845	Gate valve ASTM A352 Grade LCC Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Benzene service	
1	6				P81C-00846	Gate valve ASTM A352 Grade LCC Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Benzene service	
1	8				P81C-00847	Gate valve ASTM A352 Grade LCC Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Benzene service	
1	10				P81C-00841	Gate valve ASTM A352 Grade LCC Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Benzene service	
1	12				P81C-00842	Gate valve ASTM A352 Grade LCC Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Benzene service	
1	14				P81C-00848	Gate valve ASTM A352 Grade LCC Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Benzene service	
1	16				P81C-00849	Gate valve ASTM A352 Grade LCC Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Benzene service	
1	18				P81C-0084A	Gate valve ASTM A352 Grade LCC Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Benzene service	
1	20				P81C-0084B	Gate valve ASTM A352 Grade LCC Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Benzene service	
1	24				P81C-0084C	Gate valve ASTM A352 Grade LCC Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Benzene service	
714	0.5				P81B-002SB	Gate valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW - NPT Trim number 12 BB-BG-OS&Y Handwheel operated Benzene service	
714	0.75				P81B-002KJ	Gate valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW - NPT Trim number 12 BB-BG-OS&Y Handwheel operated Benzene service	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82B-001V5	Globe valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated Benzene service	
1	0.75				P82B-001V6	Globe valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated Benzene service	
1	1				P82B-001V7	Globe valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated Benzene service	
1	1.5				P82B-001V8	Globe valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated Benzene service	
1	2				P82C-003WM	Globe valve ASTM A352 Grade LCC Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Benzene service	
1	3				P82C-003WN	Globe valve ASTM A352 Grade LCC Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Benzene service	
1	4				P82C-003WP	Globe valve ASTM A352 Grade LCC Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Benzene service	
1	6				P82C-003WR	Globe valve ASTM A352 Grade LCC Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Benzene service	
1	8				P82C-003WS	Globe valve ASTM A352 Grade LCC Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Benzene service	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83B-000TS	Check valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 12 Lift-type Bolted cover	
1	0.75				P83B-000TT	Check valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 12 Lift-type Bolted cover	
1	1				P83B-000TU	Check valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 12 Lift-type Bolted cover	
1	1.5				P83B-000TV	Check valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 12 Lift-type Bolted cover	
1	2				P83C-00226	Check valve ASTM A352 Grade LCC Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	3				P83C-00227	Check valve ASTM A352 Grade LCC Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	4				P83C-00228	Check valve ASTM A352 Grade LCC Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	6				P83C-00229	Check valve ASTM A352 Grade LCC Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	

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CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	8				P83C-0022A	Check valve ASTM A352 Grade LCC Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	10				P83C-00221	Check valve ASTM A352 Grade LCC Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	

ORIFICE FLANGE (FO)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2		XS		P66B-00862	Orifice flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	3		STD		P66B-00863	Orifice flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	4		STD		P66B-00864	Orifice flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	6		STD		P66B-00865	Orifice flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	8		SCH20		P66B-00866	Orifice flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	10		SCH20		P66B-0086G	Orifice flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	12		SCH20		P66B-0086H	Orifice flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	14		SCH20		P66B-0086J	Orifice flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	16		SCH20		P66B-0086K	Orifice flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	18		SCH20		P66B-0086L	Orifice flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	20		STD		P66B-0086M	Orifice flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	24		STD		P66B-0086N	Orifice flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
200	2		XS		P66B-00869	Orifice flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	3		STD		P66B-0086A	Orifice flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	4		STD		P66B-0086B	Orifice flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	6		STD		P66B-0086C	Orifice flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	8		SCH20		P66B-0086D	Orifice flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	10		SCH20		P66B-0086P	Orifice flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	12		SCH20		P66B-0086R	Orifice flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	14		SCH20		P66B-0086S	Orifice flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	16		SCH20		P66B-0086T	Orifice flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	18		SCH20		P66B-0086U	Orifice flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	20		STD		P66B-0086V	Orifice flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	24		STD		P66B-0086W	Orifice flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71B-0008T	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	0.75				P71B-0008U	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	1				P71B-0008V	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71B-0008W	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	2				P71B-0008Z	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	3				P71B-00090	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	4				P71B-00091	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	6				P71B-00092	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	8				P71B-00093	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	10				P71B-0008X	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	12				P71B-0008Y	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF	

PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000CP	Paddle blank ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	16				P72B-000CR	Paddle blank ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	18				P72B-000CS	Paddle blank ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	20				P72B-000CT	Paddle blank ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	24				P72B-000CU	Paddle blank ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF	

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PADDLE SPACER (PS)							
OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000CV	Paddle spacer ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	16				P72B-000CW	Paddle spacer ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	18				P72B-000CX	Paddle spacer ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	20				P72B-000CY	Paddle spacer ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	24				P72B-000CZ	Paddle spacer ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF	

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BOLT TABLE (B_A1G804 , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	60	P80S-003VJ		
0.75	4	0.500	65	P80S-003VK		
1	4	0.500	70	P80S-003VL		
1.5	4	0.500	75	P80S-003VM		
2	4	0.625	85	P80S-003Z4		
3	4	0.625	95	P80S-003Z6		
4	8	0.625	95	P80S-003Z6		
6	8	0.750	105	P80S-003Z8		
8	8	0.750	110	P80S-003Z9		
10	12	0.875	120	P80S-00462		
12	12	0.875	120	P80S-00462		
14	12	1.000	135	P80S-004BC		
16	16	1.000	140	P80S-004BD		
18	16	1.125	150	P80S-004J1		
20	20	1.125	160	P80S-004J3		
24	20	1.250	175	P80S-004LF		

BOLT TABLE (B_A1G804_773 , STUD ASME RF, OPTION CODE 773)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-003VL		
0.75	4	0.625	75	P80S-003Z2		
1	4	0.625	80	P80S-003Z3		
1.5	4	0.750	95	P80S-0045X		
2	8	0.625	90	P80S-003Z5		
3	8	0.750	110	P80S-003Z9		
4	8	0.750	115	P80S-003ZA		
6	12	0.750	125	P80S-003ZC		
8	12	0.875	140	P80S-00466		
10	16	1.000	160	P80S-004BH		
12	16	1.125	175	P80S-004J7		
14	20	1.125	180	P80S-004J8		
16	20	1.250	190	P80S-004LJ		
18	24	1.250	200	P80S-004LL		
20	24	1.250	210	P80S-004LN		
24	24	1.500	235	P80S-003A7		

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BRANCH TABLE (T_A1G804)

RUN PIPE SIZE (in) \ BRANCH SIZE (in)	0.5	0.75	1	1.5	2	3	4	6	8	10	12	14	16	18	20	24
0.5	TS															
0.75		TS														
1		TR	TS													
1.5		TR	TR	TS												
2		L	TR	TR	TS											
3		L	L	TR	TR	TS										
4	L	L	L	L	TR	TR	TS									
6	L	L	L	L	L	TR	TR	TS								
8		L	L	L	L	L	TR	TR	TS							
10		L	L	L	L	L	TR	TR	TR	TS						
12		L	L	L	L	L	L	TR	TR	TR	TS					
14		L	L	L	L	L	L	TR	TR	TR	TR	TS				
16		L	L	L	L	L	L	TR	TR	TR	TR	TR	TS			
18		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TS		
20		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TR	TS	
24		L	L	L	L	L	L	L	9PD	TR	TR	TR	TR	TR	TR	TS

L : OUTLET
TS : STRAIGHT TEE
TR : REDUCING TEE
9PD : REINFORCING PAD 90 DEG

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PIPING CLASS

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Material : LTCS
Rating : ASME CLASS 150
Flange Face : RF
C.A.(mm) : 1.50
Gasket : Spiral Wound
Service : UTILITY - LOW PRESSURE NITROGEN
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
541	NPT(F) (CA,L)
714	SW - NPT(F) (V)
773	CLASS 300 (B,F,G)

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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P01A-000XW	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE	
1	0.75		XS		P01A-000XX	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE	
1	1		XS		P01A-000XY	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE	
1	1.5		XS		P01A-000Y4	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P02B-00019	90 degree elbow ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW	
1	0.75				P02B-0001A	90 degree elbow ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW	
1	1				P02B-0001B	90 degree elbow ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW	
1	1.5				P02B-0001C	90 degree elbow ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P03B-0001B	45 degree elbow ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW	
1	0.75				P03B-0001C	45 degree elbow ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW	
1	1				P03B-0001D	45 degree elbow ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW	
1	1.5				P03B-0001E	45 degree elbow ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P21B-0001B	Straight tee ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW	
1	0.75				P21B-0001C	Straight tee ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW	
1	1				P21B-0001D	Straight tee ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW	
1	1.5				P21B-0001E	Straight tee ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75			P24B-0002T	Reducing tee ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW	
1	1.5	0.75			P24B-0002V	Reducing tee ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW	
1	1.5	1			P24B-0002W	Reducing tee ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P29B-00028	Cap ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW	
1	0.75				P29B-00029	Cap ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW	
1	1				P29B-0002A	Cap ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW	
1	1.5				P29B-0002B	Cap ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW	
541	0.75				P29B-0000G	Cap ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P41A-000AD	Straight nipple ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		SCH160		P41A-000BB	Straight nipple ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		SCH160		P41A-000AN	Straight nipple ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		SCH160		P41A-000AP	Straight nipple ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

CON SWAGED NIPPLE (SNC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	XS	XS	P42A-00032	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	XS	XS	P42A-00031	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	XS	XS	P42A-00034	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	XS	XS	P42A-00037	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	XS	XS	P42A-0003A	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	XS	XS	P42A-00033	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S)	

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ECC SWAGED NIPPLE (SNE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	XS	XS	P43A-0004B	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	XS	XS	P43A-0004C	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	XS	XS	P43A-0004D	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	XS	XS	P43A-0004E	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	XS	XS	P43A-0004F	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	XS	XS	P43A-0004G	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S)	

COUPLING (CPS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P47B-00019	Coupling ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW - SW	
1	0.75				P47B-0001A	Coupling ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW - SW	
1	1				P47B-0001B	Coupling ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW - SW	
1	1.5				P47B-0001C	Coupling ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW - SW	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
541	1	0.75			P31B-004MV	Outlet ASTM A350 Grade LF2 Class 1 Class 3000 MSS SP-97 NPT	
541	1.5	0.75			P31B-004MZ	Outlet ASTM A350 Grade LF2 Class 1 Class 3000 MSS SP-97 NPT	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30B-0002V	Plug ASTM A350 Grade LF2 Class 1 ASME B16.11 NPT Round head	
1	0.75				P30B-0002W	Plug ASTM A350 Grade LF2 Class 1 ASME B16.11 NPT Round head	
1	1				P30B-0002X	Plug ASTM A350 Grade LF2 Class 1 ASME B16.11 NPT Round head	
1	1.5				P30B-0002Y	Plug ASTM A350 Grade LF2 Class 1 ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P61B-001MS	Flange SW ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	0.75		XS		P61B-001MT	Flange SW ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	1		XS		P61B-001MV	Flange SW ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	1.5		XS		P61B-001NF	Flange SW ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
773	0.5		XS		P61B-001K3	Flange SW ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
773	0.75		XS		P61B-001K4	Flange SW ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
773	1		XS		P61B-001L7	Flange SW ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
773	1.5		XS		P61B-001LD	Flange SW ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67B-000K2	Blind flange ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	0.75				P67B-000K3	Blind flange ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	1				P67B-000K4	Blind flange ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	1.5				P67B-000K5	Blind flange ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000L8	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000L9	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000LA	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000LB	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	0.5				P73T-000FT	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	0.75				P73T-000FU	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

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BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-1.5				See Attached Bolt Table	Bolt and Nut ASTM A320 Grade L7 / A194 Grade 4 ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
773	0.5-1.5				See Attached Bolt Table	Bolt and Nut ASTM A320 Grade L7 / A194 Grade 4 ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81B-001KB	Gate valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	0.75				P81B-001KC	Gate valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	1				P81B-001KD	Gate valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	1.5				P81B-001KE	Gate valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
714	0.5				P81B-002SC	Gate valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW - NPT Trim number 8 BB-BG-OS&Y Handwheel operated	
714	0.75				P81B-002FE	Gate valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW - NPT Trim number 8 BB-BG-OS&Y Handwheel operated	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82B-0019P	Globe valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	0.75				P82B-0019R	Globe valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	1				P82B-0019S	Globe valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	1.5				P82B-0019T	Globe valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83B-0011G	Check valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover	
1	0.75				P83B-0011H	Check valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover	
1	1				P83B-0011J	Check valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover	
1	1.5				P83B-0011K	Check valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71B-0008T	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	0.75				P71B-0008U	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	1				P71B-0008V	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71B-0008W	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF	

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BOLT TABLE (B_A1GA , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	60	P80S-003VJ		
0.75	4	0.500	65	P80S-003VK		
1	4	0.500	70	P80S-003VL		
1.5	4	0.500	75	P80S-003VM		

BOLT TABLE (B_A1GA_773 , STUD ASME RF, OPTION CODE 773)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-003VL		
0.75	4	0.625	75	P80S-003Z2		
1	4	0.625	80	P80S-003Z3		
1.5	4	0.750	95	P80S-0045X		

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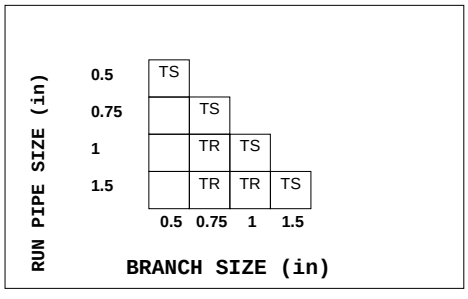
BRANCH TABLE (T_A1GA)



TR : REDUCING TEE
TS : STRAIGHT TEE

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PIPING CLASS

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Material : LTCS
Rating : ASME CLASS 150
Flange Face : RF
C.A.(mm) : 1.50
Gasket : Spiral Wound
Service : PROCESS - LOW TEMPERATURE SERVICE : / HYDROCARBONS (LIGHT) / REFRIGERANT / BLOWDOWN HC-WET FLARE / DEPROPANISER OVHD / PROCESS / LP BLOWDOWN

Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
2	USE OF SOFT SEATED BALL, PLUG AND BUTTERFLY VALVES SHALL BE LIMITED TO MAXIMUM OF 204DEGC (400DEGF)

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
200	WITH JACK SCREW (FO)
541	NPT(F) (CA,L)
714	SW - NPT(F) (V)
773	CLASS 300 (B,F,G)
781	CLASS 600 (B,F,G)

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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P01A-000XW	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE	
1	0.75		XS		P01A-000XX	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE	
1	1		XS		P01A-000XY	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE	
1	1.5		XS		P01A-000Y4	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE	
1	2		XS		P01A-000XB	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	3		STD		P01A-000YL	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	4		STD		P01A-000YT	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	6		STD		P01A-000Z2	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	8		SCH20		P01A-001BN	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	10		SCH20		P01A-00171	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	12		SCH20		P01A-0017M	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	14		SCH20		P01A-0018X	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	16		SCH20		P01A-0019K	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	18		SCH20		P01A-007GS	Pipe ASTM A671 Grade CC60 Class 22 EFW ASME B36.10M/B36.19M BE	
1	20		STD		P01A-0042R	Pipe ASTM A671 Grade CC60 Class 22 EFW ASME B36.10M/B36.19M BE	
1	24		STD		P01A-0042S	Pipe ASTM A671 Grade CC60 Class 22 EFW ASME B36.10M/B36.19M BE	
1	30		STD		P01A-0042T	Pipe ASTM A671 Grade CC60 Class 22 EFW ASME B36.10M/B36.19M BE	
1	36		XS		P01A-0091X	Pipe ASTM A671 Grade CC60 Class 22 EFW ASME B36.10M/B36.19M BE	
1	42		STD		P01A-007GV	Pipe ASTM A671 Grade CC60 Class 22 EFW ASME B36.10M/B36.19M BE	
1	48		XS		P01A-008MW	Pipe ASTM A671 Grade CC60 Class 22 EFW ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P02B-00019	90 degree elbow ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW	
1	0.75				P02B-0001A	90 degree elbow ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW	
1	1				P02B-0001B	90 degree elbow ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW	
1	1.5				P02B-0001C	90 degree elbow ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW	
1	2		XS		P02A-000B9	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	3		STD		P02A-000E7	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	4		STD		P02A-000E9	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	6		STD		P02A-000EC	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	8		SCH20		P02A-000GY	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	10		SCH20		P02A-000G4	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	12		SCH20		P02A-000GB	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	14		SCH20		P02A-000GE	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	16		SCH20		P02A-000GH	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	18		SCH20		P02A-001JY	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	20		STD		P02A-001JZ	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	24		STD		P02A-001K1	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	30		STD		P02A-000EA	90 degree elbow ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Long radius	
1	36		XS		P02A-000EY	90 degree elbow ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Long radius	
1	42		STD		P02A-003CB	90 degree elbow ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Long radius	
1	48		XS		P02A-000CV	90 degree elbow ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P03B-0001B	45 degree elbow ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW	
1	0.75				P03B-0001C	45 degree elbow ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW	
1	1				P03B-0001D	45 degree elbow ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW	
1	1.5				P03B-0001E	45 degree elbow ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW	
1	2		XS		P03A-0009Y	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	3		STD		P03A-000C4	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	4		STD		P03A-000C6	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	6		STD		P03A-000C9	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	8		SCH20		P03A-000EY	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	10		SCH20		P03A-000E3	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	12		SCH20		P03A-000EA	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	14		SCH20		P03A-000EE	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	16		SCH20		P03A-000EK	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	

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45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	18		SCH20		P03A-001E2	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	20		STD		P03A-001E3	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	24		STD		P03A-001E5	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	30		STD		P03A-000C7	45 degree elbow ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Long radius	
1	36		XS		P03A-000CT	45 degree elbow ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Long radius	
1	42		STD		P03A-0039Z	45 degree elbow ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Long radius	
1	48		XS		P03A-000B2	45 degree elbow ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P21B-0001B	Straight tee ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW	
1	0.75				P21B-0001C	Straight tee ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW	
1	1				P21B-0001D	Straight tee ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW	
1	1.5				P21B-0001E	Straight tee ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW	
1	2		XS		P21A-001BR	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	3		STD		P21A-001FE	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	4		STD		P21A-001FF	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	6		STD		P21A-001FJ	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	8		SCH20		P21A-00216	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10		SCH20		P21A-0020F	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12		SCH20		P21A-0020K	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14		SCH20		P21A-0020N	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16		SCH20		P21A-0020U	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	18		SCH20		P21A-0020E	Straight tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	20		STD		P21A-001F4	Straight tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	24		STD		P21A-001F8	Straight tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	30		STD		P21A-001FG	Straight tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	36		XS		P21A-001ZP	Straight tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	42		STD		P21A-003W4	Straight tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	48		XS		P21A-001CZ	Straight tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	

STRAIGHT LATERAL TEE (TLS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75				P22B-0000D	Straight lateral-tee ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW 60 degree	
1	1				P22B-0000E	Straight lateral-tee ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW 60 degree	
1	1.5				P22B-0000F	Straight lateral-tee ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW 60 degree	
1	2		XS		P22A-000DD	Straight lateral-tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW 60 degree	
1	3		STD		P22A-000DE	Straight lateral-tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW 60 degree	
1	4		STD		P22A-000DF	Straight lateral-tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW 60 degree	
1	6		STD		P22A-000DG	Straight lateral-tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW 60 degree	
1	8		SCH20		P22A-000DH	Straight lateral-tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW 60 degree	
1	10		SCH20		P22A-000DA	Straight lateral-tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW 60 degree	
1	12		SCH20		P22A-000GT	Straight lateral-tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW 60 degree	
1	14		SCH20		P22A-000DC	Straight lateral-tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW 60 degree	
1	16		SCH20		P22A-000E4	Straight lateral-tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW 60 degree	
1	18		SCH20		P22A-000G6	Straight lateral-tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW 60 degree	
1	20		STD		P22A-000G7	Straight lateral-tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW 60 degree	
1	24		STD		P22A-000G8	Straight lateral-tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW 60 degree	
1	30		STD		P22A-000G9	Straight lateral-tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW 60 degree	
1	36		XS		P22A-000GU	Straight lateral-tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW 60 degree	
1	42		STD		P22A-000GV	Straight lateral-tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW 60 degree	
1	48		XS		P22A-000GW	Straight lateral-tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW 60 degree	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75			P24B-0002T	Reducing tee ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW	
1	1.5	0.75			P24B-0002V	Reducing tee ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW	
1	1.5	1			P24B-0002W	Reducing tee ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW	
1	2	1	XS	XS	P24A-00264	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2	1.5	XS	XS	P24A-0026U	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	3	1.5	STD	XS	P24A-002AC	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	3	2	STD	XS	P24A-005M3	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	4	2	STD	XS	P24A-006CW	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	4	3	STD	STD	P24A-0028C	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	6	3	STD	STD	P24A-002AL	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	6	4	STD	STD	P24A-00289	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	8	4	SCH20	STD	P24A-006CX	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	8	6	SCH20	STD	P24A-005M4	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	4	SCH20	STD	P24A-00HMJ	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	6	SCH20	STD	P24A-00HLN	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	8	SCH20	SCH20	P24A-002WN	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	6	SCH20	STD	P24A-00KWL	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	8	SCH20	SCH20	P24A-002WW	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	10	SCH20	SCH20	P24A-002V7	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	6	SCH20	STD	P24A-00KWM	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	8	SCH20	SCH20	P24A-002WZ	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	10	SCH20	SCH20	P24A-002V3	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	12	SCH20	SCH20	P24A-002WD	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	6	SCH20	STD	P24A-00KWN	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	8	SCH20	SCH20	P24A-002XU	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	10	SCH20	SCH20	P24A-002VZ	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	12	SCH20	SCH20	P24A-002WR	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	14	SCH20	SCH20	P24A-002X6	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	18	8	SCH20	SCH20	P24A-002Y9	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	18	10	SCH20	SCH20	P24A-002V5	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	18	12	SCH20	SCH20	P24A-002WK	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	18	14	SCH20	SCH20	P24A-002X2	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	18	16	SCH20	SCH20	P24A-002XE	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	20	8	STD	SCH20	P24A-00KWT	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	20	10	STD	SCH20	P24A-00KWP	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	20	12	STD	SCH20	P24A-00KWR	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	20	14	STD	SCH20	P24A-00KWS	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	20	16	STD	SCH20	P24A-0071W	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	20	18	STD	SCH20	P24A-006D6	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	24	10	STD	SCH20	P24A-00KWU	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	24	12	STD	SCH20	P24A-00KWV	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	24	14	STD	SCH20	P24A-00KWW	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	24	16	STD	SCH20	P24A-00KWX	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	24	18	STD	SCH20	P24A-00799	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	24	20	STD	STD	P24A-0029L	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	30	10	STD	SCH20	P24A-00M0K	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	30	12	STD	SCH20	P24A-00PXZ	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	30	14	STD	SCH20	P24A-00M0M	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	30	16	STD	SCH20	P24A-0071X	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	30	18	STD	SCH20	P24A-008EX	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	30	20	STD	STD	P24A-0029J	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	30	24	STD	STD	P24A-0029P	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	36	16	XS	SCH20	P24A-002V8	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	36	18	XS	SCH20	P24A-002WB	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	36	20	XS	STD	P24A-002M7	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	36	24	XS	STD	P24A-002N9	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	36	30	XS	STD	P24A-0086G	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	42	16	STD	SCH20	P24A-00KX5	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	42	18	STD	SCH20	P24A-00KX6	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	42	20	STD	STD	P24A-00KX7	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	42	24	STD	STD	P24A-00KX8	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	42	30	STD	STD	P24A-00PY0	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	42	36	STD	XS	P24A-00PY1	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	

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REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	48	24	XS	STD	P24A-002L3	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	48	30	XS	STD	P24A-0027F	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	48	36	XS	XS	P24A-002PP	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	48	42	XS	STD	P24A-00MK0	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	STD	XS	P27A-003PM	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	4	2	STD	XS	P27A-003PN	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	4	3	STD	STD	P27A-001BA	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	6	3	STD	STD	P27A-001H9	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	6	4	STD	STD	P27A-00181	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	8	4	SCH20	STD	P27A-003PP	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	8	6	SCH20	STD	P27A-003PR	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	4	SCH20	STD	P27A-003PS	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	6	SCH20	STD	P27A-003PT	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	8	SCH20	SCH20	P27A-001W8	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	6	SCH20	STD	P27A-003PU	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	8	SCH20	SCH20	P27A-001W9	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	10	SCH20	SCH20	P27A-001VJ	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	6	SCH20	STD	P27A-003SC	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	8	SCH20	SCH20	P27A-001WA	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	10	SCH20	SCH20	P27A-001VH	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	12	SCH20	SCH20	P27A-001VX	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	8	SCH20	SCH20	P27A-001WH	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	10	SCH20	SCH20	P27A-001VS	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	12	SCH20	SCH20	P27A-001W5	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	14	SCH20	SCH20	P27A-001WD	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	18	10	SCH20	SCH20	P27A-001VM	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	18	12	SCH20	SCH20	P27A-001W3	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	18	14	SCH20	SCH20	P27A-001WC	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	18	16	SCH20	SCH20	P27A-001WF	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	20	12	STD	SCH20	P27A-003R7	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	20	14	STD	SCH20	P27A-00CRB	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	20	16	STD	SCH20	P27A-008G9	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	20	18	STD	SCH20	P27A-004DM	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	24	16	STD	SCH20	P27A-008GB	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	24	18	STD	SCH20	P27A-008L9	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	24	20	STD	STD	P27A-001DF	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	30	20	STD	STD	P27A-001BF	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	30	24	STD	STD	P27A-001CT	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	36	24	XS	STD	P27A-001FD	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	36	30	XS	STD	P27A-009A6	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	42	30	STD	STD	P27A-00D16	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	42	36	STD	XS	P27A-00J7T	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	48	42	XS	STD	P27A-00GGN	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	STD	XS	P28A-003PL	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	4	2	STD	XS	P28A-003PM	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	4	3	STD	STD	P28A-001CF	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	6	3	STD	STD	P28A-001AL	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	6	4	STD	STD	P28A-001BL	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	8	4	SCH20	STD	P28A-003PN	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	8	6	SCH20	STD	P28A-003PP	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	4	SCH20	STD	P28A-003PR	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	6	SCH20	STD	P28A-003PS	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	8	SCH20	SCH20	P28A-001W3	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	12	6	SCH20	STD	P28A-003PT	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	8	SCH20	SCH20	P28A-001W4	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	10	SCH20	SCH20	P28A-001VC	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	6	SCH20	STD	P28A-003S8	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	8	SCH20	SCH20	P28A-001W9	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	10	SCH20	SCH20	P28A-001V9	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	12	SCH20	SCH20	P28A-001VU	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	8	SCH20	SCH20	P28A-001WC	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	10	SCH20	SCH20	P28A-001VL	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	12	SCH20	SCH20	P28A-001W1	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	14	SCH20	SCH20	P28A-001W7	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	18	10	SCH20	SCH20	P28A-001VD	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	18	12	SCH20	SCH20	P28A-001VZ	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	18	14	SCH20	SCH20	P28A-001W6	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	18	16	SCH20	SCH20	P28A-001WA	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	20	12	STD	SCH20	P28A-003R6	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	20	14	STD	SCH20	P28A-009RD	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	20	16	STD	SCH20	P28A-0056E	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	20	18	STD	SCH20	P28A-004DF	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	24	16	STD	SCH20	P28A-0056G	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	24	18	STD	SCH20	P28A-005B4	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	24	20	STD	STD	P28A-001EB	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	30	20	STD	STD	P28A-001C6	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	30	24	STD	STD	P28A-001DL	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	36	24	XS	STD	P28A-001G0	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	36	30	XS	STD	P28A-0061U	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	42	30	STD	STD	P28A-00A1B	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	42	36	STD	XS	P28A-00FHU	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	48	42	XS	STD	P28A-00DP6	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P29B-00028	Cap ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW	
1	0.75				P29B-00029	Cap ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW	
1	1				P29B-0002A	Cap ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW	
1	1.5				P29B-0002B	Cap ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW	
1	2		XS		P29A-000BG	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	3		STD		P29A-0009Y	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	4		STD		P29A-000AH	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	6		STD		P29A-000DE	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	8		SCH20		P29A-000E4	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10		SCH20		P29A-000EF	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12		SCH20		P29A-000EJ	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14		SCH20		P29A-000EM	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16		SCH20		P29A-000ER	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	18		SCH20		P29A-000EU	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	20		STD		P29A-000BR	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	24		STD		P29A-0009T	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	30		STD		P29A-000A5	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	36		XS		P29A-000DJ	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	42		STD		P29A-002RU	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	48		XS		P29A-000DA	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
541	0.75				P29B-0000G	Cap ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 NPT	
541	1				P29B-0000H	Cap ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P41A-000AD	Straight nipple ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		SCH160		P41A-000BB	Straight nipple ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

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STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		SCH160		P41A-000AN	Straight nipple ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		SCH160		P41A-000AP	Straight nipple ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

CON SWAGED NIPPLE (SNC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	XS	XS	P42A-00032	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	XS	XS	P42A-00031	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	XS	XS	P42A-00034	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	XS	XS	P42A-00037	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	XS	XS	P42A-0003A	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	XS	XS	P42A-00033	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	XS	XS	P42A-0008M	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	XS	XS	P42A-0008N	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	XS	XS	P42A-0008P	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	XS	XS	P42A-0008R	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	STD	XS	P42A-000VB	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 BE(L) - PE(S)	

ECC SWAGED NIPPLE (SNE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	XS	XS	P43A-0004B	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	XS	XS	P43A-0004C	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	XS	XS	P43A-0004D	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	XS	XS	P43A-0004E	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	XS	XS	P43A-0004F	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	XS	XS	P43A-0004G	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	XS	XS	P43A-0004H	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	XS	XS	P43A-0004J	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	XS	XS	P43A-0004K	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	XS	XS	P43A-0004L	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	STD	XS	P43A-000LE	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 BE(L) - PE(S)	

COUPLING (CPS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P47B-00019	Coupling ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW - SW	
1	0.75				P47B-0001A	Coupling ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW - SW	
1	1				P47B-0001B	Coupling ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW - SW	
1	1.5				P47B-0001C	Coupling ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW - SW	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2 - 2.5	0.75			P31B-0139D	Outlet ASTM A350 Grade LF2 Class 1 Class 3000 MSS SP-97 SW	
1	3 - 5	0.75			P31B-0139E	Outlet ASTM A350 Grade LF2 Class 1 Class 3000 MSS SP-97 SW	
1	6 - 12	0.75			P31B-007EA	Outlet ASTM A350 Grade LF2 Class 1 Class 3000 MSS SP-97 SW	
1	14 - 36	0.75			P31B-007EH	Outlet ASTM A350 Grade LF2 Class 1 Class 3000 MSS SP-97 SW	
1	38 and larger	0.75			P31B-00LVF	Outlet ASTM A350 Grade LF2 Class 1 Class 3000 MSS SP-97 SW	
1	3	1			P31B-007E6	Outlet ASTM A350 Grade LF2 Class 1 Class 3000 MSS SP-97 SW	
1	4 - 5	1			P31B-0139F	Outlet ASTM A350 Grade LF2 Class 1 Class 3000 MSS SP-97 SW	
1	6 - 10	1			P31B-007E3	Outlet ASTM A350 Grade LF2 Class 1 Class 3000 MSS SP-97 SW	
1	12 - 36	1			P31B-007E9	Outlet ASTM A350 Grade LF2 Class 1 Class 3000 MSS SP-97 SW	
1	38 and larger	1			P31B-00LVP	Outlet ASTM A350 Grade LF2 Class 1 Class 3000 MSS SP-97 SW	
1	4	1.5			P31B-005TT	Outlet ASTM A350 Grade LF2 Class 1 Class 3000 MSS SP-97 SW	
1	5 - 6	1.5			P31B-0139G	Outlet ASTM A350 Grade LF2 Class 1 Class 3000 MSS SP-97 SW	
1	8 - 12	1.5			P31B-007DT	Outlet ASTM A350 Grade LF2 Class 1 Class 3000 MSS SP-97 SW	
1	14 - 24	1.5			P31B-007DZ	Outlet ASTM A350 Grade LF2 Class 1 Class 3000 MSS SP-97 SW	
1	26 - 36	1.5			P31B-0139K	Outlet ASTM A350 Grade LF2 Class 1 Class 3000 MSS SP-97 SW	
1	38 and larger	1.5			P31B-00LVZ	Outlet ASTM A350 Grade LF2 Class 1 Class 3000 MSS SP-97 SW	
541	1	0.75			P31B-004MV	Outlet ASTM A350 Grade LF2 Class 1 Class 3000 MSS SP-97 NPT	
541	1.5	0.75			P31B-004MZ	Outlet ASTM A350 Grade LF2 Class 1 Class 3000 MSS SP-97 NPT	

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OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
541	2 - 2.5	0.75			P31B-0139H	Outlet ASTM A350 Grade LF2 Class 1 Class 3000 MSS SP-97 NPT	
541	3 - 5	0.75			P31B-0139J	Outlet ASTM A350 Grade LF2 Class 1 Class 3000 MSS SP-97 NPT	
541	6 - 12	0.75			P31B-007J5	Outlet ASTM A350 Grade LF2 Class 1 Class 3000 MSS SP-97 NPT	
541	14 - 36	0.75			P31B-007JC	Outlet ASTM A350 Grade LF2 Class 1 Class 3000 MSS SP-97 NPT	
541	38 and larger	0.75			P31B-00N3L	Outlet ASTM A350 Grade LF2 Class 1 Class 3000 MSS SP-97 NPT	
1	6	2	STD	XS	P31B-00MFB	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	8	2	SCH20	XS	P31B-00MFH	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	10	2	SCH20	XS	P31B-00TFX	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	12	2	SCH20	XS	P31B-00TFY	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	14	2	SCH20	XS	P31B-00TFU	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	16	2	SCH20	XS	P31B-00TFZ	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	18	2	SCH20	XS	P31B-00MJS	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	20	2	STD	XS	P31B-00MGK	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	24	2	STD	XS	P31B-00M4U	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	30	2	STD	XS	P31B-00M56	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	36	2	XS	XS	P31B-00V9X	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	42	2	STD	XS	P31B-00VPM	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	48	2	XS	XS	P31B-00M65	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	8	3	SCH20	STD	P31B-00MJF	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	10	3	SCH20	STD	P31B-00UPN	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	12	3	SCH20	STD	P31B-00YAM	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	14	3	SCH20	STD	P31B-00UPP	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	16	3	SCH20	STD	P31B-00UP2	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	18	3	SCH20	STD	P31B-00MJT	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	20	3	STD	STD	P31B-00E8N	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	24	3	STD	STD	P31B-00E8T	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	30	3	STD	STD	P31B-00E8U	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	36	3	XS	STD	P31B-00E9P	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	42	3	STD	STD	P31B-00VPN	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	48	3	XS	STD	P31B-00E8Y	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	12	4	SCH20	STD	P31B-00YAN	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	14	4	SCH20	STD	P31B-00UPR	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	16	4	SCH20	STD	P31B-00UP3	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	18	4	SCH20	STD	P31B-00MJU	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	20	4	STD	STD	P31B-00E88	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	24	4	STD	STD	P31B-00E8C	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	30	4	STD	STD	P31B-00E8B	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	36	4	XS	STD	P31B-00E9F	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	42	4	STD	STD	P31B-00VPP	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	48	4	XS	STD	P31B-00E8K	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	18	6	SCH20	STD	P31B-00MJV	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	20	6	STD	STD	P31B-00E86	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	24	6	STD	STD	P31B-00E84	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	30	6	STD	STD	P31B-00E82	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	36	6	XS	STD	P31B-00E99	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	42	6	STD	STD	P31B-00VPR	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	48	6	XS	STD	P31B-00E8F	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30B-0002V	Plug ASTM A350 Grade LF2 Class 1 ASME B16.11 NPT Round head	
1	0.75				P30B-0002W	Plug ASTM A350 Grade LF2 Class 1 ASME B16.11 NPT Round head	
1	1				P30B-0002X	Plug ASTM A350 Grade LF2 Class 1 ASME B16.11 NPT Round head	
1	1.5				P30B-0002Y	Plug ASTM A350 Grade LF2 Class 1 ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P61B-001MS	Flange SW ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	0.75		XS		P61B-001MT	Flange SW ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	

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FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		XS		P61B-001MV	Flange SW ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	1.5		XS		P61B-001NF	Flange SW ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	2		XS		P61B-003R0	Flange WN ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	3		STD		P61B-001SY	Flange WN ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	4		STD		P61B-001VW	Flange WN ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	6		STD		P61B-001J0	Flange WN ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	8		SCH20		P61B-001X9	Flange WN ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	10		SCH20		P61B-0021J	Flange WN ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	12		SCH20		P61B-00227	Flange WN ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	14		SCH20		P61B-0022R	Flange WN ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	16		SCH20		P61B-00232	Flange WN ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	18		SCH20		P61B-0023B	Flange WN ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	20		STD		P61B-001S3	Flange WN ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	24		STD		P61B-001SW	Flange WN ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	30		STD		P61B-001PD	Flange WN ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.47 Series B RF	
1	36		XS		P61B-001MZ	Flange WN ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.47 Series B RF	
1	42		STD		P61B-003S3	Flange WN ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.47 Series B RF	
1	48		XS		P61B-001U9	Flange WN ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.47 Series B RF	
773	0.5		XS		P61B-001K3	Flange SW ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
773	0.75		XS		P61B-001K4	Flange SW ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
773	1		XS		P61B-001L7	Flange SW ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
773	1.5		XS		P61B-001LD	Flange SW ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
773	2		XS		P61B-003R8	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
773	3		STD		P61B-001MB	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
773	4		STD		P61B-001N0	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
773	6		STD		P61B-001NM	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
773	8		SCH20		P61B-002RS	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
773	10		SCH20		P61B-002RJ	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
773	12		SCH20		P61B-002RK	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
773	14		SCH20		P61B-002RL	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
773	16		SCH20		P61B-002RM	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
773	18		SCH20		P61B-002RN	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
773	20		STD		P61B-001NB	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
773	24		STD		P61B-001P1	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
773	30		STD		P61B-001KC	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.47 Series B RF	
773	36		XS		P61B-001UD	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.47 Series B RF	
773	42		STD		P61B-00ABU	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.47 Series B RF	
773	48		XS		P61B-001MD	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.47 Series B RF	
781	2		XS		P61B-001FN	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
781	3		STD		P61B-001TV	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
781	4		STD		P61B-001VT	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
781	6		STD		P61B-001JV	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
781	8		SCH20		P61B-003ZU	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
781	10		SCH20		P61B-006HY	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
781	12		SCH20		P61B-006NN	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
781	14		SCH20		P61B-008X1	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
781	16		SCH20		P61B-007H0	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
781	18		SCH20		P61B-003ZT	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
781	20		STD		P61B-003H5	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
781	30		STD		P61B-003HB	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.47 Series B RF	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67B-000K2	Blind flange ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	0.75				P67B-000K3	Blind flange ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	1				P67B-000K4	Blind flange ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	1.5				P67B-000K5	Blind flange ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	2				P67B-000KB	Blind flange ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	3				P67B-000KE	Blind flange ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	

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BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	4				P67B-000KF	Blind flange ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	6				P67B-000KG	Blind flange ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	8				P67B-000KH	Blind flange ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	10				P67B-000K6	Blind flange ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	12				P67B-000K7	Blind flange ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	14				P67B-000K8	Blind flange ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	16				P67B-000K9	Blind flange ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	18				P67B-000KA	Blind flange ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	20				P67B-000KC	Blind flange ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	24				P67B-000KD	Blind flange ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	30				P67B-00146	Blind flange ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.47 Series B RF	
1	36				P67B-00143	Blind flange ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.47 Series B RF	
1	42				P67B-00140	Blind flange ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.47 Series B RF	
1	48				P67B-0013X	Blind flange ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.47 Series B RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000L8	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000L9	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000LA	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000LB	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000LH	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000LL	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000LM	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	6				P73T-000LN	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	8				P73T-000LP	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	10				P73T-000LC	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	12				P73T-000LD	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	14				P73T-000LE	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	16				P73T-000LF	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	18				P73T-000LG	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	20				P73T-000LJ	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	24				P73T-000LK	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	30				P73T-000LT	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	36				P73T-000LW	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	42				P73T-000LZ	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	48				P73T-000M2	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	0.5				P73T-000FT	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	0.75				P73T-000FU	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	3				P73T-000G5	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	4				P73T-000G6	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	6				P73T-000G7	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	8				P73T-000G8	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	10				P73T-000FX	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	12				P73T-000FY	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

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GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
773	14				P73T-000FZ	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	16				P73T-000G0	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	18				P73T-000G1	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	20				P73T-000G3	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	24				P73T-000G4	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	30				P73T-000H9	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	36				P73T-000HC	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	42				P73T-000KM	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	48				P73T-000KR	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	2				P73T-000JH	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	3				P73T-000JL	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	4				P73T-000JM	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	6				P73T-000JN	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	8				P73T-000JP	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	10				P73T-000JC	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	12				P73T-000JD	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	14				P73T-000JE	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	16				P73T-000JF	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	18				P73T-000JG	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	20				P73T-000JJ	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	30				P73T-000JT	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-16				See Attached Bolt Table	Bolt and Nut ASTM A320 Grade L7 / A194 Grade 4 ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	18-24				See Attached Bolt Table	Bolt and Nut ASTM A320 Grade L7 / A194 Grade 4 ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
1	30-42				See Attached Bolt Table	Bolt and Nut ASTM A320 Grade L7 / A194 Grade 4 ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	48				See Attached Bolt Table	Bolt and Nut ASTM A320 Grade L7 / A194 Grade 4 ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
773	0.5-10				See Attached Bolt Table	Bolt and Nut ASTM A320 Grade L7 / A194 Grade 4 ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
773	12-48				See Attached Bolt Table	Bolt and Nut ASTM A320 Grade L7 / A194 Grade 4 ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
781	0.5-6				See Attached Bolt Table	Bolt and Nut ASTM A320 Grade L7 / A194 Grade 4 ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
781	8-30				See Attached Bolt Table	Bolt and Nut ASTM A320 Grade L7 / A194 Grade 4 ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81B-0018C	Gate valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	0.75				P81B-0018D	Gate valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	1				P81B-0018E	Gate valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	1.5				P81B-0018F	Gate valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	2				P81C-004DU	Gate valve ASTM A352 Grade LCC Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	3				P81C-004DV	Gate valve ASTM A352 Grade LCC Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	4				P81C-004DW	Gate valve ASTM A352 Grade LCC Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	6				P81C-004DX	Gate valve ASTM A352 Grade LCC Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	8				P81C-004DY	Gate valve ASTM A352 Grade LCC Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	10				P81C-004DS	Gate valve ASTM A352 Grade LCC Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	

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GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	12				P81C-004DT	Gate valve ASTM A352 Grade LCC Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	14				P81C-004DZ	Gate valve ASTM A352 Grade LCC Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated	
1	16				P81C-004E0	Gate valve ASTM A352 Grade LCC Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated	
1	18				P81C-004E1	Gate valve ASTM A352 Grade LCC Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated	
1	20				P81C-004E2	Gate valve ASTM A352 Grade LCC Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated	
1	24				P81C-004E3	Gate valve ASTM A352 Grade LCC Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated	
1	30				P81C-004DP	Gate valve ASTM A352 Grade LCC Class 150 API 600 Flange ASME B16.47-B RF Trim number 12 BB-BG-OS&Y Gear operated	
1	36				P81C-0051M	Gate valve ASTM A352 Grade LCC Class 150 API 600 Flange ASME B16.47-B RF Trim number 12 BB-BG-OS&Y Gear operated	
1	42				P81C-004DR	Gate valve ASTM A352 Grade LCC Class 150 API 600 Flange ASME B16.47-B RF Trim number 12 BB-BG-OS&Y Gear operated	
714	0.5				P81B-002S4	Gate valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW - NPT Trim number 12 BB-BG-OS&Y Handwheel operated	
714	0.75				P81B-002FB	Gate valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW - NPT Trim number 12 BB-BG-OS&Y Handwheel operated	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82B-0011H	Globe valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	0.75				P82B-0011J	Globe valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	1				P82B-0011K	Globe valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	1.5				P82B-0011L	Globe valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	2				P82C-0026T	Globe valve ASTM A352 Grade LCC Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	3				P82C-0026U	Globe valve ASTM A352 Grade LCC Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	4				P82C-0026V	Globe valve ASTM A352 Grade LCC Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	6				P82C-0026W	Globe valve ASTM A352 Grade LCC Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	8				P82C-002P1	Globe valve ASTM A352 Grade LCC Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83B-000TS	Check valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 12 Lift-type Bolted cover	
1	0.75				P83B-000TT	Check valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 12 Lift-type Bolted cover	
1	1				P83B-000TU	Check valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 12 Lift-type Bolted cover	
1	1.5				P83B-000TV	Check valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 12 Lift-type Bolted cover	
1	2				P83C-00226	Check valve ASTM A352 Grade LCC Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	3				P83C-00227	Check valve ASTM A352 Grade LCC Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	4				P83C-00228	Check valve ASTM A352 Grade LCC Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	6				P83C-00229	Check valve ASTM A352 Grade LCC Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	8				P83C-0022A	Check valve ASTM A352 Grade LCC Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	10				P83C-00221	Check valve ASTM A352 Grade LCC Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	12				P83C-00222	Check valve ASTM A352 Grade LCC Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	14				P83C-00223	Check valve ASTM A352 Grade LCC Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	16				P83C-00224	Check valve ASTM A352 Grade LCC Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	18				P83C-00225	Check valve ASTM A352 Grade LCC Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	

DP CHECK VALVE (XDP)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	36				P88C-00264	Dual plate check valve ASTM A352 Grade LCC Class 150 API 594 Wafer-type ASME B16.47-B RF Trim number 12 Internal wetted parts SS316 Spring Inconel Retainerless-type	

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NEEDLE VALVE (NV)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75				P82B-0027N	Needle valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	

ORIFICE FLANGE (FO)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2		XS		P66B-00862	Orifice flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	3		STD		P66B-00863	Orifice flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	4		STD		P66B-00864	Orifice flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	6		STD		P66B-00865	Orifice flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	8		SCH20		P66B-00866	Orifice flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
200	2		XS		P66B-00869	Orifice flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	3		STD		P66B-0086A	Orifice flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	4		STD		P66B-0086B	Orifice flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	6		STD		P66B-0086C	Orifice flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	8		SCH20		P66B-0086D	Orifice flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71B-0008T	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	0.75				P71B-0008U	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	1				P71B-0008V	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71B-0008W	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	2				P71B-0008Z	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	3				P71B-00090	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	4				P71B-00091	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	6				P71B-00092	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	8				P71B-00093	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	10				P71B-0008X	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	12				P71B-0008Y	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF	

PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000CP	Paddle blank ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	16				P72B-000CR	Paddle blank ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	18				P72B-000CS	Paddle blank ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	20				P72B-000CT	Paddle blank ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	24				P72B-000CU	Paddle blank ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	30				P72B-0008S	Paddle blank ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	36				P72B-0008T	Paddle blank ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	42				P72B-0008U	Paddle blank ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	48				P72B-0008V	Paddle blank ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.47-B RF	

PADDLE SPACER (PS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000CV	Paddle spacer ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	16				P72B-000CW	Paddle spacer ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	18				P72B-000CX	Paddle spacer ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	20				P72B-000CY	Paddle spacer ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	24				P72B-000CZ	Paddle spacer ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	30				P72B-0008K	Paddle spacer ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	36				P72B-0008L	Paddle spacer ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	42				P72B-0008M	Paddle spacer ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	48				P72B-0008N	Paddle spacer ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.47-B RF	

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BOLT TABLE (B_A1GP , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	60	P80S-003VJ		
0.75	4	0.500	65	P80S-003VK		
1	4	0.500	70	P80S-003VL		
1.5	4	0.500	75	P80S-003VM		
2	4	0.625	85	P80S-003Z4		
3	4	0.625	95	P80S-003Z6		
4	8	0.625	95	P80S-003Z6		
6	8	0.750	105	P80S-003Z8		
8	8	0.750	110	P80S-003Z9		
10	12	0.875	120	P80S-00462		
12	12	0.875	120	P80S-00462		
14	12	1.000	135	P80S-004BC		
16	16	1.000	140	P80S-004BD		
18	16	1.125	150	P80S-004J1		
20	20	1.125	160	P80S-004J3		
24	20	1.250	175	P80S-004LF		
30	44	0.750	145	P80S-003ZG		
36	44	0.875	175	P80S-00485		
42	48	1.000	190	P80S-004BR		
48	44	1.125	210	P80S-004JE		

BOLT TABLE (B_A1GP_773 , STUD ASME RF, OPTION CODE 773)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-003VL		
0.75	4	0.625	75	P80S-003Z2		
1	4	0.625	80	P80S-003Z3		
1.5	4	0.750	95	P80S-0045X		
2	8	0.625	90	P80S-003Z5		
3	8	0.750	110	P80S-003Z9		
4	8	0.750	115	P80S-003ZA		
6	12	0.750	125	P80S-003ZC		
8	12	0.875	140	P80S-00466		
10	16	1.000	160	P80S-004BH		
12	16	1.125	175	P80S-004J7		
14	20	1.125	180	P80S-004J8		
16	20	1.250	190	P80S-004LJ		
18	24	1.250	200	P80S-004LL		
20	24	1.250	210	P80S-004LN		
24	24	1.500	235	P80S-003A7		
30	36	1.375	285	P80S-00399		
36	32	1.625	320	P80S-00CB3		
42	36	1.750	355	P80S-0096R		
48	40	1.875	380	P80S-00ACJ		

BOLT TABLE (B_A1GP_781 , STUD ASME RF, OPTION CODE 781)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	80	P80S-003VN		
0.75	4	0.625	90	P80S-003Z5		
1	4	0.625	95	P80S-003Z6		
1.5	4	0.750	110	P80S-003Z9		
2	8	0.625	110	P80S-003VV		
3	8	0.750	130	P80S-003ZD		
4	8	0.875	150	P80S-00468		
6	12	1.000	175	P80S-004BM		
8	12	1.125	195	P80S-004JB		
10	16	1.250	250	P80S-004LX		
12	20	1.250	255	P80S-004LY		
14	20	1.375	270	P80S-003M5		
16	20	1.500	295	P80S-003D1		
18	20	1.625	320	P80S-00CB3		
20	24	1.625	335	P80S-00CB6		
24	24	1.875	380	P80S-00ACJ		
30	28	1.875	435	P80S-00ACW		
36	28	2.250	510			
42	28	2.500	575			
48	32	2.750	635			

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BRANCH TABLE (T_A1GP)

RUN PIPE SIZE (in) \ BRANCH SIZE (in)	0.5	0.75	1	1.5	2	3	4	6	8	10	12	14	16	18	20	24	30	36	42	48
0.5	TS																			
0.75		TS																		
1		TR	TS																	
1.5		TR	TR	TS																
2		L	TR	TR	TS															
3		L	L	TR	TR	TS														
4	L	L	L	L	TR	TR	TS													
6	L	L	L	L	L	TR	TR	TS												
8		L	L	L	L	L	TR	TR	TS											
10		L	L	L	L	L	TR	TR	TR	TS										
12		L	L	L	L	L	L	TR	TR	TR	TS									
14		L	L	L	L	L	L	TR	TR	TR	TR	TS								
16		L	L	L	L	L	L	TR	TR	TR	TR	TR	TS							
18		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TS						
20		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TR	TS					
24		L	L	L	L	L	L	L	9PD	TR	TR	TR	TR	TR	TR	TS				
30		L	L	L	L	L	L	L	9PD	TR	TR	TR	TR	TR	TR	TR	TS			
36		L	L	L	L	L	L	L	9PD	9PD	9PD	9PD	TR	TR	TR	TR	TR	TS		
42		L	L	L	L	L	L	L	9PD	9PD	9PD	9PD	TR	TR	TR	TR	TR	TR	TS	
48		L	L	L	L	L	L	L	9PD	9PD	9PD	9PD	9PD	9PD	9PD	TR	TR	TR	TR	TS

TS : STRAIGHT TEE
9PD : REINFORCING PAD 90 DEG
TR : REDUCING TEE
L : OUTLET

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PIPING CLASS

A1GP REV NO. 2

BRANCH TABLE (T_A1GP_3)

RUN PIPE SIZE (in) \ BRANCH SIZE (in)	0.5	0.75	1	1.5	2	3	4	6	8	10	12	14	16	18	20	24	30	36	42	48
0.5																				
0.75		TLS																		
1		6PD	TLS																	
1.5		6PD	6PD	TLS																
2		6PD	6PD	6PD	TLS															
3		6PD	6PD	6PD	6PD	TLS														
4		6PD	6PD	6PD	6PD	6PD	TLS													
6		6PD	6PD	6PD	6PD	6PD	6PD	TLS												
8		6PD	6PD	6PD	6PD	6PD	6PD	6PD	TLS											
10		6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	TLS										
12		6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	TLS									
14		6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	TLS								
16		6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	TLS							
18		6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	TLS						
20		6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	TLS					
24		6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	TLS				
30		6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	TLS			
36		6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	TLS		
42		6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	TLS	
48		6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	TLS

TLS : STRAIGHT LATERAL TEE
6PD : REINFORCING PAD 60 DEG

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PIPING CLASS

A1GP01 REV NO. 2

Material : LTCS
Rating : ASME CLASS 150
Flange Face : RF
C.A.(mm) : 1.50
Gasket : Spiral Wound
Service : PROCESS - GENERAL PROCESS NON SOUR, NON CORROSIVE
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
2	USE OF SOFT SEATED BALL, PLUG AND BUTTERFLY VALVES SHALL BE LIMITED TO MAXIMUM OF 204DEGC (400DEGF)

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
541	NPT(F) (CA,L)
714	SW - NPT(F) (V)
773	CLASS 300 (B,F,G,PB,PS,SB,V)
781	CLASS 600 (B,F,G)

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PIPING CLASS
A1GP01 REV NO. 2

PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P01A-007C2	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE Licensor-1	
1	0.75		XS		P01A-007C3	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE Licensor-1	
1	1		XS		P01A-007C4	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE Licensor-1	
1	1.5		XS		P01A-007C5	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE Licensor-1	
1	2		XS		P01A-00799	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE Licensor-1	
1	3		STD		P01A-0079A	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE Licensor-1	
1	4		STD		P01A-007C6	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE Licensor-1	
1	6		STD		P01A-007C7	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE Licensor-1	
1	8		SCH20		P01A-0079D	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE Licensor-1	
1	10		SCH20		P01A-00795	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE Licensor-1	
1	12		SCH20		P01A-00796	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE Licensor-1	
1	14		SCH20		P01A-00797	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE Licensor-1	
1	16		SCH20		P01A-00798	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE Licensor-1	
1	18		SCH20		P01A-0079E	Pipe ASTM A671 Grade CC60 Class 22 EFW ASME B36.10M/B36.19M BE Licensor-1	
1	20		STD		P01A-0079F	Pipe ASTM A671 Grade CC60 Class 22 EFW ASME B36.10M/B36.19M BE Licensor-1	
1	24		STD		P01A-007C8	Pipe ASTM A671 Grade CC60 Class 22 EFW ASME B36.10M/B36.19M BE Licensor-1	
1	30		SCH10		P01A-007C9	Pipe ASTM A671 Grade CC60 Class 22 EFW ASME B36.10M/B36.19M BE Licensor-1	
1	32		SCH10		P01A-0090D	Pipe ASTM A671 Grade CC60 Class 22 EFW ASME B36.10M/B36.19M BE Licensor-1	
1	36		SCH10		P01A-007CA	Pipe ASTM A671 Grade CC60 Class 22 EFW ASME B36.10M/B36.19M BE Licensor-1	
1	40		STD		P01A-008R5	Pipe ASTM A671 Grade CC60 Class 22 EFW ASME B36.10M/B36.19M BE Licensor-1	
1	42		STD		P01A-007CB	Pipe ASTM A671 Grade CC60 Class 22 EFW ASME B36.10M/B36.19M BE Licensor-1	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P02B-0007L	90 degree elbow ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW Licensor-1	
1	0.75				P02B-0007M	90 degree elbow ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW Licensor-1	
1	1				P02B-0007N	90 degree elbow ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW Licensor-1	
1	1.5				P02B-0007P	90 degree elbow ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW Licensor-1	
1	2		XS		P02A-003RF	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Licensor-1	
1	3		STD		P02A-003RH	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Licensor-1	
1	4		STD		P02A-003U9	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Licensor-1	
1	6		STD		P02A-003UA	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Licensor-1	
1	8		SCH20		P02A-003RL	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Licensor-1	
1	10		SCH20		P02A-003RA	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Licensor-1	
1	12		SCH20		P02A-003RB	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Licensor-1	
1	14		SCH20		P02A-003RC	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Licensor-1	
1	16		SCH20		P02A-003RD	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Licensor-1	
1	18		SCH20		P02A-003RE	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Licensor-1	
1	20		STD		P02A-003RG	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Licensor-1	
1	24		STD		P02A-003U8	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Licensor-1	
1	30		SCH10		P02A-003UB	90 degree elbow ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Long radius Licensor-1	
1	32		SCH10		P02A-00514	90 degree elbow ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Long radius Licensor-1	
1	36		SCH10		P02A-003UC	90 degree elbow ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Long radius Licensor-1	
1	40		STD		P02A-004HH	90 degree elbow ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Long radius Licensor-1	
1	42		STD		P02A-003UD	90 degree elbow ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Long radius Licensor-1	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P03B-00078	45 degree elbow ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW Licensor-1	
1	0.75				P03B-00079	45 degree elbow ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW Licensor-1	
1	1				P03B-0007A	45 degree elbow ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW Licensor-1	
1	1.5				P03B-0007B	45 degree elbow ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW Licensor-1	
1	2		XS		P03A-003N4	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Licensor-1	
1	3		STD		P03A-003N6	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Licensor-1	
1	4		STD		P03A-003RY	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Licensor-1	
1	6		STD		P03A-003RZ	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Licensor-1	
1	8		SCH20		P03A-003N9	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Licensor-1	
1	10		SCH20		P03A-003MZ	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Licensor-1	
1	12		SCH20		P03A-003N0	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Licensor-1	

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45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14		SCH20		P03A-003N1	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Licensor-1	
1	16		SCH20		P03A-003N2	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Licensor-1	
1	18		SCH20		P03A-003N3	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Licensor-1	
1	20		STD		P03A-003N5	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Licensor-1	
1	24		STD		P03A-003RX	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Licensor-1	
1	30		SCH10		P03A-003S0	45 degree elbow ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Long radius Licensor-1	
1	32		SCH10		P03A-004M3	45 degree elbow ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Long radius Licensor-1	
1	36		SCH10		P03A-003S1	45 degree elbow ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Long radius Licensor-1	
1	40		STD		P03A-004F3	45 degree elbow ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Long radius Licensor-1	
1	42		STD		P03A-003S2	45 degree elbow ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Long radius Licensor-1	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P21B-00078	Straight tee ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW Licensor-1	
1	0.75				P21B-00079	Straight tee ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW Licensor-1	
1	1				P21B-0007A	Straight tee ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW Licensor-1	
1	1.5				P21B-0007B	Straight tee ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW Licensor-1	
1	2		XS		P21A-0048U	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	3		STD		P21A-0048V	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	4		STD		P21A-004BP	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	6		STD		P21A-004BR	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	8		SCH20		P21A-0048Y	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	10		SCH20		P21A-0048P	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	12		SCH20		P21A-0048R	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	14		SCH20		P21A-0048S	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	16		SCH20		P21A-0048T	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	18		SCH20		P21A-0048Z	Straight tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Licensor-1	
1	20		STD		P21A-00490	Straight tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Licensor-1	
1	24		STD		P21A-004BS	Straight tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Licensor-1	
1	30		SCH10		P21A-004BT	Straight tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Licensor-1	
1	32		SCH10		P21A-0054A	Straight tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Licensor-1	
1	36		SCH10		P21A-004BU	Straight tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Licensor-1	
1	40		STD		P21A-004ZH	Straight tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Licensor-1	
1	42		STD		P21A-004BV	Straight tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Licensor-1	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75			P24B-000C2	Reducing tee ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW Licensor-1	
1	1.5	0.75			P24B-000C3	Reducing tee ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW Licensor-1	
1	1.5	1			P24B-000C4	Reducing tee ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW Licensor-1	
1	2	1	XS	XS	P24A-00K9R	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	2	1.5	XS	XS	P24A-00K9S	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	3	1.5	STD	XS	P24A-00K9T	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	3	2	STD	XS	P24A-00K18	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	4	2	STD	XS	P24A-00K9U	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	4	3	STD	STD	P24A-00K9V	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	6	3	STD	STD	P24A-00K9W	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	6	4	STD	STD	P24A-00K9X	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	8	4	SCH20	STD	P24A-00K9Y	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	8	6	SCH20	STD	P24A-00K9Z	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	10	4	SCH20	STD	P24A-00KA0	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	10	6	SCH20	STD	P24A-00KA1	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	10	8	SCH20	SCH20	P24A-00K1F	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	12	6	SCH20	STD	P24A-00KA2	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	12	8	SCH20	SCH20	P24A-00K1J	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	12	10	SCH20	SCH20	P24A-00K1G	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	14	6	SCH20	STD	P24A-00KA3	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	14	8	SCH20	SCH20	P24A-00K1M	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	14	10	SCH20	SCH20	P24A-00K1K	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	

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REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14	12	SCH20	SCH20	P24A-00K1L	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	16	6	SCH20	STD	P24A-00KA4	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	16	8	SCH20	SCH20	P24A-00K1T	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	16	10	SCH20	SCH20	P24A-00K1N	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	16	12	SCH20	SCH20	P24A-00K1P	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	16	14	SCH20	SCH20	P24A-00K1R	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	18	8	SCH20	SCH20	P24A-00K1Y	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Licensor-1	
1	18	10	SCH20	SCH20	P24A-00K1U	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Licensor-1	
1	18	12	SCH20	SCH20	P24A-00K1V	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Licensor-1	
1	18	14	SCH20	SCH20	P24A-00K1W	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Licensor-1	
1	18	16	SCH20	SCH20	P24A-00K1X	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Licensor-1	
1	20	8	STD	SCH20	P24A-00K24	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Licensor-1	
1	20	10	STD	SCH20	P24A-00K1Z	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Licensor-1	
1	20	12	STD	SCH20	P24A-00K20	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Licensor-1	
1	20	14	STD	SCH20	P24A-00K21	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Licensor-1	
1	20	16	STD	SCH20	P24A-00K22	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Licensor-1	
1	20	18	STD	SCH20	P24A-00K23	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Licensor-1	
1	24	10	STD	SCH20	P24A-00KWJ	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Licensor-1	
1	24	12	STD	SCH20	P24A-00KA5	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Licensor-1	
1	24	14	STD	SCH20	P24A-00KA6	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Licensor-1	
1	24	16	STD	SCH20	P24A-00KA7	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Licensor-1	
1	24	18	STD	SCH20	P24A-00KA8	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Licensor-1	
1	24	20	STD	STD	P24A-00KA9	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Licensor-1	
1	30	10	SCH10	SCH20	P24A-00KAA	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Licensor-1	
1	30	12	SCH10	SCH20	P24A-00KAB	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Licensor-1	
1	30	14	SCH10	SCH20	P24A-00KAC	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Licensor-1	
1	30	16	SCH10	SCH20	P24A-00KAD	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Licensor-1	
1	30	18	SCH10	SCH20	P24A-00KAE	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Licensor-1	
1	30	20	SCH10	STD	P24A-00KAF	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Licensor-1	
1	30	24	SCH10	STD	P24A-00KAG	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Licensor-1	
1	32	14	SCH10	SCH20	P24A-00PTH	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Licensor-1	
1	32	16	SCH10	SCH20	P24A-00PTC	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Licensor-1	
1	32	18	SCH10	SCH20	P24A-00PTD	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Licensor-1	
1	32	20	SCH10	STD	P24A-00PTE	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Licensor-1	
1	32	24	SCH10	STD	P24A-00PTF	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Licensor-1	
1	32	30	SCH10	SCH10	P24A-00PTG	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Licensor-1	
1	36	16	SCH10	SCH20	P24A-00KWK	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Licensor-1	
1	36	18	SCH10	SCH20	P24A-00KAH	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Licensor-1	
1	36	20	SCH10	STD	P24A-00KAJ	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Licensor-1	
1	36	24	SCH10	STD	P24A-00KAK	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Licensor-1	
1	36	30	SCH10	SCH10	P24A-00KAL	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Licensor-1	
1	36	32	SCH10	SCH10	P24A-00PTJ	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Licensor-1	
1	40	18	STD	SCH20	P24A-00PH5	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Licensor-1	
1	40	20	STD	STD	P24A-00PH1	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Licensor-1	
1	40	24	STD	STD	P24A-00PH2	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Licensor-1	
1	40	30	STD	SCH10	P24A-00PH3	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Licensor-1	
1	40	32	STD	SCH10	P24A-00PTK	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Licensor-1	
1	40	36	STD	SCH10	P24A-00PH4	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Licensor-1	
1	42	16	STD	SCH20	P24A-00KAM	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Licensor-1	
1	42	18	STD	SCH20	P24A-00KAN	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Licensor-1	
1	42	20	STD	STD	P24A-00KAP	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Licensor-1	
1	42	24	STD	STD	P24A-00KAR	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Licensor-1	
1	42	30	STD	SCH10	P24A-00KAS	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Licensor-1	
1	42	32	STD	SCH10	P24A-00PTL	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Licensor-1	
1	42	36	STD	SCH10	P24A-00KAT	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Licensor-1	
1	42	40	STD	STD	P24A-00PTM	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Licensor-1	

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CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	STD	XS	P27A-00EL6	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	4	2	STD	XS	P27A-00EUZ	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	4	3	STD	STD	P27A-00EV0	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	6	3	STD	STD	P27A-00EV1	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	6	4	STD	STD	P27A-00EV2	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	8	4	SCH20	STD	P27A-00EV3	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	8	6	SCH20	STD	P27A-00EV4	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	10	4	SCH20	STD	P27A-00EV5	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	10	6	SCH20	STD	P27A-00EV6	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	10	8	SCH20	SCH20	P27A-00ELD	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	12	6	SCH20	STD	P27A-00EV7	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	12	8	SCH20	SCH20	P27A-00ELG	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	12	10	SCH20	SCH20	P27A-00ELE	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	14	6	SCH20	STD	P27A-00EV8	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	14	8	SCH20	SCH20	P27A-00ELL	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	14	10	SCH20	SCH20	P27A-00ELH	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	14	12	SCH20	SCH20	P27A-00ELJ	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	16	8	SCH20	SCH20	P27A-00ELR	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	16	10	SCH20	SCH20	P27A-00ELM	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	16	12	SCH20	SCH20	P27A-00ELN	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	16	14	SCH20	SCH20	P27A-00ELP	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	18	10	SCH20	SCH20	P27A-00ELS	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Licensor-1	
1	18	12	SCH20	SCH20	P27A-00ELT	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Licensor-1	
1	18	14	SCH20	SCH20	P27A-00ELU	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Licensor-1	
1	18	16	SCH20	SCH20	P27A-00ELV	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Licensor-1	
1	20	12	STD	SCH20	P27A-00ELW	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Licensor-1	
1	20	14	STD	SCH20	P27A-00ELX	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Licensor-1	
1	20	16	STD	SCH20	P27A-00ELY	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Licensor-1	
1	20	18	STD	SCH20	P27A-00ELZ	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Licensor-1	
1	24	16	STD	SCH20	P27A-00EV9	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Licensor-1	
1	24	18	STD	SCH20	P27A-00EVA	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Licensor-1	
1	24	20	STD	STD	P27A-00EVB	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Licensor-1	
1	30	20	SCH10	STD	P27A-00EVC	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Licensor-1	
1	30	24	SCH10	STD	P27A-00EVD	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Licensor-1	
1	32	24	SCH10	STD	P27A-00J2F	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Licensor-1	
1	32	30	SCH10	SCH10	P27A-00J2G	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Licensor-1	
1	36	24	SCH10	STD	P27A-00EVE	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Licensor-1	
1	36	30	SCH10	SCH10	P27A-00EVF	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Licensor-1	
1	36	32	SCH10	SCH10	P27A-00J2H	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Licensor-1	
1	42	30	STD	SCH10	P27A-00EVG	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Licensor-1	
1	42	32	STD	SCH10	P27A-00J2J	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Licensor-1	
1	42	36	STD	SCH10	P27A-00EVH	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Licensor-1	
1	42	40	STD	STD	P27A-00HHP	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Licensor-1	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	STD	XS	P28A-00BPY	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	4	2	STD	XS	P28A-00BYU	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	4	3	STD	STD	P28A-00BYV	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	6	3	STD	STD	P28A-00BYW	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	6	4	STD	STD	P28A-00BYX	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	8	4	SCH20	STD	P28A-00BYY	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	8	6	SCH20	STD	P28A-00BYZ	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	10	4	SCH20	STD	P28A-00BZ0	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	10	6	SCH20	STD	P28A-00BZ1	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	10	8	SCH20	SCH20	P28A-00BR5	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	12	6	SCH20	STD	P28A-00BZ2	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	12	8	SCH20	SCH20	P28A-00BR8	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	12	10	SCH20	SCH20	P28A-00BR6	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	

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ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14	6	SCH20	STD	P28A-00BZ3	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	14	8	SCH20	SCH20	P28A-00BRC	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	14	10	SCH20	SCH20	P28A-00BR9	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	14	12	SCH20	SCH20	P28A-00BRA	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	16	8	SCH20	SCH20	P28A-00BRG	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	16	10	SCH20	SCH20	P28A-00BRD	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	16	12	SCH20	SCH20	P28A-00BRE	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	16	14	SCH20	SCH20	P28A-00BRF	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	18	10	SCH20	SCH20	P28A-00BRH	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Licensor-1	
1	18	12	SCH20	SCH20	P28A-00BRJ	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Licensor-1	
1	18	14	SCH20	SCH20	P28A-00BRK	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Licensor-1	
1	18	16	SCH20	SCH20	P28A-00BRL	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Licensor-1	
1	20	12	STD	SCH20	P28A-00BRM	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Licensor-1	
1	20	14	STD	SCH20	P28A-00BRN	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Licensor-1	
1	20	16	STD	SCH20	P28A-00BRP	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Licensor-1	
1	20	18	STD	SCH20	P28A-00BRR	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Licensor-1	
1	24	16	STD	SCH20	P28A-00BZ4	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Licensor-1	
1	24	18	STD	SCH20	P28A-00BZ5	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Licensor-1	
1	24	20	STD	STD	P28A-00BZ6	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Licensor-1	
1	30	20	SCH10	STD	P28A-00BZ7	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Licensor-1	
1	30	24	SCH10	STD	P28A-00BZ8	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Licensor-1	
1	32	24	SCH10	STD	P28A-00FC2	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Licensor-1	
1	32	30	SCH10	SCH10	P28A-00FC3	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Licensor-1	
1	36	24	SCH10	STD	P28A-00BZ9	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Licensor-1	
1	36	30	SCH10	SCH10	P28A-00BZA	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Licensor-1	
1	36	32	SCH10	SCH10	P28A-00FC4	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Licensor-1	
1	42	30	STD	SCH10	P28A-00BZB	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Licensor-1	
1	42	32	STD	SCH10	P28A-00FC5	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Licensor-1	
1	42	36	STD	SCH10	P28A-00BZC	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Licensor-1	
1	42	40	STD	STD	P28A-00ESE	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Licensor-1	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P29B-0005R	Cap ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW Licensor-1	
1	0.75				P29B-0005S	Cap ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW Licensor-1	
1	1				P29B-0005T	Cap ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW Licensor-1	
1	1.5				P29B-0005U	Cap ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW Licensor-1	
1	2		XS		P29A-0032L	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	3		STD		P29A-0032N	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	4		STD		P29A-00368	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	6		STD		P29A-0036A	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	8		SCH20		P29A-0032S	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	10		SCH20		P29A-0032F	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	12		SCH20		P29A-0032G	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	14		SCH20		P29A-0032H	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	16		SCH20		P29A-0032J	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	18		SCH20		P29A-0032K	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	20		STD		P29A-0032M	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	24		STD		P29A-00365	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	30		SCH10		P29A-00366	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	32		SCH10		P29A-005K4	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	36		SCH10		P29A-00367	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	40		STD		P29A-003V7	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	42		STD		P29A-00369	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
541	0.75				P29B-00068	Cap ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 NPT Licensor-1	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P41A-00198	Straight nipple ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Licensor-1	

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STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75		SCH160		P41A-00199	Straight nipple ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Licensor-1	
1	1		SCH160		P41A-0019A	Straight nipple ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Licensor-1	
1	1.5		SCH160		P41A-0019B	Straight nipple ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Licensor-1	

CON SWAGED NIPPLE (SNC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	XS	XS	P42A-000V0	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S) Licensor-1	
1	1	0.5	XS	XS	P42A-000V1	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S) Licensor-1	
1	1	0.75	XS	XS	P42A-000V2	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S) Licensor-1	
1	1.5	0.5	XS	XS	P42A-000V3	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S) Licensor-1	
1	1.5	0.75	XS	XS	P42A-000V4	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S) Licensor-1	
1	1.5	1	XS	XS	P42A-000V5	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S) Licensor-1	
1	2	0.5	XS	XS	P42A-000V6	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 BE(L) - PE(S) Licensor-1	
1	2	0.75	XS	XS	P42A-000V7	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 BE(L) - PE(S) Licensor-1	
1	2	1	XS	XS	P42A-000V8	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 BE(L) - PE(S) Licensor-1	
1	2	1.5	XS	XS	P42A-000V9	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 BE(L) - PE(S) Licensor-1	
1	3	1.5	STD	XS	P42A-000VA	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 BE(L) - PE(S) Licensor-1	

ECC SWAGED NIPPLE (SNE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	XS	XS	P43A-000L3	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S) Licensor-1	
1	1	0.5	XS	XS	P43A-000L4	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S) Licensor-1	
1	1	0.75	XS	XS	P43A-000L5	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S) Licensor-1	
1	1.5	0.5	XS	XS	P43A-000L6	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S) Licensor-1	
1	1.5	0.75	XS	XS	P43A-000L7	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S) Licensor-1	
1	1.5	1	XS	XS	P43A-000L8	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S) Licensor-1	
1	2	0.5	XS	XS	P43A-000L9	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 BE(L) - PE(S) Licensor-1	
1	2	0.75	XS	XS	P43A-000LA	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 BE(L) - PE(S) Licensor-1	
1	2	1	XS	XS	P43A-000LB	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 BE(L) - PE(S) Licensor-1	
1	2	1.5	XS	XS	P43A-000LC	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 BE(L) - PE(S) Licensor-1	
1	3	1.5	STD	XS	P43A-000LD	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 BE(L) - PE(S) Licensor-1	

COUPLING (CPS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P47B-0007Z	Coupling ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW - SW Licensor-1	
1	0.75				P47B-00080	Coupling ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW - SW Licensor-1	
1	1				P47B-00081	Coupling ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW - SW Licensor-1	
1	1.5				P47B-00082	Coupling ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW - SW Licensor-1	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2 - 2.5	0.75			P31B-0139L	Outlet ASTM A350 Grade LF2 Class 1 Class 3000 MSS SP-97 SW Licensor-1	
1	3 - 5	0.75			P31B-0139M	Outlet ASTM A350 Grade LF2 Class 1 Class 3000 MSS SP-97 SW Licensor-1	
1	6 - 12	0.75			P31B-0139N	Outlet ASTM A350 Grade LF2 Class 1 Class 3000 MSS SP-97 SW Licensor-1	
1	14 - 36	0.75			P31B-0139P	Outlet ASTM A350 Grade LF2 Class 1 Class 3000 MSS SP-97 SW Licensor-1	
1	38 and larger	0.75			P31B-013B8	Outlet ASTM A350 Grade LF2 Class 1 Class 3000 MSS SP-97 SW Licensor-1	
1	3	1			P31B-0139S	Outlet ASTM A350 Grade LF2 Class 1 Class 3000 MSS SP-97 SW Licensor-1	
1	4 - 5	1			P31B-013B7	Outlet ASTM A350 Grade LF2 Class 1 Class 3000 MSS SP-97 SW Licensor-1	
1	6 - 10	1			P31B-0139R	Outlet ASTM A350 Grade LF2 Class 1 Class 3000 MSS SP-97 SW Licensor-1	
1	12 - 36	1			P31B-0139T	Outlet ASTM A350 Grade LF2 Class 1 Class 3000 MSS SP-97 SW Licensor-1	
1	38 and larger	1			P31B-0139U	Outlet ASTM A350 Grade LF2 Class 1 Class 3000 MSS SP-97 SW Licensor-1	
1	4	1.5			P31B-010KV	Outlet ASTM A350 Grade LF2 Class 1 Class 3000 MSS SP-97 SW Licensor-1	
1	5 - 6	1.5			P31B-0139V	Outlet ASTM A350 Grade LF2 Class 1 Class 3000 MSS SP-97 SW Licensor-1	
1	8 - 12	1.5			P31B-0139W	Outlet ASTM A350 Grade LF2 Class 1 Class 3000 MSS SP-97 SW Licensor-1	
1	14 - 24	1.5			P31B-0139X	Outlet ASTM A350 Grade LF2 Class 1 Class 3000 MSS SP-97 SW Licensor-1	
1	26 - 36	1.5			P31B-0139Y	Outlet ASTM A350 Grade LF2 Class 1 Class 3000 MSS SP-97 SW Licensor-1	
1	38 and larger	1.5			P31B-013A2	Outlet ASTM A350 Grade LF2 Class 1 Class 3000 MSS SP-97 SW Licensor-1	
1	1	0.75			P31B-011AR	Outlet ASTM A350 Grade LF2 Class 1 Class 3000 MSS SP-97 NPT Licensor-1	

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OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
541	1.5	0.75			P31B-011AP	Outlet ASTM A350 Grade LF2 Class 1 Class 3000 MSS SP-97 NPT Licensor-1	
1	6	2	STD	XS	P31B-00XS1	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Licensor-1	
1	8	2	SCH20	XS	P31B-00XH3	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Licensor-1	
1	10	2	SCH20	XS	P31B-00XH5	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Licensor-1	
1	12	2	SCH20	XS	P31B-00XH7	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Licensor-1	
1	14	2	SCH20	XS	P31B-00XHA	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Licensor-1	
1	16	2	SCH20	XS	P31B-00XHH	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Licensor-1	
1	18	2	SCH20	XS	P31B-00XHL	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Licensor-1	
1	20	2	STD	XS	P31B-00XHR	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Licensor-1	
1	24	2	STD	XS	P31B-00XS9	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Licensor-1	
1	30	2	SCH10	XS	P31B-00XSD	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Licensor-1	
1	32	2	SCH10	XS	P31B-012L7	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Licensor-1	
1	36	2	SCH10	XS	P31B-00XSH	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Licensor-1	
1	40	2	STD	XS	P31B-011U5	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Licensor-1	
1	42	2	STD	XS	P31B-00XSM	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Licensor-1	
1	8	3	SCH20	STD	P31B-00XH4	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Licensor-1	
1	10	3	SCH20	STD	P31B-00XH6	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Licensor-1	
1	12	3	SCH20	STD	P31B-00XH8	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Licensor-1	
1	14	3	SCH20	STD	P31B-00XHB	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Licensor-1	
1	16	3	SCH20	STD	P31B-00XHJ	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Licensor-1	
1	18	3	SCH20	STD	P31B-00XHM	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Licensor-1	
1	20	3	STD	STD	P31B-00XHS	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Licensor-1	
1	24	3	STD	STD	P31B-00XSA	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Licensor-1	
1	30	3	SCH10	STD	P31B-00XSE	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Licensor-1	
1	32	3	SCH10	STD	P31B-012L8	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Licensor-1	
1	36	3	SCH10	STD	P31B-00XSJ	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Licensor-1	
1	40	3	STD	STD	P31B-011U6	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Licensor-1	
1	42	3	STD	STD	P31B-00XSN	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Licensor-1	
1	12	4	SCH20	STD	P31B-00XS2	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Licensor-1	
1	14	4	SCH20	STD	P31B-00XS3	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Licensor-1	
1	16	4	SCH20	STD	P31B-00XS4	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Licensor-1	
1	18	4	SCH20	STD	P31B-00XS5	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Licensor-1	
1	20	4	STD	STD	P31B-00XS7	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Licensor-1	
1	24	4	STD	STD	P31B-00XSB	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Licensor-1	
1	30	4	SCH10	STD	P31B-00XSF	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Licensor-1	
1	32	4	SCH10	STD	P31B-012L9	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Licensor-1	
1	36	4	SCH10	STD	P31B-00XSK	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Licensor-1	
1	40	4	STD	STD	P31B-011U7	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Licensor-1	
1	42	4	STD	STD	P31B-00XSP	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Licensor-1	
1	18	6	SCH20	STD	P31B-00XS6	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Licensor-1	
1	20	6	STD	STD	P31B-00XS8	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Licensor-1	
1	24	6	STD	STD	P31B-00XSC	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Licensor-1	
1	30	6	SCH10	STD	P31B-00XSG	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Licensor-1	
1	32	6	SCH10	STD	P31B-012LA	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Licensor-1	
1	36	6	SCH10	STD	P31B-00XSL	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Licensor-1	
1	40	6	STD	STD	P31B-011U8	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Licensor-1	
1	42	6	STD	STD	P31B-00XSR	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Licensor-1	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30B-0006B	Plug ASTM A350 Grade LF2 Class 1 ASME B16.11 NPT Round head Licensor-1	
1	0.75				P30B-0006C	Plug ASTM A350 Grade LF2 Class 1 ASME B16.11 NPT Round head Licensor-1	
1	1				P30B-0006D	Plug ASTM A350 Grade LF2 Class 1 ASME B16.11 NPT Round head Licensor-1	
1	1.5				P30B-0006E	Plug ASTM A350 Grade LF2 Class 1 ASME B16.11 NPT Round head Licensor-1	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P61B-00A13	Flange SW ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF Licensor-1	
1	0.75		XS		P61B-00A14	Flange SW ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF Licensor-1	

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FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		XS		P61B-00A15	Flange SW ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF Licensor-1	
1	1.5		XS		P61B-00A16	Flange SW ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF Licensor-1	
1	2		XS		P61B-00A1C	Flange WN ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF Licensor-1	
1	3		STD		P61B-00A1F	Flange WN ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF Licensor-1	
1	4		STD		P61B-00A1G	Flange WN ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF Licensor-1	
1	6		STD		P61B-00A1H	Flange WN ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF Licensor-1	
1	8		SCH20		P61B-00A1J	Flange WN ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF Licensor-1	
1	10		SCH20		P61B-00A17	Flange WN ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF Licensor-1	
1	12		SCH20		P61B-00A18	Flange WN ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF Licensor-1	
1	14		SCH20		P61B-00A19	Flange WN ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF Licensor-1	
1	16		SCH20		P61B-00A1A	Flange WN ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF Licensor-1	
1	18		SCH20		P61B-00A1B	Flange WN ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF Licensor-1	
1	20		STD		P61B-00A1D	Flange WN ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF Licensor-1	
1	24		STD		P61B-00A1E	Flange WN ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF Licensor-1	
1	30		SCH10		P61B-00A1K	Flange WN ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.47 Series B RF Licensor-1	
1	32		SCH10		P61B-00DD2	Flange WN ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.47 Series B RF Licensor-1	
1	36		SCH10		P61B-00A1L	Flange WN ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.47 Series B RF Licensor-1	
1	40		STD		P61B-00BWU	Flange WN ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.47 Series B RF Licensor-1	
1	42		STD		P61B-00A1M	Flange WN ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.47 Series B RF Licensor-1	
773	0.5		XS		P61B-00A1N	Flange SW ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF Licensor-1	
773	0.75		XS		P61B-00A1P	Flange SW ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF Licensor-1	
773	1		XS		P61B-00A1R	Flange SW ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF Licensor-1	
773	1.5		XS		P61B-00A1S	Flange SW ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF Licensor-1	
773	2		XS		P61B-00A1Y	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF Licensor-1	
773	3		STD		P61B-00A21	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF Licensor-1	
773	4		STD		P61B-00A22	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF Licensor-1	
773	6		STD		P61B-00A23	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF Licensor-1	
773	8		SCH20		P61B-00A24	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF Licensor-1	
773	10		SCH20		P61B-00A1T	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF Licensor-1	
773	12		SCH20		P61B-00A1U	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF Licensor-1	
773	14		SCH20		P61B-00A1V	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF Licensor-1	
773	16		SCH20		P61B-00A1W	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF Licensor-1	
773	18		SCH20		P61B-00A1X	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF Licensor-1	
773	20		STD		P61B-00A1Z	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF Licensor-1	
773	24		STD		P61B-00A20	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF Licensor-1	
773	30		SCH10		P61B-00A25	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.47 Series B RF Licensor-1	
773	32		SCH10		P61B-00DD3	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.47 Series B RF Licensor-1	
773	36		SCH10		P61B-00A26	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.47 Series B RF Licensor-1	
773	40		STD		P61B-00BWV	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.47 Series B RF Licensor-1	
773	42		STD		P61B-00A27	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.47 Series B RF Licensor-1	
781	3		STD		P61B-009U9	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF Licensor-1	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67B-002G7	Blind flange ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF Licensor-1	
1	0.75				P67B-002G8	Blind flange ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF Licensor-1	
1	1				P67B-002G9	Blind flange ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF Licensor-1	
1	1.5				P67B-002GA	Blind flange ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF Licensor-1	
1	2				P67B-002GG	Blind flange ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF Licensor-1	
1	3				P67B-002GK	Blind flange ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF Licensor-1	
1	4				P67B-002GL	Blind flange ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF Licensor-1	
1	6				P67B-002GM	Blind flange ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF Licensor-1	
1	8				P67B-002GN	Blind flange ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF Licensor-1	
1	10				P67B-002GB	Blind flange ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF Licensor-1	
1	12				P67B-002GC	Blind flange ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF Licensor-1	
1	14				P67B-002GD	Blind flange ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF Licensor-1	
1	16				P67B-002GE	Blind flange ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF Licensor-1	
1	18				P67B-002GF	Blind flange ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF Licensor-1	
1	20				P67B-002GH	Blind flange ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF Licensor-1	

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BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	24				P67B-002GJ	Blind flange ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF Licensor-1	
1	30				P67B-002GP	Blind flange ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.47 Series B RF Licensor-1	
1	32				P67B-00305	Blind flange ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.47 Series B RF Licensor-1	
1	36				P67B-002GR	Blind flange ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.47 Series B RF Licensor-1	
1	40				P67B-002WU	Blind flange ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.47 Series B RF Licensor-1	
1	42				P67B-002GS	Blind flange ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.47 Series B RF Licensor-1	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000L8	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000L9	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000LA	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000LB	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000LH	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000LL	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000LM	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	6				P73T-000LN	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	8				P73T-000LP	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	10				P73T-000LC	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	12				P73T-000LD	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	14				P73T-000LE	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	16				P73T-000LF	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	18				P73T-000LG	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	20				P73T-000LJ	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	24				P73T-000LK	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	30				P73T-000LT	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	32				P73T-000LU	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	36				P73T-000LW	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	40				P73T-000LY	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	42				P73T-000LZ	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	0.5				P73T-000FT	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	0.75				P73T-000FU	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	3				P73T-000G5	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	4				P73T-000G6	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	6				P73T-000G7	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	8				P73T-000G8	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	10				P73T-000FX	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	12				P73T-000FY	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	14				P73T-000FZ	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	16				P73T-000G0	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	18				P73T-000G1	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	20				P73T-000G3	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	24				P73T-000G4	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

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GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
773	30				P73T-000H9	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	32				P73T-000HA	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	36				P73T-000HC	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	40				P73T-000KL	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	42				P73T-000KM	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	3				P73T-000JL	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-16				See Attached Bolt Table	Bolt and Nut ASTM A320 Grade L7 / A194 Grade 4 ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	18-24				See Attached Bolt Table	Bolt and Nut ASTM A320 Grade L7 / A194 Grade 4 ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
1	30-42				See Attached Bolt Table	Bolt and Nut ASTM A320 Grade L7 / A194 Grade 4 ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
773	0.5-10				See Attached Bolt Table	Bolt and Nut ASTM A320 Grade L7 / A194 Grade 4 ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
773	12-42				See Attached Bolt Table	Bolt and Nut ASTM A320 Grade L7 / A194 Grade 4 ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
781	1.5-3				See Attached Bolt Table	Bolt and Nut ASTM A320 Grade L7 / A194 Grade 4 ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81B-001D1	Gate valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated Licensor-1	
1	0.75				P81B-001D2	Gate valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated Licensor-1	
1	1				P81B-001D3	Gate valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated Licensor-1	
1	1.5				P81B-001D4	Gate valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated Licensor-1	
1	2				P81C-004DU	Gate valve ASTM A352 Grade LCC Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	3				P81C-004DV	Gate valve ASTM A352 Grade LCC Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	4				P81C-004DW	Gate valve ASTM A352 Grade LCC Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	6				P81C-004DX	Gate valve ASTM A352 Grade LCC Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	8				P81C-004DY	Gate valve ASTM A352 Grade LCC Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	10				P81C-004DS	Gate valve ASTM A352 Grade LCC Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	12				P81C-004DT	Gate valve ASTM A352 Grade LCC Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	14				P81C-004DZ	Gate valve ASTM A352 Grade LCC Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated	
1	16				P81C-004E0	Gate valve ASTM A352 Grade LCC Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated	
1	18				P81C-004E1	Gate valve ASTM A352 Grade LCC Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated	
1	20				P81C-004E2	Gate valve ASTM A352 Grade LCC Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated	
1	24				P81C-004E3	Gate valve ASTM A352 Grade LCC Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated	
1	30				P81C-004DP	Gate valve ASTM A352 Grade LCC Class 150 API 600 Flange ASME B16.47-B RF Trim number 12 BB-BG-OS&Y Gear operated	
1	32				P81C-0089G	Gate valve ASTM A352 Grade LCC Class 150 API 600 Flange ASME B16.47-B RF Trim number 12 BB-BG-OS&Y Gear operated	
1	36				P81C-0051M	Gate valve ASTM A352 Grade LCC Class 150 API 600 Flange ASME B16.47-B RF Trim number 12 BB-BG-OS&Y Gear operated	
1	40				P81C-006SM	Gate valve ASTM A352 Grade LCC Class 150 API 600 Flange ASME B16.47-B RF Trim number 12 BB-BG-OS&Y Gear operated	
1	42				P81C-004DR	Gate valve ASTM A352 Grade LCC Class 150 API 600 Flange ASME B16.47-B RF Trim number 12 BB-BG-OS&Y Gear operated	
714	0.5				P81B-002S5	Gate valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW - NPT Trim number 12 BB-BG-OS&Y Handwheel operated Licensor-1	
714	0.75				P81B-002FF	Gate valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW - NPT Trim number 12 BB-BG-OS&Y Handwheel operated Licensor-1	
773	1				P81B-00365	Gate valve ASTM A350 Grade LF2 Class 1 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Licensor-1	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82B-0014R	Globe valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated Licensor-1	

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GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75				P82B-0014S	Globe valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated Licensor-1	
1	1				P82B-0014T	Globe valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated Licensor-1	
1	1.5				P82B-0014U	Globe valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated Licensor-1	
1	2				P82C-0026T	Globe valve ASTM A352 Grade LCC Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	3				P82C-0026U	Globe valve ASTM A352 Grade LCC Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	4				P82C-0026V	Globe valve ASTM A352 Grade LCC Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	6				P82C-0026W	Globe valve ASTM A352 Grade LCC Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83B-000WJ	Check valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 12 Lift-type Bolted cover Licensor-1	
1	0.75				P83B-000WK	Check valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 12 Lift-type Bolted cover Licensor-1	
1	1				P83B-000WL	Check valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 12 Lift-type Bolted cover Licensor-1	
1	1.5				P83B-000WM	Check valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 12 Lift-type Bolted cover Licensor-1	
1	2				P83C-00226	Check valve ASTM A352 Grade LCC Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	3				P83C-00227	Check valve ASTM A352 Grade LCC Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	4				P83C-00228	Check valve ASTM A352 Grade LCC Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	6				P83C-00229	Check valve ASTM A352 Grade LCC Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	8				P83C-0022A	Check valve ASTM A352 Grade LCC Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	10				P83C-00221	Check valve ASTM A352 Grade LCC Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	12				P83C-00222	Check valve ASTM A352 Grade LCC Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	14				P83C-00223	Check valve ASTM A352 Grade LCC Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	16				P83C-00224	Check valve ASTM A352 Grade LCC Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	18				P83C-00225	Check valve ASTM A352 Grade LCC Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	

DP CHECK VALVE (XDP)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	36				P88C-00264	Dual plate check valve ASTM A352 Grade LCC Class 150 API 594 Wafer-type ASME B16.47-B RF Trim number 12 Internal wetted parts SS316 Spring Inconel Retainerless-type	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71B-00094	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	0.75				P71B-00095	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	1				P71B-00096	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	1.5				P71B-00097	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	2				P71B-0009A	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	3				P71B-0009B	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	4				P71B-0009C	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	6				P71B-0009D	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	8				P71B-0009E	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	10				P71B-00098	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	12				P71B-00099	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF Licensor-1	
773	0.5				P71B-000C1	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF Licensor-1	
773	0.75				P71B-000C2	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF Licensor-1	
773	1				P71B-000C3	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF Licensor-1	
773	1.5				P71B-000C4	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF Licensor-1	

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SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
773	2				P71B-000C7	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF Licensor-1	
773	3				P71B-000C8	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF Licensor-1	
773	4				P71B-000C9	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF Licensor-1	
773	6				P71B-000CA	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF Licensor-1	
773	8				P71B-000CB	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF Licensor-1	
773	10				P71B-000C5	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF Licensor-1	
773	12				P71B-000C6	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF Licensor-1	

PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000D0	Paddle blank ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	16				P72B-000D1	Paddle blank ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	18				P72B-000D2	Paddle blank ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	20				P72B-000D3	Paddle blank ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	24				P72B-000D4	Paddle blank ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	30				P72B-000D5	Paddle blank ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.47-B RF Licensor-1	
1	32				P72B-000XW	Paddle blank ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.47-B RF Licensor-1	
1	36				P72B-000D6	Paddle blank ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.47-B RF Licensor-1	
1	40				P72B-000U4	Paddle blank ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.47-B RF Licensor-1	
1	42				P72B-000D7	Paddle blank ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.47-B RF Licensor-1	
773	36				P72B-000PZ	Paddle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.47-B RF Licensor-1	

PADDLE SPACER (PS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000D8	Paddle spacer ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	16				P72B-000D9	Paddle spacer ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	18				P72B-000DA	Paddle spacer ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	20				P72B-000DB	Paddle spacer ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	24				P72B-000DC	Paddle spacer ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	30				P72B-000DD	Paddle spacer ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.47-B RF Licensor-1	
1	32				P72B-000XX	Paddle spacer ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.47-B RF Licensor-1	
1	36				P72B-000DE	Paddle spacer ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.47-B RF Licensor-1	
1	40				P72B-000U5	Paddle spacer ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.47-B RF Licensor-1	
1	42				P72B-000DF	Paddle spacer ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.47-B RF Licensor-1	
773	36				P72B-000R0	Paddle spacer ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.47-B RF Licensor-1	

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BOLT TABLE (B_A1GP01 , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	60	P80S-003VJ		
0.75	4	0.500	65	P80S-003VK		
1	4	0.500	70	P80S-003VL		
1.5	4	0.500	75	P80S-003VM		
2	4	0.625	85	P80S-003Z4		
3	4	0.625	95	P80S-003Z6		
4	8	0.625	95	P80S-003Z6		
6	8	0.750	105	P80S-003Z8		
8	8	0.750	110	P80S-003Z9		
10	12	0.875	120	P80S-00462		
12	12	0.875	120	P80S-00462		
14	12	1.000	135	P80S-004BC		
16	16	1.000	140	P80S-004BD		
18	16	1.125	150	P80S-004J1		
20	20	1.125	160	P80S-004J3		
24	20	1.250	175	P80S-004LF		
30	44	0.750	145	P80S-003ZG		
32	48	0.750	150	P80S-003ZH		
36	44	0.875	175	P80S-00485		
40	44	1.000	185	P80S-004BP		
42	48	1.000	190	P80S-004BR		

BOLT TABLE (B_A1GP01_773 , STUD ASME RF, OPTION CODE 773)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-003VL		
0.75	4	0.625	75	P80S-003Z2		
1	4	0.625	80	P80S-003Z3		
1.5	4	0.750	95	P80S-0045X		
2	8	0.625	90	P80S-003Z5		
3	8	0.750	110	P80S-003Z9		
4	8	0.750	115	P80S-003ZA		
6	12	0.750	125	P80S-003ZC		
8	12	0.875	140	P80S-00466		
10	16	1.000	160	P80S-004BH		
12	16	1.125	175	P80S-004J7		
14	20	1.125	180	P80S-004J8		
16	20	1.250	190	P80S-004LJ		
18	24	1.250	200	P80S-004LL		
20	24	1.250	210	P80S-004LN		
24	24	1.500	235	P80S-003A7		
30	36	1.375	285	P80S-00399		
32	32	1.500	310	P80S-00962		
36	32	1.625	320	P80S-00CB3		
40	40	1.625	345	P80S-00CB8		
42	36	1.750	355	P80S-0096R		

BOLT TABLE (B_A1GP01_781 , STUD ASME RF, OPTION CODE 781)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	80			
0.75	4	0.625	90			
1	4	0.625	95			
1.5	4	0.750	110	P80S-003Z9		
2	8	0.625	110			
3	8	0.750	130	P80S-003ZD		
4	8	0.875	150			
6	12	1.000	175			
8	12	1.125	195			
10	16	1.250	250			
12	20	1.250	255			
14	20	1.375	270			
16	20	1.500	295			
18	20	1.625	320			
20	24	1.625	335			
24	24	1.875	380			
30	28	1.875	435			
32			0			
36	28	2.250	510			

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BOLT TABLE (B_A1GP01_781 , STUD ASME RF, OPTION CODE 781)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
40			0			
42	28	2.500	575			

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BRANCH TABLE (T_A1GP01)

RUN PIPE SIZE (in) \ BRANCH SIZE (in)	0.5	0.75	1	1.5	2	3	4	6	8	10	12	14	16	18	20	24	30	32	36	40	42
0.5	TS																				
0.75		TS																			
1		TR	TS																		
1.5		TR	TR	TS																	
2		L	TR	TR	TS																
3		L	L	TR	TR	TS															
4	L	L	L	L	TR	TR	TS														
6	L	L	L	L	L	TR	TR	TS													
8		L	L	L	L	L	TR	TR	TS												
10		L	L	L	L	L	TR	TR	TR	TS											
12		L	L	L	L	L	L	TR	TR	TR	TS										
14		L	L	L	L	L	L	TR	TR	TR	TR	TS									
16		L	L	L	L	L	L	TR	TR	TR	TR	TR	TS								
18		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TS							
20		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TR	TS						
24		L	L	L	L	L	L	L	9PD	TR	TR	TR	TR	TR	TR	TS					
30		L	L	L	L	L	L	L	9PD	TR	TR	TR	TR	TR	TR	TR	TS				
32		L	L	L	L	L	L	L	9PD	9PD	9PD	TR	TR	TR	TR	TR	TR	TS			
36		L	L	L	L	L	L	L	9PD	9PD	9PD	9PD	TR	TR	TR	TR	TR	TR	TS		
40		L	L	L	L	L	L	L	9PD	9PD	9PD	9PD	9PD	TR	TR	TR	TR	TR	TR	TS	
42		L	L	L	L	L	L	L	9PD	9PD	9PD	9PD	TR	TR	TR	TR	TR	TR	TR	TR	TS

TR : REDUCING TEE
TS : STRAIGHT TEE
L : OUTLET
9PD : REINFORCING PAD 90 DEG

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PIPING CLASS

A1GP04 REV NO. 2

Material : LTCS
Rating : ASME CLASS 150
Flange Face : RF
C.A.(mm) : 1.50
Gasket : Spiral Wound
Service : PROCESS - GENERAL PROCESS NON SOUR, NON CORROSIVE
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
2	USE OF SOFT SEATED BALL, PLUG AND BUTTERFLY VALVES SHALL BE LIMITED TO MAXIMUM OF 204DEGC (400DEGF)

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
200	WITH JACK SCREW (FO)
541	NPT(F) (CA,L)
714	SW - NPT(F) (V)
773	CLASS 300 (B,F,G,V)
781	CLASS 600 (B,F,G)

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PIPING CLASS
A1GP04 REV NO. 2

PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P01A-000XW	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE	
1	0.75		XS		P01A-000XX	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE	
1	1		XS		P01A-000XY	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE	
1	1.5		XS		P01A-000Y4	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE	
1	2		XS		P01A-000XB	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	3		STD		P01A-000YL	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	4		STD		P01A-000YT	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	6		STD		P01A-000Z2	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	8		SCH20		P01A-001BN	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	10		SCH20		P01A-00171	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	12		SCH20		P01A-0017M	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	14		SCH20		P01A-0018X	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	16		SCH20		P01A-0019K	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	18		SCH20		P01A-007GS	Pipe ASTM A671 Grade CC60 Class 22 EFW ASME B36.10M/B36.19M BE	
1	20		STD		P01A-0042R	Pipe ASTM A671 Grade CC60 Class 22 EFW ASME B36.10M/B36.19M BE	
1	24		STD		P01A-0042S	Pipe ASTM A671 Grade CC60 Class 22 EFW ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P02B-00019	90 degree elbow ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW	
1	0.75				P02B-0001A	90 degree elbow ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW	
1	1				P02B-0001B	90 degree elbow ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW	
1	1.5				P02B-0001C	90 degree elbow ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW	
1	2		XS		P02A-000B9	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	3		STD		P02A-000E7	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	4		STD		P02A-000E9	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	6		STD		P02A-000EC	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	8		SCH20		P02A-000GY	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	10		SCH20		P02A-000G4	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	12		SCH20		P02A-000GB	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	14		SCH20		P02A-000GE	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	16		SCH20		P02A-000GH	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	18		SCH20		P02A-001JY	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	20		STD		P02A-001JZ	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	24		STD		P02A-001K1	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P03B-0001B	45 degree elbow ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW	
1	0.75				P03B-0001C	45 degree elbow ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW	
1	1				P03B-0001D	45 degree elbow ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW	
1	1.5				P03B-0001E	45 degree elbow ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW	
1	2		XS		P03A-0009Y	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	3		STD		P03A-000C4	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	4		STD		P03A-000C6	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	6		STD		P03A-000C9	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	8		SCH20		P03A-000EY	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	10		SCH20		P03A-000E3	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	12		SCH20		P03A-000EA	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	14		SCH20		P03A-000EE	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	16		SCH20		P03A-000EK	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	18		SCH20		P03A-001E2	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	20		STD		P03A-001E3	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	24		STD		P03A-001E5	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P21B-0001B	Straight tee ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW	
1	0.75				P21B-0001C	Straight tee ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW	

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STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P21B-0001D	Straight tee ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW	
1	1.5				P21B-0001E	Straight tee ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW	
1	2		XS		P21A-001BR	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	3		STD		P21A-001FE	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	4		STD		P21A-001FF	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	6		STD		P21A-001FJ	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	8		SCH20		P21A-00216	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10		SCH20		P21A-0020F	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12		SCH20		P21A-0020K	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14		SCH20		P21A-0020N	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16		SCH20		P21A-0020U	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	18		SCH20		P21A-0020E	Straight tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	20		STD		P21A-001F4	Straight tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	24		STD		P21A-001F8	Straight tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75			P24B-0002T	Reducing tee ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW	
1	1.5	0.75			P24B-0002V	Reducing tee ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW	
1	1.5	1			P24B-0002W	Reducing tee ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW	
1	2	1	XS	XS	P24A-00264	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	2	1.5	XS	XS	P24A-0026U	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	3	1.5	STD	XS	P24A-002AC	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	3	2	STD	XS	P24A-005M3	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	4	2	STD	XS	P24A-006CW	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	4	3	STD	STD	P24A-0028C	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	6	3	STD	STD	P24A-002AL	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	6	4	STD	STD	P24A-00289	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	8	4	SCH20	STD	P24A-006CX	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	8	6	SCH20	STD	P24A-005M4	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	4	SCH20	STD	P24A-00HMJ	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	6	SCH20	STD	P24A-00HLN	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	8	SCH20	SCH20	P24A-002WN	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	6	SCH20	STD	P24A-00KWL	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	8	SCH20	SCH20	P24A-002WW	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	10	SCH20	SCH20	P24A-002V7	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	6	SCH20	STD	P24A-00KWM	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	8	SCH20	SCH20	P24A-002WZ	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	10	SCH20	SCH20	P24A-002V3	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	12	SCH20	SCH20	P24A-002WD	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	6	SCH20	STD	P24A-00KWN	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	8	SCH20	SCH20	P24A-002XU	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	10	SCH20	SCH20	P24A-002VZ	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	12	SCH20	SCH20	P24A-002WR	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	14	SCH20	SCH20	P24A-002X6	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	18	8	SCH20	SCH20	P24A-002Y9	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	18	10	SCH20	SCH20	P24A-002V5	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	18	12	SCH20	SCH20	P24A-002WK	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	18	14	SCH20	SCH20	P24A-002X2	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	18	16	SCH20	SCH20	P24A-002XE	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	20	8	STD	SCH20	P24A-00KWT	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	20	10	STD	SCH20	P24A-00KWP	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	20	12	STD	SCH20	P24A-00KWR	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	20	14	STD	SCH20	P24A-00KWS	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	20	16	STD	SCH20	P24A-0071W	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	20	18	STD	SCH20	P24A-006D6	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	24	10	STD	SCH20	P24A-00KWU	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	24	12	STD	SCH20	P24A-00KWV	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	24	14	STD	SCH20	P24A-00KWW	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	24	16	STD	SCH20	P24A-00KWX	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	24	18	STD	SCH20	P24A-00799	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	24	20	STD	STD	P24A-0029L	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	STD	XS	P27A-003PM	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	4	2	STD	XS	P27A-003PN	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	4	3	STD	STD	P27A-001BA	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	6	3	STD	STD	P27A-001H9	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	6	4	STD	STD	P27A-00181	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	8	4	SCH20	STD	P27A-003PP	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	8	6	SCH20	STD	P27A-003PR	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	4	SCH20	STD	P27A-003PS	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	6	SCH20	STD	P27A-003PT	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	8	SCH20	SCH20	P27A-001W8	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	6	SCH20	STD	P27A-003PU	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	8	SCH20	SCH20	P27A-001W9	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	10	SCH20	SCH20	P27A-001VJ	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	6	SCH20	STD	P27A-003SC	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	8	SCH20	SCH20	P27A-001WA	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	10	SCH20	SCH20	P27A-001VH	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	12	SCH20	SCH20	P27A-001VX	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	8	SCH20	SCH20	P27A-001WH	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	10	SCH20	SCH20	P27A-001VS	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	12	SCH20	SCH20	P27A-001W5	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	14	SCH20	SCH20	P27A-001WD	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	18	10	SCH20	SCH20	P27A-001VM	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	18	12	SCH20	SCH20	P27A-001W3	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	18	14	SCH20	SCH20	P27A-001WC	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	18	16	SCH20	SCH20	P27A-001WF	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	20	12	STD	SCH20	P27A-003R7	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	20	14	STD	SCH20	P27A-00CRB	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	20	16	STD	SCH20	P27A-008G9	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	20	18	STD	SCH20	P27A-004DM	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	24	16	STD	SCH20	P27A-008GB	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	24	18	STD	SCH20	P27A-008L9	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	24	20	STD	STD	P27A-001DF	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	STD	XS	P28A-003PL	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	4	2	STD	XS	P28A-003PM	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	4	3	STD	STD	P28A-001CF	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	6	3	STD	STD	P28A-001AL	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	6	4	STD	STD	P28A-001BL	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	8	4	SCH20	STD	P28A-003PN	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	8	6	SCH20	STD	P28A-003PP	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	4	SCH20	STD	P28A-003PR	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	6	SCH20	STD	P28A-003PS	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	8	SCH20	SCH20	P28A-001W3	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	6	SCH20	STD	P28A-003PT	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	8	SCH20	SCH20	P28A-001W4	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	10	SCH20	SCH20	P28A-001VC	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	6	SCH20	STD	P28A-003S8	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	8	SCH20	SCH20	P28A-001W9	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	10	SCH20	SCH20	P28A-001V9	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	12	SCH20	SCH20	P28A-001VU	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	8	SCH20	SCH20	P28A-001WC	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	16	10	SCH20	SCH20	P28A-001VL	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	12	SCH20	SCH20	P28A-001W1	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	14	SCH20	SCH20	P28A-001W7	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	18	10	SCH20	SCH20	P28A-001VD	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	18	12	SCH20	SCH20	P28A-001VZ	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	18	14	SCH20	SCH20	P28A-001W6	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	18	16	SCH20	SCH20	P28A-001WA	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	20	12	STD	SCH20	P28A-003R6	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	20	14	STD	SCH20	P28A-009RD	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	20	16	STD	SCH20	P28A-0056E	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	20	18	STD	SCH20	P28A-004DF	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	24	16	STD	SCH20	P28A-0056G	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	24	18	STD	SCH20	P28A-005B4	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	24	20	STD	STD	P28A-001EB	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P29B-00028	Cap ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW	
1	0.75				P29B-00029	Cap ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW	
1	1				P29B-0002A	Cap ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW	
1	1.5				P29B-0002B	Cap ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW	
1	2		XS		P29A-000BG	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	3		STD		P29A-0009Y	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	4		STD		P29A-000AH	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	6		STD		P29A-000DE	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	8		SCH20		P29A-000E4	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10		SCH20		P29A-000EF	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12		SCH20		P29A-000EJ	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14		SCH20		P29A-000EM	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16		SCH20		P29A-000ER	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	18		SCH20		P29A-000EU	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	20		STD		P29A-000BR	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	24		STD		P29A-0009T	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
541	0.75				P29B-0000G	Cap ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 NPT	
541	1				P29B-0000H	Cap ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 NPT	
541	1.5				P29B-0000J	Cap ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P41A-000AD	Straight nipple ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		SCH160		P41A-000BB	Straight nipple ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		SCH160		P41A-000AN	Straight nipple ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		SCH160		P41A-000AP	Straight nipple ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

CON SWAGED NIPPLE (SNC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	XS	XS	P42A-00032	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	XS	XS	P42A-00031	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	XS	XS	P42A-00034	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	XS	XS	P42A-00037	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	XS	XS	P42A-0003A	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	XS	XS	P42A-00033	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	XS	XS	P42A-0008M	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	XS	XS	P42A-0008N	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	XS	XS	P42A-0008P	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	XS	XS	P42A-0008R	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	STD	XS	P42A-000VB	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 BE(L) - PE(S)	

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ECC SWAGED NIPPLE (SNE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	XS	XS	P43A-0004B	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	XS	XS	P43A-0004C	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	XS	XS	P43A-0004D	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	XS	XS	P43A-0004E	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	XS	XS	P43A-0004F	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	XS	XS	P43A-0004G	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	XS	XS	P43A-0004H	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	XS	XS	P43A-0004J	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	XS	XS	P43A-0004K	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	XS	XS	P43A-0004L	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	STD	XS	P43A-000LE	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 BE(L) - PE(S)	

COUPLING (CPS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P47B-00019	Coupling ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW - SW	
1	0.75				P47B-0001A	Coupling ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW - SW	
1	1				P47B-0001B	Coupling ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW - SW	
1	1.5				P47B-0001C	Coupling ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW - SW	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2 - 2.5	0.75			P31B-0139D	Outlet ASTM A350 Grade LF2 Class 1 Class 3000 MSS SP-97 SW	
1	3 - 5	0.75			P31B-0139E	Outlet ASTM A350 Grade LF2 Class 1 Class 3000 MSS SP-97 SW	
1	6 - 12	0.75			P31B-007EA	Outlet ASTM A350 Grade LF2 Class 1 Class 3000 MSS SP-97 SW	
1	14 - 36	0.75			P31B-007EH	Outlet ASTM A350 Grade LF2 Class 1 Class 3000 MSS SP-97 SW	
1	3	1			P31B-007E6	Outlet ASTM A350 Grade LF2 Class 1 Class 3000 MSS SP-97 SW	
1	4 - 5	1			P31B-0139F	Outlet ASTM A350 Grade LF2 Class 1 Class 3000 MSS SP-97 SW	
1	6 - 10	1			P31B-007E3	Outlet ASTM A350 Grade LF2 Class 1 Class 3000 MSS SP-97 SW	
1	12 - 36	1			P31B-007E9	Outlet ASTM A350 Grade LF2 Class 1 Class 3000 MSS SP-97 SW	
1	4	1.5			P31B-005TT	Outlet ASTM A350 Grade LF2 Class 1 Class 3000 MSS SP-97 SW	
1	5 - 6	1.5			P31B-0139G	Outlet ASTM A350 Grade LF2 Class 1 Class 3000 MSS SP-97 SW	
1	8 - 12	1.5			P31B-007DT	Outlet ASTM A350 Grade LF2 Class 1 Class 3000 MSS SP-97 SW	
1	14 - 24	1.5			P31B-007DZ	Outlet ASTM A350 Grade LF2 Class 1 Class 3000 MSS SP-97 SW	
541	1	0.75			P31B-004MV	Outlet ASTM A350 Grade LF2 Class 1 Class 3000 MSS SP-97 NPT	
541	1.5	0.75			P31B-004MZ	Outlet ASTM A350 Grade LF2 Class 1 Class 3000 MSS SP-97 NPT	
541	2 - 2.5	0.75			P31B-0139H	Outlet ASTM A350 Grade LF2 Class 1 Class 3000 MSS SP-97 NPT	
541	3 - 5	0.75			P31B-0139J	Outlet ASTM A350 Grade LF2 Class 1 Class 3000 MSS SP-97 NPT	
541	6 - 12	0.75			P31B-007J5	Outlet ASTM A350 Grade LF2 Class 1 Class 3000 MSS SP-97 NPT	
541	14 - 36	0.75			P31B-007JC	Outlet ASTM A350 Grade LF2 Class 1 Class 3000 MSS SP-97 NPT	
1	6	2	STD	XS	P31B-00MFB	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	8	2	SCH20	XS	P31B-00MFH	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	10	2	SCH20	XS	P31B-00TFX	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	12	2	SCH20	XS	P31B-00TFY	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	14	2	SCH20	XS	P31B-00TFU	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	16	2	SCH20	XS	P31B-00TFZ	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	18	2	SCH20	XS	P31B-00MJS	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	20	2	STD	XS	P31B-00MGK	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	24	2	STD	XS	P31B-00M4U	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	8	3	SCH20	STD	P31B-00MJF	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	10	3	SCH20	STD	P31B-00UPN	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	12	3	SCH20	STD	P31B-00YAM	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	14	3	SCH20	STD	P31B-00UPP	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	16	3	SCH20	STD	P31B-00UP2	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	18	3	SCH20	STD	P31B-00MJT	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	20	3	STD	STD	P31B-00E8N	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	24	3	STD	STD	P31B-00E8T	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	12	4	SCH20	STD	P31B-00YAN	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	14	4	SCH20	STD	P31B-00UPR	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	16	4	SCH20	STD	P31B-00UP3	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	

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OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	18	4	SCH20	STD	P31B-00MJU	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	20	4	STD	STD	P31B-00E88	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	24	4	STD	STD	P31B-00E8C	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	18	6	SCH20	STD	P31B-00MJV	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	20	6	STD	STD	P31B-00E86	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	24	6	STD	STD	P31B-00E84	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30B-0002V	Plug ASTM A350 Grade LF2 Class 1 ASME B16.11 NPT Round head	
1	0.75				P30B-0002W	Plug ASTM A350 Grade LF2 Class 1 ASME B16.11 NPT Round head	
1	1				P30B-0002X	Plug ASTM A350 Grade LF2 Class 1 ASME B16.11 NPT Round head	
1	1.5				P30B-0002Y	Plug ASTM A350 Grade LF2 Class 1 ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P61B-001MS	Flange SW ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	0.75		XS		P61B-001MT	Flange SW ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	1		XS		P61B-001MV	Flange SW ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	1.5		XS		P61B-001NF	Flange SW ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	2		XS		P61B-003R0	Flange WN ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	3		STD		P61B-001SY	Flange WN ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	4		STD		P61B-001VW	Flange WN ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	6		STD		P61B-001J0	Flange WN ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	8		SCH20		P61B-001X9	Flange WN ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	10		SCH20		P61B-0021J	Flange WN ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	12		SCH20		P61B-00227	Flange WN ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	14		SCH20		P61B-0022R	Flange WN ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	16		SCH20		P61B-00232	Flange WN ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	18		SCH20		P61B-0023B	Flange WN ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	20		STD		P61B-001S3	Flange WN ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	24		STD		P61B-001SW	Flange WN ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
773	0.5		XS		P61B-001K3	Flange SW ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
773	0.75		XS		P61B-001K4	Flange SW ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
773	1		XS		P61B-001L7	Flange SW ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
773	1.5		XS		P61B-001LD	Flange SW ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
773	2		XS		P61B-003R8	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
773	3		STD		P61B-001MB	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
773	4		STD		P61B-001N0	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
773	6		STD		P61B-001NM	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
773	8		SCH20		P61B-002RS	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
773	10		SCH20		P61B-002RJ	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
773	12		SCH20		P61B-002RK	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
773	14		SCH20		P61B-002RL	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
773	16		SCH20		P61B-002RM	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
773	18		SCH20		P61B-002RN	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
773	20		STD		P61B-001NB	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
773	24		STD		P61B-001P1	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
781	2		XS		P61B-001FN	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
781	3		STD		P61B-001TV	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
781	4		STD		P61B-001VT	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
781	6		STD		P61B-001JV	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
781	8		SCH20		P61B-003ZU	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
781	10		SCH20		P61B-006HY	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67B-000K2	Blind flange ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	0.75				P67B-000K3	Blind flange ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	

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BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P67B-000K4	Blind flange ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	1.5				P67B-000K5	Blind flange ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	2				P67B-000KB	Blind flange ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	3				P67B-000KE	Blind flange ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	4				P67B-000KF	Blind flange ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	6				P67B-000KG	Blind flange ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	8				P67B-000KH	Blind flange ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	10				P67B-000K6	Blind flange ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	12				P67B-000K7	Blind flange ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	14				P67B-000K8	Blind flange ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	16				P67B-000K9	Blind flange ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	18				P67B-000KA	Blind flange ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	20				P67B-000KC	Blind flange ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	24				P67B-000KD	Blind flange ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000L8	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000L9	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000LA	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000LB	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000LH	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000LL	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000LM	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	6				P73T-000LN	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	8				P73T-000LP	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	10				P73T-000LC	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	12				P73T-000LD	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	14				P73T-000LE	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	16				P73T-000LF	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	18				P73T-000LG	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	20				P73T-000LJ	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	24				P73T-000LK	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	0.5				P73T-000FT	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	0.75				P73T-000FU	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	3				P73T-000G5	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	4				P73T-000G6	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	6				P73T-000G7	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	8				P73T-000G8	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	10				P73T-000FX	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	12				P73T-000FY	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	14				P73T-000FZ	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	16				P73T-000G0	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	18				P73T-000G1	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	20				P73T-000G3	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

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GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
773	24				P73T-000G4	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	2				P73T-000JH	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	3				P73T-000JL	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	4				P73T-000JM	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	6				P73T-000JN	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	8				P73T-000JP	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	10				P73T-000JC	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-16				See Attached Bolt Table	Bolt and Nut ASTM A320 Grade L7 / A194 Grade 4 ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	18-24				See Attached Bolt Table	Bolt and Nut ASTM A320 Grade L7 / A194 Grade 4 ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
773	0.5-10				See Attached Bolt Table	Bolt and Nut ASTM A320 Grade L7 / A194 Grade 4 ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
773	12-24				See Attached Bolt Table	Bolt and Nut ASTM A320 Grade L7 / A194 Grade 4 ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
781	0.5-6				See Attached Bolt Table	Bolt and Nut ASTM A320 Grade L7 / A194 Grade 4 ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
781	8-12				See Attached Bolt Table	Bolt and Nut ASTM A320 Grade L7 / A194 Grade 4 ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81B-0018C	Gate valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	0.75				P81B-0018D	Gate valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	1				P81B-0018E	Gate valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	1.5				P81B-0018F	Gate valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	2				P81C-004DU	Gate valve ASTM A352 Grade LCC Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	3				P81C-004DV	Gate valve ASTM A352 Grade LCC Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	4				P81C-004DW	Gate valve ASTM A352 Grade LCC Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	6				P81C-004DX	Gate valve ASTM A352 Grade LCC Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	8				P81C-004DY	Gate valve ASTM A352 Grade LCC Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	10				P81C-004DS	Gate valve ASTM A352 Grade LCC Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	12				P81C-004DT	Gate valve ASTM A352 Grade LCC Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	14				P81C-004DZ	Gate valve ASTM A352 Grade LCC Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated	
1	16				P81C-004E0	Gate valve ASTM A352 Grade LCC Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated	
1	18				P81C-004E1	Gate valve ASTM A352 Grade LCC Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated	
1	20				P81C-004E2	Gate valve ASTM A352 Grade LCC Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated	
1	24				P81C-004E3	Gate valve ASTM A352 Grade LCC Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated	
714	0.5				P81B-002S4	Gate valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW - NPT Trim number 12 BB-BG-OS&Y Handwheel operated	
714	0.75				P81B-002FB	Gate valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW - NPT Trim number 12 BB-BG-OS&Y Handwheel operated	
773	2				P81C-004HG	Gate valve ASTM A352 Grade LCC Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82B-0011H	Globe valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	0.75				P82B-0011J	Globe valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	1				P82B-0011K	Globe valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	1.5				P82B-0011L	Globe valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	2				P82C-0026T	Globe valve ASTM A352 Grade LCC Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	

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GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3				P82C-0026U	Globe valve ASTM A352 Grade LCC Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	4				P82C-0026V	Globe valve ASTM A352 Grade LCC Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	6				P82C-0026W	Globe valve ASTM A352 Grade LCC Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	8				P82C-002P1	Globe valve ASTM A352 Grade LCC Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83B-000TS	Check valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 12 Lift-type Bolted cover	
1	0.75				P83B-000TT	Check valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 12 Lift-type Bolted cover	
1	1				P83B-000TU	Check valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 12 Lift-type Bolted cover	
1	1.5				P83B-000TV	Check valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 12 Lift-type Bolted cover	
1	2				P83C-00226	Check valve ASTM A352 Grade LCC Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	3				P83C-00227	Check valve ASTM A352 Grade LCC Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	4				P83C-00228	Check valve ASTM A352 Grade LCC Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	6				P83C-00229	Check valve ASTM A352 Grade LCC Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	8				P83C-0022A	Check valve ASTM A352 Grade LCC Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	10				P83C-00221	Check valve ASTM A352 Grade LCC Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	

ORIFICE FLANGE (FO)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2		XS		P66B-00862	Orifice flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	3		STD		P66B-00863	Orifice flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	4		STD		P66B-00864	Orifice flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	6		STD		P66B-00865	Orifice flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	8		SCH20		P66B-00866	Orifice flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	10		SCH20		P66B-0086G	Orifice flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	12		SCH20		P66B-0086H	Orifice flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	14		SCH20		P66B-0086J	Orifice flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	16		SCH20		P66B-0086K	Orifice flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	18		SCH20		P66B-0086L	Orifice flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	20		STD		P66B-0086M	Orifice flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	24		STD		P66B-0086N	Orifice flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
200	2		XS		P66B-00869	Orifice flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	3		STD		P66B-0086A	Orifice flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	4		STD		P66B-0086B	Orifice flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	6		STD		P66B-0086C	Orifice flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	8		SCH20		P66B-0086D	Orifice flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	10		SCH20		P66B-0086P	Orifice flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	12		SCH20		P66B-0086R	Orifice flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	14		SCH20		P66B-0086S	Orifice flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	16		SCH20		P66B-0086T	Orifice flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	18		SCH20		P66B-0086U	Orifice flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	20		STD		P66B-0086V	Orifice flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	24		STD		P66B-0086W	Orifice flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71B-0008T	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	0.75				P71B-0008U	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	1				P71B-0008V	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71B-0008W	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF	

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SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2				P71B-0008Z	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	3				P71B-00090	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	4				P71B-00091	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	6				P71B-00092	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	8				P71B-00093	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	10				P71B-0008X	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	12				P71B-0008Y	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF	

PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000CP	Paddle blank ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	16				P72B-000CR	Paddle blank ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	18				P72B-000CS	Paddle blank ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	20				P72B-000CT	Paddle blank ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	24				P72B-000CU	Paddle blank ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF	

PADDLE SPACER (PS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000CV	Paddle spacer ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	16				P72B-000CW	Paddle spacer ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	18				P72B-000CX	Paddle spacer ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	20				P72B-000CY	Paddle spacer ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	24				P72B-000CZ	Paddle spacer ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF	

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BOLT TABLE (B_A1GP04 , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	60	P80S-003VJ		
0.75	4	0.500	65	P80S-003VK		
1	4	0.500	70	P80S-003VL		
1.5	4	0.500	75	P80S-003VM		
2	4	0.625	85	P80S-003Z4		
3	4	0.625	95	P80S-003Z6		
4	8	0.625	95	P80S-003Z6		
6	8	0.750	105	P80S-003Z8		
8	8	0.750	110	P80S-003Z9		
10	12	0.875	120	P80S-00462		
12	12	0.875	120	P80S-00462		
14	12	1.000	135	P80S-004BC		
16	16	1.000	140	P80S-004BD		
18	16	1.125	150	P80S-004J1		
20	20	1.125	160	P80S-004J3		
24	20	1.250	175	P80S-004LF		

BOLT TABLE (B_A1GP04_773 , STUD ASME RF, OPTION CODE 773)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-003VL		
0.75	4	0.625	75	P80S-003Z2		
1	4	0.625	80	P80S-003Z3		
1.5	4	0.750	95	P80S-0045X		
2	8	0.625	90	P80S-003Z5		
3	8	0.750	110	P80S-003Z9		
4	8	0.750	115	P80S-003ZA		
6	12	0.750	125	P80S-003ZC		
8	12	0.875	140	P80S-00466		
10	16	1.000	160	P80S-004BH		
12	16	1.125	175	P80S-004J7		
14	20	1.125	180	P80S-004J8		
16	20	1.250	190	P80S-004LJ		
18	24	1.250	200	P80S-004LL		
20	24	1.250	210	P80S-004LN		
24	24	1.500	235	P80S-003A7		

BOLT TABLE (B_A1GP04_781 , STUD ASME RF, OPTION CODE 781)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	80	P80S-003VN		
0.75	4	0.625	90	P80S-003Z5		
1	4	0.625	95	P80S-003Z6		
1.5	4	0.750	110	P80S-003Z9		
2	8	0.625	110	P80S-003VV		
3	8	0.750	130	P80S-003ZD		
4	8	0.875	150	P80S-00468		
6	12	1.000	175	P80S-004BM		
8	12	1.125	195	P80S-004JB		
10	16	1.250	250	P80S-004LX		
12	20	1.250	255	P80S-004LY		
14	20	1.375	270			
16	20	1.500	295			
18	20	1.625	320			
20	24	1.625	335			
24	24	1.875	380			

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BRANCH TABLE (T_A1GP04)

RUN PIPE SIZE (in) \ BRANCH SIZE (in)	0.5	0.75	1	1.5	2	3	4	6	8	10	12	14	16	18	20	24
0.5	TS															
0.75		TS														
1		TR	TS													
1.5		TR	TR	TS												
2		L	TR	TR	TS											
3		L	L	TR	TR	TS										
4	L	L	L	L	TR	TR	TS									
6	L	L	L	L	L	TR	TR	TS								
8		L	L	L	L	L	TR	TR	TS							
10		L	L	L	L	L	TR	TR	TR	TS						
12		L	L	L	L	L	L	TR	TR	TR	TS					
14		L	L	L	L	L	L	TR	TR	TR	TR	TS				
16		L	L	L	L	L	L	TR	TR	TR	TR	TR	TS			
18		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TS		
20		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TR	TS	
24		L	L	L	L	L	L	L	9PD	TR	TR	TR	TR	TR	TR	TS

TS : STRAIGHT TEE
TR : REDUCING TEE
9PD : REINFORCING PAD 90 DEG
L : OUTLET

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PIPING CLASS

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Material	:	LTCS
Rating	:	ASME CLASS 150
Flange Face	:	RF
C.A.(mm)	:	1.50
Gasket	:	Spiral Wound
Service	:	PROCESS - AIV / LOW TEMPERATURE SERVICE : / HYDROCARBONS (LIGHT) / REFRIGERANT / BLOWDOWN HC- WET FLARE / DEPROPANISER OVHD / PROCESS / LP BLOWDOWN
Design Code	:	ASME B31.3
Heat Treatment	:	

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
2	USE OF SOFT SEATED BALL, PLUG AND BUTTERFLY VALVES SHALL BE LIMITED TO MAXIMUM OF 204DEGC (400DEGF)

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
200	WITH JACK SCREW (FO)
541	NPT(F) (CA)
714	SW - NPT(F) (V)
773	CLASS 300 (B,F,G)
781	CLASS 600 (B,F,G)

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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P01A-001Z1	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE	
1	0.75		XXS		P01A-0051V	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE	
1	1		XXS		P01A-003WW	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE	
1	1.5		XXS		P01A-003WX	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE	
1	2		XXS		P01A-003XE	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	3		XXS		P01A-0022E	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	4		SCH160		P01A-002D1	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	6		SCH120		P01A-002D2	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	8		XS		P01A-000YG	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	10		XS		P01A-0022D	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	12		XS		P01A-00227	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	14		XS		P01A-0022C	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	16		XS		P01A-0011L	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	18		XS		P01A-0091T	Pipe ASTM A671 Grade CC60 Class 22 EFW ASME B36.10M/B36.19M BE	
1	20		XS		P01A-0091U	Pipe ASTM A671 Grade CC60 Class 22 EFW ASME B36.10M/B36.19M BE	
1	24		XS		P01A-0091V	Pipe ASTM A671 Grade CC60 Class 22 EFW ASME B36.10M/B36.19M BE	
1	30		XS		P01A-0091W	Pipe ASTM A671 Grade CC60 Class 22 EFW ASME B36.10M/B36.19M BE	
1	36		XS		P01A-0091X	Pipe ASTM A671 Grade CC60 Class 22 EFW ASME B36.10M/B36.19M BE	
1	42		XS		P01A-0042U	Pipe ASTM A671 Grade CC60 Class 22 EFW ASME B36.10M/B36.19M BE	
1	48		XS		P01A-008MW	Pipe ASTM A671 Grade CC60 Class 22 EFW ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P02B-0002X	90 degree elbow ASTM A350 Grade LF2 Class 1 Class 9000 ASME B16.11 SW	
1	0.75				P02B-0008P	90 degree elbow ASTM A350 Grade LF2 Class 1 Class 9000 ASME B16.11 SW	
1	1				P02B-00064	90 degree elbow ASTM A350 Grade LF2 Class 1 Class 9000 ASME B16.11 SW	
1	1.5				P02B-00065	90 degree elbow ASTM A350 Grade LF2 Class 1 Class 9000 ASME B16.11 SW	
1	2		XXS		P02A-002GA	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	3		XXS		P02A-002GL	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	4		SCH160		P02A-00119	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	6		SCH120		P02A-0011A	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	8		XS		P02A-000C4	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	10		XS		P02A-001AX	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	12		XS		P02A-000UG	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	14		XS		P02A-000UE	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	16		XS		P02A-000FJ	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	18		XS		P02A-001K2	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	20		XS		P02A-001K3	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	24		XS		P02A-001K4	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	30		XS		P02A-000FN	90 degree elbow ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Long radius	
1	36		XS		P02A-000EY	90 degree elbow ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Long radius	
1	42		XS		P02A-000EK	90 degree elbow ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Long radius	
1	48		XS		P02A-000CV	90 degree elbow ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P03B-0002T	45 degree elbow ASTM A350 Grade LF2 Class 1 Class 9000 ASME B16.11 SW	
1	0.75				P03B-0008A	45 degree elbow ASTM A350 Grade LF2 Class 1 Class 9000 ASME B16.11 SW	
1	1				P03B-0005S	45 degree elbow ASTM A350 Grade LF2 Class 1 Class 9000 ASME B16.11 SW	
1	1.5				P03B-0005T	45 degree elbow ASTM A350 Grade LF2 Class 1 Class 9000 ASME B16.11 SW	
1	2		XXS		P03A-002DT	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	3		XXS		P03A-002E7	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	4		SCH160		P03A-000XS	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	6		SCH120		P03A-000XT	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	8		XS		P03A-000AH	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	10		XS		P03A-0016V	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	12		XS		P03A-000RG	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	14		XS		P03A-000RE	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	16		XS		P03A-000DJ	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	

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45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	18		XS		P03A-001E6	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	20		XS		P03A-001E7	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	24		XS		P03A-001E8	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	30		XS		P03A-000DN	45 degree elbow ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Long radius	
1	36		XS		P03A-000CT	45 degree elbow ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Long radius	
1	42		XS		P03A-000AJ	45 degree elbow ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Long radius	
1	48		XS		P03A-000B2	45 degree elbow ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Long radius	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	XXS	XXS	P27A-00B9N	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	4	2	SCH160	XXS	P27A-0038R	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	4	3	SCH160	XXS	P27A-00B9R	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	6	3	SCH120	XXS	P27A-00J6V	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	6	4	SCH120	SCH160	P27A-0038U	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	8	4	XS	SCH160	P27A-00J6W	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	8	6	XS	SCH120	P27A-00BN7	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	4	XS	SCH160	P27A-00J6X	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	6	XS	SCH120	P27A-00J6Y	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	8	XS	XS	P27A-004CZ	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	6	XS	SCH120	P27A-00J6Z	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	8	XS	XS	P27A-004D2	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	10	XS	XS	P27A-004D0	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	6	XS	SCH120	P27A-00J70	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	8	XS	XS	P27A-004D5	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	10	XS	XS	P27A-004D3	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	12	XS	XS	P27A-002R0	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	8	XS	XS	P27A-00J71	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	10	XS	XS	P27A-008C2	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	12	XS	XS	P27A-008C3	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	14	XS	XS	P27A-008C4	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	18	10	XS	XS	P27A-00D86	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	18	12	XS	XS	P27A-002PW	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	18	14	XS	XS	P27A-002PT	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	18	16	XS	XS	P27A-001S3	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	20	12	XS	XS	P27A-00D87	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	20	14	XS	XS	P27A-00D88	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	20	16	XS	XS	P27A-001RM	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	20	18	XS	XS	P27A-001S2	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	24	16	XS	XS	P27A-001P1	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	24	18	XS	XS	P27A-001PR	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	24	20	XS	XS	P27A-001RJ	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	30	20	XS	XS	P27A-001NZ	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	30	24	XS	XS	P27A-001R5	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	36	24	XS	XS	P27A-001NR	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	36	30	XS	XS	P27A-001GB	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	42	30	XS	XS	P27A-001F7	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	42	36	XS	XS	P27A-001G9	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	48	42	XS	XS	P27A-001BN	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	XXS	XXS	P28A-0083N	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	4	2	SCH160	XXS	P28A-00387	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	4	3	SCH160	XXS	P28A-0083R	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	6	3	SCH120	XXS	P28A-00FGV	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	6	4	SCH120	SCH160	P28A-0038A	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	8	4	XS	SCH160	P28A-00FGW	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	8	6	XS	SCH120	P28A-008NG	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	

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ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	10	4	XS	SCH160	P28A-00FGX	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	6	XS	SCH120	P28A-00FGY	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	8	XS	XS	P28A-004CR	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	6	XS	SCH120	P28A-00FGZ	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	8	XS	XS	P28A-004CU	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	10	XS	XS	P28A-004CS	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	6	XS	SCH120	P28A-00FH0	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	8	XS	XS	P28A-004CX	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	10	XS	XS	P28A-004CV	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	12	XS	XS	P28A-002RJ	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	8	XS	XS	P28A-00FH1	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	10	XS	XS	P28A-00526	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	12	XS	XS	P28A-00527	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	14	XS	XS	P28A-00528	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	18	10	XS	XS	P28A-00A8P	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	18	12	XS	XS	P28A-002RG	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	18	14	XS	XS	P28A-002RB	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	18	16	XS	XS	P28A-001SZ	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	20	12	XS	XS	P28A-00A8R	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	20	14	XS	XS	P28A-00A8S	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	20	16	XS	XS	P28A-001SX	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	20	18	XS	XS	P28A-001SY	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	24	16	XS	XS	P28A-001SF	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	24	18	XS	XS	P28A-001SM	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	24	20	XS	XS	P28A-001SU	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	30	20	XS	XS	P28A-001SB	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	30	24	XS	XS	P28A-001SP	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	36	24	XS	XS	P28A-001SA	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	36	30	XS	XS	P28A-001H0	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	42	30	XS	XS	P28A-001FH	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	42	36	XS	XS	P28A-001GR	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	48	42	XS	XS	P28A-001DD	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P29B-0005A	Cap ASTM A350 Grade LF2 Class 1 Class 9000 ASME B16.11 SW	
1	0.75				P29B-0006K	Cap ASTM A350 Grade LF2 Class 1 Class 9000 ASME B16.11 SW	
1	1				P29B-0006L	Cap ASTM A350 Grade LF2 Class 1 Class 9000 ASME B16.11 SW	
1	1.5				P29B-0006M	Cap ASTM A350 Grade LF2 Class 1 Class 9000 ASME B16.11 SW	
1	2		XXS		P29A-0021G	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	3		XXS		P29A-0021H	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	4		SCH160		P29A-000YY	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	6		SCH120		P29A-000YZ	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	8		XS		P29A-000AX	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10		XS		P29A-00167	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12		XS		P29A-000WY	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14		XS		P29A-000WZ	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16		XS		P29A-000DL	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	18		XS		P29A-000DS	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	20		XS		P29A-000CJ	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	24		XS		P29A-000CN	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	30		XS		P29A-000DC	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	36		XS		P29A-000DJ	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	42		XS		P29A-000D4	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	48		XS		P29A-000DA	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
541	0.75				P29B-00015	Cap ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 NPT	

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STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P41A-000DJ	Straight nipple ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		XXS		P41A-000DK	Straight nipple ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		XXS		P41A-000DZ	Straight nipple ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		XXS		P41A-000E0	Straight nipple ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

CON SWAGED NIPPLE (SNC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	XXS	XXS	P42A-0012S	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	XXS	XXS	P42A-0012T	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	XXS	XXS	P42A-0012U	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	XXS	XXS	P42A-0012V	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	XXS	XXS	P42A-0012W	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	XXS	XXS	P42A-000J3	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	XXS	XXS	P42A-0012X	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	XXS	XXS	P42A-0012Y	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	XXS	XXS	P42A-000J4	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	XXS	XXS	P42A-000J5	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	XXS	XXS	P42A-0012Z	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 BE(L) - PE(S)	

ECC SWAGED NIPPLE (SNE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	XXS	XXS	P43A-000R1	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	XXS	XXS	P43A-000R2	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	XXS	XXS	P43A-000R3	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	XXS	XXS	P43A-000R4	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	XXS	XXS	P43A-000R5	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	XXS	XXS	P43A-000AV	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	XXS	XXS	P43A-000R6	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	XXS	XXS	P43A-000R7	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	XXS	XXS	P43A-000AW	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	XXS	XXS	P43A-000AX	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	XXS	XXS	P43A-000R8	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 BE(L) - PE(S)	

COUPLING (CPS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P47B-00036	Coupling ASTM A350 Grade LF2 Class 1 Class 9000 ASME B16.11 SW - SW	
1	0.75				P47B-00097	Coupling ASTM A350 Grade LF2 Class 1 Class 9000 ASME B16.11 SW - SW	
1	1				P47B-00068	Coupling ASTM A350 Grade LF2 Class 1 Class 9000 ASME B16.11 SW - SW	
1	1.5				P47B-00069	Coupling ASTM A350 Grade LF2 Class 1 Class 9000 ASME B16.11 SW - SW	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30B-0002V	Plug ASTM A350 Grade LF2 Class 1 ASME B16.11 NPT Round head	
1	0.75				P30B-0002W	Plug ASTM A350 Grade LF2 Class 1 ASME B16.11 NPT Round head	
1	1				P30B-0002X	Plug ASTM A350 Grade LF2 Class 1 ASME B16.11 NPT Round head	
1	1.5				P30B-0002Y	Plug ASTM A350 Grade LF2 Class 1 ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P61B-0095W	Flange SW ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	0.75		XXS		P61B-00DGE	Flange SW ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	1		XXS		P61B-00DGF	Flange SW ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	1.5		XXS		P61B-00DGG	Flange SW ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	2		XXS		P61B-00CKC	Flange WN ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	3		XXS		P61B-00CPX	Flange WN ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	4		SCH160		P61B-00CS5	Flange WN ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	6		SCH120		P61B-00CTU	Flange WN ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	8		XS		P61B-00CVS	Flange WN ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	

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FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	10		XS		P61B-004RV	Flange WN ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	12		XS		P61B-0032E	Flange WN ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	14		XS		P61B-0032B	Flange WN ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	16		XS		P61B-003RG	Flange WN ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	18		XS		P61B-0032M	Flange WN ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	20		XS		P61B-003RH	Flange WN ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	24		XS		P61B-002U0	Flange WN ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	30		XS		P61B-001VX	Flange WN ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.47 Series B RF	
1	36		XS		P61B-001MZ	Flange WN ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.47 Series B RF	
1	42		XS		P61B-001SE	Flange WN ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.47 Series B RF	
1	48		XS		P61B-001U9	Flange WN ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.47 Series B RF	
773	0.5		XXS		P61B-001D1	Flange SW ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
773	0.75		XXS		P61B-001DC	Flange SW ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
773	1		XXS		P61B-001GK	Flange SW ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
773	1.5		XXS		P61B-001G7	Flange SW ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
773	2		XXS		P61B-00DGH	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
773	3		XXS		P61B-00DGJ	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
773	4		SCH160		P61B-00DGK	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
773	6		SCH120		P61B-00DGL	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
773	8		XS		P61B-00DGM	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
773	10		XS		P61B-004H8	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
773	12		XS		P61B-0032F	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
773	14		XS		P61B-0032C	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
773	16		XS		P61B-001SP	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
773	18		XS		P61B-001UA	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
773	20		XS		P61B-001K7	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
773	24		XS		P61B-001LK	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
773	30		XS		P61B-001MA	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.47 Series B RF	
773	36		XS		P61B-001UD	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.47 Series B RF	
773	42		XS		P61B-001K9	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.47 Series B RF	
773	48		XS		P61B-001MD	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.47 Series B RF	
781	20		XS		P61B-001S9	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
781	30		XS		P61B-001PJ	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.47 Series B RF	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67B-000K2	Blind flange ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	0.75				P67B-000K3	Blind flange ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	1				P67B-000K4	Blind flange ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	1.5				P67B-000K5	Blind flange ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	2				P67B-000KB	Blind flange ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	3				P67B-000KE	Blind flange ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	4				P67B-000KF	Blind flange ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	6				P67B-000KG	Blind flange ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	8				P67B-000KH	Blind flange ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	10				P67B-000K6	Blind flange ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	12				P67B-000K7	Blind flange ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	14				P67B-000K8	Blind flange ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	16				P67B-000K9	Blind flange ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	18				P67B-000KA	Blind flange ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	20				P67B-000KC	Blind flange ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	24				P67B-000KD	Blind flange ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	30				P67B-00146	Blind flange ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.47 Series B RF	
1	36				P67B-00143	Blind flange ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.47 Series B RF	
1	42				P67B-00140	Blind flange ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.47 Series B RF	
1	48				P67B-0013X	Blind flange ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.47 Series B RF	

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GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000L8	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000L9	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000LA	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000LB	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000LH	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000LL	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000LM	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	6				P73T-000LN	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	8				P73T-000LP	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	10				P73T-000LC	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	12				P73T-000LD	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	14				P73T-000LE	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	16				P73T-000LF	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	18				P73T-000LG	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	20				P73T-000LJ	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	24				P73T-000LK	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	30				P73T-000LT	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	36				P73T-000LW	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	42				P73T-000LZ	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	48				P73T-000M2	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	0.5				P73T-000FT	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	0.75				P73T-000FU	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	3				P73T-000G5	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	4				P73T-000G6	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	6				P73T-000G7	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	8				P73T-000G8	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	10				P73T-000FX	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	12				P73T-000FY	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	14				P73T-000FZ	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	16				P73T-000G0	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	18				P73T-000G1	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	20				P73T-000G3	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	24				P73T-000G4	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	30				P73T-000H9	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	36				P73T-000HC	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	42				P73T-000KM	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	48				P73T-000KR	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	20				P73T-000JJ	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	30				P73T-000JT	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	

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BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-16				See Attached Bolt Table	Bolt and Nut ASTM A320 Grade L7 / A194 Grade 4 ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	18-24				See Attached Bolt Table	Bolt and Nut ASTM A320 Grade L7 / A194 Grade 4 ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
1	30-42				See Attached Bolt Table	Bolt and Nut ASTM A320 Grade L7 / A194 Grade 4 ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	48				See Attached Bolt Table	Bolt and Nut ASTM A320 Grade L7 / A194 Grade 4 ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
773	0.5-10				See Attached Bolt Table	Bolt and Nut ASTM A320 Grade L7 / A194 Grade 4 ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
773	12-48				See Attached Bolt Table	Bolt and Nut ASTM A320 Grade L7 / A194 Grade 4 ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
781	18-30				See Attached Bolt Table	Bolt and Nut ASTM A320 Grade L7 / A194 Grade 4 ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81B-00366	Gate valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated AIV service	
1	0.75				P81B-00367	Gate valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated AIV service	
1	1				P81B-00368	Gate valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated AIV service	
1	1.5				P81B-00369	Gate valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated AIV service	
1	2				P81C-009W9	Gate valve ASTM A352 Grade LCC Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated AIV service	
1	3				P81C-009WA	Gate valve ASTM A352 Grade LCC Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated AIV service	
1	4				P81C-009WB	Gate valve ASTM A352 Grade LCC Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated AIV service	
1	6				P81C-009WC	Gate valve ASTM A352 Grade LCC Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated AIV service	
1	8				P81C-009WD	Gate valve ASTM A352 Grade LCC Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated AIV service	
1	10				P81C-009W7	Gate valve ASTM A352 Grade LCC Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated AIV service	
1	12				P81C-009W8	Gate valve ASTM A352 Grade LCC Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated AIV service	
1	14				P81C-009W2	Gate valve ASTM A352 Grade LCC Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated AIV service	
1	16				P81C-009W3	Gate valve ASTM A352 Grade LCC Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated AIV service	
1	18				P81C-009W4	Gate valve ASTM A352 Grade LCC Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated AIV service	
1	20				P81C-009W5	Gate valve ASTM A352 Grade LCC Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated AIV service	
1	24				P81C-009W6	Gate valve ASTM A352 Grade LCC Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated AIV service	
1	30				P81C-009VZ	Gate valve ASTM A352 Grade LCC Class 150 API 600 Flange ASME B16.47-B RF Trim number 12 BB-BG-OS&Y Gear operated AIV service	
1	36				P81C-009W0	Gate valve ASTM A352 Grade LCC Class 150 API 600 Flange ASME B16.47-B RF Trim number 12 BB-BG-OS&Y Gear operated AIV service	
1	42				P81C-009W1	Gate valve ASTM A352 Grade LCC Class 150 API 600 Flange ASME B16.47-B RF Trim number 12 BB-BG-OS&Y Gear operated AIV service	
714	0.5				P81B-0036A	Gate valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW - NPT Trim number 12 BB-BG-OS&Y Handwheel operated AIV service	
714	0.75				P81B-0036B	Gate valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW - NPT Trim number 12 BB-BG-OS&Y Handwheel operated AIV service	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82B-00267	Globe valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated AIV service	
1	0.75				P82B-00268	Globe valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated AIV service	
1	1				P82B-00269	Globe valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated AIV service	
1	1.5				P82B-0026A	Globe valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated AIV service	
1	2				P82C-004KT	Globe valve ASTM A352 Grade LCC Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated AIV service	
1	3				P82C-004KU	Globe valve ASTM A352 Grade LCC Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated AIV service	
1	4				P82C-004KV	Globe valve ASTM A352 Grade LCC Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated AIV service	
1	6				P82C-004KW	Globe valve ASTM A352 Grade LCC Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated AIV service	
1	8				P82C-004KX	Globe valve ASTM A352 Grade LCC Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated AIV service	

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CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83B-001LY	Check valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 12 Lift-type Bolted cover AIV service	
1	0.75				P83B-001LZ	Check valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 12 Lift-type Bolted cover AIV service	
1	1				P83B-001M0	Check valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 12 Lift-type Bolted cover AIV service	
1	1.5				P83B-001M1	Check valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 12 Lift-type Bolted cover AIV service	
1	2				P83C-004DU	Check valve ASTM A352 Grade LCC Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover AIV service	
1	3				P83C-004DV	Check valve ASTM A352 Grade LCC Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover AIV service	
1	4				P83C-004DW	Check valve ASTM A352 Grade LCC Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover AIV service	
1	6				P83C-004DX	Check valve ASTM A352 Grade LCC Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover AIV service	
1	8				P83C-004DY	Check valve ASTM A352 Grade LCC Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover AIV service	
1	10				P83C-004DN	Check valve ASTM A352 Grade LCC Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover AIV service	
1	12				P83C-004DP	Check valve ASTM A352 Grade LCC Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover AIV service	
1	14				P83C-004DR	Check valve ASTM A352 Grade LCC Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover AIV service	
1	16				P83C-004DS	Check valve ASTM A352 Grade LCC Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover AIV service	
1	18				P83C-004DT	Check valve ASTM A352 Grade LCC Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover AIV service	

DP CHECK VALVE (XDP)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	36				P88C-003YR	Dual plate check valve ASTM A352 Grade LCC Class 150 API 594 Wafer-type ASME B16.47-B RF Trim number 12 Internal wetted parts SS316 Spring Inconel Retainerless-type AIV service	

ORIFICE FLANGE (FO)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2		XXS		P66B-008NU	Orifice flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	3		XXS		P66B-008NV	Orifice flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	4		SCH160		P66B-008NW	Orifice flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	6		SCH120		P66B-008NX	Orifice flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	8		XS		P66B-008NY	Orifice flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
200	2		XXS		P66B-008P1	Orifice flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	3		XXS		P66B-008P2	Orifice flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	4		SCH160		P66B-008P3	Orifice flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	6		SCH120		P66B-008P4	Orifice flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	8		XS		P66B-008P5	Orifice flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71B-0008T	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	0.75				P71B-0008U	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	1				P71B-0008V	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71B-0008W	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	2				P71B-0008Z	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	3				P71B-00090	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	4				P71B-00091	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	6				P71B-00092	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	8				P71B-00093	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	10				P71B-0008X	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	12				P71B-0008Y	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF	

PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000CP	Paddle blank ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	16				P72B-000CR	Paddle blank ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	18				P72B-000CS	Paddle blank ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF	

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PADDLE BLANK (PB)							
OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	20				P72B-000CT	Paddle blank ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	24				P72B-000CU	Paddle blank ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	30				P72B-0008S	Paddle blank ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	36				P72B-0008T	Paddle blank ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	42				P72B-0008U	Paddle blank ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	48				P72B-0008V	Paddle blank ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.47-B RF	

PADDLE SPACER (PS)							
OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000CV	Paddle spacer ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	16				P72B-000CW	Paddle spacer ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	18				P72B-000CX	Paddle spacer ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	20				P72B-000CY	Paddle spacer ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	24				P72B-000CZ	Paddle spacer ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	30				P72B-0008K	Paddle spacer ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	36				P72B-0008L	Paddle spacer ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	42				P72B-0008M	Paddle spacer ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	48				P72B-0008N	Paddle spacer ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.47-B RF	

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PIPING CLASS
A1GPVV REV NO. 2

BOLT TABLE (B_A1GPVV , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	60	P80S-003VJ		
0.75	4	0.500	65	P80S-003VK		
1	4	0.500	70	P80S-003VL		
1.5	4	0.500	75	P80S-003VM		
2	4	0.625	85	P80S-003Z4		
3	4	0.625	95	P80S-003Z6		
4	8	0.625	95	P80S-003Z6		
6	8	0.750	105	P80S-003Z8		
8	8	0.750	110	P80S-003Z9		
10	12	0.875	120	P80S-00462		
12	12	0.875	120	P80S-00462		
14	12	1.000	135	P80S-004BC		
16	16	1.000	140	P80S-004BD		
18	16	1.125	150	P80S-004J1		
20	20	1.125	160	P80S-004J3		
24	20	1.250	175	P80S-004LF		
30	44	0.750	145	P80S-003ZG		
36	44	0.875	175	P80S-00485		
42	48	1.000	190	P80S-004BR		
48	44	1.125	210	P80S-004JE		

BOLT TABLE (B_A1GPVV_773 , STUD ASME RF, OPTION CODE 773)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-003VL		
0.75	4	0.625	75	P80S-003Z2		
1	4	0.625	80	P80S-003Z3		
1.5	4	0.750	95	P80S-0045X		
2	8	0.625	90	P80S-003Z5		
3	8	0.750	110	P80S-003Z9		
4	8	0.750	115	P80S-003ZA		
6	12	0.750	125	P80S-003ZC		
8	12	0.875	140	P80S-00466		
10	16	1.000	160	P80S-004BH		
12	16	1.125	175	P80S-004J7		
14	20	1.125	180	P80S-004J8		
16	20	1.250	190	P80S-004LJ		
18	24	1.250	200	P80S-004LL		
20	24	1.250	210	P80S-004LN		
24	24	1.500	235	P80S-003A7		
30	36	1.375	285	P80S-00399		
36	32	1.625	320	P80S-00CB3		
42	36	1.750	355	P80S-0096R		
48	40	1.875	380	P80S-00ACJ		

BOLT TABLE (B_A1GPVV_781 , STUD ASME RF, OPTION CODE 781)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	80			
0.75	4	0.625	90			
1	4	0.625	95			
1.5	4	0.750	110			
2	8	0.625	110			
3	8	0.750	130			
4	8	0.875	150			
6	12	1.000	175			
8	12	1.125	195			
10	16	1.250	250			
12	20	1.250	255			
14	20	1.375	270			
16	20	1.500	295			
18	20	1.625	320	P80S-00CB3		
20	24	1.625	335	P80S-00CB6		
24	24	1.875	380	P80S-00ACJ		
30	28	1.875	435	P80S-00ACW		
36	28	2.250	510			
42	28	2.500	575			
48	32	2.750	635			

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PIPING CLASS

A1GPVV

REV NO. 2

BRANCH TABLE (T_A1GPVV)

RUN PIPE SIZE (in) \ BRANCH SIZE (in)	0.5	0.75	1	1.5	2	3	4	6	8	10	12	14	16	18	20	24	30	36	42	48
0.5	TS																			
0.75		TS																		
1		TR	TS																	
1.5		TR	TR	TS																
2		L	TR	TR	TS															
3		L	L	TR	TR	TS														
4	L	L	L	L	TR	TR	TS													
6	L	L	L	L	L	TR	TR	TS												
8		L	L	L	L	L	TR	TR	TS											
10		L	L	L	L	L	TR	TR	TR	TS										
12		L	L	L	L	L	L	TR	TR	TR	TS									
14		L	L	L	L	L	L	TR	TR	TR	TR	TS								
16		L	L	L	L	L	L	TR	TR	TR	TR	TR	TS							
18		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TS						
20		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TR	TS					
24		L	L	L	L	L	L	L	9PD	TR	TR	TR	TR	TR	TR	TS				
30		L	L	L	L	L	L	L	9PD	TR	TR	TR	TR	TR	TR	TR	TS			
36		L	L	L	L	L	L	L	9PD	9PD	9PD	9PD	TR	TR	TR	TR	TR	TS		
42		L	L	L	L	L	L	L	9PD	9PD	9PD	9PD	TR	TR	TR	TR	TR	TR	TS	
48		L	L	L	L	L	L	L	9PD	9PD	9PD	9PD	9PD	9PD	9PD	TR	TR	TR	TR	TS

TS : STRAIGHT TEE
9PD : REINFORCING PAD 90 DEG
L : OUTLET
TR : REDUCING TEE

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PIPING CLASS

A1GPVV REV NO. 2

BRANCH TABLE (T_A1GPVV_3)

RUN PIPE SIZE (in) \ BRANCH SIZE (in)	0.5	0.75	1	1.5	2	3	4	6	8	10	12	14	16	18	20	24	30	36	42	48
0.5																				
0.75		TLS																		
1		6FP	TLS																	
1.5		6FP	6FP	TLS																
2		6FP	6FP	6FP	TLS															
3		6FP	6FP	6FP	6FP	TLS														
4		6FP	6FP	6FP	6FP	6FP	TLS													
6		6FP	6FP	6FP	6FP	6FP	6FP	TLS												
8		6FP	6FP	6FP	6FP	6FP	6FP	6FP	TLS											
10		6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	TLS										
12		6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	TLS									
14		6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	TLS								
16		6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	TLS							
18		6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	TLS						
20		6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	TLS					
24		6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	TLS				
30		6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	TLS			
36		6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	TLS		
42		6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	TLS	
48		6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	TLS

TLS : STRAIGHT LATERAL TEE
6FP : FULL PAD 60 DEG

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PIPING CLASS

A1J804 REV NO. 2

Material : SS304L
Rating : ASME CLASS 150
Flange Face : RF
C.A.(mm) : 1.50
Gasket : Spiral Wound
Service : PROCESS - BENZENE SERVICE (5% WT)
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
3	STIFFENER RINGS, IF NEEDED, SHALL BE PROVIDED AS PER ASME SEC.VIII, DIV.1 FOR FULL VACUUM CONDITION

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
200	WITH JACK SCREW (FO)
541	NPT(F) (CA,L)
714	SW - NPT(F) (V)
773	CLASS 300 (B,F,G)
781	CLASS 600 (B,F,G)

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PIPING CLASS
A1J804 REV NO. 2

PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P01J-000UC	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE	
1	0.75		SCH80S		P01J-000UD	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE	
1	1		SCH80S		P01J-000UE	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE	
1	1.5		SCH80S		P01J-000UF	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE	
1	2		SCH40S		P01J-000RJ	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M BE	
1	3		SCH40S		P01J-000RK	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M BE	
1	4		SCH40S		P01J-000UG	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M BE	
1	6		SCH40S		P01J-000RH	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M BE	
1	8		SCH40S		P01J-000WC	Pipe ASTM A358 Grade 304/304L Class 1 dual grade EFW ASME B36.10M/B36.19M BE	
1	10		SCH40S		P01J-000W6	Pipe ASTM A358 Grade 304/304L Class 1 dual grade EFW ASME B36.10M/B36.19M BE	
1	12		SCH40S		P01J-000WJ	Pipe ASTM A358 Grade 304/304L Class 1 dual grade EFW ASME B36.10M/B36.19M BE	
1	14		SCH40S		P01J-001J0	Pipe ASTM A358 Grade 304/304L Class 1 dual grade EFW ASME B36.10M/B36.19M BE	
1	16		SCH40S		P01J-0015F	Pipe ASTM A358 Grade 304/304L Class 1 dual grade EFW ASME B36.10M/B36.19M BE	
1	18		SCH40S		P01J-000VK	Pipe ASTM A358 Grade 304/304L Class 1 dual grade EFW ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P02K-0001K	90 degree elbow ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	0.75				P02K-0001L	90 degree elbow ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	1				P02K-0001M	90 degree elbow ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	1.5				P02K-0001N	90 degree elbow ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	2		SCH40S		P02J-000J8	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	3		SCH40S		P02J-000J9	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	4		SCH40S		P02J-000KZ	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	6		SCH40S		P02J-000J4	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	8		SCH40S		P02J-000J7	90 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius	
1	10		SCH40S		P02J-000J5	90 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius	
1	12		SCH40S		P02J-000J6	90 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius	
1	14		SCH40S		P02J-001JG	90 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius	
1	16		SCH40S		P02J-000W7	90 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius	
1	18		SCH40S		P02J-000M3	90 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P03K-0001G	45 degree elbow ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	0.75				P03K-0001H	45 degree elbow ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	1				P03K-0001J	45 degree elbow ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	1.5				P03K-0001K	45 degree elbow ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	2		SCH40S		P03J-000J0	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	3		SCH40S		P03J-000J1	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	4		SCH40S		P03J-000KL	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	6		SCH40S		P03J-000HW	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	8		SCH40S		P03J-000HZ	45 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius	
1	10		SCH40S		P03J-000HX	45 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius	
1	12		SCH40S		P03J-000HY	45 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius	
1	14		SCH40S		P03J-001GU	45 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius	
1	16		SCH40S		P03J-000VN	45 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius	
1	18		SCH40S		P03J-000LR	45 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P21K-0001G	Straight tee ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	

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STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75				P21K-0001H	Straight tee ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	1				P21K-0001J	Straight tee ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	1.5				P21K-0001K	Straight tee ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	2		SCH40S		P21J-000HW	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	3		SCH40S		P21J-000HX	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	4		SCH40S		P21J-000KK	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	6		SCH40S		P21J-000HS	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	8		SCH40S		P21J-000HV	Straight tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	10		SCH40S		P21J-000HT	Straight tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	12		SCH40S		P21J-000HU	Straight tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	14		SCH40S		P21J-001AL	Straight tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	16		SCH40S		P21J-000VU	Straight tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	18		SCH40S		P21J-000LP	Straight tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75			P24K-0001X	Reducing tee ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	1.5	0.75			P24K-0001Z	Reducing tee ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	1.5	1			P24K-00020	Reducing tee ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	2	1	SCH40S	SCH80S	P24J-002SE	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	2	1.5	SCH40S	SCH80S	P24J-002SF	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	3	1.5	SCH40S	SCH80S	P24J-002SG	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	3	2	SCH40S	SCH40S	P24J-002HM	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	4	2	SCH40S	SCH40S	P24J-002SH	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	4	3	SCH40S	SCH40S	P24J-002SJ	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	6	3	SCH40S	SCH40S	P24J-002SK	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	6	4	SCH40S	SCH40S	P24J-002SL	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	8	4	SCH40S	SCH40S	P24J-005P4	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	8	6	SCH40S	SCH40S	P24J-002HF	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	10	4	SCH40S	SCH40S	P24J-007JN	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	10	6	SCH40S	SCH40S	P24J-002HH	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	10	8	SCH40S	SCH40S	P24J-002HJ	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	12	6	SCH40S	SCH40S	P24J-007JM	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	12	8	SCH40S	SCH40S	P24J-002HL	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	12	10	SCH40S	SCH40S	P24J-002HK	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	14	6	SCH40S	SCH40S	P24J-007JK	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	14	8	SCH40S	SCH40S	P24J-007JL	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	14	10	SCH40S	SCH40S	P24J-0062J	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	14	12	SCH40S	SCH40S	P24J-0062K	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	16	6	SCH40S	SCH40S	P24J-007JH	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	16	8	SCH40S	SCH40S	P24J-007JJ	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	16	10	SCH40S	SCH40S	P24J-0062L	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	16	12	SCH40S	SCH40S	P24J-0062M	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	16	14	SCH40S	SCH40S	P24J-0062N	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	18	8	SCH40S	SCH40S	P24J-007JG	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	18	10	SCH40S	SCH40S	P24J-0062P	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	18	12	SCH40S	SCH40S	P24J-0062R	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	18	14	SCH40S	SCH40S	P24J-0062S	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	18	16	SCH40S	SCH40S	P24J-0062A	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	SCH40S	SCH40S	P27J-001R7	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	4	2	SCH40S	SCH40S	P27J-001X4	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	4	3	SCH40S	SCH40S	P27J-001X5	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	6	3	SCH40S	SCH40S	P27J-001X6	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	6	4	SCH40S	SCH40S	P27J-001X7	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	8	4	SCH40S	SCH40S	P27J-004JS	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	8	6	SCH40S	SCH40S	P27J-001R0	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	10	4	SCH40S	SCH40S	P27J-004JT	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	10	6	SCH40S	SCH40S	P27J-001R2	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	10	8	SCH40S	SCH40S	P27J-001R3	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	12	6	SCH40S	SCH40S	P27J-001R5	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	12	8	SCH40S	SCH40S	P27J-001R6	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	12	10	SCH40S	SCH40S	P27J-001R4	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	14	6	SCH40S	SCH40S	P27J-004KV	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	14	8	SCH40S	SCH40S	P27J-004KW	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	14	10	SCH40S	SCH40S	P27J-004KT	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	14	12	SCH40S	SCH40S	P27J-004KU	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	16	8	SCH40S	SCH40S	P27J-004JK	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	16	10	SCH40S	SCH40S	P27J-004JH	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	16	12	SCH40S	SCH40S	P27J-004KX	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	16	14	SCH40S	SCH40S	P27J-004KY	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	18	10	SCH40S	SCH40S	P27J-004JL	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	18	12	SCH40S	SCH40S	P27J-004KZ	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	18	14	SCH40S	SCH40S	P27J-004L0	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	18	16	SCH40S	SCH40S	P27J-004JM	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	SCH40S	SCH40S	P28J-001PP	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	4	2	SCH40S	SCH40S	P28J-001WF	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	4	3	SCH40S	SCH40S	P28J-001WG	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	6	3	SCH40S	SCH40S	P28J-001WH	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	6	4	SCH40S	SCH40S	P28J-001WJ	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	8	4	SCH40S	SCH40S	P28J-004K9	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	8	6	SCH40S	SCH40S	P28J-001PG	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	10	4	SCH40S	SCH40S	P28J-004KA	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	10	6	SCH40S	SCH40S	P28J-001PJ	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	10	8	SCH40S	SCH40S	P28J-001PK	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	12	6	SCH40S	SCH40S	P28J-001PM	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	12	8	SCH40S	SCH40S	P28J-001PN	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	12	10	SCH40S	SCH40S	P28J-001PL	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	14	6	SCH40S	SCH40S	P28J-004LC	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	14	8	SCH40S	SCH40S	P28J-004LD	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	14	10	SCH40S	SCH40S	P28J-004LA	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	14	12	SCH40S	SCH40S	P28J-004LB	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	16	8	SCH40S	SCH40S	P28J-004K3	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	16	10	SCH40S	SCH40S	P28J-004K1	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	16	12	SCH40S	SCH40S	P28J-004LE	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	16	14	SCH40S	SCH40S	P28J-004LF	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	18	10	SCH40S	SCH40S	P28J-004K4	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	18	12	SCH40S	SCH40S	P28J-004LG	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	18	14	SCH40S	SCH40S	P28J-004LH	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	18	16	SCH40S	SCH40S	P28J-004K5	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P29K-0001V	Cap ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	0.75				P29K-0001W	Cap ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	1				P29K-0001X	Cap ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	1.5				P29K-0001Y	Cap ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	2		SCH40S		P29J-000G9	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	3		SCH40S		P29J-000GA	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	4		SCH40S		P29J-000JB	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	6		SCH40S		P29J-000G5	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	8		SCH40S		P29J-000LU	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	10		SCH40S		P29J-000KM	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	

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CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	12		SCH40S		P29J-000KN	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	14		SCH40S		P29J-0015L	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	16		SCH40S		P29J-000TZ	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	18		SCH40S		P29J-000JY	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
541	0.75				P29K-00020	Cap ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P41J-001V7	Straight nipple ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		SCH160		P41J-001V8	Straight nipple ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		SCH160		P41J-001V2	Straight nipple ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		SCH160		P41J-001V9	Straight nipple ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

CON SWAGED NIPPLE (SNC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH80S	SCH80S	P42J-00081	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	SCH80S	SCH80S	P42J-00082	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	SCH80S	SCH80S	P42J-00083	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	SCH80S	SCH80S	P42J-00084	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	SCH80S	SCH80S	P42J-00085	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	SCH80S	SCH80S	P42J-00086	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	SCH40S	SCH80S	P42J-0009M	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	SCH40S	SCH80S	P42J-0009N	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	SCH40S	SCH80S	P42J-0009P	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	SCH40S	SCH80S	P42J-0009R	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	SCH40S	SCH80S	P42J-000GL	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	

ECC SWAGED NIPPLE (SNE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH80S	SCH80S	P43J-0008D	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	SCH80S	SCH80S	P43J-0008E	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	SCH80S	SCH80S	P43J-0008F	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	SCH80S	SCH80S	P43J-0008G	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	SCH80S	SCH80S	P43J-0008H	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	SCH80S	SCH80S	P43J-0008J	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	SCH40S	SCH80S	P43J-0008K	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	SCH40S	SCH80S	P43J-0008L	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	SCH40S	SCH80S	P43J-0008M	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	SCH40S	SCH80S	P43J-0008N	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	SCH40S	SCH80S	P43J-000DL	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	

COUPLING (CPS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P47K-00035	Coupling ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW - SW	
1	0.75				P47K-00036	Coupling ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW - SW	
1	1				P47K-00037	Coupling ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW - SW	
1	1.5				P47K-00038	Coupling ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW - SW	

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OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2 - 2.5	0.75			P31K-00GFG	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 SW	
1	3 - 5	0.75			P31K-00GFH	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 SW	
1	6 - 12	0.75			P31K-008YY	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 SW	
1	14 - 36	0.75			P31K-008YC	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 SW	
1	3	1			P31K-008ZG	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 SW	
1	4 - 5	1			P31K-00GFL	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 SW	
1	6 - 10	1			P31K-008ZU	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 SW	
1	12 - 36	1			P31K-008Z6	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 SW	
1	4	1.5			P31K-0099M	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 SW	
1	5 - 6	1.5			P31K-00GFS	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 SW	
1	8 - 12	1.5			P31K-0099Z	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 SW	
1	14 - 24	1.5			P31K-00991	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 SW	
541	1	0.75			P31K-00911	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 NPT	
541	1.5	0.75			P31K-00916	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 NPT	
541	2 - 2.5	0.75			P31K-00GFJ	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 NPT	
541	3 - 5	0.75			P31K-00GFK	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 NPT	
541	6 - 12	0.75			P31K-0091X	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 NPT	
541	14 - 36	0.75			P31K-0091B	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 NPT	
1	6	2	SCH40S	SCH40S	P31K-005N5	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	8	2	SCH40S	SCH40S	P31K-007G9	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	10	2	SCH40S	SCH40S	P31K-00753	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	12	2	SCH40S	SCH40S	P31K-00761	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	14	2	SCH40S	SCH40S	P31K-0076Y	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	16	2	SCH40S	SCH40S	P31K-00780	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	18	2	SCH40S	SCH40S	P31K-0078Z	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	8	3	SCH40S	SCH40S	P31K-007Y2	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	10	3	SCH40S	SCH40S	P31K-007KW	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	12	3	SCH40S	SCH40S	P31K-007LX	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	14	3	SCH40S	SCH40S	P31K-007MZ	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	16	3	SCH40S	SCH40S	P31K-007P4	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	18	3	SCH40S	SCH40S	P31K-007R5	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	12	4	SCH40S	SCH40S	P31K-0081E	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	14	4	SCH40S	SCH40S	P31K-0082J	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	16	4	SCH40S	SCH40S	P31K-0083T	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	18	4	SCH40S	SCH40S	P31K-0084W	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	18	6	SCH40S	SCH40S	P31K-008FB	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30K-0001G	Plug ASTM A182 Grade F304/F304L dual grade ASME B16.11 NPT Round head	
1	0.75				P30K-0001H	Plug ASTM A182 Grade F304/F304L dual grade ASME B16.11 NPT Round head	
1	1				P30K-0001J	Plug ASTM A182 Grade F304/F304L dual grade ASME B16.11 NPT Round head	
1	1.5				P30K-0001K	Plug ASTM A182 Grade F304/F304L dual grade ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P61K-003A4	Flange SW ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	0.75		SCH80S		P61K-003A5	Flange SW ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	1		SCH80S		P61K-003A6	Flange SW ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	1.5		SCH80S		P61K-003A7	Flange SW ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	2		SCH40S		P61K-0027Y	Flange WN ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	3		SCH40S		P61K-00280	Flange WN ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	4		SCH40S		P61K-00281	Flange WN ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	6		SCH40S		P61K-0024K	Flange WN ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	8		SCH40S		P61K-002EH	Flange WN ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	10		SCH40S		P61K-0063D	Flange WN ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	12		SCH40S		P61K-0061L	Flange WN ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	14		SCH40S		P61K-0063E	Flange WN ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	16		SCH40S		P61K-0061M	Flange WN ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	18		SCH40S		P61K-0045V	Flange WN ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
773	0.5		SCH80S		P61K-003A9	Flange SW ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
773	0.75		SCH80S		P61K-003AA	Flange SW ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
773	1		SCH80S		P61K-003AB	Flange SW ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
773	1.5		SCH80S		P61K-003AC	Flange SW ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
773	2		SCH40S		P61K-0028R	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
773	3		SCH40S		P61K-0028S	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
773	4		SCH40S		P61K-0028T	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
773	6		SCH40S		P61K-0023Z	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
773	8		SCH40S		P61K-00240	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
773	10		SCH40S		P61K-0023U	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
773	12		SCH40S		P61K-0023V	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
773	14		SCH40S		P61K-00473	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
773	16		SCH40S		P61K-002MM	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
773	18		SCH40S		P61K-0029T	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
781	0.5		SCH80S		P61K-003AT	Flange SW ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 RF	
781	0.75		SCH80S		P61K-003AU	Flange SW ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 RF	
781	1		SCH80S		P61K-003AV	Flange SW ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 RF	
781	1.5		SCH80S		P61K-003AW	Flange SW ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 RF	
781	2		SCH40S		P61K-002KM	Flange WN ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 RF	
781	3		SCH40S		P61K-002P2	Flange WN ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 RF	
781	4		SCH40S		P61K-002P3	Flange WN ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 RF	
781	6		SCH40S		P61K-00293	Flange WN ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 RF	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67K-000K9	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	0.75				P67K-000KA	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	1				P67K-000KB	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	1.5				P67K-000KC	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	2				P67K-000KD	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	3				P67K-000KE	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	4				P67K-000KF	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	6				P67K-000KG	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	8				P67K-000L7	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	10				P67K-000L1	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	12				P67K-000L2	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	14				P67K-000L3	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	16				P67K-000L4	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	18				P67K-000L5	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000L8	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000L9	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000LA	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000LB	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000LH	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000LL	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000LM	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	6				P73T-000LN	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	8				P73T-000LP	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	10				P73T-000LC	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	12				P73T-000LD	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	14				P73T-000LE	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

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GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	16				P73T-000LF	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	18				P73T-000LG	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	0.5				P73T-000FT	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	0.75				P73T-000FU	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	3				P73T-000G5	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	4				P73T-000G6	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	6				P73T-000G7	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	8				P73T-000G8	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	10				P73T-000FX	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	12				P73T-000FY	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	14				P73T-000FZ	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	16				P73T-000G0	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	18				P73T-000G1	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	0.5				P73T-000J8	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	0.75				P73T-000J9	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1				P73T-000JA	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1.5				P73T-000JB	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	2				P73T-000JH	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	3				P73T-000JL	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	4				P73T-000JM	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	6				P73T-000JN	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-16				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	18				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
773	0.5-10				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
773	12-18				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
781	0.5-6				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81K-001GE	Gate valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated Benzene service	
1	0.75				P81K-001GF	Gate valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated Benzene service	
1	1				P81K-001GG	Gate valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated Benzene service	
1	1.5				P81K-001GH	Gate valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated Benzene service	
1	2				P81L-002Z7	Gate valve ASTM A351 Grade CF8 Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Benzene service	
1	3				P81L-002Z8	Gate valve ASTM A351 Grade CF8 Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Benzene service	
1	4				P81L-002Z9	Gate valve ASTM A351 Grade CF8 Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Benzene service	
1	6				P81L-002ZA	Gate valve ASTM A351 Grade CF8 Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Benzene service	
1	8				P81L-002ZB	Gate valve ASTM A351 Grade CF8 Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Benzene service	
1	10				P81L-002Z5	Gate valve ASTM A351 Grade CF8 Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Benzene service	

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GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	12				P81L-002Z6	Gate valve ASTM A351 Grade CF8 Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Benzene service	
1	14				P81L-002ZC	Gate valve ASTM A351 Grade CF8 Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Benzene service	
1	16				P81L-002ZD	Gate valve ASTM A351 Grade CF8 Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Benzene service	
1	18				P81L-002ZE	Gate valve ASTM A351 Grade CF8 Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Benzene service	
714	0.5				P81K-001LN	Gate valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW - NPT Trim number 12 BB-BG-OS&Y Handwheel operated Benzene service	
714	0.75				P81K-001GJ	Gate valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW - NPT Trim number 12 BB-BG-OS&Y Handwheel operated Benzene service	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82K-00108	Globe valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated Benzene service	
1	0.75				P82K-00109	Globe valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated Benzene service	
1	1				P82K-0010A	Globe valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated Benzene service	
1	1.5				P82K-0010B	Globe valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated Benzene service	
1	2				P82L-001MA	Globe valve ASTM A351 Grade CF8 Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Benzene service	
1	3				P82L-001MB	Globe valve ASTM A351 Grade CF8 Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Benzene service	
1	4				P82L-001MC	Globe valve ASTM A351 Grade CF8 Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Benzene service	
1	6				P82L-001MD	Globe valve ASTM A351 Grade CF8 Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Benzene service	
1	8				P82L-001ME	Globe valve ASTM A351 Grade CF8 Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Benzene service	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83K-000LM	Check valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 Lift-type Bolted cover	
1	0.75				P83K-000LN	Check valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 Lift-type Bolted cover	
1	1				P83K-000LP	Check valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 Lift-type Bolted cover	
1	1.5				P83K-000LR	Check valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 Lift-type Bolted cover	
1	2				P83L-00196	Check valve ASTM A351 Grade CF8 Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	3				P83L-00197	Check valve ASTM A351 Grade CF8 Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	4				P83L-00198	Check valve ASTM A351 Grade CF8 Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	6				P83L-0019U	Check valve ASTM A351 Grade CF8 Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	8				P83L-0019V	Check valve ASTM A351 Grade CF8 Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	10				P83L-001AA	Check valve ASTM A351 Grade CF8 Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	12				P83L-001AB	Check valve ASTM A351 Grade CF8 Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	14				P83L-001AC	Check valve ASTM A351 Grade CF8 Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	16				P83L-001AD	Check valve ASTM A351 Grade CF8 Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	18				P83L-001AE	Check valve ASTM A351 Grade CF8 Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	

ORIFICE FLANGE (FO)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2		SCH40S		P66K-0032H	Orifice flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	3		SCH40S		P66K-0032J	Orifice flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	4		SCH40S		P66K-0032K	Orifice flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	6		SCH40S		P66K-00315	Orifice flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	8		SCH40S		P66K-0031K	Orifice flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	10		SCH40S		P66K-003VZ	Orifice flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	12		SCH40S		P66K-0032E	Orifice flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	14		SCH40S		P66K-003W0	Orifice flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	16		SCH40S		P66K-0032F	Orifice flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	18		SCH40S		P66K-0032G	Orifice flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
200	2		SCH40S		P66K-0032P	Orifice flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	3		SCH40S		P66K-0032R	Orifice flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	4		SCH40S		P66K-0032S	Orifice flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	6		SCH40S		P66K-0031H	Orifice flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	8		SCH40S		P66K-0031L	Orifice flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	10		SCH40S		P66K-003W1	Orifice flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	12		SCH40S		P66K-0032L	Orifice flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	14		SCH40S		P66K-003W2	Orifice flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	16		SCH40S		P66K-0032M	Orifice flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	18		SCH40S		P66K-0032N	Orifice flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71K-00065	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	0.75				P71K-00066	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	1				P71K-00067	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71K-00068	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	2				P71K-0006A	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	3				P71K-0006B	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	4				P71K-0006C	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	6				P71K-0006D	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	8				P71K-0006E	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	10				P71K-00069	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	12				P71K-0006F	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	

PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72K-0003T	Paddle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	16				P72K-0003U	Paddle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	18				P72K-0003V	Paddle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	

PADDLE SPACER (PS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72K-0003Y	Paddle spacer ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	16				P72K-0003Z	Paddle spacer ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	18				P72K-00040	Paddle spacer ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	

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BOLT TABLE (B_A1J804 , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	60	P80S-003V2		
0.75	4	0.500	65	P80S-003V3		
1	4	0.500	70	P80S-003V4		
1.5	4	0.500	75	P80S-003V5		
2	4	0.625	85	P80S-003XE		
3	4	0.625	95	P80S-003XG		
4	8	0.625	95	P80S-003XG		
6	8	0.750	105	P80S-003XJ		
8	8	0.750	110	P80S-003XK		
10	12	0.875	120	P80S-00419		
12	12	0.875	120	P80S-00419		
14	12	1.000	135	P80S-0043E		
16	16	1.000	140	P80S-0043F		
18	16	1.125	150	P80S-0046K		

BOLT TABLE (B_A1J804_773 , STUD ASME RF, OPTION CODE 773)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-003V4		
0.75	4	0.625	75	P80S-003XC		
1	4	0.625	80	P80S-003XD		
1.5	4	0.750	95	P80S-00414		
2	8	0.625	90	P80S-003XF		
3	8	0.750	110	P80S-003XK		
4	8	0.750	115	P80S-003XL		
6	12	0.750	125	P80S-003XN		
8	12	0.875	140	P80S-0041D		
10	16	1.000	160	P80S-0043K		
12	16	1.125	175	P80S-0046S		
14	20	1.125	180	P80S-0046T		
16	20	1.250	190	P80S-004AK		
18	24	1.250	200	P80S-004AM		

BOLT TABLE (B_A1J804_781 , STUD ASME RF, OPTION CODE 781)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	80	P80S-003V6		
0.75	4	0.625	90	P80S-003XF		
1	4	0.625	95	P80S-003XG		
1.5	4	0.750	110	P80S-003XK		
2	8	0.625	110	P80S-003VC		
3	8	0.750	130	P80S-003XP		
4	8	0.875	150	P80S-0041F		
6	12	1.000	175	P80S-0043P		
8	12	1.125	195			
10	16	1.250	250			
12	20	1.250	255			
14	20	1.375	270			
16	20	1.500	295			
18	20	1.625	320			

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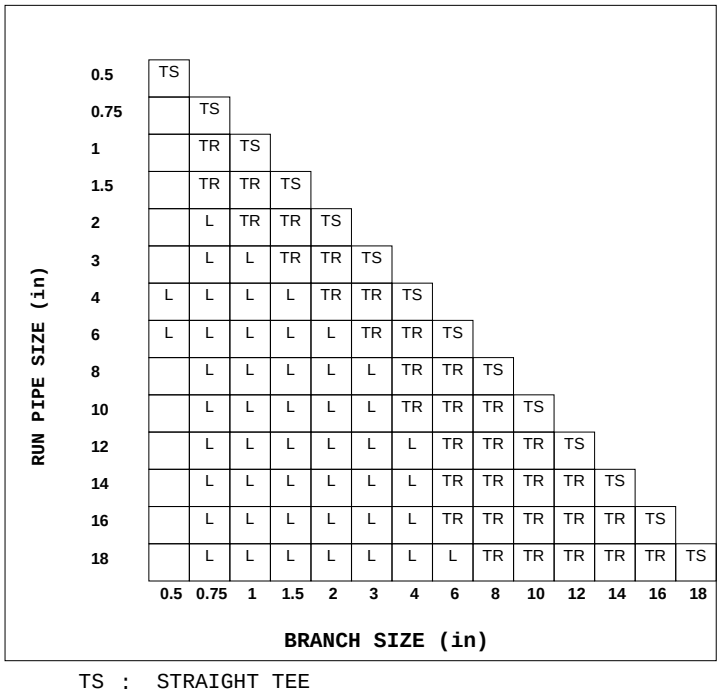
BRANCH TABLE (T_A1J804)



RUN PIPE SIZE (in) \ BRANCH SIZE (in)	0.5	0.75	1	1.5	2	3	4	6	8	10	12	14	16	18
0.5	TS													
0.75		TS												
1		TR	TS											
1.5		TR	TR	TS										
2		L	TR	TR	TS									
3		L	L	TR	TR	TS								
4	L	L	L	L	TR	TR	TS							
6	L	L	L	L	L	TR	TR	TS						
8		L	L	L	L	L	TR	TR	TS					
10		L	L	L	L	L	TR	TR	TR	TS				
12		L	L	L	L	L	L	TR	TR	TR	TS			
14		L	L	L	L	L	L	TR	TR	TR	TR	TS		
16		L	L	L	L	L	L	TR	TR	TR	TR	TR	TS	
18		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TS

TS : STRAIGHT TEE
TR : REDUCING TEE
L : OUTLET

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PIPING CLASS

A1JM REV NO. 2

Material : SS304L
Rating : ASME CLASS 150
Flange Face : RF
C.A.(mm) : 1.50
Gasket : Spiral Wound
Service : AMMONIA WATER
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED

DETAIL NOTES :

NO.	DESCRIPTION
38	TO BE USED FOR STAND PIPE

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
24	FULL PORT (Q)
200	WITH JACK SCREW (FO)
541	NPT(F) (CA,L)
714	SW - NPT(F) (V)
773	CLASS 300 (B,F,G,V)
4212	WELDOLET FOR STAND PIPE (L)

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PIPING CLASS
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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P01J-000UC	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE	
1	0.75		SCH80S		P01J-000UD	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE	
1	1		SCH80S		P01J-000UE	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE	
1	1.5		SCH80S		P01J-000UF	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE	
1	2		SCH40S		P01J-000RJ	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M BE	
1	3		SCH40S		P01J-000RK	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P02K-0001K	90 degree elbow ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	0.75				P02K-0001L	90 degree elbow ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	1				P02K-0001M	90 degree elbow ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	1.5				P02K-0001N	90 degree elbow ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	2		SCH40S		P02J-000J8	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	3		SCH40S		P02J-000J9	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P03K-0001G	45 degree elbow ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	0.75				P03K-0001H	45 degree elbow ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	1				P03K-0001J	45 degree elbow ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	1.5				P03K-0001K	45 degree elbow ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	2		SCH40S		P03J-000J0	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	3		SCH40S		P03J-000J1	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P21K-0001G	Straight tee ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	0.75				P21K-0001H	Straight tee ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	1				P21K-0001J	Straight tee ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	1.5				P21K-0001K	Straight tee ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	2		SCH40S		P21J-000HW	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	3		SCH40S		P21J-000HX	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75			P24K-0001X	Reducing tee ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	1.5	0.75			P24K-0001Z	Reducing tee ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	1.5	1			P24K-00020	Reducing tee ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	2	1	SCH40S	SCH80S	P24J-002SE	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	2	1.5	SCH40S	SCH80S	P24J-002SF	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	3	1.5	SCH40S	SCH80S	P24J-002SG	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	3	2	SCH40S	SCH40S	P24J-002HM	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	SCH40S	SCH40S	P27J-001R7	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	SCH40S	SCH40S	P28J-001PP	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P29K-0001V	Cap ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	0.75				P29K-0001W	Cap ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	

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CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P29K-0001X	Cap ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	1.5				P29K-0001Y	Cap ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	2		SCH40S		P29J-000G9	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	3		SCH40S		P29J-000GA	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
541	0.75				P29K-00020	Cap ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P41J-001V7	Straight nipple ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		SCH160		P41J-001V8	Straight nipple ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		SCH160		P41J-001V2	Straight nipple ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		SCH160		P41J-001V9	Straight nipple ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

CON SWAGED NIPPLE (SNC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH80S	SCH80S	P42J-00081	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	SCH80S	SCH80S	P42J-00082	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	SCH80S	SCH80S	P42J-00083	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	SCH80S	SCH80S	P42J-00084	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	SCH80S	SCH80S	P42J-00085	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	SCH80S	SCH80S	P42J-00086	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	SCH40S	SCH80S	P42J-0009M	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	SCH40S	SCH80S	P42J-0009N	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	SCH40S	SCH80S	P42J-0009P	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	SCH40S	SCH80S	P42J-0009R	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	SCH40S	SCH80S	P42J-000GL	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	

ECC SWAGED NIPPLE (SNE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH80S	SCH80S	P43J-0008D	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	SCH80S	SCH80S	P43J-0008E	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	SCH80S	SCH80S	P43J-0008F	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	SCH80S	SCH80S	P43J-0008G	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	SCH80S	SCH80S	P43J-0008H	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	SCH80S	SCH80S	P43J-0008J	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	SCH40S	SCH80S	P43J-0008K	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	SCH40S	SCH80S	P43J-0008L	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	SCH40S	SCH80S	P43J-0008M	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	SCH40S	SCH80S	P43J-0008N	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	SCH40S	SCH80S	P43J-000DL	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	

COUPLING (CPS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P47K-00035	Coupling ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW - SW	
1	0.75				P47K-00036	Coupling ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW - SW	
1	1				P47K-00037	Coupling ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW - SW	
1	1.5				P47K-00038	Coupling ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW - SW	

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OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2 - 2.5	0.75			P31K-00GFG	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 SW	
1	3 - 5	0.75			P31K-00GFH	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 SW	
1	3	1			P31K-008ZG	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 SW	
541	1	0.75			P31K-00911	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 NPT	
541	1.5	0.75			P31K-00916	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 NPT	
541	2 - 2.5	0.75			P31K-00GFJ	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 NPT	
541	3 - 5	0.75			P31K-00GFK	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 NPT	
4212	3	2	SCH40S	SCH40S	P31K-007C1	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	38

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30K-0001G	Plug ASTM A182 Grade F304/F304L dual grade ASME B16.11 NPT Round head	
1	0.75				P30K-0001H	Plug ASTM A182 Grade F304/F304L dual grade ASME B16.11 NPT Round head	
1	1				P30K-0001J	Plug ASTM A182 Grade F304/F304L dual grade ASME B16.11 NPT Round head	
1	1.5				P30K-0001K	Plug ASTM A182 Grade F304/F304L dual grade ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P61K-003A4	Flange SW ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	0.75		SCH80S		P61K-003A5	Flange SW ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	1		SCH80S		P61K-003A6	Flange SW ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	1.5		SCH80S		P61K-003A7	Flange SW ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	2		SCH40S		P61K-0027Y	Flange WN ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	3		SCH40S		P61K-00280	Flange WN ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
773	0.5		SCH80S		P61K-003A9	Flange SW ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
773	0.75		SCH80S		P61K-003AA	Flange SW ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
773	1		SCH80S		P61K-003AB	Flange SW ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
773	1.5		SCH80S		P61K-003AC	Flange SW ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
773	2		SCH40S		P61K-0028R	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
773	3		SCH40S		P61K-0028S	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67K-000K9	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	0.75				P67K-000KA	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	1				P67K-000KB	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	1.5				P67K-000KC	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	2				P67K-000KD	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	3				P67K-000KE	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000L8	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000L9	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000LA	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000LB	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000LH	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000LL	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	0.5				P73T-000FT	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	0.75				P73T-000FU	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	3				P73T-000G5	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

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BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-3				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
773	0.5-3				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81K-00108	Gate valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	0.75				P81K-00109	Gate valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	1				P81K-0010A	Gate valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	1.5				P81K-0010B	Gate valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	2				P81L-00293	Gate valve ASTM A351 Grade CF8 Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	3				P81L-00294	Gate valve ASTM A351 Grade CF8 Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
714	0.5				P81K-001LC	Gate valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW - NPT Trim number 12 BB-BG-OS&Y Handwheel operated	
714	0.75				P81K-001FD	Gate valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW - NPT Trim number 12 BB-BG-OS&Y Handwheel operated	
773	2				P81L-0022J	Gate valve ASTM A351 Grade CF8 Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82K-000NR	Globe valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	0.75				P82K-000NS	Globe valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	1				P82K-000NT	Globe valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	1.5				P82K-000NU	Globe valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	2				P82L-00195	Globe valve ASTM A351 Grade CF8 Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	3				P82L-00196	Globe valve ASTM A351 Grade CF8 Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83K-000LM	Check valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 Lift-type Bolted cover	
1	0.75				P83K-000LN	Check valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 Lift-type Bolted cover	
1	1				P83K-000LP	Check valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 Lift-type Bolted cover	
1	1.5				P83K-000LR	Check valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 Lift-type Bolted cover	
1	2				P83L-00196	Check valve ASTM A351 Grade CF8 Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	3				P83L-00197	Check valve ASTM A351 Grade CF8 Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	

BALL VALVE (Q)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3				P84L-0034T	Ball valve Long-pattern ASTM A351 Grade CF8 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design	
24	3				P84L-0034Y	Ball valve Long-pattern ASTM A351 Grade CF8 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	

ORIFICE FLANGE (FO)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2		SCH40S		P66K-0032H	Orifice flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	3		SCH40S		P66K-0032J	Orifice flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
200	2		SCH40S		P66K-0032P	Orifice flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	3		SCH40S		P66K-0032R	Orifice flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	

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SPECT BLANK (SB)							
OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71K-00065	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	0.75				P71K-00066	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	1				P71K-00067	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71K-00068	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	2				P71K-0006A	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	3				P71K-0006B	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	

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BOLT TABLE (B_A1JM , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	60	P80S-003V2		
0.75	4	0.500	65	P80S-003V3		
1	4	0.500	70	P80S-003V4		
1.5	4	0.500	75	P80S-003V5		
2	4	0.625	85	P80S-003XE		
3	4	0.625	95	P80S-003XG		

BOLT TABLE (B_A1JM_773 , STUD ASME RF, OPTION CODE 773)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-003V4		
0.75	4	0.625	75	P80S-003XC		
1	4	0.625	80	P80S-003XD		
1.5	4	0.750	95	P80S-00414		
2	8	0.625	90	P80S-003XF		
3	8	0.750	110	P80S-003XK		

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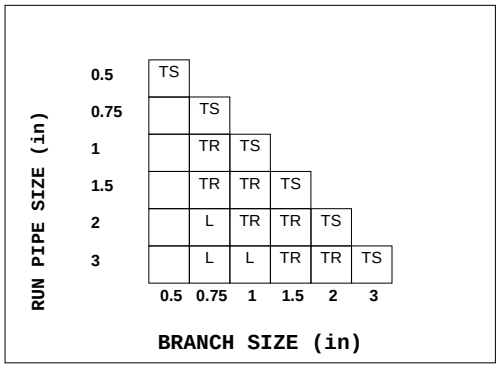
BRANCH TABLE (T_A1JM)



L : OUTLET
TS : STRAIGHT TEE
TR : REDUCING TEE

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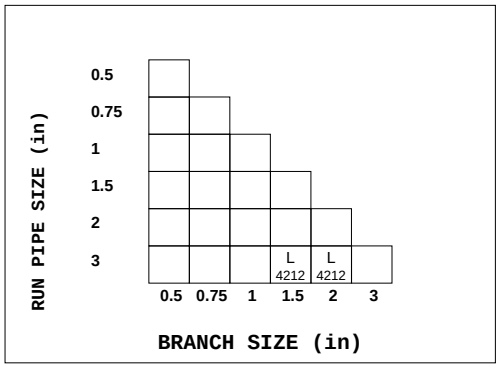
BRANCH TABLE (T_A1JM_4)



L : OUTLET

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Material : SS304L
Rating : ASME CLASS 150
Flange Face : RF
C.A.(mm) : 1.50
Gasket : Spiral Wound
Service : PROCESS - CORROSIVE SERVICE :/ SULFOLANE WITH AROMATIC HC
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
2	USE OF SOFT SEATED BALL, PLUG AND BUTTERFLY VALVES SHALL BE LIMITED TO MAXIMUM OF 204DEGC (400DEGF)

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
541	NPT(F) (CA,L)
714	SW - NPT(F) (V)
773	CLASS 300 (B,F,G)

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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P01J-000UC	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE	
1	0.75		SCH80S		P01J-000UD	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE	
1	1		SCH80S		P01J-000UE	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE	
1	1.5		SCH80S		P01J-000UF	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE	
1	2		SCH40S		P01J-000RJ	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M BE	
1	3		SCH40S		P01J-000RK	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M BE	
1	4		SCH40S		P01J-000UG	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M BE	
1	6		SCH40S		P01J-000RH	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M BE	
1	8		SCH40S		P01J-000WC	Pipe ASTM A358 Grade 304/304L Class 1 dual grade EFW ASME B36.10M/B36.19M BE	
1	10		SCH40S		P01J-000W6	Pipe ASTM A358 Grade 304/304L Class 1 dual grade EFW ASME B36.10M/B36.19M BE	
1	12		SCH40S		P01J-000WJ	Pipe ASTM A358 Grade 304/304L Class 1 dual grade EFW ASME B36.10M/B36.19M BE	
1	14		SCH40S		P01J-001J0	Pipe ASTM A358 Grade 304/304L Class 1 dual grade EFW ASME B36.10M/B36.19M BE	
1	16		SCH40S		P01J-0015F	Pipe ASTM A358 Grade 304/304L Class 1 dual grade EFW ASME B36.10M/B36.19M BE	
1	18		SCH40S		P01J-000VK	Pipe ASTM A358 Grade 304/304L Class 1 dual grade EFW ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P02K-0001K	90 degree elbow ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	0.75				P02K-0001L	90 degree elbow ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	1				P02K-0001M	90 degree elbow ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	1.5				P02K-0001N	90 degree elbow ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	2		SCH40S		P02J-000J8	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	3		SCH40S		P02J-000J9	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	4		SCH40S		P02J-000KZ	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	6		SCH40S		P02J-000J4	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	8		SCH40S		P02J-000J7	90 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius	
1	10		SCH40S		P02J-000J5	90 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius	
1	12		SCH40S		P02J-000J6	90 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius	
1	14		SCH40S		P02J-001JG	90 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius	
1	16		SCH40S		P02J-000W7	90 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius	
1	18		SCH40S		P02J-000M3	90 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P03K-0001G	45 degree elbow ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	0.75				P03K-0001H	45 degree elbow ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	1				P03K-0001J	45 degree elbow ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	1.5				P03K-0001K	45 degree elbow ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	2		SCH40S		P03J-000J0	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	3		SCH40S		P03J-000J1	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	4		SCH40S		P03J-000KL	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	6		SCH40S		P03J-000HW	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	8		SCH40S		P03J-000HZ	45 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius	
1	10		SCH40S		P03J-000HX	45 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius	
1	12		SCH40S		P03J-000HY	45 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius	
1	14		SCH40S		P03J-001GU	45 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius	
1	16		SCH40S		P03J-000VN	45 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius	
1	18		SCH40S		P03J-000LR	45 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P21K-0001G	Straight tee ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	

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STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75				P21K-0001H	Straight tee ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	1				P21K-0001J	Straight tee ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	1.5				P21K-0001K	Straight tee ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	2		SCH40S		P21J-000HW	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	3		SCH40S		P21J-000HX	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	4		SCH40S		P21J-000KK	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	6		SCH40S		P21J-000HS	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	8		SCH40S		P21J-000HV	Straight tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	10		SCH40S		P21J-000HT	Straight tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	12		SCH40S		P21J-000HU	Straight tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	14		SCH40S		P21J-001AL	Straight tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	16		SCH40S		P21J-000VU	Straight tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	18		SCH40S		P21J-000LP	Straight tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75			P24K-0001X	Reducing tee ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	1.5	0.75			P24K-0001Z	Reducing tee ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	1.5	1			P24K-00020	Reducing tee ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	2	1	SCH40S	SCH80S	P24J-002SE	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	2	1.5	SCH40S	SCH80S	P24J-002SF	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	3	1.5	SCH40S	SCH80S	P24J-002SG	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	3	2	SCH40S	SCH40S	P24J-002HM	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	4	2	SCH40S	SCH40S	P24J-002SH	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	4	3	SCH40S	SCH40S	P24J-002SJ	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	6	3	SCH40S	SCH40S	P24J-002SK	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	6	4	SCH40S	SCH40S	P24J-002SL	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	8	4	SCH40S	SCH40S	P24J-005P4	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	8	6	SCH40S	SCH40S	P24J-002HF	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	10	4	SCH40S	SCH40S	P24J-007JN	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	10	6	SCH40S	SCH40S	P24J-002HH	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	10	8	SCH40S	SCH40S	P24J-002HJ	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	12	6	SCH40S	SCH40S	P24J-007JM	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	12	8	SCH40S	SCH40S	P24J-002HL	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	12	10	SCH40S	SCH40S	P24J-002HK	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	14	6	SCH40S	SCH40S	P24J-007JK	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	14	8	SCH40S	SCH40S	P24J-007JL	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	14	10	SCH40S	SCH40S	P24J-0062J	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	14	12	SCH40S	SCH40S	P24J-0062K	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	16	6	SCH40S	SCH40S	P24J-007JH	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	16	8	SCH40S	SCH40S	P24J-007JJ	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	16	10	SCH40S	SCH40S	P24J-0062L	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	16	12	SCH40S	SCH40S	P24J-0062M	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	16	14	SCH40S	SCH40S	P24J-0062N	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	18	8	SCH40S	SCH40S	P24J-007JG	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	18	10	SCH40S	SCH40S	P24J-0062P	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	18	12	SCH40S	SCH40S	P24J-0062R	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	18	14	SCH40S	SCH40S	P24J-0062S	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	18	16	SCH40S	SCH40S	P24J-0062A	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	SCH40S	SCH40S	P27J-001R7	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	4	2	SCH40S	SCH40S	P27J-001X4	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	4	3	SCH40S	SCH40S	P27J-001X5	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	6	3	SCH40S	SCH40S	P27J-001X6	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	6	4	SCH40S	SCH40S	P27J-001X7	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	8	4	SCH40S	SCH40S	P27J-004JS	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	8	6	SCH40S	SCH40S	P27J-001R0	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	10	4	SCH40S	SCH40S	P27J-004JT	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	10	6	SCH40S	SCH40S	P27J-001R2	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	10	8	SCH40S	SCH40S	P27J-001R3	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	12	6	SCH40S	SCH40S	P27J-001R5	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	12	8	SCH40S	SCH40S	P27J-001R6	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	12	10	SCH40S	SCH40S	P27J-001R4	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	14	6	SCH40S	SCH40S	P27J-004KV	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	14	8	SCH40S	SCH40S	P27J-004KW	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	14	10	SCH40S	SCH40S	P27J-004KT	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	14	12	SCH40S	SCH40S	P27J-004KU	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	16	8	SCH40S	SCH40S	P27J-004JK	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	16	10	SCH40S	SCH40S	P27J-004JH	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	16	12	SCH40S	SCH40S	P27J-004KX	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	16	14	SCH40S	SCH40S	P27J-004KY	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	18	10	SCH40S	SCH40S	P27J-004JL	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	18	12	SCH40S	SCH40S	P27J-004KZ	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	18	14	SCH40S	SCH40S	P27J-004L0	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	18	16	SCH40S	SCH40S	P27J-004JM	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	SCH40S	SCH40S	P28J-001PP	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	4	2	SCH40S	SCH40S	P28J-001WF	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	4	3	SCH40S	SCH40S	P28J-001WG	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	6	3	SCH40S	SCH40S	P28J-001WH	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	6	4	SCH40S	SCH40S	P28J-001WJ	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	8	4	SCH40S	SCH40S	P28J-004K9	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	8	6	SCH40S	SCH40S	P28J-001PG	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	10	4	SCH40S	SCH40S	P28J-004KA	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	10	6	SCH40S	SCH40S	P28J-001PJ	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	10	8	SCH40S	SCH40S	P28J-001PK	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	12	6	SCH40S	SCH40S	P28J-001PM	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	12	8	SCH40S	SCH40S	P28J-001PN	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	12	10	SCH40S	SCH40S	P28J-001PL	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	14	6	SCH40S	SCH40S	P28J-004LC	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	14	8	SCH40S	SCH40S	P28J-004LD	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	14	10	SCH40S	SCH40S	P28J-004LA	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	14	12	SCH40S	SCH40S	P28J-004LB	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	16	8	SCH40S	SCH40S	P28J-004K3	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	16	10	SCH40S	SCH40S	P28J-004K1	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	16	12	SCH40S	SCH40S	P28J-004LE	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	16	14	SCH40S	SCH40S	P28J-004LF	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	18	10	SCH40S	SCH40S	P28J-004K4	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	18	12	SCH40S	SCH40S	P28J-004LG	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	18	14	SCH40S	SCH40S	P28J-004LH	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	18	16	SCH40S	SCH40S	P28J-004K5	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P29K-0001V	Cap ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	0.75				P29K-0001W	Cap ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	1				P29K-0001X	Cap ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	1.5				P29K-0001Y	Cap ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	2		SCH40S		P29J-000G9	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	3		SCH40S		P29J-000GA	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	4		SCH40S		P29J-000JB	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	6		SCH40S		P29J-000G5	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	8		SCH40S		P29J-000LU	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	10		SCH40S		P29J-000KM	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	

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CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	12		SCH40S		P29J-000KN	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	14		SCH40S		P29J-0015L	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	16		SCH40S		P29J-000TZ	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	18		SCH40S		P29J-000JY	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
541	0.75				P29K-00020	Cap ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P41J-001V7	Straight nipple ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		SCH160		P41J-001V8	Straight nipple ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		SCH160		P41J-001V2	Straight nipple ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		SCH160		P41J-001V9	Straight nipple ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

CON SWAGED NIPPLE (SNC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH80S	SCH80S	P42J-00081	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	SCH80S	SCH80S	P42J-00082	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	SCH80S	SCH80S	P42J-00083	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	SCH80S	SCH80S	P42J-00084	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	SCH80S	SCH80S	P42J-00085	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	SCH80S	SCH80S	P42J-00086	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	SCH40S	SCH80S	P42J-0009M	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	SCH40S	SCH80S	P42J-0009N	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	SCH40S	SCH80S	P42J-0009P	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	SCH40S	SCH80S	P42J-0009R	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	SCH40S	SCH80S	P42J-000GL	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	

ECC SWAGED NIPPLE (SNE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH80S	SCH80S	P43J-0008D	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	SCH80S	SCH80S	P43J-0008E	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	SCH80S	SCH80S	P43J-0008F	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	SCH80S	SCH80S	P43J-0008G	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	SCH80S	SCH80S	P43J-0008H	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	SCH80S	SCH80S	P43J-0008J	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	SCH40S	SCH80S	P43J-0008K	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	SCH40S	SCH80S	P43J-0008L	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	SCH40S	SCH80S	P43J-0008M	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	SCH40S	SCH80S	P43J-0008N	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	SCH40S	SCH80S	P43J-000DL	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	

COUPLING (CPS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P47K-00035	Coupling ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW - SW	
1	0.75				P47K-00036	Coupling ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW - SW	
1	1				P47K-00037	Coupling ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW - SW	
1	1.5				P47K-00038	Coupling ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW - SW	

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OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2 - 2.5	0.75			P31K-00GFG	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 SW	
1	3 - 5	0.75			P31K-00GFH	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 SW	
1	6 - 12	0.75			P31K-008YY	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 SW	
1	14 - 36	0.75			P31K-008YC	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 SW	
1	3	1			P31K-008ZG	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 SW	
1	4 - 5	1			P31K-00GFL	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 SW	
1	6 - 10	1			P31K-008ZU	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 SW	
1	12 - 36	1			P31K-008Z6	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 SW	
1	4	1.5			P31K-0099M	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 SW	
1	5 - 6	1.5			P31K-00GFS	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 SW	
1	8 - 12	1.5			P31K-0099Z	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 SW	
1	14 - 24	1.5			P31K-00991	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 SW	
541	1	0.75			P31K-00911	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 NPT	
541	1.5	0.75			P31K-00916	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 NPT	
541	2 - 2.5	0.75			P31K-00GFJ	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 NPT	
541	3 - 5	0.75			P31K-00GFK	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 NPT	
541	6 - 12	0.75			P31K-0091X	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 NPT	
541	14 - 36	0.75			P31K-0091B	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 NPT	
1	6	2	SCH40S	SCH40S	P31K-005N5	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	8	2	SCH40S	SCH40S	P31K-007G9	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	10	2	SCH40S	SCH40S	P31K-00753	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	12	2	SCH40S	SCH40S	P31K-00761	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	14	2	SCH40S	SCH40S	P31K-0076Y	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	16	2	SCH40S	SCH40S	P31K-00780	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	18	2	SCH40S	SCH40S	P31K-0078Z	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	8	3	SCH40S	SCH40S	P31K-007Y2	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	10	3	SCH40S	SCH40S	P31K-007KW	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	12	3	SCH40S	SCH40S	P31K-007LX	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	14	3	SCH40S	SCH40S	P31K-007MZ	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	16	3	SCH40S	SCH40S	P31K-007P4	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	18	3	SCH40S	SCH40S	P31K-007R5	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	12	4	SCH40S	SCH40S	P31K-0081E	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	14	4	SCH40S	SCH40S	P31K-0082J	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	16	4	SCH40S	SCH40S	P31K-0083T	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	18	4	SCH40S	SCH40S	P31K-0084W	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	18	6	SCH40S	SCH40S	P31K-008FB	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30K-0001G	Plug ASTM A182 Grade F304/F304L dual grade ASME B16.11 NPT Round head	
1	0.75				P30K-0001H	Plug ASTM A182 Grade F304/F304L dual grade ASME B16.11 NPT Round head	
1	1				P30K-0001J	Plug ASTM A182 Grade F304/F304L dual grade ASME B16.11 NPT Round head	
1	1.5				P30K-0001K	Plug ASTM A182 Grade F304/F304L dual grade ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P61K-003A4	Flange SW ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	0.75		SCH80S		P61K-003A5	Flange SW ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	1		SCH80S		P61K-003A6	Flange SW ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	1.5		SCH80S		P61K-003A7	Flange SW ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	2		SCH40S		P61K-0027Y	Flange WN ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	3		SCH40S		P61K-00280	Flange WN ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	4		SCH40S		P61K-00281	Flange WN ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	6		SCH40S		P61K-0024K	Flange WN ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	8		SCH40S		P61K-002EH	Flange WN ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	10		SCH40S		P61K-0063D	Flange WN ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	12		SCH40S		P61K-0061L	Flange WN ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	14		SCH40S		P61K-0063E	Flange WN ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	16		SCH40S		P61K-0061M	Flange WN ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	

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FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	18		SCH40S		P61K-0045V	Flange WN ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
773	0.5		SCH80S		P61K-003A9	Flange SW ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
773	0.75		SCH80S		P61K-003AA	Flange SW ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
773	1		SCH80S		P61K-003AB	Flange SW ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
773	1.5		SCH80S		P61K-003AC	Flange SW ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
773	2		SCH40S		P61K-0028R	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
773	3		SCH40S		P61K-0028S	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
773	4		SCH40S		P61K-0028T	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
773	6		SCH40S		P61K-0023Z	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
773	8		SCH40S		P61K-00240	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
773	10		SCH40S		P61K-0023U	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
773	12		SCH40S		P61K-0023V	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
773	14		SCH40S		P61K-00473	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
773	16		SCH40S		P61K-002MM	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
773	18		SCH40S		P61K-0029T	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67K-000K9	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	0.75				P67K-000KA	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	1				P67K-000KB	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	1.5				P67K-000KC	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	2				P67K-000KD	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	3				P67K-000KE	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	4				P67K-000KF	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	6				P67K-000KG	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	8				P67K-000L7	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	10				P67K-000L1	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	12				P67K-000L2	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	14				P67K-000L3	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	16				P67K-000L4	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	18				P67K-000L5	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000L8	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000L9	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000LA	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000LB	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000LH	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000LL	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000LM	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	6				P73T-000LN	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	8				P73T-000LP	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	10				P73T-000LC	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	12				P73T-000LD	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	14				P73T-000LE	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	16				P73T-000LF	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	18				P73T-000LG	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	0.5				P73T-000FT	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	0.75				P73T-000FU	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

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GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
773	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	3				P73T-000G5	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	4				P73T-000G6	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	6				P73T-000G7	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	8				P73T-000G8	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	10				P73T-000FX	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	12				P73T-000FY	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	14				P73T-000FZ	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	16				P73T-000G0	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	18				P73T-000G1	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-16				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	18				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
773	0.5-10				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
773	12-18				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81K-00108	Gate valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	0.75				P81K-00109	Gate valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	1				P81K-0010A	Gate valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	1.5				P81K-0010B	Gate valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	2				P81L-00293	Gate valve ASTM A351 Grade CF8 Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	3				P81L-00294	Gate valve ASTM A351 Grade CF8 Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	4				P81L-00295	Gate valve ASTM A351 Grade CF8 Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	6				P81L-00296	Gate valve ASTM A351 Grade CF8 Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	8				P81L-00297	Gate valve ASTM A351 Grade CF8 Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	10				P81L-002BX	Gate valve ASTM A351 Grade CF8 Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	12				P81L-002BY	Gate valve ASTM A351 Grade CF8 Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	14				P81L-002BZ	Gate valve ASTM A351 Grade CF8 Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated	
714	0.5				P81K-001LC	Gate valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW - NPT Trim number 12 BB-BG-OS&Y Handwheel operated	
714	0.75				P81K-001FD	Gate valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW - NPT Trim number 12 BB-BG-OS&Y Handwheel operated	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82K-000NR	Globe valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	0.75				P82K-000NS	Globe valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	1				P82K-000NT	Globe valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	1.5				P82K-000NU	Globe valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	2				P82L-00195	Globe valve ASTM A351 Grade CF8 Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83K-000LM	Check valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 Lift-type Bolted cover	

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CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75				P83K-000LN	Check valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 Lift-type Bolted cover	
1	1				P83K-000LP	Check valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 Lift-type Bolted cover	
1	1.5				P83K-000LR	Check valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 Lift-type Bolted cover	
1	2				P83L-00196	Check valve ASTM A351 Grade CF8 Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	3				P83L-00197	Check valve ASTM A351 Grade CF8 Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	4				P83L-00198	Check valve ASTM A351 Grade CF8 Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	6				P83L-0019U	Check valve ASTM A351 Grade CF8 Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	8				P83L-0019V	Check valve ASTM A351 Grade CF8 Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71K-00065	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	0.75				P71K-00066	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	1				P71K-00067	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71K-00068	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	2				P71K-0006A	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	3				P71K-0006B	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	4				P71K-0006C	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	6				P71K-0006D	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	8				P71K-0006E	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	10				P71K-00069	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	12				P71K-0006F	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	

PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72K-0003T	Paddle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	16				P72K-0003U	Paddle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	18				P72K-0003V	Paddle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	

PADDLE SPACER (PS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72K-0003Y	Paddle spacer ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	16				P72K-0003Z	Paddle spacer ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	18				P72K-00040	Paddle spacer ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	

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BOLT TABLE (B_A1JV04 , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	60	P80S-003V2		
0.75	4	0.500	65	P80S-003V3		
1	4	0.500	70	P80S-003V4		
1.5	4	0.500	75	P80S-003V5		
2	4	0.625	85	P80S-003XE		
3	4	0.625	95	P80S-003XG		
4	8	0.625	95	P80S-003XG		
6	8	0.750	105	P80S-003XJ		
8	8	0.750	110	P80S-003XK		
10	12	0.875	120	P80S-00419		
12	12	0.875	120	P80S-00419		
14	12	1.000	135	P80S-0043E		
16	16	1.000	140	P80S-0043F		
18	16	1.125	150	P80S-0046K		

BOLT TABLE (B_A1JV04_773 , STUD ASME RF, OPTION CODE 773)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-003V4		
0.75	4	0.625	75	P80S-003XC		
1	4	0.625	80	P80S-003XD		
1.5	4	0.750	95	P80S-00414		
2	8	0.625	90	P80S-003XF		
3	8	0.750	110	P80S-003XK		
4	8	0.750	115	P80S-003XL		
6	12	0.750	125	P80S-003XN		
8	12	0.875	140	P80S-0041D		
10	16	1.000	160	P80S-0043K		
12	16	1.125	175	P80S-0046S		
14	20	1.125	180	P80S-0046T		
16	20	1.250	190	P80S-004AK		
18	24	1.250	200	P80S-004AM		

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BRANCH TABLE (T_A1JV04)

RUN PIPE SIZE (in) \ BRANCH SIZE (in)	0.5	0.75	1	1.5	2	3	4	6	8	10	12	14	16	18
0.5	TS													
0.75		TS												
1		TR	TS											
1.5		TR	TR	TS										
2		L	TR	TR	TS									
3		L	L	TR	TR	TS								
4	L	L	L	L	TR	TR	TS							
6	L	L	L	L	L	TR	TR	TS						
8		L	L	L	L	L	TR	TR	TS					
10		L	L	L	L	L	TR	TR	TR	TS				
12		L	L	L	L	L	L	TR	TR	TR	TS			
14		L	L	L	L	L	L	TR	TR	TR	TR	TS		
16		L	L	L	L	L	L	TR	TR	TR	TR	TR	TS	
18		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TS

L : OUTLET
TS : STRAIGHT TEE
TR : REDUCING TEE

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PIPING CLASS

A1LA REV NO. 2

Material : SS316L
Rating : ASME CLASS 150
Flange Face : RF
C.A.(mm) : 1.50
Gasket : Spiral Wound
Service : UTILITY - NITROGEN(AFTER FILTER)
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
541	NPT(F) (CA,L)
714	SW - NPT(F) (V)
773	CLASS 300 (B,F,G)

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PIPING CLASS
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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P01J-0014A	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE	
1	0.75		SCH80S		P01J-0014B	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE	
1	1		SCH80S		P01J-0014C	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE	
1	1.5		SCH80S		P01J-0014D	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE	
1	2		SCH40S		P01J-000CK	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P02K-0000G	90 degree elbow ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	0.75				P02K-0000H	90 degree elbow ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	1				P02K-0000J	90 degree elbow ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	1.5				P02K-0000K	90 degree elbow ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	2		SCH40S		P02J-0007C	90 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P03K-0000D	45 degree elbow ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	0.75				P03K-0000E	45 degree elbow ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	1				P03K-0000F	45 degree elbow ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	1.5				P03K-0000G	45 degree elbow ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	2		SCH40S		P03J-0007C	45 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P21K-0000G	Straight tee ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	0.75				P21K-0000H	Straight tee ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	1				P21K-0000J	Straight tee ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	1.5				P21K-0000K	Straight tee ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	2		SCH40S		P21J-0007W	Straight tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75			P24K-0000M	Reducing tee ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	1.5	0.75			P24K-0000P	Reducing tee ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	1.5	1			P24K-0000R	Reducing tee ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	2	1	SCH40S	SCH80S	P24J-003MZ	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	2	1.5	SCH40S	SCH80S	P24J-003N0	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P29K-00021	Cap ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	0.75				P29K-00022	Cap ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	1				P29K-00023	Cap ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	1.5				P29K-00024	Cap ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	2		SCH40S		P29J-0007D	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
541	0.75				P29K-00002	Cap ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P41J-001UY	Straight nipple ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		SCH160		P41J-001UZ	Straight nipple ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		SCH160		P41J-001V0	Straight nipple ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		SCH160		P41J-001V1	Straight nipple ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

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CON SWAGED NIPPLE (SNC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH80S	SCH80S	P42J-0008N	Concentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	SCH80S	SCH80S	P42J-0008M	Concentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	SCH80S	SCH80S	P42J-0008P	Concentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	SCH80S	SCH80S	P42J-0008R	Concentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	SCH80S	SCH80S	P42J-0008S	Concentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	SCH80S	SCH80S	P42J-0008T	Concentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	SCH40S	SCH80S	P42J-000B0	Concentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	SCH40S	SCH80S	P42J-000B1	Concentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	SCH40S	SCH80S	P42J-000B2	Concentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	SCH40S	SCH80S	P42J-000B3	Concentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	

ECC SWAGED NIPPLE (SNE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH80S	SCH80S	P43J-0008R	Eccentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	SCH80S	SCH80S	P43J-0008S	Eccentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	SCH80S	SCH80S	P43J-0008T	Eccentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	SCH80S	SCH80S	P43J-0008U	Eccentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	SCH80S	SCH80S	P43J-0008V	Eccentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	SCH80S	SCH80S	P43J-0008W	Eccentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	SCH40S	SCH80S	P43J-0009D	Eccentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	SCH40S	SCH80S	P43J-0009E	Eccentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	SCH40S	SCH80S	P43J-0009F	Eccentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	SCH40S	SCH80S	P43J-0009G	Eccentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	

COUPLING (CPS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P47K-0000G	Coupling ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW - SW	
1	0.75				P47K-0000H	Coupling ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW - SW	
1	1				P47K-0000J	Coupling ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW - SW	
1	1.5				P47K-0000K	Coupling ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW - SW	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2 - 2.5	0.75			P31K-00GGG	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 SW	
541	1	0.75			P31K-001XH	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 NPT	
541	1.5	0.75			P31K-001XM	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 NPT	
541	2 - 2.5	0.75			P31K-00GGK	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 NPT	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30K-0001L	Plug ASTM A182 Grade F316/F316L dual grade ASME B16.11 NPT Round head	
1	0.75				P30K-0001M	Plug ASTM A182 Grade F316/F316L dual grade ASME B16.11 NPT Round head	
1	1				P30K-0001N	Plug ASTM A182 Grade F316/F316L dual grade ASME B16.11 NPT Round head	
1	1.5				P30K-0001P	Plug ASTM A182 Grade F316/F316L dual grade ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P61K-003AF	Flange SW ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
1	0.75		SCH80S		P61K-003AG	Flange SW ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
1	1		SCH80S		P61K-003AH	Flange SW ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
1	1.5		SCH80S		P61K-003AJ	Flange SW ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	

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FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2		SCH40S		P61K-002LB	Flange WN ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
773	0.5		SCH80S		P61K-003AK	Flange SW ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF	
773	0.75		SCH80S		P61K-003AL	Flange SW ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF	
773	1		SCH80S		P61K-003AM	Flange SW ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF	
773	1.5		SCH80S		P61K-003AN	Flange SW ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF	
773	2		SCH40S		P61K-002LG	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67K-0007A	Blind flange ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
1	0.75				P67K-00079	Blind flange ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
1	1				P67K-00078	Blind flange ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
1	1.5				P67K-00077	Blind flange ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
1	2				P67K-00071	Blind flange ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000L8	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000L9	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000LA	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000LB	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000LH	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	0.5				P73T-000FT	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	0.75				P73T-000FU	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-2				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
773	0.5-2				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81K-0010V	Gate valve ASTM A182 Grade F316/F316L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	0.75				P81K-0010W	Gate valve ASTM A182 Grade F316/F316L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	1				P81K-0010X	Gate valve ASTM A182 Grade F316/F316L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	1.5				P81K-0010Y	Gate valve ASTM A182 Grade F316/F316L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	2				P81L-002AV	Gate valve ASTM A351 Grade CF8M Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
714	0.5				P81K-001LF	Gate valve ASTM A182 Grade F316/F316L dual grade Class 800 API 602 SW - NPT Trim number 12 BB-BG-OS&Y Handwheel operated	
714	0.75				P81K-001G3	Gate valve ASTM A182 Grade F316/F316L dual grade Class 800 API 602 SW - NPT Trim number 12 BB-BG-OS&Y Handwheel operated	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82K-000P3	Globe valve ASTM A182 Grade F316/F316L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	0.75				P82K-000P4	Globe valve ASTM A182 Grade F316/F316L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	1				P82K-000P5	Globe valve ASTM A182 Grade F316/F316L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	1.5				P82K-000P6	Globe valve ASTM A182 Grade F316/F316L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	2				P82L-0019X	Globe valve ASTM A351 Grade CF8M Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	

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SPECT BLANK (SB)							
OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71K-0006P	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	0.75				P71K-0006R	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	1				P71K-0006S	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71K-0006T	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	2				P71K-0006U	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	

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BOLT TABLE (B_A1LA , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	60	P80S-003V2		
0.75	4	0.500	65	P80S-003V3		
1	4	0.500	70	P80S-003V4		
1.5	4	0.500	75	P80S-003V5		
2	4	0.625	85	P80S-003XE		

BOLT TABLE (B_A1LA_773 , STUD ASME RF, OPTION CODE 773)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-003V4		
0.75	4	0.625	75	P80S-003XC		
1	4	0.625	80	P80S-003XD		
1.5	4	0.750	95	P80S-00414		
2	8	0.625	90	P80S-003XF		

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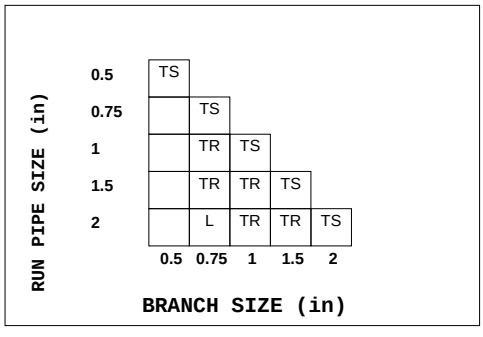
BRANCH TABLE (T_A1LA)



TR : REDUCING TEE
L : OUTLET
TS : STRAIGHT TEE

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PIPING CLASS

A1LJ REV NO. 2

Material : SS316L
Rating : ASME CLASS 150
Flange Face : RF
C.A.(mm) : 1.50
Gasket : Sheet
Service : PROCESS -ACID SERVICE : / FRESH ACID (98WT% H2SO4) / ALKY REACTOR FEED / ACIDIC RELEASES AND DRAIN
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
2	USE OF SOFT SEATED BALL, PLUG AND BUTTERFLY VALVES SHALL BE LIMITED TO MAXIMUM OF 204DEGC (400DEGF)
9	ALL ACID AND CAUSTIC SERVICE LINE FLANGED JOINTS SHALL BE COVERED WITH SAFETY SPLASH GUARDS

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
541	NPT(F) (CA,F,L)
773	CLASS 300 (B,F,G)
4608	VALVE WITH NIPPLES (V)

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PIPING CLASS
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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P01J-0014A	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE	
1	0.75		SCH80S		P01J-0014B	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE	
1	1		SCH80S		P01J-0014C	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE	
1	1.5		SCH80S		P01J-0014D	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE	
1	2		SCH40S		P01J-000CK	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P02J-00182	90 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	0.75		SCH80S		P02J-00183	90 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	1		SCH80S		P02J-00184	90 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	1.5		SCH80S		P02J-00185	90 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	2		SCH40S		P02J-0007C	90 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P03J-0016Y	45 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	0.75		SCH80S		P03J-0016Z	45 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	1		SCH80S		P03J-00170	45 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	1.5		SCH80S		P03J-00171	45 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	2		SCH40S		P03J-0007C	45 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P21J-0010E	Straight tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	0.75		SCH80S		P21J-0010F	Straight tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	1		SCH80S		P21J-0010G	Straight tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	1.5		SCH80S		P21J-0010H	Straight tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	2		SCH40S		P21J-0007W	Straight tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75	SCH80S	SCH80S	P24J-004TD	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	1.5	0.75	SCH80S	SCH80S	P24J-004TE	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	1.5	1	SCH80S	SCH80S	P24J-004TF	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	2	1	SCH40S	SCH80S	P24J-003MZ	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	2	1.5	SCH40S	SCH80S	P24J-003N0	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH80S	SCH80S	P27J-002P5	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	1	0.5	SCH80S	SCH80S	P27J-002P6	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	1	0.75	SCH80S	SCH80S	P27J-002P7	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	1.5	0.5	SCH80S	SCH80S	P27J-002P8	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	1.5	0.75	SCH80S	SCH80S	P27J-002P9	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	1.5	1	SCH80S	SCH80S	P27J-002PA	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	2	0.75	SCH40S	SCH80S	P27J-002P1	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	2	1	SCH40S	SCH80S	P27J-002P2	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	2	1.5	SCH40S	SCH80S	P27J-002P3	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH80S	SCH80S	P28J-002MS	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	1	0.5	SCH80S	SCH80S	P28J-002MT	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	

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ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75	SCH80S	SCH80S	P28J-002MU	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	1.5	0.5	SCH80S	SCH80S	P28J-002MV	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	1.5	0.75	SCH80S	SCH80S	P28J-002MW	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	1.5	1	SCH80S	SCH80S	P28J-002MX	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	2	0.75	SCH40S	SCH80S	P28J-002MM	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	2	1	SCH40S	SCH80S	P28J-002MN	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	2	1.5	SCH40S	SCH80S	P28J-002MP	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P29J-000XK	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	0.75		SCH80S		P29J-000XL	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	1		SCH80S		P29J-000XM	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	1.5		SCH80S		P29J-000XN	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	2		SCH40S		P29J-0007D	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
541	0.75				P29K-00002	Cap ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P41J-001UY	Straight nipple ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		SCH160		P41J-001UZ	Straight nipple ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		SCH160		P41J-001V0	Straight nipple ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		SCH160		P41J-001V1	Straight nipple ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
541	1	0.75			P31K-001XH	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 NPT	
541	1.5	0.75			P31K-001XM	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 NPT	
1	2	0.75	SCH40S	SCH80S	P31K-00BUE	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30K-0001L	Plug ASTM A182 Grade F316/F316L dual grade ASME B16.11 NPT Round head	
1	0.75				P30K-0001M	Plug ASTM A182 Grade F316/F316L dual grade ASME B16.11 NPT Round head	
1	1				P30K-0001N	Plug ASTM A182 Grade F316/F316L dual grade ASME B16.11 NPT Round head	
1	1.5				P30K-0001P	Plug ASTM A182 Grade F316/F316L dual grade ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P61K-002L7	Flange WN ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
1	0.75		SCH80S		P61K-002L8	Flange WN ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
1	1		SCH80S		P61K-002L9	Flange WN ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
1	1.5		SCH80S		P61K-002LA	Flange WN ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
1	2		SCH40S		P61K-002LB	Flange WN ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
541	0.5				P61K-003L5	Flange NPT ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
541	0.75				P61K-00609	Flange NPT ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
773	0.5		SCH80S		P61K-002LC	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF	
773	0.75		SCH80S		P61K-002LD	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF	
773	1		SCH80S		P61K-002LE	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF	
773	1.5		SCH80S		P61K-002LF	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF	
773	2		SCH40S		P61K-002LG	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67K-0007A	Blind flange ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
1	0.75				P67K-00079	Blind flange ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	

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BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P67K-00078	Blind flange ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
1	1.5				P67K-00077	Blind flange ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
1	2				P67K-00071	Blind flange ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P74U-000AW	Sheet gasket PTFE Class 150 ASME B16.21 Flange ASME B16.5 RF 1.5mm-T	
1	0.75				P74U-000AV	Sheet gasket PTFE Class 150 ASME B16.21 Flange ASME B16.5 RF 1.5mm-T	
1	1				P74U-000AU	Sheet gasket PTFE Class 150 ASME B16.21 Flange ASME B16.5 RF 1.5mm-T	
1	1.5				P74U-000AT	Sheet gasket PTFE Class 150 ASME B16.21 Flange ASME B16.5 RF 1.5mm-T	
1	2				P74U-000AM	Sheet gasket PTFE Class 150 ASME B16.21 Flange ASME B16.5 RF 1.5mm-T	
773	0.5				P74U-000CL	Sheet gasket PTFE Class 300 ASME B16.21 Flange ASME B16.5 RF 1.5mm-T	
773	0.75				P74U-000CK	Sheet gasket PTFE Class 300 ASME B16.21 Flange ASME B16.5 RF 1.5mm-T	
773	1				P74U-000CJ	Sheet gasket PTFE Class 300 ASME B16.21 Flange ASME B16.5 RF 1.5mm-T	
773	1.5				P74U-000CD	Sheet gasket PTFE Class 300 ASME B16.21 Flange ASME B16.5 RF 1.5mm-T	
773	2				P74U-000CC	Sheet gasket PTFE Class 300 ASME B16.21 Flange ASME B16.5 RF 1.5mm-T	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-2				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
773	0.5-2				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81K-001BD	Gate valve ASTM A182 Grade F316/F316L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim UNS N08020 BB-BG-OS&Y Handwheel operated Fluid-1	
1	0.75				P81K-001BE	Gate valve ASTM A182 Grade F316/F316L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim UNS N08020 BB-BG-OS&Y Handwheel operated Fluid-1	
1	1				P81K-001BY	Gate valve ASTM A182 Grade F316/F316L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim UNS N08020 BB-BG-OS&Y Handwheel operated Fluid-1	
1	1.5				P81K-001BZ	Gate valve ASTM A182 Grade F316/F316L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim UNS N08020 BB-BG-OS&Y Handwheel operated Fluid-1	
1	2				P81L-002SM	Gate valve ASTM A351 Grade CF8M Class 150 API 600 Flange ASME B16.5 RF Trim UNS N08020 BB-BG-OS&Y Handwheel operated Fluid-1	
4608	0.75				P81K-001PB	Gate valve ASTM A182 Grade F316/F316L dual grade Class 150 API 602 BW both sides w/ nipples BE - NPT ASTM A312-TP316(L) dual grade Seamless Sch160-nipple Trim UNS N08020 BB-BG-OS&Y Handwheel operated Fluid-1	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82K-000XM	Globe valve ASTM A182 Grade F316/F316L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim UNS N08020 BB-BG-OS&Y Handwheel operated Fluid-1	
1	0.75				P82K-000XN	Globe valve ASTM A182 Grade F316/F316L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim UNS N08020 BB-BG-OS&Y Handwheel operated Fluid-1	
1	1				P82K-000XP	Globe valve ASTM A182 Grade F316/F316L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim UNS N08020 BB-BG-OS&Y Handwheel operated Fluid-1	
1	1.5				P82K-000XR	Globe valve ASTM A182 Grade F316/F316L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim UNS N08020 BB-BG-OS&Y Handwheel operated Fluid-1	
1	2				P82L-001H4	Globe valve ASTM A351 Grade CF8M Class 150 BS 1873 Flange ASME B16.5 RF Trim UNS N08020 BB-BG-OS&Y Handwheel operated Fluid-1	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83K-000TX	Check valve ASTM A182 Grade F316/F316L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim UNS N08020 Lift-type Bolted cover	
1	0.75				P83K-000TY	Check valve ASTM A182 Grade F316/F316L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim UNS N08020 Lift-type Bolted cover	
1	1				P83K-000UP	Check valve ASTM A182 Grade F316/F316L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim UNS N08020 Lift-type Bolted cover	
1	1.5				P83K-000UR	Check valve ASTM A182 Grade F316/F316L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim UNS N08020 Lift-type Bolted cover	
1	2				P83L-001FP	Check valve ASTM A351 Grade CF8M Class 150 BS 1868 Flange ASME B16.5 RF Trim UNS N08020 Swing-type Bolted cover	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71K-0006P	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	

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SPECT BLANK (SB)							
OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75				P71K-0006R	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	

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BOLT TABLE (B_A1LJ , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	60	P80S-003V2		
0.75	4	0.500	65	P80S-003V3		
1	4	0.500	70	P80S-003V4		
1.5	4	0.500	75	P80S-003V5		
2	4	0.625	85	P80S-003XE		

BOLT TABLE (B_A1LJ_773 , STUD ASME RF, OPTION CODE 773)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-003V4		
0.75	4	0.625	75	P80S-003XC		
1	4	0.625	80	P80S-003XD		
1.5	4	0.750	95	P80S-00414		
2	8	0.625	90	P80S-003XF		

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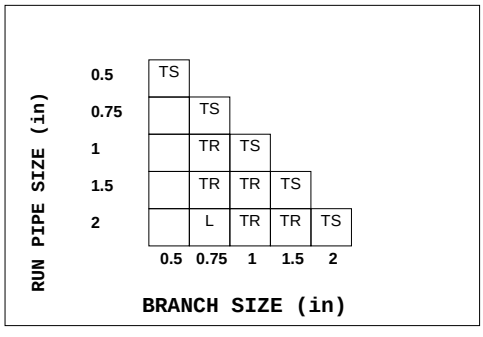
BRANCH TABLE (T_A1LJ)



L : OUTLET
TS : STRAIGHT TEE
TR : REDUCING TEE

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PIPING CLASS

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Material : SS316L
Rating : ASME CLASS 150
Flange Face : RF
C.A.(mm) : 1.50
Gasket : Spiral Wound
Service : UTILITY - SPENT CAUSTIC
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
541	NPT(F) (CA,L)
773	CLASS 300 (B,F,G)

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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P01J-0014A	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE	
1	0.75		SCH80S		P01J-0014B	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE	
1	1		SCH80S		P01J-0014C	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE	
1	1.5		SCH80S		P01J-0014D	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE	
1	2		SCH40S		P01J-000CK	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M BE	
1	3		SCH40S		P01J-000D8	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M BE	
1	4		SCH40S		P01J-000DF	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P02K-0000G	90 degree elbow ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	0.75				P02K-0000H	90 degree elbow ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	1				P02K-0000J	90 degree elbow ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	1.5				P02K-0000K	90 degree elbow ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	2		SCH40S		P02J-0007C	90 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	3		SCH40S		P02J-0007D	90 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	4		SCH40S		P02J-0007E	90 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P03K-0000D	45 degree elbow ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	0.75				P03K-0000E	45 degree elbow ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	1				P03K-0000F	45 degree elbow ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	1.5				P03K-0000G	45 degree elbow ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	2		SCH40S		P03J-0007C	45 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	3		SCH40S		P03J-0007D	45 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	4		SCH40S		P03J-0007E	45 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P21K-0000G	Straight tee ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	0.75				P21K-0000H	Straight tee ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	1				P21K-0000J	Straight tee ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	1.5				P21K-0000K	Straight tee ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	2		SCH40S		P21J-0007W	Straight tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	3		SCH40S		P21J-0007X	Straight tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	4		SCH40S		P21J-0007Y	Straight tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75			P24K-0000M	Reducing tee ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	1.5	0.75			P24K-0000P	Reducing tee ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	1.5	1			P24K-0000R	Reducing tee ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	2	1	SCH40S	SCH80S	P24J-003MZ	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	2	1.5	SCH40S	SCH80S	P24J-003N0	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	3	1.5	SCH40S	SCH80S	P24J-004TU	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	3	2	SCH40S	SCH40S	P24J-001JD	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	4	2	SCH40S	SCH40S	P24J-001JE	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	4	3	SCH40S	SCH40S	P24J-001JF	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	SCH40S	SCH40S	P27J-000WG	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	4	2	SCH40S	SCH40S	P27J-000WJ	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	4	3	SCH40S	SCH40S	P27J-000WK	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	

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ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	SCH40S	SCH40S	P28J-000WB	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	4	2	SCH40S	SCH40S	P28J-000WD	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	4	3	SCH40S	SCH40S	P28J-000WE	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P29K-00021	Cap ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	0.75				P29K-00022	Cap ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	1				P29K-00023	Cap ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	1.5				P29K-00024	Cap ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	2		SCH40S		P29J-0007D	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	3		SCH40S		P29J-0007G	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	4		SCH40S		P29J-0007J	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
541	0.75				P29K-00002	Cap ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 NPT	
541	1				P29K-00003	Cap ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P41J-001UY	Straight nipple ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		SCH160		P41J-001UZ	Straight nipple ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		SCH160		P41J-001V0	Straight nipple ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		SCH160		P41J-001V1	Straight nipple ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

CON SWAGED NIPPLE (SNC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH80S	SCH80S	P42J-0008N	Concentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	SCH80S	SCH80S	P42J-0008M	Concentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	SCH80S	SCH80S	P42J-0008P	Concentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	SCH80S	SCH80S	P42J-0008R	Concentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	SCH80S	SCH80S	P42J-0008S	Concentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	SCH80S	SCH80S	P42J-0008T	Concentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	SCH40S	SCH80S	P42J-000B0	Concentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	SCH40S	SCH80S	P42J-000B1	Concentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	SCH40S	SCH80S	P42J-000B2	Concentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	SCH40S	SCH80S	P42J-000B3	Concentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	SCH40S	SCH80S	P42J-000B4	Concentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	

ECC SWAGED NIPPLE (SNE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH80S	SCH80S	P43J-0008R	Eccentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	SCH80S	SCH80S	P43J-0008S	Eccentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	SCH80S	SCH80S	P43J-0008T	Eccentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	SCH80S	SCH80S	P43J-0008U	Eccentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	SCH80S	SCH80S	P43J-0008V	Eccentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	SCH80S	SCH80S	P43J-0008W	Eccentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	SCH40S	SCH80S	P43J-0009D	Eccentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	SCH40S	SCH80S	P43J-0009E	Eccentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	SCH40S	SCH80S	P43J-0009F	Eccentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	SCH40S	SCH80S	P43J-0009G	Eccentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	

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ECC SWAGED NIPPLE (SNE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	1.5	SCH40S	SCH80S	P43J-0009H	Eccentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	

COUPLING (CPS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P47K-0000G	Coupling ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW - SW	
1	0.75				P47K-0000H	Coupling ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW - SW	
1	1				P47K-0000J	Coupling ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW - SW	
1	1.5				P47K-0000K	Coupling ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW - SW	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2 - 2.5	0.75			P31K-00GGG	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 SW	
1	3 - 5	0.75			P31K-00GGH	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 SW	
1	3	1			P31K-003UY	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 SW	
1	4 - 5	1			P31K-00GGJ	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 SW	
1	4	1.5			P31K-003UH	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 SW	
541	1	0.75			P31K-001XH	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 NPT	
541	1.5	0.75			P31K-001XM	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 NPT	
541	2 - 2.5	0.75			P31K-00GGK	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 NPT	
541	3 - 5	0.75			P31K-00GGL	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 NPT	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30K-0001L	Plug ASTM A182 Grade F316/F316L dual grade ASME B16.11 NPT Round head	
1	0.75				P30K-0001M	Plug ASTM A182 Grade F316/F316L dual grade ASME B16.11 NPT Round head	
1	1				P30K-0001N	Plug ASTM A182 Grade F316/F316L dual grade ASME B16.11 NPT Round head	
1	1.5				P30K-0001P	Plug ASTM A182 Grade F316/F316L dual grade ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P61K-003AF	Flange SW ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
1	0.75		SCH80S		P61K-003AG	Flange SW ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
1	1		SCH80S		P61K-003AH	Flange SW ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
1	1.5		SCH80S		P61K-003AJ	Flange SW ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
1	2		SCH40S		P61K-002LB	Flange WN ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
1	3		SCH40S		P61K-00340	Flange WN ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
1	4		SCH40S		P61K-00341	Flange WN ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
773	0.5		SCH80S		P61K-003AK	Flange SW ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF	
773	0.75		SCH80S		P61K-003AL	Flange SW ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF	
773	1		SCH80S		P61K-003AM	Flange SW ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF	
773	1.5		SCH80S		P61K-003AN	Flange SW ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF	
773	2		SCH40S		P61K-002LG	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF	
773	3		SCH40S		P61K-003C5	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF	
773	4		SCH40S		P61K-003C6	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67K-0007A	Blind flange ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
1	0.75				P67K-00079	Blind flange ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
1	1				P67K-00078	Blind flange ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
1	1.5				P67K-00077	Blind flange ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
1	2				P67K-00071	Blind flange ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
1	3				P67K-0006Y	Blind flange ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
1	4				P67K-0006X	Blind flange ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	

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GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000L8	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000L9	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000LA	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000LB	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000LH	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000LL	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000LM	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	0.5				P73T-000FT	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	0.75				P73T-000FU	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	3				P73T-000G5	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	4				P73T-000G6	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-4				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
773	0.5-4				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71K-0006P	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	0.75				P71K-0006R	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	1				P71K-0006S	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71K-0006T	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	2				P71K-0006U	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	3				P71K-0006V	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	4				P71K-0006W	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	

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BOLT TABLE (B_A1LP , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	60	P80S-003V2		
0.75	4	0.500	65	P80S-003V3		
1	4	0.500	70	P80S-003V4		
1.5	4	0.500	75	P80S-003V5		
2	4	0.625	85	P80S-003XE		
3	4	0.625	95	P80S-003XG		
4	8	0.625	95	P80S-003XG		

BOLT TABLE (B_A1LP_773 , STUD ASME RF, OPTION CODE 773)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-003V4		
0.75	4	0.625	75	P80S-003XC		
1	4	0.625	80	P80S-003XD		
1.5	4	0.750	95	P80S-00414		
2	8	0.625	90	P80S-003XF		
3	8	0.750	110	P80S-003XK		
4	8	0.750	115	P80S-003XL		

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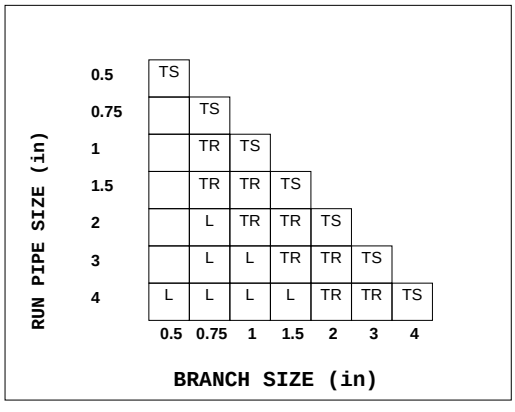
BRANCH TABLE (T_A1LP)



TS : STRAIGHT TEE
L : OUTLET
TR : REDUCING TEE

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PIPING CLASS

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Material : SS316L
Rating : ASME CLASS 150
Flange Face : RF
C.A.(mm) : 1.50
Gasket : Spiral Wound
Service : PROCESS - GENERAL PROCESS NON SOUR, NON CORROSIVE
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
541	NPT(F) (CA,L)
714	SW - NPT(F) (V)
773	CLASS 300 (B,F,G)

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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P01J-0014A	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE	
1	0.75		SCH80S		P01J-0014B	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE	
1	1		SCH80S		P01J-0014C	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE	
1	1.5		SCH80S		P01J-0014D	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE	
1	2		SCH40S		P01J-000CK	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M BE	
1	3		SCH40S		P01J-000D8	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M BE	
1	4		SCH40S		P01J-000DF	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M BE	
1	6		SCH40S		P01J-000DT	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M BE	
1	8		SCH40S		P01J-001GN	Pipe ASTM A358 Grade 316/316L Class 1 dual grade EFW ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P02K-0000G	90 degree elbow ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	0.75				P02K-0000H	90 degree elbow ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	1				P02K-0000J	90 degree elbow ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	1.5				P02K-0000K	90 degree elbow ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	2		SCH40S		P02J-0007C	90 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	3		SCH40S		P02J-0007D	90 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	4		SCH40S		P02J-0007E	90 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	6		SCH40S		P02J-0006V	90 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	8		SCH40S		P02J-00190	90 degree elbow ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P03K-0000D	45 degree elbow ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	0.75				P03K-0000E	45 degree elbow ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	1				P03K-0000F	45 degree elbow ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	1.5				P03K-0000G	45 degree elbow ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	2		SCH40S		P03J-0007C	45 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	3		SCH40S		P03J-0007D	45 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	4		SCH40S		P03J-0007E	45 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	6		SCH40S		P03J-0006L	45 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	8		SCH40S		P03J-0017W	45 degree elbow ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P21K-0000G	Straight tee ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	0.75				P21K-0000H	Straight tee ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	1				P21K-0000J	Straight tee ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	1.5				P21K-0000K	Straight tee ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	2		SCH40S		P21J-0007W	Straight tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	3		SCH40S		P21J-0007X	Straight tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	4		SCH40S		P21J-0007Y	Straight tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	6		SCH40S		P21J-00074	Straight tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	8		SCH40S		P21J-0011C	Straight tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75			P24K-0000M	Reducing tee ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	1.5	0.75			P24K-0000P	Reducing tee ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	1.5	1			P24K-0000R	Reducing tee ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	2	1	SCH40S	SCH80S	P24J-003MZ	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	2	1.5	SCH40S	SCH80S	P24J-003N0	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	3	1.5	SCH40S	SCH80S	P24J-004TU	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	3	2	SCH40S	SCH40S	P24J-001JD	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	

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REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	4	2	SCH40S	SCH40S	P24J-001JE	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	4	3	SCH40S	SCH40S	P24J-001JF	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	6	3	SCH40S	SCH40S	P24J-001JG	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	6	4	SCH40S	SCH40S	P24J-001JH	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	8	4	SCH40S	SCH40S	P24J-004UP	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	8	6	SCH40S	SCH40S	P24J-004UR	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	SCH40S	SCH40S	P27J-000WG	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	4	2	SCH40S	SCH40S	P27J-000WJ	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	4	3	SCH40S	SCH40S	P27J-000WK	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	6	3	SCH40S	SCH40S	P27J-000WL	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	6	4	SCH40S	SCH40S	P27J-000WM	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	8	4	SCH40S	SCH40S	P27J-003MV	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	8	6	SCH40S	SCH40S	P27J-003MW	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	SCH40S	SCH40S	P28J-000WB	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	4	2	SCH40S	SCH40S	P28J-000WD	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	4	3	SCH40S	SCH40S	P28J-000WE	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	6	3	SCH40S	SCH40S	P28J-000WF	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	6	4	SCH40S	SCH40S	P28J-000WG	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	8	4	SCH40S	SCH40S	P28J-003NH	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	8	6	SCH40S	SCH40S	P28J-003NJ	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P29K-00021	Cap ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	0.75				P29K-00022	Cap ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	1				P29K-00023	Cap ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	1.5				P29K-00024	Cap ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	2		SCH40S		P29J-0007D	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	3		SCH40S		P29J-0007G	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	4		SCH40S		P29J-0007J	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	6		SCH40S		P29J-00074	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	8		SCH40S		P29J-000YG	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
541	0.75				P29K-00002	Cap ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 NPT	
541	1				P29K-00003	Cap ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P41J-001UY	Straight nipple ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		SCH160		P41J-001UZ	Straight nipple ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		SCH160		P41J-001V0	Straight nipple ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		SCH160		P41J-001V1	Straight nipple ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

CON SWAGED NIPPLE (SNC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH80S	SCH80S	P42J-0008N	Concentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	SCH80S	SCH80S	P42J-0008M	Concentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	SCH80S	SCH80S	P42J-0008P	Concentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	SCH80S	SCH80S	P42J-0008R	Concentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	SCH80S	SCH80S	P42J-0008S	Concentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	

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CON SWAGED NIPPLE (SNC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5	1	SCH80S	SCH80S	P42J-0008T	Concentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	SCH40S	SCH80S	P42J-000B0	Concentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	SCH40S	SCH80S	P42J-000B1	Concentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	SCH40S	SCH80S	P42J-000B2	Concentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	SCH40S	SCH80S	P42J-000B3	Concentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	SCH40S	SCH80S	P42J-000B4	Concentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	

ECC SWAGED NIPPLE (SNE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH80S	SCH80S	P43J-0008R	Eccentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	SCH80S	SCH80S	P43J-0008S	Eccentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	SCH80S	SCH80S	P43J-0008T	Eccentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	SCH80S	SCH80S	P43J-0008U	Eccentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	SCH80S	SCH80S	P43J-0008V	Eccentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	SCH80S	SCH80S	P43J-0008W	Eccentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	SCH40S	SCH80S	P43J-0009D	Eccentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	SCH40S	SCH80S	P43J-0009E	Eccentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	SCH40S	SCH80S	P43J-0009F	Eccentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	SCH40S	SCH80S	P43J-0009G	Eccentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	SCH40S	SCH80S	P43J-0009H	Eccentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	

COUPLING (CPS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P47K-0000G	Coupling ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW - SW	
1	0.75				P47K-0000H	Coupling ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW - SW	
1	1				P47K-0000J	Coupling ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW - SW	
1	1.5				P47K-0000K	Coupling ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW - SW	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2 - 2.5	0.75			P31K-00GGG	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 SW	
1	3 - 5	0.75			P31K-00GGH	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 SW	
1	6 - 12	0.75			P31K-003VD	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 SW	
1	3	1			P31K-003UY	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 SW	
1	4 - 5	1			P31K-00GGJ	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 SW	
1	6 - 10	1			P31K-003UU	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 SW	
1	4	1.5			P31K-003UH	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 SW	
1	5 - 6	1.5			P31K-00GGN	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 SW	
1	8 - 12	1.5			P31K-003UB	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 SW	
541	1	0.75			P31K-001XH	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 NPT	
541	1.5	0.75			P31K-001XM	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 NPT	
541	2 - 2.5	0.75			P31K-00GGK	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 NPT	
541	3 - 5	0.75			P31K-00GGL	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 NPT	
541	6 - 12	0.75			P31K-003U1	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 NPT	
1	6	2	SCH40S	SCH40S	P31K-0035H	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW	
1	8	2	SCH40S	SCH40S	P31K-00BWF	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW	
1	8	3	SCH40S	SCH40S	P31K-00C60	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30K-0001L	Plug ASTM A182 Grade F316/F316L dual grade ASME B16.11 NPT Round head	
1	0.75				P30K-0001M	Plug ASTM A182 Grade F316/F316L dual grade ASME B16.11 NPT Round head	

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PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P30K-0001N	Plug ASTM A182 Grade F316/F316L dual grade ASME B16.11 NPT Round head	
1	1.5				P30K-0001P	Plug ASTM A182 Grade F316/F316L dual grade ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P61K-003AF	Flange SW ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
1	0.75		SCH80S		P61K-003AG	Flange SW ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
1	1		SCH80S		P61K-003AH	Flange SW ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
1	1.5		SCH80S		P61K-003AJ	Flange SW ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
1	2		SCH40S		P61K-002LB	Flange WN ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
1	3		SCH40S		P61K-00340	Flange WN ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
1	4		SCH40S		P61K-00341	Flange WN ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
1	6		SCH40S		P61K-001VX	Flange WN ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
1	8		SCH40S		P61K-005W0	Flange WN ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
773	0.5		SCH80S		P61K-003AK	Flange SW ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF	
773	0.75		SCH80S		P61K-003AL	Flange SW ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF	
773	1		SCH80S		P61K-003AM	Flange SW ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF	
773	1.5		SCH80S		P61K-003AN	Flange SW ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF	
773	2		SCH40S		P61K-002LG	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF	
773	3		SCH40S		P61K-003C5	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF	
773	4		SCH40S		P61K-003C6	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF	
773	6		SCH40S		P61K-00187	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF	
773	8		SCH40S		P61K-003E8	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67K-0007A	Blind flange ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
1	0.75				P67K-00079	Blind flange ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
1	1				P67K-00078	Blind flange ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
1	1.5				P67K-00077	Blind flange ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
1	2				P67K-00071	Blind flange ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
1	3				P67K-0006Y	Blind flange ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
1	4				P67K-0006X	Blind flange ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
1	6				P67K-0006W	Blind flange ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
1	8				P67K-0006V	Blind flange ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000L8	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000L9	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000LA	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000LB	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000LH	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000LL	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000LM	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	6				P73T-000LN	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	8				P73T-000LP	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	0.5				P73T-000FT	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	0.75				P73T-000FU	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	3				P73T-000G5	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

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GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
773	4				P73T-000G6	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	6				P73T-000G7	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	8				P73T-000G8	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-8				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
773	0.5-8				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81K-0010V	Gate valve ASTM A182 Grade F316/F316L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	0.75				P81K-0010W	Gate valve ASTM A182 Grade F316/F316L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	1				P81K-0010X	Gate valve ASTM A182 Grade F316/F316L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	1.5				P81K-0010Y	Gate valve ASTM A182 Grade F316/F316L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	2				P81L-002AV	Gate valve ASTM A351 Grade CF8M Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	3				P81L-002AW	Gate valve ASTM A351 Grade CF8M Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	4				P81L-002AX	Gate valve ASTM A351 Grade CF8M Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	6				P81L-002BU	Gate valve ASTM A351 Grade CF8M Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	8				P81L-002BV	Gate valve ASTM A351 Grade CF8M Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
714	0.5				P81K-001LF	Gate valve ASTM A182 Grade F316/F316L dual grade Class 800 API 602 SW - NPT Trim number 12 BB-BG-OS&Y Handwheel operated	
714	0.75				P81K-001G3	Gate valve ASTM A182 Grade F316/F316L dual grade Class 800 API 602 SW - NPT Trim number 12 BB-BG-OS&Y Handwheel operated	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82K-000P3	Globe valve ASTM A182 Grade F316/F316L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	0.75				P82K-000P4	Globe valve ASTM A182 Grade F316/F316L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	1				P82K-000P5	Globe valve ASTM A182 Grade F316/F316L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	1.5				P82K-000P6	Globe valve ASTM A182 Grade F316/F316L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	2				P82L-0019X	Globe valve ASTM A351 Grade CF8M Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	3				P82L-0019Y	Globe valve ASTM A351 Grade CF8M Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	4				P82L-0019Z	Globe valve ASTM A351 Grade CF8M Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	6				P82L-001AB	Globe valve ASTM A351 Grade CF8M Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	8				P82L-001AC	Globe valve ASTM A351 Grade CF8M Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83K-000P6	Check valve ASTM A182 Grade F316/F316L dual grade Class 800 API 602 SW Trim number 12 Lift-type Bolted cover	
1	0.75				P83K-000P7	Check valve ASTM A182 Grade F316/F316L dual grade Class 800 API 602 SW Trim number 12 Lift-type Bolted cover	
1	1				P83K-000P8	Check valve ASTM A182 Grade F316/F316L dual grade Class 800 API 602 SW Trim number 12 Lift-type Bolted cover	
1	1.5				P83K-000P9	Check valve ASTM A182 Grade F316/F316L dual grade Class 800 API 602 SW Trim number 12 Lift-type Bolted cover	
1	2				P83L-000EC	Check valve ASTM A351 Grade CF8M Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	3				P83L-000EB	Check valve ASTM A351 Grade CF8M Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	4				P83L-000EA	Check valve ASTM A351 Grade CF8M Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	6				P83L-000E9	Check valve ASTM A351 Grade CF8M Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	8				P83L-000E8	Check valve ASTM A351 Grade CF8M Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	

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SPECT BLANK (SB)							
OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71K-0006P	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	0.75				P71K-0006R	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	1				P71K-0006S	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71K-0006T	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	2				P71K-0006U	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	3				P71K-0006V	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	4				P71K-0006W	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	6				P71K-0006Z	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	8				P71K-00070	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	

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BOLT TABLE (B_A1LP04 , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	60	P80S-003V2		
0.75	4	0.500	65	P80S-003V3		
1	4	0.500	70	P80S-003V4		
1.5	4	0.500	75	P80S-003V5		
2	4	0.625	85	P80S-003XE		
3	4	0.625	95	P80S-003XG		
4	8	0.625	95	P80S-003XG		
6	8	0.750	105	P80S-003XJ		
8	8	0.750	110	P80S-003XK		

BOLT TABLE (B_A1LP04_773 , STUD ASME RF, OPTION CODE 773)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-003V4		
0.75	4	0.625	75	P80S-003XC		
1	4	0.625	80	P80S-003XD		
1.5	4	0.750	95	P80S-00414		
2	8	0.625	90	P80S-003XF		
3	8	0.750	110	P80S-003XK		
4	8	0.750	115	P80S-003XL		
6	12	0.750	125	P80S-003XN		
8	12	0.875	140	P80S-0041D		

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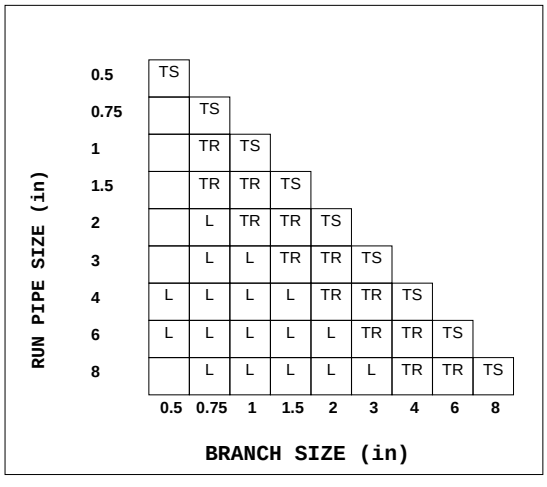
BRANCH TABLE (T_A1LP04)



TR : REDUCING TEE
L : OUTLET
TS : STRAIGHT TEE

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PIPING CLASS

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Material : SS316L
Rating : ASME CLASS 150
Flange Face : RF
C.A.(mm) : 1.50
Gasket : Spiral Wound
Service : PROCESS - CORROSIVE SERVICE : / CORROSIVE PROCESS FRESH AND SPENT ACID (H2S04)

Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
2	USE OF SOFT SEATED BALL, PLUG AND BUTTERFLY VALVES SHALL BE LIMITED TO MAXIMUM OF 204DEGC (400DEGF)
24	FOR ALL RELEVANT PIPING CLASSES WITH LINE DESIGN TEMPERATURE ABOVE 427DEGC, IN SPIRAL WOUND GASKET, SUITABLE GASKET FILLER MATERIAL SUCH AS COMBINATION OF MICA LAYERS AND GRAPHITE FILLERS OR EQUIVALENT SHALL BE REVIEWED AND SELECTED OR AS DEFINED BY THE LICENSOR

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
541	NPT(F) (CA,L)
714	SW - NPT(F) (V)
773	CLASS 300 (B,F,G)

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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P01J-0014A	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE	
1	0.75		SCH80S		P01J-0014B	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE	
1	1		SCH80S		P01J-0014C	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE	
1	1.5		SCH80S		P01J-0014D	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE	
1	2		SCH40S		P01J-000CK	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M BE	
1	3		SCH40S		P01J-000D8	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M BE	
1	4		SCH40S		P01J-000DF	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M BE	
1	6		SCH40S		P01J-000DT	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M BE	
1	8		SCH10S		P01J-001FR	Pipe ASTM A358 Grade 316/316L Class 1 dual grade EFW ASME B36.10M/B36.19M BE	
1	10		SCH40S		P01J-001FX	Pipe ASTM A358 Grade 316/316L Class 1 dual grade EFW ASME B36.10M/B36.19M BE	
1	12		SCH40S		P01J-001FY	Pipe ASTM A358 Grade 316/316L Class 1 dual grade EFW ASME B36.10M/B36.19M BE	
1	14		SCH40S		P01J-001FZ	Pipe ASTM A358 Grade 316/316L Class 1 dual grade EFW ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P02K-0000G	90 degree elbow ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	0.75				P02K-0000H	90 degree elbow ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	1				P02K-0000J	90 degree elbow ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	1.5				P02K-0000K	90 degree elbow ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	2		SCH40S		P02J-0007C	90 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	3		SCH40S		P02J-0007D	90 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	4		SCH40S		P02J-0007E	90 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	6		SCH40S		P02J-0006V	90 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	8		SCH10S		P02J-0006K	90 degree elbow ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Long radius	
1	10		SCH40S		P02J-00188	90 degree elbow ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Long radius	
1	12		SCH40S		P02J-000DX	90 degree elbow ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Long radius	
1	14		SCH40S		P02J-00189	90 degree elbow ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P03K-0000D	45 degree elbow ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	0.75				P03K-0000E	45 degree elbow ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	1				P03K-0000F	45 degree elbow ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	1.5				P03K-0000G	45 degree elbow ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	2		SCH40S		P03J-0007C	45 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	3		SCH40S		P03J-0007D	45 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	4		SCH40S		P03J-0007E	45 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	6		SCH40S		P03J-0006L	45 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	8		SCH10S		P03J-0006K	45 degree elbow ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Long radius	
1	10		SCH40S		P03J-00174	45 degree elbow ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Long radius	
1	12		SCH40S		P03J-000DM	45 degree elbow ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Long radius	
1	14		SCH40S		P03J-00175	45 degree elbow ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P21K-0000G	Straight tee ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	0.75				P21K-0000H	Straight tee ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	1				P21K-0000J	Straight tee ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	1.5				P21K-0000K	Straight tee ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	2		SCH40S		P21J-0007W	Straight tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	3		SCH40S		P21J-0007X	Straight tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	4		SCH40S		P21J-0007Y	Straight tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	6		SCH40S		P21J-00074	Straight tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	

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STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	8		SCH10S		P21J-0006V	Straight tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	10		SCH40S		P21J-0010L	Straight tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	12		SCH40S		P21J-000DP	Straight tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	14		SCH40S		P21J-0010M	Straight tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75			P24K-0000M	Reducing tee ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	1.5	0.75			P24K-0000P	Reducing tee ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	1.5	1			P24K-0000R	Reducing tee ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	2	1	SCH40S	SCH80S	P24J-003MZ	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	2	1.5	SCH40S	SCH80S	P24J-003N0	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	3	1.5	SCH40S	SCH80S	P24J-004TU	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	3	2	SCH40S	SCH40S	P24J-001JD	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	4	2	SCH40S	SCH40S	P24J-001JE	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	4	3	SCH40S	SCH40S	P24J-001JF	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	6	3	SCH40S	SCH40S	P24J-001JG	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	6	4	SCH40S	SCH40S	P24J-001JH	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	8	4	SCH10S	SCH40S	P24J-004TV	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	8	6	SCH10S	SCH40S	P24J-0026Y	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	10	4	SCH40S	SCH40S	P24J-004TW	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	10	6	SCH40S	SCH40S	P24J-004TX	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	10	8	SCH40S	SCH10S	P24J-004V5	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	12	6	SCH40S	SCH40S	P24J-0026X	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	12	8	SCH40S	SCH10S	P24J-0026P	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	12	10	SCH40S	SCH40S	P24J-004TY	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	14	6	SCH40S	SCH40S	P24J-004U1	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	14	8	SCH40S	SCH10S	P24J-004U2	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	14	10	SCH40S	SCH40S	P24J-004TZ	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	14	12	SCH40S	SCH40S	P24J-004U0	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	SCH40S	SCH40S	P27J-000WG	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	4	2	SCH40S	SCH40S	P27J-000WJ	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	4	3	SCH40S	SCH40S	P27J-000WK	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	6	3	SCH40S	SCH40S	P27J-000WL	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	6	4	SCH40S	SCH40S	P27J-000WM	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	8	4	SCH10S	SCH40S	P27J-003LV	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	8	6	SCH10S	SCH40S	P27J-001D2	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	10	4	SCH40S	SCH40S	P27J-003LW	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	10	6	SCH40S	SCH40S	P27J-003LX	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	10	8	SCH40S	SCH10S	P27J-003NF	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	12	6	SCH40S	SCH40S	P27J-001D0	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	12	8	SCH40S	SCH10S	P27J-001CW	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	12	10	SCH40S	SCH40S	P27J-003LY	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	14	6	SCH40S	SCH40S	P27J-003M1	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	14	8	SCH40S	SCH10S	P27J-003M2	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	14	10	SCH40S	SCH40S	P27J-003LZ	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	14	12	SCH40S	SCH40S	P27J-003M0	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	SCH40S	SCH40S	P28J-000WB	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	4	2	SCH40S	SCH40S	P28J-000WD	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	4	3	SCH40S	SCH40S	P28J-000WE	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	6	3	SCH40S	SCH40S	P28J-000WF	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	6	4	SCH40S	SCH40S	P28J-000WG	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	8	4	SCH10S	SCH40S	P28J-003MH	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	

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ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	8	6	SCH10S	SCH40S	P28J-001DV	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	10	4	SCH40S	SCH40S	P28J-003MJ	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	10	6	SCH40S	SCH40S	P28J-003MK	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	10	8	SCH40S	SCH10S	P28J-003P4	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	12	6	SCH40S	SCH40S	P28J-001DU	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	12	8	SCH40S	SCH10S	P28J-001DM	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	12	10	SCH40S	SCH40S	P28J-003ML	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	14	6	SCH40S	SCH40S	P28J-003MP	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	14	8	SCH40S	SCH10S	P28J-003MR	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	14	10	SCH40S	SCH40S	P28J-003MM	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	14	12	SCH40S	SCH40S	P28J-003MN	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P29K-00021	Cap ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	0.75				P29K-00022	Cap ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	1				P29K-00023	Cap ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	1.5				P29K-00024	Cap ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	2		SCH40S		P29J-0007D	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	3		SCH40S		P29J-0007G	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	4		SCH40S		P29J-0007J	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	6		SCH40S		P29J-00074	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	8		SCH10S		P29J-00068	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	10		SCH40S		P29J-000XR	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	12		SCH40S		P29J-000CB	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	14		SCH40S		P29J-000XS	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
541	0.75				P29K-00002	Cap ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P41J-001UY	Straight nipple ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		SCH160		P41J-001UZ	Straight nipple ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		SCH160		P41J-001V0	Straight nipple ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		SCH160		P41J-001V1	Straight nipple ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

CON SWAGED NIPPLE (SNC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH80S	SCH80S	P42J-0008N	Concentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	SCH80S	SCH80S	P42J-0008M	Concentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	SCH80S	SCH80S	P42J-0008P	Concentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	SCH80S	SCH80S	P42J-0008R	Concentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	SCH80S	SCH80S	P42J-0008S	Concentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	SCH80S	SCH80S	P42J-0008T	Concentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	SCH40S	SCH80S	P42J-000B0	Concentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	SCH40S	SCH80S	P42J-000B1	Concentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	SCH40S	SCH80S	P42J-000B2	Concentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	SCH40S	SCH80S	P42J-000B3	Concentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	SCH40S	SCH80S	P42J-000B4	Concentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	

ECC SWAGED NIPPLE (SNE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH80S	SCH80S	P43J-0008R	Eccentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.5	SCH80S	SCH80S	P43J-0008S	Eccentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	SCH80S	SCH80S	P43J-0008T	Eccentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	SCH80S	SCH80S	P43J-0008U	Eccentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	SCH80S	SCH80S	P43J-0008V	Eccentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	SCH80S	SCH80S	P43J-0008W	Eccentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	SCH40S	SCH80S	P43J-0009D	Eccentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	SCH40S	SCH80S	P43J-0009E	Eccentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	SCH40S	SCH80S	P43J-0009F	Eccentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	SCH40S	SCH80S	P43J-0009G	Eccentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	SCH40S	SCH80S	P43J-0009H	Eccentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	

COUPLING (CPS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P47K-0000G	Coupling ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW - SW	
1	0.75				P47K-0000H	Coupling ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW - SW	
1	1				P47K-0000J	Coupling ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW - SW	
1	1.5				P47K-0000K	Coupling ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW - SW	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2 - 2.5	0.75			P31K-00GGG	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 SW	
1	3 - 5	0.75			P31K-00GGH	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 SW	
1	6 - 12	0.75			P31K-003VD	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 SW	
1	14 - 36	0.75			P31K-003VL	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 SW	
1	3	1			P31K-003UY	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 SW	
1	4 - 5	1			P31K-00GGJ	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 SW	
1	6 - 10	1			P31K-003UU	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 SW	
1	12 - 36	1			P31K-003V1	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 SW	
1	4	1.5			P31K-003UH	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 SW	
1	5 - 6	1.5			P31K-00GGN	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 SW	
1	8 - 12	1.5			P31K-003UB	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 SW	
1	14 - 24	1.5			P31K-003UP	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 SW	
541	1	0.75			P31K-001XH	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 NPT	
541	1.5	0.75			P31K-001XM	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 NPT	
541	2 - 2.5	0.75			P31K-00GGK	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 NPT	
541	3 - 5	0.75			P31K-00GGL	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 NPT	
541	6 - 12	0.75			P31K-003U1	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 NPT	
541	14 - 36	0.75			P31K-003U8	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 NPT	
1	6	2	SCH40S	SCH40S	P31K-0035H	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW	
1	8	2	SCH10S	SCH40S	P31K-00BUN	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW	
1	10	2	SCH40S	SCH40S	P31K-00BVP	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW	
1	12	2	SCH40S	SCH40S	P31K-00BVS	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW	
1	14	2	SCH40S	SCH40S	P31K-00BVV	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW	
1	8	3	SCH10S	SCH40S	P31K-00BVN	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW	
1	10	3	SCH40S	SCH40S	P31K-00BVR	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW	
1	12	3	SCH40S	SCH40S	P31K-00BVT	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW	
1	14	3	SCH40S	SCH40S	P31K-00BVW	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW	
1	12	4	SCH40S	SCH40S	P31K-00BVU	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW	
1	14	4	SCH40S	SCH40S	P31K-00BVX	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30K-0001L	Plug ASTM A182 Grade F316/F316L dual grade ASME B16.11 NPT Round head	
1	0.75				P30K-0001M	Plug ASTM A182 Grade F316/F316L dual grade ASME B16.11 NPT Round head	
1	1				P30K-0001N	Plug ASTM A182 Grade F316/F316L dual grade ASME B16.11 NPT Round head	

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PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5				P30K-0001P	Plug ASTM A182 Grade F316/F316L dual grade ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P61K-003AF	Flange SW ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
1	0.75		SCH80S		P61K-003AG	Flange SW ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
1	1		SCH80S		P61K-003AH	Flange SW ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
1	1.5		SCH80S		P61K-003AJ	Flange SW ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
1	2		SCH40S		P61K-002LB	Flange WN ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
1	3		SCH40S		P61K-00340	Flange WN ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
1	4		SCH40S		P61K-00341	Flange WN ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
1	6		SCH40S		P61K-001VX	Flange WN ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
1	8		SCH10S		P61K-0017J	Flange WN ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
1	10		SCH40S		P61K-003C1	Flange WN ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
1	12		SCH40S		P61K-001VV	Flange WN ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
1	14		SCH40S		P61K-003C2	Flange WN ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
773	0.5		SCH80S		P61K-003AK	Flange SW ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF	
773	0.75		SCH80S		P61K-003AL	Flange SW ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF	
773	1		SCH80S		P61K-003AM	Flange SW ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF	
773	1.5		SCH80S		P61K-003AN	Flange SW ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF	
773	2		SCH40S		P61K-002LG	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF	
773	3		SCH40S		P61K-003C5	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF	
773	4		SCH40S		P61K-003C6	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF	
773	6		SCH40S		P61K-00187	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF	
773	8		SCH10S		P61K-001C7	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF	
773	10		SCH40S		P61K-003C3	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF	
773	12		SCH40S		P61K-001VW	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF	
773	14		SCH40S		P61K-003C4	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67K-0007A	Blind flange ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
1	0.75				P67K-00079	Blind flange ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
1	1				P67K-00078	Blind flange ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
1	1.5				P67K-00077	Blind flange ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
1	2				P67K-00071	Blind flange ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
1	3				P67K-0006Y	Blind flange ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
1	4				P67K-0006X	Blind flange ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
1	6				P67K-0006W	Blind flange ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
1	8				P67K-0006V	Blind flange ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
1	10				P67K-00076	Blind flange ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
1	12				P67K-00075	Blind flange ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
1	14				P67K-00074	Blind flange ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000L8	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000L9	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000LA	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000LB	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000LH	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000LL	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000LM	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	6				P73T-000LN	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	8				P73T-000LP	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

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GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	10				P73T-000LC	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	12				P73T-000LD	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	14				P73T-000LE	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	0.5				P73T-000FT	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	0.75				P73T-000FU	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	3				P73T-000G5	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	4				P73T-000G6	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	6				P73T-000G7	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	8				P73T-000G8	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	10				P73T-000FX	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	12				P73T-000FY	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	14				P73T-000FZ	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-14				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
773	0.5-10				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
773	12-14				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81K-0010V	Gate valve ASTM A182 Grade F316/F316L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	0.75				P81K-0010W	Gate valve ASTM A182 Grade F316/F316L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	1				P81K-0010X	Gate valve ASTM A182 Grade F316/F316L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	1.5				P81K-0010Y	Gate valve ASTM A182 Grade F316/F316L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	2				P81L-002AV	Gate valve ASTM A351 Grade CF8M Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	3				P81L-002AW	Gate valve ASTM A351 Grade CF8M Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	4				P81L-002AX	Gate valve ASTM A351 Grade CF8M Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	6				P81L-002BU	Gate valve ASTM A351 Grade CF8M Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	8				P81L-002BV	Gate valve ASTM A351 Grade CF8M Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	10				P81L-002BS	Gate valve ASTM A351 Grade CF8M Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	12				P81L-002BT	Gate valve ASTM A351 Grade CF8M Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	14				P81L-002BW	Gate valve ASTM A351 Grade CF8M Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated	
714	0.5				P81K-001LF	Gate valve ASTM A182 Grade F316/F316L dual grade Class 800 API 602 SW - NPT Trim number 12 BB-BG-OS&Y Handwheel operated	
714	0.75				P81K-001G3	Gate valve ASTM A182 Grade F316/F316L dual grade Class 800 API 602 SW - NPT Trim number 12 BB-BG-OS&Y Handwheel operated	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82K-000P3	Globe valve ASTM A182 Grade F316/F316L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	0.75				P82K-000P4	Globe valve ASTM A182 Grade F316/F316L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	1				P82K-000P5	Globe valve ASTM A182 Grade F316/F316L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	1.5				P82K-000P6	Globe valve ASTM A182 Grade F316/F316L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	2				P82L-0019X	Globe valve ASTM A351 Grade CF8M Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	

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GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3				P82L-0019Y	Globe valve ASTM A351 Grade CF8M Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	4				P82L-0019Z	Globe valve ASTM A351 Grade CF8M Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	6				P82L-001AB	Globe valve ASTM A351 Grade CF8M Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	8				P82L-001AC	Globe valve ASTM A351 Grade CF8M Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71K-0006P	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	0.75				P71K-0006R	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	1				P71K-0006S	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71K-0006T	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	2				P71K-0006U	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	3				P71K-0006V	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	4				P71K-0006W	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	6				P71K-0006Z	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	8				P71K-00070	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	10				P71K-0006X	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	12				P71K-0006Y	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	

PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72K-00043	Paddle blank ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	

PADDLE SPACER (PS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72K-00049	Paddle spacer ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	

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BOLT TABLE (B_A1LV , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	60	P80S-003V2		
0.75	4	0.500	65	P80S-003V3		
1	4	0.500	70	P80S-003V4		
1.5	4	0.500	75	P80S-003V5		
2	4	0.625	85	P80S-003XE		
3	4	0.625	95	P80S-003XG		
4	8	0.625	95	P80S-003XG		
6	8	0.750	105	P80S-003XJ		
8	8	0.750	110	P80S-003XK		
10	12	0.875	120	P80S-00419		
12	12	0.875	120	P80S-00419		
14	12	1.000	135	P80S-0043E		

BOLT TABLE (B_A1LV_773 , STUD ASME RF, OPTION CODE 773)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-003V4		
0.75	4	0.625	75	P80S-003XC		
1	4	0.625	80	P80S-003XD		
1.5	4	0.750	95	P80S-00414		
2	8	0.625	90	P80S-003XF		
3	8	0.750	110	P80S-003XK		
4	8	0.750	115	P80S-003XL		
6	12	0.750	125	P80S-003XN		
8	12	0.875	140	P80S-0041D		
10	16	1.000	160	P80S-0043K		
12	16	1.125	175	P80S-0046S		
14	20	1.125	180	P80S-0046T		

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PIPING CLASS

A1LV REV NO. 2

BRANCH TABLE (T_A1LV)

RUN PIPE SIZE (in) \ BRANCH SIZE (in)	0.5	0.75	1	1.5	2	3	4	6	8	10	12	14
0.5	TS											
0.75		TS										
1		TR	TS									
1.5		TR	TR	TS								
2		L	TR	TR	TS							
3		L	L	TR	TR	TS						
4	L	L	L	L	TR	TR	TS					
6	L	L	L	L	L	TR	TR	TS				
8		L	L	L	L	L	TR	TR	TS			
10		L	L	L	L	L	TR	TR	TR	TS		
12		L	L	L	L	L	L	TR	TR	TR	TS	
14		L	L	L	L	L	L	TR	TR	TR	TR	TS

TS : STRAIGHT TEE
TR : REDUCING TEE
L : OUTLET

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PIPING CLASS

A1LV04 REV NO. 2

Material : SS316L
Rating : ASME CLASS 150
Flange Face : RF
C.A.(mm) : 1.50
Gasket : Spiral Wound
Service : PROCESS - CORROSIVE SERVICE:
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
2	USE OF SOFT SEATED BALL, PLUG AND BUTTERFLY VALVES SHALL BE LIMITED TO MAXIMUM OF 204DEGC (400DEGF)
24	FOR ALL RELEVANT PIPING CLASSES WITH LINE DESIGN TEMPERATURE ABOVE 427DEGC, IN SPIRAL WOUND GASKET, SUITABLE GASKET FILLER MATERIAL SUCH AS COMBINATION OF MICA LAYERS AND GRAPHITE FILLERS OR EQUIVALENT SHALL BE REVIEWED AND SELECTED OR AS DEFINED BY THE LICENSOR

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
200	WITH JACK SCREW (FO)
221	RF (V)
541	NPT(F) (CA,L)
714	SW - NPT(F) (V)
773	CLASS 300 (B,F,G)
3001	INSULATION GASKET KIT AND BOLTS FOR FLANGE (G)

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PIPING CLASS
A1LV04 REV NO. 2

PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P01J-0014A	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE	
1	0.75		SCH80S		P01J-0014B	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE	
1	1		SCH80S		P01J-0014C	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE	
1	1.5		SCH80S		P01J-0014D	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE	
1	2		SCH40S		P01J-000CK	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M BE	
1	3		SCH40S		P01J-000D8	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M BE	
1	4		SCH40S		P01J-000DF	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M BE	
1	6		SCH40S		P01J-000DT	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M BE	
1	8		SCH40S		P01J-001GN	Pipe ASTM A358 Grade 316/316L Class 1 dual grade EFW ASME B36.10M/B36.19M BE	
1	10		SCH40S		P01J-001FX	Pipe ASTM A358 Grade 316/316L Class 1 dual grade EFW ASME B36.10M/B36.19M BE	
1	12		SCH40S		P01J-001FY	Pipe ASTM A358 Grade 316/316L Class 1 dual grade EFW ASME B36.10M/B36.19M BE	
1	14		SCH40S		P01J-001FZ	Pipe ASTM A358 Grade 316/316L Class 1 dual grade EFW ASME B36.10M/B36.19M BE	
1	16		SCH40S		P01J-001J8	Pipe ASTM A358 Grade 316/316L Class 1 dual grade EFW ASME B36.10M/B36.19M BE	
1	18		SCH40S		P01J-001HW	Pipe ASTM A358 Grade 316/316L Class 1 dual grade EFW ASME B36.10M/B36.19M BE	
1	20		SCH40S		P01J-001HX	Pipe ASTM A358 Grade 316/316L Class 1 dual grade EFW ASME B36.10M/B36.19M BE	
1	24		SCH40S		P01J-001HY	Pipe ASTM A358 Grade 316/316L Class 1 dual grade EFW ASME B36.10M/B36.19M BE	
1	30		STD		P01J-0025J	Pipe ASTM A358 Grade 316/316L Class 1 dual grade EFW ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P02K-0000G	90 degree elbow ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	0.75				P02K-0000H	90 degree elbow ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	1				P02K-0000J	90 degree elbow ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	1.5				P02K-0000K	90 degree elbow ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	2		SCH40S		P02J-0007C	90 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	3		SCH40S		P02J-0007D	90 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	4		SCH40S		P02J-0007E	90 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	6		SCH40S		P02J-0006V	90 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	8		SCH40S		P02J-00190	90 degree elbow ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Long radius	
1	10		SCH40S		P02J-00188	90 degree elbow ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Long radius	
1	12		SCH40S		P02J-000DX	90 degree elbow ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Long radius	
1	14		SCH40S		P02J-00189	90 degree elbow ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Long radius	
1	16		SCH40S		P02J-001AG	90 degree elbow ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Long radius	
1	18		SCH40S		P02J-001AA	90 degree elbow ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Long radius	
1	20		SCH40S		P02J-001AB	90 degree elbow ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Long radius	
1	24		SCH40S		P02J-001AC	90 degree elbow ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Long radius	
1	30		STD		P02J-0020S	90 degree elbow ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P03K-0000D	45 degree elbow ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	0.75				P03K-0000E	45 degree elbow ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	1				P03K-0000F	45 degree elbow ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	1.5				P03K-0000G	45 degree elbow ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	2		SCH40S		P03J-0007C	45 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	3		SCH40S		P03J-0007D	45 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	4		SCH40S		P03J-0007E	45 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	6		SCH40S		P03J-0006L	45 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	8		SCH40S		P03J-0017W	45 degree elbow ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Long radius	
1	10		SCH40S		P03J-00174	45 degree elbow ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Long radius	
1	12		SCH40S		P03J-000DM	45 degree elbow ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Long radius	
1	14		SCH40S		P03J-00175	45 degree elbow ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Long radius	

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45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	16		SCH40S		P03J-0019C	45 degree elbow ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Long radius	
1	18		SCH40S		P03J-00196	45 degree elbow ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Long radius	
1	20		SCH40S		P03J-00197	45 degree elbow ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Long radius	
1	24		SCH40S		P03J-00198	45 degree elbow ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Long radius	
1	30		STD		P03J-0020H	45 degree elbow ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P21K-0000G	Straight tee ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	0.75				P21K-0000H	Straight tee ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	1				P21K-0000J	Straight tee ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	1.5				P21K-0000K	Straight tee ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	2		SCH40S		P21J-0007W	Straight tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	3		SCH40S		P21J-0007X	Straight tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	4		SCH40S		P21J-0007Y	Straight tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	6		SCH40S		P21J-00074	Straight tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	8		SCH40S		P21J-0011C	Straight tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	10		SCH40S		P21J-0010L	Straight tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	12		SCH40S		P21J-000DP	Straight tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	14		SCH40S		P21J-0010M	Straight tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	16		SCH40S		P21J-0012V	Straight tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	18		SCH40S		P21J-0012N	Straight tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	20		SCH40S		P21J-0012P	Straight tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	24		SCH40S		P21J-0012R	Straight tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	30		STD		P21J-001PR	Straight tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75			P24K-0000M	Reducing tee ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	1.5	0.75			P24K-0000P	Reducing tee ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	1.5	1			P24K-0000R	Reducing tee ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	2	1	SCH40S	SCH80S	P24J-003MZ	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	2	1.5	SCH40S	SCH80S	P24J-003N0	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	3	1.5	SCH40S	SCH80S	P24J-004TU	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	3	2	SCH40S	SCH40S	P24J-001JD	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	4	2	SCH40S	SCH40S	P24J-001JE	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	4	3	SCH40S	SCH40S	P24J-001JF	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	6	3	SCH40S	SCH40S	P24J-001JG	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	6	4	SCH40S	SCH40S	P24J-001JH	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	8	4	SCH40S	SCH40S	P24J-004UP	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	8	6	SCH40S	SCH40S	P24J-004UR	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	10	4	SCH40S	SCH40S	P24J-004TW	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	10	6	SCH40S	SCH40S	P24J-004TX	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	10	8	SCH40S	SCH40S	P24J-004ZM	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	12	6	SCH40S	SCH40S	P24J-0026X	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	12	8	SCH40S	SCH40S	P24J-004ZN	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	12	10	SCH40S	SCH40S	P24J-004TY	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	14	6	SCH40S	SCH40S	P24J-004U1	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	14	8	SCH40S	SCH40S	P24J-00796	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	14	10	SCH40S	SCH40S	P24J-004TZ	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	14	12	SCH40S	SCH40S	P24J-004U0	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	16	6	SCH40S	SCH40S	P24J-007HP	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	16	8	SCH40S	SCH40S	P24J-00798	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	16	10	SCH40S	SCH40S	P24J-004ZP	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	16	12	SCH40S	SCH40S	P24J-004ZR	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	16	14	SCH40S	SCH40S	P24J-00797	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	18	8	SCH40S	SCH40S	P24J-0079B	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	

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PIPING CLASS
A1LV04 REV NO. 2

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	18	10	SCH40S	SCH40S	P24J-00799	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	18	12	SCH40S	SCH40S	P24J-0077S	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	18	14	SCH40S	SCH40S	P24J-0079A	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	18	16	SCH40S	SCH40S	P24J-005RV	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	20	8	SCH40S	SCH40S	P24J-0079F	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	20	10	SCH40S	SCH40S	P24J-0079C	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	20	12	SCH40S	SCH40S	P24J-0079D	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	20	14	SCH40S	SCH40S	P24J-0079E	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	20	16	SCH40S	SCH40S	P24J-005RW	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	20	18	SCH40S	SCH40S	P24J-004Z9	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	24	10	SCH40S	SCH40S	P24J-0079G	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	24	12	SCH40S	SCH40S	P24J-0079H	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	24	14	SCH40S	SCH40S	P24J-0079J	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	24	16	SCH40S	SCH40S	P24J-0060S	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	24	18	SCH40S	SCH40S	P24J-004ZB	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	24	20	SCH40S	SCH40S	P24J-004ZC	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	30	10	STD	SCH40S	P24J-0079K	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	30	12	STD	SCH40S	P24J-0079L	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	30	14	STD	SCH40S	P24J-0079M	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	30	16	STD	SCH40S	P24J-0079N	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	30	18	STD	SCH40S	P24J-0079P	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	30	20	STD	SCH40S	P24J-0079R	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	30	24	STD	SCH40S	P24J-0079S	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	SCH40S	SCH40S	P27J-000WG	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	4	2	SCH40S	SCH40S	P27J-000WJ	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	4	3	SCH40S	SCH40S	P27J-000WK	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	6	3	SCH40S	SCH40S	P27J-000WL	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	6	4	SCH40S	SCH40S	P27J-000WM	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	8	4	SCH40S	SCH40S	P27J-003MV	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	8	6	SCH40S	SCH40S	P27J-003MW	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	10	4	SCH40S	SCH40S	P27J-003LW	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	10	6	SCH40S	SCH40S	P27J-003LX	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	10	8	SCH40S	SCH40S	P27J-003UF	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	12	6	SCH40S	SCH40S	P27J-001D0	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	12	8	SCH40S	SCH40S	P27J-003UG	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	12	10	SCH40S	SCH40S	P27J-003LY	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	14	6	SCH40S	SCH40S	P27J-003M1	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	14	8	SCH40S	SCH40S	P27J-004VH	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	14	10	SCH40S	SCH40S	P27J-003LZ	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	14	12	SCH40S	SCH40S	P27J-003M0	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	16	8	SCH40S	SCH40S	P27J-003UK	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	16	10	SCH40S	SCH40S	P27J-003UH	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	16	12	SCH40S	SCH40S	P27J-003UJ	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	16	14	SCH40S	SCH40S	P27J-004VU	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	18	10	SCH40S	SCH40S	P27J-004VV	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	18	12	SCH40S	SCH40S	P27J-004VW	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	18	14	SCH40S	SCH40S	P27J-004VX	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	18	16	SCH40S	SCH40S	P27J-004VY	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	20	12	SCH40S	SCH40S	P27J-004VZ	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	20	14	SCH40S	SCH40S	P27J-004W0	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	20	16	SCH40S	SCH40S	P27J-004W1	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	20	18	SCH40S	SCH40S	P27J-003TR	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	24	16	SCH40S	SCH40S	P27J-004XT	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	24	18	SCH40S	SCH40S	P27J-003TT	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	24	20	SCH40S	SCH40S	P27J-003TU	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	30	20	STD	SCH40S	P27J-00638	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	

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CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	30	24	STD	SCH40S	P27J-00639	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	SCH40S	SCH40S	P28J-000WB	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	4	2	SCH40S	SCH40S	P28J-000WD	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	4	3	SCH40S	SCH40S	P28J-000WE	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	6	3	SCH40S	SCH40S	P28J-000WF	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	6	4	SCH40S	SCH40S	P28J-000WG	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	8	4	SCH40S	SCH40S	P28J-003NH	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	8	6	SCH40S	SCH40S	P28J-003NJ	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	10	4	SCH40S	SCH40S	P28J-003MJ	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	10	6	SCH40S	SCH40S	P28J-003MK	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	10	8	SCH40S	SCH40S	P28J-003W1	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	12	6	SCH40S	SCH40S	P28J-001DU	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	12	8	SCH40S	SCH40S	P28J-003W2	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	12	10	SCH40S	SCH40S	P28J-003ML	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	14	6	SCH40S	SCH40S	P28J-003MP	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	14	8	SCH40S	SCH40S	P28J-004W9	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	14	10	SCH40S	SCH40S	P28J-003MM	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	14	12	SCH40S	SCH40S	P28J-003MN	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	16	8	SCH40S	SCH40S	P28J-003W5	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	16	10	SCH40S	SCH40S	P28J-003W3	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	16	12	SCH40S	SCH40S	P28J-003W4	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	16	14	SCH40S	SCH40S	P28J-004WP	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	18	10	SCH40S	SCH40S	P28J-004WK	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	18	12	SCH40S	SCH40S	P28J-004WL	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	18	14	SCH40S	SCH40S	P28J-004WM	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	18	16	SCH40S	SCH40S	P28J-004WN	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	20	12	SCH40S	SCH40S	P28J-004WR	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	20	14	SCH40S	SCH40S	P28J-004WS	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	20	16	SCH40S	SCH40S	P28J-004WT	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	20	18	SCH40S	SCH40S	P28J-003V8	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	24	16	SCH40S	SCH40S	P28J-004YJ	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	24	18	SCH40S	SCH40S	P28J-003VA	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	24	20	SCH40S	SCH40S	P28J-003VB	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	30	20	STD	SCH40S	P28J-00648	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	30	24	STD	SCH40S	P28J-00649	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P29K-00021	Cap ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	0.75				P29K-00022	Cap ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	1				P29K-00023	Cap ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	1.5				P29K-00024	Cap ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	2		SCH40S		P29J-0007D	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	3		SCH40S		P29J-0007G	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	4		SCH40S		P29J-0007J	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	6		SCH40S		P29J-00074	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	8		SCH40S		P29J-000YG	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	10		SCH40S		P29J-000XR	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	12		SCH40S		P29J-000CB	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	14		SCH40S		P29J-000XS	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	16		SCH40S		P29J-000ZM	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	18		SCH40S		P29J-000Z8	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	20		SCH40S		P29J-000Z9	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	24		SCH40S		P29J-000ZA	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	30		STD		P29J-003WD	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	0.75				P29K-00002	Cap ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 NPT	

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STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P41J-001UY	Straight nipple ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		SCH160		P41J-001UZ	Straight nipple ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		SCH160		P41J-001V0	Straight nipple ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		SCH160		P41J-001V1	Straight nipple ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

CON SWAGED NIPPLE (SNC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH80S	SCH80S	P42J-0008N	Concentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	SCH80S	SCH80S	P42J-0008M	Concentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	SCH80S	SCH80S	P42J-0008P	Concentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	SCH80S	SCH80S	P42J-0008R	Concentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	SCH80S	SCH80S	P42J-0008S	Concentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	SCH80S	SCH80S	P42J-0008T	Concentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	SCH40S	SCH80S	P42J-000B0	Concentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	SCH40S	SCH80S	P42J-000B1	Concentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	SCH40S	SCH80S	P42J-000B2	Concentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	SCH40S	SCH80S	P42J-000B3	Concentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	SCH40S	SCH80S	P42J-000B4	Concentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	

ECC SWAGED NIPPLE (SNE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH80S	SCH80S	P43J-0008R	Eccentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	SCH80S	SCH80S	P43J-0008S	Eccentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	SCH80S	SCH80S	P43J-0008T	Eccentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	SCH80S	SCH80S	P43J-0008U	Eccentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	SCH80S	SCH80S	P43J-0008V	Eccentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	SCH80S	SCH80S	P43J-0008W	Eccentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	SCH40S	SCH80S	P43J-0009D	Eccentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	SCH40S	SCH80S	P43J-0009E	Eccentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	SCH40S	SCH80S	P43J-0009F	Eccentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	SCH40S	SCH80S	P43J-0009G	Eccentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	SCH40S	SCH80S	P43J-0009H	Eccentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	

COUPLING (CPS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P47K-0000G	Coupling ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW - SW	
1	0.75				P47K-0000H	Coupling ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW - SW	
1	1				P47K-0000J	Coupling ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW - SW	
1	1.5				P47K-0000K	Coupling ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW - SW	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2 - 2.5	0.75			P31K-00GGG	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 SW	
1	3 - 5	0.75			P31K-00GGH	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 SW	
1	6 - 12	0.75			P31K-003VD	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 SW	
1	14 - 36	0.75			P31K-003VL	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 SW	
1	3	1			P31K-003UY	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 SW	
1	4 - 5	1			P31K-00GGJ	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 SW	
1	6 - 10	1			P31K-003UU	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 SW	

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OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	12 - 36	1			P31K-003V1	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 SW	
1	4	1.5			P31K-003UH	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 SW	
1	5 - 6	1.5			P31K-00GGN	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 SW	
1	8 - 12	1.5			P31K-003UB	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 SW	
1	14 - 24	1.5			P31K-003UP	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 SW	
1	26 - 36	1.5			P31K-00GHR	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 SW	
541	1	0.75			P31K-001XH	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 NPT	
541	1.5	0.75			P31K-001XM	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 NPT	
541	2 - 2.5	0.75			P31K-00GGK	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 NPT	
541	3 - 5	0.75			P31K-00GGL	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 NPT	
541	6 - 12	0.75			P31K-003U1	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 NPT	
541	14 - 36	0.75			P31K-003U8	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 NPT	
1	6	2	SCH40S	SCH40S	P31K-0035H	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW	
1	8	2	SCH40S	SCH40S	P31K-00BWF	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW	
1	10	2	SCH40S	SCH40S	P31K-00BVP	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW	
1	12	2	SCH40S	SCH40S	P31K-00BVS	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW	
1	14	2	SCH40S	SCH40S	P31K-00BVV	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW	
1	16	2	SCH40S	SCH40S	P31K-00C62	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW	
1	18	2	SCH40S	SCH40S	P31K-00C54	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW	
1	20	2	SCH40S	SCH40S	P31K-00C57	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW	
1	24	2	SCH40S	SCH40S	P31K-00C5A	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW	
1	30	2	STD	SCH40S	P31K-00F63	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW	
1	8	3	SCH40S	SCH40S	P31K-00C60	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW	
1	10	3	SCH40S	SCH40S	P31K-00BVR	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW	
1	12	3	SCH40S	SCH40S	P31K-00BVT	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW	
1	14	3	SCH40S	SCH40S	P31K-00BVW	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW	
1	16	3	SCH40S	SCH40S	P31K-00C63	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW	
1	18	3	SCH40S	SCH40S	P31K-00C55	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW	
1	20	3	SCH40S	SCH40S	P31K-00C58	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW	
1	24	3	SCH40S	SCH40S	P31K-00C5B	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW	
1	30	3	STD	SCH40S	P31K-00F0L	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW	
1	12	4	SCH40S	SCH40S	P31K-00BVU	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW	
1	14	4	SCH40S	SCH40S	P31K-00BVX	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW	
1	16	4	SCH40S	SCH40S	P31K-00C64	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW	
1	18	4	SCH40S	SCH40S	P31K-00C56	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW	
1	20	4	SCH40S	SCH40S	P31K-00C59	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW	
1	24	4	SCH40S	SCH40S	P31K-00C5C	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW	
1	30	4	STD	SCH40S	P31K-00F64	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW	
1	18	6	SCH40S	SCH40S	P31K-00D85	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW	
1	20	6	SCH40S	SCH40S	P31K-00D8A	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW	
1	24	6	SCH40S	SCH40S	P31K-00DBF	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW	
1	30	6	STD	SCH40S	P31K-00F65	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30K-0001L	Plug ASTM A182 Grade F316/F316L dual grade ASME B16.11 NPT Round head	
1	0.75				P30K-0001M	Plug ASTM A182 Grade F316/F316L dual grade ASME B16.11 NPT Round head	
1	1				P30K-0001N	Plug ASTM A182 Grade F316/F316L dual grade ASME B16.11 NPT Round head	
1	1.5				P30K-0001P	Plug ASTM A182 Grade F316/F316L dual grade ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P61K-003AF	Flange SW ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
1	0.75		SCH80S		P61K-003AG	Flange SW ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
1	1		SCH80S		P61K-003AH	Flange SW ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
1	1.5		SCH80S		P61K-003AJ	Flange SW ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
1	2		SCH40S		P61K-002LB	Flange WN ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
1	3		SCH40S		P61K-00340	Flange WN ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
1	4		SCH40S		P61K-00341	Flange WN ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	

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FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	6		SCH40S		P61K-001VX	Flange WN ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
1	8		SCH40S		P61K-005W0	Flange WN ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
1	10		SCH40S		P61K-003C1	Flange WN ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
1	12		SCH40S		P61K-001VV	Flange WN ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
1	14		SCH40S		P61K-003C2	Flange WN ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
1	16		SCH40S		P61K-005W8	Flange WN ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
1	18		SCH40S		P61K-003H4	Flange WN ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
1	20		SCH40S		P61K-003H5	Flange WN ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
1	24		SCH40S		P61K-003H6	Flange WN ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
1	30		STD		P61K-005W9	Flange WN ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.47 Series B RF	
773	0.5		SCH80S		P61K-003AK	Flange SW ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF	
773	0.75		SCH80S		P61K-003AL	Flange SW ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF	
773	1		SCH80S		P61K-003AM	Flange SW ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF	
773	1.5		SCH80S		P61K-003AN	Flange SW ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF	
773	2		SCH40S		P61K-002LG	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF	
773	3		SCH40S		P61K-003C5	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF	
773	4		SCH40S		P61K-003C6	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF	
773	6		SCH40S		P61K-00187	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF	
773	8		SCH40S		P61K-003E8	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF	
773	10		SCH40S		P61K-003C3	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF	
773	12		SCH40S		P61K-001VW	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF	
773	14		SCH40S		P61K-003C4	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF	
773	16		SCH40S		P61K-003HY	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF	
773	18		SCH40S		P61K-003RC	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF	
773	20		SCH40S		P61K-003RD	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF	
773	24		SCH40S		P61K-003RE	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF	
773	30		STD		P61K-005WA	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.47 Series B RF	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67K-0007A	Blind flange ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
1	0.75				P67K-00079	Blind flange ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
1	1				P67K-00078	Blind flange ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
1	1.5				P67K-00077	Blind flange ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
1	2				P67K-00071	Blind flange ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
1	3				P67K-0006Y	Blind flange ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
1	4				P67K-0006X	Blind flange ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
1	6				P67K-0006W	Blind flange ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
1	8				P67K-0006V	Blind flange ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
1	10				P67K-00076	Blind flange ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
1	12				P67K-00075	Blind flange ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
1	14				P67K-00074	Blind flange ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
1	16				P67K-00073	Blind flange ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
1	18				P67K-00072	Blind flange ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
1	20				P67K-00070	Blind flange ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
1	24				P67K-0006Z	Blind flange ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
1	30				P67K-0010F	Blind flange ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.47 Series B RF	

REDUCING FLANGE (FR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2	0.75		SCH80S	P62K-000C3	Reducing flange WN ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
1	2	1		SCH80S	P62K-000B9	Reducing flange WN ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
1	2	1.5		SCH80S	P62K-000BA	Reducing flange WN ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
1	3	1.5		SCH80S	P62K-000BB	Reducing flange WN ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
1	3	2		SCH40S	P62K-000BC	Reducing flange WN ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
1	4	2		SCH40S	P62K-000BD	Reducing flange WN ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
1	4	3		SCH40S	P62K-000BE	Reducing flange WN ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
1	6	3		SCH40S	P62K-000BF	Reducing flange WN ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
1	6	4		SCH40S	P62K-000BG	Reducing flange WN ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	

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GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000L8	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000L9	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000LA	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000LB	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000LH	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000LL	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000LM	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	6				P73T-000LN	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	8				P73T-000LP	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	10				P73T-000LC	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	12				P73T-000LD	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	14				P73T-000LE	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	16				P73T-000LF	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	18				P73T-000LG	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	20				P73T-000LJ	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	24				P73T-000LK	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	30				P73T-000LT	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
3001	1				P78U-00067	Insulation gasket kit Glass reinforced epoxy Class 150 Manufacturer-standard Flange ASME B16.5 RF	
773	0.5				P73T-000FT	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	0.75				P73T-000FU	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	3				P73T-000G5	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	4				P73T-000G6	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	6				P73T-000G7	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	8				P73T-000G8	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	10				P73T-000FX	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	12				P73T-000FY	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	14				P73T-000FZ	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	16				P73T-000G0	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	18				P73T-000G1	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	20				P73T-000G3	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	24				P73T-000G4	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	30				P73T-000H9	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-16				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	18-24				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
1	30				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
773	0.5-10				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
773	12-30				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	

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GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81K-0010V	Gate valve ASTM A182 Grade F316/F316L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	0.75				P81K-0010W	Gate valve ASTM A182 Grade F316/F316L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	1				P81K-0010X	Gate valve ASTM A182 Grade F316/F316L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	1.5				P81K-0010Y	Gate valve ASTM A182 Grade F316/F316L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	2				P81L-002AV	Gate valve ASTM A351 Grade CF8M Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	3				P81L-002AW	Gate valve ASTM A351 Grade CF8M Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	4				P81L-002AX	Gate valve ASTM A351 Grade CF8M Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	6				P81L-002BU	Gate valve ASTM A351 Grade CF8M Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	8				P81L-002BV	Gate valve ASTM A351 Grade CF8M Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	10				P81L-002BS	Gate valve ASTM A351 Grade CF8M Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	12				P81L-002BT	Gate valve ASTM A351 Grade CF8M Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	14				P81L-002BW	Gate valve ASTM A351 Grade CF8M Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated	
1	16				P81L-002DJ	Gate valve ASTM A351 Grade CF8M Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated	
1	18				P81L-002DK	Gate valve ASTM A351 Grade CF8M Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated	
1	20				P81L-002DL	Gate valve ASTM A351 Grade CF8M Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated	
1	24				P81L-002DM	Gate valve ASTM A351 Grade CF8M Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated	
221	1				P81K-00111	Gate valve ASTM A182 Grade F316/F316L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
714	0.5				P81K-001LF	Gate valve ASTM A182 Grade F316/F316L dual grade Class 800 API 602 SW - NPT Trim number 12 BB-BG-OS&Y Handwheel operated	
714	0.75				P81K-001G3	Gate valve ASTM A182 Grade F316/F316L dual grade Class 800 API 602 SW - NPT Trim number 12 BB-BG-OS&Y Handwheel operated	
714	1				P81K-001JN	Gate valve ASTM A182 Grade F316/F316L dual grade Class 800 API 602 SW - NPT Trim number 12 BB-BG-OS&Y Handwheel operated	
714	1.5				P81K-001JP	Gate valve ASTM A182 Grade F316/F316L dual grade Class 800 API 602 SW - NPT Trim number 12 BB-BG-OS&Y Handwheel operated	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82K-000P3	Globe valve ASTM A182 Grade F316/F316L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	0.75				P82K-000P4	Globe valve ASTM A182 Grade F316/F316L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	1				P82K-000P5	Globe valve ASTM A182 Grade F316/F316L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	1.5				P82K-000P6	Globe valve ASTM A182 Grade F316/F316L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	2				P82L-0019X	Globe valve ASTM A351 Grade CF8M Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	3				P82L-0019Y	Globe valve ASTM A351 Grade CF8M Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	4				P82L-0019Z	Globe valve ASTM A351 Grade CF8M Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	6				P82L-001AB	Globe valve ASTM A351 Grade CF8M Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83K-000P6	Check valve ASTM A182 Grade F316/F316L dual grade Class 800 API 602 SW Trim number 12 Lift-type Bolted cover	
1	0.75				P83K-000P7	Check valve ASTM A182 Grade F316/F316L dual grade Class 800 API 602 SW Trim number 12 Lift-type Bolted cover	
1	1				P83K-000P8	Check valve ASTM A182 Grade F316/F316L dual grade Class 800 API 602 SW Trim number 12 Lift-type Bolted cover	
1	1.5				P83K-000P9	Check valve ASTM A182 Grade F316/F316L dual grade Class 800 API 602 SW Trim number 12 Lift-type Bolted cover	
1	2				P83L-000EC	Check valve ASTM A351 Grade CF8M Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	

BALL VALVE (Q)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2				P84L-003KF	Ball valve Long-pattern ASTM A351 Grade CF8M Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design	
1	3				P84L-003KG	Ball valve Long-pattern ASTM A351 Grade CF8M Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design	
1	4				P84L-003KH	Ball valve Long-pattern ASTM A351 Grade CF8M Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design	

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BUTTERFLY VALVE (H)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	10				P86L-0013D	Offset design butterfly valve ASTM A351 Grade CF8M Class 150 API 609 Category B Lug-type ASME B16.5 RF Disc SS316 Seat Stellite-6 Trim SS316 Triple eccentric design BG Gear operated	
1	12				P86L-0013E	Offset design butterfly valve ASTM A351 Grade CF8M Class 150 API 609 Category B Lug-type ASME B16.5 RF Disc SS316 Seat Stellite-6 Trim SS316 Triple eccentric design BG Gear operated	
1	14				P86L-0013F	Offset design butterfly valve ASTM A351 Grade CF8M Class 150 API 609 Category B Lug-type ASME B16.5 RF Disc SS316 Seat Stellite-6 Trim SS316 Triple eccentric design BG Gear operated	
1	16				P86L-0013G	Offset design butterfly valve ASTM A351 Grade CF8M Class 150 API 609 Category B Lug-type ASME B16.5 RF Disc SS316 Seat Stellite-6 Trim SS316 Triple eccentric design BG Gear operated	

PLUG VALVE (PV)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P85K-00023	Plug valve Short-pattern ASTM A182 Grade F316/F316L dual grade Class 150 API 599 Flange ASME B16.5 RF Plug SS316 Seat PTFE Trim SS316 Nonlubricated taper plug BC-BG Wrench lever operated Regular port	
1	0.75				P85K-00024	Plug valve Short-pattern ASTM A182 Grade F316/F316L dual grade Class 150 API 599 Flange ASME B16.5 RF Plug SS316 Seat PTFE Trim SS316 Nonlubricated taper plug BC-BG Wrench lever operated Regular port	
1	1				P85K-00021	Plug valve Short-pattern ASTM A182 Grade F316/F316L dual grade Class 150 API 599 Flange ASME B16.5 RF Plug SS316 Seat PTFE Trim SS316 Nonlubricated taper plug BC-BG Wrench lever operated Regular port	
1	1.5				P85K-00022	Plug valve Short-pattern ASTM A182 Grade F316/F316L dual grade Class 150 API 599 Flange ASME B16.5 RF Plug SS316 Seat PTFE Trim SS316 Nonlubricated taper plug BC-BG Wrench lever operated Regular port	
1	2				P85L-00061	Plug valve Short-pattern ASTM A351 Grade CF8M Class 150 API 599 Flange ASME B16.5 RF Plug SS316 Seat PTFE Trim SS316 Nonlubricated taper plug BC-BG Wrench lever operated Regular port	
1	3				P85L-00062	Plug valve Short-pattern ASTM A351 Grade CF8M Class 150 API 599 Flange ASME B16.5 RF Plug SS316 Seat PTFE Trim SS316 Nonlubricated taper plug BC-BG Wrench lever operated Regular port	

ORIFICE FLANGE (FO)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2		SCH40S		P66K-0032T	Orifice flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	3		SCH40S		P66K-0032U	Orifice flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	4		SCH40S		P66K-0032V	Orifice flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	6		SCH40S		P66K-0032W	Orifice flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	8		SCH40S		P66K-0032X	Orifice flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
200	2		SCH40S		P66K-0032Y	Orifice flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	3		SCH40S		P66K-0032Z	Orifice flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	4		SCH40S		P66K-00330	Orifice flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	6		SCH40S		P66K-00331	Orifice flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	8		SCH40S		P66K-00332	Orifice flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71K-0006P	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	0.75				P71K-0006R	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	1				P71K-0006S	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71K-0006T	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	2				P71K-0006U	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	3				P71K-0006V	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	4				P71K-0006W	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	6				P71K-0006Z	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	8				P71K-00070	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	10				P71K-0006X	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	12				P71K-0006Y	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	

PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72K-00043	Paddle blank ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	16				P72K-00044	Paddle blank ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	18				P72K-00045	Paddle blank ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	

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PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	20				P72K-00046	Paddle blank ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	24				P72K-00047	Paddle blank ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	30				P72K-00048	Paddle blank ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.47-B RF	

PADDLE SPACER (PS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72K-00049	Paddle spacer ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	16				P72K-0004A	Paddle spacer ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	18				P72K-0004B	Paddle spacer ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	20				P72K-0004C	Paddle spacer ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	24				P72K-0004D	Paddle spacer ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	30				P72K-0004E	Paddle spacer ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.47-B RF	

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BOLT TABLE (B_A1LV04 , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	60	P80S-003V2		
0.75	4	0.500	65	P80S-003V3		
1	4	0.500	70	P80S-003V4		
1.5	4	0.500	75	P80S-003V5		
2	4	0.625	85	P80S-003XE		
3	4	0.625	95	P80S-003XG		
4	8	0.625	95	P80S-003XG		
6	8	0.750	105	P80S-003XJ		
8	8	0.750	110	P80S-003XK		
10	12	0.875	120	P80S-00419		
12	12	0.875	120	P80S-00419		
14	12	1.000	135	P80S-0043E		
16	16	1.000	140	P80S-0043F		
18	16	1.125	150	P80S-0046K		
20	20	1.125	160	P80S-0046M		
24	20	1.250	175	P80S-004AG		
30	44	0.750	145	P80S-003ZK		

BOLT TABLE (B_A1LV04_773 , STUD ASME RF, OPTION CODE 773)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-003V4		
0.75	4	0.625	75	P80S-003XC		
1	4	0.625	80	P80S-003XD		
1.5	4	0.750	95	P80S-00414		
2	8	0.625	90	P80S-003XF		
3	8	0.750	110	P80S-003XK		
4	8	0.750	115	P80S-003XL		
6	12	0.750	125	P80S-003XN		
8	12	0.875	140	P80S-0041D		
10	16	1.000	160	P80S-0043K		
12	16	1.125	175	P80S-0046S		
14	20	1.125	180	P80S-0046T		
16	20	1.250	190	P80S-004AK		
18	24	1.250	200	P80S-004AM		
20	24	1.250	210	P80S-004AP		
24	24	1.500	235	P80S-003F8		
30	36	1.375	285	P80S-003EA		

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BRANCH TABLE (T_A1LV04)

RUN PIPE SIZE (in) \ BRANCH SIZE (in)	0.5	0.75	1	1.5	2	3	4	6	8	10	12	14	16	18	20	24	30
0.5	TS																
0.75		TS															
1		TR	TS														
1.5		TR	TR	TS													
2		L	TR	TR	TS												
3		L	L	TR	TR	TS											
4	L	L	L	L	TR	TR	TS										
6	L	L	L	L	L	TR	TR	TS									
8		L	L	L	L	L	TR	TR	TS								
10		L	L	L	L	L	TR	TR	TR	TS							
12		L	L	L	L	L	L	TR	TR	TR	TS						
14		L	L	L	L	L	L	TR	TR	TR	TR	TS					
16		L	L	L	L	L	L	TR	TR	TR	TR	TR	TS				
18		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TS			
20		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TR	TS		
24		L	L	L	L	L	L	L	9PD	TR	TR	TR	TR	TR	TR	TS	
30		L	L	L	L	L	L	L	9PD	TR	TR	TR	TR	TR	TR	TR	TS

TR : REDUCING TEE
9PD : REINFORCING PAD 90 DEG
TS : STRAIGHT TEE
L : OUTLET

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PIPING CLASS

A1LW REV NO. 2

Material : SS316L
Rating : ASME CLASS 150
Flange Face : RF
C.A.(mm) : 0.00
Gasket : Spiral Wound
Service : UTILITY - WATER SERVICES :/ COOLING, POTABLE, WASTE WATER WITH TRACE AROMATIC ETC
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
2	USE OF SOFT SEATED BALL, PLUG AND BUTTERFLY VALVES SHALL BE LIMITED TO MAXIMUM OF 204DEGC (400DEGF)

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
24	FULL PORT (Q)
541	NPT(F) (CA,L)
714	SW - NPT(F) (V)
773	CLASS 300 (B,F,G)

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PIPING CLASS
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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P01J-0014A	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE	
1	0.75		SCH80S		P01J-0014B	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE	
1	1		SCH80S		P01J-0014C	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE	
1	1.5		SCH80S		P01J-0014D	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE	
1	2		SCH40S		P01J-000CK	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P02K-0000G	90 degree elbow ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	0.75				P02K-0000H	90 degree elbow ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	1				P02K-0000J	90 degree elbow ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	1.5				P02K-0000K	90 degree elbow ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	2		SCH40S		P02J-0007C	90 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P03K-0000D	45 degree elbow ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	0.75				P03K-0000E	45 degree elbow ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	1				P03K-0000F	45 degree elbow ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	1.5				P03K-0000G	45 degree elbow ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	2		SCH40S		P03J-0007C	45 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P21K-0000G	Straight tee ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	0.75				P21K-0000H	Straight tee ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	1				P21K-0000J	Straight tee ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	1.5				P21K-0000K	Straight tee ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	2		SCH40S		P21J-0007W	Straight tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75			P24K-0000M	Reducing tee ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	1.5	0.75			P24K-0000P	Reducing tee ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	1.5	1			P24K-0000R	Reducing tee ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	2	1	SCH40S	SCH80S	P24J-003MZ	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	2	1.5	SCH40S	SCH80S	P24J-003N0	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P29K-00021	Cap ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	0.75				P29K-00022	Cap ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	1				P29K-00023	Cap ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	1.5				P29K-00024	Cap ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	2		SCH40S		P29J-0007D	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
541	0.75				P29K-00002	Cap ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P41J-001UY	Straight nipple ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		SCH160		P41J-001UZ	Straight nipple ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		SCH160		P41J-001V0	Straight nipple ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		SCH160		P41J-001V1	Straight nipple ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

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CON SWAGED NIPPLE (SNC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH80S	SCH80S	P42J-0008N	Concentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	SCH80S	SCH80S	P42J-0008M	Concentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	SCH80S	SCH80S	P42J-0008P	Concentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	SCH80S	SCH80S	P42J-0008R	Concentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	SCH80S	SCH80S	P42J-0008S	Concentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	SCH80S	SCH80S	P42J-0008T	Concentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	SCH40S	SCH80S	P42J-000B0	Concentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	SCH40S	SCH80S	P42J-000B1	Concentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	SCH40S	SCH80S	P42J-000B2	Concentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	SCH40S	SCH80S	P42J-000B3	Concentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	

ECC SWAGED NIPPLE (SNE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH80S	SCH80S	P43J-0008R	Eccentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	SCH80S	SCH80S	P43J-0008S	Eccentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	SCH80S	SCH80S	P43J-0008T	Eccentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	SCH80S	SCH80S	P43J-0008U	Eccentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	SCH80S	SCH80S	P43J-0008V	Eccentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	SCH80S	SCH80S	P43J-0008W	Eccentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	SCH40S	SCH80S	P43J-0009D	Eccentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	SCH40S	SCH80S	P43J-0009E	Eccentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	SCH40S	SCH80S	P43J-0009F	Eccentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	SCH40S	SCH80S	P43J-0009G	Eccentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	

COUPLING (CPS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P47K-0000G	Coupling ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW - SW	
1	0.75				P47K-0000H	Coupling ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW - SW	
1	1				P47K-0000J	Coupling ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW - SW	
1	1.5				P47K-0000K	Coupling ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW - SW	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2 - 2.5	0.75			P31K-00GGG	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 SW	
541	1	0.75			P31K-001XH	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 NPT	
541	1.5	0.75			P31K-001XM	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 NPT	
541	2 - 2.5	0.75			P31K-00GGK	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 NPT	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30K-0001L	Plug ASTM A182 Grade F316/F316L dual grade ASME B16.11 NPT Round head	
1	0.75				P30K-0001M	Plug ASTM A182 Grade F316/F316L dual grade ASME B16.11 NPT Round head	
1	1				P30K-0001N	Plug ASTM A182 Grade F316/F316L dual grade ASME B16.11 NPT Round head	
1	1.5				P30K-0001P	Plug ASTM A182 Grade F316/F316L dual grade ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P61K-003AF	Flange SW ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
1	0.75		SCH80S		P61K-003AG	Flange SW ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
1	1		SCH80S		P61K-003AH	Flange SW ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
1	1.5		SCH80S		P61K-003AJ	Flange SW ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	

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FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2		SCH40S		P61K-002LB	Flange WN ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
773	0.5		SCH80S		P61K-003AK	Flange SW ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF	
773	0.75		SCH80S		P61K-003AL	Flange SW ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF	
773	1		SCH80S		P61K-003AM	Flange SW ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF	
773	1.5		SCH80S		P61K-003AN	Flange SW ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF	
773	2		SCH40S		P61K-002LG	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67K-0007A	Blind flange ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
1	0.75				P67K-00079	Blind flange ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
1	1				P67K-00078	Blind flange ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
1	1.5				P67K-00077	Blind flange ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
1	2				P67K-00071	Blind flange ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000L8	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000L9	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000LA	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000LB	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000LH	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	0.5				P73T-000FT	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	0.75				P73T-000FU	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-2				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
773	0.5-2				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81K-0010V	Gate valve ASTM A182 Grade F316/F316L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	0.75				P81K-0010W	Gate valve ASTM A182 Grade F316/F316L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	1				P81K-0010X	Gate valve ASTM A182 Grade F316/F316L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	1.5				P81K-0010Y	Gate valve ASTM A182 Grade F316/F316L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	2				P81L-002AV	Gate valve ASTM A351 Grade CF8M Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
714	0.75				P81K-001G3	Gate valve ASTM A182 Grade F316/F316L dual grade Class 800 API 602 SW - NPT Trim number 12 BB-BG-OS&Y Handwheel operated	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82K-000P3	Globe valve ASTM A182 Grade F316/F316L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	0.75				P82K-000P4	Globe valve ASTM A182 Grade F316/F316L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	1				P82K-000P5	Globe valve ASTM A182 Grade F316/F316L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	1.5				P82K-000P6	Globe valve ASTM A182 Grade F316/F316L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	2				P82L-0019X	Globe valve ASTM A351 Grade CF8M Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	

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CHECK VALVE (X)							
OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83K-000P6	Check valve ASTM A182 Grade F316/F316L dual grade Class 800 API 602 SW Trim number 12 Lift-type Bolted cover	
1	0.75				P83K-000P7	Check valve ASTM A182 Grade F316/F316L dual grade Class 800 API 602 SW Trim number 12 Lift-type Bolted cover	
1	1				P83K-000P8	Check valve ASTM A182 Grade F316/F316L dual grade Class 800 API 602 SW Trim number 12 Lift-type Bolted cover	
1	1.5				P83K-000P9	Check valve ASTM A182 Grade F316/F316L dual grade Class 800 API 602 SW Trim number 12 Lift-type Bolted cover	
1	2				P83L-000EC	Check valve ASTM A351 Grade CF8M Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	

BALL VALVE (Q)							
OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P84K-000U4	Ball valve Long-pattern ASTM A182 Grade F316/F316L dual grade Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design	
1	0.75				P84K-000U5	Ball valve Long-pattern ASTM A182 Grade F316/F316L dual grade Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design	
1	1				P84K-000U6	Ball valve Long-pattern ASTM A182 Grade F316/F316L dual grade Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design	
1	1.5				P84K-000U7	Ball valve Long-pattern ASTM A182 Grade F316/F316L dual grade Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design	
24	0.5				P84K-000U8	Ball valve Long-pattern ASTM A182 Grade F316/F316L dual grade Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	
24	0.75				P84K-000U9	Ball valve Long-pattern ASTM A182 Grade F316/F316L dual grade Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	
24	1				P84K-000UA	Ball valve Long-pattern ASTM A182 Grade F316/F316L dual grade Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	
24	1.5				P84K-000UB	Ball valve Long-pattern ASTM A182 Grade F316/F316L dual grade Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	

SPECT BLANK (SB)							
OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71K-0006P	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	0.75				P71K-0006R	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	1				P71K-0006S	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71K-0006T	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	2				P71K-0006U	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	

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BOLT TABLE (B_A1LW , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	60	P80S-003V2		
0.75	4	0.500	65	P80S-003V3		
1	4	0.500	70	P80S-003V4		
1.5	4	0.500	75	P80S-003V5		
2	4	0.625	85	P80S-003XE		

BOLT TABLE (B_A1LW_773 , STUD ASME RF, OPTION CODE 773)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-003V4		
0.75	4	0.625	75	P80S-003XC		
1	4	0.625	80	P80S-003XD		
1.5	4	0.750	95	P80S-00414		
2	8	0.625	90	P80S-003XF		

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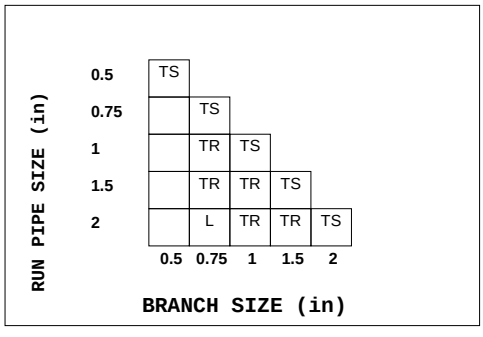
BRANCH TABLE (T_A1LW)



TR : REDUCING TEE
L : OUTLET
TS : STRAIGHT TEE

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Material : SS316L
Rating : ASME CLASS 150
Flange Face : RF
C.A.(mm) : 1.50
Gasket : Spiral Wound
Service : PROCESS - CHEMICAL DOSING:CHEMICALS
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
2	USE OF SOFT SEATED BALL, PLUG AND BUTTERFLY VALVES SHALL BE LIMITED TO MAXIMUM OF 204DEGC (400DEGF)

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
541	NPT(F) (CA,F,L)
773	CLASS 300 (B,F,G)
781	CLASS 600 (B,F,G)
3001	INSULATION GASKET KIT AND BOLTS FOR FLANGE (G)
4608	VALVE WITH NIPPLES (V)

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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P01J-0014A	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE	
1	0.75		SCH80S		P01J-0014B	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE	
1	1		SCH80S		P01J-0014C	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE	
1	1.5		SCH80S		P01J-0014D	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE	
1	2		SCH40S		P01J-000CK	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M BE	
1	3		SCH40S		P01J-000D8	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M BE	
1	4		SCH40S		P01J-000DF	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M BE	
1	6		SCH40S		P01J-000DT	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P02J-00182	90 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	0.75		SCH80S		P02J-00183	90 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	1		SCH80S		P02J-00184	90 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	1.5		SCH80S		P02J-00185	90 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	2		SCH40S		P02J-0007C	90 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	3		SCH40S		P02J-0007D	90 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	4		SCH40S		P02J-0007E	90 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	6		SCH40S		P02J-0006V	90 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P03J-0016Y	45 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	0.75		SCH80S		P03J-0016Z	45 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	1		SCH80S		P03J-00170	45 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	1.5		SCH80S		P03J-00171	45 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	2		SCH40S		P03J-0007C	45 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	3		SCH40S		P03J-0007D	45 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	4		SCH40S		P03J-0007E	45 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	6		SCH40S		P03J-0006L	45 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P21J-0010E	Straight tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	0.75		SCH80S		P21J-0010F	Straight tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	1		SCH80S		P21J-0010G	Straight tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	1.5		SCH80S		P21J-0010H	Straight tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	2		SCH40S		P21J-0007W	Straight tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	3		SCH40S		P21J-0007X	Straight tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	4		SCH40S		P21J-0007Y	Straight tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	6		SCH40S		P21J-00074	Straight tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75	SCH80S	SCH80S	P24J-004TD	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	1.5	0.75	SCH80S	SCH80S	P24J-004TE	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	1.5	1	SCH80S	SCH80S	P24J-004TF	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	2	1	SCH40S	SCH80S	P24J-003MZ	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	2	1.5	SCH40S	SCH80S	P24J-003N0	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	3	1.5	SCH40S	SCH80S	P24J-004TU	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	3	2	SCH40S	SCH40S	P24J-001JD	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	4	2	SCH40S	SCH40S	P24J-001JE	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	4	3	SCH40S	SCH40S	P24J-001JF	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	

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REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	6	3	SCH40S	SCH40S	P24J-001JG	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	6	4	SCH40S	SCH40S	P24J-001JH	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH80S	SCH80S	P27J-002P5	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	1	0.5	SCH80S	SCH80S	P27J-002P6	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	1	0.75	SCH80S	SCH80S	P27J-002P7	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	1.5	0.5	SCH80S	SCH80S	P27J-002P8	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	1.5	0.75	SCH80S	SCH80S	P27J-002P9	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	1.5	1	SCH80S	SCH80S	P27J-002PA	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	2	0.75	SCH40S	SCH80S	P27J-002P1	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	2	1	SCH40S	SCH80S	P27J-002P2	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	2	1.5	SCH40S	SCH80S	P27J-002P3	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	3	1.5	SCH40S	SCH80S	P27J-002NA	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	3	2	SCH40S	SCH40S	P27J-000WG	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	4	1.5	SCH40S	SCH80S	P27J-003MT	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	4	2	SCH40S	SCH40S	P27J-000WJ	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	4	3	SCH40S	SCH40S	P27J-000WK	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	6	3	SCH40S	SCH40S	P27J-000WL	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	6	4	SCH40S	SCH40S	P27J-000WM	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH80S	SCH80S	P28J-002MS	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	1	0.5	SCH80S	SCH80S	P28J-002MT	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	1	0.75	SCH80S	SCH80S	P28J-002MU	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	1.5	0.5	SCH80S	SCH80S	P28J-002MV	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	1.5	0.75	SCH80S	SCH80S	P28J-002MW	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	1.5	1	SCH80S	SCH80S	P28J-002MX	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	2	0.75	SCH40S	SCH80S	P28J-002MM	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	2	1	SCH40S	SCH80S	P28J-002MN	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	2	1.5	SCH40S	SCH80S	P28J-002MP	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	3	1.5	SCH40S	SCH80S	P28J-002LX	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	3	2	SCH40S	SCH40S	P28J-000WB	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	4	1.5	SCH40S	SCH80S	P28J-003NF	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	4	2	SCH40S	SCH40S	P28J-000WD	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	4	3	SCH40S	SCH40S	P28J-000WE	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	6	3	SCH40S	SCH40S	P28J-000WF	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	6	4	SCH40S	SCH40S	P28J-000WG	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P29J-000XK	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	0.75		SCH80S		P29J-000XL	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	1		SCH80S		P29J-000XM	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	1.5		SCH80S		P29J-000XN	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	2		SCH40S		P29J-0007D	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	3		SCH40S		P29J-0007G	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	4		SCH40S		P29J-0007J	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	6		SCH40S		P29J-00074	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
541	0.75				P29K-00002	Cap ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P41J-001UY	Straight nipple ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		SCH160		P41J-001UZ	Straight nipple ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

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STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		SCH160		P41J-001V0	Straight nipple ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		SCH160		P41J-001V1	Straight nipple ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
541	1	0.75			P31K-001XH	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 NPT	
541	1.5	0.75			P31K-001XM	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 NPT	
541	2 - 2.5	0.75			P31K-00GGK	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 NPT	
541	3 - 5	0.75			P31K-00GGL	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 NPT	
541	6 - 12	0.75			P31K-003U1	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 NPT	
1	2	0.75	SCH40S	SCH80S	P31K-00BUE	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW	
1	3	0.75	SCH40S	SCH80S	P31K-00BW1	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW	
1	4	0.75	SCH40S	SCH80S	P31K-00BW6	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW	
1	6	0.75	SCH40S	SCH80S	P31K-00BW9	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW	
1	3	1	SCH40S	SCH80S	P31K-00BW2	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW	
1	4	1	SCH40S	SCH80S	P31K-00BW7	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW	
1	6	1	SCH40S	SCH80S	P31K-00BWA	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW	
1	4	1.5	SCH40S	SCH80S	P31K-00BW8	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW	
1	6	1.5	SCH40S	SCH80S	P31K-00BWB	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW	
1	6	2	SCH40S	SCH40S	P31K-0035H	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30K-0001L	Plug ASTM A182 Grade F316/F316L dual grade ASME B16.11 NPT Round head	
1	0.75				P30K-0001M	Plug ASTM A182 Grade F316/F316L dual grade ASME B16.11 NPT Round head	
1	1				P30K-0001N	Plug ASTM A182 Grade F316/F316L dual grade ASME B16.11 NPT Round head	
1	1.5				P30K-0001P	Plug ASTM A182 Grade F316/F316L dual grade ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P61K-002L7	Flange WN ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
1	0.75		SCH80S		P61K-002L8	Flange WN ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
1	1		SCH80S		P61K-002L9	Flange WN ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
1	1.5		SCH80S		P61K-002LA	Flange WN ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
1	2		SCH40S		P61K-002LB	Flange WN ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
1	3		SCH40S		P61K-00340	Flange WN ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
1	4		SCH40S		P61K-00341	Flange WN ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
1	6		SCH40S		P61K-001VX	Flange WN ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
541	0.5				P61K-003L5	Flange NPT ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
541	0.75				P61K-00609	Flange NPT ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
773	0.5		SCH80S		P61K-002LC	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF	
773	0.75		SCH80S		P61K-002LD	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF	
773	1		SCH80S		P61K-002LE	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF	
773	1.5		SCH80S		P61K-002LF	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF	
773	2		SCH40S		P61K-002LG	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF	
773	3		SCH40S		P61K-003C5	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF	
773	4		SCH40S		P61K-003C6	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF	
773	6		SCH40S		P61K-00187	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF	
781	0.75		SCH80S		P61K-002LX	Flange WN ASTM A182 Grade F316/F316L dual grade Class 600 ASME B16.5 RF	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67K-0007A	Blind flange ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
1	0.75				P67K-00079	Blind flange ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
1	1				P67K-00078	Blind flange ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
1	1.5				P67K-00077	Blind flange ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
1	2				P67K-00071	Blind flange ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
1	3				P67K-0006Y	Blind flange ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	

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BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	4				P67K-0006X	Blind flange ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
1	6				P67K-0006W	Blind flange ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000L8	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000L9	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000LA	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000LB	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000LH	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000LL	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000LM	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	6				P73T-000LN	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
3001	1				P78U-00067	Insulation gasket kit Glass reinforced epoxy Class 150 Manufacturer-standard Flange ASME B16.5 RF	
773	0.5				P73T-000FT	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	0.75				P73T-000FU	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	3				P73T-000G5	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	4				P73T-000G6	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	6				P73T-000G7	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	0.75				P73T-000J9	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-6				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
773	0.5-6				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
781	0.5-6				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81K-001BF	Gate valve ASTM A182 Grade F316/F316L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Fluid-1	
1	0.75				P81K-001BG	Gate valve ASTM A182 Grade F316/F316L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Fluid-1	
1	1				P81K-001BH	Gate valve ASTM A182 Grade F316/F316L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Fluid-1	
1	1.5				P81K-001BJ	Gate valve ASTM A182 Grade F316/F316L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Fluid-1	
1	2				P81L-002RX	Gate valve ASTM A351 Grade CF8M Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Fluid-1	
1	3				P81L-002RY	Gate valve ASTM A351 Grade CF8M Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Fluid-1	
1	4				P81L-002RZ	Gate valve ASTM A351 Grade CF8M Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Fluid-1	
1	6				P81L-002S0	Gate valve ASTM A351 Grade CF8M Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Fluid-1	
4608	0.75				P81K-001PC	Gate valve ASTM A182 Grade F316/F316L dual grade Class 150 API 602 BW both sides w/ nipples BE - NPT ASTM A312-TP316(L) dual grade Seamless Sch160-nipple Trim number 12 BB-BG-OS&Y Handwheel operated Fluid-1	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83K-000M4	Check valve ASTM A182 Grade F316/F316L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover	
1	0.75				P83K-000M5	Check valve ASTM A182 Grade F316/F316L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover	
1	1				P83K-000M6	Check valve ASTM A182 Grade F316/F316L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover	

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CHECK VALVE (X)							
OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5				P83K-000M7	Check valve ASTM A182 Grade F316/F316L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover	
1	2				P83L-000EC	Check valve ASTM A351 Grade CF8M Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	3				P83L-000EB	Check valve ASTM A351 Grade CF8M Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	4				P83L-000EA	Check valve ASTM A351 Grade CF8M Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	6				P83L-000E9	Check valve ASTM A351 Grade CF8M Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	

SPECT BLANK (SB)							
OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71K-0006P	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	0.75				P71K-0006R	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	1				P71K-0006S	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71K-0006T	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	2				P71K-0006U	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	3				P71K-0006V	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	4				P71K-0006W	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	6				P71K-0006Z	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	

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BOLT TABLE (B_A1LY , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	60	P80S-003V2		
0.75	4	0.500	65	P80S-003V3		
1	4	0.500	70	P80S-003V4		
1.5	4	0.500	75	P80S-003V5		
2	4	0.625	85	P80S-003XE		
3	4	0.625	95	P80S-003XG		
4	8	0.625	95	P80S-003XG		
6	8	0.750	105	P80S-003XJ		

BOLT TABLE (B_A1LY_773 , STUD ASME RF, OPTION CODE 773)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-003V4		
0.75	4	0.625	75	P80S-003XC		
1	4	0.625	80	P80S-003XD		
1.5	4	0.750	95	P80S-00414		
2	8	0.625	90	P80S-003XF		
3	8	0.750	110	P80S-003XK		
4	8	0.750	115	P80S-003XL		
6	12	0.750	125	P80S-003XN		

BOLT TABLE (B_A1LY_781 , STUD ASME RF, OPTION CODE 781)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	80	P80S-003V6		
0.75	4	0.625	90	P80S-003XF		
1	4	0.625	95	P80S-003XG		
1.5	4	0.750	110	P80S-003XK		
2	8	0.625	110	P80S-003VC		
3	8	0.750	130	P80S-003XP		
4	8	0.875	150	P80S-0041F		
6	12	1.000	175	P80S-0043P		

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PIPING CLASS

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BRANCH TABLE (T_A1LY)

RUN PIPE SIZE (in) \ BRANCH SIZE (in)	0.5	0.75	1	1.5	2	3	4	6
0.5	TS							
0.75		TS						
1		TR	TS					
1.5		TR	TR	TS				
2		L	TR	TR	TS			
3		L	L	TR	TR	TS		
4	L	L	L	L	TR	TR	TS	
6	L	L	L	L	L	TR	TR	TS

TR : REDUCING TEE
L : OUTLET
TS : STRAIGHT TEE

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PIPING CLASS

A1LY01 REV NO. 2

Material : SS316L
Rating : ASME CLASS 150
Flange Face : RF
C.A.(mm) : 1.50
Gasket : Spiral Wound
Service : PROCESS - CHEMICAL DOSING
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
2	USE OF SOFT SEATED BALL, PLUG AND BUTTERFLY VALVES SHALL BE LIMITED TO MAXIMUM OF 204DEGC (400DEGF)

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
200	WITH JACK SCREW (FO)
541	NPT(F) (CA,F,L)
773	CLASS 300 (B,F,G)
3001	INSULATION GASKET KIT AND BOLTS FOR FLANGE (G)
4608	VALVE WITH NIPPLES (V)

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PIPING CLASS
A1LY01 REV NO. 2

PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P01J-0014A	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE	
1	0.75		SCH80S		P01J-0014B	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE	
1	1		SCH80S		P01J-0014C	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE	
1	1.5		SCH80S		P01J-0014D	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE	
1	2		SCH40S		P01J-000CK	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M BE	
1	3		SCH40S		P01J-000D8	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M BE	
1	4		SCH40S		P01J-000DF	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M BE	
1	6		SCH40S		P01J-000DT	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P02J-00182	90 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	0.75		SCH80S		P02J-00183	90 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	1		SCH80S		P02J-00184	90 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	1.5		SCH80S		P02J-00185	90 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	2		SCH40S		P02J-0007C	90 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	3		SCH40S		P02J-0007D	90 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	4		SCH40S		P02J-0007E	90 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	6		SCH40S		P02J-0006V	90 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P03J-0016Y	45 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	0.75		SCH80S		P03J-0016Z	45 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	1		SCH80S		P03J-00170	45 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	1.5		SCH80S		P03J-00171	45 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	2		SCH40S		P03J-0007C	45 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	3		SCH40S		P03J-0007D	45 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	4		SCH40S		P03J-0007E	45 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	6		SCH40S		P03J-0006L	45 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P21J-0010E	Straight tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	0.75		SCH80S		P21J-0010F	Straight tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	1		SCH80S		P21J-0010G	Straight tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	1.5		SCH80S		P21J-0010H	Straight tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	2		SCH40S		P21J-0007W	Straight tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	3		SCH40S		P21J-0007X	Straight tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	4		SCH40S		P21J-0007Y	Straight tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	6		SCH40S		P21J-00074	Straight tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75	SCH80S	SCH80S	P24J-004TD	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	1.5	0.75	SCH80S	SCH80S	P24J-004TE	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	1.5	1	SCH80S	SCH80S	P24J-004TF	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	2	1	SCH40S	SCH80S	P24J-003MZ	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	2	1.5	SCH40S	SCH80S	P24J-003N0	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	3	1.5	SCH40S	SCH80S	P24J-004TU	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	3	2	SCH40S	SCH40S	P24J-001JD	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	4	2	SCH40S	SCH40S	P24J-001JE	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	4	3	SCH40S	SCH40S	P24J-001JF	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	

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REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	6	3	SCH40S	SCH40S	P24J-001JG	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	6	4	SCH40S	SCH40S	P24J-001JH	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH80S	SCH80S	P27J-002P5	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	1	0.5	SCH80S	SCH80S	P27J-002P6	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	1	0.75	SCH80S	SCH80S	P27J-002P7	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	1.5	0.5	SCH80S	SCH80S	P27J-002P8	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	1.5	0.75	SCH80S	SCH80S	P27J-002P9	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	1.5	1	SCH80S	SCH80S	P27J-002PA	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	2	0.75	SCH40S	SCH80S	P27J-002P1	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	2	1	SCH40S	SCH80S	P27J-002P2	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	2	1.5	SCH40S	SCH80S	P27J-002P3	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	3	1.5	SCH40S	SCH80S	P27J-002NA	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	3	2	SCH40S	SCH40S	P27J-000WG	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	4	1.5	SCH40S	SCH80S	P27J-003MT	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	4	2	SCH40S	SCH40S	P27J-000WJ	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	4	3	SCH40S	SCH40S	P27J-000WK	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	6	3	SCH40S	SCH40S	P27J-000WL	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	6	4	SCH40S	SCH40S	P27J-000WM	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH80S	SCH80S	P28J-002MS	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	1	0.5	SCH80S	SCH80S	P28J-002MT	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	1	0.75	SCH80S	SCH80S	P28J-002MU	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	1.5	0.5	SCH80S	SCH80S	P28J-002MV	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	1.5	0.75	SCH80S	SCH80S	P28J-002MW	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	1.5	1	SCH80S	SCH80S	P28J-002MX	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	2	0.75	SCH40S	SCH80S	P28J-002MM	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	2	1	SCH40S	SCH80S	P28J-002MN	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	2	1.5	SCH40S	SCH80S	P28J-002MP	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	3	1.5	SCH40S	SCH80S	P28J-002LX	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	3	2	SCH40S	SCH40S	P28J-000WB	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	4	1.5	SCH40S	SCH80S	P28J-003NF	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	4	2	SCH40S	SCH40S	P28J-000WD	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	4	3	SCH40S	SCH40S	P28J-000WE	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	6	3	SCH40S	SCH40S	P28J-000WF	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	6	4	SCH40S	SCH40S	P28J-000WG	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P29J-000XK	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	0.75		SCH80S		P29J-000XL	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	1		SCH80S		P29J-000XM	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	1.5		SCH80S		P29J-000XN	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	2		SCH40S		P29J-0007D	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	3		SCH40S		P29J-0007G	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	4		SCH40S		P29J-0007J	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	6		SCH40S		P29J-00074	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
541	0.75				P29K-00002	Cap ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P41J-001UY	Straight nipple ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		SCH160		P41J-001UZ	Straight nipple ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		SCH160		P41J-001V0	Straight nipple ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		SCH160		P41J-001V1	Straight nipple ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
541	1	0.75			P31K-001XH	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 NPT	
541	1.5	0.75			P31K-001XM	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 NPT	
541	2 - 2.5	0.75			P31K-00GGK	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 NPT	
541	3 - 5	0.75			P31K-00GGL	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 NPT	
541	6 - 12	0.75			P31K-003U1	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 NPT	
1	2	0.75	SCH40S	SCH80S	P31K-00BUE	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW	
1	3	0.75	SCH40S	SCH80S	P31K-00BW1	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW	
1	4	0.75	SCH40S	SCH80S	P31K-00BW6	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW	
1	6	0.75	SCH40S	SCH80S	P31K-00BW9	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW	
1	3	1	SCH40S	SCH80S	P31K-00BW2	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW	
1	4	1	SCH40S	SCH80S	P31K-00BW7	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW	
1	6	1	SCH40S	SCH80S	P31K-00BWA	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW	
1	4	1.5	SCH40S	SCH80S	P31K-00BW8	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW	
1	6	1.5	SCH40S	SCH80S	P31K-00BWB	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW	
1	6	2	SCH40S	SCH40S	P31K-0035H	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30K-0001L	Plug ASTM A182 Grade F316/F316L dual grade ASME B16.11 NPT Round head	
1	0.75				P30K-0001M	Plug ASTM A182 Grade F316/F316L dual grade ASME B16.11 NPT Round head	
1	1				P30K-0001N	Plug ASTM A182 Grade F316/F316L dual grade ASME B16.11 NPT Round head	
1	1.5				P30K-0001P	Plug ASTM A182 Grade F316/F316L dual grade ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P61K-002L7	Flange WN ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
1	0.75		SCH80S		P61K-002L8	Flange WN ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
1	1		SCH80S		P61K-002L9	Flange WN ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
1	1.5		SCH80S		P61K-002LA	Flange WN ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
1	2		SCH40S		P61K-002LB	Flange WN ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
1	3		SCH40S		P61K-00340	Flange WN ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
1	4		SCH40S		P61K-00341	Flange WN ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
1	6		SCH40S		P61K-001VX	Flange WN ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
541	0.5				P61K-003L5	Flange NPT ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
541	0.75				P61K-00609	Flange NPT ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
773	0.5		SCH80S		P61K-002LC	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF	
773	0.75		SCH80S		P61K-002LD	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF	
773	1		SCH80S		P61K-002LE	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF	
773	1.5		SCH80S		P61K-002LF	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF	
773	2		SCH40S		P61K-002LG	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF	
773	3		SCH40S		P61K-003C5	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF	
773	4		SCH40S		P61K-003C6	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF	
773	6		SCH40S		P61K-00187	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67K-0007A	Blind flange ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
1	0.75				P67K-00079	Blind flange ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
1	1				P67K-00078	Blind flange ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
1	1.5				P67K-00077	Blind flange ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
1	2				P67K-00071	Blind flange ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
1	3				P67K-0006Y	Blind flange ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
1	4				P67K-0006X	Blind flange ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	

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BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	6				P67K-0006W	Blind flange ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000L8	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000L9	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000LA	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000LB	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000LH	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000LL	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000LM	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	6				P73T-000LN	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
3001	1				P78U-00067	Insulation gasket kit Glass reinforced epoxy Class 150 Manufacturer-standard Flange ASME B16.5 RF	
773	0.5				P73T-000FT	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	0.75				P73T-000FU	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	3				P73T-000G5	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	4				P73T-000G6	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	6				P73T-000G7	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-6				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
773	0.5-6				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81K-001BF	Gate valve ASTM A182 Grade F316/F316L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Fluid-1	
1	0.75				P81K-001BG	Gate valve ASTM A182 Grade F316/F316L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Fluid-1	
1	1				P81K-001BH	Gate valve ASTM A182 Grade F316/F316L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Fluid-1	
1	1.5				P81K-001BJ	Gate valve ASTM A182 Grade F316/F316L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Fluid-1	
1	2				P81L-002RX	Gate valve ASTM A351 Grade CF8M Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Fluid-1	
1	3				P81L-002RY	Gate valve ASTM A351 Grade CF8M Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Fluid-1	
1	4				P81L-002RZ	Gate valve ASTM A351 Grade CF8M Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Fluid-1	
4608	0.75				P81K-001PC	Gate valve ASTM A182 Grade F316/F316L dual grade Class 150 API 602 BW both sides w/ nipples BE - NPT ASTM A312-TP316(L) dual grade Seamless Sch160-nipple Trim number 12 BB-BG-OS&Y Handwheel operated Fluid-1	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83K-000M4	Check valve ASTM A182 Grade F316/F316L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover	
1	0.75				P83K-000M5	Check valve ASTM A182 Grade F316/F316L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover	
1	1				P83K-000M6	Check valve ASTM A182 Grade F316/F316L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover	
1	1.5				P83K-000M7	Check valve ASTM A182 Grade F316/F316L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover	
1	2				P83L-000EC	Check valve ASTM A351 Grade CF8M Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	3				P83L-000EB	Check valve ASTM A351 Grade CF8M Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	

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CHECK VALVE (X)							
OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	4				P83L-000EA	Check valve ASTM A351 Grade CF8M Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	

ORIFICE FLANGE (FO)							
OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2		SCH40S		P66K-0032T	Orifice flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
200	2		SCH40S		P66K-0032Y	Orifice flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	

SPECT BLANK (SB)							
OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71K-0006P	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	0.75				P71K-0006R	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	1				P71K-0006S	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71K-0006T	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	2				P71K-0006U	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	3				P71K-0006V	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	4				P71K-0006W	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	6				P71K-0006Z	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	

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BOLT TABLE (B_A1LY01 , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	60	P80S-003V2		
0.75	4	0.500	65	P80S-003V3		
1	4	0.500	70	P80S-003V4		
1.5	4	0.500	75	P80S-003V5		
2	4	0.625	85	P80S-003XE		
3	4	0.625	95	P80S-003XG		
4	8	0.625	95	P80S-003XG		
6	8	0.750	105	P80S-003XJ		

BOLT TABLE (B_A1LY01_773 , STUD ASME RF, OPTION CODE 773)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-003V4		
0.75	4	0.625	75	P80S-003XC		
1	4	0.625	80	P80S-003XD		
1.5	4	0.750	95	P80S-00414		
2	8	0.625	90	P80S-003XF		
3	8	0.750	110	P80S-003XK		
4	8	0.750	115	P80S-003XL		
6	12	0.750	125	P80S-003XN		

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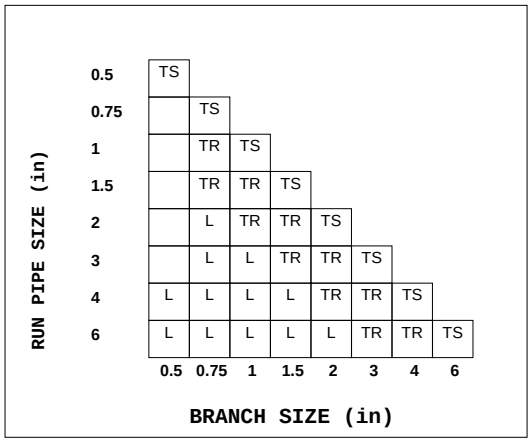
BRANCH TABLE (T_A1LY01)



TR : REDUCING TEE
L : OUTLET
TS : STRAIGHT TEE

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PIPING CLASS

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Material : SS316L
Rating : ASME CLASS 150
Flange Face : RF
C.A.(mm) : 1.50
Gasket : Spiral Wound
Service : PROCESS - CHEMICAL DOSING
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
2	USE OF SOFT SEATED BALL, PLUG AND BUTTERFLY VALVES SHALL BE LIMITED TO MAXIMUM OF 204DEGC (400DEGF)

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
24	FULL PORT (Q)
541	NPT(F) (CA,F,L)
773	CLASS 300 (B,F,G)
4608	VALVE WITH NIPPLES (V)

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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P01J-0014A	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE	
1	0.75		SCH80S		P01J-0014B	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE	
1	1		SCH80S		P01J-0014C	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE	
1	1.5		SCH80S		P01J-0014D	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE	
1	2		SCH40S		P01J-000CK	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M BE	
1	3		SCH40S		P01J-000D8	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M BE	
1	4		SCH40S		P01J-000DF	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P02J-00182	90 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	0.75		SCH80S		P02J-00183	90 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	1		SCH80S		P02J-00184	90 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	1.5		SCH80S		P02J-00185	90 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	2		SCH40S		P02J-0007C	90 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	3		SCH40S		P02J-0007D	90 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	4		SCH40S		P02J-0007E	90 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P03J-0016Y	45 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	0.75		SCH80S		P03J-0016Z	45 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	1		SCH80S		P03J-00170	45 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	1.5		SCH80S		P03J-00171	45 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	2		SCH40S		P03J-0007C	45 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	3		SCH40S		P03J-0007D	45 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	4		SCH40S		P03J-0007E	45 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P21J-0010E	Straight tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	0.75		SCH80S		P21J-0010F	Straight tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	1		SCH80S		P21J-0010G	Straight tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	1.5		SCH80S		P21J-0010H	Straight tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	2		SCH40S		P21J-0007W	Straight tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	3		SCH40S		P21J-0007X	Straight tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	4		SCH40S		P21J-0007Y	Straight tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75	SCH80S	SCH80S	P24J-004TD	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	1.5	0.75	SCH80S	SCH80S	P24J-004TE	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	1.5	1	SCH80S	SCH80S	P24J-004TF	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	2	1	SCH40S	SCH80S	P24J-003MZ	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	2	1.5	SCH40S	SCH80S	P24J-003N0	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	3	1.5	SCH40S	SCH80S	P24J-004TU	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	3	2	SCH40S	SCH40S	P24J-001JD	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	4	2	SCH40S	SCH40S	P24J-001JE	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	4	3	SCH40S	SCH40S	P24J-001JF	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH80S	SCH80S	P27J-002P5	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	

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CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.5	SCH80S	SCH80S	P27J-002P6	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	1	0.75	SCH80S	SCH80S	P27J-002P7	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	1.5	0.5	SCH80S	SCH80S	P27J-002P8	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	1.5	0.75	SCH80S	SCH80S	P27J-002P9	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	1.5	1	SCH80S	SCH80S	P27J-002PA	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	2	0.75	SCH40S	SCH80S	P27J-002P1	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	2	1	SCH40S	SCH80S	P27J-002P2	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	2	1.5	SCH40S	SCH80S	P27J-002P3	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	3	1.5	SCH40S	SCH80S	P27J-002NA	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	3	2	SCH40S	SCH40S	P27J-000WG	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	4	1.5	SCH40S	SCH80S	P27J-003MT	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	4	2	SCH40S	SCH40S	P27J-000WJ	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	4	3	SCH40S	SCH40S	P27J-000WK	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH80S	SCH80S	P28J-002MS	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	1	0.5	SCH80S	SCH80S	P28J-002MT	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	1	0.75	SCH80S	SCH80S	P28J-002MU	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	1.5	0.5	SCH80S	SCH80S	P28J-002MV	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	1.5	0.75	SCH80S	SCH80S	P28J-002MW	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	1.5	1	SCH80S	SCH80S	P28J-002MX	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	2	0.75	SCH40S	SCH80S	P28J-002MM	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	2	1	SCH40S	SCH80S	P28J-002MN	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	2	1.5	SCH40S	SCH80S	P28J-002MP	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	3	1.5	SCH40S	SCH80S	P28J-002LX	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	3	2	SCH40S	SCH40S	P28J-000WB	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	4	1.5	SCH40S	SCH80S	P28J-003NF	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	4	2	SCH40S	SCH40S	P28J-000WD	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	4	3	SCH40S	SCH40S	P28J-000WE	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P29J-000XK	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	0.75		SCH80S		P29J-000XL	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	1		SCH80S		P29J-000XM	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	1.5		SCH80S		P29J-000XN	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	2		SCH40S		P29J-0007D	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	3		SCH40S		P29J-0007G	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	4		SCH40S		P29J-0007J	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
541	0.75				P29K-00002	Cap ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P41J-001UY	Straight nipple ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		SCH160		P41J-001UZ	Straight nipple ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		SCH160		P41J-001V0	Straight nipple ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		SCH160		P41J-001V1	Straight nipple ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
541	1	0.75			P31K-001XH	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 NPT	
541	1.5	0.75			P31K-001XM	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 NPT	
541	2 - 2.5	0.75			P31K-00GGK	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 NPT	
541	3 - 5	0.75			P31K-00GGL	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 NPT	
1	2	0.75	SCH40S	SCH80S	P31K-00BUE	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW	
1	3	0.75	SCH40S	SCH80S	P31K-00BW1	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW	

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OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	4	0.75	SCH40S	SCH80S	P31K-00BW6	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW	
1	3	1	SCH40S	SCH80S	P31K-00BW2	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW	
1	4	1	SCH40S	SCH80S	P31K-00BW7	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW	
1	4	1.5	SCH40S	SCH80S	P31K-00BW8	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30K-0001L	Plug ASTM A182 Grade F316/F316L dual grade ASME B16.11 NPT Round head	
1	0.75				P30K-0001M	Plug ASTM A182 Grade F316/F316L dual grade ASME B16.11 NPT Round head	
1	1				P30K-0001N	Plug ASTM A182 Grade F316/F316L dual grade ASME B16.11 NPT Round head	
1	1.5				P30K-0001P	Plug ASTM A182 Grade F316/F316L dual grade ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P61K-002L7	Flange WN ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
1	0.75		SCH80S		P61K-002L8	Flange WN ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
1	1		SCH80S		P61K-002L9	Flange WN ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
1	1.5		SCH80S		P61K-002LA	Flange WN ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
1	2		SCH40S		P61K-002LB	Flange WN ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
1	3		SCH40S		P61K-00340	Flange WN ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
1	4		SCH40S		P61K-00341	Flange WN ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
541	0.5				P61K-003L5	Flange NPT ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
541	0.75				P61K-00609	Flange NPT ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
773	0.5		SCH80S		P61K-002LC	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF	
773	0.75		SCH80S		P61K-002LD	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF	
773	1		SCH80S		P61K-002LE	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF	
773	1.5		SCH80S		P61K-002LF	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF	
773	2		SCH40S		P61K-002LG	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF	
773	3		SCH40S		P61K-003C5	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF	
773	4		SCH40S		P61K-003C6	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67K-0007A	Blind flange ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
1	0.75				P67K-00079	Blind flange ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
1	1				P67K-00078	Blind flange ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
1	1.5				P67K-00077	Blind flange ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
1	2				P67K-00071	Blind flange ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
1	3				P67K-0006Y	Blind flange ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	
1	4				P67K-0006X	Blind flange ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000L8	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000L9	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000LA	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000LB	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000LH	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000LL	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000LM	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	0.5				P73T-000FT	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	0.75				P73T-000FU	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

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GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
773	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	3				P73T-000G5	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	4				P73T-000G6	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-4				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
773	0.5-4				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81K-001BF	Gate valve ASTM A182 Grade F316/F316L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Fluid-1	
1	0.75				P81K-001BG	Gate valve ASTM A182 Grade F316/F316L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Fluid-1	
1	1				P81K-001BH	Gate valve ASTM A182 Grade F316/F316L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Fluid-1	
1	1.5				P81K-001BJ	Gate valve ASTM A182 Grade F316/F316L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Fluid-1	
1	2				P81L-002RX	Gate valve ASTM A351 Grade CF8M Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Fluid-1	
1	3				P81L-002RY	Gate valve ASTM A351 Grade CF8M Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Fluid-1	
1	4				P81L-002RZ	Gate valve ASTM A351 Grade CF8M Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Fluid-1	
4608	0.75				P81K-001PC	Gate valve ASTM A182 Grade F316/F316L dual grade Class 150 API 602 BW both sides w/ nipples BE - NPT ASTM A312-TP316(L) dual grade Seamless Sch160-nipple Trim number 12 BB-BG-OS&Y Handwheel operated Fluid-1	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P82K-00173	Globe valve ASTM A182 Grade F316/F316L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Fluid-1	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83K-000M4	Check valve ASTM A182 Grade F316/F316L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover	
1	0.75				P83K-000M5	Check valve ASTM A182 Grade F316/F316L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover	
1	1				P83K-000M6	Check valve ASTM A182 Grade F316/F316L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover	
1	1.5				P83K-000M7	Check valve ASTM A182 Grade F316/F316L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover	
1	2				P83L-000EC	Check valve ASTM A351 Grade CF8M Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	3				P83L-000EB	Check valve ASTM A351 Grade CF8M Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	4				P83L-000EA	Check valve ASTM A351 Grade CF8M Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	

BALL VALVE (Q)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75				P84K-000UG	Ball valve Long-pattern ASTM A182 Grade F316/F316L dual grade Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design Fluid-1	
24	0.75				P84K-000UL	Ball valve Long-pattern ASTM A182 Grade F316/F316L dual grade Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design Fluid-1	

PLUG VALVE (PV)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P85K-00025	Plug valve Short-pattern ASTM A182 Grade F316/F316L dual grade Class 150 API 599 Flange ASME B16.5 RF Plug SS316 Seat PTFE Trim SS316 Nonlubricated taper plug BC-BG Wrench lever operated Regular port Fluid-1	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71K-0006P	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	

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SPECT BLANK (SB)							
OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75				P71K-0006R	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	1				P71K-0006S	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71K-0006T	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	2				P71K-0006U	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	3				P71K-0006V	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	4				P71K-0006W	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	

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BOLT TABLE (B_A1LY04 , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	60	P80S-003V2		
0.75	4	0.500	65	P80S-003V3		
1	4	0.500	70	P80S-003V4		
1.5	4	0.500	75	P80S-003V5		
2	4	0.625	85	P80S-003XE		
3	4	0.625	95	P80S-003XG		
4	8	0.625	95	P80S-003XG		

BOLT TABLE (B_A1LY04_773 , STUD ASME RF, OPTION CODE 773)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-003V4		
0.75	4	0.625	75	P80S-003XC		
1	4	0.625	80	P80S-003XD		
1.5	4	0.750	95	P80S-00414		
2	8	0.625	90	P80S-003XF		
3	8	0.750	110	P80S-003XK		
4	8	0.750	115	P80S-003XL		

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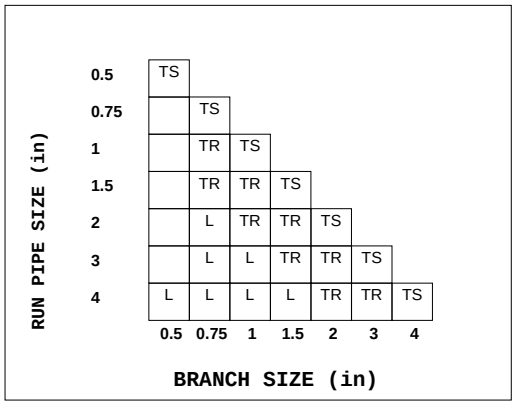
BRANCH TABLE (T_A1LY04)



TR : REDUCING TEE
L : OUTLET
TS : STRAIGHT TEE

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Material : INCONEL 625
Rating : ASME CLASS 150
Flange Face : RF
C.A.(mm) : 1.50
Gasket : Spiral Wound
Service : PROCESS - CORROSIVE SERVICE:

Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
13	ALL INCONEL 625 (ALLOY UNS N06625) MATERIAL SHALL BE SUPPLIED IN ANNEALED CONDITION

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
541	NPT(F) (CA,F,L)
773	CLASS 300 (B,F,G)
4608	VALVE WITH NIPPLES (V)

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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P01M-0005D	Pipe ASTM B444 UNS N06625 Grade 1 Seamless ASME B36.10M/B36.19M PE	
1	0.75		SCH80S		P01M-0005E	Pipe ASTM B444 UNS N06625 Grade 1 Seamless ASME B36.10M/B36.19M PE	
1	1		SCH80S		P01M-0005F	Pipe ASTM B444 UNS N06625 Grade 1 Seamless ASME B36.10M/B36.19M PE	
1	1.5		SCH80S		P01M-0005G	Pipe ASTM B444 UNS N06625 Grade 1 Seamless ASME B36.10M/B36.19M PE	
1	2		SCH40S		P01M-0005H	Pipe ASTM B444 UNS N06625 Grade 1 Seamless ASME B36.10M/B36.19M BE	
1	3		SCH40S		P01M-0009D	Pipe ASTM B444 UNS N06625 Grade 1 Seamless ASME B36.10M/B36.19M BE	
1	4		SCH40S		P01M-0009E	Pipe ASTM B444 UNS N06625 Grade 1 Seamless ASME B36.10M/B36.19M BE	
1	6		SCH40S		P01M-0003L	Pipe ASTM B444 UNS N06625 Grade 1 Seamless ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P02M-0008C	90 degree elbow ASTM B366 Grade WPNCMC Grade 1 Class S Seamless ASME B16.9 BW Long radius	
1	0.75		SCH80S		P02M-0008D	90 degree elbow ASTM B366 Grade WPNCMC Grade 1 Class S Seamless ASME B16.9 BW Long radius	
1	1		SCH80S		P02M-0008E	90 degree elbow ASTM B366 Grade WPNCMC Grade 1 Class S Seamless ASME B16.9 BW Long radius	
1	1.5		SCH80S		P02M-0008F	90 degree elbow ASTM B366 Grade WPNCMC Grade 1 Class S Seamless ASME B16.9 BW Long radius	
1	2		SCH40S		P02M-0008G	90 degree elbow ASTM B366 Grade WPNCMC Grade 1 Class S Seamless ASME B16.9 BW Long radius	
1	3		SCH40S		P02M-000C5	90 degree elbow ASTM B366 Grade WPNCMC Grade 1 Class S Seamless ASME B16.9 BW Long radius	
1	4		SCH40S		P02M-000C6	90 degree elbow ASTM B366 Grade WPNCMC Grade 1 Class S Seamless ASME B16.9 BW Long radius	
1	6		SCH40S		P02M-000C7	90 degree elbow ASTM B366 Grade WPNCMC Grade 1 Class S Seamless ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P03M-001A4	45 degree elbow ASTM B366 Grade WPNCMC Grade 1 Class S Seamless ASME B16.9 BW Long radius	
1	0.75		SCH80S		P03M-001A5	45 degree elbow ASTM B366 Grade WPNCMC Grade 1 Class S Seamless ASME B16.9 BW Long radius	
1	1		SCH80S		P03M-001A6	45 degree elbow ASTM B366 Grade WPNCMC Grade 1 Class S Seamless ASME B16.9 BW Long radius	
1	1.5		SCH80S		P03M-001A7	45 degree elbow ASTM B366 Grade WPNCMC Grade 1 Class S Seamless ASME B16.9 BW Long radius	
1	2		SCH40S		P03M-001A8	45 degree elbow ASTM B366 Grade WPNCMC Grade 1 Class S Seamless ASME B16.9 BW Long radius	
1	3		SCH40S		P03M-001D2	45 degree elbow ASTM B366 Grade WPNCMC Grade 1 Class S Seamless ASME B16.9 BW Long radius	
1	4		SCH40S		P03M-001D3	45 degree elbow ASTM B366 Grade WPNCMC Grade 1 Class S Seamless ASME B16.9 BW Long radius	
1	6		SCH40S		P03M-001D4	45 degree elbow ASTM B366 Grade WPNCMC Grade 1 Class S Seamless ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P21M-0007E	Straight tee ASTM B366 Grade WPNCMC Grade 1 Class S Seamless ASME B16.9 BW	
1	0.75		SCH80S		P21M-0007F	Straight tee ASTM B366 Grade WPNCMC Grade 1 Class S Seamless ASME B16.9 BW	
1	1		SCH80S		P21M-0007G	Straight tee ASTM B366 Grade WPNCMC Grade 1 Class S Seamless ASME B16.9 BW	
1	1.5		SCH80S		P21M-0007H	Straight tee ASTM B366 Grade WPNCMC Grade 1 Class S Seamless ASME B16.9 BW	
1	2		SCH40S		P21M-0007J	Straight tee ASTM B366 Grade WPNCMC Grade 1 Class S Seamless ASME B16.9 BW	
1	3		SCH40S		P21M-000AJ	Straight tee ASTM B366 Grade WPNCMC Grade 1 Class S Seamless ASME B16.9 BW	
1	4		SCH40S		P21M-000AK	Straight tee ASTM B366 Grade WPNCMC Grade 1 Class S Seamless ASME B16.9 BW	
1	6		SCH40S		P21M-000AL	Straight tee ASTM B366 Grade WPNCMC Grade 1 Class S Seamless ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75	SCH80S	SCH80S	P24M-000K1	Reducing tee ASTM B366 Grade WPNCMC Grade 1 Class S Seamless ASME B16.9 BW	
1	1.5	0.75	SCH80S	SCH80S	P24M-000K2	Reducing tee ASTM B366 Grade WPNCMC Grade 1 Class S Seamless ASME B16.9 BW	
1	1.5	1	SCH80S	SCH80S	P24M-000K3	Reducing tee ASTM B366 Grade WPNCMC Grade 1 Class S Seamless ASME B16.9 BW	
1	2	1	SCH40S	SCH80S	P24M-000K4	Reducing tee ASTM B366 Grade WPNCMC Grade 1 Class S Seamless ASME B16.9 BW	
1	2	1.5	SCH40S	SCH80S	P24M-000K5	Reducing tee ASTM B366 Grade WPNCMC Grade 1 Class S Seamless ASME B16.9 BW	
1	3	1.5	SCH40S	SCH80S	P24M-000V2	Reducing tee ASTM B366 Grade WPNCMC Grade 1 Class S Seamless ASME B16.9 BW	
1	3	2	SCH40S	SCH40S	P24M-000V3	Reducing tee ASTM B366 Grade WPNCMC Grade 1 Class S Seamless ASME B16.9 BW	
1	4	2	SCH40S	SCH40S	P24M-000V4	Reducing tee ASTM B366 Grade WPNCMC Grade 1 Class S Seamless ASME B16.9 BW	
1	4	3	SCH40S	SCH40S	P24M-000V5	Reducing tee ASTM B366 Grade WPNCMC Grade 1 Class S Seamless ASME B16.9 BW	
1	6	3	SCH40S	SCH40S	P24M-000V6	Reducing tee ASTM B366 Grade WPNCMC Grade 1 Class S Seamless ASME B16.9 BW	
1	6	4	SCH40S	SCH40S	P24M-000V7	Reducing tee ASTM B366 Grade WPNCMC Grade 1 Class S Seamless ASME B16.9 BW	

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CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH80S	SCH80S	P27M-000L1	Concentric reducer ASTM B366 Grade WPNCMC Grade 1 Class S Seamless ASME B16.9 BW	
1	1	0.5	SCH80S	SCH80S	P27M-000L2	Concentric reducer ASTM B366 Grade WPNCMC Grade 1 Class S Seamless ASME B16.9 BW	
1	1	0.75	SCH80S	SCH80S	P27M-000L3	Concentric reducer ASTM B366 Grade WPNCMC Grade 1 Class S Seamless ASME B16.9 BW	
1	1.5	0.5	SCH80S	SCH80S	P27M-000L4	Concentric reducer ASTM B366 Grade WPNCMC Grade 1 Class S Seamless ASME B16.9 BW	
1	1.5	0.75	SCH80S	SCH80S	P27M-000L5	Concentric reducer ASTM B366 Grade WPNCMC Grade 1 Class S Seamless ASME B16.9 BW	
1	1.5	1	SCH80S	SCH80S	P27M-000L6	Concentric reducer ASTM B366 Grade WPNCMC Grade 1 Class S Seamless ASME B16.9 BW	
1	2	0.75	SCH40S	SCH80S	P27M-000L7	Concentric reducer ASTM B366 Grade WPNCMC Grade 1 Class S Seamless ASME B16.9 BW	
1	2	1	SCH40S	SCH80S	P27M-000L8	Concentric reducer ASTM B366 Grade WPNCMC Grade 1 Class S Seamless ASME B16.9 BW	
1	2	1.5	SCH40S	SCH80S	P27M-000L9	Concentric reducer ASTM B366 Grade WPNCMC Grade 1 Class S Seamless ASME B16.9 BW	
1	3	1.5	SCH40S	SCH80S	P27M-000UE	Concentric reducer ASTM B366 Grade WPNCMC Grade 1 Class S Seamless ASME B16.9 BW	
1	3	2	SCH40S	SCH40S	P27M-000UF	Concentric reducer ASTM B366 Grade WPNCMC Grade 1 Class S Seamless ASME B16.9 BW	
1	4	1.5	SCH40S	SCH80S	P27M-000UG	Concentric reducer ASTM B366 Grade WPNCMC Grade 1 Class S Seamless ASME B16.9 BW	
1	4	2	SCH40S	SCH40S	P27M-000UH	Concentric reducer ASTM B366 Grade WPNCMC Grade 1 Class S Seamless ASME B16.9 BW	
1	4	3	SCH40S	SCH40S	P27M-000UJ	Concentric reducer ASTM B366 Grade WPNCMC Grade 1 Class S Seamless ASME B16.9 BW	
1	6	3	SCH40S	SCH40S	P27M-000UK	Concentric reducer ASTM B366 Grade WPNCMC Grade 1 Class S Seamless ASME B16.9 BW	
1	6	4	SCH40S	SCH40S	P27M-000UL	Concentric reducer ASTM B366 Grade WPNCMC Grade 1 Class S Seamless ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH80S	SCH80S	P28M-000L7	Eccentric reducer ASTM B366 Grade WPNCMC Grade 1 Class S Seamless ASME B16.9 BW	
1	1	0.5	SCH80S	SCH80S	P28M-000L8	Eccentric reducer ASTM B366 Grade WPNCMC Grade 1 Class S Seamless ASME B16.9 BW	
1	1	0.75	SCH80S	SCH80S	P28M-000L9	Eccentric reducer ASTM B366 Grade WPNCMC Grade 1 Class S Seamless ASME B16.9 BW	
1	1.5	0.5	SCH80S	SCH80S	P28M-000LA	Eccentric reducer ASTM B366 Grade WPNCMC Grade 1 Class S Seamless ASME B16.9 BW	
1	1.5	0.75	SCH80S	SCH80S	P28M-000LB	Eccentric reducer ASTM B366 Grade WPNCMC Grade 1 Class S Seamless ASME B16.9 BW	
1	1.5	1	SCH80S	SCH80S	P28M-000LC	Eccentric reducer ASTM B366 Grade WPNCMC Grade 1 Class S Seamless ASME B16.9 BW	
1	2	0.75	SCH40S	SCH80S	P28M-000LD	Eccentric reducer ASTM B366 Grade WPNCMC Grade 1 Class S Seamless ASME B16.9 BW	
1	2	1	SCH40S	SCH80S	P28M-000LE	Eccentric reducer ASTM B366 Grade WPNCMC Grade 1 Class S Seamless ASME B16.9 BW	
1	2	1.5	SCH40S	SCH80S	P28M-000LF	Eccentric reducer ASTM B366 Grade WPNCMC Grade 1 Class S Seamless ASME B16.9 BW	
1	3	1.5	SCH40S	SCH80S	P28M-000VD	Eccentric reducer ASTM B366 Grade WPNCMC Grade 1 Class S Seamless ASME B16.9 BW	
1	3	2	SCH40S	SCH40S	P28M-000VE	Eccentric reducer ASTM B366 Grade WPNCMC Grade 1 Class S Seamless ASME B16.9 BW	
1	4	1.5	SCH40S	SCH80S	P28M-000VF	Eccentric reducer ASTM B366 Grade WPNCMC Grade 1 Class S Seamless ASME B16.9 BW	
1	4	2	SCH40S	SCH40S	P28M-000VG	Eccentric reducer ASTM B366 Grade WPNCMC Grade 1 Class S Seamless ASME B16.9 BW	
1	4	3	SCH40S	SCH40S	P28M-000VH	Eccentric reducer ASTM B366 Grade WPNCMC Grade 1 Class S Seamless ASME B16.9 BW	
1	6	3	SCH40S	SCH40S	P28M-000VJ	Eccentric reducer ASTM B366 Grade WPNCMC Grade 1 Class S Seamless ASME B16.9 BW	
1	6	4	SCH40S	SCH40S	P28M-000VK	Eccentric reducer ASTM B366 Grade WPNCMC Grade 1 Class S Seamless ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P29M-0005X	Cap ASTM B366 Grade WPNCMC Grade 1 Class S Seamless ASME B16.9 BW	
1	0.75		SCH80S		P29M-0005Y	Cap ASTM B366 Grade WPNCMC Grade 1 Class S Seamless ASME B16.9 BW	
1	1		SCH80S		P29M-0005Z	Cap ASTM B366 Grade WPNCMC Grade 1 Class S Seamless ASME B16.9 BW	
1	1.5		SCH80S		P29M-00060	Cap ASTM B366 Grade WPNCMC Grade 1 Class S Seamless ASME B16.9 BW	
1	2		SCH40S		P29M-00061	Cap ASTM B366 Grade WPNCMC Grade 1 Class S Seamless ASME B16.9 BW	
1	3		SCH40S		P29M-00093	Cap ASTM B366 Grade WPNCMC Grade 1 Class S Seamless ASME B16.9 BW	
1	4		SCH40S		P29M-00094	Cap ASTM B366 Grade WPNCMC Grade 1 Class S Seamless ASME B16.9 BW	
1	6		SCH40S		P29M-00095	Cap ASTM B366 Grade WPNCMC Grade 1 Class S Seamless ASME B16.9 BW	
541	0.75				P29P-00016	Cap ASTM B564 UNS N06625 Class 3000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P41M-0009R	Straight nipple ASTM B444 UNS N06625 Grade 1 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		SCH160		P41M-0009S	Straight nipple ASTM B444 UNS N06625 Grade 1 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		SCH160		P41M-0009T	Straight nipple ASTM B444 UNS N06625 Grade 1 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		SCH160		P41M-0009U	Straight nipple ASTM B444 UNS N06625 Grade 1 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
541	1	0.75			P31P-0025C	Outlet ASTM B564 UNS N06625 Class 3000 MSS SP-97 NPT	

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OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
541	1.5	0.75			P31P-0025B	Outlet ASTM B564 UNS N06625 Class 3000 MSS SP-97 NPT	
541	2 - 2.5	0.75			P31P-002AY	Outlet ASTM B564 UNS N06625 Class 3000 MSS SP-97 NPT	
541	3 - 5	0.75			P31P-002AZ	Outlet ASTM B564 UNS N06625 Class 3000 MSS SP-97 NPT	
541	6 - 12	0.75			P31P-002B0	Outlet ASTM B564 UNS N06625 Class 3000 MSS SP-97 NPT	
1	2	0.75	SCH40S	SCH80S	P31P-001TC	Outlet ASTM B564 UNS N06625 MSS SP-97 BW	
1	3	0.75	SCH40S	SCH80S	P31P-001UY	Outlet ASTM B564 UNS N06625 MSS SP-97 BW	
1	4	0.75	SCH40S	SCH80S	P31P-001V0	Outlet ASTM B564 UNS N06625 MSS SP-97 BW	
1	6	0.75	SCH40S	SCH80S	P31P-001FP	Outlet ASTM B564 UNS N06625 MSS SP-97 BW	
1	3	1	SCH40S	SCH80S	P31P-001UZ	Outlet ASTM B564 UNS N06625 MSS SP-97 BW	
1	4	1	SCH40S	SCH80S	P31P-001V1	Outlet ASTM B564 UNS N06625 MSS SP-97 BW	
1	6	1	SCH40S	SCH80S	P31P-001FR	Outlet ASTM B564 UNS N06625 MSS SP-97 BW	
1	4	1.5	SCH40S	SCH80S	P31P-0022U	Outlet ASTM B564 UNS N06625 MSS SP-97 BW	
1	6	1.5	SCH40S	SCH80S	P31P-001FS	Outlet ASTM B564 UNS N06625 MSS SP-97 BW	
1	6	2	SCH40S	SCH40S	P31P-001FT	Outlet ASTM B564 UNS N06625 MSS SP-97 BW	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30P-0000F	Plug ASTM B564 UNS N06625 ASME B16.11 NPT Round head	
1	0.75				P30P-0000G	Plug ASTM B564 UNS N06625 ASME B16.11 NPT Round head	
1	1				P30P-0000H	Plug ASTM B564 UNS N06625 ASME B16.11 NPT Round head	
1	1.5				P30P-0000J	Plug ASTM B564 UNS N06625 ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P61P-000LR	Flange WN ASTM B564 UNS N06625 Class 150 ASME B16.5 RF	
1	0.75		SCH80S		P61P-000LS	Flange WN ASTM B564 UNS N06625 Class 150 ASME B16.5 RF	
1	1		SCH80S		P61P-000LT	Flange WN ASTM B564 UNS N06625 Class 150 ASME B16.5 RF	
1	1.5		SCH80S		P61P-000LU	Flange WN ASTM B564 UNS N06625 Class 150 ASME B16.5 RF	
1	2		SCH40S		P61P-000LV	Flange WN ASTM B564 UNS N06625 Class 150 ASME B16.5 RF	
1	3		SCH40S		P61P-000RF	Flange WN ASTM B564 UNS N06625 Class 150 ASME B16.5 RF	
1	4		SCH40S		P61P-000RG	Flange WN ASTM B564 UNS N06625 Class 150 ASME B16.5 RF	
1	6		SCH40S		P61P-000HV	Flange WN ASTM B564 UNS N06625 Class 150 ASME B16.5 RF	
541	0.5				P61P-000S1	Flange NPT ASTM B564 UNS N06625 Class 150 ASME B16.5 RF	
541	0.75				P61P-00103	Flange NPT ASTM B564 UNS N06625 Class 150 ASME B16.5 RF	
773	0.5		SCH80S		P61P-000LW	Flange WN ASTM B564 UNS N06625 Class 300 ASME B16.5 RF	
773	0.75		SCH80S		P61P-000LX	Flange WN ASTM B564 UNS N06625 Class 300 ASME B16.5 RF	
773	1		SCH80S		P61P-000LY	Flange WN ASTM B564 UNS N06625 Class 300 ASME B16.5 RF	
773	1.5		SCH80S		P61P-000LZ	Flange WN ASTM B564 UNS N06625 Class 300 ASME B16.5 RF	
773	2		SCH40S		P61P-000M0	Flange WN ASTM B564 UNS N06625 Class 300 ASME B16.5 RF	
773	3		SCH40S		P61P-000RH	Flange WN ASTM B564 UNS N06625 Class 300 ASME B16.5 RF	
773	4		SCH40S		P61P-000RJ	Flange WN ASTM B564 UNS N06625 Class 300 ASME B16.5 RF	
773	6		SCH40S		P61P-000LD	Flange WN ASTM B564 UNS N06625 Class 300 ASME B16.5 RF	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67P-0002X	Blind flange ASTM B564 UNS N06625 Class 150 ASME B16.5 RF	
1	0.75				P67P-0002Y	Blind flange ASTM B564 UNS N06625 Class 150 ASME B16.5 RF	
1	1				P67P-0002Z	Blind flange ASTM B564 UNS N06625 Class 150 ASME B16.5 RF	
1	1.5				P67P-00030	Blind flange ASTM B564 UNS N06625 Class 150 ASME B16.5 RF	
1	2				P67P-00033	Blind flange ASTM B564 UNS N06625 Class 150 ASME B16.5 RF	
1	3				P67P-00034	Blind flange ASTM B564 UNS N06625 Class 150 ASME B16.5 RF	
1	4				P67P-00035	Blind flange ASTM B564 UNS N06625 Class 150 ASME B16.5 RF	
1	6				P67P-00036	Blind flange ASTM B564 UNS N06625 Class 150 ASME B16.5 RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-002YC	Spiral wound gasket UNS N06625 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring UNS N06625	
1	0.75				P73T-002YD	Spiral wound gasket UNS N06625 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring UNS N06625	

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GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P73T-002AC	Spiral wound gasket UNS N06625 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring UNS N06625	
1	1.5				P73T-002AD	Spiral wound gasket UNS N06625 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring UNS N06625	
1	2				P73T-002AE	Spiral wound gasket UNS N06625 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring UNS N06625	
1	3				P73T-002AF	Spiral wound gasket UNS N06625 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring UNS N06625	
1	4				P73T-002AG	Spiral wound gasket UNS N06625 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring UNS N06625	
1	6				P73T-002AH	Spiral wound gasket UNS N06625 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring UNS N06625	
773	0.5				P73T-002BF	Spiral wound gasket UNS N06625 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring UNS N06625	
773	0.75				P73T-002BG	Spiral wound gasket UNS N06625 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring UNS N06625	
773	1				P73T-002AT	Spiral wound gasket UNS N06625 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring UNS N06625	
773	1.5				P73T-002AU	Spiral wound gasket UNS N06625 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring UNS N06625	
773	2				P73T-002AV	Spiral wound gasket UNS N06625 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring UNS N06625	
773	3				P73T-002AW	Spiral wound gasket UNS N06625 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring UNS N06625	
773	4				P73T-002AX	Spiral wound gasket UNS N06625 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring UNS N06625	
773	6				P73T-002AY	Spiral wound gasket UNS N06625 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring UNS N06625	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-6				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
773	0.5-6				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81P-00022	Gate valve ASTM B564 UNS N06625 Class 150 API 602 Flange ASME B16.5 RF Trim UNS N06625 BB-BG-OS&Y Handwheel operated	
1	0.75				P81P-00023	Gate valve ASTM B564 UNS N06625 Class 150 API 602 Flange ASME B16.5 RF Trim UNS N06625 BB-BG-OS&Y Handwheel operated	
1	1				P81P-00024	Gate valve ASTM B564 UNS N06625 Class 150 API 602 Flange ASME B16.5 RF Trim UNS N06625 BB-BG-OS&Y Handwheel operated	
1	1.5				P81P-00025	Gate valve ASTM B564 UNS N06625 Class 150 API 602 Flange ASME B16.5 RF Trim UNS N06625 BB-BG-OS&Y Handwheel operated	
1	2				P81R-000BH	Gate valve ASTM A494 Grade CW6MC Class 150 API 600 Flange ASME B16.5 RF Trim UNS N06625 BB-BG-OS&Y Handwheel operated	
1	3				P81R-000BJ	Gate valve ASTM A494 Grade CW6MC Class 150 API 600 Flange ASME B16.5 RF Trim UNS N06625 BB-BG-OS&Y Handwheel operated	
1	4				P81R-000BK	Gate valve ASTM A494 Grade CW6MC Class 150 API 600 Flange ASME B16.5 RF Trim UNS N06625 BB-BG-OS&Y Handwheel operated	
1	6				P81R-000BL	Gate valve ASTM A494 Grade CW6MC Class 150 API 600 Flange ASME B16.5 RF Trim UNS N06625 BB-BG-OS&Y Handwheel operated	
4608	0.75				P81P-00050	Gate valve ASTM B564 UNS N06625 Class 150 API 602 BW both sides w/ nipples BE - NPT ASTM B444-N06625 Grade 1 Sch160-nipple Trim UNS N06625 BB-BG-OS&Y Handwheel operated	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83P-00032	Check valve ASTM B564 UNS N06625 Class 150 API 602 Flange ASME B16.5 RF Trim UNS N06625 Lift-type Bolted cover	
1	0.75				P83P-00033	Check valve ASTM B564 UNS N06625 Class 150 API 602 Flange ASME B16.5 RF Trim UNS N06625 Lift-type Bolted cover	
1	1				P83P-00034	Check valve ASTM B564 UNS N06625 Class 150 API 602 Flange ASME B16.5 RF Trim UNS N06625 Lift-type Bolted cover	
1	1.5				P83P-00035	Check valve ASTM B564 UNS N06625 Class 150 API 602 Flange ASME B16.5 RF Trim UNS N06625 Lift-type Bolted cover	
1	2				P83R-0008G	Check valve ASTM A494 Grade CW6MC Class 150 BS 1868 Flange ASME B16.5 RF Trim UNS N06625 Swing-type Bolted cover	
1	3				P83R-0008H	Check valve ASTM A494 Grade CW6MC Class 150 BS 1868 Flange ASME B16.5 RF Trim UNS N06625 Swing-type Bolted cover	
1	4				P83R-0008J	Check valve ASTM A494 Grade CW6MC Class 150 BS 1868 Flange ASME B16.5 RF Trim UNS N06625 Swing-type Bolted cover	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71P-0001J	Spectacle blank ASTM B564 UNS N06625 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	0.75				P71P-0001K	Spectacle blank ASTM B564 UNS N06625 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	1				P71P-0001L	Spectacle blank ASTM B564 UNS N06625 Class 150 Standard-drawing Flange ASME B16.5 RF	

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SPECT BLANK (SB)							
OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5				P71P-0001M	Spectacle blank ASTM B564 UNS N06625 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	2				P71P-0001R	Spectacle blank ASTM B564 UNS N06625 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	3				P71P-0001S	Spectacle blank ASTM B564 UNS N06625 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	4				P71P-0001T	Spectacle blank ASTM B564 UNS N06625 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	6				P71P-0001U	Spectacle blank ASTM B564 UNS N06625 Class 150 Standard-drawing Flange ASME B16.5 RF	

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BOLT TABLE (B_A1YV , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	60	P80S-003V2		
0.75	4	0.500	65	P80S-003V3		
1	4	0.500	70	P80S-003V4		
1.5	4	0.500	75	P80S-003V5		
2	4	0.625	85	P80S-003XE		
3	4	0.625	95	P80S-003XG		
4	8	0.625	95	P80S-003XG		
6	8	0.750	105	P80S-003XJ		

BOLT TABLE (B_A1YV_773 , STUD ASME RF, OPTION CODE 773)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-003V4		
0.75	4	0.625	75	P80S-003XC		
1	4	0.625	80	P80S-003XD		
1.5	4	0.750	95	P80S-00414		
2	8	0.625	90	P80S-003XF		
3	8	0.750	110	P80S-003XK		
4	8	0.750	115	P80S-003XL		
6	12	0.750	125	P80S-003XN		

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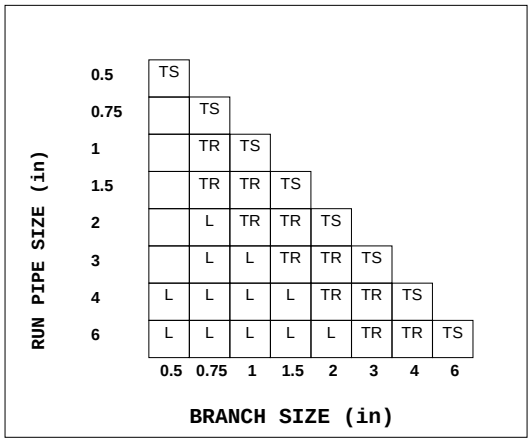
BRANCH TABLE (T_A1YV)



TS : STRAIGHT TEE
TR : REDUCING TEE
L : OUTLET

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PIPING CLASS

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Material : INCONEL 625
Rating : ASME CLASS 150
Flange Face : RF
C.A.(mm) : 1.50
Gasket : Spiral Wound
Service : PROCESS - CORROSIVE SERVICE:
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
13	ALL INCONEL 625 (ALLOY UNS N06625) MATERIAL SHALL BE SUPPLIED IN ANNEALED CONDITION

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
541	NPT(F) (CA,F,L)
773	CLASS 300 (B,F,G)
4608	VALVE WITH NIPPLES (V)

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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P01M-0005D	Pipe ASTM B444 UNS N06625 Grade 1 Seamless ASME B36.10M/B36.19M PE	
1	0.75		SCH80S		P01M-0005E	Pipe ASTM B444 UNS N06625 Grade 1 Seamless ASME B36.10M/B36.19M PE	
1	1		SCH80S		P01M-0005F	Pipe ASTM B444 UNS N06625 Grade 1 Seamless ASME B36.10M/B36.19M PE	
1	1.5		SCH80S		P01M-0005G	Pipe ASTM B444 UNS N06625 Grade 1 Seamless ASME B36.10M/B36.19M PE	
1	2		SCH40S		P01M-0005H	Pipe ASTM B444 UNS N06625 Grade 1 Seamless ASME B36.10M/B36.19M BE	
1	3		SCH40S		P01M-0009D	Pipe ASTM B444 UNS N06625 Grade 1 Seamless ASME B36.10M/B36.19M BE	
1	4		SCH40S		P01M-0009E	Pipe ASTM B444 UNS N06625 Grade 1 Seamless ASME B36.10M/B36.19M BE	
1	6		SCH40S		P01M-0003L	Pipe ASTM B444 UNS N06625 Grade 1 Seamless ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P02M-0008C	90 degree elbow ASTM B366 Grade WPNCMC Grade 1 Class S Seamless ASME B16.9 BW Long radius	
1	0.75		SCH80S		P02M-0008D	90 degree elbow ASTM B366 Grade WPNCMC Grade 1 Class S Seamless ASME B16.9 BW Long radius	
1	1		SCH80S		P02M-0008E	90 degree elbow ASTM B366 Grade WPNCMC Grade 1 Class S Seamless ASME B16.9 BW Long radius	
1	1.5		SCH80S		P02M-0008F	90 degree elbow ASTM B366 Grade WPNCMC Grade 1 Class S Seamless ASME B16.9 BW Long radius	
1	2		SCH40S		P02M-0008G	90 degree elbow ASTM B366 Grade WPNCMC Grade 1 Class S Seamless ASME B16.9 BW Long radius	
1	3		SCH40S		P02M-000C5	90 degree elbow ASTM B366 Grade WPNCMC Grade 1 Class S Seamless ASME B16.9 BW Long radius	
1	4		SCH40S		P02M-000C6	90 degree elbow ASTM B366 Grade WPNCMC Grade 1 Class S Seamless ASME B16.9 BW Long radius	
1	6		SCH40S		P02M-000C7	90 degree elbow ASTM B366 Grade WPNCMC Grade 1 Class S Seamless ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P03M-001A4	45 degree elbow ASTM B366 Grade WPNCMC Grade 1 Class S Seamless ASME B16.9 BW Long radius	
1	0.75		SCH80S		P03M-001A5	45 degree elbow ASTM B366 Grade WPNCMC Grade 1 Class S Seamless ASME B16.9 BW Long radius	
1	1		SCH80S		P03M-001A6	45 degree elbow ASTM B366 Grade WPNCMC Grade 1 Class S Seamless ASME B16.9 BW Long radius	
1	1.5		SCH80S		P03M-001A7	45 degree elbow ASTM B366 Grade WPNCMC Grade 1 Class S Seamless ASME B16.9 BW Long radius	
1	2		SCH40S		P03M-001A8	45 degree elbow ASTM B366 Grade WPNCMC Grade 1 Class S Seamless ASME B16.9 BW Long radius	
1	3		SCH40S		P03M-001D2	45 degree elbow ASTM B366 Grade WPNCMC Grade 1 Class S Seamless ASME B16.9 BW Long radius	
1	4		SCH40S		P03M-001D3	45 degree elbow ASTM B366 Grade WPNCMC Grade 1 Class S Seamless ASME B16.9 BW Long radius	
1	6		SCH40S		P03M-001D4	45 degree elbow ASTM B366 Grade WPNCMC Grade 1 Class S Seamless ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P21M-0007E	Straight tee ASTM B366 Grade WPNCMC Grade 1 Class S Seamless ASME B16.9 BW	
1	0.75		SCH80S		P21M-0007F	Straight tee ASTM B366 Grade WPNCMC Grade 1 Class S Seamless ASME B16.9 BW	
1	1		SCH80S		P21M-0007G	Straight tee ASTM B366 Grade WPNCMC Grade 1 Class S Seamless ASME B16.9 BW	
1	1.5		SCH80S		P21M-0007H	Straight tee ASTM B366 Grade WPNCMC Grade 1 Class S Seamless ASME B16.9 BW	
1	2		SCH40S		P21M-0007J	Straight tee ASTM B366 Grade WPNCMC Grade 1 Class S Seamless ASME B16.9 BW	
1	3		SCH40S		P21M-000AJ	Straight tee ASTM B366 Grade WPNCMC Grade 1 Class S Seamless ASME B16.9 BW	
1	4		SCH40S		P21M-000AK	Straight tee ASTM B366 Grade WPNCMC Grade 1 Class S Seamless ASME B16.9 BW	
1	6		SCH40S		P21M-000AL	Straight tee ASTM B366 Grade WPNCMC Grade 1 Class S Seamless ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75	SCH80S	SCH80S	P24M-000K1	Reducing tee ASTM B366 Grade WPNCMC Grade 1 Class S Seamless ASME B16.9 BW	
1	1.5	0.75	SCH80S	SCH80S	P24M-000K2	Reducing tee ASTM B366 Grade WPNCMC Grade 1 Class S Seamless ASME B16.9 BW	
1	1.5	1	SCH80S	SCH80S	P24M-000K3	Reducing tee ASTM B366 Grade WPNCMC Grade 1 Class S Seamless ASME B16.9 BW	
1	2	1	SCH40S	SCH80S	P24M-000K4	Reducing tee ASTM B366 Grade WPNCMC Grade 1 Class S Seamless ASME B16.9 BW	
1	2	1.5	SCH40S	SCH80S	P24M-000K5	Reducing tee ASTM B366 Grade WPNCMC Grade 1 Class S Seamless ASME B16.9 BW	
1	3	1.5	SCH40S	SCH80S	P24M-000V2	Reducing tee ASTM B366 Grade WPNCMC Grade 1 Class S Seamless ASME B16.9 BW	
1	3	2	SCH40S	SCH40S	P24M-000V3	Reducing tee ASTM B366 Grade WPNCMC Grade 1 Class S Seamless ASME B16.9 BW	
1	4	2	SCH40S	SCH40S	P24M-000V4	Reducing tee ASTM B366 Grade WPNCMC Grade 1 Class S Seamless ASME B16.9 BW	
1	4	3	SCH40S	SCH40S	P24M-000V5	Reducing tee ASTM B366 Grade WPNCMC Grade 1 Class S Seamless ASME B16.9 BW	
1	6	3	SCH40S	SCH40S	P24M-000V6	Reducing tee ASTM B366 Grade WPNCMC Grade 1 Class S Seamless ASME B16.9 BW	
1	6	4	SCH40S	SCH40S	P24M-000V7	Reducing tee ASTM B366 Grade WPNCMC Grade 1 Class S Seamless ASME B16.9 BW	

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CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH80S	SCH80S	P27M-000L1	Concentric reducer ASTM B366 Grade WPNCMC Grade 1 Class S Seamless ASME B16.9 BW	
1	1	0.5	SCH80S	SCH80S	P27M-000L2	Concentric reducer ASTM B366 Grade WPNCMC Grade 1 Class S Seamless ASME B16.9 BW	
1	1	0.75	SCH80S	SCH80S	P27M-000L3	Concentric reducer ASTM B366 Grade WPNCMC Grade 1 Class S Seamless ASME B16.9 BW	
1	1.5	0.5	SCH80S	SCH80S	P27M-000L4	Concentric reducer ASTM B366 Grade WPNCMC Grade 1 Class S Seamless ASME B16.9 BW	
1	1.5	0.75	SCH80S	SCH80S	P27M-000L5	Concentric reducer ASTM B366 Grade WPNCMC Grade 1 Class S Seamless ASME B16.9 BW	
1	1.5	1	SCH80S	SCH80S	P27M-000L6	Concentric reducer ASTM B366 Grade WPNCMC Grade 1 Class S Seamless ASME B16.9 BW	
1	2	0.75	SCH40S	SCH80S	P27M-000L7	Concentric reducer ASTM B366 Grade WPNCMC Grade 1 Class S Seamless ASME B16.9 BW	
1	2	1	SCH40S	SCH80S	P27M-000L8	Concentric reducer ASTM B366 Grade WPNCMC Grade 1 Class S Seamless ASME B16.9 BW	
1	2	1.5	SCH40S	SCH80S	P27M-000L9	Concentric reducer ASTM B366 Grade WPNCMC Grade 1 Class S Seamless ASME B16.9 BW	
1	3	1.5	SCH40S	SCH80S	P27M-000UE	Concentric reducer ASTM B366 Grade WPNCMC Grade 1 Class S Seamless ASME B16.9 BW	
1	3	2	SCH40S	SCH40S	P27M-000UF	Concentric reducer ASTM B366 Grade WPNCMC Grade 1 Class S Seamless ASME B16.9 BW	
1	4	1.5	SCH40S	SCH80S	P27M-000UG	Concentric reducer ASTM B366 Grade WPNCMC Grade 1 Class S Seamless ASME B16.9 BW	
1	4	2	SCH40S	SCH40S	P27M-000UH	Concentric reducer ASTM B366 Grade WPNCMC Grade 1 Class S Seamless ASME B16.9 BW	
1	4	3	SCH40S	SCH40S	P27M-000UJ	Concentric reducer ASTM B366 Grade WPNCMC Grade 1 Class S Seamless ASME B16.9 BW	
1	6	3	SCH40S	SCH40S	P27M-000UK	Concentric reducer ASTM B366 Grade WPNCMC Grade 1 Class S Seamless ASME B16.9 BW	
1	6	4	SCH40S	SCH40S	P27M-000UL	Concentric reducer ASTM B366 Grade WPNCMC Grade 1 Class S Seamless ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH80S	SCH80S	P28M-000L7	Eccentric reducer ASTM B366 Grade WPNCMC Grade 1 Class S Seamless ASME B16.9 BW	
1	1	0.5	SCH80S	SCH80S	P28M-000L8	Eccentric reducer ASTM B366 Grade WPNCMC Grade 1 Class S Seamless ASME B16.9 BW	
1	1	0.75	SCH80S	SCH80S	P28M-000L9	Eccentric reducer ASTM B366 Grade WPNCMC Grade 1 Class S Seamless ASME B16.9 BW	
1	1.5	0.5	SCH80S	SCH80S	P28M-000LA	Eccentric reducer ASTM B366 Grade WPNCMC Grade 1 Class S Seamless ASME B16.9 BW	
1	1.5	0.75	SCH80S	SCH80S	P28M-000LB	Eccentric reducer ASTM B366 Grade WPNCMC Grade 1 Class S Seamless ASME B16.9 BW	
1	1.5	1	SCH80S	SCH80S	P28M-000LC	Eccentric reducer ASTM B366 Grade WPNCMC Grade 1 Class S Seamless ASME B16.9 BW	
1	2	0.75	SCH40S	SCH80S	P28M-000LD	Eccentric reducer ASTM B366 Grade WPNCMC Grade 1 Class S Seamless ASME B16.9 BW	
1	2	1	SCH40S	SCH80S	P28M-000LE	Eccentric reducer ASTM B366 Grade WPNCMC Grade 1 Class S Seamless ASME B16.9 BW	
1	2	1.5	SCH40S	SCH80S	P28M-000LF	Eccentric reducer ASTM B366 Grade WPNCMC Grade 1 Class S Seamless ASME B16.9 BW	
1	3	1.5	SCH40S	SCH80S	P28M-000VD	Eccentric reducer ASTM B366 Grade WPNCMC Grade 1 Class S Seamless ASME B16.9 BW	
1	3	2	SCH40S	SCH40S	P28M-000VE	Eccentric reducer ASTM B366 Grade WPNCMC Grade 1 Class S Seamless ASME B16.9 BW	
1	4	1.5	SCH40S	SCH80S	P28M-000VF	Eccentric reducer ASTM B366 Grade WPNCMC Grade 1 Class S Seamless ASME B16.9 BW	
1	4	2	SCH40S	SCH40S	P28M-000VG	Eccentric reducer ASTM B366 Grade WPNCMC Grade 1 Class S Seamless ASME B16.9 BW	
1	4	3	SCH40S	SCH40S	P28M-000VH	Eccentric reducer ASTM B366 Grade WPNCMC Grade 1 Class S Seamless ASME B16.9 BW	
1	6	3	SCH40S	SCH40S	P28M-000VJ	Eccentric reducer ASTM B366 Grade WPNCMC Grade 1 Class S Seamless ASME B16.9 BW	
1	6	4	SCH40S	SCH40S	P28M-000VK	Eccentric reducer ASTM B366 Grade WPNCMC Grade 1 Class S Seamless ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P29M-0005X	Cap ASTM B366 Grade WPNCMC Grade 1 Class S Seamless ASME B16.9 BW	
1	0.75		SCH80S		P29M-0005Y	Cap ASTM B366 Grade WPNCMC Grade 1 Class S Seamless ASME B16.9 BW	
1	1		SCH80S		P29M-0005Z	Cap ASTM B366 Grade WPNCMC Grade 1 Class S Seamless ASME B16.9 BW	
1	1.5		SCH80S		P29M-00060	Cap ASTM B366 Grade WPNCMC Grade 1 Class S Seamless ASME B16.9 BW	
1	2		SCH40S		P29M-00061	Cap ASTM B366 Grade WPNCMC Grade 1 Class S Seamless ASME B16.9 BW	
1	3		SCH40S		P29M-00093	Cap ASTM B366 Grade WPNCMC Grade 1 Class S Seamless ASME B16.9 BW	
1	4		SCH40S		P29M-00094	Cap ASTM B366 Grade WPNCMC Grade 1 Class S Seamless ASME B16.9 BW	
1	6		SCH40S		P29M-00095	Cap ASTM B366 Grade WPNCMC Grade 1 Class S Seamless ASME B16.9 BW	
541	0.75				P29P-00016	Cap ASTM B564 UNS N06625 Class 3000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P41M-0009R	Straight nipple ASTM B444 UNS N06625 Grade 1 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		SCH160		P41M-0009S	Straight nipple ASTM B444 UNS N06625 Grade 1 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		SCH160		P41M-0009T	Straight nipple ASTM B444 UNS N06625 Grade 1 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		SCH160		P41M-0009U	Straight nipple ASTM B444 UNS N06625 Grade 1 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
541	1	0.75			P31P-0025C	Outlet ASTM B564 UNS N06625 Class 3000 MSS SP-97 NPT	

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OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
541	1.5	0.75			P31P-0025B	Outlet ASTM B564 UNS N06625 Class 3000 MSS SP-97 NPT	
541	2 - 2.5	0.75			P31P-002AY	Outlet ASTM B564 UNS N06625 Class 3000 MSS SP-97 NPT	
541	3 - 5	0.75			P31P-002AZ	Outlet ASTM B564 UNS N06625 Class 3000 MSS SP-97 NPT	
541	6 - 12	0.75			P31P-002B0	Outlet ASTM B564 UNS N06625 Class 3000 MSS SP-97 NPT	
1	2	0.75	SCH40S	SCH80S	P31P-001TC	Outlet ASTM B564 UNS N06625 MSS SP-97 BW	
1	3	0.75	SCH40S	SCH80S	P31P-001UY	Outlet ASTM B564 UNS N06625 MSS SP-97 BW	
1	4	0.75	SCH40S	SCH80S	P31P-001V0	Outlet ASTM B564 UNS N06625 MSS SP-97 BW	
1	6	0.75	SCH40S	SCH80S	P31P-001FP	Outlet ASTM B564 UNS N06625 MSS SP-97 BW	
1	3	1	SCH40S	SCH80S	P31P-001UZ	Outlet ASTM B564 UNS N06625 MSS SP-97 BW	
1	4	1	SCH40S	SCH80S	P31P-001V1	Outlet ASTM B564 UNS N06625 MSS SP-97 BW	
1	6	1	SCH40S	SCH80S	P31P-001FR	Outlet ASTM B564 UNS N06625 MSS SP-97 BW	
1	4	1.5	SCH40S	SCH80S	P31P-0022U	Outlet ASTM B564 UNS N06625 MSS SP-97 BW	
1	6	1.5	SCH40S	SCH80S	P31P-001FS	Outlet ASTM B564 UNS N06625 MSS SP-97 BW	
1	6	2	SCH40S	SCH40S	P31P-001FT	Outlet ASTM B564 UNS N06625 MSS SP-97 BW	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30P-0000F	Plug ASTM B564 UNS N06625 ASME B16.11 NPT Round head	
1	0.75				P30P-0000G	Plug ASTM B564 UNS N06625 ASME B16.11 NPT Round head	
1	1				P30P-0000H	Plug ASTM B564 UNS N06625 ASME B16.11 NPT Round head	
1	1.5				P30P-0000J	Plug ASTM B564 UNS N06625 ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P61P-000LR	Flange WN ASTM B564 UNS N06625 Class 150 ASME B16.5 RF	
1	0.75		SCH80S		P61P-000LS	Flange WN ASTM B564 UNS N06625 Class 150 ASME B16.5 RF	
1	1		SCH80S		P61P-000LT	Flange WN ASTM B564 UNS N06625 Class 150 ASME B16.5 RF	
1	1.5		SCH80S		P61P-000LU	Flange WN ASTM B564 UNS N06625 Class 150 ASME B16.5 RF	
1	2		SCH40S		P61P-000LV	Flange WN ASTM B564 UNS N06625 Class 150 ASME B16.5 RF	
1	3		SCH40S		P61P-000RF	Flange WN ASTM B564 UNS N06625 Class 150 ASME B16.5 RF	
1	4		SCH40S		P61P-000RG	Flange WN ASTM B564 UNS N06625 Class 150 ASME B16.5 RF	
1	6		SCH40S		P61P-000HV	Flange WN ASTM B564 UNS N06625 Class 150 ASME B16.5 RF	
541	0.5				P61P-000S1	Flange NPT ASTM B564 UNS N06625 Class 150 ASME B16.5 RF	
541	0.75				P61P-00103	Flange NPT ASTM B564 UNS N06625 Class 150 ASME B16.5 RF	
773	0.5		SCH80S		P61P-000LW	Flange WN ASTM B564 UNS N06625 Class 300 ASME B16.5 RF	
773	0.75		SCH80S		P61P-000LX	Flange WN ASTM B564 UNS N06625 Class 300 ASME B16.5 RF	
773	1		SCH80S		P61P-000LY	Flange WN ASTM B564 UNS N06625 Class 300 ASME B16.5 RF	
773	1.5		SCH80S		P61P-000LZ	Flange WN ASTM B564 UNS N06625 Class 300 ASME B16.5 RF	
773	2		SCH40S		P61P-000M0	Flange WN ASTM B564 UNS N06625 Class 300 ASME B16.5 RF	
773	3		SCH40S		P61P-000RH	Flange WN ASTM B564 UNS N06625 Class 300 ASME B16.5 RF	
773	4		SCH40S		P61P-000RJ	Flange WN ASTM B564 UNS N06625 Class 300 ASME B16.5 RF	
773	6		SCH40S		P61P-000LD	Flange WN ASTM B564 UNS N06625 Class 300 ASME B16.5 RF	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67P-0002X	Blind flange ASTM B564 UNS N06625 Class 150 ASME B16.5 RF	
1	0.75				P67P-0002Y	Blind flange ASTM B564 UNS N06625 Class 150 ASME B16.5 RF	
1	1				P67P-0002Z	Blind flange ASTM B564 UNS N06625 Class 150 ASME B16.5 RF	
1	1.5				P67P-00030	Blind flange ASTM B564 UNS N06625 Class 150 ASME B16.5 RF	
1	2				P67P-00033	Blind flange ASTM B564 UNS N06625 Class 150 ASME B16.5 RF	
1	3				P67P-00034	Blind flange ASTM B564 UNS N06625 Class 150 ASME B16.5 RF	
1	4				P67P-00035	Blind flange ASTM B564 UNS N06625 Class 150 ASME B16.5 RF	
1	6				P67P-00036	Blind flange ASTM B564 UNS N06625 Class 150 ASME B16.5 RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-002YC	Spiral wound gasket UNS N06625 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring UNS N06625	
1	0.75				P73T-002YD	Spiral wound gasket UNS N06625 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring UNS N06625	

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GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P73T-002AC	Spiral wound gasket UNS N06625 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring UNS N06625	
1	1.5				P73T-002AD	Spiral wound gasket UNS N06625 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring UNS N06625	
1	2				P73T-002AE	Spiral wound gasket UNS N06625 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring UNS N06625	
1	3				P73T-002AF	Spiral wound gasket UNS N06625 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring UNS N06625	
1	4				P73T-002AG	Spiral wound gasket UNS N06625 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring UNS N06625	
1	6				P73T-002AH	Spiral wound gasket UNS N06625 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring UNS N06625	
773	0.5				P73T-002BF	Spiral wound gasket UNS N06625 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring UNS N06625	
773	0.75				P73T-002BG	Spiral wound gasket UNS N06625 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring UNS N06625	
773	1				P73T-002AT	Spiral wound gasket UNS N06625 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring UNS N06625	
773	1.5				P73T-002AU	Spiral wound gasket UNS N06625 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring UNS N06625	
773	2				P73T-002AV	Spiral wound gasket UNS N06625 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring UNS N06625	
773	3				P73T-002AW	Spiral wound gasket UNS N06625 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring UNS N06625	
773	4				P73T-002AX	Spiral wound gasket UNS N06625 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring UNS N06625	
773	6				P73T-002AY	Spiral wound gasket UNS N06625 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring UNS N06625	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-6				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
773	0.5-6				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81P-00022	Gate valve ASTM B564 UNS N06625 Class 150 API 602 Flange ASME B16.5 RF Trim UNS N06625 BB-BG-OS&Y Handwheel operated	
1	0.75				P81P-00023	Gate valve ASTM B564 UNS N06625 Class 150 API 602 Flange ASME B16.5 RF Trim UNS N06625 BB-BG-OS&Y Handwheel operated	
1	1				P81P-00024	Gate valve ASTM B564 UNS N06625 Class 150 API 602 Flange ASME B16.5 RF Trim UNS N06625 BB-BG-OS&Y Handwheel operated	
1	1.5				P81P-00025	Gate valve ASTM B564 UNS N06625 Class 150 API 602 Flange ASME B16.5 RF Trim UNS N06625 BB-BG-OS&Y Handwheel operated	
1	2				P81R-000BH	Gate valve ASTM A494 Grade CW6MC Class 150 API 600 Flange ASME B16.5 RF Trim UNS N06625 BB-BG-OS&Y Handwheel operated	
1	3				P81R-000BJ	Gate valve ASTM A494 Grade CW6MC Class 150 API 600 Flange ASME B16.5 RF Trim UNS N06625 BB-BG-OS&Y Handwheel operated	
1	4				P81R-000BK	Gate valve ASTM A494 Grade CW6MC Class 150 API 600 Flange ASME B16.5 RF Trim UNS N06625 BB-BG-OS&Y Handwheel operated	
1	6				P81R-000BL	Gate valve ASTM A494 Grade CW6MC Class 150 API 600 Flange ASME B16.5 RF Trim UNS N06625 BB-BG-OS&Y Handwheel operated	
4608	0.75				P81P-00050	Gate valve ASTM B564 UNS N06625 Class 150 API 602 BW both sides w/ nipples BE - NPT ASTM B444-N06625 Grade 1 Sch160-nipple Trim UNS N06625 BB-BG-OS&Y Handwheel operated	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83P-00032	Check valve ASTM B564 UNS N06625 Class 150 API 602 Flange ASME B16.5 RF Trim UNS N06625 Lift-type Bolted cover	
1	0.75				P83P-00033	Check valve ASTM B564 UNS N06625 Class 150 API 602 Flange ASME B16.5 RF Trim UNS N06625 Lift-type Bolted cover	
1	1				P83P-00034	Check valve ASTM B564 UNS N06625 Class 150 API 602 Flange ASME B16.5 RF Trim UNS N06625 Lift-type Bolted cover	
1	1.5				P83P-00035	Check valve ASTM B564 UNS N06625 Class 150 API 602 Flange ASME B16.5 RF Trim UNS N06625 Lift-type Bolted cover	
1	2				P83R-0008G	Check valve ASTM A494 Grade CW6MC Class 150 BS 1868 Flange ASME B16.5 RF Trim UNS N06625 Swing-type Bolted cover	
1	3				P83R-0008H	Check valve ASTM A494 Grade CW6MC Class 150 BS 1868 Flange ASME B16.5 RF Trim UNS N06625 Swing-type Bolted cover	
1	4				P83R-0008J	Check valve ASTM A494 Grade CW6MC Class 150 BS 1868 Flange ASME B16.5 RF Trim UNS N06625 Swing-type Bolted cover	
1	6				P83R-0009V	Check valve ASTM A494 Grade CW6MC Class 150 BS 1868 Flange ASME B16.5 RF Trim UNS N06625 Swing-type Bolted cover	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71P-0001J	Spectacle blank ASTM B564 UNS N06625 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	0.75				P71P-0001K	Spectacle blank ASTM B564 UNS N06625 Class 150 Standard-drawing Flange ASME B16.5 RF	

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SPECT BLANK (SB)							
OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P71P-0001L	Spectacle blank ASTM B564 UNS N06625 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71P-0001M	Spectacle blank ASTM B564 UNS N06625 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	2				P71P-0001R	Spectacle blank ASTM B564 UNS N06625 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	3				P71P-0001S	Spectacle blank ASTM B564 UNS N06625 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	4				P71P-0001T	Spectacle blank ASTM B564 UNS N06625 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	6				P71P-0001U	Spectacle blank ASTM B564 UNS N06625 Class 150 Standard-drawing Flange ASME B16.5 RF	

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BOLT TABLE (B_A1YV04 , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	60	P80S-003V2		
0.75	4	0.500	65	P80S-003V3		
1	4	0.500	70	P80S-003V4		
1.5	4	0.500	75	P80S-003V5		
2	4	0.625	85	P80S-003XE		
3	4	0.625	95	P80S-003XG		
4	8	0.625	95	P80S-003XG		
6	8	0.750	105	P80S-003XJ		

BOLT TABLE (B_A1YV04_773 , STUD ASME RF, OPTION CODE 773)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-003V4		
0.75	4	0.625	75	P80S-003XC		
1	4	0.625	80	P80S-003XD		
1.5	4	0.750	95	P80S-00414		
2	8	0.625	90	P80S-003XF		
3	8	0.750	110	P80S-003XK		
4	8	0.750	115	P80S-003XL		
6	12	0.750	125	P80S-003XN		

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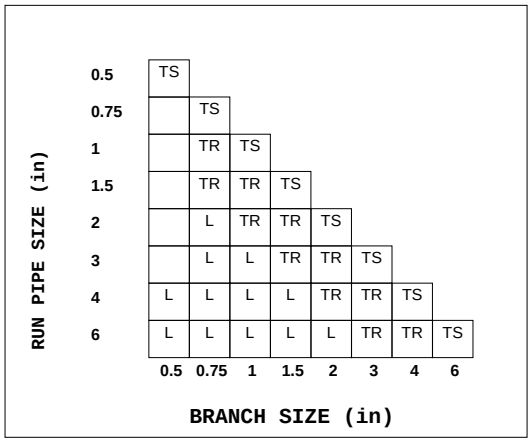
BRANCH TABLE (T_A1YV04)



L : OUTLET
TR : REDUCING TEE
TS : STRAIGHT TEE

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PIPING CLASS

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Material : Killed CS
Rating : ASME CLASS 150
Flange Face : RF
C.A.(mm) : 1.50
Gasket : Spiral Wound
Service : CHILLED WATER, STEAM CONDENSATE, LP STEAM, MP NITROGEN, VENT GAS
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED

DETAIL NOTES :

NO.	DESCRIPTION
38	TO BE USED FOR STAND PIPE

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
24	FULL PORT (Q)
200	WITH JACK SCREW (FO)
541	NPT(F) (CA,L)
714	SW - NPT(F) (V,W)
773	CLASS 300 (B,F,G)
781	CLASS 600 (B,F,G)
4203	SOCKOLET ON CAP (CAP=NPS3) (LC)
4204	SOCKOLET ON CAP (CAP=NPS4) (LC)
4206	SOCKOLET ON CAP (CAP=NPS8) (LC)
4212	WELDOLET FOR STAND PIPE (L)

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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P01A-000XM	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	0.75		XS		P01A-000XN	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1		XS		P01A-000XP	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1.5		XS		P01A-000XV	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	2		XS		P01A-000YX	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	2.5		STD		P01A-001RH	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	3		STD		P01A-000YM	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	4		STD		P01A-000YU	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	5		STD		P01A-001UB	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	6		STD		P01A-000Z3	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	8		SCH30		P01A-001WL	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	10		SCH30		P01A-0016U	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	12		SCH30		P01A-0017K	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	14		SCH20		P01A-0017A	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	16		SCH20		P01A-0018E	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P02B-00014	90 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	0.75				P02B-00015	90 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	1				P02B-00016	90 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5				P02B-00017	90 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	2		XS		P02A-000CP	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	2.5		STD		P02A-0010R	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		STD		P02A-000CU	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		STD		P02A-000CZ	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	5		STD		P02A-004YC	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		STD		P02A-000D6	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		SCH30		P02A-003DK	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	10		SCH30		P02A-000M3	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	12		SCH30		P02A-000M4	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	14		SCH20		P02A-000FX	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	16		SCH20		P02A-000GM	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P03B-00017	45 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	0.75				P03B-00018	45 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	1				P03B-00019	45 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5				P03B-0001A	45 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	2		XS		P03A-000AS	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	2.5		STD		P03A-000X7	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		STD		P03A-000AX	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		STD		P03A-000B1	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	5		STD		P03A-004HV	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		STD		P03A-000B9	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		SCH30		P03A-003BE	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	10		SCH30		P03A-000JT	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	12		SCH30		P03A-000JU	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	14		SCH20		P03A-000DW	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	16		SCH20		P03A-000EM	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P21B-00017	Straight tee ASTM A105 Class 3000 ASME B16.11 SW	
1	0.75				P21B-00018	Straight tee ASTM A105 Class 3000 ASME B16.11 SW	
1	1				P21B-00019	Straight tee ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5				P21B-0001A	Straight tee ASTM A105 Class 3000 ASME B16.11 SW	
1	2		XS		P21A-001CJ	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3		STD		P21A-001CU	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		STD		P21A-001CW	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6		STD		P21A-001D2	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8		SCH30		P21A-003WV	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10		SCH30		P21A-00259	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12		SCH30		P21A-0025A	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14		SCH20		P21A-00206	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16		SCH20		P21A-0020X	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5			P24B-0002J	Reducing tee ASTM A105 Class 3000 ASME B16.11 SW	
1	1	0.5			P24B-0002K	Reducing tee ASTM A105 Class 3000 ASME B16.11 SW	
1	1	0.75			P24B-0002L	Reducing tee ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5	0.5			P24B-0002M	Reducing tee ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5	0.75			P24B-0002N	Reducing tee ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5	1			P24B-0002P	Reducing tee ASTM A105 Class 3000 ASME B16.11 SW	
1	2	1	XS	XS	P24A-00238	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	XS	XS	P24A-0023H	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	STD	XS	P24A-00214	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	STD	XS	P24A-002HW	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P24A-002HY	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P24A-0021K	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	STD	P24A-0021A	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P24A-00229	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH30	STD	P24A-00JVH	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH30	STD	P24A-00JVG	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	SCH30	STD	P24A-00GNR	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	SCH30	STD	P24A-0060W	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	SCH30	SCH30	P24A-00J15	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	SCH30	STD	P24A-00HKT	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH30	SCH30	P24A-00M36	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH30	SCH30	P24A-003ET	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	SCH20	STD	P24A-00K0M	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	SCH20	SCH30	P24A-00M37	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	SCH20	SCH30	P24A-003ER	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	SCH20	SCH30	P24A-003ES	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	6	SCH20	STD	P24A-00GU4	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	SCH20	SCH30	P24A-00M38	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	SCH20	SCH30	P24A-00KSH	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	SCH20	SCH30	P24A-003XN	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	SCH20	SCH20	P24A-002XF	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	STD	XS	P27A-001MZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P27A-001N0	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2.5	STD	STD	P27A-0074B	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P27A-00189	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	2.5	STD	STD	P27A-00JPG	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	STD	P27A-001AZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P27A-001GW	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	5	STD	STD	P27A-007R4	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH30	STD	P27A-00ED2	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH30	STD	P27A-00ECY	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	SCH30	STD	P27A-003MK	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	SCH30	STD	P27A-003ML	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	SCH30	SCH30	P27A-004T9	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	SCH30	STD	P27A-003MN	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	12	8	SCH30	SCH30	P27A-004XA	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH30	SCH30	P27A-0028K	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	SCH20	STD	P27A-00518	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	SCH20	SCH30	P27A-0052J	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	SCH20	SCH30	P27A-0028G	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	SCH20	SCH30	P27A-0028H	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	SCH20	SCH30	P27A-0059E	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	SCH20	SCH30	P27A-003NC	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	SCH20	SCH30	P27A-002GH	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	SCH20	SCH20	P27A-001V2	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	STD	XS	P28A-001N5	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P28A-001N6	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2.5	STD	STD	P28A-00G0N	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P28A-0018B	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	2.5	STD	STD	P28A-00G0P	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	STD	P28A-001AS	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P28A-00182	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	5	STD	STD	P28A-00F3X	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH30	STD	P28A-00BFY	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH30	STD	P28A-00BFZ	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	SCH30	STD	P28A-003MD	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	SCH30	STD	P28A-003ME	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	SCH30	SCH30	P28A-00A4S	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	SCH30	STD	P28A-003MG	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH30	SCH30	P28A-00BGV	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH30	SCH30	P28A-0027C	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	SCH20	STD	P28A-0096P	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	SCH20	SCH30	P28A-00DA3	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	SCH20	SCH30	P28A-00279	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	SCH20	SCH30	P28A-0027A	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	SCH20	SCH30	P28A-00DA4	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	SCH20	SCH30	P28A-003N6	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	SCH20	SCH30	P28A-002GB	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	SCH20	SCH20	P28A-001WG	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P29B-0001J	Cap ASTM A105 Class 3000 ASME B16.11 SW	
1	0.75				P29B-0001F	Cap ASTM A105 Class 3000 ASME B16.11 SW	
1	1				P29B-0001G	Cap ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5				P29B-0001H	Cap ASTM A105 Class 3000 ASME B16.11 SW	
1	2		XS		P29A-000A1	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2.5		STD		P29A-000YK	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		STD		P29A-000BK	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		STD		P29A-000A3	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	5		STD		P29A-005GA	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6		STD		P29A-000A9	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8		SCH30		P29A-000PC	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10		SCH30		P29A-000K7	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12		SCH30		P29A-000PZ	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14		SCH20		P29A-000EA	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16		SCH20		P29A-000F3	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
541	0.5				P29B-0000B	Cap ASTM A105 Class 3000 ASME B16.11 NPT	
541	0.75				P29B-0000C	Cap ASTM A105 Class 3000 ASME B16.11 NPT	
541	1				P29B-0000D	Cap ASTM A105 Class 3000 ASME B16.11 NPT	

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STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P41A-000B5	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		SCH160		P41A-000B6	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		SCH160		P41A-000B7	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		SCH160		P41A-000B8	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

CON SWAGED NIPPLE (SNC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	XS	XS	P42A-00036	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	XS	XS	P42A-00038	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	XS	XS	P42A-0003B	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	XS	XS	P42A-00035	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	XS	XS	P42A-00039	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	XS	XS	P42A-0003C	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	XS	XS	P42A-0008C	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	XS	XS	P42A-0008D	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	XS	XS	P42A-0008E	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	XS	XS	P42A-0008F	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	STD	XS	P42A-0007V	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	

ECC SWAGED NIPPLE (SNE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	XS	XS	P43A-00036	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	XS	XS	P43A-00037	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	XS	XS	P43A-00038	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	XS	XS	P43A-00039	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	XS	XS	P43A-0003A	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	XS	XS	P43A-0003B	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	XS	XS	P43A-00042	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	XS	XS	P43A-00043	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	XS	XS	P43A-00044	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	XS	XS	P43A-00045	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	STD	XS	P43A-0003J	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	

COUPLING (CPS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P47B-0001D	Coupling ASTM A105 Class 3000 ASME B16.11 SW - SW	
1	0.75				P47B-0001E	Coupling ASTM A105 Class 3000 ASME B16.11 SW - SW	
1	1				P47B-0001F	Coupling ASTM A105 Class 3000 ASME B16.11 SW - SW	
1	1.5				P47B-0001G	Coupling ASTM A105 Class 3000 ASME B16.11 SW - SW	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2 - 2.5	0.5			P31B-013J7	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	3 - 8	0.5			P31B-007AP	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	10 and larger	0.5			P31B-013J8	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	2 - 2.5	0.75			P31B-0137J	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	3 - 5	0.75			P31B-0137K	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	6 - 12	0.75			P31B-007AB	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	14 - 36	0.75			P31B-007AJ	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	3	1			P31B-007A7	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	4 - 5	1			P31B-0138Z	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	6 - 10	1			P31B-007A4	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	12 - 36	1			P31B-007AA	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	4	1.5			P31B-005SN	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	5 - 6	1.5			P31B-01390	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	8 - 12	1.5			P31B-0079U	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	14 - 24	1.5			P31B-007A0	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	1	0.75			P31B-00551	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	

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OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
541	1.5	0.75			P31B-00555	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
541	2 - 2.5	0.75			P31B-0137H	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
541	3 - 5	0.75			P31B-01376	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
541	6 - 12	0.75			P31B-007GR	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
541	14 - 36	0.75			P31B-007GY	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
1	5	2	STD	XS	P31B-011P8	Outlet ASTM A105 MSS SP-97 BW	
1	6	2	STD	XS	P31B-007SH	Outlet ASTM A105 MSS SP-97 BW	
1	8	2	SCH30	XS	P31B-00X36	Outlet ASTM A105 MSS SP-97 BW	
1	10	2	SCH30	XS	P31B-00NVF	Outlet ASTM A105 MSS SP-97 BW	
1	12	2	SCH30	XS	P31B-00NVL	Outlet ASTM A105 MSS SP-97 BW	
1	14	2	SCH20	XS	P31B-00TF9	Outlet ASTM A105 MSS SP-97 BW	
1	16	2	SCH20	XS	P31B-00TF8	Outlet ASTM A105 MSS SP-97 BW	
1	8	3	SCH30	STD	P31B-00X37	Outlet ASTM A105 MSS SP-97 BW	
1	10	3	SCH30	STD	P31B-00NYK	Outlet ASTM A105 MSS SP-97 BW	
1	12	3	SCH30	STD	P31B-00NYR	Outlet ASTM A105 MSS SP-97 BW	
1	14	3	SCH20	STD	P31B-00UPH	Outlet ASTM A105 MSS SP-97 BW	
1	16	3	SCH20	STD	P31B-00TU2	Outlet ASTM A105 MSS SP-97 BW	
1	12	4	SCH30	STD	P31B-00P1G	Outlet ASTM A105 MSS SP-97 BW	
1	14	4	SCH20	STD	P31B-00UPJ	Outlet ASTM A105 MSS SP-97 BW	
1	16	4	SCH20	STD	P31B-00TU3	Outlet ASTM A105 MSS SP-97 BW	
4212	3	2	STD	XS	P31B-00UUU	Outlet ASTM A105 MSS SP-97 BW	38

OLET ON CAP (LC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
4203	0.75				P36B-0001L	Outlet on cap ASTM A105 Class 3000 MSS SP-97 SW Cap=NPS3	
4204	0.75				P36B-0001M	Outlet on cap ASTM A105 Class 3000 MSS SP-97 SW Cap=NPS4	
4206	0.75				P36B-0005S	Outlet on cap ASTM A105 Class 3000 MSS SP-97 SW Cap=NPS8	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30B-0002D	Plug ASTM A105 ASME B16.11 NPT Round head	
1	0.75				P30B-0002E	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1				P30B-0002F	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1.5				P30B-0002G	Plug ASTM A105 ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P61B-001R9	Flange SW ASTM A105 Class 150 ASME B16.5 RF	
1	0.75		XS		P61B-001RA	Flange SW ASTM A105 Class 150 ASME B16.5 RF	
1	1		XS		P61B-001RR	Flange SW ASTM A105 Class 150 ASME B16.5 RF	
1	1.5		XS		P61B-001RV	Flange SW ASTM A105 Class 150 ASME B16.5 RF	
1	2		XS		P61B-003NK	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	3		STD		P61B-001PW	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	4		STD		P61B-001R8	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	5		STD		P61B-00D0W	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	6		STD		P61B-001RT	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	8		SCH30		P61B-003FP	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	10		SCH30		P61B-003FS	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	12		SCH30		P61B-002TS	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	14		SCH20		P61B-002B6	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	16		SCH20		P61B-002B7	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
773	0.5		XS		P61B-001HC	Flange SW ASTM A105 Class 300 ASME B16.5 RF	
773	0.75		XS		P61B-001HS	Flange SW ASTM A105 Class 300 ASME B16.5 RF	
773	1		XS		P61B-001EF	Flange SW ASTM A105 Class 300 ASME B16.5 RF	
773	1.5		XS		P61B-001F2	Flange SW ASTM A105 Class 300 ASME B16.5 RF	
773	2		XS		P61B-001HW	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	3		STD		P61B-001LJ	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	4		STD		P61B-001MC	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	5		STD		P61B-00D0X	Flange WN ASTM A105 Class 300 ASME B16.5 RF	

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FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
773	6		STD		P61B-001N2	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	8		SCH30		P61B-008S0	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	10		SCH30		P61B-003LX	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	12		SCH30		P61B-002TV	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	14		SCH20		P61B-002MR	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	16		SCH20		P61B-002MS	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
781	1		XS		P61B-001DR	Flange SW ASTM A105 Class 600 ASME B16.5 RF	
781	1.5		XS		P61B-001DV	Flange SW ASTM A105 Class 600 ASME B16.5 RF	
781	2		XS		P61B-001DH	Flange WN ASTM A105 Class 600 ASME B16.5 RF	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67B-000FH	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	0.75				P67B-000FJ	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	1				P67B-000FK	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	1.5				P67B-000FL	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	2				P67B-000FT	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	3				P67B-000FW	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	4				P67B-000FX	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	5				P67B-000VN	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	6				P67B-000FY	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	8				P67B-000FZ	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	10				P67B-000FM	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	12				P67B-000FN	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	14				P67B-000FP	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	16				P67B-000FR	Blind flange ASTM A105 Class 150 ASME B16.5 RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-0033Y	Spiral wound gasket SS316 winding / Non-asbestos filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-5	
1	0.75				P73T-0033Z	Spiral wound gasket SS316 winding / Non-asbestos filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-5	
1	1				P73T-00340	Spiral wound gasket SS316 winding / Non-asbestos filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-5	
1	1.5				P73T-00341	Spiral wound gasket SS316 winding / Non-asbestos filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-5	
1	2				P73T-00342	Spiral wound gasket SS316 winding / Non-asbestos filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-5	
1	3				P73T-00343	Spiral wound gasket SS316 winding / Non-asbestos filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-5	
1	4				P73T-00344	Spiral wound gasket SS316 winding / Non-asbestos filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-5	
1	5				P73T-003LS	Spiral wound gasket SS316 winding / Non-asbestos filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-5	
1	6				P73T-00345	Spiral wound gasket SS316 winding / Non-asbestos filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-5	
1	8				P73T-00346	Spiral wound gasket SS316 winding / Non-asbestos filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-5	
1	10				P73T-0038B	Spiral wound gasket SS316 winding / Non-asbestos filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-5	
1	12				P73T-0038C	Spiral wound gasket SS316 winding / Non-asbestos filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-5	
1	14				P73T-0038D	Spiral wound gasket SS316 winding / Non-asbestos filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-5	
1	16				P73T-0038E	Spiral wound gasket SS316 winding / Non-asbestos filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-5	
773	0.5				P73T-00347	Spiral wound gasket SS316 winding / Non-asbestos filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-5	
773	0.75				P73T-00348	Spiral wound gasket SS316 winding / Non-asbestos filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-5	
773	1				P73T-00349	Spiral wound gasket SS316 winding / Non-asbestos filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-5	
773	1.5				P73T-0034A	Spiral wound gasket SS316 winding / Non-asbestos filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-5	
773	2				P73T-0034B	Spiral wound gasket SS316 winding / Non-asbestos filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-5	
773	3				P73T-0034C	Spiral wound gasket SS316 winding / Non-asbestos filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-5	
773	4				P73T-0034D	Spiral wound gasket SS316 winding / Non-asbestos filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-5	
773	5				P73T-003LT	Spiral wound gasket SS316 winding / Non-asbestos filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-5	

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GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
773	6				P73T-0034E	Spiral wound gasket SS316 winding / Non-asbestos filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-5	
773	8				P73T-0034F	Spiral wound gasket SS316 winding / Non-asbestos filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-5	
773	10				P73T-0038K	Spiral wound gasket SS316 winding / Non-asbestos filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-5	
773	12				P73T-0038L	Spiral wound gasket SS316 winding / Non-asbestos filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-5	
773	14				P73T-0038M	Spiral wound gasket SS316 winding / Non-asbestos filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-5	
773	16				P73T-0038N	Spiral wound gasket SS316 winding / Non-asbestos filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-5	
781	1				P73T-003GR	Spiral wound gasket SS316 winding / Non-asbestos filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-5	
781	1.5				P73T-003GS	Spiral wound gasket SS316 winding / Non-asbestos filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-5	
781	2				P73T-003GT	Spiral wound gasket SS316 winding / Non-asbestos filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-5	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-16				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
773	0.5-10				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
773	12-16				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
781	0.5-3				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81B-000P4	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	0.75				P81B-000NX	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	1				P81B-000NY	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	1.5				P81B-000NZ	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	2				P81C-002DV	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	3				P81C-002DW	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	4				P81C-002DX	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	5				P81C-007MA	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	6				P81C-002DY	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	8				P81C-002DZ	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	10				P81C-002DT	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	12				P81C-002DU	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	14				P81C-00308	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated	
1	16				P81C-002E0	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated	
714	0.5				P81B-0015L	Gate valve ASTM A105 Class 800 API 602 SW - NPT Trim number 8 BB-BG-OS&Y Handwheel operated	
714	0.75				P81B-002F4	Gate valve ASTM A105 Class 800 API 602 SW - NPT Trim number 8 BB-BG-OS&Y Handwheel operated	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82B-000K0	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	0.75				P82B-000HB	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	1				P82B-000HC	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	1.5				P82B-000HD	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	2				P82C-000N5	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	3				P82C-000N6	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	4				P82C-000N7	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	5				P82C-003UX	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	6				P82C-000N8	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	8				P82C-0026L	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	

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GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	10				P82C-002V6	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
714	0.5				P82B-0005S	Globe valve ASTM A105 Class 800 API 602 SW - NPT Trim number 8 BB-BG-OS&Y Handwheel operated	
714	0.75				P82B-0005R	Globe valve ASTM A105 Class 800 API 602 SW - NPT Trim number 8 BB-BG-OS&Y Handwheel operated	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83B-000FX	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover	
1	0.75				P83B-000ER	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover	
1	1				P83B-000ES	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover	
1	1.5				P83B-000ET	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover	
1	2				P83C-00144	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	3				P83C-00147	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	4				P83C-00148	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	5				P83C-003AX	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	6				P83C-00149	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	8				P83C-0014A	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	10				P83C-00140	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	12				P83C-00141	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	14				P83C-0021E	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	16				P83C-00142	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	

BALL VALVE (Q)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P84B-0011T	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design	
1	0.75				P84B-0011U	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design	
1	1				P84B-0011V	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design	
1	1.5				P84B-0011W	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design	
1	2				P84C-005UD	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design	
1	3				P84C-005UE	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design	
1	4				P84C-005UF	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design	
1	6				P84C-005UG	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Reduced bore Fire tested design	
1	8				P84C-005UH	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Reduced bore Fire tested design	
1	10				P84C-006MS	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Reduced bore Fire tested design	
1	12				P84C-006MT	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Reduced bore Fire tested design	
1	14				P84C-006MU	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Reduced bore Fire tested design	
1	16				P84C-006MV	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Reduced bore Fire tested design	
24	0.5				P84B-0011X	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	
24	0.75				P84B-0011Y	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	
24	1				P84B-0011Z	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	
24	1.5				P84B-00120	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	
24	2				P84C-005UJ	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	
24	3				P84C-005UK	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	
24	4				P84C-005UL	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	
24	6				P84C-005UM	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design	
24	8				P84C-005UN	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design	
24	10				P84C-006MZ	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design	
24	12				P84C-006N0	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design	

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BALL VALVE (Q)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
24	14				P84C-006N1	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design	
24	16				P84C-006N2	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design	

BUTTERFLY VALVE (H)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	12				P86C-00231	Offset design butterfly valve ASTM A216 Grade WCB Class 150 API 609 Category B Lug-type ASME B16.5 RF Disc CS Seat Stellite-6 Trim 13Cr Triple eccentric design BG Gear operated	

ORIFICE FLANGE (FO)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2		XS		P66B-0084B	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	3		STD		P66B-0084C	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	4		STD		P66B-0084D	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	5		STD		P66B-00870	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	6		STD		P66B-0084E	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	8		SCH30		P66B-00871	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	10		SCH30		P66B-0086Z	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	12		SCH30		P66B-00849	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	14		SCH20		P66B-0084A	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	16		SCH20		P66B-0083Y	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
200	2		XS		P66B-00843	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	3		STD		P66B-00844	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	4		STD		P66B-00845	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	5		STD		P66B-00875	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	6		STD		P66B-00846	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	8		SCH30		P66B-00876	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	10		SCH30		P66B-00874	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	12		SCH30		P66B-00841	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	14		SCH20		P66B-00842	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	16		SCH20		P66B-0083Z	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71B-0008A	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	0.75				P71B-0008B	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	1				P71B-0008C	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71B-0008D	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	2				P71B-0000P	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	3				P71B-0000N	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	4				P71B-0000M	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	5				P71B-000GP	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	6				P71B-0000L	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	8				P71B-0000R	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	10				P71B-0000K	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	12				P71B-0000J	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	

PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000AH	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	16				P72B-0000C	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	

PADDLE SPACER (PS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000AT	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	16				P72B-0000B	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	

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BOLT TABLE (B_A21A05 , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	60	P80S-003V2		
0.75	4	0.500	65	P80S-003V3		
1	4	0.500	70	P80S-003V4		
1.5	4	0.500	75	P80S-003V5		
2	4	0.625	85	P80S-003XE		
2.5	4	0.625	90	P80S-003XF		
3	4	0.625	95	P80S-003XG		
4	8	0.625	95	P80S-003XG		
5	8	0.750	100	P80S-003XH		
6	8	0.750	105	P80S-003XJ		
8	8	0.750	110	P80S-003XK		
10	12	0.875	120	P80S-00419		
12	12	0.875	120	P80S-00419		
14	12	1.000	135	P80S-0043E		
16	16	1.000	140	P80S-0043F		

BOLT TABLE (B_A21A05_773 , STUD ASME RF, OPTION CODE 773)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-003V4		
0.75	4	0.625	75	P80S-003XC		
1	4	0.625	80	P80S-003XD		
1.5	4	0.750	95	P80S-00414		
2	8	0.625	90	P80S-003XF		
2.5	8	0.750	105	P80S-003XJ		
3	8	0.750	110	P80S-003XK		
4	8	0.750	115	P80S-003XL		
5	8	0.750	120	P80S-003XM		
6	12	0.750	125	P80S-003XN		
8	12	0.875	140	P80S-0041D		
10	16	1.000	160	P80S-0043K		
12	16	1.125	175	P80S-0046S		
14	20	1.125	180	P80S-0046T		
16	20	1.250	190	P80S-004AK		

BOLT TABLE (B_A21A05_781 , STUD ASME RF, OPTION CODE 781)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	80	P80S-003V6		
0.75	4	0.625	90	P80S-003XF		
1	4	0.625	95	P80S-003XG		
1.5	4	0.750	110	P80S-003XK		
2	8	0.625	110	P80S-003VC		
2.5			0			
3	8	0.750	130	P80S-003XP		
4	8	0.875	150			
5	8	1.000	165			
6	12	1.000	175			
8	12	1.125	195			
10	16	1.250	250			
12	20	1.250	255			
14	20	1.375	270			
16	20	1.500	295			

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BRANCH TABLE (T_A21A05)

RUN PIPE SIZE (in) \ BRANCH SIZE (in)	0.5	0.75	1	1.5	2	2.5	3	4	5	6	8	10	12	14	16
0.5	TS														
0.75	TR	TS													
1	TR	TR	TS												
1.5	TR	TR	TR	TS											
2	L	L	TR	TR	TS										
2.5		L													
3	L	L	L	TR	TR		TS								
4	L	L	L	L	TR		TR	TS							
5		L	L		L										
6	L	L	L	L	L		TR	TR		TS					
8	L	L	L	L	L		L	TR		TR	TS				
10	L	L	L	L	L		L	TR		TR	TR	TS			
12	L	L	L	L	L		L	L		TR	TR	TR	TS		
14		L	L	L	L		L	L		TR	TR	TR	TR	TS	
16		L	L	L	L		L	L		TR	TR	TR	TR	TR	TS

TS : STRAIGHT TEE
TR : REDUCING TEE
L : OUTLET

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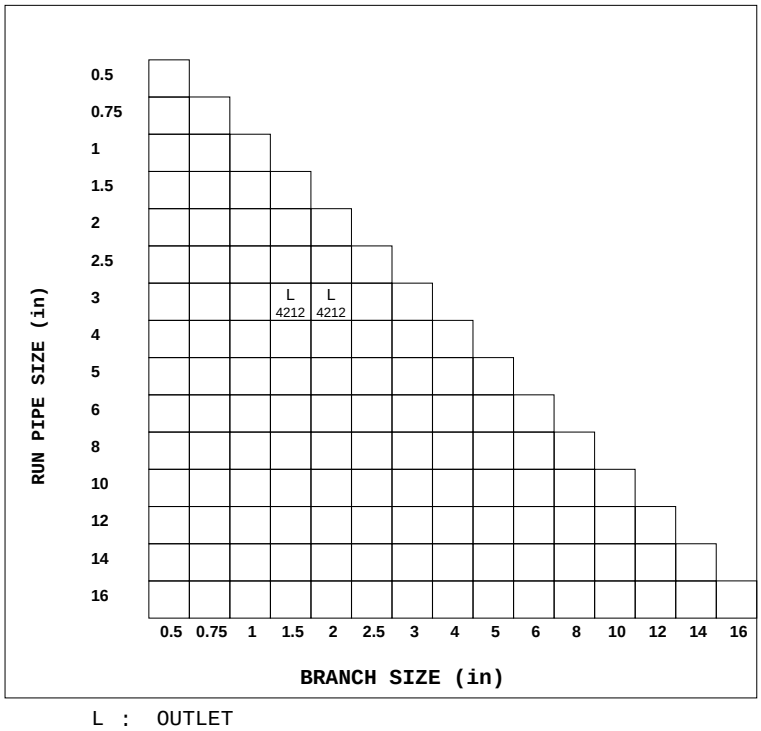
BRANCH TABLE (T_A21A05_4)



L : OUTLET

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PIPING CLASS

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Material : Killed CS
Rating : ASME CLASS 150
Flange Face : RF
C.A.(mm) : 3.00
Gasket : Spiral Wound
Service : LIQUID ADDITIVE, PROPYLENE, PROCESS WATER, WASTE OIL, WASTE WATER
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED

DETAIL NOTES :

NO.	DESCRIPTION
38	TO BE USED FOR STAND PIPE

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
24	FULL PORT (Q)
200	WITH JACK SCREW (FO)
221	RF (V)
541	NPT(F) (CA,L)
714	SW - NPT(F) (V,W)
773	CLASS 300 (B,F,G)
3001	INSULATION GASKET KIT AND BOLTS FOR FLANGE (G)
4212	WELDOLET FOR STAND PIPE (L)

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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P01A-0010P	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	0.75		SCH160		P01A-0010R	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1		SCH160		P01A-0014M	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1.5		SCH160		P01A-0015J	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	2		XS		P01A-000YX	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	3		STD		P01A-000YM	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	4		STD		P01A-000YU	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	6		STD		P01A-000Z3	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	8		SCH20		P01A-001AT	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	10		SCH20		P01A-0014Y	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	12		SCH30		P01A-0017K	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	14		SCH20		P01A-0017A	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	16		SCH20		P01A-0018E	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	18		SCH20		P01A-00438	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE	
1	20		STD		P01A-0042G	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P02B-0001J	90 degree elbow ASTM A105 Class 6000 ASME B16.11 SW	
1	0.75				P02B-0001K	90 degree elbow ASTM A105 Class 6000 ASME B16.11 SW	
1	1				P02B-0002E	90 degree elbow ASTM A105 Class 6000 ASME B16.11 SW	
1	1.5				P02B-0002F	90 degree elbow ASTM A105 Class 6000 ASME B16.11 SW	
1	2		XS		P02A-000CP	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		STD		P02A-000CU	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		STD		P02A-000CZ	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		STD		P02A-000D6	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		SCH20		P02A-000GZ	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	10		SCH20		P02A-000H1	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	12		SCH30		P02A-000M4	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	14		SCH20		P02A-000FX	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	16		SCH20		P02A-000GM	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	18		SCH20		P02A-000LT	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	20		STD		P02A-0010J	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P03B-0001F	45 degree elbow ASTM A105 Class 6000 ASME B16.11 SW	
1	0.75				P03B-0001G	45 degree elbow ASTM A105 Class 6000 ASME B16.11 SW	
1	1				P03B-0002A	45 degree elbow ASTM A105 Class 6000 ASME B16.11 SW	
1	1.5				P03B-0002B	45 degree elbow ASTM A105 Class 6000 ASME B16.11 SW	
1	2		XS		P03A-000AS	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		STD		P03A-000AX	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		STD		P03A-000B1	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		STD		P03A-000B9	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		SCH20		P03A-000EX	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	10		SCH20		P03A-000F0	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	12		SCH30		P03A-000JU	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	14		SCH20		P03A-000DW	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	16		SCH20		P03A-000EM	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	18		SCH20		P03A-001DX	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	20		STD		P03A-000X1	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P21B-0001F	Straight tee ASTM A105 Class 6000 ASME B16.11 SW	
1	0.75				P21B-0001G	Straight tee ASTM A105 Class 6000 ASME B16.11 SW	
1	1				P21B-00026	Straight tee ASTM A105 Class 6000 ASME B16.11 SW	
1	1.5				P21B-00027	Straight tee ASTM A105 Class 6000 ASME B16.11 SW	
1	2		XS		P21A-001CJ	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3		STD		P21A-001CU	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		STD		P21A-001CW	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6		STD		P21A-001D2	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8		SCH20		P21A-00215	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10		SCH20		P21A-00219	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12		SCH30		P21A-0025A	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14		SCH20		P21A-00206	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16		SCH20		P21A-0020X	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18		SCH20		P21A-001PJ	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20		STD		P21A-001C7	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5			P24B-00033	Reducing tee ASTM A105 Class 6000 ASME B16.11 SW	
1	1	0.5			P24B-00034	Reducing tee ASTM A105 Class 6000 ASME B16.11 SW	
1	1	0.75			P24B-00030	Reducing tee ASTM A105 Class 6000 ASME B16.11 SW	
1	1.5	0.5			P24B-00031	Reducing tee ASTM A105 Class 6000 ASME B16.11 SW	
1	1.5	0.75			P24B-00032	Reducing tee ASTM A105 Class 6000 ASME B16.11 SW	
1	1.5	1			P24B-0004J	Reducing tee ASTM A105 Class 6000 ASME B16.11 SW	
1	2	1	XS	SCH160	P24A-00GMB	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	XS	SCH160	P24A-005K9	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	STD	SCH160	P24A-00GMC	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	STD	XS	P24A-002HW	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P24A-002HY	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P24A-0021K	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	STD	P24A-0021A	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P24A-00229	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH20	STD	P24A-00J21	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH20	STD	P24A-005J4	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	SCH20	STD	P24A-00HMB	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	SCH20	STD	P24A-00HKS	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	SCH20	SCH20	P24A-002YX	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	SCH30	STD	P24A-00HKT	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH30	SCH20	P24A-003XM	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH30	SCH20	P24A-003XL	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	SCH20	STD	P24A-00K0M	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	SCH20	SCH20	P24A-002U7	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	SCH20	SCH20	P24A-002YA	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	SCH20	SCH30	P24A-003ES	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	6	SCH20	STD	P24A-00GU4	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	SCH20	SCH20	P24A-002XW	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	SCH20	SCH20	P24A-002YH	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	SCH20	SCH30	P24A-003XN	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	SCH20	SCH20	P24A-002XF	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	8	SCH20	SCH20	P24A-002XC	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	10	SCH20	SCH20	P24A-002UX	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	12	SCH20	SCH30	P24A-00BH0	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	14	SCH20	SCH20	P24A-002WT	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	16	SCH20	SCH20	P24A-002X5	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	8	STD	SCH20	P24A-00K0N	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	10	STD	SCH20	P24A-00BT7	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	12	STD	SCH30	P24A-00BUT	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	14	STD	SCH20	P24A-00BWB	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	16	STD	SCH20	P24A-006W3	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	18	STD	SCH20	P24A-006WD	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	STD	XS	P27A-001MZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	4	2	STD	XS	P27A-001N0	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P27A-00189	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	STD	P27A-001AZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P27A-001GW	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH20	STD	P27A-003K2	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH20	STD	P27A-003K3	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	SCH20	STD	P27A-003K4	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	SCH20	STD	P27A-003K5	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	SCH20	SCH20	P27A-001UL	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	SCH30	STD	P27A-003MN	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH30	SCH20	P27A-002GG	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH30	SCH20	P27A-002GF	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	SCH20	STD	P27A-00518	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	SCH20	SCH20	P27A-001V4	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	SCH20	SCH20	P27A-001TG	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	SCH20	SCH30	P27A-0028H	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	SCH20	SCH20	P27A-001WX	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	SCH20	SCH20	P27A-001TW	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	SCH20	SCH30	P27A-002GH	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	SCH20	SCH20	P27A-001V2	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	10	SCH20	SCH20	P27A-001TJ	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	12	SCH20	SCH30	P27A-0084K	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	14	SCH20	SCH20	P27A-001UY	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	16	SCH20	SCH20	P27A-001WN	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	12	STD	SCH30	P27A-0082K	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	14	STD	SCH20	P27A-0082L	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	16	STD	SCH20	P27A-0082M	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	18	STD	SCH20	P27A-0084N	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	STD	XS	P28A-001N5	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P28A-001N6	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P28A-0018B	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	STD	P28A-001AS	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P28A-00182	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH20	STD	P28A-003JU	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH20	STD	P28A-003JV	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	SCH20	STD	P28A-003JW	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	SCH20	STD	P28A-003JX	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	SCH20	SCH20	P28A-001V0	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	SCH30	STD	P28A-003MG	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH30	SCH20	P28A-002GA	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH30	SCH20	P28A-002G9	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	SCH20	STD	P28A-0096P	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	SCH20	SCH20	P28A-001WH	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	SCH20	SCH20	P28A-001TH	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	SCH20	SCH30	P28A-0027A	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	SCH20	SCH20	P28A-001T6	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	SCH20	SCH20	P28A-001TY	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	SCH20	SCH30	P28A-002GB	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	SCH20	SCH20	P28A-001WG	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	10	SCH20	SCH20	P28A-001TV	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	12	SCH20	SCH30	P28A-004UM	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	14	SCH20	SCH20	P28A-001WD	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	16	SCH20	SCH20	P28A-001T1	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	12	STD	SCH30	P28A-004SH	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	14	STD	SCH20	P28A-004SJ	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	16	STD	SCH20	P28A-004SK	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	

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ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	20	18	STD	SCH20	P28A-004UN	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P29B-0002F	Cap ASTM A105 Class 6000 ASME B16.11 SW	
1	0.75				P29B-0002G	Cap ASTM A105 Class 6000 ASME B16.11 SW	
1	1				P29B-0002D	Cap ASTM A105 Class 6000 ASME B16.11 SW	
1	1.5				P29B-0002E	Cap ASTM A105 Class 6000 ASME B16.11 SW	
1	2		XS		P29A-000A1	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		STD		P29A-000BK	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		STD		P29A-000A3	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6		STD		P29A-000A9	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8		SCH20		P29A-000EY	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10		SCH20		P29A-000E5	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12		SCH30		P29A-000PZ	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14		SCH20		P29A-000EA	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16		SCH20		P29A-000F3	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18		SCH20		P29A-000E0	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20		STD		P29A-000B2	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
541	0.75				P29B-0000Y	Cap ASTM A105 Class 6000 ASME B16.11 NPT	
541	1				P29B-0000Z	Cap ASTM A105 Class 6000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P41A-000B9	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		XXS		P41A-000BA	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		XXS		P41A-000D8	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		XXS		P41A-000D9	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

CON SWAGED NIPPLE (SNC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	SCH160	P42A-00029	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	SCH160	SCH160	P42A-0009T	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	SCH160	SCH160	P42A-0009U	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	SCH160	SCH160	P42A-0009V	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	SCH160	SCH160	P42A-0009W	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	SCH160	SCH160	P42A-0009X	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	XS	SCH160	P42A-000J6	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	XS	SCH160	P42A-000J7	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	XS	SCH160	P42A-000F8	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	XS	SCH160	P42A-000KZ	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	STD	SCH160	P42A-000L0	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	

ECC SWAGED NIPPLE (SNE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	SCH160	P43A-000AM	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	SCH160	SCH160	P43A-000B4	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	SCH160	SCH160	P43A-000B5	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	SCH160	SCH160	P43A-000B6	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	SCH160	SCH160	P43A-000B7	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	SCH160	SCH160	P43A-000B8	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	XS	SCH160	P43A-000B2	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	XS	SCH160	P43A-000B3	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	XS	SCH160	P43A-000CZ	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	XS	SCH160	P43A-000D0	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	STD	SCH160	P43A-000D1	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	

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COUPLING (CPS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P47B-00013	Coupling ASTM A105 Class 6000 ASME B16.11 SW - SW	
1	0.75				P47B-00012	Coupling ASTM A105 Class 6000 ASME B16.11 SW - SW	
1	1				P47B-0002A	Coupling ASTM A105 Class 6000 ASME B16.11 SW - SW	
1	1.5				P47B-0002B	Coupling ASTM A105 Class 6000 ASME B16.11 SW - SW	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5 - 2	0.5			P31B-005SW	Outlet ASTM A105 Class 6000 MSS SP-97 SW	
1	2.5 - 6	0.5			P31B-01388	Outlet ASTM A105 Class 6000 MSS SP-97 SW	
1	8 and larger	0.5			P31B-01389	Outlet ASTM A105 Class 6000 MSS SP-97 SW	
1	1.5 - 2.5	0.75			P31B-0137D	Outlet ASTM A105 Class 6000 MSS SP-97 SW	
1	3 - 10	0.75			P31B-007LV	Outlet ASTM A105 Class 6000 MSS SP-97 SW	
1	12 and larger	0.75			P31B-0136N	Outlet ASTM A105 Class 6000 MSS SP-97 SW	
1	3 - 10	1			P31B-007LN	Outlet ASTM A105 Class 6000 MSS SP-97 SW	
1	12 and larger	1			P31B-0136P	Outlet ASTM A105 Class 6000 MSS SP-97 SW	
1	4 - 5	1.5			P31B-004LE	Outlet ASTM A105 Class 6000 MSS SP-97 SW	
1	6 - 8	1.5			P31B-005T4	Outlet ASTM A105 Class 6000 MSS SP-97 SW	
1	10 - 18	1.5			P31B-007LF	Outlet ASTM A105 Class 6000 MSS SP-97 SW	
1	20 and larger	1.5			P31B-0137E	Outlet ASTM A105 Class 6000 MSS SP-97 SW	
541	1	0.75			P31B-005HL	Outlet ASTM A105 Class 6000 MSS SP-97 NPT	
541	1.5 - 2.5	0.75			P31B-0137F	Outlet ASTM A105 Class 6000 MSS SP-97 NPT	
541	3 - 10	0.75			P31B-007KP	Outlet ASTM A105 Class 6000 MSS SP-97 NPT	
541	12 and larger	0.75			P31B-0138A	Outlet ASTM A105 Class 6000 MSS SP-97 NPT	
1	6	2	STD	XS	P31B-007SH	Outlet ASTM A105 MSS SP-97 BW	
1	8	2	SCH20	XS	P31B-00NY2	Outlet ASTM A105 MSS SP-97 BW	
1	10	2	SCH20	XS	P31B-00TFB	Outlet ASTM A105 MSS SP-97 BW	
1	12	2	SCH30	XS	P31B-00NVL	Outlet ASTM A105 MSS SP-97 BW	
1	14	2	SCH20	XS	P31B-00TF9	Outlet ASTM A105 MSS SP-97 BW	
1	16	2	SCH20	XS	P31B-00TF8	Outlet ASTM A105 MSS SP-97 BW	
1	18	2	SCH20	XS	P31B-00NVX	Outlet ASTM A105 MSS SP-97 BW	
1	20	2	STD	XS	P31B-00994	Outlet ASTM A105 MSS SP-97 BW	
1	8	3	SCH20	STD	P31B-00P11	Outlet ASTM A105 MSS SP-97 BW	
1	10	3	SCH20	STD	P31B-00UPG	Outlet ASTM A105 MSS SP-97 BW	
1	12	3	SCH30	STD	P31B-00NYR	Outlet ASTM A105 MSS SP-97 BW	
1	14	3	SCH20	STD	P31B-00UPH	Outlet ASTM A105 MSS SP-97 BW	
1	16	3	SCH20	STD	P31B-00TU2	Outlet ASTM A105 MSS SP-97 BW	
1	18	3	SCH20	STD	P31B-00NZ4	Outlet ASTM A105 MSS SP-97 BW	
1	20	3	STD	STD	P31B-008FA	Outlet ASTM A105 MSS SP-97 BW	
1	12	4	SCH30	STD	P31B-00P1G	Outlet ASTM A105 MSS SP-97 BW	
1	14	4	SCH20	STD	P31B-00UPJ	Outlet ASTM A105 MSS SP-97 BW	
1	16	4	SCH20	STD	P31B-00TU3	Outlet ASTM A105 MSS SP-97 BW	
1	18	4	SCH20	STD	P31B-00P1V	Outlet ASTM A105 MSS SP-97 BW	
1	20	4	STD	STD	P31B-008D3	Outlet ASTM A105 MSS SP-97 BW	
1	18	6	SCH20	STD	P31B-00P48	Outlet ASTM A105 MSS SP-97 BW	
1	20	6	STD	STD	P31B-008PZ	Outlet ASTM A105 MSS SP-97 BW	
4212	3	2	STD	XS	P31B-00UUU	Outlet ASTM A105 MSS SP-97 BW	38

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30B-0002D	Plug ASTM A105 ASME B16.11 NPT Round head	
1	0.75				P30B-0002E	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1				P30B-0002F	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1.5				P30B-0002G	Plug ASTM A105 ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5		SCH160		P61B-002D4	Flange SW ASTM A105 Class 150 ASME B16.5 RF	
1	0.75		SCH160		P61B-002DE	Flange SW ASTM A105 Class 150 ASME B16.5 RF	
1	1		SCH160		P61B-002DU	Flange SW ASTM A105 Class 150 ASME B16.5 RF	

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FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5		SCH160		P61B-002EM	Flange SW ASTM A105 Class 150 ASME B16.5 RF	
1	2		XS		P61B-003NK	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	3		STD		P61B-001PW	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	4		STD		P61B-001R8	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	6		STD		P61B-001RT	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	8		SCH20		P61B-002BF	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	10		SCH20		P61B-002B4	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	12		SCH30		P61B-002TS	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	14		SCH20		P61B-002B6	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	16		SCH20		P61B-002B7	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	18		SCH20		P61B-002B8	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	20		STD		P61B-001JA	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
773	0.5		SCH160		P61B-001H5	Flange SW ASTM A105 Class 300 ASME B16.5 RF	
773	0.75		SCH160		P61B-001HH	Flange SW ASTM A105 Class 300 ASME B16.5 RF	
773	1		SCH160		P61B-001E8	Flange SW ASTM A105 Class 300 ASME B16.5 RF	
773	1.5		SCH160		P61B-001ET	Flange SW ASTM A105 Class 300 ASME B16.5 RF	
773	2		XS		P61B-001HW	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	3		STD		P61B-001LJ	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	4		STD		P61B-001MC	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	6		STD		P61B-001N2	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	8		SCH20		P61B-002LJ	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	10		SCH20		P61B-002LH	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	12		SCH30		P61B-002TV	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	14		SCH20		P61B-002MR	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	16		SCH20		P61B-002MS	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	18		SCH20		P61B-002MT	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	20		STD		P61B-001NT	Flange WN ASTM A105 Class 300 ASME B16.5 RF	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67B-000FH	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	0.75				P67B-000FJ	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	1				P67B-000FK	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	1.5				P67B-000FL	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	2				P67B-000FT	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	3				P67B-000FW	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	4				P67B-000FX	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	6				P67B-000FY	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	8				P67B-000FZ	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	10				P67B-000FM	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	12				P67B-000FN	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	14				P67B-000FP	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	16				P67B-000FR	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	18				P67B-000FS	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	20				P67B-000FU	Blind flange ASTM A105 Class 150 ASME B16.5 RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-0033Y	Spiral wound gasket SS316 winding / Non-asbestos filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-5	
1	0.75				P73T-0033Z	Spiral wound gasket SS316 winding / Non-asbestos filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-5	
1	1				P73T-00340	Spiral wound gasket SS316 winding / Non-asbestos filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-5	
1	1.5				P73T-00341	Spiral wound gasket SS316 winding / Non-asbestos filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-5	
1	2				P73T-00342	Spiral wound gasket SS316 winding / Non-asbestos filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-5	
1	3				P73T-00343	Spiral wound gasket SS316 winding / Non-asbestos filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-5	
1	4				P73T-00344	Spiral wound gasket SS316 winding / Non-asbestos filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-5	
1	6				P73T-00345	Spiral wound gasket SS316 winding / Non-asbestos filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-5	

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GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	8				P73T-00346	Spiral wound gasket SS316 winding / Non-asbestos filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-5	
1	10				P73T-0038B	Spiral wound gasket SS316 winding / Non-asbestos filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-5	
1	12				P73T-0038C	Spiral wound gasket SS316 winding / Non-asbestos filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-5	
1	14				P73T-0038D	Spiral wound gasket SS316 winding / Non-asbestos filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-5	
1	16				P73T-0038E	Spiral wound gasket SS316 winding / Non-asbestos filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-5	
1	18				P73T-0038F	Spiral wound gasket SS316 winding / Non-asbestos filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-5	
1	20				P73T-0038G	Spiral wound gasket SS316 winding / Non-asbestos filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-5	
3001	2				P78U-0004L	Insulation gasket kit Glass reinforced epoxy Class 150 Manufacturer-standard Flange ASME B16.5 RF	
773	0.5				P73T-00347	Spiral wound gasket SS316 winding / Non-asbestos filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-5	
773	0.75				P73T-00348	Spiral wound gasket SS316 winding / Non-asbestos filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-5	
773	1				P73T-00349	Spiral wound gasket SS316 winding / Non-asbestos filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-5	
773	1.5				P73T-0034A	Spiral wound gasket SS316 winding / Non-asbestos filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-5	
773	2				P73T-0034B	Spiral wound gasket SS316 winding / Non-asbestos filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-5	
773	3				P73T-0034C	Spiral wound gasket SS316 winding / Non-asbestos filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-5	
773	4				P73T-0034D	Spiral wound gasket SS316 winding / Non-asbestos filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-5	
773	6				P73T-0034E	Spiral wound gasket SS316 winding / Non-asbestos filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-5	
773	8				P73T-0034F	Spiral wound gasket SS316 winding / Non-asbestos filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-5	
773	10				P73T-0038K	Spiral wound gasket SS316 winding / Non-asbestos filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-5	
773	12				P73T-0038L	Spiral wound gasket SS316 winding / Non-asbestos filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-5	
773	14				P73T-0038M	Spiral wound gasket SS316 winding / Non-asbestos filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-5	
773	16				P73T-0038N	Spiral wound gasket SS316 winding / Non-asbestos filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-5	
773	18				P73T-0038P	Spiral wound gasket SS316 winding / Non-asbestos filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-5	
773	20				P73T-0038R	Spiral wound gasket SS316 winding / Non-asbestos filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-5	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-16				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	18-20				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
773	0.5-10				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
773	12-20				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81B-000P4	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	0.75				P81B-000NX	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	1				P81B-000NY	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	1.5				P81B-000NZ	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	2				P81C-002DV	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	3				P81C-002DW	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	4				P81C-002DX	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	6				P81C-002DY	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	8				P81C-002DZ	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	10				P81C-002DT	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	12				P81C-002DU	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	14				P81C-00308	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated	
1	16				P81C-002E0	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated	

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GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	18				P81C-002E1	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated	
1	20				P81C-002E2	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated	
221	0.75				P81B-001K2	Gate valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
714	0.5				P81B-0015L	Gate valve ASTM A105 Class 800 API 602 SW - NPT Trim number 8 BB-BG-OS&Y Handwheel operated	
714	0.75				P81B-002F4	Gate valve ASTM A105 Class 800 API 602 SW - NPT Trim number 8 BB-BG-OS&Y Handwheel operated	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82B-000K0	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	0.75				P82B-000HB	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	1				P82B-000HC	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	1.5				P82B-000HD	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	2				P82C-000N5	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	3				P82C-000N6	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	4				P82C-000N7	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	6				P82C-000N8	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	8				P82C-0026L	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
714	0.5				P82B-0005S	Globe valve ASTM A105 Class 800 API 602 SW - NPT Trim number 8 BB-BG-OS&Y Handwheel operated	
714	0.75				P82B-0005R	Globe valve ASTM A105 Class 800 API 602 SW - NPT Trim number 8 BB-BG-OS&Y Handwheel operated	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83B-000FX	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover	
1	0.75				P83B-000ER	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover	
1	1				P83B-000ES	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover	
1	1.5				P83B-000ET	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover	
1	2				P83C-00144	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	3				P83C-00147	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	4				P83C-00148	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	6				P83C-00149	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	8				P83C-0014A	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	10				P83C-00140	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	12				P83C-00141	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	14				P83C-0021E	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	16				P83C-00142	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	18				P83C-00143	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	20				P83C-00145	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	

BALL VALVE (Q)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P84B-0011T	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design	
1	0.75				P84B-0011U	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design	
1	1				P84B-0011V	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design	
1	1.5				P84B-0011W	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design	
1	2				P84C-005UD	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design	
1	3				P84C-005UE	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design	
1	4				P84C-005UF	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design	
1	6				P84C-005UG	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Reduced bore Fire tested design	
1	8				P84C-005UH	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Reduced bore Fire tested design	

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BALL VALVE (Q)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	10				P84C-006MS	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Reduced bore Fire tested design	
1	12				P84C-006MT	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Reduced bore Fire tested design	
1	14				P84C-006MU	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Reduced bore Fire tested design	
1	16				P84C-006MV	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Reduced bore Fire tested design	
1	18				P84C-006MW	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Reduced bore Fire tested design	
1	20				P84C-006MX	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Reduced bore Fire tested design	
24	0.5				P84B-0011X	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	
24	0.75				P84B-0011Y	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	
24	1				P84B-0011Z	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	
24	1.5				P84B-00120	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	
24	2				P84C-005UJ	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	
24	3				P84C-005UK	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	
24	4				P84C-005UL	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	
24	6				P84C-005UM	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design	
24	8				P84C-005UN	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design	
24	10				P84C-006MZ	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design	
24	12				P84C-006N0	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design	
24	14				P84C-006N1	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design	
24	16				P84C-006N2	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design	
24	18				P84C-006N3	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design	
24	20				P84C-006N4	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design	

ORIFICE FLANGE (FO)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2		XS		P66B-0084B	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	3		STD		P66B-0084C	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	4		STD		P66B-0084D	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	6		STD		P66B-0084E	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	8		SCH20		P66B-0084F	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	10		SCH20		P66B-00848	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	12		SCH30		P66B-00849	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
200	2		XS		P66B-00843	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	3		STD		P66B-00844	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	4		STD		P66B-00845	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	6		STD		P66B-00846	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	8		SCH20		P66B-00847	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	10		SCH20		P66B-00840	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	12		SCH30		P66B-00841	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71B-0008A	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	0.75				P71B-0008B	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	1				P71B-0008C	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71B-0008D	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	2				P71B-0000P	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	3				P71B-0000N	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	4				P71B-0000M	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	6				P71B-0000L	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	8				P71B-0000R	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	10				P71B-0000K	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	12				P71B-0000J	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	

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PADDLE BLANK (PB)							
OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000AH	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	16				P72B-0000C	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	18				P72B-000AJ	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	20				P72B-000AK	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	

PADDLE SPACER (PS)							
OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000AT	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	16				P72B-0000B	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	18				P72B-000AU	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	20				P72B-000AV	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	

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BOLT TABLE (B_A21B05 , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	60	P80S-003V2		
0.75	4	0.500	65	P80S-003V3		
1	4	0.500	70	P80S-003V4		
1.5	4	0.500	75	P80S-003V5		
2	4	0.625	85	P80S-003XE		
3	4	0.625	95	P80S-003XG		
4	8	0.625	95	P80S-003XG		
6	8	0.750	105	P80S-003XJ		
8	8	0.750	110	P80S-003XK		
10	12	0.875	120	P80S-00419		
12	12	0.875	120	P80S-00419		
14	12	1.000	135	P80S-0043E		
16	16	1.000	140	P80S-0043F		
18	16	1.125	150	P80S-0046K		
20	20	1.125	160	P80S-0046M		

BOLT TABLE (B_A21B05_773 , STUD ASME RF, OPTION CODE 773)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-003V4		
0.75	4	0.625	75	P80S-003XC		
1	4	0.625	80	P80S-003XD		
1.5	4	0.750	95	P80S-00414		
2	8	0.625	90	P80S-003XF		
3	8	0.750	110	P80S-003XK		
4	8	0.750	115	P80S-003XL		
6	12	0.750	125	P80S-003XN		
8	12	0.875	140	P80S-0041D		
10	16	1.000	160	P80S-0043K		
12	16	1.125	175	P80S-0046S		
14	20	1.125	180	P80S-0046T		
16	20	1.250	190	P80S-004AK		
18	24	1.250	200	P80S-004AM		
20	24	1.250	210	P80S-004AP		

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BRANCH TABLE (T_A21B05)

RUN PIPE SIZE (in) \ BRANCH SIZE (in)	0.5	0.75	1	1.5	2	3	4	6	8	10	12	14	16	18	20
0.5	TS														
0.75	TR	TS													
1	TR	TR	TS												
1.5	TR	TR	TR	TS											
2	L	L	TR	TR	TS										
3	L	L	L	TR	TR	TS									
4	L	L	L	L	TR	TR	TS								
6	L	L	L	L	L	TR	TR	TS							
8	L	L	L	L	L	L	TR	TR	TS						
10	L	L	L	L	L	L	TR	TR	TR	TS					
12	L	L	L	L	L	L	L	TR	TR	TR	TS				
14		L	L	L	L	L	L	TR	TR	TR	TR	TS			
16		L	L	L	L	L	L	TR	TR	TR	TR	TR	TS		
18		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TS	
20	L	L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TR	TS

TR : REDUCING TEE
TS : STRAIGHT TEE
L : OUTLET

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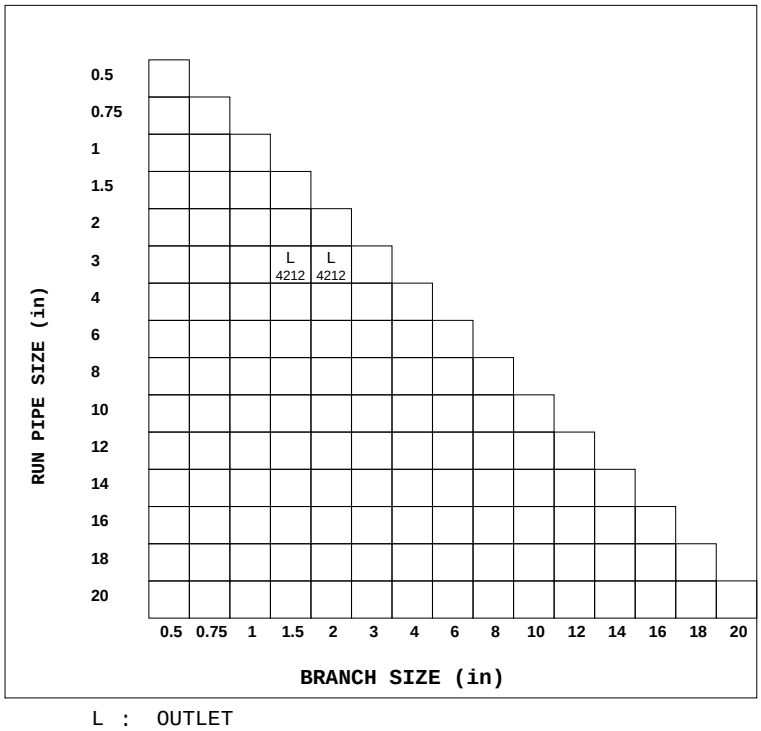
BRANCH TABLE (T_A21B05_4)



L : OUTLET

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PIPING CLASS

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Material : SS304L
Rating : ASME CLASS 150
Flange Face : RF
C.A.(mm) : 0.00
Gasket : Spiral Wound
Service : POWDER, SLURRY, TK-CATALYST
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
6	PIPE THICKNESS CALCULATION TO INCLUDE CORROSION AND EROSION ALLOWANCES DUE TO THE PROCESS CATALYST FLOW, AS PER PROCESS LICENSOR SPECIFICATIONS

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
541	NPT(F) (CA,F,L)
773	CLASS 300 (B,F,G)
4404	CLASS 600 LARGE MALE FACE (B,F,G)
4608	VALVE WITH NIPPLES (V)

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PIPING CLASS
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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P01J-000UC	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE	
1	0.75		SCH80S		P01J-000UD	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE	
1	1		SCH80S		P01J-000UE	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE	
1	1.5		SCH80S		P01J-000UF	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE	
1	2		SCH10S		P01J-000RD	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M BE	
1	3		SCH10S		P01J-000RE	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M BE	
1	4		SCH10S		P01J-000RF	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P02J-000VD	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	0.75		SCH80S		P02J-000VE	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	1		SCH80S		P02J-000VF	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	1.5		SCH80S		P02J-000VG	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	2		SCH10S		P02J-000J0	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	3		SCH10S		P02J-000J1	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	4		SCH10S		P02J-000J2	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	

90FACTORY-MADE BEND (9FM)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P08J-00060	90 degree factory-made bend ASTM A403 Grade WP304/WP304L Class S dual grade Seamless Standard-drawing BW 5DR Licensor-5	
1	0.75		SCH80S		P08J-00061	90 degree factory-made bend ASTM A403 Grade WP304/WP304L Class S dual grade Seamless Standard-drawing BW 5DR Licensor-5	
1	1		SCH80S		P08J-00062	90 degree factory-made bend ASTM A403 Grade WP304/WP304L Class S dual grade Seamless Standard-drawing BW 5DR Licensor-5	
1	1.5		SCH80S		P08J-00063	90 degree factory-made bend ASTM A403 Grade WP304/WP304L Class S dual grade Seamless Standard-drawing BW 5DR Licensor-5	
1	2		SCH10S		P08J-00064	90 degree factory-made bend ASTM A403 Grade WP304/WP304L Class S dual grade Seamless Standard-drawing BW 5DR Licensor-5	
1	3		SCH10S		P08J-00065	90 degree factory-made bend ASTM A403 Grade WP304/WP304L Class S dual grade Seamless Standard-drawing BW 5DR Licensor-5	
1	4		SCH10S		P08J-00066	90 degree factory-made bend ASTM A403 Grade WP304/WP304L Class S dual grade Seamless Standard-drawing BW 5DR Licensor-5	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P03J-000UW	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	0.75		SCH80S		P03J-000UX	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	1		SCH80S		P03J-000UY	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	1.5		SCH80S		P03J-000UZ	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	2		SCH10S		P03J-000HS	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	3		SCH10S		P03J-000HT	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	4		SCH10S		P03J-000HU	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	

45FACTORY-MADE BEND (4FM)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P09J-0005Y	45 degree factory-made bend ASTM A403 Grade WP304/WP304L Class S dual grade Seamless Standard-drawing BW 5DR Licensor-5	
1	0.75		SCH80S		P09J-0005Z	45 degree factory-made bend ASTM A403 Grade WP304/WP304L Class S dual grade Seamless Standard-drawing BW 5DR Licensor-5	
1	1		SCH80S		P09J-00060	45 degree factory-made bend ASTM A403 Grade WP304/WP304L Class S dual grade Seamless Standard-drawing BW 5DR Licensor-5	
1	1.5		SCH80S		P09J-00061	45 degree factory-made bend ASTM A403 Grade WP304/WP304L Class S dual grade Seamless Standard-drawing BW 5DR Licensor-5	
1	2		SCH10S		P09J-00062	45 degree factory-made bend ASTM A403 Grade WP304/WP304L Class S dual grade Seamless Standard-drawing BW 5DR Licensor-5	
1	3		SCH10S		P09J-00063	45 degree factory-made bend ASTM A403 Grade WP304/WP304L Class S dual grade Seamless Standard-drawing BW 5DR Licensor-5	
1	4		SCH10S		P09J-00064	45 degree factory-made bend ASTM A403 Grade WP304/WP304L Class S dual grade Seamless Standard-drawing BW 5DR Licensor-5	

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STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P21J-000V1	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	0.75		SCH80S		P21J-000V2	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	1		SCH80S		P21J-000V3	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	1.5		SCH80S		P21J-000V4	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	2		SCH10S		P21J-000HM	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	3		SCH10S		P21J-000HN	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	4		SCH10S		P21J-000HP	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH80S	SCH80S	P24J-003NV	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	1	0.5	SCH80S	SCH80S	P24J-003NW	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	1	0.75	SCH80S	SCH80S	P24J-003NX	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	1.5	0.5	SCH80S	SCH80S	P24J-003NY	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	1.5	0.75	SCH80S	SCH80S	P24J-003NZ	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	1.5	1	SCH80S	SCH80S	P24J-003P0	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	2	1	SCH10S	SCH80S	P24J-0065A	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	2	1.5	SCH10S	SCH80S	P24J-0065B	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	3	1.5	SCH10S	SCH80S	P24J-004SV	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	3	2	SCH10S	SCH10S	P24J-002H7	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	4	2	SCH10S	SCH10S	P24J-002H8	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	4	3	SCH10S	SCH10S	P24J-002H9	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH80S	SCH80S	P27J-005L7	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless Standard-drawing BW Licensor-5	
1	1	0.5	SCH80S	SCH80S	P27J-005L8	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless Standard-drawing BW Licensor-5	
1	1	0.75	SCH80S	SCH80S	P27J-005L9	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless Standard-drawing BW Licensor-5	
1	1.5	0.5	SCH80S	SCH80S	P27J-005LA	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless Standard-drawing BW Licensor-5	
1	1.5	0.75	SCH80S	SCH80S	P27J-005LB	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless Standard-drawing BW Licensor-5	
1	1.5	1	SCH80S	SCH80S	P27J-005LC	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless Standard-drawing BW Licensor-5	
1	2	0.75	SCH10S	SCH80S	P27J-005LD	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless Standard-drawing BW Licensor-5	
1	2	1	SCH10S	SCH80S	P27J-005LE	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless Standard-drawing BW Licensor-5	
1	2	1.5	SCH10S	SCH80S	P27J-005LF	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless Standard-drawing BW Licensor-5	
1	3	1.5	SCH10S	SCH80S	P27J-005LG	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless Standard-drawing BW Licensor-5	
1	3	2	SCH10S	SCH10S	P27J-005LH	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless Standard-drawing BW Licensor-5	
1	4	1.5	SCH10S	SCH80S	P27J-005LJ	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless Standard-drawing BW Licensor-5	
1	4	2	SCH10S	SCH10S	P27J-005LK	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless Standard-drawing BW Licensor-5	
1	4	3	SCH10S	SCH10S	P27J-005LL	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless Standard-drawing BW Licensor-5	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH80S	SCH80S	P28J-005M2	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless Standard-drawing BW Licensor-5	
1	1	0.5	SCH80S	SCH80S	P28J-005M3	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless Standard-drawing BW Licensor-5	
1	1	0.75	SCH80S	SCH80S	P28J-005M4	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless Standard-drawing BW Licensor-5	
1	1.5	0.5	SCH80S	SCH80S	P28J-005M5	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless Standard-drawing BW Licensor-5	
1	1.5	0.75	SCH80S	SCH80S	P28J-005M6	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless Standard-drawing BW Licensor-5	
1	1.5	1	SCH80S	SCH80S	P28J-005M7	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless Standard-drawing BW Licensor-5	
1	2	0.75	SCH10S	SCH80S	P28J-005M8	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless Standard-drawing BW Licensor-5	
1	2	1	SCH10S	SCH80S	P28J-005M9	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless Standard-drawing BW Licensor-5	
1	2	1.5	SCH10S	SCH80S	P28J-005MA	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless Standard-drawing BW Licensor-5	

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ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	1.5	SCH10S	SCH80S	P28J-005MB	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless Standard-drawing BW Licensor-5	
1	3	2	SCH10S	SCH10S	P28J-005MC	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless Standard-drawing BW Licensor-5	
1	4	1.5	SCH10S	SCH80S	P28J-005MD	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless Standard-drawing BW Licensor-5	
1	4	2	SCH10S	SCH10S	P28J-005ME	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless Standard-drawing BW Licensor-5	
1	4	3	SCH10S	SCH10S	P28J-005MF	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless Standard-drawing BW Licensor-5	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P29J-000T0	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	0.75		SCH80S		P29J-000T1	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	1		SCH80S		P29J-000T2	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	1.5		SCH80S		P29J-000T3	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	2		SCH10S		P29J-000G1	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	3		SCH10S		P29J-000G2	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	4		SCH10S		P29J-000G3	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
541	0.75				P29K-00020	Cap ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P41J-001FS	Straight nipple ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		SCH80S		P41J-001FT	Straight nipple ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		SCH80S		P41J-001FU	Straight nipple ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		SCH80S		P41J-001FV	Straight nipple ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
541	1	0.75			P31K-00911	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 NPT	
541	1.5	0.75			P31K-00916	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 NPT	
541	2 - 2.5	0.75			P31K-00GFJ	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 NPT	
541	3 - 5	0.75			P31K-00GFK	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 NPT	
1	2	0.5	SCH10S	SCH80S	P31K-00EAX	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	3	0.5	SCH10S	SCH80S	P31K-00EAZ	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	4	0.5	SCH10S	SCH80S	P31K-00EB1	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	2	0.75	SCH10S	SCH80S	P31K-00DM8	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	3	0.75	SCH10S	SCH80S	P31K-00BWW	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	4	0.75	SCH10S	SCH80S	P31K-00BX1	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	3	1	SCH10S	SCH80S	P31K-00BWX	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	4	1	SCH10S	SCH80S	P31K-00BX2	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	4	1.5	SCH10S	SCH80S	P31K-00BX3	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30K-0001G	Plug ASTM A182 Grade F304/F304L dual grade ASME B16.11 NPT Round head	
1	0.75				P30K-0001H	Plug ASTM A182 Grade F304/F304L dual grade ASME B16.11 NPT Round head	
1	1				P30K-0001J	Plug ASTM A182 Grade F304/F304L dual grade ASME B16.11 NPT Round head	
1	1.5				P30K-0001K	Plug ASTM A182 Grade F304/F304L dual grade ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P61K-002K3	Flange WN ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	0.75		SCH80S		P61K-002K4	Flange WN ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	1		SCH80S		P61K-002K5	Flange WN ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	1.5		SCH80S		P61K-002K6	Flange WN ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	2				P63B-0001Y	Lap joint ASTM A105 Class 150 ASME B16.5	
1	3				P63B-00021	Lap joint ASTM A105 Class 150 ASME B16.5	

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FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	4				P63B-00022	Lap joint ASTM A105 Class 150 ASME B16.5	
4404	1		SCH80S		P61K-00676	Flange WN ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 Large male face	
541	0.5				P61K-0052M	Flange NPT ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
541	0.75				P61K-005ZX	Flange NPT ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
773	0.5		SCH80S		P61K-0027N	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
773	0.75		SCH80S		P61K-0027P	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
773	1		SCH80S		P61K-0027R	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
773	1.5		SCH80S		P61K-0027S	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
773	2		SCH10S		P61K-0023W	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
773	3		SCH10S		P61K-0023X	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
773	4		SCH10S		P61K-0023Y	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67K-000K9	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	0.75				P67K-000KA	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	1				P67K-000KB	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	1.5				P67K-000KC	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	2				P67K-000KD	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	3				P67K-000KE	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	4				P67K-000KF	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	

STUB END (SE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2		SCH10S		P45J-0000G	Stub end Short-pattern ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	3		SCH10S		P45J-0000H	Stub end Short-pattern ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	4		SCH10S		P45J-0000J	Stub end Short-pattern ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-0033K	Spiral wound gasket SS316 winding / Non-asbestos filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-9	
1	0.75				P73T-0033L	Spiral wound gasket SS316 winding / Non-asbestos filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-9	
1	1				P73T-0033M	Spiral wound gasket SS316 winding / Non-asbestos filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-9	
1	1.5				P73T-0033N	Spiral wound gasket SS316 winding / Non-asbestos filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-9	
1	2				P73T-0033P	Spiral wound gasket SS316 winding / Non-asbestos filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-9	
1	3				P73T-0033R	Spiral wound gasket SS316 winding / Non-asbestos filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-9	
1	4				P73T-00378	Spiral wound gasket SS316 winding / Non-asbestos filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-9	
4404	1				P73T-003AE	Spiral wound gasket SS316 winding / Non-asbestos filler Class 600 Standard-drawing Flange ASME B16.5 Large male and female face 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-8	
773	0.5				P73T-0033S	Spiral wound gasket SS316 winding / Non-asbestos filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-9	
773	0.75				P73T-0033T	Spiral wound gasket SS316 winding / Non-asbestos filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-9	
773	1				P73T-0033U	Spiral wound gasket SS316 winding / Non-asbestos filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-9	
773	1.5				P73T-0033V	Spiral wound gasket SS316 winding / Non-asbestos filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-9	
773	2				P73T-0033W	Spiral wound gasket SS316 winding / Non-asbestos filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-9	
773	3				P73T-0033X	Spiral wound gasket SS316 winding / Non-asbestos filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-9	
773	4				P73T-0034W	Spiral wound gasket SS316 winding / Non-asbestos filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-9	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-4				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
773	0.5-4				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	

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GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81K-0010G	Gate valve ASTM A182 Grade F304/F304L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	0.75				P81K-0010H	Gate valve ASTM A182 Grade F304/F304L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	1				P81K-0010J	Gate valve ASTM A182 Grade F304/F304L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	1.5				P81K-0010K	Gate valve ASTM A182 Grade F304/F304L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	2				P81L-00293	Gate valve ASTM A351 Grade CF8 Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	3				P81L-00294	Gate valve ASTM A351 Grade CF8 Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	4				P81L-00295	Gate valve ASTM A351 Grade CF8 Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
4608	0.75				P81K-001PA	Gate valve ASTM A182 Grade F304/F304L dual grade Class 150 API 602 BW both sides w/ nipples BE - NPT ASTM A312-TP304(L) dual grade Seamless Sch80S-nipple Trim number 12 BB-BG-OS&Y Handwheel operated	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82K-000TX	Globe valve ASTM A182 Grade F304/F304L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	0.75				P82K-000TY	Globe valve ASTM A182 Grade F304/F304L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	1				P82K-000TZ	Globe valve ASTM A182 Grade F304/F304L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	1.5				P82K-000U0	Globe valve ASTM A182 Grade F304/F304L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	2				P82L-00195	Globe valve ASTM A351 Grade CF8 Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	3				P82L-00196	Globe valve ASTM A351 Grade CF8 Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	4				P82L-00197	Globe valve ASTM A351 Grade CF8 Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83K-000SD	Check valve ASTM A182 Grade F304/F304L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover	
1	0.75				P83K-000SE	Check valve ASTM A182 Grade F304/F304L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover	
1	1				P83K-000SF	Check valve ASTM A182 Grade F304/F304L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover	
1	1.5				P83K-000SG	Check valve ASTM A182 Grade F304/F304L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover	
1	2				P83L-00196	Check valve ASTM A351 Grade CF8 Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	3				P83L-00197	Check valve ASTM A351 Grade CF8 Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	4				P83L-00198	Check valve ASTM A351 Grade CF8 Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	

BALL VALVE (Q)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P84K-000PY	Ball valve Long-pattern ASTM A182 Grade F304/F304L dual grade Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design Licensor-5	
1	0.75				P84K-000PZ	Ball valve Long-pattern ASTM A182 Grade F304/F304L dual grade Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design Licensor-5	
1	1				P84K-000R0	Ball valve Long-pattern ASTM A182 Grade F304/F304L dual grade Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design Licensor-5	
1	1.5				P84K-000R1	Ball valve Long-pattern ASTM A182 Grade F304/F304L dual grade Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design Licensor-5	
1	2				P84L-0034D	Ball valve Long-pattern ASTM A351 Grade CF8 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design Licensor-5	
1	3				P84L-0034E	Ball valve Long-pattern ASTM A351 Grade CF8 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design Licensor-5	
1	4				P84L-0034F	Ball valve Long-pattern ASTM A351 Grade CF8 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design Licensor-5	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71K-00065	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	0.75				P71K-00066	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	1				P71K-00067	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	

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SPECT BLANK (SB)							
OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5				P71K-00068	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	2				P71K-0006A	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	3				P71K-0006B	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	4				P71K-0006C	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	

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BOLT TABLE (B_A21F05 , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	60	P80S-003V2		
0.75	4	0.500	65	P80S-003V3		
1	4	0.500	70	P80S-003V4		
1.5	4	0.500	75	P80S-003V5		
2	4	0.625	90	P80S-003XF		
3	4	0.625	100	P80S-003VA		
4	8	0.625	100	P80S-003VA		

BOLT TABLE (B_A21F05_773 , STUD ASME RF, OPTION CODE 773)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-003V4		
0.75	4	0.625	75	P80S-003XC		
1	4	0.625	80	P80S-003XD		
1.5	4	0.750	95	P80S-00414		
2	8	0.625	90	P80S-003XF		
3	8	0.750	110	P80S-003XK		
4	8	0.750	115	P80S-003XL		

BOLT TABLE (B_A21F05_781 , STUD ASME RF, OPTION CODE 781)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	80			
0.75	4	0.625	90			
1	4	0.625	95			
1.5	4	0.750	110			
2	8	0.625	110			
3	8	0.750	130			
4	8	0.875	150			

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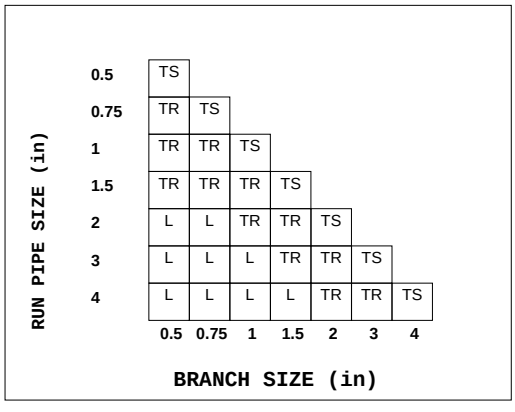
BRANCH TABLE (T_A21F05)



L : OUTLET
TS : STRAIGHT TEE
TR : REDUCING TEE

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PIPING CLASS

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Material : 9Cr - 1MO
Rating : ASME CLASS 150
Flange Face : RF
C.A.(mm) : 3.00
Gasket : Spiral Wound
Service : PROCESS - NON SOUR, NON NACE SOUR : / PROCESS WITH H2S(< 25 PPMW)

Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
24	FOR ALL RELEVANT PIPING CLASSES WITH LINE DESIGN TEMPERATURE ABOVE 427DEGC, IN SPIRAL WOUND GASKET, SUITABLE GASKET FILLER MATERIAL SUCH AS COMBINATION OF MICA LAYERS AND GRAPHITE FILLERS OR EQUIVALENT SHALL BE REVIEWED AND SELECTED OR AS DEFINED BY THE LICENSOR
36	ASTM A691 CR-MO WELDED PIPES SPECIFIED WITH CLASS 22 CAN BE USED IN LIEU OF CLASS 42 IN NON-LICENSED UNITS ONLY. GRADE SHALL BE AS SPECIFIED IN "PIPE / FLANGE MATERIAL" SECTION IN ATTACHMENT 9.0 OF THIS DOCUMENT

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
541	NPT(F) (CA,L)
773	CLASS 300 (B,F,G)
4608	VALVE WITH NIPPLES (V)

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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P01F-00014	Pipe ASTM A335 Grade P9 Seamless ASME B36.10M/B36.19M PE	
1	0.75		SCH160		P01F-00015	Pipe ASTM A335 Grade P9 Seamless ASME B36.10M/B36.19M PE	
1	1		SCH160		P01F-000D1	Pipe ASTM A335 Grade P9 Seamless ASME B36.10M/B36.19M PE	
1	1.5		SCH160		P01F-000D2	Pipe ASTM A335 Grade P9 Seamless ASME B36.10M/B36.19M PE	
1	2		XS		P01F-0001A	Pipe ASTM A335 Grade P9 Seamless ASME B36.10M/B36.19M BE	
1	3		STD		P01F-000D6	Pipe ASTM A335 Grade P9 Seamless ASME B36.10M/B36.19M BE	
1	4		STD		P01F-0002D	Pipe ASTM A335 Grade P9 Seamless ASME B36.10M/B36.19M BE	
1	6		STD		P01F-000D7	Pipe ASTM A335 Grade P9 Seamless ASME B36.10M/B36.19M BE	
1	8		SCH30		P01F-001NY	Pipe ASTM A335 Grade P9 Seamless ASME B36.10M/B36.19M BE	
1	10		SCH30		P01F-001NX	Pipe ASTM A335 Grade P9 Seamless ASME B36.10M/B36.19M BE	
1	12		SCH30		P01F-000D4	Pipe ASTM A335 Grade P9 Seamless ASME B36.10M/B36.19M BE	
1	14		SCH20		P01F-000D5	Pipe ASTM A335 Grade P9 Seamless ASME B36.10M/B36.19M BE	
1	16		SCH20		P01F-0006V	Pipe ASTM A335 Grade P9 Seamless ASME B36.10M/B36.19M BE	
1	18		SCH20		P01F-000D9	Pipe ASTM A691 Grade 9CR Class 22 EFW ASME B36.10M/B36.19M BE	
1	20		STD		P01F-000DA	Pipe ASTM A691 Grade 9CR Class 22 EFW ASME B36.10M/B36.19M BE	
1	24		STD		P01F-0002E	Pipe ASTM A691 Grade 9CR Class 22 EFW ASME B36.10M/B36.19M BE	
1	30		STD		P01F-001MX	Pipe ASTM A691 Grade 9CR Class 22 EFW ASME B36.10M/B36.19M BE	
1	36		STD		P01F-001MY	Pipe ASTM A691 Grade 9CR Class 22 EFW ASME B36.10M/B36.19M BE	
1	42		XS		P01F-001MZ	Pipe ASTM A691 Grade 9CR Class 22 EFW ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P02G-00005	90 degree elbow ASTM A182 Grade F9 Class 6000 ASME B16.11 SW	
1	0.75				P02G-00006	90 degree elbow ASTM A182 Grade F9 Class 6000 ASME B16.11 SW	
1	1				P02G-0001F	90 degree elbow ASTM A182 Grade F9 Class 6000 ASME B16.11 SW	
1	1.5				P02G-0001G	90 degree elbow ASTM A182 Grade F9 Class 6000 ASME B16.11 SW	
1	2		XS		P02F-0002C	90 degree elbow ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW Long radius	
1	3		STD		P02F-000D5	90 degree elbow ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW Long radius	
1	4		STD		P02F-0003F	90 degree elbow ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW Long radius	
1	6		STD		P02F-000D1	90 degree elbow ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW Long radius	
1	8		SCH30		P02F-000HH	90 degree elbow ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW Long radius	
1	10		SCH30		P02F-000HG	90 degree elbow ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW Long radius	
1	12		SCH30		P02F-000CW	90 degree elbow ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW Long radius	
1	14		SCH20		P02F-000CX	90 degree elbow ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW Long radius	
1	16		SCH20		P02F-000CY	90 degree elbow ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW Long radius	
1	18		SCH20		P02F-000CZ	90 degree elbow ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW Long radius	
1	20		STD		P02F-000D0	90 degree elbow ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW Long radius	
1	24		STD		P02F-0003E	90 degree elbow ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW Long radius	
1	30		STD		P02F-000GG	90 degree elbow ASTM A234 Grade WP9-W Class 1 Weld ASME B16.9 BW Long radius	
1	36		STD		P02F-000GH	90 degree elbow ASTM A234 Grade WP9-W Class 1 Weld ASME B16.9 BW Long radius	
1	42		XS		P02F-000GJ	90 degree elbow ASTM A234 Grade WP9-W Class 1 Weld ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P03G-00005	45 degree elbow ASTM A182 Grade F9 Class 6000 ASME B16.11 SW	
1	0.75				P03G-00006	45 degree elbow ASTM A182 Grade F9 Class 6000 ASME B16.11 SW	
1	1				P03G-0001F	45 degree elbow ASTM A182 Grade F9 Class 6000 ASME B16.11 SW	
1	1.5				P03G-0001G	45 degree elbow ASTM A182 Grade F9 Class 6000 ASME B16.11 SW	
1	2		XS		P03F-00029	45 degree elbow ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW Long radius	
1	3		STD		P03F-000CW	45 degree elbow ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW Long radius	
1	4		STD		P03F-0003C	45 degree elbow ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW Long radius	
1	6		STD		P03F-000CU	45 degree elbow ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW Long radius	
1	8		SCH30		P03F-000H8	45 degree elbow ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW Long radius	
1	10		SCH30		P03F-000H7	45 degree elbow ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW Long radius	
1	12		SCH30		P03F-000CN	45 degree elbow ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW Long radius	
1	14		SCH20		P03F-000CP	45 degree elbow ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW Long radius	
1	16		SCH20		P03F-000CR	45 degree elbow ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW Long radius	
1	18		SCH20		P03F-000CS	45 degree elbow ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW Long radius	
1	20		STD		P03F-000CT	45 degree elbow ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW Long radius	

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45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	24		STD		P03F-0003B	45 degree elbow ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW Long radius	
1	30		STD		P03F-000G7	45 degree elbow ASTM A234 Grade WP9-W Class 1 Weld ASME B16.9 BW Long radius	
1	36		STD		P03F-000G8	45 degree elbow ASTM A234 Grade WP9-W Class 1 Weld ASME B16.9 BW Long radius	
1	42		XS		P03F-000G9	45 degree elbow ASTM A234 Grade WP9-W Class 1 Weld ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P21G-00005	Straight tee ASTM A182 Grade F9 Class 6000 ASME B16.11 SW	
1	0.75				P21G-00006	Straight tee ASTM A182 Grade F9 Class 6000 ASME B16.11 SW	
1	1				P21G-0001F	Straight tee ASTM A182 Grade F9 Class 6000 ASME B16.11 SW	
1	1.5				P21G-0001G	Straight tee ASTM A182 Grade F9 Class 6000 ASME B16.11 SW	
1	2		XS		P21F-0002A	Straight tee ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	3		STD		P21F-000CU	Straight tee ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	4		STD		P21F-0003C	Straight tee ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	6		STD		P21F-000CV	Straight tee ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	8		SCH30		P21F-000HC	Straight tee ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	10		SCH30		P21F-000HB	Straight tee ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	12		SCH30		P21F-000CR	Straight tee ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	14		SCH20		P21F-000CS	Straight tee ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	16		SCH20		P21F-000CT	Straight tee ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	18		SCH20		P21F-000CX	Straight tee ASTM A234 Grade WP9-W Class 1 Weld ASME B16.9 BW	
1	20		STD		P21F-000CY	Straight tee ASTM A234 Grade WP9-W Class 1 Weld ASME B16.9 BW	
1	24		STD		P21F-0003D	Straight tee ASTM A234 Grade WP9-W Class 1 Weld ASME B16.9 BW	
1	30		STD		P21F-000G8	Straight tee ASTM A234 Grade WP9-W Class 1 Weld ASME B16.9 BW	
1	36		STD		P21F-000G9	Straight tee ASTM A234 Grade WP9-W Class 1 Weld ASME B16.9 BW	
1	42		XS		P21F-000GA	Straight tee ASTM A234 Grade WP9-W Class 1 Weld ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75			P24G-0001M	Reducing tee ASTM A182 Grade F9 Class 6000 ASME B16.11 SW	
1	1.5	0.75			P24G-0001K	Reducing tee ASTM A182 Grade F9 Class 6000 ASME B16.11 SW	
1	1.5	1			P24G-0001L	Reducing tee ASTM A182 Grade F9 Class 6000 ASME B16.11 SW	
1	2	1	XS	SCH160	P24F-0014G	Reducing tee ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	2	1.5	XS	SCH160	P24F-0014H	Reducing tee ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	3	1.5	STD	SCH160	P24F-0014J	Reducing tee ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	3	2	STD	XS	P24F-0014K	Reducing tee ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	4	2	STD	XS	P24F-0014M	Reducing tee ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	4	3	STD	STD	P24F-0014N	Reducing tee ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	6	3	STD	STD	P24F-0014P	Reducing tee ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	6	4	STD	STD	P24F-0014R	Reducing tee ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	8	4	SCH30	STD	P24F-001WH	Reducing tee ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	8	6	SCH30	STD	P24F-001WJ	Reducing tee ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	10	4	SCH30	STD	P24F-001WK	Reducing tee ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	10	6	SCH30	STD	P24F-001WL	Reducing tee ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	10	8	SCH30	SCH30	P24F-001WM	Reducing tee ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	12	6	SCH30	STD	P24F-0014Z	Reducing tee ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	12	8	SCH30	SCH30	P24F-001WP	Reducing tee ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	12	10	SCH30	SCH30	P24F-001WN	Reducing tee ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	14	6	SCH20	STD	P24F-00153	Reducing tee ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	14	8	SCH20	SCH30	P24F-001WS	Reducing tee ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	14	10	SCH20	SCH30	P24F-001WR	Reducing tee ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	14	12	SCH20	SCH30	P24F-00152	Reducing tee ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	16	6	SCH20	STD	P24F-00158	Reducing tee ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	16	8	SCH20	SCH30	P24F-001WU	Reducing tee ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	16	10	SCH20	SCH30	P24F-001WT	Reducing tee ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	16	12	SCH20	SCH30	P24F-00156	Reducing tee ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	16	14	SCH20	SCH20	P24F-00157	Reducing tee ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	18	8	SCH20	SCH30	P24F-001WW	Reducing tee ASTM A234 Grade WP9-W Class 1 Weld ASME B16.9 BW	
1	18	10	SCH20	SCH30	P24F-001WV	Reducing tee ASTM A234 Grade WP9-W Class 1 Weld ASME B16.9 BW	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	18	12	SCH20	SCH30	P24F-0015B	Reducing tee ASTM A234 Grade WP9-W Class 1 Weld ASME B16.9 BW	
1	18	14	SCH20	SCH20	P24F-0015C	Reducing tee ASTM A234 Grade WP9-W Class 1 Weld ASME B16.9 BW	
1	18	16	SCH20	SCH20	P24F-0015D	Reducing tee ASTM A234 Grade WP9-W Class 1 Weld ASME B16.9 BW	
1	20	8	STD	SCH30	P24F-001WY	Reducing tee ASTM A234 Grade WP9-W Class 1 Weld ASME B16.9 BW	
1	20	10	STD	SCH30	P24F-001WX	Reducing tee ASTM A234 Grade WP9-W Class 1 Weld ASME B16.9 BW	
1	20	12	STD	SCH30	P24F-0015G	Reducing tee ASTM A234 Grade WP9-W Class 1 Weld ASME B16.9 BW	
1	20	14	STD	SCH20	P24F-0015H	Reducing tee ASTM A234 Grade WP9-W Class 1 Weld ASME B16.9 BW	
1	20	16	STD	SCH20	P24F-0015J	Reducing tee ASTM A234 Grade WP9-W Class 1 Weld ASME B16.9 BW	
1	20	18	STD	SCH20	P24F-0015K	Reducing tee ASTM A234 Grade WP9-W Class 1 Weld ASME B16.9 BW	
1	24	10	STD	SCH30	P24F-001WZ	Reducing tee ASTM A234 Grade WP9-W Class 1 Weld ASME B16.9 BW	
1	24	12	STD	SCH30	P24F-0015N	Reducing tee ASTM A234 Grade WP9-W Class 1 Weld ASME B16.9 BW	
1	24	14	STD	SCH20	P24F-0015P	Reducing tee ASTM A234 Grade WP9-W Class 1 Weld ASME B16.9 BW	
1	24	16	STD	SCH20	P24F-0015R	Reducing tee ASTM A234 Grade WP9-W Class 1 Weld ASME B16.9 BW	
1	24	18	STD	SCH20	P24F-0015S	Reducing tee ASTM A234 Grade WP9-W Class 1 Weld ASME B16.9 BW	
1	24	20	STD	STD	P24F-0015T	Reducing tee ASTM A234 Grade WP9-W Class 1 Weld ASME B16.9 BW	
1	30	10	STD	SCH30	P24F-001X0	Reducing tee ASTM A234 Grade WP9-W Class 1 Weld ASME B16.9 BW	
1	30	12	STD	SCH30	P24F-001NX	Reducing tee ASTM A234 Grade WP9-W Class 1 Weld ASME B16.9 BW	
1	30	14	STD	SCH20	P24F-001NY	Reducing tee ASTM A234 Grade WP9-W Class 1 Weld ASME B16.9 BW	
1	30	16	STD	SCH20	P24F-001NZ	Reducing tee ASTM A234 Grade WP9-W Class 1 Weld ASME B16.9 BW	
1	30	18	STD	SCH20	P24F-001P0	Reducing tee ASTM A234 Grade WP9-W Class 1 Weld ASME B16.9 BW	
1	30	20	STD	STD	P24F-001P1	Reducing tee ASTM A234 Grade WP9-W Class 1 Weld ASME B16.9 BW	
1	30	24	STD	STD	P24F-001P2	Reducing tee ASTM A234 Grade WP9-W Class 1 Weld ASME B16.9 BW	
1	36	16	STD	SCH20	P24F-001P3	Reducing tee ASTM A234 Grade WP9-W Class 1 Weld ASME B16.9 BW	
1	36	18	STD	SCH20	P24F-001P4	Reducing tee ASTM A234 Grade WP9-W Class 1 Weld ASME B16.9 BW	
1	36	20	STD	STD	P24F-001P5	Reducing tee ASTM A234 Grade WP9-W Class 1 Weld ASME B16.9 BW	
1	36	24	STD	STD	P24F-001P6	Reducing tee ASTM A234 Grade WP9-W Class 1 Weld ASME B16.9 BW	
1	36	30	STD	STD	P24F-001P7	Reducing tee ASTM A234 Grade WP9-W Class 1 Weld ASME B16.9 BW	
1	42	16	XS	SCH20	P24F-001P8	Reducing tee ASTM A234 Grade WP9-W Class 1 Weld ASME B16.9 BW	
1	42	18	XS	SCH20	P24F-001P9	Reducing tee ASTM A234 Grade WP9-W Class 1 Weld ASME B16.9 BW	
1	42	20	XS	STD	P24F-001PA	Reducing tee ASTM A234 Grade WP9-W Class 1 Weld ASME B16.9 BW	
1	42	24	XS	STD	P24F-001PB	Reducing tee ASTM A234 Grade WP9-W Class 1 Weld ASME B16.9 BW	
1	42	30	XS	STD	P24F-001PC	Reducing tee ASTM A234 Grade WP9-W Class 1 Weld ASME B16.9 BW	
1	42	36	XS	STD	P24F-001PD	Reducing tee ASTM A234 Grade WP9-W Class 1 Weld ASME B16.9 BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	STD	XS	P27F-000YF	Concentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	4	2	STD	XS	P27F-000YG	Concentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	4	3	STD	STD	P27F-000YH	Concentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	6	3	STD	STD	P27F-000YJ	Concentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	6	4	STD	STD	P27F-000YK	Concentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	8	4	SCH30	STD	P27F-001EK	Concentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	8	6	SCH30	STD	P27F-001EL	Concentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	10	4	SCH30	STD	P27F-001EM	Concentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	10	6	SCH30	STD	P27F-001EN	Concentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	10	8	SCH30	SCH30	P27F-001EP	Concentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	12	6	SCH30	STD	P27F-000YT	Concentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	12	8	SCH30	SCH30	P27F-001ES	Concentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	12	10	SCH30	SCH30	P27F-001ER	Concentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	14	6	SCH20	STD	P27F-000YX	Concentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	14	8	SCH20	SCH30	P27F-001EU	Concentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	14	10	SCH20	SCH30	P27F-001ET	Concentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	14	12	SCH20	SCH30	P27F-000YW	Concentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	16	8	SCH20	SCH30	P27F-001EW	Concentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	16	10	SCH20	SCH30	P27F-001EV	Concentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	16	12	SCH20	SCH30	P27F-000Z0	Concentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	16	14	SCH20	SCH20	P27F-000Z1	Concentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	18	10	SCH20	SCH30	P27F-001EX	Concentric reducer ASTM A234 Grade WP9-W Class 1 Weld ASME B16.9 BW	
1	18	12	SCH20	SCH30	P27F-00104	Concentric reducer ASTM A234 Grade WP9-W Class 1 Weld ASME B16.9 BW	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	18	14	SCH20	SCH20	P27F-00105	Concentric reducer ASTM A234 Grade WP9-W Class 1 Weld ASME B16.9 BW	
1	18	16	SCH20	SCH20	P27F-00106	Concentric reducer ASTM A234 Grade WP9-W Class 1 Weld ASME B16.9 BW	
1	20	12	STD	SCH30	P27F-000ZZ	Concentric reducer ASTM A234 Grade WP9-W Class 1 Weld ASME B16.9 BW	
1	20	14	STD	SCH20	P27F-00100	Concentric reducer ASTM A234 Grade WP9-W Class 1 Weld ASME B16.9 BW	
1	20	16	STD	SCH20	P27F-00101	Concentric reducer ASTM A234 Grade WP9-W Class 1 Weld ASME B16.9 BW	
1	20	18	STD	SCH20	P27F-00102	Concentric reducer ASTM A234 Grade WP9-W Class 1 Weld ASME B16.9 BW	
1	24	16	STD	SCH20	P27F-000ZW	Concentric reducer ASTM A234 Grade WP9-W Class 1 Weld ASME B16.9 BW	
1	24	18	STD	SCH20	P27F-000ZX	Concentric reducer ASTM A234 Grade WP9-W Class 1 Weld ASME B16.9 BW	
1	24	20	STD	STD	P27F-000ZY	Concentric reducer ASTM A234 Grade WP9-W Class 1 Weld ASME B16.9 BW	
1	30	20	STD	STD	P27F-001B9	Concentric reducer ASTM A234 Grade WP9-W Class 1 Weld ASME B16.9 BW	
1	30	24	STD	STD	P27F-001BA	Concentric reducer ASTM A234 Grade WP9-W Class 1 Weld ASME B16.9 BW	
1	36	24	STD	STD	P27F-001BB	Concentric reducer ASTM A234 Grade WP9-W Class 1 Weld ASME B16.9 BW	
1	36	30	STD	STD	P27F-001BC	Concentric reducer ASTM A234 Grade WP9-W Class 1 Weld ASME B16.9 BW	
1	42	30	XS	STD	P27F-001BD	Concentric reducer ASTM A234 Grade WP9-W Class 1 Weld ASME B16.9 BW	
1	42	36	XS	STD	P27F-001BE	Concentric reducer ASTM A234 Grade WP9-W Class 1 Weld ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	STD	XS	P28F-000YF	Eccentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	4	2	STD	XS	P28F-000YG	Eccentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	4	3	STD	STD	P28F-000YH	Eccentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	6	3	STD	STD	P28F-000YJ	Eccentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	6	4	STD	STD	P28F-000YK	Eccentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	8	4	SCH30	STD	P28F-001F1	Eccentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	8	6	SCH30	STD	P28F-001F2	Eccentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	10	4	SCH30	STD	P28F-001F3	Eccentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	10	6	SCH30	STD	P28F-001F4	Eccentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	10	8	SCH30	SCH30	P28F-001F5	Eccentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	12	6	SCH30	STD	P28F-000YT	Eccentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	12	8	SCH30	SCH30	P28F-001F7	Eccentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	12	10	SCH30	SCH30	P28F-001F6	Eccentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	14	6	SCH20	STD	P28F-000YX	Eccentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	14	8	SCH20	SCH30	P28F-001F9	Eccentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	14	10	SCH20	SCH30	P28F-001F8	Eccentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	14	12	SCH20	SCH30	P28F-000YW	Eccentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	16	8	SCH20	SCH30	P28F-001FB	Eccentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	16	10	SCH20	SCH30	P28F-001FA	Eccentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	16	12	SCH20	SCH30	P28F-000Z0	Eccentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	16	14	SCH20	SCH20	P28F-000Z1	Eccentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	18	10	SCH20	SCH30	P28F-001FC	Eccentric reducer ASTM A234 Grade WP9-W Class 1 Weld ASME B16.9 BW	
1	18	12	SCH20	SCH30	P28F-00105	Eccentric reducer ASTM A234 Grade WP9-W Class 1 Weld ASME B16.9 BW	
1	18	14	SCH20	SCH20	P28F-00106	Eccentric reducer ASTM A234 Grade WP9-W Class 1 Weld ASME B16.9 BW	
1	18	16	SCH20	SCH20	P28F-00107	Eccentric reducer ASTM A234 Grade WP9-W Class 1 Weld ASME B16.9 BW	
1	20	12	STD	SCH30	P28F-00100	Eccentric reducer ASTM A234 Grade WP9-W Class 1 Weld ASME B16.9 BW	
1	20	14	STD	SCH20	P28F-00101	Eccentric reducer ASTM A234 Grade WP9-W Class 1 Weld ASME B16.9 BW	
1	20	16	STD	SCH20	P28F-00102	Eccentric reducer ASTM A234 Grade WP9-W Class 1 Weld ASME B16.9 BW	
1	20	18	STD	SCH20	P28F-00103	Eccentric reducer ASTM A234 Grade WP9-W Class 1 Weld ASME B16.9 BW	
1	24	16	STD	SCH20	P28F-000ZX	Eccentric reducer ASTM A234 Grade WP9-W Class 1 Weld ASME B16.9 BW	
1	24	18	STD	SCH20	P28F-000ZY	Eccentric reducer ASTM A234 Grade WP9-W Class 1 Weld ASME B16.9 BW	
1	24	20	STD	STD	P28F-000ZZ	Eccentric reducer ASTM A234 Grade WP9-W Class 1 Weld ASME B16.9 BW	
1	30	20	STD	STD	P28F-001BP	Eccentric reducer ASTM A234 Grade WP9-W Class 1 Weld ASME B16.9 BW	
1	30	24	STD	STD	P28F-001BR	Eccentric reducer ASTM A234 Grade WP9-W Class 1 Weld ASME B16.9 BW	
1	36	24	STD	STD	P28F-001BS	Eccentric reducer ASTM A234 Grade WP9-W Class 1 Weld ASME B16.9 BW	
1	36	30	STD	STD	P28F-001BT	Eccentric reducer ASTM A234 Grade WP9-W Class 1 Weld ASME B16.9 BW	
1	42	30	XS	STD	P28F-001BU	Eccentric reducer ASTM A234 Grade WP9-W Class 1 Weld ASME B16.9 BW	
1	42	36	XS	STD	P28F-001BV	Eccentric reducer ASTM A234 Grade WP9-W Class 1 Weld ASME B16.9 BW	

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CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P29G-00009	Cap ASTM A182 Grade F9 Class 6000 ASME B16.11 SW	
1	0.75				P29G-0000A	Cap ASTM A182 Grade F9 Class 6000 ASME B16.11 SW	
1	1				P29G-0001A	Cap ASTM A182 Grade F9 Class 6000 ASME B16.11 SW	
1	1.5				P29G-0001B	Cap ASTM A182 Grade F9 Class 6000 ASME B16.11 SW	
1	2		XS		P29F-00027	Cap ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	3		STD		P29F-000CU	Cap ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	4		STD		P29F-00031	Cap ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	6		STD		P29F-000CP	Cap ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	8		SCH30		P29F-000GM	Cap ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	10		SCH30		P29F-000GL	Cap ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	12		SCH30		P29F-000CJ	Cap ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	14		SCH20		P29F-000CK	Cap ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	16		SCH20		P29F-000CL	Cap ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	18		SCH20		P29F-000CM	Cap ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	20		STD		P29F-000CN	Cap ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	24		STD		P29F-00030	Cap ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	30		STD		P29F-000FL	Cap ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	36		STD		P29F-000FM	Cap ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	42		XS		P29F-000FN	Cap ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
541	0.75				P29G-0001P	Cap ASTM A182 Grade F9 Class 6000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P41F-0003C	Straight nipple ASTM A335 Grade P9 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		XXS		P41F-0003D	Straight nipple ASTM A335 Grade P9 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		XXS		P41F-0003E	Straight nipple ASTM A335 Grade P9 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		XXS		P41F-0003F	Straight nipple ASTM A335 Grade P9 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

CON SWAGED NIPPLE (SNC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	SCH160	P42F-0000D	Concentric swaged nipple ASTM A234 Grade WP9 Class 1 Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	SCH160	SCH160	P42F-0004F	Concentric swaged nipple ASTM A234 Grade WP9 Class 1 Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	SCH160	SCH160	P42F-0004G	Concentric swaged nipple ASTM A234 Grade WP9 Class 1 Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	SCH160	SCH160	P42F-0004H	Concentric swaged nipple ASTM A234 Grade WP9 Class 1 Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	SCH160	SCH160	P42F-0004J	Concentric swaged nipple ASTM A234 Grade WP9 Class 1 Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	SCH160	SCH160	P42F-0004K	Concentric swaged nipple ASTM A234 Grade WP9 Class 1 Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	XS	SCH160	P42F-0000K	Concentric swaged nipple ASTM A234 Grade WP9 Class 1 Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	XS	SCH160	P42F-0000L	Concentric swaged nipple ASTM A234 Grade WP9 Class 1 Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	XS	SCH160	P42F-00053	Concentric swaged nipple ASTM A234 Grade WP9 Class 1 Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	XS	SCH160	P42F-00054	Concentric swaged nipple ASTM A234 Grade WP9 Class 1 Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	STD	SCH160	P42F-00052	Concentric swaged nipple ASTM A234 Grade WP9 Class 1 Seamless MSS SP-95 BE(L) - PE(S)	

ECC SWAGED NIPPLE (SNE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	SCH160	P43F-00007	Eccentric swaged nipple ASTM A234 Grade WP9 Class 1 Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	SCH160	SCH160	P43F-0003R	Eccentric swaged nipple ASTM A234 Grade WP9 Class 1 Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	SCH160	SCH160	P43F-0003S	Eccentric swaged nipple ASTM A234 Grade WP9 Class 1 Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	SCH160	SCH160	P43F-0003T	Eccentric swaged nipple ASTM A234 Grade WP9 Class 1 Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	SCH160	SCH160	P43F-0003U	Eccentric swaged nipple ASTM A234 Grade WP9 Class 1 Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	SCH160	SCH160	P43F-0003V	Eccentric swaged nipple ASTM A234 Grade WP9 Class 1 Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	XS	SCH160	P43F-0000D	Eccentric swaged nipple ASTM A234 Grade WP9 Class 1 Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	XS	SCH160	P43F-0000E	Eccentric swaged nipple ASTM A234 Grade WP9 Class 1 Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	XS	SCH160	P43F-00048	Eccentric swaged nipple ASTM A234 Grade WP9 Class 1 Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	XS	SCH160	P43F-00049	Eccentric swaged nipple ASTM A234 Grade WP9 Class 1 Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	STD	SCH160	P43F-00047	Eccentric swaged nipple ASTM A234 Grade WP9 Class 1 Seamless MSS SP-95 BE(L) - PE(S)	

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COUPLING (CPS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P47G-00006	Coupling ASTM A182 Grade F9 Class 6000 ASME B16.11 SW - SW	
1	0.75				P47G-00007	Coupling ASTM A182 Grade F9 Class 6000 ASME B16.11 SW - SW	
1	1				P47G-0001M	Coupling ASTM A182 Grade F9 Class 6000 ASME B16.11 SW - SW	
1	1.5				P47G-0001N	Coupling ASTM A182 Grade F9 Class 6000 ASME B16.11 SW - SW	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5 - 2.5	0.75			P31G-00385	Outlet ASTM A182 Grade F9 Class 6000 MSS SP-97 SW	
1	3 - 10	0.75			P31G-00376	Outlet ASTM A182 Grade F9 Class 6000 MSS SP-97 SW	
1	12 and larger	0.75			P31G-00377	Outlet ASTM A182 Grade F9 Class 6000 MSS SP-97 SW	
1	3 - 10	1			P31G-00378	Outlet ASTM A182 Grade F9 Class 6000 MSS SP-97 SW	
1	12 and larger	1			P31G-00379	Outlet ASTM A182 Grade F9 Class 6000 MSS SP-97 SW	
1	4 - 5	1.5			P31G-0037A	Outlet ASTM A182 Grade F9 Class 6000 MSS SP-97 SW	
1	6 - 8	1.5			P31G-0037B	Outlet ASTM A182 Grade F9 Class 6000 MSS SP-97 SW	
1	10 - 18	1.5			P31G-0037C	Outlet ASTM A182 Grade F9 Class 6000 MSS SP-97 SW	
1	20 and larger	1.5			P31G-0037D	Outlet ASTM A182 Grade F9 Class 6000 MSS SP-97 SW	
541	1	0.75			P31G-0037G	Outlet ASTM A182 Grade F9 Class 6000 MSS SP-97 NPT	
541	1.5 - 2.5	0.75			P31G-0037E	Outlet ASTM A182 Grade F9 Class 6000 MSS SP-97 NPT	
541	3 - 10	0.75			P31G-0037F	Outlet ASTM A182 Grade F9 Class 6000 MSS SP-97 NPT	
541	12 and larger	0.75			P31G-0037H	Outlet ASTM A182 Grade F9 Class 6000 MSS SP-97 NPT	
1	6	2	STD	XS	P31G-001HR	Outlet ASTM A182 Grade F9 MSS SP-97 BW	
1	8	2	SCH30	XS	P31G-00291	Outlet ASTM A182 Grade F9 MSS SP-97 BW	
1	10	2	SCH30	XS	P31G-00293	Outlet ASTM A182 Grade F9 MSS SP-97 BW	
1	12	2	SCH30	XS	P31G-001HU	Outlet ASTM A182 Grade F9 MSS SP-97 BW	
1	14	2	SCH20	XS	P31G-001HX	Outlet ASTM A182 Grade F9 MSS SP-97 BW	
1	16	2	SCH20	XS	P31G-001J0	Outlet ASTM A182 Grade F9 MSS SP-97 BW	
1	18	2	SCH20	XS	P31G-001J7	Outlet ASTM A182 Grade F9 MSS SP-97 BW	
1	20	2	STD	XS	P31G-001J3	Outlet ASTM A182 Grade F9 MSS SP-97 BW	
1	24	2	STD	XS	P31G-001JB	Outlet ASTM A182 Grade F9 MSS SP-97 BW	
1	30	2	STD	XS	P31G-00236	Outlet ASTM A182 Grade F9 MSS SP-97 BW	
1	36	2	STD	XS	P31G-0023A	Outlet ASTM A182 Grade F9 MSS SP-97 BW	
1	42	2	XS	XS	P31G-0023E	Outlet ASTM A182 Grade F9 MSS SP-97 BW	
1	8	3	SCH30	STD	P31G-00292	Outlet ASTM A182 Grade F9 MSS SP-97 BW	
1	10	3	SCH30	STD	P31G-00294	Outlet ASTM A182 Grade F9 MSS SP-97 BW	
1	12	3	SCH30	STD	P31G-001HV	Outlet ASTM A182 Grade F9 MSS SP-97 BW	
1	14	3	SCH20	STD	P31G-001HY	Outlet ASTM A182 Grade F9 MSS SP-97 BW	
1	16	3	SCH20	STD	P31G-001J1	Outlet ASTM A182 Grade F9 MSS SP-97 BW	
1	18	3	SCH20	STD	P31G-001J8	Outlet ASTM A182 Grade F9 MSS SP-97 BW	
1	20	3	STD	STD	P31G-001J4	Outlet ASTM A182 Grade F9 MSS SP-97 BW	
1	24	3	STD	STD	P31G-001JC	Outlet ASTM A182 Grade F9 MSS SP-97 BW	
1	30	3	STD	STD	P31G-00237	Outlet ASTM A182 Grade F9 MSS SP-97 BW	
1	36	3	STD	STD	P31G-0023B	Outlet ASTM A182 Grade F9 MSS SP-97 BW	
1	42	3	XS	STD	P31G-0023F	Outlet ASTM A182 Grade F9 MSS SP-97 BW	
1	12	4	SCH30	STD	P31G-001HW	Outlet ASTM A182 Grade F9 MSS SP-97 BW	
1	14	4	SCH20	STD	P31G-001HZ	Outlet ASTM A182 Grade F9 MSS SP-97 BW	
1	16	4	SCH20	STD	P31G-001J2	Outlet ASTM A182 Grade F9 MSS SP-97 BW	
1	18	4	SCH20	STD	P31G-001J9	Outlet ASTM A182 Grade F9 MSS SP-97 BW	
1	20	4	STD	STD	P31G-001J5	Outlet ASTM A182 Grade F9 MSS SP-97 BW	
1	24	4	STD	STD	P31G-000D0	Outlet ASTM A182 Grade F9 MSS SP-97 BW	
1	30	4	STD	STD	P31G-00238	Outlet ASTM A182 Grade F9 MSS SP-97 BW	
1	36	4	STD	STD	P31G-0023C	Outlet ASTM A182 Grade F9 MSS SP-97 BW	
1	42	4	XS	STD	P31G-0023G	Outlet ASTM A182 Grade F9 MSS SP-97 BW	
1	18	6	SCH20	STD	P31G-001JA	Outlet ASTM A182 Grade F9 MSS SP-97 BW	
1	20	6	STD	STD	P31G-001J6	Outlet ASTM A182 Grade F9 MSS SP-97 BW	
1	24	6	STD	STD	P31G-001KY	Outlet ASTM A182 Grade F9 MSS SP-97 BW	
1	30	6	STD	STD	P31G-00239	Outlet ASTM A182 Grade F9 MSS SP-97 BW	
1	36	6	STD	STD	P31G-0023D	Outlet ASTM A182 Grade F9 MSS SP-97 BW	
1	42	6	XS	STD	P31G-0023H	Outlet ASTM A182 Grade F9 MSS SP-97 BW	

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PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30G-00009	Plug ASTM A182 Grade F9 ASME B16.11 NPT Round head	
1	0.75				P30G-0000A	Plug ASTM A182 Grade F9 ASME B16.11 NPT Round head	
1	1				P30G-0000B	Plug ASTM A182 Grade F9 ASME B16.11 NPT Round head	
1	1.5				P30G-0000C	Plug ASTM A182 Grade F9 ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P61G-00059	Flange SW ASTM A182 Grade F9 Class 150 ASME B16.5 RF	
1	0.75		SCH160		P61G-0005A	Flange SW ASTM A182 Grade F9 Class 150 ASME B16.5 RF	
1	1		SCH160		P61G-000PJ	Flange SW ASTM A182 Grade F9 Class 150 ASME B16.5 RF	
1	1.5		SCH160		P61G-000PK	Flange SW ASTM A182 Grade F9 Class 150 ASME B16.5 RF	
1	2		XS		P61G-000RA	Flange WN ASTM A182 Grade F9 Class 150 ASME B16.5 RF	
1	3		STD		P61G-000RB	Flange WN ASTM A182 Grade F9 Class 150 ASME B16.5 RF	
1	4		STD		P61G-0005F	Flange WN ASTM A182 Grade F9 Class 150 ASME B16.5 RF	
1	6		STD		P61G-000PT	Flange WN ASTM A182 Grade F9 Class 150 ASME B16.5 RF	
1	8		SCH30		P61G-0011V	Flange WN ASTM A182 Grade F9 Class 150 ASME B16.5 RF	
1	10		SCH30		P61G-0011U	Flange WN ASTM A182 Grade F9 Class 150 ASME B16.5 RF	
1	12		SCH30		P61G-000PM	Flange WN ASTM A182 Grade F9 Class 150 ASME B16.5 RF	
1	14		SCH20		P61G-000PN	Flange WN ASTM A182 Grade F9 Class 150 ASME B16.5 RF	
1	16		SCH20		P61G-000PP	Flange WN ASTM A182 Grade F9 Class 150 ASME B16.5 RF	
1	18		SCH20		P61G-000PR	Flange WN ASTM A182 Grade F9 Class 150 ASME B16.5 RF	
1	20		STD		P61G-000PS	Flange WN ASTM A182 Grade F9 Class 150 ASME B16.5 RF	
1	24		STD		P61G-0005E	Flange WN ASTM A182 Grade F9 Class 150 ASME B16.5 RF	
1	30		STD		P61G-000ZB	Flange WN ASTM A182 Grade F9 Class 150 ASME B16.47 Series B RF	
1	36		STD		P61G-000ZC	Flange WN ASTM A182 Grade F9 Class 150 ASME B16.47 Series B RF	
1	42		XS		P61G-000ZD	Flange WN ASTM A182 Grade F9 Class 150 ASME B16.47 Series B RF	
773	0.5		SCH160		P61G-0002H	Flange SW ASTM A182 Grade F9 Class 300 ASME B16.5 RF	
773	0.75		SCH160		P61G-0002J	Flange SW ASTM A182 Grade F9 Class 300 ASME B16.5 RF	
773	1		SCH160		P61G-000PV	Flange SW ASTM A182 Grade F9 Class 300 ASME B16.5 RF	
773	1.5		SCH160		P61G-000PW	Flange SW ASTM A182 Grade F9 Class 300 ASME B16.5 RF	
773	2		XS		P61G-0002P	Flange WN ASTM A182 Grade F9 Class 300 ASME B16.5 RF	
773	3		STD		P61G-000R9	Flange WN ASTM A182 Grade F9 Class 300 ASME B16.5 RF	
773	4		STD		P61G-0005H	Flange WN ASTM A182 Grade F9 Class 300 ASME B16.5 RF	
773	6		STD		P61G-000R3	Flange WN ASTM A182 Grade F9 Class 300 ASME B16.5 RF	
773	8		SCH30		P61G-0011X	Flange WN ASTM A182 Grade F9 Class 300 ASME B16.5 RF	
773	10		SCH30		P61G-0011W	Flange WN ASTM A182 Grade F9 Class 300 ASME B16.5 RF	
773	12		SCH30		P61G-000PY	Flange WN ASTM A182 Grade F9 Class 300 ASME B16.5 RF	
773	14		SCH20		P61G-000PZ	Flange WN ASTM A182 Grade F9 Class 300 ASME B16.5 RF	
773	16		SCH20		P61G-000R0	Flange WN ASTM A182 Grade F9 Class 300 ASME B16.5 RF	
773	18		SCH20		P61G-000R1	Flange WN ASTM A182 Grade F9 Class 300 ASME B16.5 RF	
773	20		STD		P61G-000R2	Flange WN ASTM A182 Grade F9 Class 300 ASME B16.5 RF	
773	24		STD		P61G-0005G	Flange WN ASTM A182 Grade F9 Class 300 ASME B16.5 RF	
773	30		STD		P61G-000ZE	Flange WN ASTM A182 Grade F9 Class 300 ASME B16.47 Series B RF	
773	36		STD		P61G-000ZF	Flange WN ASTM A182 Grade F9 Class 300 ASME B16.47 Series B RF	
773	42		XS		P61G-000ZG	Flange WN ASTM A182 Grade F9 Class 300 ASME B16.47 Series B RF	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67G-00030	Blind flange ASTM A182 Grade F9 Class 150 ASME B16.5 RF	
1	0.75				P67G-00031	Blind flange ASTM A182 Grade F9 Class 150 ASME B16.5 RF	
1	1				P67G-00032	Blind flange ASTM A182 Grade F9 Class 150 ASME B16.5 RF	
1	1.5				P67G-00033	Blind flange ASTM A182 Grade F9 Class 150 ASME B16.5 RF	
1	2				P67G-000BH	Blind flange ASTM A182 Grade F9 Class 150 ASME B16.5 RF	
1	3				P67G-000BK	Blind flange ASTM A182 Grade F9 Class 150 ASME B16.5 RF	
1	4				P67G-00036	Blind flange ASTM A182 Grade F9 Class 150 ASME B16.5 RF	
1	6				P67G-000BL	Blind flange ASTM A182 Grade F9 Class 150 ASME B16.5 RF	
1	8				P67G-000BM	Blind flange ASTM A182 Grade F9 Class 150 ASME B16.5 RF	
1	10				P67G-00034	Blind flange ASTM A182 Grade F9 Class 150 ASME B16.5 RF	
1	12				P67G-000BD	Blind flange ASTM A182 Grade F9 Class 150 ASME B16.5 RF	

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BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P67G-000BE	Blind flange ASTM A182 Grade F9 Class 150 ASME B16.5 RF	
1	16				P67G-000BF	Blind flange ASTM A182 Grade F9 Class 150 ASME B16.5 RF	
1	18				P67G-000BG	Blind flange ASTM A182 Grade F9 Class 150 ASME B16.5 RF	
1	20				P67G-000BJ	Blind flange ASTM A182 Grade F9 Class 150 ASME B16.5 RF	
1	24				P67G-00035	Blind flange ASTM A182 Grade F9 Class 150 ASME B16.5 RF	
1	30				P67G-000CE	Blind flange ASTM A182 Grade F9 Class 150 ASME B16.47 Series B RF	
1	36				P67G-000CF	Blind flange ASTM A182 Grade F9 Class 150 ASME B16.47 Series B RF	
1	42				P67G-000CG	Blind flange ASTM A182 Grade F9 Class 150 ASME B16.47 Series B RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-003CR	Spiral wound gasket SS316 winding / Graphite-mica filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	0.75				P73T-003CS	Spiral wound gasket SS316 winding / Graphite-mica filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	1				P73T-003CT	Spiral wound gasket SS316 winding / Graphite-mica filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	1.5				P73T-003CU	Spiral wound gasket SS316 winding / Graphite-mica filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	2				P73T-003CW	Spiral wound gasket SS316 winding / Graphite-mica filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	3				P73T-003CX	Spiral wound gasket SS316 winding / Graphite-mica filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	4				P73T-003CY	Spiral wound gasket SS316 winding / Graphite-mica filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	6				P73T-003CZ	Spiral wound gasket SS316 winding / Graphite-mica filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	8				P73T-003D0	Spiral wound gasket SS316 winding / Graphite-mica filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	10				P73T-003CV	Spiral wound gasket SS316 winding / Graphite-mica filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	12				P73T-003D1	Spiral wound gasket SS316 winding / Graphite-mica filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	14				P73T-003D2	Spiral wound gasket SS316 winding / Graphite-mica filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	16				P73T-003D3	Spiral wound gasket SS316 winding / Graphite-mica filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	18				P73T-003D4	Spiral wound gasket SS316 winding / Graphite-mica filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	20				P73T-003D5	Spiral wound gasket SS316 winding / Graphite-mica filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	24				P73T-003D6	Spiral wound gasket SS316 winding / Graphite-mica filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	30				P73T-003D7	Spiral wound gasket SS316 winding / Graphite-mica filler Class 150 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	36				P73T-003DS	Spiral wound gasket SS316 winding / Graphite-mica filler Class 150 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	42				P73T-003DT	Spiral wound gasket SS316 winding / Graphite-mica filler Class 150 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
773	0.5				P73T-003AM	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
773	0.75				P73T-003AN	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
773	1				P73T-003AP	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
773	1.5				P73T-003AR	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
773	2				P73T-003AX	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
773	3				P73T-003B0	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
773	4				P73T-003B1	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
773	6				P73T-003B2	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
773	8				P73T-003B3	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
773	10				P73T-003AS	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
773	12				P73T-003AT	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
773	14				P73T-003AU	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
773	16				P73T-003AV	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
773	18				P73T-003AW	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
773	20				P73T-003AY	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
773	24				P73T-003AZ	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
773	30				P73T-003BL	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	

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GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
773	36				P73T-003DU	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
773	42				P73T-003DV	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-16				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B16 / A194 Grade 4 ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	18-24				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B16 / A194 Grade 4 ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
1	30-42				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B16 / A194 Grade 4 ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
773	0.5-10				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B16 / A194 Grade 4 ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
773	12-42				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B16 / A194 Grade 4 ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81G-0002F	Gate valve ASTM A182 Grade F9 Class 150 API 602 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2	
1	0.75				P81G-0002G	Gate valve ASTM A182 Grade F9 Class 150 API 602 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2	
1	1				P81G-0002H	Gate valve ASTM A182 Grade F9 Class 150 API 602 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2	
1	1.5				P81G-0002J	Gate valve ASTM A182 Grade F9 Class 150 API 602 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2	
1	2				P81H-000C7	Gate valve ASTM A217 Grade C12 Class 150 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2	
1	3				P81H-000C8	Gate valve ASTM A217 Grade C12 Class 150 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2	
1	4				P81H-000WC	Gate valve ASTM A217 Grade C12 Class 150 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2	
1	6				P81H-000WD	Gate valve ASTM A217 Grade C12 Class 150 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2	
1	8				P81H-000WE	Gate valve ASTM A217 Grade C12 Class 150 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2	
1	10				P81H-000WA	Gate valve ASTM A217 Grade C12 Class 150 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2	
1	12				P81H-000WB	Gate valve ASTM A217 Grade C12 Class 150 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2	
1	14				P81H-000WF	Gate valve ASTM A217 Grade C12 Class 150 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Gear operated Fluid-2	
4608	0.75				P81G-000EM	Gate valve ASTM A182 Grade F9 Class 800 API 602 SW both sides w/ nipples PE - NPT ASTM A335-P9 XXS-nipple Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83G-0006K	Check valve ASTM A182 Grade F9 Class 150 API 602 Flange ASME B16.5 RF Trim number 5 Lift-type Bolted cover	
1	0.75				P83G-0006L	Check valve ASTM A182 Grade F9 Class 150 API 602 Flange ASME B16.5 RF Trim number 5 Lift-type Bolted cover	
1	1				P83G-0006M	Check valve ASTM A182 Grade F9 Class 150 API 602 Flange ASME B16.5 RF Trim number 5 Lift-type Bolted cover	
1	1.5				P83G-0006N	Check valve ASTM A182 Grade F9 Class 150 API 602 Flange ASME B16.5 RF Trim number 5 Lift-type Bolted cover	
1	2				P83H-0009W	Check valve ASTM A217 Grade C12 Class 150 BS 1868 Flange ASME B16.5 RF Trim number 5 Swing-type Bolted cover	
1	3				P83H-0009X	Check valve ASTM A217 Grade C12 Class 150 BS 1868 Flange ASME B16.5 RF Trim number 5 Swing-type Bolted cover	
1	4				P83H-0009Y	Check valve ASTM A217 Grade C12 Class 150 BS 1868 Flange ASME B16.5 RF Trim number 5 Swing-type Bolted cover	
1	6				P83H-0009Z	Check valve ASTM A217 Grade C12 Class 150 BS 1868 Flange ASME B16.5 RF Trim number 5 Swing-type Bolted cover	
1	8				P83H-000A0	Check valve ASTM A217 Grade C12 Class 150 BS 1868 Flange ASME B16.5 RF Trim number 5 Swing-type Bolted cover	
1	10				P83H-0009T	Check valve ASTM A217 Grade C12 Class 150 BS 1868 Flange ASME B16.5 RF Trim number 5 Swing-type Bolted cover	
1	12				P83H-0009U	Check valve ASTM A217 Grade C12 Class 150 BS 1868 Flange ASME B16.5 RF Trim number 5 Swing-type Bolted cover	
1	14				P83H-0009V	Check valve ASTM A217 Grade C12 Class 150 BS 1868 Flange ASME B16.5 RF Trim number 5 Swing-type Bolted cover	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71G-0000B	Spectacle blank ASTM A182 Grade F9 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	0.75				P71G-0000C	Spectacle blank ASTM A182 Grade F9 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	1				P71G-0000D	Spectacle blank ASTM A182 Grade F9 Class 150 Standard-drawing Flange ASME B16.5 RF	

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SPECT BLANK (SB)							
OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5				P71G-0000E	Spectacle blank ASTM A182 Grade F9 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	2				P71G-0000H	Spectacle blank ASTM A182 Grade F9 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	3				P71G-0000J	Spectacle blank ASTM A182 Grade F9 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	4				P71G-0000K	Spectacle blank ASTM A182 Grade F9 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	6				P71G-0000L	Spectacle blank ASTM A182 Grade F9 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	8				P71G-0000M	Spectacle blank ASTM A182 Grade F9 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	10				P71G-0000F	Spectacle blank ASTM A182 Grade F9 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	12				P71G-0000G	Spectacle blank ASTM A182 Grade F9 Class 150 Standard-drawing Flange ASME B16.5 RF	

PADDLE BLANK (PB)							
OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72G-00001	Paddle blank ASTM A182 Grade F9 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	16				P72G-00002	Paddle blank ASTM A182 Grade F9 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	18				P72G-00003	Paddle blank ASTM A182 Grade F9 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	20				P72G-00004	Paddle blank ASTM A182 Grade F9 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	24				P72G-00005	Paddle blank ASTM A182 Grade F9 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	30				P72G-0006F	Paddle blank ASTM A182 Grade F9 Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	36				P72G-0006G	Paddle blank ASTM A182 Grade F9 Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	42				P72G-0006H	Paddle blank ASTM A182 Grade F9 Class 150 Standard-drawing Flange ASME B16.47-B RF	

PADDLE SPACER (PS)							
OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72G-00006	Paddle spacer ASTM A182 Grade F9 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	16				P72G-00007	Paddle spacer ASTM A182 Grade F9 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	18				P72G-00008	Paddle spacer ASTM A182 Grade F9 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	20				P72G-00009	Paddle spacer ASTM A182 Grade F9 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	24				P72G-0000A	Paddle spacer ASTM A182 Grade F9 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	30				P72G-0006J	Paddle spacer ASTM A182 Grade F9 Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	36				P72G-0006K	Paddle spacer ASTM A182 Grade F9 Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	42				P72G-0006L	Paddle spacer ASTM A182 Grade F9 Class 150 Standard-drawing Flange ASME B16.47-B RF	

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BOLT TABLE (B_A28P , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	60	P80S-00GNA		
0.75	4	0.500	65	P80S-00GN9		
1	4	0.500	70	P80S-00GN8		
1.5	4	0.500	75	P80S-00GN7		
2	4	0.625	85	P80S-00GLJ		
3	4	0.625	95	P80S-00GLG		
4	8	0.625	95	P80S-00GLG		
6	8	0.750	105	P80S-00GLE		
8	8	0.750	110	P80S-00GLD		
10	12	0.875	120	P80S-00FV9		
12	12	0.875	120	P80S-00FV9		
14	12	1.000	135	P80S-00FRE		
16	16	1.000	140	P80S-00FRD		
18	16	1.125	150	P80S-00FHD		
20	20	1.125	160	P80S-00FHB		
24	20	1.250	175	P80S-00FA1		
30	44	0.750	145	P80S-00FZS		
36	44	0.875	175	P80S-00FUY		
42	48	1.000	190	P80S-00FR3		

BOLT TABLE (B_A28P_773 , STUD ASME RF, OPTION CODE 773)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-00GN8		
0.75	4	0.625	75	P80S-00GLL		
1	4	0.625	80	P80S-00GLK		
1.5	4	0.750	95	P80S-00FVE		
2	8	0.625	90	P80S-00GLH		
3	8	0.750	110	P80S-00GLD		
4	8	0.750	115	P80S-00GLC		
6	12	0.750	125	P80S-00GLA		
8	12	0.875	140	P80S-00FV5		
10	16	1.000	160	P80S-00FR9		
12	16	1.125	175	P80S-00FH8		
14	20	1.125	180	P80S-00FH7		
16	20	1.250	190	P80S-00F9Y		
18	24	1.250	200	P80S-00F9W		
20	24	1.250	210	P80S-00F9U		
24	24	1.500	235	P80S-00EYL		
30	36	1.375	285	P80S-00F2V		
36	32	1.625	320	P80S-00G0T		
42	36	1.750	355	P80S-00FTM		

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BRANCH TABLE (T_A28P)

RUN PIPE SIZE (in) \ BRANCH SIZE (in)	0.5	0.75	1	1.5	2	3	4	6	8	10	12	14	16	18	20	24	30	36	42
0.5	TS																		
0.75		TS																	
1		TR	TS																
1.5		TR	TR	TS															
2		L	TR	TR	TS														
3		L	L	TR	TR	TS													
4	L	L	L	L	TR	TR	TS												
6	L	L	L	L	L	TR	TR	TS											
8		L	L	L	L	L	TR	TR	TS										
10		L	L	L	L	L	TR	TR	TR	TS									
12		L	L	L	L	L	L	TR	TR	TR	TS								
14		L	L	L	L	L	L	TR	TR	TR	TR	TS							
16		L	L	L	L	L	L	TR	TR	TR	TR	TR	TS						
18		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TS					
20		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TR	TS				
24		L	L	L	L	L	L	L	9PD	TR	TR	TR	TR	TR	TR	TS			
30		L	L	L	L	L	L	L	9PD	TR	TR	TR	TR	TR	TR	TR	TS		
36		L	L	L	L	L	L	L	9PD	9PD	9PD	9PD	TR	TR	TR	TR	TR	TS	
42		L	L	L	L	L	L	L	9PD	9PD	9PD	9PD	TR	TR	TR	TR	TR	TR	TS

TS : STRAIGHT TEE
TR : REDUCING TEE
9PD : REINFORCING PAD 90 DEG
L : OUTLET

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PIPING CLASS

A2A201 REV NO. 2

Material : Killed CS
Rating : ASME CLASS 150
Flange Face : RF
C.A.(mm) : 3.00
Gasket : Spiral Wound
Service : PROCESS - VACUUM SERVICE
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
2	USE OF SOFT SEATED BALL, PLUG AND BUTTERFLY VALVES SHALL BE LIMITED TO MAXIMUM OF 204DEGC (400DEGF)
3	STIFFENER RINGS, IF NEEDED, SHALL BE PROVIDED AS PER ASME SEC.VIII, DIV.1 FOR FULL VACUUM CONDITION
4	VALVES TO BE TESTED FOR VACUUM AS PER ASME SEC.V, ART.10 (HOOD METHOD)

DETAIL NOTES :

NO.	DESCRIPTION
38	TO BE USED FOR STAND PIPE

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
24	FULL PORT (Q)
541	NPT(F) (CA,L)
714	SW - NPT(F) (V)
773	CLASS 300 (B,F,G)
4212	WELDOLET FOR STAND PIPE (L)

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PIPING CLASS
A2A201 REV NO. 2

PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P01A-0078U	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE Licensor-1	
1	0.75		SCH160		P01A-0078V	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE Licensor-1	
1	1		SCH160		P01A-0078W	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE Licensor-1	
1	1.5		SCH160		P01A-0078X	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE Licensor-1	
1	2		XS		P01A-0078Y	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Licensor-1	
1	3		STD		P01A-0078Z	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Licensor-1	
1	4		STD		P01A-007B3	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Licensor-1	
1	6		STD		P01A-007B8	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Licensor-1	
1	8		SCH30		P01A-008MX	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Licensor-1	
1	10		SCH30		P01A-007GE	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Licensor-1	
1	12		SCH30		P01A-007CF	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Licensor-1	
1	14		SCH20		P01A-007B6	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Licensor-1	
1	16		SCH20		P01A-007B7	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Licensor-1	
1	18		SCH20		P01A-007BA	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE Licensor-1	
1	20		STD		P01A-007BB	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE Licensor-1	
1	24		STD		P01A-007BC	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE Licensor-1	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P02B-00078	90 degree elbow ASTM A105 Class 6000 ASME B16.11 SW Licensor-1	
1	0.75				P02B-00079	90 degree elbow ASTM A105 Class 6000 ASME B16.11 SW Licensor-1	
1	1				P02B-0007A	90 degree elbow ASTM A105 Class 6000 ASME B16.11 SW Licensor-1	
1	1.5				P02B-0007B	90 degree elbow ASTM A105 Class 6000 ASME B16.11 SW Licensor-1	
1	2		XS		P02A-003R7	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	3		STD		P02A-003R8	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	4		STD		P02A-003T8	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	6		STD		P02A-003TG	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	8		SCH30		P02A-004FD	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	10		SCH30		P02A-003YN	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	12		SCH30		P02A-003UH	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	14		SCH20		P02A-003TB	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	16		SCH20		P02A-003TC	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	18		SCH20		P02A-003TD	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	20		STD		P02A-003TE	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	24		STD		P02A-003TF	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P03B-0006W	45 degree elbow ASTM A105 Class 6000 ASME B16.11 SW Licensor-1	
1	0.75				P03B-0006X	45 degree elbow ASTM A105 Class 6000 ASME B16.11 SW Licensor-1	
1	1				P03B-0006Y	45 degree elbow ASTM A105 Class 6000 ASME B16.11 SW Licensor-1	
1	1.5				P03B-0006Z	45 degree elbow ASTM A105 Class 6000 ASME B16.11 SW Licensor-1	
1	2		XS		P03A-003MW	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	3		STD		P03A-003MX	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	4		STD		P03A-003PX	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	6		STD		P03A-003R5	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	8		SCH30		P03A-004CK	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	10		SCH30		P03A-003WB	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	12		SCH30		P03A-003S6	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	14		SCH20		P03A-003R0	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	16		SCH20		P03A-003R1	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	18		SCH20		P03A-003R2	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	20		STD		P03A-003R3	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	24		STD		P03A-003R4	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P21B-0006T	Straight tee ASTM A105 Class 6000 ASME B16.11 SW Licensor-1	
1	0.75				P21B-0006U	Straight tee ASTM A105 Class 6000 ASME B16.11 SW Licensor-1	

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STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P21B-0006V	Straight tee ASTM A105 Class 6000 ASME B16.11 SW Licensor-1	
1	1.5				P21B-0006W	Straight tee ASTM A105 Class 6000 ASME B16.11 SW Licensor-1	
1	2		XS		P21A-0048L	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	3		STD		P21A-0048M	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	4		STD		P21A-004AL	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	6		STD		P21A-004AS	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	8		SCH30		P21A-004XU	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	10		SCH30		P21A-004FY	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	12		SCH30		P21A-004BZ	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	14		SCH20		P21A-004AP	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	16		SCH20		P21A-004AR	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	18		SCH20		P21A-004AU	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	20		STD		P21A-004AV	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	24		STD		P21A-004AW	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75			P24B-000BP	Reducing tee ASTM A105 Class 6000 ASME B16.11 SW Licensor-1	
1	1.5	0.75			P24B-000BR	Reducing tee ASTM A105 Class 6000 ASME B16.11 SW Licensor-1	
1	1.5	1			P24B-000BS	Reducing tee ASTM A105 Class 6000 ASME B16.11 SW Licensor-1	
1	2	1	XS	SCH160	P24A-00K0V	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	2	1.5	XS	SCH160	P24A-00K0W	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	3	1.5	STD	SCH160	P24A-00K0X	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	3	2	STD	XS	P24A-00K0Y	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	4	2	STD	XS	P24A-00K5X	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	4	3	STD	STD	P24A-00K5Y	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	6	3	STD	STD	P24A-00K64	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	6	4	STD	STD	P24A-00K65	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	8	4	SCH30	STD	P24A-00NHF	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	8	6	SCH30	STD	P24A-00NHG	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	10	4	SCH30	STD	P24A-00KSJ	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	10	6	SCH30	STD	P24A-00KSK	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	10	8	SCH30	SCH30	P24A-00NHH	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	12	6	SCH30	STD	P24A-00KBJ	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	12	8	SCH30	SCH30	P24A-00NHK	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	12	10	SCH30	SCH30	P24A-00NHJ	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	14	6	SCH20	STD	P24A-00K6G	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	14	8	SCH20	SCH30	P24A-00NHM	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	14	10	SCH20	SCH30	P24A-00NHL	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	14	12	SCH20	SCH30	P24A-00KBL	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	16	6	SCH20	STD	P24A-00K6M	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	16	8	SCH20	SCH30	P24A-00NHN	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	16	10	SCH20	SCH30	P24A-00KST	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	16	12	SCH20	SCH30	P24A-00KBM	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	16	14	SCH20	SCH20	P24A-00K6L	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	18	8	SCH20	SCH30	P24A-00NHP	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	18	10	SCH20	SCH30	P24A-00KSV	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	18	12	SCH20	SCH30	P24A-00KBN	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	18	14	SCH20	SCH20	P24A-00K6S	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	18	16	SCH20	SCH20	P24A-00K6T	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	20	8	STD	SCH30	P24A-00NHR	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	20	10	STD	SCH30	P24A-00KSY	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	20	12	STD	SCH30	P24A-00KBP	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	20	14	STD	SCH20	P24A-00K6X	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	20	16	STD	SCH20	P24A-00K6Y	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	20	18	STD	SCH20	P24A-00K6Z	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	24	10	STD	SCH30	P24A-00KT1	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	24	12	STD	SCH30	P24A-00KBR	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	24	14	STD	SCH20	P24A-00K72	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	

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REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	24	16	STD	SCH20	P24A-00K73	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	24	18	STD	SCH20	P24A-00K74	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	24	20	STD	STD	P24A-00K75	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	STD	XS	P27A-00EL1	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	4	2	STD	XS	P27A-00ES5	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	4	3	STD	STD	P27A-00ES6	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	6	3	STD	STD	P27A-00ES9	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	6	4	STD	STD	P27A-00ESA	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	8	4	SCH30	STD	P27A-00H5R	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	8	6	SCH30	STD	P27A-00H5S	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	10	4	SCH30	STD	P27A-00F7C	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	10	6	SCH30	STD	P27A-00F7D	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	10	8	SCH30	SCH30	P27A-00H5T	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	12	6	SCH30	STD	P27A-00EW1	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	12	8	SCH30	SCH30	P27A-00H5V	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	12	10	SCH30	SCH30	P27A-00H5U	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	14	6	SCH20	STD	P27A-00ESM	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	14	8	SCH20	SCH30	P27A-00H5X	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	14	10	SCH20	SCH30	P27A-00H5W	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	14	12	SCH20	SCH30	P27A-00EW3	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	16	8	SCH20	SCH30	P27A-00H5Y	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	16	10	SCH20	SCH30	P27A-00F7L	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	16	12	SCH20	SCH30	P27A-00EW4	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	16	14	SCH20	SCH20	P27A-00ESS	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	18	10	SCH20	SCH30	P27A-00F7P	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	18	12	SCH20	SCH30	P27A-00EW5	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	18	14	SCH20	SCH20	P27A-00ESW	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	18	16	SCH20	SCH20	P27A-00ESX	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	20	12	STD	SCH30	P27A-00EW6	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	20	14	STD	SCH20	P27A-00ESZ	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	20	16	STD	SCH20	P27A-00ET0	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	20	18	STD	SCH20	P27A-00ET1	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	24	16	STD	SCH20	P27A-00ET2	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	24	18	STD	SCH20	P27A-00ET3	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	24	20	STD	STD	P27A-00ET4	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	STD	XS	P28A-00BPS	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	4	2	STD	XS	P28A-00BVZ	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	4	3	STD	STD	P28A-00BW0	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	6	3	STD	STD	P28A-00BW3	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	6	4	STD	STD	P28A-00BW4	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	8	4	SCH30	STD	P28A-00EDD	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	8	6	SCH30	STD	P28A-00EDE	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	10	4	SCH30	STD	P28A-00CBD	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	10	6	SCH30	STD	P28A-00CBE	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	10	8	SCH30	SCH30	P28A-00EDF	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	12	6	SCH30	STD	P28A-00BZW	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	12	8	SCH30	SCH30	P28A-00EDH	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	12	10	SCH30	SCH30	P28A-00EDG	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	14	6	SCH20	STD	P28A-00BWF	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	14	8	SCH20	SCH30	P28A-00EDK	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	14	10	SCH20	SCH30	P28A-00EDJ	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	14	12	SCH20	SCH30	P28A-00BZY	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	16	8	SCH20	SCH30	P28A-00EDL	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	

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ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	16	10	SCH20	SCH30	P28A-00CBM	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	16	12	SCH20	SCH30	P28A-00BZZ	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	16	14	SCH20	SCH20	P28A-00BWK	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	18	10	SCH20	SCH30	P28A-00CBR	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	18	12	SCH20	SCH30	P28A-00C00	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	18	14	SCH20	SCH20	P28A-00BWP	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	18	16	SCH20	SCH20	P28A-00BWR	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	20	12	STD	SCH30	P28A-00C01	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	20	14	STD	SCH20	P28A-00BWT	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	20	16	STD	SCH20	P28A-00BWU	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	20	18	STD	SCH20	P28A-00BWV	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	24	16	STD	SCH20	P28A-00BWW	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	24	18	STD	SCH20	P28A-00BWX	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	24	20	STD	STD	P28A-00BWY	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P29B-0005C	Cap ASTM A105 Class 6000 ASME B16.11 SW Licensor-1	
1	0.75				P29B-0005D	Cap ASTM A105 Class 6000 ASME B16.11 SW Licensor-1	
1	1				P29B-0005E	Cap ASTM A105 Class 6000 ASME B16.11 SW Licensor-1	
1	1.5				P29B-0005F	Cap ASTM A105 Class 6000 ASME B16.11 SW Licensor-1	
1	2		XS		P29A-00326	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	3		STD		P29A-00327	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	4		STD		P29A-0034R	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	6		STD		P29A-00353	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	8		SCH30		P29A-003SB	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	10		SCH30		P29A-003B3	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	12		SCH30		P29A-0036E	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	14		SCH20		P29A-0034U	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	16		SCH20		P29A-0034V	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	18		SCH20		P29A-0034W	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	20		STD		P29A-0034X	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	24		STD		P29A-0034Y	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
541	0.75				P29B-00069	Cap ASTM A105 Class 6000 ASME B16.11 NPT Licensor-1	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P41A-0017X	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Licensor-1	
1	0.75		XXS		P41A-0017Y	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Licensor-1	
1	1		XXS		P41A-0017Z	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Licensor-1	
1	1.5		XXS		P41A-00180	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Licensor-1	

CON SWAGED NIPPLE (SNC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	SCH160	P42A-000U0	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S) Licensor-1	
1	1	0.5	SCH160	SCH160	P42A-000U1	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S) Licensor-1	
1	1	0.75	SCH160	SCH160	P42A-000U2	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S) Licensor-1	
1	1.5	0.5	SCH160	SCH160	P42A-000U3	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S) Licensor-1	
1	1.5	0.75	SCH160	SCH160	P42A-000U4	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S) Licensor-1	
1	1.5	1	SCH160	SCH160	P42A-000U5	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S) Licensor-1	
1	2	0.5	XS	SCH160	P42A-000U6	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S) Licensor-1	
1	2	0.75	XS	SCH160	P42A-000U7	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S) Licensor-1	
1	2	1	XS	SCH160	P42A-000U8	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S) Licensor-1	
1	2	1.5	XS	SCH160	P42A-000U9	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S) Licensor-1	
1	3	1.5	STD	SCH160	P42A-000UA	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S) Licensor-1	

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ECC SWAGED NIPPLE (SNE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	SCH160	P43A-000K3	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S) Licensor-1	
1	1	0.5	SCH160	SCH160	P43A-000K4	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S) Licensor-1	
1	1	0.75	SCH160	SCH160	P43A-000K5	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S) Licensor-1	
1	1.5	0.5	SCH160	SCH160	P43A-000K6	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S) Licensor-1	
1	1.5	0.75	SCH160	SCH160	P43A-000K7	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S) Licensor-1	
1	1.5	1	SCH160	SCH160	P43A-000K8	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S) Licensor-1	
1	2	0.5	XS	SCH160	P43A-000K9	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S) Licensor-1	
1	2	0.75	XS	SCH160	P43A-000KA	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S) Licensor-1	
1	2	1	XS	SCH160	P43A-000KB	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S) Licensor-1	
1	2	1.5	XS	SCH160	P43A-000KC	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S) Licensor-1	
1	3	1.5	STD	SCH160	P43A-000KD	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S) Licensor-1	

COUPLING (CPS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P47B-0007L	Coupling ASTM A105 Class 6000 ASME B16.11 SW - SW Licensor-1	
1	0.75				P47B-0007M	Coupling ASTM A105 Class 6000 ASME B16.11 SW - SW Licensor-1	
1	1				P47B-0007N	Coupling ASTM A105 Class 6000 ASME B16.11 SW - SW Licensor-1	
1	1.5				P47B-0007P	Coupling ASTM A105 Class 6000 ASME B16.11 SW - SW Licensor-1	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5 - 2.5	0.75			P31B-013AG	Outlet ASTM A105 Class 6000 MSS SP-97 SW Licensor-1	
1	3 - 10	0.75			P31B-013AH	Outlet ASTM A105 Class 6000 MSS SP-97 SW Licensor-1	
1	12 and larger	0.75			P31B-013AJ	Outlet ASTM A105 Class 6000 MSS SP-97 SW Licensor-1	
1	3 - 10	1			P31B-013AK	Outlet ASTM A105 Class 6000 MSS SP-97 SW Licensor-1	
1	12 and larger	1			P31B-013AL	Outlet ASTM A105 Class 6000 MSS SP-97 SW Licensor-1	
1	4 - 5	1.5			P31B-013AM	Outlet ASTM A105 Class 6000 MSS SP-97 SW Licensor-1	
1	6 - 8	1.5			P31B-013AN	Outlet ASTM A105 Class 6000 MSS SP-97 SW Licensor-1	
1	10 - 18	1.5			P31B-013AP	Outlet ASTM A105 Class 6000 MSS SP-97 SW Licensor-1	
1	20 and larger	1.5			P31B-013AR	Outlet ASTM A105 Class 6000 MSS SP-97 SW Licensor-1	
541	1	0.75			P31B-01367	Outlet ASTM A105 Class 6000 MSS SP-97 NPT Licensor-1	
541	1.5 - 2.5	0.75			P31B-013A7	Outlet ASTM A105 Class 6000 MSS SP-97 NPT Licensor-1	
541	3 - 10	0.75			P31B-013A8	Outlet ASTM A105 Class 6000 MSS SP-97 NPT Licensor-1	
541	12 and larger	0.75			P31B-013A6	Outlet ASTM A105 Class 6000 MSS SP-97 NPT Licensor-1	
1	6	2	STD	XS	P31B-00XMV	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	8	2	SCH30	XS	P31B-010U0	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	10	2	SCH30	XS	P31B-00Y8G	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	12	2	SCH30	XS	P31B-00XT7	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	14	2	SCH20	XS	P31B-00XN3	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	16	2	SCH20	XS	P31B-00XN6	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	18	2	SCH20	XS	P31B-00XN9	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	20	2	STD	XS	P31B-00XND	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	24	2	STD	XS	P31B-00XNH	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	8	3	SCH30	STD	P31B-010U1	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	10	3	SCH30	STD	P31B-00Y8H	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	12	3	SCH30	STD	P31B-00XT8	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	14	3	SCH20	STD	P31B-00XN4	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	16	3	SCH20	STD	P31B-00XN7	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	18	3	SCH20	STD	P31B-00XNA	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	20	3	STD	STD	P31B-00XNE	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	24	3	STD	STD	P31B-00XNJ	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	12	4	SCH30	STD	P31B-00XT9	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	14	4	SCH20	STD	P31B-00XN5	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	16	4	SCH20	STD	P31B-00XN8	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	18	4	SCH20	STD	P31B-00XNB	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	20	4	STD	STD	P31B-00XNF	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	24	4	STD	STD	P31B-00XNK	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	18	6	SCH20	STD	P31B-00XNC	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	20	6	STD	STD	P31B-00XNG	Outlet ASTM A105 MSS SP-97 BW Licensor-1	

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OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	24	6	STD	STD	P31B-00XNL	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
4212	3	2	STD	XS	P31B-013BM	Outlet ASTM A105 MSS SP-97 BW Licensor-1	38

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30B-00067	Plug ASTM A105 ASME B16.11 NPT Round head Licensor-1	
1	0.75				P30B-00068	Plug ASTM A105 ASME B16.11 NPT Round head Licensor-1	
1	1				P30B-00069	Plug ASTM A105 ASME B16.11 NPT Round head Licensor-1	
1	1.5				P30B-0006A	Plug ASTM A105 ASME B16.11 NPT Round head Licensor-1	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P61B-00A2J	Flange SW ASTM A105 Class 150 ASME B16.5 RF Licensor-1	
1	0.75		SCH160		P61B-00A2K	Flange SW ASTM A105 Class 150 ASME B16.5 RF Licensor-1	
1	1		SCH160		P61B-00A2L	Flange SW ASTM A105 Class 150 ASME B16.5 RF Licensor-1	
1	1.5		SCH160		P61B-00A2M	Flange SW ASTM A105 Class 150 ASME B16.5 RF Licensor-1	
1	2		XS		P61B-009YN	Flange WN ASTM A105 Class 150 ASME B16.5 RF Licensor-1	
1	3		STD		P61B-009YP	Flange WN ASTM A105 Class 150 ASME B16.5 RF Licensor-1	
1	4		STD		P61B-009YR	Flange WN ASTM A105 Class 150 ASME B16.5 RF Licensor-1	
1	6		STD		P61B-009ZG	Flange WN ASTM A105 Class 150 ASME B16.5 RF Licensor-1	
1	8		SCH30		P61B-00BS7	Flange WN ASTM A105 Class 150 ASME B16.5 RF Licensor-1	
1	10		SCH30		P61B-00BS6	Flange WN ASTM A105 Class 150 ASME B16.5 RF Licensor-1	
1	12		SCH30		P61B-00A2N	Flange WN ASTM A105 Class 150 ASME B16.5 RF Licensor-1	
1	14		SCH20		P61B-009ZB	Flange WN ASTM A105 Class 150 ASME B16.5 RF Licensor-1	
1	16		SCH20		P61B-009ZC	Flange WN ASTM A105 Class 150 ASME B16.5 RF Licensor-1	
1	18		SCH20		P61B-009ZD	Flange WN ASTM A105 Class 150 ASME B16.5 RF Licensor-1	
1	20		STD		P61B-009ZE	Flange WN ASTM A105 Class 150 ASME B16.5 RF Licensor-1	
1	24		STD		P61B-009ZF	Flange WN ASTM A105 Class 150 ASME B16.5 RF Licensor-1	
773	0.5		SCH160		P61B-00A28	Flange SW ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
773	0.75		SCH160		P61B-00A29	Flange SW ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
773	1		SCH160		P61B-00A2A	Flange SW ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
773	1.5		SCH160		P61B-00A2B	Flange SW ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
773	2		XS		P61B-009YW	Flange WN ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
773	3		STD		P61B-009YX	Flange WN ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
773	4		STD		P61B-009YY	Flange WN ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
773	6		STD		P61B-00A07	Flange WN ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
773	8		SCH30		P61B-00BS8	Flange WN ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
773	10		SCH30		P61B-00ABG	Flange WN ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
773	12		SCH30		P61B-00A2P	Flange WN ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
773	14		SCH20		P61B-00A02	Flange WN ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
773	16		SCH20		P61B-00A03	Flange WN ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
773	18		SCH20		P61B-00A04	Flange WN ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
773	20		STD		P61B-00A05	Flange WN ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
773	24		STD		P61B-00A06	Flange WN ASTM A105 Class 300 ASME B16.5 RF Licensor-1	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67B-002D6	Blind flange ASTM A105 Class 150 ASME B16.5 RF Licensor-1	
1	0.75				P67B-002D7	Blind flange ASTM A105 Class 150 ASME B16.5 RF Licensor-1	
1	1				P67B-002D8	Blind flange ASTM A105 Class 150 ASME B16.5 RF Licensor-1	
1	1.5				P67B-002D9	Blind flange ASTM A105 Class 150 ASME B16.5 RF Licensor-1	
1	2				P67B-002DB	Blind flange ASTM A105 Class 150 ASME B16.5 RF Licensor-1	
1	3				P67B-002DC	Blind flange ASTM A105 Class 150 ASME B16.5 RF Licensor-1	
1	4				P67B-002DD	Blind flange ASTM A105 Class 150 ASME B16.5 RF Licensor-1	
1	6				P67B-002DE	Blind flange ASTM A105 Class 150 ASME B16.5 RF Licensor-1	
1	8				P67B-002DF	Blind flange ASTM A105 Class 150 ASME B16.5 RF Licensor-1	
1	10				P67B-002DA	Blind flange ASTM A105 Class 150 ASME B16.5 RF Licensor-1	
1	12				P67B-002FK	Blind flange ASTM A105 Class 150 ASME B16.5 RF Licensor-1	
1	14				P67B-002FL	Blind flange ASTM A105 Class 150 ASME B16.5 RF Licensor-1	

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BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	16				P67B-002FM	Blind flange ASTM A105 Class 150 ASME B16.5 RF Licensor-1	
1	18				P67B-002FN	Blind flange ASTM A105 Class 150 ASME B16.5 RF Licensor-1	
1	20				P67B-002FP	Blind flange ASTM A105 Class 150 ASME B16.5 RF Licensor-1	
1	24				P67B-002FR	Blind flange ASTM A105 Class 150 ASME B16.5 RF Licensor-1	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000L8	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000L9	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000LA	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000LB	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000LH	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000LL	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000LM	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	6				P73T-000LN	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	8				P73T-000LP	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	10				P73T-000LC	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	12				P73T-000LD	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	14				P73T-000LE	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	16				P73T-000LF	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	18				P73T-000LG	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	20				P73T-000LJ	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	24				P73T-000LK	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	0.5				P73T-000FT	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	0.75				P73T-000FU	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	3				P73T-000G5	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	4				P73T-000G6	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	6				P73T-000G7	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	8				P73T-000G8	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	10				P73T-000FX	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	12				P73T-000FY	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	14				P73T-000FZ	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	16				P73T-000G0	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	18				P73T-000G1	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	20				P73T-000G3	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	24				P73T-000G4	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-16				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	18-24				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
773	0.5-10				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
773	12-24				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	

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GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81B-001W0	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated Vacuum condition Licensor-1	
1	0.75				P81B-001W1	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated Vacuum condition Licensor-1	
1	1				P81B-001W2	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated Vacuum condition Licensor-1	
1	1.5				P81B-001W3	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated Vacuum condition Licensor-1	
1	2				P81C-0063K	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated Vacuum condition Licensor-1	
1	3				P81C-0063L	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated Vacuum condition Licensor-1	
1	4				P81C-0063M	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated Vacuum condition Licensor-1	
1	6				P81C-0063N	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated Vacuum condition Licensor-1	
1	8				P81C-0063P	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated Vacuum condition Licensor-1	
1	10				P81C-0063J	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated Vacuum condition Licensor-1	
1	12				P81C-006ND	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated Vacuum condition Licensor-1	
714	0.5				P81B-002S9	Gate valve ASTM A105 Class 800 API 602 SW - NPT Trim number 8 BB-BG-OS&Y Handwheel operated Vacuum condition Licensor-1	
714	0.75				P81B-002FG	Gate valve ASTM A105 Class 800 API 602 SW - NPT Trim number 8 BB-BG-OS&Y Handwheel operated Vacuum condition Licensor-1	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82B-001GD	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated Vacuum condition Licensor-1	
1	0.75				P82B-001GE	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated Vacuum condition Licensor-1	
1	1				P82B-001GF	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated Vacuum condition Licensor-1	
1	1.5				P82B-001GG	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated Vacuum condition Licensor-1	
1	2				P82C-002ZS	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated Vacuum condition Licensor-1	
1	3				P82C-0037G	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated Vacuum condition Licensor-1	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83B-00164	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover Vacuum condition Licensor-1	
1	0.75				P83B-00165	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover Vacuum condition Licensor-1	
1	1				P83B-00166	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover Vacuum condition Licensor-1	
1	1.5				P83B-00167	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover Vacuum condition Licensor-1	
1	2				P83C-002Z2	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover Vacuum condition Licensor-1	
1	3				P83C-002Z3	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover Vacuum condition Licensor-1	
1	4				P83C-002Z4	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover Vacuum condition Licensor-1	
1	6				P83C-002Z5	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover Vacuum condition Licensor-1	
1	8				P83C-002Z6	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover Vacuum condition Licensor-1	

BALL VALVE (Q)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P84B-001GR	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design Vacuum condition Licensor-1	
1	0.75				P84B-001GS	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design Vacuum condition Licensor-1	
1	1				P84B-001GT	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design Vacuum condition Licensor-1	
1	1.5				P84B-001GU	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design Vacuum condition Licensor-1	
1	2				P84C-006RM	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design Vacuum condition Licensor-1	
2	0.5				P84B-001GV	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design Vacuum condition Licensor-1	

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BALL VALVE (Q)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
24	0.75				P84B-001GW	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design Vacuum condition Licensor-1	
24	1				P84B-001GX	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design Vacuum condition Licensor-1	
24	1.5				P84B-001GY	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design Vacuum condition Licensor-1	
24	2				P84C-006RN	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design Vacuum condition Licensor-1	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71B-00080	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	0.75				P71B-00081	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	1				P71B-00082	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	1.5				P71B-00083	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	2				P71B-00085	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	3				P71B-00086	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	4				P71B-00087	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	6				P71B-00088	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	8				P71B-00089	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	10				P71B-00084	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	12				P71B-0008S	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Licensor-1	

PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000BR	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	16				P72B-000BS	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	18				P72B-000BT	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	20				P72B-000BU	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	24				P72B-000BV	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Licensor-1	

PADDLE SPACER (PS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000C7	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	16				P72B-000C8	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	18				P72B-000C9	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	20				P72B-000CA	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	24				P72B-000CB	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Licensor-1	

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BOLT TABLE (B_A2A201 , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	60	P80S-003V2		
0.75	4	0.500	65	P80S-003V3		
1	4	0.500	70	P80S-003V4		
1.5	4	0.500	75	P80S-003V5		
2	4	0.625	85	P80S-003XE		
3	4	0.625	95	P80S-003XG		
4	8	0.625	95	P80S-003XG		
6	8	0.750	105	P80S-003XJ		
8	8	0.750	110	P80S-003XK		
10	12	0.875	120	P80S-00419		
12	12	0.875	120	P80S-00419		
14	12	1.000	135	P80S-0043E		
16	16	1.000	140	P80S-0043F		
18	16	1.125	150	P80S-0046K		
20	20	1.125	160	P80S-0046M		
24	20	1.250	175	P80S-004AG		

BOLT TABLE (B_A2A201_773 , STUD ASME RF, OPTION CODE 773)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-003V4		
0.75	4	0.625	75	P80S-003XC		
1	4	0.625	80	P80S-003XD		
1.5	4	0.750	95	P80S-00414		
2	8	0.625	90	P80S-003XF		
3	8	0.750	110	P80S-003XK		
4	8	0.750	115	P80S-003XL		
6	12	0.750	125	P80S-003XN		
8	12	0.875	140	P80S-0041D		
10	16	1.000	160	P80S-0043K		
12	16	1.125	175	P80S-0046S		
14	20	1.125	180	P80S-0046T		
16	20	1.250	190	P80S-004AK		
18	24	1.250	200	P80S-004AM		
20	24	1.250	210	P80S-004AP		
24	24	1.500	235	P80S-003F8		

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BRANCH TABLE (T_A2A201)

RUN PIPE SIZE (in) \ BRANCH SIZE (in)	0.5	0.75	1	1.5	2	3	4	6	8	10	12	14	16	18	20	24
0.5	TS															
0.75		TS														
1		TR	TS													
1.5		TR	TR	TS												
2		L	TR	TR	TS											
3		L	L	TR	TR	TS										
4	L	L	L	L	TR	TR	TS									
6	L	L	L	L	L	TR	TR	TS								
8		L	L	L	L	L	TR	TR	TS							
10		L	L	L	L	L	TR	TR	TR	TS						
12		L	L	L	L	L	L	TR	TR	TR	TS					
14		L	L	L	L	L	L	TR	TR	TR	TR	TS				
16		L	L	L	L	L	L	TR	TR	TR	TR	TR	TS			
18		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TS		
20		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TR	TS	
24		L	L	L	L	L	L	L	9PD	TR	TR	TR	TR	TR	TR	TS

L : OUTLET
TR : REDUCING TEE
9PD : REINFORCING PAD 90 DEG
TS : STRAIGHT TEE

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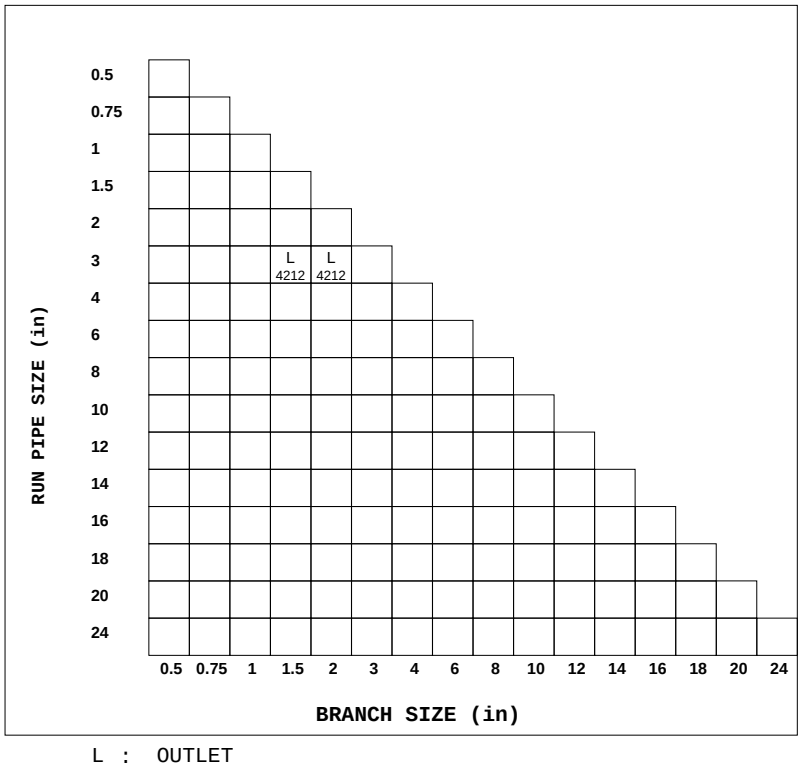
BRANCH TABLE (T_A2A201_4)



L : OUTLET

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PIPING CLASS

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Material	:	Killed CS
Rating	:	ASME CLASS 150
Flange Face	:	RF
C.A.(mm)	:	3.00
Gasket	:	Spiral Wound
Service	:	PROCESS -WET LOW SEVERITY SOUR SERVICE SUBJECT TO NACE + AMINES OR CAUSTIC - STRESS RELIEVED
Design Code	:	ASME B31.3
Heat Treatment	:	

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
5	BOLTING CONFIRMING TO B7M / 2HM SHALL BE USED UNDER CONDITIONS (A) DIRECT EXPOSURE TO SOUR ENVIRONMENTS (B) WHEN THE BOLTING WILL BE BURIED OR INSULATED
27	PWHT OF CARBON STEEL PIPING IN WET H2S, CAUSTIC AND AMINE SERVICES SHALL BE IN ACCORDANCE WITH SECTION 10.2, 10.3, AND 10.4 OF PROJECT SPECIFICATION 3550-8440-SP-0002 MATERIALS REQUIREMENTS FOR PRESSURISED EQUIPMENT AND PIPING. FOR CAUSTIC AND AMINE SERVICE THE FOLLOWING SHALL APPLY: - PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF ALL SITE PIPING FABRICATION WELDS IS REQUIRED FOR ALL WALL THICKNESSES. FOR MODERATE AND SEVERE WET H2S SERVICE THE FOLLOWING SHALL APPLY: PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF SITE FABRICATION CIRCUMFERENTIAL OR BRANCH WELDS IS NOT REQUIRED IF WELDS ARE MULTIPASS AND IN ACCORDANCE WITH PARA 10.2.12 OF PROJECT SPECIFICATION 3550-8440-SP-0002. FOR SERVICES MEETING THE WET H2S CRITERIA AND CAUSTIC OR AMINE CRITERIA THE MORE STRINGENT PWHT REQUIREMENT SHALL GOVERN.

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
541	NPT(F) (CA,F)
773	CLASS 300 (B,F,G,V)
797	CLASS 1500 (B,F,G)
4608	VALVE WITH NIPPLES (V)

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PIPING CLASS
A2A4 REV NO. 2

PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P01A-0010P	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	0.75		SCH160		P01A-0010R	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1		SCH160		P01A-0014M	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1.5		SCH160		P01A-0015J	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	2		XS		P01A-000YX	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	3		STD		P01A-000YM	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	4		STD		P01A-000YU	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	6		STD		P01A-000Z3	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	8		SCH30		P01A-001WL	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	10		SCH30		P01A-0016U	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	12		SCH30		P01A-0017K	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	14		SCH20		P01A-0017A	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	16		SCH20		P01A-0018E	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	18		STD		P01A-002CB	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	20		STD		P01A-002CC	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	24		XS		P01A-002MP	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P02A-001Y8	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	0.75		SCH160		P02A-000V8	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1		SCH160		P02A-000V7	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1.5		SCH160		P02A-000V9	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	2		XS		P02A-000CP	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		STD		P02A-000CU	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		STD		P02A-000CZ	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		STD		P02A-000D6	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		SCH30		P02A-003DK	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	10		SCH30		P02A-000M3	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	12		SCH30		P02A-000M4	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	14		SCH20		P02A-000FX	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	16		SCH20		P02A-000GM	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	18		STD		P02A-0010H	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	20		STD		P02A-0010J	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	24		XS		P02A-000MB	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P03A-001TC	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	0.75		SCH160		P03A-000RS	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1		SCH160		P03A-000RR	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1.5		SCH160		P03A-000RP	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	2		XS		P03A-000AS	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		STD		P03A-000AX	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		STD		P03A-000B1	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		STD		P03A-000B9	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		SCH30		P03A-003BE	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	10		SCH30		P03A-000JT	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	12		SCH30		P03A-000JU	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	14		SCH20		P03A-000DW	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	16		SCH20		P03A-000EM	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	18		STD		P03A-000X0	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	20		STD		P03A-000X1	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	24		XS		P03A-001E1	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P21A-003AW	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	0.75		SCH160		P21A-002B8	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		SCH160		P21A-002B6	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5		SCH160		P21A-002B9	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2		XS		P21A-001CJ	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		STD		P21A-001CU	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		STD		P21A-001CW	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6		STD		P21A-001D2	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8		SCH30		P21A-003WV	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10		SCH30		P21A-00259	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12		SCH30		P21A-0025A	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14		SCH20		P21A-00206	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16		SCH20		P21A-0020X	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18		STD		P21A-002FT	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20		STD		P21A-002FU	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24		XS		P21A-002Y5	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75	SCH160	SCH160	P24A-004B6	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.75	SCH160	SCH160	P24A-004B2	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	1	SCH160	SCH160	P24A-004BA	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	XS	SCH160	P24A-00GMB	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	XS	SCH160	P24A-005K9	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	STD	SCH160	P24A-00GMC	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	STD	XS	P24A-002HW	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P24A-002HY	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P24A-0021K	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	STD	P24A-0021A	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P24A-00229	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH30	STD	P24A-00JVH	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH30	STD	P24A-00JVG	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	SCH30	STD	P24A-00GNR	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	SCH30	STD	P24A-0060W	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	SCH30	SCH30	P24A-00J15	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	SCH30	STD	P24A-00HKT	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH30	SCH30	P24A-00M36	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH30	SCH30	P24A-003ET	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	SCH20	STD	P24A-00K0M	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	SCH20	SCH30	P24A-00M37	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	SCH20	SCH30	P24A-003ER	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	SCH20	SCH30	P24A-003ES	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	6	SCH20	STD	P24A-00GU4	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	SCH20	SCH30	P24A-00M38	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	SCH20	SCH30	P24A-00KSH	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	SCH20	SCH30	P24A-003XN	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	SCH20	SCH20	P24A-002XF	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	8	STD	SCH30	P24A-00NHT	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	10	STD	SCH30	P24A-00MH8	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	12	STD	SCH30	P24A-00HL1	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	14	STD	SCH20	P24A-00HL2	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	16	STD	SCH20	P24A-00HL3	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	8	STD	SCH30	P24A-00M3D	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	10	STD	SCH30	P24A-00M3C	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	12	STD	SCH30	P24A-00HKV	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	14	STD	SCH20	P24A-00HKW	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	16	STD	SCH20	P24A-00HKX	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	18	STD	STD	P24A-0020K	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24	10	XS	SCH30	P24A-00NAF	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24	12	XS	SCH30	P24A-00NAG	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24	14	XS	SCH20	P24A-00NAH	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	24	16	XS	SCH20	P24A-00KCK	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24	18	XS	STD	P24A-00884	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24	20	XS	STD	P24A-00885	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	SCH160	P27A-004LZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.5	SCH160	SCH160	P27A-004M8	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.75	SCH160	SCH160	P27A-002T5	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.5	SCH160	SCH160	P27A-004MV	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.75	SCH160	SCH160	P27A-002T7	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	1	SCH160	SCH160	P27A-002T4	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	0.75	XS	SCH160	P27A-001LG	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	XS	SCH160	P27A-0033P	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	XS	SCH160	P27A-0033B	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	STD	SCH160	P27A-003M9	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	STD	XS	P27A-001MZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	1.5	STD	SCH160	P27A-003MA	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P27A-001N0	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P27A-00189	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	STD	P27A-001AZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P27A-001GW	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH30	STD	P27A-00ED2	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH30	STD	P27A-00ECY	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	SCH30	STD	P27A-003MK	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	SCH30	STD	P27A-003ML	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	SCH30	SCH30	P27A-004T9	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	SCH30	STD	P27A-003MN	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH30	SCH30	P27A-004XA	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH30	SCH30	P27A-0028K	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	SCH20	STD	P27A-00518	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	SCH20	SCH30	P27A-0052J	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	SCH20	SCH30	P27A-0028G	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	SCH20	SCH30	P27A-0028H	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	SCH20	SCH30	P27A-0059E	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	SCH20	SCH30	P27A-003NC	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	SCH20	SCH30	P27A-002GH	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	SCH20	SCH20	P27A-001V2	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	10	STD	SCH30	P27A-005BK	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	12	STD	SCH30	P27A-005DR	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	14	STD	SCH20	P27A-005FP	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	16	STD	SCH20	P27A-005HV	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	12	STD	SCH30	P27A-005LW	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	14	STD	SCH20	P27A-005NZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	16	STD	SCH20	P27A-005S7	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	18	STD	STD	P27A-0037R	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24	16	XS	SCH20	P27A-005Y9	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24	18	XS	STD	P27A-005ZZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24	20	XS	STD	P27A-0061M	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	SCH160	P28A-007KG	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.5	SCH160	SCH160	P28A-007KH	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.75	SCH160	SCH160	P28A-002TU	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.5	SCH160	SCH160	P28A-007KJ	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.75	SCH160	SCH160	P28A-002TW	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	1	SCH160	SCH160	P28A-002TR	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	0.75	XS	SCH160	P28A-001LE	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2	1	XS	SCH160	P28A-003M1	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	XS	SCH160	P28A-003M2	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	STD	SCH160	P28A-003M3	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	STD	XS	P28A-001N5	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	1.5	STD	SCH160	P28A-003M4	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P28A-001N6	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P28A-0018B	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	STD	P28A-001AS	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P28A-00182	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH30	STD	P28A-00BFY	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH30	STD	P28A-00BFZ	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	SCH30	STD	P28A-003MD	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	SCH30	STD	P28A-003ME	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	SCH30	SCH30	P28A-00A4S	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	SCH30	STD	P28A-003MG	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH30	SCH30	P28A-00BGV	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH30	SCH30	P28A-0027C	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	SCH20	STD	P28A-0096P	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	SCH20	SCH30	P28A-00DA3	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	SCH20	SCH30	P28A-00279	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	SCH20	SCH30	P28A-0027A	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	SCH20	SCH30	P28A-00DA4	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	SCH20	SCH30	P28A-003N6	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	SCH20	SCH30	P28A-002GB	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	SCH20	SCH20	P28A-001WG	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	10	STD	SCH30	P28A-0063T	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	12	STD	SCH30	P28A-0096W	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	14	STD	SCH20	P28A-0096X	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	16	STD	SCH20	P28A-0096Y	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	12	STD	SCH30	P28A-0096R	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	14	STD	SCH20	P28A-0096S	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	16	STD	SCH20	P28A-0096T	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	18	STD	STD	P28A-00377	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24	16	XS	SCH20	P28A-00C0Z	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24	18	XS	STD	P28A-0063W	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24	20	XS	STD	P28A-0063X	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P29A-00329	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	0.75		SCH160		P29A-001UF	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	1		SCH160		P29A-001TC	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	1.5		SCH160		P29A-001TD	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	2		XS		P29A-001VG	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	3		STD		P29A-001VK	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	4		STD		P29A-001VN	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	6		STD		P29A-001VS	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	8		SCH30		P29A-003G6	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	10		SCH30		P29A-003B5	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	12		SCH30		P29A-00373	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	14		SCH20		P29A-00360	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	16		SCH20		P29A-00361	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	18		STD		P29A-001VF	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	20		STD		P29A-001VH	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	24		XS		P29A-001VJ	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
541	0.75				P29B-0000Y	Cap ASTM A105 Class 6000 ASME B16.11 NPT	
541	1				P29B-0000Z	Cap ASTM A105 Class 6000 ASME B16.11 NPT	

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STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P41A-000B9	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		XXS		P41A-000BA	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		XXS		P41A-000D8	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		XXS		P41A-000D9	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2	0.75	XS	SCH160	P31B-00CP7	Outlet ASTM A105 MSS SP-97 BW	
1	3	0.75	STD	SCH160	P31B-00CMT	Outlet ASTM A105 MSS SP-97 BW	
1	4	0.75	STD	SCH160	P31B-00CLT	Outlet ASTM A105 MSS SP-97 BW	
1	6	0.75	STD	SCH160	P31B-00CKK	Outlet ASTM A105 MSS SP-97 BW	
1	8	0.75	SCH30	SCH160	P31B-00ZH5	Outlet ASTM A105 MSS SP-97 BW	
1	10	0.75	SCH30	SCH160	P31B-00YEZ	Outlet ASTM A105 MSS SP-97 BW	
1	12	0.75	SCH30	SCH160	P31B-00SWH	Outlet ASTM A105 MSS SP-97 BW	
1	14	0.75	SCH20	SCH160	P31B-00X17	Outlet ASTM A105 MSS SP-97 BW	
1	16	0.75	SCH20	SCH160	P31B-00XS0	Outlet ASTM A105 MSS SP-97 BW	
1	18	0.75	STD	SCH160	P31B-00CPL	Outlet ASTM A105 MSS SP-97 BW	
1	20	0.75	STD	SCH160	P31B-00CNW	Outlet ASTM A105 MSS SP-97 BW	
1	24	0.75	XS	SCH160	P31B-007N3	Outlet ASTM A105 MSS SP-97 BW	
1	3	1	STD	SCH160	P31B-00B4J	Outlet ASTM A105 MSS SP-97 BW	
1	4	1	STD	SCH160	P31B-00B3M	Outlet ASTM A105 MSS SP-97 BW	
1	6	1	STD	SCH160	P31B-00AZC	Outlet ASTM A105 MSS SP-97 BW	
1	8	1	SCH30	SCH160	P31B-00ZH6	Outlet ASTM A105 MSS SP-97 BW	
1	10	1	SCH30	SCH160	P31B-00YF1	Outlet ASTM A105 MSS SP-97 BW	
1	12	1	SCH30	SCH160	P31B-00SWJ	Outlet ASTM A105 MSS SP-97 BW	
1	14	1	SCH20	SCH160	P31B-00X18	Outlet ASTM A105 MSS SP-97 BW	
1	16	1	SCH20	SCH160	P31B-00X8Z	Outlet ASTM A105 MSS SP-97 BW	
1	18	1	STD	SCH160	P31B-00BC9	Outlet ASTM A105 MSS SP-97 BW	
1	20	1	STD	SCH160	P31B-00B8M	Outlet ASTM A105 MSS SP-97 BW	
1	24	1	XS	SCH160	P31B-007MU	Outlet ASTM A105 MSS SP-97 BW	
1	4	1.5	STD	SCH160	P31B-00BP4	Outlet ASTM A105 MSS SP-97 BW	
1	6	1.5	STD	SCH160	P31B-00BJH	Outlet ASTM A105 MSS SP-97 BW	
1	8	1.5	SCH30	SCH160	P31B-00BHM	Outlet ASTM A105 MSS SP-97 BW	
1	10	1.5	SCH30	SCH160	P31B-00AUR	Outlet ASTM A105 MSS SP-97 BW	
1	12	1.5	SCH30	SCH160	P31B-00CEJ	Outlet ASTM A105 MSS SP-97 BW	
1	14	1.5	SCH20	SCH160	P31B-00CDS	Outlet ASTM A105 MSS SP-97 BW	
1	16	1.5	SCH20	SCH160	P31B-00C9B	Outlet ASTM A105 MSS SP-97 BW	
1	18	1.5	STD	SCH160	P31B-00C4R	Outlet ASTM A105 MSS SP-97 BW	
1	20	1.5	STD	SCH160	P31B-00C3Y	Outlet ASTM A105 MSS SP-97 BW	
1	24	1.5	XS	SCH160	P31B-007MM	Outlet ASTM A105 MSS SP-97 BW	
1	6	2	STD	XS	P31B-007SH	Outlet ASTM A105 MSS SP-97 BW	
1	8	2	SCH30	XS	P31B-00X36	Outlet ASTM A105 MSS SP-97 BW	
1	10	2	SCH30	XS	P31B-00NVF	Outlet ASTM A105 MSS SP-97 BW	
1	12	2	SCH30	XS	P31B-00NVL	Outlet ASTM A105 MSS SP-97 BW	
1	14	2	SCH20	XS	P31B-00TF9	Outlet ASTM A105 MSS SP-97 BW	
1	16	2	SCH20	XS	P31B-00TF8	Outlet ASTM A105 MSS SP-97 BW	
1	18	2	STD	XS	P31B-009FJ	Outlet ASTM A105 MSS SP-97 BW	
1	20	2	STD	XS	P31B-00994	Outlet ASTM A105 MSS SP-97 BW	
1	24	2	XS	XS	P31B-0092Y	Outlet ASTM A105 MSS SP-97 BW	
1	8	3	SCH30	STD	P31B-00X37	Outlet ASTM A105 MSS SP-97 BW	
1	10	3	SCH30	STD	P31B-00NYK	Outlet ASTM A105 MSS SP-97 BW	
1	12	3	SCH30	STD	P31B-00NYR	Outlet ASTM A105 MSS SP-97 BW	
1	14	3	SCH20	STD	P31B-00UPH	Outlet ASTM A105 MSS SP-97 BW	
1	16	3	SCH20	STD	P31B-00TU2	Outlet ASTM A105 MSS SP-97 BW	
1	18	3	STD	STD	P31B-008MK	Outlet ASTM A105 MSS SP-97 BW	
1	20	3	STD	STD	P31B-008FA	Outlet ASTM A105 MSS SP-97 BW	
1	24	3	XS	STD	P31B-00894	Outlet ASTM A105 MSS SP-97 BW	
1	12	4	SCH30	STD	P31B-00P1G	Outlet ASTM A105 MSS SP-97 BW	
1	14	4	SCH20	STD	P31B-00UPJ	Outlet ASTM A105 MSS SP-97 BW	

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OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	16	4	SCH20	STD	P31B-00TU3	Outlet ASTM A105 MSS SP-97 BW	
1	18	4	STD	STD	P31B-008KB	Outlet ASTM A105 MSS SP-97 BW	
1	20	4	STD	STD	P31B-008D3	Outlet ASTM A105 MSS SP-97 BW	
1	24	4	XS	STD	P31B-0086W	Outlet ASTM A105 MSS SP-97 BW	
1	18	6	STD	STD	P31B-008RX	Outlet ASTM A105 MSS SP-97 BW	
1	20	6	STD	STD	P31B-008PZ	Outlet ASTM A105 MSS SP-97 BW	
1	24	6	XS	STD	P31B-008JC	Outlet ASTM A105 MSS SP-97 BW	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30B-0002D	Plug ASTM A105 ASME B16.11 NPT Round head	
1	0.75				P30B-0002E	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1				P30B-0002F	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1.5				P30B-0002G	Plug ASTM A105 ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P61B-004V2	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	0.75		SCH160		P61B-0037H	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	1		SCH160		P61B-0037F	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	1.5		SCH160		P61B-0037N	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	2		XS		P61B-003NK	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	3		STD		P61B-001PW	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	4		STD		P61B-001R8	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	6		STD		P61B-001RT	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	8		SCH30		P61B-003FP	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	10		SCH30		P61B-003FS	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	12		SCH30		P61B-002TS	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	14		SCH20		P61B-002B6	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	16		SCH20		P61B-002B7	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	18		STD		P61B-001T4	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	20		STD		P61B-001JA	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	24		XS		P61B-002F2	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
541	0.5				P61B-003TZ	Flange NPT ASTM A105 Class 150 ASME B16.5 RF	
541	0.75				P61B-003U0	Flange NPT ASTM A105 Class 150 ASME B16.5 RF	
773	0.5		SCH160		P61B-003P9	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	0.75		SCH160		P61B-0037M	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	1		SCH160		P61B-0037L	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	1.5		SCH160		P61B-0037J	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	2		XS		P61B-001HW	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	3		STD		P61B-001LJ	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	4		STD		P61B-001MC	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	6		STD		P61B-001N2	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	8		SCH30		P61B-008S0	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	10		SCH30		P61B-003LX	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	12		SCH30		P61B-002TV	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	14		SCH20		P61B-002MR	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	16		SCH20		P61B-002MS	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	18		STD		P61B-001N9	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	20		STD		P61B-001NT	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	24		XS		P61B-002RA	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
797	0.75		SCH160		P61B-0065U	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
797	1		SCH160		P61B-0065V	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
797	1.5		SCH160		P61B-0065W	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
797	2		XS		P61B-0065C	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
797	3		STD		P61B-009W7	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	

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BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67B-000FH	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	0.75				P67B-000FJ	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	1				P67B-000FK	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	1.5				P67B-000FL	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	2				P67B-000FT	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	3				P67B-000FW	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	4				P67B-000FX	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	6				P67B-000FY	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	8				P67B-000FZ	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	10				P67B-000FM	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	12				P67B-000FN	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	14				P67B-000FP	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	16				P67B-000FR	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	18				P67B-000FS	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	20				P67B-000FU	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	24				P67B-000FV	Blind flange ASTM A105 Class 150 ASME B16.5 RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000L8	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000L9	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000LA	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000LB	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000LH	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000LL	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000LM	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	6				P73T-000LN	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	8				P73T-000LP	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	10				P73T-000LC	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	12				P73T-000LD	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	14				P73T-000LE	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	16				P73T-000LF	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	18				P73T-000LG	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	20				P73T-000LJ	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	24				P73T-000LK	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	0.5				P73T-000FT	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	0.75				P73T-000FU	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	3				P73T-000G5	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	4				P73T-000G6	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	6				P73T-000G7	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	8				P73T-000G8	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	10				P73T-000FX	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	12				P73T-000FY	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	14				P73T-000FZ	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	16				P73T-000G0	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	18				P73T-000G1	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

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GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
773	20				P73T-000G3	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	24				P73T-000G4	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
797	0.75				P75T-000JU	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	1				P75T-000JV	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	1.5				P75T-000JW	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	2				P75T-0008A	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	3				P75T-0008E	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-16				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	18-24				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
773	0.5-10				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
773	12-24				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
797	0.5-2				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
797	3-4				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81B-001ZT	Gate valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Amine service Moderate wet H2S service	
1	0.75				P81B-001ZU	Gate valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Amine service Moderate wet H2S service	
1	1				P81B-001ZV	Gate valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Amine service Moderate wet H2S service	
1	1.5				P81B-001ZW	Gate valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Amine service Moderate wet H2S service	
1	2				P81C-006HF	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Amine service Moderate wet H2S service	
1	3				P81C-006HG	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Amine service Moderate wet H2S service	
1	4				P81C-006HH	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Amine service Moderate wet H2S service	
1	6				P81C-006HJ	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Amine service Moderate wet H2S service	
1	8				P81C-006HK	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Amine service Moderate wet H2S service	
1	10				P81C-006HD	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Amine service Moderate wet H2S service	
1	12				P81C-006HE	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Amine service Moderate wet H2S service	
1	14				P81C-006HL	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Amine service Moderate wet H2S service	
1	16				P81C-006HM	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Amine service Moderate wet H2S service	
1	18				P81C-006HN	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Amine service Moderate wet H2S service	
1	20				P81C-006HP	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Amine service Moderate wet H2S service	
4608	0.75				P81B-002XU	Gate valve ASTM A105 Class 150 API 602 BW both sides w/ nipples BE - NPT ASTM A106-B XXS-nipple Trim number 12 BB-BG-OS&Y Handwheel operated Amine service Moderate wet H2S service	
4608	1				P81B-0038X	Gate valve ASTM A105 Class 150 API 602 BW both sides w/ nipples BE - NPT ASTM A106-B XXS-nipple Trim number 12 BB-BG-OS&Y Handwheel operated Amine service Moderate wet H2S service	
773	2				P81C-006KT	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Amine service Moderate wet H2S service	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82B-001HC	Globe valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Amine service Moderate wet H2S service	
1	0.75				P82B-001HD	Globe valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Amine service Moderate wet H2S service	
1	1				P82B-001HE	Globe valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Amine service Moderate wet H2S service	
1	1.5				P82B-001HF	Globe valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Amine service Moderate wet H2S service	
1	2				P82C-0034Y	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Amine service Moderate wet H2S service	
1	3				P82C-0034Z	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Amine service Moderate wet H2S service	
1	4				P82C-00350	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Amine service Moderate wet H2S service	

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CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83B-0016Y	Check valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Amine service Moderate wet H2S service	
1	0.75				P83B-0016Z	Check valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Amine service Moderate wet H2S service	
1	1				P83B-00170	Check valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Amine service Moderate wet H2S service	
1	1.5				P83B-00171	Check valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Amine service Moderate wet H2S service	
1	2				P83C-0030E	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Amine service Moderate wet H2S service	
1	3				P83C-0030F	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Amine service Moderate wet H2S service	
1	4				P83C-0030G	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Amine service Moderate wet H2S service	
1	6				P83C-0030H	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Amine service Moderate wet H2S service	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71B-0008A	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	0.75				P71B-0008B	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	1				P71B-0008C	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71B-0008D	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	2				P71B-0000P	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	3				P71B-0000N	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	4				P71B-0000M	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	6				P71B-0000L	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	8				P71B-0000R	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	10				P71B-0000K	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	12				P71B-0000J	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	

PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000AH	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	16				P72B-0000C	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	18				P72B-000AJ	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	20				P72B-000AK	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	24				P72B-000AL	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	

PADDLE SPACER (PS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000AT	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	16				P72B-0000B	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	18				P72B-000AU	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	20				P72B-000AV	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	24				P72B-000AW	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	

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BOLT TABLE (B_A2A4 , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	60	P80S-008SY		
0.75	4	0.500	65	P80S-008SZ		
1	4	0.500	70	P80S-008T0		
1.5	4	0.500	75	P80S-008T1		
2	4	0.625	85	P80S-0090A		
3	4	0.625	95	P80S-0090C		
4	8	0.625	95	P80S-0090C		
6	8	0.750	105	P80S-0090E		
8	8	0.750	110	P80S-0090F		
10	12	0.875	120	P80S-005Z9		
12	12	0.875	120	P80S-005Z9		
14	12	1.000	135	P80S-00619		
16	16	1.000	140	P80S-0061A		
18	16	1.125	150	P80S-0064L		
20	20	1.125	160	P80S-0064N		
24	20	1.250	175	P80S-00686		

BOLT TABLE (B_A2A4_773 , STUD ASME RF, OPTION CODE 773)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-008T0		
0.75	4	0.625	75	P80S-00908		
1	4	0.625	80	P80S-00909		
1.5	4	0.750	95	P80S-005Z4		
2	8	0.625	90	P80S-0090B		
3	8	0.750	110	P80S-0090F		
4	8	0.750	115	P80S-0090G		
6	12	0.750	125	P80S-0090J		
8	12	0.875	140	P80S-005ZD		
10	16	1.000	160	P80S-0061E		
12	16	1.125	175	P80S-0064S		
14	20	1.125	180	P80S-0064T		
16	20	1.250	190	P80S-00689		
18	24	1.250	200	P80S-0068B		
20	24	1.250	210	P80S-0068D		
24	24	1.500	235	P80S-006LB		

BOLT TABLE (B_A2A4_797 , STUD ASME RJ, OPTION CODE 797)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	110	P80S-0090F	R12	
0.75	4	0.750	115	P80S-0090G	R14	P75T-000JU
1	4	0.875	130	P80S-005ZB	R16	P75T-000JV
1.5	4	1.000	140	P80S-0061A	R20	P75T-000JW
2	8	0.875	150	P80S-005ZF	R24	P75T-0008A
3	8	1.125	180	P80S-0064T	R35	P75T-0008E
4	8	1.250	230	P80S-0068H	R39	
6	12	1.375	300		R46	
8	12	1.625	345		R50	
10	12	1.875	395		R54	
12	16	2.000	445		R58	
14	16	2.250	490		R63	
16	16	2.500	540		R67	
18	16	2.750	590		R71	
20	16	3.000	650		R75	
24	16	3.500	745		R79	

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BRANCH TABLE (T_A2A4)

RUN PIPE SIZE (in) \ BRANCH SIZE (in)	0.5	0.75	1	1.5	2	3	4	6	8	10	12	14	16	18	20	24
0.5	TS															
0.75		TS														
1		TR	TS													
1.5		TR	TR	TS												
2		L	TR	TR	TS											
3		L	L	TR	TR	TS										
4	L	L	L	L	TR	TR	TS									
6	L	L	L	L	L	TR	TR	TS								
8		L	L	L	L	L	TR	TR	TS							
10		L	L	L	L	L	TR	TR	TR	TS						
12		L	L	L	L	L	L	TR	TR	TR	TS					
14		L	L	L	L	L	L	TR	TR	TR	TR	TS				
16		L	L	L	L	L	L	TR	TR	TR	TR	TR	TS			
18		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TS		
20		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TR	TS	
24		L	L	L	L	L	L	L	9PD	TR	TR	TR	TR	TR	TR	TS

L : OUTLET
TS : STRAIGHT TEE
TR : REDUCING TEE
9PD : REINFORCING PAD 90 DEG

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PIPING CLASS

A2A5 REV NO. 2

Material	:	Killed CS
Rating	:	ASME CLASS 150
Flange Face	:	RF
C.A.(mm)	:	3.00
Gasket	:	Spiral Wound
Service	:	PROCESS - WET SEVERE SOUR SERVICE SUBJECT TO NACE + HIC STD + AMINES OR CAUSTIC - STRESS RELIEVED
Design Code	:	ASME B31.3
Heat Treatment	:	

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
5	BOLTING CONFIRMING TO B7M / 2HM SHALL BE USED UNDER CONDITIONS (A) DIRECT EXPOSURE TO SOUR ENVIRONMENTS (B) WHEN THE BOLTING WILL BE BURIED OR INSULATED
27	PWHT OF CARBON STEEL PIPING IN WET H2S, CAUSTIC AND AMINE SERVICES SHALL BE IN ACCORDANCE WITH SECTION 10.2, 10.3, AND 10.4 OF PROJECT SPECIFICATION 3550-8440-SP-0002 MATERIALS REQUIREMENTS FOR PRESSURISED EQUIPMENT AND PIPING. FOR CAUSTIC AND AMINE SERVICE THE FOLLOWING SHALL APPLY: - PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF ALL SITE PIPING FABRICATION WELDS IS REQUIRED FOR ALL WALL THICKNESSES. FOR MODERATE AND SEVERE WET H2S SERVICE THE FOLLOWING SHALL APPLY: PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF SITE FABRICATION CIRCUMFERENTIAL OR BRANCH WELDS IS NOT REQUIRED IF WELDS ARE MULTIPASS AND IN ACCORDANCE WITH PARA 10.2.12 OF PROJECT SPECIFICATION 3550-8440-SP-0002. FOR SERVICES MEETING THE WET H2S CRITERIA AND CAUSTIC OR AMINE CRITERIA THE MORE STRINGENT PWHT REQUIREMENT SHALL GOVERN.

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
541	NPT(F) (CA,F)
773	CLASS 300 (B,F,G)
4608	VALVE WITH NIPPLES (V)

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PIPING CLASS
A2A5 REV NO. 2

PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P01A-0010P	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	0.75		SCH160		P01A-0010R	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1		SCH160		P01A-0014M	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1.5		SCH160		P01A-0015J	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	2		XS		P01A-000YX	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	3		STD		P01A-000YM	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	4		STD		P01A-000YU	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	6		STD		P01A-000Z3	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	8		SCH30		P01A-001WL	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	10		SCH30		P01A-0016U	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	12		SCH30		P01A-0017K	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	14		SCH20		P01A-0017A	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	16		SCH20		P01A-0018E	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	18		STD		P01A-002CB	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	20		STD		P01A-002CC	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	24		XS		P01A-002MP	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	30		XS		P01A-008LF	Pipe ASTM A671 Grade CC60 Class 22 EFW ASME B36.10M/B36.19M BE Severe wet H2S service Amine service	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P02A-001Y8	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	0.75		SCH160		P02A-000V8	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1		SCH160		P02A-000V7	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1.5		SCH160		P02A-000V9	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	2		XS		P02A-000CP	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		STD		P02A-000CU	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		STD		P02A-000CZ	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		STD		P02A-000D6	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		SCH30		P02A-003DK	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	10		SCH30		P02A-000M3	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	12		SCH30		P02A-000M4	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	14		SCH20		P02A-000FX	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	16		SCH20		P02A-000GM	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	18		STD		P02A-0010H	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	20		STD		P02A-0010J	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	24		XS		P02A-000MB	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	30		XS		P02A-004E9	90 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius Severe wet H2S service Amine service	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P03A-001TC	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	0.75		SCH160		P03A-000RS	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1		SCH160		P03A-000RR	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1.5		SCH160		P03A-000RP	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	2		XS		P03A-000AS	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		STD		P03A-000AX	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		STD		P03A-000B1	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		STD		P03A-000B9	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		SCH30		P03A-003BE	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	10		SCH30		P03A-000JT	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	12		SCH30		P03A-000JU	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	14		SCH20		P03A-000DW	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	16		SCH20		P03A-000EM	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	18		STD		P03A-000X0	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	20		STD		P03A-000X1	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	24		XS		P03A-001E1	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	30		XS		P03A-004BF	45 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius Severe wet H2S service Amine service	

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STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P21A-003AW	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	0.75		SCH160		P21A-002B8	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1		SCH160		P21A-002B6	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5		SCH160		P21A-002B9	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2		XS		P21A-001CJ	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		STD		P21A-001CU	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		STD		P21A-001CW	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6		STD		P21A-001D2	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8		SCH30		P21A-003WV	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10		SCH30		P21A-00259	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12		SCH30		P21A-0025A	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14		SCH20		P21A-00206	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16		SCH20		P21A-0020X	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18		STD		P21A-002FT	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20		STD		P21A-002FU	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24		XS		P21A-002Y5	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	30		XS		P21A-004WJ	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Severe wet H2S service Amine service	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75	SCH160	SCH160	P24A-004B6	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.75	SCH160	SCH160	P24A-004B2	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	1	SCH160	SCH160	P24A-004BA	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	XS	SCH160	P24A-00GMB	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	XS	SCH160	P24A-005K9	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	STD	SCH160	P24A-00GMC	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	STD	XS	P24A-002HW	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P24A-002HY	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P24A-0021K	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	STD	P24A-0021A	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P24A-00229	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH30	STD	P24A-00JVH	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH30	STD	P24A-00JVG	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	SCH30	STD	P24A-00GNR	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	SCH30	STD	P24A-0060W	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	SCH30	SCH30	P24A-00J15	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	SCH30	STD	P24A-00HKT	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH30	SCH30	P24A-00M36	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH30	SCH30	P24A-003ET	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	SCH20	STD	P24A-00K0M	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	SCH20	SCH30	P24A-00M37	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	SCH20	SCH30	P24A-003ER	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	SCH20	SCH30	P24A-003ES	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	6	SCH20	STD	P24A-00GU4	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	SCH20	SCH30	P24A-00M38	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	SCH20	SCH30	P24A-00KSH	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	SCH20	SCH30	P24A-003XN	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	SCH20	SCH20	P24A-002XF	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	8	STD	SCH30	P24A-00NHT	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	10	STD	SCH30	P24A-00MH8	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	12	STD	SCH30	P24A-00HL1	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	14	STD	SCH20	P24A-00HL2	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	16	STD	SCH20	P24A-00HL3	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	8	STD	SCH30	P24A-00M3D	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	10	STD	SCH30	P24A-00M3C	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	12	STD	SCH30	P24A-00HKV	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	14	STD	SCH20	P24A-00HKW	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	16	STD	SCH20	P24A-00HKX	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	18	STD	STD	P24A-0020K	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	24	10	XS	SCH30	P24A-00NAF	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24	12	XS	SCH30	P24A-00NAG	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24	14	XS	SCH20	P24A-00NAH	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24	16	XS	SCH20	P24A-00KCK	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24	18	XS	STD	P24A-00884	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24	20	XS	STD	P24A-00885	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	30	10	XS	SCH30	P24A-00NHU	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Severe wet H2S service Amine service	
1	30	12	XS	SCH30	P24A-00NAJ	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Severe wet H2S service Amine service	
1	30	14	XS	SCH20	P24A-00NAK	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Severe wet H2S service Amine service	
1	30	16	XS	SCH20	P24A-00NAL	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Severe wet H2S service Amine service	
1	30	18	XS	STD	P24A-00NAM	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Severe wet H2S service Amine service	
1	30	20	XS	STD	P24A-00NAN	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Severe wet H2S service Amine service	
1	30	24	XS	XS	P24A-00NAP	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Severe wet H2S service Amine service	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	SCH160	P27A-004LZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.5	SCH160	SCH160	P27A-004M8	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.75	SCH160	SCH160	P27A-002T5	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.5	SCH160	SCH160	P27A-004MV	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.75	SCH160	SCH160	P27A-002T7	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	1	SCH160	SCH160	P27A-002T4	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	0.75	XS	SCH160	P27A-001LG	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	XS	SCH160	P27A-0033P	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	XS	SCH160	P27A-0033B	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	STD	SCH160	P27A-003M9	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	STD	XS	P27A-001MZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	1.5	STD	SCH160	P27A-003MA	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P27A-001N0	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P27A-00189	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	STD	P27A-001AZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P27A-001GW	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH30	STD	P27A-00ED2	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH30	STD	P27A-00ECY	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	SCH30	STD	P27A-003MK	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	SCH30	STD	P27A-003ML	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	SCH30	SCH30	P27A-004T9	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	SCH30	STD	P27A-003MN	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH30	SCH30	P27A-004XA	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH30	SCH30	P27A-0028K	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	SCH20	STD	P27A-00518	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	SCH20	SCH30	P27A-0052J	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	SCH20	SCH30	P27A-0028G	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	SCH20	SCH30	P27A-0028H	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	SCH20	SCH30	P27A-0059E	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	SCH20	SCH30	P27A-003NC	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	SCH20	SCH30	P27A-002GH	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	SCH20	SCH20	P27A-001V2	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	10	STD	SCH30	P27A-005BK	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	12	STD	SCH30	P27A-005DR	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	14	STD	SCH20	P27A-005FP	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	16	STD	SCH20	P27A-005HV	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	12	STD	SCH30	P27A-005LW	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	14	STD	SCH20	P27A-005NZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	16	STD	SCH20	P27A-005S7	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	18	STD	STD	P27A-0037R	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24	16	XS	SCH20	P27A-005Y9	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24	18	XS	STD	P27A-005ZZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24	20	XS	STD	P27A-0061M	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	30	20	XS	STD	P27A-00H0S	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Severe wet H2S service Amine service	
1	30	24	XS	XS	P27A-00H0T	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Severe wet H2S service Amine service	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	SCH160	P28A-007KG	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.5	SCH160	SCH160	P28A-007KH	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.75	SCH160	SCH160	P28A-002TU	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.5	SCH160	SCH160	P28A-007KJ	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.75	SCH160	SCH160	P28A-002TW	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	1	SCH160	SCH160	P28A-002TR	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	0.75	XS	SCH160	P28A-001LE	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	XS	SCH160	P28A-003M1	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	XS	SCH160	P28A-003M2	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	STD	SCH160	P28A-003M3	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	STD	XS	P28A-001N5	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	1.5	STD	SCH160	P28A-003M4	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P28A-001N6	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P28A-0018B	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	STD	P28A-001AS	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P28A-00182	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH30	STD	P28A-00BFY	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH30	STD	P28A-00BFZ	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	SCH30	STD	P28A-003MD	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	SCH30	STD	P28A-003ME	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	SCH30	SCH30	P28A-00A4S	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	SCH30	STD	P28A-003MG	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH30	SCH30	P28A-00BGV	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH30	SCH30	P28A-0027C	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	SCH20	STD	P28A-0096P	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	SCH20	SCH30	P28A-00DA3	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	SCH20	SCH30	P28A-00279	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	SCH20	SCH30	P28A-0027A	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	SCH20	SCH30	P28A-00DA4	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	SCH20	SCH30	P28A-003N6	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	SCH20	SCH30	P28A-002GB	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	SCH20	SCH20	P28A-001WG	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	10	STD	SCH30	P28A-0063T	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	12	STD	SCH30	P28A-0096W	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	14	STD	SCH20	P28A-0096X	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	16	STD	SCH20	P28A-0096Y	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	12	STD	SCH30	P28A-0096R	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	14	STD	SCH20	P28A-0096S	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	16	STD	SCH20	P28A-0096T	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	18	STD	STD	P28A-00377	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24	16	XS	SCH20	P28A-00C0Z	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24	18	XS	STD	P28A-0063W	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24	20	XS	STD	P28A-0063X	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	30	20	XS	STD	P28A-00E7Z	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Severe wet H2S service Amine service	
1	30	24	XS	XS	P28A-00E80	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Severe wet H2S service Amine service	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P29A-0037W	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	0.75		SCH160		P29A-0037X	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	1		SCH160		P29A-001VW	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5		SCH160		P29A-001VX	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	2		XS		P29A-00381	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	

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CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3		STD		P29A-00383	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	4		STD		P29A-00384	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	6		STD		P29A-00385	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	8		SCH30		P29A-003G7	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	10		SCH30		P29A-003BA	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	12		SCH30		P29A-0038V	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	14		SCH20		P29A-003BP	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	16		SCH20		P29A-0037Z	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	18		STD		P29A-003TU	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	20		STD		P29A-00382	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	24		XS		P29A-003BZ	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	30		XS		P29A-003C0	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
541	0.75				P29B-0000Y	Cap ASTM A105 Class 6000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P41A-000B9	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		XXS		P41A-000BA	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		XXS		P41A-000D8	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		XXS		P41A-000D9	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2	0.75	XS	SCH160	P31B-00CP7	Outlet ASTM A105 MSS SP-97 BW	
1	3	0.75	STD	SCH160	P31B-00CMT	Outlet ASTM A105 MSS SP-97 BW	
1	4	0.75	STD	SCH160	P31B-00CLT	Outlet ASTM A105 MSS SP-97 BW	
1	6	0.75	STD	SCH160	P31B-00CKK	Outlet ASTM A105 MSS SP-97 BW	
1	8	0.75	SCH30	SCH160	P31B-00ZH5	Outlet ASTM A105 MSS SP-97 BW	
1	10	0.75	SCH30	SCH160	P31B-00YEZ	Outlet ASTM A105 MSS SP-97 BW	
1	12	0.75	SCH30	SCH160	P31B-00SWH	Outlet ASTM A105 MSS SP-97 BW	
1	14	0.75	SCH20	SCH160	P31B-00X17	Outlet ASTM A105 MSS SP-97 BW	
1	16	0.75	SCH20	SCH160	P31B-00XS0	Outlet ASTM A105 MSS SP-97 BW	
1	18	0.75	STD	SCH160	P31B-00CPL	Outlet ASTM A105 MSS SP-97 BW	
1	20	0.75	STD	SCH160	P31B-00CNW	Outlet ASTM A105 MSS SP-97 BW	
1	24	0.75	XS	SCH160	P31B-007N3	Outlet ASTM A105 MSS SP-97 BW	
1	30	0.75	XS	SCH160	P31B-00CMF	Outlet ASTM A105 MSS SP-97 BW	
1	3	1	STD	SCH160	P31B-00B4J	Outlet ASTM A105 MSS SP-97 BW	
1	4	1	STD	SCH160	P31B-00B3M	Outlet ASTM A105 MSS SP-97 BW	
1	6	1	STD	SCH160	P31B-00AZC	Outlet ASTM A105 MSS SP-97 BW	
1	8	1	SCH30	SCH160	P31B-00ZH6	Outlet ASTM A105 MSS SP-97 BW	
1	10	1	SCH30	SCH160	P31B-00YF1	Outlet ASTM A105 MSS SP-97 BW	
1	12	1	SCH30	SCH160	P31B-00SWJ	Outlet ASTM A105 MSS SP-97 BW	
1	14	1	SCH20	SCH160	P31B-00X18	Outlet ASTM A105 MSS SP-97 BW	
1	16	1	SCH20	SCH160	P31B-00X8Z	Outlet ASTM A105 MSS SP-97 BW	
1	18	1	STD	SCH160	P31B-00BC9	Outlet ASTM A105 MSS SP-97 BW	
1	20	1	STD	SCH160	P31B-00B8M	Outlet ASTM A105 MSS SP-97 BW	
1	24	1	XS	SCH160	P31B-007MU	Outlet ASTM A105 MSS SP-97 BW	
1	30	1	XS	SCH160	P31B-00B45	Outlet ASTM A105 MSS SP-97 BW	
1	4	1.5	STD	SCH160	P31B-00BP4	Outlet ASTM A105 MSS SP-97 BW	
1	6	1.5	STD	SCH160	P31B-00BJH	Outlet ASTM A105 MSS SP-97 BW	
1	8	1.5	SCH30	SCH160	P31B-00BHM	Outlet ASTM A105 MSS SP-97 BW	
1	10	1.5	SCH30	SCH160	P31B-00AUR	Outlet ASTM A105 MSS SP-97 BW	
1	12	1.5	SCH30	SCH160	P31B-00CEJ	Outlet ASTM A105 MSS SP-97 BW	
1	14	1.5	SCH20	SCH160	P31B-00CDS	Outlet ASTM A105 MSS SP-97 BW	
1	16	1.5	SCH20	SCH160	P31B-00C9B	Outlet ASTM A105 MSS SP-97 BW	
1	18	1.5	STD	SCH160	P31B-00C4R	Outlet ASTM A105 MSS SP-97 BW	
1	20	1.5	STD	SCH160	P31B-00C3Y	Outlet ASTM A105 MSS SP-97 BW	
1	24	1.5	XS	SCH160	P31B-007MM	Outlet ASTM A105 MSS SP-97 BW	
1	30	1.5	XS	SCH160	P31B-00BYJ	Outlet ASTM A105 MSS SP-97 BW	

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OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	6	2	STD	XS	P31B-007SH	Outlet ASTM A105 MSS SP-97 BW	
1	8	2	SCH30	XS	P31B-00X36	Outlet ASTM A105 MSS SP-97 BW	
1	10	2	SCH30	XS	P31B-00NVF	Outlet ASTM A105 MSS SP-97 BW	
1	12	2	SCH30	XS	P31B-00NVL	Outlet ASTM A105 MSS SP-97 BW	
1	14	2	SCH20	XS	P31B-00TF9	Outlet ASTM A105 MSS SP-97 BW	
1	16	2	SCH20	XS	P31B-00TF8	Outlet ASTM A105 MSS SP-97 BW	
1	18	2	STD	XS	P31B-009FJ	Outlet ASTM A105 MSS SP-97 BW	
1	20	2	STD	XS	P31B-00994	Outlet ASTM A105 MSS SP-97 BW	
1	24	2	XS	XS	P31B-0092Y	Outlet ASTM A105 MSS SP-97 BW	
1	30	2	XS	XS	P31B-008P4	Outlet ASTM A105 MSS SP-97 BW	
1	8	3	SCH30	STD	P31B-00X37	Outlet ASTM A105 MSS SP-97 BW	
1	10	3	SCH30	STD	P31B-00NYK	Outlet ASTM A105 MSS SP-97 BW	
1	12	3	SCH30	STD	P31B-00NYR	Outlet ASTM A105 MSS SP-97 BW	
1	14	3	SCH20	STD	P31B-00UPH	Outlet ASTM A105 MSS SP-97 BW	
1	16	3	SCH20	STD	P31B-00TU2	Outlet ASTM A105 MSS SP-97 BW	
1	18	3	STD	STD	P31B-008MK	Outlet ASTM A105 MSS SP-97 BW	
1	20	3	STD	STD	P31B-008FA	Outlet ASTM A105 MSS SP-97 BW	
1	24	3	XS	STD	P31B-00894	Outlet ASTM A105 MSS SP-97 BW	
1	30	3	XS	STD	P31B-007WX	Outlet ASTM A105 MSS SP-97 BW	
1	12	4	SCH30	STD	P31B-00P1G	Outlet ASTM A105 MSS SP-97 BW	
1	14	4	SCH20	STD	P31B-00UPJ	Outlet ASTM A105 MSS SP-97 BW	
1	16	4	SCH20	STD	P31B-00TU3	Outlet ASTM A105 MSS SP-97 BW	
1	18	4	STD	STD	P31B-008KB	Outlet ASTM A105 MSS SP-97 BW	
1	20	4	STD	STD	P31B-008D3	Outlet ASTM A105 MSS SP-97 BW	
1	24	4	XS	STD	P31B-0086W	Outlet ASTM A105 MSS SP-97 BW	
1	30	4	XS	STD	P31B-007UR	Outlet ASTM A105 MSS SP-97 BW	
1	18	6	STD	STD	P31B-008RX	Outlet ASTM A105 MSS SP-97 BW	
1	20	6	STD	STD	P31B-008PZ	Outlet ASTM A105 MSS SP-97 BW	
1	24	6	XS	STD	P31B-008JC	Outlet ASTM A105 MSS SP-97 BW	
1	30	6	XS	STD	P31B-008BR	Outlet ASTM A105 MSS SP-97 BW	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30B-0002D	Plug ASTM A105 ASME B16.11 NPT Round head	
1	0.75				P30B-0002E	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1				P30B-0002F	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1.5				P30B-0002G	Plug ASTM A105 ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P61B-004V2	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	0.75		SCH160		P61B-0037H	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	1		SCH160		P61B-0037F	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	1.5		SCH160		P61B-0037N	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	2		XS		P61B-003NK	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	3		STD		P61B-001PW	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	4		STD		P61B-001R8	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	6		STD		P61B-001RT	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	8		SCH30		P61B-003FP	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	10		SCH30		P61B-003FS	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	12		SCH30		P61B-002TS	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	14		SCH20		P61B-002B6	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	16		SCH20		P61B-002B7	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	18		STD		P61B-001T4	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	20		STD		P61B-001JA	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	24		XS		P61B-002F2	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	30		XS		P61B-001SJ	Flange WN ASTM A105 Class 150 ASME B16.47 Series B RF	
541	0.5				P61B-003TZ	Flange NPT ASTM A105 Class 150 ASME B16.5 RF	
541	0.75				P61B-003U0	Flange NPT ASTM A105 Class 150 ASME B16.5 RF	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
773	0.5		SCH160		P61B-003P9	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	0.75		SCH160		P61B-0037M	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	1		SCH160		P61B-0037L	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	1.5		SCH160		P61B-0037J	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	2		XS		P61B-001HW	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	3		STD		P61B-001LJ	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	4		STD		P61B-001MC	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	6		STD		P61B-001N2	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	8		SCH30		P61B-008S0	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	10		SCH30		P61B-003LX	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	12		SCH30		P61B-002TV	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	14		SCH20		P61B-002MR	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	16		SCH20		P61B-002MS	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	18		STD		P61B-001N9	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	20		STD		P61B-001NT	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	24		XS		P61B-002RA	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	30		XS		P61B-001KT	Flange WN ASTM A105 Class 300 ASME B16.47 Series B RF	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67B-000FH	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	0.75				P67B-000FJ	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	1				P67B-000FK	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	1.5				P67B-000FL	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	2				P67B-000FT	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	3				P67B-000FW	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	4				P67B-000FX	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	6				P67B-000FY	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	8				P67B-000FZ	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	10				P67B-000FM	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	12				P67B-000FN	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	14				P67B-000FP	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	16				P67B-000FR	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	18				P67B-000FS	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	20				P67B-000FU	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	24				P67B-000FV	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	30				P67B-000G2	Blind flange ASTM A105 Class 150 ASME B16.47 Series B RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000L8	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000L9	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000LA	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000LB	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000LH	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000LL	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000LM	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	6				P73T-000LN	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	8				P73T-000LP	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	10				P73T-000LC	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	12				P73T-000LD	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	14				P73T-000LE	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	16				P73T-000LF	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	18				P73T-000LG	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

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GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	20				P73T-000LJ	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	24				P73T-000LK	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	30				P73T-000LT	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	0.5				P73T-000FT	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	0.75				P73T-000FU	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	3				P73T-000G5	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	4				P73T-000G6	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	6				P73T-000G7	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	8				P73T-000G8	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	10				P73T-000FX	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	12				P73T-000FY	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	14				P73T-000FZ	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	16				P73T-000G0	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	18				P73T-000G1	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	20				P73T-000G3	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	24				P73T-000G4	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	30				P73T-000H9	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-16				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	18-24				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
1	30				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
773	0.5-10				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
773	12-30				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81B-001ZX	Gate valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service	
1	0.75				P81B-001ZY	Gate valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service	
1	1				P81B-001ZZ	Gate valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service	
1	1.5				P81B-00200	Gate valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service	
1	2				P81C-006HT	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service	
1	3				P81C-006HU	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service	
1	4				P81C-006HV	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service	
1	6				P81C-006HW	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service	
1	8				P81C-006HX	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service	
1	10				P81C-006HR	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service	
1	12				P81C-006HS	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service	
1	14				P81C-006HY	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Severe wet H2S service Amine service	
1	16				P81C-006HZ	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Severe wet H2S service Amine service	
1	18				P81C-006J0	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Severe wet H2S service Amine service	

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GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	20				P81C-006J1	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Severe wet H2S service Amine service	
1	24				P81C-006J2	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Severe wet H2S service Amine service	
1	30				P81C-006J3	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.47-B RF Trim number 12 BB-BG-OS&Y Gear operated Severe wet H2S service Amine service	
4608	0.75				P81B-002XV	Gate valve ASTM A105 Class 150 API 602 BW both sides w/ nipples BE - NPT ASTM A106-B XXS-nipple Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82B-001HG	Globe valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service	
1	0.75				P82B-001HH	Globe valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service	
1	1				P82B-001HJ	Globe valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service	
1	1.5				P82B-001HK	Globe valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service	
1	2				P82C-00351	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service	
1	3				P82C-00352	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service	
1	4				P82C-00353	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service	
1	6				P82C-00354	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service	
1	8				P82C-00355	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83B-00172	Check valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Severe wet H2S service Amine service	
1	0.75				P83B-00173	Check valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Severe wet H2S service Amine service	
1	1				P83B-00174	Check valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Severe wet H2S service Amine service	
1	1.5				P83B-00175	Check valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Severe wet H2S service Amine service	
1	2				P83C-0030P	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service Amine service	
1	3				P83C-0030T	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service Amine service	
1	4				P83C-0030U	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service Amine service	
1	6				P83C-0030V	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service Amine service	
1	8				P83C-0030W	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service Amine service	
1	10				P83C-0030J	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service Amine service	
1	12				P83C-0030K	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service Amine service	
1	14				P83C-0030L	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service Amine service	
1	16				P83C-0030M	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service Amine service	
1	18				P83C-0030N	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service Amine service	
1	20				P83C-0030R	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service Amine service	
1	24				P83C-0030S	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service Amine service	

DP CHECK VALVE (XDP)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	30				P88C-002HY	Dual plate check valve ASTM A216 Grade WCB Class 150 API 594 Wafer-type ASME B16.47-B RF Trim number 12 Internal wetted parts SS316 Spring Inconel Retainerless-type Severe wet H2S service Amine service	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71B-0008A	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	0.75				P71B-0008B	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	1				P71B-0008C	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71B-0008D	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	2				P71B-0000P	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	

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SPECT BLANK (SB)							
OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3				P71B-0000N	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	4				P71B-0000M	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	6				P71B-0000L	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	8				P71B-0000R	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	10				P71B-0000K	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	12				P71B-0000J	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	

PADDLE BLANK (PB)							
OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000AH	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	16				P72B-0000C	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	18				P72B-000AJ	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	20				P72B-000AK	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	24				P72B-000AL	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	30				P72B-000AM	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	

PADDLE SPACER (PS)							
OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000AT	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	16				P72B-0000B	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	18				P72B-000AU	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	20				P72B-000AV	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	24				P72B-000AW	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	30				P72B-000AX	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	

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BOLT TABLE (B_A2A5 , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	60	P80S-008SY		
0.75	4	0.500	65	P80S-008SZ		
1	4	0.500	70	P80S-008T0		
1.5	4	0.500	75	P80S-008T1		
2	4	0.625	85	P80S-0090A		
3	4	0.625	95	P80S-0090C		
4	8	0.625	95	P80S-0090C		
6	8	0.750	105	P80S-0090E		
8	8	0.750	110	P80S-0090F		
10	12	0.875	120	P80S-005Z9		
12	12	0.875	120	P80S-005Z9		
14	12	1.000	135	P80S-00619		
16	16	1.000	140	P80S-0061A		
18	16	1.125	150	P80S-0064L		
20	20	1.125	160	P80S-0064N		
24	20	1.250	175	P80S-00686		
30	44	0.750	145	P80S-0090N		

BOLT TABLE (B_A2A5_773 , STUD ASME RF, OPTION CODE 773)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-008T0		
0.75	4	0.625	75	P80S-00908		
1	4	0.625	80	P80S-00909		
1.5	4	0.750	95	P80S-005Z4		
2	8	0.625	90	P80S-0090B		
3	8	0.750	110	P80S-0090F		
4	8	0.750	115	P80S-0090G		
6	12	0.750	125	P80S-0090J		
8	12	0.875	140	P80S-005ZD		
10	16	1.000	160	P80S-0061E		
12	16	1.125	175	P80S-0064S		
14	20	1.125	180	P80S-0064T		
16	20	1.250	190	P80S-00689		
18	24	1.250	200	P80S-0068B		
20	24	1.250	210	P80S-0068D		
24	24	1.500	235	P80S-006LB		
30	36	1.375	285	P80S-006HY		

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BRANCH TABLE (T_A2A5)

RUN PIPE SIZE (in) \ BRANCH SIZE (in)	0.5	0.75	1	1.5	2	3	4	6	8	10	12	14	16	18	20	24	30
0.5	TS																
0.75		TS															
1		TR	TS														
1.5		TR	TR	TS													
2		L	TR	TR	TS												
3		L	L	TR	TR	TS											
4	L	L	L	L	TR	TR	TS										
6	L	L	L	L	L	TR	TR	TS									
8		L	L	L	L	L	TR	TR	TS								
10		L	L	L	L	L	TR	TR	TR	TS							
12		L	L	L	L	L	L	TR	TR	TR	TS						
14		L	L	L	L	L	L	TR	TR	TR	TR	TS					
16		L	L	L	L	L	L	TR	TR	TR	TR	TR	TS				
18		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TS			
20		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TR	TS		
24		L	L	L	L	L	L	L	9PD	TR	TR	TR	TR	TR	TR	TS	
30		L	L	L	L	L	L	L	9PD	TR	TR	TR	TR	TR	TR	TR	TS

L : OUTLET
9PD : REINFORCING PAD 90 DEG
TR : REDUCING TEE
TS : STRAIGHT TEE

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PIPING CLASS

A2A501 REV NO. 2

Material : Killed CS
Rating : ASME CLASS 150
Flange Face : RF
C.A.(mm) : 3.00
Gasket : Spiral Wound
Service : PROCESS - WET SEVERE SOUR SERVICE SUBJECT TO NACE + HIC STD + AMINES OR CAUSTIC - STRESS RELIEVED
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
5	BOLTING CONFIRMING TO B7M / 2HM SHALL BE USED UNDER CONDITIONS (A) DIRECT EXPOSURE TO SOUR ENVIRONMENTS (B) WHEN THE BOLTING WILL BE BURIED OR INSULATED
27	PWHT OF CARBON STEEL PIPING IN WET H2S, CAUSTIC AND AMINE SERVICES SHALL BE IN ACCORDANCE WITH SECTION 10.2, 10.3, AND 10.4 OF PROJECT SPECIFICATION 3550-8440-SP-0002 MATERIALS REQUIREMENTS FOR PRESSURISED EQUIPMENT AND PIPING. FOR CAUSTIC AND AMINE SERVICE THE FOLLOWING SHALL APPLY: - PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF ALL SITE PIPING FABRICATION WELDS IS REQUIRED FOR ALL WALL THICKNESSES. FOR MODERATE AND SEVERE WET H2S SERVICE THE FOLLOWING SHALL APPLY: PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF SITE FABRICATION CIRCUMFERENTIAL OR BRANCH WELDS IS NOT REQUIRED IF WELDS ARE MULTIPASS AND IN ACCORDANCE WITH PARA 10.2.12 OF PROJECT SPECIFICATION 3550-8440-SP-0002. FOR SERVICES MEETING THE WET H2S CRITERIA AND CAUSTIC OR AMINE CRITERIA THE MORE STRINGENT PWHT REQUIREMENT SHALL GOVERN.

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
200	WITH JACK SCREW (FO)
541	NPT(F) (CA,F)
773	CLASS 300 (B,F,G,V)
4608	VALVE WITH NIPPLES (V)

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PIPING CLASS
A2A501 REV NO. 2

PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P01A-007D3	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE Severe wet H2S service Licensor-1	
1	0.75		SCH160		P01A-007D4	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE Severe wet H2S service Licensor-1	
1	1		SCH160		P01A-007D5	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE Severe wet H2S service Licensor-1	
1	1.5		SCH160		P01A-007D6	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE Severe wet H2S service Licensor-1	
1	2		XS		P01A-007DC	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Severe wet H2S service Licensor-1	
1	3		STD		P01A-007DF	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Severe wet H2S service Licensor-1	
1	4		STD		P01A-007DG	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Severe wet H2S service Licensor-1	
1	6		STD		P01A-007DH	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Severe wet H2S service Licensor-1	
1	8		SCH30		P01A-008NJ	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Severe wet H2S service Licensor-1	
1	10		SCH30		P01A-008NG	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Severe wet H2S service Licensor-1	
1	12		SCH30		P01A-007DL	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Severe wet H2S service Licensor-1	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P02A-003V5	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	0.75		SCH160		P02A-003V6	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	1		SCH160		P02A-003V7	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	1.5		SCH160		P02A-003V8	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	2		XS		P02A-003VE	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	3		STD		P02A-003VH	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	4		STD		P02A-003VJ	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	6		STD		P02A-003VK	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	8		SCH30		P02A-004FZ	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	10		SCH30		P02A-004FX	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	12		SCH30		P02A-003VN	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P03A-003SU	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	0.75		SCH160		P03A-003SV	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	1		SCH160		P03A-003SW	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	1.5		SCH160		P03A-003SX	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	2		XS		P03A-003T3	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	3		STD		P03A-003T6	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	4		STD		P03A-003T7	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	6		STD		P03A-003T8	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	8		SCH30		P03A-004D7	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	10		SCH30		P03A-004D5	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	12		SCH30		P03A-003TB	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P21A-004CL	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	0.75		SCH160		P21A-004CM	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	1		SCH160		P21A-004CN	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	1.5		SCH160		P21A-004CP	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	2		XS		P21A-004CW	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	3		STD		P21A-004CZ	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	4		STD		P21A-004D0	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	6		STD		P21A-004D1	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	8		SCH30		P21A-004YD	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	

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STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	10		SCH30		P21A-004YB	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	12		SCH30		P21A-004D4	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75	SCH160	SCH160	P24A-00KEA	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	1.5	0.75	SCH160	SCH160	P24A-00KEB	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	1.5	1	SCH160	SCH160	P24A-00KEC	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	2	1	XS	SCH160	P24A-00KED	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	2	1.5	XS	SCH160	P24A-00KEE	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	3	1.5	STD	SCH160	P24A-00KEF	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	3	2	STD	XS	P24A-00KEG	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	4	2	STD	XS	P24A-00KEH	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	4	3	STD	STD	P24A-00KEJ	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	6	3	STD	STD	P24A-00KEK	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	6	4	STD	STD	P24A-00KEL	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	8	4	SCH30	STD	P24A-00NMJ	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	8	6	SCH30	STD	P24A-00NMK	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	10	4	SCH30	STD	P24A-00NML	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	10	6	SCH30	STD	P24A-00NMM	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	10	8	SCH30	SCH30	P24A-00NMN	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	12	6	SCH30	STD	P24A-00KFT	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	12	8	SCH30	SCH30	P24A-00NMR	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	12	10	SCH30	SCH30	P24A-00NMP	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	SCH160	P27A-00EY1	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	1	0.5	SCH160	SCH160	P27A-00EY2	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	1	0.75	SCH160	SCH160	P27A-00EY3	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	1.5	0.5	SCH160	SCH160	P27A-00EY4	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	1.5	0.75	SCH160	SCH160	P27A-00EY5	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	1.5	1	SCH160	SCH160	P27A-00EY6	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	2	0.75	XS	SCH160	P27A-00EY7	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	2	1	XS	SCH160	P27A-00EY8	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	2	1.5	XS	SCH160	P27A-00EY9	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	3	1.5	STD	SCH160	P27A-00EYA	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	3	2	STD	XS	P27A-00EYB	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	4	1.5	STD	SCH160	P27A-00EYC	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	4	2	STD	XS	P27A-00EYD	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	4	3	STD	STD	P27A-00EYE	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	6	3	STD	STD	P27A-00EYF	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	6	4	STD	STD	P27A-00EYG	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	8	4	SCH30	STD	P27A-00H7Y	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	8	6	SCH30	STD	P27A-00H7Z	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	10	4	SCH30	STD	P27A-00H80	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	10	6	SCH30	STD	P27A-00H81	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	10	8	SCH30	SCH30	P27A-00H82	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	12	6	SCH30	STD	P27A-00EZH	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	12	8	SCH30	SCH30	P27A-00H84	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	12	10	SCH30	SCH30	P27A-00H83	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	SCH160	P28A-00C21	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	1	0.5	SCH160	SCH160	P28A-00C22	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	1	0.75	SCH160	SCH160	P28A-00C23	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	1.5	0.5	SCH160	SCH160	P28A-00C24	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	1.5	0.75	SCH160	SCH160	P28A-00C25	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	

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ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5	1	SCH160	SCH160	P28A-00C26	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	2	0.75	XS	SCH160	P28A-00C27	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	2	1	XS	SCH160	P28A-00C28	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	2	1.5	XS	SCH160	P28A-00C29	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	3	1.5	STD	SCH160	P28A-00C2A	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	3	2	STD	XS	P28A-00C2B	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	4	1.5	STD	SCH160	P28A-00C2C	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	4	2	STD	XS	P28A-00C2D	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	4	3	STD	STD	P28A-00C2E	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	6	3	STD	STD	P28A-00C2F	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	6	4	STD	STD	P28A-00C2G	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	8	4	SCH30	STD	P28A-00EFM	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	8	6	SCH30	STD	P28A-00EFN	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	10	4	SCH30	STD	P28A-00EFP	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	10	6	SCH30	STD	P28A-00EFR	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	10	8	SCH30	SCH30	P28A-00EFS	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	12	6	SCH30	STD	P28A-00C3H	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	12	8	SCH30	SCH30	P28A-00EFU	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	12	10	SCH30	SCH30	P28A-00EFT	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P29A-00374	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	0.75		SCH160		P29A-00375	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	1		SCH160		P29A-00376	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	1.5		SCH160		P29A-00377	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	2		XS		P29A-0037D	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	3		STD		P29A-0037G	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	4		STD		P29A-0037H	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	6		STD		P29A-0037J	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	8		SCH30		P29A-003SW	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	10		SCH30		P29A-003ST	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	12		SCH30		P29A-0037M	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
541	0.75				P29B-0006U	Cap ASTM A105 Class 6000 ASME B16.11 NPT Severe wet H2S service Licensor-1	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P41A-0019H	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Severe wet H2S service Licensor-1	
1	0.75		XXS		P41A-0019J	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Severe wet H2S service Licensor-1	
1	1		XXS		P41A-0018F	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Severe wet H2S service Licensor-1	
1	1.5		XXS		P41A-0018G	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Severe wet H2S service Licensor-1	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2	0.75	XS	SCH160	P31B-00XX6	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	3	0.75	STD	SCH160	P31B-00XX7	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	4	0.75	STD	SCH160	P31B-00XX9	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	6	0.75	STD	SCH160	P31B-00XXC	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	8	0.75	SCH30	SCH160	P31B-010WU	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	10	0.75	SCH30	SCH160	P31B-010WZ	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	12	0.75	SCH30	SCH160	P31B-00XZ7	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	3	1	STD	SCH160	P31B-00XX8	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	4	1	STD	SCH160	P31B-00XXA	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	6	1	STD	SCH160	P31B-00XXD	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	8	1	SCH30	SCH160	P31B-010WV	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	10	1	SCH30	SCH160	P31B-010X0	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	12	1	SCH30	SCH160	P31B-00XZ8	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	

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OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	4	1.5	STD	SCH160	P31B-00XXB	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	6	1.5	STD	SCH160	P31B-00XXE	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	8	1.5	SCH30	SCH160	P31B-010WW	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	10	1.5	SCH30	SCH160	P31B-010X1	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	12	1.5	SCH30	SCH160	P31B-00XZ9	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	6	2	STD	XS	P31B-00XXF	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	8	2	SCH30	XS	P31B-010WX	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	10	2	SCH30	XS	P31B-010X2	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	12	2	SCH30	XS	P31B-00XZA	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	8	3	SCH30	STD	P31B-010WY	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	10	3	SCH30	STD	P31B-010X3	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	12	3	SCH30	STD	P31B-00XZB	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	12	4	SCH30	STD	P31B-00XZC	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30B-0006M	Plug ASTM A105 ASME B16.11 NPT Round head Severe wet H2S service Licensor-1	
1	0.75				P30B-0006N	Plug ASTM A105 ASME B16.11 NPT Round head Severe wet H2S service Licensor-1	
1	1				P30B-0006K	Plug ASTM A105 ASME B16.11 NPT Round head Severe wet H2S service Licensor-1	
1	1.5				P30B-0006L	Plug ASTM A105 ASME B16.11 NPT Round head Severe wet H2S service Licensor-1	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P61B-00A5E	Flange WN ASTM A105 Class 150 ASME B16.5 RF Severe wet H2S service Licensor-1	
1	0.75		SCH160		P61B-00A5F	Flange WN ASTM A105 Class 150 ASME B16.5 RF Severe wet H2S service Licensor-1	
1	1		SCH160		P61B-00A5G	Flange WN ASTM A105 Class 150 ASME B16.5 RF Severe wet H2S service Licensor-1	
1	1.5		SCH160		P61B-00A5H	Flange WN ASTM A105 Class 150 ASME B16.5 RF Severe wet H2S service Licensor-1	
1	2		XS		P61B-00A5P	Flange WN ASTM A105 Class 150 ASME B16.5 RF Severe wet H2S service Licensor-1	
1	3		STD		P61B-00A5T	Flange WN ASTM A105 Class 150 ASME B16.5 RF Severe wet H2S service Licensor-1	
1	4		STD		P61B-00A5U	Flange WN ASTM A105 Class 150 ASME B16.5 RF Severe wet H2S service Licensor-1	
1	6		STD		P61B-00A5V	Flange WN ASTM A105 Class 150 ASME B16.5 RF Severe wet H2S service Licensor-1	
1	8		SCH30		P61B-00BT6	Flange WN ASTM A105 Class 150 ASME B16.5 RF Severe wet H2S service Licensor-1	
1	10		SCH30		P61B-00BT4	Flange WN ASTM A105 Class 150 ASME B16.5 RF Severe wet H2S service Licensor-1	
1	12		SCH30		P61B-00A5K	Flange WN ASTM A105 Class 150 ASME B16.5 RF Severe wet H2S service Licensor-1	
541	0.5				P61B-00DLL	Flange NPT ASTM A105 Class 150 ASME B16.5 RF Severe wet H2S service Licensor-1	
541	0.75				P61B-00CXT	Flange NPT ASTM A105 Class 150 ASME B16.5 RF Severe wet H2S service Licensor-1	
773	0.5		SCH160		P61B-00A4F	Flange WN ASTM A105 Class 300 ASME B16.5 RF Severe wet H2S service Licensor-1	
773	0.75		SCH160		P61B-00A4G	Flange WN ASTM A105 Class 300 ASME B16.5 RF Severe wet H2S service Licensor-1	
773	1		SCH160		P61B-00A4H	Flange WN ASTM A105 Class 300 ASME B16.5 RF Severe wet H2S service Licensor-1	
773	1.5		SCH160		P61B-00A4J	Flange WN ASTM A105 Class 300 ASME B16.5 RF Severe wet H2S service Licensor-1	
773	2		XS		P61B-00A4R	Flange WN ASTM A105 Class 300 ASME B16.5 RF Severe wet H2S service Licensor-1	
773	3		STD		P61B-00A4U	Flange WN ASTM A105 Class 300 ASME B16.5 RF Severe wet H2S service Licensor-1	
773	4		STD		P61B-00A4V	Flange WN ASTM A105 Class 300 ASME B16.5 RF Severe wet H2S service Licensor-1	
773	6		STD		P61B-00A4W	Flange WN ASTM A105 Class 300 ASME B16.5 RF Severe wet H2S service Licensor-1	
773	8		SCH30		P61B-00BTA	Flange WN ASTM A105 Class 300 ASME B16.5 RF Severe wet H2S service Licensor-1	
773	10		SCH30		P61B-00BT8	Flange WN ASTM A105 Class 300 ASME B16.5 RF Severe wet H2S service Licensor-1	
773	12		SCH30		P61B-00A63	Flange WN ASTM A105 Class 300 ASME B16.5 RF Severe wet H2S service Licensor-1	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67B-002HN	Blind flange ASTM A105 Class 150 ASME B16.5 RF Severe wet H2S service Licensor-1	
1	0.75				P67B-002HP	Blind flange ASTM A105 Class 150 ASME B16.5 RF Severe wet H2S service Licensor-1	
1	1				P67B-002HR	Blind flange ASTM A105 Class 150 ASME B16.5 RF Severe wet H2S service Licensor-1	
1	1.5				P67B-002HS	Blind flange ASTM A105 Class 150 ASME B16.5 RF Severe wet H2S service Licensor-1	
1	2				P67B-002HY	Blind flange ASTM A105 Class 150 ASME B16.5 RF Severe wet H2S service Licensor-1	
1	3				P67B-002J1	Blind flange ASTM A105 Class 150 ASME B16.5 RF Severe wet H2S service Licensor-1	
1	4				P67B-002J2	Blind flange ASTM A105 Class 150 ASME B16.5 RF Severe wet H2S service Licensor-1	
1	6				P67B-002J3	Blind flange ASTM A105 Class 150 ASME B16.5 RF Severe wet H2S service Licensor-1	
1	8				P67B-002J4	Blind flange ASTM A105 Class 150 ASME B16.5 RF Severe wet H2S service Licensor-1	

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BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	10				P67B-002HT	Blind flange ASTM A105 Class 150 ASME B16.5 RF Severe wet H2S service Licensor-1	
1	12				P67B-002HU	Blind flange ASTM A105 Class 150 ASME B16.5 RF Severe wet H2S service Licensor-1	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000L8	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000L9	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000LA	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000LB	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000LH	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000LL	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000LM	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	6				P73T-000LN	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	8				P73T-000LP	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	10				P73T-000LC	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	12				P73T-000LD	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	0.5				P73T-000FT	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	0.75				P73T-000FU	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	3				P73T-000G5	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	4				P73T-000G6	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	6				P73T-000G7	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	8				P73T-000G8	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	10				P73T-000FX	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	12				P73T-000FY	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-12				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
773	0.5-10				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
773	12				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81B-002SD	Gate valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service Licensor-1	
1	0.75				P81B-002SE	Gate valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service Licensor-1	
1	1				P81B-002SF	Gate valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service Licensor-1	
1	1.5				P81B-002SG	Gate valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service Licensor-1	
1	2				P81C-008DU	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service Licensor-1	
1	3				P81C-008DV	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service Licensor-1	
1	4				P81C-008DW	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service Licensor-1	
1	6				P81C-008DX	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service Licensor-1	
1	8				P81C-008DY	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service Licensor-1	
1	10				P81C-008DS	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service Licensor-1	

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GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	12				P81C-008DT	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service Licensor-1	
4608	0.75				P81B-002XW	Gate valve ASTM A105 Class 150 API 602 BW both sides w/ nipples BE - NPT ASTM A106-B XXS-nipple Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service Licensor-1	
773	2				P81C-006L9	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service Licensor-1	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82B-00209	Globe valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service Licensor-1	
1	0.75				P82B-0020A	Globe valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service Licensor-1	
1	1				P82B-0020B	Globe valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service Licensor-1	
1	1.5				P82B-0020C	Globe valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service Licensor-1	
1	2				P82C-0043A	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service Licensor-1	
1	3				P82C-0043B	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service Licensor-1	
1	4				P82C-0043C	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service Licensor-1	
1	6				P82C-0043D	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service Licensor-1	
1	8				P82C-0043E	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service Licensor-1	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83B-001H7	Check valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Severe wet H2S service Amine service Licensor-1	
1	0.75				P83B-001H8	Check valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Severe wet H2S service Amine service Licensor-1	
1	1				P83B-001H9	Check valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Severe wet H2S service Amine service Licensor-1	
1	1.5				P83B-001HA	Check valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Severe wet H2S service Amine service Licensor-1	
1	2				P83C-003R1	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service Amine service Licensor-1	
1	3				P83C-003R2	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service Amine service Licensor-1	
1	4				P83C-003R3	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service Amine service Licensor-1	
1	6				P83C-003R4	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service Amine service Licensor-1	
1	8				P83C-003R5	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service Amine service Licensor-1	
1	10				P83C-003PZ	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service Amine service Licensor-1	
1	12				P83C-003R0	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service Amine service Licensor-1	

ORIFICE FLANGE (FO)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2		XS		P66B-0087M	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Severe wet H2S service Licensor-1	
1	3		STD		P66B-0087N	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Severe wet H2S service Licensor-1	
1	4		STD		P66B-0087P	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Severe wet H2S service Licensor-1	
1	6		STD		P66B-0087R	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Severe wet H2S service Licensor-1	
1	8		SCH30		P66B-008RC	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Severe wet H2S service Licensor-1	
1	10		SCH30		P66B-008RA	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Severe wet H2S service Licensor-1	
1	12		SCH30		P66B-008RB	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Severe wet H2S service Licensor-1	
200	2		XS		P66B-0087U	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Severe wet H2S service with Jack screw Licensor-1	
200	3		STD		P66B-0087V	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Severe wet H2S service with Jack screw Licensor-1	
200	4		STD		P66B-0087W	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Severe wet H2S service with Jack screw Licensor-1	
200	6		STD		P66B-0087X	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Severe wet H2S service with Jack screw Licensor-1	
200	8		SCH30		P66B-008RF	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Severe wet H2S service with Jack screw Licensor-1	
200	10		SCH30		P66B-008RD	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Severe wet H2S service with Jack screw Licensor-1	
200	12		SCH30		P66B-008RE	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Severe wet H2S service with Jack screw Licensor-1	

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SPECT BLANK (SB)							
OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71B-0009T	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service Licensor-1	
1	0.75				P71B-0009U	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service Licensor-1	
1	1				P71B-0009V	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service Licensor-1	
1	1.5				P71B-0009W	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service Licensor-1	
1	2				P71B-0009Z	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service Licensor-1	
1	3				P71B-000A0	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service Licensor-1	
1	4				P71B-000A1	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service Licensor-1	
1	6				P71B-000A2	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service Licensor-1	
1	8				P71B-000A3	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service Licensor-1	
1	10				P71B-0009X	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service Licensor-1	
1	12				P71B-0009Y	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service Licensor-1	

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BOLT TABLE (B_A2A501 , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	60	P80S-008SY		
0.75	4	0.500	65	P80S-008SZ		
1	4	0.500	70	P80S-008T0		
1.5	4	0.500	75	P80S-008T1		
2	4	0.625	85	P80S-0090A		
3	4	0.625	95	P80S-0090C		
4	8	0.625	95	P80S-0090C		
6	8	0.750	105	P80S-0090E		
8	8	0.750	110	P80S-0090F		
10	12	0.875	120	P80S-005Z9		
12	12	0.875	120	P80S-005Z9		

BOLT TABLE (B_A2A501_773 , STUD ASME RF, OPTION CODE 773)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-008T0		
0.75	4	0.625	75	P80S-00908		
1	4	0.625	80	P80S-00909		
1.5	4	0.750	95	P80S-005Z4		
2	8	0.625	90	P80S-0090B		
3	8	0.750	110	P80S-0090F		
4	8	0.750	115	P80S-0090G		
6	12	0.750	125	P80S-0090J		
8	12	0.875	140	P80S-005ZD		
10	16	1.000	160	P80S-0061E		
12	16	1.125	175	P80S-0064S		

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BRANCH TABLE (T_A2A501)

RUN PIPE SIZE (in) \ BRANCH SIZE (in)	0.5	0.75	1	1.5	2	3	4	6	8	10	12
0.5	TS										
0.75		TS									
1		TR	TS								
1.5		TR	TR	TS							
2		L	TR	TR	TS						
3		L	L	TR	TR	TS					
4	L	L	L	L	TR	TR	TS				
6	L	L	L	L	L	TR	TR	TS			
8		L	L	L	L	L	TR	TR	TS		
10		L	L	L	L	L	TR	TR	TR	TS	
12		L	L	L	L	L	L	TR	TR	TR	TS

TR : REDUCING TEE
TS : STRAIGHT TEE
L : OUTLET

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Material : Killed CS
Rating : ASME CLASS 150
Flange Face : RF
C.A.(mm) : 3.00
Gasket : Spiral Wound
Service : PROCESS - WET SEVERE SOUR SERVICE SUBJECT TO NACE + HIC STD + AMINES OR CAUSTIC - STRESS RELIEVED
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
5	BOLTING CONFIRMING TO B7M / 2HM SHALL BE USED UNDER CONDITIONS (A) DIRECT EXPOSURE TO SOUR ENVIRONMENTS (B) WHEN THE BOLTING WILL BE BURIED OR INSULATED
27	PWHT OF CARBON STEEL PIPING IN WET H2S, CAUSTIC AND AMINE SERVICES SHALL BE IN ACCORDANCE WITH SECTION 10.2, 10.3, AND 10.4 OF PROJECT SPECIFICATION 3550-8440-SP-0002 MATERIALS REQUIREMENTS FOR PRESSURISED EQUIPMENT AND PIPING. FOR CAUSTIC AND AMINE SERVICE THE FOLLOWING SHALL APPLY: - PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF ALL SITE PIPING FABRICATION WELDS IS REQUIRED FOR ALL WALL THICKNESSES. FOR MODERATE AND SEVERE WET H2S SERVICE THE FOLLOWING SHALL APPLY: PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF SITE FABRICATION CIRCUMFERENTIAL OR BRANCH WELDS IS NOT REQUIRED IF WELDS ARE MULTIPASS AND IN ACCORDANCE WITH PARA 10.2.12 OF PROJECT SPECIFICATION 3550-8440-SP-0002. FOR SERVICES MEETING THE WET H2S CRITERIA AND CAUSTIC OR AMINE CRITERIA THE MORE STRINGENT PWHT REQUIREMENT SHALL GOVERN.

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
200	WITH JACK SCREW (FO)
541	NPT(F) (CA,F)
773	CLASS 300 (B,F,G)
4608	VALVE WITH NIPPLES (V)

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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P01A-007DV	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE Severe wet H2S service Licensor-3	
1	0.75		SCH160		P01A-007DW	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE Severe wet H2S service Licensor-3	
1	1		SCH160		P01A-007DX	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE Severe wet H2S service Licensor-3	
1	1.5		SCH160		P01A-007DY	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE Severe wet H2S service Licensor-3	
1	2		XS		P01A-007E4	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Severe wet H2S service Licensor-3	
1	3		STD		P01A-007E7	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Severe wet H2S service Licensor-3	
1	4		STD		P01A-007E8	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Severe wet H2S service Licensor-3	
1	6		STD		P01A-007E9	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Severe wet H2S service Licensor-3	
1	8		SCH30		P01A-008LK	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Severe wet H2S service Licensor-3	
1	10		SCH30		P01A-008LG	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Severe wet H2S service Licensor-3	
1	12		SCH30		P01A-007E0	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Severe wet H2S service Licensor-3	
1	14		SCH20		P01A-007E1	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Severe wet H2S service Licensor-3	
1	16		SCH20		P01A-007E2	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Severe wet H2S service Licensor-3	
1	18		STD		P01A-008LH	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Severe wet H2S service Licensor-3	
1	20		STD		P01A-007E5	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Severe wet H2S service Licensor-3	
1	24		XS		P01A-008LJ	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Severe wet H2S service Licensor-3	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P02A-003VX	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-3	
1	0.75		SCH160		P02A-003VY	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-3	
1	1		SCH160		P02A-003VZ	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-3	
1	1.5		SCH160		P02A-003W0	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-3	
1	2		XS		P02A-003W6	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-3	
1	3		STD		P02A-003W9	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-3	
1	4		STD		P02A-003WA	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-3	
1	6		STD		P02A-003WB	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-3	
1	8		SCH30		P02A-004ED	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-3	
1	10		SCH30		P02A-004EA	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-3	
1	12		SCH30		P02A-003W2	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-3	
1	14		SCH20		P02A-003W3	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-3	
1	16		SCH20		P02A-003W4	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-3	
1	18		STD		P02A-004EB	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-3	
1	20		STD		P02A-003W7	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-3	
1	24		XS		P02A-004EC	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-3	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P03A-003TK	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-3	
1	0.75		SCH160		P03A-003TL	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-3	
1	1		SCH160		P03A-003TM	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-3	
1	1.5		SCH160		P03A-003TN	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-3	
1	2		XS		P03A-003TV	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-3	
1	3		STD		P03A-003TY	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-3	
1	4		STD		P03A-003TZ	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-3	
1	6		STD		P03A-003U0	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-3	
1	8		SCH30		P03A-004BK	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-3	
1	10		SCH30		P03A-004BG	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-3	
1	12		SCH30		P03A-003TR	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-3	

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45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14		SCH20		P03A-003TS	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-3	
1	16		SCH20		P03A-003TT	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-3	
1	18		STD		P03A-004BH	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-3	
1	20		STD		P03A-003TW	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-3	
1	24		XS		P03A-004BJ	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-3	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P21A-004DC	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	0.75		SCH160		P21A-004DD	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	1		SCH160		P21A-004DE	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	1.5		SCH160		P21A-004DF	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	2		XS		P21A-004DM	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	3		STD		P21A-004DR	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	4		STD		P21A-004DS	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	6		STD		P21A-004DT	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	8		SCH30		P21A-004WN	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	10		SCH30		P21A-004WK	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	12		SCH30		P21A-004DH	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	14		SCH20		P21A-004DJ	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	16		SCH20		P21A-004DK	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	18		STD		P21A-004WL	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	20		STD		P21A-004DN	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	24		XS		P21A-004WM	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75	SCH160	SCH160	P24A-00KH2	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	1.5	0.75	SCH160	SCH160	P24A-00KH3	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	1.5	1	SCH160	SCH160	P24A-00KH4	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	2	1	XS	SCH160	P24A-00KH5	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	2	1.5	XS	SCH160	P24A-00KH6	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	3	1.5	STD	SCH160	P24A-00KH7	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	3	2	STD	XS	P24A-00KH8	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	4	2	STD	XS	P24A-00KH9	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	4	3	STD	STD	P24A-00KHA	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	6	3	STD	STD	P24A-00KHB	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	6	4	STD	STD	P24A-00KHC	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	8	4	SCH30	STD	P24A-00NAR	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	8	6	SCH30	STD	P24A-00NAS	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	10	4	SCH30	STD	P24A-00NAT	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	10	6	SCH30	STD	P24A-00NAU	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	10	8	SCH30	SCH30	P24A-00NAV	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	12	6	SCH30	STD	P24A-00KHL	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	12	8	SCH30	SCH30	P24A-00NAX	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	12	10	SCH30	SCH30	P24A-00NAW	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	14	6	SCH20	STD	P24A-00KHR	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	14	8	SCH20	SCH30	P24A-00NAZ	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	14	10	SCH20	SCH30	P24A-00NAY	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	14	12	SCH20	SCH30	P24A-00KHP	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	16	6	SCH20	STD	P24A-00KHW	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	16	8	SCH20	SCH30	P24A-00NB1	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	16	10	SCH20	SCH30	P24A-00NB0	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	16	12	SCH20	SCH30	P24A-00KHU	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	16	14	SCH20	SCH20	P24A-00KHV	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	18	8	STD	SCH30	P24A-00NHV	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	18	10	STD	SCH30	P24A-00NB2	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	

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REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	18	12	STD	SCH30	P24A-00NB3	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	18	14	STD	SCH20	P24A-00NB4	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	18	16	STD	SCH20	P24A-00NB5	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	20	8	STD	SCH30	P24A-00NB8	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	20	10	STD	SCH30	P24A-00NB6	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	20	12	STD	SCH30	P24A-00KJ4	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	20	14	STD	SCH20	P24A-00KJ5	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	20	16	STD	SCH20	P24A-00KJ6	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	20	18	STD	STD	P24A-00NB7	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	24	10	XS	SCH30	P24A-00NB9	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	24	12	XS	SCH30	P24A-00NBA	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	24	14	XS	SCH20	P24A-00NBB	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	24	16	XS	SCH20	P24A-00NBC	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	24	18	XS	STD	P24A-00NBD	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	24	20	XS	STD	P24A-00NBE	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	SCH160	P27A-00F07	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	1	0.5	SCH160	SCH160	P27A-00F08	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	1	0.75	SCH160	SCH160	P27A-00F09	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	1.5	0.5	SCH160	SCH160	P27A-00F0A	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	1.5	0.75	SCH160	SCH160	P27A-00F0B	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	1.5	1	SCH160	SCH160	P27A-00F0C	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	2	0.75	XS	SCH160	P27A-00F0D	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	2	1	XS	SCH160	P27A-00F0E	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	2	1.5	XS	SCH160	P27A-00F0F	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	3	1.5	STD	SCH160	P27A-00F0G	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	3	2	STD	XS	P27A-00F0H	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	4	1.5	STD	SCH160	P27A-00F0J	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	4	2	STD	XS	P27A-00F0K	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	4	3	STD	STD	P27A-00F0L	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	6	3	STD	STD	P27A-00F0M	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	6	4	STD	STD	P27A-00F0N	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	8	4	SCH30	STD	P27A-00H0U	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	8	6	SCH30	STD	P27A-00H0V	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	10	4	SCH30	STD	P27A-00H0W	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	10	6	SCH30	STD	P27A-00H0X	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	10	8	SCH30	SCH30	P27A-00H0Y	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	12	6	SCH30	STD	P27A-00F0W	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	12	8	SCH30	SCH30	P27A-00H10	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	12	10	SCH30	SCH30	P27A-00H0Z	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	14	6	SCH20	STD	P27A-00F10	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	14	8	SCH20	SCH30	P27A-00H12	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	14	10	SCH20	SCH30	P27A-00H11	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	14	12	SCH20	SCH30	P27A-00F0Z	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	16	8	SCH20	SCH30	P27A-00H14	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	16	10	SCH20	SCH30	P27A-00H13	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	16	12	SCH20	SCH30	P27A-00F13	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	16	14	SCH20	SCH20	P27A-00F14	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	18	10	STD	SCH30	P27A-00H15	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	18	12	STD	SCH30	P27A-00H16	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	18	14	STD	SCH20	P27A-00H17	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	18	16	STD	SCH20	P27A-00H18	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	20	12	STD	SCH30	P27A-00F1A	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	20	14	STD	SCH20	P27A-00F1B	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	20	16	STD	SCH20	P27A-00F1C	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	20	18	STD	STD	P27A-00H19	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	24	16	XS	SCH20	P27A-00H1A	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	24	18	XS	STD	P27A-00H1B	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	24	20	XS	STD	P27A-00H1C	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	SCH160	P28A-00C48	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	1	0.5	SCH160	SCH160	P28A-00C49	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	1	0.75	SCH160	SCH160	P28A-00C4A	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	1.5	0.5	SCH160	SCH160	P28A-00C4B	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	1.5	0.75	SCH160	SCH160	P28A-00C4C	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	1.5	1	SCH160	SCH160	P28A-00C4D	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	2	0.75	XS	SCH160	P28A-00C4E	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	2	1	XS	SCH160	P28A-00C4F	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	2	1.5	XS	SCH160	P28A-00C4G	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	3	1.5	STD	SCH160	P28A-00C4H	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	3	2	STD	XS	P28A-00C4J	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	4	1.5	STD	SCH160	P28A-00C4K	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	4	2	STD	XS	P28A-00C4L	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	4	3	STD	STD	P28A-00C4M	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	6	3	STD	STD	P28A-00C4N	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	6	4	STD	STD	P28A-00C4P	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	8	4	SCH30	STD	P28A-00E81	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	8	6	SCH30	STD	P28A-00E82	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	10	4	SCH30	STD	P28A-00E83	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	10	6	SCH30	STD	P28A-00E84	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	10	8	SCH30	SCH30	P28A-00E85	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	12	6	SCH30	STD	P28A-00C4X	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	12	8	SCH30	SCH30	P28A-00E87	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	12	10	SCH30	SCH30	P28A-00E86	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	14	6	SCH20	STD	P28A-00C51	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	14	8	SCH20	SCH30	P28A-00E89	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	14	10	SCH20	SCH30	P28A-00E88	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	14	12	SCH20	SCH30	P28A-00C50	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	16	8	SCH20	SCH30	P28A-00E8B	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	16	10	SCH20	SCH30	P28A-00E8A	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	16	12	SCH20	SCH30	P28A-00C54	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	16	14	SCH20	SCH20	P28A-00C55	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	18	10	STD	SCH30	P28A-00E8C	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	18	12	STD	SCH30	P28A-00E8D	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	18	14	STD	SCH20	P28A-00E8E	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	18	16	STD	SCH20	P28A-00E8F	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	20	12	STD	SCH30	P28A-00C5B	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	20	14	STD	SCH20	P28A-00C5C	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	20	16	STD	SCH20	P28A-00C5D	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	20	18	STD	STD	P28A-00E8G	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	24	16	XS	SCH20	P28A-00E8H	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	24	18	XS	STD	P28A-00E8J	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	24	20	XS	STD	P28A-00E8K	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P29A-00387	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	0.75		SCH160		P29A-00388	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	1		SCH160		P29A-00389	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	1.5		SCH160		P29A-0038A	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	2		XS		P29A-0038G	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	3		STD		P29A-0038K	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	4		STD		P29A-0038N	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	6		STD		P29A-0038S	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	

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CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	8		SCH30		P29A-003R1	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	10		SCH30		P29A-003PY	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	12		SCH30		P29A-0038C	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	14		SCH20		P29A-0038D	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	16		SCH20		P29A-0038E	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	18		STD		P29A-003PZ	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	20		STD		P29A-0038H	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	24		XS		P29A-003R0	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
541	0.75				P29B-0000Y	Cap ASTM A105 Class 6000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P41A-0019D	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Severe wet H2S service Licensor-3	
1	0.75		XXS		P41A-0019E	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Severe wet H2S service Licensor-3	
1	1		XXS		P41A-00194	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Severe wet H2S service Licensor-3	
1	1.5		XXS		P41A-00195	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Severe wet H2S service Licensor-3	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2	0.75	XS	SCH160	P31B-00CP7	Outlet ASTM A105 MSS SP-97 BW	
1	3	0.75	STD	SCH160	P31B-00CMT	Outlet ASTM A105 MSS SP-97 BW	
1	4	0.75	STD	SCH160	P31B-00CLT	Outlet ASTM A105 MSS SP-97 BW	
1	6	0.75	STD	SCH160	P31B-00CKK	Outlet ASTM A105 MSS SP-97 BW	
1	8	0.75	SCH30	SCH160	P31B-00ZH5	Outlet ASTM A105 MSS SP-97 BW	
1	10	0.75	SCH30	SCH160	P31B-00YEZ	Outlet ASTM A105 MSS SP-97 BW	
1	12	0.75	SCH30	SCH160	P31B-00SWH	Outlet ASTM A105 MSS SP-97 BW	
1	14	0.75	SCH20	SCH160	P31B-00X17	Outlet ASTM A105 MSS SP-97 BW	
1	16	0.75	SCH20	SCH160	P31B-00XS0	Outlet ASTM A105 MSS SP-97 BW	
1	18	0.75	STD	SCH160	P31B-00CPL	Outlet ASTM A105 MSS SP-97 BW	
1	20	0.75	STD	SCH160	P31B-00CNW	Outlet ASTM A105 MSS SP-97 BW	
1	24	0.75	XS	SCH160	P31B-007N3	Outlet ASTM A105 MSS SP-97 BW	
1	3	1	STD	SCH160	P31B-00B4J	Outlet ASTM A105 MSS SP-97 BW	
1	4	1	STD	SCH160	P31B-00B3M	Outlet ASTM A105 MSS SP-97 BW	
1	6	1	STD	SCH160	P31B-00AZC	Outlet ASTM A105 MSS SP-97 BW	
1	8	1	SCH30	SCH160	P31B-00ZH6	Outlet ASTM A105 MSS SP-97 BW	
1	10	1	SCH30	SCH160	P31B-00YF1	Outlet ASTM A105 MSS SP-97 BW	
1	12	1	SCH30	SCH160	P31B-00SWJ	Outlet ASTM A105 MSS SP-97 BW	
1	14	1	SCH20	SCH160	P31B-00X18	Outlet ASTM A105 MSS SP-97 BW	
1	16	1	SCH20	SCH160	P31B-00X8Z	Outlet ASTM A105 MSS SP-97 BW	
1	18	1	STD	SCH160	P31B-00BC9	Outlet ASTM A105 MSS SP-97 BW	
1	20	1	STD	SCH160	P31B-00B8M	Outlet ASTM A105 MSS SP-97 BW	
1	24	1	XS	SCH160	P31B-007MU	Outlet ASTM A105 MSS SP-97 BW	
1	4	1.5	STD	SCH160	P31B-00BP4	Outlet ASTM A105 MSS SP-97 BW	
1	6	1.5	STD	SCH160	P31B-00BJH	Outlet ASTM A105 MSS SP-97 BW	
1	8	1.5	SCH30	SCH160	P31B-00BHM	Outlet ASTM A105 MSS SP-97 BW	
1	10	1.5	SCH30	SCH160	P31B-00AUR	Outlet ASTM A105 MSS SP-97 BW	
1	12	1.5	SCH30	SCH160	P31B-00CEJ	Outlet ASTM A105 MSS SP-97 BW	
1	14	1.5	SCH20	SCH160	P31B-00CDS	Outlet ASTM A105 MSS SP-97 BW	
1	16	1.5	SCH20	SCH160	P31B-00C9B	Outlet ASTM A105 MSS SP-97 BW	
1	18	1.5	STD	SCH160	P31B-00C4R	Outlet ASTM A105 MSS SP-97 BW	
1	20	1.5	STD	SCH160	P31B-00C3Y	Outlet ASTM A105 MSS SP-97 BW	
1	24	1.5	XS	SCH160	P31B-007MM	Outlet ASTM A105 MSS SP-97 BW	
1	6	2	STD	XS	P31B-007SH	Outlet ASTM A105 MSS SP-97 BW	
1	8	2	SCH30	XS	P31B-00X36	Outlet ASTM A105 MSS SP-97 BW	
1	10	2	SCH30	XS	P31B-00NVF	Outlet ASTM A105 MSS SP-97 BW	
1	12	2	SCH30	XS	P31B-00NVL	Outlet ASTM A105 MSS SP-97 BW	
1	14	2	SCH20	XS	P31B-00TF9	Outlet ASTM A105 MSS SP-97 BW	

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OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	16	2	SCH20	XS	P31B-00TF8	Outlet ASTM A105 MSS SP-97 BW	
1	18	2	STD	XS	P31B-009FJ	Outlet ASTM A105 MSS SP-97 BW	
1	20	2	STD	XS	P31B-00994	Outlet ASTM A105 MSS SP-97 BW	
1	24	2	XS	XS	P31B-0092Y	Outlet ASTM A105 MSS SP-97 BW	
1	8	3	SCH30	STD	P31B-00X37	Outlet ASTM A105 MSS SP-97 BW	
1	10	3	SCH30	STD	P31B-00NYK	Outlet ASTM A105 MSS SP-97 BW	
1	12	3	SCH30	STD	P31B-00NYR	Outlet ASTM A105 MSS SP-97 BW	
1	14	3	SCH20	STD	P31B-00UPH	Outlet ASTM A105 MSS SP-97 BW	
1	16	3	SCH20	STD	P31B-00TU2	Outlet ASTM A105 MSS SP-97 BW	
1	18	3	STD	STD	P31B-008MK	Outlet ASTM A105 MSS SP-97 BW	
1	20	3	STD	STD	P31B-008FA	Outlet ASTM A105 MSS SP-97 BW	
1	24	3	XS	STD	P31B-00894	Outlet ASTM A105 MSS SP-97 BW	
1	12	4	SCH30	STD	P31B-00P1G	Outlet ASTM A105 MSS SP-97 BW	
1	14	4	SCH20	STD	P31B-00UPJ	Outlet ASTM A105 MSS SP-97 BW	
1	16	4	SCH20	STD	P31B-00TU3	Outlet ASTM A105 MSS SP-97 BW	
1	18	4	STD	STD	P31B-008KB	Outlet ASTM A105 MSS SP-97 BW	
1	20	4	STD	STD	P31B-008D3	Outlet ASTM A105 MSS SP-97 BW	
1	24	4	XS	STD	P31B-0086W	Outlet ASTM A105 MSS SP-97 BW	
1	18	6	STD	STD	P31B-008RX	Outlet ASTM A105 MSS SP-97 BW	
1	20	6	STD	STD	P31B-008PZ	Outlet ASTM A105 MSS SP-97 BW	
1	24	6	XS	STD	P31B-008JC	Outlet ASTM A105 MSS SP-97 BW	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30B-0002D	Plug ASTM A105 ASME B16.11 NPT Round head	
1	0.75				P30B-0002E	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1				P30B-0002F	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1.5				P30B-0002G	Plug ASTM A105 ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P61B-004V2	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	0.75		SCH160		P61B-0037H	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	1		SCH160		P61B-0037F	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	1.5		SCH160		P61B-0037N	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	2		XS		P61B-003NK	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	3		STD		P61B-001PW	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	4		STD		P61B-001R8	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	6		STD		P61B-001RT	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	8		SCH30		P61B-003FP	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	10		SCH30		P61B-003FS	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	12		SCH30		P61B-002TS	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	14		SCH20		P61B-002B6	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	16		SCH20		P61B-002B7	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	18		STD		P61B-001T4	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	20		STD		P61B-001JA	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	24		XS		P61B-002F2	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
541	0.5				P61B-003TZ	Flange NPT ASTM A105 Class 150 ASME B16.5 RF	
541	0.75				P61B-003U0	Flange NPT ASTM A105 Class 150 ASME B16.5 RF	
773	0.5		SCH160		P61B-003P9	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	0.75		SCH160		P61B-0037M	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	1		SCH160		P61B-0037L	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	1.5		SCH160		P61B-0037J	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	2		XS		P61B-001HW	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	3		STD		P61B-001LJ	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	4		STD		P61B-001MC	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	6		STD		P61B-001N2	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	8		SCH30		P61B-008S0	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	10		SCH30		P61B-003LX	Flange WN ASTM A105 Class 300 ASME B16.5 RF	

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FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
773	12		SCH30		P61B-002TV	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	14		SCH20		P61B-002MR	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	16		SCH20		P61B-002MS	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	18		STD		P61B-001N9	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	20		STD		P61B-001NT	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	24		XS		P61B-002RA	Flange WN ASTM A105 Class 300 ASME B16.5 RF	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67B-000FH	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	0.75				P67B-000FJ	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	1				P67B-000FK	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	1.5				P67B-000FL	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	2				P67B-000FT	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	3				P67B-000FW	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	4				P67B-000FX	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	6				P67B-000FY	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	8				P67B-000FZ	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	10				P67B-000FM	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	12				P67B-000FN	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	14				P67B-000FP	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	16				P67B-000FR	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	18				P67B-000FS	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	20				P67B-000FU	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	24				P67B-000FV	Blind flange ASTM A105 Class 150 ASME B16.5 RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000L8	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000L9	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000LA	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000LB	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000LH	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000LL	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000LM	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	6				P73T-000LN	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	8				P73T-000LP	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	10				P73T-000LC	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	12				P73T-000LD	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	14				P73T-000LE	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	16				P73T-000LF	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	18				P73T-000LG	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	20				P73T-000LJ	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	24				P73T-000LK	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	0.5				P73T-000FT	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	0.75				P73T-000FU	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	3				P73T-000G5	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	4				P73T-000G6	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

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GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
773	6				P73T-000G7	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	8				P73T-000G8	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	10				P73T-000FX	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	12				P73T-000FY	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	14				P73T-000FZ	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	16				P73T-000G0	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	18				P73T-000G1	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	20				P73T-000G3	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	24				P73T-000G4	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-16				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	18-24				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
773	0.5-10				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
773	12-24				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81B-001ZX	Gate valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service	
1	0.75				P81B-001ZY	Gate valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service	
1	1				P81B-001ZZ	Gate valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service	
1	1.5				P81B-00200	Gate valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service	
1	2				P81C-006HT	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service	
1	3				P81C-006HU	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service	
1	4				P81C-006HV	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service	
1	6				P81C-006HW	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service	
1	8				P81C-006HX	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service	
1	10				P81C-006HR	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service	
1	12				P81C-006HS	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service	
1	14				P81C-006HY	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Severe wet H2S service Amine service	
1	16				P81C-006HZ	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Severe wet H2S service Amine service	
1	18				P81C-006J0	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Severe wet H2S service Amine service	
1	20				P81C-006J1	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Severe wet H2S service Amine service	
1	24				P81C-006J2	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Severe wet H2S service Amine service	
4608	0.75				P81B-002XX	Gate valve ASTM A105 Class 150 API 602 BW both sides w/ nipples BE - NPT ASTM A106-B XXS-nipple Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service Licensor-3	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82B-001HG	Globe valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service	
1	0.75				P82B-001HH	Globe valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service	
1	1				P82B-001HJ	Globe valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service	
1	1.5				P82B-001HK	Globe valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service	
1	2				P82C-00351	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service	
1	3				P82C-00352	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service	
1	4				P82C-00353	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service	

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GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	6				P82C-00354	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service	
1	8				P82C-00355	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83B-00172	Check valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Severe wet H2S service Amine service	
1	0.75				P83B-00173	Check valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Severe wet H2S service Amine service	
1	1				P83B-00174	Check valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Severe wet H2S service Amine service	
1	1.5				P83B-00175	Check valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Severe wet H2S service Amine service	
1	2				P83C-0030P	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service Amine service	
1	3				P83C-0030T	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service Amine service	
1	4				P83C-0030U	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service Amine service	
1	6				P83C-0030V	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service Amine service	
1	8				P83C-0030W	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service Amine service	
1	10				P83C-0030J	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service Amine service	
1	12				P83C-0030K	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service Amine service	
1	14				P83C-0030L	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service Amine service	
1	16				P83C-0030M	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service Amine service	
1	18				P83C-0030N	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service Amine service	
1	20				P83C-0030R	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service Amine service	
1	24				P83C-0030S	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service Amine service	

ORIFICE FLANGE (FO)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2		XS		P66B-0084B	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	3		STD		P66B-0084C	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	4		STD		P66B-0084D	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	6		STD		P66B-0084E	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	8		SCH30		P66B-00871	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	10		SCH30		P66B-0086Z	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	12		SCH30		P66B-00849	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	14		SCH20		P66B-0084A	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
200	2		XS		P66B-00843	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	3		STD		P66B-00844	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	4		STD		P66B-00845	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	6		STD		P66B-00846	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	8		SCH30		P66B-00876	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	10		SCH30		P66B-00874	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	12		SCH30		P66B-00841	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	14		SCH20		P66B-00842	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71B-0008A	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	0.75				P71B-0008B	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	1				P71B-0008C	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71B-0008D	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	2				P71B-0000P	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	3				P71B-0000N	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	4				P71B-0000M	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	[illegible]				P71B-0000L	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	8				P71B-0000R	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	

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SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	10				P71B-0000K	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	12				P71B-0000J	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	

PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000AH	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	16				P72B-0000C	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	18				P72B-000AJ	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	20				P72B-000AK	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	24				P72B-000AL	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	

PADDLE SPACER (PS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000AT	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	16				P72B-0000B	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	18				P72B-000AU	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	20				P72B-000AV	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	24				P72B-000AW	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	

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BOLT TABLE (B_A2A503 , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	60	P80S-008SY		
0.75	4	0.500	65	P80S-008SZ		
1	4	0.500	70	P80S-008T0		
1.5	4	0.500	75	P80S-008T1		
2	4	0.625	85	P80S-0090A		
3	4	0.625	95	P80S-0090C		
4	8	0.625	95	P80S-0090C		
6	8	0.750	105	P80S-0090E		
8	8	0.750	110	P80S-0090F		
10	12	0.875	120	P80S-005Z9		
12	12	0.875	120	P80S-005Z9		
14	12	1.000	135	P80S-00619		
16	16	1.000	140	P80S-0061A		
18	16	1.125	150	P80S-0064L		
20	20	1.125	160	P80S-0064N		
24	20	1.250	175	P80S-00686		

BOLT TABLE (B_A2A503_773 , STUD ASME RF, OPTION CODE 773)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-008T0		
0.75	4	0.625	75	P80S-00908		
1	4	0.625	80	P80S-00909		
1.5	4	0.750	95	P80S-005Z4		
2	8	0.625	90	P80S-0090B		
3	8	0.750	110	P80S-0090F		
4	8	0.750	115	P80S-0090G		
6	12	0.750	125	P80S-0090J		
8	12	0.875	140	P80S-005ZD		
10	16	1.000	160	P80S-0061E		
12	16	1.125	175	P80S-0064S		
14	20	1.125	180	P80S-0064T		
16	20	1.250	190	P80S-00689		
18	24	1.250	200	P80S-0068B		
20	24	1.250	210	P80S-0068D		
24	24	1.500	235	P80S-006LB		

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BRANCH TABLE (T_A2A503)

RUN PIPE SIZE (in) \ BRANCH SIZE (in)	0.5	0.75	1	1.5	2	3	4	6	8	10	12	14	16	18	20	24
0.5	TS															
0.75		TS														
1		TR	TS													
1.5		TR	TR	TS												
2		L	TR	TR	TS											
3		L	L	TR	TR	TS										
4	L	L	L	L	TR	TR	TS									
6	L	L	L	L	L	TR	TR	TS								
8		L	L	L	L	L	TR	TR	TS							
10		L	L	L	L	L	TR	TR	TR	TS						
12		L	L	L	L	L	L	TR	TR	TR	TS					
14		L	L	L	L	L	L	TR	TR	TR	TR	TS				
16		L	L	L	L	L	L	TR	TR	TR	TR	TR	TS			
18		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TS		
20		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TR	TS	
24		L	L	L	L	L	L	L	9PD	TR	TR	TR	TR	TR	TR	TS

L : OUTLET
TS : STRAIGHT TEE
TR : REDUCING TEE
9PD : REINFORCING PAD 90 DEG

INDRA
01-SEP-2014

PIPING CLASS

A2A604 REV NO. 2

Material : Killed CS
Rating : ASME CLASS 150
Flange Face : RF
C.A.(mm) : 3.00
Gasket : Spiral Wound
Service : PROCESS -WET LOW SEVERITY SOUR SERVICE SUBJECT TO NACE + H2 SERVICE
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
2	USE OF SOFT SEATED BALL, PLUG AND BUTTERFLY VALVES SHALL BE LIMITED TO MAXIMUM OF 204DEGC (400DEGF)
5	BOLTING CONFIRMING TO B7M / 2HM SHALL BE USED UNDER CONDITIONS (A) DIRECT EXPOSURE TO SOUR ENVIRONMENTS (B) WHEN THE BOLTING WILL BE BURIED OR INSULATED
27	PWHT OF CARBON STEEL PIPING IN WET H2S, CAUSTIC AND AMINE SERVICES SHALL BE IN ACCORDANCE WITH SECTION 10.2, 10.3, AND 10.4 OF PROJECT SPECIFICATION 3550-8440-SP-0002 MATERIALS REQUIREMENTS FOR PRESSURISED EQUIPMENT AND PIPING. FOR CAUSTIC AND AMINE SERVICE THE FOLLOWING SHALL APPLY: - PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF ALL SITE PIPING FABRICATION WELDS IS REQUIRED FOR ALL WALL THICKNESSES. FOR MODERATE AND SEVERE WET H2S SERVICE THE FOLLOWING SHALL APPLY: PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF SITE FABRICATION CIRCUMFERENTIAL OR BRANCH WELDS IS NOT REQUIRED IF WELDS ARE MULTIPASS AND IN ACCORDANCE WITH PARA 10.2.12 OF PROJECT SPECIFICATION 3550-8440-SP-0002. FOR SERVICES MEETING THE WET H2S CRITERIA AND CAUSTIC OR AMINE CRITERIA THE MORE STRINGENT PWHT REQUIREMENT SHALL GOVERN.

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
200	WITH JACK SCREW (FO)
541	NPT(F) (CA,F)
773	CLASS 300 (B,F,G,SB)
781	CLASS 600 (B,F,G)
4608	VALVE WITH NIPPLES (V)

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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P01A-00143	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	0.75		SCH160		P01A-0010R	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1		SCH160		P01A-0014M	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1.5		SCH160		P01A-0015J	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	2		XS		P01A-000YX	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	3		XS		P01A-000Z4	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	4		STD		P01A-000YU	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	6		STD		P01A-000Z3	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	8		SCH30		P01A-001WL	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	10		SCH30		P01A-0016U	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P02A-00172	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	0.75		SCH160		P02A-000V8	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1		SCH160		P02A-000V7	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1.5		SCH160		P02A-000V9	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	2		XS		P02A-000CP	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		XS		P02A-000CX	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		STD		P02A-000CZ	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		STD		P02A-000D6	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		SCH30		P02A-003DK	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	10		SCH30		P02A-000M3	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P03A-0012Y	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	0.75		SCH160		P03A-000RS	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1		SCH160		P03A-000RR	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1.5		SCH160		P03A-000RP	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	2		XS		P03A-000AS	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		XS		P03A-000AZ	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		STD		P03A-000B1	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		STD		P03A-000B9	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		SCH30		P03A-003BE	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	10		SCH30		P03A-000JT	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P21A-002M0	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	0.75		SCH160		P21A-002B8	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1		SCH160		P21A-002B6	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5		SCH160		P21A-002B9	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2		XS		P21A-001CJ	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		XS		P21A-001CR	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		STD		P21A-001CW	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6		STD		P21A-001D2	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8		SCH30		P21A-003WV	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10		SCH30		P21A-00259	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75	SCH160	SCH160	P24A-004B6	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.75	SCH160	SCH160	P24A-004B2	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	1	SCH160	SCH160	P24A-004BA	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	XS	SCH160	P24A-00GMB	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	XS	SCH160	P24A-005K9	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	XS	SCH160	P24A-00GNV	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	XS	XS	P24A-0023S	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P24A-002HY	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	XS	P24A-00GNW	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	XS	P24A-00GTR	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P24A-00229	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH30	STD	P24A-00JVH	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH30	STD	P24A-00JVG	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	SCH30	STD	P24A-00GNR	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	SCH30	STD	P24A-0060W	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	SCH30	SCH30	P24A-00J15	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	XXS	P27A-003ZL	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.5	SCH160	XXS	P27A-003ZM	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.75	SCH160	SCH160	P27A-002T5	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.5	SCH160	XXS	P27A-003ZN	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.75	SCH160	SCH160	P27A-002T7	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	1	SCH160	SCH160	P27A-002T4	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	0.75	XS	SCH160	P27A-001LG	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	XS	SCH160	P27A-0033P	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	XS	SCH160	P27A-0033B	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	XS	SCH160	P27A-003N1	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	XS	XS	P27A-001E5	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	1.5	STD	SCH160	P27A-003MA	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P27A-001N0	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	XS	P27A-0074W	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	XS	P27A-007P6	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P27A-001GW	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH30	STD	P27A-00ED2	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH30	STD	P27A-00ECY	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	SCH30	STD	P27A-003MK	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	SCH30	STD	P27A-003ML	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	SCH30	SCH30	P27A-004T9	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	XXS	P28A-003ZE	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.5	SCH160	XXS	P28A-003ZF	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.75	SCH160	SCH160	P28A-002TU	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.5	SCH160	XXS	P28A-003ZG	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.75	SCH160	SCH160	P28A-002TW	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	1	SCH160	SCH160	P28A-002TR	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	0.75	XS	SCH160	P28A-001LE	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	XS	SCH160	P28A-003M1	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	XS	SCH160	P28A-003M2	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	XS	SCH160	P28A-003MV	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	XS	XS	P28A-001EH	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	1.5	STD	SCH160	P28A-003M4	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P28A-001N6	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	XS	P28A-008F7	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	XS	P28A-008K1	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P28A-00182	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH30	STD	P28A-00BFY	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH30	STD	P28A-00BFZ	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	SCH30	STD	P28A-003MD	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	SCH30	STD	P28A-003ME	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	SCH30	SCH30	P28A-00A4S	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P29A-001UE	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	0.75		SCH160		P29A-001UF	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	1		SCH160		P29A-001TC	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	1.5		SCH160		P29A-001TD	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	2		XS		P29A-001VG	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	3		XS		P29A-001X4	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	4		STD		P29A-001VN	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	6		STD		P29A-001VS	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	8		SCH30		P29A-003G6	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	10		SCH30		P29A-003B5	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
541	0.75				P29B-0000Y	Cap ASTM A105 Class 6000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P41A-000B9	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		XXS		P41A-000BA	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		XXS		P41A-000D8	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		XXS		P41A-000D9	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2	0.75	XS	SCH160	P31B-00CP7	Outlet ASTM A105 MSS SP-97 BW	
1	3	0.75	XS	SCH160	P31B-00CMS	Outlet ASTM A105 MSS SP-97 BW	
1	4	0.75	STD	SCH160	P31B-00CLT	Outlet ASTM A105 MSS SP-97 BW	
1	6	0.75	STD	SCH160	P31B-00CKK	Outlet ASTM A105 MSS SP-97 BW	
1	8	0.75	SCH30	SCH160	P31B-00ZH5	Outlet ASTM A105 MSS SP-97 BW	
1	10	0.75	SCH30	SCH160	P31B-00YEZ	Outlet ASTM A105 MSS SP-97 BW	
1	3	1	XS	SCH160	P31B-00B4H	Outlet ASTM A105 MSS SP-97 BW	
1	4	1	STD	SCH160	P31B-00B3M	Outlet ASTM A105 MSS SP-97 BW	
1	6	1	STD	SCH160	P31B-00AZC	Outlet ASTM A105 MSS SP-97 BW	
1	8	1	SCH30	SCH160	P31B-00ZH6	Outlet ASTM A105 MSS SP-97 BW	
1	10	1	SCH30	SCH160	P31B-00YF1	Outlet ASTM A105 MSS SP-97 BW	
1	4	1.5	STD	SCH160	P31B-00BP4	Outlet ASTM A105 MSS SP-97 BW	
1	6	1.5	STD	SCH160	P31B-00BJH	Outlet ASTM A105 MSS SP-97 BW	
1	8	1.5	SCH30	SCH160	P31B-00BHM	Outlet ASTM A105 MSS SP-97 BW	
1	10	1.5	SCH30	SCH160	P31B-00AUR	Outlet ASTM A105 MSS SP-97 BW	
1	6	2	STD	XS	P31B-007SH	Outlet ASTM A105 MSS SP-97 BW	
1	8	2	SCH30	XS	P31B-00X36	Outlet ASTM A105 MSS SP-97 BW	
1	10	2	SCH30	XS	P31B-00NVF	Outlet ASTM A105 MSS SP-97 BW	
1	8	3	SCH30	XS	P31B-00ZH7	Outlet ASTM A105 MSS SP-97 BW	
1	10	3	SCH30	XS	P31B-00NYL	Outlet ASTM A105 MSS SP-97 BW	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30B-0002D	Plug ASTM A105 ASME B16.11 NPT Round head	
1	0.75				P30B-0002E	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1				P30B-0002F	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1.5				P30B-0002G	Plug ASTM A105 ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P61B-003LE	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	0.75		SCH160		P61B-0037H	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	1		SCH160		P61B-0037F	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	1.5		SCH160		P61B-0037N	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	2		XS		P61B-003NK	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1			XS		P61B-003JD	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	4		STD		P61B-001R8	Flange WN ASTM A105 Class 150 ASME B16.5 RF	

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FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	6		STD		P61B-001RT	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	8		SCH30		P61B-003FP	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	10		SCH30		P61B-003FS	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
541	0.5				P61B-003TZ	Flange NPT ASTM A105 Class 150 ASME B16.5 RF	
541	0.75				P61B-003U0	Flange NPT ASTM A105 Class 150 ASME B16.5 RF	
773	0.5		XXS		P61B-003LW	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	0.75		SCH160		P61B-0037M	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	1		SCH160		P61B-0037L	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	1.5		SCH160		P61B-0037J	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	2		XS		P61B-001HW	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	3		XS		P61B-001DK	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	4		STD		P61B-001MC	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	6		STD		P61B-001N2	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	8		SCH30		P61B-008S0	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	10		SCH30		P61B-003LX	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
781	0.5		XXS		P61B-003T1	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	0.75		SCH160		P61B-003T2	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	1		SCH160		P61B-003T3	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	1.5		SCH160		P61B-003T4	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	2		XS		P61B-001DH	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	3		XS		P61B-001M8	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	4		STD		P61B-001VV	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	6		STD		P61B-001JW	Flange WN ASTM A105 Class 600 ASME B16.5 RF	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67B-000FH	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	0.75				P67B-000FJ	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	1				P67B-000FK	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	1.5				P67B-000FL	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	2				P67B-000FT	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	3				P67B-000FW	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	4				P67B-000FX	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	6				P67B-000FY	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	8				P67B-000FZ	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	10				P67B-000FM	Blind flange ASTM A105 Class 150 ASME B16.5 RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000L8	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000L9	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000LA	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000LB	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000LH	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000LL	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000LM	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	6				P73T-000LN	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	8				P73T-000LP	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	10				P73T-000LC	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	0.5				P73T-000FT	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	0.75				P73T-000FU	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

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GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
773	3				P73T-000G5	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	4				P73T-000G6	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	6				P73T-000G7	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	8				P73T-000G8	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	10				P73T-000FX	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	0.5				P73T-000J8	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	0.75				P73T-000J9	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1				P73T-000JA	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1.5				P73T-000JB	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	2				P73T-000JH	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	3				P73T-000JL	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	4				P73T-000JM	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	6				P73T-000JN	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	8				P73T-000JP	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	10				P73T-000JC	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-10				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
773	0.5-10				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
781	0.5-6				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81B-0018G	Gate valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	0.75				P81B-0018H	Gate valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	1				P81B-0018J	Gate valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	1.5				P81B-0018K	Gate valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	2				P81C-006MD	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Licensor-4	
1	3				P81C-006ME	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Licensor-4	
1	4				P81C-006MF	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Licensor-4	
1	6				P81C-006MJ	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Licensor-4	
1	8				P81C-006MK	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Licensor-4	
1	10				P81C-006MG	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Licensor-4	
4608	0.75				P81B-002XY	Gate valve ASTM A105 Class 150 API 602 BW both sides w/ nipples BE - NPT ASTM A106-B XXS-nipple Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82B-0011M	Globe valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	0.75				P82B-0011N	Globe valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	1				P82B-0011P	Globe valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	1.5				P82B-0011R	Globe valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	2				P82C-0036V	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Licensor-4	
1	3				P82C-0036W	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Licensor-4	
1	4				P82C-0036X	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Licensor-4	
1	6				P82C-0036Y	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Licensor-4	

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GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	8				P82C-0036Z	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Licensor-4	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83B-000TW	Check valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Moderate wet H2S service	
1	0.75				P83B-000TX	Check valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Moderate wet H2S service	
1	1				P83B-000TY	Check valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Moderate wet H2S service	
1	1.5				P83B-000TZ	Check valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Moderate wet H2S service	
1	2				P83C-00336	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Moderate wet H2S service Licensor-4	
1	3				P83C-00337	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Moderate wet H2S service Licensor-4	
1	4				P83C-00338	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Moderate wet H2S service Licensor-4	
1	6				P83C-0033C	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Moderate wet H2S service Licensor-4	
1	8				P83C-0033D	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Moderate wet H2S service Licensor-4	
1	10				P83C-00339	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Moderate wet H2S service Licensor-4	

ORIFICE FLANGE (FO)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2		XS		P66B-0084B	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	3		XS		P66B-008C1	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	4		STD		P66B-0084D	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
200	2		XS		P66B-00843	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	3		XS		P66B-008C3	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	4		STD		P66B-00845	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71B-0008A	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	0.75				P71B-0008B	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	1				P71B-0008C	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71B-0008D	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	2				P71B-0000P	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	3				P71B-0000N	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	4				P71B-0000M	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	6				P71B-0000L	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	8				P71B-0000R	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	10				P71B-0000K	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
773	0.5				P71B-000B1	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
773	0.75				P71B-000B2	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
773	1				P71B-000B3	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
773	1.5				P71B-000B4	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
773	2				P71B-000B6	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
773	3				P71B-000B7	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
773	4				P71B-000B8	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
773	6				P71B-000B9	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
773	8				P71B-000BA	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
773	10				P71B-000B5	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	

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BOLT TABLE (B_A2A604 , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	60	P80S-008SY		
0.75	4	0.500	65	P80S-008SZ		
1	4	0.500	70	P80S-008T0		
1.5	4	0.500	75	P80S-008T1		
2	4	0.625	85	P80S-0090A		
3	4	0.625	95	P80S-0090C		
4	8	0.625	95	P80S-0090C		
6	8	0.750	105	P80S-0090E		
8	8	0.750	110	P80S-0090F		
10	12	0.875	120	P80S-005Z9		

BOLT TABLE (B_A2A604_773 , STUD ASME RF, OPTION CODE 773)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-008T0		
0.75	4	0.625	75	P80S-00908		
1	4	0.625	80	P80S-00909		
1.5	4	0.750	95	P80S-005Z4		
2	8	0.625	90	P80S-0090B		
3	8	0.750	110	P80S-0090F		
4	8	0.750	115	P80S-0090G		
6	12	0.750	125	P80S-0090J		
8	12	0.875	140	P80S-005ZD		
10	16	1.000	160	P80S-0061E		

BOLT TABLE (B_A2A604_781 , STUD ASME RF, OPTION CODE 781)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	80	P80S-008T2		
0.75	4	0.625	90	P80S-0090B		
1	4	0.625	95	P80S-0090C		
1.5	4	0.750	110	P80S-0090F		
2	8	0.625	110	P80S-008T8		
3	8	0.750	130	P80S-0090K		
4	8	0.875	150	P80S-005ZF		
6	12	1.000	175	P80S-0061H		
8	12	1.125	195			
10	16	1.250	250			

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BRANCH TABLE (T_A2A604)

RUN PIPE SIZE (in) \ BRANCH SIZE (in)	0.5	0.75	1	1.5	2	3	4	6	8	10
0.5	TS									
0.75		TS								
1		TR	TS							
1.5		TR	TR	TS						
2		L	TR	TR	TS					
3		L	L	TR	TR	TS				
4	L	L	L	L	TR	TR	TS			
6	L	L	L	L	L	TR	TR	TS		
8		L	L	L	L	L	TR	TR	TS	
10		L	L	L	L	L	TR	TR	TR	TS

L : OUTLET
TR : REDUCING TEE
TS : STRAIGHT TEE

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PIPING CLASS

A2A704 REV NO. 2

Material : Killed CS
Rating : ASME CLASS 150
Flange Face : RF
C.A.(mm) : 3.00
Gasket : Spiral Wound
Service : PROCESS - WET SEVERE SOUR SERVICE SUBJECT TO NACE + HIC STD + H2 SERVICE
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
2	USE OF SOFT SEATED BALL, PLUG AND BUTTERFLY VALVES SHALL BE LIMITED TO MAXIMUM OF 204DEGC (400DEGF)
5	BOLTING CONFIRMING TO B7M / 2HM SHALL BE USED UNDER CONDITIONS (A) DIRECT EXPOSURE TO SOUR ENVIRONMENTS (B) WHEN THE BOLTING WILL BE BURIED OR INSULATED
27	PWHT OF CARBON STEEL PIPING IN WET H2S, CAUSTIC AND AMINE SERVICES SHALL BE IN ACCORDANCE WITH SECTION 10.2, 10.3, AND 10.4 OF PROJECT SPECIFICATION 3550-8440-SP-0002 MATERIALS REQUIREMENTS FOR PRESSURISED EQUIPMENT AND PIPING. FOR CAUSTIC AND AMINE SERVICE THE FOLLOWING SHALL APPLY: - PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF ALL SITE PIPING FABRICATION WELDS IS REQUIRED FOR ALL WALL THICKNESSES. FOR MODERATE AND SEVERE WET H2S SERVICE THE FOLLOWING SHALL APPLY: PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF SITE FABRICATION CIRCUMFERENTIAL OR BRANCH WELDS IS NOT REQUIRED IF WELDS ARE MULTIPASS AND IN ACCORDANCE WITH PARA 10.2.12 OF PROJECT SPECIFICATION 3550-8440-SP-0002. FOR SERVICES MEETING THE WET H2S CRITERIA AND CAUSTIC OR AMINE CRITERIA THE MORE STRINGENT PWHT REQUIREMENT SHALL GOVERN.

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
200	WITH JACK SCREW (FO)
541	NPT(F) (CA,F)
773	CLASS 300 (B,F,G,SB)
781	CLASS 600 (B,F,G)
4608	VALVE WITH NIPPLES (V)

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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P01A-00143	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	0.75		SCH160		P01A-0010R	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1		SCH160		P01A-0014M	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1.5		SCH160		P01A-0015J	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	2		XS		P01A-000YX	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	3		XS		P01A-000Z4	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	4		STD		P01A-000YU	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	6		STD		P01A-000Z3	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	8		SCH30		P01A-001WL	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	10		SCH30		P01A-0016U	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P02A-00172	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	0.75		SCH160		P02A-000V8	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1		SCH160		P02A-000V7	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1.5		SCH160		P02A-000V9	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	2		XS		P02A-000CP	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		XS		P02A-000CX	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		STD		P02A-000CZ	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		STD		P02A-000D6	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		SCH30		P02A-003DK	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	10		SCH30		P02A-000M3	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P03A-0012Y	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	0.75		SCH160		P03A-000RS	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1		SCH160		P03A-000RR	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1.5		SCH160		P03A-000RP	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	2		XS		P03A-000AS	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		XS		P03A-000AZ	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		STD		P03A-000B1	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		STD		P03A-000B9	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		SCH30		P03A-003BE	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	10		SCH30		P03A-000JT	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P21A-002M0	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	0.75		SCH160		P21A-002B8	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1		SCH160		P21A-002B6	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5		SCH160		P21A-002B9	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2		XS		P21A-001CJ	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		XS		P21A-001CR	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		STD		P21A-001CW	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6		STD		P21A-001D2	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8		SCH30		P21A-003WV	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10		SCH30		P21A-00259	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75	SCH160	SCH160	P24A-004B6	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.75	SCH160	SCH160	P24A-004B2	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	1	SCH160	SCH160	P24A-004BA	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	XS	SCH160	P24A-00GMB	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	XS	SCH160	P24A-005K9	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	XS	SCH160	P24A-00GNV	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	XS	XS	P24A-0023S	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P24A-002HY	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	XS	P24A-00GNW	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	XS	P24A-00GTR	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P24A-00229	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH30	STD	P24A-00JVH	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH30	STD	P24A-00JVG	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	SCH30	STD	P24A-00GNR	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	SCH30	STD	P24A-0060W	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	SCH30	SCH30	P24A-00J15	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	XXS	P27A-003ZL	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.5	SCH160	XXS	P27A-003ZM	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.75	SCH160	SCH160	P27A-002T5	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.5	SCH160	XXS	P27A-003ZN	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.75	SCH160	SCH160	P27A-002T7	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	1	SCH160	SCH160	P27A-002T4	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	0.75	XS	SCH160	P27A-001LG	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	XS	SCH160	P27A-0033P	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	XS	SCH160	P27A-0033B	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	XS	SCH160	P27A-003N1	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	XS	XS	P27A-001E5	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	1.5	STD	SCH160	P27A-003MA	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P27A-001N0	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	XS	P27A-0074W	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	XS	P27A-007P6	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P27A-001GW	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH30	STD	P27A-00ED2	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH30	STD	P27A-00ECY	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	SCH30	STD	P27A-003MK	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	SCH30	STD	P27A-003ML	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	SCH30	SCH30	P27A-004T9	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	XXS	P28A-003ZE	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.5	SCH160	XXS	P28A-003ZF	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.75	SCH160	SCH160	P28A-002TU	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.5	SCH160	XXS	P28A-003ZG	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.75	SCH160	SCH160	P28A-002TW	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	1	SCH160	SCH160	P28A-002TR	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	0.75	XS	SCH160	P28A-001LE	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	XS	SCH160	P28A-003M1	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	XS	SCH160	P28A-003M2	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	XS	SCH160	P28A-003MV	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	XS	XS	P28A-001EH	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	1.5	STD	SCH160	P28A-003M4	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P28A-001N6	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	XS	P28A-008F7	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	XS	P28A-008K1	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P28A-00182	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH30	STD	P28A-00BFY	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH30	STD	P28A-00BFZ	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	SCH30	STD	P28A-003MD	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	SCH30	STD	P28A-003ME	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	SCH30	SCH30	P28A-00A4S	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P29A-00336	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	0.75		SCH160		P29A-0037X	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	1		SCH160		P29A-001VW	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5		SCH160		P29A-001VX	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	2		XS		P29A-00381	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	3		XS		P29A-0035D	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	4		STD		P29A-00384	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	6		STD		P29A-00385	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	8		SCH30		P29A-003G7	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	10		SCH30		P29A-003BA	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
541	0.75				P29B-0000Y	Cap ASTM A105 Class 6000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P41A-000B9	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		XXS		P41A-000BA	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		XXS		P41A-000D8	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		XXS		P41A-000D9	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2	0.75	XS	SCH160	P31B-00CP7	Outlet ASTM A105 MSS SP-97 BW	
1	3	0.75	XS	SCH160	P31B-00CMS	Outlet ASTM A105 MSS SP-97 BW	
1	4	0.75	STD	SCH160	P31B-00CLT	Outlet ASTM A105 MSS SP-97 BW	
1	6	0.75	STD	SCH160	P31B-00CKK	Outlet ASTM A105 MSS SP-97 BW	
1	8	0.75	SCH30	SCH160	P31B-00ZH5	Outlet ASTM A105 MSS SP-97 BW	
1	10	0.75	SCH30	SCH160	P31B-00YEZ	Outlet ASTM A105 MSS SP-97 BW	
1	3	1	XS	SCH160	P31B-00B4H	Outlet ASTM A105 MSS SP-97 BW	
1	4	1	STD	SCH160	P31B-00B3M	Outlet ASTM A105 MSS SP-97 BW	
1	6	1	STD	SCH160	P31B-00AZC	Outlet ASTM A105 MSS SP-97 BW	
1	8	1	SCH30	SCH160	P31B-00ZH6	Outlet ASTM A105 MSS SP-97 BW	
1	10	1	SCH30	SCH160	P31B-00YF1	Outlet ASTM A105 MSS SP-97 BW	
1	4	1.5	STD	SCH160	P31B-00BP4	Outlet ASTM A105 MSS SP-97 BW	
1	6	1.5	STD	SCH160	P31B-00BJH	Outlet ASTM A105 MSS SP-97 BW	
1	8	1.5	SCH30	SCH160	P31B-00BHM	Outlet ASTM A105 MSS SP-97 BW	
1	10	1.5	SCH30	SCH160	P31B-00AUR	Outlet ASTM A105 MSS SP-97 BW	
1	6	2	STD	XS	P31B-007SH	Outlet ASTM A105 MSS SP-97 BW	
1	8	2	SCH30	XS	P31B-00X36	Outlet ASTM A105 MSS SP-97 BW	
1	10	2	SCH30	XS	P31B-00NVF	Outlet ASTM A105 MSS SP-97 BW	
1	8	3	SCH30	XS	P31B-00ZH7	Outlet ASTM A105 MSS SP-97 BW	
1	10	3	SCH30	XS	P31B-00NYL	Outlet ASTM A105 MSS SP-97 BW	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30B-0002D	Plug ASTM A105 ASME B16.11 NPT Round head	
1	0.75				P30B-0002E	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1				P30B-0002F	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1.5				P30B-0002G	Plug ASTM A105 ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P61B-003LE	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	0.75		SCH160		P61B-0037H	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	1		SCH160		P61B-0037F	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	1.5		SCH160		P61B-0037N	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	2		XS		P61B-003NK	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	3		XS		P61B-003JD	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	4		STD		P61B-001R8	Flange WN ASTM A105 Class 150 ASME B16.5 RF	

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FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	6		STD		P61B-001RT	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	8		SCH30		P61B-003FP	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	10		SCH30		P61B-003FS	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
541	0.5				P61B-003TZ	Flange NPT ASTM A105 Class 150 ASME B16.5 RF	
541	0.75				P61B-003U0	Flange NPT ASTM A105 Class 150 ASME B16.5 RF	
773	0.5		XXS		P61B-003LW	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	0.75		SCH160		P61B-0037M	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	1		SCH160		P61B-0037L	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	1.5		SCH160		P61B-0037J	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	2		XS		P61B-001HW	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	3		XS		P61B-001DK	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	4		STD		P61B-001MC	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	6		STD		P61B-001N2	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	8		SCH30		P61B-008S0	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	10		SCH30		P61B-003LX	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
781	0.5		XXS		P61B-003T1	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	0.75		SCH160		P61B-003T2	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	1		SCH160		P61B-003T3	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	1.5		SCH160		P61B-003T4	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	2		XS		P61B-001DH	Flange WN ASTM A105 Class 600 ASME B16.5 RF	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67B-000FH	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	0.75				P67B-000FJ	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	1				P67B-000FK	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	1.5				P67B-000FL	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	2				P67B-000FT	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	3				P67B-000FW	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	4				P67B-000FX	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	6				P67B-000FY	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	8				P67B-000FZ	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	10				P67B-000FM	Blind flange ASTM A105 Class 150 ASME B16.5 RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000L8	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000L9	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000LA	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000LB	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000LH	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000LL	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000LM	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	6				P73T-000LN	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	8				P73T-000LP	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	10				P73T-000LC	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	0.5				P73T-000FT	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	0.75				P73T-000FU	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	3				P73T-000G5	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	4				P73T-000G6	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

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GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
773	6				P73T-000G7	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	8				P73T-000G8	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	10				P73T-000FX	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	0.5				P73T-000J8	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	0.75				P73T-000J9	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1				P73T-000JA	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1.5				P73T-000JB	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	2				P73T-000JH	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-10				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
773	0.5-10				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
781	0.5-6				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81B-001NP	Gate valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	0.75				P81B-001NR	Gate valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	1				P81B-001NS	Gate valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	1.5				P81B-001NT	Gate valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	2				P81C-006MW	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Licensor-4	
1	3				P81C-006MX	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Licensor-4	
1	4				P81C-006MY	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Licensor-4	
1	6				P81C-006MZ	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Licensor-4	
1	8				P81C-006N0	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Licensor-4	
1	10				P81C-006MU	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Licensor-4	
4608	0.75				P81B-002XZ	Gate valve ASTM A105 Class 150 API 602 BW both sides w/ nipples BE - NPT ASTM A106-B XXS-nipple Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82B-001D5	Globe valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	0.75				P82B-001D6	Globe valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	1				P82B-001D7	Globe valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	1.5				P82B-001D8	Globe valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	2				P82C-00370	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Licensor-4	
1	3				P82C-00371	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Licensor-4	
1	4				P82C-00372	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Licensor-4	
1	6				P82C-00373	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Licensor-4	
1	8				P82C-00374	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Licensor-4	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83B-0013M	Check valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Severe wet H2S service	
1	0.75				P83B-0013N	Check valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Severe wet H2S service	
1	1				P83B-0013P	Check valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Severe wet H2S service	

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CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5				P83B-0013R	Check valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Severe wet H2S service	
1	2				P83C-0033G	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service Licensor-4	
1	3				P83C-0033H	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service Licensor-4	
1	4				P83C-0033J	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service Licensor-4	
1	6				P83C-0033K	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service Licensor-4	
1	8				P83C-0033L	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service Licensor-4	
1	10				P83C-0033E	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service Licensor-4	

ORIFICE FLANGE (FO)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2		XS		P66B-0084B	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	3		XS		P66B-008C1	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	4		STD		P66B-0084D	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
200	2		XS		P66B-00843	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	3		XS		P66B-008C3	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	4		STD		P66B-00845	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71B-0008A	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	0.75				P71B-0008B	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	1				P71B-0008C	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71B-0008D	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	2				P71B-0000P	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	3				P71B-0000N	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	4				P71B-0000M	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	6				P71B-0000L	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	8				P71B-0000R	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	10				P71B-0000K	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
773	0.5				P71B-000B1	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
773	0.75				P71B-000B2	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
773	1				P71B-000B3	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
773	1.5				P71B-000B4	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
773	2				P71B-000B6	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
773	3				P71B-000B7	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
773	4				P71B-000B8	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
773	6				P71B-000B9	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
773	8				P71B-000BA	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
773	10				P71B-000B5	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	

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BOLT TABLE (B_A2A704 , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	60	P80S-008SY		
0.75	4	0.500	65	P80S-008SZ		
1	4	0.500	70	P80S-008T0		
1.5	4	0.500	75	P80S-008T1		
2	4	0.625	85	P80S-0090A		
3	4	0.625	95	P80S-0090C		
4	8	0.625	95	P80S-0090C		
6	8	0.750	105	P80S-0090E		
8	8	0.750	110	P80S-0090F		
10	12	0.875	120	P80S-005Z9		

BOLT TABLE (B_A2A704_773 , STUD ASME RF, OPTION CODE 773)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-008T0		
0.75	4	0.625	75	P80S-00908		
1	4	0.625	80	P80S-00909		
1.5	4	0.750	95	P80S-005Z4		
2	8	0.625	90	P80S-0090B		
3	8	0.750	110	P80S-0090F		
4	8	0.750	115	P80S-0090G		
6	12	0.750	125	P80S-0090J		
8	12	0.875	140	P80S-005ZD		
10	16	1.000	160	P80S-0061E		

BOLT TABLE (B_A2A704_781 , STUD ASME RF, OPTION CODE 781)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	80	P80S-008T2		
0.75	4	0.625	90	P80S-0090B		
1	4	0.625	95	P80S-0090C		
1.5	4	0.750	110	P80S-0090F		
2	8	0.625	110	P80S-008T8		
3	8	0.750	130	P80S-0090K		
4	8	0.875	150	P80S-005ZF		
6	12	1.000	175	P80S-0061H		
8	12	1.125	195			
10	16	1.250	250			

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BRANCH TABLE (T_A2A704)

RUN PIPE SIZE (in) \ BRANCH SIZE (in)	0.5	0.75	1	1.5	2	3	4	6	8	10
0.5	TS									
0.75		TS								
1		TR	TS							
1.5		TR	TR	TS						
2		L	TR	TR	TS					
3		L	L	TR	TR	TS				
4	L	L	L	L	TR	TR	TS			
6	L	L	L	L	L	TR	TR	TS		
8		L	L	L	L	L	TR	TR	TS	
10		L	L	L	L	L	TR	TR	TR	TS

TR : REDUCING TEE
TS : STRAIGHT TEE
L : OUTLET

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Material : Killed CS
Rating : ASME CLASS 150
Flange Face : RF
C.A.(mm) : 3.00
Gasket : Spiral Wound
Service : UTILITY - CATEGORY "D" FLUID : / PLANT AIR

Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
24	FULL PORT (Q)
200	WITH JACK SCREW (FO)
541	NPT(F) (CA,L)
714	SW - NPT(F) (V)
773	CLASS 300 (B,F,G)

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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P01A-0010P	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	0.75		SCH160		P01A-0010R	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1		SCH160		P01A-0014M	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1.5		SCH160		P01A-0015J	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	2		XS		P01A-000YX	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	3		STD		P01A-000YM	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	4		STD		P01A-000YU	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	6		STD		P01A-000Z3	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	8		SCH20		P01A-001AT	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	10		SCH20		P01A-0014Y	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	12		SCH30		P01A-0017K	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	14		SCH20		P01A-0017A	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	16		SCH20		P01A-0018E	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	18		SCH20		P01A-00438	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE	
1	20		STD		P01A-0042G	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE	
1	24		STD		P01A-0042H	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P02B-0001J	90 degree elbow ASTM A105 Class 6000 ASME B16.11 SW	
1	0.75				P02B-0001K	90 degree elbow ASTM A105 Class 6000 ASME B16.11 SW	
1	1				P02B-0002E	90 degree elbow ASTM A105 Class 6000 ASME B16.11 SW	
1	1.5				P02B-0002F	90 degree elbow ASTM A105 Class 6000 ASME B16.11 SW	
1	2		XS		P02A-000CP	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		STD		P02A-000CU	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		STD		P02A-000CZ	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		STD		P02A-000D6	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		SCH20		P02A-000GZ	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	10		SCH20		P02A-000H1	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	12		SCH30		P02A-000M4	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	14		SCH20		P02A-000FX	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	16		SCH20		P02A-000GM	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	18		SCH20		P02A-000LT	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	20		STD		P02A-0010J	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	24		STD		P02A-0010K	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P03B-0001F	45 degree elbow ASTM A105 Class 6000 ASME B16.11 SW	
1	0.75				P03B-0001G	45 degree elbow ASTM A105 Class 6000 ASME B16.11 SW	
1	1				P03B-0002A	45 degree elbow ASTM A105 Class 6000 ASME B16.11 SW	
1	1.5				P03B-0002B	45 degree elbow ASTM A105 Class 6000 ASME B16.11 SW	
1	2		XS		P03A-000AS	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		STD		P03A-000AX	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		STD		P03A-000B1	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		STD		P03A-000B9	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		SCH20		P03A-000EX	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	10		SCH20		P03A-000F0	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	12		SCH30		P03A-000JU	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	14		SCH20		P03A-000DW	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	16		SCH20		P03A-000EM	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	18		SCH20		P03A-001DX	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	20		STD		P03A-000X1	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	24		STD		P03A-000X2	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P21B-0001F	Straight tee ASTM A105 Class 6000 ASME B16.11 SW	
1	0.75				P21B-0001G	Straight tee ASTM A105 Class 6000 ASME B16.11 SW	

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STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P21B-00026	Straight tee ASTM A105 Class 6000 ASME B16.11 SW	
1	1.5				P21B-00027	Straight tee ASTM A105 Class 6000 ASME B16.11 SW	
1	2		XS		P21A-001CJ	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		STD		P21A-001CU	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		STD		P21A-001CW	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6		STD		P21A-001D2	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8		SCH20		P21A-00215	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10		SCH20		P21A-00219	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12		SCH30		P21A-0025A	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14		SCH20		P21A-00206	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16		SCH20		P21A-0020X	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18		SCH20		P21A-001PJ	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20		STD		P21A-001C7	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24		STD		P21A-001CC	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75			P24B-00030	Reducing tee ASTM A105 Class 6000 ASME B16.11 SW	
1	1.5	0.75			P24B-00032	Reducing tee ASTM A105 Class 6000 ASME B16.11 SW	
1	1.5	1			P24B-0004J	Reducing tee ASTM A105 Class 6000 ASME B16.11 SW	
1	2	1	XS	SCH160	P24A-00GMB	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	XS	SCH160	P24A-005K9	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	STD	SCH160	P24A-00GMC	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	STD	XS	P24A-002HW	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P24A-002HY	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P24A-0021K	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	STD	P24A-0021A	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P24A-00229	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH20	STD	P24A-00J21	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH20	STD	P24A-005J4	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	SCH20	STD	P24A-00HMB	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	SCH20	STD	P24A-00HKS	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	SCH20	SCH20	P24A-002YX	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	SCH30	STD	P24A-00HKT	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH30	SCH20	P24A-003XM	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH30	SCH20	P24A-003XL	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	SCH20	STD	P24A-00K0M	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	SCH20	SCH20	P24A-002U7	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	SCH20	SCH20	P24A-002YA	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	SCH20	SCH30	P24A-003ES	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	6	SCH20	STD	P24A-00GU4	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	SCH20	SCH20	P24A-002XW	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	SCH20	SCH20	P24A-002YH	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	SCH20	SCH30	P24A-003XN	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	SCH20	SCH20	P24A-002XF	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	8	SCH20	SCH20	P24A-002XC	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	10	SCH20	SCH20	P24A-002UX	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	12	SCH20	SCH30	P24A-00BH0	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	14	SCH20	SCH20	P24A-002WT	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	16	SCH20	SCH20	P24A-002X5	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	8	STD	SCH20	P24A-00K0N	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	10	STD	SCH20	P24A-00BT7	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	12	STD	SCH30	P24A-00BUT	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	14	STD	SCH20	P24A-00BWB	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	16	STD	SCH20	P24A-006W3	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	18	STD	SCH20	P24A-006WD	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	10	STD	SCH20	P24A-00KT6	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	12	STD	SCH30	P24A-00C7C	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	14	STD	SCH20	P24A-00K0C	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	

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REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	24	16	STD	SCH20	P24A-00CAD	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	18	STD	SCH20	P24A-006WF	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	20	STD	STD	P24A-004SV	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	STD	XS	P27A-001MZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P27A-001N0	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P27A-00189	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	STD	P27A-001AZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P27A-001GW	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH20	STD	P27A-003K2	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH20	STD	P27A-003K3	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	SCH20	STD	P27A-003K4	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	SCH20	STD	P27A-003K5	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	SCH20	SCH20	P27A-001UL	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	SCH30	STD	P27A-003MN	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH30	SCH20	P27A-002GG	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH30	SCH20	P27A-002GF	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	SCH20	STD	P27A-00518	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	SCH20	SCH20	P27A-001V4	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	SCH20	SCH20	P27A-001TG	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	SCH20	SCH30	P27A-0028H	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	SCH20	SCH20	P27A-001WX	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	SCH20	SCH20	P27A-001TW	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	SCH20	SCH30	P27A-002GH	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	SCH20	SCH20	P27A-001V2	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	10	SCH20	SCH20	P27A-001TJ	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	12	SCH20	SCH30	P27A-0084K	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	14	SCH20	SCH20	P27A-001UY	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	16	SCH20	SCH20	P27A-001WN	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	12	STD	SCH30	P27A-0082K	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	14	STD	SCH20	P27A-0082L	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	16	STD	SCH20	P27A-0082M	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	18	STD	SCH20	P27A-0084N	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	16	STD	SCH20	P27A-0084T	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	18	STD	SCH20	P27A-0084U	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	20	STD	STD	P27A-001A8	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	STD	XS	P28A-001N5	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P28A-001N6	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P28A-0018B	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	STD	P28A-001AS	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P28A-00182	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH20	STD	P28A-003JU	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH20	STD	P28A-003JV	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	SCH20	STD	P28A-003JW	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	SCH20	STD	P28A-003JX	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	SCH20	SCH20	P28A-001V0	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	SCH30	STD	P28A-003MG	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH30	SCH20	P28A-002GA	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH30	SCH20	P28A-002G9	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	SCH20	STD	P28A-0096P	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	SCH20	SCH20	P28A-001WH	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	SCH20	SCH20	P28A-001TH	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	SCH20	SCH30	P28A-0027A	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	SCH20	SCH20	P28A-001T6	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	16	10	SCH20	SCH20	P28A-001TY	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	SCH20	SCH30	P28A-002GB	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	SCH20	SCH20	P28A-001WG	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	10	SCH20	SCH20	P28A-001TV	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	12	SCH20	SCH30	P28A-004UM	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	14	SCH20	SCH20	P28A-001WD	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	16	SCH20	SCH20	P28A-001T1	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	12	STD	SCH30	P28A-004SH	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	14	STD	SCH20	P28A-004SJ	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	16	STD	SCH20	P28A-004SK	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	18	STD	SCH20	P28A-004UN	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	16	STD	SCH20	P28A-004UR	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	18	STD	SCH20	P28A-004US	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	20	STD	STD	P28A-001AW	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P29B-0002F	Cap ASTM A105 Class 6000 ASME B16.11 SW	
1	0.75				P29B-0002G	Cap ASTM A105 Class 6000 ASME B16.11 SW	
1	1				P29B-0002D	Cap ASTM A105 Class 6000 ASME B16.11 SW	
1	1.5				P29B-0002E	Cap ASTM A105 Class 6000 ASME B16.11 SW	
1	2		XS		P29A-000A1	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		STD		P29A-000BK	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		STD		P29A-000A3	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6		STD		P29A-000A9	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8		SCH20		P29A-000EY	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10		SCH20		P29A-000E5	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12		SCH30		P29A-000PZ	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14		SCH20		P29A-000EA	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16		SCH20		P29A-000F3	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18		SCH20		P29A-000E0	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20		STD		P29A-000B2	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24		STD		P29A-000B8	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
541	0.75				P29B-0000Y	Cap ASTM A105 Class 6000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P41A-000B9	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		XXS		P41A-000BA	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		XXS		P41A-000D8	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		XXS		P41A-000D9	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

CON SWAGED NIPPLE (SNC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	SCH160	P42A-00029	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	SCH160	SCH160	P42A-0009T	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	SCH160	SCH160	P42A-0009U	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	SCH160	SCH160	P42A-0009V	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	SCH160	SCH160	P42A-0009W	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	SCH160	SCH160	P42A-0009X	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	XS	SCH160	P42A-000J6	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	XS	SCH160	P42A-000J7	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	XS	SCH160	P42A-000F8	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	XS	SCH160	P42A-000KZ	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	STD	SCH160	P42A-000L0	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	

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ECC SWAGED NIPPLE (SNE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	SCH160	P43A-000AM	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	SCH160	SCH160	P43A-000B4	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	SCH160	SCH160	P43A-000B5	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	SCH160	SCH160	P43A-000B6	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	SCH160	SCH160	P43A-000B7	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	SCH160	SCH160	P43A-000B8	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	XS	SCH160	P43A-000B2	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	XS	SCH160	P43A-000B3	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	XS	SCH160	P43A-000CZ	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	XS	SCH160	P43A-000D0	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	STD	SCH160	P43A-000D1	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	

COUPLING (CPS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P47B-00013	Coupling ASTM A105 Class 6000 ASME B16.11 SW - SW	
1	0.75				P47B-00012	Coupling ASTM A105 Class 6000 ASME B16.11 SW - SW	
1	1				P47B-0002A	Coupling ASTM A105 Class 6000 ASME B16.11 SW - SW	
1	1.5				P47B-0002B	Coupling ASTM A105 Class 6000 ASME B16.11 SW - SW	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5 - 2.5	0.75			P31B-0137D	Outlet ASTM A105 Class 6000 MSS SP-97 SW	
1	3 - 10	0.75			P31B-007LV	Outlet ASTM A105 Class 6000 MSS SP-97 SW	
1	12 and larger	0.75			P31B-0136N	Outlet ASTM A105 Class 6000 MSS SP-97 SW	
1	3 - 10	1			P31B-007LN	Outlet ASTM A105 Class 6000 MSS SP-97 SW	
1	12 and larger	1			P31B-0136P	Outlet ASTM A105 Class 6000 MSS SP-97 SW	
1	4 - 5	1.5			P31B-004LE	Outlet ASTM A105 Class 6000 MSS SP-97 SW	
1	6 - 8	1.5			P31B-005T4	Outlet ASTM A105 Class 6000 MSS SP-97 SW	
1	10 - 18	1.5			P31B-007LF	Outlet ASTM A105 Class 6000 MSS SP-97 SW	
1	20 and larger	1.5			P31B-0137E	Outlet ASTM A105 Class 6000 MSS SP-97 SW	
541	1	0.75			P31B-005HL	Outlet ASTM A105 Class 6000 MSS SP-97 NPT	
541	1.5 - 2.5	0.75			P31B-0137F	Outlet ASTM A105 Class 6000 MSS SP-97 NPT	
541	3 - 10	0.75			P31B-007KP	Outlet ASTM A105 Class 6000 MSS SP-97 NPT	
541	12 and larger	0.75			P31B-0138A	Outlet ASTM A105 Class 6000 MSS SP-97 NPT	
1	6	2	STD	XS	P31B-007SH	Outlet ASTM A105 MSS SP-97 BW	
1	8	2	SCH20	XS	P31B-00NY2	Outlet ASTM A105 MSS SP-97 BW	
1	10	2	SCH20	XS	P31B-00TFB	Outlet ASTM A105 MSS SP-97 BW	
1	12	2	SCH30	XS	P31B-00NVL	Outlet ASTM A105 MSS SP-97 BW	
1	14	2	SCH20	XS	P31B-00TF9	Outlet ASTM A105 MSS SP-97 BW	
1	16	2	SCH20	XS	P31B-00TF8	Outlet ASTM A105 MSS SP-97 BW	
1	18	2	SCH20	XS	P31B-00NVX	Outlet ASTM A105 MSS SP-97 BW	
1	20	2	STD	XS	P31B-00994	Outlet ASTM A105 MSS SP-97 BW	
1	24	2	STD	XS	P31B-0092Z	Outlet ASTM A105 MSS SP-97 BW	
1	8	3	SCH20	STD	P31B-00P11	Outlet ASTM A105 MSS SP-97 BW	
1	10	3	SCH20	STD	P31B-00UPG	Outlet ASTM A105 MSS SP-97 BW	
1	12	3	SCH30	STD	P31B-00NYR	Outlet ASTM A105 MSS SP-97 BW	
1	14	3	SCH20	STD	P31B-00UPH	Outlet ASTM A105 MSS SP-97 BW	
1	16	3	SCH20	STD	P31B-00TU2	Outlet ASTM A105 MSS SP-97 BW	
1	18	3	SCH20	STD	P31B-00NZ4	Outlet ASTM A105 MSS SP-97 BW	
1	20	3	STD	STD	P31B-008FA	Outlet ASTM A105 MSS SP-97 BW	
1	24	3	STD	STD	P31B-00895	Outlet ASTM A105 MSS SP-97 BW	
1	12	4	SCH30	STD	P31B-00P1G	Outlet ASTM A105 MSS SP-97 BW	
1	14	4	SCH20	STD	P31B-00UPJ	Outlet ASTM A105 MSS SP-97 BW	
1	16	4	SCH20	STD	P31B-00TU3	Outlet ASTM A105 MSS SP-97 BW	
1	18	4	SCH20	STD	P31B-00P1V	Outlet ASTM A105 MSS SP-97 BW	
1	20	4	STD	STD	P31B-008D3	Outlet ASTM A105 MSS SP-97 BW	
1	24	4	STD	STD	P31B-0086X	Outlet ASTM A105 MSS SP-97 BW	
1	18	6	SCH20	STD	P31B-00P48	Outlet ASTM A105 MSS SP-97 BW	
1	20	6	STD	STD	P31B-008PZ	Outlet ASTM A105 MSS SP-97 BW	

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OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	24	6	STD	STD	P31B-008JD	Outlet ASTM A105 MSS SP-97 BW	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30B-0002D	Plug ASTM A105 ASME B16.11 NPT Round head	
1	0.75				P30B-0002E	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1				P30B-0002F	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1.5				P30B-0002G	Plug ASTM A105 ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P61B-002D4	Flange SW ASTM A105 Class 150 ASME B16.5 RF	
1	0.75		SCH160		P61B-002DE	Flange SW ASTM A105 Class 150 ASME B16.5 RF	
1	1		SCH160		P61B-002DU	Flange SW ASTM A105 Class 150 ASME B16.5 RF	
1	1.5		SCH160		P61B-002EM	Flange SW ASTM A105 Class 150 ASME B16.5 RF	
1	2		XS		P61B-003NK	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	3		STD		P61B-001PW	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	4		STD		P61B-001R8	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	6		STD		P61B-001RT	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	8		SCH20		P61B-002BF	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	10		SCH20		P61B-002B4	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	12		SCH30		P61B-002TS	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	14		SCH20		P61B-002B6	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	16		SCH20		P61B-002B7	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	18		SCH20		P61B-002B8	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	20		STD		P61B-001JA	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	24		STD		P61B-001NJ	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
773	0.5		SCH160		P61B-001H5	Flange SW ASTM A105 Class 300 ASME B16.5 RF	
773	0.75		SCH160		P61B-001HH	Flange SW ASTM A105 Class 300 ASME B16.5 RF	
773	1		SCH160		P61B-001E8	Flange SW ASTM A105 Class 300 ASME B16.5 RF	
773	1.5		SCH160		P61B-001ET	Flange SW ASTM A105 Class 300 ASME B16.5 RF	
773	2		XS		P61B-001HW	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	3		STD		P61B-001LJ	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	4		STD		P61B-001MC	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	6		STD		P61B-001N2	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	8		SCH20		P61B-002LJ	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	10		SCH20		P61B-002LH	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	12		SCH30		P61B-002TV	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	14		SCH20		P61B-002MR	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	16		SCH20		P61B-002MS	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	18		SCH20		P61B-002MT	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	20		STD		P61B-001NT	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	24		STD		P61B-001PA	Flange WN ASTM A105 Class 300 ASME B16.5 RF	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67B-000FH	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	0.75				P67B-000FJ	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	1				P67B-000FK	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	1.5				P67B-000FL	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	2				P67B-000FT	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	3				P67B-000FW	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	4				P67B-000FX	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	6				P67B-000FY	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	8				P67B-000FZ	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	10				P67B-000FM	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	12				P67B-000FN	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	14				P67B-000FP	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	16				P67B-000FR	Blind flange ASTM A105 Class 150 ASME B16.5 RF	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	18				P67B-000FS	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	20				P67B-000FU	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	24				P67B-000FV	Blind flange ASTM A105 Class 150 ASME B16.5 RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000L8	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000L9	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000LA	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000LB	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000LH	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000LL	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000LM	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	6				P73T-000LN	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	8				P73T-000LP	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	10				P73T-000LC	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	12				P73T-000LD	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	14				P73T-000LE	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	16				P73T-000LF	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	18				P73T-000LG	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	20				P73T-000LJ	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	24				P73T-000LK	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	0.5				P73T-000FT	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	0.75				P73T-000FU	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	3				P73T-000G5	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	4				P73T-000G6	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	6				P73T-000G7	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	8				P73T-000G8	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	10				P73T-000FX	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	12				P73T-000FY	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	14				P73T-000FZ	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	16				P73T-000G0	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	18				P73T-000G1	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	20				P73T-000G3	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	24				P73T-000G4	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-16				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	18-24				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
773	0.5-10				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
773	12-24				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	

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GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81B-000P4	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	0.75				P81B-000NX	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	1				P81B-000NY	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	1.5				P81B-000NZ	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	2				P81C-002DV	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	3				P81C-002DW	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	4				P81C-002DX	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	6				P81C-002DY	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	8				P81C-002DZ	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	10				P81C-002DT	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
714	0.5				P81B-0015L	Gate valve ASTM A105 Class 800 API 602 SW - NPT Trim number 8 BB-BG-OS&Y Handwheel operated	
714	0.75				P81B-002F4	Gate valve ASTM A105 Class 800 API 602 SW - NPT Trim number 8 BB-BG-OS&Y Handwheel operated	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82B-000K0	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	0.75				P82B-000HB	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	1				P82B-000HC	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	1.5				P82B-000HD	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	2				P82C-000N5	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	3				P82C-000N6	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	4				P82C-000N7	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83B-000FX	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover	
1	0.75				P83B-000ER	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover	
1	1				P83B-000ES	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover	
1	1.5				P83B-000ET	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover	
1	2				P83C-00144	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	3				P83C-00147	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	4				P83C-00148	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	

BALL VALVE (Q)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P84B-0011T	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design	
1	0.75				P84B-0011U	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design	
1	1				P84B-0011V	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design	
1	1.5				P84B-0011W	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design	
1	2				P84C-005UD	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design	
1	3				P84C-005UE	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design	
24	0.5				P84B-0011X	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	
24	0.75				P84B-0011Y	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	
24	1				P84B-0011Z	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	
24	1.5				P84B-00120	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	
24	2				P84C-005UJ	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	
24	3				P84C-005UK	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	

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ORIFICE FLANGE (FO)							
OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2		XS		P66B-0084B	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	3		STD		P66B-0084C	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	4		STD		P66B-0084D	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	6		STD		P66B-0084E	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	8		SCH20		P66B-0084F	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	10		SCH20		P66B-00848	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	12		SCH30		P66B-00849	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
200	2		XS		P66B-00843	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	3		STD		P66B-00844	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	4		STD		P66B-00845	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	6		STD		P66B-00846	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	8		SCH20		P66B-00847	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	10		SCH20		P66B-00840	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	12		SCH30		P66B-00841	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	

SPECT BLANK (SB)							
OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71B-0008A	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	0.75				P71B-0008B	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	1				P71B-0008C	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71B-0008D	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	2				P71B-0000P	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	3				P71B-0000N	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	4				P71B-0000M	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	6				P71B-0000L	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	8				P71B-0000R	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	10				P71B-0000K	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	12				P71B-0000J	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	

PADDLE BLANK (PB)							
OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000AH	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	16				P72B-0000C	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	18				P72B-000AJ	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	20				P72B-000AK	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	24				P72B-000AL	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	

PADDLE SPACER (PS)							
OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000AT	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	16				P72B-0000B	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	18				P72B-000AU	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	20				P72B-000AV	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	24				P72B-000AW	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	

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BOLT TABLE (B_A2AA , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	60	P80S-003V2		
0.75	4	0.500	65	P80S-003V3		
1	4	0.500	70	P80S-003V4		
1.5	4	0.500	75	P80S-003V5		
2	4	0.625	85	P80S-003XE		
3	4	0.625	95	P80S-003XG		
4	8	0.625	95	P80S-003XG		
6	8	0.750	105	P80S-003XJ		
8	8	0.750	110	P80S-003XK		
10	12	0.875	120	P80S-00419		
12	12	0.875	120	P80S-00419		
14	12	1.000	135	P80S-0043E		
16	16	1.000	140	P80S-0043F		
18	16	1.125	150	P80S-0046K		
20	20	1.125	160	P80S-0046M		
24	20	1.250	175	P80S-004AG		

BOLT TABLE (B_A2AA_773 , STUD ASME RF, OPTION CODE 773)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-003V4		
0.75	4	0.625	75	P80S-003XC		
1	4	0.625	80	P80S-003XD		
1.5	4	0.750	95	P80S-00414		
2	8	0.625	90	P80S-003XF		
3	8	0.750	110	P80S-003XK		
4	8	0.750	115	P80S-003XL		
6	12	0.750	125	P80S-003XN		
8	12	0.875	140	P80S-0041D		
10	16	1.000	160	P80S-0043K		
12	16	1.125	175	P80S-0046S		
14	20	1.125	180	P80S-0046T		
16	20	1.250	190	P80S-004AK		
18	24	1.250	200	P80S-004AM		
20	24	1.250	210	P80S-004AP		
24	24	1.500	235	P80S-003F8		

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BRANCH TABLE (T_A2AA)

RUN PIPE SIZE (in) \ BRANCH SIZE (in)	0.5	0.75	1	1.5	2	3	4	6	8	10	12	14	16	18	20	24
0.5	TS															
0.75		TS														
1		TR	TS													
1.5		TR	TR	TS												
2		L	TR	TR	TS											
3		L	L	TR	TR	TS										
4	L	L	L	L	TR	TR	TS									
6	L	L	L	L	L	TR	TR	TS								
8		L	L	L	L	L	TR	TR	TS							
10		L	L	L	L	L	TR	TR	TR	TS						
12		L	L	L	L	L	L	TR	TR	TR	TS					
14		L	L	L	L	L	L	TR	TR	TR	TR	TS				
16		L	L	L	L	L	L	TR	TR	TR	TR	TR	TS			
18		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TS		
20		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TR	TS	
24		L	L	L	L	L	L	L	9PD	TR	TR	TR	TR	TR	TR	TS

TS : STRAIGHT TEE
9PD : REINFORCING PAD 90 DEG
TR : REDUCING TEE
L : OUTLET

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PIPING CLASS

A2AC01 REV NO. 2

Material : Killed CS
Rating : ASME CLASS 150
Flange Face : RF
C.A.(mm) : 3.00
Gasket : Spiral Wound
Service : PROCESS - CATALYST : / CATALYST
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
2	USE OF SOFT SEATED BALL, PLUG AND BUTTERFLY VALVES SHALL BE LIMITED TO MAXIMUM OF 204DEGC (400DEGF)
6	PIPE THICKNESS CALCULATION TO INCLUDE CORROSION AND EROSION ALLOWANCES DUE TO THE PROCESS CATALYST FLOW, AS PER PROCESS LICENSOR SPECIFICATIONS

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
541	NPT(F) (CA,F,L)
773	CLASS 300 (B,F,G,PB,PS)
4608	VALVE WITH NIPPLES (V)

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PIPING CLASS
A2AC01 REV NO. 2

PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P01A-0078U	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE Licensor-1	
1	0.75		SCH160		P01A-0078V	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE Licensor-1	
1	1		SCH160		P01A-0078W	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE Licensor-1	
1	1.5		SCH160		P01A-0078X	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE Licensor-1	
1	2		XS		P01A-0078Y	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Licensor-1	
1	3		STD		P01A-0078Z	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Licensor-1	
1	4		STD		P01A-007B3	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Licensor-1	
1	6		STD		P01A-007B8	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Licensor-1	
1	8		SCH30		P01A-008MX	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Licensor-1	
1	10		SCH30		P01A-007GE	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Licensor-1	
1	12		SCH30		P01A-007CF	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Licensor-1	
1	14		SCH20		P01A-007B6	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Licensor-1	
1	16		SCH20		P01A-007B7	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Licensor-1	
1	18		SCH20		P01A-007BA	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE Licensor-1	
1	20		STD		P01A-007BB	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE Licensor-1	
1	24		STD		P01A-007BC	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE Licensor-1	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P02A-003TW	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	0.75		SCH160		P02A-003TX	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	1		SCH160		P02A-003TY	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	1.5		SCH160		P02A-003TZ	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	2		XS		P02A-003R7	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	3		STD		P02A-003R8	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	4		STD		P02A-003T8	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	6		STD		P02A-003TG	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	8		SCH30		P02A-004FD	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	10		SCH30		P02A-003YN	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	12		SCH30		P02A-003UH	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	14		SCH20		P02A-003TB	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	16		SCH20		P02A-003TC	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	18		SCH20		P02A-003TD	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	20		STD		P02A-003TE	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	24		STD		P02A-003TF	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P03A-003RJ	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	0.75		SCH160		P03A-003RK	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	1		SCH160		P03A-003RL	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	1.5		SCH160		P03A-003RM	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	2		XS		P03A-003MW	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	3		STD		P03A-003MX	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	4		STD		P03A-003PX	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	6		STD		P03A-003R5	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	8		SCH30		P03A-004CK	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	10		SCH30		P03A-003WB	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	12		SCH30		P03A-003S6	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	14		SCH20		P03A-003R0	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	16		SCH20		P03A-003R1	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	18		SCH20		P03A-003R2	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	20		STD		P03A-003R3	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	24		STD		P03A-003R4	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P21A-004B8	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	0.75		SCH160		P21A-004B9	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	

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STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		SCH160		P21A-004BA	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	1.5		SCH160		P21A-004BB	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	2		XS		P21A-0048L	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	3		STD		P21A-0048M	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	4		STD		P21A-004AL	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	6		STD		P21A-004AS	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	8		SCH30		P21A-004XU	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	10		SCH30		P21A-004FY	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	12		SCH30		P21A-004BZ	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	14		SCH20		P21A-004AP	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	16		SCH20		P21A-004AR	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	18		SCH20		P21A-004AU	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	20		STD		P21A-004AV	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	24		STD		P21A-004AW	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75	SCH160	SCH160	P24A-00K7S	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	1.5	0.75	SCH160	SCH160	P24A-00K7T	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	1.5	1	SCH160	SCH160	P24A-00K7U	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	2	1	XS	SCH160	P24A-00K0V	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	2	1.5	XS	SCH160	P24A-00K0W	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	3	1.5	STD	SCH160	P24A-00K0X	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	3	2	STD	XS	P24A-00K0Y	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	4	2	STD	XS	P24A-00K5X	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	4	3	STD	STD	P24A-00K5Y	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	6	3	STD	STD	P24A-00K64	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	6	4	STD	STD	P24A-00K65	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	8	4	SCH30	STD	P24A-00NHF	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	8	6	SCH30	STD	P24A-00NHG	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	10	4	SCH30	STD	P24A-00KSJ	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	10	6	SCH30	STD	P24A-00KSK	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	10	8	SCH30	SCH30	P24A-00NHH	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	12	6	SCH30	STD	P24A-00KBJ	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	12	8	SCH30	SCH30	P24A-00NHK	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	12	10	SCH30	SCH30	P24A-00NHJ	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	14	6	SCH20	STD	P24A-00K6G	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	14	8	SCH20	SCH30	P24A-00NHM	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	14	10	SCH20	SCH30	P24A-00NHL	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	14	12	SCH20	SCH30	P24A-00KBL	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	16	6	SCH20	STD	P24A-00K6M	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	16	8	SCH20	SCH30	P24A-00NHN	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	16	10	SCH20	SCH30	P24A-00KST	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	16	12	SCH20	SCH30	P24A-00KBM	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	16	14	SCH20	SCH20	P24A-00K6L	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	18	8	SCH20	SCH30	P24A-00NHP	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	18	10	SCH20	SCH30	P24A-00KSV	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	18	12	SCH20	SCH30	P24A-00KBN	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	18	14	SCH20	SCH20	P24A-00K6S	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	18	16	SCH20	SCH20	P24A-00K6T	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	20	8	STD	SCH30	P24A-00NHR	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	20	10	STD	SCH30	P24A-00KSY	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	20	12	STD	SCH30	P24A-00KBP	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	20	14	STD	SCH20	P24A-00K6X	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	20	16	STD	SCH20	P24A-00K6Y	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	20	18	STD	SCH20	P24A-00K6Z	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	24	10	STD	SCH30	P24A-00KT1	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	24	12	STD	SCH30	P24A-00KBR	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	24	14	STD	SCH20	P24A-00K72	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	

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REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	24	16	STD	SCH20	P24A-00K73	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	24	18	STD	SCH20	P24A-00K74	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	24	20	STD	STD	P24A-00K75	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	SCH160	P27A-00ETE	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	1	0.5	SCH160	SCH160	P27A-00ETF	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	1	0.75	SCH160	SCH160	P27A-00ETG	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	1.5	0.5	SCH160	SCH160	P27A-00ETH	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	1.5	0.75	SCH160	SCH160	P27A-00ETJ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	1.5	1	SCH160	SCH160	P27A-00ETK	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	2	0.75	XS	SCH160	P27A-00ETL	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	2	1	XS	SCH160	P27A-00ETM	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	2	1.5	XS	SCH160	P27A-00ETN	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	3	1.5	STD	SCH160	P27A-00ETP	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	3	2	STD	XS	P27A-00EL1	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	4	1.5	STD	SCH160	P27A-00ETR	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	4	2	STD	XS	P27A-00ES5	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	4	3	STD	STD	P27A-00ES6	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	6	3	STD	STD	P27A-00ES9	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	6	4	STD	STD	P27A-00ESA	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	8	4	SCH30	STD	P27A-00H5R	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	8	6	SCH30	STD	P27A-00H5S	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	10	4	SCH30	STD	P27A-00F7C	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	10	6	SCH30	STD	P27A-00F7D	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	10	8	SCH30	SCH30	P27A-00H5T	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	12	6	SCH30	STD	P27A-00EW1	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	12	8	SCH30	SCH30	P27A-00H5V	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	12	10	SCH30	SCH30	P27A-00H5U	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	14	6	SCH20	STD	P27A-00ESM	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	14	8	SCH20	SCH30	P27A-00H5X	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	14	10	SCH20	SCH30	P27A-00H5W	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	14	12	SCH20	SCH30	P27A-00EW3	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	16	8	SCH20	SCH30	P27A-00H5Y	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	16	10	SCH20	SCH30	P27A-00F7L	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	16	12	SCH20	SCH30	P27A-00EW4	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	16	14	SCH20	SCH20	P27A-00ESS	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	18	10	SCH20	SCH30	P27A-00F7P	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	18	12	SCH20	SCH30	P27A-00EW5	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	18	14	SCH20	SCH20	P27A-00ESW	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	18	16	SCH20	SCH20	P27A-00ESX	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	20	12	STD	SCH30	P27A-00EW6	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	20	14	STD	SCH20	P27A-00ESZ	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	20	16	STD	SCH20	P27A-00ET0	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	20	18	STD	SCH20	P27A-00ET1	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	24	16	STD	SCH20	P27A-00ET2	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	24	18	STD	SCH20	P27A-00ET3	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	24	20	STD	STD	P27A-00ET4	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	SCH160	P28A-00BX8	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	1	0.5	SCH160	SCH160	P28A-00BX9	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	1	0.75	SCH160	SCH160	P28A-00BXA	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	1.5	0.5	SCH160	SCH160	P28A-00BXB	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	1.5	0.75	SCH160	SCH160	P28A-00BXC	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	1.5	1	SCH160	SCH160	P28A-00BXD	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	2	0.75	XS	SCH160	P28A-00BXE	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2	1	XS	SCH160	P28A-00BXF	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	2	1.5	XS	SCH160	P28A-00BXG	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	3	1.5	STD	SCH160	P28A-00BXH	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	3	2	STD	XS	P28A-00BPS	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	4	1.5	STD	SCH160	P28A-00BXJ	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	4	2	STD	XS	P28A-00BVZ	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	4	3	STD	STD	P28A-00BW0	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	6	3	STD	STD	P28A-00BW3	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	6	4	STD	STD	P28A-00BW4	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	8	4	SCH30	STD	P28A-00EDD	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	8	6	SCH30	STD	P28A-00EDE	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	10	4	SCH30	STD	P28A-00CBD	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	10	6	SCH30	STD	P28A-00CBE	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	10	8	SCH30	SCH30	P28A-00EDF	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	12	6	SCH30	STD	P28A-00BZW	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	12	8	SCH30	SCH30	P28A-00EDH	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	12	10	SCH30	SCH30	P28A-00EDG	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	14	6	SCH20	STD	P28A-00BWF	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	14	8	SCH20	SCH30	P28A-00EDK	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	14	10	SCH20	SCH30	P28A-00EDJ	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	14	12	SCH20	SCH30	P28A-00BZY	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	16	8	SCH20	SCH30	P28A-00EDL	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	16	10	SCH20	SCH30	P28A-00CBM	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	16	12	SCH20	SCH30	P28A-00BZZ	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	16	14	SCH20	SCH20	P28A-00BWK	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	18	10	SCH20	SCH30	P28A-00CBR	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	18	12	SCH20	SCH30	P28A-00C00	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	18	14	SCH20	SCH20	P28A-00BWP	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	18	16	SCH20	SCH20	P28A-00BWR	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	20	12	STD	SCH30	P28A-00C01	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	20	14	STD	SCH20	P28A-00BWT	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	20	16	STD	SCH20	P28A-00BWU	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	20	18	STD	SCH20	P28A-00BWV	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	24	16	STD	SCH20	P28A-00BWW	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	24	18	STD	SCH20	P28A-00BWX	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	24	20	STD	STD	P28A-00BWY	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P29A-0035G	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	0.75		SCH160		P29A-0035H	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	1		SCH160		P29A-0035J	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	1.5		SCH160		P29A-0035K	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	2		XS		P29A-00326	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	3		STD		P29A-00327	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	4		STD		P29A-0034R	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	6		STD		P29A-00353	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	8		SCH30		P29A-003SB	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	10		SCH30		P29A-003B3	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	12		SCH30		P29A-0036E	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	14		SCH20		P29A-0034U	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	16		SCH20		P29A-0034V	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	18		SCH20		P29A-0034W	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	20		STD		P29A-0034X	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	24		STD		P29A-0034Y	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
541	0.75				P29B-00069	Cap ASTM A105 Class 6000 ASME B16.11 NPT Licensor-1	

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STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P41A-0017X	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Licensor-1	
1	0.75		XXS		P41A-0017Y	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Licensor-1	
1	1		XXS		P41A-0017Z	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Licensor-1	
1	1.5		XXS		P41A-00180	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Licensor-1	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
541	1	0.75			P31B-01367	Outlet ASTM A105 Class 6000 MSS SP-97 NPT Licensor-1	
541	1.5 - 2.5	0.75			P31B-013A7	Outlet ASTM A105 Class 6000 MSS SP-97 NPT Licensor-1	
1	2	0.75	XS	SCH160	P31B-00XP8	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	3	0.75	STD	SCH160	P31B-00XP9	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	4	0.75	STD	SCH160	P31B-00XPB	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	6	0.75	STD	SCH160	P31B-00XPE	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	8	0.75	SCH30	SCH160	P31B-010U2	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	10	0.75	SCH30	SCH160	P31B-010U5	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	12	0.75	SCH30	SCH160	P31B-00XTE	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	14	0.75	SCH20	SCH160	P31B-00XTH	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	16	0.75	SCH20	SCH160	P31B-00XTL	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	18	0.75	SCH20	SCH160	P31B-00XTP	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	20	0.75	STD	SCH160	P31B-00XTT	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	24	0.75	STD	SCH160	P31B-00XTW	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	3	1	STD	SCH160	P31B-00XPA	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	4	1	STD	SCH160	P31B-00XPC	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	6	1	STD	SCH160	P31B-00XPF	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	8	1	SCH30	SCH160	P31B-010U3	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	10	1	SCH30	SCH160	P31B-010U6	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	12	1	SCH30	SCH160	P31B-00XTF	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	14	1	SCH20	SCH160	P31B-00XTJ	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	16	1	SCH20	SCH160	P31B-00XTM	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	18	1	SCH20	SCH160	P31B-00XTR	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	20	1	STD	SCH160	P31B-00XTU	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	24	1	STD	SCH160	P31B-00XTX	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	4	1.5	STD	SCH160	P31B-00XPD	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	6	1.5	STD	SCH160	P31B-00XPG	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	8	1.5	SCH30	SCH160	P31B-010U4	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	10	1.5	SCH30	SCH160	P31B-010U7	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	12	1.5	SCH30	SCH160	P31B-00XTG	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	14	1.5	SCH20	SCH160	P31B-00XTK	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	16	1.5	SCH20	SCH160	P31B-00XTN	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	18	1.5	SCH20	SCH160	P31B-00XTS	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	20	1.5	STD	SCH160	P31B-00XTV	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	24	1.5	STD	SCH160	P31B-00XTY	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	6	2	STD	XS	P31B-00XMV	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	8	2	SCH30	XS	P31B-010U0	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	10	2	SCH30	XS	P31B-00Y8G	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	12	2	SCH30	XS	P31B-00XT7	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	14	2	SCH20	XS	P31B-00XN3	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	16	2	SCH20	XS	P31B-00XN6	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	18	2	SCH20	XS	P31B-00XN9	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	20	2	STD	XS	P31B-00XND	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	24	2	STD	XS	P31B-00XNH	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	8	3	SCH30	STD	P31B-010U1	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	10	3	SCH30	STD	P31B-00Y8H	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	12	3	SCH30	STD	P31B-00XT8	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	14	3	SCH20	STD	P31B-00XN4	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	16	3	SCH20	STD	P31B-00XN7	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	18	3	SCH20	STD	P31B-00XNA	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	20	3	STD	STD	P31B-00XNE	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	24	3	STD	STD	P31B-00XNJ	Outlet ASTM A105 MSS SP-97 BW Licensor-1	

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OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	12	4	SCH30	STD	P31B-00XT9	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	14	4	SCH20	STD	P31B-00XN5	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	16	4	SCH20	STD	P31B-00XN8	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	18	4	SCH20	STD	P31B-00XNB	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	20	4	STD	STD	P31B-00XNF	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	24	4	STD	STD	P31B-00XNK	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	18	6	SCH20	STD	P31B-00XNC	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	20	6	STD	STD	P31B-00XNG	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	24	6	STD	STD	P31B-00XNL	Outlet ASTM A105 MSS SP-97 BW Licensor-1	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30B-00067	Plug ASTM A105 ASME B16.11 NPT Round head Licensor-1	
1	0.75				P30B-00068	Plug ASTM A105 ASME B16.11 NPT Round head Licensor-1	
1	1				P30B-00069	Plug ASTM A105 ASME B16.11 NPT Round head Licensor-1	
1	1.5				P30B-0006A	Plug ASTM A105 ASME B16.11 NPT Round head Licensor-1	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P61B-00A2R	Flange WN ASTM A105 Class 150 ASME B16.5 RF Licensor-1	
1	0.75		SCH160		P61B-00A2S	Flange WN ASTM A105 Class 150 ASME B16.5 RF Licensor-1	
1	1		SCH160		P61B-00A2T	Flange WN ASTM A105 Class 150 ASME B16.5 RF Licensor-1	
1	1.5		SCH160		P61B-00A2U	Flange WN ASTM A105 Class 150 ASME B16.5 RF Licensor-1	
1	2		XS		P61B-009YN	Flange WN ASTM A105 Class 150 ASME B16.5 RF Licensor-1	
1	3		STD		P61B-009YP	Flange WN ASTM A105 Class 150 ASME B16.5 RF Licensor-1	
1	4		STD		P61B-009YR	Flange WN ASTM A105 Class 150 ASME B16.5 RF Licensor-1	
1	6		STD		P61B-009ZG	Flange WN ASTM A105 Class 150 ASME B16.5 RF Licensor-1	
1	8		SCH30		P61B-00BS7	Flange WN ASTM A105 Class 150 ASME B16.5 RF Licensor-1	
1	10		SCH30		P61B-00BS6	Flange WN ASTM A105 Class 150 ASME B16.5 RF Licensor-1	
1	12		SCH30		P61B-00A2N	Flange WN ASTM A105 Class 150 ASME B16.5 RF Licensor-1	
1	14		SCH20		P61B-009ZB	Flange WN ASTM A105 Class 150 ASME B16.5 RF Licensor-1	
1	16		SCH20		P61B-009ZC	Flange WN ASTM A105 Class 150 ASME B16.5 RF Licensor-1	
1	18		SCH20		P61B-009ZD	Flange WN ASTM A105 Class 150 ASME B16.5 RF Licensor-1	
1	20		STD		P61B-009ZE	Flange WN ASTM A105 Class 150 ASME B16.5 RF Licensor-1	
1	24		STD		P61B-009ZF	Flange WN ASTM A105 Class 150 ASME B16.5 RF Licensor-1	
541	0.5				P61B-00DLC	Flange NPT ASTM A105 Class 150 ASME B16.5 RF Licensor-1	
541	0.75				P61B-00CXL	Flange NPT ASTM A105 Class 150 ASME B16.5 RF Licensor-1	
773	0.5		SCH160		P61B-00A0G	Flange WN ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
773	0.75		SCH160		P61B-00A0H	Flange WN ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
773	1		SCH160		P61B-00A0J	Flange WN ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
773	1.5		SCH160		P61B-00A0K	Flange WN ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
773	2		XS		P61B-009YW	Flange WN ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
773	3		STD		P61B-009YX	Flange WN ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
773	4		STD		P61B-009YY	Flange WN ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
773	6		STD		P61B-00A07	Flange WN ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
773	8		SCH30		P61B-00BS8	Flange WN ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
773	10		SCH30		P61B-00ABG	Flange WN ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
773	12		SCH30		P61B-00A2P	Flange WN ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
773	14		SCH20		P61B-00A02	Flange WN ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
773	16		SCH20		P61B-00A03	Flange WN ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
773	18		SCH20		P61B-00A04	Flange WN ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
773	20		STD		P61B-00A05	Flange WN ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
773	24		STD		P61B-00A06	Flange WN ASTM A105 Class 300 ASME B16.5 RF Licensor-1	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5				P67B-002D6	Blind flange ASTM A105 Class 150 ASME B16.5 RF Licensor-1	
1	0.75				P67B-002D7	Blind flange ASTM A105 Class 150 ASME B16.5 RF Licensor-1	
1	1				P67B-002D8	Blind flange ASTM A105 Class 150 ASME B16.5 RF Licensor-1	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5				P67B-002D9	Blind flange ASTM A105 Class 150 ASME B16.5 RF Licensor-1	
1	2				P67B-002DB	Blind flange ASTM A105 Class 150 ASME B16.5 RF Licensor-1	
1	3				P67B-002DC	Blind flange ASTM A105 Class 150 ASME B16.5 RF Licensor-1	
1	4				P67B-002DD	Blind flange ASTM A105 Class 150 ASME B16.5 RF Licensor-1	
1	6				P67B-002DE	Blind flange ASTM A105 Class 150 ASME B16.5 RF Licensor-1	
1	8				P67B-002DF	Blind flange ASTM A105 Class 150 ASME B16.5 RF Licensor-1	
1	10				P67B-002DA	Blind flange ASTM A105 Class 150 ASME B16.5 RF Licensor-1	
1	12				P67B-002FK	Blind flange ASTM A105 Class 150 ASME B16.5 RF Licensor-1	
1	14				P67B-002FL	Blind flange ASTM A105 Class 150 ASME B16.5 RF Licensor-1	
1	16				P67B-002FM	Blind flange ASTM A105 Class 150 ASME B16.5 RF Licensor-1	
1	18				P67B-002FN	Blind flange ASTM A105 Class 150 ASME B16.5 RF Licensor-1	
1	20				P67B-002FP	Blind flange ASTM A105 Class 150 ASME B16.5 RF Licensor-1	
1	24				P67B-002FR	Blind flange ASTM A105 Class 150 ASME B16.5 RF Licensor-1	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000L8	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000L9	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000LA	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000LB	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000LH	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000LL	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000LM	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	6				P73T-000LN	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	8				P73T-000LP	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	10				P73T-000LC	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	12				P73T-000LD	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	14				P73T-000LE	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	16				P73T-000LF	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	18				P73T-000LG	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	20				P73T-000LJ	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	24				P73T-000LK	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	0.5				P73T-000FT	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	0.75				P73T-000FU	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	3				P73T-000G5	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	4				P73T-000G6	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	6				P73T-000G7	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	8				P73T-000G8	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	10				P73T-000FX	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	12				P73T-000FY	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	14				P73T-000FZ	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	16				P73T-000G0	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	18				P73T-000G1	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	20				P73T-000G3	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	24				P73T-000G4	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

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BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-16				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	18-24				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
773	0.5-10				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
773	12-24				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81B-001W4	Gate valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Licensor-1	
1	0.75				P81B-001W5	Gate valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Licensor-1	
1	1				P81B-001W6	Gate valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Licensor-1	
1	1.5				P81B-001W7	Gate valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Licensor-1	
1	2				P81C-0063R	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Licensor-1	
1	3				P81C-0063S	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Licensor-1	
1	4				P81C-0063T	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Licensor-1	
1	6				P81C-0095B	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Licensor-1	
1	8				P81C-0095C	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Licensor-1	
1	10				P81C-009YU	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Licensor-1	
1	12				P81C-009YV	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Licensor-1	
1	14				P81C-009Z0	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Gear operated Licensor-1	
1	16				P81C-009Z1	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Gear operated Licensor-1	
1	18				P81C-009Z2	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Gear operated Licensor-1	
1	20				P81C-009ZL	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Gear operated Licensor-1	
4608	0.75				P81B-002Y0	Gate valve ASTM A105 Class 150 API 602 BW both sides w/ nipples BE - NPT ASTM A106-B XXS-nipple Trim number 5 BB-BG-OS&Y Handwheel operated Licensor-1	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83B-00168	Check valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 5 Lift-type Bolted cover Licensor-1	
1	0.75				P83B-00169	Check valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 5 Lift-type Bolted cover Licensor-1	
1	1				P83B-0016A	Check valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 5 Lift-type Bolted cover Licensor-1	
1	1.5				P83B-0016B	Check valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 5 Lift-type Bolted cover Licensor-1	
1	2				P83C-002Z7	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 5 Swing-type Bolted cover Licensor-1	
1	3				P83C-0044N	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 5 Swing-type Bolted cover Licensor-1	
1	4				P83C-0044P	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 5 Swing-type Bolted cover Licensor-1	
1	6				P83C-0044R	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 5 Swing-type Bolted cover Licensor-1	
1	8				P83C-0044S	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 5 Swing-type Bolted cover Licensor-1	

BALL VALVE (Q)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P84B-00149	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design Licensor-1	
1	0.75				P84B-0014A	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design Licensor-1	
1	1				P84B-0014B	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design Licensor-1	
1	1.5				P84B-0014C	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design Licensor-1	
1	2				P84C-005YS	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design Licensor-1	
1	3				P84C-005YT	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design Licensor-1	

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BALL VALVE (Q)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	4				P84C-005YU	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design Licensor-1	
1	6				P84C-005YW	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design Licensor-1	
1	8				P84C-005YX	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design Licensor-1	
1	10				P84C-005YV	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design Licensor-1	
1	12				P84C-0060L	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design Licensor-1	
1	14				P84C-0060M	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design Licensor-1	
1	16				P84C-0060N	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design Licensor-1	
1	18				P84C-0060P	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design Licensor-1	
1	20				P84C-0060R	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design Licensor-1	
1	24				P84C-0060S	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design Licensor-1	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71B-00080	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	0.75				P71B-00081	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	1				P71B-00082	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	1.5				P71B-00083	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	2				P71B-00085	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	3				P71B-00086	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	4				P71B-00087	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	6				P71B-00088	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	8				P71B-00089	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	10				P71B-00084	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	12				P71B-0008S	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Licensor-1	

PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000BR	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	16				P72B-000BS	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	18				P72B-000BT	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	20				P72B-000BU	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	24				P72B-000BV	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Licensor-1	
773	18				P72B-000FR	Paddle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF Licensor-1	

PADDLE SPACER (PS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000C7	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	16				P72B-000C8	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	18				P72B-000C9	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	20				P72B-000CA	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	24				P72B-000CB	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Licensor-1	
773	18				P72B-000FX	Paddle spacer ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF Licensor-1	

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PIPING CLASS
A2AC01 REV NO. 2

BOLT TABLE (B_A2AC01 , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	60	P80S-003V2		
0.75	4	0.500	65	P80S-003V3		
1	4	0.500	70	P80S-003V4		
1.5	4	0.500	75	P80S-003V5		
2	4	0.625	85	P80S-003XE		
3	4	0.625	95	P80S-003XG		
4	8	0.625	95	P80S-003XG		
6	8	0.750	105	P80S-003XJ		
8	8	0.750	110	P80S-003XK		
10	12	0.875	120	P80S-00419		
12	12	0.875	120	P80S-00419		
14	12	1.000	135	P80S-0043E		
16	16	1.000	140	P80S-0043F		
18	16	1.125	150	P80S-0046K		
20	20	1.125	160	P80S-0046M		
24	20	1.250	175	P80S-004AG		

BOLT TABLE (B_A2AC01_773 , STUD ASME RF, OPTION CODE 773)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-003V4		
0.75	4	0.625	75	P80S-003XC		
1	4	0.625	80	P80S-003XD		
1.5	4	0.750	95	P80S-00414		
2	8	0.625	90	P80S-003XF		
3	8	0.750	110	P80S-003XK		
4	8	0.750	115	P80S-003XL		
6	12	0.750	125	P80S-003XN		
8	12	0.875	140	P80S-0041D		
10	16	1.000	160	P80S-0043K		
12	16	1.125	175	P80S-0046S		
14	20	1.125	180	P80S-0046T		
16	20	1.250	190	P80S-004AK		
18	24	1.250	200	P80S-004AM		
20	24	1.250	210	P80S-004AP		
24	24	1.500	235	P80S-003F8		

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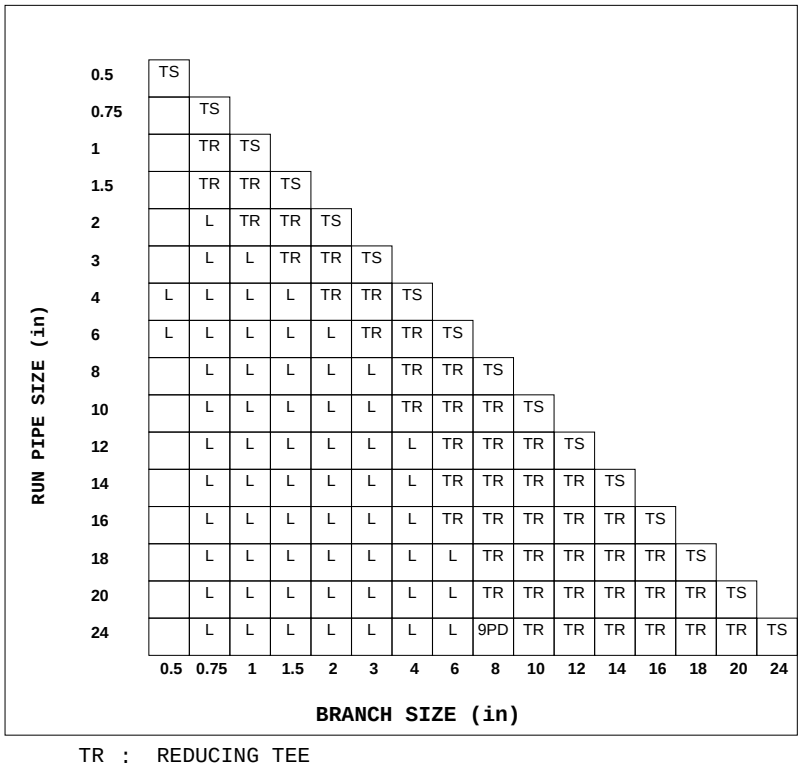
BRANCH TABLE (T_A2AC01)



RUN PIPE SIZE (in) \ BRANCH SIZE (in)	0.5	0.75	1	1.5	2	3	4	6	8	10	12	14	16	18	20	24
0.5	TS															
0.75		TS														
1		TR	TS													
1.5		TR	TR	TS												
2		L	TR	TR	TS											
3		L	L	TR	TR	TS										
4	L	L	L	L	TR	TR	TS									
6	L	L	L	L	L	TR	TR	TS								
8		L	L	L	L	L	TR	TR	TS							
10		L	L	L	L	L	TR	TR	TR	TS						
12		L	L	L	L	L	L	TR	TR	TR	TS					
14		L	L	L	L	L	L	TR	TR	TR	TR	TS				
16		L	L	L	L	L	L	TR	TR	TR	TR	TR	TS			
18		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TS		
20		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TR	TS	
24		L	L	L	L	L	L	L	9PD	TR	TR	TR	TR	TR	TR	TS

TR : REDUCING TEE
TS : STRAIGHT TEE
L : OUTLET
9PD : REINFORCING PAD 90 DEG

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PIPING CLASS

A2AD

REV NO. 2

Material	:	Killed CS
Rating	:	ASME CLASS 150
Flange Face	:	RF
C.A.(mm)	:	3.00
Gasket	:	Spiral Wound
Service	:	UTILITY - HYDROCARBON:FUEL OIL, FUEL GAS

Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
2	USE OF SOFT SEATED BALL, PLUG AND BUTTERFLY VALVES SHALL BE LIMITED TO MAXIMUM OF 204DEGC (400DEGF)

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
24	FULL PORT (Q)
200	WITH JACK SCREW (FO)
541	NPT(F) (CA,L)
714	SW - NPT(F) (V)
773	CLASS 300 (B,F,FR,G)

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PIPING CLASS
A2AD REV NO. 2

PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P01A-0010P	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	0.75		SCH160		P01A-0010R	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1		SCH160		P01A-0014M	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1.5		SCH160		P01A-0015J	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	2		XS		P01A-000YX	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	3		STD		P01A-000YM	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	4		STD		P01A-000YU	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	6		STD		P01A-000Z3	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	8		SCH30		P01A-001WL	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	10		SCH20		P01A-0014Y	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P02B-0001J	90 degree elbow ASTM A105 Class 6000 ASME B16.11 SW	
1	0.75				P02B-0001K	90 degree elbow ASTM A105 Class 6000 ASME B16.11 SW	
1	1				P02B-0002E	90 degree elbow ASTM A105 Class 6000 ASME B16.11 SW	
1	1.5				P02B-0002F	90 degree elbow ASTM A105 Class 6000 ASME B16.11 SW	
1	2		XS		P02A-000CP	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		STD		P02A-000CU	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		STD		P02A-000CZ	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		STD		P02A-000D6	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		SCH30		P02A-003DK	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	10		SCH20		P02A-000H1	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P03B-0001F	45 degree elbow ASTM A105 Class 6000 ASME B16.11 SW	
1	0.75				P03B-0001G	45 degree elbow ASTM A105 Class 6000 ASME B16.11 SW	
1	1				P03B-0002A	45 degree elbow ASTM A105 Class 6000 ASME B16.11 SW	
1	1.5				P03B-0002B	45 degree elbow ASTM A105 Class 6000 ASME B16.11 SW	
1	2		XS		P03A-000AS	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		STD		P03A-000AX	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		STD		P03A-000B1	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		STD		P03A-000B9	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		SCH30		P03A-003BE	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	10		SCH20		P03A-000F0	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P21B-0001F	Straight tee ASTM A105 Class 6000 ASME B16.11 SW	
1	0.75				P21B-0001G	Straight tee ASTM A105 Class 6000 ASME B16.11 SW	
1	1				P21B-00026	Straight tee ASTM A105 Class 6000 ASME B16.11 SW	
1	1.5				P21B-00027	Straight tee ASTM A105 Class 6000 ASME B16.11 SW	
1	2		XS		P21A-001CJ	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		STD		P21A-001CU	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		STD		P21A-001CW	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6		STD		P21A-001D2	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8		SCH30		P21A-003WV	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10		SCH20		P21A-00219	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75			P24B-00030	Reducing tee ASTM A105 Class 6000 ASME B16.11 SW	
1	1.5	0.75			P24B-00032	Reducing tee ASTM A105 Class 6000 ASME B16.11 SW	
1	1.5	1			P24B-0004J	Reducing tee ASTM A105 Class 6000 ASME B16.11 SW	
1	2	1	XS	SCH160	P24A-00GMB	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	XS	SCH160	P24A-005K9	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	STD	SCH160	P24A-00GMC	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	STD	XS	P24A-002HW	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P24A-002HY	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P24A-0021K	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	STD	P24A-0021A	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P24A-00229	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH30	STD	P24A-00JVH	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH30	STD	P24A-00JVG	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	SCH20	STD	P24A-00HMB	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	SCH20	STD	P24A-00HKS	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	SCH20	SCH30	P24A-00L85	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	STD	XS	P27A-001MZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P27A-001N0	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P27A-00189	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	STD	P27A-001AZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P27A-001GW	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH30	STD	P27A-00ED2	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH30	STD	P27A-00ECY	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	SCH20	STD	P27A-003K4	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	SCH20	STD	P27A-003K5	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	SCH20	SCH30	P27A-00FFD	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	STD	XS	P28A-001N5	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P28A-001N6	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P28A-0018B	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	STD	P28A-001AS	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P28A-00182	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH30	STD	P28A-00BFY	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH30	STD	P28A-00BFZ	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	SCH20	STD	P28A-003JW	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	SCH20	STD	P28A-003JX	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	SCH20	SCH30	P28A-00CLB	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P29B-0002F	Cap ASTM A105 Class 6000 ASME B16.11 SW	
1	0.75				P29B-0002G	Cap ASTM A105 Class 6000 ASME B16.11 SW	
1	1				P29B-0002D	Cap ASTM A105 Class 6000 ASME B16.11 SW	
1	1.5				P29B-0002E	Cap ASTM A105 Class 6000 ASME B16.11 SW	
1	2		XS		P29A-000A1	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		STD		P29A-000BK	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		STD		P29A-000A3	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6		STD		P29A-000A9	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8		SCH30		P29A-000PC	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10		SCH20		P29A-000E5	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
541	0.75				P29B-0000Y	Cap ASTM A105 Class 6000 ASME B16.11 NPT	
541	1				P29B-0000Z	Cap ASTM A105 Class 6000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P41A-000B9	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		XXS		P41A-000BA	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1			XXS		P41A-000D8	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		XXS		P41A-000D9	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

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CON SWAGED NIPPLE (SNC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	SCH160	P42A-00029	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	SCH160	SCH160	P42A-0009T	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	SCH160	SCH160	P42A-0009U	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	SCH160	SCH160	P42A-0009V	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	SCH160	SCH160	P42A-0009W	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	SCH160	SCH160	P42A-0009X	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	XS	SCH160	P42A-000J6	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	XS	SCH160	P42A-000J7	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	XS	SCH160	P42A-000F8	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	XS	SCH160	P42A-000KZ	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	STD	SCH160	P42A-000L0	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	

ECC SWAGED NIPPLE (SNE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	SCH160	P43A-000AM	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	SCH160	SCH160	P43A-000B4	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	SCH160	SCH160	P43A-000B5	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	SCH160	SCH160	P43A-000B6	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	SCH160	SCH160	P43A-000B7	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	SCH160	SCH160	P43A-000B8	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	XS	SCH160	P43A-000B2	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	XS	SCH160	P43A-000B3	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	XS	SCH160	P43A-000CZ	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	XS	SCH160	P43A-000D0	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	STD	SCH160	P43A-000D1	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	

COUPLING (CPS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P47B-00013	Coupling ASTM A105 Class 6000 ASME B16.11 SW - SW	
1	0.75				P47B-00012	Coupling ASTM A105 Class 6000 ASME B16.11 SW - SW	
1	1				P47B-0002A	Coupling ASTM A105 Class 6000 ASME B16.11 SW - SW	
1	1.5				P47B-0002B	Coupling ASTM A105 Class 6000 ASME B16.11 SW - SW	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5 - 2.5	0.75			P31B-0137D	Outlet ASTM A105 Class 6000 MSS SP-97 SW	
1	3 - 10	0.75			P31B-007LV	Outlet ASTM A105 Class 6000 MSS SP-97 SW	
1	3 - 10	1			P31B-007LN	Outlet ASTM A105 Class 6000 MSS SP-97 SW	
1	4 - 5	1.5			P31B-004LE	Outlet ASTM A105 Class 6000 MSS SP-97 SW	
1	6 - 8	1.5			P31B-005T4	Outlet ASTM A105 Class 6000 MSS SP-97 SW	
1	10 - 18	1.5			P31B-007LF	Outlet ASTM A105 Class 6000 MSS SP-97 SW	
541	1	0.75			P31B-005HL	Outlet ASTM A105 Class 6000 MSS SP-97 NPT	
541	1.5 - 2.5	0.75			P31B-0137F	Outlet ASTM A105 Class 6000 MSS SP-97 NPT	
541	3 - 10	0.75			P31B-007KP	Outlet ASTM A105 Class 6000 MSS SP-97 NPT	
1	6	2	STD	XS	P31B-007SH	Outlet ASTM A105 MSS SP-97 BW	
1	8	2	SCH30	XS	P31B-00X36	Outlet ASTM A105 MSS SP-97 BW	
1	10	2	SCH20	XS	P31B-00TFB	Outlet ASTM A105 MSS SP-97 BW	
1	8	3	SCH30	STD	P31B-00X37	Outlet ASTM A105 MSS SP-97 BW	
1	10	3	SCH20	STD	P31B-00UPG	Outlet ASTM A105 MSS SP-97 BW	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30B-0002D	Plug ASTM A105 ASME B16.11 NPT Round head	
1	0.75				P30B-0002E	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1				P30B-0002F	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1.5				P30B-0002G	Plug ASTM A105 ASME B16.11 NPT Round head	

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FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P61B-002D4	Flange SW ASTM A105 Class 150 ASME B16.5 RF	
1	0.75		SCH160		P61B-002DE	Flange SW ASTM A105 Class 150 ASME B16.5 RF	
1	1		SCH160		P61B-002DU	Flange SW ASTM A105 Class 150 ASME B16.5 RF	
1	1.5		SCH160		P61B-002EM	Flange SW ASTM A105 Class 150 ASME B16.5 RF	
1	2		XS		P61B-003NK	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	3		STD		P61B-001PW	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	4		STD		P61B-001R8	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	6		STD		P61B-001RT	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	8		SCH30		P61B-003FP	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	10		SCH20		P61B-002B4	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
773	0.5		SCH160		P61B-001H5	Flange SW ASTM A105 Class 300 ASME B16.5 RF	
773	0.75		SCH160		P61B-001HH	Flange SW ASTM A105 Class 300 ASME B16.5 RF	
773	1		SCH160		P61B-001E8	Flange SW ASTM A105 Class 300 ASME B16.5 RF	
773	1.5		SCH160		P61B-001ET	Flange SW ASTM A105 Class 300 ASME B16.5 RF	
773	2		XS		P61B-001HW	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	3		STD		P61B-001LJ	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	4		STD		P61B-001MC	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	6		STD		P61B-001N2	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	8		SCH30		P61B-008S0	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	10		SCH20		P61B-002LH	Flange WN ASTM A105 Class 300 ASME B16.5 RF	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67B-000FH	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	0.75				P67B-000FJ	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	1				P67B-000FK	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	1.5				P67B-000FL	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	2				P67B-000FT	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	3				P67B-000FW	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	4				P67B-000FX	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	6				P67B-000FY	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	8				P67B-000FZ	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	10				P67B-000FM	Blind flange ASTM A105 Class 150 ASME B16.5 RF	

REDUCING FLANGE (FR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2	0.75		SCH160	P62B-000NF	Reducing flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	2	1		SCH160	P62B-0006X	Reducing flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	2	1.5		SCH160	P62B-000K8	Reducing flange WN ASTM A105 Class 150 ASME B16.5 RF	
773	2	0.75		SCH160	P62B-000NG	Reducing flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	2	1		SCH160	P62B-0007D	Reducing flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	2	1.5		SCH160	P62B-000MG	Reducing flange WN ASTM A105 Class 300 ASME B16.5 RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000L8	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000L9	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000LA	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000LB	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000LH	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000LL	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000LM	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	6				P73T-000LN	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	8				P73T-000LP	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	10				P73T-000LC	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

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GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
773	0.5				P73T-000FT	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	0.75				P73T-000FU	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	3				P73T-000G5	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	4				P73T-000G6	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	6				P73T-000G7	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	8				P73T-000G8	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	10				P73T-000FX	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-10				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
773	0.5-10				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81B-000P4	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	0.75				P81B-000NX	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	1				P81B-000NY	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	1.5				P81B-000NZ	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	2				P81C-002DV	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	3				P81C-002DW	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	4				P81C-002DX	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	6				P81C-002DY	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	8				P81C-002DZ	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	10				P81C-002DT	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
714	0.5				P81B-0015L	Gate valve ASTM A105 Class 800 API 602 SW - NPT Trim number 8 BB-BG-OS&Y Handwheel operated	
714	0.75				P81B-002F4	Gate valve ASTM A105 Class 800 API 602 SW - NPT Trim number 8 BB-BG-OS&Y Handwheel operated	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82B-000K0	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	0.75				P82B-000HB	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	1				P82B-000HC	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	1.5				P82B-000HD	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	2				P82C-000N5	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	3				P82C-000N6	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	4				P82C-000N7	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83B-000FX	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover	
1	0.75				P83B-000ER	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover	
1	1				P83B-000ES	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover	
1	1.5				P83B-000ET	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover	
1	2				P83C-00144	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	3				P83C-00147	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	4				P83C-00148	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	

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CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	6				P83C-00149	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	8				P83C-0014A	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	

BALL VALVE (Q)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P84B-0011T	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design	
1	0.75				P84B-0011U	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design	
1	1				P84B-0011V	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design	
1	1.5				P84B-0011W	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design	
1	2				P84C-005UD	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design	
24	0.5				P84B-0011X	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	
24	0.75				P84B-0011Y	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	
24	1				P84B-0011Z	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	
24	1.5				P84B-00120	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	
24	2				P84C-005UJ	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	

ORIFICE FLANGE (FO)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2		XS		P66B-0084B	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	6		STD		P66B-0084E	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	8		SCH30		P66B-00871	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
200	2		XS		P66B-00843	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	6		STD		P66B-00846	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	8		SCH30		P66B-00876	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71B-0008A	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	0.75				P71B-0008B	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	1				P71B-0008C	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71B-0008D	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	2				P71B-0000P	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	3				P71B-0000N	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	4				P71B-0000M	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	6				P71B-0000L	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	8				P71B-0000R	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	10				P71B-0000K	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	

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BOLT TABLE (B_A2AD , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	60	P80S-003V2		
0.75	4	0.500	65	P80S-003V3		
1	4	0.500	70	P80S-003V4		
1.5	4	0.500	75	P80S-003V5		
2	4	0.625	85	P80S-003XE		
3	4	0.625	95	P80S-003XG		
4	8	0.625	95	P80S-003XG		
6	8	0.750	105	P80S-003XJ		
8	8	0.750	110	P80S-003XK		
10	12	0.875	120	P80S-00419		

BOLT TABLE (B_A2AD_773 , STUD ASME RF, OPTION CODE 773)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-003V4		
0.75	4	0.625	75	P80S-003XC		
1	4	0.625	80	P80S-003XD		
1.5	4	0.750	95	P80S-00414		
2	8	0.625	90	P80S-003XF		
3	8	0.750	110	P80S-003XK		
4	8	0.750	115	P80S-003XL		
6	12	0.750	125	P80S-003XN		
8	12	0.875	140	P80S-0041D		
10	16	1.000	160	P80S-0043K		

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BRANCH TABLE (T_A2AD)

RUN PIPE SIZE (in) \ BRANCH SIZE (in)	0.5	0.75	1	1.5	2	3	4	6	8	10
0.5	TS									
0.75		TS								
1		TR	TS							
1.5		TR	TR	TS						
2		L	TR	TR	TS					
3		L	L	TR	TR	TS				
4	L	L	L	L	TR	TR	TS			
6	L	L	L	L	L	TR	TR	TS		
8		L	L	L	L	L	TR	TR	TS	
10		L	L	L	L	L	TR	TR	TR	TS

TR : REDUCING TEE
TS : STRAIGHT TEE
L : OUTLET

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Material : CS (ASME)
Rating : ASME CLASS 150
Flange Face : RF
C.A.(mm) : 3.00
Gasket : Spiral Wound
Service : UTILITY - POWER PIPING:LOW PRESSURE STEAM, BOILER BLOW DOWN

Design Code : ASME B31.1
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
541	NPT(F) (CA,L)
714	SW - NPT(F) (V)
773	CLASS 300 (B,F,G)

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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P01A-003L3	Pipe ASME SA106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	0.75		SCH160		P01A-003L4	Pipe ASME SA106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1		SCH160		P01A-003L5	Pipe ASME SA106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1.5		SCH160		P01A-003L6	Pipe ASME SA106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	2		XS		P01A-002S2	Pipe ASME SA106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	3		STD		P01A-0042B	Pipe ASME SA106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	4		STD		P01A-0042C	Pipe ASME SA106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	6		STD		P01A-0042D	Pipe ASME SA106 Grade B Seamless ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P02B-00032	90 degree elbow ASME SA105 Class 6000 ASME B16.11 SW	
1	0.75				P02B-00033	90 degree elbow ASME SA105 Class 6000 ASME B16.11 SW	
1	1				P02B-00034	90 degree elbow ASME SA105 Class 6000 ASME B16.11 SW	
1	1.5				P02B-00035	90 degree elbow ASME SA105 Class 6000 ASME B16.11 SW	
1	2		XS		P02A-002HF	90 degree elbow ASME SA234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		STD		P02A-002HG	90 degree elbow ASME SA234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		STD		P02A-002HH	90 degree elbow ASME SA234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		STD		P02A-002HJ	90 degree elbow ASME SA234 Grade WPB Seamless ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P03B-0002Y	45 degree elbow ASME SA105 Class 6000 ASME B16.11 SW	
1	0.75				P03B-0002Z	45 degree elbow ASME SA105 Class 6000 ASME B16.11 SW	
1	1				P03B-00030	45 degree elbow ASME SA105 Class 6000 ASME B16.11 SW	
1	1.5				P03B-00031	45 degree elbow ASME SA105 Class 6000 ASME B16.11 SW	
1	2		XS		P03A-002EZ	45 degree elbow ASME SA234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		STD		P03A-002F0	45 degree elbow ASME SA234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		STD		P03A-002F1	45 degree elbow ASME SA234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		STD		P03A-002F2	45 degree elbow ASME SA234 Grade WPB Seamless ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P21B-00030	Straight tee ASME SA105 Class 6000 ASME B16.11 SW	
1	0.75				P21B-00031	Straight tee ASME SA105 Class 6000 ASME B16.11 SW	
1	1				P21B-00032	Straight tee ASME SA105 Class 6000 ASME B16.11 SW	
1	1.5				P21B-00033	Straight tee ASME SA105 Class 6000 ASME B16.11 SW	
1	2		XS		P21A-002PV	Straight tee ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	3		STD		P21A-003G4	Straight tee ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	4		STD		P21A-003G5	Straight tee ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	6		STD		P21A-003G6	Straight tee ASME SA234 Grade WPB Seamless ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75			P24B-0005N	Reducing tee ASME SA105 Class 6000 ASME B16.11 SW	
1	1.5	0.75			P24B-0005R	Reducing tee ASME SA105 Class 6000 ASME B16.11 SW	
1	1.5	1			P24B-0005S	Reducing tee ASME SA105 Class 6000 ASME B16.11 SW	
1	2	1	XS	SCH160	P24A-00GLW	Reducing tee ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	XS	SCH160	P24A-009AF	Reducing tee ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	STD	SCH160	P24A-00GLX	Reducing tee ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	STD	XS	P24A-00GLY	Reducing tee ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P24A-00GLZ	Reducing tee ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P24A-00GM0	Reducing tee ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	STD	P24A-00GM1	Reducing tee ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P24A-00GM2	Reducing tee ASME SA234 Grade WPB Seamless ASME B16.9 BW	

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CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	STD	XS	P27A-00BFE	Concentric reducer ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P27A-00BFF	Concentric reducer ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P27A-00BFG	Concentric reducer ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	STD	P27A-00BFH	Concentric reducer ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P27A-00BFJ	Concentric reducer ASME SA234 Grade WPB Seamless ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	STD	XS	P28A-008DX	Eccentric reducer ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P28A-008DY	Eccentric reducer ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P28A-008DZ	Eccentric reducer ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	STD	P28A-008E0	Eccentric reducer ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P28A-008E1	Eccentric reducer ASME SA234 Grade WPB Seamless ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P29B-00045	Cap ASME SA105 Class 6000 ASME B16.11 SW	
1	0.75				P29B-00046	Cap ASME SA105 Class 6000 ASME B16.11 SW	
1	1				P29B-00047	Cap ASME SA105 Class 6000 ASME B16.11 SW	
1	1.5				P29B-00048	Cap ASME SA105 Class 6000 ASME B16.11 SW	
1	2		XS		P29A-0015L	Cap ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	3		STD		P29A-001T5	Cap ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	4		STD		P29A-001T6	Cap ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	6		STD		P29A-001T7	Cap ASME SA234 Grade WPB Seamless ASME B16.9 BW	
541	0.75				P29B-0006A	Cap ASME SA105 Class 6000 ASME B16.11 NPT	
541	1				P29B-0006D	Cap ASME SA105 Class 6000 ASME B16.11 NPT	
541	1.5				P29B-0006E	Cap ASME SA105 Class 6000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P41A-0017T	Straight nipple ASME SA106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		XXS		P41A-0017U	Straight nipple ASME SA106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		XXS		P41A-0017V	Straight nipple ASME SA106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		XXS		P41A-0017W	Straight nipple ASME SA106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

CON SWAGED NIPPLE (SNC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	SCH160	P42A-000FF	Concentric swaged nipple ASME SA234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	SCH160	SCH160	P42A-000FG	Concentric swaged nipple ASME SA234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	SCH160	SCH160	P42A-000FH	Concentric swaged nipple ASME SA234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	SCH160	SCH160	P42A-000FJ	Concentric swaged nipple ASME SA234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	SCH160	SCH160	P42A-000FK	Concentric swaged nipple ASME SA234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	SCH160	SCH160	P42A-000FL	Concentric swaged nipple ASME SA234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	XS	SCH160	P42A-000KU	Concentric swaged nipple ASME SA234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	XS	SCH160	P42A-000KV	Concentric swaged nipple ASME SA234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	XS	SCH160	P42A-000KW	Concentric swaged nipple ASME SA234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	XS	SCH160	P42A-000KX	Concentric swaged nipple ASME SA234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	STD	SCH160	P42A-000KY	Concentric swaged nipple ASME SA234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	

ECC SWAGED NIPPLE (SNE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	SCH160	P43A-000CM	Eccentric swaged nipple ASME SA234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	SCH160	SCH160	P43A-000CN	Eccentric swaged nipple ASME SA234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	SCH160	SCH160	P43A-000CP	Eccentric swaged nipple ASME SA234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	SCH160	SCH160	P43A-000CR	Eccentric swaged nipple ASME SA234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	SCH160	SCH160	P43A-000CS	Eccentric swaged nipple ASME SA234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	SCH160	SCH160	P43A-000CT	Eccentric swaged nipple ASME SA234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	XS	SCH160	P43A-000CU	Eccentric swaged nipple ASME SA234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	

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ECC SWAGED NIPPLE (SNE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2	0.75	XS	SCH160	P43A-000CV	Eccentric swaged nipple ASME SA234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	XS	SCH160	P43A-000CW	Eccentric swaged nipple ASME SA234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	XS	SCH160	P43A-000CX	Eccentric swaged nipple ASME SA234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	STD	SCH160	P43A-000CY	Eccentric swaged nipple ASME SA234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	

COUPLING (CPS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P47B-0003B	Coupling ASME SA105 Class 6000 ASME B16.11 SW - SW	
1	0.75				P47B-0003C	Coupling ASME SA105 Class 6000 ASME B16.11 SW - SW	
1	1				P47B-0003D	Coupling ASME SA105 Class 6000 ASME B16.11 SW - SW	
1	1.5				P47B-0003E	Coupling ASME SA105 Class 6000 ASME B16.11 SW - SW	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5 - 2.5	0.75			P31B-013A9	Outlet ASME SA105 Class 6000 MSS SP-97 SW	
1	3 - 10	0.75			P31B-013AA	Outlet ASME SA105 Class 6000 MSS SP-97 SW	
1	3 - 10	1			P31B-013AB	Outlet ASME SA105 Class 6000 MSS SP-97 SW	
1	4 - 5	1.5			P31B-013AC	Outlet ASME SA105 Class 6000 MSS SP-97 SW	
1	6 - 8	1.5			P31B-013AD	Outlet ASME SA105 Class 6000 MSS SP-97 SW	
541	1	0.75			P31B-01366	Outlet ASME SA105 Class 6000 MSS SP-97 NPT	
541	1.5 - 2.5	0.75			P31B-013AE	Outlet ASME SA105 Class 6000 MSS SP-97 NPT	
541	3 - 10	0.75			P31B-013AF	Outlet ASME SA105 Class 6000 MSS SP-97 NPT	
1	6	2	STD	XS	P31B-00TP9	Outlet ASME SA105 MSS SP-97 BW	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30B-00034	Plug ASME SA105 ASME B16.11 NPT Round head	
1	0.75				P30B-00035	Plug ASME SA105 ASME B16.11 NPT Round head	
1	1				P30B-00036	Plug ASME SA105 ASME B16.11 NPT Round head	
1	1.5				P30B-00037	Plug ASME SA105 ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P61B-0063W	Flange SW ASME SA105 Class 150 ASME B16.5 RF	
1	0.75		SCH160		P61B-0063X	Flange SW ASME SA105 Class 150 ASME B16.5 RF	
1	1		SCH160		P61B-0063Y	Flange SW ASME SA105 Class 150 ASME B16.5 RF	
1	1.5		SCH160		P61B-0063Z	Flange SW ASME SA105 Class 150 ASME B16.5 RF	
1	2		XS		P61B-00642	Flange WN ASME SA105 Class 150 ASME B16.5 RF	
1	3		STD		P61B-00643	Flange WN ASME SA105 Class 150 ASME B16.5 RF	
1	4		STD		P61B-00644	Flange WN ASME SA105 Class 150 ASME B16.5 RF	
1	6		STD		P61B-00645	Flange WN ASME SA105 Class 150 ASME B16.5 RF	
773	0.5		SCH160		P61B-00647	Flange SW ASME SA105 Class 300 ASME B16.5 RF	
773	0.75		SCH160		P61B-00648	Flange SW ASME SA105 Class 300 ASME B16.5 RF	
773	1		SCH160		P61B-00649	Flange SW ASME SA105 Class 300 ASME B16.5 RF	
773	1.5		SCH160		P61B-0064A	Flange SW ASME SA105 Class 300 ASME B16.5 RF	
773	2		XS		P61B-0064D	Flange WN ASME SA105 Class 300 ASME B16.5 RF	
773	3		STD		P61B-0064E	Flange WN ASME SA105 Class 300 ASME B16.5 RF	
773	4		STD		P61B-0064F	Flange WN ASME SA105 Class 300 ASME B16.5 RF	
773	6		STD		P61B-0064G	Flange WN ASME SA105 Class 300 ASME B16.5 RF	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67B-0012M	Blind flange ASME SA105 Class 150 ASME B16.5 RF	
1	0.75				P67B-0012N	Blind flange ASME SA105 Class 150 ASME B16.5 RF	
1	1				P67B-0012P	Blind flange ASME SA105 Class 150 ASME B16.5 RF	
1	1.5				P67B-0012R	Blind flange ASME SA105 Class 150 ASME B16.5 RF	
1	2				P67B-0012X	Blind flange ASME SA105 Class 150 ASME B16.5 RF	
1	3				P67B-0012Y	Blind flange ASME SA105 Class 150 ASME B16.5 RF	

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BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	4				P67B-0012Z	Blind flange ASME SA105 Class 150 ASME B16.5 RF	
1	6				P67B-00130	Blind flange ASME SA105 Class 150 ASME B16.5 RF	

REDUCING FLANGE (FR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5		SCH160	P62B-000MX	Reducing flange SW ASME SA105 Class 150 ASME B16.5 RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000L8	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000L9	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000LA	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000LB	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000LH	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000LL	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000LM	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	6				P73T-000LN	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	0.5				P73T-000FT	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	0.75				P73T-000FU	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	3				P73T-000G5	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	4				P73T-000G6	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	6				P73T-000G7	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-6				See Attached Bolt Table	Bolt and Nut ASME SA193 Grade B7 / SA194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
773	0.5-6				See Attached Bolt Table	Bolt and Nut ASME SA193 Grade B7 / SA194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81B-000RB	Gate valve ASME SA105 Class 800 API 602 SW Trim number 5 BB-BG-OS&Y Handwheel operated	
1	0.75				P81B-000RC	Gate valve ASME SA105 Class 800 API 602 SW Trim number 5 BB-BG-OS&Y Handwheel operated	
1	1				P81B-000RD	Gate valve ASME SA105 Class 800 API 602 SW Trim number 5 BB-BG-OS&Y Handwheel operated	
1	1.5				P81B-000RE	Gate valve ASME SA105 Class 800 API 602 SW Trim number 5 BB-BG-OS&Y Handwheel operated	
1	2				P81C-004CD	Gate valve ASME SA216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated	
1	3				P81C-004CE	Gate valve ASME SA216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated	
714	0.5				P81B-0015P	Gate valve ASME SA105 Class 800 API 602 SW - NPT Trim number 5 BB-BG-OS&Y Handwheel operated	
714	0.75				P81B-002F6	Gate valve ASME SA105 Class 800 API 602 SW - NPT Trim number 5 BB-BG-OS&Y Handwheel operated	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82B-000KX	Globe valve ASME SA105 Class 800 API 602 SW Trim number 5 BB-BG-OS&Y Handwheel operated	
1	0.75				P82B-000KY	Globe valve ASME SA105 Class 800 API 602 SW Trim number 5 BB-BG-OS&Y Handwheel operated	
1	1				P82B-000KZ	Globe valve ASME SA105 Class 800 API 602 SW Trim number 5 BB-BG-OS&Y Handwheel operated	
1	1.5				P82B-000L0	Globe valve ASME SA105 Class 800 API 602 SW Trim number 5 BB-BG-OS&Y Handwheel operated	
1	2				P82C-0026F	Globe valve ASME SA216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated	

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CHECK VALVE (X)							
OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83B-000GM	Check valve ASME SA105 Class 800 API 602 SW Trim number 5 Lift-type Bolted cover	
1	0.75				P83B-000GN	Check valve ASME SA105 Class 800 API 602 SW Trim number 5 Lift-type Bolted cover	
1	1				P83B-000GP	Check valve ASME SA105 Class 800 API 602 SW Trim number 5 Lift-type Bolted cover	
1	1.5				P83B-000GR	Check valve ASME SA105 Class 800 API 602 SW Trim number 5 Lift-type Bolted cover	
1	2				P83C-0021D	Check valve ASME SA216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 5 Swing-type Bolted cover	
1	3				P83C-0022B	Check valve ASME SA216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 5 Swing-type Bolted cover	

SPECT BLANK (SB)							
OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71B-0008E	Spectacle blank ASME SA105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	0.75				P71B-0008F	Spectacle blank ASME SA105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	1				P71B-0008G	Spectacle blank ASME SA105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71B-0008H	Spectacle blank ASME SA105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	2				P71B-0008L	Spectacle blank ASME SA105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	3				P71B-0008M	Spectacle blank ASME SA105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	4				P71B-0008N	Spectacle blank ASME SA105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	6				P71B-0008P	Spectacle blank ASME SA105 Class 150 Standard-drawing Flange ASME B16.5 RF	

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BOLT TABLE (B_A2AG , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	60	P80S-00MEJ		
0.75	4	0.500	65	P80S-00MEH		
1	4	0.500	70	P80S-00MEG		
1.5	4	0.500	75	P80S-00MEF		
2	4	0.625	85	P80S-00MAN		
3	4	0.625	95	P80S-00MAL		
4	8	0.625	95	P80S-00MAL		
6	8	0.750	105	P80S-00MAJ		

BOLT TABLE (B_A2AG_773 , STUD ASME RF, OPTION CODE 773)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-00MEG		
0.75	4	0.625	75	P80S-00MAR		
1	4	0.625	80	P80S-00MAP		
1.5	4	0.750	95	P80S-00M37		
2	8	0.625	90	P80S-00MAM		
3	8	0.750	110	P80S-00MAH		
4	8	0.750	115	P80S-00M8C		
6	12	0.750	125	P80S-00M8A		

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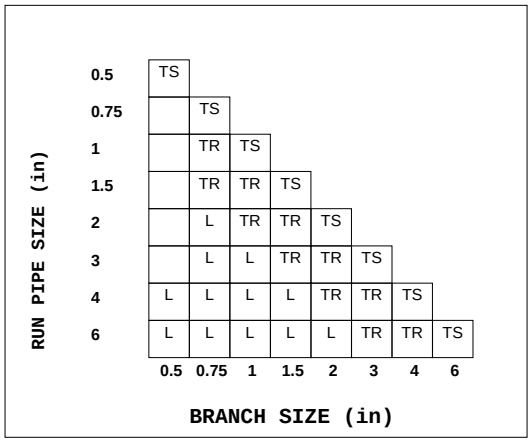
BRANCH TABLE (T_A2AG)



TR : REDUCING TEE
L : OUTLET
TS : STRAIGHT TEE

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PIPING CLASS

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Material	:	Killed CS
Rating	:	ASME CLASS 150
Flange Face	:	RF
C.A.(mm)	:	3.00
Gasket	:	Spiral Wound
Service	:	PROCESS - AMINES AND NON NACE SOUR (STRESS RELIEVED): / TREATED VENT GAS / LEAN AMINE / PROCESS WITH H2S / DHT DRIER OVHD (NOTES : 4, 5) / DHT DRIER SOUR WATER (NOTES : 4, 5) / PROCESS

Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
2	USE OF SOFT SEATED BALL, PLUG AND BUTTERFLY VALVES SHALL BE LIMITED TO MAXIMUM OF 204DEGC (400DEGF)
27	PWHT OF CARBON STEEL PIPING IN WET H2S, CAUSTIC AND AMINE SERVICES SHALL BE IN ACCORDANCE WITH SECTION 10.2, 10.3, AND 10.4 OF PROJECT SPECIFICATION 3550-8440-SP-0002 MATERIALS REQUIREMENTS FOR PRESSURISED EQUIPMENT AND PIPING. FOR CAUSTIC AND AMINE SERVICE THE FOLLOWING SHALL APPLY: - PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF ALL SITE PIPING FABRICATION WELDS IS REQUIRED FOR ALL WALL THICKNESSES. FOR MODERATE AND SEVERE WET H2S SERVICE THE FOLLOWING SHALL APPLY: PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF SITE FABRICATION CIRCUMFERENTIAL OR BRANCH WELDS IS NOT REQUIRED IF WELDS ARE MULTIPASS AND IN ACCORDANCE WITH PARA 10.2.12 OF PROJECT SPECIFICATION 3550-8440-SP-0002. FOR SERVICES MEETING THE WET H2S CRITERIA AND CAUSTIC OR AMINE CRITERIA THE MORE STRINGENT PWHT REQUIREMENT SHALL GOVERN.

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
24	FULL PORT (Q)
200	WITH JACK SCREW (FO)
541	NPT(F) (CA,F)
773	CLASS 300 (B,F,G)
4608	VALVE WITH NIPPLES (V)

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PIPING CLASS
A2AL REV NO. 2

PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P01A-0010P	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	0.75		SCH160		P01A-0010R	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1		SCH160		P01A-0014M	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1.5		SCH160		P01A-0015J	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	2		XS		P01A-000YX	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	3		STD		P01A-000YM	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	4		STD		P01A-000YU	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	6		STD		P01A-000Z3	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	8		SCH30		P01A-001WL	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	10		SCH30		P01A-0016U	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	12		SCH30		P01A-0017K	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	14		SCH20		P01A-0017A	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	16		SCH20		P01A-0018E	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	18		SCH20		P01A-007BZ	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE Amine service	
1	20		STD		P01A-007C0	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE Amine service	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P02A-001Y8	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	0.75		SCH160		P02A-000V8	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1		SCH160		P02A-000V7	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1.5		SCH160		P02A-000V9	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	2		XS		P02A-000CP	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		STD		P02A-000CU	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		STD		P02A-000CZ	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		STD		P02A-000D6	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		SCH30		P02A-003DK	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	10		SCH30		P02A-000M3	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	12		SCH30		P02A-000M4	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	14		SCH20		P02A-000FX	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	16		SCH20		P02A-000GM	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	18		SCH20		P02A-000LT	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	20		STD		P02A-0010J	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P03A-001TC	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	0.75		SCH160		P03A-000RS	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1		SCH160		P03A-000RR	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1.5		SCH160		P03A-000RP	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	2		XS		P03A-000AS	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		STD		P03A-000AX	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		STD		P03A-000B1	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		STD		P03A-000B9	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		SCH30		P03A-003BE	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	10		SCH30		P03A-000JT	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	12		SCH30		P03A-000JU	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	14		SCH20		P03A-000DW	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	16		SCH20		P03A-000EM	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	18		SCH20		P03A-001DX	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	20		STD		P03A-000X1	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P21A-003AW	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	0.75		SCH160		P21A-002B8	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1		SCH160		P21A-002B6	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5		SCH160		P21A-002B9	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2		XS		P21A-001CJ	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3		STD		P21A-001CU	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		STD		P21A-001CW	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6		STD		P21A-001D2	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8		SCH30		P21A-003WV	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10		SCH30		P21A-00259	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12		SCH30		P21A-0025A	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14		SCH20		P21A-00206	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16		SCH20		P21A-0020X	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18		SCH20		P21A-004BL	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Amine service	
1	20		STD		P21A-004BM	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Amine service	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75	SCH160	SCH160	P24A-004B6	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.75	SCH160	SCH160	P24A-004B2	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	1	SCH160	SCH160	P24A-004BA	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	XS	SCH160	P24A-00GMB	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	XS	SCH160	P24A-005K9	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	STD	SCH160	P24A-00GMC	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	STD	XS	P24A-002HW	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P24A-002HY	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P24A-0021K	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	STD	P24A-0021A	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P24A-00229	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH30	STD	P24A-00JVH	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH30	STD	P24A-00JVG	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	SCH30	STD	P24A-00GNR	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	SCH30	STD	P24A-0060W	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	SCH30	SCH30	P24A-00J15	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	SCH30	STD	P24A-00HKT	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH30	SCH30	P24A-00M36	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH30	SCH30	P24A-003ET	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	SCH20	STD	P24A-00K0M	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	SCH20	SCH30	P24A-00M37	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	SCH20	SCH30	P24A-003ER	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	SCH20	SCH30	P24A-003ES	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	6	SCH20	STD	P24A-00GU4	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	SCH20	SCH30	P24A-00M38	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	SCH20	SCH30	P24A-00KSH	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	SCH20	SCH30	P24A-003XN	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	SCH20	SCH20	P24A-002XF	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	8	SCH20	SCH30	P24A-00NHX	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Amine service	
1	18	10	SCH20	SCH30	P24A-00NHW	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Amine service	
1	18	12	SCH20	SCH30	P24A-00M34	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Amine service	
1	18	14	SCH20	SCH20	P24A-00M2G	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Amine service	
1	18	16	SCH20	SCH20	P24A-00K97	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Amine service	
1	20	8	STD	SCH30	P24A-00NHZ	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Amine service	
1	20	10	STD	SCH30	P24A-00NHY	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Amine service	
1	20	12	STD	SCH30	P24A-00M35	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Amine service	
1	20	14	STD	SCH20	P24A-00M2L	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Amine service	
1	20	16	STD	SCH20	P24A-00K9C	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Amine service	
1	20	18	STD	SCH20	P24A-00K9D	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Amine service	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	SCH160	P27A-004LZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.5	SCH160	SCH160	P27A-004M8	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.75	SCH160	SCH160	P27A-002T5	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.5	SCH160	SCH160	P27A-004MV	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5	0.75	SCH160	SCH160	P27A-002T7	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	1	SCH160	SCH160	P27A-002T4	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	0.75	XS	SCH160	P27A-001LG	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	XS	SCH160	P27A-0033P	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	XS	SCH160	P27A-0033B	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	STD	SCH160	P27A-003M9	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	STD	XS	P27A-001MZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	1.5	STD	SCH160	P27A-003MA	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P27A-001N0	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P27A-00189	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	STD	P27A-001AZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P27A-001GW	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH30	STD	P27A-00ED2	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH30	STD	P27A-00ECY	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	SCH30	STD	P27A-003MK	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	SCH30	STD	P27A-003ML	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	SCH30	SCH30	P27A-004T9	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	SCH30	STD	P27A-003MN	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH30	SCH30	P27A-004XA	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH30	SCH30	P27A-0028K	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	SCH20	STD	P27A-00518	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	SCH20	SCH30	P27A-0052J	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	SCH20	SCH30	P27A-0028G	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	SCH20	SCH30	P27A-0028H	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	SCH20	SCH30	P27A-0059E	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	SCH20	SCH30	P27A-003NC	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	SCH20	SCH30	P27A-002GH	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	SCH20	SCH20	P27A-001V2	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	10	SCH20	SCH30	P27A-00H5Z	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Amine service	
1	18	12	SCH20	SCH30	P27A-00G3U	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Amine service	
1	18	14	SCH20	SCH20	P27A-00G3K	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Amine service	
1	18	16	SCH20	SCH20	P27A-00EUR	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Amine service	
1	20	12	STD	SCH30	P27A-00G3T	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Amine service	
1	20	14	STD	SCH20	P27A-00G3M	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Amine service	
1	20	16	STD	SCH20	P27A-00EUU	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Amine service	
1	20	18	STD	SCH20	P27A-00EUV	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Amine service	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	SCH160	P28A-007KG	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.5	SCH160	SCH160	P28A-007KH	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.75	SCH160	SCH160	P28A-002TU	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.5	SCH160	SCH160	P28A-007KJ	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.75	SCH160	SCH160	P28A-002TW	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	1	SCH160	SCH160	P28A-002TR	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	0.75	XS	SCH160	P28A-001LE	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	XS	SCH160	P28A-003M1	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	XS	SCH160	P28A-003M2	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	STD	SCH160	P28A-003M3	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	STD	XS	P28A-001N5	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	1.5	STD	SCH160	P28A-003M4	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P28A-001N6	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P28A-0018B	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	STD	P28A-001AS	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P28A-00182	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH30	STD	P28A-00BFY	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH30	STD	P28A-00BFZ	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	SCH30	STD	P28A-003MD	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	SCH30	STD	P28A-003ME	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	10	8	SCH30	SCH30	P28A-00A4S	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	SCH30	STD	P28A-003MG	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH30	SCH30	P28A-00BGV	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH30	SCH30	P28A-0027C	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	SCH20	STD	P28A-0096P	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	SCH20	SCH30	P28A-00DA3	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	SCH20	SCH30	P28A-00279	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	SCH20	SCH30	P28A-0027A	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	SCH20	SCH30	P28A-00DA4	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	SCH20	SCH30	P28A-003N6	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	SCH20	SCH30	P28A-002GB	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	SCH20	SCH20	P28A-001WG	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	10	SCH20	SCH30	P28A-00EDM	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Amine service	
1	18	12	SCH20	SCH30	P28A-00DA1	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Amine service	
1	18	14	SCH20	SCH20	P28A-00D9U	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Amine service	
1	18	16	SCH20	SCH20	P28A-00BYK	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Amine service	
1	20	12	STD	SCH30	P28A-00DA2	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Amine service	
1	20	14	STD	SCH20	P28A-00D9W	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Amine service	
1	20	16	STD	SCH20	P28A-00BYN	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Amine service	
1	20	18	STD	SCH20	P28A-00BYP	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Amine service	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P29A-001UD	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	0.75		SCH160		P29A-000TX	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1		SCH160		P29A-000TY	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5		SCH160		P29A-000TZ	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2		XS		P29A-000A1	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		STD		P29A-000BK	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		STD		P29A-000A3	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6		STD		P29A-000A9	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8		SCH30		P29A-000PC	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10		SCH30		P29A-000K7	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12		SCH30		P29A-000PZ	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14		SCH20		P29A-000EA	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16		SCH20		P29A-000F3	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18		SCH20		P29A-000E0	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20		STD		P29A-000B2	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
541	0.75				P29B-0000Y	Cap ASTM A105 Class 6000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P41A-000B9	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		XXS		P41A-000BA	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		XXS		P41A-000D8	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		XXS		P41A-000D9	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2	0.75	XS	SCH160	P31B-00CP7	Outlet ASTM A105 MSS SP-97 BW	
1	3	0.75	STD	SCH160	P31B-00CMT	Outlet ASTM A105 MSS SP-97 BW	
1	4	0.75	STD	SCH160	P31B-00CLT	Outlet ASTM A105 MSS SP-97 BW	
1	6	0.75	STD	SCH160	P31B-00CKK	Outlet ASTM A105 MSS SP-97 BW	
1	8	0.75	SCH30	SCH160	P31B-00ZH5	Outlet ASTM A105 MSS SP-97 BW	
1	10	0.75	SCH30	SCH160	P31B-00YEZ	Outlet ASTM A105 MSS SP-97 BW	
1	12	0.75	SCH30	SCH160	P31B-00SWH	Outlet ASTM A105 MSS SP-97 BW	
1	14	0.75	SCH20	SCH160	P31B-00X17	Outlet ASTM A105 MSS SP-97 BW	
1	16	0.75	SCH20	SCH160	P31B-00XS0	Outlet ASTM A105 MSS SP-97 BW	
1	18	0.75	SCH20	SCH160	P31B-00SWM	Outlet ASTM A105 MSS SP-97 BW	

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OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	20	0.75	STD	SCH160	P31B-00CNW	Outlet ASTM A105 MSS SP-97 BW	
1	3	1	STD	SCH160	P31B-00B4J	Outlet ASTM A105 MSS SP-97 BW	
1	4	1	STD	SCH160	P31B-00B3M	Outlet ASTM A105 MSS SP-97 BW	
1	6	1	STD	SCH160	P31B-00AZC	Outlet ASTM A105 MSS SP-97 BW	
1	8	1	SCH30	SCH160	P31B-00ZH6	Outlet ASTM A105 MSS SP-97 BW	
1	10	1	SCH30	SCH160	P31B-00YF1	Outlet ASTM A105 MSS SP-97 BW	
1	12	1	SCH30	SCH160	P31B-00SWJ	Outlet ASTM A105 MSS SP-97 BW	
1	14	1	SCH20	SCH160	P31B-00X18	Outlet ASTM A105 MSS SP-97 BW	
1	16	1	SCH20	SCH160	P31B-00X8Z	Outlet ASTM A105 MSS SP-97 BW	
1	18	1	SCH20	SCH160	P31B-00SWN	Outlet ASTM A105 MSS SP-97 BW	
1	20	1	STD	SCH160	P31B-00B8M	Outlet ASTM A105 MSS SP-97 BW	
1	4	1.5	STD	SCH160	P31B-00BP4	Outlet ASTM A105 MSS SP-97 BW	
1	6	1.5	STD	SCH160	P31B-00BJH	Outlet ASTM A105 MSS SP-97 BW	
1	8	1.5	SCH30	SCH160	P31B-00BHM	Outlet ASTM A105 MSS SP-97 BW	
1	10	1.5	SCH30	SCH160	P31B-00AUR	Outlet ASTM A105 MSS SP-97 BW	
1	12	1.5	SCH30	SCH160	P31B-00CEJ	Outlet ASTM A105 MSS SP-97 BW	
1	14	1.5	SCH20	SCH160	P31B-00CDS	Outlet ASTM A105 MSS SP-97 BW	
1	16	1.5	SCH20	SCH160	P31B-00C9B	Outlet ASTM A105 MSS SP-97 BW	
1	18	1.5	SCH20	SCH160	P31B-00C3C	Outlet ASTM A105 MSS SP-97 BW	
1	20	1.5	STD	SCH160	P31B-00C3Y	Outlet ASTM A105 MSS SP-97 BW	
1	6	2	STD	XS	P31B-007SH	Outlet ASTM A105 MSS SP-97 BW	
1	8	2	SCH30	XS	P31B-00X36	Outlet ASTM A105 MSS SP-97 BW	
1	10	2	SCH30	XS	P31B-00NVF	Outlet ASTM A105 MSS SP-97 BW	
1	12	2	SCH30	XS	P31B-00NVL	Outlet ASTM A105 MSS SP-97 BW	
1	14	2	SCH20	XS	P31B-00TF9	Outlet ASTM A105 MSS SP-97 BW	
1	16	2	SCH20	XS	P31B-00TF8	Outlet ASTM A105 MSS SP-97 BW	
1	18	2	SCH20	XS	P31B-00NVX	Outlet ASTM A105 MSS SP-97 BW	
1	20	2	STD	XS	P31B-00994	Outlet ASTM A105 MSS SP-97 BW	
1	8	3	SCH30	STD	P31B-00X37	Outlet ASTM A105 MSS SP-97 BW	
1	10	3	SCH30	STD	P31B-00NYK	Outlet ASTM A105 MSS SP-97 BW	
1	12	3	SCH30	STD	P31B-00NYR	Outlet ASTM A105 MSS SP-97 BW	
1	14	3	SCH20	STD	P31B-00UPH	Outlet ASTM A105 MSS SP-97 BW	
1	16	3	SCH20	STD	P31B-00TU2	Outlet ASTM A105 MSS SP-97 BW	
1	18	3	SCH20	STD	P31B-00NZ4	Outlet ASTM A105 MSS SP-97 BW	
1	20	3	STD	STD	P31B-008FA	Outlet ASTM A105 MSS SP-97 BW	
1	12	4	SCH30	STD	P31B-00P1G	Outlet ASTM A105 MSS SP-97 BW	
1	14	4	SCH20	STD	P31B-00UPJ	Outlet ASTM A105 MSS SP-97 BW	
1	16	4	SCH20	STD	P31B-00TU3	Outlet ASTM A105 MSS SP-97 BW	
1	18	4	SCH20	STD	P31B-00P1V	Outlet ASTM A105 MSS SP-97 BW	
1	20	4	STD	STD	P31B-008D3	Outlet ASTM A105 MSS SP-97 BW	
1	18	6	SCH20	STD	P31B-00P48	Outlet ASTM A105 MSS SP-97 BW	
1	20	6	STD	STD	P31B-008PZ	Outlet ASTM A105 MSS SP-97 BW	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30B-0002D	Plug ASTM A105 ASME B16.11 NPT Round head	
1	0.75				P30B-0002E	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1				P30B-0002F	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1.5				P30B-0002G	Plug ASTM A105 ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P61B-004V2	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	0.75		SCH160		P61B-0037H	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	1		SCH160		P61B-0037F	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	1.5		SCH160		P61B-0037N	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	2		XS		P61B-003NK	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	3		STD		P61B-001PW	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	4		STD		P61B-001R8	Flange WN ASTM A105 Class 150 ASME B16.5 RF	

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FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	6		STD		P61B-001RT	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	8		SCH30		P61B-003FP	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	10		SCH30		P61B-003FS	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	12		SCH30		P61B-002TS	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	14		SCH20		P61B-002B6	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	16		SCH20		P61B-002B7	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	18		SCH20		P61B-002B8	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	20		STD		P61B-001JA	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
541	0.5				P61B-003TZ	Flange NPT ASTM A105 Class 150 ASME B16.5 RF	
541	0.75				P61B-003U0	Flange NPT ASTM A105 Class 150 ASME B16.5 RF	
773	0.5		SCH160		P61B-003P9	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	0.75		SCH160		P61B-0037M	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	1		SCH160		P61B-0037L	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	1.5		SCH160		P61B-0037J	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	2		XS		P61B-001HW	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	3		STD		P61B-001LJ	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	4		STD		P61B-001MC	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	6		STD		P61B-001N2	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	8		SCH30		P61B-008S0	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	10		SCH30		P61B-003LX	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	12		SCH30		P61B-002TV	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	14		SCH20		P61B-002MR	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	16		SCH20		P61B-002MS	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	18		SCH20		P61B-002MT	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	20		STD		P61B-001NT	Flange WN ASTM A105 Class 300 ASME B16.5 RF	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67B-000FH	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	0.75				P67B-000FJ	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	1				P67B-000FK	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	1.5				P67B-000FL	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	2				P67B-000FT	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	3				P67B-000FW	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	4				P67B-000FX	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	6				P67B-000FY	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	8				P67B-000FZ	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	10				P67B-000FM	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	12				P67B-000FN	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	14				P67B-000FP	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	16				P67B-000FR	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	18				P67B-000FS	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	20				P67B-000FU	Blind flange ASTM A105 Class 150 ASME B16.5 RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000L8	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000L9	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000LA	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000LB	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000LH	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000LL	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000LM	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	6				P73T-000LN	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	8				P73T-000LP	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

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GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	10				P73T-000LC	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	12				P73T-000LD	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	14				P73T-000LE	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	16				P73T-000LF	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	18				P73T-000LG	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	20				P73T-000LJ	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	0.5				P73T-000FT	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	0.75				P73T-000FU	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	3				P73T-000G5	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	4				P73T-000G6	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	6				P73T-000G7	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	8				P73T-000G8	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	10				P73T-000FX	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	12				P73T-000FY	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	14				P73T-000FZ	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	16				P73T-000G0	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	18				P73T-000G1	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	20				P73T-000G3	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-16				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	18-20				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
773	0.5-10				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
773	12-20				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81B-001MM	Gate valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Amine service	
1	0.75				P81B-001MN	Gate valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Amine service	
1	1				P81B-001MP	Gate valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Amine service	
1	1.5				P81B-001MR	Gate valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Amine service	
1	2				P81C-005DC	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Amine service	
1	3				P81C-005DD	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Amine service	
1	4				P81C-0030Z	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Amine service	
1	6				P81C-003CN	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Amine service	
1	8				P81C-003CP	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Amine service	
1	10				P81C-005DA	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Amine service	
1	12				P81C-005DB	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Amine service	
1	14				P81C-005DE	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Amine service	
1	16				P81C-005DF	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Amine service	
1	18				P81C-005DG	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Amine service	

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GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	20				P81C-005DH	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Amine service	
4608	0.75				P81B-002Y1	Gate valve ASTM A105 Class 150 API 602 BW both sides w/ nipples BE - NPT ASTM A106-B XXS-nipple Trim number 12 BB-BG-OS&Y Handwheel operated Amine service	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82B-001C7	Globe valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Amine service	
1	0.75				P82B-001C8	Globe valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Amine service	
1	1				P82B-001C9	Globe valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Amine service	
1	1.5				P82B-001CA	Globe valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Amine service	
1	2				P82C-002NT	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Amine service	
1	3				P82C-002NU	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Amine service	
1	4				P82C-002NV	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Amine service	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83B-0012M	Check valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Amine service	
1	0.75				P83B-0012N	Check valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Amine service	
1	1				P83B-0012P	Check valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Amine service	
1	1.5				P83B-0012R	Check valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Amine service	
1	2				P83C-002R6	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Amine service	
1	3				P83C-002R7	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Amine service	
1	4				P83C-002R8	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Amine service	
1	6				P83C-002R9	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Amine service	

BALL VALVE (Q)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P84B-001CB	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design Amine service	
1	0.75				P84B-001CC	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design Amine service	
1	1				P84B-001CD	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design Amine service	
1	1.5				P84B-001CE	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design Amine service	
1	2				P84C-006K0	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design Amine service	
24	0.5				P84B-001CF	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design Amine service	
24	0.75				P84B-001CG	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design Amine service	
24	1				P84B-001CH	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design Amine service	
24	1.5				P84B-001CJ	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design Amine service	
24	2				P84C-006K1	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design Amine service	

ORIFICE FLANGE (FO)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2		XS		P66B-0084B	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	3		STD		P66B-0084C	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	4		STD		P66B-0084D	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
200	2		XS		P66B-00843	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	3		STD		P66B-00844	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	4		STD		P66B-00845	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	

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SPECT BLANK (SB)							
OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71B-0008A	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	0.75				P71B-0008B	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	1				P71B-0008C	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71B-0008D	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	2				P71B-0000P	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	3				P71B-0000N	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	4				P71B-0000M	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	6				P71B-0000L	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	8				P71B-0000R	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	10				P71B-0000K	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	12				P71B-0000J	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	

PADDLE BLANK (PB)							
OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000AH	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	16				P72B-0000C	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	18				P72B-000AJ	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	20				P72B-000AK	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	

PADDLE SPACER (PS)							
OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000AT	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	16				P72B-0000B	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	18				P72B-000AU	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	20				P72B-000AV	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	

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BOLT TABLE (B_A2AL , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	60	P80S-003V2		
0.75	4	0.500	65	P80S-003V3		
1	4	0.500	70	P80S-003V4		
1.5	4	0.500	75	P80S-003V5		
2	4	0.625	85	P80S-003XE		
3	4	0.625	95	P80S-003XG		
4	8	0.625	95	P80S-003XG		
6	8	0.750	105	P80S-003XJ		
8	8	0.750	110	P80S-003XK		
10	12	0.875	120	P80S-00419		
12	12	0.875	120	P80S-00419		
14	12	1.000	135	P80S-0043E		
16	16	1.000	140	P80S-0043F		
18	16	1.125	150	P80S-0046K		
20	20	1.125	160	P80S-0046M		

BOLT TABLE (B_A2AL_773 , STUD ASME RF, OPTION CODE 773)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-003V4		
0.75	4	0.625	75	P80S-003XC		
1	4	0.625	80	P80S-003XD		
1.5	4	0.750	95	P80S-00414		
2	8	0.625	90	P80S-003XF		
3	8	0.750	110	P80S-003XK		
4	8	0.750	115	P80S-003XL		
6	12	0.750	125	P80S-003XN		
8	12	0.875	140	P80S-0041D		
10	16	1.000	160	P80S-0043K		
12	16	1.125	175	P80S-0046S		
14	20	1.125	180	P80S-0046T		
16	20	1.250	190	P80S-004AK		
18	24	1.250	200	P80S-004AM		
20	24	1.250	210	P80S-004AP		

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BRANCH TABLE (T_A2AL)

RUN PIPE SIZE (in) \ BRANCH SIZE (in)	0.5	0.75	1	1.5	2	3	4	6	8	10	12	14	16	18	20
0.5	TS														
0.75		TS													
1		TR	TS												
1.5		TR	TR	TS											
2		L	TR	TR	TS										
3		L	L	TR	TR	TS									
4	L	L	L	L	TR	TR	TS								
6	L	L	L	L	L	TR	TR	TS							
8		L	L	L	L	L	TR	TR	TS						
10		L	L	L	L	L	TR	TR	TR	TS					
12		L	L	L	L	L	L	TR	TR	TR	TS				
14		L	L	L	L	L	L	TR	TR	TR	TR	TS			
16		L	L	L	L	L	L	TR	TR	TR	TR	TR	TS		
18		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TS	
20		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TR	TS

TR : REDUCING TEE
TS : STRAIGHT TEE
L : OUTLET

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PIPING CLASS

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Material : Killed CS
Rating : ASME CLASS 150
Flange Face : RF
C.A.(mm) : 3.00
Gasket : Spiral Wound
Service : PROCESS - NON NACE MILD CORROSIVE SOUR SERVICE AND AMINES - STRESS RELIEVED
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
2	USE OF SOFT SEATED BALL, PLUG AND BUTTERFLY VALVES SHALL BE LIMITED TO MAXIMUM OF 204DEGC (400DEGF)
27	PWHT OF CARBON STEEL PIPING IN WET H2S, CAUSTIC AND AMINE SERVICES SHALL BE IN ACCORDANCE WITH SECTION 10.2, 10.3, AND 10.4 OF PROJECT SPECIFICATION 3550-8440-SP-0002 MATERIALS REQUIREMENTS FOR PRESSURISED EQUIPMENT AND PIPING. FOR CAUSTIC AND AMINE SERVICE THE FOLLOWING SHALL APPLY: - PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF ALL SITE PIPING FABRICATION WELDS IS REQUIRED FOR ALL WALL THICKNESSES. FOR MODERATE AND SEVERE WET H2S SERVICE THE FOLLOWING SHALL APPLY: PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF SITE FABRICATION CIRCUMFERENTIAL OR BRANCH WELDS IS NOT REQUIRED IF WELDS ARE MULTIPASS AND IN ACCORDANCE WITH PARA 10.2.12 OF PROJECT SPECIFICATION 3550-8440-SP-0002. FOR SERVICES MEETING THE WET H2S CRITERIA AND CAUSTIC OR AMINE CRITERIA THE MORE STRINGENT PWHT REQUIREMENT SHALL GOVERN.

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
24	FULL PORT (Q)
200	WITH JACK SCREW (FO)
541	NPT(F) (CA,F)
773	CLASS 300 (B,F,G)
4608	VALVE WITH NIPPLES (V)

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PIPING CLASS
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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P01A-0078U	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE Licensor-1	
1	0.75		SCH160		P01A-0078V	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE Licensor-1	
1	1		SCH160		P01A-0078W	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE Licensor-1	
1	1.5		SCH160		P01A-0078X	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE Licensor-1	
1	2		XS		P01A-0078Y	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Licensor-1	
1	3		STD		P01A-0078Z	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Licensor-1	
1	4		STD		P01A-007B3	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Licensor-1	
1	6		STD		P01A-007B8	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Licensor-1	
1	8		SCH20		P01A-007B9	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Licensor-1	
1	10		SCH20		P01A-007B4	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Licensor-1	
1	12		SCH30		P01A-007CF	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Licensor-1	
1	14		SCH20		P01A-007B6	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Licensor-1	
1	16		SCH20		P01A-007B7	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Licensor-1	
1	18		SCH20		P01A-007TN	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE Amine service Licensor-1	
1	20		STD		P01A-007TP	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE Amine service Licensor-1	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P02A-003TW	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	0.75		SCH160		P02A-003TX	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	1		SCH160		P02A-003TY	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	1.5		SCH160		P02A-003TZ	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	2		XS		P02A-003R7	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	3		STD		P02A-003R8	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	4		STD		P02A-003T8	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	6		STD		P02A-003TG	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	8		SCH20		P02A-003TH	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	10		SCH20		P02A-003T9	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	12		SCH30		P02A-003UH	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	14		SCH20		P02A-003TB	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	16		SCH20		P02A-003TC	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	18		SCH20		P02A-003TD	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	20		STD		P02A-003TE	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P03A-003RJ	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	0.75		SCH160		P03A-003RK	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	1		SCH160		P03A-003RL	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	1.5		SCH160		P03A-003RM	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	2		XS		P03A-003MW	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	3		STD		P03A-003MX	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	4		STD		P03A-003PX	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	6		STD		P03A-003R5	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	8		SCH20		P03A-003R6	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	10		SCH20		P03A-003PY	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	12		SCH30		P03A-003S6	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	14		SCH20		P03A-003R0	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	16		SCH20		P03A-003R1	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	18		SCH20		P03A-003R2	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	20		STD		P03A-003R3	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P21A-004B8	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	0.75		SCH160		P21A-004B9	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	1		SCH160		P21A-004BA	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	1.5		SCH160		P21A-004BB	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	2		XS		P21A-0048L	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	

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STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3		STD		P21A-0048M	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	4		STD		P21A-004AL	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	6		STD		P21A-004AS	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	8		SCH20		P21A-004AT	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	10		SCH20		P21A-004AM	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	12		SCH30		P21A-004BZ	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	14		SCH20		P21A-004AP	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	16		SCH20		P21A-004AR	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	18		SCH20		P21A-004NE	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Amine service Licensor-1	
1	20		STD		P21A-004NF	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Amine service Licensor-1	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75	SCH160	SCH160	P24A-00K7S	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	1.5	0.75	SCH160	SCH160	P24A-00K7T	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	1.5	1	SCH160	SCH160	P24A-00K7U	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	2	1	XS	SCH160	P24A-00K0V	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	2	1.5	XS	SCH160	P24A-00K0W	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	3	1.5	STD	SCH160	P24A-00K0X	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	3	2	STD	XS	P24A-00K0Y	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	4	2	STD	XS	P24A-00K5X	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	4	3	STD	STD	P24A-00K5Y	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	6	3	STD	STD	P24A-00K64	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	6	4	STD	STD	P24A-00K65	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	8	4	SCH20	STD	P24A-00K66	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	8	6	SCH20	STD	P24A-00K67	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	10	4	SCH20	STD	P24A-00K68	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	10	6	SCH20	STD	P24A-00K69	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	10	8	SCH20	SCH20	P24A-00K6A	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	12	6	SCH30	STD	P24A-00KBJ	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	12	8	SCH30	SCH20	P24A-00KBK	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	12	10	SCH30	SCH20	P24A-00KBH	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	14	6	SCH20	STD	P24A-00K6G	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	14	8	SCH20	SCH20	P24A-00K6H	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	14	10	SCH20	SCH20	P24A-00K6E	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	14	12	SCH20	SCH30	P24A-00KBL	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	16	6	SCH20	STD	P24A-00K6M	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	16	8	SCH20	SCH20	P24A-00K6N	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	16	10	SCH20	SCH20	P24A-00K6J	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	16	12	SCH20	SCH30	P24A-00KBM	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	16	14	SCH20	SCH20	P24A-00K6L	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	18	8	SCH20	SCH20	P24A-00M3Z	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Amine service Licensor-1	
1	18	10	SCH20	SCH20	P24A-00M3Y	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Amine service Licensor-1	
1	18	12	SCH20	SCH30	P24A-00M3V	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Amine service Licensor-1	
1	18	14	SCH20	SCH20	P24A-00M3W	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Amine service Licensor-1	
1	18	16	SCH20	SCH20	P24A-00M3X	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Amine service Licensor-1	
1	20	8	STD	SCH20	P24A-00M45	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Amine service Licensor-1	
1	20	10	STD	SCH20	P24A-00M40	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Amine service Licensor-1	
1	20	12	STD	SCH30	P24A-00M41	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Amine service Licensor-1	
1	20	14	STD	SCH20	P24A-00M42	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Amine service Licensor-1	
1	20	16	STD	SCH20	P24A-00M43	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Amine service Licensor-1	
1	20	18	STD	SCH20	P24A-00M44	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Amine service Licensor-1	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	SCH160	P27A-00ETE	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	1	0.5	SCH160	SCH160	P27A-00ETF	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	1	0.75	SCH160	SCH160	P27A-00ETG	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	1.5	0.5	SCH160	SCH160	P27A-00ETH	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	

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CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5	0.75	SCH160	SCH160	P27A-00ETJ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	1.5	1	SCH160	SCH160	P27A-00ETK	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	2	0.75	XS	SCH160	P27A-00ETL	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	2	1	XS	SCH160	P27A-00ETM	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	2	1.5	XS	SCH160	P27A-00ETN	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	3	1.5	STD	SCH160	P27A-00ETP	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	3	2	STD	XS	P27A-00EL1	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	4	1.5	STD	SCH160	P27A-00ETR	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	4	2	STD	XS	P27A-00ES5	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	4	3	STD	STD	P27A-00ES6	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	6	3	STD	STD	P27A-00ES9	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	6	4	STD	STD	P27A-00ESA	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	8	4	SCH20	STD	P27A-00ESB	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	8	6	SCH20	STD	P27A-00ESC	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	10	4	SCH20	STD	P27A-00ESD	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	10	6	SCH20	STD	P27A-00ESE	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	10	8	SCH20	SCH20	P27A-00ESF	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	12	6	SCH30	STD	P27A-00EW1	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	12	8	SCH30	SCH20	P27A-00EW2	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	12	10	SCH30	SCH20	P27A-00EW0	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	14	6	SCH20	STD	P27A-00ESM	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	14	8	SCH20	SCH20	P27A-00ESN	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	14	10	SCH20	SCH20	P27A-00ESK	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	14	12	SCH20	SCH30	P27A-00EW3	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	16	8	SCH20	SCH20	P27A-00EST	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	16	10	SCH20	SCH20	P27A-00ESP	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	16	12	SCH20	SCH30	P27A-00EW4	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	16	14	SCH20	SCH20	P27A-00ESS	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	18	10	SCH20	SCH20	P27A-00G3Z	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Amine service Licensor-1	
1	18	12	SCH20	SCH30	P27A-00G40	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Amine service Licensor-1	
1	18	14	SCH20	SCH20	P27A-00G41	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Amine service Licensor-1	
1	18	16	SCH20	SCH20	P27A-00G42	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Amine service Licensor-1	
1	20	12	STD	SCH30	P27A-00G43	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Amine service Licensor-1	
1	20	14	STD	SCH20	P27A-00G44	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Amine service Licensor-1	
1	20	16	STD	SCH20	P27A-00G45	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Amine service Licensor-1	
1	20	18	STD	SCH20	P27A-00G46	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Amine service Licensor-1	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	SCH160	P28A-00BX8	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	1	0.5	SCH160	SCH160	P28A-00BX9	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	1	0.75	SCH160	SCH160	P28A-00BXA	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	1.5	0.5	SCH160	SCH160	P28A-00BXB	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	1.5	0.75	SCH160	SCH160	P28A-00BXC	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	1.5	1	SCH160	SCH160	P28A-00BXD	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	2	0.75	XS	SCH160	P28A-00BXE	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	2	1	XS	SCH160	P28A-00BXF	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	2	1.5	XS	SCH160	P28A-00BXG	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	3	1.5	STD	SCH160	P28A-00BXH	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	3	2	STD	XS	P28A-00BPS	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	4	1.5	STD	SCH160	P28A-00BXJ	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	4	2	STD	XS	P28A-00BVZ	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	4	3	STD	STD	P28A-00BW0	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	6	3	STD	STD	P28A-00BW3	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	6	4	STD	STD	P28A-00BW4	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	8	4	SCH20	STD	P28A-00BW5	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	8	6	SCH20	STD	P28A-00BW6	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	10	4	SCH20	STD	P28A-00BW7	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	10	6	SCH20	STD	P28A-00BW8	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	

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ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	10	8	SCH20	SCH20	P28A-00BW9	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	12	6	SCH30	STD	P28A-00BZW	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	12	8	SCH30	SCH20	P28A-00BZX	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	12	10	SCH30	SCH20	P28A-00BZV	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	14	6	SCH20	STD	P28A-00BWF	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	14	8	SCH20	SCH20	P28A-00BWG	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	14	10	SCH20	SCH20	P28A-00BWD	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	14	12	SCH20	SCH30	P28A-00BZY	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	16	8	SCH20	SCH20	P28A-00BWL	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	16	10	SCH20	SCH20	P28A-00BWH	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	16	12	SCH20	SCH30	P28A-00BZZ	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	16	14	SCH20	SCH20	P28A-00BWK	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	18	10	SCH20	SCH20	P28A-00DAG	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Amine service Licensor-1	
1	18	12	SCH20	SCH30	P28A-00DAH	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Amine service Licensor-1	
1	18	14	SCH20	SCH20	P28A-00DAJ	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Amine service Licensor-1	
1	18	16	SCH20	SCH20	P28A-00DAK	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Amine service Licensor-1	
1	20	12	STD	SCH30	P28A-00DAL	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Amine service Licensor-1	
1	20	14	STD	SCH20	P28A-00DAM	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Amine service Licensor-1	
1	20	16	STD	SCH20	P28A-00DAN	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Amine service Licensor-1	
1	20	18	STD	SCH20	P28A-00DAP	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Amine service Licensor-1	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P29A-0035G	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	0.75		SCH160		P29A-0035H	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	1		SCH160		P29A-0035J	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	1.5		SCH160		P29A-0035K	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	2		XS		P29A-00326	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	3		STD		P29A-00327	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	4		STD		P29A-0034R	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	6		STD		P29A-00353	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	8		SCH20		P29A-00354	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	10		SCH20		P29A-0034S	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	12		SCH30		P29A-0036E	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	14		SCH20		P29A-0034U	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	16		SCH20		P29A-0034V	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	18		SCH20		P29A-0034W	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	20		STD		P29A-0034X	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
541	0.75				P29B-00069	Cap ASTM A105 Class 6000 ASME B16.11 NPT Licensor-1	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P41A-0017X	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Licensor-1	
1	0.75		XXS		P41A-0017Y	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Licensor-1	
1	1		XXS		P41A-0017Z	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Licensor-1	
1	1.5		XXS		P41A-00180	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Licensor-1	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2	0.75	XS	SCH160	P31B-00XP8	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	3	0.75	STD	SCH160	P31B-00XP9	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	4	0.75	STD	SCH160	P31B-00XPB	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	6	0.75	STD	SCH160	P31B-00XPE	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	8	0.75	SCH20	SCH160	P31B-00YB5	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	10	0.75	SCH20	SCH160	P31B-00YB4	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	12	0.75	SCH30	SCH160	P31B-00XTE	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	14	0.75	SCH20	SCH160	P31B-00XTH	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	16	0.75	SCH20	SCH160	P31B-00XTL	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	18	0.75	SCH20	SCH160	P31B-00XTP	Outlet ASTM A105 MSS SP-97 BW Licensor-1	

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OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	20	0.75	STD	SCH160	P31B-00XTT	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	3	1	STD	SCH160	P31B-00XPA	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	4	1	STD	SCH160	P31B-00XPC	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	6	1	STD	SCH160	P31B-00XPF	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	8	1	SCH20	SCH160	P31B-00XTA	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	10	1	SCH20	SCH160	P31B-00XTC	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	12	1	SCH30	SCH160	P31B-00XTF	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	14	1	SCH20	SCH160	P31B-00XTJ	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	16	1	SCH20	SCH160	P31B-00XTM	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	18	1	SCH20	SCH160	P31B-00XTR	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	20	1	STD	SCH160	P31B-00XTU	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	4	1.5	STD	SCH160	P31B-00XPD	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	6	1.5	STD	SCH160	P31B-00XPG	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	8	1.5	SCH20	SCH160	P31B-00XTB	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	10	1.5	SCH20	SCH160	P31B-00XTD	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	12	1.5	SCH30	SCH160	P31B-00XTG	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	14	1.5	SCH20	SCH160	P31B-00XTK	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	16	1.5	SCH20	SCH160	P31B-00XTN	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	18	1.5	SCH20	SCH160	P31B-00XTS	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	20	1.5	STD	SCH160	P31B-00XTV	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	6	2	STD	XS	P31B-00XMV	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	8	2	SCH20	XS	P31B-00XMW	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	10	2	SCH20	XS	P31B-00XMY	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	12	2	SCH30	XS	P31B-00XT7	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	14	2	SCH20	XS	P31B-00XN3	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	16	2	SCH20	XS	P31B-00XN6	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	18	2	SCH20	XS	P31B-00XN9	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	20	2	STD	XS	P31B-00XND	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	8	3	SCH20	STD	P31B-00XMX	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	10	3	SCH20	STD	P31B-00XMZ	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	12	3	SCH30	STD	P31B-00XT8	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	14	3	SCH20	STD	P31B-00XN4	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	16	3	SCH20	STD	P31B-00XN7	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	18	3	SCH20	STD	P31B-00XNA	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	20	3	STD	STD	P31B-00XNE	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	12	4	SCH30	STD	P31B-00XT9	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	14	4	SCH20	STD	P31B-00XN5	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	16	4	SCH20	STD	P31B-00XN8	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	18	4	SCH20	STD	P31B-00XNB	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	20	4	STD	STD	P31B-00XNF	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	18	6	SCH20	STD	P31B-00XNC	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	20	6	STD	STD	P31B-00XNG	Outlet ASTM A105 MSS SP-97 BW Licensor-1	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30B-00067	Plug ASTM A105 ASME B16.11 NPT Round head Licensor-1	
1	0.75				P30B-00068	Plug ASTM A105 ASME B16.11 NPT Round head Licensor-1	
1	1				P30B-00069	Plug ASTM A105 ASME B16.11 NPT Round head Licensor-1	
1	1.5				P30B-0006A	Plug ASTM A105 ASME B16.11 NPT Round head Licensor-1	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P61B-00A2R	Flange WN ASTM A105 Class 150 ASME B16.5 RF Licensor-1	
1	0.75		SCH160		P61B-00A2S	Flange WN ASTM A105 Class 150 ASME B16.5 RF Licensor-1	
1	1		SCH160		P61B-00A2T	Flange WN ASTM A105 Class 150 ASME B16.5 RF Licensor-1	
1	1.5		SCH160		P61B-00A2U	Flange WN ASTM A105 Class 150 ASME B16.5 RF Licensor-1	
1	2		XS		P61B-009YN	Flange WN ASTM A105 Class 150 ASME B16.5 RF Licensor-1	
1	3		STD		P61B-009YP	Flange WN ASTM A105 Class 150 ASME B16.5 RF Licensor-1	
1	4		STD		P61B-009YR	Flange WN ASTM A105 Class 150 ASME B16.5 RF Licensor-1	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	6		STD		P61B-009ZG	Flange WN ASTM A105 Class 150 ASME B16.5 RF Licensor-1	
1	8		SCH20		P61B-009ZH	Flange WN ASTM A105 Class 150 ASME B16.5 RF Licensor-1	
1	10		SCH20		P61B-009Z9	Flange WN ASTM A105 Class 150 ASME B16.5 RF Licensor-1	
1	12		SCH30		P61B-00A2N	Flange WN ASTM A105 Class 150 ASME B16.5 RF Licensor-1	
1	14		SCH20		P61B-009ZB	Flange WN ASTM A105 Class 150 ASME B16.5 RF Licensor-1	
1	16		SCH20		P61B-009ZC	Flange WN ASTM A105 Class 150 ASME B16.5 RF Licensor-1	
1	18		SCH20		P61B-009ZD	Flange WN ASTM A105 Class 150 ASME B16.5 RF Licensor-1	
1	20		STD		P61B-009ZE	Flange WN ASTM A105 Class 150 ASME B16.5 RF Licensor-1	
541	0.5				P61B-00DLC	Flange NPT ASTM A105 Class 150 ASME B16.5 RF Licensor-1	
541	0.75				P61B-00CXL	Flange NPT ASTM A105 Class 150 ASME B16.5 RF Licensor-1	
773	0.5		SCH160		P61B-00A0G	Flange WN ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
773	0.75		SCH160		P61B-00A0H	Flange WN ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
773	1		SCH160		P61B-00A0J	Flange WN ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
773	1.5		SCH160		P61B-00A0K	Flange WN ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
773	2		XS		P61B-009YW	Flange WN ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
773	3		STD		P61B-009YX	Flange WN ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
773	4		STD		P61B-009YY	Flange WN ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
773	6		STD		P61B-00A07	Flange WN ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
773	8		SCH20		P61B-00A08	Flange WN ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
773	10		SCH20		P61B-00A00	Flange WN ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
773	12		SCH30		P61B-00A2P	Flange WN ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
773	14		SCH20		P61B-00A02	Flange WN ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
773	16		SCH20		P61B-00A03	Flange WN ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
773	18		SCH20		P61B-00A04	Flange WN ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
773	20		STD		P61B-00A05	Flange WN ASTM A105 Class 300 ASME B16.5 RF Licensor-1	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67B-002D6	Blind flange ASTM A105 Class 150 ASME B16.5 RF Licensor-1	
1	0.75				P67B-002D7	Blind flange ASTM A105 Class 150 ASME B16.5 RF Licensor-1	
1	1				P67B-002D8	Blind flange ASTM A105 Class 150 ASME B16.5 RF Licensor-1	
1	1.5				P67B-002D9	Blind flange ASTM A105 Class 150 ASME B16.5 RF Licensor-1	
1	2				P67B-002DB	Blind flange ASTM A105 Class 150 ASME B16.5 RF Licensor-1	
1	3				P67B-002DC	Blind flange ASTM A105 Class 150 ASME B16.5 RF Licensor-1	
1	4				P67B-002DD	Blind flange ASTM A105 Class 150 ASME B16.5 RF Licensor-1	
1	6				P67B-002DE	Blind flange ASTM A105 Class 150 ASME B16.5 RF Licensor-1	
1	8				P67B-002DF	Blind flange ASTM A105 Class 150 ASME B16.5 RF Licensor-1	
1	10				P67B-002DA	Blind flange ASTM A105 Class 150 ASME B16.5 RF Licensor-1	
1	12				P67B-002FK	Blind flange ASTM A105 Class 150 ASME B16.5 RF Licensor-1	
1	14				P67B-002FL	Blind flange ASTM A105 Class 150 ASME B16.5 RF Licensor-1	
1	16				P67B-002FM	Blind flange ASTM A105 Class 150 ASME B16.5 RF Licensor-1	
1	18				P67B-002FN	Blind flange ASTM A105 Class 150 ASME B16.5 RF Licensor-1	
1	20				P67B-002FP	Blind flange ASTM A105 Class 150 ASME B16.5 RF Licensor-1	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000L8	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000L9	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000LA	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000LB	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000LH	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000LL	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000LM	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	6				P73T-000LN	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	8				P73T-000LP	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

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GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	10				P73T-000LC	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	12				P73T-000LD	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	14				P73T-000LE	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	16				P73T-000LF	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	18				P73T-000LG	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	20				P73T-000LJ	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	0.5				P73T-000FT	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	0.75				P73T-000FU	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	3				P73T-000G5	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	4				P73T-000G6	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	6				P73T-000G7	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	8				P73T-000G8	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	10				P73T-000FX	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	12				P73T-000FY	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	14				P73T-000FZ	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	16				P73T-000G0	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	18				P73T-000G1	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	20				P73T-000G3	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-16				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	18-20				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
773	0.5-10				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
773	12-20				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81B-001MS	Gate valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Amine service Licensor-1	
1	0.75				P81B-001MT	Gate valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Amine service Licensor-1	
1	1				P81B-001MU	Gate valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Amine service Licensor-1	
1	1.5				P81B-001MV	Gate valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Amine service Licensor-1	
1	2				P81C-005DM	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Amine service Licensor-1	
1	3				P81C-005DN	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Amine service Licensor-1	
1	4				P81C-005DP	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Amine service Licensor-1	
1	6				P81C-005DR	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Amine service Licensor-1	
1	8				P81C-005DS	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Amine service Licensor-1	
1	10				P81C-005S9	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Amine service Licensor-1	
1	12				P81C-005SA	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Amine service Licensor-1	
1	14				P81C-005GD	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Amine service Licensor-1	
1	16				P81C-005GE	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Amine service Licensor-1	
1	18				P81C-005GF	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Amine service Licensor-1	

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GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	20				P81C-005GG	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Amine service Licensor-1	
4608	0.75				P81B-002Y2	Gate valve ASTM A105 Class 150 API 602 BW both sides w/ nipples BE - NPT ASTM A106-B XXS-nipple Trim number 12 BB-BG-OS&Y Handwheel operated Amine service Licensor-1	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82B-001CB	Globe valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Amine service Licensor-1	
1	0.75				P82B-001CC	Globe valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Amine service Licensor-1	
1	1				P82B-001CD	Globe valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Amine service Licensor-1	
1	1.5				P82B-001CE	Globe valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Amine service Licensor-1	
1	2				P82C-002NW	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Amine service Licensor-1	
1	3				P82C-002NX	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Amine service Licensor-1	
1	4				P82C-002NY	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Amine service Licensor-1	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83B-0012H	Check valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Amine service Licensor-1	
1	0.75				P83B-0012J	Check valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Amine service Licensor-1	
1	1				P83B-0012K	Check valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Amine service Licensor-1	
1	1.5				P83B-0012L	Check valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Amine service Licensor-1	
1	2				P83C-002R3	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Amine service Licensor-1	
1	3				P83C-002R4	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Amine service Licensor-1	
1	4				P83C-002R5	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Amine service Licensor-1	
1	6				P83C-002RA	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Amine service Licensor-1	
1	8				P83C-002TV	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Amine service Licensor-1	
1	10				P83C-002TN	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Amine service Licensor-1	
1	12				P83C-002TP	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Amine service Licensor-1	
1	14				P83C-002TR	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Amine service Licensor-1	
1	16				P83C-002TS	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Amine service Licensor-1	
1	18				P83C-002TT	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Amine service Licensor-1	
1	20				P83C-002TU	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Amine service Licensor-1	

BALL VALVE (Q)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P84B-001CK	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design Amine service Licensor-1	
1	0.75				P84B-001CL	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design Amine service Licensor-1	
1	1				P84B-001CM	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design Amine service Licensor-1	
1	1.5				P84B-001CN	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design Amine service Licensor-1	
1	2				P84C-006K2	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design Amine service Licensor-1	
24	0.5				P84B-001CP	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design Amine service Licensor-1	
24	0.75				P84B-001CR	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design Amine service Licensor-1	
24	1				P84B-001CS	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design Amine service Licensor-1	

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BALL VALVE (Q)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
24	1.5				P84B-001CT	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design Amine service Licensor-1	
24	2				P84C-006K3	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design Amine service Licensor-1	

ORIFICE FLANGE (FO)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2		XS		P66B-0085G	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Licensor-1	
1	3		STD		P66B-0085H	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Licensor-1	
200	2		XS		P66B-0085R	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw Licensor-1	
200	3		STD		P66B-0085S	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw Licensor-1	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71B-00080	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	0.75				P71B-00081	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	1				P71B-00082	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	1.5				P71B-00083	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	2				P71B-00085	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	3				P71B-00086	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	4				P71B-00087	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	6				P71B-00088	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	8				P71B-00089	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	10				P71B-00084	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	12				P71B-0008S	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Licensor-1	

PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000BR	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	16				P72B-000BS	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	18				P72B-000BT	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	20				P72B-000BU	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Licensor-1	

PADDLE SPACER (PS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000C7	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	16				P72B-000C8	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	18				P72B-000C9	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	20				P72B-000CA	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Licensor-1	

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BOLT TABLE (B_A2AL01 , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	60	P80S-003V2		
0.75	4	0.500	65	P80S-003V3		
1	4	0.500	70	P80S-003V4		
1.5	4	0.500	75	P80S-003V5		
2	4	0.625	85	P80S-003XE		
3	4	0.625	95	P80S-003XG		
4	8	0.625	95	P80S-003XG		
6	8	0.750	105	P80S-003XJ		
8	8	0.750	110	P80S-003XK		
10	12	0.875	120	P80S-00419		
12	12	0.875	120	P80S-00419		
14	12	1.000	135	P80S-0043E		
16	16	1.000	140	P80S-0043F		
18	16	1.125	150	P80S-0046K		
20	20	1.125	160	P80S-0046M		

BOLT TABLE (B_A2AL01_773 , STUD ASME RF, OPTION CODE 773)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-003V4		
0.75	4	0.625	75	P80S-003XC		
1	4	0.625	80	P80S-003XD		
1.5	4	0.750	95	P80S-00414		
2	8	0.625	90	P80S-003XF		
3	8	0.750	110	P80S-003XK		
4	8	0.750	115	P80S-003XL		
6	12	0.750	125	P80S-003XN		
8	12	0.875	140	P80S-0041D		
10	16	1.000	160	P80S-0043K		
12	16	1.125	175	P80S-0046S		
14	20	1.125	180	P80S-0046T		
16	20	1.250	190	P80S-004AK		
18	24	1.250	200	P80S-004AM		
20	24	1.250	210	P80S-004AP		

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BRANCH TABLE (T_A2AL01)

RUN PIPE SIZE (in) \ BRANCH SIZE (in)	0.5	0.75	1	1.5	2	3	4	6	8	10	12	14	16	18	20
0.5	TS														
0.75		TS													
1		TR	TS												
1.5		TR	TR	TS											
2		L	TR	TR	TS										
3		L	L	TR	TR	TS									
4	L	L	L	L	TR	TR	TS								
6	L	L	L	L	L	TR	TR	TS							
8		L	L	L	L	L	TR	TR	TS						
10		L	L	L	L	L	TR	TR	TR	TS					
12		L	L	L	L	L	L	TR	TR	TR	TS				
14		L	L	L	L	L	L	TR	TR	TR	TR	TS			
16		L	L	L	L	L	L	TR	TR	TR	TR	TR	TS		
18		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TS	
20		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TR	TS

L : OUTLET
TR : REDUCING TEE
TS : STRAIGHT TEE

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PIPING CLASS

A2AL03 REV NO. 2

Material : Killed CS
Rating : ASME CLASS 150
Flange Face : RF
C.A.(mm) : 3.00
Gasket : Spiral Wound
Service : PROCESS - NON NACE MILD CORROSIVE SOUR SERVICE AND AMINES - STRESS RELIEVED
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
2	USE OF SOFT SEATED BALL, PLUG AND BUTTERFLY VALVES SHALL BE LIMITED TO MAXIMUM OF 204DEGC (400DEGF)
27	PWHT OF CARBON STEEL PIPING IN WET H2S, CAUSTIC AND AMINE SERVICES SHALL BE IN ACCORDANCE WITH SECTION 10.2, 10.3, AND 10.4 OF PROJECT SPECIFICATION 3550-8440-SP-0002 MATERIALS REQUIREMENTS FOR PRESSURISED EQUIPMENT AND PIPING. FOR CAUSTIC AND AMINE SERVICE THE FOLLOWING SHALL APPLY: - PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF ALL SITE PIPING FABRICATION WELDS IS REQUIRED FOR ALL WALL THICKNESSES. FOR MODERATE AND SEVERE WET H2S SERVICE THE FOLLOWING SHALL APPLY: PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF SITE FABRICATION CIRCUMFERENTIAL OR BRANCH WELDS IS NOT REQUIRED IF WELDS ARE MULTIPASS AND IN ACCORDANCE WITH PARA 10.2.12 OF PROJECT SPECIFICATION 3550-8440-SP-0002. FOR SERVICES MEETING THE WET H2S CRITERIA AND CAUSTIC OR AMINE CRITERIA THE MORE STRINGENT PWHT REQUIREMENT SHALL GOVERN.

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
24	FULL PORT (Q)
541	NPT(F) (CA,F)
773	CLASS 300 (B,F,G)
4608	VALVE WITH NIPPLES (V)

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PIPING CLASS
A2AL03 REV NO. 2

PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P01A-0010P	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	0.75		SCH160		P01A-0010R	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1		SCH160		P01A-0014M	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1.5		SCH160		P01A-0015J	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	2		XS		P01A-000YX	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	3		STD		P01A-000YM	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	4		STD		P01A-000YU	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P02A-001Y8	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	0.75		SCH160		P02A-000V8	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1		SCH160		P02A-000V7	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1.5		SCH160		P02A-000V9	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	2		XS		P02A-000CP	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		STD		P02A-000CU	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		STD		P02A-000CZ	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P03A-001TC	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	0.75		SCH160		P03A-000RS	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1		SCH160		P03A-000RR	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1.5		SCH160		P03A-000RP	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	2		XS		P03A-000AS	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		STD		P03A-000AX	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		STD		P03A-000B1	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P21A-003AW	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	0.75		SCH160		P21A-002B8	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1		SCH160		P21A-002B6	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5		SCH160		P21A-002B9	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2		XS		P21A-001CJ	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		STD		P21A-001CU	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		STD		P21A-001CW	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75	SCH160	SCH160	P24A-004B6	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.75	SCH160	SCH160	P24A-004B2	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	1	SCH160	SCH160	P24A-004BA	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	XS	SCH160	P24A-00GMB	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	XS	SCH160	P24A-005K9	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	STD	SCH160	P24A-00GMC	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	STD	XS	P24A-002HW	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P24A-002HY	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P24A-0021K	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	SCH160	P27A-004LZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.5	SCH160	SCH160	P27A-004M8	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.75	SCH160	SCH160	P27A-002T5	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.5	SCH160	SCH160	P27A-004MV	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.75	SCH160	SCH160	P27A-002T7	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	1	SCH160	SCH160	P27A-002T4	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2	0.75	XS	SCH160	P27A-001LG	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	XS	SCH160	P27A-0033P	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	XS	SCH160	P27A-0033B	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	STD	SCH160	P27A-003M9	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	STD	XS	P27A-001MZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	1.5	STD	SCH160	P27A-003MA	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P27A-001N0	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P27A-00189	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	SCH160	P28A-007KG	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.5	SCH160	SCH160	P28A-007KH	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.75	SCH160	SCH160	P28A-002TU	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.5	SCH160	SCH160	P28A-007KJ	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.75	SCH160	SCH160	P28A-002TW	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	1	SCH160	SCH160	P28A-002TR	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	0.75	XS	SCH160	P28A-001LE	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	XS	SCH160	P28A-003M1	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	XS	SCH160	P28A-003M2	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	STD	SCH160	P28A-003M3	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	STD	XS	P28A-001N5	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	1.5	STD	SCH160	P28A-003M4	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P28A-001N6	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P28A-0018B	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P29A-001UD	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	0.75		SCH160		P29A-000TX	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1		SCH160		P29A-000TY	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5		SCH160		P29A-000TZ	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2		XS		P29A-000A1	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		STD		P29A-000BK	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		STD		P29A-000A3	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
541	0.75				P29B-0000Y	Cap ASTM A105 Class 6000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P41A-000B9	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		XXS		P41A-000BA	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		XXS		P41A-000D8	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		XXS		P41A-000D9	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2	0.75	XS	SCH160	P31B-00CP7	Outlet ASTM A105 MSS SP-97 BW	
1	3	0.75	STD	SCH160	P31B-00CMT	Outlet ASTM A105 MSS SP-97 BW	
1	4	0.75	STD	SCH160	P31B-00CLT	Outlet ASTM A105 MSS SP-97 BW	
1	3	1	STD	SCH160	P31B-00B4J	Outlet ASTM A105 MSS SP-97 BW	
1	4	1	STD	SCH160	P31B-00B3M	Outlet ASTM A105 MSS SP-97 BW	
1	4	1.5	STD	SCH160	P31B-00BP4	Outlet ASTM A105 MSS SP-97 BW	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30B-0002D	Plug ASTM A105 ASME B16.11 NPT Round head	
1	0.75				P30B-0002E	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1				P30B-0002F	Plug ASTM A105 ASME B16.11 NPT Round head	

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PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5				P30B-0002G	Plug ASTM A105 ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P61B-004V2	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	0.75		SCH160		P61B-0037H	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	1		SCH160		P61B-0037F	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	1.5		SCH160		P61B-0037N	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	2		XS		P61B-003NK	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	3		STD		P61B-001PW	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	4		STD		P61B-001R8	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
541	0.5				P61B-003TZ	Flange NPT ASTM A105 Class 150 ASME B16.5 RF	
541	0.75				P61B-003U0	Flange NPT ASTM A105 Class 150 ASME B16.5 RF	
773	0.5		SCH160		P61B-003P9	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	0.75		SCH160		P61B-0037M	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	1		SCH160		P61B-0037L	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	1.5		SCH160		P61B-0037J	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	2		XS		P61B-001HW	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	3		STD		P61B-001LJ	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	4		STD		P61B-001MC	Flange WN ASTM A105 Class 300 ASME B16.5 RF	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67B-000FH	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	0.75				P67B-000FJ	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	1				P67B-000FK	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	1.5				P67B-000FL	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	2				P67B-000FT	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	3				P67B-000FW	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	4				P67B-000FX	Blind flange ASTM A105 Class 150 ASME B16.5 RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000L8	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000L9	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000LA	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000LB	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000LH	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000LL	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000LM	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	0.5				P73T-000FT	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	0.75				P73T-000FU	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	3				P73T-000G5	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	4				P73T-000G6	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-4				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
773	0.5-4				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	

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GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81B-001MM	Gate valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Amine service	
1	0.75				P81B-001MN	Gate valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Amine service	
1	1				P81B-001MP	Gate valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Amine service	
1	1.5				P81B-001MR	Gate valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Amine service	
1	2				P81C-005DC	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Amine service	
1	3				P81C-005DD	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Amine service	
1	4				P81C-0030Z	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Amine service	
4608	0.75				P81B-002Y1	Gate valve ASTM A105 Class 150 API 602 BW both sides w/ nipples BE - NPT ASTM A106-B XXS-nipple Trim number 12 BB-BG-OS&Y Handwheel operated Amine service	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82B-001C7	Globe valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Amine service	
1	0.75				P82B-001C8	Globe valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Amine service	
1	1				P82B-001C9	Globe valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Amine service	
1	1.5				P82B-001CA	Globe valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Amine service	
1	2				P82C-002NT	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Amine service	
1	3				P82C-002NU	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Amine service	
1	4				P82C-002NV	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Amine service	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83B-0012M	Check valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Amine service	
1	0.75				P83B-0012N	Check valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Amine service	
1	1				P83B-0012P	Check valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Amine service	
1	1.5				P83B-0012R	Check valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Amine service	
1	2				P83C-002R6	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Amine service	
1	3				P83C-002R7	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Amine service	
1	4				P83C-002R8	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Amine service	

BALL VALVE (Q)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P84B-001CB	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design Amine service	
1	0.75				P84B-001CC	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design Amine service	
1	1				P84B-001CD	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design Amine service	
1	1.5				P84B-001CE	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design Amine service	
1	2				P84C-006K0	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design Amine service	
24	0.5				P84B-001CF	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design Amine service	
24	0.75				P84B-001CG	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design Amine service	
24	1				P84B-001CH	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design Amine service	
24	1.5				P84B-001CJ	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design Amine service	
24	2				P84C-006K1	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design Amine service	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71B-0008A	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	0.75				P71B-0008B	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	

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SPECT BLANK (SB)							
OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P71B-0008C	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71B-0008D	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	2				P71B-0000P	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	3				P71B-0000N	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	4				P71B-0000M	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	

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BOLT TABLE (B_A2AL03 , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	60	P80S-003V2		
0.75	4	0.500	65	P80S-003V3		
1	4	0.500	70	P80S-003V4		
1.5	4	0.500	75	P80S-003V5		
2	4	0.625	85	P80S-003XE		
3	4	0.625	95	P80S-003XG		
4	8	0.625	95	P80S-003XG		

BOLT TABLE (B_A2AL03_773 , STUD ASME RF, OPTION CODE 773)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-003V4		
0.75	4	0.625	75	P80S-003XC		
1	4	0.625	80	P80S-003XD		
1.5	4	0.750	95	P80S-00414		
2	8	0.625	90	P80S-003XF		
3	8	0.750	110	P80S-003XK		
4	8	0.750	115	P80S-003XL		

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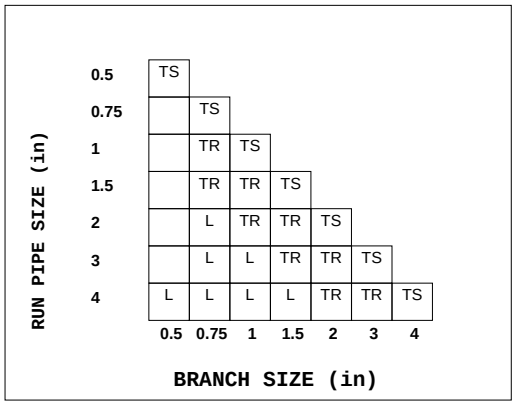
BRANCH TABLE (T_A2AL03)



L : OUTLET
TS : STRAIGHT TEE
TR : REDUCING TEE

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Material : Killed CS
Rating : ASME CLASS 150
Flange Face : RF
C.A.(mm) : 3.00
Gasket : Spiral Wound
Service : PROCESS - RICH AMINE SERVICE (STRESS RELIEVED)
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
2	USE OF SOFT SEATED BALL, PLUG AND BUTTERFLY VALVES SHALL BE LIMITED TO MAXIMUM OF 204DEGC (400DEGF)
27	PWHT OF CARBON STEEL PIPING IN WET H2S, CAUSTIC AND AMINE SERVICES SHALL BE IN ACCORDANCE WITH SECTION 10.2, 10.3, AND 10.4 OF PROJECT SPECIFICATION 3550-8440-SP-0002 MATERIALS REQUIREMENTS FOR PRESSURISED EQUIPMENT AND PIPING. FOR CAUSTIC AND AMINE SERVICE THE FOLLOWING SHALL APPLY: - PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF ALL SITE PIPING FABRICATION WELDS IS REQUIRED FOR ALL WALL THICKNESSES. FOR MODERATE AND SEVERE WET H2S SERVICE THE FOLLOWING SHALL APPLY: PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF SITE FABRICATION CIRCUMFERENTIAL OR BRANCH WELDS IS NOT REQUIRED IF WELDS ARE MULTIPASS AND IN ACCORDANCE WITH PARA 10.2.12 OF PROJECT SPECIFICATION 3550-8440-SP-0002. FOR SERVICES MEETING THE WET H2S CRITERIA AND CAUSTIC OR AMINE CRITERIA THE MORE STRINGENT PWHT REQUIREMENT SHALL GOVERN.

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
541	NPT(F) (CA,F)
773	CLASS 300 (B,F,G)
4608	VALVE WITH NIPPLES (V)

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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P01A-00143	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	0.75		SCH160		P01A-0010R	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1		SCH160		P01A-0014M	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1.5		SCH160		P01A-0015J	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	2		XS		P01A-000YX	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	3		XS		P01A-000Z4	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	4		STD		P01A-000YU	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P02A-00172	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	0.75		SCH160		P02A-000V8	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1		SCH160		P02A-000V7	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1.5		SCH160		P02A-000V9	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	2		XS		P02A-000CP	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		XS		P02A-000CX	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		STD		P02A-000CZ	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P03A-0012Y	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	0.75		SCH160		P03A-000RS	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1		SCH160		P03A-000RR	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1.5		SCH160		P03A-000RP	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	2		XS		P03A-000AS	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		XS		P03A-000AZ	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		STD		P03A-000B1	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P21A-002M0	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	0.75		SCH160		P21A-002B8	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1		SCH160		P21A-002B6	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5		SCH160		P21A-002B9	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2		XS		P21A-001CJ	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		XS		P21A-001CR	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		STD		P21A-001CW	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75	SCH160	SCH160	P24A-004B6	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.75	SCH160	SCH160	P24A-004B2	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	1	SCH160	SCH160	P24A-004BA	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	XS	SCH160	P24A-00GMB	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	XS	SCH160	P24A-005K9	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	XS	SCH160	P24A-00GNV	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	XS	XS	P24A-0023S	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P24A-002HY	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	XS	P24A-00GNW	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	XXS	P27A-003ZL	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.5	SCH160	XXS	P27A-003ZM	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.75	SCH160	SCH160	P27A-002T5	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.5	SCH160	XXS	P27A-003ZN	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.75	SCH160	SCH160	P27A-002T7	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	1	SCH160	SCH160	P27A-002T4	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2	0.75	XS	SCH160	P27A-001LG	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	XS	SCH160	P27A-0033P	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	XS	SCH160	P27A-0033B	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	XS	SCH160	P27A-003N1	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	XS	XS	P27A-001E5	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	1.5	STD	SCH160	P27A-003MA	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P27A-001N0	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	XS	P27A-0074W	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	XXS	P28A-003ZE	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.5	SCH160	XXS	P28A-003ZF	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.75	SCH160	SCH160	P28A-002TU	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.5	SCH160	XXS	P28A-003ZG	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.75	SCH160	SCH160	P28A-002TW	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	1	SCH160	SCH160	P28A-002TR	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	0.75	XS	SCH160	P28A-001LE	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	XS	SCH160	P28A-003M1	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	XS	SCH160	P28A-003M2	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	XS	SCH160	P28A-003MV	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	XS	XS	P28A-001EH	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	1.5	STD	SCH160	P28A-003M4	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P28A-001N6	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	XS	P28A-008F7	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P29A-0013Z	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	0.75		SCH160		P29A-000TX	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1		SCH160		P29A-000TY	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5		SCH160		P29A-000TZ	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2		XS		P29A-000A1	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		XS		P29A-000AT	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		STD		P29A-000A3	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
541	0.75				P29B-0000Y	Cap ASTM A105 Class 6000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P41A-000B9	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		XXS		P41A-000BA	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		XXS		P41A-000D8	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		XXS		P41A-000D9	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2	0.75	XS	SCH160	P31B-00CP7	Outlet ASTM A105 MSS SP-97 BW	
1	3	0.75	XS	SCH160	P31B-00CMS	Outlet ASTM A105 MSS SP-97 BW	
1	4	0.75	STD	SCH160	P31B-00CLT	Outlet ASTM A105 MSS SP-97 BW	
1	3	1	XS	SCH160	P31B-00B4H	Outlet ASTM A105 MSS SP-97 BW	
1	4	1	STD	SCH160	P31B-00B3M	Outlet ASTM A105 MSS SP-97 BW	
1	4	1.5	STD	SCH160	P31B-00BP4	Outlet ASTM A105 MSS SP-97 BW	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30B-0002D	Plug ASTM A105 ASME B16.11 NPT Round head	
1	0.75				P30B-0002E	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1				P30B-0002F	Plug ASTM A105 ASME B16.11 NPT Round head	

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PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5				P30B-0002G	Plug ASTM A105 ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P61B-003LE	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	0.75		SCH160		P61B-0037H	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	1		SCH160		P61B-0037F	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	1.5		SCH160		P61B-0037N	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	2		XS		P61B-003NK	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	3		XS		P61B-003JD	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	4		STD		P61B-001R8	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
541	0.5				P61B-003TZ	Flange NPT ASTM A105 Class 150 ASME B16.5 RF	
541	0.75				P61B-003U0	Flange NPT ASTM A105 Class 150 ASME B16.5 RF	
773	0.5		XXS		P61B-003LW	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	0.75		SCH160		P61B-0037M	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	1		SCH160		P61B-0037L	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	1.5		SCH160		P61B-0037J	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	2		XS		P61B-001HW	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	3		XS		P61B-001DK	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	4		STD		P61B-001MC	Flange WN ASTM A105 Class 300 ASME B16.5 RF	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67B-000FH	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	0.75				P67B-000FJ	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	1				P67B-000FK	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	1.5				P67B-000FL	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	2				P67B-000FT	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	3				P67B-000FW	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	4				P67B-000FX	Blind flange ASTM A105 Class 150 ASME B16.5 RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000L8	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000L9	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000LA	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000LB	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000LH	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000LL	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000LM	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	0.5				P73T-000FT	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	0.75				P73T-000FU	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	3				P73T-000G5	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	4				P73T-000G6	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-4				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
773	0.5-4				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	

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GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81B-001MM	Gate valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Amine service	
1	0.75				P81B-001MN	Gate valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Amine service	
1	1				P81B-001MP	Gate valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Amine service	
1	1.5				P81B-001MR	Gate valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Amine service	
1	2				P81C-005DC	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Amine service	
1	3				P81C-005DD	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Amine service	
1	4				P81C-0030Z	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Amine service	
4608	0.75				P81B-002Y1	Gate valve ASTM A105 Class 150 API 602 BW both sides w/ nipples BE - NPT ASTM A106-B XXS-nipple Trim number 12 BB-BG-OS&Y Handwheel operated Amine service	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82B-001C7	Globe valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Amine service	
1	0.75				P82B-001C8	Globe valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Amine service	
1	1				P82B-001C9	Globe valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Amine service	
1	1.5				P82B-001CA	Globe valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Amine service	
1	2				P82C-002NT	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Amine service	
1	3				P82C-002NU	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Amine service	
1	4				P82C-002NV	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Amine service	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83B-0012M	Check valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Amine service	
1	0.75				P83B-0012N	Check valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Amine service	
1	1				P83B-0012P	Check valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Amine service	
1	1.5				P83B-0012R	Check valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Amine service	
1	2				P83C-002R6	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Amine service	
1	3				P83C-002R7	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Amine service	
1	4				P83C-002R8	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Amine service	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71B-0008A	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	0.75				P71B-0008B	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	1				P71B-0008C	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71B-0008D	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	2				P71B-0000P	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	3				P71B-0000N	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	4				P71B-0000M	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	

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BOLT TABLE (B_A2AL04 , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	60	P80S-003V2		
0.75	4	0.500	65	P80S-003V3		
1	4	0.500	70	P80S-003V4		
1.5	4	0.500	75	P80S-003V5		
2	4	0.625	85	P80S-003XE		
3	4	0.625	95	P80S-003XG		
4	8	0.625	95	P80S-003XG		

BOLT TABLE (B_A2AL04_773 , STUD ASME RF, OPTION CODE 773)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-003V4		
0.75	4	0.625	75	P80S-003XC		
1	4	0.625	80	P80S-003XD		
1.5	4	0.750	95	P80S-00414		
2	8	0.625	90	P80S-003XF		
3	8	0.750	110	P80S-003XK		
4	8	0.750	115	P80S-003XL		

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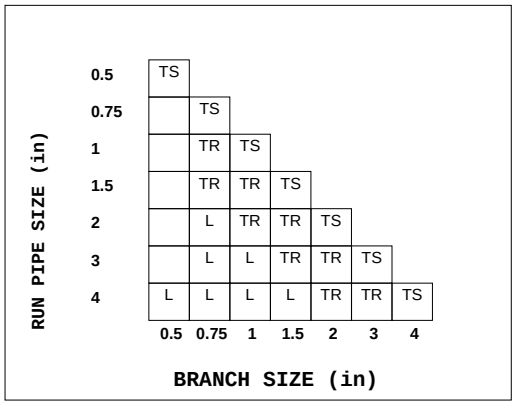
BRANCH TABLE (T_A2AL04)



TR : REDUCING TEE
TS : STRAIGHT TEE
L : OUTLET

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PIPING CLASS

A2AM **REV NO. 2**

Material : Killed CS
Rating : ASME CLASS 150
Flange Face : RF
C.A.(mm) : 3.00
Gasket : Spiral Wound
Service : AMMONIA WATER
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
200	WITH JACK SCREW (FO)
541	NPT(F) (CA,L)
714	SW - NPT(F) (V)
773	CLASS 300 (B,F,FR,G)

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PIPING CLASS
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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P01A-0010P	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	0.75		SCH160		P01A-0010R	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1		SCH160		P01A-0014M	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1.5		SCH160		P01A-0015J	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	2		XS		P01A-000YX	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	3		STD		P01A-000YM	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	4		STD		P01A-000YU	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	6		STD		P01A-000Z3	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	8		SCH20		P01A-001AT	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P02B-0001J	90 degree elbow ASTM A105 Class 6000 ASME B16.11 SW	
1	0.75				P02B-0001K	90 degree elbow ASTM A105 Class 6000 ASME B16.11 SW	
1	1				P02B-0002E	90 degree elbow ASTM A105 Class 6000 ASME B16.11 SW	
1	1.5				P02B-0002F	90 degree elbow ASTM A105 Class 6000 ASME B16.11 SW	
1	2		XS		P02A-000CP	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		STD		P02A-000CU	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		STD		P02A-000CZ	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		STD		P02A-000D6	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		SCH20		P02A-000GZ	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P03B-0001F	45 degree elbow ASTM A105 Class 6000 ASME B16.11 SW	
1	0.75				P03B-0001G	45 degree elbow ASTM A105 Class 6000 ASME B16.11 SW	
1	1				P03B-0002A	45 degree elbow ASTM A105 Class 6000 ASME B16.11 SW	
1	1.5				P03B-0002B	45 degree elbow ASTM A105 Class 6000 ASME B16.11 SW	
1	2		XS		P03A-000AS	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		STD		P03A-000AX	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		STD		P03A-000B1	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		STD		P03A-000B9	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		SCH20		P03A-000EX	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P21B-0001F	Straight tee ASTM A105 Class 6000 ASME B16.11 SW	
1	0.75				P21B-0001G	Straight tee ASTM A105 Class 6000 ASME B16.11 SW	
1	1				P21B-00026	Straight tee ASTM A105 Class 6000 ASME B16.11 SW	
1	1.5				P21B-00027	Straight tee ASTM A105 Class 6000 ASME B16.11 SW	
1	2		XS		P21A-001CJ	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		STD		P21A-001CU	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		STD		P21A-001CW	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6		STD		P21A-001D2	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8		SCH20		P21A-00215	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75			P24B-00030	Reducing tee ASTM A105 Class 6000 ASME B16.11 SW	
1	1.5	0.75			P24B-00032	Reducing tee ASTM A105 Class 6000 ASME B16.11 SW	
1	1.5	1			P24B-0004J	Reducing tee ASTM A105 Class 6000 ASME B16.11 SW	
1	2	1	XS	SCH160	P24A-00GMB	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	XS	SCH160	P24A-005K9	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	STD	SCH160	P24A-00GMC	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	STD	XS	P24A-002HW	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P24A-002HY	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P24A-0021K	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	STD	P24A-0021A	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	6	4	STD	STD	P24A-00229	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH20	STD	P24A-00J21	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH20	STD	P24A-005J4	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	STD	XS	P27A-001MZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P27A-001N0	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P27A-00189	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	STD	P27A-001AZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P27A-001GW	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH20	STD	P27A-003K2	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH20	STD	P27A-003K3	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	STD	XS	P28A-001N5	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P28A-001N6	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P28A-0018B	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	STD	P28A-001AS	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P28A-00182	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH20	STD	P28A-003JU	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH20	STD	P28A-003JV	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P29B-0002F	Cap ASTM A105 Class 6000 ASME B16.11 SW	
1	0.75				P29B-0002G	Cap ASTM A105 Class 6000 ASME B16.11 SW	
1	1				P29B-0002D	Cap ASTM A105 Class 6000 ASME B16.11 SW	
1	1.5				P29B-0002E	Cap ASTM A105 Class 6000 ASME B16.11 SW	
1	2		XS		P29A-000A1	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		STD		P29A-000BK	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		STD		P29A-000A3	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6		STD		P29A-000A9	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8		SCH20		P29A-000EY	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
541	0.75				P29B-0000Y	Cap ASTM A105 Class 6000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P41A-000B9	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		XXS		P41A-000BA	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		XXS		P41A-000D8	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		XXS		P41A-000D9	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

CON SWAGED NIPPLE (SNC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	SCH160	P42A-00029	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	SCH160	SCH160	P42A-0009T	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	SCH160	SCH160	P42A-0009U	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	SCH160	SCH160	P42A-0009V	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	SCH160	SCH160	P42A-0009W	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	SCH160	SCH160	P42A-0009X	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	XS	SCH160	P42A-000J6	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	XS	SCH160	P42A-000J7	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	XS	SCH160	P42A-000F8	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	XS	SCH160	P42A-000KZ	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	STD	SCH160	P42A-000L0	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	

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ECC SWAGED NIPPLE (SNE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	SCH160	P43A-000AM	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	SCH160	SCH160	P43A-000B4	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	SCH160	SCH160	P43A-000B5	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	SCH160	SCH160	P43A-000B6	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	SCH160	SCH160	P43A-000B7	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	SCH160	SCH160	P43A-000B8	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	XS	SCH160	P43A-000B2	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	XS	SCH160	P43A-000B3	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	XS	SCH160	P43A-000CZ	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	XS	SCH160	P43A-000D0	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	STD	SCH160	P43A-000D1	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	

COUPLING (CPS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P47B-00013	Coupling ASTM A105 Class 6000 ASME B16.11 SW - SW	
1	0.75				P47B-00012	Coupling ASTM A105 Class 6000 ASME B16.11 SW - SW	
1	1				P47B-0002A	Coupling ASTM A105 Class 6000 ASME B16.11 SW - SW	
1	1.5				P47B-0002B	Coupling ASTM A105 Class 6000 ASME B16.11 SW - SW	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5 - 2.5	0.75			P31B-0137D	Outlet ASTM A105 Class 6000 MSS SP-97 SW	
1	3 - 10	0.75			P31B-007LV	Outlet ASTM A105 Class 6000 MSS SP-97 SW	
1	3 - 10	1			P31B-007LN	Outlet ASTM A105 Class 6000 MSS SP-97 SW	
1	4 - 5	1.5			P31B-004LE	Outlet ASTM A105 Class 6000 MSS SP-97 SW	
1	6 - 8	1.5			P31B-005T4	Outlet ASTM A105 Class 6000 MSS SP-97 SW	
541	1	0.75			P31B-005HL	Outlet ASTM A105 Class 6000 MSS SP-97 NPT	
541	1.5 - 2.5	0.75			P31B-0137F	Outlet ASTM A105 Class 6000 MSS SP-97 NPT	
541	3 - 10	0.75			P31B-007KP	Outlet ASTM A105 Class 6000 MSS SP-97 NPT	
1	6	2	STD	XS	P31B-007SH	Outlet ASTM A105 MSS SP-97 BW	
1	8	2	SCH20	XS	P31B-00NY2	Outlet ASTM A105 MSS SP-97 BW	
1	8	3	SCH20	STD	P31B-00P11	Outlet ASTM A105 MSS SP-97 BW	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30B-0002D	Plug ASTM A105 ASME B16.11 NPT Round head	
1	0.75				P30B-0002E	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1				P30B-0002F	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1.5				P30B-0002G	Plug ASTM A105 ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P61B-002D4	Flange SW ASTM A105 Class 150 ASME B16.5 RF	
1	0.75		SCH160		P61B-002DE	Flange SW ASTM A105 Class 150 ASME B16.5 RF	
1	1		SCH160		P61B-002DU	Flange SW ASTM A105 Class 150 ASME B16.5 RF	
1	1.5		SCH160		P61B-002EM	Flange SW ASTM A105 Class 150 ASME B16.5 RF	
1	2		XS		P61B-003NK	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	3		STD		P61B-001PW	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	4		STD		P61B-001R8	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	6		STD		P61B-001RT	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	8		SCH20		P61B-002BF	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
773	0.5		SCH160		P61B-001H5	Flange SW ASTM A105 Class 300 ASME B16.5 RF	
773	0.75		SCH160		P61B-001HH	Flange SW ASTM A105 Class 300 ASME B16.5 RF	
773	1		SCH160		P61B-001E8	Flange SW ASTM A105 Class 300 ASME B16.5 RF	
773	1.5		SCH160		P61B-001ET	Flange SW ASTM A105 Class 300 ASME B16.5 RF	
773	2		XS		P61B-001HW	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773			STD		P61B-001LJ	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	4		STD		P61B-001MC	Flange WN ASTM A105 Class 300 ASME B16.5 RF	

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FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
773	6		STD		P61B-001N2	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	8		SCH20		P61B-002LJ	Flange WN ASTM A105 Class 300 ASME B16.5 RF	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67B-000FH	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	0.75				P67B-000FJ	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	1				P67B-000FK	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	1.5				P67B-000FL	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	2				P67B-000FT	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	3				P67B-000FW	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	4				P67B-000FX	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	6				P67B-000FY	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	8				P67B-000FZ	Blind flange ASTM A105 Class 150 ASME B16.5 RF	

REDUCING FLANGE (FR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2	0.75		SCH160	P62B-000NF	Reducing flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	2	1		SCH160	P62B-0006X	Reducing flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	2	1.5		SCH160	P62B-000K8	Reducing flange WN ASTM A105 Class 150 ASME B16.5 RF	
773	2	0.75		SCH160	P62B-000NG	Reducing flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	2	1		SCH160	P62B-0007D	Reducing flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	2	1.5		SCH160	P62B-000MG	Reducing flange WN ASTM A105 Class 300 ASME B16.5 RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000L8	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000L9	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000LA	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000LB	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000LH	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000LL	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000LM	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	6				P73T-000LN	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	8				P73T-000LP	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	0.5				P73T-000FT	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	0.75				P73T-000FU	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	3				P73T-000G5	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	4				P73T-000G6	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	6				P73T-000G7	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	8				P73T-000G8	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-8				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
773	0.5-8				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	

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GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81B-000P4	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	0.75				P81B-000NX	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	1				P81B-000NY	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	1.5				P81B-000NZ	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	2				P81C-002DV	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	3				P81C-002DW	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	4				P81C-002DX	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	6				P81C-002DY	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	8				P81C-002DZ	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
714	0.5				P81B-0015L	Gate valve ASTM A105 Class 800 API 602 SW - NPT Trim number 8 BB-BG-OS&Y Handwheel operated	
714	0.75				P81B-002F4	Gate valve ASTM A105 Class 800 API 602 SW - NPT Trim number 8 BB-BG-OS&Y Handwheel operated	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82B-000K0	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	0.75				P82B-000HB	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	1				P82B-000HC	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	1.5				P82B-000HD	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	2				P82C-000N5	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83B-000FX	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover	
1	0.75				P83B-000ER	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover	
1	1				P83B-000ES	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover	
1	1.5				P83B-000ET	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover	
1	2				P83C-00144	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	3				P83C-00147	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	4				P83C-00148	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	6				P83C-00149	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	8				P83C-0014A	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	

ORIFICE FLANGE (FO)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2		XS		P66B-0084B	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
200	2		XS		P66B-00843	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71B-0008A	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	0.75				P71B-0008B	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	1				P71B-0008C	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71B-0008D	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	2				P71B-0000P	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	3				P71B-0000N	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	4				P71B-0000M	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	6				P71B-0000L	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	8				P71B-0000R	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	

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BOLT TABLE (B_A2AM , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	60	P80S-003V2		
0.75	4	0.500	65	P80S-003V3		
1	4	0.500	70	P80S-003V4		
1.5	4	0.500	75	P80S-003V5		
2	4	0.625	85	P80S-003XE		
3	4	0.625	95	P80S-003XG		
4	8	0.625	95	P80S-003XG		
6	8	0.750	105	P80S-003XJ		
8	8	0.750	110	P80S-003XK		

BOLT TABLE (B_A2AM_773 , STUD ASME RF, OPTION CODE 773)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-003V4		
0.75	4	0.625	75	P80S-003XC		
1	4	0.625	80	P80S-003XD		
1.5	4	0.750	95	P80S-00414		
2	8	0.625	90	P80S-003XF		
3	8	0.750	110	P80S-003XK		
4	8	0.750	115	P80S-003XL		
6	12	0.750	125	P80S-003XN		
8	12	0.875	140	P80S-0041D		

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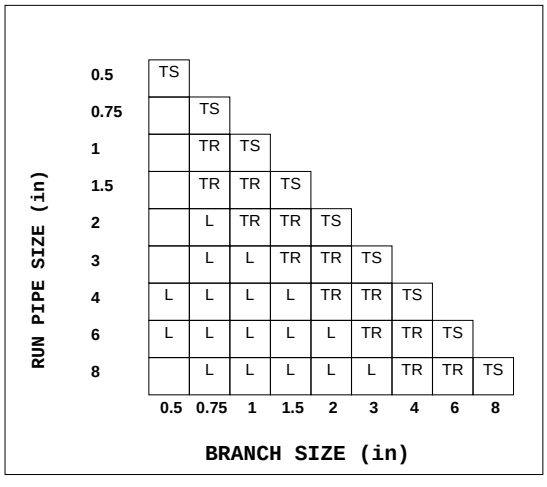
BRANCH TABLE (T_A2AM)



TS : STRAIGHT TEE
TR : REDUCING TEE
L : OUTLET

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Material : Killed CS
Rating : ASME CLASS 150
Flange Face : RF
C.A.(mm) : 3.00
Gasket : Spiral Wound
Service : CAUSTIC : / CAUSTIC 14.4% CONC. / CAUSTIC 50% CONC.

Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
9	ALL ACID AND CAUSTIC SERVICE LINE FLANGED JOINTS SHALL BE COVERED WITH SAFETY SPLASH GUARDS
27	PWHT OF CARBON STEEL PIPING IN WET H2S, CAUSTIC AND AMINE SERVICES SHALL BE IN ACCORDANCE WITH SECTION 10.2, 10.3, AND 10.4 OF PROJECT SPECIFICATION 3550-8440-SP-0002 MATERIALS REQUIREMENTS FOR PRESSURISED EQUIPMENT AND PIPING. FOR CAUSTIC AND AMINE SERVICE THE FOLLOWING SHALL APPLY: - PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF ALL SITE PIPING FABRICATION WELDS IS REQUIRED FOR ALL WALL THICKNESSES. FOR MODERATE AND SEVERE WET H2S SERVICE THE FOLLOWING SHALL APPLY: PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF SITE FABRICATION CIRCUMFERENTIAL OR BRANCH WELDS IS NOT REQUIRED IF WELDS ARE MULTIPASS AND IN ACCORDANCE WITH PARA 10.2.12 OF PROJECT SPECIFICATION 3550-8440-SP-0002. FOR SERVICES MEETING THE WET H2S CRITERIA AND CAUSTIC OR AMINE CRITERIA THE MORE STRINGENT PWHT REQUIREMENT SHALL GOVERN.

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
200	WITH JACK SCREW (FO)
541	NPT(F) (CA,F)
773	CLASS 300 (B,F,G)
4608	VALVE WITH NIPPLES (V)

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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P01A-0010P	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	0.75		SCH160		P01A-0010R	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1		SCH160		P01A-0014M	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1.5		SCH160		P01A-0015J	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	2		XS		P01A-000YX	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	3		STD		P01A-000YM	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	4		STD		P01A-000YU	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	6		STD		P01A-000Z3	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	8		SCH30		P01A-001WL	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	10		SCH30		P01A-0016U	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	12		SCH30		P01A-0017K	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	14		SCH20		P01A-0017A	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	16		SCH20		P01A-0018E	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	18		SCH20		P01A-0084V	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE Caustic service	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P02A-001Y8	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	0.75		SCH160		P02A-000V8	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1		SCH160		P02A-000V7	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1.5		SCH160		P02A-000V9	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	2		XS		P02A-000CP	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		STD		P02A-000CU	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		STD		P02A-000CZ	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		STD		P02A-000D6	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		SCH30		P02A-003DK	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	10		SCH30		P02A-000M3	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	12		SCH30		P02A-000M4	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	14		SCH20		P02A-000FX	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	16		SCH20		P02A-000GM	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	18		SCH20		P02A-000LT	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P03A-001TC	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	0.75		SCH160		P03A-000RS	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1		SCH160		P03A-000RR	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1.5		SCH160		P03A-000RP	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	2		XS		P03A-000AS	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		STD		P03A-000AX	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		STD		P03A-000B1	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		STD		P03A-000B9	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		SCH30		P03A-003BE	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	10		SCH30		P03A-000JT	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	12		SCH30		P03A-000JU	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	14		SCH20		P03A-000DW	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	16		SCH20		P03A-000EM	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	18		SCH20		P03A-001DX	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P21A-003AW	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	0.75		SCH160		P21A-002B8	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1		SCH160		P21A-002B6	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5		SCH160		P21A-002B9	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2		XS		P21A-001CJ	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		STD		P21A-001CU	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		STD		P21A-001CW	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6		STD		P21A-001D2	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	8		SCH30		P21A-003WV	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10		SCH30		P21A-00259	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12		SCH30		P21A-0025A	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14		SCH20		P21A-00206	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16		SCH20		P21A-0020X	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18		SCH20		P21A-004V5	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Caustic service	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75	SCH160	SCH160	P24A-004B6	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.75	SCH160	SCH160	P24A-004B2	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	1	SCH160	SCH160	P24A-004BA	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	XS	SCH160	P24A-00GMB	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	XS	SCH160	P24A-005K9	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	STD	SCH160	P24A-00GMC	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	STD	XS	P24A-002HW	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P24A-002HY	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P24A-0021K	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	STD	P24A-0021A	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P24A-00229	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH30	STD	P24A-00JVH	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH30	STD	P24A-00JVG	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	SCH30	STD	P24A-00GNR	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	SCH30	STD	P24A-0060W	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	SCH30	SCH30	P24A-00J15	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	SCH30	STD	P24A-00HKT	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH30	SCH30	P24A-00M36	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH30	SCH30	P24A-003ET	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	SCH20	STD	P24A-00K0M	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	SCH20	SCH30	P24A-00M37	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	SCH20	SCH30	P24A-003ER	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	SCH20	SCH30	P24A-003ES	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	6	SCH20	STD	P24A-00GU4	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	SCH20	SCH30	P24A-00M38	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	SCH20	SCH30	P24A-00KSH	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	SCH20	SCH30	P24A-003XN	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	SCH20	SCH20	P24A-002XF	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	8	SCH20	SCH30	P24A-00NJ1	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Caustic service	
1	18	10	SCH20	SCH30	P24A-00NJ0	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Caustic service	
1	18	12	SCH20	SCH30	P24A-00N3D	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Caustic service	
1	18	14	SCH20	SCH20	P24A-00N3E	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Caustic service	
1	18	16	SCH20	SCH20	P24A-00N3F	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Caustic service	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	SCH160	P27A-004LZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.5	SCH160	SCH160	P27A-004M8	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.75	SCH160	SCH160	P27A-002T5	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.5	SCH160	SCH160	P27A-004MV	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.75	SCH160	SCH160	P27A-002T7	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	1	SCH160	SCH160	P27A-002T4	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	0.75	XS	SCH160	P27A-001LG	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	XS	SCH160	P27A-0033P	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	XS	SCH160	P27A-0033B	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	STD	SCH160	P27A-003M9	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	STD	XS	P27A-001MZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	1.5	STD	SCH160	P27A-003MA	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P27A-001N0	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P27A-00189	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	6	3	STD	STD	P27A-001AZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P27A-001GW	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH30	STD	P27A-00ED2	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH30	STD	P27A-00ECY	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	SCH30	STD	P27A-003MK	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	SCH30	STD	P27A-003ML	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	SCH30	SCH30	P27A-004T9	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	SCH30	STD	P27A-003MN	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH30	SCH30	P27A-004XA	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH30	SCH30	P27A-0028K	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	SCH20	STD	P27A-00518	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	SCH20	SCH30	P27A-0052J	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	SCH20	SCH30	P27A-0028G	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	SCH20	SCH30	P27A-0028H	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	SCH20	SCH30	P27A-0059E	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	SCH20	SCH30	P27A-003NC	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	SCH20	SCH30	P27A-002GH	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	SCH20	SCH20	P27A-001V2	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	10	SCH20	SCH30	P27A-00H60	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Caustic service	
1	18	12	SCH20	SCH30	P27A-00GWZ	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Caustic service	
1	18	14	SCH20	SCH20	P27A-00GX0	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Caustic service	
1	18	16	SCH20	SCH20	P27A-00GX1	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Caustic service	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	SCH160	P28A-007KG	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.5	SCH160	SCH160	P28A-007KH	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.75	SCH160	SCH160	P28A-002TU	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.5	SCH160	SCH160	P28A-007KJ	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.75	SCH160	SCH160	P28A-002TW	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	1	SCH160	SCH160	P28A-002TR	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	0.75	XS	SCH160	P28A-001LE	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	XS	SCH160	P28A-003M1	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	XS	SCH160	P28A-003M2	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	STD	SCH160	P28A-003M3	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	STD	XS	P28A-001N5	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	1.5	STD	SCH160	P28A-003M4	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P28A-001N6	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P28A-0018B	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	STD	P28A-001AS	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P28A-00182	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH30	STD	P28A-00BFY	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH30	STD	P28A-00BFZ	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	SCH30	STD	P28A-003MD	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	SCH30	STD	P28A-003ME	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	SCH30	SCH30	P28A-00A4S	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	SCH30	STD	P28A-003MG	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH30	SCH30	P28A-00BGV	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH30	SCH30	P28A-0027C	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	SCH20	STD	P28A-0096P	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	SCH20	SCH30	P28A-00DA3	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	SCH20	SCH30	P28A-00279	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	SCH20	SCH30	P28A-0027A	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	SCH20	SCH30	P28A-00DA4	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	SCH20	SCH30	P28A-003N6	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	SCH20	SCH30	P28A-002GB	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	SCH20	SCH20	P28A-001WG	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	10	SCH20	SCH30	P28A-00EDN	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Caustic service	
1	18	12	SCH20	SCH30	P28A-00E4B	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Caustic service	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	18	14	SCH20	SCH20	P28A-00E4C	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Caustic service	
1	18	16	SCH20	SCH20	P28A-00E4D	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Caustic service	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P29A-001UD	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	0.75		SCH160		P29A-000TX	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1		SCH160		P29A-000TY	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5		SCH160		P29A-000TZ	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2		XS		P29A-000A1	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		STD		P29A-000BK	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		STD		P29A-000A3	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6		STD		P29A-000A9	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8		SCH30		P29A-000PC	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10		SCH30		P29A-000K7	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12		SCH30		P29A-000PZ	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14		SCH20		P29A-000EA	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16		SCH20		P29A-000F3	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18		SCH20		P29A-000E0	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
541	0.75				P29B-0000Y	Cap ASTM A105 Class 6000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P41A-000B9	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		XXS		P41A-000BA	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		XXS		P41A-000D8	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		XXS		P41A-000D9	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2	0.75	XS	SCH160	P31B-00CP7	Outlet ASTM A105 MSS SP-97 BW	
1	3	0.75	STD	SCH160	P31B-00CMT	Outlet ASTM A105 MSS SP-97 BW	
1	4	0.75	STD	SCH160	P31B-00CLT	Outlet ASTM A105 MSS SP-97 BW	
1	6	0.75	STD	SCH160	P31B-00CKK	Outlet ASTM A105 MSS SP-97 BW	
1	8	0.75	SCH30	SCH160	P31B-00ZH5	Outlet ASTM A105 MSS SP-97 BW	
1	10	0.75	SCH30	SCH160	P31B-00YEZ	Outlet ASTM A105 MSS SP-97 BW	
1	12	0.75	SCH30	SCH160	P31B-00SWH	Outlet ASTM A105 MSS SP-97 BW	
1	14	0.75	SCH20	SCH160	P31B-00X17	Outlet ASTM A105 MSS SP-97 BW	
1	16	0.75	SCH20	SCH160	P31B-00XS0	Outlet ASTM A105 MSS SP-97 BW	
1	18	0.75	SCH20	SCH160	P31B-00SWM	Outlet ASTM A105 MSS SP-97 BW	
1	3	1	STD	SCH160	P31B-00B4J	Outlet ASTM A105 MSS SP-97 BW	
1	4	1	STD	SCH160	P31B-00B3M	Outlet ASTM A105 MSS SP-97 BW	
1	6	1	STD	SCH160	P31B-00AZC	Outlet ASTM A105 MSS SP-97 BW	
1	8	1	SCH30	SCH160	P31B-00ZH6	Outlet ASTM A105 MSS SP-97 BW	
1	10	1	SCH30	SCH160	P31B-00YF1	Outlet ASTM A105 MSS SP-97 BW	
1	12	1	SCH30	SCH160	P31B-00SWJ	Outlet ASTM A105 MSS SP-97 BW	
1	14	1	SCH20	SCH160	P31B-00X18	Outlet ASTM A105 MSS SP-97 BW	
1	16	1	SCH20	SCH160	P31B-00X8Z	Outlet ASTM A105 MSS SP-97 BW	
1	18	1	SCH20	SCH160	P31B-00SWN	Outlet ASTM A105 MSS SP-97 BW	
1	4	1.5	STD	SCH160	P31B-00BP4	Outlet ASTM A105 MSS SP-97 BW	
1	6	1.5	STD	SCH160	P31B-00BJH	Outlet ASTM A105 MSS SP-97 BW	
1	8	1.5	SCH30	SCH160	P31B-00BHM	Outlet ASTM A105 MSS SP-97 BW	
1	10	1.5	SCH30	SCH160	P31B-00AUR	Outlet ASTM A105 MSS SP-97 BW	
1	12	1.5	SCH30	SCH160	P31B-00CEJ	Outlet ASTM A105 MSS SP-97 BW	
1	14	1.5	SCH20	SCH160	P31B-00CDS	Outlet ASTM A105 MSS SP-97 BW	
1	16	1.5	SCH20	SCH160	P31B-00C9B	Outlet ASTM A105 MSS SP-97 BW	
1	18	1.5	SCH20	SCH160	P31B-00C3C	Outlet ASTM A105 MSS SP-97 BW	
1	6	2	STD	XS	P31B-007SH	Outlet ASTM A105 MSS SP-97 BW	
1	8	2	SCH30	XS	P31B-00X36	Outlet ASTM A105 MSS SP-97 BW	

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OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	10	2	SCH30	XS	P31B-00NVF	Outlet ASTM A105 MSS SP-97 BW	
1	12	2	SCH30	XS	P31B-00NVL	Outlet ASTM A105 MSS SP-97 BW	
1	14	2	SCH20	XS	P31B-00TF9	Outlet ASTM A105 MSS SP-97 BW	
1	16	2	SCH20	XS	P31B-00TF8	Outlet ASTM A105 MSS SP-97 BW	
1	18	2	SCH20	XS	P31B-00NVX	Outlet ASTM A105 MSS SP-97 BW	
1	8	3	SCH30	STD	P31B-00X37	Outlet ASTM A105 MSS SP-97 BW	
1	10	3	SCH30	STD	P31B-00NYK	Outlet ASTM A105 MSS SP-97 BW	
1	12	3	SCH30	STD	P31B-00NYR	Outlet ASTM A105 MSS SP-97 BW	
1	14	3	SCH20	STD	P31B-00UPH	Outlet ASTM A105 MSS SP-97 BW	
1	16	3	SCH20	STD	P31B-00TU2	Outlet ASTM A105 MSS SP-97 BW	
1	18	3	SCH20	STD	P31B-00NZ4	Outlet ASTM A105 MSS SP-97 BW	
1	12	4	SCH30	STD	P31B-00P1G	Outlet ASTM A105 MSS SP-97 BW	
1	14	4	SCH20	STD	P31B-00UPJ	Outlet ASTM A105 MSS SP-97 BW	
1	16	4	SCH20	STD	P31B-00TU3	Outlet ASTM A105 MSS SP-97 BW	
1	18	4	SCH20	STD	P31B-00P1V	Outlet ASTM A105 MSS SP-97 BW	
1	18	6	SCH20	STD	P31B-00P48	Outlet ASTM A105 MSS SP-97 BW	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30B-0002D	Plug ASTM A105 ASME B16.11 NPT Round head	
1	0.75				P30B-0002E	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1				P30B-0002F	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1.5				P30B-0002G	Plug ASTM A105 ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P61B-004V2	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	0.75		SCH160		P61B-0037H	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	1		SCH160		P61B-0037F	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	1.5		SCH160		P61B-0037N	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	2		XS		P61B-003NK	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	3		STD		P61B-001PW	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	4		STD		P61B-001R8	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	6		STD		P61B-001RT	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	8		SCH30		P61B-003FP	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	10		SCH30		P61B-003FS	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	12		SCH30		P61B-002TS	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	14		SCH20		P61B-002B6	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	16		SCH20		P61B-002B7	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	18		SCH20		P61B-002B8	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
541	0.5				P61B-003TZ	Flange NPT ASTM A105 Class 150 ASME B16.5 RF	
541	0.75				P61B-003U0	Flange NPT ASTM A105 Class 150 ASME B16.5 RF	
773	0.5		SCH160		P61B-003P9	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	0.75		SCH160		P61B-0037M	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	1		SCH160		P61B-0037L	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	1.5		SCH160		P61B-0037J	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	2		XS		P61B-001HW	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	3		STD		P61B-001LJ	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	4		STD		P61B-001MC	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	6		STD		P61B-001N2	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	8		SCH30		P61B-008S0	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	10		SCH30		P61B-003LX	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	12		SCH30		P61B-002TV	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	14		SCH20		P61B-002MR	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	16		SCH20		P61B-002MS	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	18		SCH20		P61B-002MT	Flange WN ASTM A105 Class 300 ASME B16.5 RF	

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BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67B-000FH	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	0.75				P67B-000FJ	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	1				P67B-000FK	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	1.5				P67B-000FL	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	2				P67B-000FT	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	3				P67B-000FW	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	4				P67B-000FX	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	6				P67B-000FY	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	8				P67B-000FZ	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	10				P67B-000FM	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	12				P67B-000FN	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	14				P67B-000FP	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	16				P67B-000FR	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	18				P67B-000FS	Blind flange ASTM A105 Class 150 ASME B16.5 RF	

REDUCING FLANGE (FR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5		SCH160	P62B-000CT	Reducing flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	1.5	0.5		SCH160	P62B-000NH	Reducing flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	1.5	0.75		SCH160	P62B-0006W	Reducing flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	2	0.75		SCH160	P62B-000NF	Reducing flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	2	1		SCH160	P62B-0006X	Reducing flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	2	1.5		SCH160	P62B-000K8	Reducing flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	3	1.5		SCH160	P62B-00080	Reducing flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	3	2		XS	P62B-0006B	Reducing flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	4	2		XS	P62B-00098	Reducing flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	4	3		STD	P62B-0006D	Reducing flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	6	3		STD	P62B-000JY	Reducing flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	6	4		STD	P62B-000JZ	Reducing flange WN ASTM A105 Class 150 ASME B16.5 RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000L8	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000L9	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000LA	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000LB	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000LH	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000LL	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000LM	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	6				P73T-000LN	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	8				P73T-000LP	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	10				P73T-000LC	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	12				P73T-000LD	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	14				P73T-000LE	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	16				P73T-000LF	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	18				P73T-000LG	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	0.5				P73T-000FT	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	0.75				P73T-000FU	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	3				P73T-000G5	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

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GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
773	4				P73T-000G6	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	6				P73T-000G7	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	8				P73T-000G8	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	10				P73T-000FX	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	12				P73T-000FY	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	14				P73T-000FZ	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	16				P73T-000G0	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	18				P73T-000G1	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-16				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	18				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
773	0.5-10				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
773	12-18				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81B-001MW	Gate valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 9 BB-BG-OS&Y Handwheel operated Caustic service	
1	0.75				P81B-001MX	Gate valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 9 BB-BG-OS&Y Handwheel operated Caustic service	
1	1				P81B-001MY	Gate valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 9 BB-BG-OS&Y Handwheel operated Caustic service	
1	1.5				P81B-001MZ	Gate valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 9 BB-BG-OS&Y Handwheel operated Caustic service	
1	2				P81C-005DW	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 9 BB-BG-OS&Y Handwheel operated Caustic service	
1	3				P81C-005DX	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 9 BB-BG-OS&Y Handwheel operated Caustic service	
1	4				P81C-005DY	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 9 BB-BG-OS&Y Handwheel operated Caustic service	
1	6				P81C-005DZ	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 9 BB-BG-OS&Y Handwheel operated Caustic service	
1	8				P81C-005E0	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 9 BB-BG-OS&Y Handwheel operated Caustic service	
1	10				P81C-005E5	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 9 BB-BG-OS&Y Handwheel operated Caustic service	
4608	0.75				P81B-002Y3	Gate valve ASTM A105 Class 150 API 602 BW both sides w/ nipples BE - NPT ASTM A106-B XXS-nipple Trim number 9 BB-BG-OS&Y Handwheel operated Caustic service	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82B-001CF	Globe valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 9 BB-BG-OS&Y Handwheel operated Caustic service	
1	0.75				P82B-001CG	Globe valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 9 BB-BG-OS&Y Handwheel operated Caustic service	
1	1				P82B-001CH	Globe valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 9 BB-BG-OS&Y Handwheel operated Caustic service	
1	1.5				P82B-001CJ	Globe valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 9 BB-BG-OS&Y Handwheel operated Caustic service	
1	2				P82C-002NZ	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 9 BB-BG-OS&Y Handwheel operated Caustic service	
1	3				P82C-003UY	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 9 BB-BG-OS&Y Handwheel operated Caustic service	
1	4				P82C-003UZ	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 9 BB-BG-OS&Y Handwheel operated Caustic service	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83B-0012S	Check valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 9 Lift-type Bolted cover Caustic service	
1	0.75				P83B-0012T	Check valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 9 Lift-type Bolted cover Caustic service	
1	1				P83B-0012U	Check valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 9 Lift-type Bolted cover Caustic service	
1	1.5				P83B-0012V	Check valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 9 Lift-type Bolted cover Caustic service	

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CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2				P83C-002RB	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 9 Swing-type Bolted cover Caustic service	
1	3				P83C-002RC	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 9 Swing-type Bolted cover Caustic service	
1	4				P83C-002RD	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 9 Swing-type Bolted cover Caustic service	
1	6				P83C-002RE	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 9 Swing-type Bolted cover Caustic service	

NEEDLE VALVE (NV)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82B-001X7	Needle valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 9 BB-BG-OS&Y Handwheel operated Caustic service	
1	0.75				P82B-001X8	Needle valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 9 BB-BG-OS&Y Handwheel operated Caustic service	
1	1				P82B-001X9	Needle valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 9 BB-BG-OS&Y Handwheel operated Caustic service	
1	1.5				P82B-001XA	Needle valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 9 BB-BG-OS&Y Handwheel operated Caustic service	

ORIFICE FLANGE (FO)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2		XS		P66B-0084B	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	3		STD		P66B-0084C	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
200	2		XS		P66B-00843	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	3		STD		P66B-00844	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71B-0008A	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	0.75				P71B-0008B	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	1				P71B-0008C	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71B-0008D	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	2				P71B-0000P	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	3				P71B-0000N	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	4				P71B-0000M	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	6				P71B-0000L	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	8				P71B-0000R	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	10				P71B-0000K	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	12				P71B-0000J	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	

PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000AH	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	16				P72B-0000C	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	18				P72B-000AJ	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	

PADDLE SPACER (PS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000AT	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	16				P72B-0000B	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	18				P72B-000AU	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	

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BOLT TABLE (B_A2AN , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	60	P80S-003V2		
0.75	4	0.500	65	P80S-003V3		
1	4	0.500	70	P80S-003V4		
1.5	4	0.500	75	P80S-003V5		
2	4	0.625	85	P80S-003XE		
3	4	0.625	95	P80S-003XG		
4	8	0.625	95	P80S-003XG		
6	8	0.750	105	P80S-003XJ		
8	8	0.750	110	P80S-003XK		
10	12	0.875	120	P80S-00419		
12	12	0.875	120	P80S-00419		
14	12	1.000	135	P80S-0043E		
16	16	1.000	140	P80S-0043F		
18	16	1.125	150	P80S-0046K		

BOLT TABLE (B_A2AN_773 , STUD ASME RF, OPTION CODE 773)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-003V4		
0.75	4	0.625	75	P80S-003XC		
1	4	0.625	80	P80S-003XD		
1.5	4	0.750	95	P80S-00414		
2	8	0.625	90	P80S-003XF		
3	8	0.750	110	P80S-003XK		
4	8	0.750	115	P80S-003XL		
6	12	0.750	125	P80S-003XN		
8	12	0.875	140	P80S-0041D		
10	16	1.000	160	P80S-0043K		
12	16	1.125	175	P80S-0046S		
14	20	1.125	180	P80S-0046T		
16	20	1.250	190	P80S-004AK		
18	24	1.250	200	P80S-004AM		

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BRANCH TABLE (T_A2AN)

RUN PIPE SIZE (in) \ BRANCH SIZE (in)	0.5	0.75	1	1.5	2	3	4	6	8	10	12	14	16	18
0.5	TS													
0.75		TS												
1		TR	TS											
1.5		TR	TR	TS										
2		L	TR	TR	TS									
3		L	L	TR	TR	TS								
4	L	L	L	L	TR	TR	TS							
6	L	L	L	L	L	TR	TR	TS						
8		L	L	L	L	L	TR	TR	TS					
10		L	L	L	L	L	TR	TR	TR	TS				
12		L	L	L	L	L	L	TR	TR	TR	TS			
14		L	L	L	L	L	L	TR	TR	TR	TR	TS		
16		L	L	L	L	L	L	TR	TR	TR	TR	TR	TS	
18		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TS

TR : REDUCING TEE
TS : STRAIGHT TEE
L : OUTLET

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PIPING CLASS

A2AN01 REV NO. 2

Material : Killed CS
Rating : ASME CLASS 150
Flange Face : RF
C.A.(mm) : 3.00
Gasket : Spiral Wound
Service : CAUSTIC SERVICE
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
9	ALL ACID AND CAUSTIC SERVICE LINE FLANGED JOINTS SHALL BE COVERED WITH SAFETY SPLASH GUARDS
27	PWHT OF CARBON STEEL PIPING IN WET H2S, CAUSTIC AND AMINE SERVICES SHALL BE IN ACCORDANCE WITH SECTION 10.2, 10.3, AND 10.4 OF PROJECT SPECIFICATION 3550-8440-SP-0002 MATERIALS REQUIREMENTS FOR PRESSURISED EQUIPMENT AND PIPING. FOR CAUSTIC AND AMINE SERVICE THE FOLLOWING SHALL APPLY: - PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF ALL SITE PIPING FABRICATION WELDS IS REQUIRED FOR ALL WALL THICKNESSES. FOR MODERATE AND SEVERE WET H2S SERVICE THE FOLLOWING SHALL APPLY: PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF SITE FABRICATION CIRCUMFERENTIAL OR BRANCH WELDS IS NOT REQUIRED IF WELDS ARE MULTIPASS AND IN ACCORDANCE WITH PARA 10.2.12 OF PROJECT SPECIFICATION 3550-8440-SP-0002. FOR SERVICES MEETING THE WET H2S CRITERIA AND CAUSTIC OR AMINE CRITERIA THE MORE STRINGENT PWHT REQUIREMENT SHALL GOVERN.

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
541	NPT(F) (CA,F)
773	CLASS 300 (B,F,G)
4608	VALVE WITH NIPPLES (V)

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PIPING CLASS
A2AN01 REV NO. 2

PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P01A-0078U	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE Licensor-1	
1	0.75		SCH160		P01A-0078V	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE Licensor-1	
1	1		SCH160		P01A-0078W	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE Licensor-1	
1	1.5		SCH160		P01A-0078X	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE Licensor-1	
1	2		XS		P01A-0078Y	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Licensor-1	
1	3		STD		P01A-0078Z	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Licensor-1	
1	4		STD		P01A-007B3	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Licensor-1	
1	6		STD		P01A-007B8	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Licensor-1	
1	8		SCH20		P01A-007B9	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Licensor-1	
1	10		SCH20		P01A-007B4	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Licensor-1	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P02A-003TW	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	0.75		SCH160		P02A-003TX	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	1		SCH160		P02A-003TY	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	1.5		SCH160		P02A-003TZ	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	2		XS		P02A-003R7	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	3		STD		P02A-003R8	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	4		STD		P02A-003T8	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	6		STD		P02A-003TG	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	8		SCH20		P02A-003TH	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	10		SCH20		P02A-003T9	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P03A-003RJ	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	0.75		SCH160		P03A-003RK	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	1		SCH160		P03A-003RL	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	1.5		SCH160		P03A-003RM	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	2		XS		P03A-003MW	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	3		STD		P03A-003MX	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	4		STD		P03A-003PX	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	6		STD		P03A-003R5	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	8		SCH20		P03A-003R6	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	10		SCH20		P03A-003PY	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P21A-004B8	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	0.75		SCH160		P21A-004B9	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	1		SCH160		P21A-004BA	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	1.5		SCH160		P21A-004BB	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	2		XS		P21A-0048L	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	3		STD		P21A-0048M	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	4		STD		P21A-004AL	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	6		STD		P21A-004AS	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	8		SCH20		P21A-004AT	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	10		SCH20		P21A-004AM	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75	SCH160	SCH160	P24A-00K7S	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	1.5	0.75	SCH160	SCH160	P24A-00K7T	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	1.5	1	SCH160	SCH160	P24A-00K7U	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	2	1	XS	SCH160	P24A-00K0V	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	2	1.5	XS	SCH160	P24A-00K0W	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	3	1.5	STD	SCH160	P24A-00K0X	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	

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REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	STD	XS	P24A-00K0Y	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	4	2	STD	XS	P24A-00K5X	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	4	3	STD	STD	P24A-00K5Y	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	6	3	STD	STD	P24A-00K64	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	6	4	STD	STD	P24A-00K65	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	8	4	SCH20	STD	P24A-00K66	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	8	6	SCH20	STD	P24A-00K67	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	10	4	SCH20	STD	P24A-00K68	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	10	6	SCH20	STD	P24A-00K69	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	10	8	SCH20	SCH20	P24A-00K6A	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	SCH160	P27A-00ETE	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	1	0.5	SCH160	SCH160	P27A-00ETF	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	1	0.75	SCH160	SCH160	P27A-00ETG	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	1.5	0.5	SCH160	SCH160	P27A-00ETH	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	1.5	0.75	SCH160	SCH160	P27A-00ETJ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	1.5	1	SCH160	SCH160	P27A-00ETK	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	2	0.75	XS	SCH160	P27A-00ETL	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	2	1	XS	SCH160	P27A-00ETM	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	2	1.5	XS	SCH160	P27A-00ETN	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	3	1.5	STD	SCH160	P27A-00ETP	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	3	2	STD	XS	P27A-00EL1	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	4	1.5	STD	SCH160	P27A-00ETR	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	4	2	STD	XS	P27A-00ES5	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	4	3	STD	STD	P27A-00ES6	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	6	3	STD	STD	P27A-00ES9	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	6	4	STD	STD	P27A-00ESA	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	8	4	SCH20	STD	P27A-00ESB	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	8	6	SCH20	STD	P27A-00ESC	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	10	4	SCH20	STD	P27A-00ESD	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	10	6	SCH20	STD	P27A-00ESE	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	10	8	SCH20	SCH20	P27A-00ESF	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	SCH160	P28A-00BX8	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	1	0.5	SCH160	SCH160	P28A-00BX9	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	1	0.75	SCH160	SCH160	P28A-00BXA	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	1.5	0.5	SCH160	SCH160	P28A-00BXB	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	1.5	0.75	SCH160	SCH160	P28A-00BXC	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	1.5	1	SCH160	SCH160	P28A-00BXD	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	2	0.75	XS	SCH160	P28A-00BXE	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	2	1	XS	SCH160	P28A-00BXF	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	2	1.5	XS	SCH160	P28A-00BXG	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	3	1.5	STD	SCH160	P28A-00BXH	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	3	2	STD	XS	P28A-00BPS	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	4	1.5	STD	SCH160	P28A-00BXJ	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	4	2	STD	XS	P28A-00BVZ	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	4	3	STD	STD	P28A-00BW0	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	6	3	STD	STD	P28A-00BW3	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	6	4	STD	STD	P28A-00BW4	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	8	4	SCH20	STD	P28A-00BW5	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	8	6	SCH20	STD	P28A-00BW6	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	10	4	SCH20	STD	P28A-00BW7	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	10	6	SCH20	STD	P28A-00BW8	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	10	8	SCH20	SCH20	P28A-00BW9	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	

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CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P29A-0035G	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	0.75		SCH160		P29A-0035H	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	1		SCH160		P29A-0035J	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	1.5		SCH160		P29A-0035K	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	2		XS		P29A-00326	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	3		STD		P29A-00327	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	4		STD		P29A-0034R	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	6		STD		P29A-00353	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	8		SCH20		P29A-00354	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	10		SCH20		P29A-0034S	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
541	0.75				P29B-00069	Cap ASTM A105 Class 6000 ASME B16.11 NPT Licensor-1	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P41A-0017X	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Licensor-1	
1	0.75		XXS		P41A-0017Y	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Licensor-1	
1	1		XXS		P41A-0017Z	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Licensor-1	
1	1.5		XXS		P41A-00180	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Licensor-1	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2	0.75	XS	SCH160	P31B-00XP8	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	3	0.75	STD	SCH160	P31B-00XP9	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	4	0.75	STD	SCH160	P31B-00XPB	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	6	0.75	STD	SCH160	P31B-00XPE	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	8	0.75	SCH20	SCH160	P31B-00YB5	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	10	0.75	SCH20	SCH160	P31B-00YB4	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	3	1	STD	SCH160	P31B-00XPA	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	4	1	STD	SCH160	P31B-00XPC	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	6	1	STD	SCH160	P31B-00XPF	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	8	1	SCH20	SCH160	P31B-00XTA	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	10	1	SCH20	SCH160	P31B-00XTC	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	4	1.5	STD	SCH160	P31B-00XPD	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	6	1.5	STD	SCH160	P31B-00XPG	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	8	1.5	SCH20	SCH160	P31B-00XTB	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	10	1.5	SCH20	SCH160	P31B-00XTD	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	6	2	STD	XS	P31B-00XMV	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	8	2	SCH20	XS	P31B-00XMW	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	10	2	SCH20	XS	P31B-00XMY	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	8	3	SCH20	STD	P31B-00XMX	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	10	3	SCH20	STD	P31B-00XMZ	Outlet ASTM A105 MSS SP-97 BW Licensor-1	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30B-00067	Plug ASTM A105 ASME B16.11 NPT Round head Licensor-1	
1	0.75				P30B-00068	Plug ASTM A105 ASME B16.11 NPT Round head Licensor-1	
1	1				P30B-00069	Plug ASTM A105 ASME B16.11 NPT Round head Licensor-1	
1	1.5				P30B-0006A	Plug ASTM A105 ASME B16.11 NPT Round head Licensor-1	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P61B-00A2R	Flange WN ASTM A105 Class 150 ASME B16.5 RF Licensor-1	
1	0.75		SCH160		P61B-00A2S	Flange WN ASTM A105 Class 150 ASME B16.5 RF Licensor-1	
1	1		SCH160		P61B-00A2T	Flange WN ASTM A105 Class 150 ASME B16.5 RF Licensor-1	
1	1.5		SCH160		P61B-00A2U	Flange WN ASTM A105 Class 150 ASME B16.5 RF Licensor-1	
1	2		XS		P61B-009YN	Flange WN ASTM A105 Class 150 ASME B16.5 RF Licensor-1	
1	3		STD		P61B-009YP	Flange WN ASTM A105 Class 150 ASME B16.5 RF Licensor-1	
1	4		STD		P61B-009YR	Flange WN ASTM A105 Class 150 ASME B16.5 RF Licensor-1	

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FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	6		STD		P61B-009ZG	Flange WN ASTM A105 Class 150 ASME B16.5 RF Licensor-1	
1	8		SCH20		P61B-009ZH	Flange WN ASTM A105 Class 150 ASME B16.5 RF Licensor-1	
1	10		SCH20		P61B-009Z9	Flange WN ASTM A105 Class 150 ASME B16.5 RF Licensor-1	
541	0.5				P61B-00DLC	Flange NPT ASTM A105 Class 150 ASME B16.5 RF Licensor-1	
541	0.75				P61B-00CXL	Flange NPT ASTM A105 Class 150 ASME B16.5 RF Licensor-1	
773	0.5		SCH160		P61B-00A0G	Flange WN ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
773	0.75		SCH160		P61B-00A0H	Flange WN ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
773	1		SCH160		P61B-00A0J	Flange WN ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
773	1.5		SCH160		P61B-00A0K	Flange WN ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
773	2		XS		P61B-009YW	Flange WN ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
773	3		STD		P61B-009YX	Flange WN ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
773	4		STD		P61B-009YY	Flange WN ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
773	6		STD		P61B-00A07	Flange WN ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
773	8		SCH20		P61B-00A08	Flange WN ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
773	10		SCH20		P61B-00A00	Flange WN ASTM A105 Class 300 ASME B16.5 RF Licensor-1	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67B-002D6	Blind flange ASTM A105 Class 150 ASME B16.5 RF Licensor-1	
1	0.75				P67B-002D7	Blind flange ASTM A105 Class 150 ASME B16.5 RF Licensor-1	
1	1				P67B-002D8	Blind flange ASTM A105 Class 150 ASME B16.5 RF Licensor-1	
1	1.5				P67B-002D9	Blind flange ASTM A105 Class 150 ASME B16.5 RF Licensor-1	
1	2				P67B-002DB	Blind flange ASTM A105 Class 150 ASME B16.5 RF Licensor-1	
1	3				P67B-002DC	Blind flange ASTM A105 Class 150 ASME B16.5 RF Licensor-1	
1	4				P67B-002DD	Blind flange ASTM A105 Class 150 ASME B16.5 RF Licensor-1	
1	6				P67B-002DE	Blind flange ASTM A105 Class 150 ASME B16.5 RF Licensor-1	
1	8				P67B-002DF	Blind flange ASTM A105 Class 150 ASME B16.5 RF Licensor-1	
1	10				P67B-002DA	Blind flange ASTM A105 Class 150 ASME B16.5 RF Licensor-1	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000L8	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000L9	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000LA	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000LB	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000LH	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000LL	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000LM	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	6				P73T-000LN	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	8				P73T-000LP	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	10				P73T-000LC	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	0.5				P73T-000FT	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	0.75				P73T-000FU	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	3				P73T-000G5	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	4				P73T-000G6	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	6				P73T-000G7	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	8				P73T-000G8	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	10				P73T-000FX	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

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BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-10				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
773	0.5-10				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81B-001N0	Gate valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 9 BB-BG-OS&Y Handwheel operated Caustic service Licensor-1	
1	0.75				P81B-001N1	Gate valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 9 BB-BG-OS&Y Handwheel operated Caustic service Licensor-1	
1	1				P81B-001N2	Gate valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 9 BB-BG-OS&Y Handwheel operated Caustic service Licensor-1	
1	1.5				P81B-001N3	Gate valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 9 BB-BG-OS&Y Handwheel operated Caustic service Licensor-1	
1	2				P81C-005DT	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 9 BB-BG-OS&Y Handwheel operated Caustic service Licensor-1	
1	3				P81C-005DU	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 9 BB-BG-OS&Y Handwheel operated Caustic service Licensor-1	
1	4				P81C-005DV	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 9 BB-BG-OS&Y Handwheel operated Caustic service Licensor-1	
1	6				P81C-005FC	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 9 BB-BG-OS&Y Handwheel operated Caustic service Licensor-1	
1	8				P81C-005FD	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 9 BB-BG-OS&Y Handwheel operated Caustic service Licensor-1	
1	10				P81C-005FB	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 9 BB-BG-OS&Y Handwheel operated Caustic service Licensor-1	
4608	0.75				P81B-002Y4	Gate valve ASTM A105 Class 150 API 602 BW both sides w/ nipples BE - NPT ASTM A106-B XXS-nipple Trim number 9 BB-BG-OS&Y Handwheel operated Caustic service Licensor-1	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82B-001CK	Globe valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 9 BB-BG-OS&Y Handwheel operated Caustic service Licensor-1	
1	0.75				P82B-001CL	Globe valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 9 BB-BG-OS&Y Handwheel operated Caustic service Licensor-1	
1	1				P82B-001CM	Globe valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 9 BB-BG-OS&Y Handwheel operated Caustic service Licensor-1	
1	1.5				P82B-001CN	Globe valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 9 BB-BG-OS&Y Handwheel operated Caustic service Licensor-1	
1	2				P82C-002P0	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 9 BB-BG-OS&Y Handwheel operated Caustic service Licensor-1	
1	3				P82C-002PH	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 9 BB-BG-OS&Y Handwheel operated Caustic service Licensor-1	
1	4				P82C-002PJ	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 9 BB-BG-OS&Y Handwheel operated Caustic service Licensor-1	
1	6				P82C-002PK	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 9 BB-BG-OS&Y Handwheel operated Caustic service Licensor-1	
1	8				P82C-002PL	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 9 BB-BG-OS&Y Handwheel operated Caustic service Licensor-1	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83B-0012W	Check valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 9 Lift-type Bolted cover Caustic service Licensor-1	
1	0.75				P83B-0012X	Check valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 9 Lift-type Bolted cover Caustic service Licensor-1	
1	1				P83B-0012Y	Check valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 9 Lift-type Bolted cover Caustic service Licensor-1	
1	1.5				P83B-0012Z	Check valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 9 Lift-type Bolted cover Caustic service Licensor-1	
1	2				P83C-002RF	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 9 Swing-type Bolted cover Caustic service Licensor-1	
1	3				P83C-002RG	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 9 Swing-type Bolted cover Caustic service Licensor-1	
1	4				P83C-002RH	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 9 Swing-type Bolted cover Caustic service Licensor-1	
1	6				P83C-002SW	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 9 Swing-type Bolted cover Caustic service Licensor-1	
1	8				P83C-002SX	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 9 Swing-type Bolted cover Caustic service Licensor-1	
1	10				P83C-002SV	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 9 Swing-type Bolted cover Caustic service Licensor-1	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71B-00080	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	0.75				P71B-00081	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	1				P71B-00082	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Licensor-1	

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SPECT BLANK (SB)							
OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5				P71B-00083	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	2				P71B-00085	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	3				P71B-00086	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	4				P71B-00087	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	6				P71B-00088	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	8				P71B-00089	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	10				P71B-00084	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Licensor-1	

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BOLT TABLE (B_A2AN01 , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	60	P80S-003V2		
0.75	4	0.500	65	P80S-003V3		
1	4	0.500	70	P80S-003V4		
1.5	4	0.500	75	P80S-003V5		
2	4	0.625	85	P80S-003XE		
3	4	0.625	95	P80S-003XG		
4	8	0.625	95	P80S-003XG		
6	8	0.750	105	P80S-003XJ		
8	8	0.750	110	P80S-003XK		
10	12	0.875	120	P80S-00419		

BOLT TABLE (B_A2AN01_773 , STUD ASME RF, OPTION CODE 773)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-003V4		
0.75	4	0.625	75	P80S-003XC		
1	4	0.625	80	P80S-003XD		
1.5	4	0.750	95	P80S-00414		
2	8	0.625	90	P80S-003XF		
3	8	0.750	110	P80S-003XK		
4	8	0.750	115	P80S-003XL		
6	12	0.750	125	P80S-003XN		
8	12	0.875	140	P80S-0041D		
10	16	1.000	160	P80S-0043K		

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BRANCH TABLE (T_A2AN01)

RUN PIPE SIZE (in) \ BRANCH SIZE (in)	0.5	0.75	1	1.5	2	3	4	6	8	10
0.5	TS									
0.75		TS								
1		TR	TS							
1.5		TR	TR	TS						
2		L	TR	TR	TS					
3		L	L	TR	TR	TS				
4	L	L	L	L	TR	TR	TS			
6	L	L	L	L	L	TR	TR	TS		
8		L	L	L	L	L	TR	TR	TS	
10		L	L	L	L	L	TR	TR	TR	TS

TS : STRAIGHT TEE
TR : REDUCING TEE
L : OUTLET

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Material : Killed CS
Rating : ASME CLASS 150
Flange Face : RF
C.A.(mm) : 3.00
Gasket : Spiral Wound
Service : CAUSTIC SERVICE
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
9	ALL ACID AND CAUSTIC SERVICE LINE FLANGED JOINTS SHALL BE COVERED WITH SAFETY SPLASH GUARDS
27	PWHT OF CARBON STEEL PIPING IN WET H2S, CAUSTIC AND AMINE SERVICES SHALL BE IN ACCORDANCE WITH SECTION 10.2, 10.3, AND 10.4 OF PROJECT SPECIFICATION 3550-8440-SP-0002 MATERIALS REQUIREMENTS FOR PRESSURISED EQUIPMENT AND PIPING. FOR CAUSTIC AND AMINE SERVICE THE FOLLOWING SHALL APPLY: - PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF ALL SITE PIPING FABRICATION WELDS IS REQUIRED FOR ALL WALL THICKNESSES. FOR MODERATE AND SEVERE WET H2S SERVICE THE FOLLOWING SHALL APPLY: PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF SITE FABRICATION CIRCUMFERENTIAL OR BRANCH WELDS IS NOT REQUIRED IF WELDS ARE MULTIPASS AND IN ACCORDANCE WITH PARA 10.2.12 OF PROJECT SPECIFICATION 3550-8440-SP-0002. FOR SERVICES MEETING THE WET H2S CRITERIA AND CAUSTIC OR AMINE CRITERIA THE MORE STRINGENT PWHT REQUIREMENT SHALL GOVERN.

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
541	NPT(F) (CA,F)
773	CLASS 300 (B,F,G)
4608	VALVE WITH NIPPLES (V)

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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P01A-0010P	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	0.75		SCH160		P01A-0010R	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1		SCH160		P01A-0014M	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1.5		SCH160		P01A-0015J	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	2		XS		P01A-000YX	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	3		STD		P01A-000YM	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	4		STD		P01A-000YU	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P02A-001Y8	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	0.75		SCH160		P02A-000V8	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1		SCH160		P02A-000V7	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1.5		SCH160		P02A-000V9	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	2		XS		P02A-000CP	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		STD		P02A-000CU	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		STD		P02A-000CZ	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P03A-001TC	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	0.75		SCH160		P03A-000RS	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1		SCH160		P03A-000RR	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1.5		SCH160		P03A-000RP	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	2		XS		P03A-000AS	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		STD		P03A-000AX	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		STD		P03A-000B1	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P21A-003AW	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	0.75		SCH160		P21A-002B8	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1		SCH160		P21A-002B6	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5		SCH160		P21A-002B9	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2		XS		P21A-001CJ	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		STD		P21A-001CU	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		STD		P21A-001CW	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75	SCH160	SCH160	P24A-004B6	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.75	SCH160	SCH160	P24A-004B2	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	1	SCH160	SCH160	P24A-004BA	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	XS	SCH160	P24A-00GMB	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	XS	SCH160	P24A-005K9	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	STD	SCH160	P24A-00GMC	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	STD	XS	P24A-002HW	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P24A-002HY	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P24A-0021K	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	SCH160	P27A-004LZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.5	SCH160	SCH160	P27A-004M8	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.75	SCH160	SCH160	P27A-002T5	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.5	SCH160	SCH160	P27A-004MV	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.75	SCH160	SCH160	P27A-002T7	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	1	SCH160	SCH160	P27A-002T4	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2	0.75	XS	SCH160	P27A-001LG	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	XS	SCH160	P27A-0033P	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	XS	SCH160	P27A-0033B	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	STD	SCH160	P27A-003M9	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	STD	XS	P27A-001MZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	1.5	STD	SCH160	P27A-003MA	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P27A-001N0	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P27A-00189	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	SCH160	P28A-007KG	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.5	SCH160	SCH160	P28A-007KH	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.75	SCH160	SCH160	P28A-002TU	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.5	SCH160	SCH160	P28A-007KJ	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.75	SCH160	SCH160	P28A-002TW	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	1	SCH160	SCH160	P28A-002TR	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	0.75	XS	SCH160	P28A-001LE	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	XS	SCH160	P28A-003M1	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	XS	SCH160	P28A-003M2	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	STD	SCH160	P28A-003M3	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	STD	XS	P28A-001N5	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	1.5	STD	SCH160	P28A-003M4	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P28A-001N6	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P28A-0018B	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P29A-001UD	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	0.75		SCH160		P29A-000TX	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1		SCH160		P29A-000TY	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5		SCH160		P29A-000TZ	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2		XS		P29A-000A1	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		STD		P29A-000BK	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		STD		P29A-000A3	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
541	0.75				P29B-0000Y	Cap ASTM A105 Class 6000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P41A-000B9	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		XXS		P41A-000BA	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		XXS		P41A-000D8	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		XXS		P41A-000D9	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2	0.75	XS	SCH160	P31B-00CP7	Outlet ASTM A105 MSS SP-97 BW	
1	3	0.75	STD	SCH160	P31B-00CMT	Outlet ASTM A105 MSS SP-97 BW	
1	4	0.75	STD	SCH160	P31B-00CLT	Outlet ASTM A105 MSS SP-97 BW	
1	3	1	STD	SCH160	P31B-00B4J	Outlet ASTM A105 MSS SP-97 BW	
1	4	1	STD	SCH160	P31B-00B3M	Outlet ASTM A105 MSS SP-97 BW	
1	4	1.5	STD	SCH160	P31B-00BP4	Outlet ASTM A105 MSS SP-97 BW	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30B-0002D	Plug ASTM A105 ASME B16.11 NPT Round head	
1	0.75				P30B-0002E	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1				P30B-0002F	Plug ASTM A105 ASME B16.11 NPT Round head	

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PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5				P30B-0002G	Plug ASTM A105 ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P61B-004V2	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	0.75		SCH160		P61B-0037H	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	1		SCH160		P61B-0037F	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	1.5		SCH160		P61B-0037N	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	2		XS		P61B-003NK	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	3		STD		P61B-001PW	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	4		STD		P61B-001R8	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
541	0.5				P61B-003TZ	Flange NPT ASTM A105 Class 150 ASME B16.5 RF	
541	0.75				P61B-003U0	Flange NPT ASTM A105 Class 150 ASME B16.5 RF	
773	0.5		SCH160		P61B-003P9	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	0.75		SCH160		P61B-0037M	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	1		SCH160		P61B-0037L	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	1.5		SCH160		P61B-0037J	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	2		XS		P61B-001HW	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	3		STD		P61B-001LJ	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	4		STD		P61B-001MC	Flange WN ASTM A105 Class 300 ASME B16.5 RF	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67B-000FH	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	0.75				P67B-000FJ	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	1				P67B-000FK	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	1.5				P67B-000FL	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	2				P67B-000FT	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	3				P67B-000FW	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	4				P67B-000FX	Blind flange ASTM A105 Class 150 ASME B16.5 RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000L8	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000L9	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000LA	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000LB	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000LH	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000LL	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000LM	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	0.5				P73T-000FT	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	0.75				P73T-000FU	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	3				P73T-000G5	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	4				P73T-000G6	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-4				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
773	0.5-4				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	

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GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81B-001MW	Gate valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 9 BB-BG-OS&Y Handwheel operated Caustic service	
1	0.75				P81B-001MX	Gate valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 9 BB-BG-OS&Y Handwheel operated Caustic service	
1	1				P81B-001MY	Gate valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 9 BB-BG-OS&Y Handwheel operated Caustic service	
1	1.5				P81B-001MZ	Gate valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 9 BB-BG-OS&Y Handwheel operated Caustic service	
1	2				P81C-005DW	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 9 BB-BG-OS&Y Handwheel operated Caustic service	
1	3				P81C-005DX	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 9 BB-BG-OS&Y Handwheel operated Caustic service	
1	4				P81C-005DY	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 9 BB-BG-OS&Y Handwheel operated Caustic service	
4608	0.75				P81B-002Y3	Gate valve ASTM A105 Class 150 API 602 BW both sides w/ nipples BE - NPT ASTM A106-B XXS-nipple Trim number 9 BB-BG-OS&Y Handwheel operated Caustic service	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82B-001CF	Globe valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 9 BB-BG-OS&Y Handwheel operated Caustic service	
1	0.75				P82B-001CG	Globe valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 9 BB-BG-OS&Y Handwheel operated Caustic service	
1	1				P82B-001CH	Globe valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 9 BB-BG-OS&Y Handwheel operated Caustic service	
1	1.5				P82B-001CJ	Globe valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 9 BB-BG-OS&Y Handwheel operated Caustic service	
1	2				P82C-002NZ	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 9 BB-BG-OS&Y Handwheel operated Caustic service	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83B-0012S	Check valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 9 Lift-type Bolted cover Caustic service	
1	0.75				P83B-0012T	Check valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 9 Lift-type Bolted cover Caustic service	
1	1				P83B-0012U	Check valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 9 Lift-type Bolted cover Caustic service	
1	1.5				P83B-0012V	Check valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 9 Lift-type Bolted cover Caustic service	
1	2				P83C-002RB	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 9 Swing-type Bolted cover Caustic service	
1	3				P83C-002RC	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 9 Swing-type Bolted cover Caustic service	
1	4				P83C-002RD	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 9 Swing-type Bolted cover Caustic service	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71B-0008A	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	0.75				P71B-0008B	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	1				P71B-0008C	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71B-0008D	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	2				P71B-0000P	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	3				P71B-0000N	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	4				P71B-0000M	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	

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BOLT TABLE (B_A2AN03 , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	60	P80S-003V2		
0.75	4	0.500	65	P80S-003V3		
1	4	0.500	70	P80S-003V4		
1.5	4	0.500	75	P80S-003V5		
2	4	0.625	85	P80S-003XE		
3	4	0.625	95	P80S-003XG		
4	8	0.625	95	P80S-003XG		

BOLT TABLE (B_A2AN03_773 , STUD ASME RF, OPTION CODE 773)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-003V4		
0.75	4	0.625	75	P80S-003XC		
1	4	0.625	80	P80S-003XD		
1.5	4	0.750	95	P80S-00414		
2	8	0.625	90	P80S-003XF		
3	8	0.750	110	P80S-003XK		
4	8	0.750	115	P80S-003XL		

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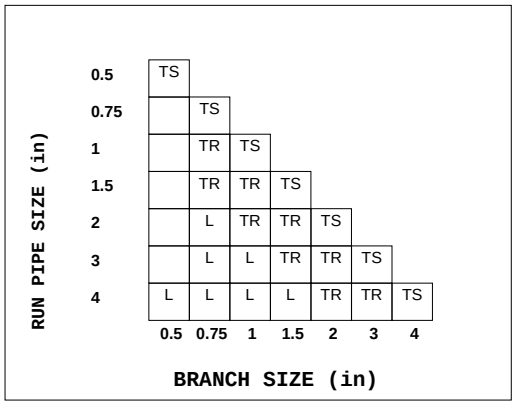
BRANCH TABLE (T_A2AN03)



TS : STRAIGHT TEE
L : OUTLET
TR : REDUCING TEE

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PIPING CLASS

A2AN04 REV NO. 2

Material : Killed CS
Rating : ASME CLASS 150
Flange Face : RF
C.A.(mm) : 3.00
Gasket : Spiral Wound
Service : CAUSTIC SERVICE
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
2	USE OF SOFT SEATED BALL, PLUG AND BUTTERFLY VALVES SHALL BE LIMITED TO MAXIMUM OF 204DEGC (400DEGF)
9	ALL ACID AND CAUSTIC SERVICE LINE FLANGED JOINTS SHALL BE COVERED WITH SAFETY SPLASH GUARDS
27	PWHT OF CARBON STEEL PIPING IN WET H2S, CAUSTIC AND AMINE SERVICES SHALL BE IN ACCORDANCE WITH SECTION 10.2, 10.3, AND 10.4 OF PROJECT SPECIFICATION 3550-8440-SP-0002 MATERIALS REQUIREMENTS FOR PRESSURISED EQUIPMENT AND PIPING. FOR CAUSTIC AND AMINE SERVICE THE FOLLOWING SHALL APPLY: - PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF ALL SITE PIPING FABRICATION WELDS IS REQUIRED FOR ALL WALL THICKNESSES. FOR MODERATE AND SEVERE WET H2S SERVICE THE FOLLOWING SHALL APPLY: PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF SITE FABRICATION CIRCUMFERENTIAL OR BRANCH WELDS IS NOT REQUIRED IF WELDS ARE MULTIPASS AND IN ACCORDANCE WITH PARA 10.2.12 OF PROJECT SPECIFICATION 3550-8440-SP-0002. FOR SERVICES MEETING THE WET H2S CRITERIA AND CAUSTIC OR AMINE CRITERIA THE MORE STRINGENT PWHT REQUIREMENT SHALL GOVERN.

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
24	FULL PORT (Q)
200	WITH JACK SCREW (FO)
541	NPT(F) (CA,F)
773	CLASS 300 (B,F,G)
4608	VALVE WITH NIPPLES (V)

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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P01A-00143	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	0.75		SCH160		P01A-0010R	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1		SCH160		P01A-0014M	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1.5		SCH160		P01A-0015J	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	2		XS		P01A-000YX	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	3		XS		P01A-000Z4	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	4		STD		P01A-000YU	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	6		STD		P01A-000Z3	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	8		SCH30		P01A-001WL	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P02A-00172	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	0.75		SCH160		P02A-000V8	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1		SCH160		P02A-000V7	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1.5		SCH160		P02A-000V9	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	2		XS		P02A-000CP	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		XS		P02A-000CX	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		STD		P02A-000CZ	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		STD		P02A-000D6	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		SCH30		P02A-003DK	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P03A-0012Y	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	0.75		SCH160		P03A-000RS	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1		SCH160		P03A-000RR	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1.5		SCH160		P03A-000RP	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	2		XS		P03A-000AS	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		XS		P03A-000AZ	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		STD		P03A-000B1	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		STD		P03A-000B9	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		SCH30		P03A-003BE	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P21A-002M0	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	0.75		SCH160		P21A-002B8	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1		SCH160		P21A-002B6	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5		SCH160		P21A-002B9	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2		XS		P21A-001CJ	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		XS		P21A-001CR	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		STD		P21A-001CW	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6		STD		P21A-001D2	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8		SCH30		P21A-003WV	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75	SCH160	SCH160	P24A-004B6	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.75	SCH160	SCH160	P24A-004B2	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	1	SCH160	SCH160	P24A-004BA	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	XS	SCH160	P24A-00GMB	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	XS	SCH160	P24A-005K9	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	XS	SCH160	P24A-00GNV	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	XS	XS	P24A-0023S	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P24A-002HY	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	XS	P24A-00GNW	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	XS	P24A-00GTR	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	6	4	STD	STD	P24A-00229	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH30	STD	P24A-00JVH	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH30	STD	P24A-00JVG	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	XXS	P27A-003ZL	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.5	SCH160	XXS	P27A-003ZM	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.75	SCH160	SCH160	P27A-002T5	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.5	SCH160	XXS	P27A-003ZN	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.75	SCH160	SCH160	P27A-002T7	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	1	SCH160	SCH160	P27A-002T4	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	0.75	XS	SCH160	P27A-001LG	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	XS	SCH160	P27A-0033P	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	XS	SCH160	P27A-0033B	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	XS	SCH160	P27A-003N1	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	XS	XS	P27A-001E5	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	1.5	STD	SCH160	P27A-003MA	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P27A-001N0	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	XS	P27A-0074W	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	XS	P27A-007P6	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P27A-001GW	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH30	STD	P27A-00ED2	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH30	STD	P27A-00ECY	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	XXS	P28A-003ZE	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.5	SCH160	XXS	P28A-003ZF	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.75	SCH160	SCH160	P28A-002TU	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.5	SCH160	XXS	P28A-003ZG	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.75	SCH160	SCH160	P28A-002TW	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	1	SCH160	SCH160	P28A-002TR	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	0.75	XS	SCH160	P28A-001LE	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	XS	SCH160	P28A-003M1	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	XS	SCH160	P28A-003M2	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	XS	SCH160	P28A-003MV	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	XS	XS	P28A-001EH	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	1.5	STD	SCH160	P28A-003M4	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P28A-001N6	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	XS	P28A-008F7	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	XS	P28A-008K1	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P28A-00182	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH30	STD	P28A-00BFY	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH30	STD	P28A-00BFZ	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P29A-0013Z	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	0.75		SCH160		P29A-000TX	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1		SCH160		P29A-000TY	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5		SCH160		P29A-000TZ	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2		XS		P29A-000A1	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		XS		P29A-000AT	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		STD		P29A-000A3	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6		STD		P29A-000A9	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8		SCH30		P29A-000PC	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
541	0.75				P29B-0000Y	Cap ASTM A105 Class 6000 ASME B16.11 NPT	
541	1				P29B-0000Z	Cap ASTM A105 Class 6000 ASME B16.11 NPT	

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STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P41A-000B9	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		XXS		P41A-000BA	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		XXS		P41A-000D8	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		XXS		P41A-000D9	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2	0.75	XS	SCH160	P31B-00CP7	Outlet ASTM A105 MSS SP-97 BW	
1	3	0.75	XS	SCH160	P31B-00CMS	Outlet ASTM A105 MSS SP-97 BW	
1	4	0.75	STD	SCH160	P31B-00CLT	Outlet ASTM A105 MSS SP-97 BW	
1	6	0.75	STD	SCH160	P31B-00CKK	Outlet ASTM A105 MSS SP-97 BW	
1	8	0.75	SCH30	SCH160	P31B-00ZH5	Outlet ASTM A105 MSS SP-97 BW	
1	3	1	XS	SCH160	P31B-00B4H	Outlet ASTM A105 MSS SP-97 BW	
1	4	1	STD	SCH160	P31B-00B3M	Outlet ASTM A105 MSS SP-97 BW	
1	6	1	STD	SCH160	P31B-00AZC	Outlet ASTM A105 MSS SP-97 BW	
1	8	1	SCH30	SCH160	P31B-00ZH6	Outlet ASTM A105 MSS SP-97 BW	
1	4	1.5	STD	SCH160	P31B-00BP4	Outlet ASTM A105 MSS SP-97 BW	
1	6	1.5	STD	SCH160	P31B-00BJH	Outlet ASTM A105 MSS SP-97 BW	
1	8	1.5	SCH30	SCH160	P31B-00BHM	Outlet ASTM A105 MSS SP-97 BW	
1	6	2	STD	XS	P31B-007SH	Outlet ASTM A105 MSS SP-97 BW	
1	8	2	SCH30	XS	P31B-00X36	Outlet ASTM A105 MSS SP-97 BW	
1	8	3	SCH30	XS	P31B-00ZH7	Outlet ASTM A105 MSS SP-97 BW	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30B-0002D	Plug ASTM A105 ASME B16.11 NPT Round head	
1	0.75				P30B-0002E	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1				P30B-0002F	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1.5				P30B-0002G	Plug ASTM A105 ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P61B-003LE	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	0.75		SCH160		P61B-0037H	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	1		SCH160		P61B-0037F	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	1.5		SCH160		P61B-0037N	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	2		XS		P61B-003NK	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	3		XS		P61B-003JD	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	4		STD		P61B-001R8	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	6		STD		P61B-001RT	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	8		SCH30		P61B-003FP	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
541	0.5				P61B-003TZ	Flange NPT ASTM A105 Class 150 ASME B16.5 RF	
541	0.75				P61B-003U0	Flange NPT ASTM A105 Class 150 ASME B16.5 RF	
773	0.5		XXS		P61B-003LW	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	0.75		SCH160		P61B-0037M	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	1		SCH160		P61B-0037L	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	1.5		SCH160		P61B-0037J	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	2		XS		P61B-001HW	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	3		XS		P61B-001DK	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	4		STD		P61B-001MC	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	6		STD		P61B-001N2	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	8		SCH30		P61B-008S0	Flange WN ASTM A105 Class 300 ASME B16.5 RF	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67B-000FH	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	0.75				P67B-000FJ	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	1				P67B-000FK	Blind flange ASTM A105 Class 150 ASME B16.5 RF	

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BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5				P67B-000FL	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	2				P67B-000FT	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	3				P67B-000FW	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	4				P67B-000FX	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	6				P67B-000FY	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	8				P67B-000FZ	Blind flange ASTM A105 Class 150 ASME B16.5 RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000L8	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000L9	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000LA	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000LB	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000LH	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000LL	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000LM	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	6				P73T-000LN	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	8				P73T-000LP	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	0.5				P73T-000FT	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	0.75				P73T-000FU	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	3				P73T-000G5	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	4				P73T-000G6	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	6				P73T-000G7	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	8				P73T-000G8	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-8				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
773	0.5-8				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81B-001MW	Gate valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 9 BB-BG-OS&Y Handwheel operated Caustic service	
1	0.75				P81B-001MX	Gate valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 9 BB-BG-OS&Y Handwheel operated Caustic service	
1	1				P81B-001MY	Gate valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 9 BB-BG-OS&Y Handwheel operated Caustic service	
1	1.5				P81B-001MZ	Gate valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 9 BB-BG-OS&Y Handwheel operated Caustic service	
1	2				P81C-005DW	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 9 BB-BG-OS&Y Handwheel operated Caustic service	
1	3				P81C-005DX	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 9 BB-BG-OS&Y Handwheel operated Caustic service	
1	4				P81C-005DY	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 9 BB-BG-OS&Y Handwheel operated Caustic service	
1	6				P81C-005DZ	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 9 BB-BG-OS&Y Handwheel operated Caustic service	
1	8				P81C-005E0	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 9 BB-BG-OS&Y Handwheel operated Caustic service	
4608	0.75				P81B-002Y3	Gate valve ASTM A105 Class 150 API 602 BW both sides w/ nipples BE - NPT ASTM A106-B XXS-nipple Trim number 9 BB-BG-OS&Y Handwheel operated Caustic service	
4608	1				P81B-002YE	Gate valve ASTM A105 Class 150 API 602 BW both sides w/ nipples BE - NPT ASTM A106-B XXS-nipple Trim number 9 BB-BG-OS&Y Handwheel operated Caustic service	

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GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82B-001CF	Globe valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 9 BB-BG-OS&Y Handwheel operated Caustic service	
1	0.75				P82B-001CG	Globe valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 9 BB-BG-OS&Y Handwheel operated Caustic service	
1	1				P82B-001CH	Globe valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 9 BB-BG-OS&Y Handwheel operated Caustic service	
1	1.5				P82B-001CJ	Globe valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 9 BB-BG-OS&Y Handwheel operated Caustic service	
1	2				P82C-002NZ	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 9 BB-BG-OS&Y Handwheel operated Caustic service	
1	3				P82C-003UY	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 9 BB-BG-OS&Y Handwheel operated Caustic service	
1	4				P82C-003UZ	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 9 BB-BG-OS&Y Handwheel operated Caustic service	
1	6				P82C-003V0	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 9 BB-BG-OS&Y Handwheel operated Caustic service	
1	8				P82C-003V1	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 9 BB-BG-OS&Y Handwheel operated Caustic service	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83B-0012S	Check valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 9 Lift-type Bolted cover Caustic service	
1	0.75				P83B-0012T	Check valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 9 Lift-type Bolted cover Caustic service	
1	1				P83B-0012U	Check valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 9 Lift-type Bolted cover Caustic service	
1	1.5				P83B-0012V	Check valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 9 Lift-type Bolted cover Caustic service	
1	2				P83C-002RB	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 9 Swing-type Bolted cover Caustic service	
1	3				P83C-002RC	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 9 Swing-type Bolted cover Caustic service	
1	4				P83C-002RD	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 9 Swing-type Bolted cover Caustic service	
1	6				P83C-002RE	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 9 Swing-type Bolted cover Caustic service	

BALL VALVE (Q)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P84B-001HU	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball UNS N04400 Seat R-PTFE Trim UNS N04400 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design Caustic service	
1	0.75				P84B-001HV	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball UNS N04400 Seat R-PTFE Trim UNS N04400 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design Caustic service	
1	1				P84B-001HW	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball UNS N04400 Seat R-PTFE Trim UNS N04400 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design Caustic service	
1	1.5				P84B-001HX	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball UNS N04400 Seat R-PTFE Trim UNS N04400 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design Caustic service	
1	2				P84C-006T2	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball UNS N04400 Seat R-PTFE Trim UNS N04400 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design Caustic service	
1	3				P84C-006T3	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball UNS N04400 Seat R-PTFE Trim UNS N04400 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design Caustic service	
24	0.5				P84B-001HY	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball UNS N04400 Seat R-PTFE Trim UNS N04400 Floating-type Side-entry Wrench lever operated Full bore Fire tested design Caustic service	
24	0.75				P84B-001HZ	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball UNS N04400 Seat R-PTFE Trim UNS N04400 Floating-type Side-entry Wrench lever operated Full bore Fire tested design Caustic service	
24	1				P84B-001J0	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball UNS N04400 Seat R-PTFE Trim UNS N04400 Floating-type Side-entry Wrench lever operated Full bore Fire tested design Caustic service	
24	1.5				P84B-001J1	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball UNS N04400 Seat R-PTFE Trim UNS N04400 Floating-type Side-entry Wrench lever operated Full bore Fire tested design Caustic service	
24	2				P84C-006T4	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball UNS N04400 Seat R-PTFE Trim UNS N04400 Floating-type Side-entry Wrench lever operated Full bore Fire tested design Caustic service	
24	3				P84C-006T5	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball UNS N04400 Seat R-PTFE Trim UNS N04400 Floating-type Side-entry Wrench lever operated Full bore Fire tested design Caustic service	

NEEDLE VALVE (NV)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82B-001X7	Needle valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 9 BB-BG-OS&Y Handwheel operated Caustic service	
1	0.75				P82B-001X8	Needle valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 9 BB-BG-OS&Y Handwheel operated Caustic service	

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NEEDLE VALVE (NV)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P82B-001X9	Needle valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 9 BB-BG-OS&Y Handwheel operated Caustic service	
1	1.5				P82B-001XA	Needle valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 9 BB-BG-OS&Y Handwheel operated Caustic service	

ORIFICE FLANGE (FO)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2		XS		P66B-0084B	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	3		XS		P66B-008C1	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	4		STD		P66B-0084D	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
200	2		XS		P66B-00843	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	3		XS		P66B-008C3	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	4		STD		P66B-00845	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71B-0008A	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	0.75				P71B-0008B	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	1				P71B-0008C	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71B-0008D	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	2				P71B-0000P	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	3				P71B-0000N	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	4				P71B-0000M	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	6				P71B-0000L	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	8				P71B-0000R	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	

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BOLT TABLE (B_A2AN04 , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	60	P80S-003V2		
0.75	4	0.500	65	P80S-003V3		
1	4	0.500	70	P80S-003V4		
1.5	4	0.500	75	P80S-003V5		
2	4	0.625	85	P80S-003XE		
3	4	0.625	95	P80S-003XG		
4	8	0.625	95	P80S-003XG		
6	8	0.750	105	P80S-003XJ		
8	8	0.750	110	P80S-003XK		

BOLT TABLE (B_A2AN04_773 , STUD ASME RF, OPTION CODE 773)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-003V4		
0.75	4	0.625	75	P80S-003XC		
1	4	0.625	80	P80S-003XD		
1.5	4	0.750	95	P80S-00414		
2	8	0.625	90	P80S-003XF		
3	8	0.750	110	P80S-003XK		
4	8	0.750	115	P80S-003XL		
6	12	0.750	125	P80S-003XN		
8	12	0.875	140	P80S-0041D		

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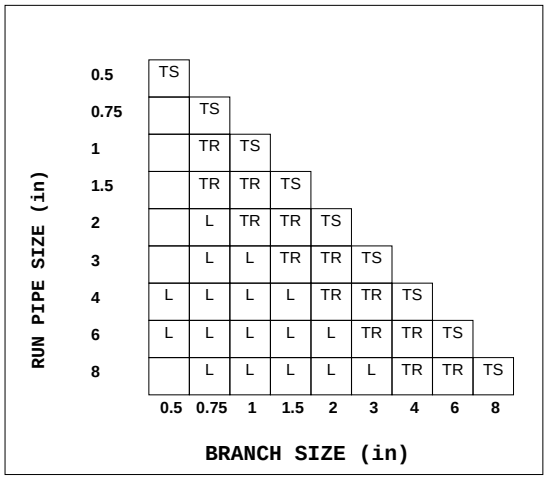
BRANCH TABLE (T_A2AN04)



RUN PIPE SIZE (in)	0.5	0.75	1	1.5	2	3	4	6	8
0.5	TS								
0.75		TS							
1		TR	TS						
1.5		TR	TR	TS					
2		L	TR	TR	TS				
3		L	L	TR	TR	TS			
4	L	L	L	L	TR	TR	TS		
6	L	L	L	L	L	TR	TR	TS	
8		L	L	L	L	L	TR	TR	TS

TS : STRAIGHT TEE
TR : REDUCING TEE
L : OUTLET

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A2AP REV NO. 2

Material : Killed CS
Rating : ASME CLASS 150
Flange Face : RF
C.A.(mm) : 3.00
Gasket : Spiral Wound
Service : PROCESS / UTILITY - GENERAL, NON SOUR : / LLP CONDENSATE / SUSPECT CONDENSATE / REJECT WATER / CRUDE FLASH VAPOUR / CRUDE OIL / HAGO / AGO / KEROSENE / DIESEL / NAPHTHA STABILISER OVHD VAPOUR / AGO FEED / NAPHTHA / DIESEL / and other various services

Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
2	USE OF SOFT SEATED BALL, PLUG AND BUTTERFLY VALVES SHALL BE LIMITED TO MAXIMUM OF 204DEGC (400DEGF)

DETAIL NOTES :

NO.	DESCRIPTION
38	TO BE USED FOR STAND PIPE

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
24	FULL PORT (Q)
200	WITH JACK SCREW (FO)
541	NPT(F) (CA,L)
714	SW - NPT(F) (V)
773	CLASS 300 (B,F,G,V)
781	CLASS 600 (B,F,G)
797	CLASS 1500 (B,F,G)
805	CLASS 2500 (B,F,G)
2489	CLASS 600 RJ (B,F,G)
3001	INSULATION GASKET KIT AND BOLTS FOR FLANGE (G)
4208	45 DEGREE LATERAL STRAIGHT TEE (TLS)
4212	WELDOLET FOR STAND PIPE (L)
4602	DISSIMILAR TYPE CHECK VALVE (XDP)

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PIPING CLASS
A2AP REV NO. 2

PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P01A-0010P	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	0.75		SCH160		P01A-0010R	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1		SCH160		P01A-0014M	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1.5		SCH160		P01A-0015J	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	2		XS		P01A-000YX	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	3		STD		P01A-000YM	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	4		STD		P01A-000YU	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	6		STD		P01A-000Z3	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	8		SCH20		P01A-001AT	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	10		SCH20		P01A-0014Y	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	12		SCH30		P01A-0017K	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	14		SCH20		P01A-0017A	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	16		SCH20		P01A-0018E	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	18		SCH20		P01A-00438	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE	
1	20		STD		P01A-0042G	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE	
1	24		STD		P01A-0042H	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE	
1	30		XS		P01A-008MM	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE	
1	36		XS		P01A-0042K	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE	
1	42		14.27mm		P01A-008MY	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE	
1	48		XS		P01A-0042L	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P02B-0001J	90 degree elbow ASTM A105 Class 6000 ASME B16.11 SW	
1	0.75				P02B-0001K	90 degree elbow ASTM A105 Class 6000 ASME B16.11 SW	
1	1				P02B-0002E	90 degree elbow ASTM A105 Class 6000 ASME B16.11 SW	
1	1.5				P02B-0002F	90 degree elbow ASTM A105 Class 6000 ASME B16.11 SW	
1	2		XS		P02A-000CP	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		STD		P02A-000CU	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		STD		P02A-000CZ	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		STD		P02A-000D6	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		SCH20		P02A-000GZ	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	10		SCH20		P02A-000H1	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	12		SCH30		P02A-000M4	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	14		SCH20		P02A-000FX	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	16		SCH20		P02A-000GM	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	18		SCH20		P02A-000LT	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	20		STD		P02A-0010J	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	24		STD		P02A-0010K	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	30		XS		P02A-000D0	90 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius	
1	36		XS		P02A-000DH	90 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius	
1	42		14.27mm		P02A-0014P	90 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius	
1	48		XS		P02A-0017R	90 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P03B-0001F	45 degree elbow ASTM A105 Class 6000 ASME B16.11 SW	
1	0.75				P03B-0001G	45 degree elbow ASTM A105 Class 6000 ASME B16.11 SW	
1	1				P03B-0002A	45 degree elbow ASTM A105 Class 6000 ASME B16.11 SW	
1	1.5				P03B-0002B	45 degree elbow ASTM A105 Class 6000 ASME B16.11 SW	
1	2		XS		P03A-000AS	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		STD		P03A-000AX	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		STD		P03A-000B1	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		STD		P03A-000B9	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		SCH20		P03A-000EX	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	10		SCH20		P03A-000F0	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	12		SCH30		P03A-000JU	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	14		SCH20		P03A-000DW	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	16		SCH20		P03A-000EM	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

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45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	18		SCH20		P03A-001DX	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	20		STD		P03A-000X1	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	24		STD		P03A-000X2	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	30		XS		P03A-000B5	45 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius	
1	36		XS		P03A-000BG	45 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius	
1	42		14.27mm		P03A-0010W	45 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius	
1	48		XS		P03A-0013P	45 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P21B-0001F	Straight tee ASTM A105 Class 6000 ASME B16.11 SW	
1	0.75				P21B-0001G	Straight tee ASTM A105 Class 6000 ASME B16.11 SW	
1	1				P21B-00026	Straight tee ASTM A105 Class 6000 ASME B16.11 SW	
1	1.5				P21B-00027	Straight tee ASTM A105 Class 6000 ASME B16.11 SW	
1	2		XS		P21A-001CJ	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		STD		P21A-001CU	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		STD		P21A-001CW	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6		STD		P21A-001D2	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8		SCH20		P21A-00215	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10		SCH20		P21A-00219	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12		SCH30		P21A-0025A	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14		SCH20		P21A-00206	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16		SCH20		P21A-0020X	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18		SCH20		P21A-001PJ	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20		STD		P21A-001C7	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24		STD		P21A-001CC	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30		XS		P21A-001CX	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	36		XS		P21A-001D7	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	42		14.27mm		P21A-001JD	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	48		XS		P21A-001RL	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	

STRAIGHT LATERAL TEE (TLS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75				P22B-00004	Straight lateral-tee ASTM A105 Class 6000 ASME B16.11 SW 60 degree	
1	1				P22B-00005	Straight lateral-tee ASTM A105 Class 6000 ASME B16.11 SW 60 degree	
1	1.5				P22B-00006	Straight lateral-tee ASTM A105 Class 6000 ASME B16.11 SW 60 degree	
1	2		XS		P22A-000DW	Straight lateral-tee ASTM A234 Grade WPB Seamless ASME B16.9 BW 60 degree	
1	3		STD		P22A-000DJ	Straight lateral-tee ASTM A234 Grade WPB Seamless ASME B16.9 BW 60 degree	
1	4		STD		P22A-000DX	Straight lateral-tee ASTM A234 Grade WPB Seamless ASME B16.9 BW 60 degree	
1	6		STD		P22A-000DY	Straight lateral-tee ASTM A234 Grade WPB Seamless ASME B16.9 BW 60 degree	
1	8		SCH20		P22A-000GC	Straight lateral-tee ASTM A234 Grade WPB Seamless ASME B16.9 BW 60 degree	
1	10		SCH20		P22A-000GA	Straight lateral-tee ASTM A234 Grade WPB Seamless ASME B16.9 BW 60 degree	
1	12		SCH30		P22A-000DT	Straight lateral-tee ASTM A234 Grade WPB Seamless ASME B16.9 BW 60 degree	
1	14		SCH20		P22A-000DU	Straight lateral-tee ASTM A234 Grade WPB Seamless ASME B16.9 BW 60 degree	
1	16		SCH20		P22A-000DV	Straight lateral-tee ASTM A234 Grade WPB Seamless ASME B16.9 BW 60 degree	
1	18		SCH20		P22A-000FW	Straight lateral-tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW 60 degree	
1	20		STD		P22A-000FX	Straight lateral-tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW 60 degree	
1	24		STD		P22A-000GD	Straight lateral-tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW 60 degree	
1	30		XS		P22A-000GX	Straight lateral-tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW 60 degree	
1	36		XS		P22A-000GF	Straight lateral-tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW 60 degree	
1	42		14.27mm		P22A-000GY	Straight lateral-tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW 60 degree	
1	48		XS		P22A-000GH	Straight lateral-tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW 60 degree	
4208	3		STD		P22A-000C2	Straight lateral-tee ASTM A234 Grade WPB Seamless ASME B16.9 BW 45 degree	
4208	4		STD		P22A-000C3	Straight lateral-tee ASTM A234 Grade WPB Seamless ASME B16.9 BW 45 degree	
4208	6		STD		P22A-000C4	Straight lateral-tee ASTM A234 Grade WPB Seamless ASME B16.9 BW 45 degree	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75			P24B-00030	Reducing tee ASTM A105 Class 6000 ASME B16.11 SW	

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REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5	0.75			P24B-00032	Reducing tee ASTM A105 Class 6000 ASME B16.11 SW	
1	1.5	1			P24B-0004J	Reducing tee ASTM A105 Class 6000 ASME B16.11 SW	
1	2	1	XS	SCH160	P24A-00GMB	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	XS	SCH160	P24A-005K9	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	STD	SCH160	P24A-00GMC	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	STD	XS	P24A-002HW	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P24A-002HY	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P24A-0021K	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	STD	P24A-0021A	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P24A-00229	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH20	STD	P24A-00J21	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH20	STD	P24A-005J4	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	SCH20	STD	P24A-00HMB	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	SCH20	STD	P24A-00HKS	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	SCH20	SCH20	P24A-002YX	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	SCH30	STD	P24A-00HKT	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH30	SCH20	P24A-003XM	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH30	SCH20	P24A-003XL	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	SCH20	STD	P24A-00K0M	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	SCH20	SCH20	P24A-002U7	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	SCH20	SCH20	P24A-002YA	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	SCH20	SCH30	P24A-003ES	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	6	SCH20	STD	P24A-00GU4	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	SCH20	SCH20	P24A-002XW	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	SCH20	SCH20	P24A-002YH	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	SCH20	SCH30	P24A-003XN	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	SCH20	SCH20	P24A-002XF	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	8	SCH20	SCH20	P24A-002XC	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	10	SCH20	SCH20	P24A-002UX	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	12	SCH20	SCH30	P24A-00BH0	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	14	SCH20	SCH20	P24A-002WT	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	16	SCH20	SCH20	P24A-002X5	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	8	STD	SCH20	P24A-00K0N	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	10	STD	SCH20	P24A-00BT7	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	12	STD	SCH30	P24A-00BUT	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	14	STD	SCH20	P24A-00BWB	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	16	STD	SCH20	P24A-006W3	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	18	STD	SCH20	P24A-006WD	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	10	STD	SCH20	P24A-00KT6	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	12	STD	SCH30	P24A-00C7C	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	14	STD	SCH20	P24A-00K0C	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	16	STD	SCH20	P24A-00CAD	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	18	STD	SCH20	P24A-006WF	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	20	STD	STD	P24A-004SV	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	10	XS	SCH20	P24A-0043F	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	12	XS	SCH30	P24A-00CZ6	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	14	XS	SCH20	P24A-0043H	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	16	XS	SCH20	P24A-0043J	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	18	XS	SCH20	P24A-0043K	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	20	XS	STD	P24A-004ST	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	24	XS	STD	P24A-004V6	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	36	16	XS	SCH20	P24A-003VH	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	36	18	XS	SCH20	P24A-003VJ	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	36	20	XS	STD	P24A-004SS	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	36	24	XS	STD	P24A-004VX	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	36	30	XS	XS	P24A-0043N	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	42	16	14.27mm	SCH20	P24A-00EF4	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	42	18	14.27mm	SCH20	P24A-00EFN	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	42	20	14.27mm	STD	P24A-00NJ2	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	

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REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	42	24	14.27mm	STD	P24A-00NJ3	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	42	30	14.27mm	XS	P24A-00AGM	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	42	36	14.27mm	XS	P24A-005L0	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	48	24	XS	STD	P24A-006WP	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	48	30	XS	XS	P24A-006Z7	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	48	36	XS	XS	P24A-00F4B	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	48	42	XS	14.27mm	P24A-00F5M	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	STD	XS	P27A-001MZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P27A-001N0	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P27A-00189	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	STD	P27A-001AZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P27A-001GW	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH20	STD	P27A-003K2	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH20	STD	P27A-003K3	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	SCH20	STD	P27A-003K4	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	SCH20	STD	P27A-003K5	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	SCH20	SCH20	P27A-001UL	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	SCH30	STD	P27A-003MN	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH30	SCH20	P27A-002GG	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH30	SCH20	P27A-002GF	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	SCH20	STD	P27A-00518	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	SCH20	SCH20	P27A-001V4	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	SCH20	SCH20	P27A-001TG	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	SCH20	SCH30	P27A-0028H	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	SCH20	SCH20	P27A-001WX	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	SCH20	SCH20	P27A-001TW	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	SCH20	SCH30	P27A-002GH	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	SCH20	SCH20	P27A-001V2	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	10	SCH20	SCH20	P27A-001TJ	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	12	SCH20	SCH30	P27A-0084K	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	14	SCH20	SCH20	P27A-001UY	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	16	SCH20	SCH20	P27A-001WN	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	12	STD	SCH30	P27A-0082K	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	14	STD	SCH20	P27A-0082L	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	16	STD	SCH20	P27A-0082M	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	18	STD	SCH20	P27A-0084N	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	16	STD	SCH20	P27A-0084T	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	18	STD	SCH20	P27A-0084U	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	20	STD	STD	P27A-001A8	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	20	XS	STD	P27A-0018E	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	24	XS	STD	P27A-0019H	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	36	24	XS	STD	P27A-001GY	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	36	30	XS	XS	P27A-0019M	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	42	30	14.27mm	XS	P27A-003P1	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	42	36	14.27mm	XS	P27A-003P4	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	48	42	XS	14.27mm	P27A-00H61	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	STD	XS	P28A-001N5	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P28A-001N6	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P28A-0018B	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	STD	P28A-001AS	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P28A-00182	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH20	STD	P28A-003JU	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH20	STD	P28A-003JV	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	10	4	SCH20	STD	P28A-003JW	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	SCH20	STD	P28A-003JX	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	SCH20	SCH20	P28A-001V0	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	SCH30	STD	P28A-003MG	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH30	SCH20	P28A-002GA	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH30	SCH20	P28A-002G9	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	SCH20	STD	P28A-0096P	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	SCH20	SCH20	P28A-001WH	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	SCH20	SCH20	P28A-001TH	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	SCH20	SCH30	P28A-0027A	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	SCH20	SCH20	P28A-001T6	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	SCH20	SCH20	P28A-001TY	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	SCH20	SCH30	P28A-002GB	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	SCH20	SCH20	P28A-001WG	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	10	SCH20	SCH20	P28A-001TV	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	12	SCH20	SCH30	P28A-004UM	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	14	SCH20	SCH20	P28A-001WD	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	16	SCH20	SCH20	P28A-001T1	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	12	STD	SCH30	P28A-004SH	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	14	STD	SCH20	P28A-004SJ	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	16	STD	SCH20	P28A-004SK	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	18	STD	SCH20	P28A-004UN	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	16	STD	SCH20	P28A-004UR	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	18	STD	SCH20	P28A-004US	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	20	STD	STD	P28A-001AW	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	20	XS	STD	P28A-0018H	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	24	XS	STD	P28A-0019P	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	36	24	XS	STD	P28A-0017X	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	36	30	XS	XS	P28A-0019M	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	42	30	14.27mm	XS	P28A-003NV	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	42	36	14.27mm	XS	P28A-003NY	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	48	42	XS	14.27mm	P28A-00EDP	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P29B-0002F	Cap ASTM A105 Class 6000 ASME B16.11 SW	
1	0.75				P29B-0002G	Cap ASTM A105 Class 6000 ASME B16.11 SW	
1	1				P29B-0002D	Cap ASTM A105 Class 6000 ASME B16.11 SW	
1	1.5				P29B-0002E	Cap ASTM A105 Class 6000 ASME B16.11 SW	
1	2		XS		P29A-000A1	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		STD		P29A-000BK	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		STD		P29A-000A3	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6		STD		P29A-000A9	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8		SCH20		P29A-000EY	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10		SCH20		P29A-000E5	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12		SCH30		P29A-000PZ	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14		SCH20		P29A-000EA	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16		SCH20		P29A-000F3	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18		SCH20		P29A-000E0	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20		STD		P29A-000B2	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24		STD		P29A-000B8	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	30		XS		P29A-000BP	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	36		XS		P29A-000A2	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	42		14.27mm		P29A-00114	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	48		XS		P29A-00136	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
541	0.5				P29B-0000X	Cap ASTM A105 Class 6000 ASME B16.11 NPT	
541	0.75				P29B-0000Y	Cap ASTM A105 Class 6000 ASME B16.11 NPT	
541	1				P29B-0000Z	Cap ASTM A105 Class 6000 ASME B16.11 NPT	
541	1.5				P29B-00010	Cap ASTM A105 Class 6000 ASME B16.11 NPT	

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STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P41A-000B9	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		XXS		P41A-000BA	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		XXS		P41A-000D8	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		XXS		P41A-000D9	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

CON SWAGED NIPPLE (SNC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	SCH160	P42A-00029	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	SCH160	SCH160	P42A-0009T	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	SCH160	SCH160	P42A-0009U	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	SCH160	SCH160	P42A-0009V	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	SCH160	SCH160	P42A-0009W	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	SCH160	SCH160	P42A-0009X	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	XS	SCH160	P42A-000J6	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	XS	SCH160	P42A-000J7	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	XS	SCH160	P42A-000F8	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	XS	SCH160	P42A-000KZ	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	STD	SCH160	P42A-000L0	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	

ECC SWAGED NIPPLE (SNE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	SCH160	P43A-000AM	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	SCH160	SCH160	P43A-000B4	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	SCH160	SCH160	P43A-000B5	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	SCH160	SCH160	P43A-000B6	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	SCH160	SCH160	P43A-000B7	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	SCH160	SCH160	P43A-000B8	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	XS	SCH160	P43A-000B2	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	XS	SCH160	P43A-000B3	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	XS	SCH160	P43A-000CZ	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	XS	SCH160	P43A-000D0	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	STD	SCH160	P43A-000D1	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	

COUPLING (CPS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P47B-00013	Coupling ASTM A105 Class 6000 ASME B16.11 SW - SW	
1	0.75				P47B-00012	Coupling ASTM A105 Class 6000 ASME B16.11 SW - SW	
1	1				P47B-0002A	Coupling ASTM A105 Class 6000 ASME B16.11 SW - SW	
1	1.5				P47B-0002B	Coupling ASTM A105 Class 6000 ASME B16.11 SW - SW	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5 - 2.5	0.75			P31B-0137D	Outlet ASTM A105 Class 6000 MSS SP-97 SW	
1	3 - 10	0.75			P31B-007LV	Outlet ASTM A105 Class 6000 MSS SP-97 SW	
1	12 and larger	0.75			P31B-0136N	Outlet ASTM A105 Class 6000 MSS SP-97 SW	
1	3 - 10	1			P31B-007LN	Outlet ASTM A105 Class 6000 MSS SP-97 SW	
1	12 and larger	1			P31B-0136P	Outlet ASTM A105 Class 6000 MSS SP-97 SW	
1	4 - 5	1.5			P31B-004LE	Outlet ASTM A105 Class 6000 MSS SP-97 SW	
1	6 - 8	1.5			P31B-005T4	Outlet ASTM A105 Class 6000 MSS SP-97 SW	
1	10 - 18	1.5			P31B-007LF	Outlet ASTM A105 Class 6000 MSS SP-97 SW	
1	20 and larger	1.5			P31B-0137E	Outlet ASTM A105 Class 6000 MSS SP-97 SW	
541	1	0.75			P31B-005HL	Outlet ASTM A105 Class 6000 MSS SP-97 NPT	
541	1.5 - 2.5	0.75			P31B-0137F	Outlet ASTM A105 Class 6000 MSS SP-97 NPT	
541	3 - 10	0.75			P31B-007KP	Outlet ASTM A105 Class 6000 MSS SP-97 NPT	
541	12 and larger	0.75			P31B-0138A	Outlet ASTM A105 Class 6000 MSS SP-97 NPT	
1	6	2	STD	XS	P31B-007SH	Outlet ASTM A105 MSS SP-97 BW	
1	4	2	SCH20	XS	P31B-00NY2	Outlet ASTM A105 MSS SP-97 BW	
1	10	2	SCH20	XS	P31B-00TFB	Outlet ASTM A105 MSS SP-97 BW	

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OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	12	2	SCH30	XS	P31B-00NVL	Outlet ASTM A105 MSS SP-97 BW	
1	14	2	SCH20	XS	P31B-00TF9	Outlet ASTM A105 MSS SP-97 BW	
1	16	2	SCH20	XS	P31B-00TF8	Outlet ASTM A105 MSS SP-97 BW	
1	18	2	SCH20	XS	P31B-00NVX	Outlet ASTM A105 MSS SP-97 BW	
1	20	2	STD	XS	P31B-00994	Outlet ASTM A105 MSS SP-97 BW	
1	24	2	STD	XS	P31B-0092Z	Outlet ASTM A105 MSS SP-97 BW	
1	30	2	XS	XS	P31B-008P4	Outlet ASTM A105 MSS SP-97 BW	
1	36	2	XS	XS	P31B-008BB	Outlet ASTM A105 MSS SP-97 BW	
1	42	2	14.27mm	XS	P31B-00VUV	Outlet ASTM A105 MSS SP-97 BW	
1	48	2	XS	XS	P31B-007YJ	Outlet ASTM A105 MSS SP-97 BW	
1	8	3	SCH20	STD	P31B-00P11	Outlet ASTM A105 MSS SP-97 BW	
1	10	3	SCH20	STD	P31B-00UPG	Outlet ASTM A105 MSS SP-97 BW	
1	12	3	SCH30	STD	P31B-00NYR	Outlet ASTM A105 MSS SP-97 BW	
1	14	3	SCH20	STD	P31B-00UPH	Outlet ASTM A105 MSS SP-97 BW	
1	16	3	SCH20	STD	P31B-00TU2	Outlet ASTM A105 MSS SP-97 BW	
1	18	3	SCH20	STD	P31B-00NZ4	Outlet ASTM A105 MSS SP-97 BW	
1	20	3	STD	STD	P31B-008FA	Outlet ASTM A105 MSS SP-97 BW	
1	24	3	STD	STD	P31B-00895	Outlet ASTM A105 MSS SP-97 BW	
1	30	3	XS	STD	P31B-007WX	Outlet ASTM A105 MSS SP-97 BW	
1	36	3	XS	STD	P31B-007P1	Outlet ASTM A105 MSS SP-97 BW	
1	42	3	14.27mm	STD	P31B-00SWX	Outlet ASTM A105 MSS SP-97 BW	
1	48	3	XS	STD	P31B-00AFD	Outlet ASTM A105 MSS SP-97 BW	
1	12	4	SCH30	STD	P31B-00P1G	Outlet ASTM A105 MSS SP-97 BW	
1	14	4	SCH20	STD	P31B-00UPJ	Outlet ASTM A105 MSS SP-97 BW	
1	16	4	SCH20	STD	P31B-00TU3	Outlet ASTM A105 MSS SP-97 BW	
1	18	4	SCH20	STD	P31B-00P1V	Outlet ASTM A105 MSS SP-97 BW	
1	20	4	STD	STD	P31B-008D3	Outlet ASTM A105 MSS SP-97 BW	
1	24	4	STD	STD	P31B-0086X	Outlet ASTM A105 MSS SP-97 BW	
1	30	4	XS	STD	P31B-007UR	Outlet ASTM A105 MSS SP-97 BW	
1	36	4	XS	STD	P31B-00AEP	Outlet ASTM A105 MSS SP-97 BW	
1	42	4	14.27mm	STD	P31B-00SWY	Outlet ASTM A105 MSS SP-97 BW	
1	48	4	XS	STD	P31B-00A2P	Outlet ASTM A105 MSS SP-97 BW	
1	18	6	SCH20	STD	P31B-00P48	Outlet ASTM A105 MSS SP-97 BW	
1	20	6	STD	STD	P31B-008PZ	Outlet ASTM A105 MSS SP-97 BW	
1	24	6	STD	STD	P31B-008JD	Outlet ASTM A105 MSS SP-97 BW	
1	30	6	XS	STD	P31B-008BR	Outlet ASTM A105 MSS SP-97 BW	
1	36	6	XS	STD	P31B-0085G	Outlet ASTM A105 MSS SP-97 BW	
1	42	6	14.27mm	STD	P31B-00SWZ	Outlet ASTM A105 MSS SP-97 BW	
1	48	6	XS	STD	P31B-007U6	Outlet ASTM A105 MSS SP-97 BW	
4212	3	2	STD	XS	P31B-00UUU	Outlet ASTM A105 MSS SP-97 BW	38

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30B-0002D	Plug ASTM A105 ASME B16.11 NPT Round head	
1	0.75				P30B-0002E	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1				P30B-0002F	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1.5				P30B-0002G	Plug ASTM A105 ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P61B-002D4	Flange SW ASTM A105 Class 150 ASME B16.5 RF	
1	0.75		SCH160		P61B-002DE	Flange SW ASTM A105 Class 150 ASME B16.5 RF	
1	1		SCH160		P61B-002DU	Flange SW ASTM A105 Class 150 ASME B16.5 RF	
1	1.5		SCH160		P61B-002EM	Flange SW ASTM A105 Class 150 ASME B16.5 RF	
1	2		XS		P61B-003NK	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	3		STD		P61B-001PW	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	4		STD		P61B-001R8	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	6		STD		P61B-001RT	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	8		SCH20		P61B-002BF	Flange WN ASTM A105 Class 150 ASME B16.5 RF	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	10		SCH20		P61B-002B4	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	12		SCH30		P61B-002TS	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	14		SCH20		P61B-002B6	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	16		SCH20		P61B-002B7	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	18		SCH20		P61B-002B8	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	20		STD		P61B-001JA	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	24		STD		P61B-001NJ	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	30		XS		P61B-001SJ	Flange WN ASTM A105 Class 150 ASME B16.47 Series B RF	
1	36		XS		P61B-001UE	Flange WN ASTM A105 Class 150 ASME B16.47 Series B RF	
1	42		14.27mm		P61B-003LG	Flange WN ASTM A105 Class 150 ASME B16.47 Series B RF	
1	48		XS		P61B-004CX	Flange WN ASTM A105 Class 150 ASME B16.47 Series B RF	
2489	1.5		SCH160		P61B-002JZ	Flange SW ASTM A105 Class 600 ASME B16.5 RJ	
773	0.5		SCH160		P61B-001H5	Flange SW ASTM A105 Class 300 ASME B16.5 RF	
773	0.75		SCH160		P61B-001HH	Flange SW ASTM A105 Class 300 ASME B16.5 RF	
773	1		SCH160		P61B-001E8	Flange SW ASTM A105 Class 300 ASME B16.5 RF	
773	1.5		SCH160		P61B-001ET	Flange SW ASTM A105 Class 300 ASME B16.5 RF	
773	2		XS		P61B-001HW	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	3		STD		P61B-001LJ	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	4		STD		P61B-001MC	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	6		STD		P61B-001N2	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	8		SCH20		P61B-002LJ	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	10		SCH20		P61B-002LH	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	12		SCH30		P61B-002TV	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	14		SCH20		P61B-002MR	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	16		SCH20		P61B-002MS	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	18		SCH20		P61B-002MT	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	20		STD		P61B-001NT	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	24		STD		P61B-001PA	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	30		XS		P61B-001KT	Flange WN ASTM A105 Class 300 ASME B16.47 Series B RF	
773	36		XS		P61B-001N6	Flange WN ASTM A105 Class 300 ASME B16.47 Series B RF	
773	42		14.27mm		P61B-003ZZ	Flange WN ASTM A105 Class 300 ASME B16.47 Series B RF	
773	48		XS		P61B-003TH	Flange WN ASTM A105 Class 300 ASME B16.47 Series B RF	
781	0.5		SCH160		P61B-001DZ	Flange SW ASTM A105 Class 600 ASME B16.5 RF	
781	0.75		SCH160		P61B-001DW	Flange SW ASTM A105 Class 600 ASME B16.5 RF	
781	1		SCH160		P61B-005X5	Flange SW ASTM A105 Class 600 ASME B16.5 RF	
781	1.5		SCH160		P61B-005X6	Flange SW ASTM A105 Class 600 ASME B16.5 RF	
781	2		XS		P61B-001DH	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	3		STD		P61B-001TW	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	4		STD		P61B-001VV	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	6		STD		P61B-001JW	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	8		SCH20		P61B-003F0	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	10		SCH20		P61B-00650	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
797	0.5		SCH160		P61B-00658	Flange SW ASTM A105 Class 1500 ASME B16.5 RJ	
797	0.75		SCH160		P61B-00659	Flange SW ASTM A105 Class 1500 ASME B16.5 RJ	
797	1		SCH160		P61B-0065A	Flange SW ASTM A105 Class 1500 ASME B16.5 RJ	
797	1.5		SCH160		P61B-0065B	Flange SW ASTM A105 Class 1500 ASME B16.5 RJ	
797	2		XS		P61B-0065C	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
797	3		STD		P61B-009W7	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
797	4		STD		P61B-009W8	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
797	6		STD		P61B-009W9	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
797	8		SCH20		P61B-00BM0	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
797	10		SCH20		P61B-009W6	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
797	12		SCH30		P61B-00BNA	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
797	14		SCH20		P61B-00BNB	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
805	0.5		SCH160		P61B-00E19	Flange SW ASTM A105 Class 2500 ASME B16.5 RJ	
805	0.75		SCH160		P61B-00E1A	Flange SW ASTM A105 Class 2500 ASME B16.5 RJ	
805	1		SCH160		P61B-0073S	Flange SW ASTM A105 Class 2500 ASME B16.5 RJ	
805	1.5		SCH160		P61B-0073T	Flange SW ASTM A105 Class 2500 ASME B16.5 RJ	
805	2		XS		P61B-0073U	Flange WN ASTM A105 Class 2500 ASME B16.5 RJ	

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FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
805	3		STD		P61B-0073N	Flange WN ASTM A105 Class 2500 ASME B16.5 RJ	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67B-000FH	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	0.75				P67B-000FJ	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	1				P67B-000FK	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	1.5				P67B-000FL	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	2				P67B-000FT	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	3				P67B-000FW	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	4				P67B-000FX	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	6				P67B-000FY	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	8				P67B-000FZ	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	10				P67B-000FM	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	12				P67B-000FN	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	14				P67B-000FP	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	16				P67B-000FR	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	18				P67B-000FS	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	20				P67B-000FU	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	24				P67B-000FV	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	30				P67B-000G2	Blind flange ASTM A105 Class 150 ASME B16.47 Series B RF	
1	36				P67B-000G5	Blind flange ASTM A105 Class 150 ASME B16.47 Series B RF	
1	42				P67B-000KZ	Blind flange ASTM A105 Class 150 ASME B16.47 Series B RF	
1	48				P67B-000L2	Blind flange ASTM A105 Class 150 ASME B16.47 Series B RF	

REDUCING FLANGE (FR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5		SCH160	P62B-000MY	Reducing flange SW ASTM A105 Class 150 ASME B16.5 RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000L8	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000L9	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000LA	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000LB	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000LH	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000LL	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000LM	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	6				P73T-000LN	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	8				P73T-000LP	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	10				P73T-000LC	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	12				P73T-000LD	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	14				P73T-000LE	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	16				P73T-000LF	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	18				P73T-000LG	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	20				P73T-000LJ	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	24				P73T-000LK	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	30				P73T-000LT	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	36				P73T-000LW	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	42				P73T-000LZ	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	48				P73T-000M2	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
2499	1.5				P75T-000ND	Ring joint gasket Soft iron Class 600 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	

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GASKET (G)							
OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
3001	3				P78U-0004P	Insulation gasket kit Glass reinforced epoxy Class 150 Manufacturer-standard Flange ASME B16.5 RF	
773	0.5				P73T-000FT	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	0.75				P73T-000FU	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	3				P73T-000G5	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	4				P73T-000G6	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	6				P73T-000G7	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	8				P73T-000G8	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	10				P73T-000FX	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	12				P73T-000FY	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	14				P73T-000FZ	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	16				P73T-000G0	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	18				P73T-000G1	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	20				P73T-000G3	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	24				P73T-000G4	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	30				P73T-000H9	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	36				P73T-000HC	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	42				P73T-000KM	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	48				P73T-000KR	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	0.5				P73T-000J8	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	0.75				P73T-000J9	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1				P73T-000JA	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1.5				P73T-000JB	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	2				P73T-000JH	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	3				P73T-000JL	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	4				P73T-000JM	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	6				P73T-000JN	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	8				P73T-000JP	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	10				P73T-000JC	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
797	0.5				P75T-000JT	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	0.75				P75T-000JU	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	1				P75T-000JV	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	1.5				P75T-000JW	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	2				P75T-0008A	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	3				P75T-0008E	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	4				P75T-0008D	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	6				P75T-0008C	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	8				P75T-0008B	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	10				P75T-0008L	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	12				P75T-0008K	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	14				P75T-0008J	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	0.5				P75T-000KT	Ring joint gasket Soft iron Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	0.75				P75T-000KU	Ring joint gasket Soft iron Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	1				P75T-000KV	Ring joint gasket Soft iron Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	1.5				P75T-000KW	Ring joint gasket Soft iron Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	2				P75T-000L6	Ring joint gasket Soft iron Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	3				P75T-000MC	Ring joint gasket Soft iron Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	

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BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-16				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	18-24				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
1	30-42				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	48				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
2489	1.5-3				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
773	0.5-10				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
773	12-48				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
781	0.5-6				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
781	8-12				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
797	0.5-2				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
797	3-14				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
805	0.5-1				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
805	1.5				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
805	2				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
805	3				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81B-000P4	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	0.75				P81B-000NX	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	1				P81B-000NY	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	1.5				P81B-000NZ	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	2				P81C-002DV	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	3				P81C-002DW	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	4				P81C-002DX	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	6				P81C-002DY	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	8				P81C-002DZ	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	10				P81C-002DT	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	12				P81C-002DU	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	14				P81C-00308	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated	
1	16				P81C-002E0	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated	
1	18				P81C-002E1	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated	
1	20				P81C-002E2	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated	
1	24				P81C-002E3	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated	
1	30				P81C-004D8	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.47-B RF Trim number 8 BB-BG-OS&Y Gear operated	
1	36				P81C-004D9	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.47-B RF Trim number 8 BB-BG-OS&Y Gear operated	
1	42				P81C-004E4	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.47-B RF Trim number 8 BB-BG-OS&Y Gear operated	
714	0.5				P81B-0015L	Gate valve ASTM A105 Class 800 API 602 SW - NPT Trim number 8 BB-BG-OS&Y Handwheel operated	
714	0.75				P81B-002F4	Gate valve ASTM A105 Class 800 API 602 SW - NPT Trim number 8 BB-BG-OS&Y Handwheel operated	
773	1				P81B-0037X	Gate valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
773	2				P81C-002D6	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82B-000K0	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	0.75				P82B-000HB	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	1				P82B-000HC	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	1.5				P82B-000HD	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	

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GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2				P82C-000N5	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	3				P82C-000N6	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	4				P82C-000N7	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	6				P82C-000N8	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	8				P82C-0026L	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83B-000FX	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover	
1	0.75				P83B-000ER	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover	
1	1				P83B-000ES	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover	
1	1.5				P83B-000ET	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover	
1	2				P83C-00144	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	3				P83C-00147	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	4				P83C-00148	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	6				P83C-00149	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	8				P83C-0014A	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	10				P83C-00140	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	12				P83C-00141	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	14				P83C-0021E	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	16				P83C-00142	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	

DP CHECK VALVE (XDP)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
4602	6				P88C-00321	Dual plate check valve ASTM A216 Grade WCB Class 150 API 594 Wafer-type ASME B16.5 RF Trim number 8 Internal wetted parts 13Cr Spring Inconel Retainerless-type	

BALL VALVE (Q)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P84B-0011T	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design	
1	0.75				P84B-0011U	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design	
1	1				P84B-0011V	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design	
1	1.5				P84B-0011W	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design	
1	2				P84C-005UD	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design	
1	3				P84C-005UE	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design	
1	4				P84C-005UF	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design	
1	6				P84C-005UG	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Reduced bore Fire tested design	
1	8				P84C-005UH	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Reduced bore Fire tested design	
24	0.5				P84B-0011X	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	
24	0.75				P84B-0011Y	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	
24	1				P84B-0011Z	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	
24	1.5				P84B-00120	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	
24	2				P84C-005UJ	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	
24	3				P84C-005UK	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	
24	4				P84C-005UL	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	
24	6				P84C-005UM	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design	
24	8				P84C-005UN	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design	

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NEEDLE VALVE (NV)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82B-001JU	Needle valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	0.75				P82B-000YB	Needle valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	1				P82B-000YC	Needle valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	1.5				P82B-000YD	Needle valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	2				P82C-0037A	Needle valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	

ORIFICE FLANGE (FO)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2		XS		P66B-0084B	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	3		STD		P66B-0084C	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	4		STD		P66B-0084D	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	6		STD		P66B-0084E	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	8		SCH20		P66B-0084F	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	10		SCH20		P66B-00848	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	12		SCH30		P66B-00849	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	14		SCH20		P66B-0084A	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	16		SCH20		P66B-0083Y	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
200	2		XS		P66B-00843	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	3		STD		P66B-00844	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	4		STD		P66B-00845	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	6		STD		P66B-00846	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	8		SCH20		P66B-00847	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	10		SCH20		P66B-00840	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	12		SCH30		P66B-00841	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	14		SCH20		P66B-00842	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	16		SCH20		P66B-0083Z	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71B-0008A	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	0.75				P71B-0008B	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	1				P71B-0008C	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71B-0008D	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	2				P71B-0000P	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	3				P71B-0000N	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	4				P71B-0000M	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	6				P71B-0000L	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	8				P71B-0000R	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	10				P71B-0000K	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	12				P71B-0000J	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	

PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000AH	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	16				P72B-0000C	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	18				P72B-000AJ	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	20				P72B-000AK	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	24				P72B-000AL	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	30				P72B-000AM	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	36				P72B-000AN	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	42				P72B-000AP	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	48				P72B-000AR	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	

PADDLE SPACER (PS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000AT	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	16				P72B-0000B	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	18				P72B-000AU	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	

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PADDLE SPACER (PS)							
OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	20				P72B-000AV	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	24				P72B-000AW	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	30				P72B-000AX	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	36				P72B-000AY	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	42				P72B-000AZ	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	48				P72B-000B0	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	

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BOLT TABLE (B_A2AP , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	60	P80S-003V2		
0.75	4	0.500	65	P80S-003V3		
1	4	0.500	70	P80S-003V4		
1.5	4	0.500	75	P80S-003V5		
2	4	0.625	85	P80S-003XE		
3	4	0.625	95	P80S-003XG		
4	8	0.625	95	P80S-003XG		
6	8	0.750	105	P80S-003XJ		
8	8	0.750	110	P80S-003XK		
10	12	0.875	120	P80S-00419		
12	12	0.875	120	P80S-00419		
14	12	1.000	135	P80S-0043E		
16	16	1.000	140	P80S-0043F		
18	16	1.125	150	P80S-0046K		
20	20	1.125	160	P80S-0046M		
24	20	1.250	175	P80S-004AG		
30	44	0.750	145	P80S-003ZK		
36	44	0.875	175	P80S-0041M		
42	48	1.000	190	P80S-0043T		
48	44	1.125	210	P80S-0046Z		

BOLT TABLE (B_A2AP_2489 , STUD ASME RJ, OPTION CODE 2489)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	80		R11	
0.75	4	0.625	90		R13	
1	4	0.625	95		R16	
1.5	4	0.750	110	P80S-003XK	R20	P75T-000ND
2	8	0.625	115		R23	
3	8	0.750	135	P80S-003XR	R31	
4	8	0.875	150		R37	
6	12	1.000	175		R45	
8	12	1.125	200		R49	
10	16	1.250	255		R53	
12	20	1.250	260		R57	
14	20	1.375	275		R61	
16	20	1.500	300		R65	
18	20	1.625	320		R69	
20	24	1.625	340		R73	
24	24	1.875	390		R77	
30	28	2.000	440		R95	
36	28	2.500	505		R98	

BOLT TABLE (B_A2AP_773 , STUD ASME RF, OPTION CODE 773)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-003V4		
0.75	4	0.625	75	P80S-003XC		
1	4	0.625	80	P80S-003XD		
1.5	4	0.750	95	P80S-00414		
2	8	0.625	90	P80S-003XF		
3	8	0.750	110	P80S-003XK		
4	8	0.750	115	P80S-003XL		
6	12	0.750	125	P80S-003XN		
8	12	0.875	140	P80S-0041D		
10	16	1.000	160	P80S-0043K		
12	16	1.125	175	P80S-0046S		
14	20	1.125	180	P80S-0046T		
16	20	1.250	190	P80S-004AK		
18	24	1.250	200	P80S-004AM		
20	24	1.250	210	P80S-004AP		
24	24	1.500	235	P80S-003F8		
30	36	1.375	285	P80S-003EA		
36	32	1.625	320	P80S-005TT		
42	36	1.750	355	P80S-007B5		
48	40	1.875	380	P80S-008P4		

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BOLT TABLE (B_A2AP_781 , STUD ASME RF, OPTION CODE 781)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	80	P80S-003V6		
0.75	4	0.625	90	P80S-003XF		
1	4	0.625	95	P80S-003XG		
1.5	4	0.750	110	P80S-003XK		
2	8	0.625	110	P80S-003VC		
3	8	0.750	130	P80S-003XP		
4	8	0.875	150	P80S-0041F		
6	12	1.000	175	P80S-0043P		
8	12	1.125	195	P80S-0046W		
10	16	1.250	250	P80S-004AY		
12	20	1.250	255	P80S-004AZ		
14	20	1.375	270			
16	20	1.500	295			
18	20	1.625	320			
20	24	1.625	335			
24	24	1.875	380			
30	28	1.875	435			
36	28	2.250	510			
42	28	2.500	575			
48	32	2.750	635			

BOLT TABLE (B_A2AP_797 , STUD ASME RJ, OPTION CODE 797)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	110	P80S-003XK	R12	P75T-000JT
0.75	4	0.750	115	P80S-003XL	R14	P75T-000JU
1	4	0.875	130	P80S-0041B	R16	P75T-000JV
1.5	4	1.000	140	P80S-0043F	R20	P75T-000JW
2	8	0.875	150	P80S-0041F	R24	P75T-0008A
3	8	1.125	180	P80S-0046T	R35	P75T-0008E
4	8	1.250	230	P80S-004AU	R39	P75T-0008D
6	12	1.375	300	P80S-003ED	R46	P75T-0008C
8	12	1.625	345	P80S-005TY	R50	P75T-0008B
10	12	1.875	395	P80S-008P7	R54	P75T-0008L
12	16	2.000	445	P80S-005VN	R58	P75T-0008K
14	16	2.250	490	P80S-00P4J	R63	P75T-0008J
16	16	2.500	540		R67	
18	16	2.750	590		R71	
20	16	3.000	650		R75	
24	16	3.500	745		R79	

BOLT TABLE (B_A2AP_805 , STUD ASME RJ, OPTION CODE 805)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	125	P80S-003XN	R13	P75T-000KT
0.75	4	0.750	130	P80S-003XP	R16	P75T-000KU
1	4	0.875	140	P80S-0041D	R18	P75T-000KV
1.5	4	1.125	175	P80S-0046S	R23	P75T-000KW
2	8	1.000	180	P80S-0043R	R26	P75T-000L6
3	8	1.250	260	P80S-004B0	R32	P75T-000MC
4	8	1.500	305		R38	
6	8	2.000	410		R47	
8	12	2.000	450		R51	
10	12	2.500	575		R55	
12	12	2.750	635		R60	
14	14	3.000	695		R64	
16	14	3.000	755		R68	
18	16	3.000	815		R72	
20	16	3.000	875		R76	
24	18	3.000	950		R81	

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BRANCH TABLE (T_A2AP)

RUN PIPE SIZE (in) \ BRANCH SIZE (in)	0.5	0.75	1	1.5	2	3	4	6	8	10	12	14	16	18	20	24	30	36	42	48
0.5	TS																			
0.75		TS																		
1		TR	TS																	
1.5		TR	TR	TS																
2		L	TR	TR	TS															
3		L	L	TR	TR	TS														
4	L	L	L	L	TR	TR	TS													
6	L	L	L	L	L	TR	TR	TS												
8		L	L	L	L	L	TR	TR	TS											
10		L	L	L	L	L	TR	TR	TR	TS										
12		L	L	L	L	L	L	TR	TR	TR	TS									
14		L	L	L	L	L	L	TR	TR	TR	TR	TS								
16		L	L	L	L	L	L	TR	TR	TR	TR	TR	TS							
18		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TS						
20		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TR	TS					
24		L	L	L	L	L	L	L	9PD	TR	TR	TR	TR	TR	TR	TS				
30		L	L	L	L	L	L	L	9PD	TR	TR	TR	TR	TR	TR	TR	TS			
36		L	L	L	L	L	L	L	9PD	9PD	9PD	9PD	TR	TR	TR	TR	TR	TS		
42		L	L	L	L	L	L	L	9PD	9PD	9PD	9PD	TR	TR	TR	TR	TR	TR	TS	
48		L	L	L	L	L	L	L	9PD	9PD	9PD	9PD	9PD	9PD	9PD	TR	TR	TR	TR	TS

L : OUTLET
9PD : REINFORCING PAD 90 DEG
TS : STRAIGHT TEE
TR : REDUCING TEE

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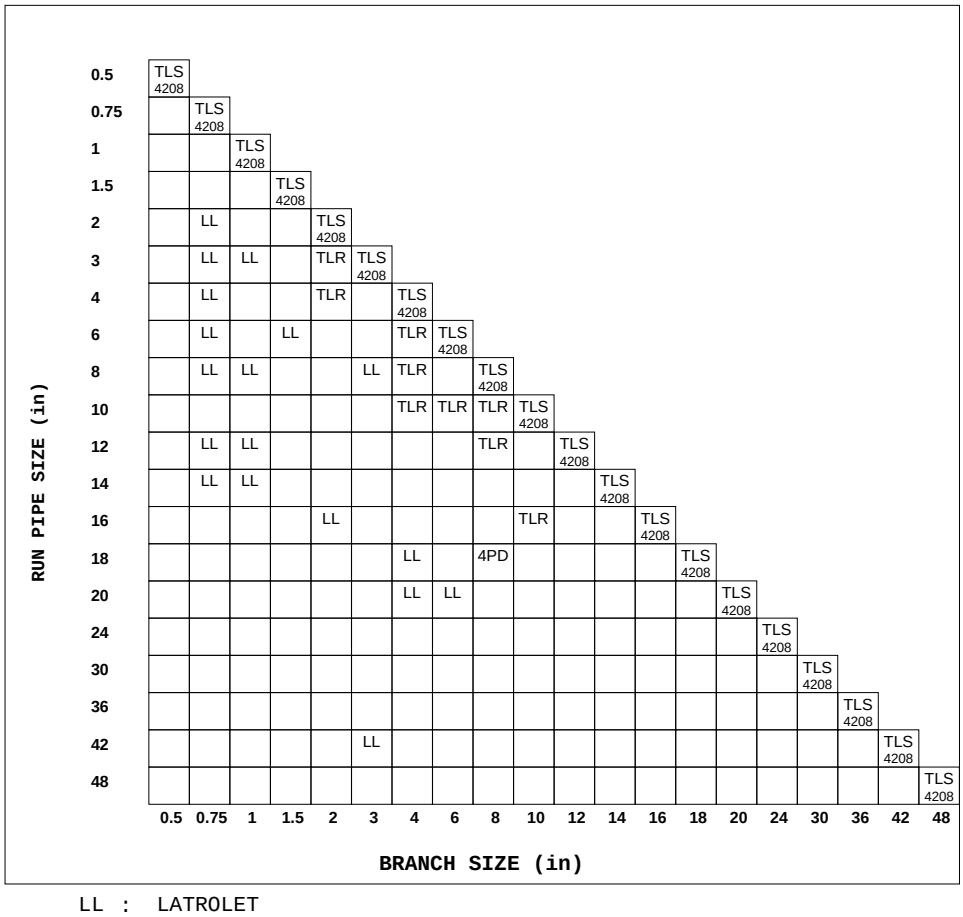
BRANCH TABLE (T_A2AP_2)



LL : LATROLET
TLS : STRAIGHT LATERAL TEE
TLR : REDUCING LATERAL TEE
4PD : REINFORCING PAD 45 DEG

INDRA
01-SEP-2014

PIPING CLASS

A2AP

REV NO. 2

BRANCH TABLE (T_A2AP_3)

RUN PIPE SIZE (in) \ BRANCH SIZE (in)	0.5	0.75	1	1.5	2	3	4	6	8	10	12	14	16	18	20	24	30	36	42	48
0.5																				
0.75		TLS																		
1		6PD	TLS																	
1.5		6PD	6PD	TLS																
2		6PD	6PD	6PD	TLS															
3		6PD	6PD	6PD	6PD	TLS														
4		6PD	6PD	6PD	6PD	6PD	TLS													
6		6PD	6PD	6PD	6PD	6PD	6PD	TLS												
8		6PD	6PD	6PD	6PD	6PD	6PD	6PD	TLS											
10		6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	TLS										
12		6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	TLS									
14		6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	TLS								
16		6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	TLS							
18		6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	TLS						
20		6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	TLS					
24		6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	TLS				
30		6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	TLS			
36		6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	TLS		
42		6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	TLS	
48		6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	TLS

TLS : STRAIGHT LATERAL TEE
6PD : REINFORCING PAD 60 DEG

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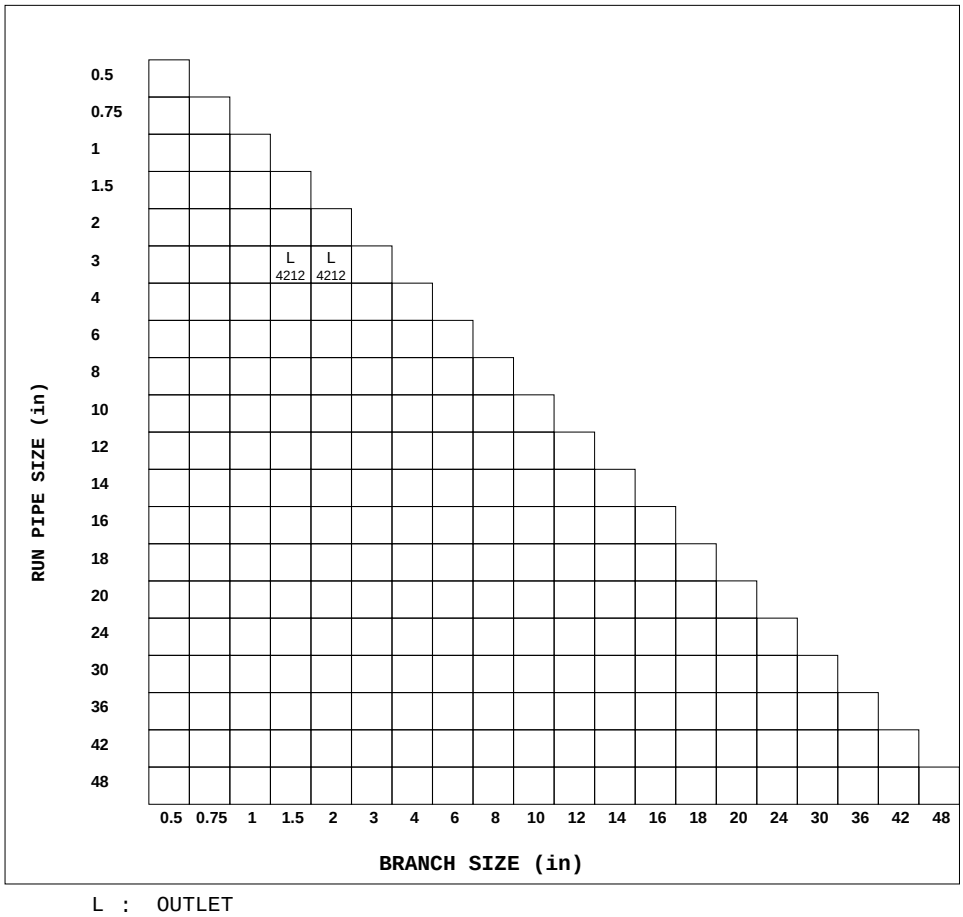
01-SEP-2014

PIPING CLASS
A2AP REV NO. 2

BRANCH TABLE (T_A2AP_4)



L : OUTLET

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01-SEP-2014

PIPING CLASS

A2AP01 REV NO. 2

Material : Killed CS
Rating : ASME CLASS 150
Flange Face : RF
C.A.(mm) : 3.00
Gasket : Spiral Wound
Service : PROCESS - GENERAL PROCESS NON SOUR, NON CORROSIVE
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
2	USE OF SOFT SEATED BALL, PLUG AND BUTTERFLY VALVES SHALL BE LIMITED TO MAXIMUM OF 204DEGC (400DEGF)

DETAIL NOTES :

NO.	DESCRIPTION
38	TO BE USED FOR STAND PIPE

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
24	FULL PORT (Q)
200	WITH JACK SCREW (FO)
541	NPT(F) (CA,L)
714	SW - NPT(F) (V)
773	CLASS 300 (B,F,G)
781	CLASS 600 (B,F,G)
797	CLASS 1500 (B,F,G)
4212	WELDOLET FOR STAND PIPE (L)

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PIPING CLASS
A2AP01 REV NO. 2

PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P01A-0078U	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE Licensor-1	
1	0.75		SCH160		P01A-0078V	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE Licensor-1	
1	1		SCH160		P01A-0078W	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE Licensor-1	
1	1.5		SCH160		P01A-0078X	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE Licensor-1	
1	2		XS		P01A-0078Y	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Licensor-1	
1	3		STD		P01A-0078Z	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Licensor-1	
1	4		STD		P01A-007B3	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Licensor-1	
1	6		STD		P01A-007B8	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Licensor-1	
1	8		SCH20		P01A-007B9	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Licensor-1	
1	10		SCH20		P01A-007B4	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Licensor-1	
1	12		SCH30		P01A-007CF	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Licensor-1	
1	14		SCH20		P01A-007B6	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Licensor-1	
1	16		SCH20		P01A-007B7	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Licensor-1	
1	18		SCH20		P01A-007BA	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE Licensor-1	
1	20		STD		P01A-007BB	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE Licensor-1	
1	24		STD		P01A-007BC	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE Licensor-1	
1	30		STD		P01A-007TY	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE Licensor-1	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P02B-00078	90 degree elbow ASTM A105 Class 6000 ASME B16.11 SW Licensor-1	
1	0.75				P02B-00079	90 degree elbow ASTM A105 Class 6000 ASME B16.11 SW Licensor-1	
1	1				P02B-0007A	90 degree elbow ASTM A105 Class 6000 ASME B16.11 SW Licensor-1	
1	1.5				P02B-0007B	90 degree elbow ASTM A105 Class 6000 ASME B16.11 SW Licensor-1	
1	2		XS		P02A-003R7	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	3		STD		P02A-003R8	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	4		STD		P02A-003T8	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	6		STD		P02A-003TG	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	8		SCH20		P02A-003TH	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	10		SCH20		P02A-003T9	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	12		SCH30		P02A-003UH	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	14		SCH20		P02A-003TB	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	16		SCH20		P02A-003TC	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	18		SCH20		P02A-003TD	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	20		STD		P02A-003TE	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	24		STD		P02A-003TF	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	30		STD		P02A-0045P	90 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius Licensor-1	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P03B-0006W	45 degree elbow ASTM A105 Class 6000 ASME B16.11 SW Licensor-1	
1	0.75				P03B-0006X	45 degree elbow ASTM A105 Class 6000 ASME B16.11 SW Licensor-1	
1	1				P03B-0006Y	45 degree elbow ASTM A105 Class 6000 ASME B16.11 SW Licensor-1	
1	1.5				P03B-0006Z	45 degree elbow ASTM A105 Class 6000 ASME B16.11 SW Licensor-1	
1	2		XS		P03A-003MW	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	3		STD		P03A-003MX	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	4		STD		P03A-003PX	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	6		STD		P03A-003R5	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	8		SCH20		P03A-003R6	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	10		SCH20		P03A-003PY	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	12		SCH30		P03A-003S6	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	14		SCH20		P03A-003R0	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	16		SCH20		P03A-003R1	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	18		SCH20		P03A-003R2	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	20		STD		P03A-003R3	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	24		STD		P03A-003R4	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	30		STD		P03A-0043A	45 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius Licensor-1	

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PIPING CLASS
A2AP01 REV NO. 2

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P21B-0006T	Straight tee ASTM A105 Class 6000 ASME B16.11 SW Licensor-1	
1	0.75				P21B-0006U	Straight tee ASTM A105 Class 6000 ASME B16.11 SW Licensor-1	
1	1				P21B-0006V	Straight tee ASTM A105 Class 6000 ASME B16.11 SW Licensor-1	
1	1.5				P21B-0006W	Straight tee ASTM A105 Class 6000 ASME B16.11 SW Licensor-1	
1	2		XS		P21A-0048L	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	3		STD		P21A-0048M	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	4		STD		P21A-004AL	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	6		STD		P21A-004AS	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	8		SCH20		P21A-004AT	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	10		SCH20		P21A-004AM	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	12		SCH30		P21A-004BZ	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	14		SCH20		P21A-004AP	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	16		SCH20		P21A-004AR	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	18		SCH20		P21A-004AU	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	20		STD		P21A-004AV	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	24		STD		P21A-004AW	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	30		STD		P21A-004NG	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	

STRAIGHT LATERAL TEE (TLS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75				P22B-00002	Straight lateral-tee ASTM A105 Class 6000 ASME B16.11 SW 60 degree Licensor-1	
1	1				P22B-0000G	Straight lateral-tee ASTM A105 Class 6000 ASME B16.11 SW 60 degree Licensor-1	
1	1.5				P22B-0000H	Straight lateral-tee ASTM A105 Class 6000 ASME B16.11 SW 60 degree Licensor-1	
1	2		XS		P22A-000HV	Straight lateral-tee ASTM A234 Grade WPB Seamless ASME B16.9 BW 60 degree Licensor-1	
1	3		STD		P22A-000DK	Straight lateral-tee ASTM A234 Grade WPB Seamless ASME B16.9 BW 60 degree Licensor-1	
1	4		STD		P22A-000HW	Straight lateral-tee ASTM A234 Grade WPB Seamless ASME B16.9 BW 60 degree Licensor-1	
1	6		STD		P22A-000HX	Straight lateral-tee ASTM A234 Grade WPB Seamless ASME B16.9 BW 60 degree Licensor-1	
1	8		SCH20		P22A-000EY	Straight lateral-tee ASTM A234 Grade WPB Seamless ASME B16.9 BW 60 degree Licensor-1	
1	10		SCH20		P22A-000ET	Straight lateral-tee ASTM A234 Grade WPB Seamless ASME B16.9 BW 60 degree Licensor-1	
1	12		SCH30		P22A-000HZ	Straight lateral-tee ASTM A234 Grade WPB Seamless ASME B16.9 BW 60 degree Licensor-1	
1	14		SCH20		P22A-000J0	Straight lateral-tee ASTM A234 Grade WPB Seamless ASME B16.9 BW 60 degree Licensor-1	
1	16		SCH20		P22A-000HU	Straight lateral-tee ASTM A234 Grade WPB Seamless ASME B16.9 BW 60 degree Licensor-1	
1	18		SCH20		P22A-000GZ	Straight lateral-tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW 60 degree Licensor-1	
1	20		STD		P22A-000H0	Straight lateral-tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW 60 degree Licensor-1	
1	24		STD		P22A-000H1	Straight lateral-tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW 60 degree Licensor-1	
1	30		STD		P22A-000H2	Straight lateral-tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW 60 degree Licensor-1	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75			P24B-000BP	Reducing tee ASTM A105 Class 6000 ASME B16.11 SW Licensor-1	
1	1.5	0.75			P24B-000BR	Reducing tee ASTM A105 Class 6000 ASME B16.11 SW Licensor-1	
1	1.5	1			P24B-000BS	Reducing tee ASTM A105 Class 6000 ASME B16.11 SW Licensor-1	
1	2	1	XS	SCH160	P24A-00K0V	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	2	1.5	XS	SCH160	P24A-00K0W	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	3	1.5	STD	SCH160	P24A-00K0X	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	3	2	STD	XS	P24A-00K0Y	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	4	2	STD	XS	P24A-00K5X	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	4	3	STD	STD	P24A-00K5Y	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	6	3	STD	STD	P24A-00K64	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	6	4	STD	STD	P24A-00K65	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	8	4	SCH20	STD	P24A-00K66	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	8	6	SCH20	STD	P24A-00K67	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	10	4	SCH20	STD	P24A-00K68	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	10	6	SCH20	STD	P24A-00K69	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	10	8	SCH20	SCH20	P24A-00K6A	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	12	6	SCH30	STD	P24A-00KBJ	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	12	8	SCH30	SCH20	P24A-00KBK	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	12	10	SCH30	SCH20	P24A-00KBH	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	14	6	SCH20	STD	P24A-00K6G	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	

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PIPING CLASS
A2AP01 REV NO. 2

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14	8	SCH20	SCH20	P24A-00K6H	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	14	10	SCH20	SCH20	P24A-00K6E	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	14	12	SCH20	SCH30	P24A-00KBL	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	16	6	SCH20	STD	P24A-00K6M	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	16	8	SCH20	SCH20	P24A-00K6N	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	16	10	SCH20	SCH20	P24A-00K6J	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	16	12	SCH20	SCH30	P24A-00KBM	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	16	14	SCH20	SCH20	P24A-00K6L	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	18	8	SCH20	SCH20	P24A-00K6U	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	18	10	SCH20	SCH20	P24A-00K6P	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	18	12	SCH20	SCH30	P24A-00KBN	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	18	14	SCH20	SCH20	P24A-00K6S	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	18	16	SCH20	SCH20	P24A-00K6T	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	20	8	STD	SCH20	P24A-00K70	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	20	10	STD	SCH20	P24A-00K6V	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	20	12	STD	SCH30	P24A-00KBP	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	20	14	STD	SCH20	P24A-00K6X	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	20	16	STD	SCH20	P24A-00K6Y	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	20	18	STD	SCH20	P24A-00K6Z	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	24	10	STD	SCH20	P24A-00KXG	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	24	12	STD	SCH30	P24A-00KBR	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	24	14	STD	SCH20	P24A-00K72	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	24	16	STD	SCH20	P24A-00K73	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	24	18	STD	SCH20	P24A-00K74	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	24	20	STD	STD	P24A-00K75	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	30	10	STD	SCH20	P24A-00M4H	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	30	12	STD	SCH30	P24A-00M4J	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	30	14	STD	SCH20	P24A-00M4K	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	30	16	STD	SCH20	P24A-00M4L	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	30	18	STD	SCH20	P24A-00M4M	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	30	20	STD	STD	P24A-00M4N	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	30	24	STD	STD	P24A-00M4P	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	STD	XS	P27A-00EL1	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	4	2	STD	XS	P27A-00ES5	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	4	3	STD	STD	P27A-00ES6	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	6	3	STD	STD	P27A-00ES9	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	6	4	STD	STD	P27A-00ESA	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	8	4	SCH20	STD	P27A-00ESB	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	8	6	SCH20	STD	P27A-00ESC	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	10	4	SCH20	STD	P27A-00ESD	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	10	6	SCH20	STD	P27A-00ESE	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	10	8	SCH20	SCH20	P27A-00ESF	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	12	6	SCH30	STD	P27A-00EW1	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	12	8	SCH30	SCH20	P27A-00EW2	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	12	10	SCH30	SCH20	P27A-00EW0	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	14	6	SCH20	STD	P27A-00ESM	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	14	8	SCH20	SCH20	P27A-00ESN	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	14	10	SCH20	SCH20	P27A-00ESK	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	14	12	SCH20	SCH30	P27A-00EW3	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	16	8	SCH20	SCH20	P27A-00EST	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	16	10	SCH20	SCH20	P27A-00ESP	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	16	12	SCH20	SCH30	P27A-00EW4	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	16	14	SCH20	SCH20	P27A-00ESS	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	18	10	SCH20	SCH20	P27A-00ESU	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	18	12	SCH20	SCH30	P27A-00EW5	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	18	14	SCH20	SCH20	P27A-00ESW	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	18	16	SCH20	SCH20	P27A-00ESX	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	20	12	STD	SCH30	P27A-00EW6	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	20	14	STD	SCH20	P27A-00ESZ	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	20	16	STD	SCH20	P27A-00ET0	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	20	18	STD	SCH20	P27A-00ET1	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	24	16	STD	SCH20	P27A-00ET2	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	24	18	STD	SCH20	P27A-00ET3	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	24	20	STD	STD	P27A-00ET4	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	30	20	STD	STD	P27A-00GKG	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	30	24	STD	STD	P27A-00GKH	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	STD	XS	P28A-00BPS	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	4	2	STD	XS	P28A-00BVZ	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	4	3	STD	STD	P28A-00BW0	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	6	3	STD	STD	P28A-00BW3	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	6	4	STD	STD	P28A-00BW4	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	8	4	SCH20	STD	P28A-00BW5	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	8	6	SCH20	STD	P28A-00BW6	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	10	4	SCH20	STD	P28A-00BW7	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	10	6	SCH20	STD	P28A-00BW8	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	10	8	SCH20	SCH20	P28A-00BW9	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	12	6	SCH30	STD	P28A-00BZW	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	12	8	SCH30	SCH20	P28A-00BZX	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	12	10	SCH30	SCH20	P28A-00BZV	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	14	6	SCH20	STD	P28A-00BWF	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	14	8	SCH20	SCH20	P28A-00BWG	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	14	10	SCH20	SCH20	P28A-00BWD	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	14	12	SCH20	SCH30	P28A-00BZY	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	16	8	SCH20	SCH20	P28A-00BWL	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	16	10	SCH20	SCH20	P28A-00BWH	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	16	12	SCH20	SCH30	P28A-00BZZ	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	16	14	SCH20	SCH20	P28A-00BWK	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	18	10	SCH20	SCH20	P28A-00BWM	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	18	12	SCH20	SCH30	P28A-00C00	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	18	14	SCH20	SCH20	P28A-00BWP	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	18	16	SCH20	SCH20	P28A-00BWR	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	20	12	STD	SCH30	P28A-00C01	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	20	14	STD	SCH20	P28A-00BWT	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	20	16	STD	SCH20	P28A-00BWU	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	20	18	STD	SCH20	P28A-00BWV	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	24	16	STD	SCH20	P28A-00BWW	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	24	18	STD	SCH20	P28A-00BWX	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	24	20	STD	STD	P28A-00BWY	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	30	20	STD	STD	P28A-00DBD	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	30	24	STD	STD	P28A-00DBE	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P29B-0005C	Cap ASTM A105 Class 6000 ASME B16.11 SW Licensor-1	
1	0.75				P29B-0005D	Cap ASTM A105 Class 6000 ASME B16.11 SW Licensor-1	
1	1				P29B-0005E	Cap ASTM A105 Class 6000 ASME B16.11 SW Licensor-1	
1	1.5				P29B-0005F	Cap ASTM A105 Class 6000 ASME B16.11 SW Licensor-1	
1	2		XS		P29A-00326	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	3		STD		P29A-00327	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	4		STD		P29A-0034R	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	6		STD		P29A-00353	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	8		SCH20		P29A-00354	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	

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CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	10		SCH20		P29A-0034S	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	12		SCH30		P29A-0036E	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	14		SCH20		P29A-0034U	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	16		SCH20		P29A-0034V	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	18		SCH20		P29A-0034W	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	20		STD		P29A-0034X	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	24		STD		P29A-0034Y	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	30		STD		P29A-003GG	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
541	0.75				P29B-00069	Cap ASTM A105 Class 6000 ASME B16.11 NPT Licensor-1	
541	1				P29B-0006N	Cap ASTM A105 Class 6000 ASME B16.11 NPT Licensor-1	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P41A-0017X	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Licensor-1	
1	0.75		XXS		P41A-0017Y	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Licensor-1	
1	1		XXS		P41A-0017Z	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Licensor-1	
1	1.5		XXS		P41A-00180	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Licensor-1	

CON SWAGED NIPPLE (SNC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	SCH160	P42A-000U0	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S) Licensor-1	
1	1	0.5	SCH160	SCH160	P42A-000U1	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S) Licensor-1	
1	1	0.75	SCH160	SCH160	P42A-000U2	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S) Licensor-1	
1	1.5	0.5	SCH160	SCH160	P42A-000U3	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S) Licensor-1	
1	1.5	0.75	SCH160	SCH160	P42A-000U4	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S) Licensor-1	
1	1.5	1	SCH160	SCH160	P42A-000U5	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S) Licensor-1	
1	2	0.5	XS	SCH160	P42A-000U6	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S) Licensor-1	
1	2	0.75	XS	SCH160	P42A-000U7	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S) Licensor-1	
1	2	1	XS	SCH160	P42A-000U8	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S) Licensor-1	
1	2	1.5	XS	SCH160	P42A-000U9	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S) Licensor-1	
1	3	1.5	STD	SCH160	P42A-000UA	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S) Licensor-1	

ECC SWAGED NIPPLE (SNE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	SCH160	P43A-000K3	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S) Licensor-1	
1	1	0.5	SCH160	SCH160	P43A-000K4	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S) Licensor-1	
1	1	0.75	SCH160	SCH160	P43A-000K5	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S) Licensor-1	
1	1.5	0.5	SCH160	SCH160	P43A-000K6	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S) Licensor-1	
1	1.5	0.75	SCH160	SCH160	P43A-000K7	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S) Licensor-1	
1	1.5	1	SCH160	SCH160	P43A-000K8	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S) Licensor-1	
1	2	0.5	XS	SCH160	P43A-000K9	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S) Licensor-1	
1	2	0.75	XS	SCH160	P43A-000KA	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S) Licensor-1	
1	2	1	XS	SCH160	P43A-000KB	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S) Licensor-1	
1	2	1.5	XS	SCH160	P43A-000KC	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S) Licensor-1	
1	3	1.5	STD	SCH160	P43A-000KD	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S) Licensor-1	

COUPLING (CPS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P47B-0007L	Coupling ASTM A105 Class 6000 ASME B16.11 SW - SW Licensor-1	
1	0.75				P47B-0007M	Coupling ASTM A105 Class 6000 ASME B16.11 SW - SW Licensor-1	
1	1				P47B-0007N	Coupling ASTM A105 Class 6000 ASME B16.11 SW - SW Licensor-1	
1	1.5				P47B-0007P	Coupling ASTM A105 Class 6000 ASME B16.11 SW - SW Licensor-1	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5 - 2.5	0.75			P31B-013AG	Outlet ASTM A105 Class 6000 MSS SP-97 SW Licensor-1	
1	3 - 10	0.75			P31B-013AH	Outlet ASTM A105 Class 6000 MSS SP-97 SW Licensor-1	
1	12 and larger	0.75			P31B-013AJ	Outlet ASTM A105 Class 6000 MSS SP-97 SW Licensor-1	

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OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3 - 10	1			P31B-013AK	Outlet ASTM A105 Class 6000 MSS SP-97 SW Licensor-1	
1	12 and larger	1			P31B-013AL	Outlet ASTM A105 Class 6000 MSS SP-97 SW Licensor-1	
1	4 - 5	1.5			P31B-013AM	Outlet ASTM A105 Class 6000 MSS SP-97 SW Licensor-1	
1	6 - 8	1.5			P31B-013AN	Outlet ASTM A105 Class 6000 MSS SP-97 SW Licensor-1	
1	10 - 18	1.5			P31B-013AP	Outlet ASTM A105 Class 6000 MSS SP-97 SW Licensor-1	
1	20 and larger	1.5			P31B-013AR	Outlet ASTM A105 Class 6000 MSS SP-97 SW Licensor-1	
541	1	0.75			P31B-01367	Outlet ASTM A105 Class 6000 MSS SP-97 NPT Licensor-1	
541	1.5 - 2.5	0.75			P31B-013A7	Outlet ASTM A105 Class 6000 MSS SP-97 NPT Licensor-1	
541	3 - 10	0.75			P31B-013A8	Outlet ASTM A105 Class 6000 MSS SP-97 NPT Licensor-1	
541	12 and larger	0.75			P31B-013A6	Outlet ASTM A105 Class 6000 MSS SP-97 NPT Licensor-1	
1	6	2	STD	XS	P31B-00XMV	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	8	2	SCH20	XS	P31B-00XMW	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	10	2	SCH20	XS	P31B-00XMY	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	12	2	SCH30	XS	P31B-00XT7	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	14	2	SCH20	XS	P31B-00XN3	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	16	2	SCH20	XS	P31B-00XN6	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	18	2	SCH20	XS	P31B-00XN9	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	20	2	STD	XS	P31B-00XND	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	24	2	STD	XS	P31B-00XNH	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	30	2	STD	XS	P31B-00ZHA	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	8	3	SCH20	STD	P31B-00XMX	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	10	3	SCH20	STD	P31B-00XMZ	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	12	3	SCH30	STD	P31B-00XT8	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	14	3	SCH20	STD	P31B-00XN4	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	16	3	SCH20	STD	P31B-00XN7	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	18	3	SCH20	STD	P31B-00XNA	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	20	3	STD	STD	P31B-00XNE	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	24	3	STD	STD	P31B-00XNJ	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	30	3	STD	STD	P31B-00ZHB	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	12	4	SCH30	STD	P31B-00XT9	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	14	4	SCH20	STD	P31B-00XN5	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	16	4	SCH20	STD	P31B-00XN8	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	18	4	SCH20	STD	P31B-00XNB	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	20	4	STD	STD	P31B-00XNF	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	24	4	STD	STD	P31B-00XNK	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	30	4	STD	STD	P31B-00ZHC	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	18	6	SCH20	STD	P31B-00XNC	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	20	6	STD	STD	P31B-00XNG	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	24	6	STD	STD	P31B-00XNL	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	30	6	STD	STD	P31B-00ZHD	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
4212	3	2	STD	XS	P31B-013BM	Outlet ASTM A105 MSS SP-97 BW Licensor-1	38

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30B-00067	Plug ASTM A105 ASME B16.11 NPT Round head Licensor-1	
1	0.75				P30B-00068	Plug ASTM A105 ASME B16.11 NPT Round head Licensor-1	
1	1				P30B-00069	Plug ASTM A105 ASME B16.11 NPT Round head Licensor-1	
1	1.5				P30B-0006A	Plug ASTM A105 ASME B16.11 NPT Round head Licensor-1	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P61B-00A2J	Flange SW ASTM A105 Class 150 ASME B16.5 RF Licensor-1	
1	0.75		SCH160		P61B-00A2K	Flange SW ASTM A105 Class 150 ASME B16.5 RF Licensor-1	
1	1		SCH160		P61B-00A2L	Flange SW ASTM A105 Class 150 ASME B16.5 RF Licensor-1	
1	1.5		SCH160		P61B-00A2M	Flange SW ASTM A105 Class 150 ASME B16.5 RF Licensor-1	
1	2		XS		P61B-009YN	Flange WN ASTM A105 Class 150 ASME B16.5 RF Licensor-1	
1	3		STD		P61B-009YP	Flange WN ASTM A105 Class 150 ASME B16.5 RF Licensor-1	
1	4		STD		P61B-009YR	Flange WN ASTM A105 Class 150 ASME B16.5 RF Licensor-1	
1	6		STD		P61B-009ZG	Flange WN ASTM A105 Class 150 ASME B16.5 RF Licensor-1	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	8		SCH20		P61B-009ZH	Flange WN ASTM A105 Class 150 ASME B16.5 RF Licensor-1	
1	10		SCH20		P61B-009Z9	Flange WN ASTM A105 Class 150 ASME B16.5 RF Licensor-1	
1	12		SCH30		P61B-00A2N	Flange WN ASTM A105 Class 150 ASME B16.5 RF Licensor-1	
1	14		SCH20		P61B-009ZB	Flange WN ASTM A105 Class 150 ASME B16.5 RF Licensor-1	
1	16		SCH20		P61B-009ZC	Flange WN ASTM A105 Class 150 ASME B16.5 RF Licensor-1	
1	18		SCH20		P61B-009ZD	Flange WN ASTM A105 Class 150 ASME B16.5 RF Licensor-1	
1	20		STD		P61B-009ZE	Flange WN ASTM A105 Class 150 ASME B16.5 RF Licensor-1	
1	24		STD		P61B-009ZF	Flange WN ASTM A105 Class 150 ASME B16.5 RF Licensor-1	
1	30		STD		P61B-00B1N	Flange WN ASTM A105 Class 150 ASME B16.47 Series B RF Licensor-1	
773	0.5		SCH160		P61B-00A28	Flange SW ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
773	0.75		SCH160		P61B-00A29	Flange SW ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
773	1		SCH160		P61B-00A2A	Flange SW ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
773	1.5		SCH160		P61B-00A2B	Flange SW ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
773	2		XS		P61B-009YW	Flange WN ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
773	3		STD		P61B-009YX	Flange WN ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
773	4		STD		P61B-009YY	Flange WN ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
773	6		STD		P61B-00A07	Flange WN ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
773	8		SCH20		P61B-00A08	Flange WN ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
773	10		SCH20		P61B-00A00	Flange WN ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
773	12		SCH30		P61B-00A2P	Flange WN ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
773	14		SCH20		P61B-00A02	Flange WN ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
773	16		SCH20		P61B-00A03	Flange WN ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
773	18		SCH20		P61B-00A04	Flange WN ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
773	20		STD		P61B-00A05	Flange WN ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
773	24		STD		P61B-00A06	Flange WN ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
773	30		STD		P61B-00B1P	Flange WN ASTM A105 Class 300 ASME B16.47 Series B RF Licensor-1	
781	4		STD		P61B-00A10	Flange WN ASTM A105 Class 600 ASME B16.5 RF Licensor-1	
781	6		STD		P61B-00A11	Flange WN ASTM A105 Class 600 ASME B16.5 RF Licensor-1	
781	8		SCH20		P61B-00ABB	Flange WN ASTM A105 Class 600 ASME B16.5 RF Licensor-1	
781	10		SCH20		P61B-00BAV	Flange WN ASTM A105 Class 600 ASME B16.5 RF Licensor-1	
797	8		SCH20		P61B-00D33	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ Licensor-1	
797	10		SCH20		P61B-00D30	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ Licensor-1	
797	12		SCH30		P61B-00D31	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ Licensor-1	
797	14		SCH20		P61B-00D32	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ Licensor-1	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67B-002D6	Blind flange ASTM A105 Class 150 ASME B16.5 RF Licensor-1	
1	0.75				P67B-002D7	Blind flange ASTM A105 Class 150 ASME B16.5 RF Licensor-1	
1	1				P67B-002D8	Blind flange ASTM A105 Class 150 ASME B16.5 RF Licensor-1	
1	1.5				P67B-002D9	Blind flange ASTM A105 Class 150 ASME B16.5 RF Licensor-1	
1	2				P67B-002DB	Blind flange ASTM A105 Class 150 ASME B16.5 RF Licensor-1	
1	3				P67B-002DC	Blind flange ASTM A105 Class 150 ASME B16.5 RF Licensor-1	
1	4				P67B-002DD	Blind flange ASTM A105 Class 150 ASME B16.5 RF Licensor-1	
1	6				P67B-002DE	Blind flange ASTM A105 Class 150 ASME B16.5 RF Licensor-1	
1	8				P67B-002DF	Blind flange ASTM A105 Class 150 ASME B16.5 RF Licensor-1	
1	10				P67B-002DA	Blind flange ASTM A105 Class 150 ASME B16.5 RF Licensor-1	
1	12				P67B-002FK	Blind flange ASTM A105 Class 150 ASME B16.5 RF Licensor-1	
1	14				P67B-002FL	Blind flange ASTM A105 Class 150 ASME B16.5 RF Licensor-1	
1	16				P67B-002FM	Blind flange ASTM A105 Class 150 ASME B16.5 RF Licensor-1	
1	18				P67B-002FN	Blind flange ASTM A105 Class 150 ASME B16.5 RF Licensor-1	
1	20				P67B-002FP	Blind flange ASTM A105 Class 150 ASME B16.5 RF Licensor-1	
1	24				P67B-002FR	Blind flange ASTM A105 Class 150 ASME B16.5 RF Licensor-1	
1	30				P67B-002FS	Blind flange ASTM A105 Class 150 ASME B16.47 Series B RF Licensor-1	

REDUCING FLANGE (FR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5		SCH160	P62B-000MZ	Reducing flange SW ASTM A105 Class 150 ASME B16.5 RF Licensor-1	

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GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000L8	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000L9	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000LA	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000LB	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000LH	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000LL	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000LM	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	6				P73T-000LN	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	8				P73T-000LP	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	10				P73T-000LC	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	12				P73T-000LD	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	14				P73T-000LE	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	16				P73T-000LF	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	18				P73T-000LG	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	20				P73T-000LJ	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	24				P73T-000LK	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	30				P73T-000LT	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	0.5				P73T-000FT	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	0.75				P73T-000FU	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	3				P73T-000G5	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	4				P73T-000G6	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	6				P73T-000G7	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	8				P73T-000G8	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	10				P73T-000FX	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	12				P73T-000FY	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	14				P73T-000FZ	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	16				P73T-000G0	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	18				P73T-000G1	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	20				P73T-000G3	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	24				P73T-000G4	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	30				P73T-000H9	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	4				P73T-000JM	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	6				P73T-000JN	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	8				P73T-000JP	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	10				P73T-000JC	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
797	8				P75T-0008B	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	10				P75T-0008L	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	12				P75T-0008K	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	14				P75T-0008J	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-16				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	

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BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	18-24				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
1	30				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
773	0.5-10				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
773	12-30				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
781	0.5-6				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
781	8-12				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
797	3-14				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81B-001CX	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated Licensor-1	
1	0.75				P81B-001CY	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated Licensor-1	
1	1				P81B-001CZ	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated Licensor-1	
1	1.5				P81B-001D0	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated Licensor-1	
1	2				P81C-004TN	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated Licensor-1	
1	3				P81C-004TP	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated Licensor-1	
1	4				P81C-004TR	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated Licensor-1	
1	6				P81C-004TS	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated Licensor-1	
1	8				P81C-004TT	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated Licensor-1	
1	10				P81C-004TL	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated Licensor-1	
1	12				P81C-004TM	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated Licensor-1	
1	14				P81C-004TU	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated Licensor-1	
1	16				P81C-004TV	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated Licensor-1	
1	18				P81C-004TW	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated Licensor-1	
1	20				P81C-004TX	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated Licensor-1	
1	24				P81C-004TY	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated Licensor-1	
714	0.5				P81B-002S7	Gate valve ASTM A105 Class 800 API 602 SW - NPT Trim number 8 BB-BG-OS&Y Handwheel operated Licensor-1	
714	0.75				P81B-002F5	Gate valve ASTM A105 Class 800 API 602 SW - NPT Trim number 8 BB-BG-OS&Y Handwheel operated Licensor-1	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82B-0014L	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated Licensor-1	
1	0.75				P82B-0014M	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated Licensor-1	
1	1				P82B-0014N	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated Licensor-1	
1	1.5				P82B-0014P	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated Licensor-1	
1	2				P82C-002BH	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated Licensor-1	
1	3				P82C-002BJ	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated Licensor-1	
1	4				P82C-002BK	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated Licensor-1	
1	6				P82C-002BL	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated Licensor-1	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83B-000WE	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover Licensor-1	
1	0.75				P83B-000WF	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover Licensor-1	
1	1				P83B-000WG	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover Licensor-1	
1	1.5				P83B-000WH	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover Licensor-1	
1	2				P83C-00299	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover Licensor-1	

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CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3				P83C-0029C	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover Licensor-1	
1	4				P83C-0029D	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover Licensor-1	
1	6				P83C-0029E	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover Licensor-1	
1	8				P83C-0029F	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover Licensor-1	
1	10				P83C-00294	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover Licensor-1	
1	12				P83C-00295	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover Licensor-1	
1	14				P83C-00296	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover Licensor-1	
1	16				P83C-00297	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover Licensor-1	
1	18				P83C-00298	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover Licensor-1	
1	20				P83C-0029A	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover Licensor-1	
1	24				P83C-0029B	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover Licensor-1	

BALL VALVE (Q)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P84B-00145	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design Licensor-1	
1	0.75				P84B-00146	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design Licensor-1	
1	1				P84B-00147	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design Licensor-1	
1	1.5				P84B-00148	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design Licensor-1	
1	2				P84C-005YK	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design Licensor-1	
1	3				P84C-005YL	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design Licensor-1	
1	4				P84C-005YM	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design Licensor-1	
1	6				P84C-005YP	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Reduced bore Fire tested design Licensor-1	
1	8				P84C-005YR	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Reduced bore Fire tested design Licensor-1	
24	0.5				P84B-00149	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design Licensor-1	
24	0.75				P84B-0014A	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design Licensor-1	
24	1				P84B-0014B	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design Licensor-1	
24	1.5				P84B-0014C	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design Licensor-1	
24	2				P84C-005YS	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design Licensor-1	
24	3				P84C-005YT	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design Licensor-1	
24	4				P84C-005YU	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design Licensor-1	
24	6				P84C-005YW	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design Licensor-1	
24	8				P84C-005YX	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design Licensor-1	

ORIFICE FLANGE (FO)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2		XS		P66B-0085G	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Licensor-1	
1	3		STD		P66B-0085H	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Licensor-1	
1	4		STD		P66B-0085J	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Licensor-1	
1	6		STD		P66B-0085K	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Licensor-1	
1	8		SCH20		P66B-0085L	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Licensor-1	
1	10		SCH20		P66B-0085F	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Licensor-1	
200	2		XS		P66B-0085R	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw Licensor-1	
200	3		STD		P66B-0085S	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw Licensor-1	
200	4		STD		P66B-0085T	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw Licensor-1	

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ORIFICE FLANGE (FO)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
200	6		STD		P66B-0085U	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw Licensor-1	
200	8		SCH20		P66B-0085V	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw Licensor-1	
200	10		SCH20		P66B-0085P	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw Licensor-1	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71B-00080	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	0.75				P71B-00081	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	1				P71B-00082	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	1.5				P71B-00083	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	2				P71B-00085	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	3				P71B-00086	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	4				P71B-00087	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	6				P71B-00088	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	8				P71B-00089	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	10				P71B-00084	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	12				P71B-0008S	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Licensor-1	

PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000BR	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	16				P72B-000BS	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	18				P72B-000BT	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	20				P72B-000BU	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	24				P72B-000BV	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	30				P72B-000BW	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF Licensor-1	

PADDLE SPACER (PS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000C7	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	16				P72B-000C8	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	18				P72B-000C9	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	20				P72B-000CA	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	24				P72B-000CB	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	30				P72B-000CC	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF Licensor-1	

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BOLT TABLE (B_A2AP01 , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	60	P80S-003V2		
0.75	4	0.500	65	P80S-003V3		
1	4	0.500	70	P80S-003V4		
1.5	4	0.500	75	P80S-003V5		
2	4	0.625	85	P80S-003XE		
3	4	0.625	95	P80S-003XG		
4	8	0.625	95	P80S-003XG		
6	8	0.750	105	P80S-003XJ		
8	8	0.750	110	P80S-003XK		
10	12	0.875	120	P80S-00419		
12	12	0.875	120	P80S-00419		
14	12	1.000	135	P80S-0043E		
16	16	1.000	140	P80S-0043F		
18	16	1.125	150	P80S-0046K		
20	20	1.125	160	P80S-0046M		
24	20	1.250	175	P80S-004AG		
30	44	0.750	145	P80S-003ZK		

BOLT TABLE (B_A2AP01_773 , STUD ASME RF, OPTION CODE 773)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-003V4		
0.75	4	0.625	75	P80S-003XC		
1	4	0.625	80	P80S-003XD		
1.5	4	0.750	95	P80S-00414		
2	8	0.625	90	P80S-003XF		
3	8	0.750	110	P80S-003XK		
4	8	0.750	115	P80S-003XL		
6	12	0.750	125	P80S-003XN		
8	12	0.875	140	P80S-0041D		
10	16	1.000	160	P80S-0043K		
12	16	1.125	175	P80S-0046S		
14	20	1.125	180	P80S-0046T		
16	20	1.250	190	P80S-004AK		
18	24	1.250	200	P80S-004AM		
20	24	1.250	210	P80S-004AP		
24	24	1.500	235	P80S-003F8		
30	36	1.375	285	P80S-003EA		

BOLT TABLE (B_A2AP01_781 , STUD ASME RF, OPTION CODE 781)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	80	P80S-003V6		
0.75	4	0.625	90	P80S-003XF		
1	4	0.625	95	P80S-003XG		
1.5	4	0.750	110	P80S-003XK		
2	8	0.625	110	P80S-003VC		
3	8	0.750	130	P80S-003XP		
4	8	0.875	150	P80S-0041F		
6	12	1.000	175	P80S-0043P		
8	12	1.125	195	P80S-0046W		
10	16	1.250	250	P80S-004AY		
12	20	1.250	255	P80S-004AZ		
14	20	1.375	270			
16	20	1.500	295			
18	20	1.625	320			
20	24	1.625	335			
24	24	1.875	380			
30	28	1.875	435			

BOLT TABLE (B_A2AP01_797 , STUD ASME RJ, OPTION CODE 797)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	110		R12	
0.75	4	0.750	115		R14	
1	4	0.875	130		R16	
1.5	4	1.000	140		R20	
2	8	0.875	150		R24	
3	8	1.125	180	P80S-0046T	R35	

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BOLT TABLE (B_A2AP01_797 , STUD ASME RJ, OPTION CODE 797)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
4	8	1.250	230	P80S-004AU	R39	
6	12	1.375	300	P80S-003ED	R46	
8	12	1.625	345	P80S-005TY	R50	P75T-0008B
10	12	1.875	395	P80S-008P7	R54	P75T-0008L
12	16	2.000	445	P80S-005VN	R58	P75T-0008K
14	16	2.250	490	P80S-00P4J	R63	P75T-0008J
16	16	2.500	540		R67	
18	16	2.750	590		R71	
20	16	3.000	650		R75	
24	16	3.500	745		R79	

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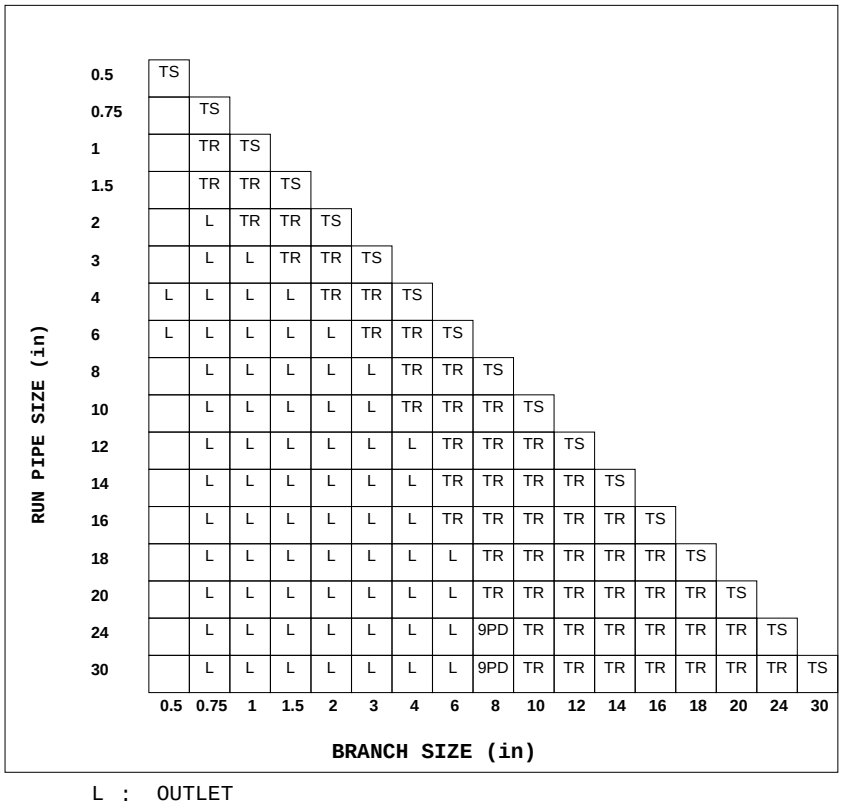
BRANCH TABLE (T_A2AP01)



RUN PIPE SIZE (in)	0.5	0.75	1	1.5	2	3	4	6	8	10	12	14	16	18	20	24	30
0.5	TS																
0.75		TS															
1		TR	TS														
1.5		TR	TR	TS													
2		L	TR	TR	TS												
3		L	L	TR	TR	TS											
4	L	L	L	L	TR	TR	TS										
6	L	L	L	L	L	TR	TR	TS									
8		L	L	L	L	L	TR	TR	TS								
10		L	L	L	L	L	TR	TR	TR	TS							
12		L	L	L	L	L	L	TR	TR	TR	TS						
14		L	L	L	L	L	L	TR	TR	TR	TR	TS					
16		L	L	L	L	L	L	TR	TR	TR	TR	TR	TS				
18		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TS			
20		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TR	TS		
24		L	L	L	L	L	L	L	9PD	TR	TR	TR	TR	TR	TR	TS	
30		L	L	L	L	L	L	L	9PD	TR	TR	TR	TR	TR	TR	TR	TS

L : OUTLET
9PD : REINFORCING PAD 90 DEG
TR : REDUCING TEE
TS : STRAIGHT TEE

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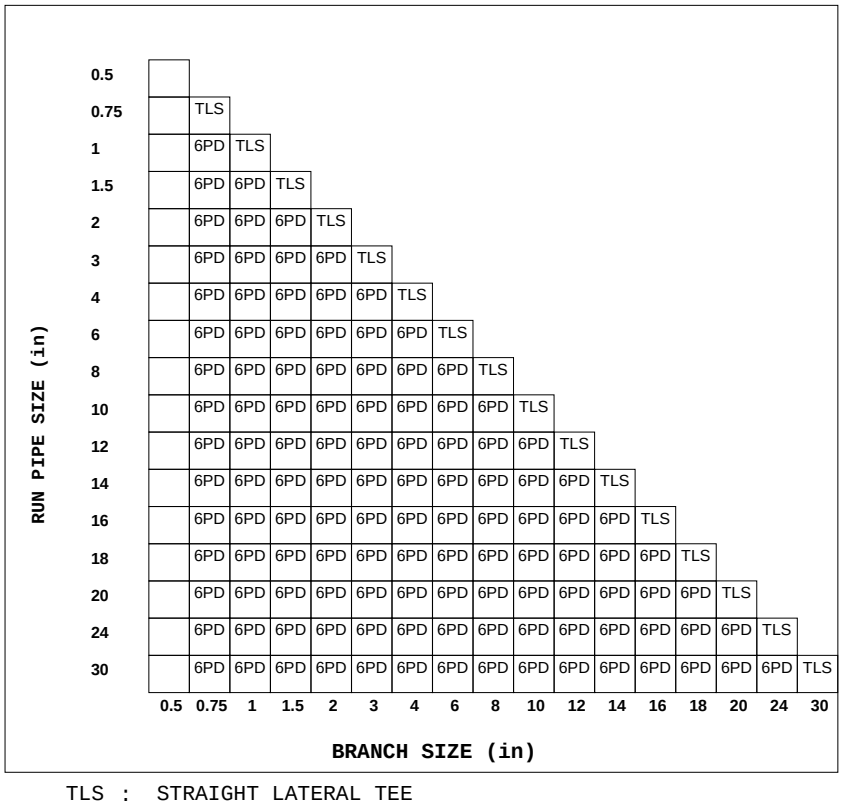
BRANCH TABLE (T_A2AP01_3)



RUN PIPE SIZE (in) \ BRANCH SIZE (in)	0.5	0.75	1	1.5	2	3	4	6	8	10	12	14	16	18	20	24	30
0.5																	
0.75		TLS															
1		6PD	TLS														
1.5		6PD	6PD	TLS													
2		6PD	6PD	6PD	TLS												
3		6PD	6PD	6PD	6PD	TLS											
4		6PD	6PD	6PD	6PD	6PD	TLS										
6		6PD	6PD	6PD	6PD	6PD	6PD	TLS									
8		6PD	6PD	6PD	6PD	6PD	6PD	6PD	TLS								
10		6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	TLS							
12		6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	TLS						
14		6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	TLS					
16		6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	TLS				
18		6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	TLS			
20		6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	TLS		
24		6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	TLS	
30		6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	TLS

TLS : STRAIGHT LATERAL TEE
6PD : REINFORCING PAD 60 DEG

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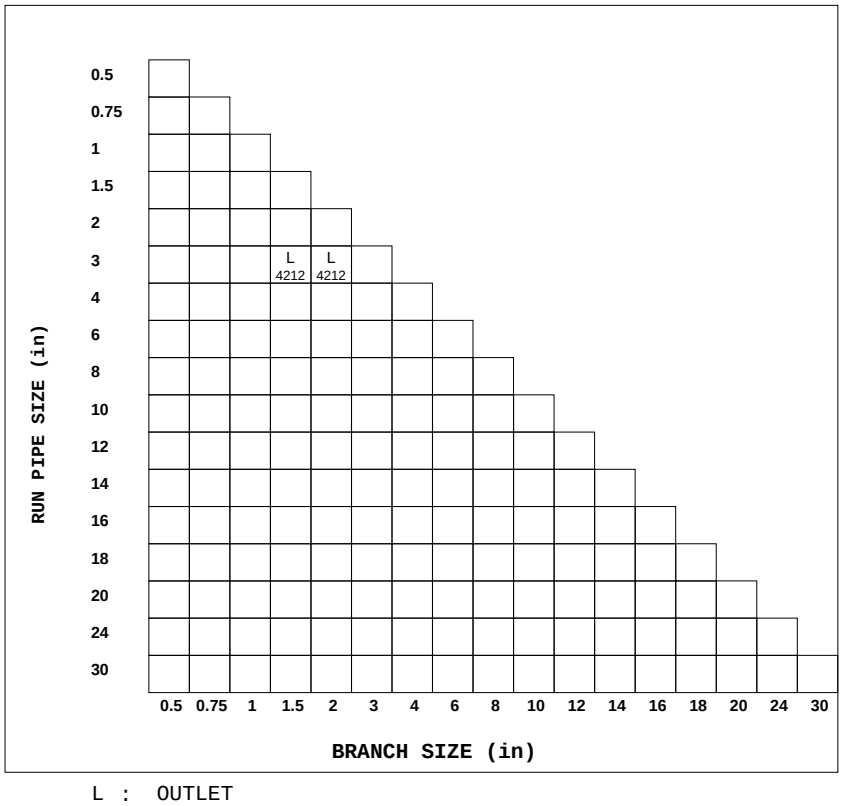
BRANCH TABLE (T_A2AP01_4)



L : OUTLET

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PIPING CLASS

A2AP02 REV NO. 2

Material : Killed CS
Rating : ASME CLASS 150
Flange Face : RF
C.A.(mm) : 3.00
Gasket : Spiral Wound
Service : PROCESS - GENERAL PROCESS NON SOUR, NON CORROSIVE
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
2	USE OF SOFT SEATED BALL, PLUG AND BUTTERFLY VALVES SHALL BE LIMITED TO MAXIMUM OF 204DEGC (400DEGF)

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
24	FULL PORT (Q)
200	WITH JACK SCREW (FO)
541	NPT(F) (CA,L)
714	SW - NPT(F) (V)
773	CLASS 300 (B,F,G,V)
781	CLASS 600 (B,F,G)
797	CLASS 1500 (B,F,G)
805	CLASS 2500 (B,F,G)
4601	Y-PATTERN (W)

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PIPING CLASS
A2AP02 REV NO. 2

PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P01A-0010P	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	0.75		SCH160		P01A-0010R	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1		SCH160		P01A-0014M	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1.5		SCH160		P01A-0015J	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	2		XS		P01A-000YX	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	3		STD		P01A-000YM	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	4		STD		P01A-000YU	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	6		STD		P01A-000Z3	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	8		SCH20		P01A-001AT	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	10		SCH20		P01A-0014Y	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	12		SCH30		P01A-0017K	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	14		SCH20		P01A-0017A	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	16		SCH20		P01A-0018E	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	18		SCH20		P01A-007T1	Pipe ASTM A672 Grade B60 Class 32 EFW ASME B36.10M/B36.19M BE	
1	20		STD		P01A-007T2	Pipe ASTM A672 Grade B60 Class 32 EFW ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P02B-0001J	90 degree elbow ASTM A105 Class 6000 ASME B16.11 SW	
1	0.75				P02B-0001K	90 degree elbow ASTM A105 Class 6000 ASME B16.11 SW	
1	1				P02B-0002E	90 degree elbow ASTM A105 Class 6000 ASME B16.11 SW	
1	1.5				P02B-0002F	90 degree elbow ASTM A105 Class 6000 ASME B16.11 SW	
1	2		XS		P02A-000CP	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		STD		P02A-000CU	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		STD		P02A-000CZ	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		STD		P02A-000D6	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		SCH20		P02A-000GZ	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	10		SCH20		P02A-000H1	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	12		SCH30		P02A-000M4	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	14		SCH20		P02A-000FX	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	16		SCH20		P02A-000GM	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	18		SCH20		P02A-000LT	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	20		STD		P02A-0010J	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P03B-0001F	45 degree elbow ASTM A105 Class 6000 ASME B16.11 SW	
1	0.75				P03B-0001G	45 degree elbow ASTM A105 Class 6000 ASME B16.11 SW	
1	1				P03B-0002A	45 degree elbow ASTM A105 Class 6000 ASME B16.11 SW	
1	1.5				P03B-0002B	45 degree elbow ASTM A105 Class 6000 ASME B16.11 SW	
1	2		XS		P03A-000AS	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		STD		P03A-000AX	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		STD		P03A-000B1	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		STD		P03A-000B9	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		SCH20		P03A-000EX	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	10		SCH20		P03A-000F0	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	12		SCH30		P03A-000JU	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	14		SCH20		P03A-000DW	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	16		SCH20		P03A-000EM	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	18		SCH20		P03A-001DX	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	20		STD		P03A-000X1	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P21B-0001F	Straight tee ASTM A105 Class 6000 ASME B16.11 SW	
1	0.75				P21B-0001G	Straight tee ASTM A105 Class 6000 ASME B16.11 SW	
1	1				P21B-00026	Straight tee ASTM A105 Class 6000 ASME B16.11 SW	
1	1.5				P21B-00027	Straight tee ASTM A105 Class 6000 ASME B16.11 SW	
1	2		XS		P21A-001CJ	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3		STD		P21A-001CU	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		STD		P21A-001CW	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6		STD		P21A-001D2	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8		SCH20		P21A-00215	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10		SCH20		P21A-00219	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12		SCH30		P21A-0025A	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14		SCH20		P21A-00206	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16		SCH20		P21A-0020X	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18		SCH20		P21A-001PJ	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20		STD		P21A-001C7	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75			P24B-00030	Reducing tee ASTM A105 Class 6000 ASME B16.11 SW	
1	1.5	0.75			P24B-00032	Reducing tee ASTM A105 Class 6000 ASME B16.11 SW	
1	1.5	1			P24B-0004J	Reducing tee ASTM A105 Class 6000 ASME B16.11 SW	
1	2	1	XS	SCH160	P24A-00GMB	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	XS	SCH160	P24A-005K9	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	STD	SCH160	P24A-00GMC	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	STD	XS	P24A-002HW	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P24A-002HY	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P24A-0021K	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	STD	P24A-0021A	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P24A-00229	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH20	STD	P24A-00J21	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH20	STD	P24A-005J4	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	SCH20	STD	P24A-00HMB	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	SCH20	STD	P24A-00HKS	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	SCH20	SCH20	P24A-002YX	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	SCH30	STD	P24A-00HKT	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH30	SCH20	P24A-003XM	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH30	SCH20	P24A-003XL	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	SCH20	STD	P24A-00K0M	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	SCH20	SCH20	P24A-002U7	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	SCH20	SCH20	P24A-002YA	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	SCH20	SCH30	P24A-003ES	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	6	SCH20	STD	P24A-00GU4	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	SCH20	SCH20	P24A-002XW	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	SCH20	SCH20	P24A-002YH	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	SCH20	SCH30	P24A-003XN	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	SCH20	SCH20	P24A-002XF	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	8	SCH20	SCH20	P24A-002XC	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	10	SCH20	SCH20	P24A-002UX	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	12	SCH20	SCH30	P24A-00BH0	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	14	SCH20	SCH20	P24A-002WT	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	16	SCH20	SCH20	P24A-002X5	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	8	STD	SCH20	P24A-00K0N	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	10	STD	SCH20	P24A-00BT7	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	12	STD	SCH30	P24A-00BUT	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	14	STD	SCH20	P24A-00BWB	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	16	STD	SCH20	P24A-006W3	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	18	STD	SCH20	P24A-006WD	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	STD	XS	P27A-001MZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P27A-001N0	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P27A-00189	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	STD	P27A-001AZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	6	4	STD	STD	P27A-001GW	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH20	STD	P27A-003K2	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH20	STD	P27A-003K3	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	SCH20	STD	P27A-003K4	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	SCH20	STD	P27A-003K5	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	SCH20	SCH20	P27A-001UL	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	SCH30	STD	P27A-003MN	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH30	SCH20	P27A-002GG	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH30	SCH20	P27A-002GF	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	SCH20	STD	P27A-00518	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	SCH20	SCH20	P27A-001V4	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	SCH20	SCH20	P27A-001TG	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	SCH20	SCH30	P27A-0028H	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	SCH20	SCH20	P27A-001WX	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	SCH20	SCH20	P27A-001TW	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	SCH20	SCH30	P27A-002GH	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	SCH20	SCH20	P27A-001V2	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	10	SCH20	SCH20	P27A-001TJ	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	12	SCH20	SCH30	P27A-0084K	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	14	SCH20	SCH20	P27A-001UY	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	16	SCH20	SCH20	P27A-001WN	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	12	STD	SCH30	P27A-0082K	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	14	STD	SCH20	P27A-0082L	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	16	STD	SCH20	P27A-0082M	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	18	STD	SCH20	P27A-0084N	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	STD	XS	P28A-001N5	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P28A-001N6	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P28A-0018B	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	STD	P28A-001AS	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P28A-00182	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH20	STD	P28A-003JU	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH20	STD	P28A-003JV	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	SCH20	STD	P28A-003JW	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	SCH20	STD	P28A-003JX	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	SCH20	SCH20	P28A-001V0	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	SCH30	STD	P28A-003MG	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH30	SCH20	P28A-002GA	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH30	SCH20	P28A-002G9	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	SCH20	STD	P28A-0096P	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	SCH20	SCH20	P28A-001WH	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	SCH20	SCH20	P28A-001TH	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	SCH20	SCH30	P28A-0027A	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	SCH20	SCH20	P28A-001T6	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	SCH20	SCH20	P28A-001TY	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	SCH20	SCH30	P28A-002GB	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	SCH20	SCH20	P28A-001WG	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	10	SCH20	SCH20	P28A-001TV	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	12	SCH20	SCH30	P28A-004UM	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	14	SCH20	SCH20	P28A-001WD	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	16	SCH20	SCH20	P28A-001T1	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	12	STD	SCH30	P28A-004SH	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	14	STD	SCH20	P28A-004SJ	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	16	STD	SCH20	P28A-004SK	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	18	STD	SCH20	P28A-004UN	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	

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CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P29B-0002F	Cap ASTM A105 Class 6000 ASME B16.11 SW	
1	0.75				P29B-0002G	Cap ASTM A105 Class 6000 ASME B16.11 SW	
1	1				P29B-0002D	Cap ASTM A105 Class 6000 ASME B16.11 SW	
1	1.5				P29B-0002E	Cap ASTM A105 Class 6000 ASME B16.11 SW	
1	2		XS		P29A-000A1	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		STD		P29A-000BK	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		STD		P29A-000A3	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6		STD		P29A-000A9	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8		SCH20		P29A-000EY	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10		SCH20		P29A-000E5	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12		SCH30		P29A-000PZ	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14		SCH20		P29A-000EA	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16		SCH20		P29A-000F3	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18		SCH20		P29A-000E0	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
541	0.75				P29B-0000Y	Cap ASTM A105 Class 6000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P41A-000B9	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		XXS		P41A-000BA	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		XXS		P41A-000D8	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		XXS		P41A-000D9	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

CON SWAGED NIPPLE (SNC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	SCH160	P42A-00029	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	SCH160	SCH160	P42A-0009T	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	SCH160	SCH160	P42A-0009U	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	SCH160	SCH160	P42A-0009V	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	SCH160	SCH160	P42A-0009W	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	SCH160	SCH160	P42A-0009X	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	XS	SCH160	P42A-000J6	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	XS	SCH160	P42A-000J7	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	XS	SCH160	P42A-000F8	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	XS	SCH160	P42A-000KZ	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	STD	SCH160	P42A-000L0	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	

ECC SWAGED NIPPLE (SNE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	SCH160	P43A-000AM	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	SCH160	SCH160	P43A-000B4	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	SCH160	SCH160	P43A-000B5	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	SCH160	SCH160	P43A-000B6	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	SCH160	SCH160	P43A-000B7	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	SCH160	SCH160	P43A-000B8	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	XS	SCH160	P43A-000B2	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	XS	SCH160	P43A-000B3	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	XS	SCH160	P43A-000CZ	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	XS	SCH160	P43A-000D0	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	STD	SCH160	P43A-000D1	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	

COUPLING (CPS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P47B-00013	Coupling ASTM A105 Class 6000 ASME B16.11 SW - SW	
1	0.75				P47B-00012	Coupling ASTM A105 Class 6000 ASME B16.11 SW - SW	
1	1				P47B-0002A	Coupling ASTM A105 Class 6000 ASME B16.11 SW - SW	
1	1.5				P47B-0002B	Coupling ASTM A105 Class 6000 ASME B16.11 SW - SW	

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OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5 - 2.5	0.75			P31B-0137D	Outlet ASTM A105 Class 6000 MSS SP-97 SW	
1	3 - 10	0.75			P31B-007LV	Outlet ASTM A105 Class 6000 MSS SP-97 SW	
1	12 and larger	0.75			P31B-0136N	Outlet ASTM A105 Class 6000 MSS SP-97 SW	
1	3 - 10	1			P31B-007LN	Outlet ASTM A105 Class 6000 MSS SP-97 SW	
1	12 and larger	1			P31B-0136P	Outlet ASTM A105 Class 6000 MSS SP-97 SW	
1	4 - 5	1.5			P31B-004LE	Outlet ASTM A105 Class 6000 MSS SP-97 SW	
1	6 - 8	1.5			P31B-005T4	Outlet ASTM A105 Class 6000 MSS SP-97 SW	
1	10 - 18	1.5			P31B-007LF	Outlet ASTM A105 Class 6000 MSS SP-97 SW	
1	20 and larger	1.5			P31B-0137E	Outlet ASTM A105 Class 6000 MSS SP-97 SW	
541	1	0.75			P31B-005HL	Outlet ASTM A105 Class 6000 MSS SP-97 NPT	
541	1.5 - 2.5	0.75			P31B-0137F	Outlet ASTM A105 Class 6000 MSS SP-97 NPT	
541	3 - 10	0.75			P31B-007KP	Outlet ASTM A105 Class 6000 MSS SP-97 NPT	
541	12 and larger	0.75			P31B-0138A	Outlet ASTM A105 Class 6000 MSS SP-97 NPT	
1	6	2	STD	XS	P31B-007SH	Outlet ASTM A105 MSS SP-97 BW	
1	8	2	SCH20	XS	P31B-00NY2	Outlet ASTM A105 MSS SP-97 BW	
1	10	2	SCH20	XS	P31B-00TFB	Outlet ASTM A105 MSS SP-97 BW	
1	12	2	SCH30	XS	P31B-00NVL	Outlet ASTM A105 MSS SP-97 BW	
1	14	2	SCH20	XS	P31B-00TF9	Outlet ASTM A105 MSS SP-97 BW	
1	16	2	SCH20	XS	P31B-00TF8	Outlet ASTM A105 MSS SP-97 BW	
1	18	2	SCH20	XS	P31B-00NVX	Outlet ASTM A105 MSS SP-97 BW	
1	20	2	STD	XS	P31B-00994	Outlet ASTM A105 MSS SP-97 BW	
1	8	3	SCH20	STD	P31B-00P11	Outlet ASTM A105 MSS SP-97 BW	
1	10	3	SCH20	STD	P31B-00UPG	Outlet ASTM A105 MSS SP-97 BW	
1	12	3	SCH30	STD	P31B-00NYR	Outlet ASTM A105 MSS SP-97 BW	
1	14	3	SCH20	STD	P31B-00UPH	Outlet ASTM A105 MSS SP-97 BW	
1	16	3	SCH20	STD	P31B-00TU2	Outlet ASTM A105 MSS SP-97 BW	
1	18	3	SCH20	STD	P31B-00NZ4	Outlet ASTM A105 MSS SP-97 BW	
1	20	3	STD	STD	P31B-008FA	Outlet ASTM A105 MSS SP-97 BW	
1	12	4	SCH30	STD	P31B-00P1G	Outlet ASTM A105 MSS SP-97 BW	
1	14	4	SCH20	STD	P31B-00UPJ	Outlet ASTM A105 MSS SP-97 BW	
1	16	4	SCH20	STD	P31B-00TU3	Outlet ASTM A105 MSS SP-97 BW	
1	18	4	SCH20	STD	P31B-00P1V	Outlet ASTM A105 MSS SP-97 BW	
1	20	4	STD	STD	P31B-008D3	Outlet ASTM A105 MSS SP-97 BW	
1	18	6	SCH20	STD	P31B-00P48	Outlet ASTM A105 MSS SP-97 BW	
1	20	6	STD	STD	P31B-008PZ	Outlet ASTM A105 MSS SP-97 BW	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30B-0002D	Plug ASTM A105 ASME B16.11 NPT Round head	
1	0.75				P30B-0002E	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1				P30B-0002F	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1.5				P30B-0002G	Plug ASTM A105 ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P61B-002D4	Flange SW ASTM A105 Class 150 ASME B16.5 RF	
1	0.75		SCH160		P61B-002DE	Flange SW ASTM A105 Class 150 ASME B16.5 RF	
1	1		SCH160		P61B-002DU	Flange SW ASTM A105 Class 150 ASME B16.5 RF	
1	1.5		SCH160		P61B-002EM	Flange SW ASTM A105 Class 150 ASME B16.5 RF	
1	2		XS		P61B-003NK	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	3		STD		P61B-001PW	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	4		STD		P61B-001R8	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	6		STD		P61B-001RT	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	8		SCH20		P61B-002BF	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	10		SCH20		P61B-002B4	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	12		SCH30		P61B-002TS	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	14		SCH20		P61B-002B6	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	16		SCH20		P61B-002B7	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	18		SCH20		P61B-002B8	Flange WN ASTM A105 Class 150 ASME B16.5 RF	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	20		STD		P61B-001JA	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
773	0.5		SCH160		P61B-001H5	Flange SW ASTM A105 Class 300 ASME B16.5 RF	
773	0.75		SCH160		P61B-001HH	Flange SW ASTM A105 Class 300 ASME B16.5 RF	
773	1		SCH160		P61B-001E8	Flange SW ASTM A105 Class 300 ASME B16.5 RF	
773	1.5		SCH160		P61B-001ET	Flange SW ASTM A105 Class 300 ASME B16.5 RF	
773	2		XS		P61B-001HW	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	3		STD		P61B-001LJ	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	4		STD		P61B-001MC	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	6		STD		P61B-001N2	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	8		SCH20		P61B-002LJ	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	10		SCH20		P61B-002LH	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	12		SCH30		P61B-002TV	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	14		SCH20		P61B-002MR	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	16		SCH20		P61B-002MS	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	18		SCH20		P61B-002MT	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	20		STD		P61B-001NT	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
781	0.5		SCH160		P61B-001DZ	Flange SW ASTM A105 Class 600 ASME B16.5 RF	
781	0.75		SCH160		P61B-001DW	Flange SW ASTM A105 Class 600 ASME B16.5 RF	
781	1		SCH160		P61B-005X5	Flange SW ASTM A105 Class 600 ASME B16.5 RF	
781	1.5		SCH160		P61B-005X6	Flange SW ASTM A105 Class 600 ASME B16.5 RF	
781	2		XS		P61B-001DH	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
797	0.5		SCH160		P61B-00658	Flange SW ASTM A105 Class 1500 ASME B16.5 RJ	
797	0.75		SCH160		P61B-00659	Flange SW ASTM A105 Class 1500 ASME B16.5 RJ	
797	1		SCH160		P61B-0065A	Flange SW ASTM A105 Class 1500 ASME B16.5 RJ	
797	1.5		SCH160		P61B-0065B	Flange SW ASTM A105 Class 1500 ASME B16.5 RJ	
797	2		XS		P61B-0065C	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
797	3		STD		P61B-009W7	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
797	4		STD		P61B-009W8	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
805	1.5		SCH160		P61B-0073T	Flange SW ASTM A105 Class 2500 ASME B16.5 RJ	
805	2		XS		P61B-0073U	Flange WN ASTM A105 Class 2500 ASME B16.5 RJ	
805	3		STD		P61B-0073N	Flange WN ASTM A105 Class 2500 ASME B16.5 RJ	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67B-000FH	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	0.75				P67B-000FJ	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	1				P67B-000FK	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	1.5				P67B-000FL	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	2				P67B-000FT	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	3				P67B-000FW	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	4				P67B-000FX	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	6				P67B-000FY	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	8				P67B-000FZ	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	10				P67B-000FM	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	12				P67B-000FN	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	14				P67B-000FP	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	16				P67B-000FR	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	18				P67B-000FS	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	20				P67B-000FU	Blind flange ASTM A105 Class 150 ASME B16.5 RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000L8	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000L9	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000LA	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000LB	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000LH	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

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GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3				P73T-000LL	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000LM	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	6				P73T-000LN	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	8				P73T-000LP	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	10				P73T-000LC	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	12				P73T-000LD	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	14				P73T-000LE	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	16				P73T-000LF	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	18				P73T-000LG	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	20				P73T-000LJ	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	0.5				P73T-000FT	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	0.75				P73T-000FU	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	3				P73T-000G5	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	4				P73T-000G6	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	6				P73T-000G7	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	8				P73T-000G8	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	10				P73T-000FX	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	12				P73T-000FY	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	14				P73T-000FZ	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	16				P73T-000G0	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	18				P73T-000G1	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	20				P73T-000G3	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	0.5				P73T-000J8	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	0.75				P73T-000J9	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1				P73T-000JA	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1.5				P73T-000JB	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	2				P73T-000JH	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
797	0.5				P75T-000JT	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	0.75				P75T-000JU	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	1				P75T-000JV	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	1.5				P75T-000JW	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	2				P75T-0008A	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	3				P75T-0008E	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	4				P75T-0008D	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	1.5				P75T-000KW	Ring joint gasket Soft iron Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	2				P75T-000L6	Ring joint gasket Soft iron Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	3				P75T-000MC	Ring joint gasket Soft iron Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-16				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	18-20				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
773	0.5-10				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
773	12-20				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	

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BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
781	0.5-3				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
797	0.5-2				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
797	3-4				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
805	1.5				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
805	2				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
805	3				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81B-002WA	Gate valve ASTM A105 Class 800 API 602 SW Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated	
1	0.75				P81B-002WB	Gate valve ASTM A105 Class 800 API 602 SW Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated	
1	1				P81B-002WC	Gate valve ASTM A105 Class 800 API 602 SW Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated	
1	1.5				P81B-002WD	Gate valve ASTM A105 Class 800 API 602 SW Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated	
1	2				P81C-008S7	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated	
1	3				P81C-008S8	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated	
1	4				P81C-008S9	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated	
1	6				P81C-008SA	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated	
1	8				P81C-008SB	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated	
1	10				P81C-008S5	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated	
1	12				P81C-008S6	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated	
1	14				P81C-008SC	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Gear operated	
1	16				P81C-008SD	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Gear operated	
1	18				P81C-008SE	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Gear operated	
1	20				P81C-008SF	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Gear operated	
714	0.5				P81B-002WE	Gate valve ASTM A105 Class 800 API 602 SW - NPT Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated	
714	0.75				P81B-002WF	Gate valve ASTM A105 Class 800 API 602 SW - NPT Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated	
773	2				P81C-008PL	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82B-0022A	Globe valve ASTM A105 Class 800 API 602 SW Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated	
1	0.75				P82B-0022B	Globe valve ASTM A105 Class 800 API 602 SW Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated	
1	1				P82B-0022C	Globe valve ASTM A105 Class 800 API 602 SW Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated	
1	1.5				P82B-0022D	Globe valve ASTM A105 Class 800 API 602 SW Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated	
1	2				P82C-0047V	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated	
1	3				P82C-0047W	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated	
1	4				P82C-0047X	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated	
1	6				P82C-0047Y	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated	
4601	1				P82B-001D2	Y-pattern globe valve ASTM A105 Class 150 ASME B16.34 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated	
4601	1.5				P82B-001D3	Y-pattern globe valve ASTM A105 Class 150 ASME B16.34 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated	
4601	2				P82C-002PE	Y-pattern globe valve ASTM A216 Grade WCB Class 150 ASME B16.34 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83B-001JH	Check valve ASTM A105 Class 800 API 602 SW Trim SS316L Body and disc seats Stellite-6 Lift-type Bolted cover	
1	0.75				P83B-001JJ	Check valve ASTM A105 Class 800 API 602 SW Trim SS316L Body and disc seats Stellite-6 Lift-type Bolted cover	

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CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P83B-001JK	Check valve ASTM A105 Class 800 API 602 SW Trim SS316L Body and disc seats Stellite-6 Lift-type Bolted cover	
1	1.5				P83B-001JL	Check valve ASTM A105 Class 800 API 602 SW Trim SS316L Body and disc seats Stellite-6 Lift-type Bolted cover	
1	2				P83C-003TS	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 Swing-type Bolted cover	
1	3				P83C-003TT	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 Swing-type Bolted cover	
1	4				P83C-003TU	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 Swing-type Bolted cover	
1	6				P83C-003TV	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 Swing-type Bolted cover	
1	8				P83C-003TW	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 Swing-type Bolted cover	
1	10				P83C-003TM	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 Swing-type Bolted cover	
1	12				P83C-003TN	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 Swing-type Bolted cover	
1	14				P83C-003TP	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 Swing-type Bolted cover	
1	16				P83C-003TR	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 Swing-type Bolted cover	

BALL VALVE (Q)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	4				P84C-0079N	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316L Seat R-PTFE Trim SS316L Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design	
24	4				P84C-0079P	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316L Seat R-PTFE Trim SS316L Floating-type Side-entry Wrench lever operated Full bore Fire tested design	

NEEDLE VALVE (NV)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82B-00226	Needle valve ASTM A105 Class 800 API 602 SW Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated	
1	0.75				P82B-00227	Needle valve ASTM A105 Class 800 API 602 SW Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated	
1	1				P82B-00228	Needle valve ASTM A105 Class 800 API 602 SW Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated	
1	1.5				P82B-00229	Needle valve ASTM A105 Class 800 API 602 SW Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated	

ORIFICE FLANGE (FO)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2		XS		P66B-0084B	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	3		STD		P66B-0084C	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	4		STD		P66B-0084D	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	6		STD		P66B-0084E	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
200	2		XS		P66B-00843	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	3		STD		P66B-00844	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	4		STD		P66B-00845	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	6		STD		P66B-00846	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71B-0008A	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	0.75				P71B-0008B	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	1				P71B-0008C	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71B-0008D	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	2				P71B-0000P	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	3				P71B-0000N	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	4				P71B-0000M	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	6				P71B-0000L	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	8				P71B-0000R	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	10				P71B-0000K	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	12				P71B-0000J	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	

PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000AH	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	

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PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	16				P72B-0000C	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	18				P72B-000AJ	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	20				P72B-000AK	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	

PADDLE SPACER (PS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000AT	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	16				P72B-0000B	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	18				P72B-000AU	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	20				P72B-000AV	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	

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BOLT TABLE (B_A2AP02 , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	60	P80S-003V2		
0.75	4	0.500	65	P80S-003V3		
1	4	0.500	70	P80S-003V4		
1.5	4	0.500	75	P80S-003V5		
2	4	0.625	85	P80S-003XE		
3	4	0.625	95	P80S-003XG		
4	8	0.625	95	P80S-003XG		
6	8	0.750	105	P80S-003XJ		
8	8	0.750	110	P80S-003XK		
10	12	0.875	120	P80S-00419		
12	12	0.875	120	P80S-00419		
14	12	1.000	135	P80S-0043E		
16	16	1.000	140	P80S-0043F		
18	16	1.125	150	P80S-0046K		
20	20	1.125	160	P80S-0046M		

BOLT TABLE (B_A2AP02_773 , STUD ASME RF, OPTION CODE 773)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-003V4		
0.75	4	0.625	75	P80S-003XC		
1	4	0.625	80	P80S-003XD		
1.5	4	0.750	95	P80S-00414		
2	8	0.625	90	P80S-003XF		
3	8	0.750	110	P80S-003XK		
4	8	0.750	115	P80S-003XL		
6	12	0.750	125	P80S-003XN		
8	12	0.875	140	P80S-0041D		
10	16	1.000	160	P80S-0043K		
12	16	1.125	175	P80S-0046S		
14	20	1.125	180	P80S-0046T		
16	20	1.250	190	P80S-004AK		
18	24	1.250	200	P80S-004AM		
20	24	1.250	210	P80S-004AP		

BOLT TABLE (B_A2AP02_781 , STUD ASME RF, OPTION CODE 781)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	80	P80S-003V6		
0.75	4	0.625	90	P80S-003XF		
1	4	0.625	95	P80S-003XG		
1.5	4	0.750	110	P80S-003XK		
2	8	0.625	110	P80S-003VC		
3	8	0.750	130	P80S-003XP		
4	8	0.875	150			
6	12	1.000	175			
8	12	1.125	195			
10	16	1.250	250			
12	20	1.250	255			
14	20	1.375	270			
16	20	1.500	295			
18	20	1.625	320			
20	24	1.625	335			

BOLT TABLE (B_A2AP02_797 , STUD ASME RJ, OPTION CODE 797)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	110	P80S-003XK	R12	P75T-000JT
0.75	4	0.750	115	P80S-003XL	R14	P75T-000JU
1	4	0.875	130	P80S-0041B	R16	P75T-000JV
1.5	4	1.000	140	P80S-0043F	R20	P75T-000JW
2	8	0.875	150	P80S-0041F	R24	P75T-0008A
3	8	1.125	180	P80S-0046T	R35	P75T-0008E
4	8	1.250	230	P80S-004AU	R39	P75T-0008D
6	12	1.375	300		R46	
8	12	1.625	345		R50	
10	12	1.875	395		R54	
12	16	2.000	445		R58	
14	16	2.250	490		R63	

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BOLT TABLE (B_A2AP02_797 , STUD ASME RJ, OPTION CODE 797)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
16	16	2.500	540		R67	
18	16	2.750	590		R71	
20	16	3.000	650		R75	

BOLT TABLE (B_A2AP02_805 , STUD ASME RJ, OPTION CODE 805)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	125		R13	
0.75	4	0.750	130		R16	
1	4	0.875	140		R18	
1.5	4	1.125	175	P80S-0046S	R23	P75T-000KW
2	8	1.000	180	P80S-0043R	R26	P75T-000L6
3	8	1.250	260	P80S-004B0	R32	P75T-000MC
4	8	1.500	305		R38	
6	8	2.000	410		R47	
8	12	2.000	450		R51	
10	12	2.500	575		R55	
12	12	2.750	635		R60	
14	14	3.000	695		R64	
16	14	3.000	755		R68	
18	16	3.000	815		R72	
20	16	3.000	875		R76	

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BRANCH TABLE (T_A2AP02)

RUN PIPE SIZE (in) \ BRANCH SIZE (in)	0.5	0.75	1	1.5	2	3	4	6	8	10	12	14	16	18	20
0.5	TS														
0.75		TS													
1		TR	TS												
1.5		TR	TR	TS											
2		L	TR	TR	TS										
3		L	L	TR	TR	TS									
4	L	L	L	L	TR	TR	TS								
6	L	L	L	L	L	TR	TR	TS							
8		L	L	L	L	L	TR	TR	TS						
10		L	L	L	L	L	TR	TR	TR	TS					
12		L	L	L	L	L	L	TR	TR	TR	TS				
14		L	L	L	L	L	L	TR	TR	TR	TR	TS			
16		L	L	L	L	L	L	TR	TR	TR	TR	TR	TS		
18		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TS	
20		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TR	TS

TR : REDUCING TEE
L : OUTLET
TS : STRAIGHT TEE

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PIPING CLASS

A2AP03 REV NO. 2

Material : Killed CS
Rating : ASME CLASS 150
Flange Face : RF
C.A.(mm) : 3.00
Gasket : Spiral Wound
Service : PROCESS - GENERAL PROCESS NON SOUR, NON CORROSIVE
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
2	USE OF SOFT SEATED BALL, PLUG AND BUTTERFLY VALVES SHALL BE LIMITED TO MAXIMUM OF 204DEGC (400DEGF)

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
24	FULL PORT (Q)
200	WITH JACK SCREW (FO)
541	NPT(F) (CA,L)
714	SW - NPT(F) (V)
773	CLASS 300 (B,F,G)

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PIPING CLASS
A2AP03 REV NO. 2

PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P01A-0010P	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	0.75		SCH160		P01A-0010R	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1		SCH160		P01A-0014M	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1.5		SCH160		P01A-0015J	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	2		XS		P01A-000YX	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	3		STD		P01A-000YM	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	4		STD		P01A-000YU	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	6		STD		P01A-000Z3	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	8		SCH20		P01A-001AT	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	10		SCH20		P01A-0014Y	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	12		SCH30		P01A-0017K	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	14		SCH20		P01A-0017A	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	16		SCH20		P01A-0018E	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	18		SCH20		P01A-00438	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE	
1	20		STD		P01A-0042G	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE	
1	24		STD		P01A-0042H	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE	
1	30		STD		P01A-0042J	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE	
1	36		STD		P01A-00439	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE	
1	42		XS		P01A-0043G	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE	
1	48		XS		P01A-0042L	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P02B-0001J	90 degree elbow ASTM A105 Class 6000 ASME B16.11 SW	
1	0.75				P02B-0001K	90 degree elbow ASTM A105 Class 6000 ASME B16.11 SW	
1	1				P02B-0002E	90 degree elbow ASTM A105 Class 6000 ASME B16.11 SW	
1	1.5				P02B-0002F	90 degree elbow ASTM A105 Class 6000 ASME B16.11 SW	
1	2		XS		P02A-000CP	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		STD		P02A-000CU	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		STD		P02A-000CZ	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		STD		P02A-000D6	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		SCH20		P02A-000GZ	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	10		SCH20		P02A-000H1	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	12		SCH30		P02A-000M4	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	14		SCH20		P02A-000FX	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	16		SCH20		P02A-000GM	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	18		SCH20		P02A-000LT	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	20		STD		P02A-0010J	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	24		STD		P02A-0010K	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	30		STD		P02A-000F3	90 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius	
1	36		STD		P02A-001GL	90 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius	
1	42		XS		P02A-000FB	90 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius	
1	48		XS		P02A-0017R	90 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P03B-0001F	45 degree elbow ASTM A105 Class 6000 ASME B16.11 SW	
1	0.75				P03B-0001G	45 degree elbow ASTM A105 Class 6000 ASME B16.11 SW	
1	1				P03B-0002A	45 degree elbow ASTM A105 Class 6000 ASME B16.11 SW	
1	1.5				P03B-0002B	45 degree elbow ASTM A105 Class 6000 ASME B16.11 SW	
1	2		XS		P03A-000AS	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		STD		P03A-000AX	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		STD		P03A-000B1	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		STD		P03A-000B9	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		SCH20		P03A-000EX	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	10		SCH20		P03A-000F0	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	12		SCH30		P03A-000JU	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	14		SCH20		P03A-000DW	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	16		SCH20		P03A-000EM	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

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45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	18		SCH20		P03A-001DX	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	20		STD		P03A-000X1	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	24		STD		P03A-000X2	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	30		STD		P03A-000D0	45 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius	
1	36		STD		P03A-001BS	45 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius	
1	42		XS		P03A-000DB	45 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius	
1	48		XS		P03A-0013P	45 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P21B-0001F	Straight tee ASTM A105 Class 6000 ASME B16.11 SW	
1	0.75				P21B-0001G	Straight tee ASTM A105 Class 6000 ASME B16.11 SW	
1	1				P21B-00026	Straight tee ASTM A105 Class 6000 ASME B16.11 SW	
1	1.5				P21B-00027	Straight tee ASTM A105 Class 6000 ASME B16.11 SW	
1	2		XS		P21A-001CJ	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		STD		P21A-001CU	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		STD		P21A-001CW	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6		STD		P21A-001D2	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8		SCH20		P21A-00215	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10		SCH20		P21A-00219	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12		SCH30		P21A-0025A	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14		SCH20		P21A-00206	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16		SCH20		P21A-0020X	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18		SCH20		P21A-001PJ	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20		STD		P21A-001C7	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24		STD		P21A-001CC	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30		STD		P21A-001YC	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	36		STD		P21A-001G4	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	42		XS		P21A-001KS	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	48		XS		P21A-001RL	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75			P24B-00030	Reducing tee ASTM A105 Class 6000 ASME B16.11 SW	
1	1.5	0.75			P24B-00032	Reducing tee ASTM A105 Class 6000 ASME B16.11 SW	
1	1.5	1			P24B-0004J	Reducing tee ASTM A105 Class 6000 ASME B16.11 SW	
1	2	1	XS	SCH160	P24A-00GMB	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	XS	SCH160	P24A-005K9	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	STD	SCH160	P24A-00GMC	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	STD	XS	P24A-002HW	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P24A-002HY	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P24A-0021K	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	STD	P24A-0021A	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P24A-00229	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH20	STD	P24A-00J21	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH20	STD	P24A-005J4	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	SCH20	STD	P24A-00HMB	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	SCH20	STD	P24A-00HKS	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	SCH20	SCH20	P24A-002YX	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	SCH30	STD	P24A-00HKT	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH30	SCH20	P24A-003XM	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH30	SCH20	P24A-003XL	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	SCH20	STD	P24A-00K0M	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	SCH20	SCH20	P24A-002U7	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	SCH20	SCH20	P24A-002YA	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	SCH20	SCH30	P24A-003ES	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	6	SCH20	STD	P24A-00GU4	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	SCH20	SCH20	P24A-002XW	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	SCH20	SCH20	P24A-002YH	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	16	12	SCH20	SCH30	P24A-003XN	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	SCH20	SCH20	P24A-002XF	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	8	SCH20	SCH20	P24A-002XC	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	10	SCH20	SCH20	P24A-002UX	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	12	SCH20	SCH30	P24A-00BH0	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	14	SCH20	SCH20	P24A-002WT	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	16	SCH20	SCH20	P24A-002X5	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	8	STD	SCH20	P24A-00K0N	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	10	STD	SCH20	P24A-00BT7	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	12	STD	SCH30	P24A-00BUT	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	14	STD	SCH20	P24A-00BWB	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	16	STD	SCH20	P24A-006W3	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	18	STD	SCH20	P24A-006WD	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	10	STD	SCH20	P24A-00KT6	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	12	STD	SCH30	P24A-00C7C	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	14	STD	SCH20	P24A-00K0C	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	16	STD	SCH20	P24A-00CAD	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	18	STD	SCH20	P24A-006WF	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	20	STD	STD	P24A-004SV	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	10	STD	SCH20	P24A-003VN	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	12	STD	SCH30	P24A-00CZ4	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	14	STD	SCH20	P24A-003VR	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	16	STD	SCH20	P24A-003VS	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	18	STD	SCH20	P24A-003VT	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	20	STD	STD	P24A-0087D	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	24	STD	STD	P24A-005XW	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	36	16	STD	SCH20	P24A-00GU6	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	36	18	STD	SCH20	P24A-0087J	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	36	20	STD	STD	P24A-0087K	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	36	24	STD	STD	P24A-00DVT	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	36	30	STD	STD	P24A-007WA	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	42	16	XS	SCH20	P24A-003VB	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	42	18	XS	SCH20	P24A-003VC	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	42	20	XS	STD	P24A-00EGT	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	42	24	XS	STD	P24A-00EHZ	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	42	30	XS	STD	P24A-003VF	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	42	36	XS	STD	P24A-00EMK	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	48	24	XS	STD	P24A-006WP	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	48	30	XS	STD	P24A-006WR	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	48	36	XS	STD	P24A-007KS	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	48	42	XS	XS	P24A-00F5N	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	STD	XS	P27A-001MZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P27A-001N0	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P27A-00189	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	STD	P27A-001AZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P27A-001GW	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH20	STD	P27A-003K2	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH20	STD	P27A-003K3	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	SCH20	STD	P27A-003K4	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	SCH20	STD	P27A-003K5	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	SCH20	SCH20	P27A-001UL	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	SCH30	STD	P27A-003MN	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH30	SCH20	P27A-002GG	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH30	SCH20	P27A-002GF	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	SCH20	STD	P27A-00518	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	SCH20	SCH20	P27A-001V4	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14	10	SCH20	SCH20	P27A-001TG	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	SCH20	SCH30	P27A-0028H	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	SCH20	SCH20	P27A-001WX	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	SCH20	SCH20	P27A-001TW	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	SCH20	SCH30	P27A-002GH	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	SCH20	SCH20	P27A-001V2	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	10	SCH20	SCH20	P27A-001TJ	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	12	SCH20	SCH30	P27A-0084K	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	14	SCH20	SCH20	P27A-001UY	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	16	SCH20	SCH20	P27A-001WN	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	12	STD	SCH30	P27A-0082K	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	14	STD	SCH20	P27A-0082L	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	16	STD	SCH20	P27A-0082M	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	18	STD	SCH20	P27A-0084N	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	16	STD	SCH20	P27A-0084T	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	18	STD	SCH20	P27A-0084U	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	20	STD	STD	P27A-001A8	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	20	STD	STD	P27A-001S0	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	24	STD	STD	P27A-001M7	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	36	24	STD	STD	P27A-00BGR	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	36	30	STD	STD	P27A-00938	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	42	30	XS	STD	P27A-001N2	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	42	36	XS	STD	P27A-00BHB	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	48	42	XS	XS	P27A-00BHA	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	STD	XS	P28A-001N5	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P28A-001N6	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P28A-0018B	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	STD	P28A-001AS	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P28A-00182	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH20	STD	P28A-003JU	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH20	STD	P28A-003JV	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	SCH20	STD	P28A-003JW	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	SCH20	STD	P28A-003JX	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	SCH20	SCH20	P28A-001V0	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	SCH30	STD	P28A-003MG	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH30	SCH20	P28A-002GA	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH30	SCH20	P28A-002G9	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	SCH20	STD	P28A-0096P	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	SCH20	SCH20	P28A-001WH	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	SCH20	SCH20	P28A-001TH	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	SCH20	SCH30	P28A-0027A	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	SCH20	SCH20	P28A-001T6	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	SCH20	SCH20	P28A-001TY	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	SCH20	SCH30	P28A-002GB	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	SCH20	SCH20	P28A-001WG	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	10	SCH20	SCH20	P28A-001TV	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	12	SCH20	SCH30	P28A-004UM	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	14	SCH20	SCH20	P28A-001WD	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	16	SCH20	SCH20	P28A-001T1	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	12	STD	SCH30	P28A-004SH	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	14	STD	SCH20	P28A-004SJ	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	16	STD	SCH20	P28A-004SK	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	18	STD	SCH20	P28A-004UN	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	16	STD	SCH20	P28A-004UR	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	18	STD	SCH20	P28A-004US	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	20	STD	STD	P28A-001AW	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	

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ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	30	20	STD	STD	P28A-001LZ	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	24	STD	STD	P28A-001N1	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	36	24	STD	STD	P28A-008FS	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	36	30	STD	STD	P28A-005V7	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	42	30	XS	STD	P28A-001RM	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	42	36	XS	STD	P28A-008GR	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	48	42	XS	XS	P28A-008GJ	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P29B-0002F	Cap ASTM A105 Class 6000 ASME B16.11 SW	
1	0.75				P29B-0002G	Cap ASTM A105 Class 6000 ASME B16.11 SW	
1	1				P29B-0002D	Cap ASTM A105 Class 6000 ASME B16.11 SW	
1	1.5				P29B-0002E	Cap ASTM A105 Class 6000 ASME B16.11 SW	
1	2		XS		P29A-000A1	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		STD		P29A-000BK	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		STD		P29A-000A3	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6		STD		P29A-000A9	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8		SCH20		P29A-000EY	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10		SCH20		P29A-000E5	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12		SCH30		P29A-000PZ	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14		SCH20		P29A-000EA	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16		SCH20		P29A-000F3	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18		SCH20		P29A-000E0	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20		STD		P29A-000B2	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24		STD		P29A-000B8	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	30		STD		P29A-000DU	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	36		STD		P29A-001AF	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	42		XS		P29A-000CW	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	48		XS		P29A-00136	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
541	0.75				P29B-0000Y	Cap ASTM A105 Class 6000 ASME B16.11 NPT	
541	1				P29B-0000Z	Cap ASTM A105 Class 6000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P41A-000B9	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		XXS		P41A-000BA	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		XXS		P41A-000D8	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		XXS		P41A-000D9	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

CON SWAGED NIPPLE (SNC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	SCH160	P42A-00029	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	SCH160	SCH160	P42A-0009T	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	SCH160	SCH160	P42A-0009U	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	SCH160	SCH160	P42A-0009V	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	SCH160	SCH160	P42A-0009W	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	SCH160	SCH160	P42A-0009X	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	XS	SCH160	P42A-000J6	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	XS	SCH160	P42A-000J7	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	XS	SCH160	P42A-000F8	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	XS	SCH160	P42A-000KZ	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	STD	SCH160	P42A-000L0	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	

ECC SWAGED NIPPLE (SNE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	SCH160	P43A-000AM	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	SCH160	SCH160	P43A-000B4	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75	SCH160	SCH160	P43A-000B5	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	SCH160	SCH160	P43A-000B6	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	SCH160	SCH160	P43A-000B7	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	SCH160	SCH160	P43A-000B8	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	XS	SCH160	P43A-000B2	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	XS	SCH160	P43A-000B3	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	XS	SCH160	P43A-000CZ	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	XS	SCH160	P43A-000D0	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	STD	SCH160	P43A-000D1	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	

COUPLING (CPS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P47B-00013	Coupling ASTM A105 Class 6000 ASME B16.11 SW - SW	
1	0.75				P47B-00012	Coupling ASTM A105 Class 6000 ASME B16.11 SW - SW	
1	1				P47B-0002A	Coupling ASTM A105 Class 6000 ASME B16.11 SW - SW	
1	1.5				P47B-0002B	Coupling ASTM A105 Class 6000 ASME B16.11 SW - SW	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5 - 2.5	0.75			P31B-0137D	Outlet ASTM A105 Class 6000 MSS SP-97 SW	
1	3 - 10	0.75			P31B-007LV	Outlet ASTM A105 Class 6000 MSS SP-97 SW	
1	12 and larger	0.75			P31B-0136N	Outlet ASTM A105 Class 6000 MSS SP-97 SW	
1	3 - 10	1			P31B-007LN	Outlet ASTM A105 Class 6000 MSS SP-97 SW	
1	12 and larger	1			P31B-0136P	Outlet ASTM A105 Class 6000 MSS SP-97 SW	
1	4 - 5	1.5			P31B-004LE	Outlet ASTM A105 Class 6000 MSS SP-97 SW	
1	6 - 8	1.5			P31B-005T4	Outlet ASTM A105 Class 6000 MSS SP-97 SW	
1	10 - 18	1.5			P31B-007LF	Outlet ASTM A105 Class 6000 MSS SP-97 SW	
1	20 and larger	1.5			P31B-0137E	Outlet ASTM A105 Class 6000 MSS SP-97 SW	
541	1	0.75			P31B-005HL	Outlet ASTM A105 Class 6000 MSS SP-97 NPT	
541	1.5 - 2.5	0.75			P31B-0137F	Outlet ASTM A105 Class 6000 MSS SP-97 NPT	
541	3 - 10	0.75			P31B-007KP	Outlet ASTM A105 Class 6000 MSS SP-97 NPT	
541	12 and larger	0.75			P31B-0138A	Outlet ASTM A105 Class 6000 MSS SP-97 NPT	
1	6	2	STD	XS	P31B-007SH	Outlet ASTM A105 MSS SP-97 BW	
1	8	2	SCH20	XS	P31B-00NY2	Outlet ASTM A105 MSS SP-97 BW	
1	10	2	SCH20	XS	P31B-00TFB	Outlet ASTM A105 MSS SP-97 BW	
1	12	2	SCH30	XS	P31B-00NVL	Outlet ASTM A105 MSS SP-97 BW	
1	14	2	SCH20	XS	P31B-00TF9	Outlet ASTM A105 MSS SP-97 BW	
1	16	2	SCH20	XS	P31B-00TF8	Outlet ASTM A105 MSS SP-97 BW	
1	18	2	SCH20	XS	P31B-00NVX	Outlet ASTM A105 MSS SP-97 BW	
1	20	2	STD	XS	P31B-00994	Outlet ASTM A105 MSS SP-97 BW	
1	24	2	STD	XS	P31B-0092Z	Outlet ASTM A105 MSS SP-97 BW	
1	30	2	STD	XS	P31B-008P5	Outlet ASTM A105 MSS SP-97 BW	
1	36	2	STD	XS	P31B-00NX8	Outlet ASTM A105 MSS SP-97 BW	
1	42	2	XS	XS	P31B-0084J	Outlet ASTM A105 MSS SP-97 BW	
1	48	2	XS	XS	P31B-007YJ	Outlet ASTM A105 MSS SP-97 BW	
1	8	3	SCH20	STD	P31B-00P11	Outlet ASTM A105 MSS SP-97 BW	
1	10	3	SCH20	STD	P31B-00UPG	Outlet ASTM A105 MSS SP-97 BW	
1	12	3	SCH30	STD	P31B-00NYR	Outlet ASTM A105 MSS SP-97 BW	
1	14	3	SCH20	STD	P31B-00UPH	Outlet ASTM A105 MSS SP-97 BW	
1	16	3	SCH20	STD	P31B-00TU2	Outlet ASTM A105 MSS SP-97 BW	
1	18	3	SCH20	STD	P31B-00NZ4	Outlet ASTM A105 MSS SP-97 BW	
1	20	3	STD	STD	P31B-008FA	Outlet ASTM A105 MSS SP-97 BW	
1	24	3	STD	STD	P31B-00895	Outlet ASTM A105 MSS SP-97 BW	
1	30	3	STD	STD	P31B-007WY	Outlet ASTM A105 MSS SP-97 BW	
1	36	3	STD	STD	P31B-007P2	Outlet ASTM A105 MSS SP-97 BW	
1	42	3	XS	STD	P31B-00AGK	Outlet ASTM A105 MSS SP-97 BW	
1	48	3	XS	STD	P31B-00AFD	Outlet ASTM A105 MSS SP-97 BW	
1	12	4	SCH30	STD	P31B-00P1G	Outlet ASTM A105 MSS SP-97 BW	
1	14	4	SCH20	STD	P31B-00UPJ	Outlet ASTM A105 MSS SP-97 BW	

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OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	16	4	SCH20	STD	P31B-00TU3	Outlet ASTM A105 MSS SP-97 BW	
1	18	4	SCH20	STD	P31B-00P1V	Outlet ASTM A105 MSS SP-97 BW	
1	20	4	STD	STD	P31B-008D3	Outlet ASTM A105 MSS SP-97 BW	
1	24	4	STD	STD	P31B-0086X	Outlet ASTM A105 MSS SP-97 BW	
1	30	4	STD	STD	P31B-007US	Outlet ASTM A105 MSS SP-97 BW	
1	36	4	STD	STD	P31B-00AER	Outlet ASTM A105 MSS SP-97 BW	
1	42	4	XS	STD	P31B-00A8G	Outlet ASTM A105 MSS SP-97 BW	
1	48	4	XS	STD	P31B-00A2P	Outlet ASTM A105 MSS SP-97 BW	
1	18	6	SCH20	STD	P31B-00P48	Outlet ASTM A105 MSS SP-97 BW	
1	20	6	STD	STD	P31B-008PZ	Outlet ASTM A105 MSS SP-97 BW	
1	24	6	STD	STD	P31B-008JD	Outlet ASTM A105 MSS SP-97 BW	
1	30	6	STD	STD	P31B-008BS	Outlet ASTM A105 MSS SP-97 BW	
1	36	6	STD	STD	P31B-0085H	Outlet ASTM A105 MSS SP-97 BW	
1	42	6	XS	STD	P31B-007ZN	Outlet ASTM A105 MSS SP-97 BW	
1	48	6	XS	STD	P31B-007U6	Outlet ASTM A105 MSS SP-97 BW	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30B-0002D	Plug ASTM A105 ASME B16.11 NPT Round head	
1	0.75				P30B-0002E	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1				P30B-0002F	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1.5				P30B-0002G	Plug ASTM A105 ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P61B-002D4	Flange SW ASTM A105 Class 150 ASME B16.5 RF	
1	0.75		SCH160		P61B-002DE	Flange SW ASTM A105 Class 150 ASME B16.5 RF	
1	1		SCH160		P61B-002DU	Flange SW ASTM A105 Class 150 ASME B16.5 RF	
1	1.5		SCH160		P61B-002EM	Flange SW ASTM A105 Class 150 ASME B16.5 RF	
1	2		XS		P61B-003NK	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	3		STD		P61B-001PW	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	4		STD		P61B-001R8	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	6		STD		P61B-001RT	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	8		SCH20		P61B-002BF	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	10		SCH20		P61B-002B4	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	12		SCH30		P61B-002TS	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	14		SCH20		P61B-002B6	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	16		SCH20		P61B-002B7	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	18		SCH20		P61B-002B8	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	20		STD		P61B-001JA	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	24		STD		P61B-001NJ	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	30		STD		P61B-001S8	Flange WN ASTM A105 Class 150 ASME B16.47 Series B RF	
1	36		STD		P61B-003M6	Flange WN ASTM A105 Class 150 ASME B16.47 Series B RF	
1	42		XS		P61B-001N1	Flange WN ASTM A105 Class 150 ASME B16.47 Series B RF	
1	48		XS		P61B-004CX	Flange WN ASTM A105 Class 150 ASME B16.47 Series B RF	
773	0.5		SCH160		P61B-001H5	Flange SW ASTM A105 Class 300 ASME B16.5 RF	
773	0.75		SCH160		P61B-001HH	Flange SW ASTM A105 Class 300 ASME B16.5 RF	
773	1		SCH160		P61B-001E8	Flange SW ASTM A105 Class 300 ASME B16.5 RF	
773	1.5		SCH160		P61B-001ET	Flange SW ASTM A105 Class 300 ASME B16.5 RF	
773	2		XS		P61B-001HW	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	3		STD		P61B-001LJ	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	4		STD		P61B-001MC	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	6		STD		P61B-001N2	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	8		SCH20		P61B-002LJ	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	10		SCH20		P61B-002LH	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	12		SCH30		P61B-002TV	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	14		SCH20		P61B-002MR	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	16		SCH20		P61B-002MS	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	18		SCH20		P61B-002MT	Flange WN ASTM A105 Class 300 ASME B16.5 RF	

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FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
773	20		STD		P61B-001NT	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	24		STD		P61B-001PA	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	30		STD		P61B-003SW	Flange WN ASTM A105 Class 300 ASME B16.47 Series B RF	
773	36		STD		P61B-004RB	Flange WN ASTM A105 Class 300 ASME B16.47 Series B RF	
773	42		XS		P61B-00673	Flange WN ASTM A105 Class 300 ASME B16.47 Series B RF	
773	48		XS		P61B-003TH	Flange WN ASTM A105 Class 300 ASME B16.47 Series B RF	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67B-000FH	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	0.75				P67B-000FJ	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	1				P67B-000FK	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	1.5				P67B-000FL	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	2				P67B-000FT	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	3				P67B-000FW	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	4				P67B-000FX	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	6				P67B-000FY	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	8				P67B-000FZ	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	10				P67B-000FM	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	12				P67B-000FN	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	14				P67B-000FP	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	16				P67B-000FR	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	18				P67B-000FS	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	20				P67B-000FU	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	24				P67B-000FV	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	30				P67B-000G2	Blind flange ASTM A105 Class 150 ASME B16.47 Series B RF	
1	36				P67B-000G5	Blind flange ASTM A105 Class 150 ASME B16.47 Series B RF	
1	42				P67B-000KZ	Blind flange ASTM A105 Class 150 ASME B16.47 Series B RF	
1	48				P67B-000L2	Blind flange ASTM A105 Class 150 ASME B16.47 Series B RF	

REDUCING FLANGE (FR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5	0.75		SCH160	P62B-000LG	Reducing flange SW ASTM A105 Class 150 ASME B16.5 RF	
1	3	1.5		SCH160	P62B-00080	Reducing flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	3	2		XS	P62B-0006B	Reducing flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	4	2		XS	P62B-00098	Reducing flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	4	3		STD	P62B-0006D	Reducing flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	6	3		STD	P62B-000JY	Reducing flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	6	4		STD	P62B-000JZ	Reducing flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	8	6		STD	P62B-0006E	Reducing flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	10	4		STD	P62B-000K0	Reducing flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	10	8		SCH20	P62B-000K1	Reducing flange WN ASTM A105 Class 150 ASME B16.5 RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000L8	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000L9	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000LA	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000LB	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000LH	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000LL	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000LM	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	6				P73T-000LN	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	8				P73T-000LP	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	10				P73T-000LC	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

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GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	12				P73T-000LD	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	14				P73T-000LE	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	16				P73T-000LF	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	18				P73T-000LG	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	20				P73T-000LJ	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	24				P73T-000LK	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	30				P73T-000LT	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	36				P73T-000LW	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	42				P73T-000LZ	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	48				P73T-000M2	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	0.5				P73T-000FT	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	0.75				P73T-000FU	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	3				P73T-000G5	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	4				P73T-000G6	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	6				P73T-000G7	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	8				P73T-000G8	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	10				P73T-000FX	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	12				P73T-000FY	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	14				P73T-000FZ	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	16				P73T-000G0	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	18				P73T-000G1	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	20				P73T-000G3	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	24				P73T-000G4	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	30				P73T-000H9	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	36				P73T-000HC	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	42				P73T-000KM	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	48				P73T-000KR	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-16				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	18-24				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
1	30-42				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	48				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
773	0.5-10				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
773	12-48				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81B-000P4	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	0.75				P81B-000NX	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1					P81B-000NY	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	1.5				P81B-000NZ	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	

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GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2				P81C-002DV	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	3				P81C-002DW	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	4				P81C-002DX	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	6				P81C-002DY	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	8				P81C-002DZ	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	10				P81C-002DT	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
714	0.5				P81B-0015L	Gate valve ASTM A105 Class 800 API 602 SW - NPT Trim number 8 BB-BG-OS&Y Handwheel operated	
714	0.75				P81B-002F4	Gate valve ASTM A105 Class 800 API 602 SW - NPT Trim number 8 BB-BG-OS&Y Handwheel operated	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82B-000K0	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	0.75				P82B-000HB	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	1				P82B-000HC	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	1.5				P82B-000HD	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	2				P82C-000N5	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	3				P82C-000N6	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	4				P82C-000N7	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	6				P82C-000N8	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83B-000FX	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover	
1	0.75				P83B-000ER	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover	
1	1				P83B-000ES	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover	
1	1.5				P83B-000ET	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover	
1	2				P83C-00144	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	3				P83C-00147	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	4				P83C-00148	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	6				P83C-00149	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	8				P83C-0014A	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	10				P83C-00140	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	12				P83C-00141	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	14				P83C-0021E	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	16				P83C-00142	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	18				P83C-00143	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	20				P83C-00145	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	24				P83C-00146	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	

BALL VALVE (Q)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P84B-0011T	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design	
1	0.75				P84B-0011U	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design	
1	1				P84B-0011V	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design	
1	1.5				P84B-0011W	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design	
1	2				P84C-005UD	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design	
1	3				P84C-005UE	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design	
1	4				P84C-005UF	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design	

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BALL VALVE (Q)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	6				P84C-005UG	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Reduced bore Fire tested design	
1	8				P84C-005UH	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Reduced bore Fire tested design	
24	0.5				P84B-0011X	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	
24	0.75				P84B-0011Y	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	
24	1				P84B-0011Z	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	
24	1.5				P84B-00120	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	
24	2				P84C-005UJ	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	
24	3				P84C-005UK	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	
24	4				P84C-005UL	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	
24	6				P84C-005UM	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design	
24	8				P84C-005UN	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design	

ORIFICE FLANGE (FO)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2		XS		P66B-0084B	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
200	2		XS		P66B-00843	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71B-0008A	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	0.75				P71B-0008B	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	1				P71B-0008C	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71B-0008D	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	2				P71B-0000P	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	3				P71B-0000N	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	4				P71B-0000M	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	6				P71B-0000L	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	8				P71B-0000R	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	10				P71B-0000K	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	12				P71B-0000J	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	

PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000AH	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	16				P72B-0000C	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	18				P72B-000AJ	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	20				P72B-000AK	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	24				P72B-000AL	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	30				P72B-000AM	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	36				P72B-000AN	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	42				P72B-000AP	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	48				P72B-000AR	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	

PADDLE SPACER (PS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000AT	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	16				P72B-0000B	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	18				P72B-000AU	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	20				P72B-000AV	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	24				P72B-000AW	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	30				P72B-000AX	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	36				P72B-000AY	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	42				P72B-000AZ	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	48				P72B-000B0	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	

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BOLT TABLE (B_A2AP03 , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	60	P80S-003V2		
0.75	4	0.500	65	P80S-003V3		
1	4	0.500	70	P80S-003V4		
1.5	4	0.500	75	P80S-003V5		
2	4	0.625	85	P80S-003XE		
3	4	0.625	95	P80S-003XG		
4	8	0.625	95	P80S-003XG		
6	8	0.750	105	P80S-003XJ		
8	8	0.750	110	P80S-003XK		
10	12	0.875	120	P80S-00419		
12	12	0.875	120	P80S-00419		
14	12	1.000	135	P80S-0043E		
16	16	1.000	140	P80S-0043F		
18	16	1.125	150	P80S-0046K		
20	20	1.125	160	P80S-0046M		
24	20	1.250	175	P80S-004AG		
30	44	0.750	145	P80S-003ZK		
36	44	0.875	175	P80S-0041M		
42	48	1.000	190	P80S-0043T		
48	44	1.125	210	P80S-0046Z		

BOLT TABLE (B_A2AP03_773 , STUD ASME RF, OPTION CODE 773)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-003V4		
0.75	4	0.625	75	P80S-003XC		
1	4	0.625	80	P80S-003XD		
1.5	4	0.750	95	P80S-00414		
2	8	0.625	90	P80S-003XF		
3	8	0.750	110	P80S-003XK		
4	8	0.750	115	P80S-003XL		
6	12	0.750	125	P80S-003XN		
8	12	0.875	140	P80S-0041D		
10	16	1.000	160	P80S-0043K		
12	16	1.125	175	P80S-0046S		
14	20	1.125	180	P80S-0046T		
16	20	1.250	190	P80S-004AK		
18	24	1.250	200	P80S-004AM		
20	24	1.250	210	P80S-004AP		
24	24	1.500	235	P80S-003F8		
30	36	1.375	285	P80S-003EA		
36	32	1.625	320	P80S-005TT		
42	36	1.750	355	P80S-007B5		
48	40	1.875	380	P80S-008P4		

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BRANCH TABLE (T_A2AP03)

RUN PIPE SIZE (in) \ BRANCH SIZE (in)	0.5	0.75	1	1.5	2	3	4	6	8	10	12	14	16	18	20	24	30	36	42	48
0.5	TS																			
0.75		TS																		
1		TR	TS																	
1.5		TR	TR	TS																
2		L	TR	TR	TS															
3		L	L	TR	TR	TS														
4	L	L	L	L	TR	TR	TS													
6	L	L	L	L	L	TR	TR	TS												
8		L	L	L	L	L	TR	TR	TS											
10		L	L	L	L	L	TR	TR	TR	TS										
12		L	L	L	L	L	L	TR	TR	TR	TS									
14		L	L	L	L	L	L	TR	TR	TR	TR	TS								
16		L	L	L	L	L	L	TR	TR	TR	TR	TR	TS							
18		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TS						
20		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TR	TS					
24		L	L	L	L	L	L	L	9PD	TR	TR	TR	TR	TR	TR	TS				
30		L	L	L	L	L	L	L	9PD	TR	TR	TR	TR	TR	TR	TR	TS			
36		L	L	L	L	L	L	L	9PD	9PD	9PD	9PD	TR	TR	TR	TR	TR	TS		
42		L	L	L	L	L	L	L	9PD	9PD	9PD	9PD	TR	TR	TR	TR	TR	TR	TS	
48		L	L	L	L	L	L	L	9PD	9PD	9PD	9PD	9PD	9PD	9PD	TR	TR	TR	TR	TS

9PD : REINFORCING PAD 90 DEG
TR : REDUCING TEE
TS : STRAIGHT TEE
L : OUTLET

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PIPING CLASS

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Material : Killed CS
Rating : ASME CLASS 150
Flange Face : RF
C.A.(mm) : 3.00
Gasket : Spiral Wound
Service : PROCESS - GENERAL PROCESS NON SOUR, NON CORROSIVE
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
2	USE OF SOFT SEATED BALL, PLUG AND BUTTERFLY VALVES SHALL BE LIMITED TO MAXIMUM OF 204DEGC (400DEGF)

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
24	FULL PORT (Q)
200	WITH JACK SCREW (FO)
541	NPT(F) (CA,L)
714	SW - NPT(F) (V)
773	CLASS 300 (B,F,G)

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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P01A-00143	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	0.75		SCH160		P01A-0010R	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1		SCH160		P01A-0014M	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1.5		SCH160		P01A-0015J	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	2		XS		P01A-000YX	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	3		XS		P01A-000Z4	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	4		STD		P01A-000YU	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	6		STD		P01A-000Z3	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	8		SCH30		P01A-001WL	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	10		SCH30		P01A-0016U	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	12		SCH30		P01A-0017K	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	14		STD		P01A-000Y1	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	16		STD		P01A-000Y9	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	18		SCH20		P01A-00438	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE	
1	20		STD		P01A-0042G	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE	
1	24		STD		P01A-0042H	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE	
1	26		XS		P01A-0090E	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE	
1	28		STD		P01A-008V4	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE	
1	30		XS		P01A-008MM	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE	
1	36		XS		P01A-0042K	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE	
1	42		XS		P01A-0043G	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE	
1	44		XS		P01A-008V5	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE	
1	48		XS		P01A-0042L	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P02B-0002A	90 degree elbow ASTM A105 Class 9000 ASME B16.11 SW	
1	0.75				P02B-0001K	90 degree elbow ASTM A105 Class 6000 ASME B16.11 SW	
1	1				P02B-0002E	90 degree elbow ASTM A105 Class 6000 ASME B16.11 SW	
1	1.5				P02B-0002F	90 degree elbow ASTM A105 Class 6000 ASME B16.11 SW	
1	2		XS		P02A-000CP	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		XS		P02A-000CX	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		STD		P02A-000CZ	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		STD		P02A-000D6	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		SCH30		P02A-003DK	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	10		SCH30		P02A-000M3	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	12		SCH30		P02A-000M4	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	14		STD		P02A-000C8	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	16		STD		P02A-000CH	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	18		SCH20		P02A-000LT	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	20		STD		P02A-0010J	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	24		STD		P02A-0010K	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	26		XS		P02A-000CS	90 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius	
1	28		STD		P02A-000F2	90 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius	
1	30		XS		P02A-000D0	90 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius	
1	36		XS		P02A-000DH	90 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius	
1	42		XS		P02A-000FB	90 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius	
1	44		XS		P02A-000FD	90 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius	
1	48		XS		P02A-0017R	90 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P03B-00026	45 degree elbow ASTM A105 Class 9000 ASME B16.11 SW	
1	0.75				P03B-0001G	45 degree elbow ASTM A105 Class 6000 ASME B16.11 SW	
1	1				P03B-0002A	45 degree elbow ASTM A105 Class 6000 ASME B16.11 SW	
1	1.5				P03B-0002B	45 degree elbow ASTM A105 Class 6000 ASME B16.11 SW	
1	2		XS		P03A-000AS	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		XS		P03A-000AZ	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		STD		P03A-000B1	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

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45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	6		STD		P03A-000B9	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		SCH30		P03A-003BE	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	10		SCH30		P03A-000JT	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	12		SCH30		P03A-000JU	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	14		STD		P03A-000AG	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	16		STD		P03A-000AM	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	18		SCH20		P03A-001DX	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	20		STD		P03A-000X1	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	24		STD		P03A-000X2	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	26		XS		P03A-000AV	45 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius	
1	28		STD		P03A-000CY	45 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius	
1	30		XS		P03A-000B5	45 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius	
1	36		XS		P03A-000BG	45 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius	
1	42		XS		P03A-000DB	45 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius	
1	44		XS		P03A-000DD	45 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius	
1	48		XS		P03A-0013P	45 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P21B-00022	Straight tee ASTM A105 Class 9000 ASME B16.11 SW	
1	0.75				P21B-0001G	Straight tee ASTM A105 Class 6000 ASME B16.11 SW	
1	1				P21B-00026	Straight tee ASTM A105 Class 6000 ASME B16.11 SW	
1	1.5				P21B-00027	Straight tee ASTM A105 Class 6000 ASME B16.11 SW	
1	2		XS		P21A-001CJ	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		XS		P21A-001CR	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		STD		P21A-001CW	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6		STD		P21A-001D2	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8		SCH30		P21A-003WV	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10		SCH30		P21A-00259	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12		SCH30		P21A-0025A	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14		STD		P21A-001C8	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16		STD		P21A-001CD	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18		SCH20		P21A-001PJ	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20		STD		P21A-001C7	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24		STD		P21A-001CC	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	26		XS		P21A-001CL	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	28		STD		P21A-001WE	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30		XS		P21A-001CX	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	36		XS		P21A-001D7	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	42		XS		P21A-001KS	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	44		XS		P21A-001LJ	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	48		XS		P21A-001RL	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75			P24B-00030	Reducing tee ASTM A105 Class 6000 ASME B16.11 SW	
1	1.5	0.75			P24B-00032	Reducing tee ASTM A105 Class 6000 ASME B16.11 SW	
1	1.5	1			P24B-0004J	Reducing tee ASTM A105 Class 6000 ASME B16.11 SW	
1	2	1	XS	SCH160	P24A-00GMB	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	XS	SCH160	P24A-005K9	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	XS	SCH160	P24A-00GNV	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	XS	XS	P24A-0023S	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P24A-002HY	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	XS	P24A-00GNW	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	XS	P24A-00GTR	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P24A-00229	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH30	STD	P24A-00JVH	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH30	STD	P24A-00JVG	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	SCH30	STD	P24A-00GNR	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	10	6	SCH30	STD	P24A-0060W	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	SCH30	SCH30	P24A-00J15	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	SCH30	STD	P24A-00HKT	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH30	SCH30	P24A-00M36	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH30	SCH30	P24A-003ET	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	STD	STD	P24A-0026N	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	STD	SCH30	P24A-00NJ4	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	STD	SCH30	P24A-0060L	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	STD	SCH30	P24A-005KF	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	6	STD	STD	P24A-001ZC	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	STD	SCH30	P24A-00NJ5	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	STD	SCH30	P24A-00N27	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	STD	SCH30	P24A-00N3R	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	STD	STD	P24A-001Z4	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	8	SCH20	SCH30	P24A-00BNK	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	10	SCH20	SCH30	P24A-00BF6	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	12	SCH20	SCH30	P24A-00BH0	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	14	SCH20	STD	P24A-00BJN	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	16	SCH20	STD	P24A-00L69	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	8	STD	SCH30	P24A-00M39	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	10	STD	SCH30	P24A-00BT8	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	12	STD	SCH30	P24A-00BUT	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	14	STD	STD	P24A-004U1	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	16	STD	STD	P24A-004SF	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	18	STD	SCH20	P24A-006WD	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	10	STD	SCH30	P24A-00C5X	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	12	STD	SCH30	P24A-00C7C	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	14	STD	STD	P24A-004T3	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	16	STD	STD	P24A-004VY	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	18	STD	SCH20	P24A-006WF	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	20	STD	STD	P24A-004SV	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	26	12	XS	SCH30	P24A-00CFE	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	26	14	XS	STD	P24A-004VU	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	26	16	XS	STD	P24A-004WF	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	26	18	XS	SCH20	P24A-00PU2	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	26	20	XS	STD	P24A-004U3	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	26	24	XS	STD	P24A-004SH	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	28	12	STD	SCH30	P24A-00CMV	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	28	14	STD	STD	P24A-00CNW	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	28	16	STD	STD	P24A-00CPY	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	28	18	STD	SCH20	P24A-004A4	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	28	20	STD	STD	P24A-00CSR	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	28	24	STD	STD	P24A-005G2	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	28	26	STD	XS	P24A-00PU3	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	10	XS	SCH30	P24A-00NFR	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	12	XS	SCH30	P24A-00CZ6	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	14	XS	STD	P24A-004TA	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	16	XS	STD	P24A-004VH	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	18	XS	SCH20	P24A-0043K	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	20	XS	STD	P24A-004ST	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	24	XS	STD	P24A-004V6	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	26	XS	XS	P24A-004TM	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	28	XS	STD	P24A-005JH	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	36	16	XS	STD	P24A-004VV	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	36	18	XS	SCH20	P24A-003VJ	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	36	20	XS	STD	P24A-004SS	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	36	24	XS	STD	P24A-004VX	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	36	26	XS	XS	P24A-004UJ	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	36	28	XS	STD	P24A-00DXE	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	

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REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	36	30	XS	XS	P24A-0043N	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	42	16	XS	STD	P24A-00GU2	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	42	18	XS	SCH20	P24A-003VC	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	42	20	XS	STD	P24A-00EGT	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	42	24	XS	STD	P24A-00EHZ	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	42	26	XS	XS	P24A-00EJE	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	42	28	XS	STD	P24A-0054T	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	42	30	XS	XS	P24A-0043R	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	42	36	XS	XS	P24A-003VG	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	44	20	XS	STD	P24A-00EPM	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	44	24	XS	STD	P24A-00ER8	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	44	26	XS	XS	P24A-00ERL	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	44	28	XS	STD	P24A-00ERX	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	44	30	XS	XS	P24A-00ESD	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	44	36	XS	XS	P24A-00ETD	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	44	42	XS	XS	P24A-00EUD	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	48	24	XS	STD	P24A-006WP	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	48	26	XS	XS	P24A-00F1C	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	48	28	XS	STD	P24A-006Z6	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	48	30	XS	XS	P24A-006Z7	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	48	36	XS	XS	P24A-00F4B	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	48	42	XS	XS	P24A-00F5N	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	48	44	XS	XS	P24A-0060U	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	XS	XS	P27A-001E5	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P27A-001N0	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	XS	P27A-0074W	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	XS	P27A-007P6	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P27A-001GW	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH30	STD	P27A-00ED2	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH30	STD	P27A-00ECY	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	SCH30	STD	P27A-003MK	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	SCH30	STD	P27A-003ML	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	SCH30	SCH30	P27A-004T9	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	SCH30	STD	P27A-003MN	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH30	SCH30	P27A-004XA	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH30	SCH30	P27A-0028K	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	STD	STD	P27A-0019L	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	STD	SCH30	P27A-0052U	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	STD	SCH30	P27A-003MB	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	STD	SCH30	P27A-003MP	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	STD	SCH30	P27A-0059W	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	STD	SCH30	P27A-0054N	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	STD	SCH30	P27A-00CBA	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	STD	STD	P27A-001A7	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	10	SCH20	SCH30	P27A-0084J	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	12	SCH20	SCH30	P27A-0084K	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	14	SCH20	STD	P27A-00BGP	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	16	SCH20	STD	P27A-00FE4	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	12	STD	SCH30	P27A-0082K	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	14	STD	STD	P27A-0019K	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	16	STD	STD	P27A-001AD	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	18	STD	SCH20	P27A-0084N	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	16	STD	STD	P27A-0018C	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	18	STD	SCH20	P27A-0084U	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	20	STD	STD	P27A-001A8	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	26	18	XS	SCH20	P27A-008EU	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	

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CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	26	20	XS	STD	P27A-0018F	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	26	24	XS	STD	P27A-0018Z	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	28	20	STD	STD	P27A-001N6	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	28	24	STD	STD	P27A-001SB	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	28	26	STD	XS	P27A-00J2K	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	20	XS	STD	P27A-0018E	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	24	XS	STD	P27A-0019H	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	26	XS	XS	P27A-0019P	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	28	XS	STD	P27A-003LV	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	36	24	XS	STD	P27A-001GY	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	36	26	XS	XS	P27A-0018H	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	36	30	XS	XS	P27A-0019M	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	42	30	XS	XS	P27A-001MC	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	42	36	XS	XS	P27A-001M6	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	44	36	XS	XS	P27A-001MK	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	44	42	XS	XS	P27A-001RP	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	48	42	XS	XS	P27A-00BHA	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	48	44	XS	XS	P27A-0041W	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	XS	XS	P28A-001EH	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P28A-001N6	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	XS	P28A-008F7	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	XS	P28A-008K1	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P28A-00182	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH30	STD	P28A-00BFY	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH30	STD	P28A-00BFZ	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	SCH30	STD	P28A-003MD	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	SCH30	STD	P28A-003ME	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	SCH30	SCH30	P28A-00A4S	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	SCH30	STD	P28A-003MG	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH30	SCH30	P28A-00BGV	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH30	SCH30	P28A-0027C	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	STD	STD	P28A-0019R	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	STD	SCH30	P28A-00BGW	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	STD	SCH30	P28A-003M5	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	STD	SCH30	P28A-003MH	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	STD	SCH30	P28A-00EDR	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	STD	SCH30	P28A-00E3U	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	STD	SCH30	P28A-009AH	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	STD	STD	P28A-001AC	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	10	SCH20	SCH30	P28A-004UL	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	12	SCH20	SCH30	P28A-004UM	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	14	SCH20	STD	P28A-008FR	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	16	SCH20	STD	P28A-00CK2	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	12	STD	SCH30	P28A-004SH	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	14	STD	STD	P28A-001A8	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	16	STD	STD	P28A-001AY	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	18	STD	SCH20	P28A-004UN	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	16	STD	STD	P28A-0018K	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	18	STD	SCH20	P28A-004US	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	20	STD	STD	P28A-001AW	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	26	18	XS	SCH20	P28A-0054X	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	26	20	XS	STD	P28A-0018L	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	26	24	XS	STD	P28A-0019L	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	28	20	STD	STD	P28A-001RE	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	28	24	STD	STD	P28A-001M5	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	28	26	STD	XS	P28A-00FC6	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	

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ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	30	20	XS	STD	P28A-0018H	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	24	XS	STD	P28A-0019P	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	26	XS	XS	P28A-001A9	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	28	XS	STD	P28A-003LL	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	36	24	XS	STD	P28A-0017X	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	36	26	XS	XS	P28A-0018E	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	36	30	XS	XS	P28A-0019M	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	42	30	XS	XS	P28A-001ME	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	42	36	XS	XS	P28A-001N0	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	44	36	XS	XS	P28A-001MM	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	44	42	XS	XS	P28A-001M1	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	48	42	XS	XS	P28A-008GJ	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	48	44	XS	XS	P28A-0041P	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P29B-0001K	Cap ASTM A105 Class 9000 ASME B16.11 SW	
1	0.75				P29B-0002G	Cap ASTM A105 Class 6000 ASME B16.11 SW	
1	1				P29B-0002D	Cap ASTM A105 Class 6000 ASME B16.11 SW	
1	1.5				P29B-0002E	Cap ASTM A105 Class 6000 ASME B16.11 SW	
1	2		XS		P29A-000A1	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		XS		P29A-000AT	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		STD		P29A-000A3	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6		STD		P29A-000A9	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8		SCH30		P29A-000PC	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10		SCH30		P29A-000K7	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12		SCH30		P29A-000PZ	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14		STD		P29A-000AJ	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16		STD		P29A-000AR	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18		SCH20		P29A-000E0	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20		STD		P29A-000B2	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24		STD		P29A-000B8	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	26		XS		P29A-000BA	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	28		STD		P29A-000DP	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	30		XS		P29A-000BP	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	36		XS		P29A-000A2	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	42		XS		P29A-000CW	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	44		XS		P29A-000CX	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	48		XS		P29A-00136	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
541	0.75				P29B-0000Y	Cap ASTM A105 Class 6000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P41A-000B9	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		XXS		P41A-000BA	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		XXS		P41A-000D8	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		XXS		P41A-000D9	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

CON SWAGED NIPPLE (SNC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	XXS	P42A-000A5	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	SCH160	XXS	P42A-000A6	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	SCH160	SCH160	P42A-0009U	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	SCH160	XXS	P42A-000A7	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	SCH160	SCH160	P42A-0009W	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	SCH160	SCH160	P42A-0009X	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	XS	XXS	P42A-000LL	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	XS	SCH160	P42A-000J7	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	XS	SCH160	P42A-000F8	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	

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CON SWAGED NIPPLE (SNC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2	1.5	XS	SCH160	P42A-000KZ	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	XS	SCH160	P42A-000L9	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	

ECC SWAGED NIPPLE (SNE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	XXS	P43A-000DD	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	SCH160	XXS	P43A-000DE	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	SCH160	SCH160	P43A-000B5	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	SCH160	XXS	P43A-000DF	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	SCH160	SCH160	P43A-000B7	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	SCH160	SCH160	P43A-000B8	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	XS	XXS	P43A-000E8	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	XS	SCH160	P43A-000B3	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	XS	SCH160	P43A-000CZ	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	XS	SCH160	P43A-000D0	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	XS	SCH160	P43A-000DM	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	

COUPLING (CPS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P47B-00026	Coupling ASTM A105 Class 9000 ASME B16.11 SW - SW	
1	0.75				P47B-00012	Coupling ASTM A105 Class 6000 ASME B16.11 SW - SW	
1	1				P47B-0002A	Coupling ASTM A105 Class 6000 ASME B16.11 SW - SW	
1	1.5				P47B-0002B	Coupling ASTM A105 Class 6000 ASME B16.11 SW - SW	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5 - 2.5	0.75			P31B-0137D	Outlet ASTM A105 Class 6000 MSS SP-97 SW	
1	3 - 10	0.75			P31B-007LV	Outlet ASTM A105 Class 6000 MSS SP-97 SW	
1	12 and larger	0.75			P31B-0136N	Outlet ASTM A105 Class 6000 MSS SP-97 SW	
1	3 - 10	1			P31B-007LN	Outlet ASTM A105 Class 6000 MSS SP-97 SW	
1	12 and larger	1			P31B-0136P	Outlet ASTM A105 Class 6000 MSS SP-97 SW	
1	4 - 5	1.5			P31B-004LE	Outlet ASTM A105 Class 6000 MSS SP-97 SW	
1	6 - 8	1.5			P31B-005T4	Outlet ASTM A105 Class 6000 MSS SP-97 SW	
1	10 - 18	1.5			P31B-007LF	Outlet ASTM A105 Class 6000 MSS SP-97 SW	
1	20 and larger	1.5			P31B-0137E	Outlet ASTM A105 Class 6000 MSS SP-97 SW	
541	1	0.75			P31B-005HL	Outlet ASTM A105 Class 6000 MSS SP-97 NPT	
541	1.5 - 2.5	0.75			P31B-0137F	Outlet ASTM A105 Class 6000 MSS SP-97 NPT	
541	3 - 10	0.75			P31B-007KP	Outlet ASTM A105 Class 6000 MSS SP-97 NPT	
541	12 and larger	0.75			P31B-0138A	Outlet ASTM A105 Class 6000 MSS SP-97 NPT	
1	6	2	STD	XS	P31B-007SH	Outlet ASTM A105 MSS SP-97 BW	
1	8	2	SCH30	XS	P31B-00X36	Outlet ASTM A105 MSS SP-97 BW	
1	10	2	SCH30	XS	P31B-00NVF	Outlet ASTM A105 MSS SP-97 BW	
1	12	2	SCH30	XS	P31B-00NVL	Outlet ASTM A105 MSS SP-97 BW	
1	14	2	STD	XS	P31B-00CAE	Outlet ASTM A105 MSS SP-97 BW	
1	16	2	STD	XS	P31B-00C1T	Outlet ASTM A105 MSS SP-97 BW	
1	18	2	SCH20	XS	P31B-00NVX	Outlet ASTM A105 MSS SP-97 BW	
1	20	2	STD	XS	P31B-00994	Outlet ASTM A105 MSS SP-97 BW	
1	24	2	STD	XS	P31B-0092Z	Outlet ASTM A105 MSS SP-97 BW	
1	26	2	XS	XS	P31B-00NWJ	Outlet ASTM A105 MSS SP-97 BW	
1	28	2	STD	XS	P31B-008WJ	Outlet ASTM A105 MSS SP-97 BW	
1	30	2	XS	XS	P31B-008P4	Outlet ASTM A105 MSS SP-97 BW	
1	36	2	XS	XS	P31B-008BB	Outlet ASTM A105 MSS SP-97 BW	
1	42	2	XS	XS	P31B-0084J	Outlet ASTM A105 MSS SP-97 BW	
1	44	2	XS	XS	P31B-00F9L	Outlet ASTM A105 MSS SP-97 BW	
1	48	2	XS	XS	P31B-007YJ	Outlet ASTM A105 MSS SP-97 BW	
1	8	3	SCH30	XS	P31B-00ZH7	Outlet ASTM A105 MSS SP-97 BW	
1	10	3	SCH30	XS	P31B-00NYL	Outlet ASTM A105 MSS SP-97 BW	
1	12	3	SCH30	XS	P31B-00NYT	Outlet ASTM A105 MSS SP-97 BW	
1	14	3	STD	XS	P31B-0090L	Outlet ASTM A105 MSS SP-97 BW	

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OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	16	3	STD	XS	P31B-008UE	Outlet ASTM A105 MSS SP-97 BW	
1	18	3	SCH20	XS	P31B-00NZ6	Outlet ASTM A105 MSS SP-97 BW	
1	20	3	STD	XS	P31B-008F4	Outlet ASTM A105 MSS SP-97 BW	
1	24	3	STD	XS	P31B-0088Z	Outlet ASTM A105 MSS SP-97 BW	
1	26	3	XS	XS	P31B-00EX2	Outlet ASTM A105 MSS SP-97 BW	
1	28	3	STD	XS	P31B-0082R	Outlet ASTM A105 MSS SP-97 BW	
1	30	3	XS	XS	P31B-00ENG	Outlet ASTM A105 MSS SP-97 BW	
1	36	3	XS	XS	P31B-00ENU	Outlet ASTM A105 MSS SP-97 BW	
1	42	3	XS	XS	P31B-00P0K	Outlet ASTM A105 MSS SP-97 BW	
1	44	3	XS	XS	P31B-00P0M	Outlet ASTM A105 MSS SP-97 BW	
1	48	3	XS	XS	P31B-00NJW	Outlet ASTM A105 MSS SP-97 BW	
1	12	4	SCH30	STD	P31B-00P1G	Outlet ASTM A105 MSS SP-97 BW	
1	14	4	STD	STD	P31B-008YM	Outlet ASTM A105 MSS SP-97 BW	
1	16	4	STD	STD	P31B-008SH	Outlet ASTM A105 MSS SP-97 BW	
1	18	4	SCH20	STD	P31B-00P1V	Outlet ASTM A105 MSS SP-97 BW	
1	20	4	STD	STD	P31B-008D3	Outlet ASTM A105 MSS SP-97 BW	
1	24	4	STD	STD	P31B-0086X	Outlet ASTM A105 MSS SP-97 BW	
1	26	4	XS	STD	P31B-0081D	Outlet ASTM A105 MSS SP-97 BW	
1	28	4	STD	STD	P31B-0080R	Outlet ASTM A105 MSS SP-97 BW	
1	30	4	XS	STD	P31B-007UR	Outlet ASTM A105 MSS SP-97 BW	
1	36	4	XS	STD	P31B-00AEP	Outlet ASTM A105 MSS SP-97 BW	
1	42	4	XS	STD	P31B-00A8G	Outlet ASTM A105 MSS SP-97 BW	
1	44	4	XS	STD	P31B-00A87	Outlet ASTM A105 MSS SP-97 BW	
1	48	4	XS	STD	P31B-00A2P	Outlet ASTM A105 MSS SP-97 BW	
1	18	6	SCH20	STD	P31B-00P48	Outlet ASTM A105 MSS SP-97 BW	
1	20	6	STD	STD	P31B-008PZ	Outlet ASTM A105 MSS SP-97 BW	
1	24	6	STD	STD	P31B-008JD	Outlet ASTM A105 MSS SP-97 BW	
1	26	6	XS	STD	P31B-008HT	Outlet ASTM A105 MSS SP-97 BW	
1	28	6	STD	STD	P31B-008CL	Outlet ASTM A105 MSS SP-97 BW	
1	30	6	XS	STD	P31B-008BR	Outlet ASTM A105 MSS SP-97 BW	
1	36	6	XS	STD	P31B-0085G	Outlet ASTM A105 MSS SP-97 BW	
1	42	6	XS	STD	P31B-007ZN	Outlet ASTM A105 MSS SP-97 BW	
1	44	6	XS	STD	P31B-007ZF	Outlet ASTM A105 MSS SP-97 BW	
1	48	6	XS	STD	P31B-007U6	Outlet ASTM A105 MSS SP-97 BW	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30B-0002D	Plug ASTM A105 ASME B16.11 NPT Round head	
1	0.75				P30B-0002E	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1				P30B-0002F	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1.5				P30B-0002G	Plug ASTM A105 ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P61B-002DA	Flange SW ASTM A105 Class 150 ASME B16.5 RF	
1	0.75		SCH160		P61B-002DE	Flange SW ASTM A105 Class 150 ASME B16.5 RF	
1	1		SCH160		P61B-002DU	Flange SW ASTM A105 Class 150 ASME B16.5 RF	
1	1.5		SCH160		P61B-002EM	Flange SW ASTM A105 Class 150 ASME B16.5 RF	
1	2		XS		P61B-003NK	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	3		XS		P61B-003JD	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	4		STD		P61B-001R8	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	6		STD		P61B-001RT	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	8		SCH30		P61B-003FP	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	10		SCH30		P61B-003FS	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	12		SCH30		P61B-002TS	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	14		STD		P61B-001SN	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	16		STD		P61B-001T5	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	18		SCH20		P61B-002B8	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	20		STD		P61B-001JA	Flange WN ASTM A105 Class 150 ASME B16.5 RF	

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FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	24		STD		P61B-001NJ	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	26		XS		P61B-001RC	Flange WN ASTM A105 Class 150 ASME B16.47 Series B RF	
1	28		STD		P61B-001RU	Flange WN ASTM A105 Class 150 ASME B16.47 Series B RF	
1	30		XS		P61B-001SJ	Flange WN ASTM A105 Class 150 ASME B16.47 Series B RF	
1	36		XS		P61B-001UE	Flange WN ASTM A105 Class 150 ASME B16.47 Series B RF	
1	42		XS		P61B-001N1	Flange WN ASTM A105 Class 150 ASME B16.47 Series B RF	
1	44		XS		P61B-001N3	Flange WN ASTM A105 Class 150 ASME B16.47 Series B RF	
1	48		XS		P61B-004CX	Flange WN ASTM A105 Class 150 ASME B16.47 Series B RF	
773	0.5		XXS		P61B-001HD	Flange SW ASTM A105 Class 300 ASME B16.5 RF	
773	0.75		SCH160		P61B-001HH	Flange SW ASTM A105 Class 300 ASME B16.5 RF	
773	1		SCH160		P61B-001E8	Flange SW ASTM A105 Class 300 ASME B16.5 RF	
773	1.5		SCH160		P61B-001ET	Flange SW ASTM A105 Class 300 ASME B16.5 RF	
773	2		XS		P61B-001HW	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	3		XS		P61B-001DK	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	4		STD		P61B-001MC	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	6		STD		P61B-001N2	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	8		SCH30		P61B-008S0	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	10		SCH30		P61B-003LX	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	12		SCH30		P61B-002TV	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	14		STD		P61B-001M9	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	16		STD		P61B-001MH	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	18		SCH20		P61B-002MT	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	20		STD		P61B-001NT	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	24		STD		P61B-001PA	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	30		XS		P61B-001KT	Flange WN ASTM A105 Class 300 ASME B16.47 Series B RF	
773	36		XS		P61B-001N6	Flange WN ASTM A105 Class 300 ASME B16.47 Series B RF	
773	42		XS		P61B-00673	Flange WN ASTM A105 Class 300 ASME B16.47 Series B RF	
773	44		XS		P61B-003TF	Flange WN ASTM A105 Class 300 ASME B16.47 Series B RF	
773	48		XS		P61B-003TH	Flange WN ASTM A105 Class 300 ASME B16.47 Series B RF	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67B-000FH	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	0.75				P67B-000FJ	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	1				P67B-000FK	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	1.5				P67B-000FL	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	2				P67B-000FT	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	3				P67B-000FW	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	4				P67B-000FX	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	6				P67B-000FY	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	8				P67B-000FZ	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	10				P67B-000FM	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	12				P67B-000FN	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	14				P67B-000FP	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	16				P67B-000FR	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	18				P67B-000FS	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	20				P67B-000FU	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	24				P67B-000FV	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	30				P67B-000G2	Blind flange ASTM A105 Class 150 ASME B16.47 Series B RF	
1	36				P67B-000G5	Blind flange ASTM A105 Class 150 ASME B16.47 Series B RF	
1	42				P67B-000KZ	Blind flange ASTM A105 Class 150 ASME B16.47 Series B RF	
1	44				P67B-000L0	Blind flange ASTM A105 Class 150 ASME B16.47 Series B RF	
1	48				P67B-000L2	Blind flange ASTM A105 Class 150 ASME B16.47 Series B RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000L8	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000L9	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

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GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P73T-000LA	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000LB	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000LH	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000LL	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000LM	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	6				P73T-000LN	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	8				P73T-000LP	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	10				P73T-000LC	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	12				P73T-000LD	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	14				P73T-000LE	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	16				P73T-000LF	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	18				P73T-000LG	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	20				P73T-000LJ	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	24				P73T-000LK	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	26				P73T-000LR	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	28				P73T-000LS	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	30				P73T-000LT	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	36				P73T-000LW	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	42				P73T-000LZ	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	44				P73T-000M0	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	48				P73T-000M2	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	0.5				P73T-000FT	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	0.75				P73T-000FU	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	3				P73T-000G5	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	4				P73T-000G6	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	6				P73T-000G7	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	8				P73T-000G8	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	10				P73T-000FX	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	12				P73T-000FY	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	14				P73T-000FZ	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	16				P73T-000G0	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	18				P73T-000G1	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	20				P73T-000G3	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	24				P73T-000G4	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	30				P73T-000H9	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	36				P73T-000HC	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	42				P73T-000KM	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	44				P73T-000KN	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	48				P73T-000KR	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	

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BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-16				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	18-24				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
1	26-44				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	48				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
773	0.5-10				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
773	12-48				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81B-000P4	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	0.75				P81B-000NX	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	1				P81B-000NY	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	1.5				P81B-000NZ	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	2				P81C-002DV	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	3				P81C-002DW	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	4				P81C-002DX	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	6				P81C-002DY	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	8				P81C-002DZ	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	10				P81C-002DT	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	12				P81C-002DU	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	14				P81C-00308	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated	
1	16				P81C-002E0	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated	
1	18				P81C-002E1	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated	
1	20				P81C-002E2	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated	
1	24				P81C-002E3	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated	
714	0.5				P81B-0015L	Gate valve ASTM A105 Class 800 API 602 SW - NPT Trim number 8 BB-BG-OS&Y Handwheel operated	
714	0.75				P81B-002F4	Gate valve ASTM A105 Class 800 API 602 SW - NPT Trim number 8 BB-BG-OS&Y Handwheel operated	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82B-000K0	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	0.75				P82B-000HB	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	1				P82B-000HC	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	1.5				P82B-000HD	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	2				P82C-000N5	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	3				P82C-000N6	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	4				P82C-000N7	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	6				P82C-000N8	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	8				P82C-0026L	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83B-000FX	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover	
1	0.75				P83B-000ER	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover	
1	1				P83B-000ES	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover	
1	1.5				P83B-000ET	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover	
1	2				P83C-00144	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	3				P83C-00147	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	4				P83C-00148	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	

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CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	6				P83C-00149	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	8				P83C-0014A	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	

BALL VALVE (Q)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P84B-0011T	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design	
1	0.75				P84B-0011U	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design	
1	1				P84B-0011V	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design	
1	1.5				P84B-0011W	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design	
1	2				P84C-005UD	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design	
1	3				P84C-005UE	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design	
1	4				P84C-005UF	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design	
1	6				P84C-005UG	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Reduced bore Fire tested design	
1	8				P84C-005UH	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Reduced bore Fire tested design	
24	0.5				P84B-0011X	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	
24	0.75				P84B-0011Y	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	
24	1				P84B-0011Z	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	
24	1.5				P84B-00120	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	
24	2				P84C-005UJ	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	
24	3				P84C-005UK	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	
24	4				P84C-005UL	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	
24	6				P84C-005UM	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design	
24	8				P84C-005UN	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design	

ORIFICE FLANGE (FO)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2		XS		P66B-0084B	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	3		XS		P66B-008C1	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	4		STD		P66B-0084D	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	6		STD		P66B-0084E	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	8		SCH30		P66B-00871	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	10		SCH30		P66B-0086Z	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	12		SCH30		P66B-00849	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	14		STD		P66B-008A3	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	16		STD		P66B-008C0	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	18		SCH20		P66B-0084R	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	20		STD		P66B-0084S	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	24		STD		P66B-0085W	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
200	2		XS		P66B-00843	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	3		XS		P66B-008C3	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	4		STD		P66B-00845	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	6		STD		P66B-00846	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	8		SCH30		P66B-00876	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	10		SCH30		P66B-00874	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	12		SCH30		P66B-00841	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	14		STD		P66B-008A5	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	16		STD		P66B-008C2	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	18		SCH20		P66B-0084T	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	20		STD		P66B-0084U	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	24		STD		P66B-0085X	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	

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SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71B-0008A	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	0.75				P71B-0008B	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	1				P71B-0008C	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71B-0008D	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	2				P71B-0000P	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	3				P71B-0000N	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	4				P71B-0000M	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	6				P71B-0000L	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	8				P71B-0000R	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	10				P71B-0000K	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	12				P71B-0000J	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	

PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000AH	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	16				P72B-0000C	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	18				P72B-000AJ	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	20				P72B-000AK	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	24				P72B-000AL	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	26				P72B-000XM	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	28				P72B-000XN	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	30				P72B-000AM	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	36				P72B-000AN	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	42				P72B-000AP	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	44				P72B-000VA	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	48				P72B-000AR	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	

PADDLE SPACER (PS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000AT	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	16				P72B-0000B	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	18				P72B-000AU	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	20				P72B-000AV	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	24				P72B-000AW	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	26				P72B-000XS	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	28				P72B-000XT	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	30				P72B-000AX	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	36				P72B-000AY	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	42				P72B-000AZ	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	44				P72B-000VB	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	48				P72B-000B0	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	

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BOLT TABLE (B_A2AP04 , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	60	P80S-003V2		
0.75	4	0.500	65	P80S-003V3		
1	4	0.500	70	P80S-003V4		
1.5	4	0.500	75	P80S-003V5		
2	4	0.625	85	P80S-003XE		
3	4	0.625	95	P80S-003XG		
4	8	0.625	95	P80S-003XG		
6	8	0.750	105	P80S-003XJ		
8	8	0.750	110	P80S-003XK		
10	12	0.875	120	P80S-00419		
12	12	0.875	120	P80S-00419		
14	12	1.000	135	P80S-0043E		
16	16	1.000	140	P80S-0043F		
18	16	1.125	150	P80S-0046K		
20	20	1.125	160	P80S-0046M		
24	20	1.250	175	P80S-004AG		
26	36	0.750	140	P80S-003ZJ		
28	40	0.750	145	P80S-003ZK		
30	44	0.750	145	P80S-003ZK		
36	44	0.875	175	P80S-0041M		
42	48	1.000	190	P80S-0043T		
44	52	1.000	195	P80S-0043U		
48	44	1.125	210	P80S-0046Z		

BOLT TABLE (B_A2AP04_773 , STUD ASME RF, OPTION CODE 773)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-003V4		
0.75	4	0.625	75	P80S-003XC		
1	4	0.625	80	P80S-003XD		
1.5	4	0.750	95	P80S-00414		
2	8	0.625	90	P80S-003XF		
3	8	0.750	110	P80S-003XK		
4	8	0.750	115	P80S-003XL		
6	12	0.750	125	P80S-003XN		
8	12	0.875	140	P80S-0041D		
10	16	1.000	160	P80S-0043K		
12	16	1.125	175	P80S-0046S		
14	20	1.125	180	P80S-0046T		
16	20	1.250	190	P80S-004AK		
18	24	1.250	200	P80S-004AM		
20	24	1.250	210	P80S-004AP		
24	24	1.500	235	P80S-003F8		
26	32	1.250	270	P80S-004B2		
28	36	1.250	270	P80S-004B2		
30	36	1.375	285	P80S-003EA		
36	32	1.625	320	P80S-005TT		
42	36	1.750	355	P80S-007B5		
44	40	1.750	370	P80S-007B8		
48	40	1.875	380	P80S-008P4		

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BRANCH TABLE (T_A2AP04)

RUN PIPE SIZE (in) \ BRANCH SIZE (in)	0.5	0.75	1	1.5	2	3	4	6	8	10	12	14	16	18	20	24	26	28	30	36	42	44	48
0.5	TS																						
0.75		TS																					
1		TR	TS																				
1.5		TR	TR	TS																			
2		L	TR	TR	TS																		
3		L	L	TR	TR	TS																	
4	L	L	L	L	TR	TR	TS																
6	L	L	L	L	L	TR	TR	TS															
8		L	L	L	L	L	TR	TR	TS														
10		L	L	L	L	L	TR	TR	TR	TS													
12		L	L	L	L	L	L	TR	TR	TR	TS												
14		L	L	L	L	L	L	TR	TR	TR	TR	TS											
16		L	L	L	L	L	L	TR	TR	TR	TR	TR	TS										
18		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TS									
20		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TR	TS								
24		L	L	L	L	L	L	L	9PD	TR	TR	TR	TR	TR	TR	TS							
26		L	L	L	L	L	L	L	9PD	9PD	TR	TR	TR	TR	TR	TR	TS						
28		L	L	L	L	L	L	L	9PD	9PD	TR	TR	TR	TR	TR	TR	TR	TS					
30		L	L	L	L	L	L	L	9PD	TR	TR	TR	TR	TR	TR	TR	TR	TR	TS				
36		L	L	L	L	L	L	L	9PD	9PD	9PD	9PD	TR	TR	TR	TR	TR	TR	TR	TS			
42		L	L	L	L	L	L	L	9PD	9PD	9PD	9PD	TR	TR	TR	TR	TR	TR	TR	TR	TS		
44		L	L	L	L	L	L	L	9PD	9PD	9PD	9PD	9PD	9PD	TR	TR	TR	TR	TR	TR	TR	TS	
48		L	L	L	L	L	L	L	9PD	9PD	9PD	9PD	9PD	9PD	9PD	TR	TR	TR	TR	TR	TR	TR	TS

TR : REDUCING TEE
L : OUTLET
TS : STRAIGHT TEE
9PD : REINFORCING PAD 90 DEG

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PIPING CLASS

A2APCL

REV NO. 2

Material : Killed CS
Rating : ASME CLASS 150
Flange Face : RF
C.A.(mm) : 3.00
Gasket : Spiral Wound
Service : PROCESS - GENERAL PROCESS NON SOUR, NON CORROSIVE
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
2	USE OF SOFT SEATED BALL, PLUG AND BUTTERFLY VALVES SHALL BE LIMITED TO MAXIMUM OF 204DEGC (400DEGF)

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
541	NPT(F) (CA,L)
773	CLASS 300 (B,F,FR,G)
4610	JACKETED VALVE (1.5" X 0.75") (PV)
4611	JACKETED VALVE (3" X 2") (PV)

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PIPING CLASS
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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P01A-0010P	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	0.75		SCH160		P01A-0010R	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1		SCH160		P01A-0014M	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1.5		SCH160		P01A-0015J	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	2		XS		P01A-000YX	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	3		STD		P01A-000YM	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	4		STD		P01A-000YU	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	6		STD		P01A-000Z3	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	8		SCH20		P01A-001AT	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P02B-0001J	90 degree elbow ASTM A105 Class 6000 ASME B16.11 SW	
1	0.75				P02B-0001K	90 degree elbow ASTM A105 Class 6000 ASME B16.11 SW	
1	1				P02B-0002E	90 degree elbow ASTM A105 Class 6000 ASME B16.11 SW	
1	1.5				P02B-0002F	90 degree elbow ASTM A105 Class 6000 ASME B16.11 SW	
1	2		XS		P02A-000CP	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		STD		P02A-000CU	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		STD		P02A-000CZ	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		STD		P02A-000D6	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		SCH20		P02A-000GZ	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P03B-0001F	45 degree elbow ASTM A105 Class 6000 ASME B16.11 SW	
1	0.75				P03B-0001G	45 degree elbow ASTM A105 Class 6000 ASME B16.11 SW	
1	1				P03B-0002A	45 degree elbow ASTM A105 Class 6000 ASME B16.11 SW	
1	1.5				P03B-0002B	45 degree elbow ASTM A105 Class 6000 ASME B16.11 SW	
1	2		XS		P03A-000AS	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		STD		P03A-000AX	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		STD		P03A-000B1	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		STD		P03A-000B9	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		SCH20		P03A-000EX	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P21B-0001F	Straight tee ASTM A105 Class 6000 ASME B16.11 SW	
1	0.75				P21B-0001G	Straight tee ASTM A105 Class 6000 ASME B16.11 SW	
1	1				P21B-00026	Straight tee ASTM A105 Class 6000 ASME B16.11 SW	
1	1.5				P21B-00027	Straight tee ASTM A105 Class 6000 ASME B16.11 SW	
1	2		XS		P21A-001CJ	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		STD		P21A-001CU	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		STD		P21A-001CW	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6		STD		P21A-001D2	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8		SCH20		P21A-00215	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

STRAIGHT CROSS TEE (TCS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	4		STD		P23A-0004Y	Straight cross-tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75			P24B-00030	Reducing tee ASTM A105 Class 6000 ASME B16.11 SW	
1	1.5	0.75			P24B-00032	Reducing tee ASTM A105 Class 6000 ASME B16.11 SW	
1	1.5	1			P24B-0004J	Reducing tee ASTM A105 Class 6000 ASME B16.11 SW	
1	2	1	XS	SCH160	P24A-00GMB	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	XS	SCH160	P24A-005K9	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	STD	SCH160	P24A-00GMC	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	STD	XS	P24A-002HW	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P24A-002HY	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P24A-0021K	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	STD	P24A-0021A	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P24A-00229	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH20	STD	P24A-00J21	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH20	STD	P24A-005J4	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

REDUCING CROSS TEE (TCR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	8	3	SCH20	STD	P26A-0000D	Reducing cross-tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH20	STD	P26A-0000B	Reducing cross-tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH20	STD	P26A-0000C	Reducing cross-tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	STD	XS	P27A-001MZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P27A-001N0	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P27A-00189	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	STD	P27A-001AZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P27A-001GW	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH20	STD	P27A-003K2	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH20	STD	P27A-003K3	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	STD	XS	P28A-001N5	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P28A-001N6	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P28A-0018B	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	STD	P28A-001AS	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P28A-00182	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH20	STD	P28A-003JU	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH20	STD	P28A-003JV	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P29B-0002F	Cap ASTM A105 Class 6000 ASME B16.11 SW	
1	0.75				P29B-0002G	Cap ASTM A105 Class 6000 ASME B16.11 SW	
1	1				P29B-0002D	Cap ASTM A105 Class 6000 ASME B16.11 SW	
1	1.5				P29B-0002E	Cap ASTM A105 Class 6000 ASME B16.11 SW	
1	2		XS		P29A-000A1	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		STD		P29A-000BK	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		STD		P29A-000A3	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6		STD		P29A-000A9	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8		SCH20		P29A-000EY	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
541	0.75				P29B-0000Y	Cap ASTM A105 Class 6000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P41A-000B9	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		XXS		P41A-000BA	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		XXS		P41A-000D8	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		XXS		P41A-000D9	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

CON SWAGED NIPPLE (SNC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	SCH160	P42A-00029	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	SCH160	SCH160	P42A-0009T	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	

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CON SWAGED NIPPLE (SNC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75	SCH160	SCH160	P42A-0009U	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	SCH160	SCH160	P42A-0009V	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	SCH160	SCH160	P42A-0009W	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	SCH160	SCH160	P42A-0009X	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	XS	SCH160	P42A-000J6	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	XS	SCH160	P42A-000J7	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	XS	SCH160	P42A-000F8	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	XS	SCH160	P42A-000KZ	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	STD	SCH160	P42A-000L0	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	

ECC SWAGED NIPPLE (SNE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	SCH160	P43A-000AM	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	SCH160	SCH160	P43A-000B4	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	SCH160	SCH160	P43A-000B5	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	SCH160	SCH160	P43A-000B6	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	SCH160	SCH160	P43A-000B7	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	SCH160	SCH160	P43A-000B8	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	XS	SCH160	P43A-000B2	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	XS	SCH160	P43A-000B3	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	XS	SCH160	P43A-000CZ	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	XS	SCH160	P43A-000D0	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	STD	SCH160	P43A-000D1	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	

COUPLING (CPS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P47B-00013	Coupling ASTM A105 Class 6000 ASME B16.11 SW - SW	
1	0.75				P47B-00012	Coupling ASTM A105 Class 6000 ASME B16.11 SW - SW	
1	1				P47B-0002A	Coupling ASTM A105 Class 6000 ASME B16.11 SW - SW	
1	1.5				P47B-0002B	Coupling ASTM A105 Class 6000 ASME B16.11 SW - SW	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5 - 2.5	0.75			P31B-0137D	Outlet ASTM A105 Class 6000 MSS SP-97 SW	
1	3 - 10	0.75			P31B-007LV	Outlet ASTM A105 Class 6000 MSS SP-97 SW	
1	3 - 10	1			P31B-007LN	Outlet ASTM A105 Class 6000 MSS SP-97 SW	
1	4 - 5	1.5			P31B-004LE	Outlet ASTM A105 Class 6000 MSS SP-97 SW	
1	6 - 8	1.5			P31B-005T4	Outlet ASTM A105 Class 6000 MSS SP-97 SW	
1	10 - 18	1.5			P31B-007LF	Outlet ASTM A105 Class 6000 MSS SP-97 SW	
541	1	0.75			P31B-005HL	Outlet ASTM A105 Class 6000 MSS SP-97 NPT	
541	1.5 - 2.5	0.75			P31B-0137F	Outlet ASTM A105 Class 6000 MSS SP-97 NPT	
541	3 - 10	0.75			P31B-007KP	Outlet ASTM A105 Class 6000 MSS SP-97 NPT	
1	6	2	STD	XS	P31B-007SH	Outlet ASTM A105 MSS SP-97 BW	
1	8	2	SCH20	XS	P31B-00NY2	Outlet ASTM A105 MSS SP-97 BW	
1	10	2	SCH20	XS	P31B-00TFB	Outlet ASTM A105 MSS SP-97 BW	
1	8	3	SCH20	STD	P31B-00P11	Outlet ASTM A105 MSS SP-97 BW	
1	10	3	SCH20	STD	P31B-00UPG	Outlet ASTM A105 MSS SP-97 BW	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30B-0002D	Plug ASTM A105 ASME B16.11 NPT Round head	
1	0.75				P30B-0002E	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1				P30B-0002F	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1.5				P30B-0002G	Plug ASTM A105 ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P61B-002D4	Flange SW ASTM A105 Class 150 ASME B16.5 RF	

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FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75		SCH160		P61B-002DE	Flange SW ASTM A105 Class 150 ASME B16.5 RF	
1	1		SCH160		P61B-002DU	Flange SW ASTM A105 Class 150 ASME B16.5 RF	
1	1.5		SCH160		P61B-002EM	Flange SW ASTM A105 Class 150 ASME B16.5 RF	
1	2		XS		P61B-003NK	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	3		STD		P61B-001PW	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	4		STD		P61B-001R8	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	6		STD		P61B-001RT	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	8		SCH20		P61B-002BF	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
773	0.5		SCH160		P61B-001H5	Flange SW ASTM A105 Class 300 ASME B16.5 RF	
773	0.75		SCH160		P61B-001HH	Flange SW ASTM A105 Class 300 ASME B16.5 RF	
773	1		SCH160		P61B-001E8	Flange SW ASTM A105 Class 300 ASME B16.5 RF	
773	1.5		SCH160		P61B-001ET	Flange SW ASTM A105 Class 300 ASME B16.5 RF	
773	2		XS		P61B-001HW	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	3		STD		P61B-001LJ	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	4		STD		P61B-001MC	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	6		STD		P61B-001N2	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	8		SCH20		P61B-002LJ	Flange WN ASTM A105 Class 300 ASME B16.5 RF	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67B-000FH	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	0.75				P67B-000FJ	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	1				P67B-000FK	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	1.5				P67B-000FL	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	2				P67B-000FT	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	3				P67B-000FW	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	4				P67B-000FX	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	6				P67B-000FY	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	8				P67B-000FZ	Blind flange ASTM A105 Class 150 ASME B16.5 RF	

REDUCING FLANGE (FR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5		SCH160	P62B-000MY	Reducing flange SW ASTM A105 Class 150 ASME B16.5 RF	
1	1.5	0.5		SCH160	P62B-000AG	Reducing flange SW ASTM A105 Class 150 ASME B16.5 RF	
1	1.5	0.75		SCH160	P62B-000LG	Reducing flange SW ASTM A105 Class 150 ASME B16.5 RF	
1	2	0.75		SCH160	P62B-00047	Reducing flange SW ASTM A105 Class 150 ASME B16.5 RF	
1	2	1		SCH160	P62B-000BV	Reducing flange SW ASTM A105 Class 150 ASME B16.5 RF	
1	2	1.5		SCH160	P62B-000NJ	Reducing flange SW ASTM A105 Class 150 ASME B16.5 RF	
1	3	1.5		SCH160	P62B-00080	Reducing flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	3	2		XS	P62B-0006B	Reducing flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	4	2		XS	P62B-00098	Reducing flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	4	3		STD	P62B-0006D	Reducing flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	6	3		STD	P62B-000JY	Reducing flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	6	4		STD	P62B-000JZ	Reducing flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	8	6		STD	P62B-0006E	Reducing flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	10	4		STD	P62B-000K0	Reducing flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	10	8		SCH20	P62B-000K1	Reducing flange WN ASTM A105 Class 150 ASME B16.5 RF	
773	4	3		STD	P62B-000AX	Reducing flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	6	4		STD	P62B-000MF	Reducing flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	8	6		STD	P62B-000K9	Reducing flange WN ASTM A105 Class 300 ASME B16.5 RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000L8	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000L9	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000LA	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000LB	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

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GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2				P73T-000LH	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000LL	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000LM	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	6				P73T-000LN	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	8				P73T-000LP	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	10				P73T-000LC	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	0.5				P73T-000FT	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	0.75				P73T-000FU	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	3				P73T-000G5	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	4				P73T-000G6	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	6				P73T-000G7	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	8				P73T-000G8	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-10				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
773	0.5-10				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5	0.5			P83B-001H4	Jacketed check valve ASTM A105 Class 150 API 600-modified Flange ASME B16.5 RF Trim number 8 Lift-type Bolted cover Full jacketed	
1	2	1			P83C-003P7	Jacketed check valve ASTM A216 Grade WCB Class 150 API 600-modified Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover Full jacketed	
1	3	1.5			P83C-003P8	Jacketed check valve ASTM A216 Grade WCB Class 150 API 600-modified Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover Full jacketed	
1	4	3			P83C-003P9	Jacketed check valve ASTM A216 Grade WCB Class 150 API 600-modified Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover Full jacketed	
1	6	4			P83C-003PA	Jacketed check valve ASTM A216 Grade WCB Class 150 API 600-modified Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover Full jacketed	
1	8	6			P83C-003PB	Jacketed check valve ASTM A216 Grade WCB Class 150 API 600-modified Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover Full jacketed	
1	10	8			P83C-003PC	Jacketed check valve ASTM A216 Grade WCB Class 150 API 600-modified Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover Full jacketed	

PLUG VALVE (PV)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5	0.5			P85B-0000J	Jacketed plug valve Short-pattern ASTM A105 Class 150 API 599 Flange ASME B16.5 RF Plug SS316 Seat PTFE Trim SS316 Nonlubricated taper plug BC-BG Wrench lever operated Regular port Full jacketed	
1	2	1			P85C-0007D	Jacketed plug valve Short-pattern ASTM A216 Grade WCB Class 150 API 599 Flange ASME B16.5 RF Plug SS316 Seat PTFE Trim SS316 Nonlubricated taper plug BC-BG Wrench lever operated Regular port Full jacketed	
1	3	1.5			P85C-0007E	Jacketed plug valve Short-pattern ASTM A216 Grade WCB Class 150 API 599 Flange ASME B16.5 RF Plug SS316 Seat PTFE Trim SS316 Nonlubricated taper plug BC-BG Wrench lever operated Regular port Full jacketed	
1	4	3			P85C-0007F	Jacketed plug valve Short-pattern ASTM A216 Grade WCB Class 150 API 599 Flange ASME B16.5 RF Plug SS316 Seat PTFE Trim SS316 Nonlubricated taper plug BC-BG Wrench lever operated Regular port Full jacketed	
1	6	4			P85C-0007H	Jacketed plug valve Short-pattern ASTM A216 Grade WCB Class 150 API 599 Flange ASME B16.5 RF Plug SS316 Seat PTFE Trim SS316 Nonlubricated taper plug BC-BG Gear operated Regular port Full jacketed	
1	8	6			P85C-0007J	Jacketed plug valve Short-pattern ASTM A216 Grade WCB Class 150 API 599 Flange ASME B16.5 RF Plug SS316 Seat PTFE Trim SS316 Nonlubricated taper plug BC-BG Gear operated Regular port Full jacketed	
1	10	8			P85C-0007K	Jacketed plug valve Short-pattern ASTM A216 Grade WCB Class 150 API 599 Flange ASME B16.5 RF Plug SS316 Seat PTFE Trim SS316 Nonlubricated taper plug BC-BG Gear operated Regular port Full jacketed	
4610	1.5	0.75			P85B-0000Y	Jacketed plug valve Short-pattern ASTM A105 Class 150 API 599 Flange ASME B16.5 RF Plug SS316 Seat PTFE Trim SS316 Nonlubricated taper plug BC-BG Wrench lever operated Regular port Full jacketed Type-10	
4611	3	2			P85C-000AS	Jacketed plug valve Short-pattern ASTM A216 Grade WCB Class 150 API 599 Flange ASME B16.5 RF Plug SS316 Seat PTFE Trim SS316 Nonlubricated taper plug BC-BG Wrench lever operated Regular port Full jacketed Type-10	

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SPECT BLANK (SB)							
OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71B-0008A	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	0.75				P71B-0008B	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	1				P71B-0008C	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71B-0008D	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	2				P71B-0000P	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	3				P71B-0000N	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	4				P71B-0000M	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	6				P71B-0000L	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	8				P71B-0000R	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	10				P71B-0000K	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	

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BOLT TABLE (B_A2APCL , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	60	P80S-003V2		
0.75	4	0.500	65	P80S-003V3		
1	4	0.500	70	P80S-003V4		
1.5	4	0.500	75	P80S-003V5		
2	4	0.625	85	P80S-003XE		
3	4	0.625	95	P80S-003XG		
4	8	0.625	95	P80S-003XG		
6	8	0.750	105	P80S-003XJ		
8	8	0.750	110	P80S-003XK		
10	12	0.875	120	P80S-00419		

BOLT TABLE (B_A2APCL_773 , STUD ASME RF, OPTION CODE 773)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-003V4		
0.75	4	0.625	75	P80S-003XC		
1	4	0.625	80	P80S-003XD		
1.5	4	0.750	95	P80S-00414		
2	8	0.625	90	P80S-003XF		
3	8	0.750	110	P80S-003XK		
4	8	0.750	115	P80S-003XL		
6	12	0.750	125	P80S-003XN		
8	12	0.875	140	P80S-0041D		
10	16	1.000	160	P80S-0043K		

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BRANCH TABLE (T_A2APCL)

RUN PIPE SIZE (in) \ BRANCH SIZE (in)	0.5	0.75	1	1.5	2	3	4	6	8	10
0.5	TS									
0.75		TS								
1		TR	TS							
1.5		TR	TR	TS						
2		L	TR	TR	TS					
3		L	L	TR	TR	TS				
4	L	L	L	L	TR	TR	TS			
6	L	L	L	L	L	TR	TR	TS		
8		L	L	L	L	L	TR	TR	TS	
10		L	L	L	L	L	TR	TR	TR	TS

TR : REDUCING TEE
TS : STRAIGHT TEE
L : OUTLET

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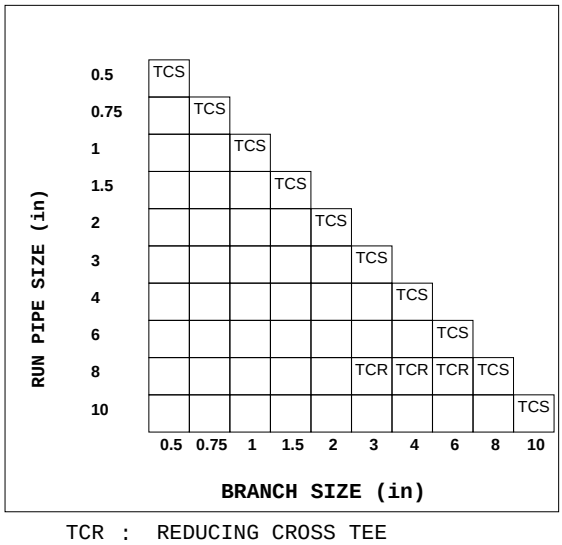
BRANCH TABLE (T_A2APCL_4)



TCR : REDUCING CROSS TEE
TCS : STRAIGHT CROSS TEE

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Material : Killed CS
Rating : ASME CLASS 150
Flange Face : RF
C.A.(mm) : 3.00
Gasket : Spiral Wound
Service : PROCESS - GENERAL PROCESS NON SOUR, NON CORROSIVE
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
2	USE OF SOFT SEATED BALL, PLUG AND BUTTERFLY VALVES SHALL BE LIMITED TO MAXIMUM OF 204DEGC (400DEGF)

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
541	NPT(F) (CA,L)
773	CLASS 300 (B,F,G)
4610	JACKETED VALVE (1.5" X 0.75") (PV)
4611	JACKETED VALVE (3" X 2") (PV)

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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P01A-0010P	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	0.75		SCH160		P01A-0010R	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1		SCH160		P01A-0014M	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1.5		SCH160		P01A-0015J	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	2		XS		P01A-000YX	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	3		STD		P01A-000YM	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	4		STD		P01A-000YU	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	6		STD		P01A-000Z3	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	8		SCH20		P01A-001AT	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	10		SCH20		P01A-0014Y	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	12		SCH30		P01A-0017K	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	14		SCH20		P01A-0017A	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	16		SCH20		P01A-0018E	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	18		SCH20		P01A-00438	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE	
1	20		STD		P01A-0042G	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE	
1	24		STD		P01A-0042H	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE	
1	30		STD		P01A-0042J	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE	
1	36		STD		P01A-00439	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE	
1	42		XS		P01A-0043G	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE	
1	48		XS		P01A-0042L	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P02B-0001J	90 degree elbow ASTM A105 Class 6000 ASME B16.11 SW	
1	0.75				P02B-0001K	90 degree elbow ASTM A105 Class 6000 ASME B16.11 SW	
1	1				P02B-0002E	90 degree elbow ASTM A105 Class 6000 ASME B16.11 SW	
1	1.5				P02B-0002F	90 degree elbow ASTM A105 Class 6000 ASME B16.11 SW	
1	2		XS		P02A-000CP	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		STD		P02A-000CU	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		STD		P02A-000CZ	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		STD		P02A-000D6	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		SCH20		P02A-000GZ	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	10		SCH20		P02A-000H1	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	12		SCH30		P02A-000M4	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	14		SCH20		P02A-000FX	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	16		SCH20		P02A-000GM	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	18		SCH20		P02A-000LT	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	20		STD		P02A-0010J	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	24		STD		P02A-0010K	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	30		STD		P02A-000F3	90 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius	
1	36		STD		P02A-001GL	90 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius	
1	42		XS		P02A-000FB	90 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius	
1	48		XS		P02A-0017R	90 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P03B-0001F	45 degree elbow ASTM A105 Class 6000 ASME B16.11 SW	
1	0.75				P03B-0001G	45 degree elbow ASTM A105 Class 6000 ASME B16.11 SW	
1	1				P03B-0002A	45 degree elbow ASTM A105 Class 6000 ASME B16.11 SW	
1	1.5				P03B-0002B	45 degree elbow ASTM A105 Class 6000 ASME B16.11 SW	
1	2		XS		P03A-000AS	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		STD		P03A-000AX	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		STD		P03A-000B1	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		STD		P03A-000B9	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		SCH20		P03A-000EX	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	10		SCH20		P03A-000F0	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	12		SCH30		P03A-000JU	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	14		SCH20		P03A-000DW	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	16		SCH20		P03A-000EM	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

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45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	18		SCH20		P03A-001DX	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	20		STD		P03A-000X1	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	24		STD		P03A-000X2	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	30		STD		P03A-000D0	45 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius	
1	36		STD		P03A-001BS	45 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius	
1	42		XS		P03A-000DB	45 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius	
1	48		XS		P03A-0013P	45 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P21B-0001F	Straight tee ASTM A105 Class 6000 ASME B16.11 SW	
1	0.75				P21B-0001G	Straight tee ASTM A105 Class 6000 ASME B16.11 SW	
1	1				P21B-00026	Straight tee ASTM A105 Class 6000 ASME B16.11 SW	
1	1.5				P21B-00027	Straight tee ASTM A105 Class 6000 ASME B16.11 SW	
1	2		XS		P21A-001CJ	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		STD		P21A-001CU	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		STD		P21A-001CW	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6		STD		P21A-001D2	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8		SCH20		P21A-00215	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10		SCH20		P21A-00219	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12		SCH30		P21A-0025A	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14		SCH20		P21A-00206	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16		SCH20		P21A-0020X	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18		SCH20		P21A-001PJ	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20		STD		P21A-001C7	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24		STD		P21A-001CC	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30		STD		P21A-001YC	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	36		STD		P21A-001G4	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	42		XS		P21A-001KS	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	48		XS		P21A-001RL	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75			P24B-00030	Reducing tee ASTM A105 Class 6000 ASME B16.11 SW	
1	1.5	0.75			P24B-00032	Reducing tee ASTM A105 Class 6000 ASME B16.11 SW	
1	1.5	1			P24B-0004J	Reducing tee ASTM A105 Class 6000 ASME B16.11 SW	
1	2	1	XS	SCH160	P24A-00GMB	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	XS	SCH160	P24A-005K9	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	STD	SCH160	P24A-00GMC	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	STD	XS	P24A-002HW	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P24A-002HY	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P24A-0021K	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	STD	P24A-0021A	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P24A-00229	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH20	STD	P24A-00J21	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH20	STD	P24A-005J4	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	SCH20	STD	P24A-00HMB	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	SCH20	STD	P24A-00HKS	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	SCH20	SCH20	P24A-002YX	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	SCH30	STD	P24A-00HKT	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH30	SCH20	P24A-003XM	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH30	SCH20	P24A-003XL	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	SCH20	STD	P24A-00K0M	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	SCH20	SCH20	P24A-002U7	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	SCH20	SCH20	P24A-002YA	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	SCH20	SCH30	P24A-003ES	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	6	SCH20	STD	P24A-00GU4	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	SCH20	SCH20	P24A-002XW	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	SCH20	SCH20	P24A-002YH	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	16	12	SCH20	SCH30	P24A-003XN	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	SCH20	SCH20	P24A-002XF	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	8	SCH20	SCH20	P24A-002XC	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	10	SCH20	SCH20	P24A-002UX	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	12	SCH20	SCH30	P24A-00BH0	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	14	SCH20	SCH20	P24A-002WT	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	16	SCH20	SCH20	P24A-002X5	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	8	STD	SCH20	P24A-00K0N	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	10	STD	SCH20	P24A-00BT7	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	12	STD	SCH30	P24A-00BUT	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	14	STD	SCH20	P24A-00BWB	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	16	STD	SCH20	P24A-006W3	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	18	STD	SCH20	P24A-006WD	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	10	STD	SCH20	P24A-00KT6	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	12	STD	SCH30	P24A-00C7C	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	14	STD	SCH20	P24A-00K0C	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	16	STD	SCH20	P24A-00CAD	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	18	STD	SCH20	P24A-006WF	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	20	STD	STD	P24A-004SV	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	10	STD	SCH20	P24A-003VN	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	12	STD	SCH30	P24A-00CZ4	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	14	STD	SCH20	P24A-003VR	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	16	STD	SCH20	P24A-003VS	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	18	STD	SCH20	P24A-003VT	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	20	STD	STD	P24A-0087D	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	24	STD	STD	P24A-005XW	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	36	16	STD	SCH20	P24A-00GU6	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	36	18	STD	SCH20	P24A-0087J	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	36	20	STD	STD	P24A-0087K	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	36	24	STD	STD	P24A-00DVT	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	36	30	STD	STD	P24A-007WA	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	42	16	XS	SCH20	P24A-003VB	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	42	18	XS	SCH20	P24A-003VC	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	42	20	XS	STD	P24A-00EGT	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	42	24	XS	STD	P24A-00EHZ	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	42	30	XS	STD	P24A-003VF	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	42	36	XS	STD	P24A-00EMK	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	48	24	XS	STD	P24A-006WP	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	48	30	XS	STD	P24A-006WR	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	48	36	XS	STD	P24A-007KS	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	48	42	XS	XS	P24A-00F5N	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	STD	XS	P27A-001MZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P27A-001N0	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P27A-00189	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	STD	P27A-001AZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P27A-001GW	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH20	STD	P27A-003K2	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH20	STD	P27A-003K3	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	SCH20	STD	P27A-003K4	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	SCH20	STD	P27A-003K5	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	SCH20	SCH20	P27A-001UL	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	SCH30	STD	P27A-003MN	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH30	SCH20	P27A-002GG	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH30	SCH20	P27A-002GF	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	SCH20	STD	P27A-00518	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	SCH20	SCH20	P27A-001V4	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14	10	SCH20	SCH20	P27A-001TG	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	SCH20	SCH30	P27A-0028H	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	SCH20	SCH20	P27A-001WX	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	SCH20	SCH20	P27A-001TW	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	SCH20	SCH30	P27A-002GH	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	SCH20	SCH20	P27A-001V2	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	10	SCH20	SCH20	P27A-001TJ	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	12	SCH20	SCH30	P27A-0084K	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	14	SCH20	SCH20	P27A-001UY	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	16	SCH20	SCH20	P27A-001WN	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	12	STD	SCH30	P27A-0082K	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	14	STD	SCH20	P27A-0082L	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	16	STD	SCH20	P27A-0082M	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	18	STD	SCH20	P27A-0084N	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	16	STD	SCH20	P27A-0084T	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	18	STD	SCH20	P27A-0084U	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	20	STD	STD	P27A-001A8	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	20	STD	STD	P27A-001S0	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	24	STD	STD	P27A-001M7	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	36	24	STD	STD	P27A-00BGR	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	36	30	STD	STD	P27A-00938	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	42	30	XS	STD	P27A-001N2	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	42	36	XS	STD	P27A-00BHB	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	48	42	XS	XS	P27A-00BHA	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	STD	XS	P28A-001N5	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P28A-001N6	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P28A-0018B	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	STD	P28A-001AS	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P28A-00182	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH20	STD	P28A-003JU	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH20	STD	P28A-003JV	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	SCH20	STD	P28A-003JW	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	SCH20	STD	P28A-003JX	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	SCH20	SCH20	P28A-001V0	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	SCH30	STD	P28A-003MG	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH30	SCH20	P28A-002GA	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH30	SCH20	P28A-002G9	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	SCH20	STD	P28A-0096P	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	SCH20	SCH20	P28A-001WH	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	SCH20	SCH20	P28A-001TH	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	SCH20	SCH30	P28A-0027A	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	SCH20	SCH20	P28A-001T6	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	SCH20	SCH20	P28A-001TY	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	SCH20	SCH30	P28A-002GB	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	SCH20	SCH20	P28A-001WG	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	10	SCH20	SCH20	P28A-001TV	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	12	SCH20	SCH30	P28A-004UM	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	14	SCH20	SCH20	P28A-001WD	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	16	SCH20	SCH20	P28A-001T1	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	12	STD	SCH30	P28A-004SH	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	14	STD	SCH20	P28A-004SJ	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	16	STD	SCH20	P28A-004SK	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	18	STD	SCH20	P28A-004UN	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	16	STD	SCH20	P28A-004UR	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	18	STD	SCH20	P28A-004US	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	20	STD	STD	P28A-001AW	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	

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ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	30	20	STD	STD	P28A-001LZ	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	24	STD	STD	P28A-001N1	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	36	24	STD	STD	P28A-008FS	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	36	30	STD	STD	P28A-005V7	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	42	30	XS	STD	P28A-001RM	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	42	36	XS	STD	P28A-008GR	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	48	42	XS	XS	P28A-008GJ	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P29B-0002F	Cap ASTM A105 Class 6000 ASME B16.11 SW	
1	0.75				P29B-0002G	Cap ASTM A105 Class 6000 ASME B16.11 SW	
1	1				P29B-0002D	Cap ASTM A105 Class 6000 ASME B16.11 SW	
1	1.5				P29B-0002E	Cap ASTM A105 Class 6000 ASME B16.11 SW	
1	2		XS		P29A-000A1	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		STD		P29A-000BK	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		STD		P29A-000A3	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6		STD		P29A-000A9	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8		SCH20		P29A-000EY	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10		SCH20		P29A-000E5	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12		SCH30		P29A-000PZ	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14		SCH20		P29A-000EA	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16		SCH20		P29A-000F3	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18		SCH20		P29A-000E0	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20		STD		P29A-000B2	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24		STD		P29A-000B8	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	30		STD		P29A-000DU	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	36		STD		P29A-001AF	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	42		XS		P29A-000CW	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	48		XS		P29A-00136	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
541	0.75				P29B-0000Y	Cap ASTM A105 Class 6000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P41A-000B9	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		XXS		P41A-000BA	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		XXS		P41A-000D8	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		XXS		P41A-000D9	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

CON SWAGED NIPPLE (SNC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	SCH160	P42A-00029	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	SCH160	SCH160	P42A-0009T	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	SCH160	SCH160	P42A-0009U	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	SCH160	SCH160	P42A-0009V	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	SCH160	SCH160	P42A-0009W	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	SCH160	SCH160	P42A-0009X	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	XS	SCH160	P42A-000J6	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	XS	SCH160	P42A-000J7	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	XS	SCH160	P42A-000F8	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	XS	SCH160	P42A-000KZ	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	STD	SCH160	P42A-000L0	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	

ECC SWAGED NIPPLE (SNE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	SCH160	P43A-000AM	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	SCH160	SCH160	P43A-000B4	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	SCH160	SCH160	P43A-000B5	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5	0.5	SCH160	SCH160	P43A-000B6	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	SCH160	SCH160	P43A-000B7	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	SCH160	SCH160	P43A-000B8	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	XS	SCH160	P43A-000B2	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	XS	SCH160	P43A-000B3	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	XS	SCH160	P43A-000CZ	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	XS	SCH160	P43A-000D0	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	STD	SCH160	P43A-000D1	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	

COUPLING (CPS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P47B-00013	Coupling ASTM A105 Class 6000 ASME B16.11 SW - SW	
1	0.75				P47B-00012	Coupling ASTM A105 Class 6000 ASME B16.11 SW - SW	
1	1				P47B-0002A	Coupling ASTM A105 Class 6000 ASME B16.11 SW - SW	
1	1.5				P47B-0002B	Coupling ASTM A105 Class 6000 ASME B16.11 SW - SW	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5 - 2.5	0.75			P31B-0137D	Outlet ASTM A105 Class 6000 MSS SP-97 SW	
1	3 - 10	0.75			P31B-007LV	Outlet ASTM A105 Class 6000 MSS SP-97 SW	
1	12 and larger	0.75			P31B-0136N	Outlet ASTM A105 Class 6000 MSS SP-97 SW	
1	3 - 10	1			P31B-007LN	Outlet ASTM A105 Class 6000 MSS SP-97 SW	
1	12 and larger	1			P31B-0136P	Outlet ASTM A105 Class 6000 MSS SP-97 SW	
1	4 - 5	1.5			P31B-004LE	Outlet ASTM A105 Class 6000 MSS SP-97 SW	
1	6 - 8	1.5			P31B-005T4	Outlet ASTM A105 Class 6000 MSS SP-97 SW	
1	10 - 18	1.5			P31B-007LF	Outlet ASTM A105 Class 6000 MSS SP-97 SW	
1	20 and larger	1.5			P31B-0137E	Outlet ASTM A105 Class 6000 MSS SP-97 SW	
541	1	0.75			P31B-005HL	Outlet ASTM A105 Class 6000 MSS SP-97 NPT	
541	1.5 - 2.5	0.75			P31B-0137F	Outlet ASTM A105 Class 6000 MSS SP-97 NPT	
541	3 - 10	0.75			P31B-007KP	Outlet ASTM A105 Class 6000 MSS SP-97 NPT	
541	12 and larger	0.75			P31B-0138A	Outlet ASTM A105 Class 6000 MSS SP-97 NPT	
1	6	2	STD	XS	P31B-007SH	Outlet ASTM A105 MSS SP-97 BW	
1	8	2	SCH20	XS	P31B-00NY2	Outlet ASTM A105 MSS SP-97 BW	
1	10	2	SCH20	XS	P31B-00TFB	Outlet ASTM A105 MSS SP-97 BW	
1	12	2	SCH30	XS	P31B-00NVL	Outlet ASTM A105 MSS SP-97 BW	
1	14	2	SCH20	XS	P31B-00TF9	Outlet ASTM A105 MSS SP-97 BW	
1	16	2	SCH20	XS	P31B-00TF8	Outlet ASTM A105 MSS SP-97 BW	
1	18	2	SCH20	XS	P31B-00NVX	Outlet ASTM A105 MSS SP-97 BW	
1	20	2	STD	XS	P31B-00994	Outlet ASTM A105 MSS SP-97 BW	
1	24	2	STD	XS	P31B-0092Z	Outlet ASTM A105 MSS SP-97 BW	
1	30	2	STD	XS	P31B-008P5	Outlet ASTM A105 MSS SP-97 BW	
1	36	2	STD	XS	P31B-00NX8	Outlet ASTM A105 MSS SP-97 BW	
1	42	2	XS	XS	P31B-0084J	Outlet ASTM A105 MSS SP-97 BW	
1	48	2	XS	XS	P31B-007YJ	Outlet ASTM A105 MSS SP-97 BW	
1	56	2	14.27mm	XS	P31B-00NRA	Outlet ASTM A105 MSS SP-97 BW	
1	8	3	SCH20	STD	P31B-00P11	Outlet ASTM A105 MSS SP-97 BW	
1	10	3	SCH20	STD	P31B-00UPG	Outlet ASTM A105 MSS SP-97 BW	
1	12	3	SCH30	STD	P31B-00NYR	Outlet ASTM A105 MSS SP-97 BW	
1	14	3	SCH20	STD	P31B-00UPH	Outlet ASTM A105 MSS SP-97 BW	
1	16	3	SCH20	STD	P31B-00TU2	Outlet ASTM A105 MSS SP-97 BW	
1	18	3	SCH20	STD	P31B-00NZ4	Outlet ASTM A105 MSS SP-97 BW	
1	20	3	STD	STD	P31B-008FA	Outlet ASTM A105 MSS SP-97 BW	
1	24	3	STD	STD	P31B-00895	Outlet ASTM A105 MSS SP-97 BW	
1	30	3	STD	STD	P31B-007WY	Outlet ASTM A105 MSS SP-97 BW	
1	36	3	STD	STD	P31B-007P2	Outlet ASTM A105 MSS SP-97 BW	
1	42	3	XS	STD	P31B-00AGK	Outlet ASTM A105 MSS SP-97 BW	
1	48	3	XS	STD	P31B-00AFD	Outlet ASTM A105 MSS SP-97 BW	
1	56	3	14.27mm	STD	P31B-00NRB	Outlet ASTM A105 MSS SP-97 BW	
1	12	4	SCH30	STD	P31B-00P1G	Outlet ASTM A105 MSS SP-97 BW	

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OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14	4	SCH20	STD	P31B-00UPJ	Outlet ASTM A105 MSS SP-97 BW	
1	16	4	SCH20	STD	P31B-00TU3	Outlet ASTM A105 MSS SP-97 BW	
1	18	4	SCH20	STD	P31B-00P1V	Outlet ASTM A105 MSS SP-97 BW	
1	20	4	STD	STD	P31B-008D3	Outlet ASTM A105 MSS SP-97 BW	
1	24	4	STD	STD	P31B-0086X	Outlet ASTM A105 MSS SP-97 BW	
1	30	4	STD	STD	P31B-007US	Outlet ASTM A105 MSS SP-97 BW	
1	36	4	STD	STD	P31B-00AER	Outlet ASTM A105 MSS SP-97 BW	
1	42	4	XS	STD	P31B-00A8G	Outlet ASTM A105 MSS SP-97 BW	
1	48	4	XS	STD	P31B-00A2P	Outlet ASTM A105 MSS SP-97 BW	
1	56	4	14.27mm	STD	P31B-00NRC	Outlet ASTM A105 MSS SP-97 BW	
1	18	6	SCH20	STD	P31B-00P48	Outlet ASTM A105 MSS SP-97 BW	
1	20	6	STD	STD	P31B-008PZ	Outlet ASTM A105 MSS SP-97 BW	
1	24	6	STD	STD	P31B-008JD	Outlet ASTM A105 MSS SP-97 BW	
1	30	6	STD	STD	P31B-008BS	Outlet ASTM A105 MSS SP-97 BW	
1	36	6	STD	STD	P31B-0085H	Outlet ASTM A105 MSS SP-97 BW	
1	42	6	XS	STD	P31B-007ZN	Outlet ASTM A105 MSS SP-97 BW	
1	48	6	XS	STD	P31B-007U6	Outlet ASTM A105 MSS SP-97 BW	
1	56	6	14.27mm	STD	P31B-00NRD	Outlet ASTM A105 MSS SP-97 BW	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30B-0002D	Plug ASTM A105 ASME B16.11 NPT Round head	
1	0.75				P30B-0002E	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1				P30B-0002F	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1.5				P30B-0002G	Plug ASTM A105 ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P61B-002D4	Flange SW ASTM A105 Class 150 ASME B16.5 RF	
1	0.75		SCH160		P61B-002DE	Flange SW ASTM A105 Class 150 ASME B16.5 RF	
1	1		SCH160		P61B-002DU	Flange SW ASTM A105 Class 150 ASME B16.5 RF	
1	1.5		SCH160		P61B-002EM	Flange SW ASTM A105 Class 150 ASME B16.5 RF	
1	2		XS		P61B-003NK	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	3		STD		P61B-001PW	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	4		STD		P61B-001R8	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	6		STD		P61B-001RT	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	8		SCH20		P61B-002BF	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	10		SCH20		P61B-002B4	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	12		SCH30		P61B-002TS	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	14		SCH20		P61B-002B6	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	16		SCH20		P61B-002B7	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	18		SCH20		P61B-002B8	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	20		STD		P61B-001JA	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	24		STD		P61B-001NJ	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	30		STD		P61B-001S8	Flange WN ASTM A105 Class 150 ASME B16.47 Series B RF	
1	36		STD		P61B-003M6	Flange WN ASTM A105 Class 150 ASME B16.47 Series B RF	
1	42		XS		P61B-001N1	Flange WN ASTM A105 Class 150 ASME B16.47 Series B RF	
1	48		XS		P61B-004CX	Flange WN ASTM A105 Class 150 ASME B16.47 Series B RF	
773	0.5		SCH160		P61B-001H5	Flange SW ASTM A105 Class 300 ASME B16.5 RF	
773	0.75		SCH160		P61B-001HH	Flange SW ASTM A105 Class 300 ASME B16.5 RF	
773	1		SCH160		P61B-001E8	Flange SW ASTM A105 Class 300 ASME B16.5 RF	
773	1.5		SCH160		P61B-001ET	Flange SW ASTM A105 Class 300 ASME B16.5 RF	
773	2		XS		P61B-001HW	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	3		STD		P61B-001LJ	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	4		STD		P61B-001MC	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	6		STD		P61B-001N2	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	8		SCH20		P61B-002LJ	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	10		SCH20		P61B-002LH	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	12		SCH30		P61B-002TV	Flange WN ASTM A105 Class 300 ASME B16.5 RF	

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FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
773	14		SCH20		P61B-002MR	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	16		SCH20		P61B-002MS	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	18		SCH20		P61B-002MT	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	20		STD		P61B-001NT	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	24		STD		P61B-001PA	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	30		STD		P61B-003SW	Flange WN ASTM A105 Class 300 ASME B16.47 Series B RF	
773	36		STD		P61B-004RB	Flange WN ASTM A105 Class 300 ASME B16.47 Series B RF	
773	42		XS		P61B-00673	Flange WN ASTM A105 Class 300 ASME B16.47 Series B RF	
773	48		XS		P61B-003TH	Flange WN ASTM A105 Class 300 ASME B16.47 Series B RF	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67B-000FH	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	0.75				P67B-000FJ	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	1				P67B-000FK	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	1.5				P67B-000FL	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	2				P67B-000FT	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	3				P67B-000FW	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	4				P67B-000FX	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	6				P67B-000FY	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	8				P67B-000FZ	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	10				P67B-000FM	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	12				P67B-000FN	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	14				P67B-000FP	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	16				P67B-000FR	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	18				P67B-000FS	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	20				P67B-000FU	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	24				P67B-000FV	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	30				P67B-000G2	Blind flange ASTM A105 Class 150 ASME B16.47 Series B RF	
1	36				P67B-000G5	Blind flange ASTM A105 Class 150 ASME B16.47 Series B RF	
1	42				P67B-000KZ	Blind flange ASTM A105 Class 150 ASME B16.47 Series B RF	
1	48				P67B-000L2	Blind flange ASTM A105 Class 150 ASME B16.47 Series B RF	

REDUCING FLANGE (FR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5		SCH160	P62B-000MY	Reducing flange SW ASTM A105 Class 150 ASME B16.5 RF	
1	1.5	0.5		SCH160	P62B-000AG	Reducing flange SW ASTM A105 Class 150 ASME B16.5 RF	
1	1.5	0.75		SCH160	P62B-000LG	Reducing flange SW ASTM A105 Class 150 ASME B16.5 RF	
1	2	0.75		SCH160	P62B-00047	Reducing flange SW ASTM A105 Class 150 ASME B16.5 RF	
1	2	1		SCH160	P62B-000BV	Reducing flange SW ASTM A105 Class 150 ASME B16.5 RF	
1	2	1.5		SCH160	P62B-000NJ	Reducing flange SW ASTM A105 Class 150 ASME B16.5 RF	
1	3	1.5		SCH160	P62B-00080	Reducing flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	3	2		XS	P62B-0006B	Reducing flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	4	2		XS	P62B-00098	Reducing flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	4	3		STD	P62B-0006D	Reducing flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	6	3		STD	P62B-000JY	Reducing flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	6	4		STD	P62B-000JZ	Reducing flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	8	6		STD	P62B-0006E	Reducing flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	10	4		STD	P62B-000K0	Reducing flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	10	8		SCH20	P62B-000K1	Reducing flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	12	6		STD	P62B-000K2	Reducing flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	12	10		SCH20	P62B-000KR	Reducing flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	14	10		SCH20	P62B-000K3	Reducing flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	16	12		SCH30	P62B-00071	Reducing flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	16	14		SCH20	P62B-000PG	Reducing flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	18	14		SCH20	P62B-000L9	Reducing flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	20	16		SCH20	P62B-000K5	Reducing flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	24	16		SCH20	P62B-000PT	Reducing flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	24	18		SCH20	P62B-00074	Reducing flange WN ASTM A105 Class 150 ASME B16.5 RF	

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REDUCING FLANGE (FR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	24	20		STD	P62B-000LA	Reducing flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	30	24		STD	P62B-000LB	Reducing flange WN ASTM A105 Class 150 ASME B16.47 Series B RF	
1	36	30		STD	P62B-000LC	Reducing flange WN ASTM A105 Class 150 ASME B16.47 Series B RF	
1	42	36		STD	P62B-000LL	Reducing flange WN ASTM A105 Class 150 ASME B16.47 Series B RF	
1	48	42		XS	P62B-000LE	Reducing flange WN ASTM A105 Class 150 ASME B16.47 Series B RF	
1	56	48		XS	P62B-000M8	Reducing flange WN ASTM A105 Class 150 ASME B16.47 Series B RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000L8	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000L9	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000LA	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000LB	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000LH	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000LL	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000LM	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	6				P73T-000LN	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	8				P73T-000LP	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	10				P73T-000LC	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	12				P73T-000LD	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	14				P73T-000LE	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	16				P73T-000LF	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	18				P73T-000LG	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	20				P73T-000LJ	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	24				P73T-000LK	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	30				P73T-000LT	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	36				P73T-000LW	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	42				P73T-000LZ	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	48				P73T-000M2	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	56				P73T-0024L	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	0.5				P73T-000FT	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	0.75				P73T-000FU	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	3				P73T-000G5	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	4				P73T-000G6	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	6				P73T-000G7	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	8				P73T-000G8	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	10				P73T-000FX	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	12				P73T-000FY	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	14				P73T-000FZ	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	16				P73T-000G0	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	18				P73T-000G1	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	20				P73T-000G3	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	24				P73T-000G4	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

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GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
773	30				P73T-000H9	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	36				P73T-000HC	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	42				P73T-000KM	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	48				P73T-000KR	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-16				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	18-24				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
1	30-42				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	48-56				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
773	0.5-10				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
773	12-48				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5	0.5			P83B-001H4	Jacketed check valve ASTM A105 Class 150 API 600-modified Flange ASME B16.5 RF Trim number 8 Lift-type Bolted cover Full jacketed	
1	2	1			P83C-003P7	Jacketed check valve ASTM A216 Grade WCB Class 150 API 600-modified Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover Full jacketed	
1	3	1.5			P83C-003P8	Jacketed check valve ASTM A216 Grade WCB Class 150 API 600-modified Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover Full jacketed	
1	4	3			P83C-003P9	Jacketed check valve ASTM A216 Grade WCB Class 150 API 600-modified Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover Full jacketed	
1	6	4			P83C-003PA	Jacketed check valve ASTM A216 Grade WCB Class 150 API 600-modified Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover Full jacketed	
1	8	6			P83C-003PB	Jacketed check valve ASTM A216 Grade WCB Class 150 API 600-modified Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover Full jacketed	
1	10	8			P83C-003PC	Jacketed check valve ASTM A216 Grade WCB Class 150 API 600-modified Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover Full jacketed	
1	12	10			P83C-003PD	Jacketed check valve ASTM A216 Grade WCB Class 150 API 600-modified Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover Full jacketed	
1	16	12			P83C-003PE	Jacketed check valve ASTM A216 Grade WCB Class 150 API 600-modified Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover Full jacketed	
1	18	14			P83C-003PF	Jacketed check valve ASTM A216 Grade WCB Class 150 API 600-modified Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover Full jacketed	
1	20	16			P83C-003PG	Jacketed check valve ASTM A216 Grade WCB Class 150 API 600-modified Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover Full jacketed	
1	24	18			P83C-003PH	Jacketed check valve ASTM A216 Grade WCB Class 150 API 600-modified Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover Full jacketed	
1	30	24			P83C-0044T	Jacketed check valve ASTM A216 Grade WCB Class 150 API 600-modified Flange ASME B16.47-B RF Trim number 8 Swing-type Bolted cover Full jacketed	

PLUG VALVE (PV)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5	0.5			P85B-0000J	Jacketed plug valve Short-pattern ASTM A105 Class 150 API 599 Flange ASME B16.5 RF Plug SS316 Seat PTFE Trim SS316 Nonlubricated taper plug BC-BG Wrench lever operated Regular port Full jacketed	
1	2	1			P85C-0007D	Jacketed plug valve Short-pattern ASTM A216 Grade WCB Class 150 API 599 Flange ASME B16.5 RF Plug SS316 Seat PTFE Trim SS316 Nonlubricated taper plug BC-BG Wrench lever operated Regular port Full jacketed	
1	3	1.5			P85C-0007E	Jacketed plug valve Short-pattern ASTM A216 Grade WCB Class 150 API 599 Flange ASME B16.5 RF Plug SS316 Seat PTFE Trim SS316 Nonlubricated taper plug BC-BG Wrench lever operated Regular port Full jacketed	
1	4	3			P85C-0007F	Jacketed plug valve Short-pattern ASTM A216 Grade WCB Class 150 API 599 Flange ASME B16.5 RF Plug SS316 Seat PTFE Trim SS316 Nonlubricated taper plug BC-BG Wrench lever operated Regular port Full jacketed	
1	6	4			P85C-0007H	Jacketed plug valve Short-pattern ASTM A216 Grade WCB Class 150 API 599 Flange ASME B16.5 RF Plug SS316 Seat PTFE Trim SS316 Nonlubricated taper plug BC-BG Gear operated Regular port Full jacketed	
1	8	6			P85C-0007J	Jacketed plug valve Short-pattern ASTM A216 Grade WCB Class 150 API 599 Flange ASME B16.5 RF Plug SS316 Seat PTFE Trim SS316 Nonlubricated taper plug BC-BG Gear operated Regular port Full jacketed	
1	10	8			P85C-0007K	Jacketed plug valve Short-pattern ASTM A216 Grade WCB Class 150 API 599 Flange ASME B16.5 RF Plug SS316 Seat PTFE Trim SS316 Nonlubricated taper plug BC-BG Gear operated Regular port Full jacketed	
1	12	10			P85C-0007L	Jacketed plug valve Short-pattern ASTM A216 Grade WCB Class 150 API 599 Flange ASME B16.5 RF Plug SS316 Seat PTFE Trim SS316 Nonlubricated taper plug BC-BG Gear operated Regular port Full jacketed	
1	16	12			P85C-0007S	Jacketed plug valve Regular-pattern ASTM A216 Grade WCB Class 150 API 599 Flange ASME B16.5 RF Plug SS316 Seat PTFE Trim SS316 Nonlubricated taper plug BC-BG Gear operated Regular port Full jacketed	
1	18	14			P85C-0007T	Jacketed plug valve Regular-pattern ASTM A216 Grade WCB Class 150 API 599 Flange ASME B16.5 RF Plug SS316 Seat PTFE Trim SS316 Nonlubricated taper plug BC-BG Gear operated Regular port Full jacketed	
1	20	16			P85C-0007U	Jacketed plug valve Regular-pattern ASTM A216 Grade WCB Class 150 API 599 Flange ASME B16.5 RF Plug SS316 Seat PTFE Trim SS316 Nonlubricated taper plug BC-BG Gear operated Regular port Full jacketed	

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PLUG VALVE (PV)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	24	18			P85C-0007V	Jacketed plug valve Regular-pattern ASTM A216 Grade WCB Class 150 API 599 Flange ASME B16.5 RF Plug SS316 Seat PTFE Trim SS316 Nonlubricated taper plug BC-BG Gear operated Regular port Full jacketed	
1	30	24			P85C-0007M	Jacketed plug valve Regular-pattern ASTM A216 Grade WCB Class 150 API 599 Flange ASME B16.47-B RF Plug SS316 Seat PTFE Trim SS316 Nonlubricated taper plug BC-BG Gear operated Regular port Full jacketed	
1	36	30			P85C-0007N	Jacketed plug valve Regular-pattern ASTM A216 Grade WCB Class 150 API 599 Flange ASME B16.47-B RF Plug SS316 Seat PTFE Trim SS316 Nonlubricated taper plug BC-BG Gear operated Regular port Full jacketed	
1	42	36			P85C-0007P	Jacketed plug valve Regular-pattern ASTM A216 Grade WCB Class 150 API 599 Flange ASME B16.47-B RF Plug SS316 Seat PTFE Trim SS316 Nonlubricated taper plug BC-BG Gear operated Regular port Full jacketed	
1	48	42			P85C-0007R	Jacketed plug valve Regular-pattern ASTM A216 Grade WCB Class 150 API 599 Flange ASME B16.47-B RF Plug SS316 Seat PTFE Trim SS316 Nonlubricated taper plug BC-BG Gear operated Regular port Full jacketed	
4610	1.5	0.75			P85B-0000Y	Jacketed plug valve Short-pattern ASTM A105 Class 150 API 599 Flange ASME B16.5 RF Plug SS316 Seat PTFE Trim SS316 Nonlubricated taper plug BC-BG Wrench lever operated Regular port Full jacketed Type-10	
4611	3	2			P85C-000AS	Jacketed plug valve Short-pattern ASTM A216 Grade WCB Class 150 API 599 Flange ASME B16.5 RF Plug SS316 Seat PTFE Trim SS316 Nonlubricated taper plug BC-BG Wrench lever operated Regular port Full jacketed Type-10	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71B-0008A	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	0.75				P71B-0008B	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	1				P71B-0008C	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71B-0008D	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	2				P71B-0000P	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	3				P71B-0000N	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	4				P71B-0000M	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	6				P71B-0000L	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	8				P71B-0000R	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	10				P71B-0000K	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	12				P71B-0000J	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	

PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000AH	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	16				P72B-0000C	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	18				P72B-000AJ	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	20				P72B-000AK	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	24				P72B-000AL	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	30				P72B-000AM	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	36				P72B-000AN	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	42				P72B-000AP	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	48				P72B-000AR	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	

PADDLE SPACER (PS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000AT	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	16				P72B-0000B	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	18				P72B-000AU	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	20				P72B-000AV	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	24				P72B-000AW	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	30				P72B-000AX	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	36				P72B-000AY	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	42				P72B-000AZ	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	48				P72B-000B0	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	

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BOLT TABLE (B_A2APCM , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	60	P80S-003V2		
0.75	4	0.500	65	P80S-003V3		
1	4	0.500	70	P80S-003V4		
1.5	4	0.500	75	P80S-003V5		
2	4	0.625	85	P80S-003XE		
3	4	0.625	95	P80S-003XG		
4	8	0.625	95	P80S-003XG		
6	8	0.750	105	P80S-003XJ		
8	8	0.750	110	P80S-003XK		
10	12	0.875	120	P80S-00419		
12	12	0.875	120	P80S-00419		
14	12	1.000	135	P80S-0043E		
16	16	1.000	140	P80S-0043F		
18	16	1.125	150	P80S-0046K		
20	20	1.125	160	P80S-0046M		
24	20	1.250	175	P80S-004AG		
30	44	0.750	145	P80S-003ZK		
36	44	0.875	175	P80S-0041M		
42	48	1.000	190	P80S-0043T		
48	44	1.125	210	P80S-0046Z		
56	60	1.125	225	P80S-00472		

BOLT TABLE (B_A2APCM_773 , STUD ASME RF, OPTION CODE 773)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-003V4		
0.75	4	0.625	75	P80S-003XC		
1	4	0.625	80	P80S-003XD		
1.5	4	0.750	95	P80S-00414		
2	8	0.625	90	P80S-003XF		
3	8	0.750	110	P80S-003XK		
4	8	0.750	115	P80S-003XL		
6	12	0.750	125	P80S-003XN		
8	12	0.875	140	P80S-0041D		
10	16	1.000	160	P80S-0043K		
12	16	1.125	175	P80S-0046S		
14	20	1.125	180	P80S-0046T		
16	20	1.250	190	P80S-004AK		
18	24	1.250	200	P80S-004AM		
20	24	1.250	210	P80S-004AP		
24	24	1.500	235	P80S-003F8		
30	36	1.375	285	P80S-003EA		
36	32	1.625	320	P80S-005TT		
42	36	1.750	355	P80S-007B5		
48	40	1.875	380	P80S-008P4		
56	36	2.250	450			

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PIPING CLASS

A2APCM REV NO. 2

BRANCH TABLE (T_A2APCM)

RUN PIPE SIZE (in) \ BRANCH SIZE (in)	0.5	0.75	1	1.5	2	3	4	6	8	10	12	14	16	18	20	24	30	36	42	48	56
0.5	TS																				
0.75		TS																			
1		TR	TS																		
1.5		TR	TR	TS																	
2		L	TR	TR	TS																
3		L	L	TR	TR	TS															
4	L	L	L	L	TR	TR	TS														
6	L	L	L	L	L	TR	TR	TS													
8		L	L	L	L	L	TR	TR	TS												
10		L	L	L	L	L	TR	TR	TR	TS											
12		L	L	L	L	L	L	TR	TR	TR	TS										
14		L	L	L	L	L	L	TR	TR	TR	TR	TS									
16		L	L	L	L	L	L	TR	TR	TR	TR	TR	TS								
18		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TS							
20		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TR	TS						
24		L	L	L	L	L	L	L	9PD	TR	TR	TR	TR	TR	TR	TS					
30		L	L	L	L	L	L	L	9PD	TR	TR	TR	TR	TR	TR	TR	TS				
36		L	L	L	L	L	L	L	9PD	9PD	9PD	9PD	TR	TR	TR	TR	TR	TS			
42		L	L	L	L	L	L	L	9PD	9PD	9PD	9PD	TR	TR	TR	TR	TR	TR	TS		
48		L	L	L	L	L	L	L	9PD	9PD	9PD	9PD	9PD	9PD	9PD	TR	TR	TR	TR	TS	
56		L	L	L	L	L	L	L	9PD	9PD	9PD	9PD	9PD	9PD	9PD	9PD	TR	TR	TR	TR	TS

L : OUTLET
TS : STRAIGHT TEE
9PD : REINFORCING PAD 90 DEG
TR : REDUCING TEE

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PIPING CLASS

A2AQ

REV NO. 2

Material : Killed CS
Rating : ASME CLASS 150
Flange Face : RF
C.A.(mm) : 3.00
Gasket : Spiral Wound
Service : PROCESS - WET SOUR SERVICE SUBJECT TO NACE STD. : / DESALTER WATER / CRUDE OVHD VAPOUR / CRUDE DISTILLATION TOP PA / CDU COLUMN OFFGAS / CDU OVHD LIQUID / OFFGAS COMP. SUCTION / RECONTACTOR DRUM OFFGAS / NAPHTHA / and other various services

Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
2	USE OF SOFT SEATED BALL, PLUG AND BUTTERFLY VALVES SHALL BE LIMITED TO MAXIMUM OF 204DEGC (400DEGF)
5	BOLTING CONFIRMING TO B7M / 2HM SHALL BE USED UNDER CONDITIONS (A) DIRECT EXPOSURE TO SOUR ENVIRONMENTS (B) WHEN THE BOLTING WILL BE BURIED OR INSULATED
27	PWHT OF CARBON STEEL PIPING IN WET H2S, CAUSTIC AND AMINE SERVICES SHALL BE IN ACCORDANCE WITH SECTION 10.2, 10.3, AND 10.4 OF PROJECT SPECIFICATION 3550-8440-SP-0002 MATERIALS REQUIREMENTS FOR PRESSURISED EQUIPMENT AND PIPING. FOR CAUSTIC AND AMINE SERVICE THE FOLLOWING SHALL APPLY: - PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF ALL SITE PIPING FABRICATION WELDS IS REQUIRED FOR ALL WALL THICKNESSES. FOR MODERATE AND SEVERE WET H2S SERVICE THE FOLLOWING SHALL APPLY: PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF SITE FABRICATION CIRCUMFERENTIAL OR BRANCH WELDS IS NOT REQUIRED IF WELDS ARE MULTIPASS AND IN ACCORDANCE WITH PARA 10.2.12 OF PROJECT SPECIFICATION 3550-8440-SP-0002. FOR SERVICES MEETING THE WET H2S CRITERIA AND CAUSTIC OR AMINE CRITERIA THE MORE STRINGENT PWHT REQUIREMENT SHALL GOVERN.

DETAIL NOTES :

NO.	DESCRIPTION
999	HOLD ITEMS. ORDER PLACEMENT SHALL NOT BE DONE BEFORE RELEASING HOLD.

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
24	FULL PORT (Q)
200	WITH JACK SCREW (FO)
541	NPT(F) (CA,F,L)
773	CLASS 300 (B,F,FR,G,V)
781	CLASS 600 (B,F,G)
789	CLASS 900 (B,F,G)
797	CLASS 1500 (B,F,G)
851	ALTERNATIVE WALL THICKNESS 1 (4L,6PD,9L,CA,F,P,RC,RE)
3001	INSULATION GASKET KIT AND BOLTS FOR FLANGE (G)
4208	45 DEGREE LATERAL STRAIGHT TEE (TLS)
4608	VALVE WITH NIPPLES (V)

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PIPING CLASS
A2AQ REV NO. 2

PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P01A-0010P	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	0.75		SCH160		P01A-0010R	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1		SCH160		P01A-0014M	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1.5		SCH160		P01A-0015J	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	2		XS		P01A-000YX	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	3		STD		P01A-000YM	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	4		STD		P01A-000YU	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	6		STD		P01A-000Z3	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	8		SCH30		P01A-001WL	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	10		SCH30		P01A-0016U	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	12		SCH30		P01A-0017K	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	14		SCH20		P01A-0017A	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	16		SCH20		P01A-0018E	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	18		STD		P01A-002CB	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	20		STD		P01A-002CC	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	24		XS		P01A-002MP	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	30		XS		P01A-007YX	Pipe ASTM A671 Grade CC60 Class 22 EFW ASME B36.10M/B36.19M BE Moderate wet H2S service	
1	36		XS		P01A-007YY	Pipe ASTM A671 Grade CC60 Class 22 EFW ASME B36.10M/B36.19M BE Moderate wet H2S service	
1	42		14.27mm		P01A-007YZ	Pipe ASTM A671 Grade CC60 Class 22 EFW ASME B36.10M/B36.19M BE Moderate wet H2S service	
1	48		14.27mm		P01A-008MZ	Pipe ASTM A671 Grade CC60 Class 22 EFW ASME B36.10M/B36.19M BE Moderate wet H2S service	
1	52		15.88mm		P01A-008N0	Pipe ASTM A671 Grade CC60 Class 22 EFW ASME B36.10M/B36.19M BE Moderate wet H2S service	
1	56		17.48mm		P01A-008N1	Pipe ASTM A671 Grade CC60 Class 22 EFW ASME B36.10M/B36.19M BE Moderate wet H2S service	
1	60		17.48mm		P01A-008N2	Pipe ASTM A671 Grade CC60 Class 22 EFW ASME B36.10M/B36.19M BE Moderate wet H2S service	
1	64		19.05mm		P01A-008N3	Pipe ASTM A671 Grade CC60 Class 22 EFW ASME B36.10M/B36.19M BE Moderate wet H2S service	
1	68		19.05mm		P01A-008N4	Pipe ASTM A671 Grade CC60 Class 22 EFW ASME B36.10M/B36.19M BE Moderate wet H2S service	
1	72		19.05mm		P01A-008N5	Pipe ASTM A671 Grade CC60 Class 22 EFW ASME B36.10M/B36.19M BE Moderate wet H2S service	
1	76		19.05mm		P01A-008N6	Pipe ASTM A671 Grade CC60 Class 22 EFW ASME B36.10M/B36.19M BE Moderate wet H2S service	
1	80		22.23mm		P01A-008N7	Pipe ASTM A671 Grade CC60 Class 22 EFW ASME B36.10M/B36.19M BE Moderate wet H2S service	
1	92		22.23mm		P01A-008V6	Pipe ASTM A671 Grade CC60 Class 22 EFW ASME B36.10M/B36.19M BE Moderate wet H2S service	
851	0.5		XXS		P01A-00143	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
851	0.75		XXS		P01A-0014D	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
851	1		XXS		P01A-0014U	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
851	1.5		XXS		P01A-00162	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
851	2		XXS		P01A-001R0	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
851	3		XXS		P01A-001SB	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
851	4		SCH160		P01A-001TN	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
851	6		SCH120		P01A-001VC	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
851	8		XS		P01A-000ZJ	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
851	10		XS		P01A-000Y2	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
851	12		XS		P01A-000YB	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
851	14		XS		P01A-000YJ	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
851	16		XS		P01A-000YS	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
851	18		XS		P01A-00372	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
851	20		XS		P01A-00373	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P02A-001Y8	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	0.75		SCH160		P02A-000V8	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1		SCH160		P02A-000V7	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1.5		SCH160		P02A-000V9	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	2		XS		P02A-000CP	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		STD		P02A-000CU	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		STD		P02A-000CZ	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		STD		P02A-000D6	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		SCH30		P02A-003DK	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	10		SCH30		P02A-000M3	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	12		SCH30		P02A-000M4	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	14		SCH20		P02A-000FX	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

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90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	16		SCH20		P02A-000GM	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	18		STD		P02A-0010H	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	20		STD		P02A-0010J	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	24		XS		P02A-000MB	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	30		XS		P02A-003Z7	90 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius Moderate wet H2S service	
1	36		XS		P02A-002JG	90 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius Moderate wet H2S service	
1	42		14.27mm		P02A-002HT	90 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius Moderate wet H2S service	
1	48		14.27mm		P02A-002JJ	90 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius Moderate wet H2S service	
1	52		15.88mm		P02A-004FE	90 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Long radius Moderate wet H2S service	
1	56		17.48mm		P02A-004FF	90 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Long radius Moderate wet H2S service	
1	60		17.48mm		P02A-004FG	90 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Long radius Moderate wet H2S service	
1	64		19.05mm		P02A-004FH	90 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Long radius Moderate wet H2S service	
1	68		19.05mm		P02A-004FJ	90 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Long radius Moderate wet H2S service	
1	72		19.05mm		P02A-004FK	90 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Long radius Moderate wet H2S service	
1	76		19.05mm		P02A-004FL	90 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Long radius Moderate wet H2S service	
1	80		22.23mm		P02A-004FM	90 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Long radius Moderate wet H2S service	
1	92		22.23mm		P02A-004YD	90 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Long radius Moderate wet H2S service	
851	0.5		XXS		P02A-00172	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
851	0.75		XXS		P02A-000XH	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
851	1		XXS		P02A-000XJ	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
851	1.5		XXS		P02A-002N4	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
851	2		XXS		P02A-00111	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
851	3		XXS		P02A-002JA	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
851	4		SCH160		P02A-002JE	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
851	6		SCH120		P02A-000UB	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
851	8		XS		P02A-000DG	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
851	10		XS		P02A-000BN	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
851	12		XS		P02A-000BX	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
851	14		XS		P02A-000C7	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
851	16		XS		P02A-000CE	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
851	18		XS		P02A-000M9	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
851	20		XS		P02A-001JX	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P03A-001TC	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	0.75		SCH160		P03A-000RS	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1		SCH160		P03A-000RR	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1.5		SCH160		P03A-000RP	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	2		XS		P03A-000AS	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		STD		P03A-000AX	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		STD		P03A-000B1	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		STD		P03A-000B9	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		SCH30		P03A-003BE	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	10		SCH30		P03A-000JT	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	12		SCH30		P03A-000JU	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	14		SCH20		P03A-000DW	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	16		SCH20		P03A-000EM	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	18		STD		P03A-000X0	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	20		STD		P03A-000X1	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	24		XS		P03A-001E1	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	30		XS		P03A-003X6	45 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius Moderate wet H2S service	
1	36		XS		P03A-002G0	45 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius Moderate wet H2S service	
1	42		14.27mm		P03A-002FA	45 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius Moderate wet H2S service	
1	48		14.27mm		P03A-002G2	45 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius Moderate wet H2S service	
1	52		15.88mm		P03A-004CL	45 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Long radius Moderate wet H2S service	

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45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	56		17.48mm		P03A-004CM	45 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Long radius Moderate wet H2S service	
1	60		17.48mm		P03A-004CN	45 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Long radius Moderate wet H2S service	
1	64		19.05mm		P03A-004CP	45 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Long radius Moderate wet H2S service	
1	68		19.05mm		P03A-004CR	45 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Long radius Moderate wet H2S service	
1	72		19.05mm		P03A-004CS	45 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Long radius Moderate wet H2S service	
1	76		19.05mm		P03A-004CT	45 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Long radius Moderate wet H2S service	
1	80		22.23mm		P03A-004CU	45 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Long radius Moderate wet H2S service	
1	92		22.23mm		P03A-004HW	45 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Long radius Moderate wet H2S service	
851	0.5		XXS		P03A-0012Y	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
851	0.75		XXS		P03A-000U9	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
851	1		XXS		P03A-000U8	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
851	1.5		XXS		P03A-002KD	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
851	2		XXS		P03A-000XH	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
851	3		XXS		P03A-002FU	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
851	4		SCH160		P03A-002FY	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
851	6		SCH120		P03A-000RD	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
851	8		XS		P03A-000BC	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
851	10		XS		P03A-000A3	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
851	12		XS		P03A-000A8	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
851	14		XS		P03A-000AF	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
851	16		XS		P03A-000AP	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
851	18		XS		P03A-001DZ	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
851	20		XS		P03A-001E0	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P21A-003AW	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	0.75		SCH160		P21A-002B8	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1		SCH160		P21A-002B6	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5		SCH160		P21A-002B9	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2		XS		P21A-001CJ	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		STD		P21A-001CU	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		STD		P21A-001CW	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6		STD		P21A-001D2	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8		SCH30		P21A-003WV	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10		SCH30		P21A-00259	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12		SCH30		P21A-0025A	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14		SCH20		P21A-00206	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16		SCH20		P21A-0020X	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18		STD		P21A-002FT	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20		STD		P21A-002FU	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24		XS		P21A-002Y5	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	30		XS		P21A-004GM	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Moderate wet H2S service	
1	36		XS		P21A-003H2	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Moderate wet H2S service	
1	42		14.27mm		P21A-003GD	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Moderate wet H2S service	
1	48		14.27mm		P21A-003H4	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Moderate wet H2S service	
1	52		15.88mm		P21A-004XV	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	56		17.48mm		P21A-004XW	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	60		17.48mm		P21A-004XX	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	64		19.05mm		P21A-004XY	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	68		19.05mm		P21A-004XZ	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	72		19.05mm		P21A-004Y0	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	76		19.05mm		P21A-004Y1	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	80		22.23mm		P21A-004Y2	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	92		22.23mm		P21A-00524	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Moderate wet H2S service	

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STRAIGHT LATERAL TEE (TLS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75		SCH160		P22A-000DZ	Straight lateral-tee ASTM A234 Grade WPB Seamless ASME B16.9 BW 60 degree	
1	1		SCH160		P22A-000F3	Straight lateral-tee ASTM A234 Grade WPB Seamless ASME B16.9 BW 60 degree	
1	1.5		SCH160		P22A-000F4	Straight lateral-tee ASTM A234 Grade WPB Seamless ASME B16.9 BW 60 degree	
1	2		XS		P22A-000DW	Straight lateral-tee ASTM A234 Grade WPB Seamless ASME B16.9 BW 60 degree	
1	3		STD		P22A-000DJ	Straight lateral-tee ASTM A234 Grade WPB Seamless ASME B16.9 BW 60 degree	
1	4		STD		P22A-000DX	Straight lateral-tee ASTM A234 Grade WPB Seamless ASME B16.9 BW 60 degree	
1	6		STD		P22A-000DY	Straight lateral-tee ASTM A234 Grade WPB Seamless ASME B16.9 BW 60 degree	
1	8		SCH30		P22A-000D8	Straight lateral-tee ASTM A234 Grade WPB Seamless ASME B16.9 BW 60 degree	
1	10		SCH30		P22A-000DS	Straight lateral-tee ASTM A234 Grade WPB Seamless ASME B16.9 BW 60 degree	
1	12		SCH30		P22A-000DT	Straight lateral-tee ASTM A234 Grade WPB Seamless ASME B16.9 BW 60 degree	
1	14		SCH20		P22A-000DU	Straight lateral-tee ASTM A234 Grade WPB Seamless ASME B16.9 BW 60 degree	
1	16		SCH20		P22A-000DV	Straight lateral-tee ASTM A234 Grade WPB Seamless ASME B16.9 BW 60 degree	
1	18		STD		P22A-000EF	Straight lateral-tee ASTM A234 Grade WPB Seamless ASME B16.9 BW 60 degree	
1	20		STD		P22A-000EG	Straight lateral-tee ASTM A234 Grade WPB Seamless ASME B16.9 BW 60 degree	
1	24		XS		P22A-000J1	Straight lateral-tee ASTM A234 Grade WPB Seamless ASME B16.9 BW 60 degree	
1	30		XS		P22A-000EL	Straight lateral-tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW 60 degree Moderate wet H2S service	
1	36		XS		P22A-000EM	Straight lateral-tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW 60 degree Moderate wet H2S service	
1	42		14.27mm		P22A-000EN	Straight lateral-tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW 60 degree Moderate wet H2S service	
1	48		14.27mm		P22A-000H3	Straight lateral-tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW 60 degree Moderate wet H2S service	
1	52		15.88mm		P22A-000J2	Straight lateral-tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW 60 degree Moderate wet H2S service	
1	56		17.48mm		P22A-000J3	Straight lateral-tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW 60 degree Moderate wet H2S service	
1	60		17.48mm		P22A-000J4	Straight lateral-tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW 60 degree Moderate wet H2S service	
1	64		19.05mm		P22A-000J5	Straight lateral-tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW 60 degree Moderate wet H2S service	
1	68		19.05mm		P22A-000J6	Straight lateral-tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW 60 degree Moderate wet H2S service	
1	76		19.05mm		P22A-000J7	Straight lateral-tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW 60 degree Moderate wet H2S service	
1	80		22.23mm		P22A-000J8	Straight lateral-tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW 60 degree Moderate wet H2S service	
1	92		22.23mm		P22A-000J9	Straight lateral-tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW 60 degree Moderate wet H2S service	
4208	14		SCH20		P22A-000EA	Straight lateral-tee ASTM A234 Grade WPB Seamless ASME B16.9 BW 45 degree	
4208	16		SCH20		P22A-000EB	Straight lateral-tee ASTM A234 Grade WPB Seamless ASME B16.9 BW 45 degree	
4208	18		STD		P22A-000EC	Straight lateral-tee ASTM A234 Grade WPB Seamless ASME B16.9 BW 45 degree	
4208	20		STD		P22A-000ED	Straight lateral-tee ASTM A234 Grade WPB Seamless ASME B16.9 BW 45 degree	
4208	24		XS		P22A-000EE	Straight lateral-tee ASTM A234 Grade WPB Seamless ASME B16.9 BW 45 degree	
4208	30		XS		P22A-000D4	Straight lateral-tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW 45 degree Moderate wet H2S service	
4208	36		XS		P22A-000D5	Straight lateral-tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW 45 degree Moderate wet H2S service	
4208	42		14.27mm		P22A-000EK	Straight lateral-tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW 45 degree Moderate wet H2S service	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75	SCH160	SCH160	P24A-004B6	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.75	SCH160	SCH160	P24A-004B2	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	1	SCH160	SCH160	P24A-004BA	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	XS	SCH160	P24A-00GMB	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	XS	SCH160	P24A-005K9	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	STD	SCH160	P24A-00GMC	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	STD	XS	P24A-002HW	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P24A-002HY	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P24A-0021K	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	STD	P24A-0021A	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P24A-00229	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH30	STD	P24A-00JVH	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH30	STD	P24A-00JVG	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	SCH30	STD	P24A-00GNR	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	SCH30	STD	P24A-0060W	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	SCH30	SCH30	P24A-00J15	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	SCH30	STD	P24A-00HKT	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH30	SCH30	P24A-00M36	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	12	10	SCH30	SCH30	P24A-003ET	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	SCH20	STD	P24A-00K0M	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	SCH20	SCH30	P24A-00M37	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	SCH20	SCH30	P24A-003ER	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	SCH20	SCH30	P24A-003ES	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	6	SCH20	STD	P24A-00GU4	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	SCH20	SCH30	P24A-00M38	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	SCH20	SCH30	P24A-00KSH	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	SCH20	SCH30	P24A-003XN	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	SCH20	SCH20	P24A-002XF	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	8	STD	SCH30	P24A-00NHT	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	10	STD	SCH30	P24A-00MH8	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	12	STD	SCH30	P24A-00HL1	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	14	STD	SCH20	P24A-00HL2	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	16	STD	SCH20	P24A-00HL3	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	8	STD	SCH30	P24A-00M3D	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	10	STD	SCH30	P24A-00M3C	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	12	STD	SCH30	P24A-00HKV	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	14	STD	SCH20	P24A-00HKW	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	16	STD	SCH20	P24A-00HKX	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	18	STD	STD	P24A-0020K	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24	10	XS	SCH30	P24A-00NAF	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24	12	XS	SCH30	P24A-00NAG	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24	14	XS	SCH20	P24A-00NAH	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24	16	XS	SCH20	P24A-00KCK	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24	18	XS	STD	P24A-00884	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24	20	XS	STD	P24A-00885	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	30	10	XS	SCH30	P24A-00NJ6	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Moderate wet H2S service	
1	30	12	XS	SCH30	P24A-00NJ7	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Moderate wet H2S service	
1	30	14	XS	SCH20	P24A-00NJ8	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Moderate wet H2S service	
1	30	16	XS	SCH20	P24A-00NJ9	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Moderate wet H2S service	
1	30	18	XS	STD	P24A-00NJA	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Moderate wet H2S service	
1	30	20	XS	STD	P24A-00NJB	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Moderate wet H2S service	
1	30	24	XS	XS	P24A-00L22	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Moderate wet H2S service	
1	36	16	XS	SCH20	P24A-00NJC	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Moderate wet H2S service	
1	36	18	XS	STD	P24A-00GRJ	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Moderate wet H2S service	
1	36	20	XS	STD	P24A-00GRK	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Moderate wet H2S service	
1	36	24	XS	XS	P24A-00GRL	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Moderate wet H2S service	
1	36	30	XS	XS	P24A-00L25	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Moderate wet H2S service	
1	42	16	14.27mm	SCH20	P24A-00NJD	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Moderate wet H2S service	
1	42	18	14.27mm	STD	P24A-00NJE	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Moderate wet H2S service	
1	42	20	14.27mm	STD	P24A-00NJF	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Moderate wet H2S service	
1	42	24	14.27mm	XS	P24A-00L26	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Moderate wet H2S service	
1	42	30	14.27mm	XS	P24A-00L27	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Moderate wet H2S service	
1	42	36	14.27mm	XS	P24A-00L28	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Moderate wet H2S service	
1	48	24	14.27mm	XS	P24A-00GRU	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Moderate wet H2S service	
1	48	30	14.27mm	XS	P24A-00NJG	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Moderate wet H2S service	
1	48	36	14.27mm	XS	P24A-00GRW	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Moderate wet H2S service	
1	48	42	14.27mm	14.27mm	P24A-00NJH	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Moderate wet H2S service	
1	52	30	15.88mm	XS	P24A-00NJJ	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	52	36	15.88mm	XS	P24A-00NJK	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	52	42	15.88mm	14.27mm	P24A-00NJL	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	52	48	15.88mm	14.27mm	P24A-00NJM	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	56	30	17.48mm	XS	P24A-00NJN	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	56	36	17.48mm	XS	P24A-00NJP	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	56	42	17.48mm	14.27mm	P24A-00NJR	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	56	48	17.48mm	14.27mm	P24A-00NJS	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	56	52	17.48mm	15.88mm	P24A-00NJT	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	60	30	17.48mm	XS	P24A-00NKT	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Moderate wet H2S service	

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REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	60	36	17.48mm	XS	P24A-00NKU	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	60	42	17.48mm	14.27mm	P24A-00NKV	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	60	48	17.48mm	14.27mm	P24A-00NJU	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	60	52	17.48mm	15.88mm	P24A-00NJV	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	60	56	17.48mm	17.48mm	P24A-00NJW	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	64	36	19.05mm	XS	P24A-00NKR	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	64	42	19.05mm	14.27mm	P24A-00NKS	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	64	48	19.05mm	14.27mm	P24A-00NJX	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	64	52	19.05mm	15.88mm	P24A-00NJY	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	64	56	19.05mm	17.48mm	P24A-00NJZ	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	64	60	19.05mm	17.48mm	P24A-00NK0	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	68	36	19.05mm	XS	P24A-00NKN	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	68	42	19.05mm	14.27mm	P24A-00NKP	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	68	48	19.05mm	14.27mm	P24A-00NK1	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	68	52	19.05mm	15.88mm	P24A-00NK2	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	68	56	19.05mm	17.48mm	P24A-00NK3	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	68	60	19.05mm	17.48mm	P24A-00NK4	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	68	64	19.05mm	19.05mm	P24A-00NK5	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	72	36	19.05mm	XS	P24A-00NKE	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	72	42	19.05mm	14.27mm	P24A-00NKF	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	72	48	19.05mm	14.27mm	P24A-00NKG	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	72	52	19.05mm	15.88mm	P24A-00NKH	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	72	56	19.05mm	17.48mm	P24A-00NKJ	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	72	60	19.05mm	17.48mm	P24A-00NKK	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	72	64	19.05mm	19.05mm	P24A-00NKL	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	72	68	19.05mm	19.05mm	P24A-00NKM	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	76	42	19.05mm	14.27mm	P24A-00PCS	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	76	48	19.05mm	14.27mm	P24A-00PCT	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	76	52	19.05mm	15.88mm	P24A-00PCU	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	76	56	19.05mm	17.48mm	P24A-00PCV	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	76	60	19.05mm	17.48mm	P24A-00PCW	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	76	64	19.05mm	19.05mm	P24A-00PCX	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	76	68	19.05mm	19.05mm	P24A-00PCY	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	76	72	19.05mm	19.05mm	P24A-00PCZ	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	80	42	22.23mm	14.27mm	P24A-00NK6	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	80	48	22.23mm	14.27mm	P24A-00NK7	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	80	52	22.23mm	15.88mm	P24A-00NK8	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	80	56	22.23mm	17.48mm	P24A-00NK9	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	80	60	22.23mm	17.48mm	P24A-00NKA	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	80	64	22.23mm	19.05mm	P24A-00NKB	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	80	68	22.23mm	19.05mm	P24A-00NKC	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	80	72	22.23mm	19.05mm	P24A-00NKD	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	80	76	22.23mm	19.05mm	P24A-00PD9	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	92	48	22.23mm	14.27mm	P24A-00PD0	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	92	52	22.23mm	15.88mm	P24A-00PD1	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	92	56	22.23mm	17.48mm	P24A-00PD2	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	92	60	22.23mm	17.48mm	P24A-00PD3	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	92	64	22.23mm	19.05mm	P24A-00PD4	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	92	68	22.23mm	19.05mm	P24A-00PD5	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	92	72	22.23mm	19.05mm	P24A-00PD6	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	92	76	22.23mm	19.05mm	P24A-00PD7	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	92	80	22.23mm	22.23mm	P24A-00PD8	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Moderate wet H2S service	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	SCH160	P27A-004LZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.5	SCH160	SCH160	P27A-004M8	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.75	SCH160	SCH160	P27A-002T5	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.5	SCH160	SCH160	P27A-004MV	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5	0.75	SCH160	SCH160	P27A-002T7	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	1	SCH160	SCH160	P27A-002T4	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	0.75	XS	SCH160	P27A-001LG	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	XS	SCH160	P27A-0033P	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	XS	SCH160	P27A-0033B	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	STD	SCH160	P27A-003M9	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	STD	XS	P27A-001MZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	1.5	STD	SCH160	P27A-003MA	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P27A-001N0	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P27A-00189	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	STD	P27A-001AZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P27A-001GW	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH30	STD	P27A-00ED2	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH30	STD	P27A-00ECY	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	SCH30	STD	P27A-003MK	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	SCH30	STD	P27A-003ML	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	SCH30	SCH30	P27A-004T9	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	SCH30	STD	P27A-003MN	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH30	SCH30	P27A-004XA	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH30	SCH30	P27A-0028K	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	SCH20	STD	P27A-00518	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	SCH20	SCH30	P27A-0052J	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	SCH20	SCH30	P27A-0028G	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	SCH20	SCH30	P27A-0028H	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	SCH20	SCH30	P27A-0059E	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	SCH20	SCH30	P27A-003NC	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	SCH20	SCH30	P27A-002GH	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	SCH20	SCH20	P27A-001V2	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	10	STD	SCH30	P27A-005BK	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	12	STD	SCH30	P27A-005DR	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	14	STD	SCH20	P27A-005FP	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	16	STD	SCH20	P27A-005HV	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	12	STD	SCH30	P27A-005LW	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	14	STD	SCH20	P27A-005NZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	16	STD	SCH20	P27A-005S7	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	18	STD	STD	P27A-0037R	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24	16	XS	SCH20	P27A-005Y9	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24	18	XS	STD	P27A-005ZZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24	20	XS	STD	P27A-0061M	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	30	20	XS	STD	P27A-00H62	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Moderate wet H2S service	
1	30	24	XS	XS	P27A-00FBZ	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Moderate wet H2S service	
1	36	24	XS	XS	P27A-00BHP	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Moderate wet H2S service	
1	36	30	XS	XS	P27A-00FC0	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Moderate wet H2S service	
1	42	30	14.27mm	XS	P27A-00FC1	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Moderate wet H2S service	
1	42	36	14.27mm	XS	P27A-00FC2	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Moderate wet H2S service	
1	48	42	14.27mm	14.27mm	P27A-00H63	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Moderate wet H2S service	
1	52	30	15.88mm	XS	P27A-00H64	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	52	36	15.88mm	XS	P27A-00H65	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	52	42	15.88mm	14.27mm	P27A-00H66	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	52	48	15.88mm	14.27mm	P27A-00H67	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	56	36	17.48mm	XS	P27A-00H68	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	56	42	17.48mm	14.27mm	P27A-00H69	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	56	48	17.48mm	14.27mm	P27A-00H6K	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	56	52	17.48mm	15.88mm	P27A-00H6L	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	60	36	17.48mm	XS	P27A-00H6M	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	60	42	17.48mm	14.27mm	P27A-00H6N	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	60	48	17.48mm	14.27mm	P27A-00H6A	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	60	52	17.48mm	15.88mm	P27A-00H6B	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	60	56	17.48mm	17.48mm	P27A-00H6P	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Moderate wet H2S service	

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CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	64	42	19.05mm	14.27mm	P27A-00H6R	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	64	48	19.05mm	14.27mm	P27A-00H6S	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	64	52	19.05mm	15.88mm	P27A-00H6T	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	64	56	19.05mm	17.48mm	P27A-00H6U	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	64	60	19.05mm	17.48mm	P27A-00H6V	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	68	48	19.05mm	14.27mm	P27A-00H6W	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	68	52	19.05mm	15.88mm	P27A-00H6X	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	68	56	19.05mm	17.48mm	P27A-00H6Y	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	68	60	19.05mm	17.48mm	P27A-00H6C	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	68	64	19.05mm	19.05mm	P27A-00H6Z	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	72	48	19.05mm	14.27mm	P27A-00H70	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	72	52	19.05mm	15.88mm	P27A-00H71	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	72	56	19.05mm	17.48mm	P27A-00H72	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	72	60	19.05mm	17.48mm	P27A-00H73	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	72	64	19.05mm	19.05mm	P27A-00H74	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	72	68	19.05mm	19.05mm	P27A-00H75	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	76	52	19.05mm	15.88mm	P27A-00HMT	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	76	56	19.05mm	17.48mm	P27A-00HMU	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	76	60	19.05mm	17.48mm	P27A-00HMV	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	76	64	19.05mm	19.05mm	P27A-00HMW	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	76	68	19.05mm	19.05mm	P27A-00HMX	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	76	72	19.05mm	19.05mm	P27A-00HMY	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	80	56	22.23mm	17.48mm	P27A-00H6E	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	80	60	22.23mm	17.48mm	P27A-00H6F	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	80	64	22.23mm	19.05mm	P27A-00H6G	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	80	68	22.23mm	19.05mm	P27A-00H6H	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	80	72	22.23mm	19.05mm	P27A-00H6J	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	80	76	22.23mm	19.05mm	P27A-00HUL	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	92	68	22.23mm	19.05mm	P27A-00HUK	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	92	72	22.23mm	19.05mm	P27A-00HUJ	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	92	76	22.23mm	19.05mm	P27A-00HUG	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	92	80	22.23mm	22.23mm	P27A-00HUH	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Moderate wet H2S service	
851	0.75	0.5	XXS	XXS	P27A-004M7	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
851	1	0.5	XXS	XXS	P27A-004MF	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
851	1	0.75	XXS	XXS	P27A-002ZZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
851	1.5	0.5	XXS	XXS	P27A-004N3	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
851	1.5	0.75	XXS	XXS	P27A-004ND	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
851	1.5	1	XXS	XXS	P27A-004NR	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
851	2	0.75	XXS	XXS	P27A-00341	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
851	2	1	XXS	XXS	P27A-0033N	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
851	2	1.5	XXS	XXS	P27A-00339	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
851	3	1.5	XXS	XXS	P27A-006BZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
851	3	2	XXS	XXS	P27A-006C9	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
851	4	1.5	SCH160	XXS	P27A-0073M	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
851	4	2	SCH160	XXS	P27A-00747	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
851	4	3	SCH160	XXS	P27A-0074P	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
851	6	3	SCH120	XXS	P27A-00DJD	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
851	6	4	SCH120	SCH160	P27A-007PN	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
851	8	4	XS	SCH160	P27A-007WE	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
851	8	6	XS	SCH120	P27A-004KE	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
851	10	4	XS	SCH160	P27A-004PZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
851	10	6	XS	SCH120	P27A-004S9	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
851	10	8	XS	XS	P27A-001FR	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
851	12	6	XS	SCH120	P27A-004WC	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
851	12	8	XS	XS	P27A-001G5	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
851	12	10	XS	XS	P27A-001EA	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
851	14	6	XS	SCH120	P27A-0051M	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
851	14	8	XS	XS	P27A-001GE	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
851	14	10	XS	XS	P27A-001E9	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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PIPING CLASS
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CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
851	14	12	XS	XS	P27A-001F1	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
851	16	8	XS	XS	P27A-001GV	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
851	16	10	XS	XS	P27A-001EN	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
851	16	12	XS	XS	P27A-001FN	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
851	16	14	XS	XS	P27A-001GF	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
851	18	10	XS	XS	P27A-005BV	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
851	18	12	XS	XS	P27A-005DX	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
851	18	14	XS	XS	P27A-005FY	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
851	18	16	XS	XS	P27A-005J1	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
851	20	12	XS	XS	P27A-005M1	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
851	20	14	XS	XS	P27A-005P4	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
851	20	16	XS	XS	P27A-005SB	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
851	20	18	XS	XS	P27A-005TZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	SCH160	P28A-007KG	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.5	SCH160	SCH160	P28A-007KH	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.75	SCH160	SCH160	P28A-002TU	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.5	SCH160	SCH160	P28A-007KJ	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.75	SCH160	SCH160	P28A-002TW	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	1	SCH160	SCH160	P28A-002TR	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	0.75	XS	SCH160	P28A-001LE	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	XS	SCH160	P28A-003M1	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	XS	SCH160	P28A-003M2	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	STD	SCH160	P28A-003M3	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	STD	XS	P28A-001N5	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	1.5	STD	SCH160	P28A-003M4	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P28A-001N6	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P28A-0018B	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	STD	P28A-001AS	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P28A-00182	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH30	STD	P28A-00BFY	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH30	STD	P28A-00BFZ	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	SCH30	STD	P28A-003MD	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	SCH30	STD	P28A-003ME	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	SCH30	SCH30	P28A-00A4S	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	SCH30	STD	P28A-003MG	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH30	SCH30	P28A-00BGV	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH30	SCH30	P28A-0027C	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	SCH20	STD	P28A-0096P	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	SCH20	SCH30	P28A-00DA3	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	SCH20	SCH30	P28A-00279	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	SCH20	SCH30	P28A-0027A	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	SCH20	SCH30	P28A-00DA4	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	SCH20	SCH30	P28A-003N6	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	SCH20	SCH30	P28A-002GB	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	SCH20	SCH20	P28A-001WG	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	10	STD	SCH30	P28A-0063T	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	12	STD	SCH30	P28A-0096W	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	14	STD	SCH20	P28A-0096X	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	16	STD	SCH20	P28A-0096Y	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	12	STD	SCH30	P28A-0096R	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	14	STD	SCH20	P28A-0096S	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	16	STD	SCH20	P28A-0096T	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	18	STD	STD	P28A-00377	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24	16	XS	SCH20	P28A-00C0Z	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24	18	XS	STD	P28A-0063W	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24	20	XS	STD	P28A-0063X	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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PIPING CLASS
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ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	30	20	XS	STD	P28A-00EDT	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Moderate wet H2S service	
1	30	24	XS	XS	P28A-00CGS	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Moderate wet H2S service	
1	36	24	XS	XS	P28A-008HD	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Moderate wet H2S service	
1	36	30	XS	XS	P28A-00CGT	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Moderate wet H2S service	
1	42	30	14.27mm	XS	P28A-00CGU	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Moderate wet H2S service	
1	42	36	14.27mm	XS	P28A-00CGV	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Moderate wet H2S service	
1	48	42	14.27mm	14.27mm	P28A-00EDU	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Moderate wet H2S service	
1	52	30	15.88mm	XS	P28A-00EDV	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	52	36	15.88mm	XS	P28A-00EDW	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	52	42	15.88mm	14.27mm	P28A-00EDX	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	52	48	15.88mm	14.27mm	P28A-00EDY	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	56	36	17.48mm	XS	P28A-00EDZ	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	56	42	17.48mm	14.27mm	P28A-00EE0	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	56	48	17.48mm	14.27mm	P28A-00EE1	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	56	52	17.48mm	15.88mm	P28A-00EE2	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	60	36	17.48mm	XS	P28A-00EE3	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	60	42	17.48mm	14.27mm	P28A-00EE4	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	60	48	17.48mm	14.27mm	P28A-00EE5	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	60	52	17.48mm	15.88mm	P28A-00EE6	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	60	56	17.48mm	17.48mm	P28A-00EE7	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	64	42	19.05mm	14.27mm	P28A-00EE8	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	64	48	19.05mm	14.27mm	P28A-00EE9	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	64	52	19.05mm	15.88mm	P28A-00EEA	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	64	56	19.05mm	17.48mm	P28A-00EEB	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	64	60	19.05mm	17.48mm	P28A-00EEC	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	68	48	19.05mm	14.27mm	P28A-00EED	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	68	52	19.05mm	15.88mm	P28A-00EEE	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	68	56	19.05mm	17.48mm	P28A-00EEF	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	68	60	19.05mm	17.48mm	P28A-00EEG	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	68	64	19.05mm	19.05mm	P28A-00EEH	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	72	48	19.05mm	14.27mm	P28A-00EEJ	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	72	52	19.05mm	15.88mm	P28A-00EEK	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	72	56	19.05mm	17.48mm	P28A-00EEL	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	72	60	19.05mm	17.48mm	P28A-00EEM	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	72	64	19.05mm	19.05mm	P28A-00EEN	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	72	68	19.05mm	19.05mm	P28A-00EEP	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	76	52	19.05mm	15.88mm	P28A-00EXB	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	76	56	19.05mm	17.48mm	P28A-00EXC	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	76	60	19.05mm	17.48mm	P28A-00EXD	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	76	64	19.05mm	19.05mm	P28A-00EXE	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	76	68	19.05mm	19.05mm	P28A-00EXF	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	76	72	19.05mm	19.05mm	P28A-00EXG	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	80	56	22.23mm	17.48mm	P28A-00EER	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	80	60	22.23mm	17.48mm	P28A-00EES	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	80	64	22.23mm	19.05mm	P28A-00EET	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	80	68	22.23mm	19.05mm	P28A-00EEU	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	80	72	22.23mm	19.05mm	P28A-00EEV	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	80	76	22.23mm	19.05mm	P28A-00F3Y	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	92	68	22.23mm	19.05mm	P28A-00F3Z	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	92	72	22.23mm	19.05mm	P28A-00F40	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	92	76	22.23mm	19.05mm	P28A-00F41	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	92	80	22.23mm	22.23mm	P28A-00F42	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Moderate wet H2S service	
851	0.75	0.5	XXS	XXS	P28A-00BNX	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
851	1	0.5	XXS	XXS	P28A-00BNY	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
851	1	0.75	XXS	XXS	P28A-0030M	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
851	1.5	0.5	XXS	XXS	P28A-00BNZ	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
851	1.5	0.75	XXS	XXS	P28A-00BP0	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
851	1.5	1	XXS	XXS	P28A-008W0	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
851	2	0.75	XXS	XXS	P28A-00BP1	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

INDRA
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PIPING CLASS
A2AQ REV NO. 2

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
851	2	1	XXS	XXS	P28A-004KN	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
851	2	1.5	XXS	XXS	P28A-004KP	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
851	3	1.5	XXS	XXS	P28A-00BP2	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
851	3	2	XXS	XXS	P28A-008GE	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
851	4	1.5	SCH160	XXS	P28A-00BN8	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
851	4	2	SCH160	XXS	P28A-00AVE	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
851	4	3	SCH160	XXS	P28A-00AKB	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
851	6	3	SCH120	XXS	P28A-00AKC	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
851	6	4	SCH120	SCH160	P28A-00AKD	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
851	8	4	XS	SCH160	P28A-008J3	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
851	8	6	XS	SCH120	P28A-004KT	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
851	10	4	XS	SCH160	P28A-00FH2	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
851	10	6	XS	SCH120	P28A-00EUB	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
851	10	8	XS	XS	P28A-001GT	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
851	12	6	XS	SCH120	P28A-00AKK	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
851	12	8	XS	XS	P28A-001GW	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
851	12	10	XS	XS	P28A-001EP	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
851	14	6	XS	SCH120	P28A-00AKN	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
851	14	8	XS	XS	P28A-001H9	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
851	14	10	XS	XS	P28A-001EN	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
851	14	12	XS	XS	P28A-001FY	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
851	16	8	XS	XS	P28A-0018A	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
851	16	10	XS	XS	P28A-001F9	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
851	16	12	XS	XS	P28A-001GS	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
851	16	14	XS	XS	P28A-001H5	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
851	18	10	XS	XS	P28A-008EE	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
851	18	12	XS	XS	P28A-00CLP	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
851	18	14	XS	XS	P28A-008EG	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
851	18	16	XS	XS	P28A-0063K	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
851	20	12	XS	XS	P28A-00CLR	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
851	20	14	XS	XS	P28A-008EJ	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
851	20	16	XS	XS	P28A-0063N	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
851	20	18	XS	XS	P28A-0063P	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P29A-00329	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	0.75		SCH160		P29A-001UF	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	1		SCH160		P29A-001TC	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	1.5		SCH160		P29A-001TD	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	2		XS		P29A-001VG	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	3		STD		P29A-001VK	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	4		STD		P29A-001VN	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	6		STD		P29A-001VS	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	8		SCH30		P29A-003G6	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	10		SCH30		P29A-003B5	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	12		SCH30		P29A-00373	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	14		SCH20		P29A-00360	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	16		SCH20		P29A-00361	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	18		STD		P29A-001VF	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	20		STD		P29A-001VH	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	24		XS		P29A-001VJ	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	30		XS		P29A-003BX	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	36		XS		P29A-001VM	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	42		14.27mm		P29A-001TT	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	48		14.27mm		P29A-001VR	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	52		15.88mm		P29A-003SC	Cap ASTM A234 Grade WPB Seamless ASME B16.9-modified BW Moderate wet H2S service	
1	56		17.48mm		P29A-003SD	Cap ASTM A234 Grade WPB Seamless ASME B16.9-modified BW Moderate wet H2S service	
1	60		17.48mm		P29A-003SE	Cap ASTM A234 Grade WPB Seamless ASME B16.9-modified BW Moderate wet H2S service	

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CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	64		19.05mm		P29A-003SF	Cap ASTM A234 Grade WPB Seamless ASME B16.9-modified BW Moderate wet H2S service	
1	68		19.05mm		P29A-003SG	Cap ASTM A234 Grade WPB Seamless ASME B16.9-modified BW Moderate wet H2S service	
1	72		19.05mm		P29A-003SH	Cap ASTM A234 Grade WPB Seamless ASME B16.9-modified BW Moderate wet H2S service	
1	76		19.05mm		P29A-003SJ	Cap ASTM A234 Grade WPB Seamless ASME B16.9-modified BW Moderate wet H2S service	
1	80		22.23mm		P29A-003SK	Cap ASTM A234 Grade WPB Seamless ASME B16.9-modified BW Moderate wet H2S service	
1	92		22.23mm		P29A-005GB	Cap ASTM A234 Grade WPB Seamless ASME B16.9-modified BW Moderate wet H2S service	
541	0.75				P29B-0000Y	Cap ASTM A105 Class 6000 ASME B16.11 NPT	
541	1				P29B-0000Z	Cap ASTM A105 Class 6000 ASME B16.11 NPT	
541	1.5				P29B-00010	Cap ASTM A105 Class 6000 ASME B16.11 NPT	
851	0.5		XXS		P29A-001UE	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
851	0.75		XXS		P29A-003VU	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
851	1		XXS		P29A-0033Z	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
851	1.5		XXS		P29A-00340	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
851	2		XXS		P29A-005KX	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
851	3		XXS		P29A-005KY	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
851	4		SCH160		P29A-001WH	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
851	6		SCH120		P29A-001WN	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
851	8		XS		P29A-001TV	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
851	10		XS		P29A-001TE	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
851	12		XS		P29A-003G9	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
851	14		XS		P29A-001TG	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
851	16		XS		P29A-001TH	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
851	18		XS		P29A-001TJ	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
851	20		XS		P29A-001TL	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P41A-000B9	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		XXS		P41A-000BA	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		XXS		P41A-000D8	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		XXS		P41A-000D9	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
541	1	0.75			P31B-005HL	Outlet ASTM A105 Class 6000 MSS SP-97 NPT	
541	1.5 - 2.5	0.75			P31B-0137F	Outlet ASTM A105 Class 6000 MSS SP-97 NPT	
541	3 - 10	0.75			P31B-007KP	Outlet ASTM A105 Class 6000 MSS SP-97 NPT	
541	12 and larger	0.75			P31B-0138A	Outlet ASTM A105 Class 6000 MSS SP-97 NPT	
1	2	0.75	XS	SCH160	P31B-00CP7	Outlet ASTM A105 MSS SP-97 BW	
1	3	0.75	STD	SCH160	P31B-00CMT	Outlet ASTM A105 MSS SP-97 BW	
1	4	0.75	STD	SCH160	P31B-00CLT	Outlet ASTM A105 MSS SP-97 BW	
1	6	0.75	STD	SCH160	P31B-00CKK	Outlet ASTM A105 MSS SP-97 BW	
1	8	0.75	SCH30	SCH160	P31B-00ZH5	Outlet ASTM A105 MSS SP-97 BW	
1	10	0.75	SCH30	SCH160	P31B-00YEZ	Outlet ASTM A105 MSS SP-97 BW	
1	12	0.75	SCH30	SCH160	P31B-00SWH	Outlet ASTM A105 MSS SP-97 BW	
1	14	0.75	SCH20	SCH160	P31B-00X17	Outlet ASTM A105 MSS SP-97 BW	
1	16	0.75	SCH20	SCH160	P31B-00XS0	Outlet ASTM A105 MSS SP-97 BW	
1	18	0.75	STD	SCH160	P31B-00CPL	Outlet ASTM A105 MSS SP-97 BW	
1	20	0.75	STD	SCH160	P31B-00CNW	Outlet ASTM A105 MSS SP-97 BW	
1	24	0.75	XS	SCH160	P31B-007N3	Outlet ASTM A105 MSS SP-97 BW	
1	30	0.75	XS	SCH160	P31B-00CMF	Outlet ASTM A105 MSS SP-97 BW	
1	36	0.75	XS	SCH160	P31B-00CM3	Outlet ASTM A105 MSS SP-97 BW	
1	42	0.75	14.27mm	SCH160	P31B-010U8	Outlet ASTM A105 MSS SP-97 BW	
1	48	0.75	14.27mm	SCH160	P31B-00TUX	Outlet ASTM A105 MSS SP-97 BW	
1	52	0.75	15.88mm	SCH160	P31B-010VK	Outlet ASTM A105 MSS SP-97 BW	
1	56	0.75	17.48mm	SCH160	P31B-010UD	Outlet ASTM A105 MSS SP-97 BW	
1	60	0.75	17.48mm	SCH160	P31B-010VF	Outlet ASTM A105 MSS SP-97 BW	
1	64	0.75	19.05mm	SCH160	P31B-010V8	Outlet ASTM A105 MSS SP-97 BW	
1	68	0.75	19.05mm	SCH160	P31B-010V1	Outlet ASTM A105 MSS SP-97 BW	

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OUTLET (L)							
OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	72	0.75	19.05mm	SCH160	P31B-010UU	Outlet ASTM A105 MSS SP-97 BW	
1	76	0.75	19.05mm	SCH160	P31B-011PG	Outlet ASTM A105 MSS SP-97 BW	
1	80	0.75	22.23mm	SCH160	P31B-010UL	Outlet ASTM A105 MSS SP-97 BW	
1	92	0.75	22.23mm	SCH160	P31B-011P9	Outlet ASTM A105 MSS SP-97 BW	
1	3	1	STD	SCH160	P31B-00B4J	Outlet ASTM A105 MSS SP-97 BW	
1	4	1	STD	SCH160	P31B-00B3M	Outlet ASTM A105 MSS SP-97 BW	
1	6	1	STD	SCH160	P31B-00AZC	Outlet ASTM A105 MSS SP-97 BW	
1	8	1	SCH30	SCH160	P31B-00ZH6	Outlet ASTM A105 MSS SP-97 BW	
1	10	1	SCH30	SCH160	P31B-00YF1	Outlet ASTM A105 MSS SP-97 BW	
1	12	1	SCH30	SCH160	P31B-00SWJ	Outlet ASTM A105 MSS SP-97 BW	
1	14	1	SCH20	SCH160	P31B-00X18	Outlet ASTM A105 MSS SP-97 BW	
1	16	1	SCH20	SCH160	P31B-00X8Z	Outlet ASTM A105 MSS SP-97 BW	
1	18	1	STD	SCH160	P31B-00BC9	Outlet ASTM A105 MSS SP-97 BW	
1	20	1	STD	SCH160	P31B-00B8M	Outlet ASTM A105 MSS SP-97 BW	
1	24	1	XS	SCH160	P31B-007MU	Outlet ASTM A105 MSS SP-97 BW	
1	30	1	XS	SCH160	P31B-00B45	Outlet ASTM A105 MSS SP-97 BW	
1	36	1	XS	SCH160	P31B-00B3W	Outlet ASTM A105 MSS SP-97 BW	
1	42	1	14.27mm	SCH160	P31B-00TVM	Outlet ASTM A105 MSS SP-97 BW	
1	48	1	14.27mm	SCH160	P31B-00TUY	Outlet ASTM A105 MSS SP-97 BW	
1	52	1	15.88mm	SCH160	P31B-010VL	Outlet ASTM A105 MSS SP-97 BW	
1	56	1	17.48mm	SCH160	P31B-010UE	Outlet ASTM A105 MSS SP-97 BW	
1	60	1	17.48mm	SCH160	P31B-010VG	Outlet ASTM A105 MSS SP-97 BW	
1	64	1	19.05mm	SCH160	P31B-010V9	Outlet ASTM A105 MSS SP-97 BW	
1	68	1	19.05mm	SCH160	P31B-010V2	Outlet ASTM A105 MSS SP-97 BW	
1	72	1	19.05mm	SCH160	P31B-010UV	Outlet ASTM A105 MSS SP-97 BW	
1	76	1	19.05mm	SCH160	P31B-011PH	Outlet ASTM A105 MSS SP-97 BW	
1	80	1	22.23mm	SCH160	P31B-010UM	Outlet ASTM A105 MSS SP-97 BW	
1	92	1	22.23mm	SCH160	P31B-011PA	Outlet ASTM A105 MSS SP-97 BW	
1	4	1.5	STD	SCH160	P31B-00BP4	Outlet ASTM A105 MSS SP-97 BW	
1	6	1.5	STD	SCH160	P31B-00BJH	Outlet ASTM A105 MSS SP-97 BW	
1	8	1.5	SCH30	SCH160	P31B-00BHM	Outlet ASTM A105 MSS SP-97 BW	
1	10	1.5	SCH30	SCH160	P31B-00AUR	Outlet ASTM A105 MSS SP-97 BW	
1	12	1.5	SCH30	SCH160	P31B-00CEJ	Outlet ASTM A105 MSS SP-97 BW	
1	14	1.5	SCH20	SCH160	P31B-00CDS	Outlet ASTM A105 MSS SP-97 BW	
1	16	1.5	SCH20	SCH160	P31B-00C9B	Outlet ASTM A105 MSS SP-97 BW	
1	18	1.5	STD	SCH160	P31B-00C4R	Outlet ASTM A105 MSS SP-97 BW	
1	20	1.5	STD	SCH160	P31B-00C3Y	Outlet ASTM A105 MSS SP-97 BW	
1	24	1.5	XS	SCH160	P31B-007MM	Outlet ASTM A105 MSS SP-97 BW	
1	30	1.5	XS	SCH160	P31B-00BYJ	Outlet ASTM A105 MSS SP-97 BW	
1	36	1.5	XS	SCH160	P31B-00BPN	Outlet ASTM A105 MSS SP-97 BW	
1	42	1.5	14.27mm	SCH160	P31B-00TVN	Outlet ASTM A105 MSS SP-97 BW	
1	48	1.5	14.27mm	SCH160	P31B-00TUZ	Outlet ASTM A105 MSS SP-97 BW	
1	52	1.5	15.88mm	SCH160	P31B-010VM	Outlet ASTM A105 MSS SP-97 BW	
1	56	1.5	17.48mm	SCH160	P31B-010UF	Outlet ASTM A105 MSS SP-97 BW	
1	60	1.5	17.48mm	SCH160	P31B-010VH	Outlet ASTM A105 MSS SP-97 BW	
1	64	1.5	19.05mm	SCH160	P31B-010VA	Outlet ASTM A105 MSS SP-97 BW	
1	68	1.5	19.05mm	SCH160	P31B-010V3	Outlet ASTM A105 MSS SP-97 BW	
1	72	1.5	19.05mm	SCH160	P31B-010UW	Outlet ASTM A105 MSS SP-97 BW	
1	76	1.5	19.05mm	SCH160	P31B-011PJ	Outlet ASTM A105 MSS SP-97 BW	
1	80	1.5	22.23mm	SCH160	P31B-010UN	Outlet ASTM A105 MSS SP-97 BW	
1	92	1.5	22.23mm	SCH160	P31B-011PB	Outlet ASTM A105 MSS SP-97 BW	
1	6	2	STD	XS	P31B-007SH	Outlet ASTM A105 MSS SP-97 BW	
1	8	2	SCH30	XS	P31B-00X36	Outlet ASTM A105 MSS SP-97 BW	
1	10	2	SCH30	XS	P31B-00NVF	Outlet ASTM A105 MSS SP-97 BW	
1	12	2	SCH30	XS	P31B-00NVL	Outlet ASTM A105 MSS SP-97 BW	
1	14	2	SCH20	XS	P31B-00TF9	Outlet ASTM A105 MSS SP-97 BW	
1	16	2	SCH20	XS	P31B-00TF8	Outlet ASTM A105 MSS SP-97 BW	
1	18	2	STD	XS	P31B-009FJ	Outlet ASTM A105 MSS SP-97 BW	
1	20	2	STD	XS	P31B-00994	Outlet ASTM A105 MSS SP-97 BW	

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OUTLET (L)							
OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	24	2	XS	XS	P31B-0092Y	Outlet ASTM A105 MSS SP-97 BW	
1	30	2	XS	XS	P31B-008P4	Outlet ASTM A105 MSS SP-97 BW	
1	36	2	XS	XS	P31B-008BB	Outlet ASTM A105 MSS SP-97 BW	
1	42	2	14.27mm	XS	P31B-00VUV	Outlet ASTM A105 MSS SP-97 BW	
1	48	2	14.27mm	XS	P31B-007YL	Outlet ASTM A105 MSS SP-97 BW	
1	52	2	15.88mm	XS	P31B-010U9	Outlet ASTM A105 MSS SP-97 BW	
1	56	2	17.48mm	XS	P31B-010UG	Outlet ASTM A105 MSS SP-97 BW	
1	60	2	17.48mm	XS	P31B-010VJ	Outlet ASTM A105 MSS SP-97 BW	
1	64	2	19.05mm	XS	P31B-010VB	Outlet ASTM A105 MSS SP-97 BW	
1	68	2	19.05mm	XS	P31B-010V4	Outlet ASTM A105 MSS SP-97 BW	
1	72	2	19.05mm	XS	P31B-010UX	Outlet ASTM A105 MSS SP-97 BW	
1	76	2	19.05mm	XS	P31B-011PK	Outlet ASTM A105 MSS SP-97 BW	
1	80	2	22.23mm	XS	P31B-010UP	Outlet ASTM A105 MSS SP-97 BW	
1	92	2	22.23mm	XS	P31B-011PC	Outlet ASTM A105 MSS SP-97 BW	
1	8	3	SCH30	STD	P31B-00X37	Outlet ASTM A105 MSS SP-97 BW	
1	10	3	SCH30	STD	P31B-00NYK	Outlet ASTM A105 MSS SP-97 BW	
1	12	3	SCH30	STD	P31B-00NYR	Outlet ASTM A105 MSS SP-97 BW	
1	14	3	SCH20	STD	P31B-00UPH	Outlet ASTM A105 MSS SP-97 BW	
1	16	3	SCH20	STD	P31B-00TU2	Outlet ASTM A105 MSS SP-97 BW	
1	18	3	STD	STD	P31B-008MK	Outlet ASTM A105 MSS SP-97 BW	
1	20	3	STD	STD	P31B-008FA	Outlet ASTM A105 MSS SP-97 BW	
1	24	3	XS	STD	P31B-00894	Outlet ASTM A105 MSS SP-97 BW	
1	30	3	XS	STD	P31B-007WX	Outlet ASTM A105 MSS SP-97 BW	
1	36	3	XS	STD	P31B-007P1	Outlet ASTM A105 MSS SP-97 BW	
1	42	3	14.27mm	STD	P31B-00SWX	Outlet ASTM A105 MSS SP-97 BW	
1	48	3	14.27mm	STD	P31B-00AFG	Outlet ASTM A105 MSS SP-97 BW	
1	52	3	15.88mm	STD	P31B-010UA	Outlet ASTM A105 MSS SP-97 BW	
1	56	3	17.48mm	STD	P31B-010UH	Outlet ASTM A105 MSS SP-97 BW	
1	60	3	17.48mm	STD	P31B-00A92	Outlet ASTM A105 MSS SP-97 BW	
1	64	3	19.05mm	STD	P31B-010VC	Outlet ASTM A105 MSS SP-97 BW	
1	68	3	19.05mm	STD	P31B-010V5	Outlet ASTM A105 MSS SP-97 BW	
1	72	3	19.05mm	STD	P31B-010UY	Outlet ASTM A105 MSS SP-97 BW	
1	76	3	19.05mm	STD	P31B-011PL	Outlet ASTM A105 MSS SP-97 BW	
1	80	3	22.23mm	STD	P31B-010UR	Outlet ASTM A105 MSS SP-97 BW	
1	92	3	22.23mm	STD	P31B-011PD	Outlet ASTM A105 MSS SP-97 BW	
1	12	4	SCH30	STD	P31B-00P1G	Outlet ASTM A105 MSS SP-97 BW	
1	14	4	SCH20	STD	P31B-00UPJ	Outlet ASTM A105 MSS SP-97 BW	
1	16	4	SCH20	STD	P31B-00TU3	Outlet ASTM A105 MSS SP-97 BW	
1	18	4	STD	STD	P31B-008KB	Outlet ASTM A105 MSS SP-97 BW	
1	20	4	STD	STD	P31B-008D3	Outlet ASTM A105 MSS SP-97 BW	
1	24	4	XS	STD	P31B-0086W	Outlet ASTM A105 MSS SP-97 BW	
1	30	4	XS	STD	P31B-007UR	Outlet ASTM A105 MSS SP-97 BW	
1	36	4	XS	STD	P31B-00AEP	Outlet ASTM A105 MSS SP-97 BW	
1	42	4	14.27mm	STD	P31B-00SWY	Outlet ASTM A105 MSS SP-97 BW	
1	48	4	14.27mm	STD	P31B-00A7E	Outlet ASTM A105 MSS SP-97 BW	
1	52	4	15.88mm	STD	P31B-010UB	Outlet ASTM A105 MSS SP-97 BW	
1	56	4	17.48mm	STD	P31B-010UJ	Outlet ASTM A105 MSS SP-97 BW	
1	60	4	17.48mm	STD	P31B-009WF	Outlet ASTM A105 MSS SP-97 BW	
1	64	4	19.05mm	STD	P31B-010VD	Outlet ASTM A105 MSS SP-97 BW	
1	68	4	19.05mm	STD	P31B-010V6	Outlet ASTM A105 MSS SP-97 BW	
1	72	4	19.05mm	STD	P31B-010UZ	Outlet ASTM A105 MSS SP-97 BW	
1	76	4	19.05mm	STD	P31B-011PM	Outlet ASTM A105 MSS SP-97 BW	
1	80	4	22.23mm	STD	P31B-010US	Outlet ASTM A105 MSS SP-97 BW	
1	92	4	22.23mm	STD	P31B-011PE	Outlet ASTM A105 MSS SP-97 BW	
1	18	6	STD	STD	P31B-008RX	Outlet ASTM A105 MSS SP-97 BW	
1	20	6	STD	STD	P31B-008PZ	Outlet ASTM A105 MSS SP-97 BW	
1	24	6	XS	STD	P31B-008JC	Outlet ASTM A105 MSS SP-97 BW	
1	30	6	XS	STD	P31B-008BR	Outlet ASTM A105 MSS SP-97 BW	
1	36	6	XS	STD	P31B-0085G	Outlet ASTM A105 MSS SP-97 BW	

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OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	42	6	14.27mm	STD	P31B-00SWZ	Outlet ASTM A105 MSS SP-97 BW	
1	48	6	14.27mm	STD	P31B-00TXJ	Outlet ASTM A105 MSS SP-97 BW	
1	52	6	15.88mm	STD	P31B-010UC	Outlet ASTM A105 MSS SP-97 BW	
1	56	6	17.48mm	STD	P31B-010UK	Outlet ASTM A105 MSS SP-97 BW	
1	60	6	17.48mm	STD	P31B-01114	Outlet ASTM A105 MSS SP-97 BW	
1	64	6	19.05mm	STD	P31B-010VE	Outlet ASTM A105 MSS SP-97 BW	
1	68	6	19.05mm	STD	P31B-010V7	Outlet ASTM A105 MSS SP-97 BW	
1	72	6	19.05mm	STD	P31B-010V0	Outlet ASTM A105 MSS SP-97 BW	
1	76	6	19.05mm	STD	P31B-011PN	Outlet ASTM A105 MSS SP-97 BW	
1	80	6	22.23mm	STD	P31B-010UT	Outlet ASTM A105 MSS SP-97 BW	
1	92	6	22.23mm	STD	P31B-011PF	Outlet ASTM A105 MSS SP-97 BW	

LATROLET (LL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	16	2	SCH20	XS	P34B-001G3	Lateral-outlet ASTM A105 MSS SP-97 BW 45 degree	
1	42	3	14.27mm	STD	P34B-001SX	Lateral-outlet ASTM A105 MSS SP-97 BW 45 degree	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30B-0002D	Plug ASTM A105 ASME B16.11 NPT Round head	
1	0.75				P30B-0002E	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1				P30B-0002F	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1.5				P30B-0002G	Plug ASTM A105 ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P61B-004V2	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	0.75		SCH160		P61B-0037H	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	1		SCH160		P61B-0037F	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	1.5		SCH160		P61B-0037N	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	2		XS		P61B-003NK	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	3		STD		P61B-001PW	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	4		STD		P61B-001R8	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	6		STD		P61B-001RT	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	8		SCH30		P61B-003FP	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	10		SCH30		P61B-003FS	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	12		SCH30		P61B-002TS	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	14		SCH20		P61B-002B6	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	16		SCH20		P61B-002B7	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	18		STD		P61B-001T4	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	20		STD		P61B-001JA	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	24		XS		P61B-002F2	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	30		XS		P61B-001SJ	Flange WN ASTM A105 Class 150 ASME B16.47 Series B RF	
1	36		XS		P61B-001UE	Flange WN ASTM A105 Class 150 ASME B16.47 Series B RF	
1	42		14.27mm		P61B-003LG	Flange WN ASTM A105 Class 150 ASME B16.47 Series B RF	
1	48		14.27mm		P61B-003LK	Flange WN ASTM A105 Class 150 ASME B16.47 Series B RF	
1	52		15.88mm		P61B-003LM	Flange WN ASTM A105 Class 150 ASME B16.47 Series B RF	
1	56		17.48mm		P61B-003LP	Flange WN ASTM A105 Class 150 ASME B16.47 Series B RF	
1	60		17.48mm		P61B-003LR	Flange WN ASTM A105 Class 150 ASME B16.47 Series B RF	
1	64		19.05mm		P61B-003LT	Flange WN ASTM A105 Class 150 Standard-drawing RF	
1	68		19.05mm		P61B-003LV	Flange WN ASTM A105 Class 150 Standard-drawing RF	
1	72		19.05mm		P61B-00BS9	Flange WN ASTM A105 Class 150 Standard-drawing RF	
1	76		19.05mm		P61B-00BSA	Flange WN ASTM A105 Class 150 Standard-drawing RF	
1	80		22.23mm		P61B-00BSB	Flange WN ASTM A105 Class 150 Standard-drawing RF	
1	92		22.23mm		P61B-00D0Y	Flange WN ASTM A105 Class 150 Standard-drawing RF	
541	0.5				P61B-003TZ	Flange NPT ASTM A105 Class 150 ASME B16.5 RF	
541	0.75				P61B-003U0	Flange NPT ASTM A105 Class 150 ASME B16.5 RF	
773	0.5		SCH160		P61B-003P9	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	0.75		SCH160		P61B-0037M	Flange WN ASTM A105 Class 300 ASME B16.5 RF	

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FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
773	1		SCH160		P61B-0037L	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	1.5		SCH160		P61B-0037J	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	2		XS		P61B-001HW	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	3		STD		P61B-001LJ	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	4		STD		P61B-001MC	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	6		STD		P61B-001N2	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	8		SCH30		P61B-008S0	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	10		SCH30		P61B-003LX	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	12		SCH30		P61B-002TV	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	14		SCH20		P61B-002MR	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	16		SCH20		P61B-002MS	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	18		STD		P61B-001N9	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	20		STD		P61B-001NT	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	24		XS		P61B-002RA	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	30		XS		P61B-001KT	Flange WN ASTM A105 Class 300 ASME B16.47 Series B RF	
773	36		XS		P61B-001N6	Flange WN ASTM A105 Class 300 ASME B16.47 Series B RF	
773	42		14.27mm		P61B-003ZZ	Flange WN ASTM A105 Class 300 ASME B16.47 Series B RF	
773	48		14.27mm		P61B-0067W	Flange WN ASTM A105 Class 300 ASME B16.47 Series B RF	
773	52		15.88mm		P61B-00ABZ	Flange WN ASTM A105 Class 300 ASME B16.47 Series B RF	
773	56		17.48mm		P61B-00BSC	Flange WN ASTM A105 Class 300 ASME B16.47 Series B RF	
773	60		17.48mm		P61B-00BSD	Flange WN ASTM A105 Class 300 ASME B16.47 Series B RF	
781	0.5		SCH160		P61B-004UV	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	0.75		SCH160		P61B-003T2	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	1		SCH160		P61B-003T3	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	1.5		SCH160		P61B-003T4	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	2		XS		P61B-001DH	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	3		STD		P61B-001TW	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	4		STD		P61B-001VV	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
789	3		STD		P61B-006SP	Flange WN ASTM A105 Class 900 ASME B16.5 RJ	
789	4		STD		P61B-007A0	Flange WN ASTM A105 Class 900 ASME B16.5 RJ	
789	6		STD		P61B-009W5	Flange WN ASTM A105 Class 900 ASME B16.5 RJ	
789	8		SCH30		P61B-009VX	Flange WN ASTM A105 Class 900 ASME B16.5 RJ	
789	10		SCH30		P61B-00BT3	Flange WN ASTM A105 Class 900 ASME B16.5 RJ	
789	12		SCH30		P61B-00DGY	Flange WN ASTM A105 Class 900 ASME B16.5 RJ	
789	14		SCH20		P61B-009TS	Flange WN ASTM A105 Class 900 ASME B16.5 RJ	
797	0.5		SCH160		P61B-0065T	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
797	0.75		SCH160		P61B-0065U	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
797	1		SCH160		P61B-0065V	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
797	1.5		SCH160		P61B-0065W	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
797	2		XS		P61B-0065C	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
797	3		STD		P61B-009W7	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
797	4		STD		P61B-009W8	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
797	6		STD		P61B-009W9	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
797	8		SCH30		P61B-00DPC	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
797	10		SCH30		P61B-00BRX	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
797	12		SCH30		P61B-00BNA	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
797	24		XS		P61B-00E1B	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
851	0.5		XXS		P61B-003LE	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
851	0.75		XXS		P61B-003M1	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
851	1		XXS		P61B-003M2	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
851	1.5		XXS		P61B-003MC	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
851	2		XXS		P61B-003MH	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
851	3		XXS		P61B-0090A	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
851	4		SCH160		P61B-0090B	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
851	6		SCH120		P61B-003ML	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
851	8		XS		P61B-003JG	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
851	10		XS		P61B-003MD	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
851	12		XS		P61B-003ME	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
851	14		XS		P61B-003MF	Flange WN ASTM A105 Class 150 ASME B16.5 RF	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
851	16		XS		P61B-003MG	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
851	18		XS		P61B-002EZ	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
851	20		XS		P61B-003A7	Flange WN ASTM A105 Class 150 ASME B16.5 RF	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67B-000FH	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	0.75				P67B-000FJ	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	1				P67B-000FK	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	1.5				P67B-000FL	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	2				P67B-000FT	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	3				P67B-000FW	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	4				P67B-000FX	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	6				P67B-000FY	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	8				P67B-000FZ	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	10				P67B-000FM	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	12				P67B-000FN	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	14				P67B-000FP	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	16				P67B-000FR	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	18				P67B-000FS	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	20				P67B-000FU	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	24				P67B-000FV	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	30				P67B-000G2	Blind flange ASTM A105 Class 150 ASME B16.47 Series B RF	
1	36				P67B-000G5	Blind flange ASTM A105 Class 150 ASME B16.47 Series B RF	
1	42				P67B-000KZ	Blind flange ASTM A105 Class 150 ASME B16.47 Series B RF	
1	48				P67B-000L2	Blind flange ASTM A105 Class 150 ASME B16.47 Series B RF	
1	52				P67B-0016N	Blind flange ASTM A105 Class 150 ASME B16.47 Series B RF	
1	56				P67B-0016R	Blind flange ASTM A105 Class 150 ASME B16.47 Series B RF	
1	60				P67B-0016T	Blind flange ASTM A105 Class 150 ASME B16.47 Series B RF	
1	64				P67B-0016V	Blind flange ASTM A105 Class 150 Standard-drawing RF	
1	68				P67B-0016X	Blind flange ASTM A105 Class 150 Standard-drawing RF	
1	72				P67B-00178	Blind flange ASTM A105 Class 150 Standard-drawing RF	
1	76				P67B-0017A	Blind flange ASTM A105 Class 150 Standard-drawing RF	
1	80				P67B-0017C	Blind flange ASTM A105 Class 150 Standard-drawing RF	
1	92				P67B-0017J	Blind flange ASTM A105 Class 150 Standard-drawing RF	

REDUCING FLANGE (FR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5		SCH160	P62B-000CT	Reducing flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	3	2		XS	P62B-0006B	Reducing flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	4	3		STD	P62B-0006D	Reducing flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	8	6		STD	P62B-0006E	Reducing flange WN ASTM A105 Class 150 ASME B16.5 RF	
773	2	0.75		SCH160	P62B-000NG	Reducing flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	2	1		SCH160	P62B-0007D	Reducing flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	2	1.5		SCH160	P62B-000MG	Reducing flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	3	1.5		SCH160	P62B-000MH	Reducing flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	3	2		XS	P62B-000MD	Reducing flange WN ASTM A105 Class 300 ASME B16.5 RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000L8	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000L9	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000LA	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000LB	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000LH	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000LL	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

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GASKET (G)							
OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	4				P73T-000LM	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	6				P73T-000LN	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	8				P73T-000LP	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	10				P73T-000LC	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	12				P73T-000LD	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	14				P73T-000LE	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	16				P73T-000LF	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	18				P73T-000LG	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	20				P73T-000LJ	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	24				P73T-000LK	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	30				P73T-000LT	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	36				P73T-000LW	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	42				P73T-000LZ	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	48				P73T-000M2	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	52				P73T-001E2	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	56				P73T-0024L	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	60				P73T-001E5	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	64				P73T-003GZ	Spiral wound gasket SS316 winding / Graphite filler Class 150 Standard-drawing Flange Standard-drawing RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	68				P73T-003H0	Spiral wound gasket SS316 winding / Graphite filler Class 150 Standard-drawing Flange Standard-drawing RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	72				P73T-003H1	Spiral wound gasket SS316 winding / Graphite filler Class 150 Standard-drawing Flange Standard-drawing RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	76				P73T-003H2	Spiral wound gasket SS316 winding / Graphite filler Class 150 Standard-drawing Flange Standard-drawing RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	80				P73T-003H3	Spiral wound gasket SS316 winding / Graphite filler Class 150 Standard-drawing Flange Standard-drawing RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	92				P73T-003J6	Spiral wound gasket SS316 winding / Graphite filler Class 150 Standard-drawing Flange Standard-drawing RF 4.5mm-T Outer-ring CS Inner-ring SS316	
3001	1				P78U-00067	Insulation gasket kit Glass reinforced epoxy Class 150 Manufacturer-standard Flange ASME B16.5 RF	
773	0.5				P73T-000FT	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	0.75				P73T-000FU	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	3				P73T-000G5	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	4				P73T-000G6	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	6				P73T-000G7	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	8				P73T-000G8	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	10				P73T-000FX	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	12				P73T-000FY	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	14				P73T-000FZ	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	16				P73T-000G0	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	18				P73T-000G1	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	20				P73T-000G3	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	24				P73T-000G4	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	30				P73T-000H9	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	36				P73T-000HC	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	42				P73T-000KM	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	48				P73T-000KR	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	

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GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
773	52				P73T-0024N	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	56				P73T-0024M	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	60				P73T-0026H	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	0.5				P73T-000J8	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	0.75				P73T-000J9	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1				P73T-000JA	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1.5				P73T-000JB	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	2				P73T-000JH	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	3				P73T-000JL	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	4				P73T-000JM	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
789	3				P75T-000JN	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	4				P75T-000JP	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	6				P75T-000JR	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	8				P75T-000JS	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	10				P75T-000JL	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	12				P75T-000JM	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	14				P75T-000MJ	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	0.5				P75T-000JT	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	0.75				P75T-000JU	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	1				P75T-000JV	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	1.5				P75T-000JW	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	2				P75T-0008A	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	3				P75T-0008E	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	4				P75T-0008D	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	6				P75T-0008C	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	8				P75T-0008B	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	10				P75T-0008L	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	12				P75T-0008K	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	24				P75T-0012C	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-16				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	18-20				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
1	24				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	999
1	30-42				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	48-56				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
1	60-92				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	999
773	0.5-10				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
773	12-60				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
781	0.5-4				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
789	0.5-3				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
789	4-14				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
797	0.5-2				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
797	3-24				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81B-0018G	Gate valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	0.75				P81B-0018H	Gate valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	

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GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P81B-0018J	Gate valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	1.5				P81B-0018K	Gate valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	2				P81C-004EG	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	3				P81C-004EH	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	4				P81C-004EJ	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	6				P81C-004EK	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	8				P81C-004EL	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	10				P81C-004EE	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	12				P81C-004EF	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	14				P81C-004E9	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Moderate wet H2S service	
1	16				P81C-004EA	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Moderate wet H2S service	
1	18				P81C-004EB	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Moderate wet H2S service	
1	20				P81C-004EC	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Moderate wet H2S service	
1	24				P81C-004ED	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Moderate wet H2S service	
1	30				P81C-004E5	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.47-B RF Trim number 12 BB-BG-OS&Y Gear operated Moderate wet H2S service	
1	36				P81C-004E6	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.47-B RF Trim number 12 BB-BG-OS&Y Gear operated Moderate wet H2S service	
1	42				P81C-004E7	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.47-B RF Trim number 12 BB-BG-OS&Y Gear operated Moderate wet H2S service	
1	48				P81C-004E8	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.47-B RF Trim number 12 BB-BG-OS&Y Gear operated Moderate wet H2S service	
4608	0.75				P81B-002XY	Gate valve ASTM A105 Class 150 API 602 BW both sides w/ nipples BE - NPT ASTM A106-B XXS-nipple Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
4608	1				P81B-00375	Gate valve ASTM A105 Class 150 API 602 BW both sides w/ nipples BE - NPT ASTM A106-B XXS-nipple Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
4608	1.5				P81B-0034X	Gate valve ASTM A105 Class 150 API 602 BW both sides w/ nipples BE - NPT ASTM A106-B XXS-nipple Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
773	0.75				P81B-00196	Gate valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
773	1				P81B-00197	Gate valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
773	2				P81C-004HZ	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82B-0011M	Globe valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	0.75				P82B-0011N	Globe valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	1				P82B-0011P	Globe valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	1.5				P82B-0011R	Globe valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	2				P82C-00270	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	3				P82C-00271	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	4				P82C-00272	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	6				P82C-00273	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	8				P82C-00274	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83B-000TW	Check valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Moderate wet H2S service	
1	0.75				P83B-000TX	Check valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Moderate wet H2S service	
1	1				P83B-000TY	Check valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Moderate wet H2S service	
1	1.5				P83B-000TZ	Check valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Moderate wet H2S service	
1	2				P83C-0022G	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Moderate wet H2S service	
1	3				P83C-0022H	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Moderate wet H2S service	

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CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	4				P83C-0022J	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Moderate wet H2S service	
1	6				P83C-0022K	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Moderate wet H2S service	
1	8				P83C-0022L	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Moderate wet H2S service	
1	10				P83C-0022C	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Moderate wet H2S service	
1	12				P83C-0022D	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Moderate wet H2S service	
1	14				P83C-0022E	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Moderate wet H2S service	
1	16				P83C-0022F	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Moderate wet H2S service	

BALL VALVE (Q)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P84B-0012D	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design Moderate wet H2S service	
1	0.75				P84B-0012E	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design Moderate wet H2S service	
1	1				P84B-0012F	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design Moderate wet H2S service	
1	1.5				P84B-0012G	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design Moderate wet H2S service	
1	2				P84C-005UV	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design Moderate wet H2S service	
1	3				P84C-005UW	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design Moderate wet H2S service	
1	4				P84C-005UX	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design Moderate wet H2S service	
1	6				P84C-005VC	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Reduced bore Fire tested design Moderate wet H2S service	
1	8				P84C-005VD	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Reduced bore Fire tested design Moderate wet H2S service	
1	10				P84C-005V6	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Reduced bore Fire tested design Moderate wet H2S service	
1	12				P84C-005V7	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Reduced bore Fire tested design Moderate wet H2S service	
1	14				P84C-005V8	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Reduced bore Fire tested design Moderate wet H2S service	
1	16				P84C-005V9	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Reduced bore Fire tested design Moderate wet H2S service	
1	18				P84C-005VA	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Reduced bore Fire tested design Moderate wet H2S service	
1	20				P84C-005VB	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Reduced bore Fire tested design Moderate wet H2S service	
24	0.5				P84B-00129	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design Moderate wet H2S service	
24	0.75				P84B-0012A	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design Moderate wet H2S service	
24	1				P84B-0012B	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design Moderate wet H2S service	
24	1.5				P84B-0012C	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design Moderate wet H2S service	
24	2				P84C-005US	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design Moderate wet H2S service	
24	3				P84C-005UT	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design Moderate wet H2S service	
24	4				P84C-005UU	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design Moderate wet H2S service	
24	6				P84C-005V4	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design Moderate wet H2S service	

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BALL VALVE (Q)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
24	8				P84C-005V5	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design Moderate wet H2S service	
24	10				P84C-005UY	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design Moderate wet H2S service	
24	12				P84C-005UZ	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design Moderate wet H2S service	
24	14				P84C-005V0	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design Moderate wet H2S service	
24	16				P84C-005V1	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design Moderate wet H2S service	
24	18				P84C-005V2	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design Moderate wet H2S service	
24	20				P84C-005V3	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design Moderate wet H2S service	

BUTTERFLY VALVE (H)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	10				P86C-00249	Offset design butterfly valve ASTM A216 Grade WCB Class 150 API 609 Category B Lug-type ASME B16.5 RF Disc CS Seat Stellite-6 Trim SS316 Triple eccentric design BG Gear operated Moderate wet H2S service	
1	12				P86C-0024A	Offset design butterfly valve ASTM A216 Grade WCB Class 150 API 609 Category B Lug-type ASME B16.5 RF Disc CS Seat Stellite-6 Trim SS316 Triple eccentric design BG Gear operated Moderate wet H2S service	
1	14				P86C-0024B	Offset design butterfly valve ASTM A216 Grade WCB Class 150 API 609 Category B Lug-type ASME B16.5 RF Disc CS Seat Stellite-6 Trim SS316 Triple eccentric design BG Gear operated Moderate wet H2S service	
1	16				P86C-0024C	Offset design butterfly valve ASTM A216 Grade WCB Class 150 API 609 Category B Lug-type ASME B16.5 RF Disc CS Seat Stellite-6 Trim SS316 Triple eccentric design BG Gear operated Moderate wet H2S service	

ORIFICE FLANGE (FO)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2		XS		P66B-0084B	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	3		STD		P66B-0084C	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	4		STD		P66B-0084D	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	6		STD		P66B-0084E	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	8		SCH30		P66B-00871	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	10		SCH30		P66B-0086Z	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	12		SCH30		P66B-00849	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	14		SCH20		P66B-0084A	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	16		SCH20		P66B-0083Y	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	18		STD		P66B-008K2	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	20		STD		P66B-0084S	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
200	2		XS		P66B-00843	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	3		STD		P66B-00844	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	4		STD		P66B-00845	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	6		STD		P66B-00846	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	8		SCH30		P66B-00876	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	10		SCH30		P66B-00874	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	12		SCH30		P66B-00841	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	14		SCH20		P66B-00842	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	16		SCH20		P66B-0083Z	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	18		STD		P66B-008K3	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	20		STD		P66B-0084U	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71B-0008A	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	0.75				P71B-0008B	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	1				P71B-0008C	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71B-0008D	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	2				P71B-0000P	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	3				P71B-0000N	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	4				P71B-0000M	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	6				P71B-0000L	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	

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SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	8				P71B-0000R	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	10				P71B-0000K	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	12				P71B-0000J	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	

PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000AH	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	16				P72B-0000C	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	18				P72B-000AJ	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	20				P72B-000AK	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	24				P72B-000AL	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	30				P72B-000AM	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	36				P72B-000AN	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	42				P72B-000AP	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	48				P72B-000AR	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	52				P72B-000AS	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	56				P72B-000BC	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	60				P72B-000BD	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	64				P72B-000BE	Paddle blank ASTM A105 Class 150 Standard-drawing Flange Standard-drawing RF	
1	68				P72B-000BF	Paddle blank ASTM A105 Class 150 Standard-drawing Flange Standard-drawing RF	
1	72				P72B-000BG	Paddle blank ASTM A105 Class 150 Standard-drawing Flange Standard-drawing RF	
1	76				P72B-000TU	Paddle blank ASTM A105 Class 150 Standard-drawing Flange Standard-drawing RF	
1	80				P72B-000BH	Paddle blank ASTM A105 Class 150 Standard-drawing Flange Standard-drawing RF	
1	92				P72B-000WS	Paddle blank ASTM A105 Class 150 Standard-drawing Flange Standard-drawing RF	

PADDLE SPACER (PS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000AT	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	16				P72B-0000B	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	18				P72B-000AU	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	20				P72B-000AV	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	24				P72B-000AW	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	30				P72B-000AX	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	36				P72B-000AY	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	42				P72B-000AZ	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	48				P72B-000B0	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	52				P72B-000B1	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	56				P72B-000BJ	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	60				P72B-000BK	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	64				P72B-000BL	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange Standard-drawing RF	
1	68				P72B-000BM	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange Standard-drawing RF	
1	72				P72B-000BN	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange Standard-drawing RF	
1	76				P72B-000TV	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange Standard-drawing RF	
1	80				P72B-000BP	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange Standard-drawing RF	
1	92				P72B-000VC	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange Standard-drawing RF	

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BOLT TABLE (B_A2AQ , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	60	P80S-008SY		
0.75	4	0.500	65	P80S-008SZ		
1	4	0.500	70	P80S-008T0		
1.5	4	0.500	75	P80S-008T1		
2	4	0.625	85	P80S-0090A		
3	4	0.625	95	P80S-0090C		
4	8	0.625	95	P80S-0090C		
6	8	0.750	105	P80S-0090E		
8	8	0.750	110	P80S-0090F		
10	12	0.875	120	P80S-005Z9		
12	12	0.875	120	P80S-005Z9		
14	12	1.000	135	P80S-00619		
16	16	1.000	140	P80S-0061A		
18	16	1.125	150	P80S-0064L		
20	20	1.125	160	P80S-0064N		
24	20	1.250	175	P80S-00686		
30	44	0.750	145	P80S-0090N		
36	44	0.875	175	P80S-005ZL		
42	48	1.000	190	P80S-0061L		
48	44	1.125	210	P80S-0064Z		
52	52	1.125	220	P80S-00651		
56	60	1.125	225	P80S-00652		
60	52	1.250	240	P80S-0068K		
64	52	1.250	280	P80S-0068U		
68	52	1.250	290	P80S-0068W		
72	52	1.250	300	P80S-0068Y		
76	52	1.250	310	P80S-00690		
80	52	1.250	320	P80S-00692		
92	52	1.250	340	P80S-00696		

BOLT TABLE (B_A2AQ_773 , STUD ASME RF, OPTION CODE 773)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-008T0		
0.75	4	0.625	75	P80S-00908		
1	4	0.625	80	P80S-00909		
1.5	4	0.750	95	P80S-005Z4		
2	8	0.625	90	P80S-0090B		
3	8	0.750	110	P80S-0090F		
4	8	0.750	115	P80S-0090G		
6	12	0.750	125	P80S-0090J		
8	12	0.875	140	P80S-005ZD		
10	16	1.000	160	P80S-0061E		
12	16	1.125	175	P80S-0064S		
14	20	1.125	180	P80S-0064T		
16	20	1.250	190	P80S-00689		
18	24	1.250	200	P80S-0068B		
20	24	1.250	210	P80S-0068D		
24	24	1.500	235	P80S-006LB		
30	36	1.375	285	P80S-006HY		
36	32	1.625	320	P80S-00A5E		
42	36	1.750	355	P80S-00AEJ		
48	40	1.875	380	P80S-00AW5		
52	48	1.875	410	P80S-00AWB		
56	36	2.250	450	P80S-00DJB		
60	40	2.250	445	P80S-00DJA		

BOLT TABLE (B_A2AQ_781 , STUD ASME RF, OPTION CODE 781)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	80	P80S-008T2		
0.75	4	0.625	90	P80S-0090B		
1	4	0.625	95	P80S-0090C		
1.5	4	0.750	110	P80S-0090F		
2	8	0.625	110	P80S-008T8		
3	8	0.750	130	P80S-0090K		
4	8	0.875	150	P80S-005ZF		
6	12	1.000	175			
8	12	1.125	195			

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BOLT TABLE (B_A2AQ_781 , STUD ASME RF, OPTION CODE 781)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
10	16	1.250	250			
12	20	1.250	255			
14	20	1.375	270			
16	20	1.500	295			
18	20	1.625	320			
20	24	1.625	335			
24	24	1.875	380			
30	28	1.875	435			
36	28	2.250	510			
42	28	2.500	575			
48	32	2.750	635			
52	32	3.000	680			
56	32	3.250	730			
60	28	3.500	780			
64			0			
68			0			
72			0			
76			0			
80			0			

BOLT TABLE (B_A2AQ_789 , STUD ASME RJ, OPTION CODE 789)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	110	P80S-0090F	R12	
0.75	4	0.750	115	P80S-0090G	R14	
1	4	0.875	130	P80S-005ZB	R16	
1.5	4	1.000	140	P80S-0061A	R20	
2	8	0.875	150	P80S-005ZF	R24	
3	8	0.875	150	P80S-005ZF	R31	P75T-000JN
4	8	1.125	175	P80S-0064S	R37	P75T-000JP
6	12	1.125	200	P80S-0064X	R45	P75T-000JR
8	12	1.375	260	P80S-006HT	R49	P75T-000JS
10	16	1.375	275	P80S-006HW	R53	P75T-000JL
12	20	1.375	295	P80S-006J0	R57	P75T-000JM
14	20	1.500	325	P80S-006RK	R62	P75T-000MJ
16	20	1.625	340		R66	
18	20	1.875	390		R70	
20	20	2.000	415		R74	
24	20	2.500	525		R78	
30	20	3.000	600		R102	
36	20	3.500	690		R105	

BOLT TABLE (B_A2AQ_797 , STUD ASME RJ, OPTION CODE 797)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	110	P80S-0090F	R12	P75T-000JT
0.75	4	0.750	115	P80S-0090G	R14	P75T-000JU
1	4	0.875	130	P80S-005ZB	R16	P75T-000JV
1.5	4	1.000	140	P80S-0061A	R20	P75T-000JW
2	8	0.875	150	P80S-005ZF	R24	P75T-0008A
3	8	1.125	180	P80S-0064T	R35	P75T-0008E
4	8	1.250	230	P80S-0068H	R39	P75T-0008D
6	12	1.375	300	P80S-006J1	R46	P75T-0008C
8	12	1.625	345	P80S-00A5K	R50	P75T-0008B
10	12	1.875	395	P80S-00AW8	R54	P75T-0008L
12	16	2.000	445	P80S-00BH5	R58	P75T-0008K
14	16	2.250	490		R63	
16	16	2.500	540		R67	
18	16	2.750	590		R71	
20	16	3.000	650		R75	
24	16	3.500	745	P80S-01VTJ	R79	P75T-0012C

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BRANCH TABLE (T_A2AQ)

RUN PIPE SIZE (in) \ BRANCH SIZE (in)	0.5	0.75	1	1.5	2	3	4	6	8	10	12	14	16	18	20	24	30	36	42	48	52	56	60	64	68	72	76	80	92
0.5	TS																												
0.75		TS																											
1		TR	TS																										
1.5		TR	TR	TS																									
2		L	TR	TR	TS																								
3		L	L	TR	TR	TS																							
4	L	L	L	L	TR	TR	TS																						
6	L	L	L	L	L	TR	TR	TS																					
8		L	L	L	L	L	TR	TR	TS																				
10		L	L	L	L	L	TR	TR	TR	TS																			
12		L	L	L	L	L	L	TR	TR	TR	TS																		
14		L	L	L	L	L	L	TR	TR	TR	TR	TS																	
16		L	L	L	L	L	L	TR	TR	TR	TR	TR	TS																
18		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TS															
20		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TR	TS														
24		L	L	L	L	L	L	L	9PD	TR	TR	TR	TR	TR	TR	TS													
30		L	L	L	L	L	L	L	9PD	TR	TR	TR	TR	TR	TR	TR	TS												
36		L	L	L	L	L	L	L	9PD	9PD	9PD	9PD	TR	TR	TR	TR	TR	TS											
42		L	L	L	L	L	L	L	9PD	9PD	9PD	9PD	TR	TR	TR	TR	TR	TR	TS										
48		L	L	L	L	L	L	L	9PD	9PD	9PD	9PD	9PD	9PD	9PD	TR	TR	TR	TR	TS									
52		L	L	L	L	L	L	L	9PD	9PD	9PD	9PD	9PD	9PD	9PD	9PD	TR	TR	TR	TR	TS								
56		L	L	L	L	L	L	L	9PD	9PD	9PD	9PD	9PD	9PD	9PD	9PD	TR	TR	TR	TR	TR	TS							
60		L	L	L	L	L	L	L	9PD	9PD	9PD	9PD	9PD	9PD	9PD	9PD	TR	TR	TR	TR	TR	TR	TS						
64		L	L	L	L	L	L	L	9PD	9PD	9PD	9PD	9PD	9PD	9PD	9PD	9PD	TR	TR	TR	TR	TR	TR	TS					
68		L	L	L	L	L	L	L	9PD	9PD	9PD	9PD	9PD	9PD	9PD	9PD	9PD	TR	TR	TR	TR	TR	TR	TR	TS				
72		L	L	L	L	L	L	L	9PD	9PD	9PD	9PD	9PD	9PD	9PD	9PD	9PD	TR	TR	TR	TR	TR	TR	TR	TR	TS			
76		L	L	L	L	L	L	L	9PD	9PD	9PD	9PD	9PD	9PD	9PD	9PD	9PD	9PD	TR	TR	TR	TR	TR	TR	TR	TR	TS		
80		L	L	L	L	L	L	L	9PD	9PD	9PD	9PD	9PD	9PD	9PD	9PD	9PD	9PD	TR	TR	TR	TR	TR	TR	TR	TR	TR	TS	
92		L	L	L	L	L	L	L	9PD	9PD	9PD	9PD	9PD	9PD	9PD	9PD	9PD	9PD	9PD	TR	TR	TR	TR	TR	TR	TR	TR	TR	TS

TS : STRAIGHT TEE
TR : REDUCING TEE
9PD : REINFORCING PAD 90 DEG
L : OUTLET

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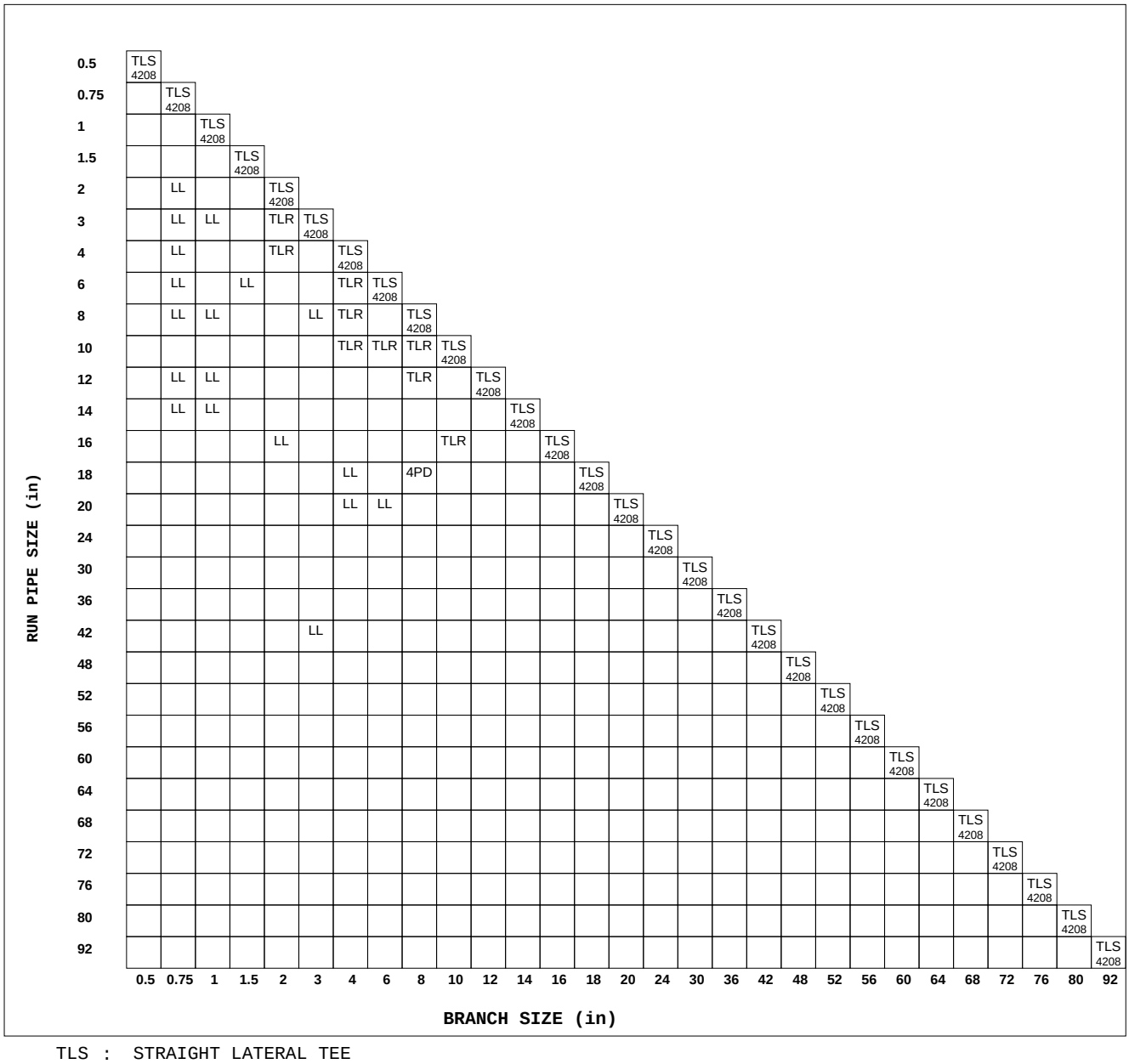
BRANCH TABLE (T_A2AQ_2)



TLS : STRAIGHT LATERAL TEE
4PD : REINFORCING PAD 45 DEG
LL : LATROLET
TLR : REDUCING LATERAL TEE

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PIPING CLASS

A2AQ REV NO. 2

BRANCH TABLE (T_A2AQ_3)

RUN PIPE SIZE (in)	0.5	0.75	1	1.5	2	3	4	6	8	10	12	14	16	18	20	24	30	36	42	48	52	56	60	64	68	72	76	80	92
0.5																													
0.75		TLS																											
1		6PD	TLS																										
1.5		6PD	6PD	TLS																									
2		6PD	6PD	6PD	TLS																								
3		6PD	6PD	6PD	6PD	TLS																							
4		6PD	6PD	6PD	6PD	6PD	TLS																						
6		6PD	6PD	6PD	6PD	6PD	6PD	TLS																					
8		6PD	6PD	6PD	6PD	6PD	6PD	6PD	TLS																				
10		6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	TLS																			
12		6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	TLS																		
14		6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	TLS																	
16		6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	TLS																
18		6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	TLS															
20		6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	TLS														
24		6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	TLS													
30		6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	TLS												
36		6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	TLS											
42		6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	TLS										
48		6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	TLS									
52		6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	TLS								
56		6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	TLS							
60		6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	TLS						
64		6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	TLS					
68		6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	TLS				
72																													
76		6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD		TLS		
80		6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD		6PD	TLS	
92		6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD		6PD	6PD	TLS

BRANCH SIZE (in)

6PD : REINFORCING PAD 60 DEG
TLS : STRAIGHT LATERAL TEE

INDRA
01-SEP-2014

PIPING CLASS

A2AQ REV NO. 2

BRANCH TABLE (T_A2AQ_4)

RUN PIPE SIZE (in) \ BRANCH SIZE (in)	0.5	0.75	1	1.5	2	3	4	6	8	10	12	14	16	18	20	24	30	36	42	48	52	56	60	64	68	72	76	80	92
0.5																													
0.75		TLS 851																											
1		6PD 851	TLS 851																										
1.5		6PD 851	6PD 851	TLS 851																									
2		6PD 851	6PD 851	6PD 851	TLS 851																								
3		6PD 851	6PD 851	6PD 851	6PD 851	TLS 851																							
4		6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	TLS 851																						
6		6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	TLS 851																					
8		6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	TLS 851																				
10		6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	TLS 851																			
12		6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	TLS 851																		
14		6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	TLS 851																	
16		6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	TLS 851																
18		6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	TLS 851															
20		6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	TLS 851														
24		6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	TLS 851													
30		6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	TLS 851												
36		6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	TLS 851											
42		6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	TLS 851										
48		6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	TLS 851									
52		6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	TLS 851								
56		6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	TLS 851							
60		6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	TLS 851						
64		6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	TLS 851					
68		6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	TLS 851				
72																													
76		6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851		TLS 851		
80		6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851		6PD 851	TLS 851	
92		6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851		6PD 851	6PD 851	TLS 851

6PD : REINFORCING PAD 60 DEG
TLS : STRAIGHT LATERAL TEE

INDRA
01-SEP-2014

PIPING CLASS

A2AQ01 REV NO. 2

Material : Killed CS
Rating : ASME CLASS 150
Flange Face : RF
C.A.(mm) : 3.00
Gasket : Spiral Wound
Service : PROCESS -WET LOW SEVERITY SOUR SERVICE SUBJECT TO NACE
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
2	USE OF SOFT SEATED BALL, PLUG AND BUTTERFLY VALVES SHALL BE LIMITED TO MAXIMUM OF 204DEGC (400DEGF)
5	BOLTING CONFIRMING TO B7M / 2HM SHALL BE USED UNDER CONDITIONS (A) DIRECT EXPOSURE TO SOUR ENVIRONMENTS (B) WHEN THE BOLTING WILL BE BURIED OR INSULATED
27	PWHT OF CARBON STEEL PIPING IN WET H2S, CAUSTIC AND AMINE SERVICES SHALL BE IN ACCORDANCE WITH SECTION 10.2, 10.3, AND 10.4 OF PROJECT SPECIFICATION 3550-8440-SP-0002 MATERIALS REQUIREMENTS FOR PRESSURISED EQUIPMENT AND PIPING. FOR CAUSTIC AND AMINE SERVICE THE FOLLOWING SHALL APPLY: - PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF ALL SITE PIPING FABRICATION WELDS IS REQUIRED FOR ALL WALL THICKNESSES. FOR MODERATE AND SEVERE WET H2S SERVICE THE FOLLOWING SHALL APPLY: PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF SITE FABRICATION CIRCUMFERENTIAL OR BRANCH WELDS IS NOT REQUIRED IF WELDS ARE MULTIPASS AND IN ACCORDANCE WITH PARA 10.2.12 OF PROJECT SPECIFICATION 3550-8440-SP-0002. FOR SERVICES MEETING THE WET H2S CRITERIA AND CAUSTIC OR AMINE CRITERIA THE MORE STRINGENT PWHT REQUIREMENT SHALL GOVERN.

DETAIL NOTES :

NO.	DESCRIPTION
38	TO BE USED FOR STAND PIPE

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
24	FULL PORT (Q)
200	WITH JACK SCREW (FO)
541	NPT(F) (CA,F)
773	CLASS 300 (B,F,G,PB,PS,SB)
789	CLASS 900 (B,F,G)
797	CLASS 1500 (B,F,G)
4212	WELDOLET FOR STAND PIPE (L)
4608	VALVE WITH NIPPLES (V)

INDRA
01-SEP-2014

PIPING CLASS
A2AQ01 REV NO. 2

PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P01A-0079G	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE Moderate wet H2S service Licensor-1	
1	0.75		SCH160		P01A-0079H	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE Moderate wet H2S service Licensor-1	
1	1		SCH160		P01A-0079J	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE Moderate wet H2S service Licensor-1	
1	1.5		SCH160		P01A-0079K	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE Moderate wet H2S service Licensor-1	
1	2		XS		P01A-007CL	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Moderate wet H2S service Licensor-1	
1	3		STD		P01A-007CM	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Moderate wet H2S service Licensor-1	
1	4		STD		P01A-007CN	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Moderate wet H2S service Licensor-1	
1	6		STD		P01A-007CP	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Moderate wet H2S service Licensor-1	
1	8		SCH30		P01A-008ND	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Moderate wet H2S service Licensor-1	
1	10		SCH30		P01A-008NC	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Moderate wet H2S service Licensor-1	
1	12		SCH30		P01A-007CT	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Moderate wet H2S service Licensor-1	
1	14		SCH20		P01A-007CU	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Moderate wet H2S service Licensor-1	
1	16		SCH20		P01A-007CK	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Moderate wet H2S service Licensor-1	
1	18		STD		P01A-007U5	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Moderate wet H2S service Licensor-1	
1	20		STD		P01A-007CW	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Moderate wet H2S service Licensor-1	
1	24		XS		P01A-007U6	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Moderate wet H2S service Licensor-1	
1	30		XS		P01A-008N8	Pipe ASTM A671 Grade CC60 Class 22 EFW ASME B36.10M/B36.19M BE Moderate wet H2S service Licensor-1	
1	36		XS		P01A-008N9	Pipe ASTM A671 Grade CC60 Class 22 EFW ASME B36.10M/B36.19M BE Moderate wet H2S service Licensor-1	
1	42		14.27mm		P01A-008NA	Pipe ASTM A671 Grade CC60 Class 22 EFW ASME B36.10M/B36.19M BE Moderate wet H2S service Licensor-1	
1	48		14.27mm		P01A-008NB	Pipe ASTM A671 Grade CC60 Class 22 EFW ASME B36.10M/B36.19M BE Moderate wet H2S service Licensor-1	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P02A-003RM	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Moderate wet H2S service Licensor-1	
1	0.75		SCH160		P02A-003RN	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Moderate wet H2S service Licensor-1	
1	1		SCH160		P02A-003RP	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Moderate wet H2S service Licensor-1	
1	1.5		SCH160		P02A-003RR	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Moderate wet H2S service Licensor-1	
1	2		XS		P02A-003UN	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Moderate wet H2S service Licensor-1	
1	3		STD		P02A-003UP	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Moderate wet H2S service Licensor-1	
1	4		STD		P02A-003UR	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Moderate wet H2S service Licensor-1	
1	6		STD		P02A-003US	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Moderate wet H2S service Licensor-1	
1	8		SCH30		P02A-004FU	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Moderate wet H2S service Licensor-1	
1	10		SCH30		P02A-004FT	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Moderate wet H2S service Licensor-1	
1	12		SCH30		P02A-003UV	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Moderate wet H2S service Licensor-1	
1	14		SCH20		P02A-003UW	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Moderate wet H2S service Licensor-1	
1	16		SCH20		P02A-003UM	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Moderate wet H2S service Licensor-1	
1	18		STD		P02A-0045T	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Moderate wet H2S service Licensor-1	
1	20		STD		P02A-003UY	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Moderate wet H2S service Licensor-1	
1	24		XS		P02A-0045U	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Moderate wet H2S service Licensor-1	
1	30		XS		P02A-004FN	90 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius Moderate wet H2S service Licensor-1	
1	36		XS		P02A-004FP	90 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius Moderate wet H2S service Licensor-1	
1	42		14.27mm		P02A-004FR	90 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius Moderate wet H2S service Licensor-1	
1	48		14.27mm		P02A-004FS	90 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius Moderate wet H2S service Licensor-1	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P03A-003NA	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Moderate wet H2S service Licensor-1	
1	0.75		SCH160		P03A-003NB	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Moderate wet H2S service Licensor-1	
1	1		SCH160		P03A-003NC	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Moderate wet H2S service Licensor-1	

INDRA 01-SEP-2014

PIPING CLASS
A2AQ01 REV NO. 2

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5		SCH160		P03A-003ND	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Moderate wet H2S service Licensor-1	
1	2		XS		P03A-003SB	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Moderate wet H2S service Licensor-1	
1	3		STD		P03A-003SC	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Moderate wet H2S service Licensor-1	
1	4		STD		P03A-003SD	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Moderate wet H2S service Licensor-1	
1	6		STD		P03A-003SE	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Moderate wet H2S service Licensor-1	
1	8		SCH30		P03A-004D2	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Moderate wet H2S service Licensor-1	
1	10		SCH30		P03A-004D1	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Moderate wet H2S service Licensor-1	
1	12		SCH30		P03A-003SH	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Moderate wet H2S service Licensor-1	
1	14		SCH20		P03A-003SJ	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Moderate wet H2S service Licensor-1	
1	16		SCH20		P03A-003SA	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Moderate wet H2S service Licensor-1	
1	18		STD		P03A-0043B	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Moderate wet H2S service Licensor-1	
1	20		STD		P03A-003SL	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Moderate wet H2S service Licensor-1	
1	24		XS		P03A-0043C	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Moderate wet H2S service Licensor-1	
1	30		XS		P03A-004CV	45 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius Moderate wet H2S service Licensor-1	
1	36		XS		P03A-004CW	45 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius Moderate wet H2S service Licensor-1	
1	42		14.27mm		P03A-004CX	45 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius Moderate wet H2S service Licensor-1	
1	48		14.27mm		P03A-004CY	45 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius Moderate wet H2S service Licensor-1	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P21A-00491	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	0.75		SCH160		P21A-00492	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	1		SCH160		P21A-00493	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	1.5		SCH160		P21A-00494	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	2		XS		P21A-004C4	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	3		STD		P21A-004C5	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	4		STD		P21A-004C6	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	6		STD		P21A-004C7	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	8		SCH30		P21A-004Y8	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	10		SCH30		P21A-004Y7	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	12		SCH30		P21A-004CA	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	14		SCH20		P21A-004CB	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	16		SCH20		P21A-004C3	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	18		STD		P21A-004NM	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	20		STD		P21A-004CD	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	24		XS		P21A-004NN	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	30		XS		P21A-004Y3	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	36		XS		P21A-004Y4	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	42		14.27mm		P21A-004Y5	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	48		14.27mm		P21A-004Y6	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Moderate wet H2S service Licensor-1	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75	SCH160	SCH160	P24A-00K26	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	1.5	0.75	SCH160	SCH160	P24A-00K27	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	1.5	1	SCH160	SCH160	P24A-00K28	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	2	1	XS	SCH160	P24A-00KBS	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	2	1.5	XS	SCH160	P24A-00KBT	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	3	1.5	STD	SCH160	P24A-00KBU	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	3	2	STD	XS	P24A-00KBV	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	4	2	STD	XS	P24A-00KBW	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	4	3	STD	STD	P24A-00KBX	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	6	3	STD	STD	P24A-00KBY	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	

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REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	6	4	STD	STD	P24A-00KBZ	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	8	4	SCH30	STD	P24A-00NKW	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	8	6	SCH30	STD	P24A-00NKX	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	10	4	SCH30	STD	P24A-00NKY	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	10	6	SCH30	STD	P24A-00NKZ	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	10	8	SCH30	SCH30	P24A-00NL0	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	12	6	SCH30	STD	P24A-00KCV	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	12	8	SCH30	SCH30	P24A-00NL2	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	12	10	SCH30	SCH30	P24A-00NL1	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	14	6	SCH20	STD	P24A-00KCZ	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	14	8	SCH20	SCH30	P24A-00NL4	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	14	10	SCH20	SCH30	P24A-00NL3	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	14	12	SCH20	SCH30	P24A-00KCY	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	16	6	SCH20	STD	P24A-00KCD	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	16	8	SCH20	SCH30	P24A-00NL6	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	16	10	SCH20	SCH30	P24A-00NL5	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	16	12	SCH20	SCH30	P24A-00KD2	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	16	14	SCH20	SCH20	P24A-00KD3	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	18	8	STD	SCH30	P24A-00NLA	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	18	10	STD	SCH30	P24A-00NL7	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	18	12	STD	SCH30	P24A-00NL8	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	18	14	STD	SCH20	P24A-00NL9	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	18	16	STD	SCH20	P24A-00M6A	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	20	8	STD	SCH30	P24A-00NLC	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	20	10	STD	SCH30	P24A-00NLB	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	20	12	STD	SCH30	P24A-00KDB	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	20	14	STD	SCH20	P24A-00KDC	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	20	16	STD	SCH20	P24A-00KDD	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	20	18	STD	STD	P24A-00M6F	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	24	10	XS	SCH30	P24A-00NLD	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	24	12	XS	SCH30	P24A-00NLE	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	24	14	XS	SCH20	P24A-00NLF	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	24	16	XS	SCH20	P24A-00M6L	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	24	18	XS	STD	P24A-00M6M	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	24	20	XS	STD	P24A-00M6N	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	30	10	XS	SCH30	P24A-00NLG	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	30	12	XS	SCH30	P24A-00NLH	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	30	14	XS	SCH20	P24A-00NLJ	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	30	16	XS	SCH20	P24A-00NLK	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	30	18	XS	STD	P24A-00NLL	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	30	20	XS	STD	P24A-00NLM	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	30	24	XS	XS	P24A-00NLN	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	36	16	XS	SCH20	P24A-00NLP	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	36	18	XS	STD	P24A-00NLR	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	36	20	XS	STD	P24A-00NLS	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	36	24	XS	XS	P24A-00NLT	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	36	30	XS	XS	P24A-00NLU	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	42	16	14.27mm	SCH20	P24A-00NLV	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	42	18	14.27mm	STD	P24A-00NLW	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	42	20	14.27mm	STD	P24A-00NLX	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	42	24	14.27mm	XS	P24A-00NLY	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	42	30	14.27mm	XS	P24A-00NLZ	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	42	36	14.27mm	XS	P24A-00NM0	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	48	24	14.27mm	XS	P24A-00NM1	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	48	30	14.27mm	XS	P24A-00NM2	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	48	36	14.27mm	XS	P24A-00NM3	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	48	42	14.27mm	14.27mm	P24A-00NM4	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Moderate wet H2S service Licensor-1	

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CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	SCH160	P27A-00EM0	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	1	0.5	SCH160	SCH160	P27A-00EM1	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	1	0.75	SCH160	SCH160	P27A-00EM2	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	1.5	0.5	SCH160	SCH160	P27A-00EM3	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	1.5	0.75	SCH160	SCH160	P27A-00EM4	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	1.5	1	SCH160	SCH160	P27A-00EM5	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	2	0.75	XS	SCH160	P27A-00EW7	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	2	1	XS	SCH160	P27A-00EW8	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	2	1.5	XS	SCH160	P27A-00EW9	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	3	1.5	STD	SCH160	P27A-00EWA	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	3	2	STD	XS	P27A-00EWB	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	4	1.5	STD	SCH160	P27A-00EWC	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	4	2	STD	XS	P27A-00EWD	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	4	3	STD	STD	P27A-00EWE	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	6	3	STD	STD	P27A-00EWF	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	6	4	STD	STD	P27A-00EWG	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	8	4	SCH30	STD	P27A-00H76	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	8	6	SCH30	STD	P27A-00H77	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	10	4	SCH30	STD	P27A-00H78	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	10	6	SCH30	STD	P27A-00H79	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	10	8	SCH30	SCH30	P27A-00H7A	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	12	6	SCH30	STD	P27A-00EX6	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	12	8	SCH30	SCH30	P27A-00H7C	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	12	10	SCH30	SCH30	P27A-00H7B	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	14	6	SCH20	STD	P27A-00EXA	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	14	8	SCH20	SCH30	P27A-00H7E	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	14	10	SCH20	SCH30	P27A-00H7D	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	14	12	SCH20	SCH30	P27A-00EX9	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	16	8	SCH20	SCH30	P27A-00H7G	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	16	10	SCH20	SCH30	P27A-00H7F	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	16	12	SCH20	SCH30	P27A-00EXD	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	16	14	SCH20	SCH20	P27A-00EXE	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	18	10	STD	SCH30	P27A-00H7H	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	18	12	STD	SCH30	P27A-00H7J	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	18	14	STD	SCH20	P27A-00H7K	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	18	16	STD	SCH20	P27A-00G54	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	20	12	STD	SCH30	P27A-00EXL	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	20	14	STD	SCH20	P27A-00EXM	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	20	16	STD	SCH20	P27A-00EXN	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	20	18	STD	STD	P27A-00G57	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	24	16	XS	SCH20	P27A-00G58	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	24	18	XS	STD	P27A-00G59	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	24	20	XS	STD	P27A-00G5A	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	30	20	XS	STD	P27A-00H7L	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	30	24	XS	XS	P27A-00H7M	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Moderate wet H2S service Licensor-1	

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CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	36	24	XS	XS	P27A-00H7N	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	36	30	XS	XS	P27A-00H7P	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	42	30	14.27mm	XS	P27A-00H7R	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	42	36	14.27mm	XS	P27A-00H7S	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	48	42	14.27mm	14.27mm	P27A-00H7T	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Moderate wet H2S service Licensor-1	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	SCH160	P28A-00BRS	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	1	0.5	SCH160	SCH160	P28A-00BRT	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	1	0.75	SCH160	SCH160	P28A-00BRU	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	1.5	0.5	SCH160	SCH160	P28A-00BRV	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	1.5	0.75	SCH160	SCH160	P28A-00BRW	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	1.5	1	SCH160	SCH160	P28A-00BRX	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	2	0.75	XS	SCH160	P28A-00C02	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	2	1	XS	SCH160	P28A-00C03	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	2	1.5	XS	SCH160	P28A-00C04	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	3	1.5	STD	SCH160	P28A-00C05	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	3	2	STD	XS	P28A-00C06	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	4	1.5	STD	SCH160	P28A-00C07	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	4	2	STD	XS	P28A-00C08	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	4	3	STD	STD	P28A-00C09	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	6	3	STD	STD	P28A-00C0A	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	6	4	STD	STD	P28A-00C0B	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	8	4	SCH30	STD	P28A-00EEW	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	8	6	SCH30	STD	P28A-00EEX	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	10	4	SCH30	STD	P28A-00EEY	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	10	6	SCH30	STD	P28A-00EEZ	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	10	8	SCH30	SCH30	P28A-00EF0	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	12	6	SCH30	STD	P28A-00C16	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	12	8	SCH30	SCH30	P28A-00EF2	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	12	10	SCH30	SCH30	P28A-00EF1	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	14	6	SCH20	STD	P28A-00C1A	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	14	8	SCH20	SCH30	P28A-00EF4	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	14	10	SCH20	SCH30	P28A-00EF3	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	14	12	SCH20	SCH30	P28A-00C19	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	16	8	SCH20	SCH30	P28A-00EF6	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	16	10	SCH20	SCH30	P28A-00EF5	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	16	12	SCH20	SCH30	P28A-00C1D	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	16	14	SCH20	SCH20	P28A-00C1E	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	18	10	STD	SCH30	P28A-00EF7	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	18	12	STD	SCH30	P28A-00EF8	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	18	14	STD	SCH20	P28A-00EF9	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	18	16	STD	SCH20	P28A-00DC3	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	20	12	STD	SCH30	P28A-00C1L	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	20	14	STD	SCH20	P28A-00C1M	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	20	16	STD	SCH20	P28A-00C1N	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	20	18	STD	STD	P28A-00DC6	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	24	16	XS	SCH20	P28A-00DC7	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	24	18	XS	STD	P28A-00DC8	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	24	20	XS	STD	P28A-00DC9	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	30	20	XS	STD	P28A-00EFA	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	30	24	XS	XS	P28A-00EFB	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	36	24	XS	XS	P28A-00EFC	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	36	30	XS	XS	P28A-00EFD	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	42	30	14.27mm	XS	P28A-00EFE	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	42	36	14.27mm	XS	P28A-00EFF	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	48	42	14.27mm	14.27mm	P28A-00EFG	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Moderate wet H2S service Licensor-1	

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CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P29A-0032T	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	0.75		SCH160		P29A-0032U	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	1		SCH160		P29A-0032V	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	1.5		SCH160		P29A-0032W	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	2		XS		P29A-0036K	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	3		STD		P29A-0036L	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	4		STD		P29A-0036M	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	6		STD		P29A-0036N	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	8		SCH30		P29A-003SS	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	10		SCH30		P29A-003SL	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	12		SCH30		P29A-0036T	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	14		SCH20		P29A-0036U	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	16		SCH20		P29A-0036J	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	18		STD		P29A-003GL	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	20		STD		P29A-0036W	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	24		XS		P29A-003GM	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	30		XS		P29A-003SM	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	36		XS		P29A-003SN	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	42		14.27mm		P29A-003SP	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	48		14.27mm		P29A-003SR	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
541	0.75				P29B-0006V	Cap ASTM A105 Class 6000 ASME B16.11 NPT Moderate wet H2S service Licensor-1	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P41A-0019F	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Moderate wet H2S service Licensor-1	
1	0.75		XXS		P41A-0019G	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Moderate wet H2S service Licensor-1	
1	1		XXS		P41A-0018D	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Moderate wet H2S service Licensor-1	
1	1.5		XXS		P41A-0018E	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Moderate wet H2S service Licensor-1	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2	0.75	XS	SCH160	P31B-00XTZ	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	3	0.75	STD	SCH160	P31B-00XU0	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	4	0.75	STD	SCH160	P31B-00XU2	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	6	0.75	STD	SCH160	P31B-00XU5	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	8	0.75	SCH30	SCH160	P31B-010VN	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	10	0.75	SCH30	SCH160	P31B-010VU	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	12	0.75	SCH30	SCH160	P31B-00XVC	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	14	0.75	SCH20	SCH160	P31B-00XVJ	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	16	0.75	SCH20	SCH160	P31B-00XUY	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	18	0.75	STD	SCH160	P31B-00ZHL	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	20	0.75	STD	SCH160	P31B-00XVY	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	24	0.75	XS	SCH160	P31B-00ZHU	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	30	0.75	XS	SCH160	P31B-010VZ	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	36	0.75	XS	SCH160	P31B-010W6	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	42	0.75	14.27mm	SCH160	P31B-010WD	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	48	0.75	14.27mm	SCH160	P31B-010WL	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	3	1	STD	SCH160	P31B-00XU1	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	4	1	STD	SCH160	P31B-00XU3	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	6	1	STD	SCH160	P31B-00XU6	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	8	1	SCH30	SCH160	P31B-010VP	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	10	1	SCH30	SCH160	P31B-010VV	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	12	1	SCH30	SCH160	P31B-00XVD	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	14	1	SCH20	SCH160	P31B-00XVK	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	16	1	SCH20	SCH160	P31B-00XUZ	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	18	1	STD	SCH160	P31B-00ZHM	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	20	1	STD	SCH160	P31B-00XVZ	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	

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OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	24	1	XS	SCH160	P31B-00ZHV	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	30	1	XS	SCH160	P31B-010W0	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	36	1	XS	SCH160	P31B-010W7	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	42	1	14.27mm	SCH160	P31B-010WE	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	48	1	14.27mm	SCH160	P31B-010WM	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	4	1.5	STD	SCH160	P31B-00XU4	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	6	1.5	STD	SCH160	P31B-00XU7	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	8	1.5	SCH30	SCH160	P31B-010VR	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	10	1.5	SCH30	SCH160	P31B-010VW	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	12	1.5	SCH30	SCH160	P31B-00XVE	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	14	1.5	SCH20	SCH160	P31B-00XVL	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	16	1.5	SCH20	SCH160	P31B-00XV0	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	18	1.5	STD	SCH160	P31B-00ZHN	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	20	1.5	STD	SCH160	P31B-00XW0	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	24	1.5	XS	SCH160	P31B-00ZHW	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	30	1.5	XS	SCH160	P31B-010W1	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	36	1.5	XS	SCH160	P31B-010W8	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	42	1.5	14.27mm	SCH160	P31B-010WF	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	48	1.5	14.27mm	SCH160	P31B-010WN	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	6	2	STD	XS	P31B-00XU8	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	8	2	SCH30	XS	P31B-010VS	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	10	2	SCH30	XS	P31B-010VX	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	12	2	SCH30	XS	P31B-00XVF	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	14	2	SCH20	XS	P31B-00XVM	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	16	2	SCH20	XS	P31B-00XV1	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	18	2	STD	XS	P31B-00ZHP	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	20	2	STD	XS	P31B-00XW1	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	24	2	XS	XS	P31B-00ZHX	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	30	2	XS	XS	P31B-010W2	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	36	2	XS	XS	P31B-010W9	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	42	2	14.27mm	XS	P31B-010WG	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	48	2	14.27mm	XS	P31B-010WP	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	8	3	SCH30	STD	P31B-010VT	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	10	3	SCH30	STD	P31B-010VY	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	12	3	SCH30	STD	P31B-00XVG	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	14	3	SCH20	STD	P31B-00XVN	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	16	3	SCH20	STD	P31B-00XV2	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	18	3	STD	STD	P31B-00ZHR	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	20	3	STD	STD	P31B-00XW2	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	24	3	XS	STD	P31B-00ZHY	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	30	3	XS	STD	P31B-010W3	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	36	3	XS	STD	P31B-010WA	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	42	3	14.27mm	STD	P31B-010WH	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	48	3	14.27mm	STD	P31B-010WR	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	12	4	SCH30	STD	P31B-00XVH	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	14	4	SCH20	STD	P31B-00XVP	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	16	4	SCH20	STD	P31B-00XV3	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	18	4	STD	STD	P31B-00ZHS	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	20	4	STD	STD	P31B-00XW3	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	24	4	XS	STD	P31B-00ZHZ	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	30	4	XS	STD	P31B-010W4	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	36	4	XS	STD	P31B-010WB	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	42	4	14.27mm	STD	P31B-010WJ	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	48	4	14.27mm	STD	P31B-010WS	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	18	6	STD	STD	P31B-00ZHT	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	20	6	STD	STD	P31B-00XW4	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	24	6	XS	STD	P31B-00ZJ0	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	30	6	XS	STD	P31B-010W5	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	36	6	XS	STD	P31B-010WC	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	

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OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	42	6	14.27mm	STD	P31B-010WK	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	48	6	14.27mm	STD	P31B-010WT	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
4212	3	2	STD	XS	P31B-013BN	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	38

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30B-0006F	Plug ASTM A105 ASME B16.11 NPT Round head Moderate wet H2S service Licensor-1	
1	0.75				P30B-0006G	Plug ASTM A105 ASME B16.11 NPT Round head Moderate wet H2S service Licensor-1	
1	1				P30B-0006H	Plug ASTM A105 ASME B16.11 NPT Round head Moderate wet H2S service Licensor-1	
1	1.5				P30B-0006J	Plug ASTM A105 ASME B16.11 NPT Round head Moderate wet H2S service Licensor-1	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P61B-00A3H	Flange WN ASTM A105 Class 150 ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	0.75		SCH160		P61B-00A3J	Flange WN ASTM A105 Class 150 ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	1		SCH160		P61B-00A3K	Flange WN ASTM A105 Class 150 ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	1.5		SCH160		P61B-00A3L	Flange WN ASTM A105 Class 150 ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	2		XS		P61B-00A3T	Flange WN ASTM A105 Class 150 ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	3		STD		P61B-00A3W	Flange WN ASTM A105 Class 150 ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	4		STD		P61B-00A3X	Flange WN ASTM A105 Class 150 ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	6		STD		P61B-00A3Y	Flange WN ASTM A105 Class 150 ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	8		SCH30		P61B-00BSH	Flange WN ASTM A105 Class 150 ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	10		SCH30		P61B-00BSE	Flange WN ASTM A105 Class 150 ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	12		SCH30		P61B-00A3N	Flange WN ASTM A105 Class 150 ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	14		SCH20		P61B-00A3P	Flange WN ASTM A105 Class 150 ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	16		SCH20		P61B-00A3R	Flange WN ASTM A105 Class 150 ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	18		STD		P61B-00BSF	Flange WN ASTM A105 Class 150 ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	20		STD		P61B-00A3U	Flange WN ASTM A105 Class 150 ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	24		XS		P61B-00BSG	Flange WN ASTM A105 Class 150 ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	30		XS		P61B-00BSJ	Flange WN ASTM A105 Class 150 ASME B16.47 Series B RF Moderate wet H2S service Licensor-1	
1	36		XS		P61B-00BSK	Flange WN ASTM A105 Class 150 ASME B16.47 Series B RF Moderate wet H2S service Licensor-1	
1	42		14.27mm		P61B-00BSL	Flange WN ASTM A105 Class 150 ASME B16.47 Series B RF Moderate wet H2S service Licensor-1	
1	48		14.27mm		P61B-00BSM	Flange WN ASTM A105 Class 150 ASME B16.47 Series B RF Moderate wet H2S service Licensor-1	
541	0.5				P61B-00DLM	Flange NPT ASTM A105 Class 150 ASME B16.5 RF Moderate wet H2S service Licensor-1	
541	0.75				P61B-00CXS	Flange NPT ASTM A105 Class 150 ASME B16.5 RF Moderate wet H2S service Licensor-1	
773	0.5		SCH160		P61B-00A2V	Flange WN ASTM A105 Class 300 ASME B16.5 RF Moderate wet H2S service Licensor-1	
773	0.75		SCH160		P61B-00A2W	Flange WN ASTM A105 Class 300 ASME B16.5 RF Moderate wet H2S service Licensor-1	
773	1		SCH160		P61B-00A2X	Flange WN ASTM A105 Class 300 ASME B16.5 RF Moderate wet H2S service Licensor-1	
773	1.5		SCH160		P61B-00A2Y	Flange WN ASTM A105 Class 300 ASME B16.5 RF Moderate wet H2S service Licensor-1	
773	2		XS		P61B-00A33	Flange WN ASTM A105 Class 300 ASME B16.5 RF Moderate wet H2S service Licensor-1	
773	3		STD		P61B-00A34	Flange WN ASTM A105 Class 300 ASME B16.5 RF Moderate wet H2S service Licensor-1	
773	4		STD		P61B-00A35	Flange WN ASTM A105 Class 300 ASME B16.5 RF Moderate wet H2S service Licensor-1	
773	6		STD		P61B-00A36	Flange WN ASTM A105 Class 300 ASME B16.5 RF Moderate wet H2S service Licensor-1	
773	8		SCH30		P61B-00BSP	Flange WN ASTM A105 Class 300 ASME B16.5 RF Moderate wet H2S service Licensor-1	
773	10		SCH30		P61B-00BSN	Flange WN ASTM A105 Class 300 ASME B16.5 RF Moderate wet H2S service Licensor-1	
773	12		SCH30		P61B-00A45	Flange WN ASTM A105 Class 300 ASME B16.5 RF Moderate wet H2S service Licensor-1	
773	14		SCH20		P61B-00A46	Flange WN ASTM A105 Class 300 ASME B16.5 RF Moderate wet H2S service Licensor-1	
773	16		SCH20		P61B-00A32	Flange WN ASTM A105 Class 300 ASME B16.5 RF Moderate wet H2S service Licensor-1	
773	18		STD		P61B-00B1W	Flange WN ASTM A105 Class 300 ASME B16.5 RF Moderate wet H2S service Licensor-1	
773	20		STD		P61B-00A48	Flange WN ASTM A105 Class 300 ASME B16.5 RF Moderate wet H2S service Licensor-1	
773	24		XS		P61B-00B1X	Flange WN ASTM A105 Class 300 ASME B16.5 RF Moderate wet H2S service Licensor-1	
773	30		XS		P61B-00BSR	Flange WN ASTM A105 Class 300 ASME B16.47 Series B RF Moderate wet H2S service Licensor-1	
773	36		XS		P61B-00BSS	Flange WN ASTM A105 Class 300 ASME B16.47 Series B RF Moderate wet H2S service Licensor-1	
773	42		14.27mm		P61B-00BST	Flange WN ASTM A105 Class 300 ASME B16.47 Series B RF Moderate wet H2S service Licensor-1	
773	48		14.27mm		P61B-00BSU	Flange WN ASTM A105 Class 300 ASME B16.47 Series B RF Moderate wet H2S service Licensor-1	
789	3		STD		P61B-00BSV	Flange WN ASTM A105 Class 900 ASME B16.5 RJ Moderate wet H2S service Licensor-1	
789	4		STD		P61B-00BSW	Flange WN ASTM A105 Class 900 ASME B16.5 RJ Moderate wet H2S service Licensor-1	
789	6		STD		P61B-00BSX	Flange WN ASTM A105 Class 900 ASME B16.5 RJ Moderate wet H2S service Licensor-1	
789	8		SCH30		P61B-00BSY	Flange WN ASTM A105 Class 900 ASME B16.5 RJ Moderate wet H2S service Licensor-1	

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FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
797	1		SCH160		P61B-009VG	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ Moderate wet H2S service Licensor-1	
797	1.5		SCH160		P61B-009VH	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ Moderate wet H2S service Licensor-1	
797	2		XS		P61B-00BSZ	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ Moderate wet H2S service Licensor-1	
797	3		STD		P61B-00BT0	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ Moderate wet H2S service Licensor-1	
797	4		STD		P61B-00BT1	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ Moderate wet H2S service Licensor-1	
797	6		STD		P61B-00BT2	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ Moderate wet H2S service Licensor-1	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67B-002GY	Blind flange ASTM A105 Class 150 ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	0.75				P67B-002GZ	Blind flange ASTM A105 Class 150 ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	1				P67B-002H0	Blind flange ASTM A105 Class 150 ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	1.5				P67B-002H1	Blind flange ASTM A105 Class 150 ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	2				P67B-002H7	Blind flange ASTM A105 Class 150 ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	3				P67B-002HA	Blind flange ASTM A105 Class 150 ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	4				P67B-002HB	Blind flange ASTM A105 Class 150 ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	6				P67B-002HC	Blind flange ASTM A105 Class 150 ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	8				P67B-002HD	Blind flange ASTM A105 Class 150 ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	10				P67B-002H2	Blind flange ASTM A105 Class 150 ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	12				P67B-002H3	Blind flange ASTM A105 Class 150 ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	14				P67B-002H4	Blind flange ASTM A105 Class 150 ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	16				P67B-002H5	Blind flange ASTM A105 Class 150 ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	18				P67B-002H6	Blind flange ASTM A105 Class 150 ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	20				P67B-002H8	Blind flange ASTM A105 Class 150 ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	24				P67B-002H9	Blind flange ASTM A105 Class 150 ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	30				P67B-002HE	Blind flange ASTM A105 Class 150 ASME B16.47 Series B RF Moderate wet H2S service Licensor-1	
1	36				P67B-002HF	Blind flange ASTM A105 Class 150 ASME B16.47 Series B RF Moderate wet H2S service Licensor-1	
1	42				P67B-002HG	Blind flange ASTM A105 Class 150 ASME B16.47 Series B RF Moderate wet H2S service Licensor-1	
1	48				P67B-002HH	Blind flange ASTM A105 Class 150 ASME B16.47 Series B RF Moderate wet H2S service Licensor-1	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000L8	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000L9	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000LA	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000LB	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000LH	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000LL	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000LM	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	6				P73T-000LN	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	8				P73T-000LP	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	10				P73T-000LC	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	12				P73T-000LD	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	14				P73T-000LE	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	16				P73T-000LF	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	18				P73T-000LG	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	20				P73T-000LJ	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	24				P73T-000LK	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	30				P73T-000LT	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	36				P73T-000LW	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	42				P73T-000LZ	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	48				P73T-000M2	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	

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GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
773	0.5				P73T-000FT	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	0.75				P73T-000FU	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	3				P73T-000G5	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	4				P73T-000G6	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	6				P73T-000G7	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	8				P73T-000G8	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	10				P73T-000FX	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	12				P73T-000FY	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	14				P73T-000FZ	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	16				P73T-000G0	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	18				P73T-000G1	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	20				P73T-000G3	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	24				P73T-000G4	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	30				P73T-000H9	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	36				P73T-000HC	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	42				P73T-000KM	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	48				P73T-000KR	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
789	3				P75T-000JN	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	4				P75T-000JP	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	6				P75T-000JR	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	8				P75T-000JS	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	1				P75T-000JV	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	1.5				P75T-000JW	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	2				P75T-0008A	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	3				P75T-0008E	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	4				P75T-0008D	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	6				P75T-0008C	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-16				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	18-24				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
1	30-42				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	48				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
773	0.5-10				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
773	12-48				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
789	1-3				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
789	4-12				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
797	1-2				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
797	3-12				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81B-001EU	Gate valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Licensor-1	
1	0.75				P81B-001EV	Gate valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Licensor-1	

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GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P81B-001EW	Gate valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Licensor-1	
1	1.5				P81B-001EX	Gate valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Licensor-1	
1	2				P81C-004WK	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Licensor-1	
1	3				P81C-004WL	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Licensor-1	
1	4				P81C-004WM	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Licensor-1	
1	6				P81C-004WN	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Licensor-1	
1	8				P81C-004WP	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Licensor-1	
1	10				P81C-004WH	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Licensor-1	
1	12				P81C-004WJ	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Licensor-1	
1	14				P81C-004WR	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Moderate wet H2S service Licensor-1	
1	16				P81C-004WS	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Moderate wet H2S service Licensor-1	
1	18				P81C-004WT	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Moderate wet H2S service Licensor-1	
1	20				P81C-004WU	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Moderate wet H2S service Licensor-1	
1	24				P81C-004WV	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Moderate wet H2S service Licensor-1	
1	30				P81C-004WW	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.47-B RF Trim number 12 BB-BG-OS&Y Gear operated Moderate wet H2S service Licensor-1	
1	36				P81C-004WX	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.47-B RF Trim number 12 BB-BG-OS&Y Gear operated Moderate wet H2S service Licensor-1	
1	42				P81C-004WY	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.47-B RF Trim number 12 BB-BG-OS&Y Gear operated Moderate wet H2S service Licensor-1	
1	48				P81C-004WZ	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.47-B RF Trim number 12 BB-BG-OS&Y Gear operated Moderate wet H2S service Licensor-1	
4608	0.75				P81B-002Y5	Gate valve ASTM A105 Class 150 API 602 BW both sides w/ nipples BE - NPT ASTM A106-B XXS-nipple Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Licensor-1	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82B-0016K	Globe valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Licensor-1	
1	0.75				P82B-0016L	Globe valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Licensor-1	
1	1				P82B-0016M	Globe valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Licensor-1	
1	1.5				P82B-0016N	Globe valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Licensor-1	
1	2				P82C-002CT	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Licensor-1	
1	3				P82C-002CU	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Licensor-1	
1	4				P82C-002CV	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Licensor-1	
1	6				P82C-002CW	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Licensor-1	
1	8				P82C-002CX	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Licensor-1	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83B-000YA	Check valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Moderate wet H2S service Licensor-1	
1	0.75				P83B-000YB	Check valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Moderate wet H2S service Licensor-1	
1	1				P83B-000YC	Check valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Moderate wet H2S service Licensor-1	
1	1.5				P83B-000YD	Check valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Moderate wet H2S service Licensor-1	
1	2				P83C-002BH	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Moderate wet H2S service Licensor-1	
1	3				P83C-002BJ	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Moderate wet H2S service Licensor-1	
1	4				P83C-002BK	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Moderate wet H2S service Licensor-1	
1	6				P83C-002BL	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Moderate wet H2S service Licensor-1	
1	8				P83C-002BM	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Moderate wet H2S service Licensor-1	
1	10				P83C-002BD	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Moderate wet H2S service Licensor-1	
1	12				P83C-002BE	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Moderate wet H2S service Licensor-1	

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CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P83C-002BF	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Moderate wet H2S service Licensor-1	
1	16				P83C-002BG	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Moderate wet H2S service Licensor-1	

BALL VALVE (Q)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P84B-0015V	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design Moderate wet H2S service Licensor-1	
1	0.75				P84B-0015W	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design Moderate wet H2S service Licensor-1	
1	1				P84B-0015X	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design Moderate wet H2S service Licensor-1	
1	1.5				P84B-0015Y	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design Moderate wet H2S service Licensor-1	
1	2				P84C-0060X	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design Moderate wet H2S service Licensor-1	
1	3				P84C-0060Y	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design Moderate wet H2S service Licensor-1	
1	4				P84C-0060Z	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design Moderate wet H2S service Licensor-1	
1	6				P84C-00616	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Reduced bore Fire tested design Moderate wet H2S service Licensor-1	
1	8				P84C-00617	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Reduced bore Fire tested design Moderate wet H2S service Licensor-1	
1	10				P84C-00610	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Reduced bore Fire tested design Moderate wet H2S service Licensor-1	
1	12				P84C-00611	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Reduced bore Fire tested design Moderate wet H2S service Licensor-1	
1	14				P84C-00612	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Reduced bore Fire tested design Moderate wet H2S service Licensor-1	
1	16				P84C-00613	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Reduced bore Fire tested design Moderate wet H2S service Licensor-1	
1	18				P84C-00614	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Reduced bore Fire tested design Moderate wet H2S service Licensor-1	
1	20				P84C-00615	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Reduced bore Fire tested design Moderate wet H2S service Licensor-1	
24	0.5				P84B-0015Z	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design Moderate wet H2S service Licensor-1	
24	0.75				P84B-00160	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design Moderate wet H2S service Licensor-1	
24	1				P84B-00161	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design Moderate wet H2S service Licensor-1	
24	1.5				P84B-00162	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design Moderate wet H2S service Licensor-1	
24	2				P84C-00618	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design Moderate wet H2S service Licensor-1	
24	3				P84C-00619	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design Moderate wet H2S service Licensor-1	
24	4				P84C-0061A	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design Moderate wet H2S service Licensor-1	
24	6				P84C-0061H	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design Moderate wet H2S service Licensor-1	
24	8				P84C-0061J	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design Moderate wet H2S service Licensor-1	
24	10				P84C-0061B	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design Moderate wet H2S service Licensor-1	
24	12				P84C-0061C	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design Moderate wet H2S service Licensor-1	
24	14				P84C-0061D	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design Moderate wet H2S service Licensor-1	

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BALL VALVE (Q)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
24	16				P84C-0061E	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design Moderate wet H2S service Licensor-1	
24	18				P84C-0061F	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design Moderate wet H2S service Licensor-1	
24	20				P84C-0061G	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design Moderate wet H2S service Licensor-1	

BUTTERFLY VALVE (H)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	10				P86C-0024D	Offset design butterfly valve ASTM A216 Grade WCB Class 150 API 609 Category B Lug-type ASME B16.5 RF Disc CS Seat Stellite-6 Trim SS316 Triple eccentric design BG Gear operated Moderate wet H2S service Licensor-1	
1	12				P86C-0024E	Offset design butterfly valve ASTM A216 Grade WCB Class 150 API 609 Category B Lug-type ASME B16.5 RF Disc CS Seat Stellite-6 Trim SS316 Triple eccentric design BG Gear operated Moderate wet H2S service Licensor-1	
1	14				P86C-0024F	Offset design butterfly valve ASTM A216 Grade WCB Class 150 API 609 Category B Lug-type ASME B16.5 RF Disc CS Seat Stellite-6 Trim SS316 Triple eccentric design BG Gear operated Moderate wet H2S service Licensor-1	
1	16				P86C-0024G	Offset design butterfly valve ASTM A216 Grade WCB Class 150 API 609 Category B Lug-type ASME B16.5 RF Disc CS Seat Stellite-6 Trim SS316 Triple eccentric design BG Gear operated Moderate wet H2S service Licensor-1	

NEEDLE VALVE (NV)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82B-001K7	Needle valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Licensor-1	
1	0.75				P82B-001K8	Needle valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Licensor-1	
1	1				P82B-001K9	Needle valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Licensor-1	
1	1.5				P82B-001KA	Needle valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Licensor-1	

ORIFICE FLANGE (FO)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2		XS		P66B-008CA	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Moderate wet H2S service Licensor-1	
1	3		STD		P66B-008CB	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Moderate wet H2S service Licensor-1	
1	4		STD		P66B-008CC	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Moderate wet H2S service Licensor-1	
1	6		STD		P66B-008CD	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Moderate wet H2S service Licensor-1	
1	8		SCH30		P66B-008RK	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Moderate wet H2S service Licensor-1	
1	10		SCH30		P66B-008RG	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Moderate wet H2S service Licensor-1	
1	12		SCH30		P66B-008RH	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Moderate wet H2S service Licensor-1	
1	14		SCH20		P66B-008RJ	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Moderate wet H2S service Licensor-1	
200	2		XS		P66B-008CM	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Moderate wet H2S service with Jack screw Licensor-1	
200	3		STD		P66B-008CN	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Moderate wet H2S service with Jack screw Licensor-1	
200	4		STD		P66B-008CP	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Moderate wet H2S service with Jack screw Licensor-1	
200	6		STD		P66B-008CR	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Moderate wet H2S service with Jack screw Licensor-1	
200	8		SCH30		P66B-008RP	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Moderate wet H2S service with Jack screw Licensor-1	
200	10		SCH30		P66B-008RL	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Moderate wet H2S service with Jack screw Licensor-1	
200	12		SCH30		P66B-008RM	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Moderate wet H2S service with Jack screw Licensor-1	
200	14		SCH20		P66B-008RN	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Moderate wet H2S service with Jack screw Licensor-1	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71B-0009F	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	0.75				P71B-0009G	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	1				P71B-0009H	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	1.5				P71B-0009J	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service Licensor-1	

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SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2				P71B-0009M	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	3				P71B-0009N	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	4				P71B-0009P	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	6				P71B-0009R	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	8				P71B-0009S	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	10				P71B-0009K	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	12				P71B-0009L	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service Licensor-1	
773	10				P71B-000CG	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service Licensor-1	
773	12				P71B-000CH	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service Licensor-1	

PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000DG	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	16				P72B-000DH	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	18				P72B-000DJ	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	20				P72B-000DK	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	24				P72B-000DL	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	30				P72B-000DM	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF Moderate wet H2S service Licensor-1	
1	36				P72B-000DN	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF Moderate wet H2S service Licensor-1	
1	42				P72B-000DP	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF Moderate wet H2S service Licensor-1	
1	48				P72B-000DR	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF Moderate wet H2S service Licensor-1	
773	14				P72B-000GP	Paddle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service Licensor-1	

PADDLE SPACER (PS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000DS	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	16				P72B-000DT	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	18				P72B-000DU	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	20				P72B-000DV	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	24				P72B-000DW	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	30				P72B-000DX	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF Moderate wet H2S service Licensor-1	
1	36				P72B-000DY	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF Moderate wet H2S service Licensor-1	
1	42				P72B-000DZ	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF Moderate wet H2S service Licensor-1	
1	48				P72B-000E0	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF Moderate wet H2S service Licensor-1	
773	14				P72B-000GS	Paddle spacer ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service Licensor-1	

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BOLT TABLE (B_A2AQ01 , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	60	P80S-008SY		
0.75	4	0.500	65	P80S-008SZ		
1	4	0.500	70	P80S-008T0		
1.5	4	0.500	75	P80S-008T1		
2	4	0.625	85	P80S-0090A		
3	4	0.625	95	P80S-0090C		
4	8	0.625	95	P80S-0090C		
6	8	0.750	105	P80S-0090E		
8	8	0.750	110	P80S-0090F		
10	12	0.875	120	P80S-005Z9		
12	12	0.875	120	P80S-005Z9		
14	12	1.000	135	P80S-00619		
16	16	1.000	140	P80S-0061A		
18	16	1.125	150	P80S-0064L		
20	20	1.125	160	P80S-0064N		
24	20	1.250	175	P80S-00686		
30	44	0.750	145	P80S-0090N		
36	44	0.875	175	P80S-005ZL		
42	48	1.000	190	P80S-0061L		
48	44	1.125	210	P80S-0064Z		

BOLT TABLE (B_A2AQ01_773 , STUD ASME RF, OPTION CODE 773)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-008T0		
0.75	4	0.625	75	P80S-00908		
1	4	0.625	80	P80S-00909		
1.5	4	0.750	95	P80S-005Z4		
2	8	0.625	90	P80S-0090B		
3	8	0.750	110	P80S-0090F		
4	8	0.750	115	P80S-0090G		
6	12	0.750	125	P80S-0090J		
8	12	0.875	140	P80S-005ZD		
10	16	1.000	160	P80S-0061E		
12	16	1.125	175	P80S-0064S		
14	20	1.125	180	P80S-0064T		
16	20	1.250	190	P80S-00689		
18	24	1.250	200	P80S-0068B		
20	24	1.250	210	P80S-0068D		
24	24	1.500	235	P80S-006LB		
30	36	1.375	285	P80S-006HY		
36	32	1.625	320	P80S-00A5E		
42	36	1.750	355	P80S-00AEJ		
48	40	1.875	380	P80S-00AW5		

BOLT TABLE (B_A2AQ01_789 , STUD ASME RJ, OPTION CODE 789)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	110		R12	
0.75	4	0.750	115		R14	
1	4	0.875	130	P80S-005ZB	R16	
1.5	4	1.000	140	P80S-0061A	R20	
2	8	0.875	150	P80S-005ZF	R24	
3	8	0.875	150	P80S-005ZF	R31	P75T-000JN
4	8	1.125	175	P80S-0064S	R37	P75T-000JP
6	12	1.125	200	P80S-0064X	R45	P75T-000JR
8	12	1.375	260	P80S-006HT	R49	P75T-000JS
10	16	1.375	275	P80S-006HW	R53	
12	20	1.375	295	P80S-006J0	R57	
14	20	1.500	325		R62	
16	20	1.625	340		R66	
18	20	1.875	390		R70	
20	20	2.000	415		R74	
24	20	2.500	525		R78	
30	20	3.000	600		R102	
36	20	3.500	690		R105	

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BOLT TABLE (B_A2AQ01_797 , STUD ASME RJ, OPTION CODE 797)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	110		R12	
0.75	4	0.750	115		R14	
1	4	0.875	130	P80S-005ZB	R16	P75T-000JV
1.5	4	1.000	140	P80S-0061A	R20	P75T-000JW
2	8	0.875	150	P80S-005ZF	R24	P75T-0008A
3	8	1.125	180	P80S-0064T	R35	P75T-0008E
4	8	1.250	230	P80S-0068H	R39	P75T-0008D
6	12	1.375	300	P80S-006J1	R46	P75T-0008C
8	12	1.625	345	P80S-00A5K	R50	
10	12	1.875	395	P80S-00AW8	R54	
12	16	2.000	445	P80S-00BH5	R58	
14	16	2.250	490		R63	
16	16	2.500	540		R67	
18	16	2.750	590		R71	
20	16	3.000	650		R75	
24	16	3.500	745		R79	

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BRANCH TABLE (T_A2AQ01)

RUN PIPE SIZE (in) \ BRANCH SIZE (in)	0.5	0.75	1	1.5	2	3	4	6	8	10	12	14	16	18	20	24	30	36	42	48
0.5	TS																			
0.75		TS																		
1		TR	TS																	
1.5		TR	TR	TS																
2		L	TR	TR	TS															
3		L	L	TR	TR	TS														
4	L	L	L	L	TR	TR	TS													
6	L	L	L	L	L	TR	TR	TS												
8		L	L	L	L	L	TR	TR	TS											
10		L	L	L	L	L	TR	TR	TR	TS										
12		L	L	L	L	L	L	TR	TR	TR	TS									
14		L	L	L	L	L	L	TR	TR	TR	TR	TS								
16		L	L	L	L	L	L	TR	TR	TR	TR	TR	TS							
18		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TS						
20		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TR	TS					
24		L	L	L	L	L	L	L	9PD	TR	TR	TR	TR	TR	TR	TS				
30		L	L	L	L	L	L	L	9PD	TR	TR	TR	TR	TR	TR	TR	TS			
36		L	L	L	L	L	L	L	9PD	9PD	9PD	9PD	TR	TR	TR	TR	TR	TS		
42		L	L	L	L	L	L	L	9PD	9PD	9PD	9PD	TR	TR	TR	TR	TR	TR	TS	
48		L	L	L	L	L	L	L	9PD	9PD	9PD	9PD	9PD	9PD	9PD	TR	TR	TR	TR	TS

TS : STRAIGHT TEE
9PD : REINFORCING PAD 90 DEG
TR : REDUCING TEE
L : OUTLET

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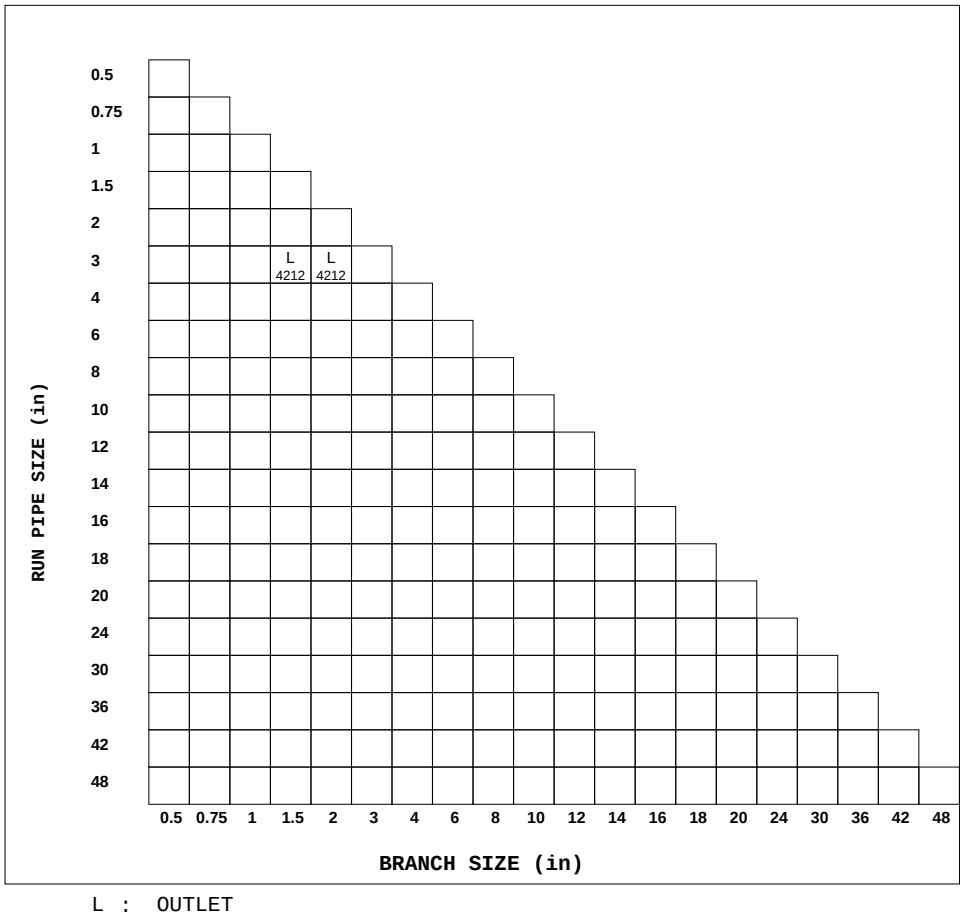
BRANCH TABLE (T_A2AQ01_4)



L : OUTLET

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Material : Killed CS
Rating : ASME CLASS 150
Flange Face : RF
C.A.(mm) : 3.00
Gasket : Spiral Wound
Service : PROCESS -WET LOW SEVERITY SOUR SERVICE SUBJECT TO NACE
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
2	USE OF SOFT SEATED BALL, PLUG AND BUTTERFLY VALVES SHALL BE LIMITED TO MAXIMUM OF 204DEGC (400DEGF)
5	BOLTING CONFIRMING TO B7M / 2HM SHALL BE USED UNDER CONDITIONS (A) DIRECT EXPOSURE TO SOUR ENVIRONMENTS (B) WHEN THE BOLTING WILL BE BURIED OR INSULATED
27	PWHT OF CARBON STEEL PIPING IN WET H2S, CAUSTIC AND AMINE SERVICES SHALL BE IN ACCORDANCE WITH SECTION 10.2, 10.3, AND 10.4 OF PROJECT SPECIFICATION 3550-8440-SP-0002 MATERIALS REQUIREMENTS FOR PRESSURISED EQUIPMENT AND PIPING. FOR CAUSTIC AND AMINE SERVICE THE FOLLOWING SHALL APPLY: - PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF ALL SITE PIPING FABRICATION WELDS IS REQUIRED FOR ALL WALL THICKNESSES. FOR MODERATE AND SEVERE WET H2S SERVICE THE FOLLOWING SHALL APPLY: PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF SITE FABRICATION CIRCUMFERENTIAL OR BRANCH WELDS IS NOT REQUIRED IF WELDS ARE MULTIPASS AND IN ACCORDANCE WITH PARA 10.2.12 OF PROJECT SPECIFICATION 3550-8440-SP-0002. FOR SERVICES MEETING THE WET H2S CRITERIA AND CAUSTIC OR AMINE CRITERIA THE MORE STRINGENT PWHT REQUIREMENT SHALL GOVERN.

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
24	FULL PORT (Q)
541	NPT(F) (CA,F)
773	CLASS 300 (B,F,G)
4608	VALVE WITH NIPPLES (V)

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PIPING CLASS
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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P01A-0010P	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	0.75		SCH160		P01A-0010R	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1		SCH160		P01A-0014M	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1.5		SCH160		P01A-0015J	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	2		XS		P01A-000YX	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	3		STD		P01A-000YM	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	4		STD		P01A-000YU	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	6		STD		P01A-000Z3	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	8		SCH30		P01A-001WL	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	10		SCH30		P01A-0016U	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	12		SCH30		P01A-0017K	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	14		SCH20		P01A-0017A	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	16		SCH20		P01A-0018E	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P02A-001Y8	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	0.75		SCH160		P02A-000V8	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1		SCH160		P02A-000V7	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1.5		SCH160		P02A-000V9	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	2		XS		P02A-000CP	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		STD		P02A-000CU	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		STD		P02A-000CZ	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		STD		P02A-000D6	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		SCH30		P02A-003DK	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	10		SCH30		P02A-000M3	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	12		SCH30		P02A-000M4	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	14		SCH20		P02A-000FX	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	16		SCH20		P02A-000GM	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P03A-001TC	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	0.75		SCH160		P03A-000RS	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1		SCH160		P03A-000RR	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1.5		SCH160		P03A-000RP	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	2		XS		P03A-000AS	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		STD		P03A-000AX	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		STD		P03A-000B1	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		STD		P03A-000B9	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		SCH30		P03A-003BE	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	10		SCH30		P03A-000JT	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	12		SCH30		P03A-000JU	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	14		SCH20		P03A-000DW	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	16		SCH20		P03A-000EM	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P21A-003AW	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	0.75		SCH160		P21A-002B8	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1		SCH160		P21A-002B6	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5		SCH160		P21A-002B9	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2		XS		P21A-001CJ	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		STD		P21A-001CU	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		STD		P21A-001CW	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6		STD		P21A-001D2	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8		SCH30		P21A-003WV	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10		SCH30		P21A-00259	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12		SCH30		P21A-0025A	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14		SCH20		P21A-00206	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16		SCH20		P21A-0020X	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

STRAIGHT LATERAL TEE (TLS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75		SCH160		P22A-000DZ	Straight lateral-tee ASTM A234 Grade WPB Seamless ASME B16.9 BW 60 degree	
1	1		SCH160		P22A-000F3	Straight lateral-tee ASTM A234 Grade WPB Seamless ASME B16.9 BW 60 degree	
1	1.5		SCH160		P22A-000F4	Straight lateral-tee ASTM A234 Grade WPB Seamless ASME B16.9 BW 60 degree	
1	2		XS		P22A-000DW	Straight lateral-tee ASTM A234 Grade WPB Seamless ASME B16.9 BW 60 degree	
1	3		STD		P22A-000DJ	Straight lateral-tee ASTM A234 Grade WPB Seamless ASME B16.9 BW 60 degree	
1	4		STD		P22A-000DX	Straight lateral-tee ASTM A234 Grade WPB Seamless ASME B16.9 BW 60 degree	
1	6		STD		P22A-000DY	Straight lateral-tee ASTM A234 Grade WPB Seamless ASME B16.9 BW 60 degree	
1	8		SCH30		P22A-000D8	Straight lateral-tee ASTM A234 Grade WPB Seamless ASME B16.9 BW 60 degree	
1	10		SCH30		P22A-000DS	Straight lateral-tee ASTM A234 Grade WPB Seamless ASME B16.9 BW 60 degree	
1	12		SCH30		P22A-000DT	Straight lateral-tee ASTM A234 Grade WPB Seamless ASME B16.9 BW 60 degree	
1	14		SCH20		P22A-000DU	Straight lateral-tee ASTM A234 Grade WPB Seamless ASME B16.9 BW 60 degree	
1	16		SCH20		P22A-000DV	Straight lateral-tee ASTM A234 Grade WPB Seamless ASME B16.9 BW 60 degree	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75	SCH160	SCH160	P24A-004B6	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.75	SCH160	SCH160	P24A-004B2	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	1	SCH160	SCH160	P24A-004BA	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	XS	SCH160	P24A-00GMB	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	XS	SCH160	P24A-005K9	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	STD	SCH160	P24A-00GMC	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	STD	XS	P24A-002HW	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P24A-002HY	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P24A-0021K	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	STD	P24A-0021A	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P24A-00229	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH30	STD	P24A-00JVH	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH30	STD	P24A-00JVG	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	SCH30	STD	P24A-00GNR	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	SCH30	STD	P24A-0060W	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	SCH30	SCH30	P24A-00J15	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	SCH30	STD	P24A-00HKT	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH30	SCH30	P24A-00M36	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH30	SCH30	P24A-003ET	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	SCH20	STD	P24A-00K0M	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	SCH20	SCH30	P24A-00M37	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	SCH20	SCH30	P24A-003ER	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	SCH20	SCH30	P24A-003ES	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	6	SCH20	STD	P24A-00GU4	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	SCH20	SCH30	P24A-00M38	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	SCH20	SCH30	P24A-00KSH	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	SCH20	SCH30	P24A-003XN	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	SCH20	SCH20	P24A-002XF	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	SCH160	P27A-004LZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.5	SCH160	SCH160	P27A-004M8	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.75	SCH160	SCH160	P27A-002T5	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.5	SCH160	SCH160	P27A-004MV	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.75	SCH160	SCH160	P27A-002T7	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	1	SCH160	SCH160	P27A-002T4	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	0.75	XS	SCH160	P27A-001LG	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	XS	SCH160	P27A-0033P	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2	1.5	XS	SCH160	P27A-0033B	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	STD	SCH160	P27A-003M9	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	STD	XS	P27A-001MZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	1.5	STD	SCH160	P27A-003MA	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P27A-001N0	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P27A-00189	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	STD	P27A-001AZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P27A-001GW	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH30	STD	P27A-00ED2	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH30	STD	P27A-00ECY	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	SCH30	STD	P27A-003MK	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	SCH30	STD	P27A-003ML	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	SCH30	SCH30	P27A-004T9	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	SCH30	STD	P27A-003MN	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH30	SCH30	P27A-004XA	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH30	SCH30	P27A-0028K	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	SCH20	STD	P27A-00518	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	SCH20	SCH30	P27A-0052J	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	SCH20	SCH30	P27A-0028G	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	SCH20	SCH30	P27A-0028H	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	SCH20	SCH30	P27A-0059E	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	SCH20	SCH30	P27A-003NC	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	SCH20	SCH30	P27A-002GH	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	SCH20	SCH20	P27A-001V2	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	SCH160	P28A-007KG	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.5	SCH160	SCH160	P28A-007KH	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.75	SCH160	SCH160	P28A-002TU	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.5	SCH160	SCH160	P28A-007KJ	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.75	SCH160	SCH160	P28A-002TW	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	1	SCH160	SCH160	P28A-002TR	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	0.75	XS	SCH160	P28A-001LE	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	XS	SCH160	P28A-003M1	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	XS	SCH160	P28A-003M2	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	STD	SCH160	P28A-003M3	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	STD	XS	P28A-001N5	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	1.5	STD	SCH160	P28A-003M4	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P28A-001N6	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P28A-0018B	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	STD	P28A-001AS	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P28A-00182	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH30	STD	P28A-00BFY	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH30	STD	P28A-00BFZ	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	SCH30	STD	P28A-003MD	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	SCH30	STD	P28A-003ME	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	SCH30	SCH30	P28A-00A4S	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	SCH30	STD	P28A-003MG	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH30	SCH30	P28A-00BGV	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH30	SCH30	P28A-0027C	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	SCH20	STD	P28A-0096P	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	SCH20	SCH30	P28A-00DA3	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	SCH20	SCH30	P28A-00279	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	SCH20	SCH30	P28A-0027A	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	SCH20	SCH30	P28A-00DA4	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	SCH20	SCH30	P28A-003N6	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	SCH20	SCH30	P28A-002GB	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	SCH20	SCH20	P28A-001WG	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P29A-00329	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	0.75		SCH160		P29A-001UF	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	1		SCH160		P29A-001TC	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	1.5		SCH160		P29A-001TD	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	2		XS		P29A-001VG	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	3		STD		P29A-001VK	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	4		STD		P29A-001VN	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	6		STD		P29A-001VS	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	8		SCH30		P29A-003G6	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	10		SCH30		P29A-003B5	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	12		SCH30		P29A-00373	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	14		SCH20		P29A-00360	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	16		SCH20		P29A-00361	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
541	0.75				P29B-0000Y	Cap ASTM A105 Class 6000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P41A-000B9	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		XXS		P41A-000BA	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		XXS		P41A-000D8	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		XXS		P41A-000D9	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2	0.75	XS	SCH160	P31B-00CP7	Outlet ASTM A105 MSS SP-97 BW	
1	3	0.75	STD	SCH160	P31B-00CMT	Outlet ASTM A105 MSS SP-97 BW	
1	4	0.75	STD	SCH160	P31B-00CLT	Outlet ASTM A105 MSS SP-97 BW	
1	6	0.75	STD	SCH160	P31B-00CKK	Outlet ASTM A105 MSS SP-97 BW	
1	8	0.75	SCH30	SCH160	P31B-00ZH5	Outlet ASTM A105 MSS SP-97 BW	
1	10	0.75	SCH30	SCH160	P31B-00YEZ	Outlet ASTM A105 MSS SP-97 BW	
1	12	0.75	SCH30	SCH160	P31B-00SWH	Outlet ASTM A105 MSS SP-97 BW	
1	14	0.75	SCH20	SCH160	P31B-00X17	Outlet ASTM A105 MSS SP-97 BW	
1	16	0.75	SCH20	SCH160	P31B-00XS0	Outlet ASTM A105 MSS SP-97 BW	
1	3	1	STD	SCH160	P31B-00B4J	Outlet ASTM A105 MSS SP-97 BW	
1	4	1	STD	SCH160	P31B-00B3M	Outlet ASTM A105 MSS SP-97 BW	
1	6	1	STD	SCH160	P31B-00AZC	Outlet ASTM A105 MSS SP-97 BW	
1	8	1	SCH30	SCH160	P31B-00ZH6	Outlet ASTM A105 MSS SP-97 BW	
1	10	1	SCH30	SCH160	P31B-00YF1	Outlet ASTM A105 MSS SP-97 BW	
1	12	1	SCH30	SCH160	P31B-00SWJ	Outlet ASTM A105 MSS SP-97 BW	
1	14	1	SCH20	SCH160	P31B-00X18	Outlet ASTM A105 MSS SP-97 BW	
1	16	1	SCH20	SCH160	P31B-00X8Z	Outlet ASTM A105 MSS SP-97 BW	
1	4	1.5	STD	SCH160	P31B-00BP4	Outlet ASTM A105 MSS SP-97 BW	
1	6	1.5	STD	SCH160	P31B-00BJH	Outlet ASTM A105 MSS SP-97 BW	
1	8	1.5	SCH30	SCH160	P31B-00BHM	Outlet ASTM A105 MSS SP-97 BW	
1	10	1.5	SCH30	SCH160	P31B-00AUR	Outlet ASTM A105 MSS SP-97 BW	
1	12	1.5	SCH30	SCH160	P31B-00CEJ	Outlet ASTM A105 MSS SP-97 BW	
1	14	1.5	SCH20	SCH160	P31B-00CDS	Outlet ASTM A105 MSS SP-97 BW	
1	16	1.5	SCH20	SCH160	P31B-00C9B	Outlet ASTM A105 MSS SP-97 BW	
1	6	2	STD	XS	P31B-007SH	Outlet ASTM A105 MSS SP-97 BW	
1	8	2	SCH30	XS	P31B-00X36	Outlet ASTM A105 MSS SP-97 BW	
1	10	2	SCH30	XS	P31B-00NVF	Outlet ASTM A105 MSS SP-97 BW	
1	12	2	SCH30	XS	P31B-00NVL	Outlet ASTM A105 MSS SP-97 BW	
1	14	2	SCH20	XS	P31B-00TF9	Outlet ASTM A105 MSS SP-97 BW	
1	16	2	SCH20	XS	P31B-00TF8	Outlet ASTM A105 MSS SP-97 BW	
1	8	3	SCH30	STD	P31B-00X37	Outlet ASTM A105 MSS SP-97 BW	
1	10	3	SCH30	STD	P31B-00NYK	Outlet ASTM A105 MSS SP-97 BW	
1	12	3	SCH30	STD	P31B-00NYR	Outlet ASTM A105 MSS SP-97 BW	
1	14	3	SCH20	STD	P31B-00UPH	Outlet ASTM A105 MSS SP-97 BW	
1	16	3	SCH20	STD	P31B-00TU2	Outlet ASTM A105 MSS SP-97 BW	

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OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	12	4	SCH30	STD	P31B-00P1G	Outlet ASTM A105 MSS SP-97 BW	
1	14	4	SCH20	STD	P31B-00UPJ	Outlet ASTM A105 MSS SP-97 BW	
1	16	4	SCH20	STD	P31B-00TU3	Outlet ASTM A105 MSS SP-97 BW	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30B-0002D	Plug ASTM A105 ASME B16.11 NPT Round head	
1	0.75				P30B-0002E	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1				P30B-0002F	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1.5				P30B-0002G	Plug ASTM A105 ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P61B-004V2	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	0.75		SCH160		P61B-0037H	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	1		SCH160		P61B-0037F	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	1.5		SCH160		P61B-0037N	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	2		XS		P61B-003NK	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	3		STD		P61B-001PW	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	4		STD		P61B-001R8	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	6		STD		P61B-001RT	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	8		SCH30		P61B-003FP	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	10		SCH30		P61B-003FS	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	12		SCH30		P61B-002TS	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	14		SCH20		P61B-002B6	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	16		SCH20		P61B-002B7	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
541	0.5				P61B-003TZ	Flange NPT ASTM A105 Class 150 ASME B16.5 RF	
541	0.75				P61B-003U0	Flange NPT ASTM A105 Class 150 ASME B16.5 RF	
773	0.5		SCH160		P61B-003P9	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	0.75		SCH160		P61B-0037M	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	1		SCH160		P61B-0037L	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	1.5		SCH160		P61B-0037J	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	2		XS		P61B-001HW	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	3		STD		P61B-001LJ	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	4		STD		P61B-001MC	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	6		STD		P61B-001N2	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	8		SCH30		P61B-008S0	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	10		SCH30		P61B-003LX	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	12		SCH30		P61B-002TV	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	14		SCH20		P61B-002MR	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	16		SCH20		P61B-002MS	Flange WN ASTM A105 Class 300 ASME B16.5 RF	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67B-000FH	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	0.75				P67B-000FJ	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	1				P67B-000FK	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	1.5				P67B-000FL	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	2				P67B-000FT	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	3				P67B-000FW	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	4				P67B-000FX	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	6				P67B-000FY	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	8				P67B-000FZ	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	10				P67B-000FM	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	12				P67B-000FN	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	14				P67B-000FP	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	16				P67B-000FR	Blind flange ASTM A105 Class 150 ASME B16.5 RF	

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REDUCING FLANGE (FR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2	0.75		SCH160	P62B-000NF	Reducing flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	2	1		SCH160	P62B-0006X	Reducing flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	2	1.5		SCH160	P62B-000K8	Reducing flange WN ASTM A105 Class 150 ASME B16.5 RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000L8	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000L9	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000LA	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000LB	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000LH	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000LL	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000LM	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	6				P73T-000LN	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	8				P73T-000LP	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	10				P73T-000LC	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	12				P73T-000LD	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	14				P73T-000LE	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	16				P73T-000LF	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	0.5				P73T-000FT	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	0.75				P73T-000FU	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	3				P73T-000G5	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	4				P73T-000G6	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	6				P73T-000G7	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	8				P73T-000G8	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	10				P73T-000FX	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	12				P73T-000FY	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	14				P73T-000FZ	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	16				P73T-000G0	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-16				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
773	0.5-10				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
773	12-16				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81B-0018G	Gate valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	0.75				P81B-0018H	Gate valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	1				P81B-0018J	Gate valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	1.5				P81B-0018K	Gate valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	2				P81C-004EG	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	

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GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3				P81C-004EH	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	4				P81C-004EJ	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	6				P81C-004EK	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	8				P81C-004EL	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	10				P81C-004EE	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	12				P81C-004EF	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	14				P81C-004E9	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Moderate wet H2S service	
1	16				P81C-004EA	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Moderate wet H2S service	
4608	0.75				P81B-002XY	Gate valve ASTM A105 Class 150 API 602 BW both sides w/ nipples BE - NPT ASTM A106-B XXS-nipple Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82B-0011M	Globe valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	0.75				P82B-0011N	Globe valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	1				P82B-0011P	Globe valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	1.5				P82B-0011R	Globe valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	2				P82C-00270	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	3				P82C-00271	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	4				P82C-00272	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	6				P82C-00273	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	8				P82C-00274	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83B-000TW	Check valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Moderate wet H2S service	
1	0.75				P83B-000TX	Check valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Moderate wet H2S service	
1	1				P83B-000TY	Check valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Moderate wet H2S service	
1	1.5				P83B-000TZ	Check valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Moderate wet H2S service	
1	2				P83C-0022G	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Moderate wet H2S service	
1	3				P83C-0022H	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Moderate wet H2S service	
1	4				P83C-0022J	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Moderate wet H2S service	
1	6				P83C-0022K	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Moderate wet H2S service	
1	8				P83C-0022L	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Moderate wet H2S service	
1	10				P83C-0022C	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Moderate wet H2S service	
1	12				P83C-0022D	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Moderate wet H2S service	
1	14				P83C-0022E	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Moderate wet H2S service	
1	16				P83C-0022F	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Moderate wet H2S service	

BALL VALVE (Q)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P84B-0012D	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design Moderate wet H2S service	
1	0.75				P84B-0012E	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design Moderate wet H2S service	
1	1				P84B-0012F	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design Moderate wet H2S service	
1	1.5				P84B-0012G	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design Moderate wet H2S service	

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BALL VALVE (Q)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2				P84C-005UV	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design Moderate wet H2S service	
1	3				P84C-005UW	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design Moderate wet H2S service	
1	4				P84C-005UX	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design Moderate wet H2S service	
1	6				P84C-005VC	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Reduced bore Fire tested design Moderate wet H2S service	
1	8				P84C-005VD	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Reduced bore Fire tested design Moderate wet H2S service	
1	10				P84C-005V6	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Reduced bore Fire tested design Moderate wet H2S service	
1	12				P84C-005V7	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Reduced bore Fire tested design Moderate wet H2S service	
1	14				P84C-005V8	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Reduced bore Fire tested design Moderate wet H2S service	
1	16				P84C-005V9	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Reduced bore Fire tested design Moderate wet H2S service	
24	0.5				P84B-00129	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design Moderate wet H2S service	
24	0.75				P84B-0012A	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design Moderate wet H2S service	
24	1				P84B-0012B	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design Moderate wet H2S service	
24	1.5				P84B-0012C	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design Moderate wet H2S service	
24	2				P84C-005US	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design Moderate wet H2S service	
24	3				P84C-005UT	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design Moderate wet H2S service	
24	4				P84C-005UU	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design Moderate wet H2S service	
24	6				P84C-005V4	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design Moderate wet H2S service	
24	8				P84C-005V5	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design Moderate wet H2S service	
24	10				P84C-005UY	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design Moderate wet H2S service	
24	12				P84C-005UZ	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design Moderate wet H2S service	
24	14				P84C-005V0	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design Moderate wet H2S service	
24	16				P84C-005V1	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design Moderate wet H2S service	

BUTTERFLY VALVE (H)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	10				P86C-00249	Offset design butterfly valve ASTM A216 Grade WCB Class 150 API 609 Category B Lug-type ASME B16.5 RF Disc CS Seat Stellite-6 Trim SS316 Triple eccentric design BG Gear operated Moderate wet H2S service	
1	12				P86C-0024A	Offset design butterfly valve ASTM A216 Grade WCB Class 150 API 609 Category B Lug-type ASME B16.5 RF Disc CS Seat Stellite-6 Trim SS316 Triple eccentric design BG Gear operated Moderate wet H2S service	
1	14				P86C-0024B	Offset design butterfly valve ASTM A216 Grade WCB Class 150 API 609 Category B Lug-type ASME B16.5 RF Disc CS Seat Stellite-6 Trim SS316 Triple eccentric design BG Gear operated Moderate wet H2S service	
1	16				P86C-0024C	Offset design butterfly valve ASTM A216 Grade WCB Class 150 API 609 Category B Lug-type ASME B16.5 RF Disc CS Seat Stellite-6 Trim SS316 Triple eccentric design BG Gear operated Moderate wet H2S service	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71B-0008A	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	0.75				P71B-0008B	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	1				P71B-0008C	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71B-0008D	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	

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SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2				P71B-0000P	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	3				P71B-0000N	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	4				P71B-0000M	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	6				P71B-0000L	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	8				P71B-0000R	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	10				P71B-0000K	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	12				P71B-0000J	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	

PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000AH	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	16				P72B-0000C	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	

PADDLE SPACER (PS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000AT	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	16				P72B-0000B	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	

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BOLT TABLE (B_A2AQ03 , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	60	P80S-008SY		
0.75	4	0.500	65	P80S-008SZ		
1	4	0.500	70	P80S-008T0		
1.5	4	0.500	75	P80S-008T1		
2	4	0.625	85	P80S-0090A		
3	4	0.625	95	P80S-0090C		
4	8	0.625	95	P80S-0090C		
6	8	0.750	105	P80S-0090E		
8	8	0.750	110	P80S-0090F		
10	12	0.875	120	P80S-005Z9		
12	12	0.875	120	P80S-005Z9		
14	12	1.000	135	P80S-00619		
16	16	1.000	140	P80S-0061A		

BOLT TABLE (B_A2AQ03_773 , STUD ASME RF, OPTION CODE 773)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-008T0		
0.75	4	0.625	75	P80S-00908		
1	4	0.625	80	P80S-00909		
1.5	4	0.750	95	P80S-005Z4		
2	8	0.625	90	P80S-0090B		
3	8	0.750	110	P80S-0090F		
4	8	0.750	115	P80S-0090G		
6	12	0.750	125	P80S-0090J		
8	12	0.875	140	P80S-005ZD		
10	16	1.000	160	P80S-0061E		
12	16	1.125	175	P80S-0064S		
14	20	1.125	180	P80S-0064T		
16	20	1.250	190	P80S-00689		

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BRANCH TABLE (T_A2AQ03)

RUN PIPE SIZE (in) \ BRANCH SIZE (in)	0.5	0.75	1	1.5	2	3	4	6	8	10	12	14	16
0.5	TS												
0.75		TS											
1		TR	TS										
1.5		TR	TR	TS									
2		L	TR	TR	TS								
3		L	L	TR	TR	TS							
4	L	L	L	L	TR	TR	TS						
6	L	L	L	L	L	TR	TR	TS					
8		L	L	L	L	L	TR	TR	TS				
10		L	L	L	L	L	TR	TR	TR	TS			
12		L	L	L	L	L	L	TR	TR	TR	TS		
14		L	L	L	L	L	L	TR	TR	TR	TR	TS	
16		L	L	L	L	L	L	TR	TR	TR	TR	TR	TS

TS : STRAIGHT TEE
TR : REDUCING TEE
L : OUTLET

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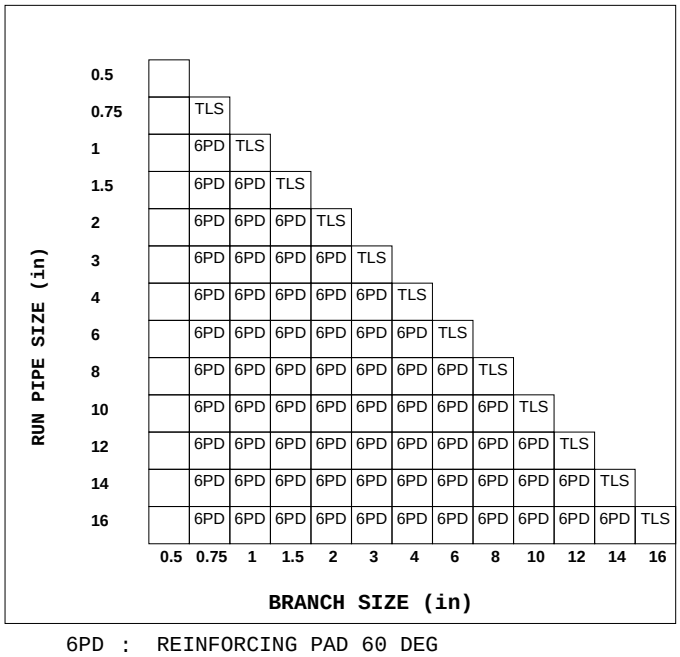
BRANCH TABLE (T_A2AQ03_3)



RUN PIPE SIZE (in) \ BRANCH SIZE (in)	0.5	0.75	1	1.5	2	3	4	6	8	10	12	14	16
0.5													
0.75		TLS											
1		6PD	TLS										
1.5		6PD	6PD	TLS									
2		6PD	6PD	6PD	TLS								
3		6PD	6PD	6PD	6PD	TLS							
4		6PD	6PD	6PD	6PD	6PD	TLS						
6		6PD	6PD	6PD	6PD	6PD	6PD	TLS					
8		6PD	6PD	6PD	6PD	6PD	6PD	6PD	TLS				
10		6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	TLS			
12		6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	TLS		
14		6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	TLS	
16		6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	TLS

6PD : REINFORCING PAD 60 DEG
TLS : STRAIGHT LATERAL TEE

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PIPING CLASS

A2AQ04 REV NO. 2

Material : Killed CS
Rating : ASME CLASS 150
Flange Face : RF
C.A.(mm) : 3.00
Gasket : Spiral Wound
Service : PROCESS -WET LOW SEVERITY SOUR SERVICE SUBJECT TO NACE
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
2	USE OF SOFT SEATED BALL, PLUG AND BUTTERFLY VALVES SHALL BE LIMITED TO MAXIMUM OF 204DEGC (400DEGF)
5	BOLTING CONFIRMING TO B7M / 2HM SHALL BE USED UNDER CONDITIONS (A) DIRECT EXPOSURE TO SOUR ENVIRONMENTS (B) WHEN THE BOLTING WILL BE BURIED OR INSULATED
27	PWHT OF CARBON STEEL PIPING IN WET H2S, CAUSTIC AND AMINE SERVICES SHALL BE IN ACCORDANCE WITH SECTION 10.2, 10.3, AND 10.4 OF PROJECT SPECIFICATION 3550-8440-SP-0002 MATERIALS REQUIREMENTS FOR PRESSURISED EQUIPMENT AND PIPING. FOR CAUSTIC AND AMINE SERVICE THE FOLLOWING SHALL APPLY: - PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF ALL SITE PIPING FABRICATION WELDS IS REQUIRED FOR ALL WALL THICKNESSES. FOR MODERATE AND SEVERE WET H2S SERVICE THE FOLLOWING SHALL APPLY: PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF SITE FABRICATION CIRCUMFERENTIAL OR BRANCH WELDS IS NOT REQUIRED IF WELDS ARE MULTIPASS AND IN ACCORDANCE WITH PARA 10.2.12 OF PROJECT SPECIFICATION 3550-8440-SP-0002. FOR SERVICES MEETING THE WET H2S CRITERIA AND CAUSTIC OR AMINE CRITERIA THE MORE STRINGENT PWHT REQUIREMENT SHALL GOVERN.

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
24	FULL PORT (Q)
541	NPT(F) (CA,F)
773	CLASS 300 (B,F,G)
781	CLASS 600 (B,F,G)
4608	VALVE WITH NIPPLES (V)

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PIPING CLASS
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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P01A-00143	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	0.75		SCH160		P01A-0010R	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1		SCH160		P01A-0014M	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1.5		SCH160		P01A-0015J	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	2		XS		P01A-000YX	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	3		XS		P01A-000Z4	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	4		STD		P01A-000YU	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	6		STD		P01A-000Z3	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	8		SCH30		P01A-001WL	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	10		SCH30		P01A-0016U	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	12		SCH30		P01A-0017K	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	14		STD		P01A-000Y1	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	16		STD		P01A-000Y9	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	18		STD		P01A-002CB	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	20		STD		P01A-002CC	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	24		XS		P01A-002MP	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	30		XS		P01A-008NE	Pipe ASTM A671 Grade CC60 Class 22 EFW ASME B36.10M/B36.19M BE Moderate wet H2S service Licensor-4	
1	36		XS		P01A-008NF	Pipe ASTM A671 Grade CC60 Class 22 EFW ASME B36.10M/B36.19M BE Moderate wet H2S service Licensor-4	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P02A-00172	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	0.75		SCH160		P02A-000V8	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1		SCH160		P02A-000V7	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1.5		SCH160		P02A-000V9	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	2		XS		P02A-000CP	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		XS		P02A-000CX	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		STD		P02A-000CZ	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		STD		P02A-000D6	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		SCH30		P02A-003DK	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	10		SCH30		P02A-000M3	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	12		SCH30		P02A-000M4	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	14		STD		P02A-000C8	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	16		STD		P02A-000CH	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	18		STD		P02A-0010H	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	20		STD		P02A-0010J	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	24		XS		P02A-000MB	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	30		XS		P02A-004FV	90 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius Moderate wet H2S service Licensor-4	
1	36		XS		P02A-004FW	90 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius Moderate wet H2S service Licensor-4	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P03A-0012Y	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	0.75		SCH160		P03A-000RS	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1		SCH160		P03A-000RR	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1.5		SCH160		P03A-000RP	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	2		XS		P03A-000AS	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		XS		P03A-000AZ	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		STD		P03A-000B1	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		STD		P03A-000B9	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		SCH30		P03A-003BE	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	10		SCH30		P03A-000JT	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	12		SCH30		P03A-000JU	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	14		STD		P03A-000AG	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	16		STD		P03A-000AM	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	18		STD		P03A-000X0	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	20		STD		P03A-000X1	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

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45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	24		XS		P03A-001E1	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	30		XS		P03A-004D3	45 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius Moderate wet H2S service Licensor-4	
1	36		XS		P03A-004D4	45 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius Moderate wet H2S service Licensor-4	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P21A-002M0	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	0.75		SCH160		P21A-002B8	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1		SCH160		P21A-002B6	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5		SCH160		P21A-002B9	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2		XS		P21A-001CJ	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		XS		P21A-001CR	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		STD		P21A-001CW	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6		STD		P21A-001D2	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8		SCH30		P21A-003WV	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10		SCH30		P21A-00259	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12		SCH30		P21A-0025A	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14		STD		P21A-001C8	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16		STD		P21A-001CD	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18		STD		P21A-002FT	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20		STD		P21A-002FU	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24		XS		P21A-002Y5	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	30		XS		P21A-004Y9	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Moderate wet H2S service Licensor-4	
1	36		XS		P21A-004YA	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Moderate wet H2S service Licensor-4	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75	SCH160	SCH160	P24A-004B6	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.75	SCH160	SCH160	P24A-004B2	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	1	SCH160	SCH160	P24A-004BA	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	XS	SCH160	P24A-00GMB	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	XS	SCH160	P24A-005K9	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	XS	SCH160	P24A-00GNV	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	XS	XS	P24A-0023S	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P24A-002HY	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	XS	P24A-00GNW	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	XS	P24A-00GTR	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P24A-00229	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH30	STD	P24A-00JVH	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH30	STD	P24A-00JVG	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	SCH30	STD	P24A-00GNR	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	SCH30	STD	P24A-0060W	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	SCH30	SCH30	P24A-00J15	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	SCH30	STD	P24A-00HKT	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH30	SCH30	P24A-00M36	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH30	SCH30	P24A-003ET	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	STD	STD	P24A-0026N	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	STD	SCH30	P24A-00NJ4	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	STD	SCH30	P24A-0060L	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	STD	SCH30	P24A-005KF	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	6	STD	STD	P24A-001ZC	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	STD	SCH30	P24A-00NJ5	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	STD	SCH30	P24A-00N27	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	STD	SCH30	P24A-00N3R	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	STD	STD	P24A-001Z4	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	8	STD	SCH30	P24A-00NHT	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	10	STD	SCH30	P24A-00MH8	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	12	STD	SCH30	P24A-00HL1	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	18	14	STD	STD	P24A-001YL	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	16	STD	STD	P24A-001ZU	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	8	STD	SCH30	P24A-00M3D	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	10	STD	SCH30	P24A-00M3C	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	12	STD	SCH30	P24A-00HKV	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	14	STD	STD	P24A-001YK	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	16	STD	STD	P24A-001ZV	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	18	STD	STD	P24A-0020K	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24	10	XS	SCH30	P24A-00NAF	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24	12	XS	SCH30	P24A-00NAG	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24	14	XS	STD	P24A-008B2	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24	16	XS	STD	P24A-00GRA	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24	18	XS	STD	P24A-00884	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24	20	XS	STD	P24A-00885	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	30	10	XS	SCH30	P24A-00NM5	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Moderate wet H2S service Licensor-4	
1	30	12	XS	SCH30	P24A-00NM6	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Moderate wet H2S service Licensor-4	
1	30	14	XS	STD	P24A-00NM7	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Moderate wet H2S service Licensor-4	
1	30	16	XS	STD	P24A-00NM8	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Moderate wet H2S service Licensor-4	
1	30	18	XS	STD	P24A-00NM9	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Moderate wet H2S service Licensor-4	
1	30	20	XS	STD	P24A-00NMA	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Moderate wet H2S service Licensor-4	
1	30	24	XS	XS	P24A-00NMB	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Moderate wet H2S service Licensor-4	
1	36	16	XS	STD	P24A-00NMC	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Moderate wet H2S service Licensor-4	
1	36	18	XS	STD	P24A-00NMD	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Moderate wet H2S service Licensor-4	
1	36	20	XS	STD	P24A-00NME	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Moderate wet H2S service Licensor-4	
1	36	24	XS	XS	P24A-00NMF	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Moderate wet H2S service Licensor-4	
1	36	30	XS	XS	P24A-00NMG	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Moderate wet H2S service Licensor-4	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	XXS	P27A-003ZL	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.5	SCH160	XXS	P27A-003ZM	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.75	SCH160	SCH160	P27A-002T5	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.5	SCH160	XXS	P27A-003ZN	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.75	SCH160	SCH160	P27A-002T7	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	1	SCH160	SCH160	P27A-002T4	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	0.75	XS	SCH160	P27A-001LG	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	XS	SCH160	P27A-0033P	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	XS	SCH160	P27A-0033B	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	XS	SCH160	P27A-003N1	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	XS	XS	P27A-001E5	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	1.5	STD	SCH160	P27A-003MA	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P27A-001N0	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	XS	P27A-0074W	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	XS	P27A-007P6	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P27A-001GW	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH30	STD	P27A-00ED2	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH30	STD	P27A-00ECY	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	SCH30	STD	P27A-003MK	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	SCH30	STD	P27A-003ML	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	SCH30	SCH30	P27A-004T9	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	SCH30	STD	P27A-003MN	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH30	SCH30	P27A-004XA	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH30	SCH30	P27A-0028K	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	STD	STD	P27A-0019L	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	STD	SCH30	P27A-0052U	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	STD	SCH30	P27A-003MB	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	STD	SCH30	P27A-003MP	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	STD	SCH30	P27A-0059W	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	STD	SCH30	P27A-0054N	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	16	12	STD	SCH30	P27A-00CBA	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	STD	STD	P27A-001A7	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	10	STD	SCH30	P27A-005BK	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	12	STD	SCH30	P27A-005DR	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	14	STD	STD	P27A-0037K	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	16	STD	STD	P27A-0037L	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	12	STD	SCH30	P27A-005LW	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	14	STD	STD	P27A-0037N	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	16	STD	STD	P27A-0037P	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	18	STD	STD	P27A-0037R	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24	16	XS	STD	P27A-005YC	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24	18	XS	STD	P27A-005ZZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24	20	XS	STD	P27A-0061M	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	30	20	XS	STD	P27A-00H7U	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Moderate wet H2S service Licensor-4	
1	30	24	XS	XS	P27A-00H7V	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Moderate wet H2S service Licensor-4	
1	36	24	XS	XS	P27A-00H7W	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Moderate wet H2S service Licensor-4	
1	36	30	XS	XS	P27A-00H7X	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Moderate wet H2S service Licensor-4	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	XXS	P28A-003ZE	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.5	SCH160	XXS	P28A-003ZF	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.75	SCH160	SCH160	P28A-002TU	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.5	SCH160	XXS	P28A-003ZG	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.75	SCH160	SCH160	P28A-002TW	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	1	SCH160	SCH160	P28A-002TR	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	0.75	XS	SCH160	P28A-001LE	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	XS	SCH160	P28A-003M1	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	XS	SCH160	P28A-003M2	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	XS	SCH160	P28A-003MV	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	XS	XS	P28A-001EH	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	1.5	STD	SCH160	P28A-003M4	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P28A-001N6	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	XS	P28A-008F7	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	XS	P28A-008K1	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P28A-00182	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH30	STD	P28A-00BFY	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH30	STD	P28A-00BFZ	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	SCH30	STD	P28A-003MD	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	SCH30	STD	P28A-003ME	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	SCH30	SCH30	P28A-00A4S	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	SCH30	STD	P28A-003MG	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH30	SCH30	P28A-00BGV	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH30	SCH30	P28A-0027C	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	STD	STD	P28A-0019R	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	STD	SCH30	P28A-00BGW	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	STD	SCH30	P28A-003M5	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	STD	SCH30	P28A-003MH	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	STD	SCH30	P28A-00EDR	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	STD	SCH30	P28A-00E3U	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	STD	SCH30	P28A-009AH	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	STD	STD	P28A-001AC	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	10	STD	SCH30	P28A-0063T	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	12	STD	SCH30	P28A-0096W	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	14	STD	STD	P28A-00372	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	16	STD	STD	P28A-00373	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	12	STD	SCH30	P28A-0096R	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	14	STD	STD	P28A-00375	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	16	STD	STD	P28A-00376	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	20	18	STD	STD	P28A-00377	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24	16	XS	STD	P28A-008HA	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24	18	XS	STD	P28A-0063W	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24	20	XS	STD	P28A-0063X	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	30	20	XS	STD	P28A-00EFH	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Moderate wet H2S service Licensor-4	
1	30	24	XS	XS	P28A-00EFJ	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Moderate wet H2S service Licensor-4	
1	36	24	XS	XS	P28A-00EFK	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Moderate wet H2S service Licensor-4	
1	36	30	XS	XS	P28A-00EFL	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Moderate wet H2S service Licensor-4	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P29A-001UE	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	0.75		SCH160		P29A-001UF	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	1		SCH160		P29A-001TC	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	1.5		SCH160		P29A-001TD	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	2		XS		P29A-001VG	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	3		XS		P29A-001X4	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	4		STD		P29A-001VN	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	6		STD		P29A-001VS	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	8		SCH30		P29A-003G6	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	10		SCH30		P29A-003B5	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	12		SCH30		P29A-00373	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	14		STD		P29A-001VD	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	16		STD		P29A-001VE	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	18		STD		P29A-001VF	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	20		STD		P29A-001VH	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	24		XS		P29A-001VJ	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	30		XS		P29A-003BX	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	36		XS		P29A-001VM	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
541	0.75				P29B-0000Y	Cap ASTM A105 Class 6000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P41A-000B9	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		XXS		P41A-000BA	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		XXS		P41A-000D8	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		XXS		P41A-000D9	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2	0.75	XS	SCH160	P31B-00CP7	Outlet ASTM A105 MSS SP-97 BW	
1	3	0.75	XS	SCH160	P31B-00CMS	Outlet ASTM A105 MSS SP-97 BW	
1	4	0.75	STD	SCH160	P31B-00CLT	Outlet ASTM A105 MSS SP-97 BW	
1	6	0.75	STD	SCH160	P31B-00CKK	Outlet ASTM A105 MSS SP-97 BW	
1	8	0.75	SCH30	SCH160	P31B-00ZH5	Outlet ASTM A105 MSS SP-97 BW	
1	10	0.75	SCH30	SCH160	P31B-00YEZ	Outlet ASTM A105 MSS SP-97 BW	
1	12	0.75	SCH30	SCH160	P31B-00SWH	Outlet ASTM A105 MSS SP-97 BW	
1	14	0.75	STD	SCH160	P31B-00TPM	Outlet ASTM A105 MSS SP-97 BW	
1	16	0.75	STD	SCH160	P31B-00CR7	Outlet ASTM A105 MSS SP-97 BW	
1	18	0.75	STD	SCH160	P31B-00CPL	Outlet ASTM A105 MSS SP-97 BW	
1	20	0.75	STD	SCH160	P31B-00CNW	Outlet ASTM A105 MSS SP-97 BW	
1	24	0.75	XS	SCH160	P31B-007N3	Outlet ASTM A105 MSS SP-97 BW	
1	30	0.75	XS	SCH160	P31B-00CMF	Outlet ASTM A105 MSS SP-97 BW	
1	36	0.75	XS	SCH160	P31B-00CM3	Outlet ASTM A105 MSS SP-97 BW	
1	3	1	XS	SCH160	P31B-00B4H	Outlet ASTM A105 MSS SP-97 BW	
1	4	1	STD	SCH160	P31B-00B3M	Outlet ASTM A105 MSS SP-97 BW	
1	6	1	STD	SCH160	P31B-00AZC	Outlet ASTM A105 MSS SP-97 BW	
1	8	1	SCH30	SCH160	P31B-00ZH6	Outlet ASTM A105 MSS SP-97 BW	
1	10	1	SCH30	SCH160	P31B-00YF1	Outlet ASTM A105 MSS SP-97 BW	

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OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	12	1	SCH30	SCH160	P31B-00SWJ	Outlet ASTM A105 MSS SP-97 BW	
1	14	1	STD	SCH160	P31B-00TPN	Outlet ASTM A105 MSS SP-97 BW	
1	16	1	STD	SCH160	P31B-00BR6	Outlet ASTM A105 MSS SP-97 BW	
1	18	1	STD	SCH160	P31B-00BC9	Outlet ASTM A105 MSS SP-97 BW	
1	20	1	STD	SCH160	P31B-00B8M	Outlet ASTM A105 MSS SP-97 BW	
1	24	1	XS	SCH160	P31B-007MU	Outlet ASTM A105 MSS SP-97 BW	
1	30	1	XS	SCH160	P31B-00B45	Outlet ASTM A105 MSS SP-97 BW	
1	36	1	XS	SCH160	P31B-00B3W	Outlet ASTM A105 MSS SP-97 BW	
1	4	1.5	STD	SCH160	P31B-00BP4	Outlet ASTM A105 MSS SP-97 BW	
1	6	1.5	STD	SCH160	P31B-00BJH	Outlet ASTM A105 MSS SP-97 BW	
1	8	1.5	SCH30	SCH160	P31B-00BHM	Outlet ASTM A105 MSS SP-97 BW	
1	10	1.5	SCH30	SCH160	P31B-00AUR	Outlet ASTM A105 MSS SP-97 BW	
1	12	1.5	SCH30	SCH160	P31B-00CEJ	Outlet ASTM A105 MSS SP-97 BW	
1	14	1.5	STD	SCH160	P31B-00TPP	Outlet ASTM A105 MSS SP-97 BW	
1	16	1.5	STD	SCH160	P31B-00C99	Outlet ASTM A105 MSS SP-97 BW	
1	18	1.5	STD	SCH160	P31B-00C4R	Outlet ASTM A105 MSS SP-97 BW	
1	20	1.5	STD	SCH160	P31B-00C3Y	Outlet ASTM A105 MSS SP-97 BW	
1	24	1.5	XS	SCH160	P31B-007MM	Outlet ASTM A105 MSS SP-97 BW	
1	30	1.5	XS	SCH160	P31B-00BYJ	Outlet ASTM A105 MSS SP-97 BW	
1	36	1.5	XS	SCH160	P31B-00BPN	Outlet ASTM A105 MSS SP-97 BW	
1	6	2	STD	XS	P31B-007SH	Outlet ASTM A105 MSS SP-97 BW	
1	8	2	SCH30	XS	P31B-00X36	Outlet ASTM A105 MSS SP-97 BW	
1	10	2	SCH30	XS	P31B-00NVF	Outlet ASTM A105 MSS SP-97 BW	
1	12	2	SCH30	XS	P31B-00NVL	Outlet ASTM A105 MSS SP-97 BW	
1	14	2	STD	XS	P31B-00CAE	Outlet ASTM A105 MSS SP-97 BW	
1	16	2	STD	XS	P31B-00C1T	Outlet ASTM A105 MSS SP-97 BW	
1	18	2	STD	XS	P31B-009FJ	Outlet ASTM A105 MSS SP-97 BW	
1	20	2	STD	XS	P31B-00994	Outlet ASTM A105 MSS SP-97 BW	
1	24	2	XS	XS	P31B-0092Y	Outlet ASTM A105 MSS SP-97 BW	
1	30	2	XS	XS	P31B-008P4	Outlet ASTM A105 MSS SP-97 BW	
1	36	2	XS	XS	P31B-008BB	Outlet ASTM A105 MSS SP-97 BW	
1	8	3	SCH30	XS	P31B-00ZH7	Outlet ASTM A105 MSS SP-97 BW	
1	10	3	SCH30	XS	P31B-00NYL	Outlet ASTM A105 MSS SP-97 BW	
1	12	3	SCH30	XS	P31B-00NYT	Outlet ASTM A105 MSS SP-97 BW	
1	14	3	STD	XS	P31B-0090L	Outlet ASTM A105 MSS SP-97 BW	
1	16	3	STD	XS	P31B-008UE	Outlet ASTM A105 MSS SP-97 BW	
1	18	3	STD	XS	P31B-008MC	Outlet ASTM A105 MSS SP-97 BW	
1	20	3	STD	XS	P31B-008F4	Outlet ASTM A105 MSS SP-97 BW	
1	24	3	XS	XS	P31B-0088Y	Outlet ASTM A105 MSS SP-97 BW	
1	30	3	XS	XS	P31B-00ENG	Outlet ASTM A105 MSS SP-97 BW	
1	36	3	XS	XS	P31B-00ENU	Outlet ASTM A105 MSS SP-97 BW	
1	12	4	SCH30	STD	P31B-00P1G	Outlet ASTM A105 MSS SP-97 BW	
1	14	4	STD	STD	P31B-008YM	Outlet ASTM A105 MSS SP-97 BW	
1	16	4	STD	STD	P31B-008SH	Outlet ASTM A105 MSS SP-97 BW	
1	18	4	STD	STD	P31B-008KB	Outlet ASTM A105 MSS SP-97 BW	
1	20	4	STD	STD	P31B-008D3	Outlet ASTM A105 MSS SP-97 BW	
1	24	4	XS	STD	P31B-0086W	Outlet ASTM A105 MSS SP-97 BW	
1	30	4	XS	STD	P31B-007UR	Outlet ASTM A105 MSS SP-97 BW	
1	36	4	XS	STD	P31B-00AEP	Outlet ASTM A105 MSS SP-97 BW	
1	18	6	STD	STD	P31B-008RX	Outlet ASTM A105 MSS SP-97 BW	
1	20	6	STD	STD	P31B-008PZ	Outlet ASTM A105 MSS SP-97 BW	
1	24	6	XS	STD	P31B-008JC	Outlet ASTM A105 MSS SP-97 BW	
1	30	6	XS	STD	P31B-008BR	Outlet ASTM A105 MSS SP-97 BW	
1	36	6	XS	STD	P31B-0085G	Outlet ASTM A105 MSS SP-97 BW	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30B-0002D	Plug ASTM A105 ASME B16.11 NPT Round head	
2	0.75				P30B-0002E	Plug ASTM A105 ASME B16.11 NPT Round head	

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PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P30B-0002F	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1.5				P30B-0002G	Plug ASTM A105 ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P61B-003LE	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	0.75		SCH160		P61B-0037H	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	1		SCH160		P61B-0037F	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	1.5		SCH160		P61B-0037N	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	2		XS		P61B-003NK	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	3		XS		P61B-003JD	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	4		STD		P61B-001R8	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	6		STD		P61B-001RT	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	8		SCH30		P61B-003FP	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	10		SCH30		P61B-003FS	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	12		SCH30		P61B-002TS	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	14		STD		P61B-001SN	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	16		STD		P61B-001T5	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	18		STD		P61B-001T4	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	20		STD		P61B-001JA	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	24		XS		P61B-002F2	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	30		XS		P61B-001SJ	Flange WN ASTM A105 Class 150 ASME B16.47 Series B RF	
1	36		XS		P61B-001UE	Flange WN ASTM A105 Class 150 ASME B16.47 Series B RF	
541	0.5				P61B-003TZ	Flange NPT ASTM A105 Class 150 ASME B16.5 RF	
541	0.75				P61B-003U0	Flange NPT ASTM A105 Class 150 ASME B16.5 RF	
773	0.5		XXS		P61B-003LW	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	0.75		SCH160		P61B-0037M	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	1		SCH160		P61B-0037L	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	1.5		SCH160		P61B-0037J	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	2		XS		P61B-001HW	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	3		XS		P61B-001DK	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	4		STD		P61B-001MC	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	6		STD		P61B-001N2	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	8		SCH30		P61B-008S0	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	10		SCH30		P61B-003LX	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	12		SCH30		P61B-002TV	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	14		STD		P61B-001M9	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	16		STD		P61B-001MH	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	18		STD		P61B-001N9	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	20		STD		P61B-001NT	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	24		XS		P61B-002RA	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	30		XS		P61B-001KT	Flange WN ASTM A105 Class 300 ASME B16.47 Series B RF	
773	36		XS		P61B-001N6	Flange WN ASTM A105 Class 300 ASME B16.47 Series B RF	
781	0.5		XXS		P61B-003T1	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	0.75		SCH160		P61B-003T2	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	1		SCH160		P61B-003T3	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	1.5		SCH160		P61B-003T4	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	2		XS		P61B-001DH	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	3		XS		P61B-001M8	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	4		STD		P61B-001VV	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	6		STD		P61B-001JW	Flange WN ASTM A105 Class 600 ASME B16.5 RF	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67B-000FH	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	0.75				P67B-000FJ	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	1				P67B-000FK	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	1.5				P67B-000FL	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	2				P67B-000FT	Blind flange ASTM A105 Class 150 ASME B16.5 RF	

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BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3				P67B-000FW	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	4				P67B-000FX	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	6				P67B-000FY	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	8				P67B-000FZ	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	10				P67B-000FM	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	12				P67B-000FN	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	14				P67B-000FP	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	16				P67B-000FR	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	18				P67B-000FS	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	20				P67B-000FU	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	24				P67B-000FV	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	30				P67B-000G2	Blind flange ASTM A105 Class 150 ASME B16.47 Series B RF	
1	36				P67B-000G5	Blind flange ASTM A105 Class 150 ASME B16.47 Series B RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000L8	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000L9	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000LA	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000LB	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000LH	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000LL	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000LM	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	6				P73T-000LN	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	8				P73T-000LP	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	10				P73T-000LC	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	12				P73T-000LD	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	14				P73T-000LE	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	16				P73T-000LF	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	18				P73T-000LG	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	20				P73T-000LJ	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	24				P73T-000LK	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	30				P73T-000LT	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	36				P73T-000LW	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	0.5				P73T-000FT	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	0.75				P73T-000FU	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	3				P73T-000G5	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	4				P73T-000G6	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	6				P73T-000G7	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	8				P73T-000G8	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	10				P73T-000FX	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	12				P73T-000FY	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	14				P73T-000FZ	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	16				P73T-000G0	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	18				P73T-000G1	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

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GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
773	20				P73T-000G3	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	24				P73T-000G4	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	30				P73T-000H9	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	36				P73T-000HC	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	0.5				P73T-000J8	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	0.75				P73T-000J9	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1				P73T-000JA	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1.5				P73T-000JB	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	2				P73T-000JH	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	3				P73T-000JL	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	4				P73T-000JM	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	6				P73T-000JN	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-16				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	18-24				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
1	30-36				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
773	0.5-10				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
773	12-36				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
781	0.5-6				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81B-0018G	Gate valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	0.75				P81B-0018H	Gate valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	1				P81B-0018J	Gate valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	1.5				P81B-0018K	Gate valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	2				P81C-006MD	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Licensor-4	
1	3				P81C-006ME	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Licensor-4	
1	4				P81C-006MF	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Licensor-4	
1	6				P81C-006MJ	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Licensor-4	
1	8				P81C-006MK	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Licensor-4	
1	10				P81C-006MG	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Licensor-4	
1	12				P81C-006MH	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Licensor-4	
1	14				P81C-006ML	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Moderate wet H2S service Licensor-4	
1	16				P81C-006MM	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Moderate wet H2S service Licensor-4	
1	18				P81C-006MN	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Moderate wet H2S service Licensor-4	
1	20				P81C-006MP	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Moderate wet H2S service Licensor-4	
1	24				P81C-006MR	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Moderate wet H2S service Licensor-4	
1	30				P81C-006MS	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.47-B RF Trim number 12 BB-BG-OS&Y Gear operated Moderate wet H2S service Licensor-4	
1	36				P81C-006MT	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.47-B RF Trim number 12 BB-BG-OS&Y Gear operated Moderate wet H2S service Licensor-4	
4608	0.75				P81B-002XY	Gate valve ASTM A105 Class 150 API 602 BW both sides w/ nipples BE - NPT ASTM A106-B XXS-nipple Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	

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GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82B-0011M	Globe valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	0.75				P82B-0011N	Globe valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	1				P82B-0011P	Globe valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	1.5				P82B-0011R	Globe valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	2				P82C-0036V	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Licensor-4	
1	3				P82C-0036W	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Licensor-4	
1	4				P82C-0036X	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Licensor-4	
1	6				P82C-0036Y	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Licensor-4	
1	8				P82C-0036Z	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Licensor-4	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83B-000TW	Check valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Moderate wet H2S service	
1	0.75				P83B-000TX	Check valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Moderate wet H2S service	
1	1				P83B-000TY	Check valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Moderate wet H2S service	
1	1.5				P83B-000TZ	Check valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Moderate wet H2S service	
1	2				P83C-00336	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Moderate wet H2S service Licensor-4	
1	3				P83C-00337	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Moderate wet H2S service Licensor-4	
1	4				P83C-00338	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Moderate wet H2S service Licensor-4	
1	6				P83C-0033C	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Moderate wet H2S service Licensor-4	
1	8				P83C-0033D	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Moderate wet H2S service Licensor-4	
1	10				P83C-00339	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Moderate wet H2S service Licensor-4	
1	12				P83C-0033A	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Moderate wet H2S service Licensor-4	
1	14				P83C-0033B	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Moderate wet H2S service Licensor-4	

BALL VALVE (Q)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P84B-0012D	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design Moderate wet H2S service	
1	0.75				P84B-0012E	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design Moderate wet H2S service	
1	1				P84B-0012F	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design Moderate wet H2S service	
1	1.5				P84B-0012G	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design Moderate wet H2S service	
1	2				P84C-006S9	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design Moderate wet H2S service Licensor-4	
1	3				P84C-006SA	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design Moderate wet H2S service Licensor-4	
1	4				P84C-006SB	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design Moderate wet H2S service Licensor-4	
1	6				P84C-006SH	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Reduced bore Fire tested design Moderate wet H2S service Licensor-4	
1	8				P84C-006SJ	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Reduced bore Fire tested design Moderate wet H2S service Licensor-4	
1	10				P84C-006SE	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Reduced bore Fire tested design Moderate wet H2S service Licensor-4	
1	12				P84C-006SF	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Reduced bore Fire tested design Moderate wet H2S service Licensor-4	
1	14				P84C-006SG	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Reduced bore Fire tested design Moderate wet H2S service Licensor-4	

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BALL VALVE (Q)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
24	0.5				P84B-00129	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design Moderate wet H2S service	
24	0.75				P84B-0012A	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design Moderate wet H2S service	
24	1				P84B-0012B	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design Moderate wet H2S service	
24	1.5				P84B-0012C	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design Moderate wet H2S service	
24	2				P84C-006S6	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design Moderate wet H2S service Licensor-4	
24	3				P84C-006S7	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design Moderate wet H2S service Licensor-4	
24	4				P84C-006S8	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design Moderate wet H2S service Licensor-4	
24	6				P84C-006SN	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design Moderate wet H2S service Licensor-4	
24	8				P84C-006SP	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design Moderate wet H2S service Licensor-4	
24	10				P84C-006SK	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design Moderate wet H2S service Licensor-4	
24	12				P84C-006SL	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design Moderate wet H2S service Licensor-4	
24	14				P84C-006SM	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design Moderate wet H2S service Licensor-4	

BUTTERFLY VALVE (H)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	10				P86C-0024M	Offset design butterfly valve ASTM A216 Grade WCB Class 150 API 609 Category B Lug-type ASME B16.5 RF Disc CS Seat Stellite-6 Trim SS316 Triple eccentric design BG Gear operated Moderate wet H2S service Licensor-4	
1	12				P86C-0024N	Offset design butterfly valve ASTM A216 Grade WCB Class 150 API 609 Category B Lug-type ASME B16.5 RF Disc CS Seat Stellite-6 Trim SS316 Triple eccentric design BG Gear operated Moderate wet H2S service Licensor-4	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71B-0008A	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	0.75				P71B-0008B	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	1				P71B-0008C	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71B-0008D	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	2				P71B-0000P	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	3				P71B-0000N	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	4				P71B-0000M	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	6				P71B-0000L	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	8				P71B-0000R	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	10				P71B-0000K	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	12				P71B-0000J	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	

PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000AH	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	16				P72B-0000C	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	18				P72B-000AJ	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	20				P72B-000AK	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	24				P72B-000AL	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	30				P72B-000AM	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	36				P72B-000AN	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	

PADDLE SPACER (PS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000AT	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	

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PADDLE SPACER (PS)							
OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	16				P72B-0000B	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	18				P72B-000AU	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	20				P72B-000AV	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	24				P72B-000AW	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	30				P72B-000AX	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	36				P72B-000AY	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	

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BOLT TABLE (B_A2AQ04 , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	60	P80S-008SY		
0.75	4	0.500	65	P80S-008SZ		
1	4	0.500	70	P80S-008T0		
1.5	4	0.500	75	P80S-008T1		
2	4	0.625	85	P80S-0090A		
3	4	0.625	95	P80S-0090C		
4	8	0.625	95	P80S-0090C		
6	8	0.750	105	P80S-0090E		
8	8	0.750	110	P80S-0090F		
10	12	0.875	120	P80S-005Z9		
12	12	0.875	120	P80S-005Z9		
14	12	1.000	135	P80S-00619		
16	16	1.000	140	P80S-0061A		
18	16	1.125	150	P80S-0064L		
20	20	1.125	160	P80S-0064N		
24	20	1.250	175	P80S-00686		
30	44	0.750	145	P80S-0090N		
36	44	0.875	175	P80S-005ZL		

BOLT TABLE (B_A2AQ04_773 , STUD ASME RF, OPTION CODE 773)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-008T0		
0.75	4	0.625	75	P80S-00908		
1	4	0.625	80	P80S-00909		
1.5	4	0.750	95	P80S-005Z4		
2	8	0.625	90	P80S-0090B		
3	8	0.750	110	P80S-0090F		
4	8	0.750	115	P80S-0090G		
6	12	0.750	125	P80S-0090J		
8	12	0.875	140	P80S-005ZD		
10	16	1.000	160	P80S-0061E		
12	16	1.125	175	P80S-0064S		
14	20	1.125	180	P80S-0064T		
16	20	1.250	190	P80S-00689		
18	24	1.250	200	P80S-0068B		
20	24	1.250	210	P80S-0068D		
24	24	1.500	235	P80S-006LB		
30	36	1.375	285	P80S-006HY		
36	32	1.625	320	P80S-00A5E		

BOLT TABLE (B_A2AQ04_781 , STUD ASME RF, OPTION CODE 781)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	80	P80S-008T2		
0.75	4	0.625	90	P80S-0090B		
1	4	0.625	95	P80S-0090C		
1.5	4	0.750	110	P80S-0090F		
2	8	0.625	110	P80S-008T8		
3	8	0.750	130	P80S-0090K		
4	8	0.875	150	P80S-005ZF		
6	12	1.000	175	P80S-0061H		
8	12	1.125	195			
10	16	1.250	250			
12	20	1.250	255			
14	20	1.375	270			
16	20	1.500	295			
18	20	1.625	320			
20	24	1.625	335			
24	24	1.875	380			
30	28	1.875	435			
36	28	2.250	510			

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BRANCH TABLE (T_A2AQ04)

RUN PIPE SIZE (in) \ BRANCH SIZE (in)	0.5	0.75	1	1.5	2	3	4	6	8	10	12	14	16	18	20	24	30	36
0.5	TS																	
0.75		TS																
1		TR	TS															
1.5		TR	TR	TS														
2		L	TR	TR	TS													
3		L	L	TR	TR	TS												
4	L	L	L	L	TR	TR	TS											
6	L	L	L	L	L	TR	TR	TS										
8		L	L	L	L	L	TR	TR	TS									
10		L	L	L	L	L	TR	TR	TR	TS								
12		L	L	L	L	L	L	TR	TR	TR	TS							
14		L	L	L	L	L	L	TR	TR	TR	TR	TS						
16		L	L	L	L	L	L	TR	TR	TR	TR	TR	TS					
18		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TS				
20		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TR	TS			
24		L	L	L	L	L	L	L	9PD	TR	TR	TR	TR	TR	TR	TS		
30		L	L	L	L	L	L	L	9PD	TR	TR	TR	TR	TR	TR	TR	TS	
36		L	L	L	L	L	L	L	9PD	9PD	9PD	9PD	TR	TR	TR	TR	TR	TS

L : OUTLET
9PD : REINFORCING PAD 90 DEG
TS : STRAIGHT TEE
TR : REDUCING TEE

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PIPING CLASS

A2AQCL **REV NO. 2**

Material : Killed CS
Rating : ASME CLASS 150
Flange Face : RF
C.A.(mm) : 3.00
Gasket : Spiral Wound
Service : PROCESS -WET LOW SEVERITY SOUR SERVICE SUBJECT TO NACE
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
2	USE OF SOFT SEATED BALL, PLUG AND BUTTERFLY VALVES SHALL BE LIMITED TO MAXIMUM OF 204DEGC (400DEGF)
5	BOLTING CONFIRMING TO B7M / 2HM SHALL BE USED UNDER CONDITIONS (A) DIRECT EXPOSURE TO SOUR ENVIRONMENTS (B) WHEN THE BOLTING WILL BE BURIED OR INSULATED
27	PWHT OF CARBON STEEL PIPING IN WET H2S, CAUSTIC AND AMINE SERVICES SHALL BE IN ACCORDANCE WITH SECTION 10.2, 10.3, AND 10.4 OF PROJECT SPECIFICATION 3550-8440-SP-0002 MATERIALS REQUIREMENTS FOR PRESSURISED EQUIPMENT AND PIPING. FOR CAUSTIC AND AMINE SERVICE THE FOLLOWING SHALL APPLY: - PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF ALL SITE PIPING FABRICATION WELDS IS REQUIRED FOR ALL WALL THICKNESSES. FOR MODERATE AND SEVERE WET H2S SERVICE THE FOLLOWING SHALL APPLY: PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF SITE FABRICATION CIRCUMFERENTIAL OR BRANCH WELDS IS NOT REQUIRED IF WELDS ARE MULTIPASS AND IN ACCORDANCE WITH PARA 10.2.12 OF PROJECT SPECIFICATION 3550-8440-SP-0002. FOR SERVICES MEETING THE WET H2S CRITERIA AND CAUSTIC OR AMINE CRITERIA THE MORE STRINGENT PWHT REQUIREMENT SHALL GOVERN.

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
541	NPT(F) (F)
773	CLASS 300 (B,F,FR,G)
4610	JACKETED VALVE (1.5" X 0.75") (PV)
4611	JACKETED VALVE (3" X 2") (PV,X)
4612	CLASS 300 JACKETED VALVE (3" X 2") (PV)

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PIPING CLASS
A2AQCL REV NO. 2

PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P01A-0010P	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	0.75		SCH160		P01A-0010R	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1		SCH160		P01A-0014M	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1.5		SCH160		P01A-0015J	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	2		XS		P01A-000YX	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	3		STD		P01A-000YM	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	4		STD		P01A-000YU	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	6		STD		P01A-000Z3	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	8		SCH30		P01A-001WL	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	10		SCH30		P01A-0016U	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	12		SCH30		P01A-0017K	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	14		SCH20		P01A-0017A	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	16		SCH20		P01A-0018E	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	18		SCH20		P01A-00370	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	20		STD		P01A-002CC	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	24		STD		P01A-002CD	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	30		STD		P01A-007TC	Pipe ASTM A671 Grade CC60 Class 22 EFW ASME B36.10M/B36.19M BE Moderate wet H2S service	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P02A-001Y8	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	0.75		SCH160		P02A-000V8	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1		SCH160		P02A-000V7	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1.5		SCH160		P02A-000V9	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	2		XS		P02A-000CP	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		STD		P02A-000CU	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		STD		P02A-000CZ	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		STD		P02A-000D6	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		SCH30		P02A-003DK	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	10		SCH30		P02A-000M3	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	12		SCH30		P02A-000M4	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	14		SCH20		P02A-000FX	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	16		SCH20		P02A-000GM	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	18		SCH20		P02A-000LT	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	20		STD		P02A-0010J	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	24		STD		P02A-0010K	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	30		STD		P02A-002JF	90 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius Moderate wet H2S service	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P03A-001TC	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	0.75		SCH160		P03A-000RS	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1		SCH160		P03A-000RR	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1.5		SCH160		P03A-000RP	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	2		XS		P03A-000AS	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		STD		P03A-000AX	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		STD		P03A-000B1	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		STD		P03A-000B9	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		SCH30		P03A-003BE	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	10		SCH30		P03A-000JT	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	12		SCH30		P03A-000JU	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	14		SCH20		P03A-000DW	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	16		SCH20		P03A-000EM	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	18		SCH20		P03A-001DX	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	20		STD		P03A-000X1	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	24		STD		P03A-000X2	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	30		STD		P03A-002FZ	45 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius Moderate wet H2S service	

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PIPING CLASS
A2AQCL REV NO. 2

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P21A-003AW	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	0.75		SCH160		P21A-002B8	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1		SCH160		P21A-002B6	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5		SCH160		P21A-002B9	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2		XS		P21A-001CJ	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		STD		P21A-001CU	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		STD		P21A-001CW	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6		STD		P21A-001D2	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8		SCH30		P21A-003WV	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10		SCH30		P21A-00259	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12		SCH30		P21A-0025A	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14		SCH20		P21A-00206	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16		SCH20		P21A-0020X	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18		SCH20		P21A-002Y1	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20		STD		P21A-002FU	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24		STD		P21A-002FV	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	30		STD		P21A-003H1	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Moderate wet H2S service	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75	SCH160	SCH160	P24A-004B6	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.75	SCH160	SCH160	P24A-004B2	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	1	SCH160	SCH160	P24A-004BA	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	XS	SCH160	P24A-00GMB	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	XS	SCH160	P24A-005K9	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	STD	SCH160	P24A-00GMC	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	STD	XS	P24A-002HW	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P24A-002HY	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P24A-0021K	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	STD	P24A-0021A	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P24A-00229	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH30	STD	P24A-00JVH	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH30	STD	P24A-00JVG	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	SCH30	STD	P24A-00GNR	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	SCH30	STD	P24A-0060W	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	SCH30	SCH30	P24A-00J15	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	SCH30	STD	P24A-00HKT	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH30	SCH30	P24A-00M36	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH30	SCH30	P24A-003ET	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	SCH20	STD	P24A-00K0M	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	SCH20	SCH30	P24A-00M37	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	SCH20	SCH30	P24A-003ER	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	SCH20	SCH30	P24A-003ES	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	6	SCH20	STD	P24A-00GU4	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	SCH20	SCH30	P24A-00M38	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	SCH20	SCH30	P24A-00KSH	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	SCH20	SCH30	P24A-003XN	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	SCH20	SCH20	P24A-002XF	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	8	SCH20	SCH30	P24A-00M3B	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	10	SCH20	SCH30	P24A-00M3A	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	12	SCH20	SCH30	P24A-00AF5	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	14	SCH20	SCH20	P24A-00GAH	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	16	SCH20	SCH20	P24A-00GAJ	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	8	STD	SCH30	P24A-00M3D	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	10	STD	SCH30	P24A-00M3C	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	12	STD	SCH30	P24A-00HKV	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	14	STD	SCH20	P24A-00HKW	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	16	STD	SCH20	P24A-00HKX	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	18	STD	SCH20	P24A-0087A	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	24	10	STD	SCH30	P24A-00M3E	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24	12	STD	SCH30	P24A-00HKY	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24	14	STD	SCH20	P24A-00HME	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24	16	STD	SCH20	P24A-00HKZ	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24	18	STD	SCH20	P24A-008A5	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24	20	STD	STD	P24A-002PM	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	30	10	STD	SCH30	P24A-00PJE	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Moderate wet H2S service	
1	30	12	STD	SCH30	P24A-00KXJ	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Moderate wet H2S service	
1	30	14	STD	SCH20	P24A-00KXK	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Moderate wet H2S service	
1	30	16	STD	SCH20	P24A-00KCM	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Moderate wet H2S service	
1	30	18	STD	SCH20	P24A-00KXL	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Moderate wet H2S service	
1	30	20	STD	STD	P24A-00GRF	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Moderate wet H2S service	
1	30	24	STD	STD	P24A-00KXM	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Moderate wet H2S service	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	SCH160	P27A-004LZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.5	SCH160	SCH160	P27A-004M8	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.75	SCH160	SCH160	P27A-002T5	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.5	SCH160	SCH160	P27A-004MV	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.75	SCH160	SCH160	P27A-002T7	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	1	SCH160	SCH160	P27A-002T4	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	0.75	XS	SCH160	P27A-001LG	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	XS	SCH160	P27A-0033P	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	XS	SCH160	P27A-0033B	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	STD	SCH160	P27A-003M9	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	STD	XS	P27A-001MZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	1.5	STD	SCH160	P27A-003MA	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P27A-001N0	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P27A-00189	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	STD	P27A-001AZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P27A-001GW	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH30	STD	P27A-00ED2	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH30	STD	P27A-00ECY	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	SCH30	STD	P27A-003MK	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	SCH30	STD	P27A-003ML	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	SCH30	SCH30	P27A-004T9	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	SCH30	STD	P27A-003MN	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH30	SCH30	P27A-004XA	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH30	SCH30	P27A-0028K	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	SCH20	STD	P27A-00518	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	SCH20	SCH30	P27A-0052J	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	SCH20	SCH30	P27A-0028G	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	SCH20	SCH30	P27A-0028H	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	SCH20	SCH30	P27A-0059E	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	SCH20	SCH30	P27A-003NC	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	SCH20	SCH30	P27A-002GH	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	SCH20	SCH20	P27A-001V2	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	10	SCH20	SCH30	P27A-005AY	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	12	SCH20	SCH30	P27A-005D3	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	14	SCH20	SCH20	P27A-005F3	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	16	SCH20	SCH20	P27A-005H6	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	12	STD	SCH30	P27A-005LW	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	14	STD	SCH20	P27A-005NZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	16	STD	SCH20	P27A-005S7	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	18	STD	SCH20	P27A-005TW	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24	16	STD	SCH20	P27A-005Y6	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24	18	STD	SCH20	P27A-005ZV	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24	20	STD	STD	P27A-0037U	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	30	20	STD	STD	P27A-00BHM	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Moderate wet H2S service	
1	30	24	STD	STD	P27A-00F9C	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Moderate wet H2S service	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	SCH160	P28A-007KG	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.5	SCH160	SCH160	P28A-007KH	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.75	SCH160	SCH160	P28A-002TU	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.5	SCH160	SCH160	P28A-007KJ	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.75	SCH160	SCH160	P28A-002TW	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	1	SCH160	SCH160	P28A-002TR	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	0.75	XS	SCH160	P28A-001LE	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	XS	SCH160	P28A-003M1	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	XS	SCH160	P28A-003M2	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	STD	SCH160	P28A-003M3	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	STD	XS	P28A-001N5	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	1.5	STD	SCH160	P28A-003M4	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P28A-001N6	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P28A-0018B	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	STD	P28A-001AS	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P28A-00182	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH30	STD	P28A-00BFY	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH30	STD	P28A-00BFZ	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	SCH30	STD	P28A-003MD	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	SCH30	STD	P28A-003ME	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	SCH30	SCH30	P28A-00A4S	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	SCH30	STD	P28A-003MG	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH30	SCH30	P28A-00BGV	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH30	SCH30	P28A-0027C	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	SCH20	STD	P28A-0096P	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	SCH20	SCH30	P28A-00DA3	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	SCH20	SCH30	P28A-00279	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	SCH20	SCH30	P28A-0027A	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	SCH20	SCH30	P28A-00DA4	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	SCH20	SCH30	P28A-003N6	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	SCH20	SCH30	P28A-002GB	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	SCH20	SCH20	P28A-001WG	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	10	SCH20	SCH30	P28A-00635	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	12	SCH20	SCH30	P28A-0066M	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	14	SCH20	SCH20	P28A-0082K	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	16	SCH20	SCH20	P28A-0082L	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	12	STD	SCH30	P28A-0096R	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	14	STD	SCH20	P28A-0096S	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	16	STD	SCH20	P28A-0096T	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	18	STD	SCH20	P28A-0063A	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24	16	STD	SCH20	P28A-0096U	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24	18	STD	SCH20	P28A-0066J	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24	20	STD	STD	P28A-0037A	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	30	20	STD	STD	P28A-008HB	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Moderate wet H2S service	
1	30	24	STD	STD	P28A-00CDD	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Moderate wet H2S service	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P29A-00329	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	0.75		SCH160		P29A-001UF	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	1		SCH160		P29A-001TC	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	1.5		SCH160		P29A-001TD	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	2		XS		P29A-001VG	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	3		STD		P29A-001VK	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	

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CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	4		STD		P29A-001VN	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	6		STD		P29A-001VS	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	8		SCH30		P29A-003G6	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	10		SCH30		P29A-003B5	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	12		SCH30		P29A-00373	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	14		SCH20		P29A-00360	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	16		SCH20		P29A-00361	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	18		SCH20		P29A-00362	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	20		STD		P29A-001VH	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	24		STD		P29A-001TM	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	30		STD		P29A-001VL	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P41A-000B9	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		XXS		P41A-000BA	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		XXS		P41A-000D8	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		XXS		P41A-000D9	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2	0.75	XS	SCH160	P31B-00CP7	Outlet ASTM A105 MSS SP-97 BW	
1	3	0.75	STD	SCH160	P31B-00CMT	Outlet ASTM A105 MSS SP-97 BW	
1	4	0.75	STD	SCH160	P31B-00CLT	Outlet ASTM A105 MSS SP-97 BW	
1	6	0.75	STD	SCH160	P31B-00CKK	Outlet ASTM A105 MSS SP-97 BW	
1	8	0.75	SCH30	SCH160	P31B-00ZH5	Outlet ASTM A105 MSS SP-97 BW	
1	10	0.75	SCH30	SCH160	P31B-00YEZ	Outlet ASTM A105 MSS SP-97 BW	
1	12	0.75	SCH30	SCH160	P31B-00SWH	Outlet ASTM A105 MSS SP-97 BW	
1	14	0.75	SCH20	SCH160	P31B-00X17	Outlet ASTM A105 MSS SP-97 BW	
1	16	0.75	SCH20	SCH160	P31B-00XS0	Outlet ASTM A105 MSS SP-97 BW	
1	18	0.75	SCH20	SCH160	P31B-00SWM	Outlet ASTM A105 MSS SP-97 BW	
1	20	0.75	STD	SCH160	P31B-00CNW	Outlet ASTM A105 MSS SP-97 BW	
1	24	0.75	STD	SCH160	P31B-00CNB	Outlet ASTM A105 MSS SP-97 BW	
1	30	0.75	STD	SCH160	P31B-00TUU	Outlet ASTM A105 MSS SP-97 BW	
1	36	0.75	XS	SCH160	P31B-00CM3	Outlet ASTM A105 MSS SP-97 BW	
1	3	1	STD	SCH160	P31B-00B4J	Outlet ASTM A105 MSS SP-97 BW	
1	4	1	STD	SCH160	P31B-00B3M	Outlet ASTM A105 MSS SP-97 BW	
1	6	1	STD	SCH160	P31B-00AZC	Outlet ASTM A105 MSS SP-97 BW	
1	8	1	SCH30	SCH160	P31B-00ZH6	Outlet ASTM A105 MSS SP-97 BW	
1	10	1	SCH30	SCH160	P31B-00YF1	Outlet ASTM A105 MSS SP-97 BW	
1	12	1	SCH30	SCH160	P31B-00SWJ	Outlet ASTM A105 MSS SP-97 BW	
1	14	1	SCH20	SCH160	P31B-00X18	Outlet ASTM A105 MSS SP-97 BW	
1	16	1	SCH20	SCH160	P31B-00X8Z	Outlet ASTM A105 MSS SP-97 BW	
1	18	1	SCH20	SCH160	P31B-00SWN	Outlet ASTM A105 MSS SP-97 BW	
1	20	1	STD	SCH160	P31B-00B8M	Outlet ASTM A105 MSS SP-97 BW	
1	24	1	STD	SCH160	P31B-00B82	Outlet ASTM A105 MSS SP-97 BW	
1	30	1	STD	SCH160	P31B-00TUV	Outlet ASTM A105 MSS SP-97 BW	
1	36	1	XS	SCH160	P31B-00B3W	Outlet ASTM A105 MSS SP-97 BW	
1	4	1.5	STD	SCH160	P31B-00BP4	Outlet ASTM A105 MSS SP-97 BW	
1	6	1.5	STD	SCH160	P31B-00BJH	Outlet ASTM A105 MSS SP-97 BW	
1	8	1.5	SCH30	SCH160	P31B-00BHM	Outlet ASTM A105 MSS SP-97 BW	
1	10	1.5	SCH30	SCH160	P31B-00AUR	Outlet ASTM A105 MSS SP-97 BW	
1	12	1.5	SCH30	SCH160	P31B-00CEJ	Outlet ASTM A105 MSS SP-97 BW	
1	14	1.5	SCH20	SCH160	P31B-00CDS	Outlet ASTM A105 MSS SP-97 BW	
1	16	1.5	SCH20	SCH160	P31B-00C9B	Outlet ASTM A105 MSS SP-97 BW	
1	18	1.5	SCH20	SCH160	P31B-00C3C	Outlet ASTM A105 MSS SP-97 BW	
1	20	1.5	STD	SCH160	P31B-00C3Y	Outlet ASTM A105 MSS SP-97 BW	
1	24	1.5	STD	SCH160	P31B-00BZK	Outlet ASTM A105 MSS SP-97 BW	
1	30	1.5	STD	SCH160	P31B-00TUW	Outlet ASTM A105 MSS SP-97 BW	

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OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	36	1.5	XS	SCH160	P31B-00BPN	Outlet ASTM A105 MSS SP-97 BW	
1	6	2	STD	XS	P31B-007SH	Outlet ASTM A105 MSS SP-97 BW	
1	8	2	SCH30	XS	P31B-00X36	Outlet ASTM A105 MSS SP-97 BW	
1	10	2	SCH30	XS	P31B-00NVF	Outlet ASTM A105 MSS SP-97 BW	
1	12	2	SCH30	XS	P31B-00NVL	Outlet ASTM A105 MSS SP-97 BW	
1	14	2	SCH20	XS	P31B-00TF9	Outlet ASTM A105 MSS SP-97 BW	
1	16	2	SCH20	XS	P31B-00TF8	Outlet ASTM A105 MSS SP-97 BW	
1	18	2	SCH20	XS	P31B-00NVX	Outlet ASTM A105 MSS SP-97 BW	
1	20	2	STD	XS	P31B-00994	Outlet ASTM A105 MSS SP-97 BW	
1	24	2	STD	XS	P31B-0092Z	Outlet ASTM A105 MSS SP-97 BW	
1	30	2	STD	XS	P31B-008P5	Outlet ASTM A105 MSS SP-97 BW	
1	36	2	XS	XS	P31B-008BB	Outlet ASTM A105 MSS SP-97 BW	
1	8	3	SCH30	STD	P31B-00X37	Outlet ASTM A105 MSS SP-97 BW	
1	10	3	SCH30	STD	P31B-00NYK	Outlet ASTM A105 MSS SP-97 BW	
1	12	3	SCH30	STD	P31B-00NYR	Outlet ASTM A105 MSS SP-97 BW	
1	14	3	SCH20	STD	P31B-00UPH	Outlet ASTM A105 MSS SP-97 BW	
1	16	3	SCH20	STD	P31B-00TU2	Outlet ASTM A105 MSS SP-97 BW	
1	18	3	SCH20	STD	P31B-00NZ4	Outlet ASTM A105 MSS SP-97 BW	
1	20	3	STD	STD	P31B-008FA	Outlet ASTM A105 MSS SP-97 BW	
1	24	3	STD	STD	P31B-00895	Outlet ASTM A105 MSS SP-97 BW	
1	30	3	STD	STD	P31B-007WY	Outlet ASTM A105 MSS SP-97 BW	
1	36	3	XS	STD	P31B-007P1	Outlet ASTM A105 MSS SP-97 BW	
1	12	4	SCH30	STD	P31B-00P1G	Outlet ASTM A105 MSS SP-97 BW	
1	14	4	SCH20	STD	P31B-00UPJ	Outlet ASTM A105 MSS SP-97 BW	
1	16	4	SCH20	STD	P31B-00TU3	Outlet ASTM A105 MSS SP-97 BW	
1	18	4	SCH20	STD	P31B-00P1V	Outlet ASTM A105 MSS SP-97 BW	
1	20	4	STD	STD	P31B-008D3	Outlet ASTM A105 MSS SP-97 BW	
1	24	4	STD	STD	P31B-0086X	Outlet ASTM A105 MSS SP-97 BW	
1	30	4	STD	STD	P31B-007US	Outlet ASTM A105 MSS SP-97 BW	
1	36	4	XS	STD	P31B-00AEP	Outlet ASTM A105 MSS SP-97 BW	
1	18	6	SCH20	STD	P31B-00P48	Outlet ASTM A105 MSS SP-97 BW	
1	20	6	STD	STD	P31B-008PZ	Outlet ASTM A105 MSS SP-97 BW	
1	24	6	STD	STD	P31B-008JD	Outlet ASTM A105 MSS SP-97 BW	
1	30	6	STD	STD	P31B-008BS	Outlet ASTM A105 MSS SP-97 BW	
1	36	6	XS	STD	P31B-0085G	Outlet ASTM A105 MSS SP-97 BW	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30B-0002D	Plug ASTM A105 ASME B16.11 NPT Round head	
1	0.75				P30B-0002E	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1				P30B-0002F	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1.5				P30B-0002G	Plug ASTM A105 ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P61B-004V2	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	0.75		SCH160		P61B-0037H	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	1		SCH160		P61B-0037F	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	1.5		SCH160		P61B-0037N	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	2		XS		P61B-003NK	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	3		STD		P61B-001PW	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	4		STD		P61B-001R8	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	6		STD		P61B-001RT	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	8		SCH30		P61B-003FP	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	10		SCH30		P61B-003FS	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	12		SCH30		P61B-002TS	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	14		SCH20		P61B-002B6	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	16		SCH20		P61B-002B7	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	18		SCH20		P61B-002B8	Flange WN ASTM A105 Class 150 ASME B16.5 RF	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	20		STD		P61B-001JA	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	24		STD		P61B-001NJ	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	30		STD		P61B-001S8	Flange WN ASTM A105 Class 150 ASME B16.47 Series B RF	
541	0.5				P61B-003TZ	Flange NPT ASTM A105 Class 150 ASME B16.5 RF	
541	0.75				P61B-003U0	Flange NPT ASTM A105 Class 150 ASME B16.5 RF	
773	0.5		SCH160		P61B-003P9	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	0.75		SCH160		P61B-0037M	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	1		SCH160		P61B-0037L	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	1.5		SCH160		P61B-0037J	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	2		XS		P61B-001HW	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	3		STD		P61B-001LJ	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	4		STD		P61B-001MC	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	6		STD		P61B-001N2	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	8		SCH30		P61B-008S0	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	10		SCH30		P61B-003LX	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	12		SCH30		P61B-002TV	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	14		SCH20		P61B-002MR	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	16		SCH20		P61B-002MS	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	18		SCH20		P61B-002MT	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	20		STD		P61B-001NT	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	24		STD		P61B-001PA	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	30		STD		P61B-003SW	Flange WN ASTM A105 Class 300 ASME B16.47 Series B RF	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67B-000FH	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	0.75				P67B-000FJ	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	1				P67B-000FK	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	1.5				P67B-000FL	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	2				P67B-000FT	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	3				P67B-000FW	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	4				P67B-000FX	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	6				P67B-000FY	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	8				P67B-000FZ	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	10				P67B-000FM	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	12				P67B-000FN	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	14				P67B-000FP	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	16				P67B-000FR	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	18				P67B-000FS	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	20				P67B-000FU	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	24				P67B-000FV	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	30				P67B-000G2	Blind flange ASTM A105 Class 150 ASME B16.47 Series B RF	

REDUCING FLANGE (FR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5		SCH160	P62B-000CT	Reducing flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	1.5	0.5		SCH160	P62B-000NH	Reducing flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	1.5	0.75		SCH160	P62B-0006W	Reducing flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	2	0.75		SCH160	P62B-000NF	Reducing flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	2	1		SCH160	P62B-0006X	Reducing flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	2	1.5		SCH160	P62B-000K8	Reducing flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	3	1.5		SCH160	P62B-00080	Reducing flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	3	2		XS	P62B-0006B	Reducing flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	4	2		XS	P62B-00098	Reducing flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	4	3		STD	P62B-0006D	Reducing flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	6	3		STD	P62B-000JY	Reducing flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	6	4		STD	P62B-000JZ	Reducing flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	8	6		STD	P62B-0006E	Reducing flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	10	4		STD	P62B-000K0	Reducing flange WN ASTM A105 Class 150 ASME B16.5 RF	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	10	8		SCH30	P62B-000LH	Reducing flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	12	6		STD	P62B-000K2	Reducing flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	12	10		SCH30	P62B-000LJ	Reducing flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	14	10		SCH30	P62B-000LK	Reducing flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	16	12		SCH30	P62B-00071	Reducing flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	16	14		SCH20	P62B-000PG	Reducing flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	18	14		SCH20	P62B-000L9	Reducing flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	20	16		SCH20	P62B-000K5	Reducing flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	24	16		SCH20	P62B-000PT	Reducing flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	24	18		SCH20	P62B-00074	Reducing flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	24	20		STD	P62B-000LA	Reducing flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	30	24		STD	P62B-000LB	Reducing flange WN ASTM A105 Class 150 ASME B16.47 Series B RF	
1	36	30		STD	P62B-000LC	Reducing flange WN ASTM A105 Class 150 ASME B16.47 Series B RF	
773	3	2		XS	P62B-000MD	Reducing flange WN ASTM A105 Class 300 ASME B16.5 RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000L8	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000L9	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000LA	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000LB	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000LH	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000LL	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000LM	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	6				P73T-000LN	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	8				P73T-000LP	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	10				P73T-000LC	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	12				P73T-000LD	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	14				P73T-000LE	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	16				P73T-000LF	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	18				P73T-000LG	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	20				P73T-000LJ	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	24				P73T-000LK	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	30				P73T-000LT	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	0.5				P73T-000FT	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	0.75				P73T-000FU	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	3				P73T-000G5	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	4				P73T-000G6	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	6				P73T-000G7	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	8				P73T-000G8	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	10				P73T-000FX	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	12				P73T-000FY	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	14				P73T-000FZ	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	16				P73T-000G0	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	18				P73T-000G1	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

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GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
773	20				P73T-000G3	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	24				P73T-000G4	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	30				P73T-000H9	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-16				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	18-24				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
1	30-36				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
773	0.5-10				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
773	12-30				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	30				P81C-004E5	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.47-B RF Trim number 12 BB-BG-OS&Y Gear operated Moderate wet H2S service	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5	0.5			P83B-001H6	Jacketed check valve ASTM A105 Class 150 API 600-modified Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Full jacketed Moderate wet H2S service	
1	2	1			P83C-003PM	Jacketed check valve ASTM A216 Grade WCB Class 150 API 600-modified Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Full jacketed Moderate wet H2S service	
1	3	1.5			P83C-003PN	Jacketed check valve ASTM A216 Grade WCB Class 150 API 600-modified Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Full jacketed Moderate wet H2S service	
1	4	3			P83C-003PP	Jacketed check valve ASTM A216 Grade WCB Class 150 API 600-modified Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Full jacketed Moderate wet H2S service	
1	6	4			P83C-003PY	Jacketed check valve ASTM A216 Grade WCB Class 150 API 600-modified Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Full jacketed Moderate wet H2S service	
1	8	6			P83C-003PX	Jacketed check valve ASTM A216 Grade WCB Class 150 API 600-modified Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Full jacketed Moderate wet H2S service	
1	10	8			P83C-003PW	Jacketed check valve ASTM A216 Grade WCB Class 150 API 600-modified Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Full jacketed Moderate wet H2S service	
1	12	10			P83C-003PV	Jacketed check valve ASTM A216 Grade WCB Class 150 API 600-modified Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Full jacketed Moderate wet H2S service	
1	16	12			P83C-003PU	Jacketed check valve ASTM A216 Grade WCB Class 150 API 600-modified Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Full jacketed Moderate wet H2S service	
1	18	14			P83C-003PT	Jacketed check valve ASTM A216 Grade WCB Class 150 API 600-modified Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Full jacketed Moderate wet H2S service	
1	20	16			P83C-003PS	Jacketed check valve ASTM A216 Grade WCB Class 150 API 600-modified Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Full jacketed Moderate wet H2S service	
1	24	18			P83C-003PR	Jacketed check valve ASTM A216 Grade WCB Class 150 API 600-modified Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Full jacketed Moderate wet H2S service	
4611	3	2			P83C-004F6	Jacketed check valve ASTM A216 Grade WCB Class 150 API 600-modified Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Full jacketed Moderate wet H2S service Type-10	

PLUG VALVE (PV)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5	0.5			P85B-0000M	Jacketed plug valve Short-pattern ASTM A105 Class 150 API 599 Flange ASME B16.5 RF Plug SS316 Seat PTFE Trim SS316 Nonlubricated taper plug BC-BG Wrench lever operated Regular port Full jacketed Moderate wet H2S service	
1	2	1			P85C-0007Z	Jacketed plug valve Short-pattern ASTM A216 Grade WCB Class 150 API 599 Flange ASME B16.5 RF Plug SS316 Seat PTFE Trim SS316 Nonlubricated taper plug BC-BG Wrench lever operated Regular port Full jacketed Moderate wet H2S service	
1	3	1.5			P85C-00080	Jacketed plug valve Short-pattern ASTM A216 Grade WCB Class 150 API 599 Flange ASME B16.5 RF Plug SS316 Seat PTFE Trim SS316 Nonlubricated taper plug BC-BG Wrench lever operated Regular port Full jacketed Moderate wet H2S service	
1	4	3			P85C-00081	Jacketed plug valve Short-pattern ASTM A216 Grade WCB Class 150 API 599 Flange ASME B16.5 RF Plug SS316 Seat PTFE Trim SS316 Nonlubricated taper plug BC-BG Wrench lever operated Regular port Full jacketed Moderate wet H2S service	
1	6	4			P85C-00082	Jacketed plug valve Short-pattern ASTM A216 Grade WCB Class 150 API 599 Flange ASME B16.5 RF Plug SS316 Seat PTFE Trim SS316 Nonlubricated taper plug BC-BG Gear operated Regular port Full jacketed Moderate wet H2S service	
1	8	6			P85C-00083	Jacketed plug valve Short-pattern ASTM A216 Grade WCB Class 150 API 599 Flange ASME B16.5 RF Plug SS316 Seat PTFE Trim SS316 Nonlubricated taper plug BC-BG Gear operated Regular port Full jacketed Moderate wet H2S service	
1	10	8			P85C-00084	Jacketed plug valve Short-pattern ASTM A216 Grade WCB Class 150 API 599 Flange ASME B16.5 RF Plug SS316 Seat PTFE Trim SS316 Nonlubricated taper plug BC-BG Gear operated Regular port Full jacketed Moderate wet H2S service	
1	12	10			P85C-00085	Jacketed plug valve Short-pattern ASTM A216 Grade WCB Class 150 API 599 Flange ASME B16.5 RF Plug SS316 Seat PTFE Trim SS316 Nonlubricated taper plug BC-BG Gear operated Regular port Full jacketed Moderate wet H2S service	

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PLUG VALVE (PV)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	16	12			P85C-00086	Jacketed plug valve Regular-pattern ASTM A216 Grade WCB Class 150 API 599 Flange ASME B16.5 RF Plug SS316 Seat PTFE Trim SS316 Nonlubricated taper plug BC-BG Gear operated Regular port Full jacketed Moderate wet H2S service	
1	18	14			P85C-00087	Jacketed plug valve Regular-pattern ASTM A216 Grade WCB Class 150 API 599 Flange ASME B16.5 RF Plug SS316 Seat PTFE Trim SS316 Nonlubricated taper plug BC-BG Gear operated Regular port Full jacketed Moderate wet H2S service	
1	20	16			P85C-00088	Jacketed plug valve Regular-pattern ASTM A216 Grade WCB Class 150 API 599 Flange ASME B16.5 RF Plug SS316 Seat PTFE Trim SS316 Nonlubricated taper plug BC-BG Gear operated Regular port Full jacketed Moderate wet H2S service	
1	24	18			P85C-00089	Jacketed plug valve Regular-pattern ASTM A216 Grade WCB Class 150 API 599 Flange ASME B16.5 RF Plug SS316 Seat PTFE Trim SS316 Nonlubricated taper plug BC-BG Gear operated Regular port Full jacketed Moderate wet H2S service	
1	30	24			P85C-0008A	Jacketed plug valve Regular-pattern ASTM A216 Grade WCB Class 150 API 599 Flange ASME B16.47-B RF Plug SS316 Seat PTFE Trim SS316 Nonlubricated taper plug BC-BG Gear operated Regular port Full jacketed Moderate wet H2S service	
1	36	30			P85C-0008B	Jacketed plug valve Regular-pattern ASTM A216 Grade WCB Class 150 API 599 Flange ASME B16.47-B RF Plug SS316 Seat PTFE Trim SS316 Nonlubricated taper plug BC-BG Gear operated Regular port Full jacketed Moderate wet H2S service	
4610	1.5	0.75			P85B-0000Z	Jacketed plug valve Short-pattern ASTM A105 Class 150 API 599 Flange ASME B16.5 RF Plug SS316 Seat PTFE Trim SS316 Nonlubricated taper plug BC-BG Wrench lever operated Regular port Full jacketed Moderate wet H2S service Type-10	
4611	3	2			P85C-000AU	Jacketed plug valve Short-pattern ASTM A216 Grade WCB Class 150 API 599 Flange ASME B16.5 RF Plug SS316 Seat PTFE Trim SS316 Nonlubricated taper plug BC-BG Wrench lever operated Regular port Full jacketed Moderate wet H2S service Type-10	
4612	3	2			P85C-000AV	Jacketed plug valve Short-pattern ASTM A216 Grade WCB Class 300 API 599 Flange ASME B16.5 RF Plug SS316 Seat PTFE Trim SS316 Nonlubricated taper plug BC-BG Wrench lever operated Regular port Full jacketed Moderate wet H2S service Type-10	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71B-0008A	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	0.75				P71B-0008B	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	1				P71B-0008C	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71B-0008D	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	2				P71B-0000P	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	3				P71B-0000N	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	4				P71B-0000M	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	6				P71B-0000L	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	8				P71B-0000R	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	10				P71B-0000K	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	12				P71B-0000J	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	

PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000AH	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	16				P72B-0000C	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	18				P72B-000AJ	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	20				P72B-000AK	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	24				P72B-000AL	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	30				P72B-000AM	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	

PADDLE SPACER (PS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000AT	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	16				P72B-0000B	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	18				P72B-000AU	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	20				P72B-000AV	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	24				P72B-000AW	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	30				P72B-000AX	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	

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BOLT TABLE (B_A2AQCL , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	60	P80S-008SY		
0.75	4	0.500	65	P80S-008SZ		
1	4	0.500	70	P80S-008T0		
1.5	4	0.500	75	P80S-008T1		
2	4	0.625	85	P80S-0090A		
3	4	0.625	95	P80S-0090C		
4	8	0.625	95	P80S-0090C		
6	8	0.750	105	P80S-0090E		
8	8	0.750	110	P80S-0090F		
10	12	0.875	120	P80S-005Z9		
12	12	0.875	120	P80S-005Z9		
14	12	1.000	135	P80S-00619		
16	16	1.000	140	P80S-0061A		
18	16	1.125	150	P80S-0064L		
20	20	1.125	160	P80S-0064N		
24	20	1.250	175	P80S-00686		
30	44	0.750	145	P80S-0090N		
36	44	0.875	175	P80S-005ZL		

BOLT TABLE (B_A2AQCL_773 , STUD ASME RF, OPTION CODE 773)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-008T0		
0.75	4	0.625	75	P80S-00908		
1	4	0.625	80	P80S-00909		
1.5	4	0.750	95	P80S-005Z4		
2	8	0.625	90	P80S-0090B		
3	8	0.750	110	P80S-0090F		
4	8	0.750	115	P80S-0090G		
6	12	0.750	125	P80S-0090J		
8	12	0.875	140	P80S-005ZD		
10	16	1.000	160	P80S-0061E		
12	16	1.125	175	P80S-0064S		
14	20	1.125	180	P80S-0064T		
16	20	1.250	190	P80S-00689		
18	24	1.250	200	P80S-0068B		
20	24	1.250	210	P80S-0068D		
24	24	1.500	235	P80S-006LB		
30	36	1.375	285	P80S-006HY		
36	32	1.625	320			

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BRANCH TABLE (T_A2AQCL)

RUN PIPE SIZE (in) \ BRANCH SIZE (in)	0.5	0.75	1	1.5	2	3	4	6	8	10	12	14	16	18	20	24	30	36
0.5	TS																	
0.75		TS																
1		TR	TS															
1.5		TR	TR	TS														
2		L	TR	TR	TS													
3		L	L	TR	TR	TS												
4	L	L	L	L	TR	TR	TS											
6	L	L	L	L	L	TR	TR	TS										
8		L	L	L	L	L	TR	TR	TS									
10		L	L	L	L	L	TR	TR	TR	TS								
12		L	L	L	L	L	L	TR	TR	TR	TS							
14		L	L	L	L	L	L	TR	TR	TR	TR	TS						
16		L	L	L	L	L	L	TR	TR	TR	TR	TR	TS					
18		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TS				
20		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TR	TS			
24		L	L	L	L	L	L	L	9PD	TR	TR	TR	TR	TR	TR	TS		
30		L	L	L	L	L	L	L	9PD	TR	TR	TR	TR	TR	TR	TR	TS	
36		L	L	L	L	L	L	L	9PD	9PD	9PD	9PD	TR	TR	TR	TR	TR	TS

L : OUTLET
TR : REDUCING TEE
TS : STRAIGHT TEE
9PD : REINFORCING PAD 90 DEG

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PIPING CLASS

A2AQVV REV NO. 2

Material : Killed CS
Rating : ASME CLASS 150
Flange Face : RF
C.A.(mm) : 3.00
Gasket : Spiral Wound
Service : PROCESS - AIV / WET SOUR SERVICE SUBJECT TO NACE STD. : / DESALTER WATER / CRUDE OVHD VAPOUR / CRUDE DISTILLATION TOP PA / CDU COLUMN OFFGAS / CDU OVHD LIQUID / OFFGAS COMP. SUCTION / RECONTACTOR DRUM OFFGAS / NAPHTHA / and other various services
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
2	USE OF SOFT SEATED BALL, PLUG AND BUTTERFLY VALVES SHALL BE LIMITED TO MAXIMUM OF 204DEGC (400DEGF)
5	BOLTING CONFIRMING TO B7M / 2HM SHALL BE USED UNDER CONDITIONS (A) DIRECT EXPOSURE TO SOUR ENVIRONMENTS (B) WHEN THE BOLTING WILL BE BURIED OR INSULATED
27	PWHT OF CARBON STEEL PIPING IN WET H2S, CAUSTIC AND AMINE SERVICES SHALL BE IN ACCORDANCE WITH SECTION 10.2, 10.3, AND 10.4 OF PROJECT SPECIFICATION 3550-8440-SP-0002 MATERIALS REQUIREMENTS FOR PRESSURISED EQUIPMENT AND PIPING. FOR CAUSTIC AND AMINE SERVICE THE FOLLOWING SHALL APPLY: - PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF ALL SITE PIPING FABRICATION WELDS IS REQUIRED FOR ALL WALL THICKNESSES. FOR MODERATE AND SEVERE WET H2S SERVICE THE FOLLOWING SHALL APPLY: PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF SITE FABRICATION CIRCUMFERENTIAL OR BRANCH WELDS IS NOT REQUIRED IF WELDS ARE MULTIPASS AND IN ACCORDANCE WITH PARA 10.2.12 OF PROJECT SPECIFICATION 3550-8440-SP-0002. FOR SERVICES MEETING THE WET H2S CRITERIA AND CAUSTIC OR AMINE CRITERIA THE MORE STRINGENT PWHT REQUIREMENT SHALL GOVERN.

DETAIL NOTES :

NO.	DESCRIPTION
999	HOLD ITEMS. ORDER PLACEMENT SHALL NOT BE DONE BEFORE RELEASING HOLD.

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
24	FULL PORT (Q)
200	WITH JACK SCREW (FO)
541	NPT(F) (CA,F)
773	CLASS 300 (B,F,G)
781	CLASS 600 (B,F,G)
789	CLASS 900 (B,F,G)
797	CLASS 1500 (B,F,G)
3001	INSULATION GASKET KIT AND BOLTS FOR FLANGE (G)
4608	VALVE WITH NIPPLES (V)

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PIPING CLASS
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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P01A-00143	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	0.75		XXS		P01A-0014D	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1		XXS		P01A-0014U	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1.5		XXS		P01A-00162	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	2		XXS		P01A-001R0	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	3		XXS		P01A-001SB	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	4		SCH160		P01A-001TN	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	6		SCH120		P01A-001VC	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	8		XS		P01A-000ZJ	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	10		XS		P01A-000Y2	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	12		XS		P01A-000YB	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	14		XS		P01A-000YJ	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	16		XS		P01A-000YS	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	18		XS		P01A-00372	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	20		XS		P01A-00373	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	24		XS		P01A-002MP	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	30		XS		P01A-007YX	Pipe ASTM A671 Grade CC60 Class 22 EFW ASME B36.10M/B36.19M BE Moderate wet H2S service	
1	36		XS		P01A-007YY	Pipe ASTM A671 Grade CC60 Class 22 EFW ASME B36.10M/B36.19M BE Moderate wet H2S service	
1	42		14.27mm		P01A-007YZ	Pipe ASTM A671 Grade CC60 Class 22 EFW ASME B36.10M/B36.19M BE Moderate wet H2S service	
1	48		14.27mm		P01A-008MZ	Pipe ASTM A671 Grade CC60 Class 22 EFW ASME B36.10M/B36.19M BE Moderate wet H2S service	
1	52		15.88mm		P01A-008N0	Pipe ASTM A671 Grade CC60 Class 22 EFW ASME B36.10M/B36.19M BE Moderate wet H2S service	
1	56		17.48mm		P01A-008N1	Pipe ASTM A671 Grade CC60 Class 22 EFW ASME B36.10M/B36.19M BE Moderate wet H2S service	
1	60		17.48mm		P01A-008N2	Pipe ASTM A671 Grade CC60 Class 22 EFW ASME B36.10M/B36.19M BE Moderate wet H2S service	
1	64		19.05mm		P01A-008N3	Pipe ASTM A671 Grade CC60 Class 22 EFW ASME B36.10M/B36.19M BE Moderate wet H2S service	
1	68		19.05mm		P01A-008N4	Pipe ASTM A671 Grade CC60 Class 22 EFW ASME B36.10M/B36.19M BE Moderate wet H2S service	
1	72		19.05mm		P01A-008N5	Pipe ASTM A671 Grade CC60 Class 22 EFW ASME B36.10M/B36.19M BE Moderate wet H2S service	
1	76		19.05mm		P01A-008N6	Pipe ASTM A671 Grade CC60 Class 22 EFW ASME B36.10M/B36.19M BE Moderate wet H2S service	
1	80		22.23mm		P01A-008N7	Pipe ASTM A671 Grade CC60 Class 22 EFW ASME B36.10M/B36.19M BE Moderate wet H2S service	
1	92		22.23mm		P01A-008V6	Pipe ASTM A671 Grade CC60 Class 22 EFW ASME B36.10M/B36.19M BE Moderate wet H2S service	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P02A-00172	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	0.75		XXS		P02A-000XH	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1		XXS		P02A-000XJ	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1.5		XXS		P02A-002N4	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	2		XXS		P02A-00111	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		XXS		P02A-002JA	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		SCH160		P02A-002JE	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		SCH120		P02A-000UB	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		XS		P02A-000DG	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	10		XS		P02A-000BN	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	12		XS		P02A-000BX	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	14		XS		P02A-000C7	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	16		XS		P02A-000CE	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	18		XS		P02A-000M9	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	20		XS		P02A-001JX	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	24		XS		P02A-000MB	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	30		XS		P02A-003Z7	90 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius Moderate wet H2S service	
1	36		XS		P02A-002JG	90 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius Moderate wet H2S service	
1	42		14.27mm		P02A-002HT	90 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius Moderate wet H2S service	
1	48		14.27mm		P02A-002JJ	90 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius Moderate wet H2S service	
1	52		15.88mm		P02A-004FE	90 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Long radius Moderate wet H2S service	
1	56		17.48mm		P02A-004FF	90 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Long radius Moderate wet H2S service	
1	60		17.48mm		P02A-004FG	90 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Long radius Moderate wet H2S service	
1	64		19.05mm		P02A-004FH	90 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Long radius Moderate wet H2S service	
1	68		19.05mm		P02A-004FJ	90 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Long radius Moderate wet H2S service	

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90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	72		19.05mm		P02A-004FK	90 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Long radius Moderate wet H2S service	
1	76		19.05mm		P02A-004FL	90 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Long radius Moderate wet H2S service	
1	80		22.23mm		P02A-004FM	90 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Long radius Moderate wet H2S service	
1	92		22.23mm		P02A-004YD	90 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Long radius Moderate wet H2S service	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P03A-0012Y	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	0.75		XXS		P03A-000U9	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1		XXS		P03A-000U8	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1.5		XXS		P03A-002KD	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	2		XXS		P03A-000XH	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		XXS		P03A-002FU	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		SCH160		P03A-002FY	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		SCH120		P03A-000RD	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		XS		P03A-000BC	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	10		XS		P03A-000A3	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	12		XS		P03A-000A8	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	14		XS		P03A-000AF	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	16		XS		P03A-000AP	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	18		XS		P03A-001DZ	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	20		XS		P03A-001E0	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	24		XS		P03A-001E1	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	30		XS		P03A-003X6	45 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius Moderate wet H2S service	
1	36		XS		P03A-002G0	45 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius Moderate wet H2S service	
1	42		14.27mm		P03A-002FA	45 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius Moderate wet H2S service	
1	48		14.27mm		P03A-002G2	45 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius Moderate wet H2S service	
1	52		15.88mm		P03A-004CL	45 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Long radius Moderate wet H2S service	
1	56		17.48mm		P03A-004CM	45 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Long radius Moderate wet H2S service	
1	60		17.48mm		P03A-004CN	45 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Long radius Moderate wet H2S service	
1	64		19.05mm		P03A-004CP	45 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Long radius Moderate wet H2S service	
1	68		19.05mm		P03A-004CR	45 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Long radius Moderate wet H2S service	
1	72		19.05mm		P03A-004CS	45 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Long radius Moderate wet H2S service	
1	76		19.05mm		P03A-004CT	45 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Long radius Moderate wet H2S service	
1	80		22.23mm		P03A-004CU	45 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Long radius Moderate wet H2S service	
1	92		22.23mm		P03A-004HW	45 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Long radius Moderate wet H2S service	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	XXS	XXS	P27A-004M7	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.5	XXS	XXS	P27A-004MF	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.75	XXS	XXS	P27A-002ZZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.5	XXS	XXS	P27A-004N3	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.75	XXS	XXS	P27A-004ND	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	1	XXS	XXS	P27A-004NR	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	0.75	XXS	XXS	P27A-00341	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	XXS	XXS	P27A-0033N	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	XXS	XXS	P27A-00339	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	XXS	XXS	P27A-006BZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	XXS	XXS	P27A-006C9	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	1.5	SCH160	XXS	P27A-0073M	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	SCH160	XXS	P27A-00747	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	SCH160	XXS	P27A-0074P	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	SCH120	XXS	P27A-00DJD	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	6	4	SCH120	SCH160	P27A-007PN	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	XS	SCH160	P27A-007WE	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	XS	SCH120	P27A-004KE	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	XS	SCH160	P27A-004PZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	XS	SCH120	P27A-004S9	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	XS	XS	P27A-001FR	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	XS	SCH120	P27A-004WC	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	XS	XS	P27A-001G5	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	XS	XS	P27A-001EA	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	XS	SCH120	P27A-0051M	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	XS	XS	P27A-001GE	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	XS	XS	P27A-001E9	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	XS	XS	P27A-001F1	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	XS	XS	P27A-001GV	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	XS	XS	P27A-001EN	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	XS	XS	P27A-001FN	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	XS	XS	P27A-001GF	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	10	XS	XS	P27A-005BV	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	12	XS	XS	P27A-005DX	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	14	XS	XS	P27A-005FY	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	16	XS	XS	P27A-005J1	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	12	XS	XS	P27A-005M1	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	14	XS	XS	P27A-005P4	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	16	XS	XS	P27A-005SB	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	18	XS	XS	P27A-005TZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24	16	XS	XS	P27A-005YD	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24	18	XS	XS	P27A-00600	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24	20	XS	XS	P27A-0061N	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	30	20	XS	XS	P27A-00FBY	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Moderate wet H2S service	
1	30	24	XS	XS	P27A-00FBZ	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Moderate wet H2S service	
1	36	24	XS	XS	P27A-00BHP	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Moderate wet H2S service	
1	36	30	XS	XS	P27A-00FC0	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Moderate wet H2S service	
1	42	30	14.27mm	XS	P27A-00FC1	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Moderate wet H2S service	
1	42	36	14.27mm	XS	P27A-00FC2	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Moderate wet H2S service	
1	48	42	14.27mm	14.27mm	P27A-00H63	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Moderate wet H2S service	
1	52	30	15.88mm	XS	P27A-00H64	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	52	36	15.88mm	XS	P27A-00H65	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	52	42	15.88mm	14.27mm	P27A-00H66	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	52	48	15.88mm	14.27mm	P27A-00H67	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	56	36	17.48mm	XS	P27A-00H68	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	56	42	17.48mm	14.27mm	P27A-00H69	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	56	48	17.48mm	14.27mm	P27A-00H6K	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	56	52	17.48mm	15.88mm	P27A-00H6L	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	60	36	17.48mm	XS	P27A-00H6M	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	60	42	17.48mm	14.27mm	P27A-00H6N	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	60	48	17.48mm	14.27mm	P27A-00H6A	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	60	52	17.48mm	15.88mm	P27A-00H6B	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	60	56	17.48mm	17.48mm	P27A-00H6P	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	64	42	19.05mm	14.27mm	P27A-00H6R	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	64	48	19.05mm	14.27mm	P27A-00H6S	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	64	52	19.05mm	15.88mm	P27A-00H6T	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	64	56	19.05mm	17.48mm	P27A-00H6U	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	64	60	19.05mm	17.48mm	P27A-00H6V	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	68	48	19.05mm	14.27mm	P27A-00H6W	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	68	52	19.05mm	15.88mm	P27A-00H6X	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	68	56	19.05mm	17.48mm	P27A-00H6Y	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	68	60	19.05mm	17.48mm	P27A-00H6C	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	68	64	19.05mm	19.05mm	P27A-00H6Z	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	72	48	19.05mm	14.27mm	P27A-00H70	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Moderate wet H2S service	

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CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	72	52	19.05mm	15.88mm	P27A-00H71	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	72	56	19.05mm	17.48mm	P27A-00H72	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	72	60	19.05mm	17.48mm	P27A-00H73	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	72	64	19.05mm	19.05mm	P27A-00H74	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	72	68	19.05mm	19.05mm	P27A-00H75	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	76	52	19.05mm	15.88mm	P27A-00HMT	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	76	56	19.05mm	17.48mm	P27A-00HMU	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	76	60	19.05mm	17.48mm	P27A-00HMV	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	76	64	19.05mm	19.05mm	P27A-00HMW	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	76	68	19.05mm	19.05mm	P27A-00HMX	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	76	72	19.05mm	19.05mm	P27A-00HMY	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	80	56	22.23mm	17.48mm	P27A-00H6E	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	80	60	22.23mm	17.48mm	P27A-00H6F	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	80	64	22.23mm	19.05mm	P27A-00H6G	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	80	68	22.23mm	19.05mm	P27A-00H6H	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	80	72	22.23mm	19.05mm	P27A-00H6J	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	80	76	22.23mm	19.05mm	P27A-00HUL	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	92	68	22.23mm	19.05mm	P27A-00HUK	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	92	72	22.23mm	19.05mm	P27A-00HUJ	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	92	76	22.23mm	19.05mm	P27A-00HUG	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	92	80	22.23mm	22.23mm	P27A-00HUH	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Moderate wet H2S service	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	XXS	XXS	P28A-00BNX	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.5	XXS	XXS	P28A-00BNY	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.75	XXS	XXS	P28A-0030M	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.5	XXS	XXS	P28A-00BNZ	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.75	XXS	XXS	P28A-00BP0	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	1	XXS	XXS	P28A-008W0	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	0.75	XXS	XXS	P28A-00BP1	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	XXS	XXS	P28A-004KN	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	XXS	XXS	P28A-004KP	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	XXS	XXS	P28A-00BP2	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	XXS	XXS	P28A-008GE	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	1.5	SCH160	XXS	P28A-00BN8	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	SCH160	XXS	P28A-00AVE	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	SCH160	XXS	P28A-00AKB	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	SCH120	XXS	P28A-00AKC	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	SCH120	SCH160	P28A-00AKD	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	XS	SCH160	P28A-008J3	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	XS	SCH120	P28A-004KT	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	XS	SCH160	P28A-00FH2	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	XS	SCH120	P28A-00EUB	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	XS	XS	P28A-001GT	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	XS	SCH120	P28A-00AKK	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	XS	XS	P28A-001GW	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	XS	XS	P28A-001EP	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	XS	SCH120	P28A-00AKN	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	XS	XS	P28A-001H9	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	XS	XS	P28A-001EN	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	XS	XS	P28A-001FY	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	XS	XS	P28A-0018A	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	XS	XS	P28A-001F9	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	XS	XS	P28A-001GS	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	XS	XS	P28A-001H5	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	10	XS	XS	P28A-008EE	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	12	XS	XS	P28A-00CLP	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	14	XS	XS	P28A-008EG	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	18	16	XS	XS	P28A-0063K	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	12	XS	XS	P28A-00CLR	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	14	XS	XS	P28A-008EJ	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	16	XS	XS	P28A-0063N	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	18	XS	XS	P28A-0063P	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24	16	XS	XS	P28A-0063R	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24	18	XS	XS	P28A-0028D	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24	20	XS	XS	P28A-0063S	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	30	20	XS	XS	P28A-00CGR	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Moderate wet H2S service	
1	30	24	XS	XS	P28A-00CGS	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Moderate wet H2S service	
1	36	24	XS	XS	P28A-008HD	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Moderate wet H2S service	
1	36	30	XS	XS	P28A-00CGT	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Moderate wet H2S service	
1	42	30	14.27mm	XS	P28A-00CGU	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Moderate wet H2S service	
1	42	36	14.27mm	XS	P28A-00CGV	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Moderate wet H2S service	
1	48	42	14.27mm	14.27mm	P28A-00EDU	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Moderate wet H2S service	
1	52	30	15.88mm	XS	P28A-00EDV	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	52	36	15.88mm	XS	P28A-00EDW	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	52	42	15.88mm	14.27mm	P28A-00EDX	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	52	48	15.88mm	14.27mm	P28A-00EDY	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	56	36	17.48mm	XS	P28A-00EDZ	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	56	42	17.48mm	14.27mm	P28A-00EE0	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	56	48	17.48mm	14.27mm	P28A-00EE1	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	56	52	17.48mm	15.88mm	P28A-00EE2	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	60	36	17.48mm	XS	P28A-00EE3	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	60	42	17.48mm	14.27mm	P28A-00EE4	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	60	48	17.48mm	14.27mm	P28A-00EE5	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	60	52	17.48mm	15.88mm	P28A-00EE6	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	60	56	17.48mm	17.48mm	P28A-00EE7	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	64	42	19.05mm	14.27mm	P28A-00EE8	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	64	48	19.05mm	14.27mm	P28A-00EE9	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	64	52	19.05mm	15.88mm	P28A-00EEA	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	64	56	19.05mm	17.48mm	P28A-00EEB	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	64	60	19.05mm	17.48mm	P28A-00EEC	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	68	48	19.05mm	14.27mm	P28A-00EED	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	68	52	19.05mm	15.88mm	P28A-00EEE	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	68	56	19.05mm	17.48mm	P28A-00EEF	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	68	60	19.05mm	17.48mm	P28A-00EEG	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	68	64	19.05mm	19.05mm	P28A-00EEH	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	72	48	19.05mm	14.27mm	P28A-00EEJ	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	72	52	19.05mm	15.88mm	P28A-00EEK	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	72	56	19.05mm	17.48mm	P28A-00EEL	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	72	60	19.05mm	17.48mm	P28A-00EEM	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	72	64	19.05mm	19.05mm	P28A-00EEN	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	72	68	19.05mm	19.05mm	P28A-00EEP	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	76	52	19.05mm	15.88mm	P28A-00EXB	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	76	56	19.05mm	17.48mm	P28A-00EXC	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	76	60	19.05mm	17.48mm	P28A-00EXD	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	76	64	19.05mm	19.05mm	P28A-00EXE	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	76	68	19.05mm	19.05mm	P28A-00EXF	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	76	72	19.05mm	19.05mm	P28A-00EXG	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	80	56	22.23mm	17.48mm	P28A-00EER	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	80	60	22.23mm	17.48mm	P28A-00EES	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	80	64	22.23mm	19.05mm	P28A-00EET	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	80	68	22.23mm	19.05mm	P28A-00EEU	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	80	72	22.23mm	19.05mm	P28A-00EEV	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	80	76	22.23mm	19.05mm	P28A-00F3Y	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	92	68	22.23mm	19.05mm	P28A-00F3Z	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	92	72	22.23mm	19.05mm	P28A-00F40	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	92	76	22.23mm	19.05mm	P28A-00F41	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Moderate wet H2S service	

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ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	92	80	22.23mm	22.23mm	P28A-00F42	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Moderate wet H2S service	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P29A-001UE	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	0.75		XXS		P29A-003VU	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	1		XXS		P29A-0033Z	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	1.5		XXS		P29A-00340	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	2		XXS		P29A-005KX	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	3		XXS		P29A-005KY	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	4		SCH160		P29A-001WH	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	6		SCH120		P29A-001WN	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	8		XS		P29A-001TV	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	10		XS		P29A-001TE	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	12		XS		P29A-003G9	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	14		XS		P29A-001TG	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	16		XS		P29A-001TH	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	18		XS		P29A-001TJ	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	20		XS		P29A-001TL	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	24		XS		P29A-001VJ	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	30		XS		P29A-003BX	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	36		XS		P29A-001VM	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	42		14.27mm		P29A-001TT	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	48		14.27mm		P29A-001VR	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	52		15.88mm		P29A-003SC	Cap ASTM A234 Grade WPB Seamless ASME B16.9-modified BW Moderate wet H2S service	
1	56		17.48mm		P29A-003SD	Cap ASTM A234 Grade WPB Seamless ASME B16.9-modified BW Moderate wet H2S service	
1	60		17.48mm		P29A-003SE	Cap ASTM A234 Grade WPB Seamless ASME B16.9-modified BW Moderate wet H2S service	
1	64		19.05mm		P29A-003SF	Cap ASTM A234 Grade WPB Seamless ASME B16.9-modified BW Moderate wet H2S service	
1	68		19.05mm		P29A-003SG	Cap ASTM A234 Grade WPB Seamless ASME B16.9-modified BW Moderate wet H2S service	
1	72		19.05mm		P29A-003SH	Cap ASTM A234 Grade WPB Seamless ASME B16.9-modified BW Moderate wet H2S service	
1	76		19.05mm		P29A-003SJ	Cap ASTM A234 Grade WPB Seamless ASME B16.9-modified BW Moderate wet H2S service	
1	80		22.23mm		P29A-003SK	Cap ASTM A234 Grade WPB Seamless ASME B16.9-modified BW Moderate wet H2S service	
1	92		22.23mm		P29A-005GB	Cap ASTM A234 Grade WPB Seamless ASME B16.9-modified BW Moderate wet H2S service	
541	0.75				P29B-0000Y	Cap ASTM A105 Class 6000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P41A-000B9	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		XXS		P41A-000BA	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		XXS		P41A-000D8	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		XXS		P41A-000D9	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2	0.75	XXS	XXS	P31B-00CP1	Outlet ASTM A105 MSS SP-97 BW	
1	3	0.75	XXS	XXS	P31B-00CMJ	Outlet ASTM A105 MSS SP-97 BW	
1	4	0.75	SCH160	XXS	P31B-00CLK	Outlet ASTM A105 MSS SP-97 BW	
1	6	0.75	SCH120	XXS	P31B-00CKB	Outlet ASTM A105 MSS SP-97 BW	
1	8	0.75	XS	XXS	P31B-00C4Z	Outlet ASTM A105 MSS SP-97 BW	
1	10	0.75	XS	XXS	P31B-00CEY	Outlet ASTM A105 MSS SP-97 BW	
1	12	0.75	XS	XXS	P31B-00CRS	Outlet ASTM A105 MSS SP-97 BW	
1	14	0.75	XS	XXS	P31B-00CRB	Outlet ASTM A105 MSS SP-97 BW	
1	16	0.75	XS	XXS	P31B-00CPR	Outlet ASTM A105 MSS SP-97 BW	
1	18	0.75	XS	XXS	P31B-00CP9	Outlet ASTM A105 MSS SP-97 BW	
1	20	0.75	XS	XXS	P31B-00CNG	Outlet ASTM A105 MSS SP-97 BW	
1	24	0.75	XS	XXS	P31B-00CMX	Outlet ASTM A105 MSS SP-97 BW	
1	30	0.75	XS	XXS	P31B-01452	Outlet ASTM A105 MSS SP-97 BW	
1	36	0.75	XS	XXS	P31B-01453	Outlet ASTM A105 MSS SP-97 BW	
1	42	0.75	14.27mm	XXS	P31B-01454	Outlet ASTM A105 MSS SP-97 BW	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	48	0.75	14.27mm	XXS	P31B-01456	Outlet ASTM A105 MSS SP-97 BW	
1	52	0.75	15.88mm	XXS	P31B-00CKT	Outlet ASTM A105 MSS SP-97 BW	
1	56	0.75	17.48mm	XXS	P31B-0145B	Outlet ASTM A105 MSS SP-97 BW	
1	60	0.75	17.48mm	XXS	P31B-0145F	Outlet ASTM A105 MSS SP-97 BW	
1	64	0.75	19.05mm	XXS	P31B-0145K	Outlet ASTM A105 MSS SP-97 BW	
1	68	0.75	19.05mm	XXS	P31B-0145P	Outlet ASTM A105 MSS SP-97 BW	
1	72	0.75	19.05mm	XXS	P31B-00CA1	Outlet ASTM A105 MSS SP-97 BW	
1	76	0.75	19.05mm	XXS	P31B-0145V	Outlet ASTM A105 MSS SP-97 BW	
1	80	0.75	22.23mm	XXS	P31B-0145Z	Outlet ASTM A105 MSS SP-97 BW	
1	92	0.75	22.23mm	XXS	P31B-01469	Outlet ASTM A105 MSS SP-97 BW	
1	3	1	XXS	XXS	P31B-00B48	Outlet ASTM A105 MSS SP-97 BW	
1	4	1	SCH160	XXS	P31B-00B07	Outlet ASTM A105 MSS SP-97 BW	
1	6	1	SCH120	XXS	P31B-00AZ2	Outlet ASTM A105 MSS SP-97 BW	
1	8	1	XS	XXS	P31B-00AUZ	Outlet ASTM A105 MSS SP-97 BW	
1	10	1	XS	XXS	P31B-00BW4	Outlet ASTM A105 MSS SP-97 BW	
1	12	1	XS	XXS	P31B-00BRR	Outlet ASTM A105 MSS SP-97 BW	
1	14	1	XS	XXS	P31B-00BRA	Outlet ASTM A105 MSS SP-97 BW	
1	16	1	XS	XXS	P31B-00BCD	Outlet ASTM A105 MSS SP-97 BW	
1	18	1	XS	XXS	P31B-00B8W	Outlet ASTM A105 MSS SP-97 BW	
1	20	1	XS	XXS	P31B-00B88	Outlet ASTM A105 MSS SP-97 BW	
1	24	1	XS	XXS	P31B-00B4L	Outlet ASTM A105 MSS SP-97 BW	
1	30	1	XS	XXS	P31B-00YDW	Outlet ASTM A105 MSS SP-97 BW	
1	36	1	XS	XXS	P31B-00YDU	Outlet ASTM A105 MSS SP-97 BW	
1	42	1	14.27mm	XXS	P31B-00YDR	Outlet ASTM A105 MSS SP-97 BW	
1	48	1	14.27mm	XXS	P31B-01457	Outlet ASTM A105 MSS SP-97 BW	
1	52	1	15.88mm	XXS	P31B-00AZH	Outlet ASTM A105 MSS SP-97 BW	
1	56	1	17.48mm	XXS	P31B-0145C	Outlet ASTM A105 MSS SP-97 BW	
1	60	1	17.48mm	XXS	P31B-0145G	Outlet ASTM A105 MSS SP-97 BW	
1	64	1	19.05mm	XXS	P31B-0145L	Outlet ASTM A105 MSS SP-97 BW	
1	68	1	19.05mm	XXS	P31B-0145R	Outlet ASTM A105 MSS SP-97 BW	
1	72	1	19.05mm	XXS	P31B-00AVM	Outlet ASTM A105 MSS SP-97 BW	
1	76	1	19.05mm	XXS	P31B-0145W	Outlet ASTM A105 MSS SP-97 BW	
1	80	1	22.23mm	XXS	P31B-01460	Outlet ASTM A105 MSS SP-97 BW	
1	92	1	22.23mm	XXS	P31B-0146A	Outlet ASTM A105 MSS SP-97 BW	
1	4	1.5	SCH160	XXS	P31B-00BNW	Outlet ASTM A105 MSS SP-97 BW	
1	6	1.5	SCH120	XXS	P31B-00BJ8	Outlet ASTM A105 MSS SP-97 BW	
1	8	1.5	XS	XXS	P31B-00BFF	Outlet ASTM A105 MSS SP-97 BW	
1	10	1.5	XS	XXS	P31B-00CER	Outlet ASTM A105 MSS SP-97 BW	
1	12	1.5	XS	XXS	P31B-00CDW	Outlet ASTM A105 MSS SP-97 BW	
1	14	1.5	XS	XXS	P31B-00C9H	Outlet ASTM A105 MSS SP-97 BW	
1	16	1.5	XS	XXS	P31B-00C8P	Outlet ASTM A105 MSS SP-97 BW	
1	18	1.5	XS	XXS	P31B-00C48	Outlet ASTM A105 MSS SP-97 BW	
1	20	1.5	XS	XXS	P31B-00C3G	Outlet ASTM A105 MSS SP-97 BW	
1	24	1.5	XS	XXS	P31B-00BZ4	Outlet ASTM A105 MSS SP-97 BW	
1	30	1.5	XS	XXS	P31B-00YDX	Outlet ASTM A105 MSS SP-97 BW	
1	36	1.5	XS	XXS	P31B-00YDV	Outlet ASTM A105 MSS SP-97 BW	
1	42	1.5	14.27mm	XXS	P31B-00YDS	Outlet ASTM A105 MSS SP-97 BW	
1	48	1.5	14.27mm	XXS	P31B-01458	Outlet ASTM A105 MSS SP-97 BW	
1	52	1.5	15.88mm	XXS	P31B-00BL8	Outlet ASTM A105 MSS SP-97 BW	
1	56	1.5	17.48mm	XXS	P31B-0145D	Outlet ASTM A105 MSS SP-97 BW	
1	60	1.5	17.48mm	XXS	P31B-0145H	Outlet ASTM A105 MSS SP-97 BW	
1	64	1.5	19.05mm	XXS	P31B-0145M	Outlet ASTM A105 MSS SP-97 BW	
1	68	1.5	19.05mm	XXS	P31B-0145S	Outlet ASTM A105 MSS SP-97 BW	
1	72	1.5	19.05mm	XXS	P31B-00BHW	Outlet ASTM A105 MSS SP-97 BW	
1	76	1.5	19.05mm	XXS	P31B-0145X	Outlet ASTM A105 MSS SP-97 BW	
1	80	1.5	22.23mm	XXS	P31B-01461	Outlet ASTM A105 MSS SP-97 BW	
1	92	1.5	22.23mm	XXS	P31B-0146B	Outlet ASTM A105 MSS SP-97 BW	
1	6	2	SCH120	XXS	P31B-007SC	Outlet ASTM A105 MSS SP-97 BW	
1	8	2	XS	XXS	P31B-0112W	Outlet ASTM A105 MSS SP-97 BW	

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OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	10	2	XS	XXS	P31B-0112V	Outlet ASTM A105 MSS SP-97 BW	
1	12	2	XS	XXS	P31B-00CBF	Outlet ASTM A105 MSS SP-97 BW	
1	14	2	XS	XXS	P31B-011FN	Outlet ASTM A105 MSS SP-97 BW	
1	16	2	XS	XXS	P31B-011BM	Outlet ASTM A105 MSS SP-97 BW	
1	18	2	XS	XXS	P31B-011FP	Outlet ASTM A105 MSS SP-97 BW	
1	20	2	XS	XXS	P31B-01451	Outlet ASTM A105 MSS SP-97 BW	
1	24	2	XS	XXS	P31B-00NMT	Outlet ASTM A105 MSS SP-97 BW	
1	30	2	XS	XXS	P31B-00EU0	Outlet ASTM A105 MSS SP-97 BW	
1	36	2	XS	XXS	P31B-00EUC	Outlet ASTM A105 MSS SP-97 BW	
1	42	2	14.27mm	XXS	P31B-01455	Outlet ASTM A105 MSS SP-97 BW	
1	48	2	14.27mm	XXS	P31B-01459	Outlet ASTM A105 MSS SP-97 BW	
1	52	2	15.88mm	XXS	P31B-0145A	Outlet ASTM A105 MSS SP-97 BW	
1	56	2	17.48mm	XXS	P31B-0145E	Outlet ASTM A105 MSS SP-97 BW	
1	60	2	17.48mm	XXS	P31B-0145J	Outlet ASTM A105 MSS SP-97 BW	
1	64	2	19.05mm	XXS	P31B-0145N	Outlet ASTM A105 MSS SP-97 BW	
1	68	2	19.05mm	XXS	P31B-0145T	Outlet ASTM A105 MSS SP-97 BW	
1	72	2	19.05mm	XXS	P31B-0145U	Outlet ASTM A105 MSS SP-97 BW	
1	76	2	19.05mm	XXS	P31B-0145Y	Outlet ASTM A105 MSS SP-97 BW	
1	80	2	22.23mm	XXS	P31B-01462	Outlet ASTM A105 MSS SP-97 BW	
1	92	2	22.23mm	XXS	P31B-0146C	Outlet ASTM A105 MSS SP-97 BW	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30B-0002D	Plug ASTM A105 ASME B16.11 NPT Round head	
1	0.75				P30B-0002E	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1				P30B-0002F	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1.5				P30B-0002G	Plug ASTM A105 ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P61B-003LE	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	0.75		XXS		P61B-003M1	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	1		XXS		P61B-003M2	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	1.5		XXS		P61B-003MC	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	2		XXS		P61B-003MH	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	3		XXS		P61B-0090A	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	4		SCH160		P61B-0090B	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	6		SCH120		P61B-003ML	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	8		XS		P61B-003JG	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	10		XS		P61B-003MD	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	12		XS		P61B-003ME	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	14		XS		P61B-003MF	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	16		XS		P61B-003MG	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	18		XS		P61B-002EZ	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	20		XS		P61B-003A7	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	24		XS		P61B-002F2	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	30		XS		P61B-001SJ	Flange WN ASTM A105 Class 150 ASME B16.47 Series B RF	
1	36		XS		P61B-001UE	Flange WN ASTM A105 Class 150 ASME B16.47 Series B RF	
1	42		14.27mm		P61B-003LG	Flange WN ASTM A105 Class 150 ASME B16.47 Series B RF	
1	48		14.27mm		P61B-003LK	Flange WN ASTM A105 Class 150 ASME B16.47 Series B RF	
1	52		15.88mm		P61B-003LM	Flange WN ASTM A105 Class 150 ASME B16.47 Series B RF	
1	56		17.48mm		P61B-003LP	Flange WN ASTM A105 Class 150 ASME B16.47 Series B RF	
1	60		17.48mm		P61B-003LR	Flange WN ASTM A105 Class 150 ASME B16.47 Series B RF	
1	64		19.05mm		P61B-003LT	Flange WN ASTM A105 Class 150 Standard-drawing RF	
1	68		19.05mm		P61B-003LV	Flange WN ASTM A105 Class 150 Standard-drawing RF	
1	72		19.05mm		P61B-00BS9	Flange WN ASTM A105 Class 150 Standard-drawing RF	
1	76		19.05mm		P61B-00BSA	Flange WN ASTM A105 Class 150 Standard-drawing RF	
1	80		22.23mm		P61B-00BSB	Flange WN ASTM A105 Class 150 Standard-drawing RF	
1	92		22.23mm		P61B-00D0Y	Flange WN ASTM A105 Class 150 Standard-drawing RF	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
541	0.5				P61B-003TZ	Flange NPT ASTM A105 Class 150 ASME B16.5 RF	
541	0.75				P61B-003U0	Flange NPT ASTM A105 Class 150 ASME B16.5 RF	
773	0.5		XXS		P61B-003LW	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	0.75		XXS		P61B-003MA	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	1		XXS		P61B-003MB	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	1.5		XXS		P61B-003MR	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	2		XXS		P61B-003MS	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	3		XXS		P61B-0090D	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	4		SCH160		P61B-0068D	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	6		SCH120		P61B-003MV	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	8		XS		P61B-001FV	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	10		XS		P61B-001FD	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	12		XS		P61B-001FU	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	14		XS		P61B-001GR	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	16		XS		P61B-001HU	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	18		XS		P61B-001T0	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	20		XS		P61B-003A5	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	24		XS		P61B-002RA	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	30		XS		P61B-001KT	Flange WN ASTM A105 Class 300 ASME B16.47 Series B RF	
773	36		XS		P61B-001N6	Flange WN ASTM A105 Class 300 ASME B16.47 Series B RF	
773	42		14.27mm		P61B-003ZZ	Flange WN ASTM A105 Class 300 ASME B16.47 Series B RF	
773	48		14.27mm		P61B-0067W	Flange WN ASTM A105 Class 300 ASME B16.47 Series B RF	
773	52		15.88mm		P61B-00ABZ	Flange WN ASTM A105 Class 300 ASME B16.47 Series B RF	
773	56		17.48mm		P61B-00BSC	Flange WN ASTM A105 Class 300 ASME B16.47 Series B RF	
773	60		17.48mm		P61B-00BSD	Flange WN ASTM A105 Class 300 ASME B16.47 Series B RF	
781	0.5		XXS		P61B-003T1	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	0.75		XXS		P61B-003TB	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	1		XXS		P61B-003TC	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	1.5		XXS		P61B-009N1	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	2		XXS		P61B-003JR	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	3		XXS		P61B-0092V	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	4		SCH160		P61B-0068E	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
789	3		XXS		P61B-00DGN	Flange WN ASTM A105 Class 900 ASME B16.5 RJ	
789	4		SCH160		P61B-00DGP	Flange WN ASTM A105 Class 900 ASME B16.5 RJ	
789	6		SCH120		P61B-0065Y	Flange WN ASTM A105 Class 900 ASME B16.5 RJ	
789	8		XS		P61B-00657	Flange WN ASTM A105 Class 900 ASME B16.5 RJ	
789	10		XS		P61B-009UV	Flange WN ASTM A105 Class 900 ASME B16.5 RJ	
789	12		XS		P61B-009UW	Flange WN ASTM A105 Class 900 ASME B16.5 RJ	
789	14		XS		P61B-009UX	Flange WN ASTM A105 Class 900 ASME B16.5 RJ	
797	0.5		XXS		P61B-00664	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
797	0.75		XXS		P61B-005V2	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
797	1		XXS		P61B-009W2	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
797	1.5		XXS		P61B-009WB	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
797	2		XXS		P61B-0066U	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
797	3		XXS		P61B-0066V	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
797	4		SCH160		P61B-00671	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67B-000FH	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	0.75				P67B-000FJ	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	1				P67B-000FK	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	1.5				P67B-000FL	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	2				P67B-000FT	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	3				P67B-000FW	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	4				P67B-000FX	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	6				P67B-000FY	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	8				P67B-000FZ	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	10				P67B-000FM	Blind flange ASTM A105 Class 150 ASME B16.5 RF	

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BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	12				P67B-000FN	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	14				P67B-000FP	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	16				P67B-000FR	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	18				P67B-000FS	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	20				P67B-000FU	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	24				P67B-000FV	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	30				P67B-000G2	Blind flange ASTM A105 Class 150 ASME B16.47 Series B RF	
1	36				P67B-000G5	Blind flange ASTM A105 Class 150 ASME B16.47 Series B RF	
1	42				P67B-000KZ	Blind flange ASTM A105 Class 150 ASME B16.47 Series B RF	
1	48				P67B-000L2	Blind flange ASTM A105 Class 150 ASME B16.47 Series B RF	
1	52				P67B-0016N	Blind flange ASTM A105 Class 150 ASME B16.47 Series B RF	
1	56				P67B-0016R	Blind flange ASTM A105 Class 150 ASME B16.47 Series B RF	
1	60				P67B-0016T	Blind flange ASTM A105 Class 150 ASME B16.47 Series B RF	
1	64				P67B-0016V	Blind flange ASTM A105 Class 150 Standard-drawing RF	
1	68				P67B-0016X	Blind flange ASTM A105 Class 150 Standard-drawing RF	
1	72				P67B-00178	Blind flange ASTM A105 Class 150 Standard-drawing RF	
1	76				P67B-0017A	Blind flange ASTM A105 Class 150 Standard-drawing RF	
1	80				P67B-0017C	Blind flange ASTM A105 Class 150 Standard-drawing RF	
1	92				P67B-0017J	Blind flange ASTM A105 Class 150 Standard-drawing RF	

REDUCING FLANGE (FR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5		XXS	P62B-000D0	Reducing flange WN ASTM A105 Class 150 ASME B16.5 RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000L8	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000L9	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000LA	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000LB	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000LH	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000LL	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000LM	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	6				P73T-000LN	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	8				P73T-000LP	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	10				P73T-000LC	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	12				P73T-000LD	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	14				P73T-000LE	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	16				P73T-000LF	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	18				P73T-000LG	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	20				P73T-000LJ	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	24				P73T-000LK	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	30				P73T-000LT	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	36				P73T-000LW	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	42				P73T-000LZ	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	48				P73T-000M2	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	52				P73T-001E2	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	56				P73T-0024L	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	60				P73T-001E5	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	64				P73T-003GZ	Spiral wound gasket SS316 winding / Graphite filler Class 150 Standard-drawing Flange Standard-drawing RF 4.5mm-T Outer-ring CS Inner-ring SS316	

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GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	68				P73T-003H0	Spiral wound gasket SS316 winding / Graphite filler Class 150 Standard-drawing Flange Standard-drawing RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	72				P73T-003H1	Spiral wound gasket SS316 winding / Graphite filler Class 150 Standard-drawing Flange Standard-drawing RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	76				P73T-003H2	Spiral wound gasket SS316 winding / Graphite filler Class 150 Standard-drawing Flange Standard-drawing RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	80				P73T-003H3	Spiral wound gasket SS316 winding / Graphite filler Class 150 Standard-drawing Flange Standard-drawing RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	92				P73T-003J6	Spiral wound gasket SS316 winding / Graphite filler Class 150 Standard-drawing Flange Standard-drawing RF 4.5mm-T Outer-ring CS Inner-ring SS316	
3001	1				P78U-00067	Insulation gasket kit Glass reinforced epoxy Class 150 Manufacturer-standard Flange ASME B16.5 RF	
773	0.5				P73T-000FT	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	0.75				P73T-000FU	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	3				P73T-000G5	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	4				P73T-000G6	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	6				P73T-000G7	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	8				P73T-000G8	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	10				P73T-000FX	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	12				P73T-000FY	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	14				P73T-000FZ	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	16				P73T-000G0	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	18				P73T-000G1	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	20				P73T-000G3	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	24				P73T-000G4	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	30				P73T-000H9	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	36				P73T-000HC	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	42				P73T-000KM	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	48				P73T-000KR	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	52				P73T-0024N	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	56				P73T-0024M	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	60				P73T-0026H	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	0.5				P73T-000J8	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	0.75				P73T-000J9	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1				P73T-000JA	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1.5				P73T-000JB	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	2				P73T-000JH	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	3				P73T-000JL	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	4				P73T-000JM	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
789	3				P75T-000JN	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	4				P75T-000JP	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	6				P75T-000JR	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	8				P75T-000JS	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	10				P75T-000JL	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	12				P75T-000JM	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	14				P75T-000MJ	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	0.5				P75T-000JT	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	0.75				P75T-000JU	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	1				P75T-000JV	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	1.5				P75T-000JW	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	

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GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
797	2				P75T-0008A	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	3				P75T-0008E	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	4				P75T-0008D	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-16				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	18-20				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
1	24				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	999
1	30-42				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	48-56				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
1	60-92				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	999
773	0.5-10				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
773	12-60				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
781	0.5-4				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
789	0.5-3				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
789	4-14				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
797	0.5-2				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
797	3-4				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81B-0036C	Gate valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service AIV service	
1	0.75				P81B-0036D	Gate valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service AIV service	
1	1				P81B-0036E	Gate valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service AIV service	
1	1.5				P81B-0036F	Gate valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service AIV service	
1	2				P81C-009WS	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service AIV service	
1	3				P81C-009WT	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service AIV service	
1	4				P81C-009WU	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service AIV service	
1	6				P81C-009WV	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service AIV service	
1	8				P81C-009WW	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service AIV service	
1	10				P81C-009WP	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service AIV service	
1	12				P81C-009WR	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service AIV service	
1	14				P81C-009WJ	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Moderate wet H2S service AIV service	
1	16				P81C-009WK	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Moderate wet H2S service AIV service	
1	18				P81C-009WL	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Moderate wet H2S service AIV service	
1	20				P81C-009WM	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Moderate wet H2S service AIV service	
1	24				P81C-009WN	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Moderate wet H2S service AIV service	
1	30				P81C-009WE	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.47-B RF Trim number 12 BB-BG-OS&Y Gear operated Moderate wet H2S service AIV service	
1	36				P81C-009WF	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.47-B RF Trim number 12 BB-BG-OS&Y Gear operated Moderate wet H2S service AIV service	
1	42				P81C-009WG	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.47-B RF Trim number 12 BB-BG-OS&Y Gear operated Moderate wet H2S service AIV service	
1	48				P81C-009WH	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.47-B RF Trim number 12 BB-BG-OS&Y Gear operated Moderate wet H2S service AIV service	
4608	0.75				P81B-0036G	Gate valve ASTM A105 Class 150 API 602 BW both sides w/ nipples BE - NPT ASTM A106-B XXS-nipple Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service AIV service	

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GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82B-0026B	Globe valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service AIV service	
1	0.75				P82B-0026C	Globe valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service AIV service	
1	1				P82B-0026D	Globe valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service AIV service	
1	1.5				P82B-0026E	Globe valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service AIV service	
1	2				P82C-004KY	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service AIV service	
1	3				P82C-004KZ	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service AIV service	
1	4				P82C-004L0	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service AIV service	
1	6				P82C-004L1	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service AIV service	
1	8				P82C-004L2	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service AIV service	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83B-001M2	Check valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Moderate wet H2S service AIV service	
1	0.75				P83B-001M3	Check valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Moderate wet H2S service AIV service	
1	1				P83B-001M4	Check valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Moderate wet H2S service AIV service	
1	1.5				P83B-001M5	Check valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Moderate wet H2S service AIV service	
1	2				P83C-004E3	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Moderate wet H2S service AIV service	
1	3				P83C-004E4	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Moderate wet H2S service AIV service	
1	4				P83C-004E5	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Moderate wet H2S service AIV service	
1	6				P83C-004E6	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Moderate wet H2S service AIV service	
1	8				P83C-004E7	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Moderate wet H2S service AIV service	
1	10				P83C-004DZ	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Moderate wet H2S service AIV service	
1	12				P83C-004E0	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Moderate wet H2S service AIV service	
1	14				P83C-004E1	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Moderate wet H2S service AIV service	
1	16				P83C-004E2	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Moderate wet H2S service AIV service	

BALL VALVE (Q)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P84B-001S4	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design Moderate wet H2S service AIV service	
1	0.75				P84B-001S5	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design Moderate wet H2S service AIV service	
1	1				P84B-001S6	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design Moderate wet H2S service AIV service	
1	1.5				P84B-001S7	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design Moderate wet H2S service AIV service	
1	2				P84C-008NF	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design Moderate wet H2S service AIV service	
1	3				P84C-008NG	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design Moderate wet H2S service AIV service	
1	4				P84C-008NH	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design Moderate wet H2S service AIV service	
1	6				P84C-008NZ	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Reduced bore Fire tested design Moderate wet H2S service AIV service	
1	8				P84C-008P0	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Reduced bore Fire tested design Moderate wet H2S service AIV service	
1	10				P84C-008NT	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Reduced bore Fire tested design Moderate wet H2S service AIV service	
1	12				P84C-008NU	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Reduced bore Fire tested design Moderate wet H2S service AIV service	

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BALL VALVE (Q)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P84C-008NV	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Reduced bore Fire tested design Moderate wet H2S service AIV service	
1	16				P84C-008NW	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Reduced bore Fire tested design Moderate wet H2S service AIV service	
1	18				P84C-008NX	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Reduced bore Fire tested design Moderate wet H2S service AIV service	
1	20				P84C-008NY	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Reduced bore Fire tested design Moderate wet H2S service AIV service	
24	0.5				P84B-001S0	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design Moderate wet H2S service AIV service	
24	0.75				P84B-001S1	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design Moderate wet H2S service AIV service	
24	1				P84B-001S2	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design Moderate wet H2S service AIV service	
24	1.5				P84B-001S3	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design Moderate wet H2S service AIV service	
24	2				P84C-008NC	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design Moderate wet H2S service AIV service	
24	3				P84C-008ND	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design Moderate wet H2S service AIV service	
24	4				P84C-008NE	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design Moderate wet H2S service AIV service	
24	6				P84C-008NR	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design Moderate wet H2S service AIV service	
24	8				P84C-008NS	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design Moderate wet H2S service AIV service	
24	10				P84C-008NJ	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design Moderate wet H2S service AIV service	
24	12				P84C-008NK	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design Moderate wet H2S service AIV service	
24	14				P84C-008NL	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design Moderate wet H2S service AIV service	
24	16				P84C-008NM	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design Moderate wet H2S service AIV service	
24	18				P84C-008NN	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design Moderate wet H2S service AIV service	
24	20				P84C-008NP	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design Moderate wet H2S service AIV service	

BUTTERFLY VALVE (H)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	10				P86C-002SS	Offset design butterfly valve ASTM A216 Grade WCB Class 150 API 609 Category B Lug-type ASME B16.5 RF Disc CS Seat Stellite-6 Trim SS316 Triple eccentric design BG Gear operated Moderate wet H2S service AIV service	
1	12				P86C-002ST	Offset design butterfly valve ASTM A216 Grade WCB Class 150 API 609 Category B Lug-type ASME B16.5 RF Disc CS Seat Stellite-6 Trim SS316 Triple eccentric design BG Gear operated Moderate wet H2S service AIV service	
1	14				P86C-002SU	Offset design butterfly valve ASTM A216 Grade WCB Class 150 API 609 Category B Lug-type ASME B16.5 RF Disc CS Seat Stellite-6 Trim SS316 Triple eccentric design BG Gear operated Moderate wet H2S service AIV service	
1	16				P86C-002SV	Offset design butterfly valve ASTM A216 Grade WCB Class 150 API 609 Category B Lug-type ASME B16.5 RF Disc CS Seat Stellite-6 Trim SS316 Triple eccentric design BG Gear operated Moderate wet H2S service AIV service	

ORIFICE FLANGE (FO)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2		XXS		P66B-008P8	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	3		XXS		P66B-008P9	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	4		SCH160		P66B-008PA	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	6		SCH120		P66B-008PB	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	8		XS		P66B-008DS	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	10		XS		P66B-00884	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	12		XS		P66B-008P6	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	

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ORIFICE FLANGE (FO)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14		XS		P66B-008P7	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	16		XS		P66B-00887	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	18		XS		P66B-00888	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	20		XS		P66B-0088A	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
200	2		XXS		P66B-008PE	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	3		XXS		P66B-008PF	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	4		SCH160		P66B-008PG	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	6		SCH120		P66B-008PH	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	8		XS		P66B-008DW	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	10		XS		P66B-0088J	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	12		XS		P66B-008PC	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	14		XS		P66B-008PD	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	16		XS		P66B-0088M	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	18		XS		P66B-0088N	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	20		XS		P66B-0088R	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71B-0008A	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	0.75				P71B-0008B	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	1				P71B-0008C	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71B-0008D	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	2				P71B-0000P	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	3				P71B-0000N	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	4				P71B-0000M	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	6				P71B-0000L	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	8				P71B-0000R	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	10				P71B-0000K	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	12				P71B-0000J	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	

PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000AH	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	16				P72B-0000C	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	18				P72B-000AJ	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	20				P72B-000AK	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	24				P72B-000AL	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	30				P72B-000AM	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	36				P72B-000AN	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	42				P72B-000AP	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	48				P72B-000AR	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	52				P72B-000AS	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	56				P72B-000BC	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	60				P72B-000BD	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	64				P72B-000BE	Paddle blank ASTM A105 Class 150 Standard-drawing Flange Standard-drawing RF	
1	68				P72B-000BF	Paddle blank ASTM A105 Class 150 Standard-drawing Flange Standard-drawing RF	
1	72				P72B-000BG	Paddle blank ASTM A105 Class 150 Standard-drawing Flange Standard-drawing RF	
1	76				P72B-000TU	Paddle blank ASTM A105 Class 150 Standard-drawing Flange Standard-drawing RF	
1	80				P72B-000BH	Paddle blank ASTM A105 Class 150 Standard-drawing Flange Standard-drawing RF	
1	92				P72B-000WS	Paddle blank ASTM A105 Class 150 Standard-drawing Flange Standard-drawing RF	

PADDLE SPACER (PS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000AT	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	16				P72B-0000B	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	18				P72B-000AU	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	20				P72B-000AV	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	24				P72B-000AW	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	30				P72B-000AX	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	

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PADDLE SPACER (PS)							
OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	36				P72B-000AY	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	42				P72B-000AZ	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	48				P72B-000B0	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	52				P72B-000B1	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	56				P72B-000BJ	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	60				P72B-000BK	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	64				P72B-000BL	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange Standard-drawing RF	
1	68				P72B-000BM	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange Standard-drawing RF	
1	72				P72B-000BN	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange Standard-drawing RF	
1	76				P72B-000TV	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange Standard-drawing RF	
1	80				P72B-000BP	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange Standard-drawing RF	
1	92				P72B-000VC	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange Standard-drawing RF	

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BOLT TABLE (B_A2AQVV , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	60	P80S-008SY		
0.75	4	0.500	65	P80S-008SZ		
1	4	0.500	70	P80S-008T0		
1.5	4	0.500	75	P80S-008T1		
2	4	0.625	85	P80S-0090A		
3	4	0.625	95	P80S-0090C		
4	8	0.625	95	P80S-0090C		
6	8	0.750	105	P80S-0090E		
8	8	0.750	110	P80S-0090F		
10	12	0.875	120	P80S-005Z9		
12	12	0.875	120	P80S-005Z9		
14	12	1.000	135	P80S-00619		
16	16	1.000	140	P80S-0061A		
18	16	1.125	150	P80S-0064L		
20	20	1.125	160	P80S-0064N		
24	20	1.250	175	P80S-00686		
30	44	0.750	145	P80S-0090N		
36	44	0.875	175	P80S-005ZL		
42	48	1.000	190	P80S-0061L		
48	44	1.125	210	P80S-0064Z		
52	52	1.125	220	P80S-00651		
56	60	1.125	225	P80S-00652		
60	52	1.250	240	P80S-0068K		
64	52	1.250	280	P80S-0068U		
68	52	1.250	290	P80S-0068W		
72	52	1.250	300	P80S-0068Y		
76	52	1.250	310	P80S-00690		
80	52	1.250	320	P80S-00692		
92	52	1.250	340	P80S-00696		

BOLT TABLE (B_A2AQVV_773 , STUD ASME RF, OPTION CODE 773)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-008T0		
0.75	4	0.625	75	P80S-00908		
1	4	0.625	80	P80S-00909		
1.5	4	0.750	95	P80S-005Z4		
2	8	0.625	90	P80S-0090B		
3	8	0.750	110	P80S-0090F		
4	8	0.750	115	P80S-0090G		
6	12	0.750	125	P80S-0090J		
8	12	0.875	140	P80S-005ZD		
10	16	1.000	160	P80S-0061E		
12	16	1.125	175	P80S-0064S		
14	20	1.125	180	P80S-0064T		
16	20	1.250	190	P80S-00689		
18	24	1.250	200	P80S-0068B		
20	24	1.250	210	P80S-0068D		
24	24	1.500	235	P80S-006LB		
30	36	1.375	285	P80S-006HY		
36	32	1.625	320	P80S-00A5E		
42	36	1.750	355	P80S-00AEJ		
48	40	1.875	380	P80S-00AW5		
52	48	1.875	410	P80S-00AWB		
56	36	2.250	450	P80S-00DJB		
60	40	2.250	445	P80S-00DJA		

BOLT TABLE (B_A2AQVV_781 , STUD ASME RF, OPTION CODE 781)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	80	P80S-008T2		
0.75	4	0.625	90	P80S-0090B		
1	4	0.625	95	P80S-0090C		
1.5	4	0.750	110	P80S-0090F		
2	8	0.625	110	P80S-008T8		
3	8	0.750	130	P80S-0090K		
4	8	0.875	150	P80S-005ZF		
6	12	1.000	175			
8	12	1.125	195			

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BOLT TABLE (B_A2AQVV_781 , STUD ASME RF, OPTION CODE 781)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
10	16	1.250	250			
12	20	1.250	255			
14	20	1.375	270			
16	20	1.500	295			
18	20	1.625	320			
20	24	1.625	335			
24	24	1.875	380			
30	28	1.875	435			
36	28	2.250	510			
42	28	2.500	575			
48	32	2.750	635			
52	32	3.000	680			
56	32	3.250	730			
60	28	3.500	780			
64			0			
68			0			
72			0			
76			0			
80			0			

BOLT TABLE (B_A2AQVV_789 , STUD ASME RJ, OPTION CODE 789)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	110	P80S-0090F	R12	
0.75	4	0.750	115	P80S-0090G	R14	
1	4	0.875	130	P80S-005ZB	R16	
1.5	4	1.000	140	P80S-0061A	R20	
2	8	0.875	150	P80S-005ZF	R24	
3	8	0.875	150	P80S-005ZF	R31	P75T-000JN
4	8	1.125	175	P80S-0064S	R37	P75T-000JP
6	12	1.125	200	P80S-0064X	R45	P75T-000JR
8	12	1.375	260	P80S-006HT	R49	P75T-000JS
10	16	1.375	275	P80S-006HW	R53	P75T-000JL
12	20	1.375	295	P80S-006J0	R57	P75T-000JM
14	20	1.500	325	P80S-006RK	R62	P75T-000MJ
16	20	1.625	340		R66	
18	20	1.875	390		R70	
20	20	2.000	415		R74	
24	20	2.500	525		R78	
30	20	3.000	600		R102	
36	20	3.500	690		R105	

BOLT TABLE (B_A2AQVV_797 , STUD ASME RJ, OPTION CODE 797)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	110	P80S-0090F	R12	P75T-000JT
0.75	4	0.750	115	P80S-0090G	R14	P75T-000JU
1	4	0.875	130	P80S-005ZB	R16	P75T-000JV
1.5	4	1.000	140	P80S-0061A	R20	P75T-000JW
2	8	0.875	150	P80S-005ZF	R24	P75T-0008A
3	8	1.125	180	P80S-0064T	R35	P75T-0008E
4	8	1.250	230	P80S-0068H	R39	P75T-0008D
6	12	1.375	300		R46	
8	12	1.625	345		R50	
10	12	1.875	395		R54	
12	16	2.000	445		R58	
14	16	2.250	490		R63	
16	16	2.500	540		R67	
18	16	2.750	590		R71	
20	16	3.000	650		R75	
24	16	3.500	745		R79	

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BRANCH TABLE (T_A2AQVV)

RUN PIPE SIZE (in) \ BRANCH SIZE (in)	0.5	0.75	1	1.5	2	3	4	6	8	10	12	14	16	18	20	24	30	36	42	48	52	56	60	64	68	72	76	80	92
0.5	TS																												
0.75		TS																											
1		TR	TS																										
1.5		TR	TR	TS																									
2		L	TR	TR	TS																								
3		L	L	TR	TR	TS																							
4		L	L	L	TR	TR	TS																						
6		L	L	L	L	TR	TR	TS																					
8		L	L	L	L	9FP	TR	TR	TS																				
10		L	L	L	L	9FP	TR	TR	TR	TS																			
12		L	L	L	L	9FP	9FP	TR	TR	TR	TS																		
14		L	L	L	L	9FP	9FP	TR	TR	TR	TR	TS																	
16		L	L	L	L	9FP	9FP	TR	TR	TR	TR	TR	TS																
18		L	L	L	L	9FP	9FP	9FP	TR	TR	TR	TR	TR	TS															
20		L	L	L	L	9FP	9FP	9FP	TR	TR	TR	TR	TR	TR	TS														
24		L	L	L	L	9FP	9FP	9FP	9FP	TR	TR	TR	TR	TR	TR	TS													
30		L	L	L	L	9FP	9FP	9FP	9FP	TR	TR	TR	TR	TR	TR	TR	TS												
36		L	L	L	L	9FP	9FP	9FP	9FP	9FP	9FP	9FP	TR	TR	TR	TR	TR	TS											
42		L	L	L	L	9FP	9FP	9FP	9FP	9FP	9FP	9FP	TR	TR	TR	TR	TR	TR	TS										
48		L	L	L	L	9FP	9FP	9FP	9FP	9FP	9FP	9FP	9FP	9FP	9FP	TR	TR	TR	TR	TS									
52		L	L	L	L	9FP	9FP	9FP	9FP	9FP	9FP	9FP	9FP	9FP	9FP	9FP	TR	TR	TR	TR	TS								
56		L	L	L	L	9FP	9FP	9FP	9FP	9FP	9FP	9FP	9FP	9FP	9FP	9FP	TR	TR	TR	TR	TR	TS							
60		L	L	L	L	9FP	9FP	9FP	9FP	9FP	9FP	9FP	9FP	9FP	9FP	9FP	TR	TR	TR	TR	TR	TR	TS						
64		L	L	L	L	9FP	9FP	9FP	9FP	9FP	9FP	9FP	9FP	9FP	9FP	9FP	9FP	TR	TR	TR	TR	TR	TR	TS					
68		L	L	L	L	9FP	9FP	9FP	9FP	9FP	9FP	9FP	9FP	9FP	9FP	9FP	9FP	TR	TR	TR	TR	TR	TR	TR	TS				
72		L	L	L	L	9FP	9FP	9FP	9FP	9FP	9FP	9FP	9FP	9FP	9FP	9FP	9FP	TR	TR	TR	TR	TR	TR	TR	TR	TS			
76		L	L	L	L	9FP	9FP	9FP	9FP	9FP	9FP	9FP	9FP	9FP	9FP	9FP	9FP	9FP	TR	TR	TR	TR	TR	TR	TR	TR	TS		
80		L	L	L	L	9FP	9FP	9FP	9FP	9FP	9FP	9FP	9FP	9FP	9FP	9FP	9FP	9FP	TR	TR	TR	TR	TR	TR	TR	TR	TR	TS	
92		L	L	L	L	9FP	9FP	9FP	9FP	9FP	9FP	9FP	9FP	9FP	9FP	9FP	9FP	9FP	9FP	TR	TR	TR	TR	TR	TR	TR	TR	TR	TS

L : OUTLET
TR : REDUCING TEE
TS : STRAIGHT TEE
9FP : FULL PAD 90 DEG

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BRANCH TABLE (T_A2AQVV_3)

RUN PIPE SIZE (in)	0.5	0.75	1	1.5	2	3	4	6	8	10	12	14	16	18	20	24	30	36	42	48	52	56	60	64	68	72	76	80	92
0.5																													
0.75		TLS																											
1		6FP	TLS																										
1.5		6FP	6FP	TLS																									
2		6FP	6FP	6FP	TLS																								
3		6FP	6FP	6FP	6FP	TLS																							
4		6FP	6FP	6FP	6FP	6FP	TLS																						
6		6FP	6FP	6FP	6FP	6FP	6FP	TLS																					
8		6FP	6FP	6FP	6FP	6FP	6FP	6FP	TLS																				
10		6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	TLS																			
12		6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	TLS																		
14		6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	TLS																	
16		6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	TLS																
18		6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	TLS															
20		6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	TLS														
24		6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	TLS													
30		6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	TLS												
36		6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	TLS											
42		6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	TLS										
48		6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	TLS									
52		6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	TLS								
56		6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	TLS							
60		6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	TLS						
64		6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	TLS					
68		6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	TLS				
72		6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	TLS			
76		6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	TLS		
80		6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	TLS	
92		6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	TLS

BRANCH SIZE (in)

TLS : STRAIGHT LATERAL TEE
6FP : FULL PAD 60 DEG

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PIPING CLASS

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Material	:	Killed CS
Rating	:	ASME CLASS 150
Flange Face	:	RF
C.A.(mm)	:	3.00
Gasket	:	Spiral Wound
Service	:	PROCESS - WET SEVERE SOUR SERVICE SUBJECT TO NACE + HIC STD. : / CRUDE COLUMN OVHD CONDENSER INLET / OUTLET / DHT WASH WATER / DHT STRIPPER OVHD CONDENSER OUTLET / RICH AMINE / PROCESS . PX / CAUSTIC SERVICE WITH PH > 9, H2S >50PPM (SPENT CAUSTIC)
Design Code	:	ASME B31.3
Heat Treatment	:	

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
2	USE OF SOFT SEATED BALL, PLUG AND BUTTERFLY VALVES SHALL BE LIMITED TO MAXIMUM OF 204DEGC (400DEGF)
5	BOLTING CONFIRMING TO B7M / 2HM SHALL BE USED UNDER CONDITIONS (A) DIRECT EXPOSURE TO SOUR ENVIRONMENTS (B) WHEN THE BOLTING WILL BE BURIED OR INSULATED
27	PWHT OF CARBON STEEL PIPING IN WET H2S, CAUSTIC AND AMINE SERVICES SHALL BE IN ACCORDANCE WITH SECTION 10.2, 10.3, AND 10.4 OF PROJECT SPECIFICATION 3550-8440-SP-0002 MATERIALS REQUIREMENTS FOR PRESSURISED EQUIPMENT AND PIPING. FOR CAUSTIC AND AMINE SERVICE THE FOLLOWING SHALL APPLY: - PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF ALL SITE PIPING FABRICATION WELDS IS REQUIRED FOR ALL WALL THICKNESSES. FOR MODERATE AND SEVERE WET H2S SERVICE THE FOLLOWING SHALL APPLY: PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF SITE FABRICATION CIRCUMFERENTIAL OR BRANCH WELDS IS NOT REQUIRED IF WELDS ARE MULTIPASS AND IN ACCORDANCE WITH PARA 10.2.12 OF PROJECT SPECIFICATION 3550-8440-SP-0002. FOR SERVICES MEETING THE WET H2S CRITERIA AND CAUSTIC OR AMINE CRITERIA THE MORE STRINGENT PWHT REQUIREMENT SHALL GOVERN.

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
200	WITH JACK SCREW (FO)
541	NPT(F) (CA,F,L)
773	CLASS 300 (B,F,G)
789	CLASS 900 (B,F,G)
797	CLASS 1500 (B,F,G)
4608	VALVE WITH NIPPLES (V)

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PIPING CLASS
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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P01A-0010P	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	0.75		SCH160		P01A-0010R	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1		SCH160		P01A-0014M	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1.5		SCH160		P01A-0015J	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	2		XS		P01A-000YX	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	3		STD		P01A-000YM	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	4		STD		P01A-000YU	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	6		STD		P01A-000Z3	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	8		SCH30		P01A-001WL	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	10		SCH30		P01A-0016U	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	12		SCH30		P01A-0017K	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	14		SCH20		P01A-0017A	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	16		SCH20		P01A-0018E	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	18		SCH20		P01A-00370	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	20		STD		P01A-002CC	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	24		STD		P01A-002CD	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	30		STD		P01A-007H4	Pipe ASTM A671 Grade CC60 Class 22 EFW ASME B36.10M/B36.19M BE Severe wet H2S service	
1	36		STD		P01A-007H5	Pipe ASTM A671 Grade CC60 Class 22 EFW ASME B36.10M/B36.19M BE Severe wet H2S service	
1	42		XS		P01A-007H6	Pipe ASTM A671 Grade CC60 Class 22 EFW ASME B36.10M/B36.19M BE Severe wet H2S service	
1	48		XS		P01A-007H7	Pipe ASTM A671 Grade CC60 Class 22 EFW ASME B36.10M/B36.19M BE Severe wet H2S service	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P02A-001Y8	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	0.75		SCH160		P02A-000V8	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1		SCH160		P02A-000V7	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1.5		SCH160		P02A-000V9	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	2		XS		P02A-000CP	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		STD		P02A-000CU	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		STD		P02A-000CZ	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		STD		P02A-000D6	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		SCH30		P02A-003DK	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	10		SCH30		P02A-000M3	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	12		SCH30		P02A-000M4	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	14		SCH20		P02A-000FX	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	16		SCH20		P02A-000GM	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	18		SCH20		P02A-000LT	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	20		STD		P02A-0010J	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	24		STD		P02A-0010K	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	30		STD		P02A-003Z3	90 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius Severe wet H2S service	
1	36		STD		P02A-003Z4	90 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius Severe wet H2S service	
1	42		XS		P02A-003Z5	90 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius Severe wet H2S service	
1	48		XS		P02A-003Z6	90 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius Severe wet H2S service	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P03A-001TC	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	0.75		SCH160		P03A-000RS	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1		SCH160		P03A-000RR	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1.5		SCH160		P03A-000RP	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	2		XS		P03A-000AS	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		STD		P03A-000AX	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		STD		P03A-000B1	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		STD		P03A-000B9	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		SCH30		P03A-003BE	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	10		SCH30		P03A-000JT	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	12		SCH30		P03A-000JU	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	14		SCH20		P03A-000DW	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	16		SCH20		P03A-000EM	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

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45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	18		SCH20		P03A-001DX	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	20		STD		P03A-000X1	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	24		STD		P03A-000X2	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	30		STD		P03A-003X2	45 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius Severe wet H2S service	
1	36		STD		P03A-003X3	45 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius Severe wet H2S service	
1	42		XS		P03A-003X4	45 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius Severe wet H2S service	
1	48		XS		P03A-003X5	45 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius Severe wet H2S service	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P21A-003AW	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	0.75		SCH160		P21A-002B8	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1		SCH160		P21A-002B6	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5		SCH160		P21A-002B9	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2		XS		P21A-001CJ	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		STD		P21A-001CU	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		STD		P21A-001CW	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6		STD		P21A-001D2	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8		SCH30		P21A-003WV	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10		SCH30		P21A-00259	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12		SCH30		P21A-0025A	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14		SCH20		P21A-00206	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16		SCH20		P21A-0020X	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18		SCH20		P21A-002Y1	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20		STD		P21A-002FU	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24		STD		P21A-002FV	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	30		STD		P21A-004GH	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Severe wet H2S service	
1	36		STD		P21A-004GJ	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Severe wet H2S service	
1	42		XS		P21A-004GK	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Severe wet H2S service	
1	48		XS		P21A-004GL	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Severe wet H2S service	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75	SCH160	SCH160	P24A-004B6	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.75	SCH160	SCH160	P24A-004B2	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	1	SCH160	SCH160	P24A-004BA	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	XS	SCH160	P24A-00GMB	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	XS	SCH160	P24A-005K9	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	STD	SCH160	P24A-00GMC	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	STD	XS	P24A-002HW	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P24A-002HY	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P24A-0021K	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	STD	P24A-0021A	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P24A-00229	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH30	STD	P24A-00JVH	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH30	STD	P24A-00JVG	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	SCH30	STD	P24A-00GNR	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	SCH30	STD	P24A-0060W	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	SCH30	SCH30	P24A-00J15	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	SCH30	STD	P24A-00HKT	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH30	SCH30	P24A-00M36	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH30	SCH30	P24A-003ET	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	SCH20	STD	P24A-00K0M	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	SCH20	SCH30	P24A-00M37	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	SCH20	SCH30	P24A-003ER	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	SCH20	SCH30	P24A-003ES	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	6	SCH20	STD	P24A-00GU4	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	SCH20	SCH30	P24A-00M38	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	SCH20	SCH30	P24A-00KSH	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	16	12	SCH20	SCH30	P24A-003XN	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	SCH20	SCH20	P24A-002XF	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	8	SCH20	SCH30	P24A-00M3B	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	10	SCH20	SCH30	P24A-00M3A	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	12	SCH20	SCH30	P24A-00AF5	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	14	SCH20	SCH20	P24A-00GAH	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	16	SCH20	SCH20	P24A-00GAJ	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	8	STD	SCH30	P24A-00M3D	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	10	STD	SCH30	P24A-00M3C	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	12	STD	SCH30	P24A-00HKV	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	14	STD	SCH20	P24A-00HKW	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	16	STD	SCH20	P24A-00HKX	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	18	STD	SCH20	P24A-0087A	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24	10	STD	SCH30	P24A-00M3E	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24	12	STD	SCH30	P24A-00HKY	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24	14	STD	SCH20	P24A-00HME	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24	16	STD	SCH20	P24A-00HKZ	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24	18	STD	SCH20	P24A-008A5	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24	20	STD	STD	P24A-002PM	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	30	10	STD	SCH30	P24A-00NMH	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Severe wet H2S service	
1	30	12	STD	SCH30	P24A-00KYC	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Severe wet H2S service	
1	30	14	STD	SCH20	P24A-00KYD	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Severe wet H2S service	
1	30	16	STD	SCH20	P24A-00KYE	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Severe wet H2S service	
1	30	18	STD	SCH20	P24A-00KYF	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Severe wet H2S service	
1	30	20	STD	STD	P24A-00KYG	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Severe wet H2S service	
1	30	24	STD	STD	P24A-00KYH	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Severe wet H2S service	
1	36	16	STD	SCH20	P24A-00KYJ	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Severe wet H2S service	
1	36	18	STD	SCH20	P24A-00KYK	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Severe wet H2S service	
1	36	20	STD	STD	P24A-00KYL	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Severe wet H2S service	
1	36	24	STD	STD	P24A-00KYM	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Severe wet H2S service	
1	36	30	STD	STD	P24A-00KYN	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Severe wet H2S service	
1	42	16	XS	SCH20	P24A-00KYP	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Severe wet H2S service	
1	42	18	XS	SCH20	P24A-00KYR	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Severe wet H2S service	
1	42	20	XS	STD	P24A-00KYS	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Severe wet H2S service	
1	42	24	XS	STD	P24A-00KYT	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Severe wet H2S service	
1	42	30	XS	STD	P24A-00KYU	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Severe wet H2S service	
1	42	36	XS	STD	P24A-00KYV	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Severe wet H2S service	
1	48	24	XS	STD	P24A-00KYW	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Severe wet H2S service	
1	48	30	XS	STD	P24A-00KYX	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Severe wet H2S service	
1	48	36	XS	STD	P24A-00KYY	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Severe wet H2S service	
1	48	42	XS	XS	P24A-00KYZ	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Severe wet H2S service	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	SCH160	P27A-004LZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.5	SCH160	SCH160	P27A-004M8	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.75	SCH160	SCH160	P27A-002T5	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.5	SCH160	SCH160	P27A-004MV	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.75	SCH160	SCH160	P27A-002T7	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	1	SCH160	SCH160	P27A-002T4	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	0.75	XS	SCH160	P27A-001LG	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	XS	SCH160	P27A-0033P	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	XS	SCH160	P27A-0033B	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	STD	SCH160	P27A-003M9	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	STD	XS	P27A-001MZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	1.5	STD	SCH160	P27A-003MA	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P27A-001N0	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P27A-00189	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	STD	P27A-001AZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	6	4	STD	STD	P27A-001GW	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH30	STD	P27A-00ED2	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH30	STD	P27A-00ECY	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	SCH30	STD	P27A-003MK	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	SCH30	STD	P27A-003ML	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	SCH30	SCH30	P27A-004T9	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	SCH30	STD	P27A-003MN	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH30	SCH30	P27A-004XA	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH30	SCH30	P27A-0028K	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	SCH20	STD	P27A-00518	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	SCH20	SCH30	P27A-0052J	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	SCH20	SCH30	P27A-0028G	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	SCH20	SCH30	P27A-0028H	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	SCH20	SCH30	P27A-0059E	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	SCH20	SCH30	P27A-003NC	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	SCH20	SCH30	P27A-002GH	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	SCH20	SCH20	P27A-001V2	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	10	SCH20	SCH30	P27A-005AY	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	12	SCH20	SCH30	P27A-005D3	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	14	SCH20	SCH20	P27A-005F3	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	16	SCH20	SCH20	P27A-005H6	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	12	STD	SCH30	P27A-005LW	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	14	STD	SCH20	P27A-005NZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	16	STD	SCH20	P27A-005S7	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	18	STD	SCH20	P27A-005TW	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24	16	STD	SCH20	P27A-005Y6	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24	18	STD	SCH20	P27A-005ZV	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24	20	STD	STD	P27A-0037U	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	30	20	STD	STD	P27A-00FAJ	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Severe wet H2S service	
1	30	24	STD	STD	P27A-00FAK	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Severe wet H2S service	
1	36	24	STD	STD	P27A-00FAL	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Severe wet H2S service	
1	36	30	STD	STD	P27A-00FAM	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Severe wet H2S service	
1	42	30	XS	STD	P27A-00FAN	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Severe wet H2S service	
1	42	36	XS	STD	P27A-00FAP	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Severe wet H2S service	
1	48	42	XS	XS	P27A-00FAR	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Severe wet H2S service	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	SCH160	P28A-007KG	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.5	SCH160	SCH160	P28A-007KH	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.75	SCH160	SCH160	P28A-002TU	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.5	SCH160	SCH160	P28A-007KJ	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.75	SCH160	SCH160	P28A-002TW	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	1	SCH160	SCH160	P28A-002TR	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	0.75	XS	SCH160	P28A-001LE	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	XS	SCH160	P28A-003M1	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	XS	SCH160	P28A-003M2	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	STD	SCH160	P28A-003M3	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	STD	XS	P28A-001N5	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	1.5	STD	SCH160	P28A-003M4	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P28A-001N6	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P28A-0018B	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	STD	P28A-001AS	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P28A-00182	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH30	STD	P28A-00BFY	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH30	STD	P28A-00BFZ	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	SCH30	STD	P28A-003MD	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	SCH30	STD	P28A-003ME	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	SCH30	SCH30	P28A-00A4S	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	12	6	SCH30	STD	P28A-003MG	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH30	SCH30	P28A-00BGV	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH30	SCH30	P28A-0027C	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	SCH20	STD	P28A-0096P	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	SCH20	SCH30	P28A-00DA3	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	SCH20	SCH30	P28A-00279	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	SCH20	SCH30	P28A-0027A	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	SCH20	SCH30	P28A-00DA4	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	SCH20	SCH30	P28A-003N6	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	SCH20	SCH30	P28A-002GB	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	SCH20	SCH20	P28A-001WG	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	10	SCH20	SCH30	P28A-00635	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	12	SCH20	SCH30	P28A-0066M	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	14	SCH20	SCH20	P28A-0082K	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	16	SCH20	SCH20	P28A-0082L	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	12	STD	SCH30	P28A-0096R	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	14	STD	SCH20	P28A-0096S	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	16	STD	SCH20	P28A-0096T	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	18	STD	SCH20	P28A-0063A	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24	16	STD	SCH20	P28A-0096U	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24	18	STD	SCH20	P28A-0066J	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24	20	STD	STD	P28A-0037A	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	30	20	STD	STD	P28A-00CEM	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Severe wet H2S service	
1	30	24	STD	STD	P28A-00CEN	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Severe wet H2S service	
1	36	24	STD	STD	P28A-00CEP	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Severe wet H2S service	
1	36	30	STD	STD	P28A-00CER	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Severe wet H2S service	
1	42	30	XS	STD	P28A-00CES	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Severe wet H2S service	
1	42	36	XS	STD	P28A-00CET	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Severe wet H2S service	
1	48	42	XS	XS	P28A-00CEU	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Severe wet H2S service	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P29A-0037W	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	0.75		SCH160		P29A-0037X	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	1		SCH160		P29A-001VW	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5		SCH160		P29A-001VX	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	2		XS		P29A-00381	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	3		STD		P29A-00383	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	4		STD		P29A-00384	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	6		STD		P29A-00385	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	8		SCH30		P29A-003G7	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	10		SCH30		P29A-003BA	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	12		SCH30		P29A-0038V	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	14		SCH20		P29A-003BP	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	16		SCH20		P29A-0037Z	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	18		SCH20		P29A-00380	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	20		STD		P29A-00382	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	24		STD		P29A-003BR	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	30		STD		P29A-003BS	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	36		STD		P29A-003BT	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	42		XS		P29A-003BU	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	48		XS		P29A-003BV	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
541	0.75				P29B-0000Y	Cap ASTM A105 Class 6000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P41A-000B9	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		XXS		P41A-000BA	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		XXS		P41A-000D8	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

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STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5		XXS		P41A-000D9	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
541	1	0.75			P31B-005HL	Outlet ASTM A105 Class 6000 MSS SP-97 NPT	
541	1.5 - 2.5	0.75			P31B-0137F	Outlet ASTM A105 Class 6000 MSS SP-97 NPT	
1	2	0.75	XS	SCH160	P31B-00CP7	Outlet ASTM A105 MSS SP-97 BW	
1	3	0.75	STD	SCH160	P31B-00CMT	Outlet ASTM A105 MSS SP-97 BW	
1	4	0.75	STD	SCH160	P31B-00CLT	Outlet ASTM A105 MSS SP-97 BW	
1	6	0.75	STD	SCH160	P31B-00CKK	Outlet ASTM A105 MSS SP-97 BW	
1	8	0.75	SCH30	SCH160	P31B-00ZH5	Outlet ASTM A105 MSS SP-97 BW	
1	10	0.75	SCH30	SCH160	P31B-00YEZ	Outlet ASTM A105 MSS SP-97 BW	
1	12	0.75	SCH30	SCH160	P31B-00SWH	Outlet ASTM A105 MSS SP-97 BW	
1	14	0.75	SCH20	SCH160	P31B-00X17	Outlet ASTM A105 MSS SP-97 BW	
1	16	0.75	SCH20	SCH160	P31B-00XS0	Outlet ASTM A105 MSS SP-97 BW	
1	18	0.75	SCH20	SCH160	P31B-00SWM	Outlet ASTM A105 MSS SP-97 BW	
1	20	0.75	STD	SCH160	P31B-00CNW	Outlet ASTM A105 MSS SP-97 BW	
1	24	0.75	STD	SCH160	P31B-00CNB	Outlet ASTM A105 MSS SP-97 BW	
1	30	0.75	STD	SCH160	P31B-00TUU	Outlet ASTM A105 MSS SP-97 BW	
1	36	0.75	STD	SCH160	P31B-00YBE	Outlet ASTM A105 MSS SP-97 BW	
1	42	0.75	XS	SCH160	P31B-00TSZ	Outlet ASTM A105 MSS SP-97 BW	
1	48	0.75	XS	SCH160	P31B-00WT9	Outlet ASTM A105 MSS SP-97 BW	
1	3	1	STD	SCH160	P31B-00B4J	Outlet ASTM A105 MSS SP-97 BW	
1	4	1	STD	SCH160	P31B-00B3M	Outlet ASTM A105 MSS SP-97 BW	
1	6	1	STD	SCH160	P31B-00AZC	Outlet ASTM A105 MSS SP-97 BW	
1	8	1	SCH30	SCH160	P31B-00ZH6	Outlet ASTM A105 MSS SP-97 BW	
1	10	1	SCH30	SCH160	P31B-00YF1	Outlet ASTM A105 MSS SP-97 BW	
1	12	1	SCH30	SCH160	P31B-00SWJ	Outlet ASTM A105 MSS SP-97 BW	
1	14	1	SCH20	SCH160	P31B-00X18	Outlet ASTM A105 MSS SP-97 BW	
1	16	1	SCH20	SCH160	P31B-00X8Z	Outlet ASTM A105 MSS SP-97 BW	
1	18	1	SCH20	SCH160	P31B-00SWN	Outlet ASTM A105 MSS SP-97 BW	
1	20	1	STD	SCH160	P31B-00B8M	Outlet ASTM A105 MSS SP-97 BW	
1	24	1	STD	SCH160	P31B-00B82	Outlet ASTM A105 MSS SP-97 BW	
1	30	1	STD	SCH160	P31B-00TUV	Outlet ASTM A105 MSS SP-97 BW	
1	36	1	STD	SCH160	P31B-00XD8	Outlet ASTM A105 MSS SP-97 BW	
1	42	1	XS	SCH160	P31B-00TT0	Outlet ASTM A105 MSS SP-97 BW	
1	48	1	XS	SCH160	P31B-00AZT	Outlet ASTM A105 MSS SP-97 BW	
1	4	1.5	STD	SCH160	P31B-00BP4	Outlet ASTM A105 MSS SP-97 BW	
1	6	1.5	STD	SCH160	P31B-00BJH	Outlet ASTM A105 MSS SP-97 BW	
1	8	1.5	SCH30	SCH160	P31B-00BHM	Outlet ASTM A105 MSS SP-97 BW	
1	10	1.5	SCH30	SCH160	P31B-00AUR	Outlet ASTM A105 MSS SP-97 BW	
1	12	1.5	SCH30	SCH160	P31B-00CEJ	Outlet ASTM A105 MSS SP-97 BW	
1	14	1.5	SCH20	SCH160	P31B-00CDS	Outlet ASTM A105 MSS SP-97 BW	
1	16	1.5	SCH20	SCH160	P31B-00C9B	Outlet ASTM A105 MSS SP-97 BW	
1	18	1.5	SCH20	SCH160	P31B-00C3C	Outlet ASTM A105 MSS SP-97 BW	
1	20	1.5	STD	SCH160	P31B-00C3Y	Outlet ASTM A105 MSS SP-97 BW	
1	24	1.5	STD	SCH160	P31B-00BZK	Outlet ASTM A105 MSS SP-97 BW	
1	30	1.5	STD	SCH160	P31B-00TUW	Outlet ASTM A105 MSS SP-97 BW	
1	36	1.5	STD	SCH160	P31B-00XD9	Outlet ASTM A105 MSS SP-97 BW	
1	42	1.5	XS	SCH160	P31B-00TT1	Outlet ASTM A105 MSS SP-97 BW	
1	48	1.5	XS	SCH160	P31B-00BLL	Outlet ASTM A105 MSS SP-97 BW	
1	6	2	STD	XS	P31B-007SH	Outlet ASTM A105 MSS SP-97 BW	
1	8	2	SCH30	XS	P31B-00X36	Outlet ASTM A105 MSS SP-97 BW	
1	10	2	SCH30	XS	P31B-00NVF	Outlet ASTM A105 MSS SP-97 BW	
1	12	2	SCH30	XS	P31B-00NVL	Outlet ASTM A105 MSS SP-97 BW	
1	14	2	SCH20	XS	P31B-00TF9	Outlet ASTM A105 MSS SP-97 BW	
1	16	2	SCH20	XS	P31B-00TF8	Outlet ASTM A105 MSS SP-97 BW	
1	18	2	SCH20	XS	P31B-00NVX	Outlet ASTM A105 MSS SP-97 BW	
1	20	2	STD	XS	P31B-00994	Outlet ASTM A105 MSS SP-97 BW	

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OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	24	2	STD	XS	P31B-0092Z	Outlet ASTM A105 MSS SP-97 BW	
1	30	2	STD	XS	P31B-008P5	Outlet ASTM A105 MSS SP-97 BW	
1	36	2	STD	XS	P31B-00NX8	Outlet ASTM A105 MSS SP-97 BW	
1	42	2	XS	XS	P31B-0084J	Outlet ASTM A105 MSS SP-97 BW	
1	48	2	XS	XS	P31B-007YJ	Outlet ASTM A105 MSS SP-97 BW	
1	8	3	SCH30	STD	P31B-00X37	Outlet ASTM A105 MSS SP-97 BW	
1	10	3	SCH30	STD	P31B-00NYK	Outlet ASTM A105 MSS SP-97 BW	
1	12	3	SCH30	STD	P31B-00NYR	Outlet ASTM A105 MSS SP-97 BW	
1	14	3	SCH20	STD	P31B-00UPH	Outlet ASTM A105 MSS SP-97 BW	
1	16	3	SCH20	STD	P31B-00TU2	Outlet ASTM A105 MSS SP-97 BW	
1	18	3	SCH20	STD	P31B-00NZ4	Outlet ASTM A105 MSS SP-97 BW	
1	20	3	STD	STD	P31B-008FA	Outlet ASTM A105 MSS SP-97 BW	
1	24	3	STD	STD	P31B-00895	Outlet ASTM A105 MSS SP-97 BW	
1	30	3	STD	STD	P31B-007WY	Outlet ASTM A105 MSS SP-97 BW	
1	36	3	STD	STD	P31B-007P2	Outlet ASTM A105 MSS SP-97 BW	
1	42	3	XS	STD	P31B-00AGK	Outlet ASTM A105 MSS SP-97 BW	
1	48	3	XS	STD	P31B-00AFD	Outlet ASTM A105 MSS SP-97 BW	
1	12	4	SCH30	STD	P31B-00P1G	Outlet ASTM A105 MSS SP-97 BW	
1	14	4	SCH20	STD	P31B-00UPJ	Outlet ASTM A105 MSS SP-97 BW	
1	16	4	SCH20	STD	P31B-00TU3	Outlet ASTM A105 MSS SP-97 BW	
1	18	4	SCH20	STD	P31B-00P1V	Outlet ASTM A105 MSS SP-97 BW	
1	20	4	STD	STD	P31B-008D3	Outlet ASTM A105 MSS SP-97 BW	
1	24	4	STD	STD	P31B-0086X	Outlet ASTM A105 MSS SP-97 BW	
1	30	4	STD	STD	P31B-007US	Outlet ASTM A105 MSS SP-97 BW	
1	36	4	STD	STD	P31B-00AER	Outlet ASTM A105 MSS SP-97 BW	
1	42	4	XS	STD	P31B-00A8G	Outlet ASTM A105 MSS SP-97 BW	
1	48	4	XS	STD	P31B-00A2P	Outlet ASTM A105 MSS SP-97 BW	
1	18	6	SCH20	STD	P31B-00P48	Outlet ASTM A105 MSS SP-97 BW	
1	20	6	STD	STD	P31B-008PZ	Outlet ASTM A105 MSS SP-97 BW	
1	24	6	STD	STD	P31B-008JD	Outlet ASTM A105 MSS SP-97 BW	
1	30	6	STD	STD	P31B-008BS	Outlet ASTM A105 MSS SP-97 BW	
1	36	6	STD	STD	P31B-0085H	Outlet ASTM A105 MSS SP-97 BW	
1	42	6	XS	STD	P31B-007ZN	Outlet ASTM A105 MSS SP-97 BW	
1	48	6	XS	STD	P31B-007U6	Outlet ASTM A105 MSS SP-97 BW	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30B-0002D	Plug ASTM A105 ASME B16.11 NPT Round head	
1	0.75				P30B-0002E	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1				P30B-0002F	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1.5				P30B-0002G	Plug ASTM A105 ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P61B-004V2	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	0.75		SCH160		P61B-0037H	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	1		SCH160		P61B-0037F	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	1.5		SCH160		P61B-0037N	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	2		XS		P61B-003NK	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	3		STD		P61B-001PW	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	4		STD		P61B-001R8	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	6		STD		P61B-001RT	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	8		SCH30		P61B-003FP	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	10		SCH30		P61B-003FS	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	12		SCH30		P61B-002TS	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	14		SCH20		P61B-002B6	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	16		SCH20		P61B-002B7	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	18		SCH20		P61B-002B8	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	20		STD		P61B-001JA	Flange WN ASTM A105 Class 150 ASME B16.5 RF	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	24		STD		P61B-001NJ	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	30		STD		P61B-001S8	Flange WN ASTM A105 Class 150 ASME B16.47 Series B RF	
1	36		STD		P61B-003M6	Flange WN ASTM A105 Class 150 ASME B16.47 Series B RF	
1	42		XS		P61B-001N1	Flange WN ASTM A105 Class 150 ASME B16.47 Series B RF	
1	48		XS		P61B-004CX	Flange WN ASTM A105 Class 150 ASME B16.47 Series B RF	
541	0.5				P61B-003TZ	Flange NPT ASTM A105 Class 150 ASME B16.5 RF	
541	0.75				P61B-003U0	Flange NPT ASTM A105 Class 150 ASME B16.5 RF	
773	0.5		SCH160		P61B-003P9	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	0.75		SCH160		P61B-0037M	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	1		SCH160		P61B-0037L	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	1.5		SCH160		P61B-0037J	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	2		XS		P61B-001HW	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	3		STD		P61B-001LJ	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	4		STD		P61B-001MC	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	6		STD		P61B-001N2	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	8		SCH30		P61B-008S0	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	10		SCH30		P61B-003LX	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	12		SCH30		P61B-002TV	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	14		SCH20		P61B-002MR	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	16		SCH20		P61B-002MS	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	18		SCH20		P61B-002MT	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	20		STD		P61B-001NT	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	24		STD		P61B-001PA	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	30		STD		P61B-003SW	Flange WN ASTM A105 Class 300 ASME B16.47 Series B RF	
773	36		STD		P61B-004RB	Flange WN ASTM A105 Class 300 ASME B16.47 Series B RF	
773	42		XS		P61B-00673	Flange WN ASTM A105 Class 300 ASME B16.47 Series B RF	
773	48		XS		P61B-003TH	Flange WN ASTM A105 Class 300 ASME B16.47 Series B RF	
789	10		SCH30		P61B-00BT3	Flange WN ASTM A105 Class 900 ASME B16.5 RJ	
797	0.5		SCH160		P61B-0065T	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
797	0.75		SCH160		P61B-0065U	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
797	1		SCH160		P61B-0065V	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
797	1.5		SCH160		P61B-0065W	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
797	2		XS		P61B-0065C	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67B-000FH	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	0.75				P67B-000FJ	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	1				P67B-000FK	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	1.5				P67B-000FL	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	2				P67B-000FT	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	3				P67B-000FW	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	4				P67B-000FX	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	6				P67B-000FY	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	8				P67B-000FZ	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	10				P67B-000FM	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	12				P67B-000FN	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	14				P67B-000FP	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	16				P67B-000FR	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	18				P67B-000FS	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	20				P67B-000FU	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	24				P67B-000FV	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	30				P67B-000G2	Blind flange ASTM A105 Class 150 ASME B16.47 Series B RF	
1	36				P67B-000G5	Blind flange ASTM A105 Class 150 ASME B16.47 Series B RF	
1	42				P67B-000KZ	Blind flange ASTM A105 Class 150 ASME B16.47 Series B RF	
1	48				P67B-000L2	Blind flange ASTM A105 Class 150 ASME B16.47 Series B RF	

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GASKET (G)							
OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000L8	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000L9	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000LA	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000LB	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000LH	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000LL	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000LM	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	6				P73T-000LN	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	8				P73T-000LP	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	10				P73T-000LC	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	12				P73T-000LD	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	14				P73T-000LE	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	16				P73T-000LF	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	18				P73T-000LG	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	20				P73T-000LJ	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	24				P73T-000LK	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	30				P73T-000LT	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	36				P73T-000LW	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	42				P73T-000LZ	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	48				P73T-000M2	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	0.5				P73T-000FT	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	0.75				P73T-000FU	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	3				P73T-000G5	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	4				P73T-000G6	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	6				P73T-000G7	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	8				P73T-000G8	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	10				P73T-000FX	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	12				P73T-000FY	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	14				P73T-000FZ	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	16				P73T-000G0	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	18				P73T-000G1	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	20				P73T-000G3	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	24				P73T-000G4	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	30				P73T-000H9	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	36				P73T-000HC	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	42				P73T-000KM	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	48				P73T-000KR	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
789	10				P75T-000JL	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	0.5				P75T-000JT	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	0.75				P75T-000JU	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	1				P75T-000JV	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	1.5				P75T-000JW	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	2				P75T-0008A	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	

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BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-16				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	18-24				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
1	30-42				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	48				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
773	0.5-10				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
773	12-48				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
789	8-12				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
797	0.5-2				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81B-001NP	Gate valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	0.75				P81B-001NR	Gate valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	1				P81B-001NS	Gate valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	1.5				P81B-001NT	Gate valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	2				P81C-005FG	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	3				P81C-005FH	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	4				P81C-005FJ	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	6				P81C-005FK	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	8				P81C-005FL	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	10				P81C-005FE	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	12				P81C-005FF	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	14				P81C-005FM	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Severe wet H2S service	
1	16				P81C-005FN	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Severe wet H2S service	
1	18				P81C-005FP	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Severe wet H2S service	
1	20				P81C-005FR	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Severe wet H2S service	
1	24				P81C-005FS	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Severe wet H2S service	
1	30				P81C-005FT	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.47-B RF Trim number 12 BB-BG-OS&Y Gear operated Severe wet H2S service	
1	36				P81C-005FU	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.47-B RF Trim number 12 BB-BG-OS&Y Gear operated Severe wet H2S service	
1	42				P81C-005FV	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.47-B RF Trim number 12 BB-BG-OS&Y Gear operated Severe wet H2S service	
1	48				P81C-005FW	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.47-B RF Trim number 12 BB-BG-OS&Y Gear operated Severe wet H2S service	
4608	0.75				P81B-002XZ	Gate valve ASTM A105 Class 150 API 602 BW both sides w/ nipples BE - NPT ASTM A106-B XXS-nipple Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82B-001D5	Globe valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	0.75				P82B-001D6	Globe valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	1				P82B-001D7	Globe valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	1.5				P82B-001D8	Globe valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	2				P82C-002PM	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	3				P82C-002PN	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	4				P82C-002PP	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	6				P82C-002PR	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	8				P82C-002PS	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	

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CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83B-0013M	Check valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Severe wet H2S service	
1	0.75				P83B-0013N	Check valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Severe wet H2S service	
1	1				P83B-0013P	Check valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Severe wet H2S service	
1	1.5				P83B-0013R	Check valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Severe wet H2S service	
1	2				P83C-002T3	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service	
1	3				P83C-002T6	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service	
1	4				P83C-002T7	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service	
1	6				P83C-002T8	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service	
1	8				P83C-002T9	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service	
1	10				P83C-002SY	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service	
1	12				P83C-002SZ	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service	
1	14				P83C-002T0	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service	
1	16				P83C-002T1	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service	
1	18				P83C-002T2	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service	
1	20				P83C-002T4	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service	
1	24				P83C-002T5	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service	

DP CHECK VALVE (XDP)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	30				P88C-0028V	Dual plate check valve ASTM A216 Grade WCB Class 150 API 594 Wafer-type ASME B16.47-B RF Trim number 12 Internal wetted parts SS316 Spring Inconel Retainerless-type Severe wet H2S service	

BUTTERFLY VALVE (H)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	10				P86C-0024P	Offset design butterfly valve ASTM A216 Grade WCB Class 150 API 609 Category B Lug-type ASME B16.5 RF Disc CS Seat Stellite-6 Trim SS316 Triple eccentric design BG Gear operated Severe wet H2S service	

NEEDLE VALVE (NV)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82B-001XB	Needle valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	0.75				P82B-001XC	Needle valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	1				P82B-001XD	Needle valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	1.5				P82B-001XE	Needle valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	

ORIFICE FLANGE (FO)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2		XS		P66B-0084B	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	3		STD		P66B-0084C	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	4		STD		P66B-0084D	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	6		STD		P66B-0084E	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	8		SCH30		P66B-00871	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
200	2		XS		P66B-00843	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	3		STD		P66B-00844	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	4		STD		P66B-00845	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	6		STD		P66B-00846	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	8		SCH30		P66B-00876	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71B-0008A	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	0.75				P71B-0008B	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	1				P71B-0008C	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	

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SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5				P71B-0008D	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	2				P71B-0000P	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	3				P71B-0000N	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	4				P71B-0000M	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	6				P71B-0000L	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	8				P71B-0000R	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	10				P71B-0000K	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	12				P71B-0000J	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	

PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000AH	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	16				P72B-0000C	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	18				P72B-000AJ	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	20				P72B-000AK	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	24				P72B-000AL	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	30				P72B-000AM	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	36				P72B-000AN	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	42				P72B-000AP	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	48				P72B-000AR	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	

PADDLE SPACER (PS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000AT	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	16				P72B-0000B	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	18				P72B-000AU	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	20				P72B-000AV	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	24				P72B-000AW	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	30				P72B-000AX	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	36				P72B-000AY	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	42				P72B-000AZ	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	48				P72B-000B0	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	

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BOLT TABLE (B_A2AR , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	60	P80S-008SY		
0.75	4	0.500	65	P80S-008SZ		
1	4	0.500	70	P80S-008T0		
1.5	4	0.500	75	P80S-008T1		
2	4	0.625	85	P80S-0090A		
3	4	0.625	95	P80S-0090C		
4	8	0.625	95	P80S-0090C		
6	8	0.750	105	P80S-0090E		
8	8	0.750	110	P80S-0090F		
10	12	0.875	120	P80S-005Z9		
12	12	0.875	120	P80S-005Z9		
14	12	1.000	135	P80S-00619		
16	16	1.000	140	P80S-0061A		
18	16	1.125	150	P80S-0064L		
20	20	1.125	160	P80S-0064N		
24	20	1.250	175	P80S-00686		
30	44	0.750	145	P80S-0090N		
36	44	0.875	175	P80S-005ZL		
42	48	1.000	190	P80S-0061L		
48	44	1.125	210	P80S-0064Z		

BOLT TABLE (B_A2AR_773 , STUD ASME RF, OPTION CODE 773)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-008T0		
0.75	4	0.625	75	P80S-00908		
1	4	0.625	80	P80S-00909		
1.5	4	0.750	95	P80S-005Z4		
2	8	0.625	90	P80S-0090B		
3	8	0.750	110	P80S-0090F		
4	8	0.750	115	P80S-0090G		
6	12	0.750	125	P80S-0090J		
8	12	0.875	140	P80S-005ZD		
10	16	1.000	160	P80S-0061E		
12	16	1.125	175	P80S-0064S		
14	20	1.125	180	P80S-0064T		
16	20	1.250	190	P80S-00689		
18	24	1.250	200	P80S-0068B		
20	24	1.250	210	P80S-0068D		
24	24	1.500	235	P80S-006LB		
30	36	1.375	285	P80S-006HY		
36	32	1.625	320	P80S-00A5E		
42	36	1.750	355	P80S-00AEJ		
48	40	1.875	380	P80S-00AW5		

BOLT TABLE (B_A2AR_789 , STUD ASME RJ, OPTION CODE 789)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	110		R12	
0.75	4	0.750	115		R14	
1	4	0.875	130		R16	
1.5	4	1.000	140		R20	
2	8	0.875	150		R24	
3	8	0.875	150		R31	
4	8	1.125	175		R37	
6	12	1.125	200		R45	
8	12	1.375	260	P80S-006HT	R49	
10	16	1.375	275	P80S-006HW	R53	P75T-000JL
12	20	1.375	295	P80S-006J0	R57	
14	20	1.500	325		R62	
16	20	1.625	340		R66	
18	20	1.875	390		R70	
20	20	2.000	415		R74	
24	20	2.500	525		R78	
30	20	3.000	600		R102	
36	20	3.500	690		R105	

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BOLT TABLE (B_A2AR_797 , STUD ASME RJ, OPTION CODE 797)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	110	P80S-0090F	R12	P75T-000JT
0.75	4	0.750	115	P80S-0090G	R14	P75T-000JU
1	4	0.875	130	P80S-005ZB	R16	P75T-000JV
1.5	4	1.000	140	P80S-0061A	R20	P75T-000JW
2	8	0.875	150	P80S-005ZF	R24	P75T-0008A
3	8	1.125	180		R35	
4	8	1.250	230		R39	
6	12	1.375	300		R46	
8	12	1.625	345		R50	
10	12	1.875	395		R54	
12	16	2.000	445		R58	
14	16	2.250	490		R63	
16	16	2.500	540		R67	
18	16	2.750	590		R71	
20	16	3.000	650		R75	
24	16	3.500	745		R79	

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BRANCH TABLE (T_A2AR)

RUN PIPE SIZE (in) \ BRANCH SIZE (in)	0.5	0.75	1	1.5	2	3	4	6	8	10	12	14	16	18	20	24	30	36	42	48
0.5	TS																			
0.75		TS																		
1		TR	TS																	
1.5		TR	TR	TS																
2		L	TR	TR	TS															
3		L	L	TR	TR	TS														
4	L	L	L	L	TR	TR	TS													
6	L	L	L	L	L	TR	TR	TS												
8		L	L	L	L	L	TR	TR	TS											
10		L	L	L	L	L	TR	TR	TR	TS										
12		L	L	L	L	L	L	TR	TR	TR	TS									
14		L	L	L	L	L	L	TR	TR	TR	TR	TS								
16		L	L	L	L	L	L	TR	TR	TR	TR	TR	TS							
18		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TS						
20		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TR	TS					
24		L	L	L	L	L	L	L	9PD	TR	TR	TR	TR	TR	TR	TS				
30		L	L	L	L	L	L	L	9PD	TR	TR	TR	TR	TR	TR	TR	TS			
36		L	L	L	L	L	L	L	9PD	9PD	9PD	9PD	TR	TR	TR	TR	TR	TS		
42		L	L	L	L	L	L	L	9PD	9PD	9PD	9PD	TR	TR	TR	TR	TR	TR	TS	
48		L	L	L	L	L	L	L	9PD	9PD	9PD	9PD	9PD	9PD	9PD	TR	TR	TR	TR	TS

9PD : REINFORCING PAD 90 DEG
L : OUTLET
TR : REDUCING TEE
TS : STRAIGHT TEE

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Material : Killed CS
Rating : ASME CLASS 150
Flange Face : RF
C.A.(mm) : 3.00
Gasket : Spiral Wound
Service : PROCESS - WET SEVERE SOUR SERVICE SUBJECT TO NACE + HIC STD.
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
2	USE OF SOFT SEATED BALL, PLUG AND BUTTERFLY VALVES SHALL BE LIMITED TO MAXIMUM OF 204DEGC (400DEGF)
5	BOLTING CONFIRMING TO B7M / 2HM SHALL BE USED UNDER CONDITIONS (A) DIRECT EXPOSURE TO SOUR ENVIRONMENTS (B) WHEN THE BOLTING WILL BE BURIED OR INSULATED
27	PWHT OF CARBON STEEL PIPING IN WET H2S, CAUSTIC AND AMINE SERVICES SHALL BE IN ACCORDANCE WITH SECTION 10.2, 10.3, AND 10.4 OF PROJECT SPECIFICATION 3550-8440-SP-0002 MATERIALS REQUIREMENTS FOR PRESSURISED EQUIPMENT AND PIPING. FOR CAUSTIC AND AMINE SERVICE THE FOLLOWING SHALL APPLY: - PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF ALL SITE PIPING FABRICATION WELDS IS REQUIRED FOR ALL WALL THICKNESSES. FOR MODERATE AND SEVERE WET H2S SERVICE THE FOLLOWING SHALL APPLY: PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF SITE FABRICATION CIRCUMFERENTIAL OR BRANCH WELDS IS NOT REQUIRED IF WELDS ARE MULTIPASS AND IN ACCORDANCE WITH PARA 10.2.12 OF PROJECT SPECIFICATION 3550-8440-SP-0002. FOR SERVICES MEETING THE WET H2S CRITERIA AND CAUSTIC OR AMINE CRITERIA THE MORE STRINGENT PWHT REQUIREMENT SHALL GOVERN.

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
200	WITH JACK SCREW (FO)
541	NPT(F) (CA,F)
773	CLASS 300 (B,F,G,V)
781	CLASS 600 (B,F,G)
789	CLASS 900 (B,F,G)
797	CLASS 1500 (B,F,G)
4608	VALVE WITH NIPPLES (V)

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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P01A-007D3	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE Severe wet H2S service Licensor-1	
1	0.75		SCH160		P01A-007D4	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE Severe wet H2S service Licensor-1	
1	1		SCH160		P01A-007D5	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE Severe wet H2S service Licensor-1	
1	1.5		SCH160		P01A-007D6	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE Severe wet H2S service Licensor-1	
1	2		XS		P01A-007DC	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Severe wet H2S service Licensor-1	
1	3		STD		P01A-007DF	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Severe wet H2S service Licensor-1	
1	4		STD		P01A-007DG	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Severe wet H2S service Licensor-1	
1	6		STD		P01A-007DH	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Severe wet H2S service Licensor-1	
1	8		SCH30		P01A-008NJ	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Severe wet H2S service Licensor-1	
1	10		SCH30		P01A-008NG	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Severe wet H2S service Licensor-1	
1	12		SCH30		P01A-007DL	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Severe wet H2S service Licensor-1	
1	14		SCH20		P01A-007DM	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Severe wet H2S service Licensor-1	
1	16		SCH20		P01A-007DA	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Severe wet H2S service Licensor-1	
1	18		STD		P01A-008NH	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Severe wet H2S service Licensor-1	
1	20		STD		P01A-007DD	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Severe wet H2S service Licensor-1	
1	24		XS		P01A-007F2	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Severe wet H2S service Licensor-1	
1	30		XS		P01A-007FV	Pipe ASTM A671 Grade CC60 Class 22 EFW ASME B36.10M/B36.19M BE Severe wet H2S service Licensor-1	
1	36		XS		P01A-007T8	Pipe ASTM A671 Grade CC60 Class 22 EFW ASME B36.10M/B36.19M BE Severe wet H2S service Licensor-1	
1	42		14.27mm		P01A-007T9	Pipe ASTM A671 Grade CC60 Class 22 EFW ASME B36.10M/B36.19M BE Severe wet H2S service Licensor-1	
1	48		14.27mm		P01A-008NK	Pipe ASTM A671 Grade CC60 Class 22 EFW ASME B36.10M/B36.19M BE Severe wet H2S service Licensor-1	
1	52		15.88mm		P01A-007TB	Pipe ASTM A671 Grade CC60 Class 22 EFW ASME B36.10M/B36.19M BE Severe wet H2S service Licensor-1	
1	54		15.88mm		P01A-009R6	Pipe ASTM A671 Grade CC60 Class 22 EFW ASME B36.10M/B36.19M BE Severe wet H2S service Licensor-1	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P02A-003V5	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	0.75		SCH160		P02A-003V6	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	1		SCH160		P02A-003V7	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	1.5		SCH160		P02A-003V8	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	2		XS		P02A-003VE	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	3		STD		P02A-003VH	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	4		STD		P02A-003VJ	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	6		STD		P02A-003VK	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	8		SCH30		P02A-004FZ	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	10		SCH30		P02A-004FX	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	12		SCH30		P02A-003VN	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	14		SCH20		P02A-003VP	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	16		SCH20		P02A-003VC	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	18		STD		P02A-004FY	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	20		STD		P02A-003VF	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	24		XS		P02A-003X4	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	30		XS		P02A-003X6	90 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	36		XS		P02A-003X7	90 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	42		14.27mm		P02A-003X8	90 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	48		14.27mm		P02A-004G0	90 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	52		15.88mm		P02A-003XA	90 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Long radius Severe wet H2S service Licensor-1	

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45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P03A-003SU	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	0.75		SCH160		P03A-003SV	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	1		SCH160		P03A-003SW	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	1.5		SCH160		P03A-003SX	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	2		XS		P03A-003T3	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	3		STD		P03A-003T6	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	4		STD		P03A-003T7	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	6		STD		P03A-003T8	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	8		SCH30		P03A-004D7	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	10		SCH30		P03A-004D5	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	12		SCH30		P03A-003TB	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	14		SCH20		P03A-003TC	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	16		SCH20		P03A-003T1	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	18		STD		P03A-004D6	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	20		STD		P03A-003T4	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	24		XS		P03A-003UT	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	30		XS		P03A-003UV	45 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	36		XS		P03A-003UW	45 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	42		14.27mm		P03A-003UX	45 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	48		14.27mm		P03A-004D8	45 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	52		15.88mm		P03A-003UZ	45 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Long radius Severe wet H2S service Licensor-1	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P21A-004CL	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	0.75		SCH160		P21A-004CM	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	1		SCH160		P21A-004CN	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	1.5		SCH160		P21A-004CP	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	2		XS		P21A-004CW	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	3		STD		P21A-004CZ	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	4		STD		P21A-004D0	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	6		STD		P21A-004D1	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	8		SCH30		P21A-004YD	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	10		SCH30		P21A-004YB	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	12		SCH30		P21A-004D4	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	14		SCH20		P21A-004D5	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	16		SCH20		P21A-004CU	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	18		STD		P21A-004YC	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	20		STD		P21A-004CX	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	24		XS		P21A-004EK	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	30		XS		P21A-004EM	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Severe wet H2S service Licensor-1	
1	36		XS		P21A-004EN	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Severe wet H2S service Licensor-1	
1	42		14.27mm		P21A-004EP	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Severe wet H2S service Licensor-1	
1	48		14.27mm		P21A-004YE	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Severe wet H2S service Licensor-1	
1	52		15.88mm		P21A-004ES	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Severe wet H2S service Licensor-1	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75	SCH160	SCH160	P24A-00KEA	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	1.5	0.75	SCH160	SCH160	P24A-00KEB	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	1.5	1	SCH160	SCH160	P24A-00KEC	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	2	1	XS	SCH160	P24A-00KED	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	

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REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2	1.5	XS	SCH160	P24A-00KEE	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	3	1.5	STD	SCH160	P24A-00KEF	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	3	2	STD	XS	P24A-00KEG	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	4	2	STD	XS	P24A-00KEH	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	4	3	STD	STD	P24A-00KEJ	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	6	3	STD	STD	P24A-00KEK	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	6	4	STD	STD	P24A-00KEL	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	8	4	SCH30	STD	P24A-00NMJ	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	8	6	SCH30	STD	P24A-00NMK	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	10	4	SCH30	STD	P24A-00NML	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	10	6	SCH30	STD	P24A-00NMM	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	10	8	SCH30	SCH30	P24A-00NMN	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	12	6	SCH30	STD	P24A-00KFT	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	12	8	SCH30	SCH30	P24A-00NMR	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	12	10	SCH30	SCH30	P24A-00NMP	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	14	6	SCH20	STD	P24A-00KFX	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	14	8	SCH20	SCH30	P24A-00NMT	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	14	10	SCH20	SCH30	P24A-00NMS	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	14	12	SCH20	SCH30	P24A-00KFW	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	16	6	SCH20	STD	P24A-00KF1	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	16	8	SCH20	SCH30	P24A-00NMV	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	16	10	SCH20	SCH30	P24A-00NMU	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	16	12	SCH20	SCH30	P24A-00KG0	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	16	14	SCH20	SCH20	P24A-00KG1	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	18	8	STD	SCH30	P24A-00NN0	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	18	10	STD	SCH30	P24A-00NMW	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	18	12	STD	SCH30	P24A-00NMX	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	18	14	STD	SCH20	P24A-00NMY	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	18	16	STD	SCH20	P24A-00NMZ	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	20	8	STD	SCH30	P24A-00NN3	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	20	10	STD	SCH30	P24A-00NN1	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	20	12	STD	SCH30	P24A-00KG8	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	20	14	STD	SCH20	P24A-00KG9	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	20	16	STD	SCH20	P24A-00KFB	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	20	18	STD	STD	P24A-00NN2	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	24	10	XS	SCH30	P24A-00NN4	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	24	12	XS	SCH30	P24A-00NN5	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	24	14	XS	SCH20	P24A-00NN6	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	24	16	XS	SCH20	P24A-00NN7	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	24	18	XS	STD	P24A-00NN8	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	24	20	XS	STD	P24A-00NN9	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	30	10	XS	SCH30	P24A-00NNA	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Severe wet H2S service Licensor-1	
1	30	12	XS	SCH30	P24A-00NNB	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Severe wet H2S service Licensor-1	
1	30	14	XS	SCH20	P24A-00NNC	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Severe wet H2S service Licensor-1	
1	30	16	XS	SCH20	P24A-00NND	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Severe wet H2S service Licensor-1	
1	30	18	XS	STD	P24A-00NNE	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Severe wet H2S service Licensor-1	
1	30	20	XS	STD	P24A-00NNF	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Severe wet H2S service Licensor-1	
1	30	24	XS	XS	P24A-00KMV	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Severe wet H2S service Licensor-1	
1	36	16	XS	SCH20	P24A-00NNG	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Severe wet H2S service Licensor-1	
1	36	18	XS	STD	P24A-00NNH	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Severe wet H2S service Licensor-1	
1	36	20	XS	STD	P24A-00NNJ	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Severe wet H2S service Licensor-1	
1	36	24	XS	XS	P24A-00KMY	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Severe wet H2S service Licensor-1	
1	36	30	XS	XS	P24A-00KMZ	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Severe wet H2S service Licensor-1	
1	42	16	14.27mm	SCH20	P24A-00NNK	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Severe wet H2S service Licensor-1	
1	42	18	14.27mm	STD	P24A-00NNL	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Severe wet H2S service Licensor-1	
1	42	20	14.27mm	STD	P24A-00NNM	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Severe wet H2S service Licensor-1	
1	42	24	14.27mm	XS	P24A-00KN2	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Severe wet H2S service Licensor-1	
1	42	30	14.27mm	XS	P24A-00KN3	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Severe wet H2S service Licensor-1	
1	42	36	14.27mm	XS	P24A-00KN4	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Severe wet H2S service Licensor-1	

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REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	48	24	14.27mm	XS	P24A-00NNN	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Severe wet H2S service Licensor-1	
1	48	30	14.27mm	XS	P24A-00NNP	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Severe wet H2S service Licensor-1	
1	48	36	14.27mm	XS	P24A-00NNR	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Severe wet H2S service Licensor-1	
1	48	42	14.27mm	14.27mm	P24A-00NNS	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Severe wet H2S service Licensor-1	
1	52	30	15.88mm	XS	P24A-00L3U	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Severe wet H2S service Licensor-1	
1	52	36	15.88mm	XS	P24A-00KN9	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Severe wet H2S service Licensor-1	
1	52	42	15.88mm	14.27mm	P24A-00KNA	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Severe wet H2S service Licensor-1	
1	52	48	15.88mm	14.27mm	P24A-00NNT	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Severe wet H2S service Licensor-1	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	SCH160	P27A-00EY1	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	1	0.5	SCH160	SCH160	P27A-00EY2	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	1	0.75	SCH160	SCH160	P27A-00EY3	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	1.5	0.5	SCH160	SCH160	P27A-00EY4	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	1.5	0.75	SCH160	SCH160	P27A-00EY5	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	1.5	1	SCH160	SCH160	P27A-00EY6	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	2	0.75	XS	SCH160	P27A-00EY7	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	2	1	XS	SCH160	P27A-00EY8	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	2	1.5	XS	SCH160	P27A-00EY9	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	3	1.5	STD	SCH160	P27A-00EYA	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	3	2	STD	XS	P27A-00EYB	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	4	1.5	STD	SCH160	P27A-00EYC	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	4	2	STD	XS	P27A-00EYD	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	4	3	STD	STD	P27A-00EYE	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	6	3	STD	STD	P27A-00EYF	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	6	4	STD	STD	P27A-00EYG	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	8	4	SCH30	STD	P27A-00H7Y	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	8	6	SCH30	STD	P27A-00H7Z	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	10	4	SCH30	STD	P27A-00H80	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	10	6	SCH30	STD	P27A-00H81	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	10	8	SCH30	SCH30	P27A-00H82	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	12	6	SCH30	STD	P27A-00EZH	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	12	8	SCH30	SCH30	P27A-00H84	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	12	10	SCH30	SCH30	P27A-00H83	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	14	6	SCH20	STD	P27A-00EZM	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	14	8	SCH20	SCH30	P27A-00H86	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	14	10	SCH20	SCH30	P27A-00H85	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	14	12	SCH20	SCH30	P27A-00EZL	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	16	8	SCH20	SCH30	P27A-00H88	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	16	10	SCH20	SCH30	P27A-00H87	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	16	12	SCH20	SCH30	P27A-00EZR	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	16	14	SCH20	SCH20	P27A-00EZS	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	18	10	STD	SCH30	P27A-00H89	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	18	12	STD	SCH30	P27A-00H8A	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	18	14	STD	SCH20	P27A-00H8B	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	18	16	STD	SCH20	P27A-00H8C	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	20	12	STD	SCH30	P27A-00EZX	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	20	14	STD	SCH20	P27A-00EZY	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	20	16	STD	SCH20	P27A-00EZ6	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	20	18	STD	STD	P27A-00H8D	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	24	16	XS	SCH20	P27A-00H8E	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	24	18	XS	STD	P27A-00H8F	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	24	20	XS	STD	P27A-00H8G	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	30	20	XS	STD	P27A-00H8H	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Severe wet H2S service Licensor-1	
1	30	24	XS	XS	P27A-00F47	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Severe wet H2S service Licensor-1	
1	30	24	XS	XS	P27A-00F48	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Severe wet H2S service Licensor-1	
1	36	30	XS	XS	P27A-00F49	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Severe wet H2S service Licensor-1	

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CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	42	30	14.27mm	XS	P27A-00F4A	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Severe wet H2S service Licensor-1	
1	42	36	14.27mm	XS	P27A-00F4B	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Severe wet H2S service Licensor-1	
1	48	42	14.27mm	14.27mm	P27A-00H8J	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Severe wet H2S service Licensor-1	
1	52	30	15.88mm	XS	P27A-00FCN	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Severe wet H2S service Licensor-1	
1	52	36	15.88mm	XS	P27A-00F4D	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Severe wet H2S service Licensor-1	
1	52	42	15.88mm	14.27mm	P27A-00F4E	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Severe wet H2S service Licensor-1	
1	52	48	15.88mm	14.27mm	P27A-00H8K	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Severe wet H2S service Licensor-1	
1	54	48	15.88mm	14.27mm	P27A-00JPK	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Severe wet H2S service Licensor-1	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	SCH160	P28A-00C21	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	1	0.5	SCH160	SCH160	P28A-00C22	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	1	0.75	SCH160	SCH160	P28A-00C23	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	1.5	0.5	SCH160	SCH160	P28A-00C24	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	1.5	0.75	SCH160	SCH160	P28A-00C25	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	1.5	1	SCH160	SCH160	P28A-00C26	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	2	0.75	XS	SCH160	P28A-00C27	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	2	1	XS	SCH160	P28A-00C28	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	2	1.5	XS	SCH160	P28A-00C29	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	3	1.5	STD	SCH160	P28A-00C2A	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	3	2	STD	XS	P28A-00C2B	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	4	1.5	STD	SCH160	P28A-00C2C	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	4	2	STD	XS	P28A-00C2D	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	4	3	STD	STD	P28A-00C2E	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	6	3	STD	STD	P28A-00C2F	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	6	4	STD	STD	P28A-00C2G	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	8	4	SCH30	STD	P28A-00EFM	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	8	6	SCH30	STD	P28A-00EFN	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	10	4	SCH30	STD	P28A-00EFP	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	10	6	SCH30	STD	P28A-00EFR	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	10	8	SCH30	SCH30	P28A-00EFS	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	12	6	SCH30	STD	P28A-00C3H	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	12	8	SCH30	SCH30	P28A-00EFU	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	12	10	SCH30	SCH30	P28A-00EFT	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	14	6	SCH20	STD	P28A-00C3M	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	14	8	SCH20	SCH30	P28A-00EFW	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	14	10	SCH20	SCH30	P28A-00EFV	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	14	12	SCH20	SCH30	P28A-00C3L	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	16	8	SCH20	SCH30	P28A-00EFY	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	16	10	SCH20	SCH30	P28A-00EFX	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	16	12	SCH20	SCH30	P28A-00C3R	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	16	14	SCH20	SCH20	P28A-00C3S	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	18	10	STD	SCH30	P28A-00EFZ	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	18	12	STD	SCH30	P28A-00EG0	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	18	14	STD	SCH20	P28A-00EG1	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	18	16	STD	SCH20	P28A-00EG2	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	20	12	STD	SCH30	P28A-00C3X	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	20	14	STD	SCH20	P28A-00C3Y	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	20	16	STD	SCH20	P28A-00C36	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	20	18	STD	STD	P28A-00EG3	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	24	16	XS	SCH20	P28A-00EG4	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	24	18	XS	STD	P28A-00EG5	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	24	20	XS	STD	P28A-00EG6	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	30	20	XS	STD	P28A-00EG7	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Severe wet H2S service Licensor-1	
1	30	24	XS	XS	P28A-00C88	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Severe wet H2S service Licensor-1	
1	36	24	XS	XS	P28A-00C89	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Severe wet H2S service Licensor-1	

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ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	36	30	XS	XS	P28A-00C8A	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Severe wet H2S service Licensor-1	
1	42	30	14.27mm	XS	P28A-00C8B	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Severe wet H2S service Licensor-1	
1	42	36	14.27mm	XS	P28A-00C8C	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Severe wet H2S service Licensor-1	
1	48	42	14.27mm	14.27mm	P28A-00EG8	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Severe wet H2S service Licensor-1	
1	52	30	15.88mm	XS	P28A-00CHF	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Severe wet H2S service Licensor-1	
1	52	36	15.88mm	XS	P28A-00C8E	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Severe wet H2S service Licensor-1	
1	52	42	15.88mm	14.27mm	P28A-00C8F	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Severe wet H2S service Licensor-1	
1	52	48	15.88mm	14.27mm	P28A-00EG9	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Severe wet H2S service Licensor-1	
1	54	48	15.88mm	14.27mm	P28A-00G0R	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Severe wet H2S service Licensor-1	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P29A-00374	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	0.75		SCH160		P29A-00375	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	1		SCH160		P29A-00376	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	1.5		SCH160		P29A-00377	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	2		XS		P29A-0037D	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	3		STD		P29A-0037G	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	4		STD		P29A-0037H	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	6		STD		P29A-0037J	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	8		SCH30		P29A-003SW	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	10		SCH30		P29A-003ST	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	12		SCH30		P29A-0037M	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	14		SCH20		P29A-0037N	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	16		SCH20		P29A-0037B	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	18		STD		P29A-003SU	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	20		STD		P29A-0037E	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	24		XS		P29A-0039H	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	30		XS		P29A-0039J	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	36		XS		P29A-0039K	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	42		14.27mm		P29A-0039L	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	48		14.27mm		P29A-003SV	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	52		15.88mm		P29A-0039P	Cap ASTM A234 Grade WPB Seamless ASME B16.9-modified BW Severe wet H2S service Licensor-1	
541	0.75				P29B-0006U	Cap ASTM A105 Class 6000 ASME B16.11 NPT Severe wet H2S service Licensor-1	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P41A-0019H	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Severe wet H2S service Licensor-1	
1	0.75		XXS		P41A-0019J	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Severe wet H2S service Licensor-1	
1	1		XXS		P41A-0018F	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Severe wet H2S service Licensor-1	
1	1.5		XXS		P41A-0018G	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Severe wet H2S service Licensor-1	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2	0.75	XS	SCH160	P31B-00XX6	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	3	0.75	STD	SCH160	P31B-00XX7	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	4	0.75	STD	SCH160	P31B-00XX9	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	6	0.75	STD	SCH160	P31B-00XXC	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	8	0.75	SCH30	SCH160	P31B-010WU	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	10	0.75	SCH30	SCH160	P31B-010WZ	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	12	0.75	SCH30	SCH160	P31B-00XZ7	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	14	0.75	SCH20	SCH160	P31B-00XZD	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	16	0.75	SCH20	SCH160	P31B-00XY5	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	18	0.75	STD	SCH160	P31B-010X4	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	20	0.75	STD	SCH160	P31B-00XYJ	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	24	0.75	XS	SCH160	P31B-010XB	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	30	0.75	XS	SCH160	P31B-010XJ	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	36	0.75	XS	SCH160	P31B-010XS	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	42	0.75	14.27mm	SCH160	P31B-010XZ	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	48	0.75	14.27mm	SCH160	P31B-010Y6	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	52	0.75	15.88mm	SCH160	P31B-010YD	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	3	1	STD	SCH160	P31B-00XX8	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	4	1	STD	SCH160	P31B-00XXA	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	6	1	STD	SCH160	P31B-00XXD	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	8	1	SCH30	SCH160	P31B-010WV	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	10	1	SCH30	SCH160	P31B-010X0	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	12	1	SCH30	SCH160	P31B-00XZ8	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	14	1	SCH20	SCH160	P31B-00XZE	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	16	1	SCH20	SCH160	P31B-00XY6	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	18	1	STD	SCH160	P31B-010X5	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	20	1	STD	SCH160	P31B-00XYK	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	24	1	XS	SCH160	P31B-010XC	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	30	1	XS	SCH160	P31B-010XK	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	36	1	XS	SCH160	P31B-010XT	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	42	1	14.27mm	SCH160	P31B-010Y0	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	48	1	14.27mm	SCH160	P31B-010Y7	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	52	1	15.88mm	SCH160	P31B-010YE	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	4	1.5	STD	SCH160	P31B-00XXB	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	6	1.5	STD	SCH160	P31B-00XXE	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	8	1.5	SCH30	SCH160	P31B-010WW	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	10	1.5	SCH30	SCH160	P31B-010X1	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	12	1.5	SCH30	SCH160	P31B-00XZ9	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	14	1.5	SCH20	SCH160	P31B-00XZF	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	16	1.5	SCH20	SCH160	P31B-00XY7	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	18	1.5	STD	SCH160	P31B-010X6	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	20	1.5	STD	SCH160	P31B-00XYL	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	24	1.5	XS	SCH160	P31B-010XD	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	30	1.5	XS	SCH160	P31B-010XL	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	36	1.5	XS	SCH160	P31B-010XU	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	42	1.5	14.27mm	SCH160	P31B-010Y1	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	48	1.5	14.27mm	SCH160	P31B-010Y8	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	52	1.5	15.88mm	SCH160	P31B-010YF	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	6	2	STD	XS	P31B-00XXF	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	8	2	SCH30	XS	P31B-010WX	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	10	2	SCH30	XS	P31B-010X2	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	12	2	SCH30	XS	P31B-00XZA	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	14	2	SCH20	XS	P31B-00XZG	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	16	2	SCH20	XS	P31B-00XY8	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	18	2	STD	XS	P31B-010X7	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	20	2	STD	XS	P31B-00XYM	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	24	2	XS	XS	P31B-010XE	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	30	2	XS	XS	P31B-010XM	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	36	2	XS	XS	P31B-010XV	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	42	2	14.27mm	XS	P31B-010Y2	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	48	2	14.27mm	XS	P31B-010Y9	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	52	2	15.88mm	XS	P31B-010YG	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	8	3	SCH30	STD	P31B-010WY	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	10	3	SCH30	STD	P31B-010X3	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	12	3	SCH30	STD	P31B-00XZB	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	14	3	SCH20	STD	P31B-00XZH	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	16	3	SCH20	STD	P31B-00XY9	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	18	3	STD	STD	P31B-010X8	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	20	3	STD	STD	P31B-00XYN	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	24	3	XS	STD	P31B-010XF	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	30	3	XS	STD	P31B-010XN	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	36	3	XS	STD	P31B-010XW	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	42	3	14.27mm	STD	P31B-010Y3	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	48	3	14.27mm	STD	P31B-010YA	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	52	3	15.88mm	STD	P31B-010YH	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	12	4	SCH30	STD	P31B-00XZC	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	14	4	SCH20	STD	P31B-00XZJ	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	16	4	SCH20	STD	P31B-00XYA	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	18	4	STD	STD	P31B-010X9	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	20	4	STD	STD	P31B-00XYP	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	24	4	XS	STD	P31B-010XG	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	30	4	XS	STD	P31B-010XP	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	36	4	XS	STD	P31B-010XX	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	42	4	14.27mm	STD	P31B-010Y4	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	48	4	14.27mm	STD	P31B-010YB	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	52	4	15.88mm	STD	P31B-010YJ	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	18	6	STD	STD	P31B-010XA	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	20	6	STD	STD	P31B-00XYR	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	24	6	XS	STD	P31B-010XH	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	30	6	XS	STD	P31B-010XR	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	36	6	XS	STD	P31B-010XY	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	42	6	14.27mm	STD	P31B-010Y5	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	48	6	14.27mm	STD	P31B-010YC	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	52	6	15.88mm	STD	P31B-010YK	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30B-0006M	Plug ASTM A105 ASME B16.11 NPT Round head Severe wet H2S service Licensor-1	
1	0.75				P30B-0006N	Plug ASTM A105 ASME B16.11 NPT Round head Severe wet H2S service Licensor-1	
1	1				P30B-0006K	Plug ASTM A105 ASME B16.11 NPT Round head Severe wet H2S service Licensor-1	
1	1.5				P30B-0006L	Plug ASTM A105 ASME B16.11 NPT Round head Severe wet H2S service Licensor-1	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P61B-00A5E	Flange WN ASTM A105 Class 150 ASME B16.5 RF Severe wet H2S service Licensor-1	
1	0.75		SCH160		P61B-00A5F	Flange WN ASTM A105 Class 150 ASME B16.5 RF Severe wet H2S service Licensor-1	
1	1		SCH160		P61B-00A5G	Flange WN ASTM A105 Class 150 ASME B16.5 RF Severe wet H2S service Licensor-1	
1	1.5		SCH160		P61B-00A5H	Flange WN ASTM A105 Class 150 ASME B16.5 RF Severe wet H2S service Licensor-1	
1	2		XS		P61B-00A5P	Flange WN ASTM A105 Class 150 ASME B16.5 RF Severe wet H2S service Licensor-1	
1	3		STD		P61B-00A5T	Flange WN ASTM A105 Class 150 ASME B16.5 RF Severe wet H2S service Licensor-1	
1	4		STD		P61B-00A5U	Flange WN ASTM A105 Class 150 ASME B16.5 RF Severe wet H2S service Licensor-1	
1	6		STD		P61B-00A5V	Flange WN ASTM A105 Class 150 ASME B16.5 RF Severe wet H2S service Licensor-1	
1	8		SCH30		P61B-00BT6	Flange WN ASTM A105 Class 150 ASME B16.5 RF Severe wet H2S service Licensor-1	
1	10		SCH30		P61B-00BT4	Flange WN ASTM A105 Class 150 ASME B16.5 RF Severe wet H2S service Licensor-1	
1	12		SCH30		P61B-00A5K	Flange WN ASTM A105 Class 150 ASME B16.5 RF Severe wet H2S service Licensor-1	
1	14		SCH20		P61B-00A5L	Flange WN ASTM A105 Class 150 ASME B16.5 RF Severe wet H2S service Licensor-1	
1	16		SCH20		P61B-00A5M	Flange WN ASTM A105 Class 150 ASME B16.5 RF Severe wet H2S service Licensor-1	
1	18		STD		P61B-00BT5	Flange WN ASTM A105 Class 150 ASME B16.5 RF Severe wet H2S service Licensor-1	
1	20		STD		P61B-00A5R	Flange WN ASTM A105 Class 150 ASME B16.5 RF Severe wet H2S service Licensor-1	
1	24		XS		P61B-00A81	Flange WN ASTM A105 Class 150 ASME B16.5 RF Severe wet H2S service Licensor-1	
1	30		XS		P61B-00A86	Flange WN ASTM A105 Class 150 ASME B16.47 Series B RF Severe wet H2S service Licensor-1	
1	36		XS		P61B-00A87	Flange WN ASTM A105 Class 150 ASME B16.47 Series B RF Severe wet H2S service Licensor-1	
1	42		14.27mm		P61B-00A88	Flange WN ASTM A105 Class 150 ASME B16.47 Series B RF Severe wet H2S service Licensor-1	
1	48		14.27mm		P61B-00BT7	Flange WN ASTM A105 Class 150 ASME B16.47 Series B RF Severe wet H2S service Licensor-1	
1	52		15.88mm		P61B-00A8A	Flange WN ASTM A105 Class 150 ASME B16.47 Series B RF Severe wet H2S service Licensor-1	
541	0.5				P61B-00DLL	Flange NPT ASTM A105 Class 150 ASME B16.5 RF Severe wet H2S service Licensor-1	
541	0.75				P61B-00CXT	Flange NPT ASTM A105 Class 150 ASME B16.5 RF Severe wet H2S service Licensor-1	
773	0.5		SCH160		P61B-00A4F	Flange WN ASTM A105 Class 300 ASME B16.5 RF Severe wet H2S service Licensor-1	
773	0.75		SCH160		P61B-00A4G	Flange WN ASTM A105 Class 300 ASME B16.5 RF Severe wet H2S service Licensor-1	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
773	1		SCH160		P61B-00A4H	Flange WN ASTM A105 Class 300 ASME B16.5 RF Severe wet H2S service Licensor-1	
773	1.5		SCH160		P61B-00A4J	Flange WN ASTM A105 Class 300 ASME B16.5 RF Severe wet H2S service Licensor-1	
773	2		XS		P61B-00A4R	Flange WN ASTM A105 Class 300 ASME B16.5 RF Severe wet H2S service Licensor-1	
773	3		STD		P61B-00A4U	Flange WN ASTM A105 Class 300 ASME B16.5 RF Severe wet H2S service Licensor-1	
773	4		STD		P61B-00A4V	Flange WN ASTM A105 Class 300 ASME B16.5 RF Severe wet H2S service Licensor-1	
773	6		STD		P61B-00A4W	Flange WN ASTM A105 Class 300 ASME B16.5 RF Severe wet H2S service Licensor-1	
773	8		SCH30		P61B-00BTA	Flange WN ASTM A105 Class 300 ASME B16.5 RF Severe wet H2S service Licensor-1	
773	10		SCH30		P61B-00BT8	Flange WN ASTM A105 Class 300 ASME B16.5 RF Severe wet H2S service Licensor-1	
773	12		SCH30		P61B-00A63	Flange WN ASTM A105 Class 300 ASME B16.5 RF Severe wet H2S service Licensor-1	
773	14		SCH20		P61B-00A64	Flange WN ASTM A105 Class 300 ASME B16.5 RF Severe wet H2S service Licensor-1	
773	16		SCH20		P61B-00A4N	Flange WN ASTM A105 Class 300 ASME B16.5 RF Severe wet H2S service Licensor-1	
773	18		STD		P61B-00BT9	Flange WN ASTM A105 Class 300 ASME B16.5 RF Severe wet H2S service Licensor-1	
773	20		STD		P61B-00A4S	Flange WN ASTM A105 Class 300 ASME B16.5 RF Severe wet H2S service Licensor-1	
773	24		XS		P61B-00A8C	Flange WN ASTM A105 Class 300 ASME B16.5 RF Severe wet H2S service Licensor-1	
773	30		XS		P61B-00A8E	Flange WN ASTM A105 Class 300 ASME B16.47 Series B RF Severe wet H2S service Licensor-1	
773	36		XS		P61B-00A8F	Flange WN ASTM A105 Class 300 ASME B16.47 Series B RF Severe wet H2S service Licensor-1	
773	42		14.27mm		P61B-00A8G	Flange WN ASTM A105 Class 300 ASME B16.47 Series B RF Severe wet H2S service Licensor-1	
773	48		14.27mm		P61B-00BTB	Flange WN ASTM A105 Class 300 ASME B16.47 Series B RF Severe wet H2S service Licensor-1	
773	52		15.88mm		P61B-00A8J	Flange WN ASTM A105 Class 300 ASME B16.47 Series B RF Severe wet H2S service Licensor-1	
773	54		15.88mm		P61B-00DX8	Flange WN ASTM A105 Class 300 ASME B16.47 Series B RF Severe wet H2S service Licensor-1	
781	6		STD		P61B-00A5C	Flange WN ASTM A105 Class 600 ASME B16.5 RF Severe wet H2S service Licensor-1	
789	8		SCH30		P61B-00DNP	Flange WN ASTM A105 Class 900 ASME B16.5 RJ Severe wet H2S service Licensor-1	
789	10		SCH30		P61B-00DGZ	Flange WN ASTM A105 Class 900 ASME B16.5 RJ Severe wet H2S service Licensor-1	
797	0.5		SCH160		P61B-00BNG	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ Severe wet H2S service Licensor-1	
797	0.75		SCH160		P61B-00BNH	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ Severe wet H2S service Licensor-1	
797	1		SCH160		P61B-00BNJ	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ Severe wet H2S service Licensor-1	
797	1.5		SCH160		P61B-00BNK	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ Severe wet H2S service Licensor-1	
797	2		XS		P61B-00DH0	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ Severe wet H2S service Licensor-1	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67B-002HN	Blind flange ASTM A105 Class 150 ASME B16.5 RF Severe wet H2S service Licensor-1	
1	0.75				P67B-002HP	Blind flange ASTM A105 Class 150 ASME B16.5 RF Severe wet H2S service Licensor-1	
1	1				P67B-002HR	Blind flange ASTM A105 Class 150 ASME B16.5 RF Severe wet H2S service Licensor-1	
1	1.5				P67B-002HS	Blind flange ASTM A105 Class 150 ASME B16.5 RF Severe wet H2S service Licensor-1	
1	2				P67B-002HY	Blind flange ASTM A105 Class 150 ASME B16.5 RF Severe wet H2S service Licensor-1	
1	3				P67B-002J1	Blind flange ASTM A105 Class 150 ASME B16.5 RF Severe wet H2S service Licensor-1	
1	4				P67B-002J2	Blind flange ASTM A105 Class 150 ASME B16.5 RF Severe wet H2S service Licensor-1	
1	6				P67B-002J3	Blind flange ASTM A105 Class 150 ASME B16.5 RF Severe wet H2S service Licensor-1	
1	8				P67B-002J4	Blind flange ASTM A105 Class 150 ASME B16.5 RF Severe wet H2S service Licensor-1	
1	10				P67B-002HT	Blind flange ASTM A105 Class 150 ASME B16.5 RF Severe wet H2S service Licensor-1	
1	12				P67B-002HU	Blind flange ASTM A105 Class 150 ASME B16.5 RF Severe wet H2S service Licensor-1	
1	14				P67B-002HV	Blind flange ASTM A105 Class 150 ASME B16.5 RF Severe wet H2S service Licensor-1	
1	16				P67B-002HW	Blind flange ASTM A105 Class 150 ASME B16.5 RF Severe wet H2S service Licensor-1	
1	18				P67B-002HX	Blind flange ASTM A105 Class 150 ASME B16.5 RF Severe wet H2S service Licensor-1	
1	20				P67B-002HZ	Blind flange ASTM A105 Class 150 ASME B16.5 RF Severe wet H2S service Licensor-1	
1	24				P67B-002J0	Blind flange ASTM A105 Class 150 ASME B16.5 RF Severe wet H2S service Licensor-1	
1	30				P67B-002J5	Blind flange ASTM A105 Class 150 ASME B16.47 Series B RF Severe wet H2S service Licensor-1	
1	36				P67B-002J6	Blind flange ASTM A105 Class 150 ASME B16.47 Series B RF Severe wet H2S service Licensor-1	
1	42				P67B-002J7	Blind flange ASTM A105 Class 150 ASME B16.47 Series B RF Severe wet H2S service Licensor-1	
1	48				P67B-002J8	Blind flange ASTM A105 Class 150 ASME B16.47 Series B RF Severe wet H2S service Licensor-1	
1	52				P67B-002J9	Blind flange ASTM A105 Class 150 ASME B16.47 Series B RF Severe wet H2S service Licensor-1	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000L8	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000L9	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000LA	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

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GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5				P73T-000LB	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000LH	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000LL	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000LM	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	6				P73T-000LN	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	8				P73T-000LP	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	10				P73T-000LC	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	12				P73T-000LD	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	14				P73T-000LE	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	16				P73T-000LF	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	18				P73T-000LG	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	20				P73T-000LJ	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	24				P73T-000LK	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	30				P73T-000LT	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	36				P73T-000LW	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	42				P73T-000LZ	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	48				P73T-000M2	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	52				P73T-001E2	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	0.5				P73T-000FT	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	0.75				P73T-000FU	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	3				P73T-000G5	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	4				P73T-000G6	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	6				P73T-000G7	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	8				P73T-000G8	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	10				P73T-000FX	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	12				P73T-000FY	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	14				P73T-000FZ	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	16				P73T-000G0	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	18				P73T-000G1	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	20				P73T-000G3	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	24				P73T-000G4	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	30				P73T-000H9	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	36				P73T-000HC	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	42				P73T-000KM	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	48				P73T-000KR	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	52				P73T-0024N	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	54				P73T-0040M	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	6				P73T-000JN	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
789	8				P75T-000JS	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	10				P75T-000JL	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	0.5				P75T-000JT	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	0.75				P75T-000JU	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	

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GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
797	1				P75T-000JV	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	1.5				P75T-000JW	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	2				P75T-0008A	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-16				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	18-24				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
1	30-42				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	48-52				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
773	0.5-10				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
773	12-54				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
781	6				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
789	8-12				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
797	0.5-2				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81B-001NU	Gate valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Licensor-1	
1	0.75				P81B-001NV	Gate valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Licensor-1	
1	1				P81B-001NW	Gate valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Licensor-1	
1	1.5				P81B-001NX	Gate valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Licensor-1	
1	2				P81C-005FZ	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Licensor-1	
1	3				P81C-005G0	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Licensor-1	
1	4				P81C-005G1	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Licensor-1	
1	6				P81C-005G2	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Licensor-1	
1	8				P81C-005G3	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Licensor-1	
1	10				P81C-005FX	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Licensor-1	
1	12				P81C-005FY	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Licensor-1	
1	14				P81C-005G4	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Severe wet H2S service Licensor-1	
1	16				P81C-005G5	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Severe wet H2S service Licensor-1	
1	18				P81C-005G6	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Severe wet H2S service Licensor-1	
1	20				P81C-005G7	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Severe wet H2S service Licensor-1	
1	24				P81C-005G8	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Severe wet H2S service Licensor-1	
1	30				P81C-005G9	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.47-B RF Trim number 12 BB-BG-OS&Y Gear operated Severe wet H2S service Licensor-1	
1	36				P81C-005GA	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.47-B RF Trim number 12 BB-BG-OS&Y Gear operated Severe wet H2S service Licensor-1	
1	42				P81C-005GB	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.47-B RF Trim number 12 BB-BG-OS&Y Gear operated Severe wet H2S service Licensor-1	
1	48				P81C-005GC	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.47-B RF Trim number 12 BB-BG-OS&Y Gear operated Severe wet H2S service Licensor-1	
4608	0.75				P81B-002Y6	Gate valve ASTM A105 Class 150 API 602 BW both sides w/ nipples BE - NPT ASTM A106-B XXS-nipple Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Licensor-1	
773	2				P81C-004X0	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Licensor-1	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82B-001D9	Globe valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Licensor-1	
1	0.75				P82B-001DA	Globe valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Licensor-1	
1	1				P82B-001DB	Globe valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Licensor-1	

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GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5				P82B-001DC	Globe valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Licensor-1	
1	2				P82C-002PT	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Licensor-1	
1	3				P82C-002PU	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Licensor-1	
1	4				P82C-002PV	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Licensor-1	
1	6				P82C-002PW	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Licensor-1	
1	8				P82C-002PX	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Licensor-1	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83B-0013S	Check valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Severe wet H2S service Licensor-1	
1	0.75				P83B-0013T	Check valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Severe wet H2S service Licensor-1	
1	1				P83B-0013U	Check valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Severe wet H2S service Licensor-1	
1	1.5				P83B-0013V	Check valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Severe wet H2S service Licensor-1	
1	2				P83C-002TF	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service Licensor-1	
1	3				P83C-002TJ	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service Licensor-1	
1	4				P83C-002TK	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service Licensor-1	
1	6				P83C-002TL	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service Licensor-1	
1	8				P83C-002TM	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service Licensor-1	
1	10				P83C-002TA	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service Licensor-1	
1	12				P83C-002TB	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service Licensor-1	
1	14				P83C-002TC	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service Licensor-1	
1	16				P83C-002TD	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service Licensor-1	
1	18				P83C-002TE	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service Licensor-1	
1	20				P83C-002TG	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service Licensor-1	
1	24				P83C-002TH	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service Licensor-1	

DP CHECK VALVE (XDP)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	30				P88C-0028W	Dual plate check valve ASTM A216 Grade WCB Class 150 API 594 Wafer-type ASME B16.47-B RF Trim number 12 Internal wetted parts SS316 Spring Inconel Retainerless-type Severe wet H2S service Licensor-1	

NEEDLE VALVE (NV)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82B-001XF	Needle valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Licensor-1	

ORIFICE FLANGE (FO)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2		XS		P66B-0087M	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Severe wet H2S service Licensor-1	
1	3		STD		P66B-0087N	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Severe wet H2S service Licensor-1	
1	4		STD		P66B-0087P	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Severe wet H2S service Licensor-1	
1	6		STD		P66B-0087R	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Severe wet H2S service Licensor-1	
200	2		XS		P66B-0087U	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Severe wet H2S service with Jack screw Licensor-1	
200	3		STD		P66B-0087V	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Severe wet H2S service with Jack screw Licensor-1	
200	4		STD		P66B-0087W	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Severe wet H2S service with Jack screw Licensor-1	
200	6		STD		P66B-0087X	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Severe wet H2S service with Jack screw Licensor-1	

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PIPING CLASS
A2AR01 REV NO. 2

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71B-0009T	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service Licensor-1	
1	0.75				P71B-0009U	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service Licensor-1	
1	1				P71B-0009V	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service Licensor-1	
1	1.5				P71B-0009W	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service Licensor-1	
1	2				P71B-0009Z	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service Licensor-1	
1	3				P71B-000A0	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service Licensor-1	
1	4				P71B-000A1	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service Licensor-1	
1	6				P71B-000A2	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service Licensor-1	
1	8				P71B-000A3	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service Licensor-1	
1	10				P71B-0009X	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service Licensor-1	
1	12				P71B-0009Y	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service Licensor-1	

PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000E1	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service Licensor-1	
1	16				P72B-000E2	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service Licensor-1	
1	18				P72B-000E3	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service Licensor-1	
1	20				P72B-000E4	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service Licensor-1	
1	24				P72B-000E5	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service Licensor-1	
1	30				P72B-000E6	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF Severe wet H2S service Licensor-1	
1	36				P72B-000E7	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF Severe wet H2S service Licensor-1	
1	42				P72B-000E8	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF Severe wet H2S service Licensor-1	
1	48				P72B-000E9	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF Severe wet H2S service Licensor-1	
1	52				P72B-000EA	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF Severe wet H2S service Licensor-1	

PADDLE SPACER (PS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000EB	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service Licensor-1	
1	16				P72B-000EC	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service Licensor-1	
1	18				P72B-000ED	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service Licensor-1	
1	20				P72B-000EE	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service Licensor-1	
1	24				P72B-000EF	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service Licensor-1	
1	30				P72B-000EG	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF Severe wet H2S service Licensor-1	
1	36				P72B-000EH	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF Severe wet H2S service Licensor-1	
1	42				P72B-000EJ	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF Severe wet H2S service Licensor-1	
1	48				P72B-000EK	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF Severe wet H2S service Licensor-1	
1	52				P72B-000EL	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF Severe wet H2S service Licensor-1	

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PIPING CLASS
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BOLT TABLE (B_A2AR01 , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	60	P80S-008SY		
0.75	4	0.500	65	P80S-008SZ		
1	4	0.500	70	P80S-008T0		
1.5	4	0.500	75	P80S-008T1		
2	4	0.625	85	P80S-0090A		
3	4	0.625	95	P80S-0090C		
4	8	0.625	95	P80S-0090C		
6	8	0.750	105	P80S-0090E		
8	8	0.750	110	P80S-0090F		
10	12	0.875	120	P80S-005Z9		
12	12	0.875	120	P80S-005Z9		
14	12	1.000	135	P80S-00619		
16	16	1.000	140	P80S-0061A		
18	16	1.125	150	P80S-0064L		
20	20	1.125	160	P80S-0064N		
24	20	1.250	175	P80S-00686		
30	44	0.750	145	P80S-0090N		
36	44	0.875	175	P80S-005ZL		
42	48	1.000	190	P80S-0061L		
48	44	1.125	210	P80S-0064Z		
52	52	1.125	220	P80S-00651		
54			0			

BOLT TABLE (B_A2AR01_773 , STUD ASME RF, OPTION CODE 773)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-008T0		
0.75	4	0.625	75	P80S-00908		
1	4	0.625	80	P80S-00909		
1.5	4	0.750	95	P80S-005Z4		
2	8	0.625	90	P80S-0090B		
3	8	0.750	110	P80S-0090F		
4	8	0.750	115	P80S-0090G		
6	12	0.750	125	P80S-0090J		
8	12	0.875	140	P80S-005ZD		
10	16	1.000	160	P80S-0061E		
12	16	1.125	175	P80S-0064S		
14	20	1.125	180	P80S-0064T		
16	20	1.250	190	P80S-00689		
18	24	1.250	200	P80S-0068B		
20	24	1.250	210	P80S-0068D		
24	24	1.500	235	P80S-006LB		
30	36	1.375	285	P80S-006HY		
36	32	1.625	320	P80S-00A5E		
42	36	1.750	355	P80S-00AEJ		
48	40	1.875	380	P80S-00AW5		
52	48	1.875	410	P80S-00AWB		
54	48	1.875	400	P80S-00AW9		

BOLT TABLE (B_A2AR01_781 , STUD ASME RF, OPTION CODE 781)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	80			
0.75	4	0.625	90			
1	4	0.625	95			
1.5	4	0.750	110			
2	8	0.625	110			
3	8	0.750	130			
4	8	0.875	150			
6	12	1.000	175	P80S-0061H		
8	12	1.125	195			
10	16	1.250	250			
12	20	1.250	255			
14	20	1.375	270			
16	20	1.500	295			
18	20	1.625	320			
20	24	1.625	335			
24	24	1.875	380			
30	28	1.875	435			

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BOLT TABLE (B_A2AR01_781 , STUD ASME RF, OPTION CODE 781)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
36	28	2.250	510			
42	28	2.500	575			
48	32	2.750	635			
52	32	3.000	680			
54			0			

BOLT TABLE (B_A2AR01_789 , STUD ASME RJ, OPTION CODE 789)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	110		R12	
0.75	4	0.750	115		R14	
1	4	0.875	130		R16	
1.5	4	1.000	140		R20	
2	8	0.875	150		R24	
3	8	0.875	150		R31	
4	8	1.125	175		R37	
6	12	1.125	200		R45	
8	12	1.375	260	P80S-006HT	R49	P75T-000JS
10	16	1.375	275	P80S-006HW	R53	P75T-000JL
12	20	1.375	295	P80S-006J0	R57	
14	20	1.500	325		R62	
16	20	1.625	340		R66	
18	20	1.875	390		R70	
20	20	2.000	415		R74	
24	20	2.500	525		R78	
30	20	3.000	600		R102	
36	20	3.500	690		R105	

BOLT TABLE (B_A2AR01_797 , STUD ASME RJ, OPTION CODE 797)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	110	P80S-0090F	R12	P75T-000JT
0.75	4	0.750	115	P80S-0090G	R14	P75T-000JU
1	4	0.875	130	P80S-005ZB	R16	P75T-000JV
1.5	4	1.000	140	P80S-0061A	R20	P75T-000JW
2	8	0.875	150	P80S-005ZF	R24	P75T-0008A
3	8	1.125	180		R35	
4	8	1.250	230		R39	
6	12	1.375	300		R46	
8	12	1.625	345		R50	
10	12	1.875	395		R54	
12	16	2.000	445		R58	
14	16	2.250	490		R63	
16	16	2.500	540		R67	
18	16	2.750	590		R71	
20	16	3.000	650		R75	
24	16	3.500	745		R79	

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BRANCH TABLE (T_A2AR01)

RUN PIPE SIZE (in) \ BRANCH SIZE (in)	0.5	0.75	1	1.5	2	3	4	6	8	10	12	14	16	18	20	24	30	36	42	48	52	54
0.5	TS																					
0.75		TS																				
1		TR	TS																			
1.5		TR	TR	TS																		
2		L	TR	TR	TS																	
3		L	L	TR	TR	TS																
4	L	L	L	L	TR	TR	TS															
6	L	L	L	L	L	TR	TR	TS														
8		L	L	L	L	L	TR	TR	TS													
10		L	L	L	L	L	TR	TR	TR	TS												
12		L	L	L	L	L	L	TR	TR	TR	TS											
14		L	L	L	L	L	L	TR	TR	TR	TR	TS										
16		L	L	L	L	L	L	TR	TR	TR	TR	TR	TS									
18		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TS								
20		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TR	TS							
24		L	L	L	L	L	L	L	9PD	TR	TR	TR	TR	TR	TR	TS						
30		L	L	L	L	L	L	L	9PD	TR	TR	TR	TR	TR	TR	TR	TS					
36		L	L	L	L	L	L	L	9PD	9PD	9PD	9PD	TR	TR	TR	TR	TR	TS				
42		L	L	L	L	L	L	L	9PD	9PD	9PD	9PD	TR	TR	TR	TR	TR	TR	TS			
48		L	L	L	L	L	L	L	9PD	9PD	9PD	9PD	9PD	9PD	9PD	TR	TR	TR	TR	TS		
52		L	L	L	L	L	L	L	9PD	9PD	9PD	9PD	9PD	9PD	9PD	9PD	TR	TR	TR	TR	TS	
54																						

9PD : REINFORCING PAD 90 DEG
TR : REDUCING TEE
L : OUTLET
TS : STRAIGHT TEE

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PIPING CLASS

A2AR03 REV NO. 2

Material : Killed CS
Rating : ASME CLASS 150
Flange Face : RF
C.A.(mm) : 3.00
Gasket : Spiral Wound
Service : PROCESS - WET SEVERE SOUR SERVICE SUBJECT TO NACE + HIC STD.
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
2	USE OF SOFT SEATED BALL, PLUG AND BUTTERFLY VALVES SHALL BE LIMITED TO MAXIMUM OF 204DEGC (400DEGF)
5	BOLTING CONFIRMING TO B7M / 2HM SHALL BE USED UNDER CONDITIONS (A) DIRECT EXPOSURE TO SOUR ENVIRONMENTS (B) WHEN THE BOLTING WILL BE BURIED OR INSULATED
27	PWHT OF CARBON STEEL PIPING IN WET H2S, CAUSTIC AND AMINE SERVICES SHALL BE IN ACCORDANCE WITH SECTION 10.2, 10.3, AND 10.4 OF PROJECT SPECIFICATION 3550-8440-SP-0002 MATERIALS REQUIREMENTS FOR PRESSURISED EQUIPMENT AND PIPING. FOR CAUSTIC AND AMINE SERVICE THE FOLLOWING SHALL APPLY: - PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF ALL SITE PIPING FABRICATION WELDS IS REQUIRED FOR ALL WALL THICKNESSES. FOR MODERATE AND SEVERE WET H2S SERVICE THE FOLLOWING SHALL APPLY: PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF SITE FABRICATION CIRCUMFERENTIAL OR BRANCH WELDS IS NOT REQUIRED IF WELDS ARE MULTIPASS AND IN ACCORDANCE WITH PARA 10.2.12 OF PROJECT SPECIFICATION 3550-8440-SP-0002. FOR SERVICES MEETING THE WET H2S CRITERIA AND CAUSTIC OR AMINE CRITERIA THE MORE STRINGENT PWHT REQUIREMENT SHALL GOVERN.

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
200	WITH JACK SCREW (FO)
541	NPT(F) (CA,F)
773	CLASS 300 (B,F,G,V)
4608	VALVE WITH NIPPLES (V)

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PIPING CLASS
A2AR03 REV NO. 2

PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P01A-007DV	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE Severe wet H2S service Licensor-3	
1	0.75		SCH160		P01A-007DW	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE Severe wet H2S service Licensor-3	
1	1		SCH160		P01A-007DX	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE Severe wet H2S service Licensor-3	
1	1.5		SCH160		P01A-007DY	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE Severe wet H2S service Licensor-3	
1	2		XS		P01A-007E4	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Severe wet H2S service Licensor-3	
1	3		STD		P01A-007E7	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Severe wet H2S service Licensor-3	
1	4		STD		P01A-007E8	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Severe wet H2S service Licensor-3	
1	6		STD		P01A-007E9	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Severe wet H2S service Licensor-3	
1	8		SCH30		P01A-008LK	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Severe wet H2S service Licensor-3	
1	10		SCH30		P01A-008LG	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Severe wet H2S service Licensor-3	
1	12		SCH30		P01A-007E0	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Severe wet H2S service Licensor-3	
1	14		SCH20		P01A-007E1	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Severe wet H2S service Licensor-3	
1	16		SCH20		P01A-007E2	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Severe wet H2S service Licensor-3	
1	18		STD		P01A-008LH	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Severe wet H2S service Licensor-3	
1	20		STD		P01A-007E5	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Severe wet H2S service Licensor-3	
1	24		XS		P01A-008LJ	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Severe wet H2S service Licensor-3	
1	30		XS		P01A-008NL	Pipe ASTM A671 Grade CC60 Class 22 EFW ASME B36.10M/B36.19M BE Severe wet H2S service Licensor-3	
1	36		XS		P01A-008NM	Pipe ASTM A671 Grade CC60 Class 22 EFW ASME B36.10M/B36.19M BE Severe wet H2S service Licensor-3	
1	42		14.27mm		P01A-008NN	Pipe ASTM A671 Grade CC60 Class 22 EFW ASME B36.10M/B36.19M BE Severe wet H2S service Licensor-3	
1	48		XS		P01A-007EE	Pipe ASTM A671 Grade CC60 Class 22 EFW ASME B36.10M/B36.19M BE Severe wet H2S service Licensor-3	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P02A-003VX	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-3	
1	0.75		SCH160		P02A-003VY	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-3	
1	1		SCH160		P02A-003VZ	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-3	
1	1.5		SCH160		P02A-003W0	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-3	
1	2		XS		P02A-003W6	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-3	
1	3		STD		P02A-003W9	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-3	
1	4		STD		P02A-003WA	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-3	
1	6		STD		P02A-003WB	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-3	
1	8		SCH30		P02A-004ED	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-3	
1	10		SCH30		P02A-004EA	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-3	
1	12		SCH30		P02A-003W2	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-3	
1	14		SCH20		P02A-003W3	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-3	
1	16		SCH20		P02A-003W4	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-3	
1	18		STD		P02A-004EB	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-3	
1	20		STD		P02A-003W7	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-3	
1	24		XS		P02A-004EC	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-3	
1	30		XS		P02A-004G1	90 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius Severe wet H2S service Licensor-3	
1	36		XS		P02A-004G2	90 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius Severe wet H2S service Licensor-3	
1	42		14.27mm		P02A-004G3	90 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius Severe wet H2S service Licensor-3	
1	48		XS		P02A-003WG	90 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius Severe wet H2S service Licensor-3	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P03A-003TK	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-3	
1	0.75		SCH160		P03A-003TL	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-3	
1	1		SCH160		P03A-003TM	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-3	

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45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5		SCH160		P03A-003TN	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-3	
1	2		XS		P03A-003TV	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-3	
1	3		STD		P03A-003TY	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-3	
1	4		STD		P03A-003TZ	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-3	
1	6		STD		P03A-003U0	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-3	
1	8		SCH30		P03A-004BK	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-3	
1	10		SCH30		P03A-004BG	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-3	
1	12		SCH30		P03A-003TR	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-3	
1	14		SCH20		P03A-003TS	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-3	
1	16		SCH20		P03A-003TT	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-3	
1	18		STD		P03A-004BH	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-3	
1	20		STD		P03A-003TW	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-3	
1	24		XS		P03A-004BJ	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-3	
1	30		XS		P03A-004D9	45 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius Severe wet H2S service Licensor-3	
1	36		XS		P03A-004DA	45 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius Severe wet H2S service Licensor-3	
1	42		14.27mm		P03A-004DB	45 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius Severe wet H2S service Licensor-3	
1	48		XS		P03A-003U5	45 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius Severe wet H2S service Licensor-3	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P21A-004DC	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	0.75		SCH160		P21A-004DD	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	1		SCH160		P21A-004DE	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	1.5		SCH160		P21A-004DF	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	2		XS		P21A-004DM	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	3		STD		P21A-004DR	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	4		STD		P21A-004DS	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	6		STD		P21A-004DT	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	8		SCH30		P21A-004WN	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	10		SCH30		P21A-004WK	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	12		SCH30		P21A-004DH	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	14		SCH20		P21A-004DJ	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	16		SCH20		P21A-004DK	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	18		STD		P21A-004WL	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	20		STD		P21A-004DN	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	24		XS		P21A-004WM	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	30		XS		P21A-004YF	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Severe wet H2S service Licensor-3	
1	36		XS		P21A-004YG	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Severe wet H2S service Licensor-3	
1	42		14.27mm		P21A-004YH	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Severe wet H2S service Licensor-3	
1	48		XS		P21A-004DY	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Severe wet H2S service Licensor-3	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75	SCH160	SCH160	P24A-00KH2	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	1.5	0.75	SCH160	SCH160	P24A-00KH3	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	1.5	1	SCH160	SCH160	P24A-00KH4	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	2	1	XS	SCH160	P24A-00KH5	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	2	1.5	XS	SCH160	P24A-00KH6	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	3	1.5	STD	SCH160	P24A-00KH7	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	3	2	STD	XS	P24A-00KH8	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	4	2	STD	XS	P24A-00KH9	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	4	3	STD	STD	P24A-00KHA	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	6	3	STD	STD	P24A-00KHB	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	

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REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	6	4	STD	STD	P24A-00KHC	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	8	4	SCH30	STD	P24A-00NAR	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	8	6	SCH30	STD	P24A-00NAS	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	10	4	SCH30	STD	P24A-00NAT	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	10	6	SCH30	STD	P24A-00NAU	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	10	8	SCH30	SCH30	P24A-00NAV	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	12	6	SCH30	STD	P24A-00KHL	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	12	8	SCH30	SCH30	P24A-00NAX	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	12	10	SCH30	SCH30	P24A-00NAW	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	14	6	SCH20	STD	P24A-00KHR	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	14	8	SCH20	SCH30	P24A-00NAZ	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	14	10	SCH20	SCH30	P24A-00NAY	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	14	12	SCH20	SCH30	P24A-00KHP	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	16	6	SCH20	STD	P24A-00KHW	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	16	8	SCH20	SCH30	P24A-00NB1	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	16	10	SCH20	SCH30	P24A-00NB0	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	16	12	SCH20	SCH30	P24A-00KHU	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	16	14	SCH20	SCH20	P24A-00KHV	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	18	8	STD	SCH30	P24A-00NHV	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	18	10	STD	SCH30	P24A-00NB2	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	18	12	STD	SCH30	P24A-00NB3	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	18	14	STD	SCH20	P24A-00NB4	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	18	16	STD	SCH20	P24A-00NB5	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	20	8	STD	SCH30	P24A-00NB8	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	20	10	STD	SCH30	P24A-00NB6	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	20	12	STD	SCH30	P24A-00KJ4	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	20	14	STD	SCH20	P24A-00KJ5	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	20	16	STD	SCH20	P24A-00KJ6	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	20	18	STD	STD	P24A-00NB7	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	24	10	XS	SCH30	P24A-00NB9	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	24	12	XS	SCH30	P24A-00NBA	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	24	14	XS	SCH20	P24A-00NBB	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	24	16	XS	SCH20	P24A-00NBC	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	24	18	XS	STD	P24A-00NBD	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	24	20	XS	STD	P24A-00NBE	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	30	10	XS	SCH30	P24A-00NNU	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Severe wet H2S service Licensor-3	
1	30	12	XS	SCH30	P24A-00NNV	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Severe wet H2S service Licensor-3	
1	30	14	XS	SCH20	P24A-00NNW	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Severe wet H2S service Licensor-3	
1	30	16	XS	SCH20	P24A-00NNX	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Severe wet H2S service Licensor-3	
1	30	18	XS	STD	P24A-00NNY	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Severe wet H2S service Licensor-3	
1	30	20	XS	STD	P24A-00NNZ	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Severe wet H2S service Licensor-3	
1	30	24	XS	XS	P24A-00NP0	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Severe wet H2S service Licensor-3	
1	36	16	XS	SCH20	P24A-00NP1	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Severe wet H2S service Licensor-3	
1	36	18	XS	STD	P24A-00NP2	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Severe wet H2S service Licensor-3	
1	36	20	XS	STD	P24A-00NP3	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Severe wet H2S service Licensor-3	
1	36	24	XS	XS	P24A-00NP4	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Severe wet H2S service Licensor-3	
1	36	30	XS	XS	P24A-00NP5	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Severe wet H2S service Licensor-3	
1	42	16	14.27mm	SCH20	P24A-00NP6	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Severe wet H2S service Licensor-3	
1	42	18	14.27mm	STD	P24A-00NP7	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Severe wet H2S service Licensor-3	
1	42	20	14.27mm	STD	P24A-00NP8	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Severe wet H2S service Licensor-3	
1	42	24	14.27mm	XS	P24A-00NP9	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Severe wet H2S service Licensor-3	
1	42	30	14.27mm	XS	P24A-00NPA	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Severe wet H2S service Licensor-3	
1	42	36	14.27mm	XS	P24A-00NPB	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Severe wet H2S service Licensor-3	
1	48	24	XS	XS	P24A-00NPC	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Severe wet H2S service Licensor-3	
1	48	30	XS	XS	P24A-00NPD	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Severe wet H2S service Licensor-3	
1	48	36	XS	XS	P24A-00NPE	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Severe wet H2S service Licensor-3	
1	48	42	XS	14.27mm	P24A-00NPF	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Severe wet H2S service Licensor-3	

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CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	SCH160	P27A-00F07	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	1	0.5	SCH160	SCH160	P27A-00F08	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	1	0.75	SCH160	SCH160	P27A-00F09	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	1.5	0.5	SCH160	SCH160	P27A-00F0A	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	1.5	0.75	SCH160	SCH160	P27A-00F0B	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	1.5	1	SCH160	SCH160	P27A-00F0C	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	2	0.75	XS	SCH160	P27A-00F0D	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	2	1	XS	SCH160	P27A-00F0E	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	2	1.5	XS	SCH160	P27A-00F0F	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	3	1.5	STD	SCH160	P27A-00F0G	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	3	2	STD	XS	P27A-00F0H	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	4	1.5	STD	SCH160	P27A-00F0J	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	4	2	STD	XS	P27A-00F0K	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	4	3	STD	STD	P27A-00F0L	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	6	3	STD	STD	P27A-00F0M	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	6	4	STD	STD	P27A-00F0N	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	8	4	SCH30	STD	P27A-00H0U	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	8	6	SCH30	STD	P27A-00H0V	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	10	4	SCH30	STD	P27A-00H0W	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	10	6	SCH30	STD	P27A-00H0X	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	10	8	SCH30	SCH30	P27A-00H0Y	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	12	6	SCH30	STD	P27A-00F0W	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	12	8	SCH30	SCH30	P27A-00H10	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	12	10	SCH30	SCH30	P27A-00H0Z	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	14	6	SCH20	STD	P27A-00F10	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	14	8	SCH20	SCH30	P27A-00H12	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	14	10	SCH20	SCH30	P27A-00H11	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	14	12	SCH20	SCH30	P27A-00F0Z	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	16	8	SCH20	SCH30	P27A-00H14	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	16	10	SCH20	SCH30	P27A-00H13	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	16	12	SCH20	SCH30	P27A-00F13	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	16	14	SCH20	SCH20	P27A-00F14	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	18	10	STD	SCH30	P27A-00H15	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	18	12	STD	SCH30	P27A-00H16	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	18	14	STD	SCH20	P27A-00H17	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	18	16	STD	SCH20	P27A-00H18	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	20	12	STD	SCH30	P27A-00F1A	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	20	14	STD	SCH20	P27A-00F1B	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	20	16	STD	SCH20	P27A-00F1C	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	20	18	STD	STD	P27A-00H19	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	24	16	XS	SCH20	P27A-00H1A	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	24	18	XS	STD	P27A-00H1B	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	24	20	XS	STD	P27A-00H1C	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	30	20	XS	STD	P27A-00H8L	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Severe wet H2S service Licensor-3	
1	30	24	XS	XS	P27A-00H8M	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Severe wet H2S service Licensor-3	
1	36	24	XS	XS	P27A-00H8N	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Severe wet H2S service Licensor-3	
1	36	30	XS	XS	P27A-00H8P	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Severe wet H2S service Licensor-3	
1	42	30	14.27mm	XS	P27A-00H8R	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Severe wet H2S service Licensor-3	
1	42	36	14.27mm	XS	P27A-00H8S	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Severe wet H2S service Licensor-3	
1	48	42	XS	14.27mm	P27A-00H8T	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Severe wet H2S service Licensor-3	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	SCH160	P28A-00C48	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	1	0.5	SCH160	SCH160	P28A-00C49	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	1	0.75	SCH160	SCH160	P28A-00C4A	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	1.5	0.5	SCH160	SCH160	P28A-00C4B	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	1.5	0.75	SCH160	SCH160	P28A-00C4C	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	1.5	1	SCH160	SCH160	P28A-00C4D	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	

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ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2	0.75	XS	SCH160	P28A-00C4E	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	2	1	XS	SCH160	P28A-00C4F	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	2	1.5	XS	SCH160	P28A-00C4G	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	3	1.5	STD	SCH160	P28A-00C4H	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	3	2	STD	XS	P28A-00C4J	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	4	1.5	STD	SCH160	P28A-00C4K	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	4	2	STD	XS	P28A-00C4L	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	4	3	STD	STD	P28A-00C4M	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	6	3	STD	STD	P28A-00C4N	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	6	4	STD	STD	P28A-00C4P	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	8	4	SCH30	STD	P28A-00E81	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	8	6	SCH30	STD	P28A-00E82	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	10	4	SCH30	STD	P28A-00E83	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	10	6	SCH30	STD	P28A-00E84	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	10	8	SCH30	SCH30	P28A-00E85	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	12	6	SCH30	STD	P28A-00C4X	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	12	8	SCH30	SCH30	P28A-00E87	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	12	10	SCH30	SCH30	P28A-00E86	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	14	6	SCH20	STD	P28A-00C51	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	14	8	SCH20	SCH30	P28A-00E89	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	14	10	SCH20	SCH30	P28A-00E88	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	14	12	SCH20	SCH30	P28A-00C50	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	16	8	SCH20	SCH30	P28A-00E8B	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	16	10	SCH20	SCH30	P28A-00E8A	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	16	12	SCH20	SCH30	P28A-00C54	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	16	14	SCH20	SCH20	P28A-00C55	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	18	10	STD	SCH30	P28A-00E8C	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	18	12	STD	SCH30	P28A-00E8D	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	18	14	STD	SCH20	P28A-00E8E	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	18	16	STD	SCH20	P28A-00E8F	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	20	12	STD	SCH30	P28A-00C5B	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	20	14	STD	SCH20	P28A-00C5C	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	20	16	STD	SCH20	P28A-00C5D	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	20	18	STD	STD	P28A-00E8G	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	24	16	XS	SCH20	P28A-00E8H	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	24	18	XS	STD	P28A-00E8J	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	24	20	XS	STD	P28A-00E8K	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	30	20	XS	STD	P28A-00EGA	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Severe wet H2S service Licensor-3	
1	30	24	XS	XS	P28A-00EGB	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Severe wet H2S service Licensor-3	
1	36	24	XS	XS	P28A-00EGC	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Severe wet H2S service Licensor-3	
1	36	30	XS	XS	P28A-00EGD	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Severe wet H2S service Licensor-3	
1	42	30	14.27mm	XS	P28A-00EGE	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Severe wet H2S service Licensor-3	
1	42	36	14.27mm	XS	P28A-00EGF	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Severe wet H2S service Licensor-3	
1	48	42	XS	14.27mm	P28A-00EGG	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Severe wet H2S service Licensor-3	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P29A-00387	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	0.75		SCH160		P29A-00388	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	1		SCH160		P29A-00389	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	1.5		SCH160		P29A-0038A	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	2		XS		P29A-0038G	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	3		STD		P29A-0038K	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	4		STD		P29A-0038N	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	6		STD		P29A-0038S	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	8		SCH30		P29A-003R1	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	10		SCH30		P29A-003PY	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	12		SCH30		P29A-0038C	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	14		SCH20		P29A-0038D	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	

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CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	16		SCH20		P29A-0038E	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	18		STD		P29A-003PZ	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	20		STD		P29A-0038H	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	24		XS		P29A-003R0	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	30		XS		P29A-003SX	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	36		XS		P29A-003SY	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	42		14.27mm		P29A-003SZ	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	48		XS		P29A-0038R	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
541	0.75				P29B-0000Y	Cap ASTM A105 Class 6000 ASME B16.11 NPT	
541	1				P29B-0000Z	Cap ASTM A105 Class 6000 ASME B16.11 NPT	
541	1.5				P29B-00010	Cap ASTM A105 Class 6000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P41A-0019D	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Severe wet H2S service Licensor-3	
1	0.75		XXS		P41A-0019E	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Severe wet H2S service Licensor-3	
1	1		XXS		P41A-00194	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Severe wet H2S service Licensor-3	
1	1.5		XXS		P41A-00195	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Severe wet H2S service Licensor-3	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2	0.75	XS	SCH160	P31B-00CP7	Outlet ASTM A105 MSS SP-97 BW	
1	3	0.75	STD	SCH160	P31B-00CMT	Outlet ASTM A105 MSS SP-97 BW	
1	4	0.75	STD	SCH160	P31B-00CLT	Outlet ASTM A105 MSS SP-97 BW	
1	6	0.75	STD	SCH160	P31B-00CKK	Outlet ASTM A105 MSS SP-97 BW	
1	8	0.75	SCH30	SCH160	P31B-00ZH5	Outlet ASTM A105 MSS SP-97 BW	
1	10	0.75	SCH30	SCH160	P31B-00YEZ	Outlet ASTM A105 MSS SP-97 BW	
1	12	0.75	SCH30	SCH160	P31B-00SWH	Outlet ASTM A105 MSS SP-97 BW	
1	14	0.75	SCH20	SCH160	P31B-00X17	Outlet ASTM A105 MSS SP-97 BW	
1	16	0.75	SCH20	SCH160	P31B-00XS0	Outlet ASTM A105 MSS SP-97 BW	
1	18	0.75	STD	SCH160	P31B-00CPL	Outlet ASTM A105 MSS SP-97 BW	
1	20	0.75	STD	SCH160	P31B-00CNW	Outlet ASTM A105 MSS SP-97 BW	
1	24	0.75	XS	SCH160	P31B-007N3	Outlet ASTM A105 MSS SP-97 BW	
1	30	0.75	XS	SCH160	P31B-00CMF	Outlet ASTM A105 MSS SP-97 BW	
1	36	0.75	XS	SCH160	P31B-00CM3	Outlet ASTM A105 MSS SP-97 BW	
1	42	0.75	14.27mm	SCH160	P31B-010U8	Outlet ASTM A105 MSS SP-97 BW	
1	48	0.75	XS	SCH160	P31B-00WT9	Outlet ASTM A105 MSS SP-97 BW	
1	3	1	STD	SCH160	P31B-00B4J	Outlet ASTM A105 MSS SP-97 BW	
1	4	1	STD	SCH160	P31B-00B3M	Outlet ASTM A105 MSS SP-97 BW	
1	6	1	STD	SCH160	P31B-00AZC	Outlet ASTM A105 MSS SP-97 BW	
1	8	1	SCH30	SCH160	P31B-00ZH6	Outlet ASTM A105 MSS SP-97 BW	
1	10	1	SCH30	SCH160	P31B-00YF1	Outlet ASTM A105 MSS SP-97 BW	
1	12	1	SCH30	SCH160	P31B-00SWJ	Outlet ASTM A105 MSS SP-97 BW	
1	14	1	SCH20	SCH160	P31B-00X18	Outlet ASTM A105 MSS SP-97 BW	
1	16	1	SCH20	SCH160	P31B-00X8Z	Outlet ASTM A105 MSS SP-97 BW	
1	18	1	STD	SCH160	P31B-00BC9	Outlet ASTM A105 MSS SP-97 BW	
1	20	1	STD	SCH160	P31B-00B8M	Outlet ASTM A105 MSS SP-97 BW	
1	24	1	XS	SCH160	P31B-007MU	Outlet ASTM A105 MSS SP-97 BW	
1	30	1	XS	SCH160	P31B-00B45	Outlet ASTM A105 MSS SP-97 BW	
1	36	1	XS	SCH160	P31B-00B3W	Outlet ASTM A105 MSS SP-97 BW	
1	42	1	14.27mm	SCH160	P31B-00TVM	Outlet ASTM A105 MSS SP-97 BW	
1	48	1	XS	SCH160	P31B-00AZT	Outlet ASTM A105 MSS SP-97 BW	
1	4	1.5	STD	SCH160	P31B-00BP4	Outlet ASTM A105 MSS SP-97 BW	
1	6	1.5	STD	SCH160	P31B-00BJH	Outlet ASTM A105 MSS SP-97 BW	
1	8	1.5	SCH30	SCH160	P31B-00BHM	Outlet ASTM A105 MSS SP-97 BW	
1	10	1.5	SCH30	SCH160	P31B-00AUR	Outlet ASTM A105 MSS SP-97 BW	
1	12	1.5	SCH30	SCH160	P31B-00CEJ	Outlet ASTM A105 MSS SP-97 BW	

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OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14	1.5	SCH20	SCH160	P31B-00CDS	Outlet ASTM A105 MSS SP-97 BW	
1	16	1.5	SCH20	SCH160	P31B-00C9B	Outlet ASTM A105 MSS SP-97 BW	
1	18	1.5	STD	SCH160	P31B-00C4R	Outlet ASTM A105 MSS SP-97 BW	
1	20	1.5	STD	SCH160	P31B-00C3Y	Outlet ASTM A105 MSS SP-97 BW	
1	24	1.5	XS	SCH160	P31B-007MM	Outlet ASTM A105 MSS SP-97 BW	
1	30	1.5	XS	SCH160	P31B-00BYJ	Outlet ASTM A105 MSS SP-97 BW	
1	36	1.5	XS	SCH160	P31B-00BPN	Outlet ASTM A105 MSS SP-97 BW	
1	42	1.5	14.27mm	SCH160	P31B-00TVN	Outlet ASTM A105 MSS SP-97 BW	
1	48	1.5	XS	SCH160	P31B-00BLL	Outlet ASTM A105 MSS SP-97 BW	
1	6	2	STD	XS	P31B-007SH	Outlet ASTM A105 MSS SP-97 BW	
1	8	2	SCH30	XS	P31B-00X36	Outlet ASTM A105 MSS SP-97 BW	
1	10	2	SCH30	XS	P31B-00NVF	Outlet ASTM A105 MSS SP-97 BW	
1	12	2	SCH30	XS	P31B-00NVL	Outlet ASTM A105 MSS SP-97 BW	
1	14	2	SCH20	XS	P31B-00TF9	Outlet ASTM A105 MSS SP-97 BW	
1	16	2	SCH20	XS	P31B-00TF8	Outlet ASTM A105 MSS SP-97 BW	
1	18	2	STD	XS	P31B-009FJ	Outlet ASTM A105 MSS SP-97 BW	
1	20	2	STD	XS	P31B-00994	Outlet ASTM A105 MSS SP-97 BW	
1	24	2	XS	XS	P31B-0092Y	Outlet ASTM A105 MSS SP-97 BW	
1	30	2	XS	XS	P31B-008P4	Outlet ASTM A105 MSS SP-97 BW	
1	36	2	XS	XS	P31B-008BB	Outlet ASTM A105 MSS SP-97 BW	
1	42	2	14.27mm	XS	P31B-00VUV	Outlet ASTM A105 MSS SP-97 BW	
1	48	2	XS	XS	P31B-007YJ	Outlet ASTM A105 MSS SP-97 BW	
1	8	3	SCH30	STD	P31B-00X37	Outlet ASTM A105 MSS SP-97 BW	
1	10	3	SCH30	STD	P31B-00NYK	Outlet ASTM A105 MSS SP-97 BW	
1	12	3	SCH30	STD	P31B-00NYR	Outlet ASTM A105 MSS SP-97 BW	
1	14	3	SCH20	STD	P31B-00UPH	Outlet ASTM A105 MSS SP-97 BW	
1	16	3	SCH20	STD	P31B-00TU2	Outlet ASTM A105 MSS SP-97 BW	
1	18	3	STD	STD	P31B-008MK	Outlet ASTM A105 MSS SP-97 BW	
1	20	3	STD	STD	P31B-008FA	Outlet ASTM A105 MSS SP-97 BW	
1	24	3	XS	STD	P31B-00894	Outlet ASTM A105 MSS SP-97 BW	
1	30	3	XS	STD	P31B-007WX	Outlet ASTM A105 MSS SP-97 BW	
1	36	3	XS	STD	P31B-007P1	Outlet ASTM A105 MSS SP-97 BW	
1	42	3	14.27mm	STD	P31B-00SWX	Outlet ASTM A105 MSS SP-97 BW	
1	48	3	XS	STD	P31B-00AFD	Outlet ASTM A105 MSS SP-97 BW	
1	12	4	SCH30	STD	P31B-00P1G	Outlet ASTM A105 MSS SP-97 BW	
1	14	4	SCH20	STD	P31B-00UPJ	Outlet ASTM A105 MSS SP-97 BW	
1	16	4	SCH20	STD	P31B-00TU3	Outlet ASTM A105 MSS SP-97 BW	
1	18	4	STD	STD	P31B-008KB	Outlet ASTM A105 MSS SP-97 BW	
1	20	4	STD	STD	P31B-008D3	Outlet ASTM A105 MSS SP-97 BW	
1	24	4	XS	STD	P31B-0086W	Outlet ASTM A105 MSS SP-97 BW	
1	30	4	XS	STD	P31B-007UR	Outlet ASTM A105 MSS SP-97 BW	
1	36	4	XS	STD	P31B-00AEP	Outlet ASTM A105 MSS SP-97 BW	
1	42	4	14.27mm	STD	P31B-00SWY	Outlet ASTM A105 MSS SP-97 BW	
1	48	4	XS	STD	P31B-00A2P	Outlet ASTM A105 MSS SP-97 BW	
1	18	6	STD	STD	P31B-008RX	Outlet ASTM A105 MSS SP-97 BW	
1	20	6	STD	STD	P31B-008PZ	Outlet ASTM A105 MSS SP-97 BW	
1	24	6	XS	STD	P31B-008JC	Outlet ASTM A105 MSS SP-97 BW	
1	30	6	XS	STD	P31B-008BR	Outlet ASTM A105 MSS SP-97 BW	
1	36	6	XS	STD	P31B-0085G	Outlet ASTM A105 MSS SP-97 BW	
1	42	6	14.27mm	STD	P31B-00SWZ	Outlet ASTM A105 MSS SP-97 BW	
1	48	6	XS	STD	P31B-007U6	Outlet ASTM A105 MSS SP-97 BW	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30B-0002D	Plug ASTM A105 ASME B16.11 NPT Round head	
1	0.75				P30B-0002E	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1				P30B-0002F	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1.5				P30B-0002G	Plug ASTM A105 ASME B16.11 NPT Round head	

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FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P61B-004V2	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	0.75		SCH160		P61B-0037H	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	1		SCH160		P61B-0037F	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	1.5		SCH160		P61B-0037N	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	2		XS		P61B-003NK	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	3		STD		P61B-001PW	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	4		STD		P61B-001R8	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	6		STD		P61B-001RT	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	8		SCH30		P61B-003FP	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	10		SCH30		P61B-003FS	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	12		SCH30		P61B-002TS	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	14		SCH20		P61B-002B6	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	16		SCH20		P61B-002B7	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	18		STD		P61B-001T4	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	20		STD		P61B-001JA	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	24		XS		P61B-002F2	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	30		XS		P61B-001SJ	Flange WN ASTM A105 Class 150 ASME B16.47 Series B RF	
1	36		XS		P61B-001UE	Flange WN ASTM A105 Class 150 ASME B16.47 Series B RF	
1	42		14.27mm		P61B-003LG	Flange WN ASTM A105 Class 150 ASME B16.47 Series B RF	
1	48		XS		P61B-004CX	Flange WN ASTM A105 Class 150 ASME B16.47 Series B RF	
541	0.5				P61B-003TZ	Flange NPT ASTM A105 Class 150 ASME B16.5 RF	
541	0.75				P61B-003U0	Flange NPT ASTM A105 Class 150 ASME B16.5 RF	
773	0.5		SCH160		P61B-003P9	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	0.75		SCH160		P61B-0037M	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	1		SCH160		P61B-0037L	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	1.5		SCH160		P61B-0037J	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	2		XS		P61B-001HW	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	3		STD		P61B-001LJ	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	4		STD		P61B-001MC	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	6		STD		P61B-001N2	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	8		SCH30		P61B-008S0	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	10		SCH30		P61B-003LX	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	12		SCH30		P61B-002TV	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	14		SCH20		P61B-002MR	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	16		SCH20		P61B-002MS	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	18		STD		P61B-001N9	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	20		STD		P61B-001NT	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	24		XS		P61B-002RA	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	30		XS		P61B-001KT	Flange WN ASTM A105 Class 300 ASME B16.47 Series B RF	
773	36		XS		P61B-001N6	Flange WN ASTM A105 Class 300 ASME B16.47 Series B RF	
773	42		14.27mm		P61B-003ZZ	Flange WN ASTM A105 Class 300 ASME B16.47 Series B RF	
773	48		XS		P61B-003TH	Flange WN ASTM A105 Class 300 ASME B16.47 Series B RF	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67B-000FH	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	0.75				P67B-000FJ	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	1				P67B-000FK	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	1.5				P67B-000FL	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	2				P67B-000FT	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	3				P67B-000FW	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	4				P67B-000FX	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	6				P67B-000FY	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	8				P67B-000FZ	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	10				P67B-000FM	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	12				P67B-000FN	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	14				P67B-000FP	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	16				P67B-000FR	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	18				P67B-000FS	Blind flange ASTM A105 Class 150 ASME B16.5 RF	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	20				P67B-000FU	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	24				P67B-000FV	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	30				P67B-000G2	Blind flange ASTM A105 Class 150 ASME B16.47 Series B RF	
1	36				P67B-000G5	Blind flange ASTM A105 Class 150 ASME B16.47 Series B RF	
1	42				P67B-000KZ	Blind flange ASTM A105 Class 150 ASME B16.47 Series B RF	
1	48				P67B-000L2	Blind flange ASTM A105 Class 150 ASME B16.47 Series B RF	

REDUCING FLANGE (FR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	30	24		XS	P62B-000PN	Reducing flange WN ASTM A105 Class 150 ASME B16.47 Series B RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000L8	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000L9	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000LA	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000LB	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000LH	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000LL	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000LM	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	6				P73T-000LN	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	8				P73T-000LP	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	10				P73T-000LC	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	12				P73T-000LD	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	14				P73T-000LE	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	16				P73T-000LF	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	18				P73T-000LG	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	20				P73T-000LJ	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	24				P73T-000LK	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	30				P73T-000LT	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	36				P73T-000LW	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	42				P73T-000LZ	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	48				P73T-000M2	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	0.5				P73T-000FT	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	0.75				P73T-000FU	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	3				P73T-000G5	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	4				P73T-000G6	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	6				P73T-000G7	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	8				P73T-000G8	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	10				P73T-000FX	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	12				P73T-000FY	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	14				P73T-000FZ	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	16				P73T-000G0	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	18				P73T-000G1	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

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GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
773	20				P73T-000G3	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	24				P73T-000G4	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	30				P73T-000H9	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	36				P73T-000HC	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	42				P73T-000KM	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	48				P73T-000KR	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-16				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	18-24				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
1	30-42				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	48				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
773	0.5-10				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
773	12-48				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81B-001NP	Gate valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	0.75				P81B-001NR	Gate valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	1				P81B-001NS	Gate valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	1.5				P81B-001NT	Gate valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	2				P81C-005FG	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	3				P81C-005FH	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	4				P81C-005FJ	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	6				P81C-005FK	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	8				P81C-005FL	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	10				P81C-005FE	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	12				P81C-005FF	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	14				P81C-005FM	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Severe wet H2S service	
1	16				P81C-005FN	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Severe wet H2S service	
1	18				P81C-005FP	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Severe wet H2S service	
1	20				P81C-005FR	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Severe wet H2S service	
1	24				P81C-005FS	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Severe wet H2S service	
1	30				P81C-005FT	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.47-B RF Trim number 12 BB-BG-OS&Y Gear operated Severe wet H2S service	
1	36				P81C-005FU	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.47-B RF Trim number 12 BB-BG-OS&Y Gear operated Severe wet H2S service	
1	42				P81C-005FV	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.47-B RF Trim number 12 BB-BG-OS&Y Gear operated Severe wet H2S service	
1	48				P81C-005FW	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.47-B RF Trim number 12 BB-BG-OS&Y Gear operated Severe wet H2S service	
4608	0.75				P81B-002Y7	Gate valve ASTM A105 Class 150 API 602 BW both sides w/ nipples BE - NPT ASTM A106-B XXS-nipple Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Licensor-3	
4608	1				P81B-0038F	Gate valve ASTM A105 Class 150 API 602 BW both sides w/ nipples BE - NPT ASTM A106-B XXS-nipple Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Licensor-3	
4608	1.5				P81B-0038G	Gate valve ASTM A105 Class 150 API 602 BW both sides w/ nipples BE - NPT ASTM A106-B XXS-nipple Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Licensor-3	
773	0.75				P81B-001F7	Gate valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
773	2				P81C-004XV	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	

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GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82B-001D5	Globe valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	0.75				P82B-001D6	Globe valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	1				P82B-001D7	Globe valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	1.5				P82B-001D8	Globe valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	2				P82C-002PM	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	3				P82C-002PN	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	4				P82C-002PP	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	6				P82C-002PR	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	8				P82C-002PS	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83B-0013M	Check valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Severe wet H2S service	
1	0.75				P83B-0013N	Check valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Severe wet H2S service	
1	1				P83B-0013P	Check valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Severe wet H2S service	
1	1.5				P83B-0013R	Check valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Severe wet H2S service	
1	2				P83C-002T3	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service	
1	3				P83C-002T6	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service	
1	4				P83C-002T7	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service	
1	6				P83C-002T8	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service	
1	8				P83C-002T9	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service	
1	10				P83C-002SY	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service	
1	12				P83C-002SZ	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service	
1	14				P83C-002T0	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service	
1	16				P83C-002T1	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service	
1	18				P83C-002T2	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service	
1	20				P83C-002T4	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service	
1	24				P83C-002T5	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service	

DP CHECK VALVE (XDP)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	30				P88C-0028V	Dual plate check valve ASTM A216 Grade WCB Class 150 API 594 Wafer-type ASME B16.47-B RF Trim number 12 Internal wetted parts SS316 Spring Inconel Retainerless-type Severe wet H2S service	

BUTTERFLY VALVE (H)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	16				P86C-002SF	Offset design butterfly valve ASTM A216 Grade WCB Class 150 API 609 Category B Lug-type ASME B16.5 RF Disc CS Seat Stellite-6 Trim SS316 Triple eccentric design BG Gear operated Severe wet H2S service	
1	18				P86C-002SG	Offset design butterfly valve ASTM A216 Grade WCB Class 150 API 609 Category B Lug-type ASME B16.5 RF Disc CS Seat Stellite-6 Trim SS316 Triple eccentric design BG Gear operated Severe wet H2S service	
1	20				P86C-002BF	Offset design butterfly valve ASTM A216 Grade WCB Class 150 API 609 Category B Double flanged ASME B16.5 RF Disc CS Seat Stellite-6 Trim SS316 Triple eccentric design BG Gear operated Severe wet H2S service	
1	24				P86C-0024R	Offset design butterfly valve ASTM A216 Grade WCB Class 150 API 609 Category B Double flanged ASME B16.5 RF Disc CS Seat Stellite-6 Trim SS316 Triple eccentric design BG Gear operated Severe wet H2S service	

ORIFICE FLANGE (FO)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3		STD		P66B-0084C	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
200	3		STD		P66B-00844	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	

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SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71B-0008A	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	0.75				P71B-0008B	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	1				P71B-0008C	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71B-0008D	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	2				P71B-0000P	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	3				P71B-0000N	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	4				P71B-0000M	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	6				P71B-0000L	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	8				P71B-0000R	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	10				P71B-0000K	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	12				P71B-0000J	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	

PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000AH	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	16				P72B-0000C	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	18				P72B-000AJ	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	20				P72B-000AK	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	24				P72B-000AL	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	30				P72B-000AM	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	36				P72B-000AN	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	42				P72B-000AP	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	48				P72B-000AR	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	

PADDLE SPACER (PS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000AT	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	16				P72B-0000B	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	18				P72B-000AU	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	20				P72B-000AV	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	24				P72B-000AW	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	30				P72B-000AX	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	36				P72B-000AY	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	42				P72B-000AZ	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	48				P72B-000B0	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	

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BOLT TABLE (B_A2AR03 , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	60	P80S-008SY		
0.75	4	0.500	65	P80S-008SZ		
1	4	0.500	70	P80S-008T0		
1.5	4	0.500	75	P80S-008T1		
2	4	0.625	85	P80S-0090A		
3	4	0.625	95	P80S-0090C		
4	8	0.625	95	P80S-0090C		
6	8	0.750	105	P80S-0090E		
8	8	0.750	110	P80S-0090F		
10	12	0.875	120	P80S-005Z9		
12	12	0.875	120	P80S-005Z9		
14	12	1.000	135	P80S-00619		
16	16	1.000	140	P80S-0061A		
18	16	1.125	150	P80S-0064L		
20	20	1.125	160	P80S-0064N		
24	20	1.250	175	P80S-00686		
30	44	0.750	145	P80S-0090N		
36	44	0.875	175	P80S-005ZL		
42	48	1.000	190	P80S-0061L		
48	44	1.125	210	P80S-0064Z		

BOLT TABLE (B_A2AR03_773 , STUD ASME RF, OPTION CODE 773)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-008T0		
0.75	4	0.625	75	P80S-00908		
1	4	0.625	80	P80S-00909		
1.5	4	0.750	95	P80S-005Z4		
2	8	0.625	90	P80S-0090B		
3	8	0.750	110	P80S-0090F		
4	8	0.750	115	P80S-0090G		
6	12	0.750	125	P80S-0090J		
8	12	0.875	140	P80S-005ZD		
10	16	1.000	160	P80S-0061E		
12	16	1.125	175	P80S-0064S		
14	20	1.125	180	P80S-0064T		
16	20	1.250	190	P80S-00689		
18	24	1.250	200	P80S-0068B		
20	24	1.250	210	P80S-0068D		
24	24	1.500	235	P80S-006LB		
30	36	1.375	285	P80S-006HY		
36	32	1.625	320	P80S-00A5E		
42	36	1.750	355	P80S-00AEJ		
48	40	1.875	380	P80S-00AW5		

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BRANCH TABLE (T_A2AR03)

RUN PIPE SIZE (in) \ BRANCH SIZE (in)	0.5	0.75	1	1.5	2	3	4	6	8	10	12	14	16	18	20	24	30	36	42	48
0.5	TS																			
0.75		TS																		
1		TR	TS																	
1.5		TR	TR	TS																
2		L	TR	TR	TS															
3		L	L	TR	TR	TS														
4	L	L	L	L	TR	TR	TS													
6	L	L	L	L	L	TR	TR	TS												
8		L	L	L	L	L	TR	TR	TS											
10		L	L	L	L	L	TR	TR	TR	TS										
12		L	L	L	L	L	L	TR	TR	TR	TS									
14		L	L	L	L	L	L	TR	TR	TR	TR	TS								
16		L	L	L	L	L	L	TR	TR	TR	TR	TR	TS							
18		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TS						
20		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TR	TS					
24		L	L	L	L	L	L	L	9PD	TR	TR	TR	TR	TR	TR	TS				
30		L	L	L	L	L	L	L	9PD	TR	TR	TR	TR	TR	TR	TR	TS			
36		L	L	L	L	L	L	L	9PD	9PD	9PD	9PD	TR	TR	TR	TR	TR	TS		
42		L	L	L	L	L	L	L	9PD	9PD	9PD	9PD	TR	TR	TR	TR	TR	TR	TS	
48		L	L	L	L	L	L	L	9PD	9PD	9PD	9PD	9PD	9PD	9PD	TR	TR	TR	TR	TS

L : OUTLET
TR : REDUCING TEE
TS : STRAIGHT TEE
9PD : REINFORCING PAD 90 DEG

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PIPING CLASS

A2AR04 REV NO. 2

Material : Killed CS
Rating : ASME CLASS 150
Flange Face : RF
C.A.(mm) : 3.00
Gasket : Spiral Wound
Service : PROCESS - WET SEVERE SOUR SERVICE SUBJECT TO NACE + HIC STD.
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
2	USE OF SOFT SEATED BALL, PLUG AND BUTTERFLY VALVES SHALL BE LIMITED TO MAXIMUM OF 204DEGC (400DEGF)
5	BOLTING CONFIRMING TO B7M / 2HM SHALL BE USED UNDER CONDITIONS (A) DIRECT EXPOSURE TO SOUR ENVIRONMENTS (B) WHEN THE BOLTING WILL BE BURIED OR INSULATED
27	PWHT OF CARBON STEEL PIPING IN WET H2S, CAUSTIC AND AMINE SERVICES SHALL BE IN ACCORDANCE WITH SECTION 10.2, 10.3, AND 10.4 OF PROJECT SPECIFICATION 3550-8440-SP-0002 MATERIALS REQUIREMENTS FOR PRESSURISED EQUIPMENT AND PIPING. FOR CAUSTIC AND AMINE SERVICE THE FOLLOWING SHALL APPLY: - PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF ALL SITE PIPING FABRICATION WELDS IS REQUIRED FOR ALL WALL THICKNESSES. FOR MODERATE AND SEVERE WET H2S SERVICE THE FOLLOWING SHALL APPLY: PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF SITE FABRICATION CIRCUMFERENTIAL OR BRANCH WELDS IS NOT REQUIRED IF WELDS ARE MULTIPASS AND IN ACCORDANCE WITH PARA 10.2.12 OF PROJECT SPECIFICATION 3550-8440-SP-0002. FOR SERVICES MEETING THE WET H2S CRITERIA AND CAUSTIC OR AMINE CRITERIA THE MORE STRINGENT PWHT REQUIREMENT SHALL GOVERN.

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
200	WITH JACK SCREW (FO)
541	NPT(F) (CA,F)
773	CLASS 300 (B,F,G,PB,PS,SB)
4608	VALVE WITH NIPPLES (V)

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PIPING CLASS
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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P01A-00143	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	0.75		SCH160		P01A-0010R	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1		SCH160		P01A-0014M	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1.5		SCH160		P01A-0015J	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	2		XS		P01A-000YX	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	3		XS		P01A-000Z4	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	4		STD		P01A-000YU	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	6		STD		P01A-000Z3	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	8		SCH30		P01A-001WL	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	10		SCH30		P01A-0016U	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	12		SCH30		P01A-0017K	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	14		STD		P01A-000Y1	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P02A-00172	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	0.75		SCH160		P02A-000V8	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1		SCH160		P02A-000V7	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1.5		SCH160		P02A-000V9	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	2		XS		P02A-000CP	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		XS		P02A-000CX	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		STD		P02A-000CZ	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		STD		P02A-000D6	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		SCH30		P02A-003DK	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	10		SCH30		P02A-000M3	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	12		SCH30		P02A-000M4	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	14		STD		P02A-000C8	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P03A-0012Y	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	0.75		SCH160		P03A-000RS	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1		SCH160		P03A-000RR	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1.5		SCH160		P03A-000RP	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	2		XS		P03A-000AS	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		XS		P03A-000AZ	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		STD		P03A-000B1	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		STD		P03A-000B9	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		SCH30		P03A-003BE	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	10		SCH30		P03A-000JT	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	12		SCH30		P03A-000JU	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	14		STD		P03A-000AG	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P21A-002M0	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	0.75		SCH160		P21A-002B8	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1		SCH160		P21A-002B6	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5		SCH160		P21A-002B9	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2		XS		P21A-001CJ	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		XS		P21A-001CR	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		STD		P21A-001CW	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6		STD		P21A-001D2	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8		SCH30		P21A-003WV	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10		SCH30		P21A-00259	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12		SCH30		P21A-0025A	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14		STD		P21A-001C8	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75	SCH160	SCH160	P24A-004B6	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.75	SCH160	SCH160	P24A-004B2	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	1	SCH160	SCH160	P24A-004BA	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	XS	SCH160	P24A-00GMB	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	XS	SCH160	P24A-005K9	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	XS	SCH160	P24A-00GNV	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	XS	XS	P24A-0023S	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P24A-002HY	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	XS	P24A-00GNW	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	XS	P24A-00GTR	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P24A-00229	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH30	STD	P24A-00JVH	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH30	STD	P24A-00JVG	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	SCH30	STD	P24A-00GNR	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	SCH30	STD	P24A-0060W	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	SCH30	SCH30	P24A-00J15	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	SCH30	STD	P24A-00HKT	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH30	SCH30	P24A-00M36	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH30	SCH30	P24A-003ET	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	STD	STD	P24A-0026N	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	STD	SCH30	P24A-00NJ4	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	STD	SCH30	P24A-0060L	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	STD	SCH30	P24A-005KF	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	XXS	P27A-003ZL	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.5	SCH160	XXS	P27A-003ZM	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.75	SCH160	SCH160	P27A-002T5	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.5	SCH160	XXS	P27A-003ZN	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.75	SCH160	SCH160	P27A-002T7	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	1	SCH160	SCH160	P27A-002T4	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	0.75	XS	SCH160	P27A-001LG	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	XS	SCH160	P27A-0033P	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	XS	SCH160	P27A-0033B	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	XS	SCH160	P27A-003N1	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	XS	XS	P27A-001E5	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	1.5	STD	SCH160	P27A-003MA	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P27A-001N0	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	XS	P27A-0074W	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	XS	P27A-007P6	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P27A-001GW	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH30	STD	P27A-00ED2	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH30	STD	P27A-00ECY	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	SCH30	STD	P27A-003MK	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	SCH30	STD	P27A-003ML	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	SCH30	SCH30	P27A-004T9	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	SCH30	STD	P27A-003MN	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH30	SCH30	P27A-004XA	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH30	SCH30	P27A-0028K	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	STD	STD	P27A-0019L	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	STD	SCH30	P27A-0052U	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	STD	SCH30	P27A-003MB	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	STD	SCH30	P27A-003MP	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	XXS	P28A-003ZE	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.5	SCH160	XXS	P28A-003ZF	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75	SCH160	SCH160	P28A-002TU	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.5	SCH160	XXS	P28A-003ZG	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.75	SCH160	SCH160	P28A-002TW	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	1	SCH160	SCH160	P28A-002TR	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	0.75	XS	SCH160	P28A-001LE	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	XS	SCH160	P28A-003M1	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	XS	SCH160	P28A-003M2	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	XS	SCH160	P28A-003MV	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	XS	XS	P28A-001EH	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	1.5	STD	SCH160	P28A-003M4	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P28A-001N6	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	XS	P28A-008F7	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	XS	P28A-008K1	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P28A-00182	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH30	STD	P28A-00BFY	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH30	STD	P28A-00BFZ	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	SCH30	STD	P28A-003MD	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	SCH30	STD	P28A-003ME	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	SCH30	SCH30	P28A-00A4S	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	SCH30	STD	P28A-003MG	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH30	SCH30	P28A-00BGV	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH30	SCH30	P28A-0027C	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	STD	STD	P28A-0019R	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	STD	SCH30	P28A-00BGW	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	STD	SCH30	P28A-003M5	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	STD	SCH30	P28A-003MH	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P29A-00336	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	0.75		SCH160		P29A-0037X	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	1		SCH160		P29A-001VW	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5		SCH160		P29A-001VX	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	2		XS		P29A-00381	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	3		XS		P29A-0035D	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	4		STD		P29A-00384	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	6		STD		P29A-00385	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	8		SCH30		P29A-003G7	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	10		SCH30		P29A-003BA	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	12		SCH30		P29A-0038V	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	14		STD		P29A-003WU	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
541	0.75				P29B-0000Y	Cap ASTM A105 Class 6000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P41A-000B9	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		XXS		P41A-000BA	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		XXS		P41A-000D8	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		XXS		P41A-000D9	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2	0.75	XS	SCH160	P31B-00CP7	Outlet ASTM A105 MSS SP-97 BW	
1	3	0.75	XS	SCH160	P31B-00CMS	Outlet ASTM A105 MSS SP-97 BW	
1	4	0.75	STD	SCH160	P31B-00CLT	Outlet ASTM A105 MSS SP-97 BW	
1	6	0.75	STD	SCH160	P31B-00CKK	Outlet ASTM A105 MSS SP-97 BW	
1	8	0.75	SCH30	SCH160	P31B-00ZH5	Outlet ASTM A105 MSS SP-97 BW	
1	10	0.75	SCH30	SCH160	P31B-00YEZ	Outlet ASTM A105 MSS SP-97 BW	
1	12	0.75	SCH30	SCH160	P31B-00SWH	Outlet ASTM A105 MSS SP-97 BW	

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OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14	0.75	STD	SCH160	P31B-00TPM	Outlet ASTM A105 MSS SP-97 BW	
1	3	1	XS	SCH160	P31B-00B4H	Outlet ASTM A105 MSS SP-97 BW	
1	4	1	STD	SCH160	P31B-00B3M	Outlet ASTM A105 MSS SP-97 BW	
1	6	1	STD	SCH160	P31B-00AZC	Outlet ASTM A105 MSS SP-97 BW	
1	8	1	SCH30	SCH160	P31B-00ZH6	Outlet ASTM A105 MSS SP-97 BW	
1	10	1	SCH30	SCH160	P31B-00YF1	Outlet ASTM A105 MSS SP-97 BW	
1	12	1	SCH30	SCH160	P31B-00SWJ	Outlet ASTM A105 MSS SP-97 BW	
1	14	1	STD	SCH160	P31B-00TPN	Outlet ASTM A105 MSS SP-97 BW	
1	4	1.5	STD	SCH160	P31B-00BP4	Outlet ASTM A105 MSS SP-97 BW	
1	6	1.5	STD	SCH160	P31B-00BJH	Outlet ASTM A105 MSS SP-97 BW	
1	8	1.5	SCH30	SCH160	P31B-00BHM	Outlet ASTM A105 MSS SP-97 BW	
1	10	1.5	SCH30	SCH160	P31B-00AUR	Outlet ASTM A105 MSS SP-97 BW	
1	12	1.5	SCH30	SCH160	P31B-00CEJ	Outlet ASTM A105 MSS SP-97 BW	
1	14	1.5	STD	SCH160	P31B-00TPP	Outlet ASTM A105 MSS SP-97 BW	
1	6	2	STD	XS	P31B-007SH	Outlet ASTM A105 MSS SP-97 BW	
1	8	2	SCH30	XS	P31B-00X36	Outlet ASTM A105 MSS SP-97 BW	
1	10	2	SCH30	XS	P31B-00NVF	Outlet ASTM A105 MSS SP-97 BW	
1	12	2	SCH30	XS	P31B-00NVL	Outlet ASTM A105 MSS SP-97 BW	
1	14	2	STD	XS	P31B-00CAE	Outlet ASTM A105 MSS SP-97 BW	
1	8	3	SCH30	XS	P31B-00ZH7	Outlet ASTM A105 MSS SP-97 BW	
1	10	3	SCH30	XS	P31B-00NYL	Outlet ASTM A105 MSS SP-97 BW	
1	12	3	SCH30	XS	P31B-00NYT	Outlet ASTM A105 MSS SP-97 BW	
1	14	3	STD	XS	P31B-0090L	Outlet ASTM A105 MSS SP-97 BW	
1	12	4	SCH30	STD	P31B-00P1G	Outlet ASTM A105 MSS SP-97 BW	
1	14	4	STD	STD	P31B-008YM	Outlet ASTM A105 MSS SP-97 BW	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30B-0002D	Plug ASTM A105 ASME B16.11 NPT Round head	
1	0.75				P30B-0002E	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1				P30B-0002F	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1.5				P30B-0002G	Plug ASTM A105 ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P61B-003LE	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	0.75		SCH160		P61B-0037H	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	1		SCH160		P61B-0037F	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	1.5		SCH160		P61B-0037N	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	2		XS		P61B-003NK	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	3		XS		P61B-003JD	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	4		STD		P61B-001R8	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	6		STD		P61B-001RT	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	8		SCH30		P61B-003FP	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	10		SCH30		P61B-003FS	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	12		SCH30		P61B-002TS	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	14		STD		P61B-001SN	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
541	0.5				P61B-003TZ	Flange NPT ASTM A105 Class 150 ASME B16.5 RF	
541	0.75				P61B-003U0	Flange NPT ASTM A105 Class 150 ASME B16.5 RF	
773	0.5		XXS		P61B-003LW	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	0.75		SCH160		P61B-0037M	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	1		SCH160		P61B-0037L	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	1.5		SCH160		P61B-0037J	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	2		XS		P61B-001HW	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	3		XS		P61B-001DK	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	4		STD		P61B-001MC	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	6		STD		P61B-001N2	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	8		SCH30		P61B-008S0	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	10		SCH30		P61B-003LX	Flange WN ASTM A105 Class 300 ASME B16.5 RF	

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FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
773	12		SCH30		P61B-002TV	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	14		STD		P61B-001M9	Flange WN ASTM A105 Class 300 ASME B16.5 RF	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67B-000FH	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	0.75				P67B-000FJ	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	1				P67B-000FK	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	1.5				P67B-000FL	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	2				P67B-000FT	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	3				P67B-000FW	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	4				P67B-000FX	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	6				P67B-000FY	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	8				P67B-000FZ	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	10				P67B-000FM	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	12				P67B-000FN	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	14				P67B-000FP	Blind flange ASTM A105 Class 150 ASME B16.5 RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000L8	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000L9	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000LA	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000LB	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000LH	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000LL	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000LM	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	6				P73T-000LN	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	8				P73T-000LP	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	10				P73T-000LC	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	12				P73T-000LD	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	14				P73T-000LE	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	0.5				P73T-000FT	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	0.75				P73T-000FU	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	3				P73T-000G5	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	4				P73T-000G6	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	6				P73T-000G7	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	8				P73T-000G8	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	10				P73T-000FX	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	12				P73T-000FY	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	14				P73T-000FZ	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-14				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
773	0.5-20				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	

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BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
773	12-14				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81B-001NP	Gate valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	0.75				P81B-001NR	Gate valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	1				P81B-001NS	Gate valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	1.5				P81B-001NT	Gate valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	2				P81C-006MW	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Licensor-4	
1	3				P81C-006MX	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Licensor-4	
1	4				P81C-006MY	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Licensor-4	
1	6				P81C-006MZ	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Licensor-4	
1	8				P81C-006N0	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Licensor-4	
1	10				P81C-006MU	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Licensor-4	
1	12				P81C-006MV	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Licensor-4	
1	14				P81C-007JA	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Severe wet H2S service Licensor-4	
4608	0.75				P81B-002XZ	Gate valve ASTM A105 Class 150 API 602 BW both sides w/ nipples BE - NPT ASTM A106-B XXS-nipple Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82B-001D5	Globe valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	0.75				P82B-001D6	Globe valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	1				P82B-001D7	Globe valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	1.5				P82B-001D8	Globe valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	2				P82C-00370	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Licensor-4	
1	3				P82C-00371	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Licensor-4	
1	4				P82C-00372	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Licensor-4	
1	6				P82C-00373	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Licensor-4	
1	8				P82C-00374	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Licensor-4	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83B-0013M	Check valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Severe wet H2S service	
1	0.75				P83B-0013N	Check valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Severe wet H2S service	
1	1				P83B-0013P	Check valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Severe wet H2S service	
1	1.5				P83B-0013R	Check valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Severe wet H2S service	
1	2				P83C-0033G	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service Licensor-4	
1	3				P83C-0033H	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service Licensor-4	
1	4				P83C-0033J	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service Licensor-4	
1	6				P83C-0033K	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service Licensor-4	
1	8				P83C-0033L	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service Licensor-4	
1	10				P83C-0033E	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service Licensor-4	
1	12				P83C-0033F	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service Licensor-4	
1	14				P83C-003A4	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service Licensor-4	

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ORIFICE FLANGE (FO)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2		XS		P66B-0084B	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	3		XS		P66B-008C1	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	4		STD		P66B-0084D	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
200	2		XS		P66B-00843	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	3		XS		P66B-008C3	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	4		STD		P66B-00845	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71B-0008A	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	0.75				P71B-0008B	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	1				P71B-0008C	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71B-0008D	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	2				P71B-0000P	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	3				P71B-0000N	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	4				P71B-0000M	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	6				P71B-0000L	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	8				P71B-0000R	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	10				P71B-0000K	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	12				P71B-0000J	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
773	0.5				P71B-000B1	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
773	0.75				P71B-000B2	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
773	1				P71B-000B3	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
773	1.5				P71B-000B4	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
773	2				P71B-000B6	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
773	3				P71B-000B7	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
773	4				P71B-000B8	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
773	6				P71B-000B9	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
773	8				P71B-000BA	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
773	10				P71B-000B5	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
773	12				P71B-000BB	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	

PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000AH	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
773	14				P72B-000FA	Paddle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	

PADDLE SPACER (PS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000AT	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
773	14				P72B-000FG	Paddle spacer ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	

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BOLT TABLE (B_A2AR04 , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	60	P80S-008SY		
0.75	4	0.500	65	P80S-008SZ		
1	4	0.500	70	P80S-008T0		
1.5	4	0.500	75	P80S-008T1		
2	4	0.625	85	P80S-0090A		
3	4	0.625	95	P80S-0090C		
4	8	0.625	95	P80S-0090C		
6	8	0.750	105	P80S-0090E		
8	8	0.750	110	P80S-0090F		
10	12	0.875	120	P80S-005Z9		
12	12	0.875	120	P80S-005Z9		
14	12	1.000	135	P80S-00619		

BOLT TABLE (B_A2AR04_773 , STUD ASME RF, OPTION CODE 773)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-008T0		
0.75	4	0.625	75	P80S-00908		
1	4	0.625	80	P80S-00909		
1.5	4	0.750	95	P80S-005Z4		
2	8	0.625	90	P80S-0090B		
3	8	0.750	110	P80S-0090F		
4	8	0.750	115	P80S-0090G		
6	12	0.750	125	P80S-0090J		
8	12	0.875	140	P80S-005ZD		
10	16	1.000	160	P80S-0061E		
12	16	1.125	175	P80S-0064S		
14	20	1.125	180	P80S-0064T		

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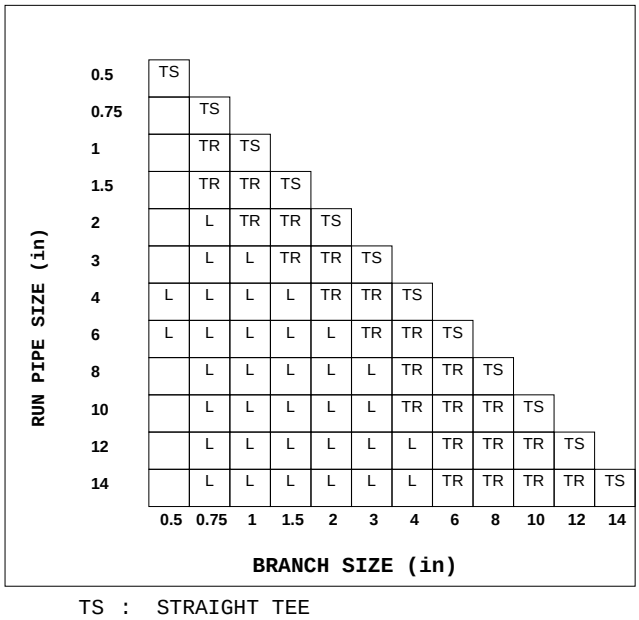
BRANCH TABLE (T_A2AR04)



TS : STRAIGHT TEE
L : OUTLET
TR : REDUCING TEE

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Material : Killed CS
Rating : ASME CLASS 150
Flange Face : RF
C.A.(mm) : 3.00
Gasket : Spiral Wound
Service : UTILITY : / LOW PRESSURE CONDENSATE / HYDROCARBONS - WATER CONDENSATE / BOILER FEED WATER

Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
2	USE OF SOFT SEATED BALL, PLUG AND BUTTERFLY VALVES SHALL BE LIMITED TO MAXIMUM OF 204DEGC (400DEGF)

DETAIL NOTES :

NO.	DESCRIPTION
38	TO BE USED FOR STAND PIPE
999	HOLD ITEMS. ORDER PLACEMENT SHALL NOT BE DONE BEFORE RELEASING HOLD.

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
200	WITH JACK SCREW (FO)
541	NPT(F) (CA,L)
714	SW - NPT(F) (V)
773	CLASS 300 (B,F,FR,G,V)
781	CLASS 600 (B,F,G)
789	CLASS 900 (B,F,G)
805	CLASS 2500 (B,F,G)
4207	SOCKOLETT ON CAP (CAP=NPS10 AND LARGER) (LC)
4208	45 DEGREE LATERAL STRAIGHT TEE (TLS)
4212	WELDOLET FOR STAND PIPE (L)

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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P01A-0010P	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	0.75		SCH160		P01A-0010R	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1		SCH160		P01A-0014M	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1.5		SCH160		P01A-0015J	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	2		XS		P01A-000YX	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	3		STD		P01A-000YM	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	4		STD		P01A-000YU	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	6		STD		P01A-000Z3	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	8		SCH30		P01A-001WL	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	10		SCH30		P01A-0016U	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	12		SCH30		P01A-0017K	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	14		SCH20		P01A-0017A	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	16		SCH20		P01A-0018E	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	18		SCH20		P01A-00438	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE	
1	20		STD		P01A-0042G	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE	
1	24		STD		P01A-0042H	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE	
1	30		STD		P01A-0042J	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE	
1	36		STD		P01A-00439	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P02B-0001J	90 degree elbow ASTM A105 Class 6000 ASME B16.11 SW	
1	0.75				P02B-0001K	90 degree elbow ASTM A105 Class 6000 ASME B16.11 SW	
1	1				P02B-0002E	90 degree elbow ASTM A105 Class 6000 ASME B16.11 SW	
1	1.5				P02B-0002F	90 degree elbow ASTM A105 Class 6000 ASME B16.11 SW	
1	2		XS		P02A-000CP	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		STD		P02A-000CU	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		STD		P02A-000CZ	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		STD		P02A-000D6	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		SCH30		P02A-003DK	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	10		SCH30		P02A-000M3	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	12		SCH30		P02A-000M4	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	14		SCH20		P02A-000FX	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	16		SCH20		P02A-000GM	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	18		SCH20		P02A-000LT	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	20		STD		P02A-0010J	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	24		STD		P02A-0010K	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	30		STD		P02A-000F3	90 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius	
1	36		STD		P02A-001GL	90 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P03B-0001F	45 degree elbow ASTM A105 Class 6000 ASME B16.11 SW	
1	0.75				P03B-0001G	45 degree elbow ASTM A105 Class 6000 ASME B16.11 SW	
1	1				P03B-0002A	45 degree elbow ASTM A105 Class 6000 ASME B16.11 SW	
1	1.5				P03B-0002B	45 degree elbow ASTM A105 Class 6000 ASME B16.11 SW	
1	2		XS		P03A-000AS	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		STD		P03A-000AX	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		STD		P03A-000B1	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		STD		P03A-000B9	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		SCH30		P03A-003BE	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	10		SCH30		P03A-000JT	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	12		SCH30		P03A-000JU	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	14		SCH20		P03A-000DW	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	16		SCH20		P03A-000EM	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	18		SCH20		P03A-001DX	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	20		STD		P03A-000X1	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	24		STD		P03A-000X2	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	30		STD		P03A-000D0	45 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius	

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45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	36		STD		P03A-001BS	45 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P21B-0001F	Straight tee ASTM A105 Class 6000 ASME B16.11 SW	
1	0.75				P21B-0001G	Straight tee ASTM A105 Class 6000 ASME B16.11 SW	
1	1				P21B-00026	Straight tee ASTM A105 Class 6000 ASME B16.11 SW	
1	1.5				P21B-00027	Straight tee ASTM A105 Class 6000 ASME B16.11 SW	
1	2		XS		P21A-001CJ	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		STD		P21A-001CU	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		STD		P21A-001CW	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6		STD		P21A-001D2	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8		SCH30		P21A-003WV	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10		SCH30		P21A-00259	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12		SCH30		P21A-0025A	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14		SCH20		P21A-00206	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16		SCH20		P21A-0020X	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18		SCH20		P21A-001PJ	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20		STD		P21A-001C7	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24		STD		P21A-001CC	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30		STD		P21A-001YC	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	36		STD		P21A-001G4	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	

STRAIGHT LATERAL TEE (TLS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75				P22B-00004	Straight lateral-tee ASTM A105 Class 6000 ASME B16.11 SW 60 degree	
1	1				P22B-00005	Straight lateral-tee ASTM A105 Class 6000 ASME B16.11 SW 60 degree	
1	1.5				P22B-00006	Straight lateral-tee ASTM A105 Class 6000 ASME B16.11 SW 60 degree	
1	2		XS		P22A-000DW	Straight lateral-tee ASTM A234 Grade WPB Seamless ASME B16.9 BW 60 degree	
1	3		STD		P22A-000DJ	Straight lateral-tee ASTM A234 Grade WPB Seamless ASME B16.9 BW 60 degree	
1	4		STD		P22A-000DX	Straight lateral-tee ASTM A234 Grade WPB Seamless ASME B16.9 BW 60 degree	
1	6		STD		P22A-000DY	Straight lateral-tee ASTM A234 Grade WPB Seamless ASME B16.9 BW 60 degree	
1	8		SCH30		P22A-000D8	Straight lateral-tee ASTM A234 Grade WPB Seamless ASME B16.9 BW 60 degree	
1	10		SCH30		P22A-000DS	Straight lateral-tee ASTM A234 Grade WPB Seamless ASME B16.9 BW 60 degree	
1	12		SCH30		P22A-000DT	Straight lateral-tee ASTM A234 Grade WPB Seamless ASME B16.9 BW 60 degree	
1	14		SCH20		P22A-000DU	Straight lateral-tee ASTM A234 Grade WPB Seamless ASME B16.9 BW 60 degree	
1	16		SCH20		P22A-000DV	Straight lateral-tee ASTM A234 Grade WPB Seamless ASME B16.9 BW 60 degree	
1	18		SCH20		P22A-000FW	Straight lateral-tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW 60 degree	
1	20		STD		P22A-000FX	Straight lateral-tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW 60 degree	
1	24		STD		P22A-000GD	Straight lateral-tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW 60 degree	
1	30		STD		P22A-000GE	Straight lateral-tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW 60 degree	
1	36		STD		P22A-000HD	Straight lateral-tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW 60 degree	
4208	3		STD		P22A-000C2	Straight lateral-tee ASTM A234 Grade WPB Seamless ASME B16.9 BW 45 degree	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75			P24B-00030	Reducing tee ASTM A105 Class 6000 ASME B16.11 SW	
1	1.5	0.75			P24B-00032	Reducing tee ASTM A105 Class 6000 ASME B16.11 SW	
1	1.5	1			P24B-0004J	Reducing tee ASTM A105 Class 6000 ASME B16.11 SW	
1	2	1	XS	SCH160	P24A-00GMB	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	XS	SCH160	P24A-005K9	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	STD	SCH160	P24A-00GMC	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	STD	XS	P24A-002HW	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P24A-002HY	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P24A-0021K	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	STD	P24A-0021A	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P24A-00229	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH30	STD	P24A-00JVH	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH30	STD	P24A-00JVG	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	10	4	SCH30	STD	P24A-00GNR	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	SCH30	STD	P24A-0060W	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	SCH30	SCH30	P24A-00J15	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	SCH30	STD	P24A-00HKT	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH30	SCH30	P24A-00M36	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH30	SCH30	P24A-003ET	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	SCH20	STD	P24A-00K0M	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	SCH20	SCH30	P24A-00M37	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	SCH20	SCH30	P24A-003ER	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	SCH20	SCH30	P24A-003ES	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	6	SCH20	STD	P24A-00GU4	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	SCH20	SCH30	P24A-00M38	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	SCH20	SCH30	P24A-00KSH	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	SCH20	SCH30	P24A-003XN	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	SCH20	SCH20	P24A-002XF	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	8	SCH20	SCH30	P24A-00BNK	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	10	SCH20	SCH30	P24A-00BF6	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	12	SCH20	SCH30	P24A-00BH0	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	14	SCH20	SCH20	P24A-002WT	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	16	SCH20	SCH20	P24A-002X5	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	8	STD	SCH30	P24A-00M39	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	10	STD	SCH30	P24A-00BT8	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	12	STD	SCH30	P24A-00BUT	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	14	STD	SCH20	P24A-00BWB	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	16	STD	SCH20	P24A-006W3	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	18	STD	SCH20	P24A-006WD	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	10	STD	SCH30	P24A-00C5X	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	12	STD	SCH30	P24A-00C7C	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	14	STD	SCH20	P24A-00K0C	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	16	STD	SCH20	P24A-00CAD	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	18	STD	SCH20	P24A-006WF	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	20	STD	STD	P24A-004SV	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	10	STD	SCH30	P24A-00CXV	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	12	STD	SCH30	P24A-00CZ4	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	14	STD	SCH20	P24A-003VR	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	16	STD	SCH20	P24A-003VS	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	18	STD	SCH20	P24A-003VT	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	20	STD	STD	P24A-0087D	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	24	STD	STD	P24A-005XW	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	36	16	STD	SCH20	P24A-00GU6	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	36	18	STD	SCH20	P24A-0087J	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	36	20	STD	STD	P24A-0087K	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	36	24	STD	STD	P24A-00DVT	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	36	30	STD	STD	P24A-007WA	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	

REDUCING LATERAL TEE (TLR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	10	6	SCH30	STD	P25A-002TL	Reducing lateral-tee ASTM A234 Grade WPB Seamless ASME B16.9 BW 45 degree	
1	10	8	SCH30	SCH30	P25A-002TM	Reducing lateral-tee ASTM A234 Grade WPB Seamless ASME B16.9 BW 45 degree	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	STD	XS	P27A-001MZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P27A-001N0	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P27A-00189	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	STD	P27A-001AZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P27A-001GW	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH30	STD	P27A-00ED2	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH30	STD	P27A-00ECY	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	10	4	SCH30	STD	P27A-003MK	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	SCH30	STD	P27A-003ML	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	SCH30	SCH30	P27A-004T9	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	SCH30	STD	P27A-003MN	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH30	SCH30	P27A-004XA	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH30	SCH30	P27A-0028K	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	SCH20	STD	P27A-00518	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	SCH20	SCH30	P27A-0052J	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	SCH20	SCH30	P27A-0028G	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	SCH20	SCH30	P27A-0028H	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	SCH20	SCH30	P27A-0059E	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	SCH20	SCH30	P27A-003NC	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	SCH20	SCH30	P27A-002GH	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	SCH20	SCH20	P27A-001V2	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	10	SCH20	SCH30	P27A-0084J	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	12	SCH20	SCH30	P27A-0084K	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	14	SCH20	SCH20	P27A-001UY	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	16	SCH20	SCH20	P27A-001WN	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	12	STD	SCH30	P27A-0082K	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	14	STD	SCH20	P27A-0082L	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	16	STD	SCH20	P27A-0082M	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	18	STD	SCH20	P27A-0084N	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	16	STD	SCH20	P27A-0084T	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	18	STD	SCH20	P27A-0084U	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	20	STD	STD	P27A-001A8	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	20	STD	STD	P27A-001S0	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	24	STD	STD	P27A-001M7	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	36	24	STD	STD	P27A-00BGR	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	36	30	STD	STD	P27A-00938	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	STD	XS	P28A-001N5	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P28A-001N6	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P28A-0018B	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	STD	P28A-001AS	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P28A-00182	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH30	STD	P28A-00BFY	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH30	STD	P28A-00BFZ	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	SCH30	STD	P28A-003MD	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	SCH30	STD	P28A-003ME	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	SCH30	SCH30	P28A-00A4S	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	SCH30	STD	P28A-003MG	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH30	SCH30	P28A-00BGV	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH30	SCH30	P28A-0027C	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	SCH20	STD	P28A-0096P	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	SCH20	SCH30	P28A-00DA3	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	SCH20	SCH30	P28A-00279	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	SCH20	SCH30	P28A-0027A	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	SCH20	SCH30	P28A-00DA4	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	SCH20	SCH30	P28A-003N6	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	SCH20	SCH30	P28A-002GB	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	SCH20	SCH20	P28A-001WG	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	10	SCH20	SCH30	P28A-004UL	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	12	SCH20	SCH30	P28A-004UM	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	14	SCH20	SCH20	P28A-001WD	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	16	SCH20	SCH20	P28A-001T1	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	12	STD	SCH30	P28A-004SH	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	14	STD	SCH20	P28A-004SJ	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	20	16	STD	SCH20	P28A-004SK	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	18	STD	SCH20	P28A-004UN	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	16	STD	SCH20	P28A-004UR	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	18	STD	SCH20	P28A-004US	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	20	STD	STD	P28A-001AW	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	20	STD	STD	P28A-001LZ	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	24	STD	STD	P28A-001N1	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	36	24	STD	STD	P28A-008FS	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	36	30	STD	STD	P28A-005V7	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P29B-0002F	Cap ASTM A105 Class 6000 ASME B16.11 SW	
1	0.75				P29B-0002G	Cap ASTM A105 Class 6000 ASME B16.11 SW	
1	1				P29B-0002D	Cap ASTM A105 Class 6000 ASME B16.11 SW	
1	1.5				P29B-0002E	Cap ASTM A105 Class 6000 ASME B16.11 SW	
1	2		XS		P29A-000A1	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		STD		P29A-000BK	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		STD		P29A-000A3	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6		STD		P29A-000A9	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8		SCH30		P29A-000PC	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10		SCH30		P29A-000K7	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12		SCH30		P29A-000PZ	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14		SCH20		P29A-000EA	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16		SCH20		P29A-000F3	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18		SCH20		P29A-000E0	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20		STD		P29A-000B2	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24		STD		P29A-000B8	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	30		STD		P29A-000DU	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	36		STD		P29A-001AF	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
541	0.75				P29B-0000Y	Cap ASTM A105 Class 6000 ASME B16.11 NPT	
541	1				P29B-0000Z	Cap ASTM A105 Class 6000 ASME B16.11 NPT	
541	1.5				P29B-00010	Cap ASTM A105 Class 6000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P41A-000B9	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		XXS		P41A-000BA	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		XXS		P41A-000D8	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		XXS		P41A-000D9	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

CON SWAGED NIPPLE (SNC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	SCH160	P42A-00029	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	SCH160	SCH160	P42A-0009T	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	SCH160	SCH160	P42A-0009U	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	SCH160	SCH160	P42A-0009V	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	SCH160	SCH160	P42A-0009W	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	SCH160	SCH160	P42A-0009X	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	XS	SCH160	P42A-000J6	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	XS	SCH160	P42A-000J7	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	XS	SCH160	P42A-000F8	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	XS	SCH160	P42A-000KZ	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	STD	SCH160	P42A-000L0	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	

ECC SWAGED NIPPLE (SNE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	SCH160	P43A-000AM	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.5	SCH160	SCH160	P43A-000B4	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	SCH160	SCH160	P43A-000B5	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	SCH160	SCH160	P43A-000B6	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	SCH160	SCH160	P43A-000B7	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	SCH160	SCH160	P43A-000B8	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	XS	SCH160	P43A-000B2	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	XS	SCH160	P43A-000B3	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	XS	SCH160	P43A-000CZ	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	XS	SCH160	P43A-000D0	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	STD	SCH160	P43A-000D1	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	

COUPLING (CPS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P47B-00013	Coupling ASTM A105 Class 6000 ASME B16.11 SW - SW	
1	0.75				P47B-00012	Coupling ASTM A105 Class 6000 ASME B16.11 SW - SW	
1	1				P47B-0002A	Coupling ASTM A105 Class 6000 ASME B16.11 SW - SW	
1	1.5				P47B-0002B	Coupling ASTM A105 Class 6000 ASME B16.11 SW - SW	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5 - 2.5	0.75			P31B-0137D	Outlet ASTM A105 Class 6000 MSS SP-97 SW	
1	3 - 10	0.75			P31B-007LV	Outlet ASTM A105 Class 6000 MSS SP-97 SW	
1	12 and larger	0.75			P31B-0136N	Outlet ASTM A105 Class 6000 MSS SP-97 SW	
1	3 - 10	1			P31B-007LN	Outlet ASTM A105 Class 6000 MSS SP-97 SW	
1	12 and larger	1			P31B-0136P	Outlet ASTM A105 Class 6000 MSS SP-97 SW	
1	4 - 5	1.5			P31B-004LE	Outlet ASTM A105 Class 6000 MSS SP-97 SW	
1	6 - 8	1.5			P31B-005T4	Outlet ASTM A105 Class 6000 MSS SP-97 SW	
1	10 - 18	1.5			P31B-007LF	Outlet ASTM A105 Class 6000 MSS SP-97 SW	
1	20 and larger	1.5			P31B-0137E	Outlet ASTM A105 Class 6000 MSS SP-97 SW	
541	1	0.75			P31B-005HL	Outlet ASTM A105 Class 6000 MSS SP-97 NPT	
541	1.5 - 2.5	0.75			P31B-0137F	Outlet ASTM A105 Class 6000 MSS SP-97 NPT	
541	3 - 10	0.75			P31B-007KP	Outlet ASTM A105 Class 6000 MSS SP-97 NPT	
541	12 and larger	0.75			P31B-0138A	Outlet ASTM A105 Class 6000 MSS SP-97 NPT	
1	6	2	STD	XS	P31B-007SH	Outlet ASTM A105 MSS SP-97 BW	
1	8	2	SCH30	XS	P31B-00X36	Outlet ASTM A105 MSS SP-97 BW	
1	10	2	SCH30	XS	P31B-00NVF	Outlet ASTM A105 MSS SP-97 BW	
1	12	2	SCH30	XS	P31B-00NVL	Outlet ASTM A105 MSS SP-97 BW	
1	14	2	SCH20	XS	P31B-00TF9	Outlet ASTM A105 MSS SP-97 BW	
1	16	2	SCH20	XS	P31B-00TF8	Outlet ASTM A105 MSS SP-97 BW	
1	18	2	SCH20	XS	P31B-00NVX	Outlet ASTM A105 MSS SP-97 BW	
1	20	2	STD	XS	P31B-00994	Outlet ASTM A105 MSS SP-97 BW	
1	24	2	STD	XS	P31B-0092Z	Outlet ASTM A105 MSS SP-97 BW	
1	30	2	STD	XS	P31B-008P5	Outlet ASTM A105 MSS SP-97 BW	
1	36	2	STD	XS	P31B-00NX8	Outlet ASTM A105 MSS SP-97 BW	
1	8	3	SCH30	STD	P31B-00X37	Outlet ASTM A105 MSS SP-97 BW	
1	10	3	SCH30	STD	P31B-00NYK	Outlet ASTM A105 MSS SP-97 BW	
1	12	3	SCH30	STD	P31B-00NYR	Outlet ASTM A105 MSS SP-97 BW	
1	14	3	SCH20	STD	P31B-00UPH	Outlet ASTM A105 MSS SP-97 BW	
1	16	3	SCH20	STD	P31B-00TU2	Outlet ASTM A105 MSS SP-97 BW	
1	18	3	SCH20	STD	P31B-00NZ4	Outlet ASTM A105 MSS SP-97 BW	
1	20	3	STD	STD	P31B-008FA	Outlet ASTM A105 MSS SP-97 BW	
1	24	3	STD	STD	P31B-00895	Outlet ASTM A105 MSS SP-97 BW	
1	30	3	STD	STD	P31B-007WY	Outlet ASTM A105 MSS SP-97 BW	
1	36	3	STD	STD	P31B-007P2	Outlet ASTM A105 MSS SP-97 BW	
1	12	4	SCH30	STD	P31B-00P1G	Outlet ASTM A105 MSS SP-97 BW	
1	14	4	SCH20	STD	P31B-00UPJ	Outlet ASTM A105 MSS SP-97 BW	
1	16	4	SCH20	STD	P31B-00TU3	Outlet ASTM A105 MSS SP-97 BW	
1	18	4	SCH20	STD	P31B-00P1V	Outlet ASTM A105 MSS SP-97 BW	
1	20	4	STD	STD	P31B-008D3	Outlet ASTM A105 MSS SP-97 BW	

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OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	24	4	STD	STD	P31B-0086X	Outlet ASTM A105 MSS SP-97 BW	
1	30	4	STD	STD	P31B-007US	Outlet ASTM A105 MSS SP-97 BW	
1	36	4	STD	STD	P31B-00AER	Outlet ASTM A105 MSS SP-97 BW	
1	18	6	SCH20	STD	P31B-00P48	Outlet ASTM A105 MSS SP-97 BW	
1	20	6	STD	STD	P31B-008PZ	Outlet ASTM A105 MSS SP-97 BW	
1	24	6	STD	STD	P31B-008JD	Outlet ASTM A105 MSS SP-97 BW	
1	30	6	STD	STD	P31B-008BS	Outlet ASTM A105 MSS SP-97 BW	
1	36	6	STD	STD	P31B-0085H	Outlet ASTM A105 MSS SP-97 BW	
4212	3	2	STD	XS	P31B-00UUU	Outlet ASTM A105 MSS SP-97 BW	38

OLET ON CAP (LC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3		STD		P36B-000BT	Outlet on cap ASTM A105 MSS SP-97 BW Cap=NPS24 (STD)	
1	4		STD		P36B-000BV	Outlet on cap ASTM A105 MSS SP-97 BW Cap=NPS24 (STD)	
4207	1				P36B-00033	Outlet on cap ASTM A105 Class 6000 MSS SP-97 SW Cap=NPS10 and larger	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30B-0002D	Plug ASTM A105 ASME B16.11 NPT Round head	
1	0.75				P30B-0002E	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1				P30B-0002F	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1.5				P30B-0002G	Plug ASTM A105 ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P61B-002D4	Flange SW ASTM A105 Class 150 ASME B16.5 RF	
1	0.75		SCH160		P61B-002DE	Flange SW ASTM A105 Class 150 ASME B16.5 RF	
1	1		SCH160		P61B-002DU	Flange SW ASTM A105 Class 150 ASME B16.5 RF	
1	1.5		SCH160		P61B-002EM	Flange SW ASTM A105 Class 150 ASME B16.5 RF	
1	2		XS		P61B-003NK	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	3		STD		P61B-001PW	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	4		STD		P61B-001R8	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	6		STD		P61B-001RT	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	8		SCH30		P61B-003FP	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	10		SCH30		P61B-003FS	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	12		SCH30		P61B-002TS	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	14		SCH20		P61B-002B6	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	16		SCH20		P61B-002B7	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	18		SCH20		P61B-002B8	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	20		STD		P61B-001JA	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	24		STD		P61B-001NJ	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	30		STD		P61B-001S8	Flange WN ASTM A105 Class 150 ASME B16.47 Series B RF	
1	36		STD		P61B-003M6	Flange WN ASTM A105 Class 150 ASME B16.47 Series B RF	
773	0.5		SCH160		P61B-001H5	Flange SW ASTM A105 Class 300 ASME B16.5 RF	
773	0.75		SCH160		P61B-001HH	Flange SW ASTM A105 Class 300 ASME B16.5 RF	
773	1		SCH160		P61B-001E8	Flange SW ASTM A105 Class 300 ASME B16.5 RF	
773	1.5		SCH160		P61B-001ET	Flange SW ASTM A105 Class 300 ASME B16.5 RF	
773	2		XS		P61B-001HW	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	3		STD		P61B-001LJ	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	4		STD		P61B-001MC	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	6		STD		P61B-001N2	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	8		SCH30		P61B-008S0	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	10		SCH30		P61B-003LX	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	12		SCH30		P61B-002TV	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	14		SCH20		P61B-002MR	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	16		SCH20		P61B-002MS	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	18		SCH20		P61B-002MT	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	20		STD		P61B-001NT	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	24		STD		P61B-001PA	Flange WN ASTM A105 Class 300 ASME B16.5 RF	

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FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
773	30		STD		P61B-003SW	Flange WN ASTM A105 Class 300 ASME B16.47 Series B RF	
773	36		STD		P61B-004RB	Flange WN ASTM A105 Class 300 ASME B16.47 Series B RF	
781	0.5		SCH160		P61B-001DZ	Flange SW ASTM A105 Class 600 ASME B16.5 RF	
781	0.75		SCH160		P61B-001DW	Flange SW ASTM A105 Class 600 ASME B16.5 RF	
781	1		SCH160		P61B-005X5	Flange SW ASTM A105 Class 600 ASME B16.5 RF	
781	1.5		SCH160		P61B-005X6	Flange SW ASTM A105 Class 600 ASME B16.5 RF	
781	2		XS		P61B-001DH	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	3		STD		P61B-001TW	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	4		STD		P61B-001VV	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	6		STD		P61B-001JW	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	8		SCH30		P61B-009GW	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	10		SCH30		P61B-003TN	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
789	14		SCH20		P61B-009TS	Flange WN ASTM A105 Class 900 ASME B16.5 RJ	
805	1		SCH160		P61B-0073S	Flange SW ASTM A105 Class 2500 ASME B16.5 RJ	
805	18		SCH20		P61B-00D34	Flange WN ASTM A105 Class 2500 Standard-drawing RJ	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67B-000FH	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	0.75				P67B-000FJ	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	1				P67B-000FK	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	1.5				P67B-000FL	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	2				P67B-000FT	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	3				P67B-000FW	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	4				P67B-000FX	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	6				P67B-000FY	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	8				P67B-000FZ	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	10				P67B-000FM	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	12				P67B-000FN	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	14				P67B-000FP	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	16				P67B-000FR	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	18				P67B-000FS	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	20				P67B-000FU	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	24				P67B-000FV	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	30				P67B-000G2	Blind flange ASTM A105 Class 150 ASME B16.47 Series B RF	
1	36				P67B-000G5	Blind flange ASTM A105 Class 150 ASME B16.47 Series B RF	

REDUCING FLANGE (FR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5		SCH160	P62B-000MY	Reducing flange SW ASTM A105 Class 150 ASME B16.5 RF	
1	2	0.75		SCH160	P62B-000NF	Reducing flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	2	1		SCH160	P62B-0006X	Reducing flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	2	1.5		SCH160	P62B-000K8	Reducing flange WN ASTM A105 Class 150 ASME B16.5 RF	
773	2	0.75		SCH160	P62B-000NG	Reducing flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	2	1		SCH160	P62B-0007D	Reducing flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	2	1.5		SCH160	P62B-000MG	Reducing flange WN ASTM A105 Class 300 ASME B16.5 RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000L8	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000L9	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000LA	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000LB	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000LH	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000LL	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000LM	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

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GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	6				P73T-000LN	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	8				P73T-000LP	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	10				P73T-000LC	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	12				P73T-000LD	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	14				P73T-000LE	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	16				P73T-000LF	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	18				P73T-000LG	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	20				P73T-000LJ	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	24				P73T-000LK	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	30				P73T-000LT	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	36				P73T-000LW	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	0.5				P73T-000FT	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	0.75				P73T-000FU	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	3				P73T-000G5	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	4				P73T-000G6	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	6				P73T-000G7	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	8				P73T-000G8	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	10				P73T-000FX	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	12				P73T-000FY	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	14				P73T-000FZ	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	16				P73T-000G0	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	18				P73T-000G1	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	20				P73T-000G3	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	24				P73T-000G4	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	30				P73T-000H9	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	36				P73T-000HC	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	0.5				P73T-000J8	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	0.75				P73T-000J9	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1				P73T-000JA	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1.5				P73T-000JB	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	2				P73T-000JH	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	3				P73T-000JL	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	4				P73T-000JM	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	6				P73T-000JN	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	8				P73T-000JP	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	10				P73T-000JC	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
789	14				P75T-000MJ	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	1				P75T-0014Z	Ring joint gasket Soft iron Class 2500 ASME B16.20 Flange Standard-drawing RJ Octagonal type	
805	18				P75T-00143	Ring joint gasket Soft iron Class 2500 ASME B16.20 Flange Standard-drawing RJ Octagonal type	999

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BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-16				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	18-24				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
1	30-36				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
773	0.5-10				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
773	12-36				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
781	0.5-6				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
781	8-12				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
789	14				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
805	1				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
805	1.5-3				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
805	14-24				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	999

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81B-000RA	Gate valve ASTM A105 Class 800 API 602 SW Trim number 5 BB-BG-OS&Y Handwheel operated	
1	0.75				P81B-000P0	Gate valve ASTM A105 Class 800 API 602 SW Trim number 5 BB-BG-OS&Y Handwheel operated	
1	1				P81B-000P1	Gate valve ASTM A105 Class 800 API 602 SW Trim number 5 BB-BG-OS&Y Handwheel operated	
1	1.5				P81B-000P2	Gate valve ASTM A105 Class 800 API 602 SW Trim number 5 BB-BG-OS&Y Handwheel operated	
1	2				P81C-004DJ	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated	
1	3				P81C-004DK	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated	
1	4				P81C-004DL	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated	
1	6				P81C-004DM	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated	
1	8				P81C-004DN	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated	
1	10				P81C-004DG	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated	
1	12				P81C-004DH	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated	
1	14				P81C-004DB	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Gear operated	
1	16				P81C-004DC	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Gear operated	
1	18				P81C-004DD	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Gear operated	
1	20				P81C-004DE	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Gear operated	
1	24				P81C-004DF	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Gear operated	
1	36				P81C-007M9	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.47-B RF Trim number 5 BB-BG-OS&Y Gear operated	
714	0.5				P81B-0015N	Gate valve ASTM A105 Class 800 API 602 SW - NPT Trim number 5 BB-BG-OS&Y Handwheel operated	
714	0.75				P81B-002FC	Gate valve ASTM A105 Class 800 API 602 SW - NPT Trim number 5 BB-BG-OS&Y Handwheel operated	
773	1				P81B-002SK	Gate valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated	
773	2				P81C-004HA	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82B-000KW	Globe valve ASTM A105 Class 800 API 602 SW Trim number 5 BB-BG-OS&Y Handwheel operated	
1	0.75				P82B-000HE	Globe valve ASTM A105 Class 800 API 602 SW Trim number 5 BB-BG-OS&Y Handwheel operated	
1	1				P82B-000HF	Globe valve ASTM A105 Class 800 API 602 SW Trim number 5 BB-BG-OS&Y Handwheel operated	
1	1.5				P82B-000HG	Globe valve ASTM A105 Class 800 API 602 SW Trim number 5 BB-BG-OS&Y Handwheel operated	
1	2				P82C-0026M	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated	
1	3				P82C-0026N	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated	
1	4				P82C-0026P	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated	
1	6				P82C-0026R	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated	
1	8				P82C-0026S	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated	

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CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83B-000GL	Check valve ASTM A105 Class 800 API 602 SW Trim number 5 Lift-type Bolted cover	
1	0.75				P83B-000EU	Check valve ASTM A105 Class 800 API 602 SW Trim number 5 Lift-type Bolted cover	
1	1				P83B-000EV	Check valve ASTM A105 Class 800 API 602 SW Trim number 5 Lift-type Bolted cover	
1	1.5				P83B-000EW	Check valve ASTM A105 Class 800 API 602 SW Trim number 5 Lift-type Bolted cover	
1	2				P83C-0021U	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 5 Swing-type Bolted cover	
1	3				P83C-0021X	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 5 Swing-type Bolted cover	
1	4				P83C-0021Y	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 5 Swing-type Bolted cover	
1	6				P83C-0021Z	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 5 Swing-type Bolted cover	
1	8				P83C-00220	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 5 Swing-type Bolted cover	
1	10				P83C-0021N	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 5 Swing-type Bolted cover	
1	12				P83C-0021P	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 5 Swing-type Bolted cover	
1	14				P83C-0021R	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 5 Swing-type Bolted cover	
1	16				P83C-0021S	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 5 Swing-type Bolted cover	

BUTTERFLY VALVE (H)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	4				P86C-0023Y	Offset design butterfly valve ASTM A216 Grade WCB Class 150 API 609 Category B Lug-type ASME B16.5 RF Disc CS Seat Stellite-6 Trim 13Cr Triple eccentric design BG Gear operated	
1	6				P86C-002AC	Offset design butterfly valve ASTM A216 Grade WCB Class 150 API 609 Category B Lug-type ASME B16.5 RF Disc CS Seat Stellite-6 Trim 13Cr Triple eccentric design BG Gear operated	
1	8				P86C-002AD	Offset design butterfly valve ASTM A216 Grade WCB Class 150 API 609 Category B Lug-type ASME B16.5 RF Disc CS Seat Stellite-6 Trim 13Cr Triple eccentric design BG Gear operated	
1	10				P86C-00230	Offset design butterfly valve ASTM A216 Grade WCB Class 150 API 609 Category B Lug-type ASME B16.5 RF Disc CS Seat Stellite-6 Trim 13Cr Triple eccentric design BG Gear operated	
1	12				P86C-00231	Offset design butterfly valve ASTM A216 Grade WCB Class 150 API 609 Category B Lug-type ASME B16.5 RF Disc CS Seat Stellite-6 Trim 13Cr Triple eccentric design BG Gear operated	

NEEDLE VALVE (NV)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82B-001K3	Needle valve ASTM A105 Class 800 API 602 SW Trim number 5 BB-BG-OS&Y Handwheel operated	
1	0.75				P82B-001K4	Needle valve ASTM A105 Class 800 API 602 SW Trim number 5 BB-BG-OS&Y Handwheel operated	
1	1				P82B-001K5	Needle valve ASTM A105 Class 800 API 602 SW Trim number 5 BB-BG-OS&Y Handwheel operated	
1	1.5				P82B-001K6	Needle valve ASTM A105 Class 800 API 602 SW Trim number 5 BB-BG-OS&Y Handwheel operated	
1	2				P82C-0040G	Needle valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated	

ORIFICE FLANGE (FO)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2		XS		P66B-0084B	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	3		STD		P66B-0084C	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	4		STD		P66B-0084D	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	6		STD		P66B-0084E	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	8		SCH30		P66B-00871	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	10		SCH30		P66B-0086Z	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	12		SCH30		P66B-00849	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	14		SCH20		P66B-0084A	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	16		SCH20		P66B-0083Y	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
200	2		XS		P66B-00843	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	3		STD		P66B-00844	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	4		STD		P66B-00845	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	6		STD		P66B-00846	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	8		SCH30		P66B-00876	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	10		SCH30		P66B-00874	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	12		SCH30		P66B-00841	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	14		SCH20		P66B-00842	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	16		SCH20		P66B-0083Z	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	

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SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71B-0008A	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	0.75				P71B-0008B	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	1				P71B-0008C	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71B-0008D	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	2				P71B-0000P	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	3				P71B-0000N	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	4				P71B-0000M	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	6				P71B-0000L	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	8				P71B-0000R	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	10				P71B-0000K	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	12				P71B-0000J	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	

PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000AH	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	16				P72B-0000C	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	18				P72B-000AJ	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	20				P72B-000AK	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	24				P72B-000AL	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	30				P72B-000AM	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	36				P72B-000AN	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	

PADDLE SPACER (PS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000AT	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	16				P72B-0000B	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	18				P72B-000AU	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	20				P72B-000AV	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	24				P72B-000AW	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	30				P72B-000AX	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	36				P72B-000AY	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	

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BOLT TABLE (B_A2AS , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	60	P80S-003V2		
0.75	4	0.500	65	P80S-003V3		
1	4	0.500	70	P80S-003V4		
1.5	4	0.500	75	P80S-003V5		
2	4	0.625	85	P80S-003XE		
3	4	0.625	95	P80S-003XG		
4	8	0.625	95	P80S-003XG		
6	8	0.750	105	P80S-003XJ		
8	8	0.750	110	P80S-003XK		
10	12	0.875	120	P80S-00419		
12	12	0.875	120	P80S-00419		
14	12	1.000	135	P80S-0043E		
16	16	1.000	140	P80S-0043F		
18	16	1.125	150	P80S-0046K		
20	20	1.125	160	P80S-0046M		
24	20	1.250	175	P80S-004AG		
30	44	0.750	145	P80S-003ZK		
36	44	0.875	175	P80S-0041M		

BOLT TABLE (B_A2AS_773 , STUD ASME RF, OPTION CODE 773)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-003V4		
0.75	4	0.625	75	P80S-003XC		
1	4	0.625	80	P80S-003XD		
1.5	4	0.750	95	P80S-00414		
2	8	0.625	90	P80S-003XF		
3	8	0.750	110	P80S-003XK		
4	8	0.750	115	P80S-003XL		
6	12	0.750	125	P80S-003XN		
8	12	0.875	140	P80S-0041D		
10	16	1.000	160	P80S-0043K		
12	16	1.125	175	P80S-0046S		
14	20	1.125	180	P80S-0046T		
16	20	1.250	190	P80S-004AK		
18	24	1.250	200	P80S-004AM		
20	24	1.250	210	P80S-004AP		
24	24	1.500	235	P80S-003F8		
30	36	1.375	285	P80S-003EA		
36	32	1.625	320	P80S-005TT		

BOLT TABLE (B_A2AS_781 , STUD ASME RF, OPTION CODE 781)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	80	P80S-003V6		
0.75	4	0.625	90	P80S-003XF		
1	4	0.625	95	P80S-003XG		
1.5	4	0.750	110	P80S-003XK		
2	8	0.625	110	P80S-003VC		
3	8	0.750	130	P80S-003XP		
4	8	0.875	150	P80S-0041F		
6	12	1.000	175	P80S-0043P		
8	12	1.125	195	P80S-0046W		
10	16	1.250	250	P80S-004AY		
12	20	1.250	255	P80S-004AZ		
14	20	1.375	270			
16	20	1.500	295			
18	20	1.625	320			
20	24	1.625	335			
24	24	1.875	380			
30	28	1.875	435			
36	28	2.250	510			

BOLT TABLE (B_A2AS_789 , STUD ASME RJ, OPTION CODE 789)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	110		R12	
0.75	4	0.750	115		R14	
1	4	0.875	130		R16	

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BOLT TABLE (B_A2AS_789 , STUD ASME RJ, OPTION CODE 789)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
1.5	4	1.000	140		R20	
2	8	0.875	150		R24	
3	8	0.875	150		R31	
4	8	1.125	175		R37	
6	12	1.125	200		R45	
8	12	1.375	260		R49	
10	16	1.375	275		R53	
12	20	1.375	295		R57	
14	20	1.500	325	P80S-008N3	R62	P75T-000MJ
16	20	1.625	340		R66	
18	20	1.875	390		R70	
20	20	2.000	415		R74	
24	20	2.500	525		R78	
30	20	3.000	600		R102	
36	20	3.500	690		R105	

BOLT TABLE (B_A2AS_805 , STUD ASME RJ, OPTION CODE 805)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	125		R13	
0.75	4	0.750	130		R16	
1	4	0.875	140	P80S-0041D	R18	P75T-0014Z
1.5	4	1.125	175	P80S-0046S	R23	
2	8	1.000	180		R26	
3	8	1.250	260	P80S-004B0	R32	
4	8	1.500	305		R38	
6	8	2.000	410		R47	
8	12	2.000	450		R51	
10	12	2.500	575		R55	
12	12	2.750	635		R60	
14	14	3.000	695	P80S-00PNU	R64	
16	14	3.000	755	P80S-00PNF	R68	
18	16	3.000	815		R72	P75T-00143
20	16	3.000	875		R76	
24	18	3.000	950	P80S-032D8	R81	

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BRANCH TABLE (T_A2AS)

RUN PIPE SIZE (in) \ BRANCH SIZE (in)	0.5	0.75	1	1.5	2	3	4	6	8	10	12	14	16	18	20	24	30	36
0.5	TS																	
0.75		TS																
1		TR	TS															
1.5		TR	TR	TS														
2		L	TR	TR	TS													
3		L	L	TR	TR	TS												
4	L	L	L	L	TR	TR	TS											
6	L	L	L	L	L	TR	TR	TS										
8		L	L	L	L	L	TR	TR	TS									
10		L	L	L	L	L	TR	TR	TR	TS								
12		L	L	L	L	L	L	TR	TR	TR	TS							
14		L	L	L	L	L	L	TR	TR	TR	TR	TS						
16		L	L	L	L	L	L	TR	TR	TR	TR	TR	TS					
18		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TS				
20		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TR	TS			
24		L	L	L	L	L	L	L	9PD	TR	TR	TR	TR	TR	TR	TS		
30		L	L	L	L	L	L	L	9PD	TR	TR	TR	TR	TR	TR	TR	TS	
36		L	L	L	L	L	L	L	9PD	9PD	9PD	9PD	TR	TR	TR	TR	TR	TS

TS : STRAIGHT TEE
9PD : REINFORCING PAD 90 DEG
TR : REDUCING TEE
L : OUTLET

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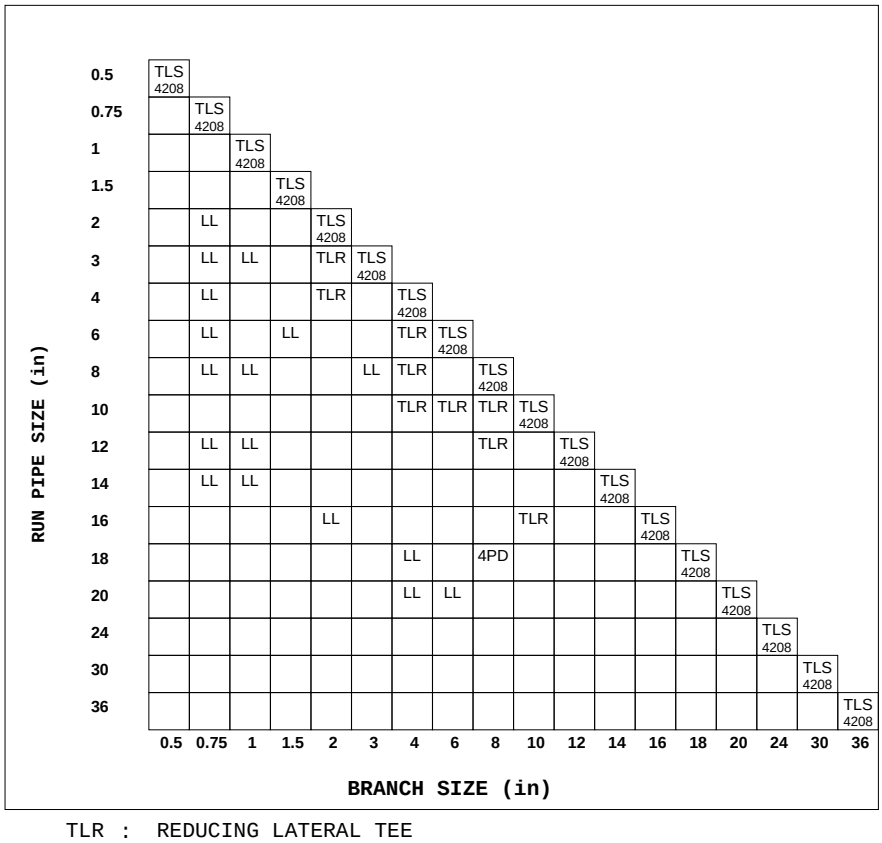
A2AS

REV NO. 2

BRANCH TABLE (T_A2AS_2)



TLR : REDUCING LATERAL TEE
TLS : STRAIGHT LATERAL TEE
LL : LATROLET
4PD : REINFORCING PAD 45 DEG

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A2AS

REV NO. 2

BRANCH TABLE (T_A2AS_3)

RUN PIPE SIZE (in) \ BRANCH SIZE (in)	0.5	0.75	1	1.5	2	3	4	6	8	10	12	14	16	18	20	24	30	36
0.5																		
0.75		TLS																
1		6PD	TLS															
1.5		6PD	6PD	TLS														
2		6PD	6PD	6PD	TLS													
3		6PD	6PD	6PD	6PD	TLS												
4		6PD	6PD	6PD	6PD	6PD	TLS											
6		6PD	6PD	6PD	6PD	6PD	6PD	TLS										
8		6PD	6PD	6PD	6PD	6PD	6PD	6PD	TLS									
10		6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	TLS								
12		6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	TLS							
14		6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	TLS						
16		6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	TLS					
18		6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	TLS				
20		6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	TLS			
24		6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	TLS		
30		6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	TLS	
36		6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	TLS

6PD : REINFORCING PAD 60 DEG
TLS : STRAIGHT LATERAL TEE

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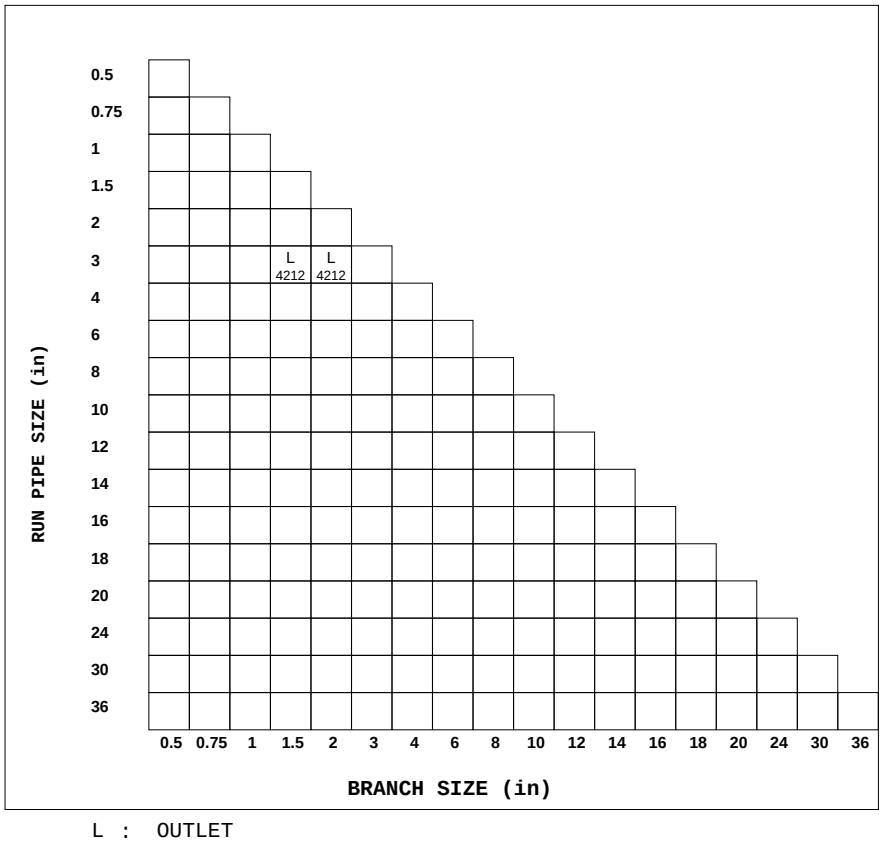
PIPING CLASS
A2AS REV NO. 2

BRANCH TABLE (T_A2AS_4)



L : OUTLET

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PIPING CLASS

A2AW **REV NO. 2**

Material : Killed CS
Rating : ASME CLASS 150
Flange Face : RF/FF
C.A.(mm) : 3.00
Gasket : Spiral Wound
Service : UTILITY - WATER SERVICE, CATEGORY D" FLUID : " / COOLING WATER SUPPLY / COOLING WATER RETURN / SERVICE WATER / RAW WATER (A/G)

Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
25	THE WELDED PIPES SHALL BE GROOVING CORROSION RESISTANT
30	RAW WATER DESIGN CONDITIONS SHALL BE SUPPLIED BY 3RD PARTY RAW WATER SUPPLIER

DETAIL NOTES :

NO.	DESCRIPTION
38	TO BE USED FOR STAND PIPE
999	HOLD ITEMS. ORDER PLACEMENT SHALL NOT BE DONE BEFORE RELEASING HOLD.

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
24	FULL PORT (Q)
200	WITH JACK SCREW (FO)
211	FF (B,F,G)
541	NPT(F) (CA,L)
714	SW - NPT(F) (V)
773	CLASS 300 (B,F,G,V)
2499	ASME B16.47 SERIES A RF (B,F,G)
3001	INSULATION GASKET KIT AND BOLTS FOR FLANGE (G)
4201	EXTERNALLY EPOXY COATED FOR UNDERGROUND (P)
4212	WELDOLET FOR STAND PIPE (L)
4602	DISSIMILAR TYPE CHECK VALVE (X)

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PIPING CLASS
A2AW REV NO. 2

PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P01A-0010P	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	0.75		SCH160		P01A-0010R	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1		SCH160		P01A-0014M	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1.5		SCH160		P01A-0015J	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	2		XS		P01A-000YX	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	3		STD		P01A-000YM	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	4		STD		P01A-000YU	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	6		STD		P01A-000Z3	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	8		SCH30		P01A-001WL	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	10		SCH30		P01A-0016U	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	12		SCH30		P01A-0017K	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	14		SCH20		P01A-0017A	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	16		SCH20		P01A-0018E	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	18		SCH20		P01A-00438	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE	
1	20		STD		P01A-0042G	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE	
1	24		STD		P01A-0042H	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE	
1	30		STD		P01A-0042J	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE	
1	36		STD		P01A-00439	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE	
1	40		11.13mm		P01A-009RJ	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE	
1	42		11.13mm		P01A-0084W	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE	
1	48		11.91mm		P01A-008NT	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE	
1	52		12.70mm		P01A-00437	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE	
1	56		14.27mm		P01A-008NU	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE	
1	60		14.27mm		P01A-008NV	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE	
1	64		14.27mm		P01A-008NW	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE	
1	68		15.88mm		P01A-007GK	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE	
1	72		15.88mm		P01A-007GL	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE	
1	76		17.48mm		P01A-008NX	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE	
1	80		17.48mm		P01A-008T8	Pipe ASTM A672 Grade B60 Class 12 EFW ASME B36.10M/B36.19M BE	
1	84		17.48mm		P01A-008Y6	Pipe ASTM A672 Grade B60 Class 12 EFW ASME B36.10M/B36.19M BE	
1	92		17.48mm		P01A-008Y7	Pipe ASTM A672 Grade B60 Class 12 EFW ASME B36.10M/B36.19M BE	
1	96		19.05mm		P01A-008TB	Pipe ASTM A672 Grade B60 Class 12 EFW ASME B36.10M/B36.19M BE	
1	104		19.05mm		P01A-008YD	Pipe ASTM A672 Grade B60 Class 12 EFW ASME B36.10M/B36.19M BE	
1	108		19.05mm		P01A-008YE	Pipe ASTM A672 Grade B60 Class 12 EFW ASME B36.10M/B36.19M BE	
4201	18		SCH20		P01A-008RK	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE Epoxy coated	
4201	20		STD		P01A-008RL	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE Epoxy coated	
4201	24		STD		P01A-008RM	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE Epoxy coated	
4201	30		STD		P01A-008RN	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE Epoxy coated	
4201	36		STD		P01A-008RP	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE Epoxy coated	
4201	42		11.13mm		P01A-008RR	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE Epoxy coated	
4201	48		11.91mm		P01A-008RS	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE Epoxy coated	
4201	52		12.70mm		P01A-008RT	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE Epoxy coated	
4201	56		14.27mm		P01A-008RU	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE Epoxy coated	
4201	60		14.27mm		P01A-008RV	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE Epoxy coated	
4201	64		14.27mm		P01A-008RW	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE Epoxy coated	
4201	68		15.88mm		P01A-008RX	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE Epoxy coated	
4201	72		15.88mm		P01A-008RY	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE Epoxy coated	
4201	76		17.48mm		P01A-008RZ	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE Epoxy coated	
4201	80		17.48mm		P01A-008XP	Pipe ASTM A672 Grade B60 Class 12 EFW ASME B36.10M/B36.19M BE Epoxy coated	
4201	84		17.48mm		P01A-008Y8	Pipe ASTM A672 Grade B60 Class 12 EFW ASME B36.10M/B36.19M BE Epoxy coated	
4201	92		17.48mm		P01A-008Y9	Pipe ASTM A672 Grade B60 Class 12 EFW ASME B36.10M/B36.19M BE Epoxy coated	
4201	96		19.05mm		P01A-008XR	Pipe ASTM A672 Grade B60 Class 12 EFW ASME B36.10M/B36.19M BE Epoxy coated	
4201	104		19.05mm		P01A-008YA	Pipe ASTM A672 Grade B60 Class 12 EFW ASME B36.10M/B36.19M BE Epoxy coated	
4201	108		19.05mm		P01A-008YB	Pipe ASTM A672 Grade B60 Class 12 EFW ASME B36.10M/B36.19M BE Epoxy coated	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P02B-0001J	90 degree elbow ASTM A105 Class 6000 ASME B16.11 SW	
1	0.75				P02B-0001K	90 degree elbow ASTM A105 Class 6000 ASME B16.11 SW	

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90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P02B-0002E	90 degree elbow ASTM A105 Class 6000 ASME B16.11 SW	
1	1.5				P02B-0002F	90 degree elbow ASTM A105 Class 6000 ASME B16.11 SW	
1	2		XS		P02A-000CP	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		STD		P02A-000CU	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		STD		P02A-000CZ	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		STD		P02A-000D6	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		SCH30		P02A-003DK	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	10		SCH30		P02A-000M3	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	12		SCH30		P02A-000M4	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	14		SCH20		P02A-000FX	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	16		SCH20		P02A-000GM	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	18		SCH20		P02A-000LT	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	20		STD		P02A-0010J	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	24		STD		P02A-0010K	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	30		STD		P02A-000F3	90 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius	
1	36		STD		P02A-001GL	90 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius	
1	42		11.13mm		P02A-001DU	90 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius	
1	48		11.91mm		P02A-004G4	90 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius	
1	52		12.70mm		P02A-002J0	90 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Long radius	
1	56		14.27mm		P02A-001JE	90 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Long radius	
1	60		14.27mm		P02A-004G5	90 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Long radius	
1	64		14.27mm		P02A-004G6	90 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Long radius	
1	68		15.88mm		P02A-003YK	90 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Long radius	
1	72		15.88mm		P02A-003YL	90 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Long radius	
1	76		17.48mm		P02A-001JM	90 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Long radius	
1	80		17.48mm		P02A-002HM	90 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Long radius	
1	84		17.48mm		P02A-004ZD	90 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Long radius	
1	92		17.48mm		P02A-004ZE	90 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Long radius	
1	96		19.05mm		P02A-004WS	90 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Long radius	
1	104		19.05mm		P02A-004ZG	90 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Long radius	
1	108		19.05mm		P02A-004ZF	90 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P03B-0001F	45 degree elbow ASTM A105 Class 6000 ASME B16.11 SW	
1	0.75				P03B-0001G	45 degree elbow ASTM A105 Class 6000 ASME B16.11 SW	
1	1				P03B-0002A	45 degree elbow ASTM A105 Class 6000 ASME B16.11 SW	
1	1.5				P03B-0002B	45 degree elbow ASTM A105 Class 6000 ASME B16.11 SW	
1	2		XS		P03A-000AS	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		STD		P03A-000AX	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		STD		P03A-000B1	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		STD		P03A-000B9	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		SCH30		P03A-003BE	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	10		SCH30		P03A-000JT	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	12		SCH30		P03A-000JU	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	14		SCH20		P03A-000DW	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	16		SCH20		P03A-000EM	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	18		SCH20		P03A-001DX	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	20		STD		P03A-000X1	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	24		STD		P03A-000X2	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	30		STD		P03A-000D0	45 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius	
1	36		STD		P03A-001BS	45 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius	
1	42		11.13mm		P03A-00194	45 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius	
1	48		11.91mm		P03A-004DC	45 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius	
1	52		12.70mm		P03A-002FH	45 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Long radius	
1	56		14.27mm		P03A-001DC	45 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Long radius	
1	60		14.27mm		P03A-004DD	45 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Long radius	
1	64		14.27mm		P03A-004DE	45 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Long radius	
1	68		15.88mm		P03A-003W8	45 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Long radius	

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45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	72		15.88mm		P03A-003W9	45 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Long radius	
1	76		17.48mm		P03A-001DL	45 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Long radius	
1	80		17.48mm		P03A-002F5	45 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Long radius	
1	84		17.48mm		P03A-004JV	45 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Long radius	
1	92		17.48mm		P03A-004JW	45 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Long radius	
1	96		19.05mm		P03A-004G8	45 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Long radius	
1	104		19.05mm		P03A-004JX	45 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Long radius	
1	108		19.05mm		P03A-004JY	45 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P21B-0001F	Straight tee ASTM A105 Class 6000 ASME B16.11 SW	
1	0.75				P21B-0001G	Straight tee ASTM A105 Class 6000 ASME B16.11 SW	
1	1				P21B-00026	Straight tee ASTM A105 Class 6000 ASME B16.11 SW	
1	1.5				P21B-00027	Straight tee ASTM A105 Class 6000 ASME B16.11 SW	
1	2		XS		P21A-001CJ	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		STD		P21A-001CU	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		STD		P21A-001CW	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6		STD		P21A-001D2	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8		SCH30		P21A-003WV	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10		SCH30		P21A-00259	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12		SCH30		P21A-0025A	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14		SCH20		P21A-00206	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16		SCH20		P21A-0020X	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18		SCH20		P21A-001PJ	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20		STD		P21A-001C7	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24		STD		P21A-001CC	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30		STD		P21A-001YC	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	36		STD		P21A-001G4	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	42		11.13mm		P21A-001J8	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	48		11.91mm		P21A-001MM	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	52		12.70mm		P21A-003GJ	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	56		14.27mm		P21A-004YM	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	60		14.27mm		P21A-004YN	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	64		14.27mm		P21A-004YP	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	68		15.88mm		P21A-004G2	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	72		15.88mm		P21A-004G3	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	76		17.48mm		P21A-004YR	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	80		17.48mm		P21A-003G9	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	84		17.48mm		P21A-0052Y	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	92		17.48mm		P21A-0052Z	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	96		19.05mm		P21A-0050L	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	104		19.05mm		P21A-0052X	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	108		19.05mm		P21A-00530	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75			P24B-00030	Reducing tee ASTM A105 Class 6000 ASME B16.11 SW	
1	1.5	0.75			P24B-00032	Reducing tee ASTM A105 Class 6000 ASME B16.11 SW	
1	1.5	1			P24B-0004J	Reducing tee ASTM A105 Class 6000 ASME B16.11 SW	
1	2	1	XS	SCH160	P24A-00GMB	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	XS	SCH160	P24A-005K9	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	STD	SCH160	P24A-00GMC	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	STD	XS	P24A-002HW	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P24A-002HY	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P24A-0021K	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	STD	P24A-0021A	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P24A-00229	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH30	STD	P24A-00JVH	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	8	6	SCH30	STD	P24A-00JVG	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	SCH30	STD	P24A-00GNR	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	SCH30	STD	P24A-0060W	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	SCH30	SCH30	P24A-00J15	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	SCH30	STD	P24A-00HKT	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH30	SCH30	P24A-00M36	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH30	SCH30	P24A-003ET	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	SCH20	STD	P24A-00K0M	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	SCH20	SCH30	P24A-00M37	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	SCH20	SCH30	P24A-003ER	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	SCH20	SCH30	P24A-003ES	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	6	SCH20	STD	P24A-00GU4	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	SCH20	SCH30	P24A-00M38	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	SCH20	SCH30	P24A-00KSH	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	SCH20	SCH30	P24A-003XN	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	SCH20	SCH20	P24A-002XF	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	8	SCH20	SCH30	P24A-00BNK	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	10	SCH20	SCH30	P24A-00BF6	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	12	SCH20	SCH30	P24A-00BH0	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	14	SCH20	SCH20	P24A-002WT	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	16	SCH20	SCH20	P24A-002X5	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	8	STD	SCH30	P24A-00M39	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	10	STD	SCH30	P24A-00BT8	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	12	STD	SCH30	P24A-00BUT	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	14	STD	SCH20	P24A-00BWB	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	16	STD	SCH20	P24A-006W3	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	18	STD	SCH20	P24A-006WD	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	10	STD	SCH30	P24A-00C5X	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	12	STD	SCH30	P24A-00C7C	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	14	STD	SCH20	P24A-00K0C	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	16	STD	SCH20	P24A-00CAD	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	18	STD	SCH20	P24A-006WF	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	20	STD	STD	P24A-004SV	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	10	STD	SCH30	P24A-00CXV	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	12	STD	SCH30	P24A-00CZ4	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	14	STD	SCH20	P24A-003VR	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	16	STD	SCH20	P24A-003VS	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	18	STD	SCH20	P24A-003VT	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	20	STD	STD	P24A-0087D	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	24	STD	STD	P24A-005XW	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	36	16	STD	SCH20	P24A-00GU6	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	36	18	STD	SCH20	P24A-0087J	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	36	20	STD	STD	P24A-0087K	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	36	24	STD	STD	P24A-00DVT	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	36	30	STD	STD	P24A-007WA	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	42	16	11.13mm	SCH20	P24A-00N3H	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	42	18	11.13mm	SCH20	P24A-00N3J	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	42	20	11.13mm	STD	P24A-00EG6	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	42	24	11.13mm	STD	P24A-00EH8	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	42	30	11.13mm	STD	P24A-007WE	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	42	36	11.13mm	STD	P24A-007KK	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	48	24	11.91mm	STD	P24A-00NR2	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	48	30	11.91mm	STD	P24A-00NR3	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	48	36	11.91mm	STD	P24A-00F3N	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	48	42	11.91mm	11.13mm	P24A-00NR4	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	52	30	12.70mm	STD	P24A-00NR5	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	52	36	12.70mm	STD	P24A-00NR6	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	52	42	12.70mm	11.13mm	P24A-00NSM	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	52	48	12.70mm	11.91mm	P24A-00NSN	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	56	30	14.27mm	STD	P24A-00NR7	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	56	36	14.27mm	STD	P24A-00NR8	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	56	42	14.27mm	11.13mm	P24A-00NR9	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	56	48	14.27mm	11.91mm	P24A-00NSL	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	56	52	14.27mm	12.70mm	P24A-00NRA	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	60	30	14.27mm	STD	P24A-00NRB	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	60	36	14.27mm	STD	P24A-00NRC	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	60	42	14.27mm	11.13mm	P24A-00NSJ	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	60	48	14.27mm	11.91mm	P24A-00NSK	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	60	52	14.27mm	12.70mm	P24A-00NRD	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	60	56	14.27mm	14.27mm	P24A-00NRE	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	64	36	14.27mm	STD	P24A-00NRF	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	64	42	14.27mm	11.13mm	P24A-00NSG	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	64	48	14.27mm	11.91mm	P24A-00NSH	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	64	52	14.27mm	12.70mm	P24A-00NRG	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	64	56	14.27mm	14.27mm	P24A-00NRH	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	64	60	14.27mm	14.27mm	P24A-00NRJ	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	68	36	15.88mm	STD	P24A-00NRK	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	68	42	15.88mm	11.13mm	P24A-00NSE	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	68	48	15.88mm	11.91mm	P24A-00NSF	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	68	52	15.88mm	12.70mm	P24A-00NRL	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	68	56	15.88mm	14.27mm	P24A-00NRM	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	68	60	15.88mm	14.27mm	P24A-00NRN	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	68	64	15.88mm	14.27mm	P24A-00NRP	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	72	36	15.88mm	STD	P24A-00NRR	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	72	42	15.88mm	11.13mm	P24A-00NSC	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	72	48	15.88mm	11.91mm	P24A-00NSD	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	72	52	15.88mm	12.70mm	P24A-00NRS	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	72	56	15.88mm	14.27mm	P24A-00NRT	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	72	60	15.88mm	14.27mm	P24A-00NRU	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	72	64	15.88mm	14.27mm	P24A-00NRV	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	72	68	15.88mm	15.88mm	P24A-00L0C	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	76	42	17.48mm	11.13mm	P24A-00PDC	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	76	48	17.48mm	11.91mm	P24A-00PDD	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	76	52	17.48mm	12.70mm	P24A-00PDE	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	76	56	17.48mm	14.27mm	P24A-00PDF	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	76	60	17.48mm	14.27mm	P24A-00PDG	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	76	64	17.48mm	14.27mm	P24A-00PDH	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	76	68	17.48mm	15.88mm	P24A-00PDJ	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	76	72	17.48mm	15.88mm	P24A-00PDK	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	80	42	17.48mm	11.13mm	P24A-00NSA	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	80	48	17.48mm	11.91mm	P24A-00NSB	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	80	52	17.48mm	12.70mm	P24A-00NRW	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	80	56	17.48mm	14.27mm	P24A-00NRX	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	80	60	17.48mm	14.27mm	P24A-00NRY	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	80	64	17.48mm	14.27mm	P24A-00NRZ	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	80	68	17.48mm	15.88mm	P24A-00NS0	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	80	72	17.48mm	15.88mm	P24A-00NS1	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	80	76	17.48mm	17.48mm	P24A-00PDB	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	84	42	17.48mm	11.13mm	P24A-00PHT	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	84	48	17.48mm	11.91mm	P24A-00PHU	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	84	52	17.48mm	12.70mm	P24A-00PHV	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	84	56	17.48mm	14.27mm	P24A-00PHW	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	84	60	17.48mm	14.27mm	P24A-00PHX	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	84	64	17.48mm	14.27mm	P24A-00PGN	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	84	68	17.48mm	15.88mm	P24A-00PGP	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	84	72	17.48mm	15.88mm	P24A-00PH6	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	84	76	17.48mm	17.48mm	P24A-00PHY	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	84	80	17.48mm	17.48mm	P24A-00PHZ	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	

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REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	92	48	17.48mm	11.91mm	P24A-00PGR	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	92	52	17.48mm	12.70mm	P24A-00PGS	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	92	56	17.48mm	14.27mm	P24A-00PGT	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	92	60	17.48mm	14.27mm	P24A-00PGU	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	92	64	17.48mm	14.27mm	P24A-00PGV	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	92	68	17.48mm	15.88mm	P24A-00PGW	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	92	72	17.48mm	15.88mm	P24A-00PGX	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	92	76	17.48mm	17.48mm	P24A-00PGY	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	92	80	17.48mm	17.48mm	P24A-00PGZ	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	96	48	19.05mm	11.91mm	P24A-00P5D	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	96	52	19.05mm	12.70mm	P24A-00P5E	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	96	56	19.05mm	14.27mm	P24A-00P5F	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	96	60	19.05mm	14.27mm	P24A-00P5G	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	96	64	19.05mm	14.27mm	P24A-00P5H	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	96	68	19.05mm	15.88mm	P24A-00P5J	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	96	72	19.05mm	15.88mm	P24A-00P5K	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	96	76	19.05mm	17.48mm	P24A-00PDA	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	96	80	19.05mm	17.48mm	P24A-00P5L	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	96	92	19.05mm	17.48mm	P24A-00PJ6	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	104	48	19.05mm	11.91mm	P24A-00PHG	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	104	52	19.05mm	12.70mm	P24A-00PH0	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	104	56	19.05mm	14.27mm	P24A-00PHH	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	104	60	19.05mm	14.27mm	P24A-00PHJ	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	104	64	19.05mm	14.27mm	P24A-00PHK	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	104	68	19.05mm	15.88mm	P24A-00PHL	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	104	72	19.05mm	15.88mm	P24A-00PHM	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	104	76	19.05mm	17.48mm	P24A-00PHN	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	104	80	19.05mm	17.48mm	P24A-00PHP	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	104	92	19.05mm	17.48mm	P24A-00PHR	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	104	96	19.05mm	19.05mm	P24A-00PHS	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	108	56	19.05mm	14.27mm	P24A-00PH7	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	108	60	19.05mm	14.27mm	P24A-00PH8	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	108	64	19.05mm	14.27mm	P24A-00PH9	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	108	68	19.05mm	15.88mm	P24A-00PHA	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	108	72	19.05mm	15.88mm	P24A-00PHB	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	108	76	19.05mm	17.48mm	P24A-00PHC	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	108	80	19.05mm	17.48mm	P24A-00PHD	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	108	92	19.05mm	17.48mm	P24A-00PHE	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	108	96	19.05mm	19.05mm	P24A-00PHF	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	STD	XS	P27A-001MZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P27A-001N0	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P27A-00189	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	STD	P27A-001AZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P27A-001GW	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH30	STD	P27A-00ED2	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH30	STD	P27A-00ECY	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	SCH30	STD	P27A-003MK	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	SCH30	STD	P27A-003ML	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	SCH30	SCH30	P27A-004T9	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	SCH30	STD	P27A-003MN	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH30	SCH30	P27A-004XA	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH30	SCH30	P27A-0028K	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	SCH20	STD	P27A-00518	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	SCH20	SCH30	P27A-0052J	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	SCH20	SCH30	P27A-0028G	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	SCH20	SCH30	P27A-0028H	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	16	8	SCH20	SCH30	P27A-0059E	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	SCH20	SCH30	P27A-003NC	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	SCH20	SCH30	P27A-002GH	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	SCH20	SCH20	P27A-001V2	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	10	SCH20	SCH30	P27A-0084J	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	12	SCH20	SCH30	P27A-0084K	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	14	SCH20	SCH20	P27A-001UY	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	16	SCH20	SCH20	P27A-001WN	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	12	STD	SCH30	P27A-0082K	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	14	STD	SCH20	P27A-0082L	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	16	STD	SCH20	P27A-0082M	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	18	STD	SCH20	P27A-0084N	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	16	STD	SCH20	P27A-0084T	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	18	STD	SCH20	P27A-0084U	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	20	STD	STD	P27A-001A8	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	20	STD	STD	P27A-001S0	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	24	STD	STD	P27A-001M7	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	36	24	STD	STD	P27A-00BGR	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	36	30	STD	STD	P27A-00938	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	42	30	11.13mm	STD	P27A-0093D	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	42	36	11.13mm	STD	P27A-008WA	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	42	40	11.13mm	11.13mm	P27A-00JRP	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	48	40	11.91mm	11.13mm	P27A-00JRR	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	48	42	11.91mm	11.13mm	P27A-00H94	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	52	30	12.70mm	STD	P27A-00H95	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	52	36	12.70mm	STD	P27A-00H96	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	52	42	12.70mm	11.13mm	P27A-00HA3	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	52	48	12.70mm	11.91mm	P27A-00HA4	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	56	36	14.27mm	STD	P27A-00H97	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	56	42	14.27mm	11.13mm	P27A-00HA2	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	56	48	14.27mm	11.91mm	P27A-00H98	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	56	52	14.27mm	12.70mm	P27A-00H99	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	60	36	14.27mm	STD	P27A-00H9A	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	60	42	14.27mm	11.13mm	P27A-00HA0	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	60	48	14.27mm	11.91mm	P27A-00HA1	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	60	52	14.27mm	12.70mm	P27A-00H9B	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	60	56	14.27mm	14.27mm	P27A-00H9C	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	64	42	14.27mm	11.13mm	P27A-00HA5	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	64	48	14.27mm	11.91mm	P27A-00HA6	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	64	52	14.27mm	12.70mm	P27A-00H9D	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	64	56	14.27mm	14.27mm	P27A-00H9E	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	64	60	14.27mm	14.27mm	P27A-00H9F	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	68	48	15.88mm	11.91mm	P27A-00H9Z	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	68	52	15.88mm	12.70mm	P27A-00H9G	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	68	56	15.88mm	14.27mm	P27A-00H9H	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	68	60	15.88mm	14.27mm	P27A-00H9J	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	68	64	15.88mm	14.27mm	P27A-00H9K	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	72	48	15.88mm	11.91mm	P27A-00H9L	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	72	52	15.88mm	12.70mm	P27A-00H9M	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	72	56	15.88mm	14.27mm	P27A-00H9N	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	72	60	15.88mm	14.27mm	P27A-00H9P	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	72	64	15.88mm	14.27mm	P27A-00H9R	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	72	68	15.88mm	15.88mm	P27A-00F8C	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	76	52	17.48mm	12.70mm	P27A-00HMZ	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	76	56	17.48mm	14.27mm	P27A-0089E	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	76	60	17.48mm	14.27mm	P27A-00HN0	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	76	64	17.48mm	14.27mm	P27A-00HN1	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	76	68	17.48mm	15.88mm	P27A-00HN2	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	76	72	17.48mm	15.88mm	P27A-00HN3	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	

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CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	80	56	17.48mm	14.27mm	P27A-00H9S	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	80	60	17.48mm	14.27mm	P27A-00H9T	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	80	64	17.48mm	14.27mm	P27A-00H9U	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	80	68	17.48mm	15.88mm	P27A-00H9V	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	80	72	17.48mm	15.88mm	P27A-00H9W	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	80	76	17.48mm	17.48mm	P27A-00HVR	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	84	56	17.48mm	14.27mm	P27A-00HVT	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	84	60	17.48mm	14.27mm	P27A-00HVL	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	84	64	17.48mm	14.27mm	P27A-00HVU	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	84	68	17.48mm	15.88mm	P27A-00HVV	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	84	72	17.48mm	15.88mm	P27A-00HVS	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	84	76	17.48mm	17.48mm	P27A-00HVW	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	84	80	17.48mm	17.48mm	P27A-00HVX	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	92	68	17.48mm	15.88mm	P27A-00HVY	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	92	72	17.48mm	15.88mm	P27A-00HVZ	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	92	76	17.48mm	17.48mm	P27A-00HW0	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	92	80	17.48mm	17.48mm	P27A-00HW1	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	92	84	17.48mm	17.48mm	P27A-00HVM	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	96	72	19.05mm	15.88mm	P27A-00HN4	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	96	76	19.05mm	17.48mm	P27A-00HN5	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	96	80	19.05mm	17.48mm	P27A-00HN6	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	96	84	19.05mm	17.48mm	P27A-00HW2	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	96	92	19.05mm	17.48mm	P27A-00HW3	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	104	80	19.05mm	17.48mm	P27A-00HW4	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	104	84	19.05mm	17.48mm	P27A-00HW6	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	104	92	19.05mm	17.48mm	P27A-00HW5	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	104	96	19.05mm	19.05mm	P27A-00HW7	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	108	84	19.05mm	17.48mm	P27A-00HW8	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	108	92	19.05mm	17.48mm	P27A-00HW9	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	108	96	19.05mm	19.05mm	P27A-00HWA	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	108	104	19.05mm	19.05mm	P27A-00HWB	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	STD	XS	P28A-001N5	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P28A-001N6	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P28A-0018B	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	STD	P28A-001AS	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P28A-00182	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH30	STD	P28A-00BFY	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH30	STD	P28A-00BFZ	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	SCH30	STD	P28A-003MD	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	SCH30	STD	P28A-003ME	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	SCH30	SCH30	P28A-00A4S	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	SCH30	STD	P28A-003MG	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH30	SCH30	P28A-00BGV	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH30	SCH30	P28A-0027C	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	SCH20	STD	P28A-0096P	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	SCH20	SCH30	P28A-00DA3	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	SCH20	SCH30	P28A-00279	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	SCH20	SCH30	P28A-0027A	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	SCH20	SCH30	P28A-00DA4	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	SCH20	SCH30	P28A-003N6	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	SCH20	SCH30	P28A-002GB	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	SCH20	SCH20	P28A-001WG	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	10	SCH20	SCH30	P28A-004UL	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	12	SCH20	SCH30	P28A-004UM	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	14	SCH20	SCH20	P28A-001WD	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	16	SCH20	SCH20	P28A-001T1	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	20	12	STD	SCH30	P28A-004SH	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	14	STD	SCH20	P28A-004SJ	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	16	STD	SCH20	P28A-004SK	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	18	STD	SCH20	P28A-004UN	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	16	STD	SCH20	P28A-004UR	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	18	STD	SCH20	P28A-004US	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	20	STD	STD	P28A-001AW	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	20	STD	STD	P28A-001LZ	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	24	STD	STD	P28A-001N1	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	36	24	STD	STD	P28A-008FS	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	36	30	STD	STD	P28A-005V7	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	42	30	11.13mm	STD	P28A-005VD	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	42	36	11.13mm	STD	P28A-005M4	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	42	40	11.13mm	11.13mm	P28A-00G1X	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	48	40	11.91mm	11.13mm	P28A-00G1Y	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	48	42	11.91mm	11.13mm	P28A-00EGU	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	52	30	12.70mm	STD	P28A-00EGV	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	52	36	12.70mm	STD	P28A-00EGW	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	52	42	12.70mm	11.13mm	P28A-00EGX	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	52	48	12.70mm	11.91mm	P28A-00EGY	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	56	36	14.27mm	STD	P28A-00EGZ	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	56	42	14.27mm	11.13mm	P28A-00EH0	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	56	48	14.27mm	11.91mm	P28A-00EH1	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	56	52	14.27mm	12.70mm	P28A-00EH2	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	60	36	14.27mm	STD	P28A-00EH3	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	60	42	14.27mm	11.13mm	P28A-00EH4	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	60	48	14.27mm	11.91mm	P28A-00EH5	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	60	52	14.27mm	12.70mm	P28A-00EH6	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	60	56	14.27mm	14.27mm	P28A-00EH7	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	64	42	14.27mm	11.13mm	P28A-00EH8	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	64	48	14.27mm	11.91mm	P28A-00EH9	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	64	52	14.27mm	12.70mm	P28A-00EHA	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	64	56	14.27mm	14.27mm	P28A-00EHB	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	64	60	14.27mm	14.27mm	P28A-00EHC	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	68	48	15.88mm	11.91mm	P28A-00EHD	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	68	52	15.88mm	12.70mm	P28A-00EHE	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	68	56	15.88mm	14.27mm	P28A-00EHF	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	68	60	15.88mm	14.27mm	P28A-00EHG	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	68	64	15.88mm	14.27mm	P28A-00EHH	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	72	48	15.88mm	11.91mm	P28A-00EHJ	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	72	52	15.88mm	12.70mm	P28A-00EHK	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	72	56	15.88mm	14.27mm	P28A-00EHL	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	72	60	15.88mm	14.27mm	P28A-00EHM	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	72	64	15.88mm	14.27mm	P28A-00EHN	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	72	68	15.88mm	15.88mm	P28A-00CC9	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	76	52	17.48mm	12.70mm	P28A-00EXH	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	76	56	17.48mm	14.27mm	P28A-004ZH	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	76	60	17.48mm	14.27mm	P28A-00EXJ	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	76	64	17.48mm	14.27mm	P28A-00EXK	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	76	68	17.48mm	15.88mm	P28A-00EXL	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	76	72	17.48mm	15.88mm	P28A-00EXM	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	80	56	17.48mm	14.27mm	P28A-00EHP	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	80	60	17.48mm	14.27mm	P28A-00EHR	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	80	64	17.48mm	14.27mm	P28A-00EHS	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	80	68	17.48mm	15.88mm	P28A-00EHT	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	80	72	17.48mm	15.88mm	P28A-00EHU	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	80	76	17.48mm	17.48mm	P28A-00F58	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	84	56	17.48mm	14.27mm	P28A-00F59	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	84	60	17.48mm	14.27mm	P28A-00F51	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	84	64	17.48mm	14.27mm	P28A-00F5A	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	84	68	17.48mm	15.88mm	P28A-00F5B	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	84	72	17.48mm	15.88mm	P28A-00F5C	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	84	76	17.48mm	17.48mm	P28A-00F5D	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	84	80	17.48mm	17.48mm	P28A-00F5E	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	92	68	17.48mm	15.88mm	P28A-00F5F	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	92	72	17.48mm	15.88mm	P28A-00F5G	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	92	76	17.48mm	17.48mm	P28A-00F5H	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	92	80	17.48mm	17.48mm	P28A-00F5J	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	92	84	17.48mm	17.48mm	P28A-00F52	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	96	72	19.05mm	15.88mm	P28A-00EXN	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	96	76	19.05mm	17.48mm	P28A-00EXP	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	96	80	19.05mm	17.48mm	P28A-00EXR	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	96	84	19.05mm	17.48mm	P28A-00F5K	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	96	92	19.05mm	17.48mm	P28A-00F5L	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	104	80	19.05mm	17.48mm	P28A-00F53	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	104	84	19.05mm	17.48mm	P28A-00F5M	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	104	92	19.05mm	17.48mm	P28A-00F54	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	104	96	19.05mm	19.05mm	P28A-00F5N	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	108	84	19.05mm	17.48mm	P28A-00F5P	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	108	92	19.05mm	17.48mm	P28A-00F5R	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	108	96	19.05mm	19.05mm	P28A-00F5S	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	
1	108	104	19.05mm	19.05mm	P28A-00F55	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P29B-0002F	Cap ASTM A105 Class 6000 ASME B16.11 SW	
1	0.75				P29B-0002G	Cap ASTM A105 Class 6000 ASME B16.11 SW	
1	1				P29B-0002D	Cap ASTM A105 Class 6000 ASME B16.11 SW	
1	1.5				P29B-0002E	Cap ASTM A105 Class 6000 ASME B16.11 SW	
1	2		XS		P29A-000A1	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		STD		P29A-000BK	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		STD		P29A-000A3	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6		STD		P29A-000A9	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8		SCH30		P29A-000PC	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10		SCH30		P29A-000K7	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12		SCH30		P29A-000PZ	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14		SCH20		P29A-000EA	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16		SCH20		P29A-000F3	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18		SCH20		P29A-000E0	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20		STD		P29A-000B2	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24		STD		P29A-000B8	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	30		STD		P29A-000DU	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	36		STD		P29A-001AF	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	42		11.13mm		P29A-0017S	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	48		11.91mm		P29A-003T0	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	52		12.70mm		P29A-001UC	Cap ASTM A234 Grade WPB Seamless ASME B16.9-modified BW	
1	56		14.27mm		P29A-003T1	Cap ASTM A234 Grade WPB Seamless ASME B16.9-modified BW	
1	60		14.27mm		P29A-003T2	Cap ASTM A234 Grade WPB Seamless ASME B16.9-modified BW	
1	64		14.27mm		P29A-003T3	Cap ASTM A234 Grade WPB Seamless ASME B16.9-modified BW	
1	68		15.88mm		P29A-003B0	Cap ASTM A234 Grade WPB Seamless ASME B16.9-modified BW	
1	72		15.88mm		P29A-003B1	Cap ASTM A234 Grade WPB Seamless ASME B16.9-modified BW	
1	76		17.48mm		P29A-003T4	Cap ASTM A234 Grade WPB Seamless ASME B16.9-modified BW	
1	80		17.48mm		P29A-001TA	Cap ASTM A234 Grade WPB Seamless ASME B16.9-modified BW	
1	84		17.48mm		P29A-005HN	Cap ASTM A234 Grade WPB Seamless ASME B16.9-modified BW	
1	92		17.48mm		P29A-005HP	Cap ASTM A234 Grade WPB Seamless ASME B16.9-modified BW	
1	96		19.05mm		P29A-003WV	Cap ASTM A234 Grade WPB Seamless ASME B16.9-modified BW	
1	104		19.05mm		P29A-005HR	Cap ASTM A234 Grade WPB Seamless ASME B16.9-modified BW	
1	108		19.05mm		P29A-005HS	Cap ASTM A234 Grade WPB Seamless ASME B16.9-modified BW	

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CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
541	0.75				P29B-0000Y	Cap ASTM A105 Class 6000 ASME B16.11 NPT	
541	1				P29B-0000Z	Cap ASTM A105 Class 6000 ASME B16.11 NPT	
541	1.5				P29B-00010	Cap ASTM A105 Class 6000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P41A-000B9	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		XXS		P41A-000BA	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		XXS		P41A-000D8	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		XXS		P41A-000D9	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

CON SWAGED NIPPLE (SNC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	SCH160	P42A-00029	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	SCH160	SCH160	P42A-0009T	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	SCH160	SCH160	P42A-0009U	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	SCH160	SCH160	P42A-0009V	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	SCH160	SCH160	P42A-0009W	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	SCH160	SCH160	P42A-0009X	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	XS	SCH160	P42A-000J6	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	XS	SCH160	P42A-000J7	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	XS	SCH160	P42A-000F8	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	XS	SCH160	P42A-000KZ	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	STD	SCH160	P42A-000L0	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	

ECC SWAGED NIPPLE (SNE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	SCH160	P43A-000AM	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	SCH160	SCH160	P43A-000B4	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	SCH160	SCH160	P43A-000B5	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	SCH160	SCH160	P43A-000B6	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	SCH160	SCH160	P43A-000B7	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	SCH160	SCH160	P43A-000B8	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	XS	SCH160	P43A-000B2	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	XS	SCH160	P43A-000B3	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	XS	SCH160	P43A-000CZ	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	XS	SCH160	P43A-000D0	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	STD	SCH160	P43A-000D1	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	

COUPLING (CPS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P47B-00013	Coupling ASTM A105 Class 6000 ASME B16.11 SW - SW	
1	0.75				P47B-00012	Coupling ASTM A105 Class 6000 ASME B16.11 SW - SW	
1	1				P47B-0002A	Coupling ASTM A105 Class 6000 ASME B16.11 SW - SW	
1	1.5				P47B-0002B	Coupling ASTM A105 Class 6000 ASME B16.11 SW - SW	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5 - 2.5	0.75			P31B-0137D	Outlet ASTM A105 Class 6000 MSS SP-97 SW	
1	3 - 10	0.75			P31B-007LV	Outlet ASTM A105 Class 6000 MSS SP-97 SW	
1	12 and larger	0.75			P31B-0136N	Outlet ASTM A105 Class 6000 MSS SP-97 SW	
1	3 - 10	1			P31B-007LN	Outlet ASTM A105 Class 6000 MSS SP-97 SW	
1	12 and larger	1			P31B-0136P	Outlet ASTM A105 Class 6000 MSS SP-97 SW	
1	4 - 5	1.5			P31B-004LE	Outlet ASTM A105 Class 6000 MSS SP-97 SW	
1	6 - 8	1.5			P31B-005T4	Outlet ASTM A105 Class 6000 MSS SP-97 SW	
1	10 - 18	1.5			P31B-007LF	Outlet ASTM A105 Class 6000 MSS SP-97 SW	
1	20 and larger	1.5			P31B-0137E	Outlet ASTM A105 Class 6000 MSS SP-97 SW	
541	1	0.75			P31B-005HL	Outlet ASTM A105 Class 6000 MSS SP-97 NPT	

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OUTLET (L)							
OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
541	1.5 - 2.5	0.75			P31B-0137F	Outlet ASTM A105 Class 6000 MSS SP-97 NPT	
541	3 - 10	0.75			P31B-007KP	Outlet ASTM A105 Class 6000 MSS SP-97 NPT	
541	12 and larger	0.75			P31B-0138A	Outlet ASTM A105 Class 6000 MSS SP-97 NPT	
1	6	2	STD	XS	P31B-007SH	Outlet ASTM A105 MSS SP-97 BW	
1	8	2	SCH30	XS	P31B-00X36	Outlet ASTM A105 MSS SP-97 BW	
1	10	2	SCH30	XS	P31B-00NVF	Outlet ASTM A105 MSS SP-97 BW	
1	12	2	SCH30	XS	P31B-00NVL	Outlet ASTM A105 MSS SP-97 BW	
1	14	2	SCH20	XS	P31B-00TF9	Outlet ASTM A105 MSS SP-97 BW	
1	16	2	SCH20	XS	P31B-00TF8	Outlet ASTM A105 MSS SP-97 BW	
1	18	2	SCH20	XS	P31B-00NVX	Outlet ASTM A105 MSS SP-97 BW	
1	20	2	STD	XS	P31B-00994	Outlet ASTM A105 MSS SP-97 BW	
1	24	2	STD	XS	P31B-0092Z	Outlet ASTM A105 MSS SP-97 BW	
1	30	2	STD	XS	P31B-008P5	Outlet ASTM A105 MSS SP-97 BW	
1	36	2	STD	XS	P31B-00NX8	Outlet ASTM A105 MSS SP-97 BW	
1	42	2	11.13mm	XS	P31B-00NPV	Outlet ASTM A105 MSS SP-97 BW	
1	48	2	11.91mm	XS	P31B-00VUX	Outlet ASTM A105 MSS SP-97 BW	
1	52	2	12.70mm	XS	P31B-00TTP	Outlet ASTM A105 MSS SP-97 BW	
1	56	2	14.27mm	XS	P31B-00NRA	Outlet ASTM A105 MSS SP-97 BW	
1	60	2	14.27mm	XS	P31B-00YBP	Outlet ASTM A105 MSS SP-97 BW	
1	64	2	14.27mm	XS	P31B-00YBW	Outlet ASTM A105 MSS SP-97 BW	
1	68	2	15.88mm	XS	P31B-00Y9L	Outlet ASTM A105 MSS SP-97 BW	
1	72	2	15.88mm	XS	P31B-00Y9J	Outlet ASTM A105 MSS SP-97 BW	
1	76	2	17.48mm	XS	P31B-011PP	Outlet ASTM A105 MSS SP-97 BW	
1	80	2	17.48mm	XS	P31B-00TTY	Outlet ASTM A105 MSS SP-97 BW	
1	84	2	17.48mm	XS	P31B-011U9	Outlet ASTM A105 MSS SP-97 BW	
1	92	2	17.48mm	XS	P31B-011U1	Outlet ASTM A105 MSS SP-97 BW	
1	96	2	19.05mm	XS	P31B-011AZ	Outlet ASTM A105 MSS SP-97 BW	
1	104	2	19.05mm	XS	P31B-011UH	Outlet ASTM A105 MSS SP-97 BW	
1	108	2	19.05mm	XS	P31B-011UD	Outlet ASTM A105 MSS SP-97 BW	
1	8	3	SCH30	STD	P31B-00X37	Outlet ASTM A105 MSS SP-97 BW	
1	10	3	SCH30	STD	P31B-00NYK	Outlet ASTM A105 MSS SP-97 BW	
1	12	3	SCH30	STD	P31B-00NYR	Outlet ASTM A105 MSS SP-97 BW	
1	14	3	SCH20	STD	P31B-00UPH	Outlet ASTM A105 MSS SP-97 BW	
1	16	3	SCH20	STD	P31B-00TU2	Outlet ASTM A105 MSS SP-97 BW	
1	18	3	SCH20	STD	P31B-00NZ4	Outlet ASTM A105 MSS SP-97 BW	
1	20	3	STD	STD	P31B-008FA	Outlet ASTM A105 MSS SP-97 BW	
1	24	3	STD	STD	P31B-00895	Outlet ASTM A105 MSS SP-97 BW	
1	30	3	STD	STD	P31B-007WY	Outlet ASTM A105 MSS SP-97 BW	
1	36	3	STD	STD	P31B-007P2	Outlet ASTM A105 MSS SP-97 BW	
1	42	3	11.13mm	STD	P31B-00AM8	Outlet ASTM A105 MSS SP-97 BW	
1	48	3	11.91mm	STD	P31B-00VUY	Outlet ASTM A105 MSS SP-97 BW	
1	52	3	12.70mm	STD	P31B-00TTR	Outlet ASTM A105 MSS SP-97 BW	
1	56	3	14.27mm	STD	P31B-00NRB	Outlet ASTM A105 MSS SP-97 BW	
1	60	3	14.27mm	STD	P31B-00A94	Outlet ASTM A105 MSS SP-97 BW	
1	64	3	14.27mm	STD	P31B-00YBX	Outlet ASTM A105 MSS SP-97 BW	
1	68	3	15.88mm	STD	P31B-00Y9M	Outlet ASTM A105 MSS SP-97 BW	
1	72	3	15.88mm	STD	P31B-00A3N	Outlet ASTM A105 MSS SP-97 BW	
1	76	3	17.48mm	STD	P31B-011PR	Outlet ASTM A105 MSS SP-97 BW	
1	80	3	17.48mm	STD	P31B-00TTZ	Outlet ASTM A105 MSS SP-97 BW	
1	84	3	17.48mm	STD	P31B-011UA	Outlet ASTM A105 MSS SP-97 BW	
1	92	3	17.48mm	STD	P31B-011U2	Outlet ASTM A105 MSS SP-97 BW	
1	96	3	19.05mm	STD	P31B-011B0	Outlet ASTM A105 MSS SP-97 BW	
1	104	3	19.05mm	STD	P31B-011UJ	Outlet ASTM A105 MSS SP-97 BW	
1	108	3	19.05mm	STD	P31B-011UE	Outlet ASTM A105 MSS SP-97 BW	
1	12	4	SCH30	STD	P31B-00P1G	Outlet ASTM A105 MSS SP-97 BW	
1	14	4	SCH20	STD	P31B-00UPJ	Outlet ASTM A105 MSS SP-97 BW	
1	16	4	SCH20	STD	P31B-00TU3	Outlet ASTM A105 MSS SP-97 BW	
1	18	4	SCH20	STD	P31B-00P1V	Outlet ASTM A105 MSS SP-97 BW	
1	20	4	STD	STD	P31B-008D3	Outlet ASTM A105 MSS SP-97 BW	

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	L / RUN	S / BRN	(L)	(S)			
1	24	4	STD	STD	P31B-0086X	Outlet ASTM A105 MSS SP-97 BW	
1	30	4	STD	STD	P31B-007US	Outlet ASTM A105 MSS SP-97 BW	
1	36	4	STD	STD	P31B-00AER	Outlet ASTM A105 MSS SP-97 BW	
1	42	4	11.13mm	STD	P31B-00A8J	Outlet ASTM A105 MSS SP-97 BW	
1	48	4	11.91mm	STD	P31B-00VUZ	Outlet ASTM A105 MSS SP-97 BW	
1	52	4	12.70mm	STD	P31B-00TTS	Outlet ASTM A105 MSS SP-97 BW	
1	56	4	14.27mm	STD	P31B-00NRC	Outlet ASTM A105 MSS SP-97 BW	
1	60	4	14.27mm	STD	P31B-009WH	Outlet ASTM A105 MSS SP-97 BW	
1	64	4	14.27mm	STD	P31B-00YBY	Outlet ASTM A105 MSS SP-97 BW	
1	68	4	15.88mm	STD	P31B-00Y9N	Outlet ASTM A105 MSS SP-97 BW	
1	72	4	15.88mm	STD	P31B-009VN	Outlet ASTM A105 MSS SP-97 BW	
1	76	4	17.48mm	STD	P31B-011PS	Outlet ASTM A105 MSS SP-97 BW	
1	80	4	17.48mm	STD	P31B-00TU0	Outlet ASTM A105 MSS SP-97 BW	
1	84	4	17.48mm	STD	P31B-011UB	Outlet ASTM A105 MSS SP-97 BW	
1	92	4	17.48mm	STD	P31B-011U3	Outlet ASTM A105 MSS SP-97 BW	
1	96	4	19.05mm	STD	P31B-011B1	Outlet ASTM A105 MSS SP-97 BW	
1	104	4	19.05mm	STD	P31B-011UK	Outlet ASTM A105 MSS SP-97 BW	
1	108	4	19.05mm	STD	P31B-011UF	Outlet ASTM A105 MSS SP-97 BW	
1	18	6	SCH20	STD	P31B-00P48	Outlet ASTM A105 MSS SP-97 BW	
1	20	6	STD	STD	P31B-008PZ	Outlet ASTM A105 MSS SP-97 BW	
1	24	6	STD	STD	P31B-008JD	Outlet ASTM A105 MSS SP-97 BW	
1	30	6	STD	STD	P31B-008BS	Outlet ASTM A105 MSS SP-97 BW	
1	36	6	STD	STD	P31B-0085H	Outlet ASTM A105 MSS SP-97 BW	
1	42	6	11.13mm	STD	P31B-00NPW	Outlet ASTM A105 MSS SP-97 BW	
1	48	6	11.91mm	STD	P31B-00VV0	Outlet ASTM A105 MSS SP-97 BW	
1	52	6	12.70mm	STD	P31B-00TTT	Outlet ASTM A105 MSS SP-97 BW	
1	56	6	14.27mm	STD	P31B-00NRD	Outlet ASTM A105 MSS SP-97 BW	
1	60	6	14.27mm	STD	P31B-00YBR	Outlet ASTM A105 MSS SP-97 BW	
1	64	6	14.27mm	STD	P31B-00YBZ	Outlet ASTM A105 MSS SP-97 BW	
1	68	6	15.88mm	STD	P31B-00Y9P	Outlet ASTM A105 MSS SP-97 BW	
1	72	6	15.88mm	STD	P31B-00Y9K	Outlet ASTM A105 MSS SP-97 BW	
1	76	6	17.48mm	STD	P31B-011PT	Outlet ASTM A105 MSS SP-97 BW	
1	80	6	17.48mm	STD	P31B-00TU1	Outlet ASTM A105 MSS SP-97 BW	
1	84	6	17.48mm	STD	P31B-011UC	Outlet ASTM A105 MSS SP-97 BW	
1	92	6	17.48mm	STD	P31B-011U4	Outlet ASTM A105 MSS SP-97 BW	
1	96	6	19.05mm	STD	P31B-011B2	Outlet ASTM A105 MSS SP-97 BW	
1	104	6	19.05mm	STD	P31B-011UL	Outlet ASTM A105 MSS SP-97 BW	
1	108	6	19.05mm	STD	P31B-011UG	Outlet ASTM A105 MSS SP-97 BW	
4212	3	2	STD	XS	P31B-00UUU	Outlet ASTM A105 MSS SP-97 BW	38

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30B-0002D	Plug ASTM A105 ASME B16.11 NPT Round head	
1	0.75				P30B-0002E	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1				P30B-0002F	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1.5				P30B-0002G	Plug ASTM A105 ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P61B-002D4	Flange SW ASTM A105 Class 150 ASME B16.5 RF	
1	0.75		SCH160		P61B-002DE	Flange SW ASTM A105 Class 150 ASME B16.5 RF	
1	1		SCH160		P61B-002DU	Flange SW ASTM A105 Class 150 ASME B16.5 RF	
1	1.5		SCH160		P61B-002EM	Flange SW ASTM A105 Class 150 ASME B16.5 RF	
1	2		XS		P61B-003NK	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	3		STD		P61B-001PW	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	4		STD		P61B-001R8	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	6		STD		P61B-001RT	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	8		SCH30		P61B-003FP	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	10		SCH30		P61B-003FS	Flange WN ASTM A105 Class 150 ASME B16.5 RF	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	12		SCH30		P61B-002TS	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	14		SCH20		P61B-002B6	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	16		SCH20		P61B-002B7	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	18		SCH20		P61B-002B8	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	20		STD		P61B-001JA	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	24		STD		P61B-001NJ	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	30		STD		P61B-001S8	Flange WN ASTM A105 Class 150 ASME B16.47 Series B RF	
1	36		STD		P61B-003M6	Flange WN ASTM A105 Class 150 ASME B16.47 Series B RF	
1	42		11.13mm		P61B-00487	Flange WN ASTM A105 Class 150 ASME B16.47 Series B RF	
1	48		11.91mm		P61B-004BJ	Flange WN ASTM A105 Class 150 ASME B16.47 Series B RF	
1	52		12.70mm		P61B-004D3	Flange WN ASTM A105 Class 150 ASME B16.47 Series B RF	
1	56		14.27mm		P61B-004DR	Flange WN ASTM A105 Class 150 ASME B16.47 Series B RF	
1	60		14.27mm		P61B-004EM	Flange WN ASTM A105 Class 150 ASME B16.47 Series B RF	
1	64		14.27mm		P61B-005H9	Flange WN ASTM A105 Class 150 Standard-drawing RF	
1	68		15.88mm		P61B-005HA	Flange WN ASTM A105 Class 150 Standard-drawing RF	
1	72		15.88mm		P61B-005HC	Flange WN ASTM A105 Class 150 Standard-drawing RF	
1	76		17.48mm		P61B-004GB	Flange WN ASTM A105 Class 150 Standard-drawing RF	
1	80		17.48mm		P61B-005GU	Flange WN ASTM A105 Class 150 Standard-drawing RF	
1	84		17.48mm		P61B-00D2T	Flange WN ASTM A105 Class 150 Standard-drawing RF	
1	92		17.48mm		P61B-005KL	Flange WN ASTM A105 Class 150 Standard-drawing RF	
1	96		19.05mm		P61B-00CXU	Flange WN ASTM A105 Class 150 Standard-drawing RF	
1	104		19.05mm		P61B-00D35	Flange WN ASTM A105 Class 150 Standard-drawing RF	
1	108		19.05mm		P61B-00D36	Flange WN ASTM A105 Class 150 Standard-drawing RF	
211	0.5		SCH160		P61B-0069X	Flange SW ASTM A105 Class 150 ASME B16.5 FF	
211	0.75		SCH160		P61B-00679	Flange SW ASTM A105 Class 150 ASME B16.5 FF	
211	1		SCH160		P61B-0067A	Flange SW ASTM A105 Class 150 ASME B16.5 FF	
211	1.5		SCH160		P61B-0067B	Flange SW ASTM A105 Class 150 ASME B16.5 FF	
211	2		XS		P61B-0067C	Flange WN ASTM A105 Class 150 ASME B16.5 FF	
211	3		STD		P61B-003F9	Flange WN ASTM A105 Class 150 ASME B16.5 FF	
211	4		STD		P61B-003GL	Flange WN ASTM A105 Class 150 ASME B16.5 FF	
211	6		STD		P61B-003GH	Flange WN ASTM A105 Class 150 ASME B16.5 FF	
211	8		SCH30		P61B-009GZ	Flange WN ASTM A105 Class 150 ASME B16.5 FF	
211	10		SCH30		P61B-006X2	Flange WN ASTM A105 Class 150 ASME B16.5 FF	
211	12		SCH30		P61B-00ABY	Flange WN ASTM A105 Class 150 ASME B16.5 FF	
211	14		SCH20		P61B-002LR	Flange WN ASTM A105 Class 150 ASME B16.5 FF	
211	16		SCH20		P61B-002LS	Flange WN ASTM A105 Class 150 ASME B16.5 FF	
211	18		SCH20		P61B-002LT	Flange WN ASTM A105 Class 150 ASME B16.5 FF	
211	20		STD		P61B-003GR	Flange WN ASTM A105 Class 150 ASME B16.5 FF	
211	24		STD		P61B-003GN	Flange WN ASTM A105 Class 150 ASME B16.5 FF	
211	30		STD		P61B-0067D	Flange WN ASTM A105 Class 150 ASME B16.47 Series B FF	
211	36		STD		P61B-0067E	Flange WN ASTM A105 Class 150 ASME B16.47 Series B FF	
211	42		11.13mm		P61B-00BK9	Flange WN ASTM A105 Class 150 ASME B16.47 Series B FF	
211	48		11.91mm		P61B-00BTD	Flange WN ASTM A105 Class 150 ASME B16.47 Series B FF	
2499	30		STD		P61B-002BG	Flange WN ASTM A105 Class 150 ASME B16.47 Series A RF	
2499	36		STD		P61B-007E1	Flange WN ASTM A105 Class 150 ASME B16.47 Series A RF	
2499	42		11.13mm		P61B-008TM	Flange WN ASTM A105 Class 150 ASME B16.47 Series A RF	
2499	56		14.27mm		P61B-00D09	Flange WN ASTM A105 Class 150 ASME B16.47 Series A RF	
773	0.5		SCH160		P61B-001H5	Flange SW ASTM A105 Class 300 ASME B16.5 RF	
773	0.75		SCH160		P61B-001HH	Flange SW ASTM A105 Class 300 ASME B16.5 RF	
773	1		SCH160		P61B-001E8	Flange SW ASTM A105 Class 300 ASME B16.5 RF	
773	1.5		SCH160		P61B-001ET	Flange SW ASTM A105 Class 300 ASME B16.5 RF	
773	2		XS		P61B-001HW	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	3		STD		P61B-001LJ	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	4		STD		P61B-001MC	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	6		STD		P61B-001N2	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	8		SCH30		P61B-008S0	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	10		SCH30		P61B-003LX	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	12		SCH30		P61B-002TV	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	14		SCH20		P61B-002MR	Flange WN ASTM A105 Class 300 ASME B16.5 RF	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
773	16		SCH20		P61B-002MS	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	18		SCH20		P61B-002MT	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	20		STD		P61B-001NT	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	24		STD		P61B-001PA	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	30		STD		P61B-003SW	Flange WN ASTM A105 Class 300 ASME B16.47 Series B RF	
773	36		STD		P61B-004RB	Flange WN ASTM A105 Class 300 ASME B16.47 Series B RF	
773	40		11.13mm		P61B-004GK	Flange WN ASTM A105 Class 300 ASME B16.47 Series B RF	
773	42		11.13mm		P61B-004H7	Flange WN ASTM A105 Class 300 ASME B16.47 Series B RF	
773	48		11.91mm		P61B-00BTE	Flange WN ASTM A105 Class 300 ASME B16.47 Series B RF	

BLIND FLANGE (FB)							
OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67B-000FH	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	0.75				P67B-000FJ	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	1				P67B-000FK	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	1.5				P67B-000FL	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	2				P67B-000FT	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	3				P67B-000FW	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	4				P67B-000FX	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	6				P67B-000FY	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	8				P67B-000FZ	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	10				P67B-000FM	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	12				P67B-000FN	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	14				P67B-000FP	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	16				P67B-000FR	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	18				P67B-000FS	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	20				P67B-000FU	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	24				P67B-000FV	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	30				P67B-000G2	Blind flange ASTM A105 Class 150 ASME B16.47 Series B RF	
1	36				P67B-000G5	Blind flange ASTM A105 Class 150 ASME B16.47 Series B RF	
1	42				P67B-000KZ	Blind flange ASTM A105 Class 150 ASME B16.47 Series B RF	
1	48				P67B-000L2	Blind flange ASTM A105 Class 150 ASME B16.47 Series B RF	
1	52				P67B-0016N	Blind flange ASTM A105 Class 150 ASME B16.47 Series B RF	
1	56				P67B-0016R	Blind flange ASTM A105 Class 150 ASME B16.47 Series B RF	
1	60				P67B-0016T	Blind flange ASTM A105 Class 150 ASME B16.47 Series B RF	
1	64				P67B-0016V	Blind flange ASTM A105 Class 150 Standard-drawing RF	
1	68				P67B-0016X	Blind flange ASTM A105 Class 150 Standard-drawing RF	
1	72				P67B-00178	Blind flange ASTM A105 Class 150 Standard-drawing RF	
1	76				P67B-0017A	Blind flange ASTM A105 Class 150 Standard-drawing RF	
1	80				P67B-0017C	Blind flange ASTM A105 Class 150 Standard-drawing RF	
1	84				P67B-0017E	Blind flange ASTM A105 Class 150 Standard-drawing RF	
1	92				P67B-0017J	Blind flange ASTM A105 Class 150 Standard-drawing RF	
1	96				P67B-002WP	Blind flange ASTM A105 Class 150 Standard-drawing RF	
1	104				P67B-002XY	Blind flange ASTM A105 Class 150 Standard-drawing RF	
1	108				P67B-001AF	Blind flange ASTM A105 Class 150 Standard-drawing RF	

GASKET (G)							
OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000L8	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000L9	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000LA	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000LB	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000LH	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000LL	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000LM	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	6				P73T-000LN	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	8				P73T-000LP	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	10				P73T-000LC	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	12				P73T-000LD	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	14				P73T-000LE	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	16				P73T-000LF	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	18				P73T-000LG	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	20				P73T-000LJ	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	24				P73T-000LK	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	30				P73T-000LT	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	36				P73T-000LW	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	42				P73T-000LZ	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	48				P73T-000M2	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	52				P73T-001E2	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	56				P73T-0024L	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	60				P73T-001E5	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	64				P73T-003GZ	Spiral wound gasket SS316 winding / Graphite filler Class 150 Standard-drawing Flange Standard-drawing RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	68				P73T-003H0	Spiral wound gasket SS316 winding / Graphite filler Class 150 Standard-drawing Flange Standard-drawing RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	72				P73T-003H1	Spiral wound gasket SS316 winding / Graphite filler Class 150 Standard-drawing Flange Standard-drawing RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	76				P73T-003H2	Spiral wound gasket SS316 winding / Graphite filler Class 150 Standard-drawing Flange Standard-drawing RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	80				P73T-003H3	Spiral wound gasket SS316 winding / Graphite filler Class 150 Standard-drawing Flange Standard-drawing RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	84				P73T-003MB	Spiral wound gasket SS316 winding / Graphite filler Class 150 Standard-drawing Flange Standard-drawing RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	92				P73T-003J6	Spiral wound gasket SS316 winding / Graphite filler Class 150 Standard-drawing Flange Standard-drawing RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	96				P73T-003H4	Spiral wound gasket SS316 winding / Graphite filler Class 150 Standard-drawing Flange Standard-drawing RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	104				P73T-003MC	Spiral wound gasket SS316 winding / Graphite filler Class 150 Standard-drawing Flange Standard-drawing RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	108				P73T-003MD	Spiral wound gasket SS316 winding / Graphite filler Class 150 Standard-drawing Flange Standard-drawing RF 4.5mm-T Outer-ring CS Inner-ring SS316	
211	0.5				P74U-000VT	Sheet gasket Synthetic fiber Class 150 ASME B16.21 Flange ASME B16.5 FF 1.5mm-T	
211	0.75				P74U-000VU	Sheet gasket Synthetic fiber Class 150 ASME B16.21 Flange ASME B16.5 FF 1.5mm-T	
211	1				P74U-000VV	Sheet gasket Synthetic fiber Class 150 ASME B16.21 Flange ASME B16.5 FF 1.5mm-T	
211	1.5				P74U-000VW	Sheet gasket Synthetic fiber Class 150 ASME B16.21 Flange ASME B16.5 FF 1.5mm-T	
211	2				P74U-000W8	Sheet gasket Synthetic fiber Class 150 ASME B16.21 Flange ASME B16.5 FF 1.5mm-T	
211	3				P74U-000WB	Sheet gasket Synthetic fiber Class 150 ASME B16.21 Flange ASME B16.5 FF 1.5mm-T	
211	4				P74U-000WC	Sheet gasket Synthetic fiber Class 150 ASME B16.21 Flange ASME B16.5 FF 1.5mm-T	
211	6				P74U-000WD	Sheet gasket Synthetic fiber Class 150 ASME B16.21 Flange ASME B16.5 FF 1.5mm-T	
211	8				P74U-000WE	Sheet gasket Synthetic fiber Class 150 ASME B16.21 Flange ASME B16.5 FF 1.5mm-T	
211	10				P74U-000W3	Sheet gasket Synthetic fiber Class 150 ASME B16.21 Flange ASME B16.5 FF 1.5mm-T	
211	12				P74U-000W4	Sheet gasket Synthetic fiber Class 150 ASME B16.21 Flange ASME B16.5 FF 1.5mm-T	
211	14				P74U-000W5	Sheet gasket Synthetic fiber Class 150 ASME B16.21 Flange ASME B16.5 FF 1.5mm-T	
211	16				P74U-000W6	Sheet gasket Synthetic fiber Class 150 ASME B16.21 Flange ASME B16.5 FF 1.5mm-T	
211	18				P74U-000W7	Sheet gasket Synthetic fiber Class 150 ASME B16.21 Flange ASME B16.5 FF 1.5mm-T	
211	20				P74U-000W9	Sheet gasket Synthetic fiber Class 150 ASME B16.21 Flange ASME B16.5 FF 1.5mm-T	
211	24				P74U-000WA	Sheet gasket Synthetic fiber Class 150 ASME B16.21 Flange ASME B16.5 FF 1.5mm-T	
211	30				P74U-000WF	Sheet gasket Synthetic fiber Class 150 ASME B16.21 Flange ASME B16.47-B FF 1.5mm-T	
211	36				P74U-000WG	Sheet gasket Synthetic fiber Class 150 ASME B16.21 Flange ASME B16.47-B FF 1.5mm-T	
211	42				P74U-000WH	Sheet gasket Synthetic fiber Class 150 ASME B16.21 Flange ASME B16.47-B FF 1.5mm-T	
211	48				P74U-001J4	Sheet gasket Synthetic fiber Class 150 ASME B16.21 Flange ASME B16.47-B FF 1.5mm-T	
2499	30				P73T-002NG	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.47-A RF 4.5mm-T Outer-ring CS Inner-ring SS316	
2499	36				P73T-002NH	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.47-A RF 4.5mm-T Outer-ring CS Inner-ring SS316	
2499	42				P73T-002P0	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.47-A RF 4.5mm-T Outer-ring CS Inner-ring SS316	
2499	56				P73T-002PA	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.47-A RF 4.5mm-T Outer-ring CS Inner-ring SS316	

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GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
3001	2				P78U-0004L	Insulation gasket kit Glass reinforced epoxy Class 150 Manufacturer-standard Flange ASME B16.5 RF	
3001	3				P78U-0004P	Insulation gasket kit Glass reinforced epoxy Class 150 Manufacturer-standard Flange ASME B16.5 RF	
3001	4				P78U-0004R	Insulation gasket kit Glass reinforced epoxy Class 150 Manufacturer-standard Flange ASME B16.5 RF	
3001	6				P78U-0004S	Insulation gasket kit Glass reinforced epoxy Class 150 Manufacturer-standard Flange ASME B16.5 RF	
3001	8				P78U-0004T	Insulation gasket kit Glass reinforced epoxy Class 150 Manufacturer-standard Flange ASME B16.5 RF	
3001	10				P78U-0004F	Insulation gasket kit Glass reinforced epoxy Class 150 Manufacturer-standard Flange ASME B16.5 RF	
3001	12				P78U-0004G	Insulation gasket kit Glass reinforced epoxy Class 150 Manufacturer-standard Flange ASME B16.5 RF	
3001	14				P78U-0004H	Insulation gasket kit Glass reinforced epoxy Class 150 Manufacturer-standard Flange ASME B16.5 RF	
3001	16				P78U-0004J	Insulation gasket kit Glass reinforced epoxy Class 150 Manufacturer-standard Flange ASME B16.5 RF	
3001	18				P78U-0004K	Insulation gasket kit Glass reinforced epoxy Class 150 Manufacturer-standard Flange ASME B16.5 RF	
3001	20				P78U-0004M	Insulation gasket kit Glass reinforced epoxy Class 150 Manufacturer-standard Flange ASME B16.5 RF	
3001	24				P78U-0004N	Insulation gasket kit Glass reinforced epoxy Class 150 Manufacturer-standard Flange ASME B16.5 RF	
3001	30				P78U-0008C	Insulation gasket kit Glass reinforced epoxy Class 150 Manufacturer-standard Flange ASME B16.47-B RF	
3001	42				P78U-00065	Insulation gasket kit Glass reinforced epoxy Class 150 Manufacturer-standard Flange ASME B16.47-B RF	
3001	68				P78U-00068	Insulation gasket kit Glass reinforced epoxy Class 150 Manufacturer-standard Flange Standard-drawing RF	
773	0.5				P73T-000FT	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	0.75				P73T-000FU	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	3				P73T-000G5	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	4				P73T-000G6	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	6				P73T-000G7	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	8				P73T-000G8	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	10				P73T-000FX	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	12				P73T-000FY	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	14				P73T-000FZ	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	16				P73T-000G0	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	18				P73T-000G1	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	20				P73T-000G3	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	24				P73T-000G4	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	30				P73T-000H9	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	36				P73T-000HC	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	40				P73T-000KL	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	42				P73T-000KM	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	48				P73T-000KR	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-16				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	18-20				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
1	24				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	999
1	30-42				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	48-56				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
1	60-108				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	999
211	0.5-16				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
211	18-24				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
211	30-42				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	

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BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
211	48				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
2499	30-56				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
773	0.5-10				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
773	12-52				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81B-000P4	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	0.75				P81B-000NX	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	1				P81B-000NY	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	1.5				P81B-000NZ	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	2				P81C-002DV	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	3				P81C-002DW	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	4				P81C-002DX	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	6				P81C-002DY	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	8				P81C-002DZ	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	10				P81C-002DT	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	12				P81C-002DU	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	14				P81C-00308	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated	
1	16				P81C-002E0	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated	
1	18				P81C-002E1	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated	
1	20				P81C-002E2	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated	
1	24				P81C-002E3	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated	
1	30				P81C-004D8	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.47-B RF Trim number 8 BB-BG-OS&Y Gear operated	
1	36				P81C-004D9	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.47-B RF Trim number 8 BB-BG-OS&Y Gear operated	
1	42				P81C-004E4	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.47-B RF Trim number 8 BB-BG-OS&Y Gear operated	
714	0.5				P81B-0015L	Gate valve ASTM A105 Class 800 API 602 SW - NPT Trim number 8 BB-BG-OS&Y Handwheel operated	
714	0.75				P81B-002F4	Gate valve ASTM A105 Class 800 API 602 SW - NPT Trim number 8 BB-BG-OS&Y Handwheel operated	
773	2				P81C-002D6	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82B-000K0	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	0.75				P82B-000HB	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	1				P82B-000HC	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	1.5				P82B-000HD	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	2				P82C-000N5	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	3				P82C-000N6	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	4				P82C-000N7	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	6				P82C-000N8	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	8				P82C-0026L	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	10				P82C-002V6	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	12				P82C-0013V	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83B-000FX	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover	
1	0.75				P83B-000ER	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover	
1	1				P83B-000ES	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover	

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CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5				P83B-000ET	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover	
1	2				P83C-00144	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	3				P83C-00147	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	4				P83C-00148	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	6				P83C-00149	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	8				P83C-0014A	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	10				P83C-00140	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	12				P83C-00141	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	14				P83C-0021E	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	16				P83C-00142	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	18				P83C-00143	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	20				P83C-00145	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	24				P83C-00146	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
4602	42				P83C-003N5	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.47-B RF Trim number 8 Swing-type Bolted cover	

DP CHECK VALVE (XDP)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	36				P88C-0023B	Dual plate check valve ASTM A216 Grade WCB Class 150 API 594 Wafer-type ASME B16.47-B RF Trim number 8 Internal wetted parts 13Cr Spring Inconel Retainerless-type	
1	42				P88C-0025X	Dual plate check valve ASTM A216 Grade WCB Class 150 API 594 Wafer-type ASME B16.47-B RF Trim number 8 Internal wetted parts 13Cr Spring Inconel Retainerless-type	

BALL VALVE (Q)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P84B-0011T	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design	
1	0.75				P84B-0011U	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design	
1	1				P84B-0011V	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design	
1	1.5				P84B-0011W	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design	
1	2				P84C-005UD	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design	
24	0.5				P84B-0011X	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	
24	0.75				P84B-0011Y	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	
24	1				P84B-0011Z	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	
24	1.5				P84B-00120	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	
24	2				P84C-005UJ	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	

BUTTERFLY VALVE (H)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2				P86C-0022F	Concentric butterfly valve ASTM A216 Grade WCB Class 150 API 609 Category A Lug-type ASME B16.5 RF NBR lined Disc 13Cr Trim 13Cr Wrench lever operated	
1	3				P86C-001U2	Concentric butterfly valve ASTM A216 Grade WCB Class 150 API 609 Category A Lug-type ASME B16.5 RF NBR lined Disc 13Cr Trim 13Cr Wrench lever operated	
1	4				P86C-001U3	Concentric butterfly valve ASTM A216 Grade WCB Class 150 API 609 Category A Lug-type ASME B16.5 RF NBR lined Disc 13Cr Trim 13Cr Wrench lever operated	
1	6				P86C-001U0	Concentric butterfly valve ASTM A216 Grade WCB Class 150 API 609 Category A Lug-type ASME B16.5 RF NBR lined Disc 13Cr Trim 13Cr Gear operated	
1	8				P86C-001U1	Concentric butterfly valve ASTM A216 Grade WCB Class 150 API 609 Category A Lug-type ASME B16.5 RF NBR lined Disc 13Cr Trim 13Cr Gear operated	
1	10				P86C-001TV	Concentric butterfly valve ASTM A216 Grade WCB Class 150 API 609 Category A Lug-type ASME B16.5 RF NBR lined Disc 13Cr Trim 13Cr Gear operated	
1	12				P86C-001TW	Concentric butterfly valve ASTM A216 Grade WCB Class 150 API 609 Category A Lug-type ASME B16.5 RF NBR lined Disc 13Cr Trim 13Cr Gear operated	
1	14				P86C-001TX	Concentric butterfly valve ASTM A216 Grade WCB Class 150 API 609 Category A Lug-type ASME B16.5 RF NBR lined Disc 13Cr Trim 13Cr Gear operated	
1	16				P86C-001TY	Concentric butterfly valve ASTM A216 Grade WCB Class 150 API 609 Category A Lug-type ASME B16.5 RF NBR lined Disc 13Cr Trim 13Cr Gear operated	
1	18				P86C-001TZ	Concentric butterfly valve ASTM A216 Grade WCB Class 150 API 609 Category A Lug-type ASME B16.5 RF NBR lined Disc 13Cr Trim 13Cr Gear operated	
1	20				P86C-001TT	Concentric butterfly valve ASTM A216 Grade WCB Class 150 API 609 Category A Double flanged ASME B16.5 RF NBR lined Disc 13Cr Trim 13Cr Gear operated	

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BUTTERFLY VALVE (H)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	24				P86C-001TU	Concentric butterfly valve ASTM A216 Grade WCB Class 150 API 609 Category A Double flanged ASME B16.5 RF NBR lined Disc 13Cr Trim 13Cr Gear operated	
1	30				P86C-002AZ	Concentric butterfly valve ASTM A216 Grade WCB Class 150 API 609 Category A Double flanged ASME B16.47-A RF NBR lined Disc 13Cr Trim 13Cr Gear operated	
1	36				P86C-002B0	Concentric butterfly valve ASTM A216 Grade WCB Class 150 API 609 Category A Double flanged ASME B16.47-A RF NBR lined Disc 13Cr Trim 13Cr Gear operated	
1	42				P86C-002B1	Concentric butterfly valve ASTM A216 Grade WCB Class 150 API 609 Category A Double flanged ASME B16.47-A RF NBR lined Disc 13Cr Trim 13Cr Gear operated	

NEEDLE VALVE (NV)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82B-001JU	Needle valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	0.75				P82B-000YB	Needle valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	1				P82B-000YC	Needle valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	1.5				P82B-000YD	Needle valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	

ORIFICE FLANGE (FO)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2		XS		P66B-0084B	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	3		STD		P66B-0084C	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	4		STD		P66B-0084D	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	6		STD		P66B-0084E	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	8		SCH30		P66B-00871	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	10		SCH30		P66B-0086Z	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	12		SCH30		P66B-00849	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	14		SCH20		P66B-0084A	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	16		SCH20		P66B-0083Y	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	18		SCH20		P66B-0084R	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	20		STD		P66B-0084S	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	24		STD		P66B-0085W	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
200	2		XS		P66B-00843	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	3		STD		P66B-00844	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	4		STD		P66B-00845	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	6		STD		P66B-00846	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	8		SCH30		P66B-00876	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	10		SCH30		P66B-00874	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	12		SCH30		P66B-00841	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	14		SCH20		P66B-00842	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	16		SCH20		P66B-0083Z	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	18		SCH20		P66B-0084T	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	20		STD		P66B-0084U	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	24		STD		P66B-0085X	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71B-0008A	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	0.75				P71B-0008B	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	1				P71B-0008C	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71B-0008D	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	2				P71B-0000P	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	3				P71B-0000N	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	4				P71B-0000M	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	6				P71B-0000L	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	8				P71B-0000R	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	10				P71B-0000K	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	12				P71B-0000J	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	

PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000AH	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	16				P72B-0000C	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	

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PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	18				P72B-000AJ	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	20				P72B-000AK	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	24				P72B-000AL	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	30				P72B-000AM	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	36				P72B-000AN	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	42				P72B-000AP	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	48				P72B-000AR	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	52				P72B-000AS	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	56				P72B-000BC	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	60				P72B-000BD	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	64				P72B-000BE	Paddle blank ASTM A105 Class 150 Standard-drawing Flange Standard-drawing RF	
1	68				P72B-000BF	Paddle blank ASTM A105 Class 150 Standard-drawing Flange Standard-drawing RF	
1	72				P72B-000BG	Paddle blank ASTM A105 Class 150 Standard-drawing Flange Standard-drawing RF	
1	76				P72B-000TU	Paddle blank ASTM A105 Class 150 Standard-drawing Flange Standard-drawing RF	
1	80				P72B-000BH	Paddle blank ASTM A105 Class 150 Standard-drawing Flange Standard-drawing RF	
1	84				P72B-000WT	Paddle blank ASTM A105 Class 150 Standard-drawing Flange Standard-drawing RF	
1	92				P72B-000WS	Paddle blank ASTM A105 Class 150 Standard-drawing Flange Standard-drawing RF	
1	96				P72B-000TW	Paddle blank ASTM A105 Class 150 Standard-drawing Flange Standard-drawing RF	
1	104				P72B-000WX	Paddle blank ASTM A105 Class 150 Standard-drawing Flange Standard-drawing RF	
1	108				P72B-000WY	Paddle blank ASTM A105 Class 150 Standard-drawing Flange Standard-drawing RF	

PADDLE SPACER (PS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000AT	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	16				P72B-0000B	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	18				P72B-000AU	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	20				P72B-000AV	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	24				P72B-000AW	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	30				P72B-000AX	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	36				P72B-000AY	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	42				P72B-000AZ	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	48				P72B-000B0	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	52				P72B-000B1	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	56				P72B-000BJ	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	60				P72B-000BK	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	64				P72B-000BL	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange Standard-drawing RF	
1	68				P72B-000BM	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange Standard-drawing RF	
1	72				P72B-000BN	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange Standard-drawing RF	
1	76				P72B-000TV	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange Standard-drawing RF	
1	80				P72B-000BP	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange Standard-drawing RF	
1	84				P72B-000WU	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange Standard-drawing RF	
1	92				P72B-000VC	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange Standard-drawing RF	
1	96				P72B-000TX	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange Standard-drawing RF	
1	104				P72B-000WZ	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange Standard-drawing RF	
1	108				P72B-000X0	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange Standard-drawing RF	

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BOLT TABLE (B_A2AW , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	60	P80S-003V2		
0.75	4	0.500	65	P80S-003V3		
1	4	0.500	70	P80S-003V4		
1.5	4	0.500	75	P80S-003V5		
2	4	0.625	85	P80S-003XE		
3	4	0.625	95	P80S-003XG		
4	8	0.625	95	P80S-003XG		
6	8	0.750	105	P80S-003XJ		
8	8	0.750	110	P80S-003XK		
10	12	0.875	120	P80S-00419		
12	12	0.875	120	P80S-00419		
14	12	1.000	135	P80S-0043E		
16	16	1.000	140	P80S-0043F		
18	16	1.125	150	P80S-0046K		
20	20	1.125	160	P80S-0046M		
24	20	1.250	175	P80S-004AG		
30	44	0.750	145	P80S-003ZK		
36	44	0.875	175	P80S-0041M		
40	44	1.000	185	P80S-0043S		
42	48	1.000	190	P80S-0043T		
48	44	1.125	210	P80S-0046Z		
52	52	1.125	220	P80S-00471		
56	60	1.125	225	P80S-00472		
60	52	1.250	240	P80S-004AW		
64	52	1.250	280	P80S-004B4		
68	52	1.250	290	P80S-004B6		
72	52	1.250	300	P80S-004DL		
76	52	1.250	310	P80S-004CW		
80	52	1.250	320	P80S-004CY		
84	52	1.250	330	P80S-004D0		
92	52	1.250	340	P80S-004D2		
96	52	1.250	350	P80S-004D4		
104	52	1.250	360	P80S-004D6		
108	52	1.250	380	P80S-004DA		

BOLT TABLE (B_A2AW_211 , MACHINE ASME FF, OPTION CODE 211)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	60	P80S-003V2		
0.75	4	0.500	60	P80S-003V2		
1	4	0.500	65	P80S-003V3		
1.5	4	0.500	70	P80S-003V4		
2	4	0.625	80	P80S-003XD		
3	4	0.625	90	P80S-003XF		
4	8	0.625	90	P80S-003XF		
6	8	0.750	100	P80S-003XH		
8	8	0.750	105	P80S-003XJ		
10	12	0.875	115	P80S-00418		
12	12	0.875	120	P80S-00419		
14	12	1.000	130	P80S-0043D		
16	16	1.000	135	P80S-0043E		
18	16	1.125	145	P80S-0046J		
20	20	1.125	155	P80S-0046L		
24	20	1.250	175	P80S-004AG		
30	44	0.750	140	P80S-003ZJ		
36	44	0.875	170	P80S-0041L		
40			0			
42	48	1.000	190	P80S-0043T		
48	44	1.125	205	P80S-0046Y		

BOLT TABLE (B_A2AW_2499 , STUD ASME RF, OPTION CODE 2499)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
30	28	1.250	235	P80S-004AV		
36	32	1.500	285	P80S-003FJ		
40			0			
42	36	1.500	300	P80S-003JX		
48	44	1.500	320	P80S-008N2		
52			0			

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BOLT TABLE (B_A2AW_2499 , STUD ASME RF, OPTION CODE 2499)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
56	48	1.750	365	P80S-007B7		

BOLT TABLE (B_A2AW_773 , STUD ASME RF, OPTION CODE 773)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-003V4		
0.75	4	0.625	75	P80S-003XC		
1	4	0.625	80	P80S-003XD		
1.5	4	0.750	95	P80S-00414		
2	8	0.625	90	P80S-003XF		
3	8	0.750	110	P80S-003XK		
4	8	0.750	115	P80S-003XL		
6	12	0.750	125	P80S-003XN		
8	12	0.875	140	P80S-0041D		
10	16	1.000	160	P80S-0043K		
12	16	1.125	175	P80S-0046S		
14	20	1.125	180	P80S-0046T		
16	20	1.250	190	P80S-004AK		
18	24	1.250	200	P80S-004AM		
20	24	1.250	210	P80S-004AP		
24	24	1.500	235	P80S-003F8		
30	36	1.375	285	P80S-003EA		
36	32	1.625	320	P80S-005TT		
40	40	1.625	345	P80S-005TY		
42	36	1.750	355	P80S-007B5		
48	40	1.875	380	P80S-008P4		
52	48	1.875	410	P80S-008PA		
56	36	2.250	450			
60	40	2.250	445			

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PIPING CLASS

A2AW REV NO. 2

BRANCH TABLE (T_A2AW)

RUN PIPE SIZE (in) \ HEADER PIPE SIZE (in)	0.5	0.75	1	1.5	2	3	4	6	8	10	12	14	16	18	20	24	30	36	40	42	48	52	56	60	64	68	72	76	80	84	92
0.5	TS																														
0.75		TS																													
1		TR	TS																												
1.5		TR	TR	TS																											
2		L	TR	TR	TS																										
3		L	L	TR	TR	TS																									
4	L	L	L	L	TR	TR	TS																								
6	L	L	L	L	L	TR	TR	TS																							
8		L	L	L	L	L	TR	TR	TS																						
10		L	L	L	L	L	TR	TR	TR	TS																					
12		L	L	L	L	L	L	TR	TR	TR	TS																				
14		L	L	L	L	L	L	TR	TR	TR	TR	TS																			
16		L	L	L	L	L	L	TR	TR	TR	TR	TR	TS																		
18		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TS																	
20		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TR	TS																
24		L	L	L	L	L	L	L	9PD	TR	TR	TR	TR	TR	TR	TS															
30		L	L	L	L	L	L	L	9PD	TR	TR	TR	TR	TR	TR	TR	TS														
36		L	L	L	L	L	L	L	9PD	9PD	9PD	9PD	TR	TR	TR	TR	TR	TS													
40		L	L	L	L	L	L	L	9PD	9PD	9PD	9PD	9PD	TR	TR	TR	TR	TR	TS												
42		L	L	L	L	L	L	L	9PD	9PD	9PD	9PD	TR	TR	TR	TR	TR	TR	TR	TS											
48		L	L	L	L	L	L	L	9PD	9PD	9PD	9PD	9PD	9PD	9PD	TR	TR	TR	TR	TR	TS										
52		L	L	L	L	L	L	L	9PD	9PD	9PD	9PD	9PD	9PD	9PD	9PD	TR	TR	TR	TR	TR	TS									
56		L	L	L	L	L	L	L	9PD	9PD	9PD	9PD	9PD	9PD	9PD	9PD	TR	TR	TR	TR	TR	TR	TS								
60		L	L	L	L	L	L	L	9PD	9PD	9PD	9PD	9PD	9PD	9PD	9PD	TR	TR	TR	TR	TR	TR	TR	TS							
64		L	L	L	L	L	L	L	9PD	9PD	9PD	9PD	9PD	9PD	9PD	9PD	9PD	TR	TR	TR	TR	TR	TR	TR	TS						
68		L	L	L	L	L	L	L	9PD	9PD	9PD	9PD	9PD	9PD	9PD	9PD	9PD	TR	TR	TR	TR	TR	TR	TR	TR	TS					
72		L	L	L	L	L	L	L	9PD	9PD	9PD	9PD	9PD	9PD	9PD	9PD	9PD	9PD	TR	TR	TR	TR	TR	TR	TR	TR	TR	TS			
76		L	L	L	L	L	L	L	9PD	9PD	9PD	9PD	9PD	9PD	9PD	9PD	9PD	9PD	9PD	TR	TR	TR	TR	TR	TR	TR	TR	TR	TS		
80		L	L	L	L	L	L	L	9PD	9PD	9PD	9PD	9PD	9PD	9PD	9PD	9PD	9PD	9PD	TR	TR	TR	TR	TR	TR	TR	TR	TR	TR	TS	
84		L	L	L	L	L	L	L	9PD	9PD	9PD	9PD	9PD	9PD	9PD	9PD	9PD	9PD	9PD	9PD	TR	TR	TR	TR	TR	TR	TR	TR	TR	TR	TS
92		L	L	L	L	L	L	L	9PD	9PD	9PD	9PD	9PD	9PD	9PD	9PD	9PD	9PD	9PD	9PD	9PD	TR	TR	TR	TR	TR	TR	TR	TR	TR	TS
96		L	L	L	L	L	L	L	9PD	9PD	9PD	9PD	9PD	9PD	9PD	9PD	9PD	9PD	9PD	9PD	9PD	TR	TR	TR	TR	TR	TR	TR	TR	TR	TR
104		L	L	L	L	L	L	L	9PD	9PD	9PD	9PD	9PD	9PD	9PD	9PD	9PD	9PD	9PD	9PD	9PD	TR	TR	TR	TR	TR	TR	TR	TR	TR	TR
108		L	L	L	L	L	L	L	9PD	9PD	9PD	9PD	9PD	9PD	9PD	9PD	9PD	9PD	9PD	9PD	9PD	9PD	9PD	TR	TR	TR	TR	TR	TR	TR	TR

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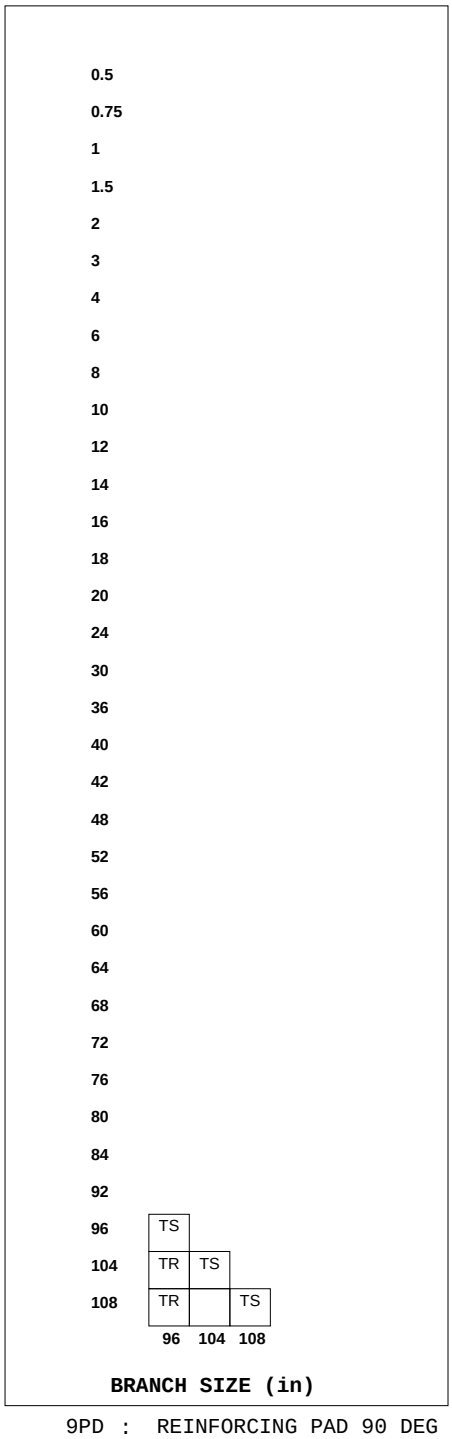
PIPING CLASS

A2AW REV NO. 2



9PD : REINFORCING PAD 90 DEG
TR : REDUCING TEE
TS : STRAIGHT TEE
L : OUTLET

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PIPING CLASS
A2AW **REV NO. 2**

BRANCH TABLE (T_A2AW_2)

RUN PIPE SIZE (in) \ HEADER PIPE SIZE (in)	0.5	0.75	1	1.5	2	3	4	6	8	10	12	14	16	18	20	24	30	36	40	42	48	52	56	60	64	68	72	76	80	84	92
0.5	TLS 4208																														
0.75		TLS 4208																													
1			TLS 4208																												
1.5				TLS 4208																											
2		LL			TLS 4208																										
3		LL	LL		TLR	TLS 4208																									
4		LL			TLR		TLS 4208																								
6		LL		LL			TLR	TLS 4208																							
8		LL	LL			LL	TLR		TLS 4208																						
10							TLR	TLR	TLR	TLS 4208																					
12		LL	LL						TLR		TLS 4208																				
14		LL	LL									TLS 4208																			
16					LL					TLR			TLS 4208																		
18							LL		4PD					TLS 4208																	
20							LL	LL							TLS 4208																
24																TLS 4208															
30																	TLS 4208														
36																		TLS 4208													
40																			TLS 4208												
42						LL														TLS 4208											
48																					TLS 4208										
52																						TLS 4208									
56																							TLS 4208								
60																								TLS 4208							
64																									TLS 4208						
68																										TLS 4208					
72																											TLS 4208				
76																												TLS 4208			
80																													TLS 4208		
84																															
92																															TLS 4208
96																	4PD			4PD										
104																															
108																		4PD		4PD											

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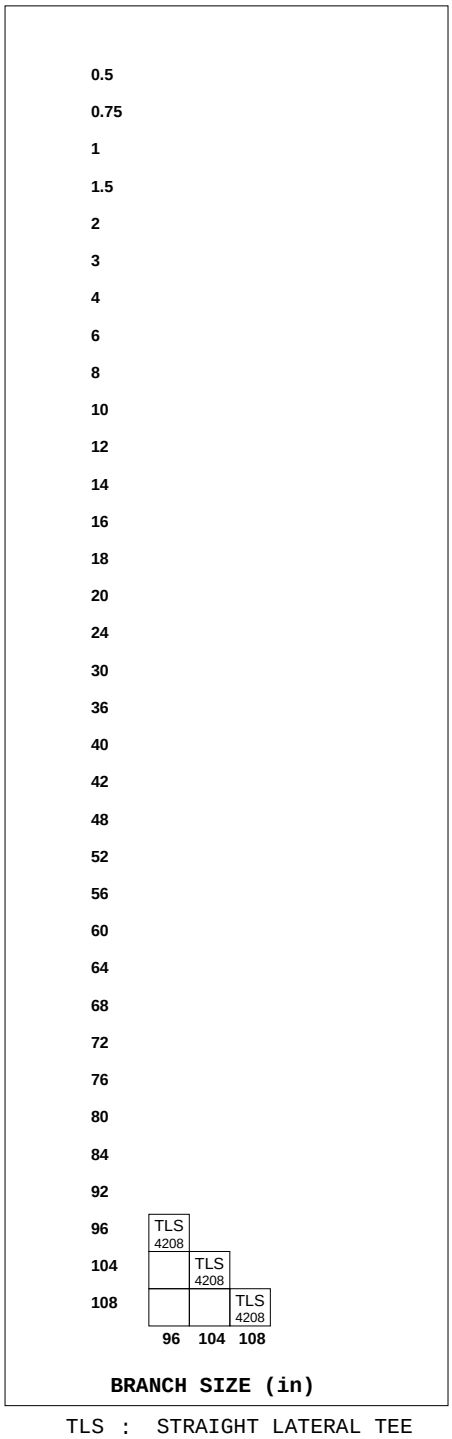
A2AW REV NO. 2



TLS : STRAIGHT LATERAL TEE
TLR : REDUCING LATERAL TEE
4PD : REINFORCING PAD 45 DEG
LL : LATROLET

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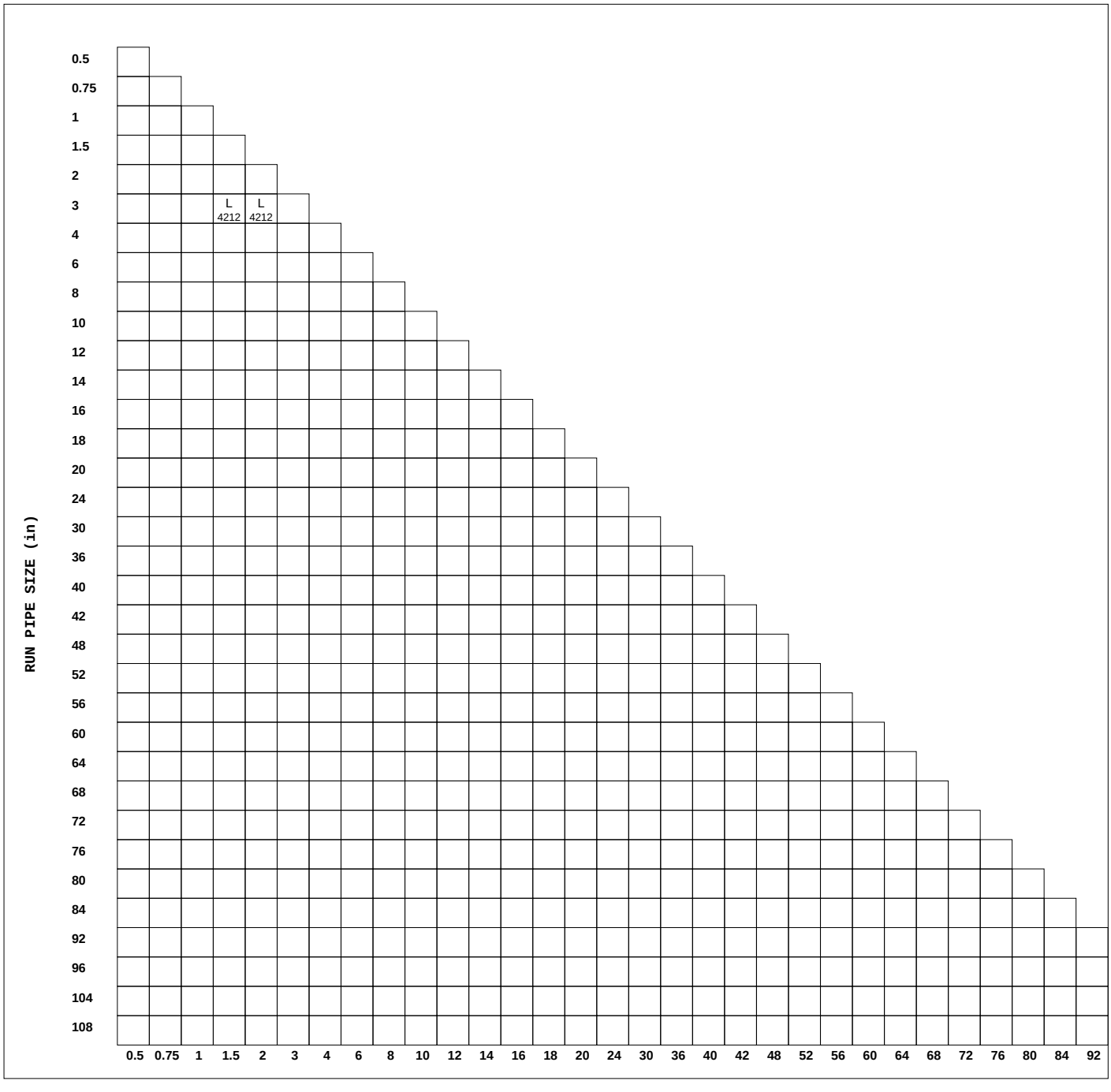
PIPING CLASS
A2AW REV NO. 2

BRANCH TABLE (T_A2AW_4)



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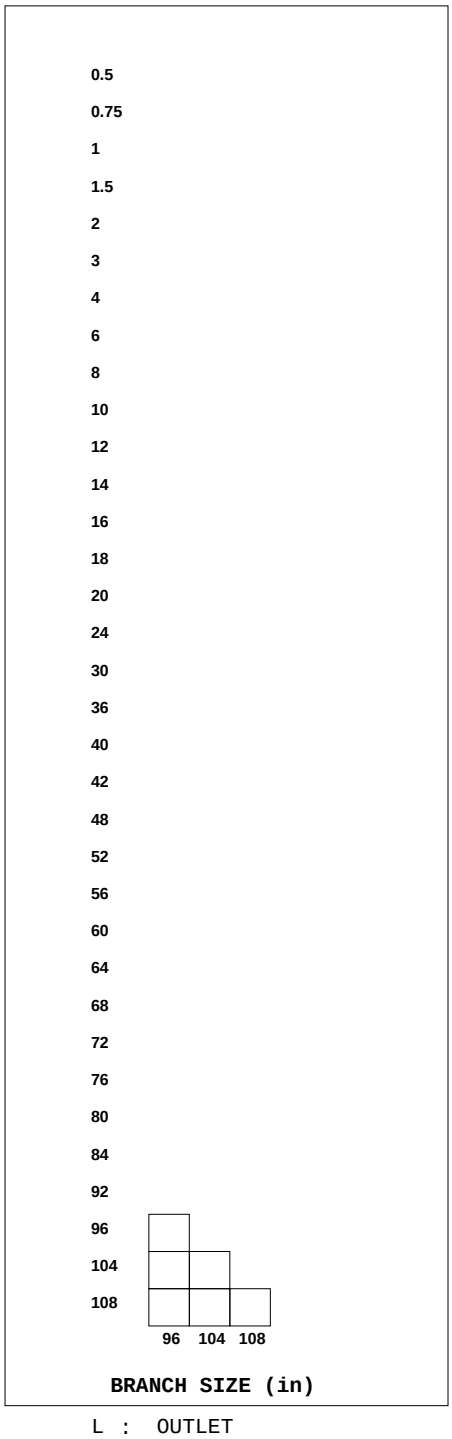
PIPING CLASS

A2AW REV NO. 2



BRANCH SIZE (in)

L : OUTLET

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PIPING CLASS

A2AY04 REV NO. 2

Material : Killed CS
Rating : ASME CLASS 150
Flange Face : RF
C.A.(mm) : 3.00
Gasket : Spiral Wound
Service : CHEMICAL DOSING : / AMINE
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
2	USE OF SOFT SEATED BALL, PLUG AND BUTTERFLY VALVES SHALL BE LIMITED TO MAXIMUM OF 204DEGC (400DEGF)

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
24	FULL PORT (Q)
541	NPT(F) (CA,L)
714	SW - NPT(F) (V)
773	CLASS 300 (B,F,G)
4205	SOCKOLET ON CAP (CAP=NPS6) (LC)

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PIPING CLASS
A2AY04 REV NO. 2

PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P01A-00143	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	0.75		SCH160		P01A-0010R	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1		SCH160		P01A-0014M	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1.5		SCH160		P01A-0015J	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	2		XS		P01A-000YX	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	3		XS		P01A-000Z4	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	4		STD		P01A-000YU	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	6		STD		P01A-000Z3	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P02B-0002A	90 degree elbow ASTM A105 Class 9000 ASME B16.11 SW	
1	0.75				P02B-0001K	90 degree elbow ASTM A105 Class 6000 ASME B16.11 SW	
1	1				P02B-0002E	90 degree elbow ASTM A105 Class 6000 ASME B16.11 SW	
1	1.5				P02B-0002F	90 degree elbow ASTM A105 Class 6000 ASME B16.11 SW	
1	2		XS		P02A-000CP	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		XS		P02A-000CX	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		STD		P02A-000CZ	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		STD		P02A-000D6	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P03B-00026	45 degree elbow ASTM A105 Class 9000 ASME B16.11 SW	
1	0.75				P03B-0001G	45 degree elbow ASTM A105 Class 6000 ASME B16.11 SW	
1	1				P03B-0002A	45 degree elbow ASTM A105 Class 6000 ASME B16.11 SW	
1	1.5				P03B-0002B	45 degree elbow ASTM A105 Class 6000 ASME B16.11 SW	
1	2		XS		P03A-000AS	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		XS		P03A-000AZ	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		STD		P03A-000B1	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		STD		P03A-000B9	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P21B-00022	Straight tee ASTM A105 Class 9000 ASME B16.11 SW	
1	0.75				P21B-0001G	Straight tee ASTM A105 Class 6000 ASME B16.11 SW	
1	1				P21B-00026	Straight tee ASTM A105 Class 6000 ASME B16.11 SW	
1	1.5				P21B-00027	Straight tee ASTM A105 Class 6000 ASME B16.11 SW	
1	2		XS		P21A-001CJ	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		XS		P21A-001CR	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		STD		P21A-001CW	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6		STD		P21A-001D2	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75			P24B-00030	Reducing tee ASTM A105 Class 6000 ASME B16.11 SW	
1	1.5	0.75			P24B-00032	Reducing tee ASTM A105 Class 6000 ASME B16.11 SW	
1	1.5	1			P24B-0004J	Reducing tee ASTM A105 Class 6000 ASME B16.11 SW	
1	2	1	XS	SCH160	P24A-00GMB	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	XS	SCH160	P24A-005K9	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	XS	SCH160	P24A-00GNV	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	XS	XS	P24A-0023S	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P24A-002HY	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	XS	P24A-00GNW	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	XS	P24A-00GTR	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P24A-00229	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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PIPING CLASS
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CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	XS	XS	P27A-001E5	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P27A-001N0	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	XS	P27A-0074W	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	XS	P27A-007P6	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P27A-001GW	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	XS	XS	P28A-001EH	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P28A-001N6	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	XS	P28A-008F7	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	XS	P28A-008K1	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P28A-00182	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P29B-0001K	Cap ASTM A105 Class 9000 ASME B16.11 SW	
1	0.75				P29B-0002G	Cap ASTM A105 Class 6000 ASME B16.11 SW	
1	1				P29B-0002D	Cap ASTM A105 Class 6000 ASME B16.11 SW	
1	1.5				P29B-0002E	Cap ASTM A105 Class 6000 ASME B16.11 SW	
1	2		XS		P29A-000A1	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		XS		P29A-000AT	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		STD		P29A-000A3	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6		STD		P29A-000A9	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
541	0.5				P29B-0000X	Cap ASTM A105 Class 6000 ASME B16.11 NPT	
541	0.75				P29B-0000Y	Cap ASTM A105 Class 6000 ASME B16.11 NPT	
541	1				P29B-0000Z	Cap ASTM A105 Class 6000 ASME B16.11 NPT	
541	1.5				P29B-00010	Cap ASTM A105 Class 6000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P41A-000B9	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		XXS		P41A-000BA	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		XXS		P41A-000D8	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		XXS		P41A-000D9	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

CON SWAGED NIPPLE (SNC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	XXS	P42A-000A5	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	SCH160	XXS	P42A-000A6	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	SCH160	SCH160	P42A-0009U	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	SCH160	XXS	P42A-000A7	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	SCH160	SCH160	P42A-0009W	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	SCH160	SCH160	P42A-0009X	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	XS	XXS	P42A-000LL	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	XS	SCH160	P42A-000J7	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	XS	SCH160	P42A-000F8	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	XS	SCH160	P42A-000KZ	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	XS	SCH160	P42A-000L9	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	

ECC SWAGED NIPPLE (SNE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	XXS	P43A-000DD	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	SCH160	XXS	P43A-000DE	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	SCH160	SCH160	P43A-000B5	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	SCH160	XXS	P43A-000DF	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	SCH160	SCH160	P43A-000B7	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	SCH160	SCH160	P43A-000B8	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	

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ECC SWAGED NIPPLE (SNE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2	0.5	XS	XXS	P43A-000E8	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	XS	SCH160	P43A-000B3	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	XS	SCH160	P43A-000CZ	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	XS	SCH160	P43A-000D0	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	XS	SCH160	P43A-000DM	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	

COUPLING (CPS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P47B-00026	Coupling ASTM A105 Class 9000 ASME B16.11 SW - SW	
1	0.75				P47B-00012	Coupling ASTM A105 Class 6000 ASME B16.11 SW - SW	
1	1				P47B-0002A	Coupling ASTM A105 Class 6000 ASME B16.11 SW - SW	
1	1.5				P47B-0002B	Coupling ASTM A105 Class 6000 ASME B16.11 SW - SW	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5 - 2.5	0.75			P31B-0137D	Outlet ASTM A105 Class 6000 MSS SP-97 SW	
1	3 - 10	0.75			P31B-007LV	Outlet ASTM A105 Class 6000 MSS SP-97 SW	
1	3 - 10	1			P31B-007LN	Outlet ASTM A105 Class 6000 MSS SP-97 SW	
1	4 - 5	1.5			P31B-004LE	Outlet ASTM A105 Class 6000 MSS SP-97 SW	
1	6 - 8	1.5			P31B-005T4	Outlet ASTM A105 Class 6000 MSS SP-97 SW	
541	1	0.75			P31B-005HL	Outlet ASTM A105 Class 6000 MSS SP-97 NPT	
541	1.5 - 2.5	0.75			P31B-0137F	Outlet ASTM A105 Class 6000 MSS SP-97 NPT	
541	3 - 10	0.75			P31B-007KP	Outlet ASTM A105 Class 6000 MSS SP-97 NPT	

OLET ON CAP (LC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
4205	0.75				P36B-00024	Outlet on cap ASTM A105 Class 6000 MSS SP-97 SW Cap=NPS6	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30B-0002D	Plug ASTM A105 ASME B16.11 NPT Round head	
1	0.75				P30B-0002E	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1				P30B-0002F	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1.5				P30B-0002G	Plug ASTM A105 ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P61B-002DA	Flange SW ASTM A105 Class 150 ASME B16.5 RF	
1	0.75		SCH160		P61B-002DE	Flange SW ASTM A105 Class 150 ASME B16.5 RF	
1	1		SCH160		P61B-002DU	Flange SW ASTM A105 Class 150 ASME B16.5 RF	
1	1.5		SCH160		P61B-002EM	Flange SW ASTM A105 Class 150 ASME B16.5 RF	
1	2		XS		P61B-003NK	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	3		XS		P61B-003JD	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	4		STD		P61B-001R8	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	6		STD		P61B-001RT	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
773	0.5		XXS		P61B-001HD	Flange SW ASTM A105 Class 300 ASME B16.5 RF	
773	0.75		SCH160		P61B-001HH	Flange SW ASTM A105 Class 300 ASME B16.5 RF	
773	1		SCH160		P61B-001E8	Flange SW ASTM A105 Class 300 ASME B16.5 RF	
773	1.5		SCH160		P61B-001ET	Flange SW ASTM A105 Class 300 ASME B16.5 RF	
773	2		XS		P61B-001HW	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	3		XS		P61B-001DK	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	4		STD		P61B-001MC	Flange WN ASTM A105 Class 300 ASME B16.5 RF	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67B-000FH	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	0.75				P67B-000FJ	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	1				P67B-000FK	Blind flange ASTM A105 Class 150 ASME B16.5 RF	

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BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5				P67B-000FL	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	2				P67B-000FT	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	3				P67B-000FW	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	4				P67B-000FX	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	6				P67B-000FY	Blind flange ASTM A105 Class 150 ASME B16.5 RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000L8	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000L9	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000LA	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000LB	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000LH	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000LL	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000LM	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	6				P73T-000LN	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	0.5				P73T-000FT	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	0.75				P73T-000FU	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	3				P73T-000G5	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	4				P73T-000G6	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-6				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
773	0.5-6				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81B-001ZN	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated Fluid-1	
1	0.75				P81B-001ZP	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated Fluid-1	
1	1				P81B-001ZR	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated Fluid-1	
1	1.5				P81B-001ZS	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated Fluid-1	
1	2				P81C-006H8	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated Fluid-1	
1	3				P81C-006H9	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated Fluid-1	
1	4				P81C-006HA	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated Fluid-1	
714	0.5				P81B-002SA	Gate valve ASTM A105 Class 800 API 602 SW - NPT Trim number 8 BB-BG-OS&Y Handwheel operated Fluid-1	
714	0.75				P81B-002FD	Gate valve ASTM A105 Class 800 API 602 SW - NPT Trim number 8 BB-BG-OS&Y Handwheel operated Fluid-1	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82B-001H8	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated Fluid-1	
1	0.75				P82B-001H9	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated Fluid-1	
1	1				P82B-001HA	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated Fluid-1	
1	1.5				P82B-001HB	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated Fluid-1	
1	2				P82C-0034V	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated Fluid-1	
1	3				P82C-0034W	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated Fluid-1	
1	4				P82C-0034X	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated Fluid-1	

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CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83B-000FX	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover	
1	0.75				P83B-000ER	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover	
1	1				P83B-000ES	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover	
1	1.5				P83B-000ET	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover	
1	2				P83C-00144	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	3				P83C-00147	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	4				P83C-00148	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	

BALL VALVE (Q)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P84B-001HB	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design Fluid-1	
1	0.75				P84B-001HC	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design Fluid-1	
1	1				P84B-001HD	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design Fluid-1	
1	1.5				P84B-001HE	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design Fluid-1	
1	2				P84C-006SC	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design Fluid-1	
24	0.5				P84B-001HF	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design Fluid-1	
24	0.75				P84B-001HG	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design Fluid-1	
24	1				P84B-001HH	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design Fluid-1	
24	1.5				P84B-001HJ	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design Fluid-1	
24	2				P84C-006SD	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design Fluid-1	

PLUG VALVE (PV)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P85B-0000R	Plug valve Short-pattern ASTM A105 Class 150 API 599 Flange ASME B16.5 RF Plug SS316 Seat PTFE Trim SS316 Nonlubricated taper plug BC-BG Wrench lever operated Regular port Fluid-1	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71B-0008A	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	0.75				P71B-0008B	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	1				P71B-0008C	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71B-0008D	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	2				P71B-0000P	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	3				P71B-0000N	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	4				P71B-0000M	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	6				P71B-0000L	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	

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BOLT TABLE (B_A2AY04 , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	60	P80S-003V2		
0.75	4	0.500	65	P80S-003V3		
1	4	0.500	70	P80S-003V4		
1.5	4	0.500	75	P80S-003V5		
2	4	0.625	85	P80S-003XE		
3	4	0.625	95	P80S-003XG		
4	8	0.625	95	P80S-003XG		
6	8	0.750	105	P80S-003XJ		

BOLT TABLE (B_A2AY04_773 , STUD ASME RF, OPTION CODE 773)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-003V4		
0.75	4	0.625	75	P80S-003XC		
1	4	0.625	80	P80S-003XD		
1.5	4	0.750	95	P80S-00414		
2	8	0.625	90	P80S-003XF		
3	8	0.750	110	P80S-003XK		
4	8	0.750	115	P80S-003XL		
6	12	0.750	125	P80S-003XN		

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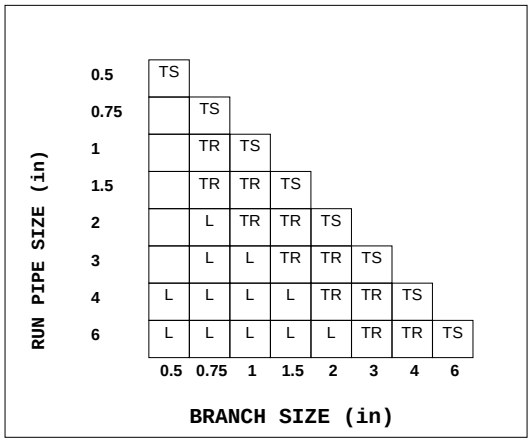
BRANCH TABLE (T_A2AY04)



TS : STRAIGHT TEE
L : OUTLET
TR : REDUCING TEE

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PIPING CLASS

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Material : 1-1/4Cr - 1/2Mo
Rating : ASME CLASS 150
Flange Face : RF
C.A.(mm) : 3.00
Gasket : Spiral Wound
Service : PROCESS - CATALYST : / CATALYST
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
2	USE OF SOFT SEATED BALL, PLUG AND BUTTERFLY VALVES SHALL BE LIMITED TO MAXIMUM OF 204DEGC (400DEGF)
6	PIPE THICKNESS CALCULATION TO INCLUDE CORROSION AND EROSION ALLOWANCES DUE TO THE PROCESS CATALYST FLOW, AS PER PROCESS LICENSOR SPECIFICATIONS
36	ASTM A691 CR-MO WELDED PIPES SPECIFIED WITH CLASS 22 CAN BE USED IN LIEU OF CLASS 42 IN NON-LICENSED UNITS ONLY. GRADE SHALL BE AS SPECIFIED IN "PIPE / FLANGE MATERIAL" SECTION IN ATTACHMENT 9.0 OF THIS DOCUMENT

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
541	NPT(F) (CA,F)
773	CLASS 300 (B,F,G)
4608	VALVE WITH NIPPLES (V)

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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P01F-0001X	Pipe ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M PE	
1	0.75		SCH160		P01F-0001Y	Pipe ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M PE	
1	1		SCH160		P01F-0003X	Pipe ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M PE	
1	1.5		SCH160		P01F-0003Y	Pipe ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M PE	
1	2		XS		P01F-0002U	Pipe ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M BE	
1	3		STD		P01F-0002V	Pipe ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M BE	
1	4		STD		P01F-0002W	Pipe ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M BE	
1	6		STD		P01F-00010	Pipe ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M BE	
1	8		SCH30		P01F-00011	Pipe ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M BE	
1	10		SCH30		P01F-0009V	Pipe ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M BE	
1	12		SCH30		P01F-0009W	Pipe ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M BE	
1	14		SCH20		P01F-0009X	Pipe ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M BE	
1	16		SCH20		P01F-0001S	Pipe ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M BE	
1	18		SCH20		P01F-000CK	Pipe ASTM A691 Grade 1-1/4CR Class 22 EFW ASME B36.10M/B36.19M BE	
1	20		STD		P01F-0001V	Pipe ASTM A691 Grade 1-1/4CR Class 22 EFW ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P02F-00068	90 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	0.75		SCH160		P02F-00069	90 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	1		SCH160		P02F-0005B	90 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	1.5		SCH160		P02F-0005C	90 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	2		XS		P02F-00055	90 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	3		STD		P02F-00056	90 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	4		STD		P02F-00057	90 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	6		STD		P02F-00058	90 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	8		SCH30		P02F-000DW	90 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	10		SCH30		P02F-0008V	90 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	12		SCH30		P02F-0008W	90 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	14		SCH20		P02F-0008X	90 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	16		SCH20		P02F-0008Y	90 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	18		SCH20		P02F-0008Z	90 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	20		STD		P02F-000C2	90 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P03F-00065	45 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	0.75		SCH160		P03F-00066	45 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	1		SCH160		P03F-00058	45 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	1.5		SCH160		P03F-00059	45 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	2		XS		P03F-00052	45 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	3		STD		P03F-00053	45 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	4		STD		P03F-00054	45 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	6		STD		P03F-00055	45 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	8		SCH30		P03F-000DN	45 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	10		SCH30		P03F-0008M	45 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	12		SCH30		P03F-0008N	45 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	14		SCH20		P03F-0008P	45 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	16		SCH20		P03F-0008R	45 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	18		SCH20		P03F-0008S	45 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	20		STD		P03F-000BV	45 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P21F-00066	Straight tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	0.75		SCH160		P21F-00067	Straight tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	1		SCH160		P21F-00059	Straight tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	1.5		SCH160		P21F-0005A	Straight tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	2		XS		P21F-00053	Straight tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	

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STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3		STD		P21F-00054	Straight tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	4		STD		P21F-00055	Straight tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	6		STD		P21F-00056	Straight tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	8		SCH30		P21F-000DS	Straight tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	10		SCH30		P21F-0008N	Straight tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	12		SCH30		P21F-0008P	Straight tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	14		SCH20		P21F-0008R	Straight tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	16		SCH20		P21F-0008S	Straight tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	18		SCH20		P21F-000BS	Straight tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	
1	20		STD		P21F-000BT	Straight tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75	SCH160	SCH160	P24F-000FA	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	1.5	0.75	SCH160	SCH160	P24F-000F7	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	1.5	1	SCH160	SCH160	P24F-000D6	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	2	1	XS	SCH160	P24F-000CM	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	2	1.5	XS	SCH160	P24F-000CN	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	3	1.5	STD	SCH160	P24F-000CP	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	3	2	STD	XS	P24F-000CR	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	4	2	STD	XS	P24F-000CS	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	4	3	STD	STD	P24F-000CT	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	6	3	STD	STD	P24F-000CU	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	6	4	STD	STD	P24F-000CV	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	8	4	SCH30	STD	P24F-001X1	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	8	6	SCH30	STD	P24F-0018V	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	10	4	SCH30	STD	P24F-001X2	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	10	6	SCH30	STD	P24F-001X3	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	10	8	SCH30	SCH30	P24F-001X4	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	12	6	SCH30	STD	P24F-000ZJ	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	12	8	SCH30	SCH30	P24F-001X5	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	12	10	SCH30	SCH30	P24F-000L1	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	14	6	SCH20	STD	P24F-000ZM	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	14	8	SCH20	SCH30	P24F-001X6	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	14	10	SCH20	SCH30	P24F-000L2	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	14	12	SCH20	SCH30	P24F-000L3	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	16	6	SCH20	STD	P24F-000ZR	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	16	8	SCH20	SCH30	P24F-001X7	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	16	10	SCH20	SCH30	P24F-000L4	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	16	12	SCH20	SCH30	P24F-000L5	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	16	14	SCH20	SCH20	P24F-000L6	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	18	8	SCH20	SCH30	P24F-001X9	Reducing tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	
1	18	10	SCH20	SCH30	P24F-001X8	Reducing tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	
1	18	12	SCH20	SCH30	P24F-000ZU	Reducing tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	
1	18	14	SCH20	SCH20	P24F-000ZV	Reducing tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	
1	18	16	SCH20	SCH20	P24F-000ZW	Reducing tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	
1	20	8	STD	SCH30	P24F-001XB	Reducing tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	
1	20	10	STD	SCH30	P24F-001XA	Reducing tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	
1	20	12	STD	SCH30	P24F-000ZZ	Reducing tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	
1	20	14	STD	SCH20	P24F-00100	Reducing tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	
1	20	16	STD	SCH20	P24F-00101	Reducing tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	
1	20	18	STD	SCH20	P24F-00102	Reducing tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	SCH160	P27F-000DT	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	1	0.5	SCH160	SCH160	P27F-000DU	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	1	0.75	SCH160	SCH160	P27F-000DV	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	1.5	0.5	SCH160	SCH160	P27F-000DR	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5	0.75	SCH160	SCH160	P27F-000DS	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	1.5	1	SCH160	SCH160	P27F-000BS	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	2	0.75	XS	SCH160	P27F-000B1	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	2	1	XS	SCH160	P27F-000B2	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	2	1.5	XS	SCH160	P27F-000B3	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	3	1.5	STD	SCH160	P27F-000B4	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	3	2	STD	XS	P27F-000B5	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	4	1.5	STD	SCH160	P27F-000B6	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	4	2	STD	XS	P27F-000B7	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	4	3	STD	STD	P27F-000B8	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	6	3	STD	STD	P27F-000B9	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	6	4	STD	STD	P27F-000BA	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	8	4	SCH30	STD	P27F-001EY	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	8	6	SCH30	STD	P27F-0011S	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	10	4	SCH30	STD	P27F-001EZ	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	10	6	SCH30	STD	P27F-001F0	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	10	8	SCH30	SCH30	P27F-001F1	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	12	6	SCH30	STD	P27F-000UK	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	12	8	SCH30	SCH30	P27F-001F2	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	12	10	SCH30	SCH30	P27F-000L3	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	14	6	SCH20	STD	P27F-000UN	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	14	8	SCH20	SCH30	P27F-001F3	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	14	10	SCH20	SCH30	P27F-000L5	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	14	12	SCH20	SCH30	P27F-000L6	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	16	8	SCH20	SCH30	P27F-001F4	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	16	10	SCH20	SCH30	P27F-000L8	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	16	12	SCH20	SCH30	P27F-000L9	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	16	14	SCH20	SCH20	P27F-000LA	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	18	10	SCH20	SCH30	P27F-001F5	Concentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	
1	18	12	SCH20	SCH30	P27F-000UU	Concentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	
1	18	14	SCH20	SCH20	P27F-000UV	Concentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	
1	18	16	SCH20	SCH20	P27F-000UW	Concentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	
1	20	12	STD	SCH30	P27F-000UX	Concentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	
1	20	14	STD	SCH20	P27F-000UY	Concentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	
1	20	16	STD	SCH20	P27F-000UZ	Concentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	
1	20	18	STD	SCH20	P27F-000V0	Concentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	SCH160	P28F-000DT	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	1	0.5	SCH160	SCH160	P28F-000DU	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	1	0.75	SCH160	SCH160	P28F-000DV	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	1.5	0.5	SCH160	SCH160	P28F-000DR	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	1.5	0.75	SCH160	SCH160	P28F-000DS	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	1.5	1	SCH160	SCH160	P28F-000BS	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	2	0.75	XS	SCH160	P28F-000B1	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	2	1	XS	SCH160	P28F-000B2	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	2	1.5	XS	SCH160	P28F-000B3	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	3	1.5	STD	SCH160	P28F-000B4	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	3	2	STD	XS	P28F-000B5	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	4	1.5	STD	SCH160	P28F-000B6	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	4	2	STD	XS	P28F-000B7	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	4	3	STD	STD	P28F-000B8	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	6	3	STD	STD	P28F-000B9	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	6	4	STD	STD	P28F-000BA	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	8	4	SCH30	STD	P28F-001FD	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	8	6	SCH30	STD	P28F-0011W	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	10	4	SCH30	STD	P28F-001FE	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	10	6	SCH30	STD	P28F-001FF	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	10	8	SCH30	SCH30	P28F-001FG	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	12	6	SCH30	STD	P28F-000UK	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	12	8	SCH30	SCH30	P28F-001FH	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	12	10	SCH30	SCH30	P28F-000L3	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	14	6	SCH20	STD	P28F-000UN	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	14	8	SCH20	SCH30	P28F-001FJ	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	14	10	SCH20	SCH30	P28F-000L5	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	14	12	SCH20	SCH30	P28F-000L6	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	16	8	SCH20	SCH30	P28F-001FK	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	16	10	SCH20	SCH30	P28F-000L8	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	16	12	SCH20	SCH30	P28F-000L9	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	16	14	SCH20	SCH20	P28F-000LA	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	18	10	SCH20	SCH30	P28F-001FL	Eccentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	
1	18	12	SCH20	SCH30	P28F-000UU	Eccentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	
1	18	14	SCH20	SCH20	P28F-000UV	Eccentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	
1	18	16	SCH20	SCH20	P28F-000UW	Eccentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	
1	20	12	STD	SCH30	P28F-000UX	Eccentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	
1	20	14	STD	SCH20	P28F-000UY	Eccentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	
1	20	16	STD	SCH20	P28F-000UZ	Eccentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	
1	20	18	STD	SCH20	P28F-000V0	Eccentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P29F-000BP	Cap ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	0.75		SCH160		P29F-000BR	Cap ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	1		SCH160		P29F-000BS	Cap ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	1.5		SCH160		P29F-000BT	Cap ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	2		XS		P29F-00050	Cap ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	3		STD		P29F-00051	Cap ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	4		STD		P29F-00052	Cap ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	6		STD		P29F-00053	Cap ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	8		SCH30		P29F-000DL	Cap ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	10		SCH30		P29F-0008C	Cap ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	12		SCH30		P29F-0008D	Cap ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	14		SCH20		P29F-0008E	Cap ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	16		SCH20		P29F-0008F	Cap ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	18		SCH20		P29F-0008G	Cap ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	20		STD		P29F-000BL	Cap ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
541	0.75				P29G-0001R	Cap ASTM A182 Grade F11 Class 1 Class 6000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P41F-0002D	Straight nipple ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		XXS		P41F-0002E	Straight nipple ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		XXS		P41F-0002F	Straight nipple ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		XXS		P41F-0002G	Straight nipple ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2	0.75	XS	SCH160	P31G-001CW	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	3	0.75	STD	SCH160	P31G-001CX	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	4	0.75	STD	SCH160	P31G-001CZ	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	6	0.75	STD	SCH160	P31G-001JD	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	8	0.75	SCH30	SCH160	P31G-00295	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	10	0.75	SCH30	SCH160	P31G-0029A	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	12	0.75	SCH30	SCH160	P31G-001JN	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	14	0.75	SCH20	SCH160	P31G-001JS	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	16	0.75	SCH20	SCH160	P31G-001JV	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	18	0.75	SCH20	SCH160	P31G-001JY	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	

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OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	20	0.75	STD	SCH160	P31G-001K1	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	3	1	STD	SCH160	P31G-001CY	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	4	1	STD	SCH160	P31G-001D0	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	6	1	STD	SCH160	P31G-001JE	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	8	1	SCH30	SCH160	P31G-00296	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	10	1	SCH30	SCH160	P31G-0029B	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	12	1	SCH30	SCH160	P31G-001JP	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	14	1	SCH20	SCH160	P31G-001JT	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	16	1	SCH20	SCH160	P31G-001JW	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	18	1	SCH20	SCH160	P31G-001JZ	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	20	1	STD	SCH160	P31G-001K2	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	4	1.5	STD	SCH160	P31G-001D1	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	6	1.5	STD	SCH160	P31G-001JF	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	8	1.5	SCH30	SCH160	P31G-00297	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	10	1.5	SCH30	SCH160	P31G-0029C	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	12	1.5	SCH30	SCH160	P31G-001JR	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	14	1.5	SCH20	SCH160	P31G-001JU	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	16	1.5	SCH20	SCH160	P31G-001JX	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	18	1.5	SCH20	SCH160	P31G-001K0	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	20	1.5	STD	SCH160	P31G-001K3	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	6	2	STD	XS	P31G-001BZ	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	8	2	SCH30	XS	P31G-00298	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	10	2	SCH30	XS	P31G-0029D	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	12	2	SCH30	XS	P31G-001C4	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	14	2	SCH20	XS	P31G-001C7	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	16	2	SCH20	XS	P31G-001CA	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	18	2	SCH20	XS	P31G-001CD	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	20	2	STD	XS	P31G-001CH	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	8	3	SCH30	STD	P31G-00299	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	10	3	SCH30	STD	P31G-0029E	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	12	3	SCH30	STD	P31G-001C5	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	14	3	SCH20	STD	P31G-001C8	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	16	3	SCH20	STD	P31G-001CB	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	18	3	SCH20	STD	P31G-001CE	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	20	3	STD	STD	P31G-001CJ	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	12	4	SCH30	STD	P31G-001C6	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	14	4	SCH20	STD	P31G-001C9	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	16	4	SCH20	STD	P31G-001CC	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	18	4	SCH20	STD	P31G-001CF	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	20	4	STD	STD	P31G-001CK	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	18	6	SCH20	STD	P31G-001CG	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	20	6	STD	STD	P31G-001CL	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30G-0001G	Plug ASTM A182 Grade F11 Class 1 ASME B16.11 NPT Round head	
1	0.75				P30G-0001H	Plug ASTM A182 Grade F11 Class 1 ASME B16.11 NPT Round head	
1	1				P30G-0001J	Plug ASTM A182 Grade F11 Class 1 ASME B16.11 NPT Round head	
1	1.5				P30G-0001K	Plug ASTM A182 Grade F11 Class 1 ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P61G-000R5	Flange WN ASTM A182 Grade F11 Class 2 Class 150 ASME B16.5 RF	
1	0.75		SCH160		P61G-000R6	Flange WN ASTM A182 Grade F11 Class 2 Class 150 ASME B16.5 RF	
1	1		SCH160		P61G-000R7	Flange WN ASTM A182 Grade F11 Class 2 Class 150 ASME B16.5 RF	
1	1.5		SCH160		P61G-000R8	Flange WN ASTM A182 Grade F11 Class 2 Class 150 ASME B16.5 RF	
1	2		XS		P61G-0006E	Flange WN ASTM A182 Grade F11 Class 2 Class 150 ASME B16.5 RF	
1	3		STD		P61G-0006H	Flange WN ASTM A182 Grade F11 Class 2 Class 150 ASME B16.5 RF	
1	4		STD		P61G-0006J	Flange WN ASTM A182 Grade F11 Class 2 Class 150 ASME B16.5 RF	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	6		STD		P61G-0006K	Flange WN ASTM A182 Grade F11 Class 2 Class 150 ASME B16.5 RF	
1	8		SCH30		P61G-0011Z	Flange WN ASTM A182 Grade F11 Class 2 Class 150 ASME B16.5 RF	
1	10		SCH30		P61G-0011Y	Flange WN ASTM A182 Grade F11 Class 2 Class 150 ASME B16.5 RF	
1	12		SCH30		P61G-000M1	Flange WN ASTM A182 Grade F11 Class 2 Class 150 ASME B16.5 RF	
1	14		SCH20		P61G-000M2	Flange WN ASTM A182 Grade F11 Class 2 Class 150 ASME B16.5 RF	
1	16		SCH20		P61G-000M3	Flange WN ASTM A182 Grade F11 Class 2 Class 150 ASME B16.5 RF	
1	18		SCH20		P61G-000M4	Flange WN ASTM A182 Grade F11 Class 2 Class 150 ASME B16.5 RF	
1	20		STD		P61G-0006F	Flange WN ASTM A182 Grade F11 Class 2 Class 150 ASME B16.5 RF	
541	0.5				P61G-001B4	Flange NPT ASTM A182 Grade F11 Class 2 Class 150 ASME B16.5 RF	
541	0.75				P61G-0015T	Flange NPT ASTM A182 Grade F11 Class 2 Class 150 ASME B16.5 RF	
773	0.5		SCH160		P61G-000AP	Flange WN ASTM A182 Grade F11 Class 2 Class 300 ASME B16.5 RF	
773	0.75		SCH160		P61G-000AR	Flange WN ASTM A182 Grade F11 Class 2 Class 300 ASME B16.5 RF	
773	1		SCH160		P61G-0009L	Flange WN ASTM A182 Grade F11 Class 2 Class 300 ASME B16.5 RF	
773	1.5		SCH160		P61G-0009M	Flange WN ASTM A182 Grade F11 Class 2 Class 300 ASME B16.5 RF	
773	2		XS		P61G-0006V	Flange WN ASTM A182 Grade F11 Class 2 Class 300 ASME B16.5 RF	
773	3		STD		P61G-0006Y	Flange WN ASTM A182 Grade F11 Class 2 Class 300 ASME B16.5 RF	
773	4		STD		P61G-0006Z	Flange WN ASTM A182 Grade F11 Class 2 Class 300 ASME B16.5 RF	
773	6		STD		P61G-00026	Flange WN ASTM A182 Grade F11 Class 2 Class 300 ASME B16.5 RF	
773	8		SCH30		P61G-00027	Flange WN ASTM A182 Grade F11 Class 2 Class 300 ASME B16.5 RF	
773	10		SCH30		P61G-00120	Flange WN ASTM A182 Grade F11 Class 2 Class 300 ASME B16.5 RF	
773	12		SCH30		P61G-000M8	Flange WN ASTM A182 Grade F11 Class 2 Class 300 ASME B16.5 RF	
773	14		SCH20		P61G-000M9	Flange WN ASTM A182 Grade F11 Class 2 Class 300 ASME B16.5 RF	
773	16		SCH20		P61G-000MA	Flange WN ASTM A182 Grade F11 Class 2 Class 300 ASME B16.5 RF	
773	18		SCH20		P61G-000MB	Flange WN ASTM A182 Grade F11 Class 2 Class 300 ASME B16.5 RF	
773	20		STD		P61G-0006W	Flange WN ASTM A182 Grade F11 Class 2 Class 300 ASME B16.5 RF	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67G-0003U	Blind flange ASTM A182 Grade F11 Class 2 Class 150 ASME B16.5 RF	
1	0.75				P67G-0003V	Blind flange ASTM A182 Grade F11 Class 2 Class 150 ASME B16.5 RF	
1	1				P67G-0003W	Blind flange ASTM A182 Grade F11 Class 2 Class 150 ASME B16.5 RF	
1	1.5				P67G-0003X	Blind flange ASTM A182 Grade F11 Class 2 Class 150 ASME B16.5 RF	
1	2				P67G-00043	Blind flange ASTM A182 Grade F11 Class 2 Class 150 ASME B16.5 RF	
1	3				P67G-00046	Blind flange ASTM A182 Grade F11 Class 2 Class 150 ASME B16.5 RF	
1	4				P67G-00047	Blind flange ASTM A182 Grade F11 Class 2 Class 150 ASME B16.5 RF	
1	6				P67G-00048	Blind flange ASTM A182 Grade F11 Class 2 Class 150 ASME B16.5 RF	
1	8				P67G-00049	Blind flange ASTM A182 Grade F11 Class 2 Class 150 ASME B16.5 RF	
1	10				P67G-0003Y	Blind flange ASTM A182 Grade F11 Class 2 Class 150 ASME B16.5 RF	
1	12				P67G-0003Z	Blind flange ASTM A182 Grade F11 Class 2 Class 150 ASME B16.5 RF	
1	14				P67G-00040	Blind flange ASTM A182 Grade F11 Class 2 Class 150 ASME B16.5 RF	
1	16				P67G-00041	Blind flange ASTM A182 Grade F11 Class 2 Class 150 ASME B16.5 RF	
1	18				P67G-00042	Blind flange ASTM A182 Grade F11 Class 2 Class 150 ASME B16.5 RF	
1	20				P67G-00044	Blind flange ASTM A182 Grade F11 Class 2 Class 150 ASME B16.5 RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-003CR	Spiral wound gasket SS316 winding / Graphite-mica filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	0.75				P73T-003CS	Spiral wound gasket SS316 winding / Graphite-mica filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	1				P73T-003CT	Spiral wound gasket SS316 winding / Graphite-mica filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	1.5				P73T-003CU	Spiral wound gasket SS316 winding / Graphite-mica filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	2				P73T-003CW	Spiral wound gasket SS316 winding / Graphite-mica filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	3				P73T-003CX	Spiral wound gasket SS316 winding / Graphite-mica filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	4				P73T-003CY	Spiral wound gasket SS316 winding / Graphite-mica filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	6				P73T-003CZ	Spiral wound gasket SS316 winding / Graphite-mica filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	8				P73T-003D0	Spiral wound gasket SS316 winding / Graphite-mica filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	

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GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	10				P73T-003CV	Spiral wound gasket SS316 winding / Graphite-mica filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	12				P73T-003D1	Spiral wound gasket SS316 winding / Graphite-mica filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	14				P73T-003D2	Spiral wound gasket SS316 winding / Graphite-mica filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	16				P73T-003D3	Spiral wound gasket SS316 winding / Graphite-mica filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	18				P73T-003D4	Spiral wound gasket SS316 winding / Graphite-mica filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	20				P73T-003D5	Spiral wound gasket SS316 winding / Graphite-mica filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
773	0.5				P73T-003AM	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
773	0.75				P73T-003AN	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
773	1				P73T-003AP	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
773	1.5				P73T-003AR	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
773	2				P73T-003AX	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
773	3				P73T-003B0	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
773	4				P73T-003B1	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
773	6				P73T-003B2	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
773	8				P73T-003B3	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
773	10				P73T-003AS	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
773	12				P73T-003AT	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
773	14				P73T-003AU	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
773	16				P73T-003AV	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
773	18				P73T-003AW	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
773	20				P73T-003AY	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-16				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B16 / A194 Grade 4 ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	18-20				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B16 / A194 Grade 4 ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
773	0.5-10				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B16 / A194 Grade 4 ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
773	12-20				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B16 / A194 Grade 4 ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81G-000C3	Gate valve ASTM A182 Grade F11 Class 2 Class 150 API 602 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2	
1	0.75				P81G-000C4	Gate valve ASTM A182 Grade F11 Class 2 Class 150 API 602 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2	
1	1				P81G-000C5	Gate valve ASTM A182 Grade F11 Class 2 Class 150 API 602 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2	
1	1.5				P81G-000C6	Gate valve ASTM A182 Grade F11 Class 2 Class 150 API 602 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2	
1	2				P81H-000WT	Gate valve ASTM A217 Grade WC6 Class 150 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2	
4608	0.75				P81G-000DY	Gate valve ASTM A182 Grade F11 Class 2 Class 150 API 602 BW both sides w/ nipples BE - NPT ASTM A335-P11 XXS-nipple Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2	

BALL VALVE (Q)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P84G-0000L	Ball valve Long-pattern ASTM A182 Grade F11 Class 2 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	
1	0.75				P84G-0000M	Ball valve Long-pattern ASTM A182 Grade F11 Class 2 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	
1	1				P84G-0000N	Ball valve Long-pattern ASTM A182 Grade F11 Class 2 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	
1	1.5				P84G-0000P	Ball valve Long-pattern ASTM A182 Grade F11 Class 2 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	

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BALL VALVE (Q)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2				P84H-0001X	Ball valve Long-pattern ASTM A217 Grade WC6 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	
1	3				P84H-0001Y	Ball valve Long-pattern ASTM A217 Grade WC6 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	
1	4				P84H-0001Z	Ball valve Long-pattern ASTM A217 Grade WC6 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	
1	6				P84H-00026	Ball valve Long-pattern ASTM A217 Grade WC6 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design	
1	8				P84H-00027	Ball valve Long-pattern ASTM A217 Grade WC6 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design	
1	10				P84H-00020	Ball valve Long-pattern ASTM A217 Grade WC6 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design	
1	12				P84H-00021	Ball valve Long-pattern ASTM A217 Grade WC6 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design	
1	14				P84H-00022	Ball valve Long-pattern ASTM A217 Grade WC6 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design	
1	16				P84H-00023	Ball valve Long-pattern ASTM A217 Grade WC6 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design	
1	18				P84H-00024	Ball valve Long-pattern ASTM A217 Grade WC6 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design	
1	20				P84H-00025	Ball valve Long-pattern ASTM A217 Grade WC6 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71G-0000N	Spectacle blank ASTM A182 Grade F11 Class 2 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	0.75				P71G-0000P	Spectacle blank ASTM A182 Grade F11 Class 2 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	1				P71G-0000R	Spectacle blank ASTM A182 Grade F11 Class 2 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71G-0000S	Spectacle blank ASTM A182 Grade F11 Class 2 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	2				P71G-0000V	Spectacle blank ASTM A182 Grade F11 Class 2 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	3				P71G-0000W	Spectacle blank ASTM A182 Grade F11 Class 2 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	4				P71G-0000X	Spectacle blank ASTM A182 Grade F11 Class 2 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	6				P71G-0000Y	Spectacle blank ASTM A182 Grade F11 Class 2 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	8				P71G-0000Z	Spectacle blank ASTM A182 Grade F11 Class 2 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	10				P71G-0000T	Spectacle blank ASTM A182 Grade F11 Class 2 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	12				P71G-0000U	Spectacle blank ASTM A182 Grade F11 Class 2 Class 150 Standard-drawing Flange ASME B16.5 RF	

PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72G-0000B	Paddle blank ASTM A182 Grade F11 Class 2 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	16				P72G-0000C	Paddle blank ASTM A182 Grade F11 Class 2 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	18				P72G-0000D	Paddle blank ASTM A182 Grade F11 Class 2 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	20				P72G-0000E	Paddle blank ASTM A182 Grade F11 Class 2 Class 150 Standard-drawing Flange ASME B16.5 RF	

PADDLE SPACER (PS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72G-0000F	Paddle spacer ASTM A182 Grade F11 Class 2 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	16				P72G-0000G	Paddle spacer ASTM A182 Grade F11 Class 2 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	18				P72G-0000H	Paddle spacer ASTM A182 Grade F11 Class 2 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	20				P72G-0000J	Paddle spacer ASTM A182 Grade F11 Class 2 Class 150 Standard-drawing Flange ASME B16.5 RF	

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BOLT TABLE (B_A2DC01 , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	60	P80S-00GNA		
0.75	4	0.500	65	P80S-00GN9		
1	4	0.500	70	P80S-00GN8		
1.5	4	0.500	75	P80S-00GN7		
2	4	0.625	85	P80S-00GLJ		
3	4	0.625	95	P80S-00GLG		
4	8	0.625	95	P80S-00GLG		
6	8	0.750	105	P80S-00GLE		
8	8	0.750	110	P80S-00GLD		
10	12	0.875	120	P80S-00FV9		
12	12	0.875	120	P80S-00FV9		
14	12	1.000	135	P80S-00FRE		
16	16	1.000	140	P80S-00FRD		
18	16	1.125	150	P80S-00FHD		
20	20	1.125	160	P80S-00FHB		

BOLT TABLE (B_A2DC01_773 , STUD ASME RF, OPTION CODE 773)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-00GN8		
0.75	4	0.625	75	P80S-00GLL		
1	4	0.625	80	P80S-00GLK		
1.5	4	0.750	95	P80S-00FVE		
2	8	0.625	90	P80S-00GLH		
3	8	0.750	110	P80S-00GLD		
4	8	0.750	115	P80S-00GLC		
6	12	0.750	125	P80S-00GLA		
8	12	0.875	140	P80S-00FV5		
10	16	1.000	160	P80S-00FR9		
12	16	1.125	175	P80S-00FH8		
14	20	1.125	180	P80S-00FH7		
16	20	1.250	190	P80S-00F9Y		
18	24	1.250	200	P80S-00F9W		
20	24	1.250	210	P80S-00F9U		

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BRANCH TABLE (T_A2DC01)

RUN PIPE SIZE (in) \ BRANCH SIZE (in)	0.5	0.75	1	1.5	2	3	4	6	8	10	12	14	16	18	20
0.5	TS														
0.75		TS													
1		TR	TS												
1.5		TR	TR	TS											
2		L	TR	TR	TS										
3		L	L	TR	TR	TS									
4	L	L	L	L	TR	TR	TS								
6	L	L	L	L	L	TR	TR	TS							
8		L	L	L	L	L	TR	TR	TS						
10		L	L	L	L	L	TR	TR	TR	TS					
12		L	L	L	L	L	L	TR	TR	TR	TS				
14		L	L	L	L	L	L	TR	TR	TR	TR	TS			
16		L	L	L	L	L	L	TR	TR	TR	TR	TR	TS		
18		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TS	
20		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TR	TS

TS : STRAIGHT TEE
TR : REDUCING TEE
L : OUTLET

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Material : 1-1/4Cr - 1/2Mo
Rating : ASME CLASS 150
Flange Face : RF
C.A.(mm) : 3.00
Gasket : Spiral Wound
Service : PROCESS - GENERAL PROCESS NON SOUR, NON CORROSIVE
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
24	FOR ALL RELEVANT PIPING CLASSES WITH LINE DESIGN TEMPERATURE ABOVE 427DEGC, IN SPIRAL WOUND GASKET, SUITABLE GASKET FILLER MATERIAL SUCH AS COMBINATION OF MICA LAYERS AND GRAPHITE FILLERS OR EQUIVALENT SHALL BE REVIEWED AND SELECTED OR AS DEFINED BY THE LICENSOR
36	ASTM A691 CR-MO WELDED PIPES SPECIFIED WITH CLASS 22 CAN BE USED IN LIEU OF CLASS 42 IN NON-LICENSED UNITS ONLY. GRADE SHALL BE AS SPECIFIED IN "PIPE / FLANGE MATERIAL" SECTION IN ATTACHMENT 9.0 OF THIS DOCUMENT

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
541	NPT(F) (CA,L)
773	CLASS 300 (B,F,G,PB,PS)
4608	VALVE WITH NIPPLES (V)

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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P01F-0001X	Pipe ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M PE	
1	0.75		SCH160		P01F-0001Y	Pipe ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M PE	
1	1		SCH160		P01F-0003X	Pipe ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M PE	
1	1.5		SCH160		P01F-0003Y	Pipe ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M PE	
1	2		XS		P01F-0002U	Pipe ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M BE	
1	3		STD		P01F-0002V	Pipe ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M BE	
1	4		STD		P01F-0002W	Pipe ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M BE	
1	6		STD		P01F-00010	Pipe ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M BE	
1	8		SCH30		P01F-00011	Pipe ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M BE	
1	10		SCH30		P01F-0009V	Pipe ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M BE	
1	12		SCH30		P01F-0009W	Pipe ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M BE	
1	14		SCH20		P01F-0009X	Pipe ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M BE	
1	16		SCH20		P01F-0001S	Pipe ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M BE	
1	18		SCH20		P01F-000CK	Pipe ASTM A691 Grade 1-1/4CR Class 22 EFW ASME B36.10M/B36.19M BE	
1	20		STD		P01F-0001V	Pipe ASTM A691 Grade 1-1/4CR Class 22 EFW ASME B36.10M/B36.19M BE	
1	24		STD		P01F-0002Z	Pipe ASTM A691 Grade 1-1/4CR Class 22 EFW ASME B36.10M/B36.19M BE	
1	30		XS		P01F-001NZ	Pipe ASTM A691 Grade 1-1/4CR Class 22 EFW ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P02G-00017	90 degree elbow ASTM A182 Grade F11 Class 1 Class 6000 ASME B16.11 SW	
1	0.75				P02G-00018	90 degree elbow ASTM A182 Grade F11 Class 1 Class 6000 ASME B16.11 SW	
1	1				P02G-0001S	90 degree elbow ASTM A182 Grade F11 Class 1 Class 6000 ASME B16.11 SW	
1	1.5				P02G-0001T	90 degree elbow ASTM A182 Grade F11 Class 1 Class 6000 ASME B16.11 SW	
1	2		XS		P02F-00055	90 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	3		STD		P02F-00056	90 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	4		STD		P02F-00057	90 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	6		STD		P02F-00058	90 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	8		SCH30		P02F-000DW	90 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	10		SCH30		P02F-0008V	90 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	12		SCH30		P02F-0008W	90 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	14		SCH20		P02F-0008X	90 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	16		SCH20		P02F-0008Y	90 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	18		SCH20		P02F-0008Z	90 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	20		STD		P02F-000C2	90 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	24		STD		P02F-000C3	90 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	30		XS		P02F-000HJ	90 degree elbow ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P03G-00017	45 degree elbow ASTM A182 Grade F11 Class 1 Class 6000 ASME B16.11 SW	
1	0.75				P03G-00018	45 degree elbow ASTM A182 Grade F11 Class 1 Class 6000 ASME B16.11 SW	
1	1				P03G-0001M	45 degree elbow ASTM A182 Grade F11 Class 1 Class 6000 ASME B16.11 SW	
1	1.5				P03G-0001N	45 degree elbow ASTM A182 Grade F11 Class 1 Class 6000 ASME B16.11 SW	
1	2		XS		P03F-00052	45 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	3		STD		P03F-00053	45 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	4		STD		P03F-00054	45 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	6		STD		P03F-00055	45 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	8		SCH30		P03F-000DN	45 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	10		SCH30		P03F-0008M	45 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	12		SCH30		P03F-0008N	45 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	14		SCH20		P03F-0008P	45 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	16		SCH20		P03F-0008R	45 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	18		SCH20		P03F-0008S	45 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	20		STD		P03F-000BV	45 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	24		STD		P03F-000BW	45 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	30		XS		P03F-000H9	45 degree elbow ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW Long radius	

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STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P21G-00017	Straight tee ASTM A182 Grade F11 Class 1 Class 6000 ASME B16.11 SW	
1	0.75				P21G-00018	Straight tee ASTM A182 Grade F11 Class 1 Class 6000 ASME B16.11 SW	
1	1				P21G-0001S	Straight tee ASTM A182 Grade F11 Class 1 Class 6000 ASME B16.11 SW	
1	1.5				P21G-0001T	Straight tee ASTM A182 Grade F11 Class 1 Class 6000 ASME B16.11 SW	
1	2		XS		P21F-00053	Straight tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	3		STD		P21F-00054	Straight tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	4		STD		P21F-00055	Straight tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	6		STD		P21F-00056	Straight tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	8		SCH30		P21F-000DS	Straight tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	10		SCH30		P21F-0008N	Straight tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	12		SCH30		P21F-0008P	Straight tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	14		SCH20		P21F-0008R	Straight tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	16		SCH20		P21F-0008S	Straight tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	18		SCH20		P21F-000BS	Straight tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	
1	20		STD		P21F-000BT	Straight tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	
1	24		STD		P21F-000BU	Straight tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	
1	30		XS		P21F-000HD	Straight tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75			P24G-0001S	Reducing tee ASTM A182 Grade F11 Class 1 Class 6000 ASME B16.11 SW	
1	1.5	0.75			P24G-0001T	Reducing tee ASTM A182 Grade F11 Class 1 Class 6000 ASME B16.11 SW	
1	1.5	1			P24G-0001U	Reducing tee ASTM A182 Grade F11 Class 1 Class 6000 ASME B16.11 SW	
1	2	1	XS	SCH160	P24F-000CM	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	2	1.5	XS	SCH160	P24F-000CN	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	3	1.5	STD	SCH160	P24F-000CP	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	3	2	STD	XS	P24F-000CR	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	4	2	STD	XS	P24F-000CS	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	4	3	STD	STD	P24F-000CT	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	6	3	STD	STD	P24F-000CU	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	6	4	STD	STD	P24F-000CV	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	8	4	SCH30	STD	P24F-001X1	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	8	6	SCH30	STD	P24F-0018V	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	10	4	SCH30	STD	P24F-001X2	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	10	6	SCH30	STD	P24F-001X3	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	10	8	SCH30	SCH30	P24F-001X4	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	12	6	SCH30	STD	P24F-000ZJ	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	12	8	SCH30	SCH30	P24F-001X5	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	12	10	SCH30	SCH30	P24F-000L1	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	14	6	SCH20	STD	P24F-000ZM	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	14	8	SCH20	SCH30	P24F-001X6	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	14	10	SCH20	SCH30	P24F-000L2	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	14	12	SCH20	SCH30	P24F-000L3	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	16	6	SCH20	STD	P24F-000ZR	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	16	8	SCH20	SCH30	P24F-001X7	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	16	10	SCH20	SCH30	P24F-000L4	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	16	12	SCH20	SCH30	P24F-000L5	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	16	14	SCH20	SCH20	P24F-000L6	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	18	8	SCH20	SCH30	P24F-001X9	Reducing tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	
1	18	10	SCH20	SCH30	P24F-001X8	Reducing tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	
1	18	12	SCH20	SCH30	P24F-000ZU	Reducing tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	
1	18	14	SCH20	SCH20	P24F-000ZV	Reducing tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	
1	18	16	SCH20	SCH20	P24F-000ZW	Reducing tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	
1	20	8	STD	SCH30	P24F-001XB	Reducing tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	
1	20	10	STD	SCH30	P24F-001XA	Reducing tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	
1	20	12	STD	SCH30	P24F-000ZZ	Reducing tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	
1	20	14	STD	SCH20	P24F-00100	Reducing tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	
1	20	16	STD	SCH20	P24F-00101	Reducing tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	
1	20	18	STD	SCH20	P24F-00102	Reducing tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	

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REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	24	10	STD	SCH30	P24F-001XC	Reducing tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	
1	24	12	STD	SCH30	P24F-00104	Reducing tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	
1	24	14	STD	SCH20	P24F-00105	Reducing tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	
1	24	16	STD	SCH20	P24F-00106	Reducing tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	
1	24	18	STD	SCH20	P24F-00107	Reducing tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	
1	24	20	STD	STD	P24F-00108	Reducing tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	
1	30	10	XS	SCH30	P24F-001XD	Reducing tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	
1	30	12	XS	SCH30	P24F-001XE	Reducing tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	
1	30	14	XS	SCH20	P24F-001XF	Reducing tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	
1	30	16	XS	SCH20	P24F-001XG	Reducing tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	
1	30	18	XS	SCH20	P24F-001XH	Reducing tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	
1	30	20	XS	STD	P24F-001XJ	Reducing tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	
1	30	24	XS	STD	P24F-001XK	Reducing tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	STD	XS	P27F-000B5	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	4	2	STD	XS	P27F-000B7	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	4	3	STD	STD	P27F-000B8	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	6	3	STD	STD	P27F-000B9	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	6	4	STD	STD	P27F-000BA	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	8	4	SCH30	STD	P27F-001EY	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	8	6	SCH30	STD	P27F-0011S	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	10	4	SCH30	STD	P27F-001EZ	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	10	6	SCH30	STD	P27F-001F0	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	10	8	SCH30	SCH30	P27F-001F1	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	12	6	SCH30	STD	P27F-000UK	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	12	8	SCH30	SCH30	P27F-001F2	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	12	10	SCH30	SCH30	P27F-000L3	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	14	6	SCH20	STD	P27F-000UN	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	14	8	SCH20	SCH30	P27F-001F3	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	14	10	SCH20	SCH30	P27F-000L5	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	14	12	SCH20	SCH30	P27F-000L6	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	16	8	SCH20	SCH30	P27F-001F4	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	16	10	SCH20	SCH30	P27F-000L8	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	16	12	SCH20	SCH30	P27F-000L9	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	16	14	SCH20	SCH20	P27F-000LA	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	18	10	SCH20	SCH30	P27F-001F5	Concentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	
1	18	12	SCH20	SCH30	P27F-000UU	Concentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	
1	18	14	SCH20	SCH20	P27F-000UV	Concentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	
1	18	16	SCH20	SCH20	P27F-000UW	Concentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	
1	20	12	STD	SCH30	P27F-000UX	Concentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	
1	20	14	STD	SCH20	P27F-000UY	Concentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	
1	20	16	STD	SCH20	P27F-000UZ	Concentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	
1	20	18	STD	SCH20	P27F-000V0	Concentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	
1	24	16	STD	SCH20	P27F-000V1	Concentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	
1	24	18	STD	SCH20	P27F-000V2	Concentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	
1	24	20	STD	STD	P27F-000V3	Concentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	
1	30	20	XS	STD	P27F-001F6	Concentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	
1	30	24	XS	STD	P27F-001F7	Concentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	STD	XS	P28F-000B5	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	4	2	STD	XS	P28F-000B7	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	4	3	STD	STD	P28F-000B8	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	6	3	STD	STD	P28F-000B9	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	6	4	STD	STD	P28F-000BA	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	8	4	SCH30	STD	P28F-001FD	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	8	6	SCH30	STD	P28F-0011W	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	10	4	SCH30	STD	P28F-001FE	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	10	6	SCH30	STD	P28F-001FF	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	10	8	SCH30	SCH30	P28F-001FG	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	12	6	SCH30	STD	P28F-000UK	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	12	8	SCH30	SCH30	P28F-001FH	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	12	10	SCH30	SCH30	P28F-000L3	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	14	6	SCH20	STD	P28F-000UN	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	14	8	SCH20	SCH30	P28F-001FJ	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	14	10	SCH20	SCH30	P28F-000L5	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	14	12	SCH20	SCH30	P28F-000L6	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	16	8	SCH20	SCH30	P28F-001FK	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	16	10	SCH20	SCH30	P28F-000L8	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	16	12	SCH20	SCH30	P28F-000L9	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	16	14	SCH20	SCH20	P28F-000LA	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	18	10	SCH20	SCH30	P28F-001FL	Eccentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	
1	18	12	SCH20	SCH30	P28F-000UU	Eccentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	
1	18	14	SCH20	SCH20	P28F-000UV	Eccentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	
1	18	16	SCH20	SCH20	P28F-000UW	Eccentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	
1	20	12	STD	SCH30	P28F-000UX	Eccentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	
1	20	14	STD	SCH20	P28F-000UY	Eccentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	
1	20	16	STD	SCH20	P28F-000UZ	Eccentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	
1	20	18	STD	SCH20	P28F-000V0	Eccentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	
1	24	16	STD	SCH20	P28F-000V1	Eccentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	
1	24	18	STD	SCH20	P28F-000V2	Eccentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	
1	24	20	STD	STD	P28F-000V3	Eccentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	
1	30	20	XS	STD	P28F-001FM	Eccentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	
1	30	24	XS	STD	P28F-001FN	Eccentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P29G-00012	Cap ASTM A182 Grade F11 Class 1 Class 6000 ASME B16.11 SW	
1	0.75				P29G-00013	Cap ASTM A182 Grade F11 Class 1 Class 6000 ASME B16.11 SW	
1	1				P29G-0001G	Cap ASTM A182 Grade F11 Class 1 Class 6000 ASME B16.11 SW	
1	1.5				P29G-0001H	Cap ASTM A182 Grade F11 Class 1 Class 6000 ASME B16.11 SW	
1	2		XS		P29F-00050	Cap ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	3		STD		P29F-00051	Cap ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	4		STD		P29F-00052	Cap ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	6		STD		P29F-00053	Cap ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	8		SCH30		P29F-000DL	Cap ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	10		SCH30		P29F-0008C	Cap ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	12		SCH30		P29F-0008D	Cap ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	14		SCH20		P29F-0008E	Cap ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	16		SCH20		P29F-0008F	Cap ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	18		SCH20		P29F-0008G	Cap ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	20		STD		P29F-000BL	Cap ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	24		STD		P29F-000BM	Cap ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	30		XS		P29F-000GN	Cap ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
541	0.75				P29G-0001R	Cap ASTM A182 Grade F11 Class 1 Class 6000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P41F-0002D	Straight nipple ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		XXS		P41F-0002E	Straight nipple ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		XXS		P41F-0002F	Straight nipple ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		XXS		P41F-0002G	Straight nipple ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

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CON SWAGED NIPPLE (SNC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	SCH160	P42F-0001N	Concentric swaged nipple ASTM A234 Grade WP11 Class 1 Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	SCH160	SCH160	P42F-0001P	Concentric swaged nipple ASTM A234 Grade WP11 Class 1 Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	SCH160	SCH160	P42F-0001R	Concentric swaged nipple ASTM A234 Grade WP11 Class 1 Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	SCH160	SCH160	P42F-0001S	Concentric swaged nipple ASTM A234 Grade WP11 Class 1 Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	SCH160	SCH160	P42F-0001T	Concentric swaged nipple ASTM A234 Grade WP11 Class 1 Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	SCH160	SCH160	P42F-0001U	Concentric swaged nipple ASTM A234 Grade WP11 Class 1 Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	XS	SCH160	P42F-0003X	Concentric swaged nipple ASTM A234 Grade WP11 Class 1 Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	XS	SCH160	P42F-0003Y	Concentric swaged nipple ASTM A234 Grade WP11 Class 1 Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	XS	SCH160	P42F-0003Z	Concentric swaged nipple ASTM A234 Grade WP11 Class 1 Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	XS	SCH160	P42F-00040	Concentric swaged nipple ASTM A234 Grade WP11 Class 1 Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	STD	SCH160	P42F-00041	Concentric swaged nipple ASTM A234 Grade WP11 Class 1 Seamless MSS SP-95 BE(L) - PE(S)	

ECC SWAGED NIPPLE (SNE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	SCH160	P43F-00031	Eccentric swaged nipple ASTM A234 Grade WP11 Class 1 Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	SCH160	SCH160	P43F-00032	Eccentric swaged nipple ASTM A234 Grade WP11 Class 1 Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	SCH160	SCH160	P43F-0001J	Eccentric swaged nipple ASTM A234 Grade WP11 Class 1 Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	SCH160	SCH160	P43F-00033	Eccentric swaged nipple ASTM A234 Grade WP11 Class 1 Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	SCH160	SCH160	P43F-0001L	Eccentric swaged nipple ASTM A234 Grade WP11 Class 1 Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	SCH160	SCH160	P43F-0001M	Eccentric swaged nipple ASTM A234 Grade WP11 Class 1 Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	XS	SCH160	P43F-00038	Eccentric swaged nipple ASTM A234 Grade WP11 Class 1 Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	XS	SCH160	P43F-00039	Eccentric swaged nipple ASTM A234 Grade WP11 Class 1 Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	XS	SCH160	P43F-0003A	Eccentric swaged nipple ASTM A234 Grade WP11 Class 1 Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	XS	SCH160	P43F-0003B	Eccentric swaged nipple ASTM A234 Grade WP11 Class 1 Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	STD	SCH160	P43F-0003C	Eccentric swaged nipple ASTM A234 Grade WP11 Class 1 Seamless MSS SP-95 BE(L) - PE(S)	

COUPLING (CPS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P47G-0001A	Coupling ASTM A182 Grade F11 Class 1 Class 6000 ASME B16.11 SW - SW	
1	0.75				P47G-0001B	Coupling ASTM A182 Grade F11 Class 1 Class 6000 ASME B16.11 SW - SW	
1	1				P47G-0001Y	Coupling ASTM A182 Grade F11 Class 1 Class 6000 ASME B16.11 SW - SW	
1	1.5				P47G-0001Z	Coupling ASTM A182 Grade F11 Class 1 Class 6000 ASME B16.11 SW - SW	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5 - 2.5	0.75			P31G-00360	Outlet ASTM A182 Grade F11 Class 1 Class 6000 MSS SP-97 SW	
1	3 - 10	0.75			P31G-0035Z	Outlet ASTM A182 Grade F11 Class 1 Class 6000 MSS SP-97 SW	
1	12 and larger	0.75			P31G-00361	Outlet ASTM A182 Grade F11 Class 1 Class 6000 MSS SP-97 SW	
1	3 - 10	1			P31G-00363	Outlet ASTM A182 Grade F11 Class 1 Class 6000 MSS SP-97 SW	
1	12 and larger	1			P31G-00362	Outlet ASTM A182 Grade F11 Class 1 Class 6000 MSS SP-97 SW	
1	4 - 5	1.5			P31G-00364	Outlet ASTM A182 Grade F11 Class 1 Class 6000 MSS SP-97 SW	
1	6 - 8	1.5			P31G-00365	Outlet ASTM A182 Grade F11 Class 1 Class 6000 MSS SP-97 SW	
1	10 - 18	1.5			P31G-00366	Outlet ASTM A182 Grade F11 Class 1 Class 6000 MSS SP-97 SW	
1	20 and larger	1.5			P31G-00367	Outlet ASTM A182 Grade F11 Class 1 Class 6000 MSS SP-97 SW	
541	1	0.75			P31G-0035Y	Outlet ASTM A182 Grade F11 Class 1 Class 6000 MSS SP-97 NPT	
541	1.5 - 2.5	0.75			P31G-00369	Outlet ASTM A182 Grade F11 Class 1 Class 6000 MSS SP-97 NPT	
541	3 - 10	0.75			P31G-00368	Outlet ASTM A182 Grade F11 Class 1 Class 6000 MSS SP-97 NPT	
541	12 and larger	0.75			P31G-0036A	Outlet ASTM A182 Grade F11 Class 1 Class 6000 MSS SP-97 NPT	
1	6	2	STD	XS	P31G-001BZ	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	8	2	SCH30	XS	P31G-00298	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	10	2	SCH30	XS	P31G-0029D	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	12	2	SCH30	XS	P31G-001C4	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	14	2	SCH20	XS	P31G-001C7	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	16	2	SCH20	XS	P31G-001CA	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	18	2	SCH20	XS	P31G-001CD	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	20	2	STD	XS	P31G-001CH	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	24	2	STD	XS	P31G-001CM	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	30	2	XS	XS	P31G-0029F	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	8	3	SCH30	STD	P31G-00299	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	

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OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	10	3	SCH30	STD	P31G-0029E	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	12	3	SCH30	STD	P31G-001C5	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	14	3	SCH20	STD	P31G-001C8	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	16	3	SCH20	STD	P31G-001CB	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	18	3	SCH20	STD	P31G-001CE	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	20	3	STD	STD	P31G-001CJ	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	24	3	STD	STD	P31G-001CN	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	30	3	XS	STD	P31G-0029G	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	12	4	SCH30	STD	P31G-001C6	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	14	4	SCH20	STD	P31G-001C9	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	16	4	SCH20	STD	P31G-001CC	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	18	4	SCH20	STD	P31G-001CF	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	20	4	STD	STD	P31G-001CK	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	24	4	STD	STD	P31G-001CP	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	30	4	XS	STD	P31G-0029H	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	18	6	SCH20	STD	P31G-001CG	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	20	6	STD	STD	P31G-001CL	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	24	6	STD	STD	P31G-001CR	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	30	6	XS	STD	P31G-0029J	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30G-0001G	Plug ASTM A182 Grade F11 Class 1 ASME B16.11 NPT Round head	
1	0.75				P30G-0001H	Plug ASTM A182 Grade F11 Class 1 ASME B16.11 NPT Round head	
1	1				P30G-0001J	Plug ASTM A182 Grade F11 Class 1 ASME B16.11 NPT Round head	
1	1.5				P30G-0001K	Plug ASTM A182 Grade F11 Class 1 ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P61G-00065	Flange SW ASTM A182 Grade F11 Class 2 Class 150 ASME B16.5 RF	
1	0.75		SCH160		P61G-00066	Flange SW ASTM A182 Grade F11 Class 2 Class 150 ASME B16.5 RF	
1	1		SCH160		P61G-0009G	Flange SW ASTM A182 Grade F11 Class 2 Class 150 ASME B16.5 RF	
1	1.5		SCH160		P61G-0009H	Flange SW ASTM A182 Grade F11 Class 2 Class 150 ASME B16.5 RF	
1	2		XS		P61G-0006E	Flange WN ASTM A182 Grade F11 Class 2 Class 150 ASME B16.5 RF	
1	3		STD		P61G-0006H	Flange WN ASTM A182 Grade F11 Class 2 Class 150 ASME B16.5 RF	
1	4		STD		P61G-0006J	Flange WN ASTM A182 Grade F11 Class 2 Class 150 ASME B16.5 RF	
1	6		STD		P61G-0006K	Flange WN ASTM A182 Grade F11 Class 2 Class 150 ASME B16.5 RF	
1	8		SCH30		P61G-0011Z	Flange WN ASTM A182 Grade F11 Class 2 Class 150 ASME B16.5 RF	
1	10		SCH30		P61G-0011Y	Flange WN ASTM A182 Grade F11 Class 2 Class 150 ASME B16.5 RF	
1	12		SCH30		P61G-000M1	Flange WN ASTM A182 Grade F11 Class 2 Class 150 ASME B16.5 RF	
1	14		SCH20		P61G-000M2	Flange WN ASTM A182 Grade F11 Class 2 Class 150 ASME B16.5 RF	
1	16		SCH20		P61G-000M3	Flange WN ASTM A182 Grade F11 Class 2 Class 150 ASME B16.5 RF	
1	18		SCH20		P61G-000M4	Flange WN ASTM A182 Grade F11 Class 2 Class 150 ASME B16.5 RF	
1	20		STD		P61G-0006F	Flange WN ASTM A182 Grade F11 Class 2 Class 150 ASME B16.5 RF	
1	24		STD		P61G-0006G	Flange WN ASTM A182 Grade F11 Class 2 Class 150 ASME B16.5 RF	
1	30		XS		P61G-00121	Flange WN ASTM A182 Grade F11 Class 2 Class 150 ASME B16.47 Series B RF	
773	0.5		SCH160		P61G-0006M	Flange SW ASTM A182 Grade F11 Class 2 Class 300 ASME B16.5 RF	
773	0.75		SCH160		P61G-0006N	Flange SW ASTM A182 Grade F11 Class 2 Class 300 ASME B16.5 RF	
773	1		SCH160		P61G-0009J	Flange SW ASTM A182 Grade F11 Class 2 Class 300 ASME B16.5 RF	
773	1.5		SCH160		P61G-0009K	Flange SW ASTM A182 Grade F11 Class 2 Class 300 ASME B16.5 RF	
773	2		XS		P61G-0006V	Flange WN ASTM A182 Grade F11 Class 2 Class 300 ASME B16.5 RF	
773	3		STD		P61G-0006Y	Flange WN ASTM A182 Grade F11 Class 2 Class 300 ASME B16.5 RF	
773	4		STD		P61G-0006Z	Flange WN ASTM A182 Grade F11 Class 2 Class 300 ASME B16.5 RF	
773	6		STD		P61G-00026	Flange WN ASTM A182 Grade F11 Class 2 Class 300 ASME B16.5 RF	
773	8		SCH30		P61G-00027	Flange WN ASTM A182 Grade F11 Class 2 Class 300 ASME B16.5 RF	
773	10		SCH30		P61G-00120	Flange WN ASTM A182 Grade F11 Class 2 Class 300 ASME B16.5 RF	
773	12		SCH30		P61G-000M8	Flange WN ASTM A182 Grade F11 Class 2 Class 300 ASME B16.5 RF	
773	14		SCH20		P61G-000M9	Flange WN ASTM A182 Grade F11 Class 2 Class 300 ASME B16.5 RF	
773	16		SCH20		P61G-000MA	Flange WN ASTM A182 Grade F11 Class 2 Class 300 ASME B16.5 RF	

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FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
773	18		SCH20		P61G-000MB	Flange WN ASTM A182 Grade F11 Class 2 Class 300 ASME B16.5 RF	
773	20		STD		P61G-0006W	Flange WN ASTM A182 Grade F11 Class 2 Class 300 ASME B16.5 RF	
773	24		STD		P61G-0006X	Flange WN ASTM A182 Grade F11 Class 2 Class 300 ASME B16.5 RF	
773	30		XS		P61G-00122	Flange WN ASTM A182 Grade F11 Class 2 Class 300 ASME B16.47 Series B RF	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67G-0003U	Blind flange ASTM A182 Grade F11 Class 2 Class 150 ASME B16.5 RF	
1	0.75				P67G-0003V	Blind flange ASTM A182 Grade F11 Class 2 Class 150 ASME B16.5 RF	
1	1				P67G-0003W	Blind flange ASTM A182 Grade F11 Class 2 Class 150 ASME B16.5 RF	
1	1.5				P67G-0003X	Blind flange ASTM A182 Grade F11 Class 2 Class 150 ASME B16.5 RF	
1	2				P67G-00043	Blind flange ASTM A182 Grade F11 Class 2 Class 150 ASME B16.5 RF	
1	3				P67G-00046	Blind flange ASTM A182 Grade F11 Class 2 Class 150 ASME B16.5 RF	
1	4				P67G-00047	Blind flange ASTM A182 Grade F11 Class 2 Class 150 ASME B16.5 RF	
1	6				P67G-00048	Blind flange ASTM A182 Grade F11 Class 2 Class 150 ASME B16.5 RF	
1	8				P67G-00049	Blind flange ASTM A182 Grade F11 Class 2 Class 150 ASME B16.5 RF	
1	10				P67G-0003Y	Blind flange ASTM A182 Grade F11 Class 2 Class 150 ASME B16.5 RF	
1	12				P67G-0003Z	Blind flange ASTM A182 Grade F11 Class 2 Class 150 ASME B16.5 RF	
1	14				P67G-00040	Blind flange ASTM A182 Grade F11 Class 2 Class 150 ASME B16.5 RF	
1	16				P67G-00041	Blind flange ASTM A182 Grade F11 Class 2 Class 150 ASME B16.5 RF	
1	18				P67G-00042	Blind flange ASTM A182 Grade F11 Class 2 Class 150 ASME B16.5 RF	
1	20				P67G-00044	Blind flange ASTM A182 Grade F11 Class 2 Class 150 ASME B16.5 RF	
1	24				P67G-00045	Blind flange ASTM A182 Grade F11 Class 2 Class 150 ASME B16.5 RF	
1	30				P67G-000AH	Blind flange ASTM A182 Grade F11 Class 2 Class 150 ASME B16.47 Series B RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-003CR	Spiral wound gasket SS316 winding / Graphite-mica filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	0.75				P73T-003CS	Spiral wound gasket SS316 winding / Graphite-mica filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	1				P73T-003CT	Spiral wound gasket SS316 winding / Graphite-mica filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	1.5				P73T-003CU	Spiral wound gasket SS316 winding / Graphite-mica filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	2				P73T-003CW	Spiral wound gasket SS316 winding / Graphite-mica filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	3				P73T-003CX	Spiral wound gasket SS316 winding / Graphite-mica filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	4				P73T-003CY	Spiral wound gasket SS316 winding / Graphite-mica filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	6				P73T-003CZ	Spiral wound gasket SS316 winding / Graphite-mica filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	8				P73T-003D0	Spiral wound gasket SS316 winding / Graphite-mica filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	10				P73T-003CV	Spiral wound gasket SS316 winding / Graphite-mica filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	12				P73T-003D1	Spiral wound gasket SS316 winding / Graphite-mica filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	14				P73T-003D2	Spiral wound gasket SS316 winding / Graphite-mica filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	16				P73T-003D3	Spiral wound gasket SS316 winding / Graphite-mica filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	18				P73T-003D4	Spiral wound gasket SS316 winding / Graphite-mica filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	20				P73T-003D5	Spiral wound gasket SS316 winding / Graphite-mica filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	24				P73T-003D6	Spiral wound gasket SS316 winding / Graphite-mica filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	30				P73T-003D7	Spiral wound gasket SS316 winding / Graphite-mica filler Class 150 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
773	0.5				P73T-003AM	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
773	0.75				P73T-003AN	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
773	1				P73T-003AP	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
773	1.5				P73T-003AR	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
773	2				P73T-003AX	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
773	3				P73T-003B0	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
773	4				P73T-003B1	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	

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GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
773	6				P73T-003B2	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
773	8				P73T-003B3	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
773	10				P73T-003AS	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
773	12				P73T-003AT	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
773	14				P73T-003AU	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
773	16				P73T-003AV	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
773	18				P73T-003AW	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
773	20				P73T-003AY	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
773	24				P73T-003AZ	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
773	30				P73T-003BL	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-16				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B16 / A194 Grade 4 ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	18-24				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B16 / A194 Grade 4 ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
1	30				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B16 / A194 Grade 4 ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
773	0.5-10				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B16 / A194 Grade 4 ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
773	12-30				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B16 / A194 Grade 4 ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81G-000C3	Gate valve ASTM A182 Grade F11 Class 2 Class 150 API 602 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2	
1	0.75				P81G-000C4	Gate valve ASTM A182 Grade F11 Class 2 Class 150 API 602 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2	
1	1				P81G-000C5	Gate valve ASTM A182 Grade F11 Class 2 Class 150 API 602 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2	
1	1.5				P81G-000C6	Gate valve ASTM A182 Grade F11 Class 2 Class 150 API 602 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2	
1	2				P81H-000WT	Gate valve ASTM A217 Grade WC6 Class 150 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2	
1	3				P81H-000WU	Gate valve ASTM A217 Grade WC6 Class 150 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2	
1	4				P81H-000WV	Gate valve ASTM A217 Grade WC6 Class 150 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2	
1	6				P81H-000WW	Gate valve ASTM A217 Grade WC6 Class 150 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2	
4608	0.75				P81G-000EK	Gate valve ASTM A182 Grade F11 Class 2 Class 800 API 602 SW both sides w/ nipples PE - NPT ASTM A335-P11 XXS-nipple Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2	
4608	1				P81G-000EP	Gate valve ASTM A182 Grade F11 Class 2 Class 800 API 602 SW both sides w/ nipples PE - NPT ASTM A335-P11 XXS-nipple Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83G-00078	Check valve ASTM A182 Grade F11 Class 2 Class 150 API 602 Flange ASME B16.5 RF Trim number 5 Lift-type Bolted cover	
1	0.75				P83G-00079	Check valve ASTM A182 Grade F11 Class 2 Class 150 API 602 Flange ASME B16.5 RF Trim number 5 Lift-type Bolted cover	
1	1				P83G-0007A	Check valve ASTM A182 Grade F11 Class 2 Class 150 API 602 Flange ASME B16.5 RF Trim number 5 Lift-type Bolted cover	
1	1.5				P83G-0007B	Check valve ASTM A182 Grade F11 Class 2 Class 150 API 602 Flange ASME B16.5 RF Trim number 5 Lift-type Bolted cover	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71G-0000N	Spectacle blank ASTM A182 Grade F11 Class 2 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	0.75				P71G-0000P	Spectacle blank ASTM A182 Grade F11 Class 2 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	1				P71G-0000R	Spectacle blank ASTM A182 Grade F11 Class 2 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71G-0000S	Spectacle blank ASTM A182 Grade F11 Class 2 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	2				P71G-0000V	Spectacle blank ASTM A182 Grade F11 Class 2 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	3				P71G-0000W	Spectacle blank ASTM A182 Grade F11 Class 2 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	4				P71G-0000X	Spectacle blank ASTM A182 Grade F11 Class 2 Class 150 Standard-drawing Flange ASME B16.5 RF	

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SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	6				P71G-0000Y	Spectacle blank ASTM A182 Grade F11 Class 2 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	8				P71G-0000Z	Spectacle blank ASTM A182 Grade F11 Class 2 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	10				P71G-0000T	Spectacle blank ASTM A182 Grade F11 Class 2 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	12				P71G-0000U	Spectacle blank ASTM A182 Grade F11 Class 2 Class 150 Standard-drawing Flange ASME B16.5 RF	

PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72G-0000B	Paddle blank ASTM A182 Grade F11 Class 2 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	16				P72G-0000C	Paddle blank ASTM A182 Grade F11 Class 2 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	18				P72G-0000D	Paddle blank ASTM A182 Grade F11 Class 2 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	20				P72G-0000E	Paddle blank ASTM A182 Grade F11 Class 2 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	24				P72G-0000K	Paddle blank ASTM A182 Grade F11 Class 2 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	30				P72G-0000L	Paddle blank ASTM A182 Grade F11 Class 2 Class 150 Standard-drawing Flange ASME B16.47-B RF	
773	24				P72G-0001H	Paddle blank ASTM A182 Grade F11 Class 2 Class 300 Standard-drawing Flange ASME B16.5 RF	

PADDLE SPACER (PS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72G-0000F	Paddle spacer ASTM A182 Grade F11 Class 2 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	16				P72G-0000G	Paddle spacer ASTM A182 Grade F11 Class 2 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	18				P72G-0000H	Paddle spacer ASTM A182 Grade F11 Class 2 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	20				P72G-0000J	Paddle spacer ASTM A182 Grade F11 Class 2 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	24				P72G-0000M	Paddle spacer ASTM A182 Grade F11 Class 2 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	30				P72G-0000N	Paddle spacer ASTM A182 Grade F11 Class 2 Class 150 Standard-drawing Flange ASME B16.47-B RF	
773	24				P72G-0001M	Paddle spacer ASTM A182 Grade F11 Class 2 Class 300 Standard-drawing Flange ASME B16.5 RF	

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BOLT TABLE (B_A2DP01 , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	60	P80S-00GNA		
0.75	4	0.500	65	P80S-00GN9		
1	4	0.500	70	P80S-00GN8		
1.5	4	0.500	75	P80S-00GN7		
2	4	0.625	85	P80S-00GLJ		
3	4	0.625	95	P80S-00GLG		
4	8	0.625	95	P80S-00GLG		
6	8	0.750	105	P80S-00GLE		
8	8	0.750	110	P80S-00GLD		
10	12	0.875	120	P80S-00FV9		
12	12	0.875	120	P80S-00FV9		
14	12	1.000	135	P80S-00FRE		
16	16	1.000	140	P80S-00FRD		
18	16	1.125	150	P80S-00FHD		
20	20	1.125	160	P80S-00FHB		
24	20	1.250	175	P80S-00FA1		
30	44	0.750	145	P80S-00FZS		

BOLT TABLE (B_A2DP01_773 , STUD ASME RF, OPTION CODE 773)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-00GN8		
0.75	4	0.625	75	P80S-00GLL		
1	4	0.625	80	P80S-00GLK		
1.5	4	0.750	95	P80S-00FVE		
2	8	0.625	90	P80S-00GLH		
3	8	0.750	110	P80S-00GLD		
4	8	0.750	115	P80S-00GLC		
6	12	0.750	125	P80S-00GLA		
8	12	0.875	140	P80S-00FV5		
10	16	1.000	160	P80S-00FR9		
12	16	1.125	175	P80S-00FH8		
14	20	1.125	180	P80S-00FH7		
16	20	1.250	190	P80S-00F9Y		
18	24	1.250	200	P80S-00F9W		
20	24	1.250	210	P80S-00F9U		
24	24	1.500	235	P80S-00EYL		
30	36	1.375	285	P80S-00F2V		

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BRANCH TABLE (T_A2DP01)

RUN PIPE SIZE (in) \ BRANCH SIZE (in)	0.5	0.75	1	1.5	2	3	4	6	8	10	12	14	16	18	20	24	30
0.5	TS																
0.75		TS															
1		TR	TS														
1.5		TR	TR	TS													
2		L	TR	TR	TS												
3		L	L	TR	TR	TS											
4	L	L	L	L	TR	TR	TS										
6	L	L	L	L	L	TR	TR	TS									
8		L	L	L	L	L	TR	TR	TS								
10		L	L	L	L	L	TR	TR	TR	TS							
12		L	L	L	L	L	L	TR	TR	TR	TS						
14		L	L	L	L	L	L	TR	TR	TR	TR	TS					
16		L	L	L	L	L	L	TR	TR	TR	TR	TR	TS				
18		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TS			
20		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TR	TS		
24		L	L	L	L	L	L	L	9PD	TR	TR	TR	TR	TR	TR	TS	
30		L	L	L	L	L	L	L	9PD	TR	TR	TR	TR	TR	TR	TR	TS

TS : STRAIGHT TEE
9PD : REINFORCING PAD 90 DEG
L : OUTLET
TR : REDUCING TEE

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PIPING CLASS

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Material : 5Cr-1/2Mo
Rating : ASME CLASS 150
Flange Face : RF
C.A.(mm) : 3.00
Gasket : Spiral Wound
Service : PROCESS - CATALYST : / CATALYST
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
6	PIPE THICKNESS CALCULATION TO INCLUDE CORROSION AND EROSION ALLOWANCES DUE TO THE PROCESS CATALYST FLOW, AS PER PROCESS LICENSOR SPECIFICATIONS
24	FOR ALL RELEVANT PIPING CLASSES WITH LINE DESIGN TEMPERATURE ABOVE 427DEGC, IN SPIRAL WOUND GASKET, SUITABLE GASKET FILLER MATERIAL SUCH AS COMBINATION OF MICA LAYERS AND GRAPHITE FILLERS OR EQUIVALENT SHALL BE REVIEWED AND SELECTED OR AS DEFINED BY THE LICENSOR

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
541	NPT(F) (CA,F)
773	CLASS 300 (B,F,G,PB,PS,V)
4608	VALVE WITH NIPPLES (V)

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PIPING CLASS
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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P01F-0001C	Pipe ASTM A335 Grade P5 Seamless ASME B36.10M/B36.19M PE	
1	0.75		SCH160		P01F-0001D	Pipe ASTM A335 Grade P5 Seamless ASME B36.10M/B36.19M PE	
1	1		SCH160		P01F-000CL	Pipe ASTM A335 Grade P5 Seamless ASME B36.10M/B36.19M PE	
1	1.5		SCH160		P01F-000CM	Pipe ASTM A335 Grade P5 Seamless ASME B36.10M/B36.19M PE	
1	2		XS		P01F-0001K	Pipe ASTM A335 Grade P5 Seamless ASME B36.10M/B36.19M BE	
1	3		STD		P01F-0001L	Pipe ASTM A335 Grade P5 Seamless ASME B36.10M/B36.19M BE	
1	4		STD		P01F-00045	Pipe ASTM A335 Grade P5 Seamless ASME B36.10M/B36.19M BE	
1	6		STD		P01F-0001N	Pipe ASTM A335 Grade P5 Seamless ASME B36.10M/B36.19M BE	
1	8		SCH30		P01F-001P1	Pipe ASTM A335 Grade P5 Seamless ASME B36.10M/B36.19M BE	
1	10		SCH30		P01F-001P0	Pipe ASTM A335 Grade P5 Seamless ASME B36.10M/B36.19M BE	
1	12		SCH30		P01F-000CN	Pipe ASTM A335 Grade P5 Seamless ASME B36.10M/B36.19M BE	
1	14		SCH20		P01F-0006R	Pipe ASTM A335 Grade P5 Seamless ASME B36.10M/B36.19M BE	
1	16		SCH20		P01F-0006S	Pipe ASTM A335 Grade P5 Seamless ASME B36.10M/B36.19M BE	
1	18		SCH20		P01F-000CP	Pipe ASTM A691 Grade 5CR Class 22 EFW ASME B36.10M/B36.19M BE	
1	20		STD		P01F-0001R	Pipe ASTM A691 Grade 5CR Class 22 EFW ASME B36.10M/B36.19M BE	
1	24		STD		P01F-0003E	Pipe ASTM A691 Grade 5CR Class 22 EFW ASME B36.10M/B36.19M BE	
1	30		XS		P01F-000DE	Pipe ASTM A691 Grade 5CR Class 22 EFW ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P02F-00044	90 degree elbow ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW Long radius	
1	0.75		SCH160		P02F-00045	90 degree elbow ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW Long radius	
1	1		SCH160		P02F-000C5	90 degree elbow ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW Long radius	
1	1.5		SCH160		P02F-000C6	90 degree elbow ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW Long radius	
1	2		XS		P02F-0002H	90 degree elbow ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW Long radius	
1	3		STD		P02F-0002K	90 degree elbow ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW Long radius	
1	4		STD		P02F-000CC	90 degree elbow ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW Long radius	
1	6		STD		P02F-0002M	90 degree elbow ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW Long radius	
1	8		SCH30		P02F-000HL	90 degree elbow ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW Long radius	
1	10		SCH30		P02F-000HK	90 degree elbow ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW Long radius	
1	12		SCH30		P02F-000C8	90 degree elbow ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW Long radius	
1	14		SCH20		P02F-000C9	90 degree elbow ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW Long radius	
1	16		SCH20		P02F-000CA	90 degree elbow ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW Long radius	
1	18		SCH20		P02F-000CB	90 degree elbow ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW Long radius	
1	20		STD		P02F-0002J	90 degree elbow ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW Long radius	
1	24		STD		P02F-0004C	90 degree elbow ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW Long radius	
1	30		XS		P02F-000DF	90 degree elbow ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P03F-00041	45 degree elbow ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW Long radius	
1	0.75		SCH160		P03F-00042	45 degree elbow ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW Long radius	
1	1		SCH160		P03F-000BY	45 degree elbow ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW Long radius	
1	1.5		SCH160		P03F-000BZ	45 degree elbow ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW Long radius	
1	2		XS		P03F-0002E	45 degree elbow ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW Long radius	
1	3		STD		P03F-0002G	45 degree elbow ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW Long radius	
1	4		STD		P03F-000C5	45 degree elbow ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW Long radius	
1	6		STD		P03F-0002J	45 degree elbow ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW Long radius	
1	8		SCH30		P03F-000HB	45 degree elbow ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW Long radius	
1	10		SCH30		P03F-000HA	45 degree elbow ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW Long radius	
1	12		SCH30		P03F-000C1	45 degree elbow ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW Long radius	
1	14		SCH20		P03F-000C2	45 degree elbow ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW Long radius	
1	16		SCH20		P03F-000C3	45 degree elbow ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW Long radius	
1	18		SCH20		P03F-000C4	45 degree elbow ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW Long radius	
1	20		STD		P03F-0002F	45 degree elbow ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW Long radius	
1	24		STD		P03F-00049	45 degree elbow ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW Long radius	
1	30		XS		P03F-000D8	45 degree elbow ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW Long radius	

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STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P21F-00042	Straight tee ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	0.75		SCH160		P21F-00043	Straight tee ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	1		SCH160		P21F-000BW	Straight tee ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	1.5		SCH160		P21F-000BX	Straight tee ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	2		XS		P21F-0002F	Straight tee ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	3		STD		P21F-0002G	Straight tee ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	4		STD		P21F-000C2	Straight tee ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	6		STD		P21F-0002J	Straight tee ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	8		SCH30		P21F-000HF	Straight tee ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	10		SCH30		P21F-000HE	Straight tee ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	12		SCH30		P21F-000BZ	Straight tee ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	14		SCH20		P21F-000C0	Straight tee ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	16		SCH20		P21F-000C1	Straight tee ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	18		SCH20		P21F-000C4	Straight tee ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	
1	20		STD		P21F-0002L	Straight tee ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	
1	24		STD		P21F-0004F	Straight tee ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	
1	30		XS		P21F-000D4	Straight tee ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75	SCH160	SCH160	P24F-0010G	Reducing tee ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	1.5	0.75	SCH160	SCH160	P24F-0010H	Reducing tee ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	1.5	1	SCH160	SCH160	P24F-0010J	Reducing tee ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	2	1	XS	SCH160	P24F-0010K	Reducing tee ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	2	1.5	XS	SCH160	P24F-0010L	Reducing tee ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	3	1.5	STD	SCH160	P24F-0010M	Reducing tee ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	3	2	STD	XS	P24F-0006J	Reducing tee ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	4	2	STD	XS	P24F-0010N	Reducing tee ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	4	3	STD	STD	P24F-0010P	Reducing tee ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	6	3	STD	STD	P24F-0006M	Reducing tee ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	6	4	STD	STD	P24F-0010V	Reducing tee ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	8	4	SCH30	STD	P24F-001XL	Reducing tee ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	8	6	SCH30	STD	P24F-001XM	Reducing tee ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	10	4	SCH30	STD	P24F-001XN	Reducing tee ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	10	6	SCH30	STD	P24F-001XP	Reducing tee ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	10	8	SCH30	SCH30	P24F-001XR	Reducing tee ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	12	6	SCH30	STD	P24F-0011B	Reducing tee ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	12	8	SCH30	SCH30	P24F-001XT	Reducing tee ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	12	10	SCH30	SCH30	P24F-001XS	Reducing tee ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	14	6	SCH20	STD	P24F-0011F	Reducing tee ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	14	8	SCH20	SCH30	P24F-001XV	Reducing tee ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	14	10	SCH20	SCH30	P24F-001XU	Reducing tee ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	14	12	SCH20	SCH30	P24F-0011E	Reducing tee ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	16	6	SCH20	STD	P24F-0011L	Reducing tee ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	16	8	SCH20	SCH30	P24F-001XX	Reducing tee ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	16	10	SCH20	SCH30	P24F-001XW	Reducing tee ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	16	12	SCH20	SCH30	P24F-0011J	Reducing tee ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	16	14	SCH20	SCH20	P24F-0011K	Reducing tee ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	18	8	SCH20	SCH30	P24F-001XZ	Reducing tee ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	
1	18	10	SCH20	SCH30	P24F-001XY	Reducing tee ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	
1	18	12	SCH20	SCH30	P24F-0011P	Reducing tee ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	
1	18	14	SCH20	SCH20	P24F-0011R	Reducing tee ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	
1	18	16	SCH20	SCH20	P24F-0011S	Reducing tee ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	
1	20	8	STD	SCH30	P24F-001Y1	Reducing tee ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	
1	20	10	STD	SCH30	P24F-001Y0	Reducing tee ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	
1	20	12	STD	SCH30	P24F-0011V	Reducing tee ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	
1	20	14	STD	SCH20	P24F-0011W	Reducing tee ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	
1	20	16	STD	SCH20	P24F-0011X	Reducing tee ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	
1	20	18	STD	SCH20	P24F-0011Y	Reducing tee ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	

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REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	24	10	STD	SCH30	P24F-001Y2	Reducing tee ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	
1	24	12	STD	SCH30	P24F-00120	Reducing tee ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	
1	24	14	STD	SCH20	P24F-00121	Reducing tee ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	
1	24	16	STD	SCH20	P24F-00122	Reducing tee ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	
1	24	18	STD	SCH20	P24F-00123	Reducing tee ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	
1	24	20	STD	STD	P24F-00124	Reducing tee ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	
1	30	10	XS	SCH30	P24F-001Y3	Reducing tee ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	
1	30	12	XS	SCH30	P24F-001Y4	Reducing tee ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	
1	30	14	XS	SCH20	P24F-001Y5	Reducing tee ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	
1	30	16	XS	SCH20	P24F-001Y6	Reducing tee ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	
1	30	18	XS	SCH20	P24F-001Y7	Reducing tee ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	
1	30	20	XS	STD	P24F-001Y8	Reducing tee ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	
1	30	24	XS	STD	P24F-001Y9	Reducing tee ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	SCH160	P27F-0008C	Concentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	1	0.5	SCH160	SCH160	P27F-000VJ	Concentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	1	0.75	SCH160	SCH160	P27F-000VK	Concentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	1.5	0.5	SCH160	SCH160	P27F-000VL	Concentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	1.5	0.75	SCH160	SCH160	P27F-000VM	Concentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	1.5	1	SCH160	SCH160	P27F-000VN	Concentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	2	0.75	XS	SCH160	P27F-000VP	Concentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	2	1	XS	SCH160	P27F-000VR	Concentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	2	1.5	XS	SCH160	P27F-000VS	Concentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	3	1.5	STD	SCH160	P27F-000VT	Concentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	3	2	STD	XS	P27F-0005L	Concentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	4	1.5	STD	SCH160	P27F-000VU	Concentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	4	2	STD	XS	P27F-000VV	Concentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	4	3	STD	STD	P27F-000VW	Concentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	6	3	STD	STD	P27F-0005P	Concentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	6	4	STD	STD	P27F-000VX	Concentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	8	4	SCH30	STD	P27F-001F8	Concentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	8	6	SCH30	STD	P27F-001F9	Concentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	10	4	SCH30	STD	P27F-001FA	Concentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	10	6	SCH30	STD	P27F-001FB	Concentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	10	8	SCH30	SCH30	P27F-001FC	Concentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	12	6	SCH30	STD	P27F-000W4	Concentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	12	8	SCH30	SCH30	P27F-001FE	Concentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	12	10	SCH30	SCH30	P27F-001FD	Concentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	14	6	SCH20	STD	P27F-000W8	Concentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	14	8	SCH20	SCH30	P27F-001FG	Concentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	14	10	SCH20	SCH30	P27F-001FF	Concentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	14	12	SCH20	SCH30	P27F-000W7	Concentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	16	8	SCH20	SCH30	P27F-001FJ	Concentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	16	10	SCH20	SCH30	P27F-001FH	Concentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	16	12	SCH20	SCH30	P27F-000WB	Concentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	16	14	SCH20	SCH20	P27F-000WC	Concentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	18	10	SCH20	SCH30	P27F-001FK	Concentric reducer ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	
1	18	12	SCH20	SCH30	P27F-000WF	Concentric reducer ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	
1	18	14	SCH20	SCH20	P27F-000WG	Concentric reducer ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	
1	18	16	SCH20	SCH20	P27F-000WH	Concentric reducer ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	
1	20	12	STD	SCH30	P27F-000WJ	Concentric reducer ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	
1	20	14	STD	SCH20	P27F-000WK	Concentric reducer ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	
1	20	16	STD	SCH20	P27F-000WL	Concentric reducer ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	
1	20	18	STD	SCH20	P27F-000WM	Concentric reducer ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	
1	24	16	STD	SCH20	P27F-000WN	Concentric reducer ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	
1	24	18	STD	SCH20	P27F-000WP	Concentric reducer ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	
1	24	20	STD	STD	P27F-000WR	Concentric reducer ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	

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CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	30	20	XS	STD	P27F-001FL	Concentric reducer ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	
1	30	24	XS	STD	P27F-001FM	Concentric reducer ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	SCH160	P28F-0008C	Eccentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	1	0.5	SCH160	SCH160	P28F-000VJ	Eccentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	1	0.75	SCH160	SCH160	P28F-000VK	Eccentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	1.5	0.5	SCH160	SCH160	P28F-000VL	Eccentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	1.5	0.75	SCH160	SCH160	P28F-000VM	Eccentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	1.5	1	SCH160	SCH160	P28F-000VN	Eccentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	2	0.75	XS	SCH160	P28F-000VP	Eccentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	2	1	XS	SCH160	P28F-000VR	Eccentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	2	1.5	XS	SCH160	P28F-000VS	Eccentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	3	1.5	STD	SCH160	P28F-000VT	Eccentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	3	2	STD	XS	P28F-0005L	Eccentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	4	1.5	STD	SCH160	P28F-000VU	Eccentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	4	2	STD	XS	P28F-000VV	Eccentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	4	3	STD	STD	P28F-000VW	Eccentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	6	3	STD	STD	P28F-0005P	Eccentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	6	4	STD	STD	P28F-000VX	Eccentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	8	4	SCH30	STD	P28F-001FP	Eccentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	8	6	SCH30	STD	P28F-001FR	Eccentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	10	4	SCH30	STD	P28F-001FS	Eccentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	10	6	SCH30	STD	P28F-001FT	Eccentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	10	8	SCH30	SCH30	P28F-001FU	Eccentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	12	6	SCH30	STD	P28F-000W4	Eccentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	12	8	SCH30	SCH30	P28F-001FW	Eccentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	12	10	SCH30	SCH30	P28F-001FV	Eccentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	14	6	SCH20	STD	P28F-000W8	Eccentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	14	8	SCH20	SCH30	P28F-001FY	Eccentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	14	10	SCH20	SCH30	P28F-001FX	Eccentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	14	12	SCH20	SCH30	P28F-000W7	Eccentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	16	8	SCH20	SCH30	P28F-001G0	Eccentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	16	10	SCH20	SCH30	P28F-001FZ	Eccentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	16	12	SCH20	SCH30	P28F-000WB	Eccentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	16	14	SCH20	SCH20	P28F-000WC	Eccentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	18	10	SCH20	SCH30	P28F-001G1	Eccentric reducer ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	
1	18	12	SCH20	SCH30	P28F-000WF	Eccentric reducer ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	
1	18	14	SCH20	SCH20	P28F-000WG	Eccentric reducer ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	
1	18	16	SCH20	SCH20	P28F-000WH	Eccentric reducer ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	
1	20	12	STD	SCH30	P28F-000WJ	Eccentric reducer ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	
1	20	14	STD	SCH20	P28F-000WK	Eccentric reducer ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	
1	20	16	STD	SCH20	P28F-000WL	Eccentric reducer ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	
1	20	18	STD	SCH20	P28F-000WM	Eccentric reducer ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	
1	24	16	STD	SCH20	P28F-000WN	Eccentric reducer ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	
1	24	18	STD	SCH20	P28F-000WP	Eccentric reducer ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	
1	24	20	STD	STD	P28F-000WR	Eccentric reducer ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	
1	30	20	XS	STD	P28F-001G2	Eccentric reducer ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	
1	30	24	XS	STD	P28F-001G3	Eccentric reducer ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P29F-0003Z	Cap ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	0.75		SCH160		P29F-00040	Cap ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	1		SCH160		P29F-000BV	Cap ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	1.5		SCH160		P29F-000BW	Cap ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	2		XS		P29F-0002C	Cap ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	3		STD		P29F-0002E	Cap ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	

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CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	4		STD		P29F-000C3	Cap ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	6		STD		P29F-0002G	Cap ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	8		SCH30		P29F-000GR	Cap ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	10		SCH30		P29F-000GP	Cap ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	12		SCH30		P29F-000BY	Cap ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	14		SCH20		P29F-000BZ	Cap ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	16		SCH20		P29F-000C0	Cap ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	18		SCH20		P29F-000C1	Cap ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	20		STD		P29F-0002D	Cap ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	24		STD		P29F-00047	Cap ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	30		XS		P29F-000D3	Cap ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
541	0.75				P29G-0001T	Cap ASTM A182 Grade F5 Class 6000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P41F-0003G	Straight nipple ASTM A335 Grade P5 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		XXS		P41F-0003H	Straight nipple ASTM A335 Grade P5 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		XXS		P41F-0002H	Straight nipple ASTM A335 Grade P5 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		XXS		P41F-0002J	Straight nipple ASTM A335 Grade P5 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2	0.75	XS	SCH160	P31G-001DV	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	3	0.75	STD	SCH160	P31G-001DW	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	4	0.75	STD	SCH160	P31G-001DY	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	6	0.75	STD	SCH160	P31G-001E1	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	8	0.75	SCH30	SCH160	P31G-0029K	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	10	0.75	SCH30	SCH160	P31G-0029R	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	12	0.75	SCH30	SCH160	P31G-001EC	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	14	0.75	SCH20	SCH160	P31G-001EJ	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	16	0.75	SCH20	SCH160	P31G-001ER	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	18	0.75	SCH20	SCH160	P31G-001EX	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	20	0.75	STD	SCH160	P31G-001F4	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	24	0.75	STD	SCH160	P31G-001F8	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	30	0.75	XS	SCH160	P31G-0029W	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	3	1	STD	SCH160	P31G-001DX	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	4	1	STD	SCH160	P31G-001DZ	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	6	1	STD	SCH160	P31G-001E2	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	8	1	SCH30	SCH160	P31G-0029L	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	10	1	SCH30	SCH160	P31G-0029S	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	12	1	SCH30	SCH160	P31G-001ED	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	14	1	SCH20	SCH160	P31G-001EK	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	16	1	SCH20	SCH160	P31G-001ES	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	18	1	SCH20	SCH160	P31G-001EY	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	20	1	STD	SCH160	P31G-001F5	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	24	1	STD	SCH160	P31G-001F9	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	30	1	XS	SCH160	P31G-0029X	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	4	1.5	STD	SCH160	P31G-001E0	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	6	1.5	STD	SCH160	P31G-001E3	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	8	1.5	SCH30	SCH160	P31G-0029M	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	10	1.5	SCH30	SCH160	P31G-0029T	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	12	1.5	SCH30	SCH160	P31G-001EE	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	14	1.5	SCH20	SCH160	P31G-001EL	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	16	1.5	SCH20	SCH160	P31G-001ET	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	18	1.5	SCH20	SCH160	P31G-001EZ	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	20	1.5	STD	SCH160	P31G-001F6	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	24	1.5	STD	SCH160	P31G-001FA	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	30	1.5	XS	SCH160	P31G-0029Y	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	6	2	STD	XS	P31G-000BX	Outlet ASTM A182 Grade F5 MSS SP-97 BW	

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OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	8	2	SCH30	XS	P31G-0029N	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	10	2	SCH30	XS	P31G-0029U	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	12	2	SCH30	XS	P31G-001EF	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	14	2	SCH20	XS	P31G-001EM	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	16	2	SCH20	XS	P31G-001EU	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	18	2	SCH20	XS	P31G-001F0	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	20	2	STD	XS	P31G-000C8	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	24	2	STD	XS	P31G-001FB	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	30	2	XS	XS	P31G-0029Z	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	8	3	SCH30	STD	P31G-0029P	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	10	3	SCH30	STD	P31G-0029V	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	12	3	SCH30	STD	P31G-001EG	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	14	3	SCH20	STD	P31G-001EN	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	16	3	SCH20	STD	P31G-001EV	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	18	3	SCH20	STD	P31G-001F1	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	20	3	STD	STD	P31G-000C9	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	24	3	STD	STD	P31G-001FC	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	30	3	XS	STD	P31G-002A0	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	12	4	SCH30	STD	P31G-001EH	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	14	4	SCH20	STD	P31G-001EP	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	16	4	SCH20	STD	P31G-001EW	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	18	4	SCH20	STD	P31G-001F2	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	20	4	STD	STD	P31G-001F7	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	24	4	STD	STD	P31G-001FD	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	30	4	XS	STD	P31G-002A1	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	18	6	SCH20	STD	P31G-001F3	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	20	6	STD	STD	P31G-000CB	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	24	6	STD	STD	P31G-001FE	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	30	6	XS	STD	P31G-002A2	Outlet ASTM A182 Grade F5 MSS SP-97 BW	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30G-0000D	Plug ASTM A182 Grade F5 ASME B16.11 NPT Round head	
1	0.75				P30G-0000E	Plug ASTM A182 Grade F5 ASME B16.11 NPT Round head	
1	1				P30G-0000F	Plug ASTM A182 Grade F5 ASME B16.11 NPT Round head	
1	1.5				P30G-0000G	Plug ASTM A182 Grade F5 ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P61G-000MD	Flange WN ASTM A182 Grade F5 Class 150 ASME B16.5 RF	
1	0.75		SCH160		P61G-000ME	Flange WN ASTM A182 Grade F5 Class 150 ASME B16.5 RF	
1	1		SCH160		P61G-000MF	Flange WN ASTM A182 Grade F5 Class 150 ASME B16.5 RF	
1	1.5		SCH160		P61G-000MG	Flange WN ASTM A182 Grade F5 Class 150 ASME B16.5 RF	
1	2		XS		P61G-000MN	Flange WN ASTM A182 Grade F5 Class 150 ASME B16.5 RF	
1	3		STD		P61G-000MR	Flange WN ASTM A182 Grade F5 Class 150 ASME B16.5 RF	
1	4		STD		P61G-000MS	Flange WN ASTM A182 Grade F5 Class 150 ASME B16.5 RF	
1	6		STD		P61G-000MT	Flange WN ASTM A182 Grade F5 Class 150 ASME B16.5 RF	
1	8		SCH30		P61G-00124	Flange WN ASTM A182 Grade F5 Class 150 ASME B16.5 RF	
1	10		SCH30		P61G-00123	Flange WN ASTM A182 Grade F5 Class 150 ASME B16.5 RF	
1	12		SCH30		P61G-000MJ	Flange WN ASTM A182 Grade F5 Class 150 ASME B16.5 RF	
1	14		SCH20		P61G-000MK	Flange WN ASTM A182 Grade F5 Class 150 ASME B16.5 RF	
1	16		SCH20		P61G-000ML	Flange WN ASTM A182 Grade F5 Class 150 ASME B16.5 RF	
1	18		SCH20		P61G-000MM	Flange WN ASTM A182 Grade F5 Class 150 ASME B16.5 RF	
1	20		STD		P61G-000MP	Flange WN ASTM A182 Grade F5 Class 150 ASME B16.5 RF	
1	24		STD		P61G-00081	Flange WN ASTM A182 Grade F5 Class 150 ASME B16.5 RF	
1	30		XS		P61G-000RT	Flange WN ASTM A182 Grade F5 Class 150 ASME B16.47 Series B RF	
541	0.5				P61G-001B5	Flange NPT ASTM A182 Grade F5 Class 150 ASME B16.5 RF	
541	0.75				P61G-0015U	Flange NPT ASTM A182 Grade F5 Class 150 ASME B16.5 RF	
773	0.5		SCH160		P61G-0007G	Flange WN ASTM A182 Grade F5 Class 300 ASME B16.5 RF	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
773	0.75		SCH160		P61G-0007H	Flange WN ASTM A182 Grade F5 Class 300 ASME B16.5 RF	
773	1		SCH160		P61G-000MW	Flange WN ASTM A182 Grade F5 Class 300 ASME B16.5 RF	
773	1.5		SCH160		P61G-000MX	Flange WN ASTM A182 Grade F5 Class 300 ASME B16.5 RF	
773	2		XS		P61G-00037	Flange WN ASTM A182 Grade F5 Class 300 ASME B16.5 RF	
773	3		STD		P61G-00039	Flange WN ASTM A182 Grade F5 Class 300 ASME B16.5 RF	
773	4		STD		P61G-000N3	Flange WN ASTM A182 Grade F5 Class 300 ASME B16.5 RF	
773	6		STD		P61G-0003B	Flange WN ASTM A182 Grade F5 Class 300 ASME B16.5 RF	
773	8		SCH30		P61G-00126	Flange WN ASTM A182 Grade F5 Class 300 ASME B16.5 RF	
773	10		SCH30		P61G-00125	Flange WN ASTM A182 Grade F5 Class 300 ASME B16.5 RF	
773	12		SCH30		P61G-000MZ	Flange WN ASTM A182 Grade F5 Class 300 ASME B16.5 RF	
773	14		SCH20		P61G-000N0	Flange WN ASTM A182 Grade F5 Class 300 ASME B16.5 RF	
773	16		SCH20		P61G-000N1	Flange WN ASTM A182 Grade F5 Class 300 ASME B16.5 RF	
773	18		SCH20		P61G-000N2	Flange WN ASTM A182 Grade F5 Class 300 ASME B16.5 RF	
773	20		STD		P61G-00038	Flange WN ASTM A182 Grade F5 Class 300 ASME B16.5 RF	
773	24		STD		P61G-00083	Flange WN ASTM A182 Grade F5 Class 300 ASME B16.5 RF	
773	30		XS		P61G-000S3	Flange WN ASTM A182 Grade F5 Class 300 ASME B16.47 Series B RF	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67G-000AJ	Blind flange ASTM A182 Grade F5 Class 150 ASME B16.5 RF	
1	0.75				P67G-000AK	Blind flange ASTM A182 Grade F5 Class 150 ASME B16.5 RF	
1	1				P67G-0004J	Blind flange ASTM A182 Grade F5 Class 150 ASME B16.5 RF	
1	1.5				P67G-0004K	Blind flange ASTM A182 Grade F5 Class 150 ASME B16.5 RF	
1	2				P67G-000AS	Blind flange ASTM A182 Grade F5 Class 150 ASME B16.5 RF	
1	3				P67G-000AU	Blind flange ASTM A182 Grade F5 Class 150 ASME B16.5 RF	
1	4				P67G-000AV	Blind flange ASTM A182 Grade F5 Class 150 ASME B16.5 RF	
1	6				P67G-000AW	Blind flange ASTM A182 Grade F5 Class 150 ASME B16.5 RF	
1	8				P67G-000AX	Blind flange ASTM A182 Grade F5 Class 150 ASME B16.5 RF	
1	10				P67G-000AL	Blind flange ASTM A182 Grade F5 Class 150 ASME B16.5 RF	
1	12				P67G-000AM	Blind flange ASTM A182 Grade F5 Class 150 ASME B16.5 RF	
1	14				P67G-000AN	Blind flange ASTM A182 Grade F5 Class 150 ASME B16.5 RF	
1	16				P67G-000AP	Blind flange ASTM A182 Grade F5 Class 150 ASME B16.5 RF	
1	18				P67G-000AR	Blind flange ASTM A182 Grade F5 Class 150 ASME B16.5 RF	
1	20				P67G-000AT	Blind flange ASTM A182 Grade F5 Class 150 ASME B16.5 RF	
1	24				P67G-0004L	Blind flange ASTM A182 Grade F5 Class 150 ASME B16.5 RF	
1	30				P67G-0004M	Blind flange ASTM A182 Grade F5 Class 150 ASME B16.47 Series B RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-003CR	Spiral wound gasket SS316 winding / Graphite-mica filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	0.75				P73T-003CS	Spiral wound gasket SS316 winding / Graphite-mica filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	1				P73T-003CT	Spiral wound gasket SS316 winding / Graphite-mica filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	1.5				P73T-003CU	Spiral wound gasket SS316 winding / Graphite-mica filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	2				P73T-003CW	Spiral wound gasket SS316 winding / Graphite-mica filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	3				P73T-003CX	Spiral wound gasket SS316 winding / Graphite-mica filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	4				P73T-003CY	Spiral wound gasket SS316 winding / Graphite-mica filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	6				P73T-003CZ	Spiral wound gasket SS316 winding / Graphite-mica filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	8				P73T-003D0	Spiral wound gasket SS316 winding / Graphite-mica filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	10				P73T-003CV	Spiral wound gasket SS316 winding / Graphite-mica filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	12				P73T-003D1	Spiral wound gasket SS316 winding / Graphite-mica filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	14				P73T-003D2	Spiral wound gasket SS316 winding / Graphite-mica filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	16				P73T-003D3	Spiral wound gasket SS316 winding / Graphite-mica filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	18				P73T-003D4	Spiral wound gasket SS316 winding / Graphite-mica filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	20				P73T-003D5	Spiral wound gasket SS316 winding / Graphite-mica filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	

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GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	24				P73T-003D6	Spiral wound gasket SS316 winding / Graphite-mica filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	30				P73T-003D7	Spiral wound gasket SS316 winding / Graphite-mica filler Class 150 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
773	0.5				P73T-003AM	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
773	0.75				P73T-003AN	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
773	1				P73T-003AP	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
773	1.5				P73T-003AR	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
773	2				P73T-003AX	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
773	3				P73T-003B0	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
773	4				P73T-003B1	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
773	6				P73T-003B2	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
773	8				P73T-003B3	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
773	10				P73T-003AS	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
773	12				P73T-003AT	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
773	14				P73T-003AU	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
773	16				P73T-003AV	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
773	18				P73T-003AW	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
773	20				P73T-003AY	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
773	24				P73T-003AZ	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
773	30				P73T-003BL	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-16				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B16 / A194 Grade 4 ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	18-24				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B16 / A194 Grade 4 ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
1	30				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B16 / A194 Grade 4 ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
773	0.5-10				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B16 / A194 Grade 4 ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
773	12-30				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B16 / A194 Grade 4 ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81G-0004C	Gate valve ASTM A182 Grade F5 Class 150 API 602 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2	
1	0.75				P81G-0004D	Gate valve ASTM A182 Grade F5 Class 150 API 602 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2	
1	1				P81G-0004E	Gate valve ASTM A182 Grade F5 Class 150 API 602 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2	
1	1.5				P81G-0004F	Gate valve ASTM A182 Grade F5 Class 150 API 602 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2	
1	2				P81H-000BP	Gate valve ASTM A217 Grade C5 Class 150 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2	
1	3				P81H-000BR	Gate valve ASTM A217 Grade C5 Class 150 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2	
1	4				P81H-000BS	Gate valve ASTM A217 Grade C5 Class 150 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2	
1	6				P81H-000BT	Gate valve ASTM A217 Grade C5 Class 150 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2	
1	8				P81H-000BU	Gate valve ASTM A217 Grade C5 Class 150 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2	
1	10				P81H-000BN	Gate valve ASTM A217 Grade C5 Class 150 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2	
1	12				P81H-00144	Gate valve ASTM A217 Grade C5 Class 150 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2	
4608	0.75				P81G-000E0	Gate valve ASTM A182 Grade F5 Class 150 API 602 BW both sides w/ nipples BE - NPT ASTM A335-P5 XXS-nipple Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2	
773	2				P81H-000AY	Gate valve ASTM A217 Grade C5 Class 300 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2	

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GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82G-00089	Globe valve ASTM A182 Grade F5 Class 150 API 602 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2	
1	0.75				P82G-0008A	Globe valve ASTM A182 Grade F5 Class 150 API 602 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2	
1	1				P82G-0008B	Globe valve ASTM A182 Grade F5 Class 150 API 602 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2	
1	1.5				P82G-0008C	Globe valve ASTM A182 Grade F5 Class 150 API 602 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83G-00026	Check valve ASTM A182 Grade F5 Class 150 API 602 Flange ASME B16.5 RF Trim number 5 Lift-type Bolted cover	
1	0.75				P83G-00027	Check valve ASTM A182 Grade F5 Class 150 API 602 Flange ASME B16.5 RF Trim number 5 Lift-type Bolted cover	
1	1				P83G-00028	Check valve ASTM A182 Grade F5 Class 150 API 602 Flange ASME B16.5 RF Trim number 5 Lift-type Bolted cover	
1	1.5				P83G-00029	Check valve ASTM A182 Grade F5 Class 150 API 602 Flange ASME B16.5 RF Trim number 5 Lift-type Bolted cover	
1	2				P83H-0005N	Check valve ASTM A217 Grade C5 Class 150 BS 1868 Flange ASME B16.5 RF Trim number 5 Swing-type Bolted cover	
1	3				P83H-0005P	Check valve ASTM A217 Grade C5 Class 150 BS 1868 Flange ASME B16.5 RF Trim number 5 Swing-type Bolted cover	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71G-00010	Spectacle blank ASTM A182 Grade F5 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	0.75				P71G-00011	Spectacle blank ASTM A182 Grade F5 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	1				P71G-00012	Spectacle blank ASTM A182 Grade F5 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71G-00013	Spectacle blank ASTM A182 Grade F5 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	2				P71G-00016	Spectacle blank ASTM A182 Grade F5 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	3				P71G-00017	Spectacle blank ASTM A182 Grade F5 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	4				P71G-00018	Spectacle blank ASTM A182 Grade F5 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	6				P71G-00019	Spectacle blank ASTM A182 Grade F5 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	8				P71G-0001A	Spectacle blank ASTM A182 Grade F5 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	10				P71G-00014	Spectacle blank ASTM A182 Grade F5 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	12				P71G-00015	Spectacle blank ASTM A182 Grade F5 Class 150 Standard-drawing Flange ASME B16.5 RF	

PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72G-0000P	Paddle blank ASTM A182 Grade F5 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	16				P72G-0000R	Paddle blank ASTM A182 Grade F5 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	18				P72G-0000S	Paddle blank ASTM A182 Grade F5 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	20				P72G-0000T	Paddle blank ASTM A182 Grade F5 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	24				P72G-0000U	Paddle blank ASTM A182 Grade F5 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	30				P72G-0000V	Paddle blank ASTM A182 Grade F5 Class 150 Standard-drawing Flange ASME B16.47-B RF	
773	20				P72G-0001S	Paddle blank ASTM A182 Grade F5 Class 300 Standard-drawing Flange ASME B16.5 RF	
773	30				P72G-0001U	Paddle blank ASTM A182 Grade F5 Class 300 Standard-drawing Flange ASME B16.47-B RF	

PADDLE SPACER (PS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72G-0000W	Paddle spacer ASTM A182 Grade F5 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	16				P72G-0000X	Paddle spacer ASTM A182 Grade F5 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	18				P72G-0000Y	Paddle spacer ASTM A182 Grade F5 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	20				P72G-0000Z	Paddle spacer ASTM A182 Grade F5 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	24				P72G-00010	Paddle spacer ASTM A182 Grade F5 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	30				P72G-00011	Paddle spacer ASTM A182 Grade F5 Class 150 Standard-drawing Flange ASME B16.47-B RF	
773	20				P72G-0001Y	Paddle spacer ASTM A182 Grade F5 Class 300 Standard-drawing Flange ASME B16.5 RF	
773	30				P72G-00020	Paddle spacer ASTM A182 Grade F5 Class 300 Standard-drawing Flange ASME B16.47-B RF	

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BOLT TABLE (B_A2FC01 , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	60	P80S-00GNA		
0.75	4	0.500	65	P80S-00GN9		
1	4	0.500	70	P80S-00GN8		
1.5	4	0.500	75	P80S-00GN7		
2	4	0.625	85	P80S-00GLJ		
3	4	0.625	95	P80S-00GLG		
4	8	0.625	95	P80S-00GLG		
6	8	0.750	105	P80S-00GLE		
8	8	0.750	110	P80S-00GLD		
10	12	0.875	120	P80S-00FV9		
12	12	0.875	120	P80S-00FV9		
14	12	1.000	135	P80S-00FRE		
16	16	1.000	140	P80S-00FRD		
18	16	1.125	150	P80S-00FHD		
20	20	1.125	160	P80S-00FHB		
24	20	1.250	175	P80S-00FA1		
30	44	0.750	145	P80S-00FZS		

BOLT TABLE (B_A2FC01_773 , STUD ASME RF, OPTION CODE 773)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-00GN8		
0.75	4	0.625	75	P80S-00GLL		
1	4	0.625	80	P80S-00GLK		
1.5	4	0.750	95	P80S-00FVE		
2	8	0.625	90	P80S-00GLH		
3	8	0.750	110	P80S-00GLD		
4	8	0.750	115	P80S-00GLC		
6	12	0.750	125	P80S-00GLA		
8	12	0.875	140	P80S-00FV5		
10	16	1.000	160	P80S-00FR9		
12	16	1.125	175	P80S-00FH8		
14	20	1.125	180	P80S-00FH7		
16	20	1.250	190	P80S-00F9Y		
18	24	1.250	200	P80S-00F9W		
20	24	1.250	210	P80S-00F9U		
24	24	1.500	235	P80S-00EYL		
30	36	1.375	285	P80S-00F2V		

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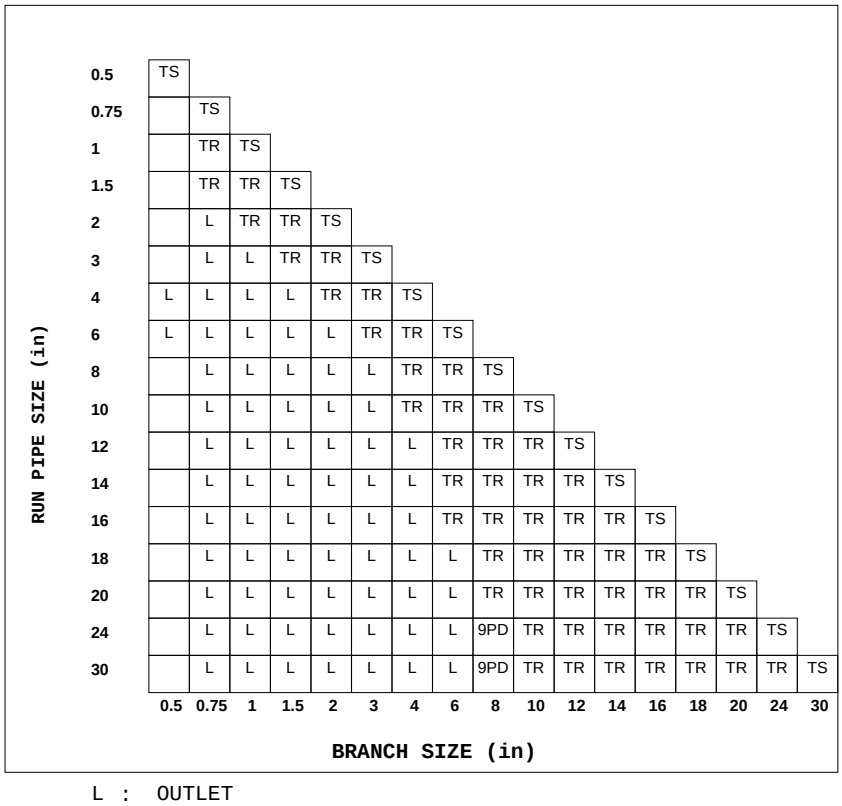
PIPING CLASS

A2FC01 REV NO. 2

BRANCH TABLE (T_A2FC01)



RUN PIPE SIZE (in)	0.5	0.75	1	1.5	2	3	4	6	8	10	12	14	16	18	20	24	30
0.5	TS																
0.75		TS															
1		TR	TS														
1.5		TR	TR	TS													
2		L	TR	TR	TS												
3		L	L	TR	TR	TS											
4	L	L	L	L	TR	TR	TS										
6	L	L	L	L	L	TR	TR	TS									
8		L	L	L	L	L	TR	TR	TS								
10		L	L	L	L	L	TR	TR	TR	TS							
12		L	L	L	L	L	L	TR	TR	TR	TS						
14		L	L	L	L	L	L	TR	TR	TR	TR	TS					
16		L	L	L	L	L	L	TR	TR	TR	TR	TR	TS				
18		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TS			
20		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TR	TS		
24		L	L	L	L	L	L	L	9PD	TR	TR	TR	TR	TR	TR	TS	
30		L	L	L	L	L	L	L	9PD	TR	TR	TR	TR	TR	TR	TR	TS

L : OUTLET
9PD : REINFORCING PAD 90 DEG
TS : STRAIGHT TEE
TR : REDUCING TEE

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PIPING CLASS

A2GN REV NO. 2

Material : LTCS
Rating : ASME CLASS 150
Flange Face : RF
C.A.(mm) : 3.00
Gasket : Spiral Wound
Service : PROCESS - LOW TEMPERATURE SERVICE, STRESS RELIEVED: / CAUSTIC

Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
9	ALL ACID AND CAUSTIC SERVICE LINE FLANGED JOINTS SHALL BE COVERED WITH SAFETY SPLASH GUARDS
27	PWHT OF CARBON STEEL PIPING IN WET H2S, CAUSTIC AND AMINE SERVICES SHALL BE IN ACCORDANCE WITH SECTION 10.2, 10.3, AND 10.4 OF PROJECT SPECIFICATION 3550-8440-SP-0002 MATERIALS REQUIREMENTS FOR PRESSURISED EQUIPMENT AND PIPING. FOR CAUSTIC AND AMINE SERVICE THE FOLLOWING SHALL APPLY: - PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF ALL SITE PIPING FABRICATION WELDS IS REQUIRED FOR ALL WALL THICKNESSES. FOR MODERATE AND SEVERE WET H2S SERVICE THE FOLLOWING SHALL APPLY: PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF SITE FABRICATION CIRCUMFERENTIAL OR BRANCH WELDS IS NOT REQUIRED IF WELDS ARE MULTIPASS AND IN ACCORDANCE WITH PARA 10.2.12 OF PROJECT SPECIFICATION 3550-8440-SP-0002. FOR SERVICES MEETING THE WET H2S CRITERIA AND CAUSTIC OR AMINE CRITERIA THE MORE STRINGENT PWHT REQUIREMENT SHALL GOVERN.

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
24	FULL PORT (Q)
200	WITH JACK SCREW (FO)
541	NPT(F) (CA,F)
773	CLASS 300 (B,F,G)
4608	VALVE WITH NIPPLES (V)

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PIPING CLASS
A2GN REV NO. 2

PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P01A-00167	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE	
1	0.75		SCH160		P01A-0016P	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE	
1	1		SCH160		P01A-0011Z	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE	
1	1.5		SCH160		P01A-00127	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE	
1	2		XS		P01A-000XB	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	3		STD		P01A-000YL	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	4		STD		P01A-000YT	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	6		STD		P01A-000Z2	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	8		SCH20		P01A-001BN	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P02A-002GD	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	0.75		SCH160		P02A-002GE	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	1		SCH160		P02A-002GF	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	1.5		SCH160		P02A-002GG	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	2		XS		P02A-000B9	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	3		STD		P02A-000E7	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	4		STD		P02A-000E9	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	6		STD		P02A-000EC	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	8		SCH20		P02A-000GY	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P03A-002E0	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	0.75		SCH160		P03A-002E1	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	1		SCH160		P03A-002E2	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	1.5		SCH160		P03A-002E3	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	2		XS		P03A-0009Y	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	3		STD		P03A-000C4	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	4		STD		P03A-000C6	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	6		STD		P03A-000C9	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	8		SCH20		P03A-000EY	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P21A-003EN	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	0.75		SCH160		P21A-003EP	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	1		SCH160		P21A-003ER	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	1.5		SCH160		P21A-003ES	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	2		XS		P21A-001BR	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	3		STD		P21A-001FE	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	4		STD		P21A-001FF	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	6		STD		P21A-001FJ	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	8		SCH20		P21A-00216	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75	SCH160	SCH160	P24A-00GC7	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	1.5	0.75	SCH160	SCH160	P24A-00GC9	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	1.5	1	SCH160	SCH160	P24A-00GCA	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	2	1	XS	SCH160	P24A-00GMD	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	2	1.5	XS	SCH160	P24A-005NK	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	3	1.5	STD	SCH160	P24A-00GME	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	3	2	STD	XS	P24A-005M3	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	4	2	STD	XS	P24A-006CW	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	4	3	STD	STD	P24A-0028C	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	6	3	STD	STD	P24A-002AL	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	

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REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	6	4	STD	STD	P24A-00289	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	8	4	SCH20	STD	P24A-006CX	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	8	6	SCH20	STD	P24A-005M4	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	SCH160	P27A-00B9Z	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	1	0.5	SCH160	SCH160	P27A-00BA0	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	1	0.75	SCH160	SCH160	P27A-00BA1	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	1.5	0.5	SCH160	SCH160	P27A-00BA2	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	1.5	0.75	SCH160	SCH160	P27A-00BA3	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	1.5	1	SCH160	SCH160	P27A-00BA4	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	2	0.75	XS	SCH160	P27A-003S6	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	2	1	XS	SCH160	P27A-003S7	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	2	1.5	XS	SCH160	P27A-003S8	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	3	1.5	STD	SCH160	P27A-003S9	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	3	2	STD	XS	P27A-003PM	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	4	1.5	STD	SCH160	P27A-003SA	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	4	2	STD	XS	P27A-003PN	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	4	3	STD	STD	P27A-001BA	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	6	3	STD	STD	P27A-001H9	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	6	4	STD	STD	P27A-00181	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	8	4	SCH20	STD	P27A-003PP	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	8	6	SCH20	STD	P27A-003PR	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	SCH160	P28A-0083Z	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	1	0.5	SCH160	SCH160	P28A-00840	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	1	0.75	SCH160	SCH160	P28A-00841	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	1.5	0.5	SCH160	SCH160	P28A-00842	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	1.5	0.75	SCH160	SCH160	P28A-00843	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	1.5	1	SCH160	SCH160	P28A-00844	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	2	0.75	XS	SCH160	P28A-003S2	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	2	1	XS	SCH160	P28A-003S3	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	2	1.5	XS	SCH160	P28A-003S4	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	3	1.5	STD	SCH160	P28A-003S5	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	3	2	STD	XS	P28A-003PL	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	4	1.5	STD	SCH160	P28A-003S6	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	4	2	STD	XS	P28A-003PM	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	4	3	STD	STD	P28A-001CF	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	6	3	STD	STD	P28A-001AL	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	6	4	STD	STD	P28A-001BL	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	8	4	SCH20	STD	P28A-003PN	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	8	6	SCH20	STD	P28A-003PP	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P29A-000R0	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	0.75		SCH160		P29A-000R1	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	1		SCH160		P29A-000R2	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	1.5		SCH160		P29A-000R3	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	2		XS		P29A-000BG	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	3		STD		P29A-0009Y	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	4		STD		P29A-000AH	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	6		STD		P29A-000DE	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	8		SCH20		P29A-000E4	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
541	0.75				P29B-00015	Cap ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 NPT	

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PIPING CLASS
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STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P41A-000DJ	Straight nipple ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		XXS		P41A-000DK	Straight nipple ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		XXS		P41A-000DZ	Straight nipple ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		XXS		P41A-000E0	Straight nipple ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2	0.75	XS	SCH160	P31B-00TPR	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	3	0.75	STD	SCH160	P31B-00TPS	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	4	0.75	STD	SCH160	P31B-00TPU	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	6	0.75	STD	SCH160	P31B-00TPX	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	8	0.75	SCH20	SCH160	P31B-011US	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	3	1	STD	SCH160	P31B-00TPT	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	4	1	STD	SCH160	P31B-00TPV	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	6	1	STD	SCH160	P31B-00TPY	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	8	1	SCH20	SCH160	P31B-011UT	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	4	1.5	STD	SCH160	P31B-00TPW	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	6	1.5	STD	SCH160	P31B-00TPZ	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	8	1.5	SCH20	SCH160	P31B-011UU	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	6	2	STD	XS	P31B-00MFB	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	8	2	SCH20	XS	P31B-00MFH	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	8	3	SCH20	STD	P31B-00MJF	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30B-0002V	Plug ASTM A350 Grade LF2 Class 1 ASME B16.11 NPT Round head	
1	0.75				P30B-0002W	Plug ASTM A350 Grade LF2 Class 1 ASME B16.11 NPT Round head	
1	1				P30B-0002X	Plug ASTM A350 Grade LF2 Class 1 ASME B16.11 NPT Round head	
1	1.5				P30B-0002Y	Plug ASTM A350 Grade LF2 Class 1 ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P61B-004VC	Flange WN ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	0.75		SCH160		P61B-003RN	Flange WN ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	1		SCH160		P61B-003RP	Flange WN ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	1.5		SCH160		P61B-003RR	Flange WN ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	2		XS		P61B-003R0	Flange WN ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	3		STD		P61B-001SY	Flange WN ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	4		STD		P61B-001VW	Flange WN ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	6		STD		P61B-001J0	Flange WN ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	8		SCH20		P61B-001X9	Flange WN ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
541	0.5				P61B-00AHW	Flange NPT ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
541	0.75				P61B-008VN	Flange NPT ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
773	0.5		SCH160		P61B-003RC	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
773	0.75		SCH160		P61B-003RD	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
773	1		SCH160		P61B-003RE	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
773	1.5		SCH160		P61B-003RF	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
773	2		XS		P61B-003R8	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
773	3		STD		P61B-001MB	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
773	4		STD		P61B-001N0	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
773	6		STD		P61B-001NM	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
773	8		SCH20		P61B-002RS	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67B-000K2	Blind flange ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	0.75				P67B-000K3	Blind flange ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	1				P67B-000K4	Blind flange ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	

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BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5				P67B-000K5	Blind flange ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	2				P67B-000KB	Blind flange ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	3				P67B-000KE	Blind flange ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	4				P67B-000KF	Blind flange ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	6				P67B-000KG	Blind flange ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	8				P67B-000KH	Blind flange ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000L8	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000L9	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000LA	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000LB	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000LH	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000LL	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000LM	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	6				P73T-000LN	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	8				P73T-000LP	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	0.5				P73T-000FT	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	0.75				P73T-000FU	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	3				P73T-000G5	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	4				P73T-000G6	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	6				P73T-000G7	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	8				P73T-000G8	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-8				See Attached Bolt Table	Bolt and Nut ASTM A320 Grade L7 / A194 Grade 4 ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
773	0.5-8				See Attached Bolt Table	Bolt and Nut ASTM A320 Grade L7 / A194 Grade 4 ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81B-001N4	Gate valve ASTM A350 Grade LF2 Class 1 Class 150 API 602 Flange ASME B16.5 RF Trim number 9 BB-BG-OS&Y Handwheel operated Caustic service	
1	0.75				P81B-001N5	Gate valve ASTM A350 Grade LF2 Class 1 Class 150 API 602 Flange ASME B16.5 RF Trim number 9 BB-BG-OS&Y Handwheel operated Caustic service	
1	1				P81B-001N6	Gate valve ASTM A350 Grade LF2 Class 1 Class 150 API 602 Flange ASME B16.5 RF Trim number 9 BB-BG-OS&Y Handwheel operated Caustic service	
1	1.5				P81B-001N7	Gate valve ASTM A350 Grade LF2 Class 1 Class 150 API 602 Flange ASME B16.5 RF Trim number 9 BB-BG-OS&Y Handwheel operated Caustic service	
1	2				P81C-005E1	Gate valve ASTM A352 Grade LCC Class 150 API 600 Flange ASME B16.5 RF Trim number 9 BB-BG-OS&Y Handwheel operated Caustic service	
1	3				P81C-005E2	Gate valve ASTM A352 Grade LCC Class 150 API 600 Flange ASME B16.5 RF Trim number 9 BB-BG-OS&Y Handwheel operated Caustic service	
1	4				P81C-005E3	Gate valve ASTM A352 Grade LCC Class 150 API 600 Flange ASME B16.5 RF Trim number 9 BB-BG-OS&Y Handwheel operated Caustic service	
1	6				P81C-005E4	Gate valve ASTM A352 Grade LCC Class 150 API 600 Flange ASME B16.5 RF Trim number 9 BB-BG-OS&Y Handwheel operated Caustic service	
1	8				P81C-00852	Gate valve ASTM A352 Grade LCC Class 150 API 600 Flange ASME B16.5 RF Trim number 9 BB-BG-OS&Y Handwheel operated Caustic service	
4608	0.75				P81B-002Y8	Gate valve ASTM A350 Grade LF2 Class 1 Class 150 API 602 BW both sides w/ nipples BE - NPT ASTM A333-6 XXS-nipple Trim number 9 BB-BG-OS&Y Handwheel operated Caustic service	

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CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83B-00130	Check valve ASTM A350 Grade LF2 Class 1 Class 150 API 602 Flange ASME B16.5 RF Trim number 9 Lift-type Bolted cover Caustic service	
1	0.75				P83B-00131	Check valve ASTM A350 Grade LF2 Class 1 Class 150 API 602 Flange ASME B16.5 RF Trim number 9 Lift-type Bolted cover Caustic service	
1	1				P83B-00132	Check valve ASTM A350 Grade LF2 Class 1 Class 150 API 602 Flange ASME B16.5 RF Trim number 9 Lift-type Bolted cover Caustic service	
1	1.5				P83B-00133	Check valve ASTM A350 Grade LF2 Class 1 Class 150 API 602 Flange ASME B16.5 RF Trim number 9 Lift-type Bolted cover Caustic service	
1	2				P83C-002RJ	Check valve ASTM A352 Grade LCC Class 150 BS 1868 Flange ASME B16.5 RF Trim number 9 Swing-type Bolted cover Caustic service	

BALL VALVE (Q)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P84B-001CU	Ball valve Long-pattern ASTM A350 Grade LF2 Class 1 Class 150 API 608 Flange ASME B16.5 RF Ball UNS N04400 Seat R-PTFE Trim UNS N04400 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design Caustic service	
1	0.75				P84B-001CV	Ball valve Long-pattern ASTM A350 Grade LF2 Class 1 Class 150 API 608 Flange ASME B16.5 RF Ball UNS N04400 Seat R-PTFE Trim UNS N04400 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design Caustic service	
1	1				P84B-001CW	Ball valve Long-pattern ASTM A350 Grade LF2 Class 1 Class 150 API 608 Flange ASME B16.5 RF Ball UNS N04400 Seat R-PTFE Trim UNS N04400 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design Caustic service	
1	1.5				P84B-001CX	Ball valve Long-pattern ASTM A350 Grade LF2 Class 1 Class 150 API 608 Flange ASME B16.5 RF Ball UNS N04400 Seat R-PTFE Trim UNS N04400 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design Caustic service	
1	2				P84C-006K4	Ball valve Long-pattern ASTM A352 Grade LCC Class 150 API 608 Flange ASME B16.5 RF Ball UNS N04400 Seat R-PTFE Trim UNS N04400 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design Caustic service	
24	0.5				P84B-001CY	Ball valve Long-pattern ASTM A350 Grade LF2 Class 1 Class 150 API 608 Flange ASME B16.5 RF Ball UNS N04400 Seat R-PTFE Trim UNS N04400 Floating-type Side-entry Wrench lever operated Full bore Fire tested design Caustic service	
24	0.75				P84B-001CZ	Ball valve Long-pattern ASTM A350 Grade LF2 Class 1 Class 150 API 608 Flange ASME B16.5 RF Ball UNS N04400 Seat R-PTFE Trim UNS N04400 Floating-type Side-entry Wrench lever operated Full bore Fire tested design Caustic service	
24	1				P84B-001D0	Ball valve Long-pattern ASTM A350 Grade LF2 Class 1 Class 150 API 608 Flange ASME B16.5 RF Ball UNS N04400 Seat R-PTFE Trim UNS N04400 Floating-type Side-entry Wrench lever operated Full bore Fire tested design Caustic service	
24	1.5				P84B-001D1	Ball valve Long-pattern ASTM A350 Grade LF2 Class 1 Class 150 API 608 Flange ASME B16.5 RF Ball UNS N04400 Seat R-PTFE Trim UNS N04400 Floating-type Side-entry Wrench lever operated Full bore Fire tested design Caustic service	
24	2				P84C-006K5	Ball valve Long-pattern ASTM A352 Grade LCC Class 150 API 608 Flange ASME B16.5 RF Ball UNS N04400 Seat R-PTFE Trim UNS N04400 Floating-type Side-entry Wrench lever operated Full bore Fire tested design Caustic service	

ORIFICE FLANGE (FO)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2		XS		P66B-00862	Orifice flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
200	2		XS		P66B-00869	Orifice flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71B-0008T	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	0.75				P71B-0008U	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	1				P71B-0008V	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71B-0008W	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	2				P71B-0008Z	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	3				P71B-00090	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	4				P71B-00091	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	6				P71B-00092	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	8				P71B-00093	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF	

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BOLT TABLE (B_A2GN , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	60	P80S-003VJ		
0.75	4	0.500	65	P80S-003VK		
1	4	0.500	70	P80S-003VL		
1.5	4	0.500	75	P80S-003VM		
2	4	0.625	85	P80S-003Z4		
3	4	0.625	95	P80S-003Z6		
4	8	0.625	95	P80S-003Z6		
6	8	0.750	105	P80S-003Z8		
8	8	0.750	110	P80S-003Z9		

BOLT TABLE (B_A2GN_773 , STUD ASME RF, OPTION CODE 773)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-003VL		
0.75	4	0.625	75	P80S-003Z2		
1	4	0.625	80	P80S-003Z3		
1.5	4	0.750	95	P80S-0045X		
2	8	0.625	90	P80S-003Z5		
3	8	0.750	110	P80S-003Z9		
4	8	0.750	115	P80S-003ZA		
6	12	0.750	125	P80S-003ZC		
8	12	0.875	140	P80S-00466		

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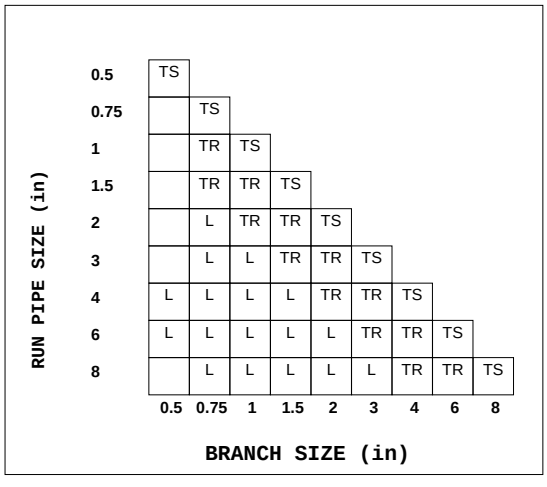
BRANCH TABLE (T_A2GN)



RUN PIPE SIZE (in) \ BRANCH SIZE (in)	0.5	0.75	1	1.5	2	3	4	6	8
0.5	TS								
0.75		TS							
1		TR	TS						
1.5		TR	TR	TS					
2		L	TR	TR	TS				
3		L	L	TR	TR	TS			
4	L	L	L	L	TR	TR	TS		
6	L	L	L	L	L	TR	TR	TS	
8		L	L	L	L	L	TR	TR	TS

TS : STRAIGHT TEE
TR : REDUCING TEE
L : OUTLET

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Material : LTCS
Rating : ASME CLASS 150
Flange Face : RF
C.A.(mm) : 3.00
Gasket : Spiral Wound
Service : PROCESS - GENERAL PROCESS NON SOUR, NON CORROSIVE
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
200	WITH JACK SCREW (FO)
541	NPT(F) (CA,L)
714	SW - NPT(F) (V)
773	CLASS 300 (B,F,G)
781	CLASS 600 (B,F,G)

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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P01A-00167	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE	
1	0.75		SCH160		P01A-0016P	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE	
1	1		SCH160		P01A-0011Z	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE	
1	1.5		SCH160		P01A-00127	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE	
1	2		XS		P01A-000XB	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	3		STD		P01A-000YL	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	4		STD		P01A-000YT	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	6		STD		P01A-000Z2	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	8		SCH20		P01A-001BN	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	10		SCH20		P01A-00171	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	12		SCH30		P01A-001XU	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	14		SCH20		P01A-0018X	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	16		SCH20		P01A-0019K	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	18		SCH20		P01A-007GS	Pipe ASTM A671 Grade CC60 Class 22 EFW ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P02B-0001V	90 degree elbow ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW	
1	0.75				P02B-0001W	90 degree elbow ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW	
1	1				P02B-0001X	90 degree elbow ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW	
1	1.5				P02B-0001Y	90 degree elbow ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW	
1	2		XS		P02A-000B9	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	3		STD		P02A-000E7	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	4		STD		P02A-000E9	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	6		STD		P02A-000EC	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	8		SCH20		P02A-000GY	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	10		SCH20		P02A-000G4	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	12		SCH30		P02A-000RD	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	14		SCH20		P02A-000GE	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	16		SCH20		P02A-000GH	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	18		SCH20		P02A-001JY	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P03B-0001S	45 degree elbow ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW	
1	0.75				P03B-0001T	45 degree elbow ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW	
1	1				P03B-0001U	45 degree elbow ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW	
1	1.5				P03B-0001V	45 degree elbow ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW	
1	2		XS		P03A-0009Y	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	3		STD		P03A-000C4	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	4		STD		P03A-000C6	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	6		STD		P03A-000C9	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	8		SCH20		P03A-000EY	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	10		SCH20		P03A-000E3	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	12		SCH30		P03A-000N0	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	14		SCH20		P03A-000EE	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	16		SCH20		P03A-000EK	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	18		SCH20		P03A-001E2	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P21B-0001S	Straight tee ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW	
1	0.75				P21B-0001T	Straight tee ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW	
1	1				P21B-0001U	Straight tee ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW	
1	1.5				P21B-0001V	Straight tee ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW	
1	2		XS		P21A-001BR	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	3		STD		P21A-001FE	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	4		STD		P21A-001FF	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	6		STD		P21A-001FJ	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	

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STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	8		SCH20		P21A-00216	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10		SCH20		P21A-0020F	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12		SCH30		P21A-0028D	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14		SCH20		P21A-0020N	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16		SCH20		P21A-0020U	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	18		SCH20		P21A-0020E	Straight tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75			P24B-0003M	Reducing tee ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW	
1	1.5	0.75			P24B-0003P	Reducing tee ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW	
1	1.5	1			P24B-0003R	Reducing tee ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW	
1	2	1	XS	SCH160	P24A-00GMD	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	2	1.5	XS	SCH160	P24A-005NK	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	3	1.5	STD	SCH160	P24A-00GME	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	3	2	STD	XS	P24A-005M3	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	4	2	STD	XS	P24A-006CW	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	4	3	STD	STD	P24A-0028C	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	6	3	STD	STD	P24A-002AL	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	6	4	STD	STD	P24A-00289	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	8	4	SCH20	STD	P24A-006CX	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	8	6	SCH20	STD	P24A-005M4	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	4	SCH20	STD	P24A-00HMJ	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	6	SCH20	STD	P24A-00HLN	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	8	SCH20	SCH20	P24A-002WN	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	6	SCH30	STD	P24A-00HLP	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	8	SCH30	SCH20	P24A-003Y5	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	10	SCH30	SCH20	P24A-003Y3	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	6	SCH20	STD	P24A-00KWM	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	8	SCH20	SCH20	P24A-002WZ	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	10	SCH20	SCH20	P24A-002V3	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	12	SCH20	SCH30	P24A-003Y6	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	6	SCH20	STD	P24A-00KWN	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	8	SCH20	SCH20	P24A-002XU	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	10	SCH20	SCH20	P24A-002VZ	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	12	SCH20	SCH30	P24A-003Y7	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	14	SCH20	SCH20	P24A-002X6	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	18	8	SCH20	SCH20	P24A-002Y9	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	18	10	SCH20	SCH20	P24A-002V5	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	18	12	SCH20	SCH30	P24A-00M0G	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	18	14	SCH20	SCH20	P24A-002X2	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	18	16	SCH20	SCH20	P24A-002XE	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	STD	XS	P27A-003PM	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	4	2	STD	XS	P27A-003PN	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	4	3	STD	STD	P27A-001BA	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	6	3	STD	STD	P27A-001H9	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	6	4	STD	STD	P27A-00181	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	8	4	SCH20	STD	P27A-003PP	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	8	6	SCH20	STD	P27A-003PR	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	4	SCH20	STD	P27A-003PS	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	6	SCH20	STD	P27A-003PT	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	8	SCH20	SCH20	P27A-001W8	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	6	SCH30	STD	P27A-003SB	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	8	SCH30	SCH20	P27A-002GW	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	10	SCH30	SCH20	P27A-002GU	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	6	SCH20	STD	P27A-003SC	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	

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CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14	8	SCH20	SCH20	P27A-001WA	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	10	SCH20	SCH20	P27A-001VH	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	12	SCH20	SCH30	P27A-002GX	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	8	SCH20	SCH20	P27A-001WH	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	10	SCH20	SCH20	P27A-001VS	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	12	SCH20	SCH30	P27A-002GY	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	14	SCH20	SCH20	P27A-001WD	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	18	10	SCH20	SCH20	P27A-001VM	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	18	12	SCH20	SCH30	P27A-004DG	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	18	14	SCH20	SCH20	P27A-001WC	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	18	16	SCH20	SCH20	P27A-001WF	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	STD	XS	P28A-003PL	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	4	2	STD	XS	P28A-003PM	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	4	3	STD	STD	P28A-001CF	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	6	3	STD	STD	P28A-001AL	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	6	4	STD	STD	P28A-001BL	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	8	4	SCH20	STD	P28A-003PN	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	8	6	SCH20	STD	P28A-003PP	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	4	SCH20	STD	P28A-003PR	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	6	SCH20	STD	P28A-003PS	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	8	SCH20	SCH20	P28A-001W3	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	6	SCH30	STD	P28A-003S7	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	8	SCH30	SCH20	P28A-002GP	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	10	SCH30	SCH20	P28A-002GM	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	6	SCH20	STD	P28A-003S8	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	8	SCH20	SCH20	P28A-001W9	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	10	SCH20	SCH20	P28A-001V9	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	12	SCH20	SCH30	P28A-002GR	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	8	SCH20	SCH20	P28A-001WC	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	10	SCH20	SCH20	P28A-001VL	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	12	SCH20	SCH30	P28A-002GS	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	14	SCH20	SCH20	P28A-001W7	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	18	10	SCH20	SCH20	P28A-001VD	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	18	12	SCH20	SCH30	P28A-004DA	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	18	14	SCH20	SCH20	P28A-001W6	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	18	16	SCH20	SCH20	P28A-001WA	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P29B-0002J	Cap ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW	
1	0.75				P29B-0002K	Cap ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW	
1	1				P29B-0002L	Cap ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW	
1	1.5				P29B-0002H	Cap ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW	
1	2		XS		P29A-000BG	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	3		STD		P29A-0009Y	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	4		STD		P29A-000AH	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	6		STD		P29A-000DE	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	8		SCH20		P29A-000E4	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10		SCH20		P29A-000EF	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12		SCH30		P29A-000SJ	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14		SCH20		P29A-000EM	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16		SCH20		P29A-000ER	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	18		SCH20		P29A-000EU	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
541	0.75				P29B-00015	Cap ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 NPT	
541	1				P29B-00017	Cap ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 NPT	

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STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P41A-000DJ	Straight nipple ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		XXS		P41A-000DK	Straight nipple ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		XXS		P41A-000DZ	Straight nipple ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		XXS		P41A-000E0	Straight nipple ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

CON SWAGED NIPPLE (SNC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	SCH160	P42A-000A8	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	SCH160	SCH160	P42A-000A9	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	SCH160	SCH160	P42A-000A1	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	SCH160	SCH160	P42A-000AA	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	SCH160	SCH160	P42A-000A3	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	SCH160	SCH160	P42A-000A4	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	XS	SCH160	P42A-000L1	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	XS	SCH160	P42A-000L2	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	XS	SCH160	P42A-000L3	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	XS	SCH160	P42A-000L4	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	STD	SCH160	P42A-000L5	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 BE(L) - PE(S)	

ECC SWAGED NIPPLE (SNE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	SCH160	P43A-000D2	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	SCH160	SCH160	P43A-000D3	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	SCH160	SCH160	P43A-000D4	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	SCH160	SCH160	P43A-000D5	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	SCH160	SCH160	P43A-000D6	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	SCH160	SCH160	P43A-000D7	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	XS	SCH160	P43A-000D8	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	XS	SCH160	P43A-000D9	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	XS	SCH160	P43A-000DA	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	XS	SCH160	P43A-000DB	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	STD	SCH160	P43A-000DC	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 BE(L) - PE(S)	

COUPLING (CPS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P47B-0001S	Coupling ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW - SW	
1	0.75				P47B-0001T	Coupling ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW - SW	
1	1				P47B-0001U	Coupling ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW - SW	
1	1.5				P47B-0001V	Coupling ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW - SW	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5 - 2.5	0.75			P31B-0138C	Outlet ASTM A350 Grade LF2 Class 1 Class 6000 MSS SP-97 SW	
1	3 - 10	0.75			P31B-007DK	Outlet ASTM A350 Grade LF2 Class 1 Class 6000 MSS SP-97 SW	
1	12 and larger	0.75			P31B-0138B	Outlet ASTM A350 Grade LF2 Class 1 Class 6000 MSS SP-97 SW	
1	3 - 10	1			P31B-007BL	Outlet ASTM A350 Grade LF2 Class 1 Class 6000 MSS SP-97 SW	
1	12 and larger	1			P31B-0138D	Outlet ASTM A350 Grade LF2 Class 1 Class 6000 MSS SP-97 SW	
1	4 - 5	1.5			P31B-00514	Outlet ASTM A350 Grade LF2 Class 1 Class 6000 MSS SP-97 SW	
1	6 - 8	1.5			P31B-007B0	Outlet ASTM A350 Grade LF2 Class 1 Class 6000 MSS SP-97 SW	
1	10 - 18	1.5			P31B-007BC	Outlet ASTM A350 Grade LF2 Class 1 Class 6000 MSS SP-97 SW	
541	1	0.75			P31B-004HD	Outlet ASTM A350 Grade LF2 Class 1 Class 6000 MSS SP-97 NPT	
541	1.5 - 2.5	0.75			P31B-0138F	Outlet ASTM A350 Grade LF2 Class 1 Class 6000 MSS SP-97 NPT	
541	3 - 10	0.75			P31B-007CY	Outlet ASTM A350 Grade LF2 Class 1 Class 6000 MSS SP-97 NPT	
541	12 and larger	0.75			P31B-0138G	Outlet ASTM A350 Grade LF2 Class 1 Class 6000 MSS SP-97 NPT	
1	6	2	STD	XS	P31B-00MFB	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	8	2	SCH20	XS	P31B-00MFH	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	10	2	SCH20	XS	P31B-00TFX	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	12	2	SCH30	XS	P31B-00MJK	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	

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OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14	2	SCH20	XS	P31B-00TFU	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	16	2	SCH20	XS	P31B-00TFZ	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	18	2	SCH20	XS	P31B-00MJS	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	8	3	SCH20	STD	P31B-00MJF	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	10	3	SCH20	STD	P31B-00UPN	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	12	3	SCH30	STD	P31B-00MJL	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	14	3	SCH20	STD	P31B-00UPP	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	16	3	SCH20	STD	P31B-00UP2	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	18	3	SCH20	STD	P31B-00MJT	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	12	4	SCH30	STD	P31B-00MJM	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	14	4	SCH20	STD	P31B-00UPR	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	16	4	SCH20	STD	P31B-00UP3	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	18	4	SCH20	STD	P31B-00MJU	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	18	6	SCH20	STD	P31B-00MJV	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30B-0002V	Plug ASTM A350 Grade LF2 Class 1 ASME B16.11 NPT Round head	
1	0.75				P30B-0002W	Plug ASTM A350 Grade LF2 Class 1 ASME B16.11 NPT Round head	
1	1				P30B-0002X	Plug ASTM A350 Grade LF2 Class 1 ASME B16.11 NPT Round head	
1	1.5				P30B-0002Y	Plug ASTM A350 Grade LF2 Class 1 ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P61B-0064K	Flange SW ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	0.75		SCH160		P61B-0064L	Flange SW ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	1		SCH160		P61B-0064M	Flange SW ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	1.5		SCH160		P61B-0064N	Flange SW ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	2		XS		P61B-003R0	Flange WN ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	3		STD		P61B-001SY	Flange WN ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	4		STD		P61B-001VW	Flange WN ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	6		STD		P61B-001J0	Flange WN ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	8		SCH20		P61B-001X9	Flange WN ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	10		SCH20		P61B-0021J	Flange WN ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	12		SCH30		P61B-002TZ	Flange WN ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	14		SCH20		P61B-0022R	Flange WN ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	16		SCH20		P61B-00232	Flange WN ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	18		SCH20		P61B-0023B	Flange WN ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
773	0.5		SCH160		P61B-001CU	Flange SW ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
773	0.75		SCH160		P61B-001D5	Flange SW ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
773	1		SCH160		P61B-001GC	Flange SW ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
773	1.5		SCH160		P61B-001GZ	Flange SW ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
773	2		XS		P61B-003R8	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
773	3		STD		P61B-001MB	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
773	4		STD		P61B-001N0	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
773	6		STD		P61B-001NM	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
773	8		SCH20		P61B-002RS	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
773	10		SCH20		P61B-002RJ	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
773	12		SCH30		P61B-002U4	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
773	14		SCH20		P61B-002RL	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
773	16		SCH20		P61B-002RM	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
773	18		SCH20		P61B-002RN	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
781	2		XS		P61B-001FN	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
781	3		STD		P61B-001TV	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
781	4		STD		P61B-001VT	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
781	6		STD		P61B-001JV	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	

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BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67B-000K2	Blind flange ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	0.75				P67B-000K3	Blind flange ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	1				P67B-000K4	Blind flange ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	1.5				P67B-000K5	Blind flange ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	2				P67B-000KB	Blind flange ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	3				P67B-000KE	Blind flange ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	4				P67B-000KF	Blind flange ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	6				P67B-000KG	Blind flange ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	8				P67B-000KH	Blind flange ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	10				P67B-000K6	Blind flange ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	12				P67B-000K7	Blind flange ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	14				P67B-000K8	Blind flange ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	16				P67B-000K9	Blind flange ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	18				P67B-000KA	Blind flange ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000L8	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000L9	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000LA	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000LB	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000LH	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000LL	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000LM	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	6				P73T-000LN	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	8				P73T-000LP	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	10				P73T-000LC	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	12				P73T-000LD	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	14				P73T-000LE	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	16				P73T-000LF	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	18				P73T-000LG	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	0.5				P73T-000FT	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	0.75				P73T-000FU	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	3				P73T-000G5	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	4				P73T-000G6	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	6				P73T-000G7	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	8				P73T-000G8	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	10				P73T-000FX	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	12				P73T-000FY	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	14				P73T-000FZ	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	16				P73T-000G0	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	18				P73T-000G1	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	2				P73T-000JH	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	3				P73T-000JL	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	4				P73T-000JM	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

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GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
781	6				P73T-000JN	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-16				See Attached Bolt Table	Bolt and Nut ASTM A320 Grade L7 / A194 Grade 4 ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	18				See Attached Bolt Table	Bolt and Nut ASTM A320 Grade L7 / A194 Grade 4 ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
773	0.5-10				See Attached Bolt Table	Bolt and Nut ASTM A320 Grade L7 / A194 Grade 4 ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
773	12-18				See Attached Bolt Table	Bolt and Nut ASTM A320 Grade L7 / A194 Grade 4 ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
781	0.75-6				See Attached Bolt Table	Bolt and Nut ASTM A320 Grade L7 / A194 Grade 4 ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81B-0018C	Gate valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	0.75				P81B-0018D	Gate valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	1				P81B-0018E	Gate valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	1.5				P81B-0018F	Gate valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	2				P81C-004DU	Gate valve ASTM A352 Grade LCC Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	3				P81C-004DV	Gate valve ASTM A352 Grade LCC Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	4				P81C-004DW	Gate valve ASTM A352 Grade LCC Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	6				P81C-004DX	Gate valve ASTM A352 Grade LCC Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	8				P81C-004DY	Gate valve ASTM A352 Grade LCC Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	10				P81C-004DS	Gate valve ASTM A352 Grade LCC Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
714	0.5				P81B-002S4	Gate valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW - NPT Trim number 12 BB-BG-OS&Y Handwheel operated	
714	0.75				P81B-002FB	Gate valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW - NPT Trim number 12 BB-BG-OS&Y Handwheel operated	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82B-0011H	Globe valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	0.75				P82B-0011J	Globe valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	1				P82B-0011K	Globe valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	1.5				P82B-0011L	Globe valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	2				P82C-0026T	Globe valve ASTM A352 Grade LCC Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	3				P82C-0026U	Globe valve ASTM A352 Grade LCC Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	4				P82C-0026V	Globe valve ASTM A352 Grade LCC Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	6				P82C-0026W	Globe valve ASTM A352 Grade LCC Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	8				P82C-002P1	Globe valve ASTM A352 Grade LCC Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83B-000TS	Check valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 12 Lift-type Bolted cover	
1	0.75				P83B-000TT	Check valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 12 Lift-type Bolted cover	
1	1				P83B-000TU	Check valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 12 Lift-type Bolted cover	
1	1.5				P83B-000TV	Check valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 12 Lift-type Bolted cover	
1	2				P83C-00226	Check valve ASTM A352 Grade LCC Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	3				P83C-00227	Check valve ASTM A352 Grade LCC Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	4				P83C-00228	Check valve ASTM A352 Grade LCC Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	6				P83C-00229	Check valve ASTM A352 Grade LCC Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	

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CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	8				P83C-0022A	Check valve ASTM A352 Grade LCC Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	

ORIFICE FLANGE (FO)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3		STD		P66B-00863	Orifice flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
200	3		STD		P66B-0086A	Orifice flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71B-0008T	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	0.75				P71B-0008U	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	1				P71B-0008V	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71B-0008W	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	2				P71B-0008Z	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	3				P71B-00090	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	4				P71B-00091	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	6				P71B-00092	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	8				P71B-00093	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	10				P71B-0008X	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	12				P71B-0008Y	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF	

PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000CP	Paddle blank ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	16				P72B-000CR	Paddle blank ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	18				P72B-000CS	Paddle blank ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF	

PADDLE SPACER (PS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000CV	Paddle spacer ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	16				P72B-000CW	Paddle spacer ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	18				P72B-000CX	Paddle spacer ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF	

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BOLT TABLE (B_A2GP , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	60	P80S-003VJ		
0.75	4	0.500	65	P80S-003VK		
1	4	0.500	70	P80S-003VL		
1.5	4	0.500	75	P80S-003VM		
2	4	0.625	85	P80S-003Z4		
3	4	0.625	95	P80S-003Z6		
4	8	0.625	95	P80S-003Z6		
6	8	0.750	105	P80S-003Z8		
8	8	0.750	110	P80S-003Z9		
10	12	0.875	120	P80S-00462		
12	12	0.875	120	P80S-00462		
14	12	1.000	135	P80S-004BC		
16	16	1.000	140	P80S-004BD		
18	16	1.125	150	P80S-004J1		

BOLT TABLE (B_A2GP_773 , STUD ASME RF, OPTION CODE 773)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-003VL		
0.75	4	0.625	75	P80S-003Z2		
1	4	0.625	80	P80S-003Z3		
1.5	4	0.750	95	P80S-0045X		
2	8	0.625	90	P80S-003Z5		
3	8	0.750	110	P80S-003Z9		
4	8	0.750	115	P80S-003ZA		
6	12	0.750	125	P80S-003ZC		
8	12	0.875	140	P80S-00466		
10	16	1.000	160	P80S-004BH		
12	16	1.125	175	P80S-004J7		
14	20	1.125	180	P80S-004J8		
16	20	1.250	190	P80S-004LJ		
18	24	1.250	200	P80S-004LL		

BOLT TABLE (B_A2GP_781 , STUD ASME RF, OPTION CODE 781)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	80			
0.75	4	0.625	90	P80S-003Z5		
1	4	0.625	95	P80S-003Z6		
1.5	4	0.750	110	P80S-003Z9		
2	8	0.625	110	P80S-003VV		
3	8	0.750	130	P80S-003ZD		
4	8	0.875	150	P80S-00468		
6	12	1.000	175	P80S-004BM		
8	12	1.125	195			
10	16	1.250	250			
12	20	1.250	255			
14	20	1.375	270			
16	20	1.500	295			
18	20	1.625	320			

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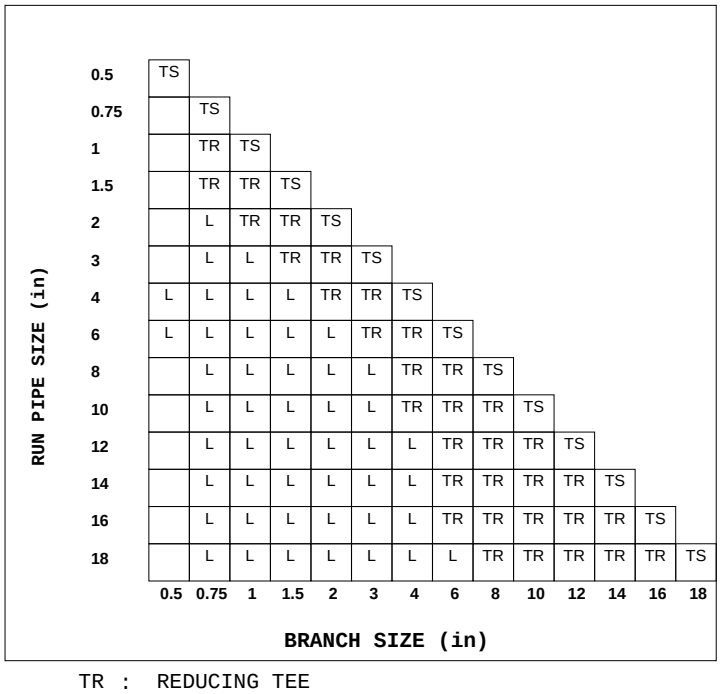
BRANCH TABLE (T_A2GP)



TR : REDUCING TEE
TS : STRAIGHT TEE
L : OUTLET

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Material : LTCS
Rating : ASME CLASS 150
Flange Face : RF
C.A.(mm) : 3.00
Gasket : Spiral Wound
Service : PROCESS - GENERAL PROCESS NON SOUR, NON CORROSIVE
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
2	USE OF SOFT SEATED BALL, PLUG AND BUTTERFLY VALVES SHALL BE LIMITED TO MAXIMUM OF 204DEGC (400DEGF)

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
541	NPT(F) (CA,L)
714	SW - NPT(F) (V)
773	CLASS 300 (B,F,G)

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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P01A-001Z1	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE	
1	0.75		SCH160		P01A-0016P	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE	
1	1		SCH160		P01A-0011Z	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE	
1	1.5		SCH160		P01A-00127	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE	
1	2		XS		P01A-000XB	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	3		XS		P01A-000XG	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	4		STD		P01A-000YT	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	6		STD		P01A-000Z2	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	8		SCH30		P01A-005NB	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P02B-0002X	90 degree elbow ASTM A350 Grade LF2 Class 1 Class 9000 ASME B16.11 SW	
1	0.75				P02B-0001W	90 degree elbow ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW	
1	1				P02B-0001X	90 degree elbow ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW	
1	1.5				P02B-0001Y	90 degree elbow ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW	
1	2		XS		P02A-000B9	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	3		XS		P02A-000BC	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	4		STD		P02A-000E9	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	6		STD		P02A-000EC	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	8		SCH30		P02A-003NV	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P03B-0002T	45 degree elbow ASTM A350 Grade LF2 Class 1 Class 9000 ASME B16.11 SW	
1	0.75				P03B-0001T	45 degree elbow ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW	
1	1				P03B-0001U	45 degree elbow ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW	
1	1.5				P03B-0001V	45 degree elbow ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW	
1	2		XS		P03A-0009Y	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	3		XS		P03A-000A0	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	4		STD		P03A-000C6	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	6		STD		P03A-000C9	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	8		SCH30		P03A-003LK	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P21B-0002W	Straight tee ASTM A350 Grade LF2 Class 1 Class 9000 ASME B16.11 SW	
1	0.75				P21B-0001T	Straight tee ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW	
1	1				P21B-0001U	Straight tee ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW	
1	1.5				P21B-0001V	Straight tee ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW	
1	2		XS		P21A-001BR	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	3		XS		P21A-001BT	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	4		STD		P21A-001FF	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	6		STD		P21A-001FJ	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	8		SCH30		P21A-0046V	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75			P24B-0003M	Reducing tee ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW	
1	1.5	0.75			P24B-0003P	Reducing tee ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW	
1	1.5	1			P24B-0003R	Reducing tee ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW	
1	2	1	XS	SCH160	P24A-00GMD	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	2	1.5	XS	SCH160	P24A-005NK	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	3	1.5	XS	SCH160	P24A-00GMW	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	3	2	XS	XS	P24A-00270	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	4	2	STD	XS	P24A-006CW	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	4	3	STD	XS	P24A-00M5R	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	6	3	STD	XS	P24A-00M5S	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	

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REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	6	4	STD	STD	P24A-00289	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	8	4	SCH30	STD	P24A-00JVZ	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	8	6	SCH30	STD	P24A-00JW0	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	XS	XS	P27A-0018T	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	4	2	STD	XS	P27A-003PN	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	4	3	STD	XS	P27A-00G4P	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	6	3	STD	XS	P27A-00G4R	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	6	4	STD	STD	P27A-00181	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	8	4	SCH30	STD	P27A-00EEA	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	8	6	SCH30	STD	P27A-00EEB	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	XS	XS	P28A-00199	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	4	2	STD	XS	P28A-003PM	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	4	3	STD	XS	P28A-00DBN	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	6	3	STD	XS	P28A-00DBP	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	6	4	STD	STD	P28A-001BL	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	8	4	SCH30	STD	P28A-00BHC	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	8	6	SCH30	STD	P28A-00BHD	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P29B-0005A	Cap ASTM A350 Grade LF2 Class 1 Class 9000 ASME B16.11 SW	
1	0.75				P29B-0002K	Cap ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW	
1	1				P29B-0002L	Cap ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW	
1	1.5				P29B-0002H	Cap ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW	
1	2		XS		P29A-000BG	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	3		XS		P29A-0009U	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	4		STD		P29A-000AH	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	6		STD		P29A-000DE	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	8		SCH30		P29A-0030U	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
541	0.75				P29B-00015	Cap ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P41A-000DJ	Straight nipple ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		XXS		P41A-000DK	Straight nipple ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		XXS		P41A-000DZ	Straight nipple ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		XXS		P41A-000E0	Straight nipple ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

CON SWAGED NIPPLE (SNC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	XXS	P42A-0009Z	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	SCH160	XXS	P42A-000A0	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	SCH160	SCH160	P42A-000A1	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	SCH160	XXS	P42A-000A2	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	SCH160	SCH160	P42A-000A3	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	SCH160	SCH160	P42A-000A4	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	XS	XXS	P42A-0010J	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	XS	SCH160	P42A-000L2	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	XS	SCH160	P42A-000L3	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	XS	SCH160	P42A-000L4	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	XS	SCH160	P42A-000LK	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 BE(L) - PE(S)	

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ECC SWAGED NIPPLE (SNE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	XXS	P43A-000HB	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	SCH160	XXS	P43A-000HC	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	SCH160	SCH160	P43A-000D4	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	SCH160	XXS	P43A-000HD	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	SCH160	SCH160	P43A-000D6	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	SCH160	SCH160	P43A-000D7	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	XS	XXS	P43A-000MC	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	XS	SCH160	P43A-000D9	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	XS	SCH160	P43A-000DA	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	XS	SCH160	P43A-000DB	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	XS	SCH160	P43A-000E4	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 BE(L) - PE(S)	

COUPLING (CPS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P47B-00036	Coupling ASTM A350 Grade LF2 Class 1 Class 9000 ASME B16.11 SW - SW	
1	0.75				P47B-0001T	Coupling ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW - SW	
1	1				P47B-0001U	Coupling ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW - SW	
1	1.5				P47B-0001V	Coupling ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW - SW	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5 - 2.5	0.75			P31B-0138C	Outlet ASTM A350 Grade LF2 Class 1 Class 6000 MSS SP-97 SW	
1	3 - 10	0.75			P31B-007DK	Outlet ASTM A350 Grade LF2 Class 1 Class 6000 MSS SP-97 SW	
1	3 - 10	1			P31B-007BL	Outlet ASTM A350 Grade LF2 Class 1 Class 6000 MSS SP-97 SW	
1	4 - 5	1.5			P31B-00514	Outlet ASTM A350 Grade LF2 Class 1 Class 6000 MSS SP-97 SW	
1	6 - 8	1.5			P31B-007B0	Outlet ASTM A350 Grade LF2 Class 1 Class 6000 MSS SP-97 SW	
541	1	0.75			P31B-004HD	Outlet ASTM A350 Grade LF2 Class 1 Class 6000 MSS SP-97 NPT	
541	1.5 - 2.5	0.75			P31B-0138F	Outlet ASTM A350 Grade LF2 Class 1 Class 6000 MSS SP-97 NPT	
541	3 - 10	0.75			P31B-007CY	Outlet ASTM A350 Grade LF2 Class 1 Class 6000 MSS SP-97 NPT	
1	6	2	STD	XS	P31B-00MFB	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	8	2	SCH30	XS	P31B-00X5G	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	8	3	SCH30	XS	P31B-010NT	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30B-0002V	Plug ASTM A350 Grade LF2 Class 1 ASME B16.11 NPT Round head	
1	0.75				P30B-0002W	Plug ASTM A350 Grade LF2 Class 1 ASME B16.11 NPT Round head	
1	1				P30B-0002X	Plug ASTM A350 Grade LF2 Class 1 ASME B16.11 NPT Round head	
1	1.5				P30B-0002Y	Plug ASTM A350 Grade LF2 Class 1 ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P61B-0095W	Flange SW ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	0.75		SCH160		P61B-0064L	Flange SW ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	1		SCH160		P61B-0064M	Flange SW ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	1.5		SCH160		P61B-0064N	Flange SW ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	2		XS		P61B-003R0	Flange WN ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	3		XS		P61B-003RU	Flange WN ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	4		STD		P61B-001VW	Flange WN ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	6		STD		P61B-001J0	Flange WN ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	8		SCH30		P61B-009H2	Flange WN ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
773	0.5		XXS		P61B-001D1	Flange SW ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
773	0.75		SCH160		P61B-001D5	Flange SW ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
773	1		SCH160		P61B-001GC	Flange SW ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
773	1.5		SCH160		P61B-001GZ	Flange SW ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
773	2		XS		P61B-003R8	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
773	3		XS		P61B-003SG	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
773	4		STD		P61B-001N0	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	

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FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
773	6		STD		P61B-001NM	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
773	8		SCH30		P61B-009H4	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67B-000K2	Blind flange ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	0.75				P67B-000K3	Blind flange ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	1				P67B-000K4	Blind flange ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	1.5				P67B-000K5	Blind flange ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	2				P67B-000KB	Blind flange ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	3				P67B-000KE	Blind flange ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	4				P67B-000KF	Blind flange ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	6				P67B-000KG	Blind flange ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	8				P67B-000KH	Blind flange ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000L8	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000L9	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000LA	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000LB	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000LH	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000LL	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000LM	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	6				P73T-000LN	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	8				P73T-000LP	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	0.5				P73T-000FT	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	0.75				P73T-000FU	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	3				P73T-000G5	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	4				P73T-000G6	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	6				P73T-000G7	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	8				P73T-000G8	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-8				See Attached Bolt Table	Bolt and Nut ASTM A320 Grade L7 / A194 Grade 4 ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
773	0.5-8				See Attached Bolt Table	Bolt and Nut ASTM A320 Grade L7 / A194 Grade 4 ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81B-0018C	Gate valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	0.75				P81B-0018D	Gate valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	1				P81B-0018E	Gate valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	1.5				P81B-0018F	Gate valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	2				P81C-004DU	Gate valve ASTM A352 Grade LCC Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	3				P81C-004DV	Gate valve ASTM A352 Grade LCC Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	

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GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	4				P81C-004DW	Gate valve ASTM A352 Grade LCC Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	6				P81C-004DX	Gate valve ASTM A352 Grade LCC Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	8				P81C-004DY	Gate valve ASTM A352 Grade LCC Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
714	0.5				P81B-002S4	Gate valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW - NPT Trim number 12 BB-BG-OS&Y Handwheel operated	
714	0.75				P81B-002FB	Gate valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW - NPT Trim number 12 BB-BG-OS&Y Handwheel operated	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82B-0011H	Globe valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	0.75				P82B-0011J	Globe valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	1				P82B-0011K	Globe valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	1.5				P82B-0011L	Globe valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	2				P82C-0026T	Globe valve ASTM A352 Grade LCC Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	3				P82C-0026U	Globe valve ASTM A352 Grade LCC Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	4				P82C-0026V	Globe valve ASTM A352 Grade LCC Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	6				P82C-0026W	Globe valve ASTM A352 Grade LCC Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	8				P82C-002P1	Globe valve ASTM A352 Grade LCC Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83B-000TS	Check valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 12 Lift-type Bolted cover	
1	0.75				P83B-000TT	Check valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 12 Lift-type Bolted cover	
1	1				P83B-000TU	Check valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 12 Lift-type Bolted cover	
1	1.5				P83B-000TV	Check valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 12 Lift-type Bolted cover	
1	2				P83C-00226	Check valve ASTM A352 Grade LCC Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	3				P83C-00227	Check valve ASTM A352 Grade LCC Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	4				P83C-00228	Check valve ASTM A352 Grade LCC Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	6				P83C-00229	Check valve ASTM A352 Grade LCC Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	8				P83C-0022A	Check valve ASTM A352 Grade LCC Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71B-0008T	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	0.75				P71B-0008U	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	1				P71B-0008V	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71B-0008W	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	2				P71B-0008Z	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	3				P71B-00090	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	4				P71B-00091	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	6				P71B-00092	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	8				P71B-00093	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF	

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BOLT TABLE (B_A2GP04 , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	60	P80S-003VJ		
0.75	4	0.500	65	P80S-003VK		
1	4	0.500	70	P80S-003VL		
1.5	4	0.500	75	P80S-003VM		
2	4	0.625	85	P80S-003Z4		
3	4	0.625	95	P80S-003Z6		
4	8	0.625	95	P80S-003Z6		
6	8	0.750	105	P80S-003Z8		
8	8	0.750	110	P80S-003Z9		

BOLT TABLE (B_A2GP04_773 , STUD ASME RF, OPTION CODE 773)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-003VL		
0.75	4	0.625	75	P80S-003Z2		
1	4	0.625	80	P80S-003Z3		
1.5	4	0.750	95	P80S-0045X		
2	8	0.625	90	P80S-003Z5		
3	8	0.750	110	P80S-003Z9		
4	8	0.750	115	P80S-003ZA		
6	12	0.750	125	P80S-003ZC		
8	12	0.875	140	P80S-00466		

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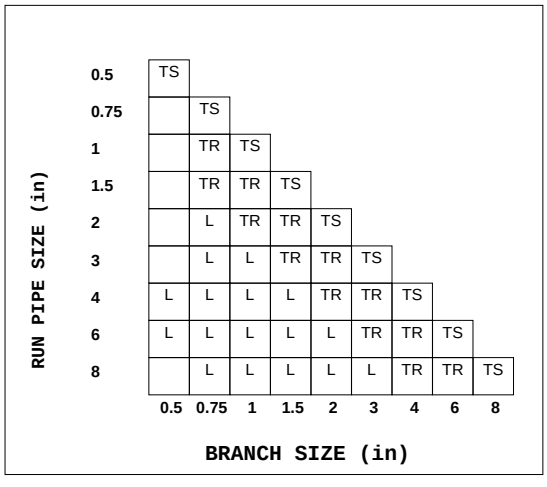
BRANCH TABLE (T_A2GP04)



0.5	TS							
0.75		TS						
1		TR	TS					
1.5		TR	TR	TS				
2		L	TR	TR	TS			
3		L	L	TR	TR	TS		
4	L	L	L	L	TR	TR	TS	
6	L	L	L	L	L	TR	TR	TS
8		L	L	L	L	L	TR	TR	TS

L : OUTLET
TR : REDUCING TEE
TS : STRAIGHT TEE

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PIPING CLASS

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Material : LTCS
Rating : ASME CLASS 150
Flange Face : RF
C.A.(mm) : 3.00
Gasket : Spiral Wound
Service : PROCESS -WET SOUR SERVICE SUBJECT TO NACE STD. : / DE-ETHANISER OVHD / DE-ETHANISER OFFGAS
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
2	USE OF SOFT SEATED BALL, PLUG AND BUTTERFLY VALVES SHALL BE LIMITED TO MAXIMUM OF 204DEGC (400DEGF)
5	BOLTING CONFIRMING TO B7M / 2HM SHALL BE USED UNDER CONDITIONS (A) DIRECT EXPOSURE TO SOUR ENVIRONMENTS (B) WHEN THE BOLTING WILL BE BURIED OR INSULATED
15	BOLTING CONFIRMING TO L7M / 7M SHALL BE USED UNDER CONDITIONS (A) DIRECT EXPOSURE TO SOUR ENVIRONMENTS (B) WHEN THE BOLTING WILL BE BURIED OR INSULATED
27	PWHT OF CARBON STEEL PIPING IN WET H2S, CAUSTIC AND AMINE SERVICES SHALL BE IN ACCORDANCE WITH SECTION 10.2, 10.3, AND 10.4 OF PROJECT SPECIFICATION 3550-8440-SP-0002 MATERIALS REQUIREMENTS FOR PRESSURISED EQUIPMENT AND PIPING. FOR CAUSTIC AND AMINE SERVICE THE FOLLOWING SHALL APPLY: - PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF ALL SITE PIPING FABRICATION WELDS IS REQUIRED FOR ALL WALL THICKNESSES. FOR MODERATE AND SEVERE WET H2S SERVICE THE FOLLOWING SHALL APPLY: PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF SITE FABRICATION CIRCUMFERENTIAL OR BRANCH WELDS IS NOT REQUIRED IF WELDS ARE MULTIPASS AND IN ACCORDANCE WITH PARA 10.2.12 OF PROJECT SPECIFICATION 3550-8440-SP-0002. FOR SERVICES MEETING THE WET H2S CRITERIA AND CAUSTIC OR AMINE CRITERIA THE MORE STRINGENT PWHT REQUIREMENT SHALL GOVERN.

DETAIL NOTES :

NO.	DESCRIPTION
999	HOLD ITEMS. ORDER PLACEMENT SHALL NOT BE DONE BEFORE RELEASING HOLD.

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
541	NPT(F) (CA,F,L)
773	CLASS 300 (B,F,G)
781	CLASS 600 (B,F,G)
851	ALTERNATIVE WALL THICKNESS 1 (4L,6PD,9L,CA,F,P,RC,RE)
4202	SHORT RADIUS (9L)
4208	45 DEGREE LATERAL STRAIGHT TEE (TLS)
4608	VALVE WITH NIPPLES (V)

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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P01A-00167	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE	
1	0.75		SCH160		P01A-0016P	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE	
1	1		SCH160		P01A-0011Z	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE	
1	1.5		SCH160		P01A-00127	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE	
1	2		XS		P01A-000XB	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	3		STD		P01A-000YL	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	4		STD		P01A-000YT	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	6		STD		P01A-000Z2	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	8		SCH30		P01A-005NB	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	10		SCH30		P01A-002SV	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	12		SCH30		P01A-001XU	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	14		SCH20		P01A-0018X	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	16		SCH20		P01A-0019K	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	18		STD		P01A-0043H	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	20		STD		P01A-00375	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	24		XS		P01A-0037A	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	30		XS		P01A-007YX	Pipe ASTM A671 Grade CC60 Class 22 EFW ASME B36.10M/B36.19M BE Moderate wet H2S service	
1	36		XS		P01A-007YY	Pipe ASTM A671 Grade CC60 Class 22 EFW ASME B36.10M/B36.19M BE Moderate wet H2S service	
1	42		14.27mm		P01A-007YZ	Pipe ASTM A671 Grade CC60 Class 22 EFW ASME B36.10M/B36.19M BE Moderate wet H2S service	
1	48		14.27mm		P01A-008MZ	Pipe ASTM A671 Grade CC60 Class 22 EFW ASME B36.10M/B36.19M BE Moderate wet H2S service	
1	52		15.88mm		P01A-008N0	Pipe ASTM A671 Grade CC60 Class 22 EFW ASME B36.10M/B36.19M BE Moderate wet H2S service	
1	56		17.48mm		P01A-008N1	Pipe ASTM A671 Grade CC60 Class 22 EFW ASME B36.10M/B36.19M BE Moderate wet H2S service	
1	60		17.48mm		P01A-008N2	Pipe ASTM A671 Grade CC60 Class 22 EFW ASME B36.10M/B36.19M BE Moderate wet H2S service	
1	64		19.05mm		P01A-008N3	Pipe ASTM A671 Grade CC60 Class 22 EFW ASME B36.10M/B36.19M BE Moderate wet H2S service	
1	68		19.05mm		P01A-008N4	Pipe ASTM A671 Grade CC60 Class 22 EFW ASME B36.10M/B36.19M BE Moderate wet H2S service	
1	72		19.05mm		P01A-008N5	Pipe ASTM A671 Grade CC60 Class 22 EFW ASME B36.10M/B36.19M BE Moderate wet H2S service	
1	76		19.05mm		P01A-008N6	Pipe ASTM A671 Grade CC60 Class 22 EFW ASME B36.10M/B36.19M BE Moderate wet H2S service	
1	80		22.23mm		P01A-008N7	Pipe ASTM A671 Grade CC60 Class 22 EFW ASME B36.10M/B36.19M BE Moderate wet H2S service	
1	92		19.05mm		P01A-008TA	Pipe ASTM A671 Grade CC60 Class 22 EFW ASME B36.10M/B36.19M BE Moderate wet H2S service	
851	0.5		XXS		P01A-001Z1	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE	
851	0.75		XXS		P01A-0051V	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE	
851	1		XXS		P01A-003WW	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE	
851	1.5		XXS		P01A-003WX	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE	
851	2		XXS		P01A-003XE	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
851	3		XXS		P01A-0022E	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
851	4		SCH160		P01A-002D1	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
851	6		SCH120		P01A-002D2	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
851	8		XS		P01A-000YG	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
851	10		XS		P01A-0022D	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
851	12		XS		P01A-00227	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
851	14		XS		P01A-0022C	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
851	16		XS		P01A-0011L	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
851	18		XS		P01A-00378	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
851	20		XS		P01A-00379	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P02A-002GD	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	0.75		SCH160		P02A-002GE	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	1		SCH160		P02A-002GF	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	1.5		SCH160		P02A-002GG	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	2		XS		P02A-000B9	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	3		STD		P02A-000E7	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	4		STD		P02A-000E9	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	6		STD		P02A-000EC	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	8		SCH30		P02A-003NV	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	10		SCH30		P02A-001B0	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	12		SCH30		P02A-000RD	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	14		SCH20		P02A-000GE	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	

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90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	16		SCH20		P02A-000GH	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	18		STD		P02A-002HN	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	20		STD		P02A-001JZ	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	24		XS		P02A-001K4	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	30		XS		P02A-004WC	90 degree elbow ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Long radius Moderate wet H2S service	
1	36		XS		P02A-004WD	90 degree elbow ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Long radius Moderate wet H2S service	
1	42		14.27mm		P02A-004WE	90 degree elbow ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Long radius Moderate wet H2S service	
1	48		14.27mm		P02A-004WF	90 degree elbow ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Long radius Moderate wet H2S service	
1	52		15.88mm		P02A-004WG	90 degree elbow ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Long radius Moderate wet H2S service	
1	56		17.48mm		P02A-004WH	90 degree elbow ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Long radius Moderate wet H2S service	
1	60		17.48mm		P02A-004WJ	90 degree elbow ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Long radius Moderate wet H2S service	
1	64		19.05mm		P02A-004WK	90 degree elbow ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Long radius Moderate wet H2S service	
1	68		19.05mm		P02A-004WL	90 degree elbow ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Long radius Moderate wet H2S service	
1	72		19.05mm		P02A-004WM	90 degree elbow ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Long radius Moderate wet H2S service	
1	76		19.05mm		P02A-004WN	90 degree elbow ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Long radius Moderate wet H2S service	
1	80		22.23mm		P02A-004WP	90 degree elbow ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Long radius Moderate wet H2S service	
1	92		19.05mm		P02A-004WR	90 degree elbow ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Long radius Moderate wet H2S service	
4202	24		XS		P02A-0057N	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Short radius	
851	0.5		XXS		P02A-002HP	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
851	0.75		XXS		P02A-0043D	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
851	1		XXS		P02A-002GH	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
851	1.5		XXS		P02A-002GJ	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
851	2		XXS		P02A-002GA	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
851	3		XXS		P02A-002GL	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
851	4		SCH160		P02A-00119	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
851	6		SCH120		P02A-0011A	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
851	8		XS		P02A-000C4	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
851	10		XS		P02A-001AX	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
851	12		XS		P02A-000UG	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
851	14		XS		P02A-000UE	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
851	16		XS		P02A-000FJ	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
851	18		XS		P02A-001K2	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
851	20		XS		P02A-001K3	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P03A-002E0	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	0.75		SCH160		P03A-002E1	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	1		SCH160		P03A-002E2	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	1.5		SCH160		P03A-002E3	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	2		XS		P03A-0009Y	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	3		STD		P03A-000C4	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	4		STD		P03A-000C6	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	6		STD		P03A-000C9	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	8		SCH30		P03A-003LK	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	10		SCH30		P03A-0016Z	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	12		SCH30		P03A-000N0	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	14		SCH20		P03A-000EE	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	16		SCH20		P03A-000EK	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	18		STD		P03A-002F6	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	20		STD		P03A-001E3	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	24		XS		P03A-001E8	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	30		XS		P03A-004FV	45 degree elbow ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Long radius Moderate wet H2S service	
1	36		XS		P03A-004FW	45 degree elbow ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Long radius Moderate wet H2S service	
1	42		14.27mm		P03A-004FX	45 degree elbow ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Long radius Moderate wet H2S service	
1	48		14.27mm		P03A-004FY	45 degree elbow ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Long radius Moderate wet H2S service	

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45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	52		15.88mm		P03A-004FZ	45 degree elbow ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Long radius Moderate wet H2S service	
1	56		17.48mm		P03A-004G0	45 degree elbow ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Long radius Moderate wet H2S service	
1	60		17.48mm		P03A-004G1	45 degree elbow ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Long radius Moderate wet H2S service	
1	64		19.05mm		P03A-004G2	45 degree elbow ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Long radius Moderate wet H2S service	
1	68		19.05mm		P03A-004G3	45 degree elbow ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Long radius Moderate wet H2S service	
1	72		19.05mm		P03A-004G4	45 degree elbow ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Long radius Moderate wet H2S service	
1	76		19.05mm		P03A-004G5	45 degree elbow ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Long radius Moderate wet H2S service	
1	80		22.23mm		P03A-004G6	45 degree elbow ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Long radius Moderate wet H2S service	
1	92		19.05mm		P03A-004G7	45 degree elbow ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Long radius Moderate wet H2S service	
851	0.5		XXS		P03A-002F7	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
851	0.75		XXS		P03A-0041D	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
851	1		XXS		P03A-002E4	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
851	1.5		XXS		P03A-002E5	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
851	2		XXS		P03A-002DT	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
851	3		XXS		P03A-002E7	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
851	4		SCH160		P03A-000XS	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
851	6		SCH120		P03A-000XT	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
851	8		XS		P03A-000AH	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
851	10		XS		P03A-0016V	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
851	12		XS		P03A-000RG	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
851	14		XS		P03A-000RE	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
851	16		XS		P03A-000DJ	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
851	18		XS		P03A-001E6	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
851	20		XS		P03A-001E7	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P21A-003EN	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	0.75		SCH160		P21A-003EP	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	1		SCH160		P21A-003ER	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	1.5		SCH160		P21A-003ES	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	2		XS		P21A-001BR	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	3		STD		P21A-001FE	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	4		STD		P21A-001FF	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	6		STD		P21A-001FJ	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	8		SCH30		P21A-0046V	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10		SCH30		P21A-002RK	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12		SCH30		P21A-0028D	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14		SCH20		P21A-0020N	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16		SCH20		P21A-0020U	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	18		STD		P21A-003H0	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	20		STD		P21A-002Y7	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	24		XS		P21A-002YC	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	30		XS		P21A-00507	Straight tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Moderate wet H2S service	
1	36		XS		P21A-00508	Straight tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Moderate wet H2S service	
1	42		14.27mm		P21A-00509	Straight tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Moderate wet H2S service	
1	48		14.27mm		P21A-0050A	Straight tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Moderate wet H2S service	
1	52		15.88mm		P21A-0050B	Straight tee ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	56		17.48mm		P21A-0050C	Straight tee ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	60		17.48mm		P21A-0050D	Straight tee ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	64		19.05mm		P21A-0050E	Straight tee ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	68		19.05mm		P21A-0050F	Straight tee ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	72		19.05mm		P21A-0050G	Straight tee ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	76		19.05mm		P21A-0050H	Straight tee ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	80		22.23mm		P21A-0050J	Straight tee ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	92		19.05mm		P21A-0050K	Straight tee ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Moderate wet H2S service	

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STRAIGHT LATERAL TEE (TLS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75		SCH160		P22A-000JA	Straight lateral-tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW 60 degree	
1	1		SCH160		P22A-000JB	Straight lateral-tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW 60 degree	
1	1.5		SCH160		P22A-000JC	Straight lateral-tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW 60 degree	
1	2		XS		P22A-000DD	Straight lateral-tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW 60 degree	
1	3		STD		P22A-000DE	Straight lateral-tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW 60 degree	
1	4		STD		P22A-000DF	Straight lateral-tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW 60 degree	
1	6		STD		P22A-000DG	Straight lateral-tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW 60 degree	
1	8		SCH30		P22A-000JG	Straight lateral-tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW 60 degree	
1	10		SCH30		P22A-000JD	Straight lateral-tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW 60 degree	
1	12		SCH30		P22A-000DB	Straight lateral-tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW 60 degree	
1	14		SCH20		P22A-000DC	Straight lateral-tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW 60 degree	
1	16		SCH20		P22A-000E4	Straight lateral-tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW 60 degree	
1	18		STD		P22A-000JE	Straight lateral-tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW 60 degree	
1	20		STD		P22A-000JF	Straight lateral-tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW 60 degree	
1	24		XS		P22A-000FR	Straight lateral-tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW 60 degree	
1	30		XS		P22A-000EP	Straight lateral-tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW 60 degree Moderate wet H2S service	
1	36		XS		P22A-000ER	Straight lateral-tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW 60 degree Moderate wet H2S service	
1	42		14.27mm		P22A-000E6	Straight lateral-tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW 60 degree Moderate wet H2S service	
1	48		14.27mm		P22A-000HE	Straight lateral-tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW 60 degree Moderate wet H2S service	
1	52		15.88mm		P22A-000JH	Straight lateral-tee ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW 60 degree Moderate wet H2S service	
1	56		17.48mm		P22A-000JJ	Straight lateral-tee ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW 60 degree Moderate wet H2S service	
1	60		17.48mm		P22A-000JK	Straight lateral-tee ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW 60 degree Moderate wet H2S service	
1	64		19.05mm		P22A-000JL	Straight lateral-tee ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW 60 degree Moderate wet H2S service	
1	68		19.05mm		P22A-000JM	Straight lateral-tee ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW 60 degree Moderate wet H2S service	
1	76		19.05mm		P22A-000JN	Straight lateral-tee ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW 60 degree Moderate wet H2S service	
1	80		22.23mm		P22A-000JP	Straight lateral-tee ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW 60 degree Moderate wet H2S service	
1	92		19.05mm		P22A-000JR	Straight lateral-tee ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW 60 degree Moderate wet H2S service	
4208	42		14.27mm		P22A-000E7	Straight lateral-tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW 45 degree Moderate wet H2S service	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75	SCH160	SCH160	P24A-00GC7	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	1.5	0.75	SCH160	SCH160	P24A-00GC9	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	1.5	1	SCH160	SCH160	P24A-00GCA	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	2	1	XS	SCH160	P24A-00GMD	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	2	1.5	XS	SCH160	P24A-005NK	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	3	1.5	STD	SCH160	P24A-00GME	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	3	2	STD	XS	P24A-005M3	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	4	2	STD	XS	P24A-006CW	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	4	3	STD	STD	P24A-0028C	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	6	3	STD	STD	P24A-002AL	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	6	4	STD	STD	P24A-00289	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	8	4	SCH30	STD	P24A-00JVZ	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	8	6	SCH30	STD	P24A-00JW0	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	4	SCH30	STD	P24A-00KT4	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	6	SCH30	STD	P24A-006CY	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	8	SCH30	SCH30	P24A-00MKC	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	6	SCH30	STD	P24A-00HLP	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	8	SCH30	SCH30	P24A-00MKD	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	10	SCH30	SCH30	P24A-006D0	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	6	SCH20	STD	P24A-00KWM	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	8	SCH20	SCH30	P24A-00MKF	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	10	SCH20	SCH30	P24A-00MKE	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	12	SCH20	SCH30	P24A-003Y6	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	6	SCH20	STD	P24A-00KWN	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	

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REDUCING TEE (TR)							
OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	16	8	SCH20	SCH30	P24A-00P2T	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	10	SCH20	SCH30	P24A-00MKG	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	12	SCH20	SCH30	P24A-003Y7	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	14	SCH20	SCH20	P24A-002X6	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	18	8	STD	SCH30	P24A-00P2Y	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	18	10	STD	SCH30	P24A-00P2U	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	18	12	STD	SCH30	P24A-00P2V	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	18	14	STD	SCH20	P24A-00P2W	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	18	16	STD	SCH20	P24A-00P2X	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	20	8	STD	SCH30	P24A-00P30	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	20	10	STD	SCH30	P24A-00P2Z	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	20	12	STD	SCH30	P24A-00HLU	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	20	14	STD	SCH20	P24A-00HLV	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	20	16	STD	SCH20	P24A-00HLW	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	20	18	STD	STD	P24A-00GR1	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	24	10	XS	SCH30	P24A-00P31	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	24	12	XS	SCH30	P24A-00P32	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	24	14	XS	SCH20	P24A-00P33	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	24	16	XS	SCH20	P24A-00P34	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	24	18	XS	STD	P24A-00GR7	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	24	20	XS	STD	P24A-008BC	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	30	10	XS	SCH30	P24A-00P35	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Moderate wet H2S service	
1	30	12	XS	SCH30	P24A-00P36	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Moderate wet H2S service	
1	30	14	XS	SCH20	P24A-00P37	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Moderate wet H2S service	
1	30	16	XS	SCH20	P24A-00P38	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Moderate wet H2S service	
1	30	18	XS	STD	P24A-00P39	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Moderate wet H2S service	
1	30	20	XS	STD	P24A-00P3A	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Moderate wet H2S service	
1	30	24	XS	XS	P24A-00P3B	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Moderate wet H2S service	
1	36	16	XS	SCH20	P24A-00P3C	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Moderate wet H2S service	
1	36	18	XS	STD	P24A-00P3D	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Moderate wet H2S service	
1	36	20	XS	STD	P24A-00P3E	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Moderate wet H2S service	
1	36	24	XS	XS	P24A-00P3F	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Moderate wet H2S service	
1	36	30	XS	XS	P24A-00P3G	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Moderate wet H2S service	
1	42	16	14.27mm	SCH20	P24A-00P3H	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Moderate wet H2S service	
1	42	18	14.27mm	STD	P24A-00P3J	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Moderate wet H2S service	
1	42	20	14.27mm	STD	P24A-00P3K	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Moderate wet H2S service	
1	42	24	14.27mm	XS	P24A-00P3L	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Moderate wet H2S service	
1	42	30	14.27mm	XS	P24A-00P3M	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Moderate wet H2S service	
1	42	36	14.27mm	XS	P24A-00P3N	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Moderate wet H2S service	
1	48	24	14.27mm	XS	P24A-00P3P	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Moderate wet H2S service	
1	48	30	14.27mm	XS	P24A-00P3R	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Moderate wet H2S service	
1	48	36	14.27mm	XS	P24A-00P3S	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Moderate wet H2S service	
1	48	42	14.27mm	14.27mm	P24A-00P3T	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Moderate wet H2S service	
1	52	30	15.88mm	XS	P24A-00P3U	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	52	36	15.88mm	XS	P24A-00P3V	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	52	42	15.88mm	14.27mm	P24A-00P3W	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	52	48	15.88mm	14.27mm	P24A-00P3X	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	56	30	17.48mm	XS	P24A-00P3Y	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	56	36	17.48mm	XS	P24A-00P3Z	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	56	42	17.48mm	14.27mm	P24A-00P40	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	56	48	17.48mm	14.27mm	P24A-00P41	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	56	52	17.48mm	15.88mm	P24A-00P42	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	60	30	17.48mm	XS	P24A-00P43	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	60	36	17.48mm	XS	P24A-00P44	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	60	42	17.48mm	14.27mm	P24A-00P45	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	60	48	17.48mm	14.27mm	P24A-00P46	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	60	52	17.48mm	15.88mm	P24A-00P47	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	60	56	17.48mm	17.48mm	P24A-00P48	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	64	36	19.05mm	XS	P24A-00P49	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Moderate wet H2S service	

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REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	64	42	19.05mm	14.27mm	P24A-00P4A	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	64	48	19.05mm	14.27mm	P24A-00P4B	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	64	52	19.05mm	15.88mm	P24A-00P4C	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	64	56	19.05mm	17.48mm	P24A-00P4D	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	64	60	19.05mm	17.48mm	P24A-00P4E	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	68	36	19.05mm	XS	P24A-00P4F	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	68	42	19.05mm	14.27mm	P24A-00P4G	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	68	48	19.05mm	14.27mm	P24A-00P4H	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	68	52	19.05mm	15.88mm	P24A-00P4J	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	68	56	19.05mm	17.48mm	P24A-00P4K	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	68	60	19.05mm	17.48mm	P24A-00P4L	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	68	64	19.05mm	19.05mm	P24A-00P4M	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	72	36	19.05mm	XS	P24A-00P4N	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	72	42	19.05mm	14.27mm	P24A-00P4P	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	72	48	19.05mm	14.27mm	P24A-00P4R	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	72	52	19.05mm	15.88mm	P24A-00P4S	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	72	56	19.05mm	17.48mm	P24A-00P4T	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	72	60	19.05mm	17.48mm	P24A-00P4U	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	72	64	19.05mm	19.05mm	P24A-00P4V	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	72	68	19.05mm	19.05mm	P24A-00P4W	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	76	42	19.05mm	14.27mm	P24A-00PDM	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	76	48	19.05mm	14.27mm	P24A-00PDN	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	76	52	19.05mm	15.88mm	P24A-00PDP	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	76	56	19.05mm	17.48mm	P24A-00PDR	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	76	60	19.05mm	17.48mm	P24A-00PDS	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	76	64	19.05mm	19.05mm	P24A-00PDT	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	76	68	19.05mm	19.05mm	P24A-00PDU	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	76	72	19.05mm	19.05mm	P24A-00PDV	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	80	42	22.23mm	14.27mm	P24A-00P4X	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	80	48	22.23mm	14.27mm	P24A-00P4Y	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	80	52	22.23mm	15.88mm	P24A-00P4Z	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	80	56	22.23mm	17.48mm	P24A-00P50	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	80	60	22.23mm	17.48mm	P24A-00P51	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	80	64	22.23mm	19.05mm	P24A-00P52	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	80	68	22.23mm	19.05mm	P24A-00P53	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	80	72	22.23mm	19.05mm	P24A-00P54	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	80	76	22.23mm	19.05mm	P24A-00PDW	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	92	48	19.05mm	14.27mm	P24A-00P55	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	92	52	19.05mm	15.88mm	P24A-00P56	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	92	56	19.05mm	17.48mm	P24A-00P57	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	92	60	19.05mm	17.48mm	P24A-00P58	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	92	64	19.05mm	19.05mm	P24A-00P59	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	92	68	19.05mm	19.05mm	P24A-00P5A	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	92	72	19.05mm	19.05mm	P24A-00P5B	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	92	76	19.05mm	19.05mm	P24A-00PDX	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	92	80	19.05mm	22.23mm	P24A-00P5C	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Moderate wet H2S service	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	SCH160	P27A-00B9Z	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	1	0.5	SCH160	SCH160	P27A-00BA0	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	1	0.75	SCH160	SCH160	P27A-00BA1	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	1.5	0.5	SCH160	SCH160	P27A-00BA2	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	1.5	0.75	SCH160	SCH160	P27A-00BA3	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	1.5	1	SCH160	SCH160	P27A-00BA4	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	2	0.75	XS	SCH160	P27A-003S6	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	2	1	XS	SCH160	P27A-003S7	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	2	1.5	XS	SCH160	P27A-003S8	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	3	1.5	STD	SCH160	P27A-003S9	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	

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CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	STD	XS	P27A-003PM	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	4	1.5	STD	SCH160	P27A-003SA	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	4	2	STD	XS	P27A-003PN	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	4	3	STD	STD	P27A-001BA	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	6	3	STD	STD	P27A-001H9	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	6	4	STD	STD	P27A-00181	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	8	4	SCH30	STD	P27A-00EEA	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	8	6	SCH30	STD	P27A-00EEB	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	4	SCH30	STD	P27A-004D7	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	6	SCH30	STD	P27A-004D8	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	8	SCH30	SCH30	P27A-00EEC	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	6	SCH30	STD	P27A-003SB	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	8	SCH30	SCH30	P27A-00EF8	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	10	SCH30	SCH30	P27A-004DA	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	6	SCH20	STD	P27A-003SC	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	8	SCH20	SCH30	P27A-00GGU	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	10	SCH20	SCH30	P27A-008Z1	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	12	SCH20	SCH30	P27A-002GX	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	8	SCH20	SCH30	P27A-00GGV	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	10	SCH20	SCH30	P27A-008G2	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	12	SCH20	SCH30	P27A-002GY	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	14	SCH20	SCH20	P27A-001WD	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	18	10	STD	SCH30	P27A-00HL3	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	18	12	STD	SCH30	P27A-00HL4	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	18	14	STD	SCH20	P27A-00HL5	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	18	16	STD	SCH20	P27A-00HL6	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	20	12	STD	SCH30	P27A-009C4	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	20	14	STD	SCH20	P27A-00C8G	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	20	16	STD	SCH20	P27A-00C8H	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	20	18	STD	STD	P27A-00BHJ	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	24	16	XS	SCH20	P27A-00HL7	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	24	18	XS	STD	P27A-00BHL	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	24	20	XS	STD	P27A-009EP	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	30	20	XS	STD	P27A-00HL8	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Moderate wet H2S service	
1	30	24	XS	XS	P27A-00HL9	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Moderate wet H2S service	
1	36	24	XS	XS	P27A-00HLA	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Moderate wet H2S service	
1	36	30	XS	XS	P27A-00HLB	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Moderate wet H2S service	
1	42	30	14.27mm	XS	P27A-00HLC	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Moderate wet H2S service	
1	42	36	14.27mm	XS	P27A-00HLD	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Moderate wet H2S service	
1	48	42	14.27mm	14.27mm	P27A-00HLE	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Moderate wet H2S service	
1	52	30	15.88mm	XS	P27A-00HLF	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	52	36	15.88mm	XS	P27A-00HLG	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	52	42	15.88mm	14.27mm	P27A-00HLH	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	52	48	15.88mm	14.27mm	P27A-00HLJ	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	56	36	17.48mm	XS	P27A-00HLK	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	56	42	17.48mm	14.27mm	P27A-00HLL	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	56	48	17.48mm	14.27mm	P27A-00HLM	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	56	52	17.48mm	15.88mm	P27A-00HLN	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	60	36	17.48mm	XS	P27A-00HLP	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	60	42	17.48mm	14.27mm	P27A-00HLR	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	60	48	17.48mm	14.27mm	P27A-00HLS	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	60	52	17.48mm	15.88mm	P27A-00HLT	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	60	56	17.48mm	17.48mm	P27A-00HLU	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	64	42	19.05mm	14.27mm	P27A-00HLV	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	64	48	19.05mm	14.27mm	P27A-00HLW	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	64	52	19.05mm	15.88mm	P27A-00HLX	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	64	56	19.05mm	17.48mm	P27A-00HLY	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	64	60	19.05mm	17.48mm	P27A-00HLZ	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	68	48	19.05mm	14.27mm	P27A-00HM0	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Moderate wet H2S service	

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CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	68	52	19.05mm	15.88mm	P27A-00HM1	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	68	56	19.05mm	17.48mm	P27A-00HM2	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	68	60	19.05mm	17.48mm	P27A-00HM3	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	68	64	19.05mm	19.05mm	P27A-00HM4	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	72	48	19.05mm	14.27mm	P27A-00HM5	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	72	52	19.05mm	15.88mm	P27A-00HM6	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	72	56	19.05mm	17.48mm	P27A-00HM7	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	72	60	19.05mm	17.48mm	P27A-00HM8	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	72	64	19.05mm	19.05mm	P27A-00HM9	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	72	68	19.05mm	19.05mm	P27A-00HMA	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	76	52	19.05mm	15.88mm	P27A-00HNE	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	76	56	19.05mm	17.48mm	P27A-00HNF	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	76	60	19.05mm	17.48mm	P27A-00HNG	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	76	64	19.05mm	19.05mm	P27A-00HNH	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	76	68	19.05mm	19.05mm	P27A-00HNJ	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	76	72	19.05mm	19.05mm	P27A-00HMB	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	80	56	22.23mm	17.48mm	P27A-00HMC	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	80	60	22.23mm	17.48mm	P27A-00HMD	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	80	64	22.23mm	19.05mm	P27A-00HME	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	80	68	22.23mm	19.05mm	P27A-00HMF	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	80	72	22.23mm	19.05mm	P27A-00HMG	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	80	76	22.23mm	19.05mm	P27A-00HUM	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	92	68	19.05mm	19.05mm	P27A-00HUN	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	92	72	19.05mm	19.05mm	P27A-00HUP	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	92	76	19.05mm	19.05mm	P27A-00HUR	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	92	80	19.05mm	22.23mm	P27A-00HUS	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Moderate wet H2S service	
851	0.75	0.5	XXS	XXS	P27A-00FW2	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
851	1	0.5	XXS	XXS	P27A-00FW3	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
851	1	0.75	XXS	XXS	P27A-00FW4	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
851	1.5	0.5	XXS	XXS	P27A-00J72	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
851	1.5	0.75	XXS	XXS	P27A-00J73	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
851	1.5	1	XXS	XXS	P27A-00B9J	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
851	2	0.75	XXS	XXS	P27A-00J74	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
851	2	1	XXS	XXS	P27A-00B9K	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
851	2	1.5	XXS	XXS	P27A-00B9L	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
851	3	1.5	XXS	XXS	P27A-00B9M	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
851	3	2	XXS	XXS	P27A-00B9N	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
851	4	1.5	SCH160	XXS	P27A-00B9P	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
851	4	2	SCH160	XXS	P27A-0038R	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
851	4	3	SCH160	XXS	P27A-00B9R	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
851	6	3	SCH120	XXS	P27A-00J6V	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
851	6	4	SCH120	SCH160	P27A-0038U	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
851	8	4	XS	SCH160	P27A-00J6W	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
851	8	6	XS	SCH120	P27A-00BN7	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
851	10	4	XS	SCH160	P27A-00J6X	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
851	10	6	XS	SCH120	P27A-00J6Y	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
851	10	8	XS	XS	P27A-004CZ	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
851	12	6	XS	SCH120	P27A-00J6Z	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
851	12	8	XS	XS	P27A-004D2	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
851	12	10	XS	XS	P27A-004D0	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
851	14	6	XS	SCH120	P27A-00J70	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
851	14	8	XS	XS	P27A-004D5	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
851	14	10	XS	XS	P27A-004D3	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
851	14	12	XS	XS	P27A-002R0	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
851	16	8	XS	XS	P27A-00J71	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
851	16	10	XS	XS	P27A-008C2	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
851	16	12	XS	XS	P27A-008C3	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
851	16	14	XS	XS	P27A-008C4	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
851	18	10	XS	XS	P27A-00EBA	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	

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CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
851	18	12	XS	XS	P27A-00EBB	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
851	18	14	XS	XS	P27A-00EBC	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
851	18	16	XS	XS	P27A-009CM	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
851	20	12	XS	XS	P27A-00EBD	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
851	20	14	XS	XS	P27A-00EBE	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
851	20	16	XS	XS	P27A-009CR	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
851	20	18	XS	XS	P27A-009CS	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	SCH160	P28A-0083Z	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	1	0.5	SCH160	SCH160	P28A-00840	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	1	0.75	SCH160	SCH160	P28A-00841	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	1.5	0.5	SCH160	SCH160	P28A-00842	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	1.5	0.75	SCH160	SCH160	P28A-00843	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	1.5	1	SCH160	SCH160	P28A-00844	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	2	0.75	XS	SCH160	P28A-003S2	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	2	1	XS	SCH160	P28A-003S3	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	2	1.5	XS	SCH160	P28A-003S4	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	3	1.5	STD	SCH160	P28A-003S5	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	3	2	STD	XS	P28A-003PL	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	4	1.5	STD	SCH160	P28A-003S6	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	4	2	STD	XS	P28A-003PM	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	4	3	STD	STD	P28A-001CF	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	6	3	STD	STD	P28A-001AL	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	6	4	STD	STD	P28A-001BL	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	8	4	SCH30	STD	P28A-00BHC	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	8	6	SCH30	STD	P28A-00BHD	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	4	SCH30	STD	P28A-004D1	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	6	SCH30	STD	P28A-004D2	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	8	SCH30	SCH30	P28A-00BHE	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	6	SCH30	STD	P28A-003S7	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	8	SCH30	SCH30	P28A-00BJA	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	10	SCH30	SCH30	P28A-004D4	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	6	SCH20	STD	P28A-003S8	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	8	SCH20	SCH30	P28A-00DPB	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	10	SCH20	SCH30	P28A-005PH	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	12	SCH20	SCH30	P28A-002GR	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	8	SCH20	SCH30	P28A-00DPC	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	10	SCH20	SCH30	P28A-00567	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	12	SCH20	SCH30	P28A-002GS	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	14	SCH20	SCH20	P28A-001W7	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	18	10	STD	SCH30	P28A-00EVC	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	18	12	STD	SCH30	P28A-00EVD	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	18	14	STD	SCH20	P28A-00EVE	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	18	16	STD	SCH20	P28A-00EVF	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	20	12	STD	SCH30	P28A-00649	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	20	14	STD	SCH20	P28A-0097H	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	20	16	STD	SCH20	P28A-0097J	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	20	18	STD	STD	P28A-008GY	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	24	16	XS	SCH20	P28A-00EVG	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	24	18	XS	STD	P28A-008H0	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	24	20	XS	STD	P28A-00678	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	30	20	XS	STD	P28A-00EVH	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Moderate wet H2S service	
1	30	24	XS	XS	P28A-00EVJ	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Moderate wet H2S service	
1	36	24	XS	XS	P28A-00EVK	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Moderate wet H2S service	
1	36	30	XS	XS	P28A-00EVL	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Moderate wet H2S service	
1	42	30	14.27mm	XS	P28A-00EVM	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Moderate wet H2S service	
1	42	36	14.27mm	XS	P28A-00EVN	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Moderate wet H2S service	

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ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	48	42	14.27mm	14.27mm	P28A-00EVP	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Moderate wet H2S service	
1	52	30	15.88mm	XS	P28A-00EVR	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	52	36	15.88mm	XS	P28A-00EVS	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	52	42	15.88mm	14.27mm	P28A-00EVT	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	52	48	15.88mm	14.27mm	P28A-00EVU	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	56	36	17.48mm	XS	P28A-00EVV	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	56	42	17.48mm	14.27mm	P28A-00EVW	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	56	48	17.48mm	14.27mm	P28A-00EVX	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	56	52	17.48mm	15.88mm	P28A-00EVY	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	60	36	17.48mm	XS	P28A-00EVZ	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	60	42	17.48mm	14.27mm	P28A-00EW0	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	60	48	17.48mm	14.27mm	P28A-00EW1	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	60	52	17.48mm	15.88mm	P28A-00EW2	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	60	56	17.48mm	17.48mm	P28A-00EW3	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	64	42	19.05mm	14.27mm	P28A-00EW4	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	64	48	19.05mm	14.27mm	P28A-00EW5	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	64	52	19.05mm	15.88mm	P28A-00EW6	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	64	56	19.05mm	17.48mm	P28A-00EW7	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	64	60	19.05mm	17.48mm	P28A-00EW8	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	68	48	19.05mm	14.27mm	P28A-00EW9	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	68	52	19.05mm	15.88mm	P28A-00EWA	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	68	56	19.05mm	17.48mm	P28A-00EWB	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	68	60	19.05mm	17.48mm	P28A-00EWC	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	68	64	19.05mm	19.05mm	P28A-00EWD	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	72	48	19.05mm	14.27mm	P28A-00EWE	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	72	52	19.05mm	15.88mm	P28A-00EWF	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	72	56	19.05mm	17.48mm	P28A-00EWG	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	72	60	19.05mm	17.48mm	P28A-00EWH	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	72	64	19.05mm	19.05mm	P28A-00EWJ	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	72	68	19.05mm	19.05mm	P28A-00EWK	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	76	52	19.05mm	15.88mm	P28A-00EWT	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	76	56	19.05mm	17.48mm	P28A-00EWU	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	76	60	19.05mm	17.48mm	P28A-00EWV	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	76	64	19.05mm	19.05mm	P28A-00EWW	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	76	68	19.05mm	19.05mm	P28A-00EWX	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	76	72	19.05mm	19.05mm	P28A-00EWL	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	80	56	22.23mm	17.48mm	P28A-00EWM	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	80	60	22.23mm	17.48mm	P28A-00EWN	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	80	64	22.23mm	19.05mm	P28A-00EWP	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	80	68	22.23mm	19.05mm	P28A-00EWR	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	80	72	22.23mm	19.05mm	P28A-00EWS	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	80	76	22.23mm	19.05mm	P28A-00F43	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	92	68	19.05mm	19.05mm	P28A-00F46	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	92	72	19.05mm	19.05mm	P28A-00F47	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	92	76	19.05mm	19.05mm	P28A-00F44	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	92	80	19.05mm	22.23mm	P28A-00F45	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Moderate wet H2S service	
851	0.75	0.5	XXS	XXS	P28A-00D1P	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
851	1	0.5	XXS	XXS	P28A-00D1R	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
851	1	0.75	XXS	XXS	P28A-00D1S	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
851	1.5	0.5	XXS	XXS	P28A-00FH3	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
851	1.5	0.75	XXS	XXS	P28A-00FH4	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
851	1.5	1	XXS	XXS	P28A-0083J	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
851	2	0.75	XXS	XXS	P28A-00FH5	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
851	2	1	XXS	XXS	P28A-0083K	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
851	2	1.5	XXS	XXS	P28A-0083L	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
851	3	1.5	XXS	XXS	P28A-0083M	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
851	3	2	XXS	XXS	P28A-0083N	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
851	4	1.5	SCH160	XXS	P28A-0083P	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
851	4	2	SCH160	XXS	P28A-00387	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	

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ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
851	4	3	SCH160	XXS	P28A-0083R	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
851	6	3	SCH120	XXS	P28A-00FGV	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
851	6	4	SCH120	SCH160	P28A-0038A	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
851	8	4	XS	SCH160	P28A-00FGW	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
851	8	6	XS	SCH120	P28A-008NG	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
851	10	4	XS	SCH160	P28A-00FGX	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
851	10	6	XS	SCH120	P28A-00FGY	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
851	10	8	XS	XS	P28A-004CR	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
851	12	6	XS	SCH120	P28A-00FGZ	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
851	12	8	XS	XS	P28A-004CU	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
851	12	10	XS	XS	P28A-004CS	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
851	14	6	XS	SCH120	P28A-00FH0	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
851	14	8	XS	XS	P28A-004CX	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
851	14	10	XS	XS	P28A-004CV	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
851	14	12	XS	XS	P28A-002RJ	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
851	16	8	XS	XS	P28A-00FH1	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
851	16	10	XS	XS	P28A-00526	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
851	16	12	XS	XS	P28A-00527	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
851	16	14	XS	XS	P28A-00528	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
851	18	10	XS	XS	P28A-00BEB	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
851	18	12	XS	XS	P28A-00BEC	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
851	18	14	XS	XS	P28A-00BED	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
851	18	16	XS	XS	P28A-0064T	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
851	20	12	XS	XS	P28A-00BE9	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
851	20	14	XS	XS	P28A-00BEA	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
851	20	16	XS	XS	P28A-0064W	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
851	20	18	XS	XS	P28A-0064X	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P29A-003AK	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service	
1	0.75		SCH160		P29A-001UV	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service	
1	1		SCH160		P29A-001UW	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service	
1	1.5		SCH160		P29A-001UX	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service	
1	2		XS		P29A-001V3	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service	
1	3		STD		P29A-001V6	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service	
1	4		STD		P29A-001V7	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service	
1	6		STD		P29A-001V8	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service	
1	8		SCH30		P29A-003WH	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service	
1	10		SCH30		P29A-003W9	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service	
1	12		SCH30		P29A-003WA	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service	
1	14		SCH20		P29A-003WB	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service	
1	16		SCH20		P29A-003WC	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service	
1	18		STD		P29A-001V2	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service	
1	20		STD		P29A-001V4	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service	
1	24		XS		P29A-001V5	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service	
1	30		XS		P29A-003WD	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service	
1	36		XS		P29A-003WE	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service	
1	42		14.27mm		P29A-003WF	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service	
1	48		14.27mm		P29A-003WG	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service	
1	52		15.88mm		P29A-003WJ	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9-modified BW Moderate wet H2S service	
1	56		17.48mm		P29A-003WK	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9-modified BW Moderate wet H2S service	
1	60		17.48mm		P29A-003WL	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9-modified BW Moderate wet H2S service	
1	64		19.05mm		P29A-003WM	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9-modified BW Moderate wet H2S service	
1	68		19.05mm		P29A-003WN	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9-modified BW Moderate wet H2S service	
1	72		19.05mm		P29A-003WP	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9-modified BW Moderate wet H2S service	
1	76		19.05mm		P29A-003WR	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9-modified BW Moderate wet H2S service	
1	80		22.23mm		P29A-003WS	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9-modified BW Moderate wet H2S service	
1	92		19.05mm		P29A-003WT	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9-modified BW Moderate wet H2S service	

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CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
541	0.75				P29B-00015	Cap ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 NPT	
851	0.5		XXS		P29A-001UU	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service	
851	0.75		XXS		P29A-005KZ	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service	
851	1		XXS		P29A-003CE	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service	
851	1.5		XXS		P29A-003CF	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service	
851	2		XXS		P29A-005L2	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service	
851	3		XXS		P29A-005L4	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service	
851	4		SCH160		P29A-005L5	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service	
851	6		SCH120		P29A-005L6	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service	
851	8		XS		P29A-005L7	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service	
851	10		XS		P29A-001WY	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service	
851	12		XS		P29A-001WZ	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service	
851	14		XS		P29A-001X0	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service	
851	16		XS		P29A-005L0	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service	
851	18		XS		P29A-005L1	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service	
851	20		XS		P29A-005L3	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P41A-000DJ	Straight nipple ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		XXS		P41A-000DK	Straight nipple ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		XXS		P41A-000DZ	Straight nipple ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		XXS		P41A-000E0	Straight nipple ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
541	1	0.75			P31B-004HD	Outlet ASTM A350 Grade LF2 Class 1 Class 6000 MSS SP-97 NPT	
541	1.5 - 2.5	0.75			P31B-0138F	Outlet ASTM A350 Grade LF2 Class 1 Class 6000 MSS SP-97 NPT	
541	3 - 10	0.75			P31B-007CY	Outlet ASTM A350 Grade LF2 Class 1 Class 6000 MSS SP-97 NPT	
541	12 and larger	0.75			P31B-0138G	Outlet ASTM A350 Grade LF2 Class 1 Class 6000 MSS SP-97 NPT	
1	2	0.75	XS	SCH160	P31B-00TPR	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	3	0.75	STD	SCH160	P31B-00TPS	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	4	0.75	STD	SCH160	P31B-00TPU	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	6	0.75	STD	SCH160	P31B-00TPX	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	8	0.75	SCH30	SCH160	P31B-0118U	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	10	0.75	SCH30	SCH160	P31B-0118X	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	12	0.75	SCH30	SCH160	P31B-00WPP	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	14	0.75	SCH20	SCH160	P31B-00WZ0	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	16	0.75	SCH20	SCH160	P31B-00WZ4	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	18	0.75	STD	SCH160	P31B-00TSS	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	20	0.75	STD	SCH160	P31B-00TSV	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	24	0.75	XS	SCH160	P31B-00TSY	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	30	0.75	XS	SCH160	P31B-011BJ	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	36	0.75	XS	SCH160	P31B-01190	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	42	0.75	14.27mm	SCH160	P31B-01193	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	48	0.75	14.27mm	SCH160	P31B-00X75	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	52	0.75	15.88mm	SCH160	P31B-01196	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	56	0.75	17.48mm	SCH160	P31B-01199	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	60	0.75	17.48mm	SCH160	P31B-0119C	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	64	0.75	19.05mm	SCH160	P31B-0119K	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	68	0.75	19.05mm	SCH160	P31B-0119T	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	72	0.75	19.05mm	SCH160	P31B-011A0	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	76	0.75	19.05mm	SCH160	P31B-011PU	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	80	0.75	22.23mm	SCH160	P31B-011A7	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	92	0.75	19.05mm	SCH160	P31B-011AE	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	3	1	STD	SCH160	P31B-00TPT	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	4	1	STD	SCH160	P31B-00TPV	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	6	1	STD	SCH160	P31B-00TPY	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	8	1	SCH30	SCH160	P31B-0118V	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	

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OUTLET (L)							
OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	10	1	SCH30	SCH160	P31B-0118Y	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	12	1	SCH30	SCH160	P31B-00WPR	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	14	1	SCH20	SCH160	P31B-00WZ1	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	16	1	SCH20	SCH160	P31B-00WZ5	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	18	1	STD	SCH160	P31B-00TST	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	20	1	STD	SCH160	P31B-00TSW	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	24	1	XS	SCH160	P31B-00TRV	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	30	1	XS	SCH160	P31B-00YEN	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	36	1	XS	SCH160	P31B-01191	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	42	1	14.27mm	SCH160	P31B-01194	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	48	1	14.27mm	SCH160	P31B-00X76	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	52	1	15.88mm	SCH160	P31B-01197	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	56	1	17.48mm	SCH160	P31B-0119A	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	60	1	17.48mm	SCH160	P31B-0119D	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	64	1	19.05mm	SCH160	P31B-0119L	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	68	1	19.05mm	SCH160	P31B-0119U	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	72	1	19.05mm	SCH160	P31B-011A1	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	76	1	19.05mm	SCH160	P31B-011PV	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	80	1	22.23mm	SCH160	P31B-011A8	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	92	1	19.05mm	SCH160	P31B-011AF	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	4	1.5	STD	SCH160	P31B-00TPW	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	6	1.5	STD	SCH160	P31B-00TPZ	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	8	1.5	SCH30	SCH160	P31B-0118W	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	10	1.5	SCH30	SCH160	P31B-0118Z	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	12	1.5	SCH30	SCH160	P31B-00WPS	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	14	1.5	SCH20	SCH160	P31B-00WPW	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	16	1.5	SCH20	SCH160	P31B-00WPY	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	18	1.5	STD	SCH160	P31B-00TSU	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	20	1.5	STD	SCH160	P31B-00TSX	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	24	1.5	XS	SCH160	P31B-00TRW	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	30	1.5	XS	SCH160	P31B-00YEP	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	36	1.5	XS	SCH160	P31B-01192	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	42	1.5	14.27mm	SCH160	P31B-01195	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	48	1.5	14.27mm	SCH160	P31B-00X77	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	52	1.5	15.88mm	SCH160	P31B-01198	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	56	1.5	17.48mm	SCH160	P31B-0119B	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	60	1.5	17.48mm	SCH160	P31B-0119E	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	64	1.5	19.05mm	SCH160	P31B-0119M	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	68	1.5	19.05mm	SCH160	P31B-0119V	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	72	1.5	19.05mm	SCH160	P31B-011A2	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	76	1.5	19.05mm	SCH160	P31B-011PW	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	80	1.5	22.23mm	SCH160	P31B-011A9	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	92	1.5	19.05mm	SCH160	P31B-011AG	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	6	2	STD	XS	P31B-00MFB	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	8	2	SCH30	XS	P31B-00X5G	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	10	2	SCH30	XS	P31B-00MJG	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	12	2	SCH30	XS	P31B-00MJK	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	14	2	SCH20	XS	P31B-00TFU	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	16	2	SCH20	XS	P31B-00TFZ	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	18	2	STD	XS	P31B-00TPL	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	20	2	STD	XS	P31B-00MGK	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	24	2	XS	XS	P31B-00M6H	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	30	2	XS	XS	P31B-00MHM	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	36	2	XS	XS	P31B-00V9X	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	42	2	14.27mm	XS	P31B-00V9Y	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	48	2	14.27mm	XS	P31B-00V9G	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	52	2	15.88mm	XS	P31B-00VT1	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	56	2	17.48mm	XS	P31B-00VJG	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	60	2	17.48mm	XS	P31B-0119F	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	

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OUTLET (L)							
OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	64	2	19.05mm	XS	P31B-0119N	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	68	2	19.05mm	XS	P31B-0119W	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	72	2	19.05mm	XS	P31B-011A3	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	76	2	19.05mm	XS	P31B-011PX	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	80	2	22.23mm	XS	P31B-011AA	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	92	2	19.05mm	XS	P31B-011AH	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	8	3	SCH30	STD	P31B-00X5H	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	10	3	SCH30	STD	P31B-00MJH	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	12	3	SCH30	STD	P31B-00MJL	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	14	3	SCH20	STD	P31B-00UPP	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	16	3	SCH20	STD	P31B-00UP2	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	18	3	STD	STD	P31B-00E8W	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	20	3	STD	STD	P31B-00E8N	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	24	3	XS	STD	P31B-00M6J	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	30	3	XS	STD	P31B-00E9J	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	36	3	XS	STD	P31B-00E9P	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	42	3	14.27mm	STD	P31B-00V9Z	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	48	3	14.27mm	STD	P31B-00V9H	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	52	3	15.88mm	STD	P31B-00VT2	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	56	3	17.48mm	STD	P31B-00VJH	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	60	3	17.48mm	STD	P31B-0119G	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	64	3	19.05mm	STD	P31B-0119P	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	68	3	19.05mm	STD	P31B-0119X	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	72	3	19.05mm	STD	P31B-011A4	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	76	3	19.05mm	STD	P31B-011PY	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	80	3	22.23mm	STD	P31B-011AB	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	92	3	19.05mm	STD	P31B-011AJ	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	12	4	SCH30	STD	P31B-00MJM	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	14	4	SCH20	STD	P31B-00UPR	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	16	4	SCH20	STD	P31B-00UP3	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	18	4	STD	STD	P31B-00E8D	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	20	4	STD	STD	P31B-00E88	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	24	4	XS	STD	P31B-00M6K	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	30	4	XS	STD	P31B-00E95	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	36	4	XS	STD	P31B-00E9F	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	42	4	14.27mm	STD	P31B-00VA0	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	48	4	14.27mm	STD	P31B-00V9J	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	52	4	15.88mm	STD	P31B-00VT3	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	56	4	17.48mm	STD	P31B-00VJJ	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	60	4	17.48mm	STD	P31B-0119H	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	64	4	19.05mm	STD	P31B-0119R	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	68	4	19.05mm	STD	P31B-0119Y	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	72	4	19.05mm	STD	P31B-011A5	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	76	4	19.05mm	STD	P31B-011PZ	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	80	4	22.23mm	STD	P31B-011AC	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	92	4	19.05mm	STD	P31B-011AK	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	18	6	STD	STD	P31B-00E85	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	20	6	STD	STD	P31B-00E86	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	24	6	XS	STD	P31B-00M6L	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	30	6	XS	STD	P31B-00E97	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	36	6	XS	STD	P31B-00E99	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	42	6	14.27mm	STD	P31B-00VA1	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	48	6	14.27mm	STD	P31B-00V9K	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	52	6	15.88mm	STD	P31B-00VT4	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	56	6	17.48mm	STD	P31B-00VJK	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	60	6	17.48mm	STD	P31B-0119J	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	64	6	19.05mm	STD	P31B-0119S	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	68	6	19.05mm	STD	P31B-0119Z	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	72	6	19.05mm	STD	P31B-011A6	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	

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OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	76	6	19.05mm	STD	P31B-011R0	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	80	6	22.23mm	STD	P31B-011AD	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	92	6	19.05mm	STD	P31B-011AL	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	

LATROLET (LL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	8	3	SCH30	STD	P34B-001TC	Lateral-outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW 45 degree	
1	42	3	14.27mm	STD	P34B-001SS	Lateral-outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW 45 degree	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30B-0002V	Plug ASTM A350 Grade LF2 Class 1 ASME B16.11 NPT Round head	
1	0.75				P30B-0002W	Plug ASTM A350 Grade LF2 Class 1 ASME B16.11 NPT Round head	
1	1				P30B-0002X	Plug ASTM A350 Grade LF2 Class 1 ASME B16.11 NPT Round head	
1	1.5				P30B-0002Y	Plug ASTM A350 Grade LF2 Class 1 ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P61B-004VC	Flange WN ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	0.75		SCH160		P61B-003RN	Flange WN ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	1		SCH160		P61B-003RP	Flange WN ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	1.5		SCH160		P61B-003RR	Flange WN ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	2		XS		P61B-003R0	Flange WN ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	3		STD		P61B-001SY	Flange WN ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	4		STD		P61B-001VW	Flange WN ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	6		STD		P61B-001J0	Flange WN ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	8		SCH30		P61B-009H2	Flange WN ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	10		SCH30		P61B-003RS	Flange WN ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	12		SCH30		P61B-002TZ	Flange WN ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	14		SCH20		P61B-0022R	Flange WN ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	16		SCH20		P61B-00232	Flange WN ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	18		STD		P61B-001R7	Flange WN ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	20		STD		P61B-001S3	Flange WN ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	24		XS		P61B-002U0	Flange WN ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	30		XS		P61B-001VX	Flange WN ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.47 Series B RF	
1	36		XS		P61B-001MZ	Flange WN ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.47 Series B RF	
1	42		14.27mm		P61B-00CXA	Flange WN ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.47 Series B RF	
1	48		14.27mm		P61B-00AE8	Flange WN ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.47 Series B RF	
1	52		15.88mm		P61B-00CXB	Flange WN ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.47 Series B RF	
1	56		17.48mm		P61B-003SP	Flange WN ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.47 Series B RF	
1	60		17.48mm		P61B-00CXC	Flange WN ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.47 Series B RF	
1	64		19.05mm		P61B-00CXD	Flange WN ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing RF	
1	68		19.05mm		P61B-00CXE	Flange WN ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing RF	
1	72		19.05mm		P61B-00CXF	Flange WN ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing RF	
1	76		19.05mm		P61B-00CXG	Flange WN ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing RF	
1	80		22.23mm		P61B-00CXH	Flange WN ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing RF	
1	92		19.05mm		P61B-00CXJ	Flange WN ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing RF	
541	0.5				P61B-00AHW	Flange NPT ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
541	0.75				P61B-008VN	Flange NPT ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
773	0.5		SCH160		P61B-003RC	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
773	0.75		SCH160		P61B-003RD	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
773	1		SCH160		P61B-003RE	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
773	1.5		SCH160		P61B-003RF	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
773	2		XS		P61B-003R8	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
773	3		STD		P61B-001MB	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
773	4		STD		P61B-001N0	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
773	6		STD		P61B-001NM	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
773	8		SCH30		P61B-009H4	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
773	10		SCH30		P61B-003SE	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	

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FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
773	12		SCH30		P61B-002U4	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
773	14		SCH20		P61B-002RL	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
773	16		SCH20		P61B-002RM	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
773	18		STD		P61B-001MF	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
773	20		STD		P61B-001NB	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
773	24		XS		P61B-001LK	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
773	30		XS		P61B-001MA	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.47 Series B RF	
773	36		XS		P61B-001UD	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.47 Series B RF	
773	42		14.27mm		P61B-00AEJ	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.47 Series B RF	
773	48		14.27mm		P61B-00CXK	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.47 Series B RF	
781	2		XS		P61B-001FN	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
781	3		STD		P61B-001TV	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
781	4		STD		P61B-001VT	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
781	6		STD		P61B-001JV	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
781	8		SCH30		P61B-009H5	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
781	10		SCH30		P61B-003ZR	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
781	12		SCH30		P61B-003ZS	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
851	0.5		XXS		P61B-003RM	Flange WN ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
851	0.75		XXS		P61B-00DGR	Flange WN ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
851	1		XXS		P61B-00DGS	Flange WN ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
851	1.5		XXS		P61B-00DGT	Flange WN ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
851	2		XXS		P61B-00CKC	Flange WN ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
851	3		XXS		P61B-00CPX	Flange WN ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
851	4		SCH160		P61B-00CS5	Flange WN ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
851	6		SCH120		P61B-00CTU	Flange WN ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
851	8		XS		P61B-00CVS	Flange WN ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
851	10		XS		P61B-004RV	Flange WN ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
851	12		XS		P61B-0032E	Flange WN ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
851	14		XS		P61B-0032B	Flange WN ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
851	16		XS		P61B-003RG	Flange WN ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
851	18		XS		P61B-0032M	Flange WN ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
851	20		XS		P61B-003RH	Flange WN ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67B-000K2	Blind flange ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	0.75				P67B-000K3	Blind flange ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	1				P67B-000K4	Blind flange ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	1.5				P67B-000K5	Blind flange ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	2				P67B-000KB	Blind flange ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	3				P67B-000KE	Blind flange ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	4				P67B-000KF	Blind flange ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	6				P67B-000KG	Blind flange ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	8				P67B-000KH	Blind flange ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	10				P67B-000K6	Blind flange ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	12				P67B-000K7	Blind flange ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	14				P67B-000K8	Blind flange ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	16				P67B-000K9	Blind flange ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	18				P67B-000KA	Blind flange ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	20				P67B-000KC	Blind flange ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	24				P67B-000KD	Blind flange ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	30				P67B-00146	Blind flange ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.47 Series B RF	
1	36				P67B-00143	Blind flange ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.47 Series B RF	
1	42				P67B-00140	Blind flange ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.47 Series B RF	
1	48				P67B-0013X	Blind flange ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.47 Series B RF	
1	52				P67B-0017L	Blind flange ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.47 Series B RF	
1	56				P67B-0017R	Blind flange ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.47 Series B RF	
1	60				P67B-0017T	Blind flange ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.47 Series B RF	
1	64				P67B-002X9	Blind flange ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing RF	

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BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	68				P67B-002XA	Blind flange ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing RF	
1	72				P67B-002XB	Blind flange ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing RF	
1	76				P67B-002XC	Blind flange ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing RF	
1	80				P67B-002XD	Blind flange ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing RF	
1	92				P67B-002XE	Blind flange ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000L8	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000L9	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000LA	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000LB	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000LH	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000LL	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000LM	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	6				P73T-000LN	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	8				P73T-000LP	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	10				P73T-000LC	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	12				P73T-000LD	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	14				P73T-000LE	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	16				P73T-000LF	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	18				P73T-000LG	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	20				P73T-000LJ	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	24				P73T-000LK	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	30				P73T-000LT	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	36				P73T-000LW	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	42				P73T-000LZ	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	48				P73T-000M2	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	52				P73T-001E2	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	56				P73T-0024L	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	60				P73T-001E5	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	64				P73T-003GZ	Spiral wound gasket SS316 winding / Graphite filler Class 150 Standard-drawing Flange Standard-drawing RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	68				P73T-003H0	Spiral wound gasket SS316 winding / Graphite filler Class 150 Standard-drawing Flange Standard-drawing RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	72				P73T-003H1	Spiral wound gasket SS316 winding / Graphite filler Class 150 Standard-drawing Flange Standard-drawing RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	76				P73T-003H2	Spiral wound gasket SS316 winding / Graphite filler Class 150 Standard-drawing Flange Standard-drawing RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	80				P73T-003H3	Spiral wound gasket SS316 winding / Graphite filler Class 150 Standard-drawing Flange Standard-drawing RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	92				P73T-003J6	Spiral wound gasket SS316 winding / Graphite filler Class 150 Standard-drawing Flange Standard-drawing RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	0.5				P73T-000FT	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	0.75				P73T-000FU	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	3				P73T-000G5	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	4				P73T-000G6	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	6				P73T-000G7	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	8				P73T-000G8	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

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GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
773	10				P73T-000FX	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	12				P73T-000FY	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	14				P73T-000FZ	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	16				P73T-000G0	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	18				P73T-000G1	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	20				P73T-000G3	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	24				P73T-000G4	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	30				P73T-000H9	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	36				P73T-000HC	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	42				P73T-000KM	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	48				P73T-000KR	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	2				P73T-000JH	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	3				P73T-000JL	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	4				P73T-000JM	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	6				P73T-000JN	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	8				P73T-000JP	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	10				P73T-000JC	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	12				P73T-000JD	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-16				See Attached Bolt Table	Bolt and Nut ASTM A320 Grade L7M / A194 Grade 7M ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	18-20				See Attached Bolt Table	Bolt and Nut ASTM A320 Grade L7M / A194 Grade 7M ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
1	24				See Attached Bolt Table	Bolt and Nut ASTM A320 Grade L7M / A194 Grade 7M ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	999
1	30-42				See Attached Bolt Table	Bolt and Nut ASTM A320 Grade L7M / A194 Grade 7M ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	48-56				See Attached Bolt Table	Bolt and Nut ASTM A320 Grade L7M / A194 Grade 7M ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
1	60-92				See Attached Bolt Table	Bolt and Nut ASTM A320 Grade L7M / A194 Grade 7M ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	999
773	0.5-10				See Attached Bolt Table	Bolt and Nut ASTM A320 Grade L7M / A194 Grade 7M ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
773	12-52				See Attached Bolt Table	Bolt and Nut ASTM A320 Grade L7M / A194 Grade 7M ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
781	0.75-6				See Attached Bolt Table	Bolt and Nut ASTM A320 Grade L7M / A194 Grade 7M ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
781	8-12				See Attached Bolt Table	Bolt and Nut ASTM A320 Grade L7M / A194 Grade 7M ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81B-0018R	Gate valve ASTM A350 Grade LF2 Class 1 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	0.75				P81B-0018S	Gate valve ASTM A350 Grade LF2 Class 1 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	1				P81B-0018T	Gate valve ASTM A350 Grade LF2 Class 1 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	1.5				P81B-0018U	Gate valve ASTM A350 Grade LF2 Class 1 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	2				P81C-004EZ	Gate valve ASTM A352 Grade LCC Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	3				P81C-004F0	Gate valve ASTM A352 Grade LCC Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	4				P81C-004F1	Gate valve ASTM A352 Grade LCC Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	6				P81C-004F2	Gate valve ASTM A352 Grade LCC Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	8				P81C-004F3	Gate valve ASTM A352 Grade LCC Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	10				P81C-004EX	Gate valve ASTM A352 Grade LCC Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	12				P81C-004EY	Gate valve ASTM A352 Grade LCC Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	

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GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P81C-004ES	Gate valve ASTM A352 Grade LCC Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Moderate wet H2S service	
1	16				P81C-004ET	Gate valve ASTM A352 Grade LCC Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Moderate wet H2S service	
1	18				P81C-004EU	Gate valve ASTM A352 Grade LCC Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Moderate wet H2S service	
1	20				P81C-004EV	Gate valve ASTM A352 Grade LCC Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Moderate wet H2S service	
1	24				P81C-004EW	Gate valve ASTM A352 Grade LCC Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Moderate wet H2S service	
1	30				P81C-008SH	Gate valve ASTM A352 Grade LCC Class 150 API 600 Flange ASME B16.47-B RF Trim number 12 BB-BG-OS&Y Gear operated Moderate wet H2S service	
4608	0.75				P81B-002Y9	Gate valve ASTM A350 Grade LF2 Class 1 Class 150 API 602 BW both sides w/ nipples BE - NPT ASTM A333-6 XXS-nipple Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82B-0011S	Globe valve ASTM A350 Grade LF2 Class 1 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	0.75				P82B-0011T	Globe valve ASTM A350 Grade LF2 Class 1 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	1				P82B-0011U	Globe valve ASTM A350 Grade LF2 Class 1 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	1.5				P82B-0011V	Globe valve ASTM A350 Grade LF2 Class 1 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	2				P82C-00275	Globe valve ASTM A352 Grade LCC Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	3				P82C-003TK	Globe valve ASTM A352 Grade LCC Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	4				P82C-003TL	Globe valve ASTM A352 Grade LCC Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	6				P82C-003TM	Globe valve ASTM A352 Grade LCC Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	8				P82C-003TN	Globe valve ASTM A352 Grade LCC Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83B-000U4	Check valve ASTM A350 Grade LF2 Class 1 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Moderate wet H2S service	
1	0.75				P83B-000U5	Check valve ASTM A350 Grade LF2 Class 1 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Moderate wet H2S service	
1	1				P83B-000U6	Check valve ASTM A350 Grade LF2 Class 1 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Moderate wet H2S service	
1	1.5				P83B-000U7	Check valve ASTM A350 Grade LF2 Class 1 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Moderate wet H2S service	
1	2				P83C-0022N	Check valve ASTM A352 Grade LCC Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Moderate wet H2S service	
1	3				P83C-0022P	Check valve ASTM A352 Grade LCC Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Moderate wet H2S service	
1	4				P83C-0022R	Check valve ASTM A352 Grade LCC Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Moderate wet H2S service	
1	6				P83C-0022S	Check valve ASTM A352 Grade LCC Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Moderate wet H2S service	
1	8				P83C-003A3	Check valve ASTM A352 Grade LCC Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Moderate wet H2S service	
1	10				P83C-0039W	Check valve ASTM A352 Grade LCC Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Moderate wet H2S service	
1	12				P83C-0039X	Check valve ASTM A352 Grade LCC Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Moderate wet H2S service	
1	14				P83C-0039Y	Check valve ASTM A352 Grade LCC Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Moderate wet H2S service	
1	16				P83C-0039Z	Check valve ASTM A352 Grade LCC Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Moderate wet H2S service	
1	18				P83C-003A0	Check valve ASTM A352 Grade LCC Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Moderate wet H2S service	
1	20				P83C-003A1	Check valve ASTM A352 Grade LCC Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Moderate wet H2S service	
1	24				P83C-003A2	Check valve ASTM A352 Grade LCC Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Moderate wet H2S service	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71B-0008T	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	0.75				P71B-0008U	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	1				P71B-0008V	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71B-0008W	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	2				P71B-0008Z	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	3				P71B-00090	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF	

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SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	4				P71B-00091	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	6				P71B-00092	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	8				P71B-00093	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	10				P71B-0008X	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	12				P71B-0008Y	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF	

PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000CP	Paddle blank ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	16				P72B-000CR	Paddle blank ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	18				P72B-000CS	Paddle blank ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	20				P72B-000CT	Paddle blank ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	24				P72B-000CU	Paddle blank ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	30				P72B-0008S	Paddle blank ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	36				P72B-0008T	Paddle blank ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	42				P72B-0008U	Paddle blank ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	48				P72B-0008V	Paddle blank ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	52				P72B-000UA	Paddle blank ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	56				P72B-000UB	Paddle blank ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	60				P72B-0008Z	Paddle blank ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	64				P72B-000UC	Paddle blank ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange Standard-drawing RF	
1	68				P72B-000UD	Paddle blank ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange Standard-drawing RF	
1	72				P72B-000UE	Paddle blank ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange Standard-drawing RF	
1	76				P72B-000UF	Paddle blank ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange Standard-drawing RF	
1	80				P72B-000UG	Paddle blank ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange Standard-drawing RF	
1	92				P72B-000UH	Paddle blank ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange Standard-drawing RF	

PADDLE SPACER (PS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000CV	Paddle spacer ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	16				P72B-000CW	Paddle spacer ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	18				P72B-000CX	Paddle spacer ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	20				P72B-000CY	Paddle spacer ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	24				P72B-000CZ	Paddle spacer ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	30				P72B-0008K	Paddle spacer ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	36				P72B-0008L	Paddle spacer ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	42				P72B-0008M	Paddle spacer ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	48				P72B-0008N	Paddle spacer ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	52				P72B-000UY	Paddle spacer ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	56				P72B-000UZ	Paddle spacer ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	60				P72B-00093	Paddle spacer ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	64				P72B-000UJ	Paddle spacer ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange Standard-drawing RF	
1	68				P72B-000UK	Paddle spacer ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange Standard-drawing RF	
1	72				P72B-000UL	Paddle spacer ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange Standard-drawing RF	
1	76				P72B-000UM	Paddle spacer ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange Standard-drawing RF	
1	80				P72B-000UN	Paddle spacer ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange Standard-drawing RF	
1	92				P72B-000UX	Paddle spacer ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange Standard-drawing RF	

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BOLT TABLE (B_A2GQ , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	60	P80S-009UJ		
0.75	4	0.500	65	P80S-009UK		
1	4	0.500	70	P80S-009UL		
1.5	4	0.500	75	P80S-009UM		
2	4	0.625	85	P80S-00A03		
3	4	0.625	95	P80S-00A05		
4	8	0.625	95	P80S-00A05		
6	8	0.750	105	P80S-00A07		
8	8	0.750	110	P80S-00A08		
10	12	0.875	120	P80S-009XE		
12	12	0.875	120	P80S-009XE		
14	12	1.000	135	P80S-00A37		
16	16	1.000	140	P80S-00A38		
18	16	1.125	150	P80S-00A4M		
20	20	1.125	160	P80S-00A4P		
24	20	1.250	175	P80S-00CTJ		
30	44	0.750	145	P80S-00A0F		
36	44	0.875	175	P80S-009XS		
42	48	1.000	190	P80S-009XW		
48	44	1.125	210	P80S-00A50		
52	52	1.125	220	P80S-00A52		
56	60	1.125	225	P80S-00A53		
60	52	1.250	240	P80S-00CTY		
64	52	1.250	280	P80S-00CU6		
68	52	1.250	290	P80S-00CU8		
72	52	1.250	300	P80S-00CUA		
76	52	1.250	310	P80S-00CUC		
80	52	1.250	320	P80S-00CW9		
92	52	1.250	340	P80S-00CWD		

BOLT TABLE (B_A2GQ_773 , STUD ASME RF, OPTION CODE 773)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-009UL		
0.75	4	0.625	75	P80S-00A01		
1	4	0.625	80	P80S-00A02		
1.5	4	0.750	95	P80S-009X9		
2	8	0.625	90	P80S-00A04		
3	8	0.750	110	P80S-00A08		
4	8	0.750	115	P80S-00A09		
6	12	0.750	125	P80S-00A0B		
8	12	0.875	140	P80S-009XJ		
10	16	1.000	160	P80S-00A3C		
12	16	1.125	175	P80S-00A4T		
14	20	1.125	180	P80S-00A4U		
16	20	1.250	190	P80S-00CTM		
18	24	1.250	200	P80S-00CTP		
20	24	1.250	210	P80S-00CTS		
24	24	1.500	235	P80S-00D4Z		
30	36	1.375	285	P80S-00D0P		
36	32	1.625	320	P80S-00DCR		
42	36	1.750	355	P80S-00DKU		
48	40	1.875	380	P80S-00CVW		
52	48	1.875	410	P80S-00CW2		
56	36	2.250	450			
60	40	2.250	445			

BOLT TABLE (B_A2GQ_781 , STUD ASME RF, OPTION CODE 781)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	80			
0.75	4	0.625	90	P80S-00A04		
1	4	0.625	95	P80S-00A05		
1.5	4	0.750	110	P80S-00A08		
2	8	0.625	110	P80S-009UV		
3	8	0.750	130	P80S-00A0C		
4	8	0.875	150	P80S-009XL		
6	12	1.000	175	P80S-009XT		
8	12	1.125	195	P80S-00A4X		

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BOLT TABLE (B_A2GQ_781 , STUD ASME RF, OPTION CODE 781)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
10	16	1.250	250	P80S-00CU0		
12	20	1.250	255	P80S-00CU1		
14	20	1.375	270			
16	20	1.500	295			
18	20	1.625	320			
20	24	1.625	335			
24	24	1.875	380			
30	28	1.875	435			
36	28	2.250	510			
42	28	2.500	575			
48	32	2.750	635			
52	32	3.000	680			
56	32	3.250	730			
60	28	3.500	780			
64			0			
68			0			
72			0			
76			0			
80			0			

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BRANCH TABLE (T_A2GQ)

RUN PIPE SIZE (in) \ BRANCH SIZE (in)	0.5	0.75	1	1.5	2	3	4	6	8	10	12	14	16	18	20	24	30	36	42	48	52	56	60	64	68	72	76	80	92
0.5	TS																												
0.75		TS																											
1		TR	TS																										
1.5		TR	TR	TS																									
2		L	TR	TR	TS																								
3		L	L	TR	TR	TS																							
4	L	L	L	L	TR	TR	TS																						
6	L	L	L	L	L	TR	TR	TS																					
8		L	L	L	L	L	TR	TR	TS																				
10		L	L	L	L	L	TR	TR	TR	TS																			
12		L	L	L	L	L	L	TR	TR	TR	TS																		
14		L	L	L	L	L	L	TR	TR	TR	TR	TS																	
16		L	L	L	L	L	L	TR	TR	TR	TR	TR	TS																
18		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TS															
20		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TR	TS														
24		L	L	L	L	L	L	L	9PD	TR	TR	TR	TR	TR	TR	TS													
30		L	L	L	L	L	L	L	9PD	TR	TR	TR	TR	TR	TR	TR	TS												
36		L	L	L	L	L	L	L	9PD	9PD	9PD	9PD	TR	TR	TR	TR	TR	TS											
42		L	L	L	L	L	L	L	9PD	9PD	9PD	9PD	TR	TR	TR	TR	TR	TR	TS										
48		L	L	L	L	L	L	L	9PD	9PD	9PD	9PD	9PD	9PD	9PD	TR	TR	TR	TR	TS									
52		L	L	L	L	L	L	L	9PD	9PD	9PD	9PD	9PD	9PD	9PD	9PD	TR	TR	TR	TR	TS								
56		L	L	L	L	L	L	L	9PD	9PD	9PD	9PD	9PD	9PD	9PD	9PD	TR	TR	TR	TR	TR	TS							
60		L	L	L	L	L	L	L	9PD	9PD	9PD	9PD	9PD	9PD	9PD	9PD	TR	TR	TR	TR	TR	TR	TS						
64		L	L	L	L	L	L	L	9PD	9PD	9PD	9PD	9PD	9PD	9PD	9PD	9PD	TR	TR	TR	TR	TR	TR	TS					
68		L	L	L	L	L	L	L	9PD	9PD	9PD	9PD	9PD	9PD	9PD	9PD	9PD	TR	TR	TR	TR	TR	TR	TR	TS				
72		L	L	L	L	L	L	L	9PD	9PD	9PD	9PD	9PD	9PD	9PD	9PD	9PD	TR	TR	TR	TR	TR	TR	TR	TR	TS			
76		L	L	L	L	L	L	L	9PD	9PD	9PD	9PD	9PD	9PD	9PD	9PD	9PD	9PD	TR	TR	TR	TR	TR	TR	TR	TR	TS		
80		L	L	L	L	L	L	L	9PD	9PD	9PD	9PD	9PD	9PD	9PD	9PD	9PD	9PD	TR	TR	TR	TR	TR	TR	TR	TR	TR	TS	
92		L	L	L	L	L	L	L	9PD	9PD	9PD	9PD	9PD	9PD	9PD	9PD	9PD	9PD	9PD	TR	TR	TR	TR	TR	TR	TR	TR	TR	TS

TS : STRAIGHT TEE
L : OUTLET
TR : REDUCING TEE
9PD : REINFORCING PAD 90 DEG

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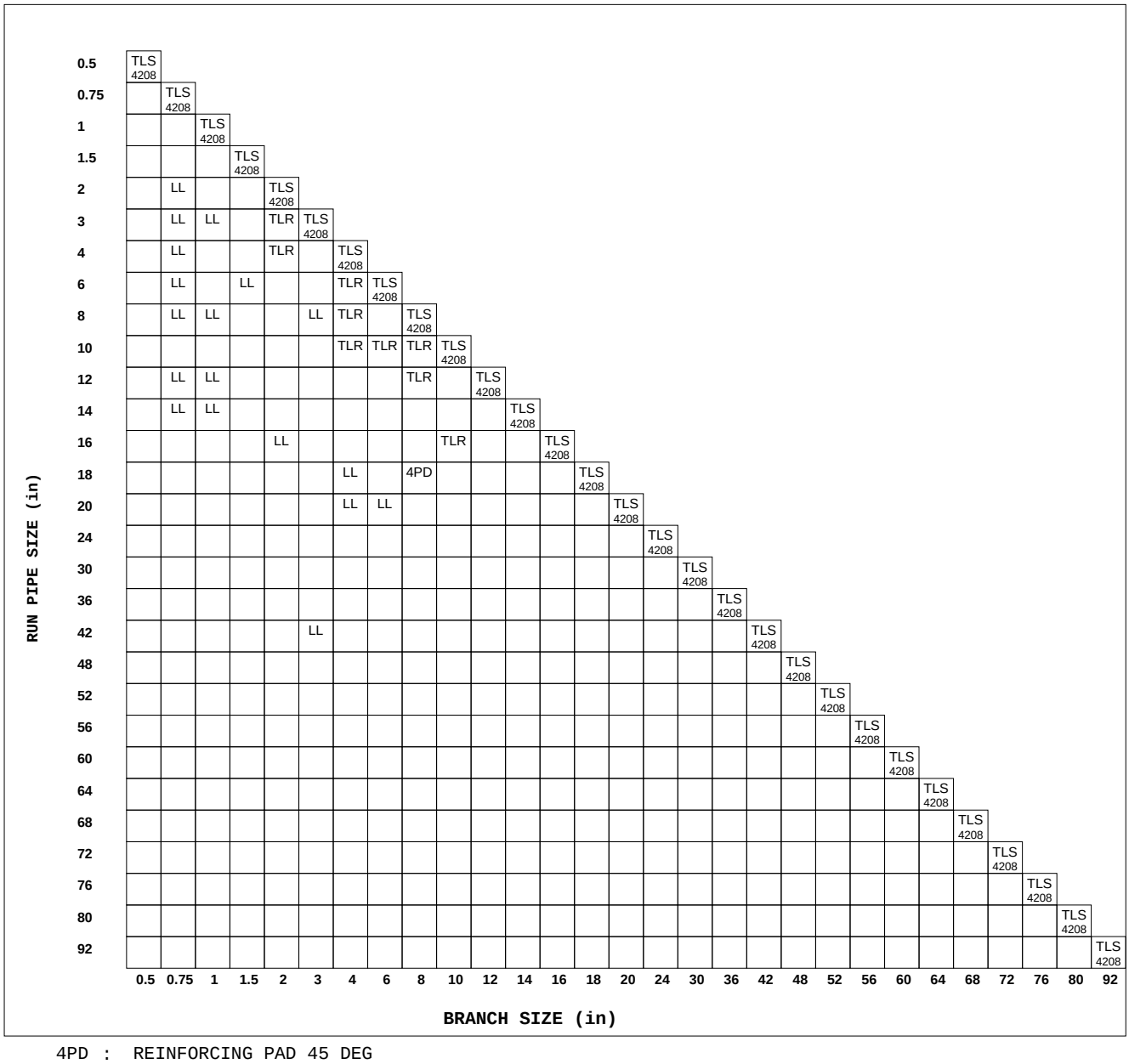
PIPING CLASS

A2GQ REV NO. 2

BRANCH TABLE (T_A2GQ_2)



4PD : REINFORCING PAD 45 DEG
TLS : STRAIGHT LATERAL TEE
LL : LATROLET
TLR : REDUCING LATERAL TEE

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PIPING CLASS

A2GQ REV NO. 2

BRANCH TABLE (T_A2GQ_3)

RUN PIPE SIZE (in)	0.5	0.75	1	1.5	2	3	4	6	8	10	12	14	16	18	20	24	30	36	42	48	52	56	60	64	68	72	76	80	92
0.5																													
0.75		TLS																											
1		6PD	TLS																										
1.5		6PD	6PD	TLS																									
2		6PD	6PD	6PD	TLS																								
3		6PD	6PD	6PD	6PD	TLS																							
4		6PD	6PD	6PD	6PD	6PD	TLS																						
6		6PD	6PD	6PD	6PD	6PD	6PD	TLS																					
8		6PD	6PD	6PD	6PD	6PD	6PD	6PD	TLS																				
10		6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	TLS																			
12		6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	TLS																		
14		6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	TLS																	
16		6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	TLS																
18		6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	TLS															
20		6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	TLS														
24		6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	TLS													
30		6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	TLS												
36		6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	TLS											
42		6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	TLS										
48		6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	TLS									
52		6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	TLS								
56		6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	TLS							
60		6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	TLS						
64		6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	TLS					
68		6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	TLS				
72																													
76		6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD		TLS		
80		6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD		6PD	TLS	
92		6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD		6PD	6PD	TLS

BRANCH SIZE (in)

TLS : STRAIGHT LATERAL TEE
6PD : REINFORCING PAD 60 DEG

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PIPING CLASS

A2GQ REV NO. 2

BRANCH TABLE (T_A2GQ_4)

RUN PIPE SIZE (in) \ BRANCH SIZE (in)	0.5	0.75	1	1.5	2	3	4	6	8	10	12	14	16	18	20	24	30	36	42	48	52	56	60	64	68	72	76	80	92
0.5																													
0.75		TLS 851																											
1		6PD 851	TLS 851																										
1.5		6PD 851	6PD 851	TLS 851																									
2		6PD 851	6PD 851	6PD 851	TLS 851																								
3		6PD 851	6PD 851	6PD 851	6PD 851	TLS 851																							
4		6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	TLS 851																						
6		6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	TLS 851																					
8		6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	TLS 851																				
10		6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	TLS 851																			
12		6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	TLS 851																		
14		6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	TLS 851																	
16		6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	TLS 851																
18		6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	TLS 851															
20		6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	TLS 851														
24		6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	TLS 851													
30		6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	TLS 851												
36		6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	TLS 851											
42		6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	TLS 851										
48		6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	TLS 851									
52		6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	TLS 851								
56		6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	TLS 851							
60		6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	TLS 851						
64		6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	TLS 851					
68		6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	TLS 851				
72																													
76		6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851		TLS 851		
80		6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851		6PD 851	TLS 851	
92		6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851	6PD 851		6PD 851	6PD 851	TLS 851

6PD : REINFORCING PAD 60 DEG
TLS : STRAIGHT LATERAL TEE

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PIPING CLASS

A2GQ01 REV NO. 2

Material : LTCS
Rating : ASME CLASS 150
Flange Face : RF
C.A.(mm) : 3.00
Gasket : Spiral Wound
Service : PROCESS -WET SOUR SERVICE SUBJECT TO NACE STD. : / DE-ETHANISER OVHD / DE-ETHANISER OFFGAS
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
2	USE OF SOFT SEATED BALL, PLUG AND BUTTERFLY VALVES SHALL BE LIMITED TO MAXIMUM OF 204DEGC (400DEGF)
5	BOLTING CONFIRMING TO B7M / 2HM SHALL BE USED UNDER CONDITIONS (A) DIRECT EXPOSURE TO SOUR ENVIRONMENTS (B) WHEN THE BOLTING WILL BE BURIED OR INSULATED
15	BOLTING CONFIRMING TO L7M / 7M SHALL BE USED UNDER CONDITIONS (A) DIRECT EXPOSURE TO SOUR ENVIRONMENTS (B) WHEN THE BOLTING WILL BE BURIED OR INSULATED
27	PWHT OF CARBON STEEL PIPING IN WET H2S, CAUSTIC AND AMINE SERVICES SHALL BE IN ACCORDANCE WITH SECTION 10.2, 10.3, AND 10.4 OF PROJECT SPECIFICATION 3550-8440-SP-0002 MATERIALS REQUIREMENTS FOR PRESSURISED EQUIPMENT AND PIPING. FOR CAUSTIC AND AMINE SERVICE THE FOLLOWING SHALL APPLY: - PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF ALL SITE PIPING FABRICATION WELDS IS REQUIRED FOR ALL WALL THICKNESSES. FOR MODERATE AND SEVERE WET H2S SERVICE THE FOLLOWING SHALL APPLY: PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF SITE FABRICATION CIRCUMFERENTIAL OR BRANCH WELDS IS NOT REQUIRED IF WELDS ARE MULTIPASS AND IN ACCORDANCE WITH PARA 10.2.12 OF PROJECT SPECIFICATION 3550-8440-SP-0002. FOR SERVICES MEETING THE WET H2S CRITERIA AND CAUSTIC OR AMINE CRITERIA THE MORE STRINGENT PWHT REQUIREMENT SHALL GOVERN.

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
200	WITH JACK SCREW (FO)
541	NPT(F) (CA,F)
773	CLASS 300 (B,F,G,PB,PS,V)
4608	VALVE WITH NIPPLES (V)

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PIPING CLASS
A2GQ01 REV NO. 2

PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P01A-007EF	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE Moderate wet H2S service Licensor-1	
1	0.75		SCH160		P01A-007EG	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE Moderate wet H2S service Licensor-1	
1	1		SCH160		P01A-007EH	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE Moderate wet H2S service Licensor-1	
1	1.5		SCH160		P01A-007EJ	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE Moderate wet H2S service Licensor-1	
1	2		XS		P01A-007ER	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE Moderate wet H2S service Licensor-1	
1	3		STD		P01A-007EU	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE Moderate wet H2S service Licensor-1	
1	4		STD		P01A-007EV	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE Moderate wet H2S service Licensor-1	
1	6		STD		P01A-007EW	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE Moderate wet H2S service Licensor-1	
1	8		SCH30		P01A-008P0	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE Moderate wet H2S service Licensor-1	
1	10		SCH30		P01A-008NZ	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE Moderate wet H2S service Licensor-1	
1	12		SCH30		P01A-007EL	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE Moderate wet H2S service Licensor-1	
1	14		SCH20		P01A-007EM	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE Moderate wet H2S service Licensor-1	
1	16		SCH20		P01A-007EN	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE Moderate wet H2S service Licensor-1	
1	18		STD		P01A-007G0	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE Moderate wet H2S service Licensor-1	
1	20		STD		P01A-007ES	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE Moderate wet H2S service Licensor-1	
1	24		XS		P01A-007G2	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE Moderate wet H2S service Licensor-1	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P02A-003WH	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Moderate wet H2S service Licensor-1	
1	0.75		SCH160		P02A-003WJ	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Moderate wet H2S service Licensor-1	
1	1		SCH160		P02A-003WK	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Moderate wet H2S service Licensor-1	
1	1.5		SCH160		P02A-003WL	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Moderate wet H2S service Licensor-1	
1	2		XS		P02A-003WT	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Moderate wet H2S service Licensor-1	
1	3		STD		P02A-003WW	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Moderate wet H2S service Licensor-1	
1	4		STD		P02A-003WX	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Moderate wet H2S service Licensor-1	
1	6		STD		P02A-003WY	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Moderate wet H2S service Licensor-1	
1	8		SCH30		P02A-004GC	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Moderate wet H2S service Licensor-1	
1	10		SCH30		P02A-004GB	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Moderate wet H2S service Licensor-1	
1	12		SCH30		P02A-003WN	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Moderate wet H2S service Licensor-1	
1	14		SCH20		P02A-003WP	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Moderate wet H2S service Licensor-1	
1	16		SCH20		P02A-003WR	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Moderate wet H2S service Licensor-1	
1	18		STD		P02A-003Y2	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Moderate wet H2S service Licensor-1	
1	20		STD		P02A-003WU	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Moderate wet H2S service Licensor-1	
1	24		XS		P02A-003Y4	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Moderate wet H2S service Licensor-1	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P03A-003U6	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Moderate wet H2S service Licensor-1	
1	0.75		SCH160		P03A-003U7	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Moderate wet H2S service Licensor-1	
1	1		SCH160		P03A-003U8	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Moderate wet H2S service Licensor-1	
1	1.5		SCH160		P03A-003U9	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Moderate wet H2S service Licensor-1	
1	2		XS		P03A-003UF	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Moderate wet H2S service Licensor-1	
1	3		STD		P03A-003UJ	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Moderate wet H2S service Licensor-1	
1	4		STD		P03A-003UK	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Moderate wet H2S service Licensor-1	
1	6		STD		P03A-003UL	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Moderate wet H2S service Licensor-1	
1	8		SCH30		P03A-004DJ	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Moderate wet H2S service Licensor-1	
1	10		SCH30		P03A-004DH	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Moderate wet H2S service Licensor-1	
1	12		SCH30		P03A-003UB	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Moderate wet H2S service Licensor-1	

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45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14		SCH20		P03A-003UC	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Moderate wet H2S service Licensor-1	
1	16		SCH20		P03A-003UD	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Moderate wet H2S service Licensor-1	
1	18		STD		P03A-003VR	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Moderate wet H2S service Licensor-1	
1	20		STD		P03A-003UG	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Moderate wet H2S service Licensor-1	
1	24		XS		P03A-003VT	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Moderate wet H2S service Licensor-1	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P21A-004DZ	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	0.75		SCH160		P21A-004E0	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	1		SCH160		P21A-004E1	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	1.5		SCH160		P21A-004E2	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	2		XS		P21A-004E8	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	3		STD		P21A-004EB	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	4		STD		P21A-004EC	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	6		STD		P21A-004ED	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	8		SCH30		P21A-004YU	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	10		SCH30		P21A-004YT	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	12		SCH30		P21A-004E4	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	14		SCH20		P21A-004E5	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	16		SCH20		P21A-004E6	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	18		STD		P21A-004FH	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	20		STD		P21A-004E9	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	24		XS		P21A-004FK	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75	SCH160	SCH160	P24A-00KK3	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	1.5	0.75	SCH160	SCH160	P24A-00KK4	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	1.5	1	SCH160	SCH160	P24A-00KK5	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	2	1	XS	SCH160	P24A-00KK6	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	2	1.5	XS	SCH160	P24A-00KK7	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	3	1.5	STD	SCH160	P24A-00KK8	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	3	2	STD	XS	P24A-00KK9	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	4	2	STD	XS	P24A-00KKA	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	4	3	STD	STD	P24A-00KKB	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	6	3	STD	STD	P24A-00KKC	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	6	4	STD	STD	P24A-00KKD	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	8	4	SCH30	STD	P24A-00NSP	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	8	6	SCH30	STD	P24A-00NSR	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	10	4	SCH30	STD	P24A-00NSS	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	10	6	SCH30	STD	P24A-00NST	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	10	8	SCH30	SCH30	P24A-00NSU	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	12	6	SCH30	STD	P24A-00KKL	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	12	8	SCH30	SCH30	P24A-00NSW	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	12	10	SCH30	SCH30	P24A-00NSV	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	14	6	SCH20	STD	P24A-00KKR	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	14	8	SCH20	SCH30	P24A-00NSY	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	14	10	SCH20	SCH30	P24A-00NSX	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	14	12	SCH20	SCH30	P24A-00KKP	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	16	6	SCH20	STD	P24A-00KKW	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	16	8	SCH20	SCH30	P24A-00NT0	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	16	10	SCH20	SCH30	P24A-00NSZ	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	16	12	SCH20	SCH30	P24A-00KKU	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	16	14	SCH20	SCH20	P24A-00KKV	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	18	8	STD	SCH30	P24A-00NT5	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	18	10	STD	SCH30	P24A-00NT1	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	

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PIPING CLASS
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REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	18	12	STD	SCH30	P24A-00NT2	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	18	14	STD	SCH20	P24A-00NT3	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	18	16	STD	SCH20	P24A-00NT4	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	20	8	STD	SCH30	P24A-00NT8	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	20	10	STD	SCH30	P24A-00NT6	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	20	12	STD	SCH30	P24A-00KL4	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	20	14	STD	SCH20	P24A-00KL5	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	20	16	STD	SCH20	P24A-00KL6	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	20	18	STD	STD	P24A-00NT7	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	24	10	XS	SCH30	P24A-00NT9	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	24	12	XS	SCH30	P24A-00NTA	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	24	14	XS	SCH20	P24A-00NTB	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	24	16	XS	SCH20	P24A-00NTC	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	24	18	XS	STD	P24A-00KRY	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	24	20	XS	STD	P24A-00NTD	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	SCH160	P27A-00F1R	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	1	0.5	SCH160	SCH160	P27A-00F1S	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	1	0.75	SCH160	SCH160	P27A-00F1T	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	1.5	0.5	SCH160	SCH160	P27A-00F1U	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	1.5	0.75	SCH160	SCH160	P27A-00F1V	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	1.5	1	SCH160	SCH160	P27A-00F1W	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	2	0.75	XS	SCH160	P27A-00F1X	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	2	1	XS	SCH160	P27A-00F1Y	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	2	1.5	XS	SCH160	P27A-00F1Z	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	3	1.5	STD	SCH160	P27A-00F20	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	3	2	STD	XS	P27A-00F21	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	4	1.5	STD	SCH160	P27A-00F22	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	4	2	STD	XS	P27A-00F23	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	4	3	STD	STD	P27A-00F24	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	6	3	STD	STD	P27A-00F25	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	6	4	STD	STD	P27A-00F26	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	8	4	SCH30	STD	P27A-00HA7	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	8	6	SCH30	STD	P27A-00HA8	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	10	4	SCH30	STD	P27A-00HA9	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	10	6	SCH30	STD	P27A-00HAA	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	10	8	SCH30	SCH30	P27A-00HAB	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	12	6	SCH30	STD	P27A-00F2D	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	12	8	SCH30	SCH30	P27A-00HAD	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	12	10	SCH30	SCH30	P27A-00HAC	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	14	6	SCH20	STD	P27A-00F2H	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	14	8	SCH20	SCH30	P27A-00HAF	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	14	10	SCH20	SCH30	P27A-00HAE	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	14	12	SCH20	SCH30	P27A-00F2G	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	16	8	SCH20	SCH30	P27A-00HAH	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	16	10	SCH20	SCH30	P27A-00HAG	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	

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CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	16	12	SCH20	SCH30	P27A-00F2L	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	16	14	SCH20	SCH20	P27A-00F2M	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	18	10	STD	SCH30	P27A-00HAJ	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	18	12	STD	SCH30	P27A-00HAK	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	18	14	STD	SCH20	P27A-00HAL	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	18	16	STD	SCH20	P27A-00HAM	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	20	12	STD	SCH30	P27A-00F2U	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	20	14	STD	SCH20	P27A-00F2V	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	20	16	STD	SCH20	P27A-00F2W	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	20	18	STD	STD	P27A-00HAN	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	24	16	XS	SCH20	P27A-00HAP	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	24	18	XS	STD	P27A-00F6N	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	24	20	XS	STD	P27A-00HAR	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	SCH160	P28A-00C5S	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	1	0.5	SCH160	SCH160	P28A-00C5T	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	1	0.75	SCH160	SCH160	P28A-00C5U	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	1.5	0.5	SCH160	SCH160	P28A-00C5V	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	1.5	0.75	SCH160	SCH160	P28A-00C5W	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	1.5	1	SCH160	SCH160	P28A-00C5X	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	2	0.75	XS	SCH160	P28A-00C5Y	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	2	1	XS	SCH160	P28A-00C5Z	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	2	1.5	XS	SCH160	P28A-00C60	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	3	1.5	STD	SCH160	P28A-00C61	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	3	2	STD	XS	P28A-00C62	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	4	1.5	STD	SCH160	P28A-00C63	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	4	2	STD	XS	P28A-00C64	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	4	3	STD	STD	P28A-00C65	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	6	3	STD	STD	P28A-00C66	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	6	4	STD	STD	P28A-00C67	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	8	4	SCH30	STD	P28A-00EHX	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	8	6	SCH30	STD	P28A-00EHY	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	10	4	SCH30	STD	P28A-00EHZ	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	10	6	SCH30	STD	P28A-00EJ0	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	10	8	SCH30	SCH30	P28A-00EJ1	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	12	6	SCH30	STD	P28A-00C6E	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	12	8	SCH30	SCH30	P28A-00EJ3	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	12	10	SCH30	SCH30	P28A-00EJ2	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	14	6	SCH20	STD	P28A-00C6J	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	14	8	SCH20	SCH30	P28A-00EJ5	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	14	10	SCH20	SCH30	P28A-00EJ4	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	14	12	SCH20	SCH30	P28A-00C6H	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	16	8	SCH20	SCH30	P28A-00EJ7	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	

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ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	16	10	SCH20	SCH30	P28A-00EJ6	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	16	12	SCH20	SCH30	P28A-00C6M	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	16	14	SCH20	SCH20	P28A-00C6N	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	18	10	STD	SCH30	P28A-00EJ8	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	18	12	STD	SCH30	P28A-00EJ9	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	18	14	STD	SCH20	P28A-00EJA	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	18	16	STD	SCH20	P28A-00EJB	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	20	12	STD	SCH30	P28A-00C6V	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	20	14	STD	SCH20	P28A-00C6W	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	20	16	STD	SCH20	P28A-00C6X	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	20	18	STD	STD	P28A-00EJC	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	24	16	XS	SCH20	P28A-00EJD	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	24	18	XS	STD	P28A-00CAP	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	24	20	XS	STD	P28A-00EJE	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P29A-0038X	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	0.75		SCH160		P29A-0038Y	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	1		SCH160		P29A-0038Z	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	1.5		SCH160		P29A-00390	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	2		XS		P29A-00396	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	3		STD		P29A-00399	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	4		STD		P29A-0039A	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	6		STD		P29A-0039B	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	8		SCH30		P29A-003TA	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	10		SCH30		P29A-003T9	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	12		SCH30		P29A-00392	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	14		SCH20		P29A-00393	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	16		SCH20		P29A-00394	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	18		STD		P29A-003AF	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	20		STD		P29A-00397	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	24		XS		P29A-003AH	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
541	0.75				P29B-0006W	Cap ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 NPT Moderate wet H2S service Licensor-1	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P41A-0019S	Straight nipple ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Moderate wet H2S service Licensor-1	
1	0.75		XXS		P41A-0019T	Straight nipple ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Moderate wet H2S service Licensor-1	
1	1		XXS		P41A-0019U	Straight nipple ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Moderate wet H2S service Licensor-1	
1	1.5		XXS		P41A-0019V	Straight nipple ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Moderate wet H2S service Licensor-1	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2	0.75	XS	SCH160	P31B-00Y0K	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	3	0.75	STD	SCH160	P31B-00Y0L	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	4	0.75	STD	SCH160	P31B-00Y0N	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	6	0.75	STD	SCH160	P31B-00Y0S	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	8	0.75	SCH30	SCH160	P31B-010Z3	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	10	0.75	SCH30	SCH160	P31B-010Z8	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	12	0.75	SCH30	SCH160	P31B-00Y14	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	14	0.75	SCH20	SCH160	P31B-00Y1A	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Moderate wet H2S service Licensor-1	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	16	0.75	SCH20	SCH160	P31B-00Y1G	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	18	0.75	STD	SCH160	P31B-00Y78	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	20	0.75	STD	SCH160	P31B-00Y1W	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	24	0.75	XS	SCH160	P31B-00Y7N	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	3	1	STD	SCH160	P31B-00Y0M	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	4	1	STD	SCH160	P31B-00Y0P	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	6	1	STD	SCH160	P31B-00Y0T	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	8	1	SCH30	SCH160	P31B-010Z4	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	10	1	SCH30	SCH160	P31B-010Z9	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	12	1	SCH30	SCH160	P31B-00Y15	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	14	1	SCH20	SCH160	P31B-00Y1B	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	16	1	SCH20	SCH160	P31B-00Y1H	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	18	1	STD	SCH160	P31B-00Y79	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	20	1	STD	SCH160	P31B-00Y1X	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	24	1	XS	SCH160	P31B-00Y7P	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	4	1.5	STD	SCH160	P31B-00Y0R	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	6	1.5	STD	SCH160	P31B-00Y0U	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	8	1.5	SCH30	SCH160	P31B-010Z5	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	10	1.5	SCH30	SCH160	P31B-010ZA	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	12	1.5	SCH30	SCH160	P31B-00Y16	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	14	1.5	SCH20	SCH160	P31B-00Y1C	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	16	1.5	SCH20	SCH160	P31B-00Y1J	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	18	1.5	STD	SCH160	P31B-00Y7A	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	20	1.5	STD	SCH160	P31B-00Y1Y	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	24	1.5	XS	SCH160	P31B-00Y7R	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	6	2	STD	XS	P31B-00Y0V	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	8	2	SCH30	XS	P31B-010Z6	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	10	2	SCH30	XS	P31B-010ZB	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	12	2	SCH30	XS	P31B-00Y17	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	14	2	SCH20	XS	P31B-00Y1D	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	16	2	SCH20	XS	P31B-00Y1K	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	18	2	STD	XS	P31B-00Y7B	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	20	2	STD	XS	P31B-00Y1Z	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	24	2	XS	XS	P31B-00Y7S	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	8	3	SCH30	STD	P31B-010Z7	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	10	3	SCH30	STD	P31B-010ZC	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	12	3	SCH30	STD	P31B-00Y18	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	14	3	SCH20	STD	P31B-00Y1E	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	16	3	SCH20	STD	P31B-00Y1L	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	18	3	STD	STD	P31B-00Y7C	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	20	3	STD	STD	P31B-00Y20	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	24	3	XS	STD	P31B-00Y7T	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	12	4	SCH30	STD	P31B-00Y19	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	14	4	SCH20	STD	P31B-00Y1F	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	16	4	SCH20	STD	P31B-00Y1M	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	18	4	STD	STD	P31B-00Y7D	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	20	4	STD	STD	P31B-00Y21	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	24	4	XS	STD	P31B-00Y7U	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	18	6	STD	STD	P31B-00Y7E	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	20	6	STD	STD	P31B-00Y22	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	24	6	XS	STD	P31B-00Y7V	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Moderate wet H2S service Licensor-1	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30B-0006P	Plug ASTM A350 Grade LF2 Class 1 ASME B16.11 NPT Round head Moderate wet H2S service Licensor-1	
1	0.75				P30B-0006R	Plug ASTM A350 Grade LF2 Class 1 ASME B16.11 NPT Round head Moderate wet H2S service Licensor-1	
1	1				P30B-0006S	Plug ASTM A350 Grade LF2 Class 1 ASME B16.11 NPT Round head Moderate wet H2S service Licensor-1	
1	1.5				P30B-0006T	Plug ASTM A350 Grade LF2 Class 1 ASME B16.11 NPT Round head Moderate wet H2S service Licensor-1	

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FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P61B-00A6B	Flange WN ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	0.75		SCH160		P61B-00A6C	Flange WN ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	1		SCH160		P61B-00A6D	Flange WN ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	1.5		SCH160		P61B-00A6E	Flange WN ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	2		XS		P61B-00A6L	Flange WN ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	3		STD		P61B-00A6P	Flange WN ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	4		STD		P61B-00A6R	Flange WN ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	6		STD		P61B-00A6S	Flange WN ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	8		SCH30		P61B-00BTR	Flange WN ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	10		SCH30		P61B-00BTM	Flange WN ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	12		SCH30		P61B-00A6G	Flange WN ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	14		SCH20		P61B-00A6H	Flange WN ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	16		SCH20		P61B-00A6J	Flange WN ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	18		STD		P61B-00BTN	Flange WN ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	20		STD		P61B-00A6M	Flange WN ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	24		XS		P61B-00BTP	Flange WN ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF Moderate wet H2S service Licensor-1	
541	0.5				P61B-00DLN	Flange NPT ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF Moderate wet H2S service Licensor-1	
541	0.75				P61B-00CY0	Flange NPT ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF Moderate wet H2S service Licensor-1	
773	0.5		SCH160		P61B-00A6U	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF Moderate wet H2S service Licensor-1	
773	0.75		SCH160		P61B-00A6V	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF Moderate wet H2S service Licensor-1	
773	1		SCH160		P61B-00A6W	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF Moderate wet H2S service Licensor-1	
773	1.5		SCH160		P61B-00A6X	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF Moderate wet H2S service Licensor-1	
773	2		XS		P61B-00A73	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF Moderate wet H2S service Licensor-1	
773	3		STD		P61B-00A76	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF Moderate wet H2S service Licensor-1	
773	4		STD		P61B-00A77	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF Moderate wet H2S service Licensor-1	
773	6		STD		P61B-00A78	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF Moderate wet H2S service Licensor-1	
773	8		SCH30		P61B-00BTT	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF Moderate wet H2S service Licensor-1	
773	10		SCH30		P61B-00BTS	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF Moderate wet H2S service Licensor-1	
773	12		SCH30		P61B-00A6Z	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF Moderate wet H2S service Licensor-1	
773	14		SCH20		P61B-00A70	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF Moderate wet H2S service Licensor-1	
773	16		SCH20		P61B-00A71	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF Moderate wet H2S service Licensor-1	
773	18		STD		P61B-00AA0	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF Moderate wet H2S service Licensor-1	
773	20		STD		P61B-00A74	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF Moderate wet H2S service Licensor-1	
773	24		XS		P61B-00AA2	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF Moderate wet H2S service Licensor-1	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67B-002JA	Blind flange ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	0.75				P67B-002JB	Blind flange ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	1				P67B-002JC	Blind flange ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	1.5				P67B-002JD	Blind flange ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	2				P67B-002JK	Blind flange ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	3				P67B-002JN	Blind flange ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	4				P67B-002JP	Blind flange ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	6				P67B-002JR	Blind flange ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF Moderate wet H2S service Licensor-1	

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BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	8				P67B-002JS	Blind flange ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	10				P67B-002JE	Blind flange ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	12				P67B-002JF	Blind flange ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	14				P67B-002JG	Blind flange ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	16				P67B-002JH	Blind flange ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	18				P67B-002JJ	Blind flange ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	20				P67B-002JL	Blind flange ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	24				P67B-002JM	Blind flange ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF Moderate wet H2S service Licensor-1	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000L8	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000L9	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000LA	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000LB	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000LH	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000LL	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000LM	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	6				P73T-000LN	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	8				P73T-000LP	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	10				P73T-000LC	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	12				P73T-000LD	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	14				P73T-000LE	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	16				P73T-000LF	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	18				P73T-000LG	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	20				P73T-000LJ	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	24				P73T-000LK	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	0.5				P73T-000FT	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	0.75				P73T-000FU	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	3				P73T-000G5	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	4				P73T-000G6	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	6				P73T-000G7	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	8				P73T-000G8	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	10				P73T-000FX	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	12				P73T-000FY	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	14				P73T-000FZ	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	16				P73T-000G0	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	18				P73T-000G1	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	20				P73T-000G3	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	24				P73T-000G4	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

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BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-16				See Attached Bolt Table	Bolt and Nut ASTM A320 Grade L7M / A194 Grade 7M ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	18-24				See Attached Bolt Table	Bolt and Nut ASTM A320 Grade L7M / A194 Grade 7M ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
773	0.5-10				See Attached Bolt Table	Bolt and Nut ASTM A320 Grade L7M / A194 Grade 7M ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
773	12-24				See Attached Bolt Table	Bolt and Nut ASTM A320 Grade L7M / A194 Grade 7M ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81B-001FN	Gate valve ASTM A350 Grade LF2 Class 1 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Licensor-1	
1	0.75				P81B-001FP	Gate valve ASTM A350 Grade LF2 Class 1 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Licensor-1	
1	1				P81B-001FR	Gate valve ASTM A350 Grade LF2 Class 1 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Licensor-1	
1	1.5				P81B-001FS	Gate valve ASTM A350 Grade LF2 Class 1 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Licensor-1	
1	2				P81C-004Z1	Gate valve ASTM A352 Grade LCC Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Licensor-1	
1	3				P81C-004Z2	Gate valve ASTM A352 Grade LCC Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Licensor-1	
1	4				P81C-004Z3	Gate valve ASTM A352 Grade LCC Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Licensor-1	
1	6				P81C-004Z4	Gate valve ASTM A352 Grade LCC Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Licensor-1	
1	8				P81C-004Z5	Gate valve ASTM A352 Grade LCC Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Licensor-1	
1	10				P81C-004YZ	Gate valve ASTM A352 Grade LCC Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Licensor-1	
1	12				P81C-004Z0	Gate valve ASTM A352 Grade LCC Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Licensor-1	
1	14				P81C-004Z6	Gate valve ASTM A352 Grade LCC Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Moderate wet H2S service Licensor-1	
1	16				P81C-004Z7	Gate valve ASTM A352 Grade LCC Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Moderate wet H2S service Licensor-1	
1	18				P81C-004Z8	Gate valve ASTM A352 Grade LCC Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Moderate wet H2S service Licensor-1	
1	20				P81C-004Z9	Gate valve ASTM A352 Grade LCC Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Moderate wet H2S service Licensor-1	
1	24				P81C-004ZA	Gate valve ASTM A352 Grade LCC Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Moderate wet H2S service Licensor-1	
4608	0.75				P81B-002YA	Gate valve ASTM A350 Grade LF2 Class 1 Class 150 API 602 BW both sides w/ nipples BE - NPT ASTM A333-6 XXS-nipple Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Licensor-1	
773	2				P81C-0050M	Gate valve ASTM A352 Grade LCC Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Licensor-1	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82B-0017E	Globe valve ASTM A350 Grade LF2 Class 1 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Licensor-1	
1	0.75				P82B-0017F	Globe valve ASTM A350 Grade LF2 Class 1 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Licensor-1	
1	1				P82B-0017G	Globe valve ASTM A350 Grade LF2 Class 1 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Licensor-1	
1	1.5				P82B-0017H	Globe valve ASTM A350 Grade LF2 Class 1 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Licensor-1	
1	2				P82C-002DT	Globe valve ASTM A352 Grade LCC Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Licensor-1	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83B-000Z5	Check valve ASTM A350 Grade LF2 Class 1 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Moderate wet H2S service Licensor-1	
1	0.75				P83B-000Z6	Check valve ASTM A350 Grade LF2 Class 1 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Moderate wet H2S service Licensor-1	
1	1				P83B-000Z7	Check valve ASTM A350 Grade LF2 Class 1 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Moderate wet H2S service Licensor-1	
1	1.5				P83B-000Z8	Check valve ASTM A350 Grade LF2 Class 1 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Moderate wet H2S service Licensor-1	
1	2				P83C-002DC	Check valve ASTM A352 Grade LCC Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Moderate wet H2S service Licensor-1	
1	3				P83C-002DD	Check valve ASTM A352 Grade LCC Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Moderate wet H2S service Licensor-1	
1	4				P83C-002DE	Check valve ASTM A352 Grade LCC Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Moderate wet H2S service Licensor-1	
1	6				P83C-002DF	Check valve ASTM A352 Grade LCC Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Moderate wet H2S service Licensor-1	

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ORIFICE FLANGE (FO)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	16		SCH20		P66B-008LZ	Orifice flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Moderate wet H2S service Licensor-1	
200	16		SCH20		P66B-008M0	Orifice flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Moderate wet H2S service with Jack screw Licensor-1	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71B-000A4	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	0.75				P71B-000A5	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	1				P71B-000A6	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	1.5				P71B-000A7	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	2				P71B-000AA	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	3				P71B-000AB	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	4				P71B-000AC	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	6				P71B-000AD	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	8				P71B-000AE	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	10				P71B-000A8	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	12				P71B-000A9	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service Licensor-1	

PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000EM	Paddle blank ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	16				P72B-000EN	Paddle blank ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	18				P72B-000EP	Paddle blank ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	20				P72B-000ER	Paddle blank ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	24				P72B-000ES	Paddle blank ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service Licensor-1	
773	16				P72B-000H5	Paddle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service Licensor-1	
773	18				P72B-000H6	Paddle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service Licensor-1	
773	20				P72B-000H7	Paddle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service Licensor-1	
773	24				P72B-000H8	Paddle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service Licensor-1	

PADDLE SPACER (PS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000ET	Paddle spacer ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	16				P72B-000EU	Paddle spacer ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	18				P72B-000EV	Paddle spacer ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	20				P72B-000EW	Paddle spacer ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	24				P72B-000EX	Paddle spacer ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service Licensor-1	
773	16				P72B-000HA	Paddle spacer ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service Licensor-1	
773	18				P72B-000HB	Paddle spacer ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service Licensor-1	
773	20				P72B-000HC	Paddle spacer ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service Licensor-1	
773	24				P72B-000HD	Paddle spacer ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service Licensor-1	

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BOLT TABLE (B_A2GQ01 , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	60	P80S-009UJ		
0.75	4	0.500	65	P80S-009UK		
1	4	0.500	70	P80S-009UL		
1.5	4	0.500	75	P80S-009UM		
2	4	0.625	85	P80S-00A03		
3	4	0.625	95	P80S-00A05		
4	8	0.625	95	P80S-00A05		
6	8	0.750	105	P80S-00A07		
8	8	0.750	110	P80S-00A08		
10	12	0.875	120	P80S-009XE		
12	12	0.875	120	P80S-009XE		
14	12	1.000	135	P80S-00A37		
16	16	1.000	140	P80S-00A38		
18	16	1.125	150	P80S-00A4M		
20	20	1.125	160	P80S-00A4P		
24	20	1.250	175	P80S-00CTJ		

BOLT TABLE (B_A2GQ01_773 , STUD ASME RF, OPTION CODE 773)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-009UL		
0.75	4	0.625	75	P80S-00A01		
1	4	0.625	80	P80S-00A02		
1.5	4	0.750	95	P80S-009X9		
2	8	0.625	90	P80S-00A04		
3	8	0.750	110	P80S-00A08		
4	8	0.750	115	P80S-00A09		
6	12	0.750	125	P80S-00A0B		
8	12	0.875	140	P80S-009XJ		
10	16	1.000	160	P80S-00A3C		
12	16	1.125	175	P80S-00A4T		
14	20	1.125	180	P80S-00A4U		
16	20	1.250	190	P80S-00CTM		
18	24	1.250	200	P80S-00CTP		
20	24	1.250	210	P80S-00CTS		
24	24	1.500	235	P80S-00D4Z		

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BRANCH TABLE (T_A2GQ01)

RUN PIPE SIZE (in) \ BRANCH SIZE (in)	0.5	0.75	1	1.5	2	3	4	6	8	10	12	14	16	18	20	24
0.5	TS															
0.75		TS														
1		TR	TS													
1.5		TR	TR	TS												
2		L	TR	TR	TS											
3		L	L	TR	TR	TS										
4	L	L	L	L	TR	TR	TS									
6	L	L	L	L	L	TR	TR	TS								
8		L	L	L	L	L	TR	TR	TS							
10		L	L	L	L	L	TR	TR	TR	TS						
12		L	L	L	L	L	L	TR	TR	TR	TS					
14		L	L	L	L	L	L	TR	TR	TR	TR	TS				
16		L	L	L	L	L	L	TR	TR	TR	TR	TR	TS			
18		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TS		
20		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TR	TS	
24		L	L	L	L	L	L	L	9PD	TR	TR	TR	TR	TR	TR	TS

L : OUTLET
TS : STRAIGHT TEE
9PD : REINFORCING PAD 90 DEG
TR : REDUCING TEE

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PIPING CLASS

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Material : LTCS
Rating : ASME CLASS 150
Flange Face : RF
C.A.(mm) : 3.00
Gasket : Spiral Wound
Service : PROCESS - AIV / WET SOUR SERVICE SUBJECT TO NACE STD. : / DE-ETHANISER OVHD / DE-ETHANISER OFFGAS
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
2	USE OF SOFT SEATED BALL, PLUG AND BUTTERFLY VALVES SHALL BE LIMITED TO MAXIMUM OF 204DEGC (400DEGF)
5	BOLTING CONFIRMING TO B7M / 2HM SHALL BE USED UNDER CONDITIONS (A) DIRECT EXPOSURE TO SOUR ENVIRONMENTS (B) WHEN THE BOLTING WILL BE BURIED OR INSULATED
15	BOLTING CONFIRMING TO L7M / 7M SHALL BE USED UNDER CONDITIONS (A) DIRECT EXPOSURE TO SOUR ENVIRONMENTS (B) WHEN THE BOLTING WILL BE BURIED OR INSULATED
27	PWHT OF CARBON STEEL PIPING IN WET H2S, CAUSTIC AND AMINE SERVICES SHALL BE IN ACCORDANCE WITH SECTION 10.2, 10.3, AND 10.4 OF PROJECT SPECIFICATION 3550-8440-SP-0002 MATERIALS REQUIREMENTS FOR PRESSURISED EQUIPMENT AND PIPING. FOR CAUSTIC AND AMINE SERVICE THE FOLLOWING SHALL APPLY: - PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF ALL SITE PIPING FABRICATION WELDS IS REQUIRED FOR ALL WALL THICKNESSES. FOR MODERATE AND SEVERE WET H2S SERVICE THE FOLLOWING SHALL APPLY: PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF SITE FABRICATION CIRCUMFERENTIAL OR BRANCH WELDS IS NOT REQUIRED IF WELDS ARE MULTIPASS AND IN ACCORDANCE WITH PARA 10.2.12 OF PROJECT SPECIFICATION 3550-8440-SP-0002. FOR SERVICES MEETING THE WET H2S CRITERIA AND CAUSTIC OR AMINE CRITERIA THE MORE STRINGENT PWHT REQUIREMENT SHALL GOVERN.

DETAIL NOTES :

NO.	DESCRIPTION
999	HOLD ITEMS. ORDER PLACEMENT SHALL NOT BE DONE BEFORE RELEASING HOLD.

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
541	NPT(F) (CA,F)
773	CLASS 300 (B,F,G)
781	CLASS 600 (B,F,G)
4608	VALVE WITH NIPPLES (V)

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PIPING CLASS
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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P01A-001Z1	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE	
1	0.75		XXS		P01A-0051V	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE	
1	1		XXS		P01A-003WW	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE	
1	1.5		XXS		P01A-003WX	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE	
1	2		XXS		P01A-003XE	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	3		XXS		P01A-0022E	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	4		SCH160		P01A-002D1	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	6		SCH120		P01A-002D2	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	8		XS		P01A-000YG	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	10		XS		P01A-0022D	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	12		XS		P01A-00227	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	14		XS		P01A-0022C	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	16		XS		P01A-0011L	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	18		XS		P01A-00378	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	20		XS		P01A-00379	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	24		XS		P01A-0037A	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	30		XS		P01A-007YX	Pipe ASTM A671 Grade CC60 Class 22 EFW ASME B36.10M/B36.19M BE Moderate wet H2S service	
1	36		XS		P01A-007YY	Pipe ASTM A671 Grade CC60 Class 22 EFW ASME B36.10M/B36.19M BE Moderate wet H2S service	
1	42		14.27mm		P01A-007YZ	Pipe ASTM A671 Grade CC60 Class 22 EFW ASME B36.10M/B36.19M BE Moderate wet H2S service	
1	48		14.27mm		P01A-008MZ	Pipe ASTM A671 Grade CC60 Class 22 EFW ASME B36.10M/B36.19M BE Moderate wet H2S service	
1	52		15.88mm		P01A-008N0	Pipe ASTM A671 Grade CC60 Class 22 EFW ASME B36.10M/B36.19M BE Moderate wet H2S service	
1	56		17.48mm		P01A-008N1	Pipe ASTM A671 Grade CC60 Class 22 EFW ASME B36.10M/B36.19M BE Moderate wet H2S service	
1	60		17.48mm		P01A-008N2	Pipe ASTM A671 Grade CC60 Class 22 EFW ASME B36.10M/B36.19M BE Moderate wet H2S service	
1	64		19.05mm		P01A-008N3	Pipe ASTM A671 Grade CC60 Class 22 EFW ASME B36.10M/B36.19M BE Moderate wet H2S service	
1	68		19.05mm		P01A-008N4	Pipe ASTM A671 Grade CC60 Class 22 EFW ASME B36.10M/B36.19M BE Moderate wet H2S service	
1	72		19.05mm		P01A-008N5	Pipe ASTM A671 Grade CC60 Class 22 EFW ASME B36.10M/B36.19M BE Moderate wet H2S service	
1	76		19.05mm		P01A-008N6	Pipe ASTM A671 Grade CC60 Class 22 EFW ASME B36.10M/B36.19M BE Moderate wet H2S service	
1	80		22.23mm		P01A-008N7	Pipe ASTM A671 Grade CC60 Class 22 EFW ASME B36.10M/B36.19M BE Moderate wet H2S service	
1	92		19.05mm		P01A-008TA	Pipe ASTM A671 Grade CC60 Class 22 EFW ASME B36.10M/B36.19M BE Moderate wet H2S service	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P02A-002HP	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	0.75		XXS		P02A-0043D	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	1		XXS		P02A-002GH	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	1.5		XXS		P02A-002GJ	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	2		XXS		P02A-002GA	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	3		XXS		P02A-002GL	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	4		SCH160		P02A-00119	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	6		SCH120		P02A-0011A	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	8		XS		P02A-000C4	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	10		XS		P02A-001AX	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	12		XS		P02A-000UG	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	14		XS		P02A-000UE	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	16		XS		P02A-000FJ	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	18		XS		P02A-001K2	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	20		XS		P02A-001K3	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	24		XS		P02A-001K4	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	30		XS		P02A-004WC	90 degree elbow ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Long radius Moderate wet H2S service	
1	36		XS		P02A-004WD	90 degree elbow ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Long radius Moderate wet H2S service	
1	42		14.27mm		P02A-004WE	90 degree elbow ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Long radius Moderate wet H2S service	
1	48		14.27mm		P02A-004WF	90 degree elbow ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Long radius Moderate wet H2S service	
1	52		15.88mm		P02A-004WG	90 degree elbow ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Long radius Moderate wet H2S service	
1	56		17.48mm		P02A-004WH	90 degree elbow ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Long radius Moderate wet H2S service	
1	60		17.48mm		P02A-004WJ	90 degree elbow ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Long radius Moderate wet H2S service	
1	64		19.05mm		P02A-004WK	90 degree elbow ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Long radius Moderate wet H2S service	
1	68		19.05mm		P02A-004WL	90 degree elbow ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Long radius Moderate wet H2S service	

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90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	72		19.05mm		P02A-004WM	90 degree elbow ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Long radius Moderate wet H2S service	
1	76		19.05mm		P02A-004WN	90 degree elbow ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Long radius Moderate wet H2S service	
1	80		22.23mm		P02A-004WP	90 degree elbow ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Long radius Moderate wet H2S service	
1	92		19.05mm		P02A-004WR	90 degree elbow ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Long radius Moderate wet H2S service	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P03A-002F7	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	0.75		XXS		P03A-0041D	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	1		XXS		P03A-002E4	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	1.5		XXS		P03A-002E5	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	2		XXS		P03A-002DT	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	3		XXS		P03A-002E7	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	4		SCH160		P03A-000XS	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	6		SCH120		P03A-000XT	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	8		XS		P03A-000AH	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	10		XS		P03A-0016V	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	12		XS		P03A-000RG	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	14		XS		P03A-000RE	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	16		XS		P03A-000DJ	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	18		XS		P03A-001E6	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	20		XS		P03A-001E7	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	24		XS		P03A-001E8	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	30		XS		P03A-004FV	45 degree elbow ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Long radius Moderate wet H2S service	
1	36		XS		P03A-004FW	45 degree elbow ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Long radius Moderate wet H2S service	
1	42		14.27mm		P03A-004FX	45 degree elbow ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Long radius Moderate wet H2S service	
1	48		14.27mm		P03A-004FY	45 degree elbow ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Long radius Moderate wet H2S service	
1	52		15.88mm		P03A-004FZ	45 degree elbow ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Long radius Moderate wet H2S service	
1	56		17.48mm		P03A-004G0	45 degree elbow ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Long radius Moderate wet H2S service	
1	60		17.48mm		P03A-004G1	45 degree elbow ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Long radius Moderate wet H2S service	
1	64		19.05mm		P03A-004G2	45 degree elbow ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Long radius Moderate wet H2S service	
1	68		19.05mm		P03A-004G3	45 degree elbow ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Long radius Moderate wet H2S service	
1	72		19.05mm		P03A-004G4	45 degree elbow ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Long radius Moderate wet H2S service	
1	76		19.05mm		P03A-004G5	45 degree elbow ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Long radius Moderate wet H2S service	
1	80		22.23mm		P03A-004G6	45 degree elbow ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Long radius Moderate wet H2S service	
1	92		19.05mm		P03A-004G7	45 degree elbow ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Long radius Moderate wet H2S service	

STRAIGHT LATERAL TEE (TLS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75		XXS		P22A-000FE	Straight lateral-tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW 60 degree	
1	1		XXS		P22A-000FF	Straight lateral-tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW 60 degree	
1	1.5		XXS		P22A-000FG	Straight lateral-tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW 60 degree	
1	2		XXS		P22A-000FN	Straight lateral-tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW 60 degree	
1	3		XXS		P22A-000FS	Straight lateral-tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW 60 degree	
1	4		SCH160		P22A-000FT	Straight lateral-tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW 60 degree	
1	6		SCH120		P22A-000FU	Straight lateral-tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW 60 degree	
1	8		XS		P22A-000FV	Straight lateral-tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW 60 degree	
1	10		XS		P22A-000FH	Straight lateral-tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW 60 degree	
1	12		XS		P22A-000FJ	Straight lateral-tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW 60 degree	
1	14		XS		P22A-000FK	Straight lateral-tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW 60 degree	
1	16		XS		P22A-000FL	Straight lateral-tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW 60 degree	
1	18		XS		P22A-000FM	Straight lateral-tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW 60 degree	
1	20		XS		P22A-000FP	Straight lateral-tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW 60 degree	
1	24		XS		P22A-000FR	Straight lateral-tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW 60 degree	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	XXS	XXS	P27A-00FW2	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	1	0.5	XXS	XXS	P27A-00FW3	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	1	0.75	XXS	XXS	P27A-00FW4	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	1.5	0.5	XXS	XXS	P27A-00J72	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	1.5	0.75	XXS	XXS	P27A-00J73	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	1.5	1	XXS	XXS	P27A-00B9J	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	2	0.75	XXS	XXS	P27A-00J74	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	2	1	XXS	XXS	P27A-00B9K	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	2	1.5	XXS	XXS	P27A-00B9L	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	3	1.5	XXS	XXS	P27A-00B9M	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	3	2	XXS	XXS	P27A-00B9N	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	4	1.5	SCH160	XXS	P27A-00B9P	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	4	2	SCH160	XXS	P27A-0038R	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	4	3	SCH160	XXS	P27A-00B9R	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	6	3	SCH120	XXS	P27A-00J6V	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	6	4	SCH120	SCH160	P27A-0038U	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	8	4	XS	SCH160	P27A-00J6W	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	8	6	XS	SCH120	P27A-00BN7	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	4	XS	SCH160	P27A-00J6X	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	6	XS	SCH120	P27A-00J6Y	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	8	XS	XS	P27A-004CZ	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	6	XS	SCH120	P27A-00J6Z	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	8	XS	XS	P27A-004D2	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	10	XS	XS	P27A-004D0	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	6	XS	SCH120	P27A-00J70	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	8	XS	XS	P27A-004D5	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	10	XS	XS	P27A-004D3	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	12	XS	XS	P27A-002R0	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	8	XS	XS	P27A-00J71	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	10	XS	XS	P27A-008C2	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	12	XS	XS	P27A-008C3	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	14	XS	XS	P27A-008C4	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	18	10	XS	XS	P27A-00EBA	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	18	12	XS	XS	P27A-00EBB	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	18	14	XS	XS	P27A-00EBC	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	18	16	XS	XS	P27A-009CM	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	20	12	XS	XS	P27A-00EBD	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	20	14	XS	XS	P27A-00EBE	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	20	16	XS	XS	P27A-009CR	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	20	18	XS	XS	P27A-009CS	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	24	16	XS	XS	P27A-009CT	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	24	18	XS	XS	P27A-009CU	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	24	20	XS	XS	P27A-009CV	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	30	20	XS	XS	P27A-00J75	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Moderate wet H2S service	
1	30	24	XS	XS	P27A-00HL9	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Moderate wet H2S service	
1	36	24	XS	XS	P27A-00HLA	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Moderate wet H2S service	
1	36	30	XS	XS	P27A-00HLB	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Moderate wet H2S service	
1	42	30	14.27mm	XS	P27A-00HLC	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Moderate wet H2S service	
1	42	36	14.27mm	XS	P27A-00HLD	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Moderate wet H2S service	
1	48	42	14.27mm	14.27mm	P27A-00HLE	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Moderate wet H2S service	
1	52	30	15.88mm	XS	P27A-00HLF	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	52	36	15.88mm	XS	P27A-00HLG	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	52	42	15.88mm	14.27mm	P27A-00HLH	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	52	48	15.88mm	14.27mm	P27A-00HLJ	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	56	36	17.48mm	XS	P27A-00HLK	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	56	42	17.48mm	14.27mm	P27A-00HLL	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	56	48	17.48mm	14.27mm	P27A-00HLM	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	56	52	17.48mm	15.88mm	P27A-00HLN	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	60	36	17.48mm	XS	P27A-00HLP	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Moderate wet H2S service	

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CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	60	42	17.48mm	14.27mm	P27A-00HLR	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	60	48	17.48mm	14.27mm	P27A-00HLS	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	60	52	17.48mm	15.88mm	P27A-00HLT	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	60	56	17.48mm	17.48mm	P27A-00HLU	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	64	42	19.05mm	14.27mm	P27A-00HLV	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	64	48	19.05mm	14.27mm	P27A-00HLW	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	64	52	19.05mm	15.88mm	P27A-00HLX	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	64	56	19.05mm	17.48mm	P27A-00HLY	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	64	60	19.05mm	17.48mm	P27A-00HLZ	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	68	48	19.05mm	14.27mm	P27A-00HM0	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	68	52	19.05mm	15.88mm	P27A-00HM1	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	68	56	19.05mm	17.48mm	P27A-00HM2	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	68	60	19.05mm	17.48mm	P27A-00HM3	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	68	64	19.05mm	19.05mm	P27A-00HM4	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	72	48	19.05mm	14.27mm	P27A-00HM5	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	72	52	19.05mm	15.88mm	P27A-00HM6	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	72	56	19.05mm	17.48mm	P27A-00HM7	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	72	60	19.05mm	17.48mm	P27A-00HM8	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	72	64	19.05mm	19.05mm	P27A-00HM9	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	72	68	19.05mm	19.05mm	P27A-00HMA	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	76	52	19.05mm	15.88mm	P27A-00HNE	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	76	56	19.05mm	17.48mm	P27A-00HNF	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	76	60	19.05mm	17.48mm	P27A-00HNG	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	76	64	19.05mm	19.05mm	P27A-00HNH	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	76	68	19.05mm	19.05mm	P27A-00HNJ	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	76	72	19.05mm	19.05mm	P27A-00HMB	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	80	56	22.23mm	17.48mm	P27A-00HMC	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	80	60	22.23mm	17.48mm	P27A-00HMD	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	80	64	22.23mm	19.05mm	P27A-00HME	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	80	68	22.23mm	19.05mm	P27A-00HMF	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	80	72	22.23mm	19.05mm	P27A-00HMG	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	80	76	22.23mm	19.05mm	P27A-00HUM	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	92	68	19.05mm	19.05mm	P27A-00HUN	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	92	72	19.05mm	19.05mm	P27A-00HUP	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	92	76	19.05mm	19.05mm	P27A-00HUR	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	92	80	19.05mm	22.23mm	P27A-00HUS	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Moderate wet H2S service	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	XXS	XXS	P28A-00D1P	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	1	0.5	XXS	XXS	P28A-00D1R	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	1	0.75	XXS	XXS	P28A-00D1S	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	1.5	0.5	XXS	XXS	P28A-00FH3	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	1.5	0.75	XXS	XXS	P28A-00FH4	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	1.5	1	XXS	XXS	P28A-0083J	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	2	0.75	XXS	XXS	P28A-00FH5	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	2	1	XXS	XXS	P28A-0083K	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	2	1.5	XXS	XXS	P28A-0083L	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	3	1.5	XXS	XXS	P28A-0083M	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	3	2	XXS	XXS	P28A-0083N	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	4	1.5	SCH160	XXS	P28A-0083P	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	4	2	SCH160	XXS	P28A-00387	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	4	3	SCH160	XXS	P28A-0083R	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	6	3	SCH120	XXS	P28A-00FGV	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	6	4	SCH120	SCH160	P28A-0038A	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	8	4	XS	SCH160	P28A-00FGW	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	8	6	XS	SCH120	P28A-008NG	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	4	XS	SCH160	P28A-00FGX	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	6	XS	SCH120	P28A-00FGY	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	

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ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	10	8	XS	XS	P28A-004CR	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	6	XS	SCH120	P28A-00FGZ	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	8	XS	XS	P28A-004CU	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	10	XS	XS	P28A-004CS	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	6	XS	SCH120	P28A-00FH0	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	8	XS	XS	P28A-004CX	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	10	XS	XS	P28A-004CV	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	12	XS	XS	P28A-002RJ	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	8	XS	XS	P28A-00FH1	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	10	XS	XS	P28A-00526	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	12	XS	XS	P28A-00527	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	14	XS	XS	P28A-00528	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	18	10	XS	XS	P28A-00BEB	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	18	12	XS	XS	P28A-00BEC	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	18	14	XS	XS	P28A-00BED	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	18	16	XS	XS	P28A-0064T	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	20	12	XS	XS	P28A-00BE9	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	20	14	XS	XS	P28A-00BEA	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	20	16	XS	XS	P28A-0064W	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	20	18	XS	XS	P28A-0064X	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	24	16	XS	XS	P28A-0064Y	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	24	18	XS	XS	P28A-0064Z	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	24	20	XS	XS	P28A-00650	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	30	20	XS	XS	P28A-00FH6	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Moderate wet H2S service	
1	30	24	XS	XS	P28A-00EVJ	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Moderate wet H2S service	
1	36	24	XS	XS	P28A-00EVK	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Moderate wet H2S service	
1	36	30	XS	XS	P28A-00EVL	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Moderate wet H2S service	
1	42	30	14.27mm	XS	P28A-00EVM	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Moderate wet H2S service	
1	42	36	14.27mm	XS	P28A-00EVN	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Moderate wet H2S service	
1	48	42	14.27mm	14.27mm	P28A-00EVP	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Moderate wet H2S service	
1	52	30	15.88mm	XS	P28A-00EVR	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	52	36	15.88mm	XS	P28A-00EVS	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	52	42	15.88mm	14.27mm	P28A-00EVT	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	52	48	15.88mm	14.27mm	P28A-00EVU	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	56	36	17.48mm	XS	P28A-00EVV	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	56	42	17.48mm	14.27mm	P28A-00EVW	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	56	48	17.48mm	14.27mm	P28A-00EVX	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	56	52	17.48mm	15.88mm	P28A-00EVY	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	60	36	17.48mm	XS	P28A-00EVZ	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	60	42	17.48mm	14.27mm	P28A-00EW0	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	60	48	17.48mm	14.27mm	P28A-00EW1	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	60	52	17.48mm	15.88mm	P28A-00EW2	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	60	56	17.48mm	17.48mm	P28A-00EW3	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	64	42	19.05mm	14.27mm	P28A-00EW4	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	64	48	19.05mm	14.27mm	P28A-00EW5	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	64	52	19.05mm	15.88mm	P28A-00EW6	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	64	56	19.05mm	17.48mm	P28A-00EW7	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	64	60	19.05mm	17.48mm	P28A-00EW8	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	68	48	19.05mm	14.27mm	P28A-00EW9	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	68	52	19.05mm	15.88mm	P28A-00EWA	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	68	56	19.05mm	17.48mm	P28A-00EWB	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	68	60	19.05mm	17.48mm	P28A-00EWC	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	68	64	19.05mm	19.05mm	P28A-00EWD	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	72	48	19.05mm	14.27mm	P28A-00EWE	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	72	52	19.05mm	15.88mm	P28A-00EWF	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	72	56	19.05mm	17.48mm	P28A-00EWG	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	72	60	19.05mm	17.48mm	P28A-00EWH	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	72	64	19.05mm	19.05mm	P28A-00EWJ	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	72	68	19.05mm	19.05mm	P28A-00EWK	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Moderate wet H2S service	

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ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	76	52	19.05mm	15.88mm	P28A-00EWT	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	76	56	19.05mm	17.48mm	P28A-00EWU	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	76	60	19.05mm	17.48mm	P28A-00EWV	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	76	64	19.05mm	19.05mm	P28A-00EWW	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	76	68	19.05mm	19.05mm	P28A-00EWX	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	76	72	19.05mm	19.05mm	P28A-00EWL	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	80	56	22.23mm	17.48mm	P28A-00EWM	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	80	60	22.23mm	17.48mm	P28A-00EWN	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	80	64	22.23mm	19.05mm	P28A-00EWP	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	80	68	22.23mm	19.05mm	P28A-00EWR	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	80	72	22.23mm	19.05mm	P28A-00EWS	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	80	76	22.23mm	19.05mm	P28A-00F43	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	92	68	19.05mm	19.05mm	P28A-00F46	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	92	72	19.05mm	19.05mm	P28A-00F47	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	92	76	19.05mm	19.05mm	P28A-00F44	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Moderate wet H2S service	
1	92	80	19.05mm	22.23mm	P28A-00F45	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9-modified BW Moderate wet H2S service	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P29A-001UU	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service	
1	0.75		XXS		P29A-005KZ	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service	
1	1		XXS		P29A-003CE	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service	
1	1.5		XXS		P29A-003CF	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service	
1	2		XXS		P29A-005L2	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service	
1	3		XXS		P29A-005L4	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service	
1	4		SCH160		P29A-005L5	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service	
1	6		SCH120		P29A-005L6	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service	
1	8		XS		P29A-005L7	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service	
1	10		XS		P29A-001WY	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service	
1	12		XS		P29A-001WZ	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service	
1	14		XS		P29A-001X0	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service	
1	16		XS		P29A-005L0	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service	
1	18		XS		P29A-005L1	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service	
1	20		XS		P29A-005L3	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service	
1	24		XS		P29A-001V5	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service	
1	30		XS		P29A-003WD	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service	
1	36		XS		P29A-003WE	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service	
1	42		14.27mm		P29A-003WF	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service	
1	48		14.27mm		P29A-003WG	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service	
1	52		15.88mm		P29A-003WJ	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9-modified BW Moderate wet H2S service	
1	56		17.48mm		P29A-003WK	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9-modified BW Moderate wet H2S service	
1	60		17.48mm		P29A-003WL	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9-modified BW Moderate wet H2S service	
1	64		19.05mm		P29A-003WM	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9-modified BW Moderate wet H2S service	
1	68		19.05mm		P29A-003WN	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9-modified BW Moderate wet H2S service	
1	72		19.05mm		P29A-003WP	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9-modified BW Moderate wet H2S service	
1	76		19.05mm		P29A-003WR	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9-modified BW Moderate wet H2S service	
1	80		22.23mm		P29A-003WS	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9-modified BW Moderate wet H2S service	
1	92		19.05mm		P29A-003WT	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9-modified BW Moderate wet H2S service	
541	0.75				P29B-00015	Cap ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P41A-000DJ	Straight nipple ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		XXS		P41A-000DK	Straight nipple ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		XXS		P41A-000DZ	Straight nipple ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		XXS		P41A-000E0	Straight nipple ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

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OUTLET (L)							
OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2	0.75	XXS	XXS	P31B-013L9	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	3	0.75	XXS	XXS	P31B-013LA	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	4	0.75	SCH160	XXS	P31B-013LB	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	6	0.75	SCH120	XXS	P31B-013LC	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	8	0.75	XS	XXS	P31B-013LD	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	10	0.75	XS	XXS	P31B-013LF	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	12	0.75	XS	XXS	P31B-013LH	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	14	0.75	XS	XXS	P31B-013LM	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	16	0.75	XS	XXS	P31B-013LS	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	18	0.75	XS	XXS	P31B-013LU	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	20	0.75	XS	XXS	P31B-013LW	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	24	0.75	XS	XXS	P31B-013LX	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	30	0.75	XS	XXS	P31B-013ME	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	36	0.75	XS	XXS	P31B-013MF	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	42	0.75	14.27mm	XXS	P31B-013JM	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	48	0.75	14.27mm	XXS	P31B-013MG	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	52	0.75	15.88mm	XXS	P31B-013M7	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	56	0.75	17.48mm	XXS	P31B-013MM	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	60	0.75	17.48mm	XXS	P31B-013MS	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	64	0.75	19.05mm	XXS	P31B-013MW	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	68	0.75	19.05mm	XXS	P31B-013N0	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	72	0.75	19.05mm	XXS	P31B-013MA	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	76	0.75	19.05mm	XXS	P31B-013N5	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	80	0.75	22.23mm	XXS	P31B-013N9	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	92	0.75	19.05mm	XXS	P31B-013ND	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	3	1	XXS	XXS	P31B-00TCY	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	4	1	SCH160	XXS	P31B-00NH2	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	6	1	SCH120	XXS	P31B-00NH4	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	8	1	XS	XXS	P31B-0136A	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	10	1	XS	XXS	P31B-0135G	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	12	1	XS	XXS	P31B-013LJ	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	14	1	XS	XXS	P31B-013LN	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	16	1	XS	XXS	P31B-0135U	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	18	1	XS	XXS	P31B-0135Y	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	20	1	XS	XXS	P31B-01362	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	24	1	XS	XXS	P31B-013LY	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	30	1	XS	XXS	P31B-013M1	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	36	1	XS	XXS	P31B-013M4	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	42	1	14.27mm	XXS	P31B-013JK	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	48	1	14.27mm	XXS	P31B-013MH	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	52	1	15.88mm	XXS	P31B-013M8	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	56	1	17.48mm	XXS	P31B-013MN	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	60	1	17.48mm	XXS	P31B-013MT	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	64	1	19.05mm	XXS	P31B-013MX	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	68	1	19.05mm	XXS	P31B-013N1	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	72	1	19.05mm	XXS	P31B-013MB	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	76	1	19.05mm	XXS	P31B-013N6	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	80	1	22.23mm	XXS	P31B-013NA	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	92	1	19.05mm	XXS	P31B-013NE	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	4	1.5	SCH160	XXS	P31B-00NH3	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	6	1.5	SCH120	XXS	P31B-00NH5	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	8	1.5	XS	XXS	P31B-0136B	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	10	1.5	XS	XXS	P31B-0135H	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	12	1.5	XS	XXS	P31B-013LK	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	14	1.5	XS	XXS	P31B-013LP	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	16	1.5	XS	XXS	P31B-0135V	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	18	1.5	XS	XXS	P31B-0135Z	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	20	1.5	XS	XXS	P31B-01363	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	24	1.5	XS	XXS	P31B-013LZ	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	

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OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	30	1.5	XS	XXS	P31B-013M2	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	36	1.5	XS	XXS	P31B-013M5	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	42	1.5	14.27mm	XXS	P31B-013JL	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	48	1.5	14.27mm	XXS	P31B-013MJ	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	52	1.5	15.88mm	XXS	P31B-013M9	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	56	1.5	17.48mm	XXS	P31B-013MP	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	60	1.5	17.48mm	XXS	P31B-013MU	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	64	1.5	19.05mm	XXS	P31B-013MY	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	68	1.5	19.05mm	XXS	P31B-013N2	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	72	1.5	19.05mm	XXS	P31B-013MC	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	76	1.5	19.05mm	XXS	P31B-013N7	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	80	1.5	22.23mm	XXS	P31B-013NB	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	92	1.5	19.05mm	XXS	P31B-013NF	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	6	2	SCH120	XXS	P31B-00EEH	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	8	2	XS	XXS	P31B-013LE	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	10	2	XS	XXS	P31B-013LG	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	12	2	XS	XXS	P31B-013LL	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	14	2	XS	XXS	P31B-013LR	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	16	2	XS	XXS	P31B-013LT	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	18	2	XS	XXS	P31B-013LV	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	20	2	XS	XXS	P31B-013MD	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	24	2	XS	XXS	P31B-013M0	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	30	2	XS	XXS	P31B-013M3	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	36	2	XS	XXS	P31B-013M6	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	42	2	14.27mm	XXS	P31B-013JN	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	48	2	14.27mm	XXS	P31B-013MK	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	52	2	15.88mm	XXS	P31B-013ML	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	56	2	17.48mm	XXS	P31B-013MR	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	60	2	17.48mm	XXS	P31B-013MV	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	64	2	19.05mm	XXS	P31B-013MZ	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	68	2	19.05mm	XXS	P31B-013N3	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	72	2	19.05mm	XXS	P31B-013N4	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	76	2	19.05mm	XXS	P31B-013N8	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	80	2	22.23mm	XXS	P31B-013NC	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	92	2	19.05mm	XXS	P31B-013NG	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30B-0002V	Plug ASTM A350 Grade LF2 Class 1 ASME B16.11 NPT Round head	
1	0.75				P30B-0002W	Plug ASTM A350 Grade LF2 Class 1 ASME B16.11 NPT Round head	
1	1				P30B-0002X	Plug ASTM A350 Grade LF2 Class 1 ASME B16.11 NPT Round head	
1	1.5				P30B-0002Y	Plug ASTM A350 Grade LF2 Class 1 ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P61B-003RM	Flange WN ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	0.75		XXS		P61B-00DGR	Flange WN ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	1		XXS		P61B-00DGS	Flange WN ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	1.5		XXS		P61B-00DGT	Flange WN ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	2		XXS		P61B-00CKC	Flange WN ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	3		XXS		P61B-00CPX	Flange WN ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	4		SCH160		P61B-00CS5	Flange WN ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	6		SCH120		P61B-00CTU	Flange WN ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	8		XS		P61B-00CVS	Flange WN ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	10		XS		P61B-004RV	Flange WN ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	12		XS		P61B-0032E	Flange WN ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	14		XS		P61B-0032B	Flange WN ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	16		XS		P61B-003RG	Flange WN ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	18		XS		P61B-0032M	Flange WN ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	20		XS		P61B-003RH	Flange WN ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	24		XS		P61B-002U0	Flange WN ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	30		XS		P61B-001VX	Flange WN ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.47 Series B RF	
1	36		XS		P61B-001MZ	Flange WN ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.47 Series B RF	
1	42		14.27mm		P61B-00CXA	Flange WN ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.47 Series B RF	
1	48		14.27mm		P61B-00AE8	Flange WN ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.47 Series B RF	
1	52		15.88mm		P61B-00CXB	Flange WN ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.47 Series B RF	
1	56		17.48mm		P61B-003SP	Flange WN ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.47 Series B RF	
1	60		17.48mm		P61B-00CXC	Flange WN ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.47 Series B RF	
1	64		19.05mm		P61B-00CXD	Flange WN ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing RF	
1	68		19.05mm		P61B-00CXE	Flange WN ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing RF	
1	72		19.05mm		P61B-00CXF	Flange WN ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing RF	
1	76		19.05mm		P61B-00CXG	Flange WN ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing RF	
1	80		22.23mm		P61B-00CXH	Flange WN ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing RF	
1	92		19.05mm		P61B-00CXJ	Flange WN ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing RF	
541	0.5				P61B-00AHW	Flange NPT ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
541	0.75				P61B-008VN	Flange NPT ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
773	0.5		XXS		P61B-003SD	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
773	0.75		XXS		P61B-00DGU	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
773	1		XXS		P61B-00AD2	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
773	1.5		XXS		P61B-00AD3	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
773	2		XXS		P61B-00DGH	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
773	3		XXS		P61B-00DGJ	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
773	4		SCH160		P61B-00DGK	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
773	6		SCH120		P61B-00DGL	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
773	8		XS		P61B-00DGM	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
773	10		XS		P61B-004H8	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
773	12		XS		P61B-0032F	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
773	14		XS		P61B-0032C	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
773	16		XS		P61B-001SP	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
773	18		XS		P61B-001UA	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
773	20		XS		P61B-001K7	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
773	24		XS		P61B-001LK	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
773	30		XS		P61B-001MA	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.47 Series B RF	
773	36		XS		P61B-001UD	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.47 Series B RF	
773	42		14.27mm		P61B-00AEJ	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.47 Series B RF	
773	48		14.27mm		P61B-00CXK	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.47 Series B RF	
781	3		XXS		P61B-00937	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67B-000K2	Blind flange ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	0.75				P67B-000K3	Blind flange ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	1				P67B-000K4	Blind flange ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	1.5				P67B-000K5	Blind flange ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	2				P67B-000KB	Blind flange ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	3				P67B-000KE	Blind flange ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	4				P67B-000KF	Blind flange ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	6				P67B-000KG	Blind flange ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	8				P67B-000KH	Blind flange ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	10				P67B-000K6	Blind flange ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	12				P67B-000K7	Blind flange ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	14				P67B-000K8	Blind flange ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	16				P67B-000K9	Blind flange ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	18				P67B-000KA	Blind flange ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	20				P67B-000KC	Blind flange ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	24				P67B-000KD	Blind flange ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	30				P67B-00146	Blind flange ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.47 Series B RF	
1	36				P67B-00143	Blind flange ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.47 Series B RF	

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BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	42				P67B-00140	Blind flange ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.47 Series B RF	
1	48				P67B-0013X	Blind flange ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.47 Series B RF	
1	52				P67B-0017L	Blind flange ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.47 Series B RF	
1	56				P67B-0017R	Blind flange ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.47 Series B RF	
1	60				P67B-0017T	Blind flange ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.47 Series B RF	
1	64				P67B-002X9	Blind flange ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing RF	
1	68				P67B-002XA	Blind flange ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing RF	
1	72				P67B-002XB	Blind flange ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing RF	
1	76				P67B-002XC	Blind flange ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing RF	
1	80				P67B-002XD	Blind flange ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing RF	
1	92				P67B-002XE	Blind flange ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000L8	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000L9	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000LA	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000LB	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000LH	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000LL	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000LM	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	6				P73T-000LN	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	8				P73T-000LP	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	10				P73T-000LC	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	12				P73T-000LD	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	14				P73T-000LE	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	16				P73T-000LF	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	18				P73T-000LG	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	20				P73T-000LJ	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	24				P73T-000LK	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	30				P73T-000LT	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	36				P73T-000LW	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	42				P73T-000LZ	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	48				P73T-000M2	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	52				P73T-001E2	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	56				P73T-0024L	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	60				P73T-001E5	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	64				P73T-003GZ	Spiral wound gasket SS316 winding / Graphite filler Class 150 Standard-drawing Flange Standard-drawing RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	68				P73T-003H0	Spiral wound gasket SS316 winding / Graphite filler Class 150 Standard-drawing Flange Standard-drawing RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	72				P73T-003H1	Spiral wound gasket SS316 winding / Graphite filler Class 150 Standard-drawing Flange Standard-drawing RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	76				P73T-003H2	Spiral wound gasket SS316 winding / Graphite filler Class 150 Standard-drawing Flange Standard-drawing RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	80				P73T-003H3	Spiral wound gasket SS316 winding / Graphite filler Class 150 Standard-drawing Flange Standard-drawing RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	92				P73T-003J6	Spiral wound gasket SS316 winding / Graphite filler Class 150 Standard-drawing Flange Standard-drawing RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	0.5				P73T-000FT	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	0.75				P73T-000FU	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

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GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
773	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	3				P73T-000G5	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	4				P73T-000G6	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	6				P73T-000G7	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	8				P73T-000G8	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	10				P73T-000FX	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	12				P73T-000FY	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	14				P73T-000FZ	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	16				P73T-000G0	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	18				P73T-000G1	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	20				P73T-000G3	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	24				P73T-000G4	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	30				P73T-000H9	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	36				P73T-000HC	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	42				P73T-000KM	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	48				P73T-000KR	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	3				P73T-000JL	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-16				See Attached Bolt Table	Bolt and Nut ASTM A320 Grade L7M / A194 Grade 7M ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	18-20				See Attached Bolt Table	Bolt and Nut ASTM A320 Grade L7M / A194 Grade 7M ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
1	24				See Attached Bolt Table	Bolt and Nut ASTM A320 Grade L7M / A194 Grade 7M ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	999
1	30-42				See Attached Bolt Table	Bolt and Nut ASTM A320 Grade L7M / A194 Grade 7M ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	48-56				See Attached Bolt Table	Bolt and Nut ASTM A320 Grade L7M / A194 Grade 7M ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
1	60-92				See Attached Bolt Table	Bolt and Nut ASTM A320 Grade L7M / A194 Grade 7M ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	999
773	0.5-10				See Attached Bolt Table	Bolt and Nut ASTM A320 Grade L7M / A194 Grade 7M ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
773	12-52				See Attached Bolt Table	Bolt and Nut ASTM A320 Grade L7M / A194 Grade 7M ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
781	1.5-3				See Attached Bolt Table	Bolt and Nut ASTM A320 Grade L7M / A194 Grade 7M ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81B-0036H	Gate valve ASTM A350 Grade LF2 Class 1 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service AIV service	
1	0.75				P81B-0036J	Gate valve ASTM A350 Grade LF2 Class 1 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service AIV service	
1	1				P81B-0036K	Gate valve ASTM A350 Grade LF2 Class 1 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service AIV service	
1	1.5				P81B-0036L	Gate valve ASTM A350 Grade LF2 Class 1 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service AIV service	
1	2				P81C-009WZ	Gate valve ASTM A352 Grade LCC Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service AIV service	
1	3				P81C-009X0	Gate valve ASTM A352 Grade LCC Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service AIV service	
1	4				P81C-009X1	Gate valve ASTM A352 Grade LCC Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service AIV service	
1	6				P81C-009X2	Gate valve ASTM A352 Grade LCC Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service AIV service	
1	8				P81C-009X3	Gate valve ASTM A352 Grade LCC Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service AIV service	
1	10				P81C-009WX	Gate valve ASTM A352 Grade LCC Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service AIV service	
1	12				P81C-009WY	Gate valve ASTM A352 Grade LCC Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service AIV service	
1	14				P81C-009X4	Gate valve ASTM A352 Grade LCC Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Moderate wet H2S service AIV service	
1	16				P81C-009X5	Gate valve ASTM A352 Grade LCC Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Moderate wet H2S service AIV service	

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GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	18				P81C-009X6	Gate valve ASTM A352 Grade LCC Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Moderate wet H2S service AIV service	
1	20				P81C-009X7	Gate valve ASTM A352 Grade LCC Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Moderate wet H2S service AIV service	
1	24				P81C-009X8	Gate valve ASTM A352 Grade LCC Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Moderate wet H2S service AIV service	
4608	0.75				P81B-0036M	Gate valve ASTM A350 Grade LF2 Class 1 Class 150 API 602 BW both sides w/ nipples BE - NPT ASTM A333-6 XXS-nipple Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service AIV service	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82B-0026F	Globe valve ASTM A350 Grade LF2 Class 1 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service AIV service	
1	0.75				P82B-0026G	Globe valve ASTM A350 Grade LF2 Class 1 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service AIV service	
1	1				P82B-0026H	Globe valve ASTM A350 Grade LF2 Class 1 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service AIV service	
1	1.5				P82B-0026J	Globe valve ASTM A350 Grade LF2 Class 1 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service AIV service	
1	2				P82C-004L3	Globe valve ASTM A352 Grade LCC Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service AIV service	
1	3				P82C-004L4	Globe valve ASTM A352 Grade LCC Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service AIV service	
1	4				P82C-004L5	Globe valve ASTM A352 Grade LCC Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service AIV service	
1	6				P82C-004L6	Globe valve ASTM A352 Grade LCC Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service AIV service	
1	8				P82C-004L7	Globe valve ASTM A352 Grade LCC Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service AIV service	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83B-001M6	Check valve ASTM A350 Grade LF2 Class 1 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Moderate wet H2S service AIV service	
1	0.75				P83B-001M7	Check valve ASTM A350 Grade LF2 Class 1 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Moderate wet H2S service AIV service	
1	1				P83B-001M8	Check valve ASTM A350 Grade LF2 Class 1 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Moderate wet H2S service AIV service	
1	1.5				P83B-001M9	Check valve ASTM A350 Grade LF2 Class 1 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Moderate wet H2S service AIV service	
1	2				P83C-004EL	Check valve ASTM A352 Grade LCC Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Moderate wet H2S service AIV service	
1	3				P83C-004EP	Check valve ASTM A352 Grade LCC Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Moderate wet H2S service AIV service	
1	4				P83C-004ER	Check valve ASTM A352 Grade LCC Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Moderate wet H2S service AIV service	
1	6				P83C-004ES	Check valve ASTM A352 Grade LCC Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Moderate wet H2S service AIV service	
1	8				P83C-004ET	Check valve ASTM A352 Grade LCC Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Moderate wet H2S service AIV service	
1	10				P83C-004EF	Check valve ASTM A352 Grade LCC Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Moderate wet H2S service AIV service	
1	12				P83C-004EG	Check valve ASTM A352 Grade LCC Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Moderate wet H2S service AIV service	
1	14				P83C-004EH	Check valve ASTM A352 Grade LCC Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Moderate wet H2S service AIV service	
1	16				P83C-004EJ	Check valve ASTM A352 Grade LCC Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Moderate wet H2S service AIV service	
1	18				P83C-004EK	Check valve ASTM A352 Grade LCC Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Moderate wet H2S service AIV service	
1	20				P83C-004EM	Check valve ASTM A352 Grade LCC Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Moderate wet H2S service AIV service	
1	24				P83C-004EN	Check valve ASTM A352 Grade LCC Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Moderate wet H2S service AIV service	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71B-0008T	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	0.75				P71B-0008U	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	1				P71B-0008V	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71B-0008W	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	2				P71B-0008Z	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	3				P71B-00090	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	4				P71B-00091	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	6				P71B-00092	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	8				P71B-00093	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	10				P71B-0008X	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF	

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SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	12				P71B-0008Y	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF	

PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000CP	Paddle blank ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	16				P72B-000CR	Paddle blank ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	18				P72B-000CS	Paddle blank ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	20				P72B-000CT	Paddle blank ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	24				P72B-000CU	Paddle blank ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	30				P72B-0008S	Paddle blank ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	36				P72B-0008T	Paddle blank ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	42				P72B-0008U	Paddle blank ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	48				P72B-0008V	Paddle blank ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	52				P72B-000UA	Paddle blank ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	56				P72B-000UB	Paddle blank ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	60				P72B-0008Z	Paddle blank ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	64				P72B-000UC	Paddle blank ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange Standard-drawing RF	
1	68				P72B-000UD	Paddle blank ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange Standard-drawing RF	
1	72				P72B-000UE	Paddle blank ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange Standard-drawing RF	
1	76				P72B-000UF	Paddle blank ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange Standard-drawing RF	
1	80				P72B-000UG	Paddle blank ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange Standard-drawing RF	
1	92				P72B-000UH	Paddle blank ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange Standard-drawing RF	

PADDLE SPACER (PS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000CV	Paddle spacer ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	16				P72B-000CW	Paddle spacer ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	18				P72B-000CX	Paddle spacer ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	20				P72B-000CY	Paddle spacer ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	24				P72B-000CZ	Paddle spacer ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	30				P72B-0008K	Paddle spacer ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	36				P72B-0008L	Paddle spacer ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	42				P72B-0008M	Paddle spacer ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	48				P72B-0008N	Paddle spacer ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	52				P72B-000UY	Paddle spacer ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	56				P72B-000UZ	Paddle spacer ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	60				P72B-00093	Paddle spacer ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	64				P72B-000UJ	Paddle spacer ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange Standard-drawing RF	
1	68				P72B-000UK	Paddle spacer ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange Standard-drawing RF	
1	72				P72B-000UL	Paddle spacer ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange Standard-drawing RF	
1	76				P72B-000UM	Paddle spacer ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange Standard-drawing RF	
1	80				P72B-000UN	Paddle spacer ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange Standard-drawing RF	
1	92				P72B-000UX	Paddle spacer ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange Standard-drawing RF	

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BOLT TABLE (B_A2GQVV , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	60	P80S-009UJ		
0.75	4	0.500	65	P80S-009UK		
1	4	0.500	70	P80S-009UL		
1.5	4	0.500	75	P80S-009UM		
2	4	0.625	85	P80S-00A03		
3	4	0.625	95	P80S-00A05		
4	8	0.625	95	P80S-00A05		
6	8	0.750	105	P80S-00A07		
8	8	0.750	110	P80S-00A08		
10	12	0.875	120	P80S-009XE		
12	12	0.875	120	P80S-009XE		
14	12	1.000	135	P80S-00A37		
16	16	1.000	140	P80S-00A38		
18	16	1.125	150	P80S-00A4M		
20	20	1.125	160	P80S-00A4P		
24	20	1.250	175	P80S-00CTJ		
30	44	0.750	145	P80S-00A0F		
36	44	0.875	175	P80S-009XS		
42	48	1.000	190	P80S-009XW		
48	44	1.125	210	P80S-00A50		
52	52	1.125	220	P80S-00A52		
56	60	1.125	225	P80S-00A53		
60	52	1.250	240	P80S-00CTY		
64	52	1.250	280	P80S-00CU6		
68	52	1.250	290	P80S-00CU8		
72	52	1.250	300	P80S-00CUA		
76	52	1.250	310	P80S-00CUC		
80	52	1.250	320	P80S-00CW9		
92	52	1.250	340	P80S-00CWD		

BOLT TABLE (B_A2GQVV_773 , STUD ASME RF, OPTION CODE 773)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-009UL		
0.75	4	0.625	75	P80S-00A01		
1	4	0.625	80	P80S-00A02		
1.5	4	0.750	95	P80S-009X9		
2	8	0.625	90	P80S-00A04		
3	8	0.750	110	P80S-00A08		
4	8	0.750	115	P80S-00A09		
6	12	0.750	125	P80S-00A0B		
8	12	0.875	140	P80S-009XJ		
10	16	1.000	160	P80S-00A3C		
12	16	1.125	175	P80S-00A4T		
14	20	1.125	180	P80S-00A4U		
16	20	1.250	190	P80S-00CTM		
18	24	1.250	200	P80S-00CTP		
20	24	1.250	210	P80S-00CTS		
24	24	1.500	235	P80S-00D4Z		
30	36	1.375	285	P80S-00D0P		
36	32	1.625	320	P80S-00DCR		
42	36	1.750	355	P80S-00DKU		
48	40	1.875	380	P80S-00CVW		
52	48	1.875	410	P80S-00CW2		
56	36	2.250	450			
60	40	2.250	445			

BOLT TABLE (B_A2GQVV_781 , STUD ASME RF, OPTION CODE 781)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	80			
0.75	4	0.625	90			
1	4	0.625	95			
1.5	4	0.750	110	P80S-00A08		
2	8	0.625	110			
3	8	0.750	130	P80S-00A0C		
4	8	0.875	150			
6	12	1.000	175			
8	12	1.125	195			

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BOLT TABLE (B_A2GQVV_781 , STUD ASME RF, OPTION CODE 781)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
10	16	1.250	250			
12	20	1.250	255			
14	20	1.375	270			
16	20	1.500	295			
18	20	1.625	320			
20	24	1.625	335			
24	24	1.875	380			
30	28	1.875	435			
36	28	2.250	510			
42	28	2.500	575			
48	32	2.750	635			
52	32	3.000	680			
56	32	3.250	730			
60	28	3.500	780			
64			0			
68			0			
72			0			
76			0			
80			0			

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BRANCH TABLE (T_A2GQVV)

RUN PIPE SIZE (in) \ BRANCH SIZE (in)	0.5	0.75	1	1.5	2	3	4	6	8	10	12	14	16	18	20	24	30	36	42	48	52	56	60	64	68	72	76	80	92
0.5	TS																												
0.75		TS																											
1		TR	TS																										
1.5		TR	TR	TS																									
2		L	TR	TR	TS																								
3		L	L	TR	TR	TS																							
4		L	L	L	TR	TR	TS																						
6		L	L	L	L	TR	TR	TS																					
8		L	L	L	L	9FP	TR	TR	TS																				
10		L	L	L	L	9FP	TR	TR	TR	TS																			
12		L	L	L	L	9FP	9FP	TR	TR	TR	TS																		
14		L	L	L	L	9FP	9FP	TR	TR	TR	TR	TS																	
16		L	L	L	L	9FP	9FP	TR	TR	TR	TR	TR	TS																
18		L	L	L	L	9FP	9FP	9FP	TR	TR	TR	TR	TR	TS															
20		L	L	L	L	9FP	9FP	9FP	TR	TR	TR	TR	TR	TR	TS														
24		L	L	L	L	9FP	9FP	9FP	9FP	TR	TR	TR	TR	TR	TR	TS													
30		L	L	L	L	9FP	9FP	9FP	9FP	TR	TR	TR	TR	TR	TR	TR	TS												
36		L	L	L	L	9FP	9FP	9FP	9FP	9FP	9FP	9FP	TR	TR	TR	TR	TR	TS											
42		L	L	L	L	9FP	9FP	9FP	9FP	9FP	9FP	9FP	TR	TR	TR	TR	TR	TR	TS										
48		L	L	L	L	9FP	9FP	9FP	9FP	9FP	9FP	9FP	9FP	9FP	9FP	TR	TR	TR	TR	TS									
52		L	L	L	L	9FP	9FP	9FP	9FP	9FP	9FP	9FP	9FP	9FP	9FP	9FP	TR	TR	TR	TR	TS								
56		L	L	L	L	9FP	9FP	9FP	9FP	9FP	9FP	9FP	9FP	9FP	9FP	9FP	TR	TR	TR	TR	TR	TS							
60		L	L	L	L	9FP	9FP	9FP	9FP	9FP	9FP	9FP	9FP	9FP	9FP	9FP	TR	TR	TR	TR	TR	TR	TS						
64		L	L	L	L	9FP	9FP	9FP	9FP	9FP	9FP	9FP	9FP	9FP	9FP	9FP	9FP	TR	TR	TR	TR	TR	TR	TS					
68		L	L	L	L	9FP	9FP	9FP	9FP	9FP	9FP	9FP	9FP	9FP	9FP	9FP	9FP	TR	TR	TR	TR	TR	TR	TR	TS				
72		L	L	L	L	9FP	9FP	9FP	9FP	9FP	9FP	9FP	9FP	9FP	9FP	9FP	9FP	TR	TR	TR	TR	TR	TR	TR	TR	TS			
76		L	L	L	L	9FP	9FP	9FP	9FP	9FP	9FP	9FP	9FP	9FP	9FP	9FP	9FP	9FP	TR	TR	TR	TR	TR	TR	TR	TR	TS		
80		L	L	L	L	9FP	9FP	9FP	9FP	9FP	9FP	9FP	9FP	9FP	9FP	9FP	9FP	9FP	TR	TR	TR	TR	TR	TR	TR	TR	TR	TS	
92		L	L	L	L	9FP	9FP	9FP	9FP	9FP	9FP	9FP	9FP	9FP	9FP	9FP	9FP	9FP	9FP	TR	TR	TR	TR	TR	TR	TR	TR	TR	TS

TR : REDUCING TEE
L : OUTLET
9FP : FULL PAD 90 DEG
TS : STRAIGHT TEE

INDRA
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PIPING CLASS

A2GQVV REV NO. 2

BRANCH TABLE (T_A2GQVV_3)

RUN PIPE SIZE (in) \ BRANCH SIZE (in)	0.5	0.75	1	1.5	2	3	4	6	8	10	12	14	16	18	20	24	30	36	42	48	52	56	60	64	68	72	76	80	92
0.5																													
0.75		TLS																											
1		6FP	TLS																										
1.5		6FP	6FP	TLS																									
2		6FP	6FP	6FP	TLS																								
3		6FP	6FP	6FP	6FP	TLS																							
4		6FP	6FP	6FP	6FP	6FP	TLS																						
6		6FP	6FP	6FP	6FP	6FP	6FP	TLS																					
8		6FP	6FP	6FP	6FP	6FP	6FP	6FP	TLS																				
10		6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	TLS																			
12		6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	TLS																		
14		6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	TLS																	
16		6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	TLS																
18		6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	TLS															
20		6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	TLS														
24		6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	TLS													
30		6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	TLS												
36		6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	TLS											
42		6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	TLS										
48		6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	TLS									
52		6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	TLS								
56		6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	TLS							
60		6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	TLS						
64		6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	TLS					
68		6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	TLS				
72		6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	TLS			
76		6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	TLS		
80		6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	TLS	
92		6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	6FP	TLS

6FP : FULL PAD 60 DEG
TLS : STRAIGHT LATERAL TEE

INDRA
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PIPING CLASS

A2UQ REV NO. 2

Material : CS Coated & Wrapped
Rating : ASME CLASS 150
Flange Face : RF
C.A.(mm) : 3.00
Gasket : Spiral Wound
Service : UTILITY - UNDERGROUND PROCESS SERVICE(WRAPPED AND COATED): CLOSED BLOW DOWN DRAIN HEADER

Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
5	BOLTING CONFIRMING TO B7M / 2HM SHALL BE USED UNDER CONDITIONS (A) DIRECT EXPOSURE TO SOUR ENVIRONMENTS (B) WHEN THE BOLTING WILL BE BURIED OR INSULATED
11	UNDERGROUND PIPING SHALL BE EXTERNALLY PROTECTED IN ACCORDANCE WITH PROJECT STANDARD 3550-8440-SP-0008 AND 3550-8440-SP-0009
27	PWHT OF CARBON STEEL PIPING IN WET H2S, CAUSTIC AND AMINE SERVICES SHALL BE IN ACCORDANCE WITH SECTION 10.2, 10.3, AND 10.4 OF PROJECT SPECIFICATION 3550-8440-SP-0002 MATERIALS REQUIREMENTS FOR PRESSURISED EQUIPMENT AND PIPING. FOR CAUSTIC AND AMINE SERVICE THE FOLLOWING SHALL APPLY: - PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF ALL SITE PIPING FABRICATION WELDS IS REQUIRED FOR ALL WALL THICKNESSES. FOR MODERATE AND SEVERE WET H2S SERVICE THE FOLLOWING SHALL APPLY: PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF SITE FABRICATION CIRCUMFERENTIAL OR BRANCH WELDS IS NOT REQUIRED IF WELDS ARE MULTIPASS AND IN ACCORDANCE WITH PARA 10.2.12 OF PROJECT SPECIFICATION 3550-8440-SP-0002. FOR SERVICES MEETING THE WET H2S CRITERIA AND CAUSTIC OR AMINE CRITERIA THE MORE STRINGENT PWHT REQUIREMENT SHALL GOVERN.
28	UNDERGROUND CARBON STEEL PIPING SHALL BE CATHODIC PROTECTED IN ACCORDANCE WITH PROJECT SPECIFICATIONS 3550-8440-SP-0004 AND 3550-8440-SP-0005

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
773	CLASS 300 (B,F,G)

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PIPING CLASS
A2UQ REV NO. 2

PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	4		STD		P01A-000YU	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	6		STD		P01A-000Z3	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	8		SCH20		P01A-001AT	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	10		SCH20		P01A-0014Y	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	12		SCH30		P01A-0017K	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	14		SCH20		P01A-0017A	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	16		SCH20		P01A-0018E	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	18		SCH20		P01A-00370	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	20		STD		P01A-002CC	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	24		STD		P01A-002CD	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	4		STD		P02A-000CZ	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		STD		P02A-000D6	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		SCH20		P02A-000GZ	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	10		SCH20		P02A-000H1	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	12		SCH30		P02A-000M4	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	14		SCH20		P02A-000FX	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	16		SCH20		P02A-000GM	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	18		SCH20		P02A-000LT	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	20		STD		P02A-0010J	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	24		STD		P02A-0010K	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	4		STD		P03A-000B1	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		STD		P03A-000B9	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		SCH20		P03A-000EX	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	10		SCH20		P03A-000F0	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	12		SCH30		P03A-000JU	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	14		SCH20		P03A-000DW	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	16		SCH20		P03A-000EM	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	18		SCH20		P03A-001DX	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	20		STD		P03A-000X1	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	24		STD		P03A-000X2	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	4		STD		P21A-001CW	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6		STD		P21A-001D2	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8		SCH20		P21A-00215	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10		SCH20		P21A-00219	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12		SCH30		P21A-0025A	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14		SCH20		P21A-00206	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16		SCH20		P21A-0020X	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18		SCH20		P21A-002Y1	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20		STD		P21A-002FU	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24		STD		P21A-002FV	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	6	4	STD	STD	P24A-00229	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH20	STD	P24A-00J21	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH20	STD	P24A-005J4	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	SCH20	STD	P24A-00HMB	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	SCH20	STD	P24A-00HKS	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	SCH20	SCH20	P24A-002YX	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	12	6	SCH30	STD	P24A-00HKT	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH30	SCH20	P24A-003XM	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH30	SCH20	P24A-003XL	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	SCH20	STD	P24A-00K0M	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	SCH20	SCH20	P24A-002U7	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	SCH20	SCH20	P24A-002YA	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	SCH20	SCH30	P24A-003ES	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	6	SCH20	STD	P24A-00GU4	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	SCH20	SCH20	P24A-002XW	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	SCH20	SCH20	P24A-002YH	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	SCH20	SCH30	P24A-003XN	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	SCH20	SCH20	P24A-002XF	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	8	SCH20	SCH20	P24A-00K8W	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	10	SCH20	SCH20	P24A-00GAF	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	12	SCH20	SCH30	P24A-00AF5	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	14	SCH20	SCH20	P24A-00GAH	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	16	SCH20	SCH20	P24A-00GAJ	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	8	STD	SCH20	P24A-00K8Y	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	10	STD	SCH20	P24A-00HKU	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	12	STD	SCH30	P24A-00HKV	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	14	STD	SCH20	P24A-00HKW	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	16	STD	SCH20	P24A-00HKX	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	18	STD	SCH20	P24A-0087A	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24	10	STD	SCH20	P24A-00KVZ	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24	12	STD	SCH30	P24A-00HKY	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24	14	STD	SCH20	P24A-00HME	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24	16	STD	SCH20	P24A-00HKZ	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24	18	STD	SCH20	P24A-008A5	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24	20	STD	STD	P24A-002PM	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	6	4	STD	STD	P27A-001GW	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH20	STD	P27A-003K2	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH20	STD	P27A-003K3	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	SCH20	STD	P27A-003K4	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	SCH20	STD	P27A-003K5	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	SCH20	SCH20	P27A-001UL	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	SCH30	STD	P27A-003MN	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH30	SCH20	P27A-002GG	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH30	SCH20	P27A-002GF	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	SCH20	STD	P27A-00518	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	SCH20	SCH20	P27A-001V4	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	SCH20	SCH20	P27A-001TG	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	SCH20	SCH30	P27A-0028H	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	SCH20	SCH20	P27A-001WX	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	SCH20	SCH20	P27A-001TW	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	SCH20	SCH30	P27A-002GH	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	SCH20	SCH20	P27A-001V2	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	10	SCH20	SCH20	P27A-005AX	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	12	SCH20	SCH30	P27A-005D3	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	14	SCH20	SCH20	P27A-005F3	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	16	SCH20	SCH20	P27A-005H6	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	12	STD	SCH30	P27A-005LW	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	14	STD	SCH20	P27A-005NZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	16	STD	SCH20	P27A-005S7	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	18	STD	SCH20	P27A-005TW	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24	16	STD	SCH20	P27A-005Y6	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24	18	STD	SCH20	P27A-005ZV	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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PIPING CLASS
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CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	24	20	STD	STD	P27A-0037U	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	6	4	STD	STD	P28A-00182	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH20	STD	P28A-003JU	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH20	STD	P28A-003JV	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	SCH20	STD	P28A-003JW	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	SCH20	STD	P28A-003JX	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	SCH20	SCH20	P28A-001V0	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	SCH30	STD	P28A-003MG	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH30	SCH20	P28A-002GA	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH30	SCH20	P28A-002G9	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	SCH20	STD	P28A-0096P	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	SCH20	SCH20	P28A-001WH	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	SCH20	SCH20	P28A-001TH	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	SCH20	SCH30	P28A-0027A	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	SCH20	SCH20	P28A-001T6	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	SCH20	SCH20	P28A-001TY	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	SCH20	SCH30	P28A-002GB	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	SCH20	SCH20	P28A-001WG	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	10	SCH20	SCH20	P28A-0082H	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	12	SCH20	SCH30	P28A-0066M	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	14	SCH20	SCH20	P28A-0082K	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	16	SCH20	SCH20	P28A-0082L	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	12	STD	SCH30	P28A-0096R	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	14	STD	SCH20	P28A-0096S	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	16	STD	SCH20	P28A-0096T	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	18	STD	SCH20	P28A-0063A	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24	16	STD	SCH20	P28A-0096U	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24	18	STD	SCH20	P28A-0066J	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24	20	STD	STD	P28A-0037A	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	4		STD		P29A-001VN	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	6		STD		P29A-001VS	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	8		SCH20		P29A-00364	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	10		SCH20		P29A-0035Y	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	12		SCH30		P29A-00373	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	14		SCH20		P29A-00360	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	16		SCH20		P29A-00361	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	18		SCH20		P29A-00362	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	20		STD		P29A-001VH	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	24		STD		P29A-001TM	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	12	4	SCH30	STD	P31B-00P1G	Outlet ASTM A105 MSS SP-97 BW	
1	14	4	SCH20	STD	P31B-00UPJ	Outlet ASTM A105 MSS SP-97 BW	
1	16	4	SCH20	STD	P31B-00TU3	Outlet ASTM A105 MSS SP-97 BW	
1	18	4	SCH20	STD	P31B-00P1V	Outlet ASTM A105 MSS SP-97 BW	
1	20	4	STD	STD	P31B-008D3	Outlet ASTM A105 MSS SP-97 BW	
1	24	4	STD	STD	P31B-0086X	Outlet ASTM A105 MSS SP-97 BW	
1	18	6	SCH20	STD	P31B-00P48	Outlet ASTM A105 MSS SP-97 BW	
1	20	6	STD	STD	P31B-008PZ	Outlet ASTM A105 MSS SP-97 BW	
1	24	6	STD	STD	P31B-008JD	Outlet ASTM A105 MSS SP-97 BW	

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FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	4		STD		P61B-001R8	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	6		STD		P61B-001RT	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	8		SCH20		P61B-002BF	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	10		SCH20		P61B-002B4	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	12		SCH30		P61B-002TS	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	14		SCH20		P61B-002B6	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	16		SCH20		P61B-002B7	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	18		SCH20		P61B-002B8	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	20		STD		P61B-001JA	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	24		STD		P61B-001NJ	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
773	4		STD		P61B-001MC	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	6		STD		P61B-001N2	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	8		SCH20		P61B-002LJ	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	10		SCH20		P61B-002LH	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	12		SCH30		P61B-002TV	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	14		SCH20		P61B-002MR	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	16		SCH20		P61B-002MS	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	18		SCH20		P61B-002MT	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	20		STD		P61B-001NT	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	24		STD		P61B-001PA	Flange WN ASTM A105 Class 300 ASME B16.5 RF	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	4				P67B-000FX	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	6				P67B-000FY	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	8				P67B-000FZ	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	10				P67B-000FM	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	12				P67B-000FN	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	14				P67B-000FP	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	16				P67B-000FR	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	18				P67B-000FS	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	20				P67B-000FU	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	24				P67B-000FV	Blind flange ASTM A105 Class 150 ASME B16.5 RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	4				P73T-000LM	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	6				P73T-000LN	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	8				P73T-000LP	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	10				P73T-000LC	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	12				P73T-000LD	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	14				P73T-000LE	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	16				P73T-000LF	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	18				P73T-000LG	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	20				P73T-000LJ	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	24				P73T-000LK	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	4				P73T-000G6	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	6				P73T-000G7	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	8				P73T-000G8	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	10				P73T-000FX	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	12				P73T-000FY	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	14				P73T-000FZ	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	16				P73T-000G0	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

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GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
773	18				P73T-000G1	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	20				P73T-000G3	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	24				P73T-000G4	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	4-16				See Attached Bolt Table	Bolt and Nut ASTM A307 Grade B / A563 Grade A ASME B1.1 Galvanized UNC Stud-bolt with two Heavy HEX nuts	
1	18-24				See Attached Bolt Table	Bolt and Nut ASTM A307 Grade B / A563 Grade A ASME B1.1 Galvanized 8UN Stud-bolt with two Heavy HEX nuts	
773	4-10				See Attached Bolt Table	Bolt and Nut ASTM A307 Grade B / A563 Grade A ASME B1.1 Galvanized UNC Stud-bolt with two Heavy HEX nuts	
773	12-24				See Attached Bolt Table	Bolt and Nut ASTM A307 Grade B / A563 Grade A ASME B1.1 Galvanized 8UN Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	4				P81C-004EJ	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	6				P81C-004EK	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	8				P81C-004EL	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	10				P81C-004EE	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	12				P81C-004EF	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	14				P81C-004E9	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Moderate wet H2S service	
1	16				P81C-004EA	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Moderate wet H2S service	
1	18				P81C-004EB	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Moderate wet H2S service	
1	20				P81C-004EC	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Moderate wet H2S service	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	4				P83C-0022J	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Moderate wet H2S service	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	4				P71B-0000M	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	6				P71B-0000L	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	8				P71B-0000R	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	10				P71B-0000K	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	12				P71B-0000J	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	

PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000AH	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	16				P72B-0000C	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	18				P72B-000AJ	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	20				P72B-000AK	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	24				P72B-000AL	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	

PADDLE SPACER (PS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000AT	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	16				P72B-0000B	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	18				P72B-000AU	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	20				P72B-000AV	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	24				P72B-000AW	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	

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BOLT TABLE (B_A2UQ , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
4	8	0.625	95	P80S-01GYD		
6	8	0.750	105	P80S-01GYF		
8	8	0.750	110	P80S-01GYG		
10	12	0.875	120	P80S-01H1B		
12	12	0.875	120	P80S-01H1B		
14	12	1.000	135	P80S-01H3E		
16	16	1.000	140	P80S-01H3F		
18	16	1.125	150	P80S-01H6S		
20	20	1.125	160	P80S-01H6U		
24	20	1.250	175	P80S-01HAB		

BOLT TABLE (B_A2UQ_773 , STUD ASME RF, OPTION CODE 773)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
4	8	0.750	115	P80S-01GYH		
6	12	0.750	125	P80S-01GYK		
8	12	0.875	140	P80S-01H1F		
10	16	1.000	160	P80S-01H3K		
12	16	1.125	175	P80S-01H6X		
14	20	1.125	180	P80S-01H6Y		
16	20	1.250	190	P80S-01HAE		
18	24	1.250	200	P80S-01HAG		
20	24	1.250	210	P80S-01HAJ		
24	24	1.500	235	P80S-01S4B		

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BRANCH TABLE (T_A2UQ)

RUN PIPE SIZE (in) \ BRANCH SIZE (in)	4	6	8	10	12	14	16	18	20	24
4	TS									
6	TR	TS								
8	TR	TR	TS							
10	TR	TR	TR	TS						
12	L	TR	TR	TR	TS					
14	L	TR	TR	TR	TR	TS				
16	L	TR	TR	TR	TR	TR	TS			
18	L	L	TR	TR	TR	TR	TR	TS		
20	L	L	TR	TR	TR	TR	TR	TR	TS	
24	L	L	9PD	TR	TR	TR	TR	TR	TR	TS

TS : STRAIGHT TEE
L : OUTLET
TR : REDUCING TEE
9PD : REINFORCING PAD 90 DEG

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PIPING CLASS

A31B05 REV NO. 2

Material : Killed CS
Rating : ASME CLASS 150
Flange Face : RF
C.A.(mm) : 3.00
Gasket : Spiral Wound
Service : EXHAUST TO FLARE STACK, LP BLOWDOWN
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
24	FULL PORT (Q)
200	WITH JACK SCREW (FO)
541	NPT(F) (CA,L)
714	SW - NPT(F) (V)
773	CLASS 300 (B,F,G)
781	CLASS 600 (B,F,G)

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A31B05 REV NO. 2

PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P01A-0010P	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	0.75		SCH160		P01A-0010R	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1		SCH160		P01A-0014M	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1.5		SCH160		P01A-0015J	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	2		XS		P01A-000YX	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	3		STD		P01A-000YM	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	4		STD		P01A-000YU	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	6		STD		P01A-000Z3	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	8		SCH30		P01A-001WL	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	10		SCH30		P01A-0016U	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	12		SCH30		P01A-0017K	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	14		SCH20		P01A-0017A	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	16		SCH20		P01A-0018E	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	18		SCH20		P01A-00438	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE	
1	20		STD		P01A-0042G	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P02B-0001J	90 degree elbow ASTM A105 Class 6000 ASME B16.11 SW	
1	0.75				P02B-0001K	90 degree elbow ASTM A105 Class 6000 ASME B16.11 SW	
1	1				P02B-0002E	90 degree elbow ASTM A105 Class 6000 ASME B16.11 SW	
1	1.5				P02B-0002F	90 degree elbow ASTM A105 Class 6000 ASME B16.11 SW	
1	2		XS		P02A-000CP	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		STD		P02A-000CU	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		STD		P02A-000CZ	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		STD		P02A-000D6	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		SCH30		P02A-003DK	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	10		SCH30		P02A-000M3	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	12		SCH30		P02A-000M4	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	14		SCH20		P02A-000FX	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	16		SCH20		P02A-000GM	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	18		SCH20		P02A-000LT	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	20		STD		P02A-0010J	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

90FACTORY-MADE BEND (9FM)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P08A-00127	90 degree factory-made bend ASTM A234 Grade WPB Seamless Standard-drawing BW 5DR Licensor-5	
1	0.75		SCH160		P08A-00128	90 degree factory-made bend ASTM A234 Grade WPB Seamless Standard-drawing BW 5DR Licensor-5	
1	1		SCH160		P08A-00129	90 degree factory-made bend ASTM A234 Grade WPB Seamless Standard-drawing BW 5DR Licensor-5	
1	1.5		SCH160		P08A-0012A	90 degree factory-made bend ASTM A234 Grade WPB Seamless Standard-drawing BW 5DR Licensor-5	
1	2		XS		P08A-0012F	90 degree factory-made bend ASTM A234 Grade WPB Seamless Standard-drawing BW 5DR Licensor-5	
1	3		STD		P08A-0012G	90 degree factory-made bend ASTM A234 Grade WPB Seamless Standard-drawing BW 5DR Licensor-5	
1	4		STD		P08A-0012H	90 degree factory-made bend ASTM A234 Grade WPB Seamless Standard-drawing BW 5DR Licensor-5	
1	6		STD		P08A-0012J	90 degree factory-made bend ASTM A234 Grade WPB Seamless Standard-drawing BW 5DR Licensor-5	
1	8		SCH30		P08A-0012M	90 degree factory-made bend ASTM A234 Grade WPB Seamless Standard-drawing BW 5DR Licensor-5	
1	10		SCH30		P08A-0012L	90 degree factory-made bend ASTM A234 Grade WPB Seamless Standard-drawing BW 5DR Licensor-5	
1	12		SCH30		P08A-0012C	90 degree factory-made bend ASTM A234 Grade WPB Seamless Standard-drawing BW 5DR Licensor-5	
1	14		SCH20		P08A-0012D	90 degree factory-made bend ASTM A234 Grade WPB Seamless Standard-drawing BW 5DR Licensor-5	
1	16		SCH20		P08A-0012E	90 degree factory-made bend ASTM A234 Grade WPB Seamless Standard-drawing BW 5DR Licensor-5	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P03B-0001F	45 degree elbow ASTM A105 Class 6000 ASME B16.11 SW	
1	0.75				P03B-0001G	45 degree elbow ASTM A105 Class 6000 ASME B16.11 SW	
1	1				P03B-0002A	45 degree elbow ASTM A105 Class 6000 ASME B16.11 SW	
1	1.5				P03B-0002B	45 degree elbow ASTM A105 Class 6000 ASME B16.11 SW	
1	2		XS		P03A-000AS	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		STD		P03A-000AX	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		STD		P03A-000B1	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

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45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	6		STD		P03A-000B9	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		SCH30		P03A-003BE	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	10		SCH30		P03A-000JT	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	12		SCH30		P03A-000JU	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	14		SCH20		P03A-000DW	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	16		SCH20		P03A-000EM	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	18		SCH20		P03A-001DX	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	20		STD		P03A-000X1	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

45FACTORY-MADE BEND (4FM)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P09A-0002L	45 degree factory-made bend ASTM A234 Grade WPB Seamless Standard-drawing BW 5DR Licensor-5	
1	0.75		SCH160		P09A-0002M	45 degree factory-made bend ASTM A234 Grade WPB Seamless Standard-drawing BW 5DR Licensor-5	
1	1		SCH160		P09A-0002N	45 degree factory-made bend ASTM A234 Grade WPB Seamless Standard-drawing BW 5DR Licensor-5	
1	1.5		SCH160		P09A-0002P	45 degree factory-made bend ASTM A234 Grade WPB Seamless Standard-drawing BW 5DR Licensor-5	
1	2		XS		P09A-0002V	45 degree factory-made bend ASTM A234 Grade WPB Seamless Standard-drawing BW 5DR Licensor-5	
1	3		STD		P09A-0002W	45 degree factory-made bend ASTM A234 Grade WPB Seamless Standard-drawing BW 5DR Licensor-5	
1	4		STD		P09A-0002X	45 degree factory-made bend ASTM A234 Grade WPB Seamless Standard-drawing BW 5DR Licensor-5	
1	6		STD		P09A-0002Y	45 degree factory-made bend ASTM A234 Grade WPB Seamless Standard-drawing BW 5DR Licensor-5	
1	8		SCH30		P09A-00031	45 degree factory-made bend ASTM A234 Grade WPB Seamless Standard-drawing BW 5DR Licensor-5	
1	10		SCH30		P09A-00030	45 degree factory-made bend ASTM A234 Grade WPB Seamless Standard-drawing BW 5DR Licensor-5	
1	12		SCH30		P09A-0002S	45 degree factory-made bend ASTM A234 Grade WPB Seamless Standard-drawing BW 5DR Licensor-5	
1	14		SCH20		P09A-0002T	45 degree factory-made bend ASTM A234 Grade WPB Seamless Standard-drawing BW 5DR Licensor-5	
1	16		SCH20		P09A-0002U	45 degree factory-made bend ASTM A234 Grade WPB Seamless Standard-drawing BW 5DR Licensor-5	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P21B-0001F	Straight tee ASTM A105 Class 6000 ASME B16.11 SW	
1	0.75				P21B-0001G	Straight tee ASTM A105 Class 6000 ASME B16.11 SW	
1	1				P21B-00026	Straight tee ASTM A105 Class 6000 ASME B16.11 SW	
1	1.5				P21B-00027	Straight tee ASTM A105 Class 6000 ASME B16.11 SW	
1	2		XS		P21A-001CJ	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		STD		P21A-001CU	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		STD		P21A-001CW	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6		STD		P21A-001D2	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8		SCH30		P21A-003WV	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10		SCH30		P21A-00259	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12		SCH30		P21A-0025A	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14		SCH20		P21A-00206	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16		SCH20		P21A-0020X	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18		SCH20		P21A-001PJ	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20		STD		P21A-001C7	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	

STRAIGHT LATERAL TEE (TLS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75				P22B-00004	Straight lateral-tee ASTM A105 Class 6000 ASME B16.11 SW 60 degree	
1	1				P22B-00005	Straight lateral-tee ASTM A105 Class 6000 ASME B16.11 SW 60 degree	
1	1.5				P22B-00006	Straight lateral-tee ASTM A105 Class 6000 ASME B16.11 SW 60 degree	
1	2		XS		P22A-000DW	Straight lateral-tee ASTM A234 Grade WPB Seamless ASME B16.9 BW 60 degree	
1	3		STD		P22A-000DJ	Straight lateral-tee ASTM A234 Grade WPB Seamless ASME B16.9 BW 60 degree	
1	4		STD		P22A-000DX	Straight lateral-tee ASTM A234 Grade WPB Seamless ASME B16.9 BW 60 degree	
1	6		STD		P22A-000DY	Straight lateral-tee ASTM A234 Grade WPB Seamless ASME B16.9 BW 60 degree	
1	8		SCH30		P22A-000D8	Straight lateral-tee ASTM A234 Grade WPB Seamless ASME B16.9 BW 60 degree	
1	10		SCH30		P22A-000DS	Straight lateral-tee ASTM A234 Grade WPB Seamless ASME B16.9 BW 60 degree	
1	12		SCH30		P22A-000DT	Straight lateral-tee ASTM A234 Grade WPB Seamless ASME B16.9 BW 60 degree	
1	14		SCH20		P22A-000DU	Straight lateral-tee ASTM A234 Grade WPB Seamless ASME B16.9 BW 60 degree	
1	16		SCH20		P22A-000DV	Straight lateral-tee ASTM A234 Grade WPB Seamless ASME B16.9 BW 60 degree	
1	18		SCH20		P22A-000FW	Straight lateral-tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW 60 degree	
1	20		STD		P22A-000FX	Straight lateral-tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW 60 degree	

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REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75			P24B-00030	Reducing tee ASTM A105 Class 6000 ASME B16.11 SW	
1	1.5	0.75			P24B-00032	Reducing tee ASTM A105 Class 6000 ASME B16.11 SW	
1	1.5	1			P24B-0004J	Reducing tee ASTM A105 Class 6000 ASME B16.11 SW	
1	2	1	XS	SCH160	P24A-00GMB	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	XS	SCH160	P24A-005K9	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	STD	SCH160	P24A-00GMC	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	STD	XS	P24A-002HW	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P24A-002HY	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P24A-0021K	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	STD	P24A-0021A	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P24A-00229	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH30	STD	P24A-00JVH	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH30	STD	P24A-00JVG	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	SCH30	STD	P24A-00GNR	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	SCH30	STD	P24A-0060W	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	SCH30	SCH30	P24A-00J15	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	SCH30	STD	P24A-00HKT	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH30	SCH30	P24A-00M36	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH30	SCH30	P24A-003ET	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	SCH20	STD	P24A-00K0M	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	SCH20	SCH30	P24A-00M37	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	SCH20	SCH30	P24A-003ER	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	SCH20	SCH30	P24A-003ES	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	6	SCH20	STD	P24A-00GU4	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	SCH20	SCH30	P24A-00M38	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	SCH20	SCH30	P24A-00KSH	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	SCH20	SCH30	P24A-003XN	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	SCH20	SCH20	P24A-002XF	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	8	SCH20	SCH30	P24A-00BNK	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	10	SCH20	SCH30	P24A-00BF6	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	12	SCH20	SCH30	P24A-00BH0	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	14	SCH20	SCH20	P24A-002WT	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	16	SCH20	SCH20	P24A-002X5	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	8	STD	SCH30	P24A-00M39	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	10	STD	SCH30	P24A-00BT8	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	12	STD	SCH30	P24A-00BUT	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	14	STD	SCH20	P24A-00BWB	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	16	STD	SCH20	P24A-006W3	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	18	STD	SCH20	P24A-006WD	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	STD	XS	P27A-001MZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P27A-001N0	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P27A-00189	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	STD	P27A-001AZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P27A-001GW	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH30	STD	P27A-00ED2	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH30	STD	P27A-00ECY	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	SCH30	STD	P27A-003MK	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	SCH30	STD	P27A-003ML	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	SCH30	SCH30	P27A-004T9	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	SCH30	STD	P27A-003MN	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH30	SCH30	P27A-004XA	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH30	SCH30	P27A-0028K	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	SCH20	STD	P27A-00518	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	SCH20	SCH30	P27A-0052J	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	SCH20	SCH30	P27A-0028G	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	SCH20	SCH30	P27A-0028H	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	16	8	SCH20	SCH30	P27A-0059E	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	SCH20	SCH30	P27A-003NC	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	SCH20	SCH30	P27A-002GH	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	SCH20	SCH20	P27A-001V2	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	10	SCH20	SCH30	P27A-0084J	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	12	SCH20	SCH30	P27A-0084K	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	14	SCH20	SCH20	P27A-001UY	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	16	SCH20	SCH20	P27A-001WN	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	12	STD	SCH30	P27A-0082K	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	14	STD	SCH20	P27A-0082L	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	16	STD	SCH20	P27A-0082M	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	18	STD	SCH20	P27A-0084N	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	STD	XS	P28A-001N5	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P28A-001N6	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P28A-0018B	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	STD	P28A-001AS	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P28A-00182	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH30	STD	P28A-00BFY	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH30	STD	P28A-00BFZ	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	SCH30	STD	P28A-003MD	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	SCH30	STD	P28A-003ME	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	SCH30	SCH30	P28A-00A4S	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	SCH30	STD	P28A-003MG	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH30	SCH30	P28A-00BGV	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH30	SCH30	P28A-0027C	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	SCH20	STD	P28A-0096P	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	SCH20	SCH30	P28A-00DA3	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	SCH20	SCH30	P28A-00279	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	SCH20	SCH30	P28A-0027A	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	SCH20	SCH30	P28A-00DA4	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	SCH20	SCH30	P28A-003N6	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	SCH20	SCH30	P28A-002GB	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	SCH20	SCH20	P28A-001WG	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	10	SCH20	SCH30	P28A-004UL	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	12	SCH20	SCH30	P28A-004UM	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	14	SCH20	SCH20	P28A-001WD	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	16	SCH20	SCH20	P28A-001T1	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	12	STD	SCH30	P28A-004SH	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	14	STD	SCH20	P28A-004SJ	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	16	STD	SCH20	P28A-004SK	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	18	STD	SCH20	P28A-004UN	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P29B-0002F	Cap ASTM A105 Class 6000 ASME B16.11 SW	
1	0.75				P29B-0002G	Cap ASTM A105 Class 6000 ASME B16.11 SW	
1	1				P29B-0002D	Cap ASTM A105 Class 6000 ASME B16.11 SW	
1	1.5				P29B-0002E	Cap ASTM A105 Class 6000 ASME B16.11 SW	
1	2		XS		P29A-000A1	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		STD		P29A-000BK	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		STD		P29A-000A3	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6		STD		P29A-000A9	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8		SCH30		P29A-000PC	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10		SCH30		P29A-000K7	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12		SCH30		P29A-000PZ	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14		SCH20		P29A-000EA	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	16		SCH20		P29A-000F3	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18		SCH20		P29A-000E0	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20		STD		P29A-000B2	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
541	0.75				P29B-0000Y	Cap ASTM A105 Class 6000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P41A-000B9	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		XXS		P41A-000BA	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		XXS		P41A-000D8	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		XXS		P41A-000D9	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

CON SWAGED NIPPLE (SNC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	SCH160	P42A-00029	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	SCH160	SCH160	P42A-0009T	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	SCH160	SCH160	P42A-0009U	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	SCH160	SCH160	P42A-0009V	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	SCH160	SCH160	P42A-0009W	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	SCH160	SCH160	P42A-0009X	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	XS	SCH160	P42A-000J6	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	XS	SCH160	P42A-000J7	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	XS	SCH160	P42A-000F8	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	XS	SCH160	P42A-000KZ	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	STD	SCH160	P42A-000L0	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	

ECC SWAGED NIPPLE (SNE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	SCH160	P43A-000AM	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	SCH160	SCH160	P43A-000B4	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	SCH160	SCH160	P43A-000B5	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	SCH160	SCH160	P43A-000B6	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	SCH160	SCH160	P43A-000B7	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	SCH160	SCH160	P43A-000B8	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	XS	SCH160	P43A-000B2	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	XS	SCH160	P43A-000B3	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	XS	SCH160	P43A-000CZ	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	XS	SCH160	P43A-000D0	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	STD	SCH160	P43A-000D1	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	

COUPLING (CPS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P47B-00013	Coupling ASTM A105 Class 6000 ASME B16.11 SW - SW	
1	0.75				P47B-00012	Coupling ASTM A105 Class 6000 ASME B16.11 SW - SW	
1	1				P47B-0002A	Coupling ASTM A105 Class 6000 ASME B16.11 SW - SW	
1	1.5				P47B-0002B	Coupling ASTM A105 Class 6000 ASME B16.11 SW - SW	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5 - 2.5	0.75			P31B-0137D	Outlet ASTM A105 Class 6000 MSS SP-97 SW	
1	3 - 10	0.75			P31B-007LV	Outlet ASTM A105 Class 6000 MSS SP-97 SW	
1	12 and larger	0.75			P31B-0136N	Outlet ASTM A105 Class 6000 MSS SP-97 SW	
1	3 - 10	1			P31B-007LN	Outlet ASTM A105 Class 6000 MSS SP-97 SW	
1	12 and larger	1			P31B-0136P	Outlet ASTM A105 Class 6000 MSS SP-97 SW	
1	4 - 5	1.5			P31B-004LE	Outlet ASTM A105 Class 6000 MSS SP-97 SW	
1	6 - 8	1.5			P31B-005T4	Outlet ASTM A105 Class 6000 MSS SP-97 SW	
1	10 - 18	1.5			P31B-007LF	Outlet ASTM A105 Class 6000 MSS SP-97 SW	
1	20 and larger	1.5			P31B-0137E	Outlet ASTM A105 Class 6000 MSS SP-97 SW	

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OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
541	1	0.75			P31B-005HL	Outlet ASTM A105 Class 6000 MSS SP-97 NPT	
541	1.5 - 2.5	0.75			P31B-0137F	Outlet ASTM A105 Class 6000 MSS SP-97 NPT	
541	3 - 10	0.75			P31B-007KP	Outlet ASTM A105 Class 6000 MSS SP-97 NPT	
541	12 and larger	0.75			P31B-0138A	Outlet ASTM A105 Class 6000 MSS SP-97 NPT	
1	6	2	STD	XS	P31B-007SH	Outlet ASTM A105 MSS SP-97 BW	
1	8	2	SCH30	XS	P31B-00X36	Outlet ASTM A105 MSS SP-97 BW	
1	10	2	SCH30	XS	P31B-00NVF	Outlet ASTM A105 MSS SP-97 BW	
1	12	2	SCH30	XS	P31B-00NVL	Outlet ASTM A105 MSS SP-97 BW	
1	14	2	SCH20	XS	P31B-00TF9	Outlet ASTM A105 MSS SP-97 BW	
1	16	2	SCH20	XS	P31B-00TF8	Outlet ASTM A105 MSS SP-97 BW	
1	18	2	SCH20	XS	P31B-00NVX	Outlet ASTM A105 MSS SP-97 BW	
1	20	2	STD	XS	P31B-00994	Outlet ASTM A105 MSS SP-97 BW	
1	8	3	SCH30	STD	P31B-00X37	Outlet ASTM A105 MSS SP-97 BW	
1	10	3	SCH30	STD	P31B-00NYK	Outlet ASTM A105 MSS SP-97 BW	
1	12	3	SCH30	STD	P31B-00NYR	Outlet ASTM A105 MSS SP-97 BW	
1	14	3	SCH20	STD	P31B-00UPH	Outlet ASTM A105 MSS SP-97 BW	
1	16	3	SCH20	STD	P31B-00TU2	Outlet ASTM A105 MSS SP-97 BW	
1	18	3	SCH20	STD	P31B-00NZ4	Outlet ASTM A105 MSS SP-97 BW	
1	20	3	STD	STD	P31B-008FA	Outlet ASTM A105 MSS SP-97 BW	
1	12	4	SCH30	STD	P31B-00P1G	Outlet ASTM A105 MSS SP-97 BW	
1	14	4	SCH20	STD	P31B-00UPJ	Outlet ASTM A105 MSS SP-97 BW	
1	16	4	SCH20	STD	P31B-00TU3	Outlet ASTM A105 MSS SP-97 BW	
1	18	4	SCH20	STD	P31B-00P1V	Outlet ASTM A105 MSS SP-97 BW	
1	20	4	STD	STD	P31B-008D3	Outlet ASTM A105 MSS SP-97 BW	
1	18	6	SCH20	STD	P31B-00P48	Outlet ASTM A105 MSS SP-97 BW	
1	20	6	STD	STD	P31B-008PZ	Outlet ASTM A105 MSS SP-97 BW	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30B-0002D	Plug ASTM A105 ASME B16.11 NPT Round head	
1	0.75				P30B-0002E	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1				P30B-0002F	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1.5				P30B-0002G	Plug ASTM A105 ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P61B-002D4	Flange SW ASTM A105 Class 150 ASME B16.5 RF	
1	0.75		SCH160		P61B-002DE	Flange SW ASTM A105 Class 150 ASME B16.5 RF	
1	1		SCH160		P61B-002DU	Flange SW ASTM A105 Class 150 ASME B16.5 RF	
1	1.5		SCH160		P61B-002EM	Flange SW ASTM A105 Class 150 ASME B16.5 RF	
1	2		XS		P61B-003NK	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	3		STD		P61B-001PW	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	4		STD		P61B-001R8	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	6		STD		P61B-001RT	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	8		SCH30		P61B-003FP	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	10		SCH30		P61B-003FS	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	12		SCH30		P61B-002TS	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	14		SCH20		P61B-002B6	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	16		SCH20		P61B-002B7	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	18		SCH20		P61B-002B8	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	20		STD		P61B-001JA	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
773	0.5		SCH160		P61B-001H5	Flange SW ASTM A105 Class 300 ASME B16.5 RF	
773	0.75		SCH160		P61B-001HH	Flange SW ASTM A105 Class 300 ASME B16.5 RF	
773	1		SCH160		P61B-001E8	Flange SW ASTM A105 Class 300 ASME B16.5 RF	
773	1.5		SCH160		P61B-001ET	Flange SW ASTM A105 Class 300 ASME B16.5 RF	
773	2		XS		P61B-001HW	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	3		STD		P61B-001LJ	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	4		STD		P61B-001MC	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	6		STD		P61B-001N2	Flange WN ASTM A105 Class 300 ASME B16.5 RF	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
773	8		SCH30		P61B-008S0	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	10		SCH30		P61B-003LX	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	12		SCH30		P61B-002TV	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	14		SCH20		P61B-002MR	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	16		SCH20		P61B-002MS	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	18		SCH20		P61B-002MT	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	20		STD		P61B-001NT	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
781	0.5		SCH160		P61B-001DZ	Flange SW ASTM A105 Class 600 ASME B16.5 RF	
781	0.75		SCH160		P61B-001DW	Flange SW ASTM A105 Class 600 ASME B16.5 RF	
781	1		SCH160		P61B-005X5	Flange SW ASTM A105 Class 600 ASME B16.5 RF	
781	1.5		SCH160		P61B-005X6	Flange SW ASTM A105 Class 600 ASME B16.5 RF	
781	2		XS		P61B-001DH	Flange WN ASTM A105 Class 600 ASME B16.5 RF	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67B-000FH	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	0.75				P67B-000FJ	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	1				P67B-000FK	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	1.5				P67B-000FL	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	2				P67B-000FT	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	3				P67B-000FW	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	4				P67B-000FX	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	6				P67B-000FY	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	8				P67B-000FZ	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	10				P67B-000FM	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	12				P67B-000FN	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	14				P67B-000FP	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	16				P67B-000FR	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	18				P67B-000FS	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	20				P67B-000FU	Blind flange ASTM A105 Class 150 ASME B16.5 RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-0033Y	Spiral wound gasket SS316 winding / Non-asbestos filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-5	
1	0.75				P73T-0033Z	Spiral wound gasket SS316 winding / Non-asbestos filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-5	
1	1				P73T-00340	Spiral wound gasket SS316 winding / Non-asbestos filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-5	
1	1.5				P73T-00341	Spiral wound gasket SS316 winding / Non-asbestos filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-5	
1	2				P73T-00342	Spiral wound gasket SS316 winding / Non-asbestos filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-5	
1	3				P73T-00343	Spiral wound gasket SS316 winding / Non-asbestos filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-5	
1	4				P73T-00344	Spiral wound gasket SS316 winding / Non-asbestos filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-5	
1	6				P73T-00345	Spiral wound gasket SS316 winding / Non-asbestos filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-5	
1	8				P73T-00346	Spiral wound gasket SS316 winding / Non-asbestos filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-5	
1	10				P73T-0038B	Spiral wound gasket SS316 winding / Non-asbestos filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-5	
1	12				P73T-0038C	Spiral wound gasket SS316 winding / Non-asbestos filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-5	
1	14				P73T-0038D	Spiral wound gasket SS316 winding / Non-asbestos filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-5	
1	16				P73T-0038E	Spiral wound gasket SS316 winding / Non-asbestos filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-5	
1	18				P73T-0038F	Spiral wound gasket SS316 winding / Non-asbestos filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-5	
1	20				P73T-0038G	Spiral wound gasket SS316 winding / Non-asbestos filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-5	
773	0.5				P73T-00347	Spiral wound gasket SS316 winding / Non-asbestos filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-5	
773	0.75				P73T-00348	Spiral wound gasket SS316 winding / Non-asbestos filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-5	
773	1				P73T-00349	Spiral wound gasket SS316 winding / Non-asbestos filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-5	
773	1.5				P73T-0034A	Spiral wound gasket SS316 winding / Non-asbestos filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-5	

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GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
773	2				P73T-0034B	Spiral wound gasket SS316 winding / Non-asbestos filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-5	
773	3				P73T-0034C	Spiral wound gasket SS316 winding / Non-asbestos filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-5	
773	4				P73T-0034D	Spiral wound gasket SS316 winding / Non-asbestos filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-5	
773	6				P73T-0034E	Spiral wound gasket SS316 winding / Non-asbestos filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-5	
773	8				P73T-0034F	Spiral wound gasket SS316 winding / Non-asbestos filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-5	
773	10				P73T-0038K	Spiral wound gasket SS316 winding / Non-asbestos filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-5	
773	12				P73T-0038L	Spiral wound gasket SS316 winding / Non-asbestos filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-5	
773	14				P73T-0038M	Spiral wound gasket SS316 winding / Non-asbestos filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-5	
773	16				P73T-0038N	Spiral wound gasket SS316 winding / Non-asbestos filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-5	
773	18				P73T-0038P	Spiral wound gasket SS316 winding / Non-asbestos filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-5	
773	20				P73T-0038R	Spiral wound gasket SS316 winding / Non-asbestos filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-5	
781	0.5				P73T-003H5	Spiral wound gasket SS316 winding / Non-asbestos filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-5	
781	0.75				P73T-003H6	Spiral wound gasket SS316 winding / Non-asbestos filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-5	
781	1				P73T-003GR	Spiral wound gasket SS316 winding / Non-asbestos filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-5	
781	1.5				P73T-003GS	Spiral wound gasket SS316 winding / Non-asbestos filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-5	
781	2				P73T-003GT	Spiral wound gasket SS316 winding / Non-asbestos filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-5	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-16				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	18-20				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
773	0.5-10				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
773	12-20				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
781	0.5-6				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81B-000P4	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	0.75				P81B-000NX	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	1				P81B-000NY	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	1.5				P81B-000NZ	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	2				P81C-002DV	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	3				P81C-002DW	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	4				P81C-002DX	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	6				P81C-002DY	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	8				P81C-002DZ	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	10				P81C-002DT	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	12				P81C-002DU	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	14				P81C-00308	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated	
1	16				P81C-002E0	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated	
1	18				P81C-002E1	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated	
1	20				P81C-002E2	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated	
714	0.5				P81B-0015L	Gate valve ASTM A105 Class 800 API 602 SW - NPT Trim number 8 BB-BG-OS&Y Handwheel operated	
714	0.75				P81B-002F4	Gate valve ASTM A105 Class 800 API 602 SW - NPT Trim number 8 BB-BG-OS&Y Handwheel operated	

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GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82B-000K0	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	0.75				P82B-000HB	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	1				P82B-000HC	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	1.5				P82B-000HD	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	2				P82C-000N5	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	3				P82C-000N6	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	4				P82C-000N7	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	6				P82C-000N8	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	8				P82C-0026L	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83B-000FX	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover	
1	0.75				P83B-000ER	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover	
1	1				P83B-000ES	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover	
1	1.5				P83B-000ET	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover	
1	2				P83C-00144	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	3				P83C-00147	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	4				P83C-00148	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	6				P83C-00149	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	8				P83C-0014A	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	10				P83C-00140	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	12				P83C-00141	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	14				P83C-0021E	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	16				P83C-00142	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	18				P83C-00143	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	20				P83C-00145	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	

BALL VALVE (Q)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P84B-0011T	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design	
1	0.75				P84B-0011U	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design	
1	1				P84B-0011V	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design	
1	1.5				P84B-0011W	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design	
1	2				P84C-005UD	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design	
1	3				P84C-005UE	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design	
1	4				P84C-005UF	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design	
1	6				P84C-005UG	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Reduced bore Fire tested design	
1	8				P84C-005UH	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Reduced bore Fire tested design	
1	10				P84C-006MS	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Reduced bore Fire tested design	
1	12				P84C-006MT	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Reduced bore Fire tested design	
1	14				P84C-006MU	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Reduced bore Fire tested design	
1	16				P84C-006MV	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Reduced bore Fire tested design	
1	18				P84C-006MW	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Reduced bore Fire tested design	
1	20				P84C-006MX	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Reduced bore Fire tested design	
24	0.5				P84B-0011X	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	
2	0.75				P84B-0011Y	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	

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BALL VALVE (Q)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
24	1				P84B-0011Z	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	
24	1.5				P84B-00120	Ball valve Long-pattern ASTM A105 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	
24	2				P84C-005UJ	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	
24	3				P84C-005UK	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	
24	4				P84C-005UL	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	
24	6				P84C-005UM	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design	
24	8				P84C-005UN	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design	
24	10				P84C-006MZ	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design	
24	12				P84C-006N0	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design	
24	14				P84C-006N1	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design	
24	16				P84C-006N2	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design	
24	18				P84C-006N3	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design	
24	20				P84C-006N4	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design	

BUTTERFLY VALVE (H)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	10				P86C-00230	Offset design butterfly valve ASTM A216 Grade WCB Class 150 API 609 Category B Lug-type ASME B16.5 RF Disc CS Seat Stellite-6 Trim 13Cr Triple eccentric design BG Gear operated	
1	12				P86C-00231	Offset design butterfly valve ASTM A216 Grade WCB Class 150 API 609 Category B Lug-type ASME B16.5 RF Disc CS Seat Stellite-6 Trim 13Cr Triple eccentric design BG Gear operated	
1	14				P86C-00232	Offset design butterfly valve ASTM A216 Grade WCB Class 150 API 609 Category B Lug-type ASME B16.5 RF Disc CS Seat Stellite-6 Trim 13Cr Triple eccentric design BG Gear operated	

ORIFICE FLANGE (FO)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14		SCH20		P66B-0084A	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
200	14		SCH20		P66B-00842	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71B-0008A	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	0.75				P71B-0008B	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	1				P71B-0008C	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71B-0008D	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	2				P71B-0000P	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	3				P71B-0000N	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	4				P71B-0000M	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	6				P71B-0000L	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	8				P71B-0000R	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	10				P71B-0000K	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	12				P71B-0000J	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	

PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000AH	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	16				P72B-0000C	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	18				P72B-000AJ	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	20				P72B-000AK	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	

PADDLE SPACER (PS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000AT	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	16				P72B-0000B	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	18				P72B-000AU	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	20				P72B-000AV	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	

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BOLT TABLE (B_A31B05 , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	60	P80S-003V2		
0.75	4	0.500	65	P80S-003V3		
1	4	0.500	70	P80S-003V4		
1.5	4	0.500	75	P80S-003V5		
2	4	0.625	85	P80S-003XE		
3	4	0.625	95	P80S-003XG		
4	8	0.625	95	P80S-003XG		
6	8	0.750	105	P80S-003XJ		
8	8	0.750	110	P80S-003XK		
10	12	0.875	120	P80S-00419		
12	12	0.875	120	P80S-00419		
14	12	1.000	135	P80S-0043E		
16	16	1.000	140	P80S-0043F		
18	16	1.125	150	P80S-0046K		
20	20	1.125	160	P80S-0046M		

BOLT TABLE (B_A31B05_773 , STUD ASME RF, OPTION CODE 773)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-003V4		
0.75	4	0.625	75	P80S-003XC		
1	4	0.625	80	P80S-003XD		
1.5	4	0.750	95	P80S-00414		
2	8	0.625	90	P80S-003XF		
3	8	0.750	110	P80S-003XK		
4	8	0.750	115	P80S-003XL		
6	12	0.750	125	P80S-003XN		
8	12	0.875	140	P80S-0041D		
10	16	1.000	160	P80S-0043K		
12	16	1.125	175	P80S-0046S		
14	20	1.125	180	P80S-0046T		
16	20	1.250	190	P80S-004AK		
18	24	1.250	200	P80S-004AM		
20	24	1.250	210	P80S-004AP		

BOLT TABLE (B_A31B05_781 , STUD ASME RF, OPTION CODE 781)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	80	P80S-003V6		
0.75	4	0.625	90	P80S-003XF		
1	4	0.625	95	P80S-003XG		
1.5	4	0.750	110	P80S-003XK		
2	8	0.625	110	P80S-003VC		
3	8	0.750	130	P80S-003XP		
4	8	0.875	150	P80S-0041F		
6	12	1.000	175	P80S-0043P		
8	12	1.125	195			
10	16	1.250	250			
12	20	1.250	255			
14	20	1.375	270			
16	20	1.500	295			
18	20	1.625	320			
20	24	1.625	335			

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BRANCH TABLE (T_A31B05)

RUN PIPE SIZE (in) \ BRANCH SIZE (in)	0.5	0.75	1	1.5	2	3	4	6	8	10	12	14	16	18	20
0.5	TS														
0.75		TS													
1		TR	TS												
1.5		TR	TR	TS											
2		L	TR	TR	TS										
3		L	L	TR	TR	TS									
4	L	L	L	L	TR	TR	TS								
6	L	L	L	L	L	TR	TR	TS							
8		L	L	L	L	L	TR	TR	TS						
10		L	L	L	L	L	TR	TR	TR	TS					
12		L	L	L	L	L	L	TR	TR	TR	TS				
14		L	L	L	L	L	L	TR	TR	TR	TR	TS			
16		L	L	L	L	L	L	TR	TR	TR	TR	TR	TS		
18		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TS	
20		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TR	TS

L : OUTLET
TR : REDUCING TEE
TS : STRAIGHT TEE

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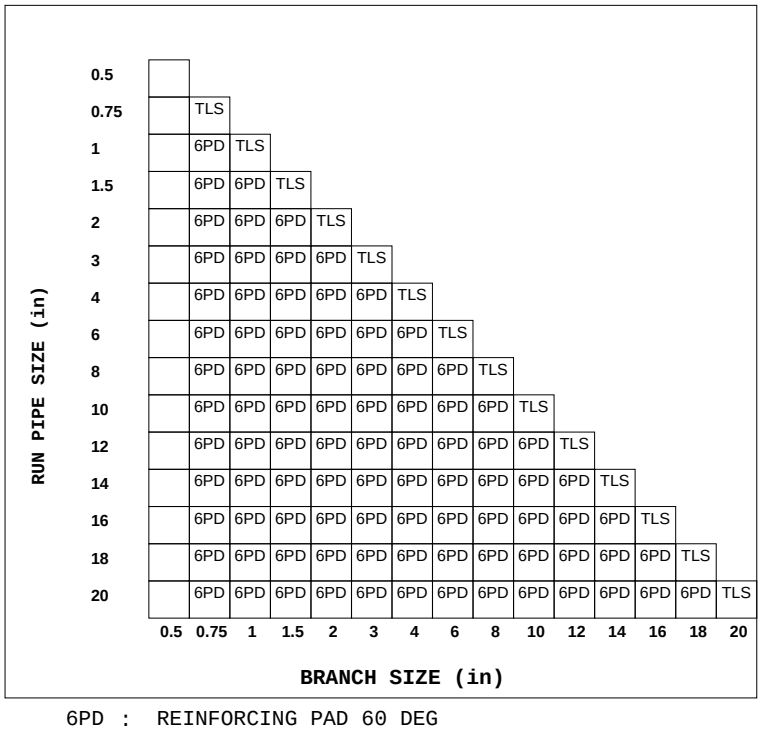
PIPING CLASS

A31B05 REV NO. 2

BRANCH TABLE (T_A31B05_3)



RUN PIPE SIZE (in) \ BRANCH SIZE (in)	0.5	0.75	1	1.5	2	3	4	6	8	10	12	14	16	18	20
0.5															
0.75		TLS													
1		6PD	TLS												
1.5		6PD	6PD	TLS											
2		6PD	6PD	6PD	TLS										
3		6PD	6PD	6PD	6PD	TLS									
4		6PD	6PD	6PD	6PD	6PD	TLS								
6		6PD	6PD	6PD	6PD	6PD	6PD	TLS							
8		6PD	6PD	6PD	6PD	6PD	6PD	6PD	TLS						
10		6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	TLS					
12		6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	TLS				
14		6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	TLS			
16		6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	TLS		
18		6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	TLS	
20		6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	TLS

6PD : REINFORCING PAD 60 DEG
TLS : STRAIGHT LATERAL TEE

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PIPING CLASS

A31F05 REV NO. 2

Material : SS304L
Rating : ASME CLASS 150
Flange Face : RF
C.A.(mm) : 0.00
Gasket : Spiral Wound
Service : STEAM CONDENSATE, LP STEAM, MINERAL OIL, GREASE, VENT GAS
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
24	FULL PORT (Q)
200	WITH JACK SCREW (FO)
221	RF (V)
541	NPT(F) (CA,L)
714	SW - NPT(F) (V)
773	CLASS 300 (B,F,G)

INDRA
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PIPING CLASS
A31F05 REV NO. 2

PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P01J-000UC	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE	
1	0.75		SCH80S		P01J-000UD	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE	
1	1		SCH80S		P01J-000UE	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE	
1	1.5		SCH80S		P01J-000UF	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE	
1	2		SCH10S		P01J-000RD	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M BE	
1	3		SCH10S		P01J-000RE	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M BE	
1	4		SCH10S		P01J-000RF	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M BE	
1	6		SCH10S		P01J-000RG	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M BE	
1	8		SCH10S		P01J-001F7	Pipe ASTM A358 Grade 304/304L Class 1 dual grade EFW ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P02K-0001K	90 degree elbow ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	0.75				P02K-0001L	90 degree elbow ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	1				P02K-0001M	90 degree elbow ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	1.5				P02K-0001N	90 degree elbow ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	2		SCH10S		P02J-000J0	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	3		SCH10S		P02J-000J1	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	4		SCH10S		P02J-000J2	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	6		SCH10S		P02J-000J3	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	8		SCH10S		P02J-0017L	90 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P03K-0001G	45 degree elbow ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	0.75				P03K-0001H	45 degree elbow ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	1				P03K-0001J	45 degree elbow ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	1.5				P03K-0001K	45 degree elbow ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	2		SCH10S		P03J-000HS	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	3		SCH10S		P03J-000HT	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	4		SCH10S		P03J-000HU	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	6		SCH10S		P03J-000HV	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	8		SCH10S		P03J-0016G	45 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P21K-0001G	Straight tee ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	0.75				P21K-0001H	Straight tee ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	1				P21K-0001J	Straight tee ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	1.5				P21K-0001K	Straight tee ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	2		SCH10S		P21J-000HM	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	3		SCH10S		P21J-000HN	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	4		SCH10S		P21J-000HP	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	6		SCH10S		P21J-000HR	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	8		SCH10S		P21J-000ZZ	Straight tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5			P24K-0001V	Reducing tee ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	1	0.5			P24K-0001W	Reducing tee ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	1	0.75			P24K-0001X	Reducing tee ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	1.5	0.5			P24K-0001Y	Reducing tee ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	1.5	0.75			P24K-0001Z	Reducing tee ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	1.5	1			P24K-00020	Reducing tee ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	2	1	SCH10S	SCH80S	P24J-0065A	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	

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REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2	1.5	SCH10S	SCH80S	P24J-0065B	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	3	1.5	SCH10S	SCH80S	P24J-004SV	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	3	2	SCH10S	SCH10S	P24J-002H7	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	4	2	SCH10S	SCH10S	P24J-002H8	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	4	3	SCH10S	SCH10S	P24J-002H9	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	6	3	SCH10S	SCH10S	P24J-002HA	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	6	4	SCH10S	SCH10S	P24J-002HB	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	8	4	SCH10S	SCH10S	P24J-004SY	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	8	6	SCH10S	SCH10S	P24J-004SZ	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	SCH10S	SCH10S	P27J-001PS	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	4	2	SCH10S	SCH10S	P27J-001PT	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	4	3	SCH10S	SCH10S	P27J-001PU	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	6	3	SCH10S	SCH10S	P27J-001PV	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	6	4	SCH10S	SCH10S	P27J-001PW	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	8	4	SCH10S	SCH10S	P27J-003L1	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	8	6	SCH10S	SCH10S	P27J-003L2	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	SCH10S	SCH10S	P28J-001P8	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	4	2	SCH10S	SCH10S	P28J-001P9	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	4	3	SCH10S	SCH10S	P28J-001PA	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	6	3	SCH10S	SCH10S	P28J-001PB	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	6	4	SCH10S	SCH10S	P28J-001PC	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	8	4	SCH10S	SCH10S	P28J-003LP	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	8	6	SCH10S	SCH10S	P28J-003LR	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P29K-0001V	Cap ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	0.75				P29K-0001W	Cap ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	1				P29K-0001X	Cap ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	1.5				P29K-0001Y	Cap ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	2		SCH10S		P29J-000G1	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	3		SCH10S		P29J-000G2	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	4		SCH10S		P29J-000G3	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	6		SCH10S		P29J-000G4	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	8		SCH10S		P29J-000X3	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
541	0.5				P29K-00045	Cap ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 NPT	
541	0.75				P29K-00020	Cap ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P41J-001FS	Straight nipple ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		SCH80S		P41J-001FT	Straight nipple ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		SCH80S		P41J-001FU	Straight nipple ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		SCH80S		P41J-001FV	Straight nipple ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

CON SWAGED NIPPLE (SNC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH80S	SCH80S	P42J-00081	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	SCH80S	SCH80S	P42J-00082	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	SCH80S	SCH80S	P42J-00083	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	

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CON SWAGED NIPPLE (SNC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5	0.5	SCH80S	SCH80S	P42J-00084	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	SCH80S	SCH80S	P42J-00085	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	SCH80S	SCH80S	P42J-00086	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	SCH10S	SCH80S	P42J-000F9	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	SCH10S	SCH80S	P42J-000F6	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	SCH10S	SCH80S	P42J-000F7	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	SCH10S	SCH80S	P42J-000F8	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	SCH10S	SCH80S	P42J-000AG	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	

ECC SWAGED NIPPLE (SNE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH80S	SCH80S	P43J-0008D	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	SCH80S	SCH80S	P43J-0008E	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	SCH80S	SCH80S	P43J-0008F	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	SCH80S	SCH80S	P43J-0008G	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	SCH80S	SCH80S	P43J-0008H	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	SCH80S	SCH80S	P43J-0008J	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	SCH10S	SCH80S	P43J-000CT	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	SCH10S	SCH80S	P43J-000CU	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	SCH10S	SCH80S	P43J-000CV	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	SCH10S	SCH80S	P43J-000CW	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	SCH10S	SCH80S	P43J-0008P	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	

COUPLING (CPS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P47K-00035	Coupling ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW - SW	
1	0.75				P47K-00036	Coupling ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW - SW	
1	1				P47K-00037	Coupling ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW - SW	
1	1.5				P47K-00038	Coupling ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW - SW	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2 - 2.5	0.75			P31K-00GFG	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 SW	
1	3 - 5	0.75			P31K-00GFH	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 SW	
1	6 - 12	0.75			P31K-008YY	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 SW	
1	3	1			P31K-008ZG	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 SW	
1	4 - 5	1			P31K-00GFL	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 SW	
1	6 - 10	1			P31K-008ZU	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 SW	
1	4	1.5			P31K-0099M	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 SW	
1	5 - 6	1.5			P31K-00GFS	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 SW	
1	8 - 12	1.5			P31K-0099Z	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 SW	
541	1	0.75			P31K-00911	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 NPT	
541	1.5	0.75			P31K-00916	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 NPT	
541	2 - 2.5	0.75			P31K-00GFJ	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 NPT	
541	3 - 5	0.75			P31K-00GFK	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 NPT	
541	6 - 12	0.75			P31K-0091X	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 NPT	
1	6	2	SCH10S	SCH10S	P31K-005AV	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	8	2	SCH10S	SCH10S	P31K-007G1	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	8	3	SCH10S	SCH10S	P31K-007XV	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	

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PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30K-0001G	Plug ASTM A182 Grade F304/F304L dual grade ASME B16.11 NPT Round head	
1	0.75				P30K-0001H	Plug ASTM A182 Grade F304/F304L dual grade ASME B16.11 NPT Round head	
1	1				P30K-0001J	Plug ASTM A182 Grade F304/F304L dual grade ASME B16.11 NPT Round head	
1	1.5				P30K-0001K	Plug ASTM A182 Grade F304/F304L dual grade ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P61K-003A4	Flange SW ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	0.75		SCH80S		P61K-003A5	Flange SW ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	1		SCH80S		P61K-003A6	Flange SW ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	1.5		SCH80S		P61K-003A7	Flange SW ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	2				P63B-0001Y	Lap joint ASTM A105 Class 150 ASME B16.5	
1	3				P63B-00021	Lap joint ASTM A105 Class 150 ASME B16.5	
1	4				P63B-00022	Lap joint ASTM A105 Class 150 ASME B16.5	
1	6				P63B-00024	Lap joint ASTM A105 Class 150 ASME B16.5	
1	8				P63B-00023	Lap joint ASTM A105 Class 150 ASME B16.5	
773	0.5		SCH80S		P61K-003A9	Flange SW ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
773	0.75		SCH80S		P61K-003AA	Flange SW ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
773	1		SCH80S		P61K-003AB	Flange SW ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
773	1.5		SCH80S		P61K-003AC	Flange SW ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
773	2		SCH10S		P61K-0023W	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
773	3		SCH10S		P61K-0023X	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
773	4		SCH10S		P61K-0023Y	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
773	6		SCH10S		P61K-003AD	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
773	8		SCH10S		P61K-003AE	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67K-000K9	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	0.75				P67K-000KA	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	1				P67K-000KB	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	1.5				P67K-000KC	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	2				P67K-000KD	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	3				P67K-000KE	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	4				P67K-000KF	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	6				P67K-000KG	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	8				P67K-000L7	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	

REDUCING FLANGE (FR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2	0.75		SCH80S	P62K-000CK	Reducing flange SW ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	2	1		SCH80S	P62K-000CL	Reducing flange SW ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	2	1.5		SCH80S	P62K-000CM	Reducing flange SW ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	

STUB END (SE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2		SCH10S		P45J-0000G	Stub end Short-pattern ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	3		SCH10S		P45J-0000H	Stub end Short-pattern ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	4		SCH10S		P45J-0000J	Stub end Short-pattern ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	6		SCH10S		P45J-0000K	Stub end Short-pattern ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	8		SCH10S		P45J-0000T	Stub end Short-pattern ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-0033Y	Spiral wound gasket SS316 winding / Non-asbestos filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-5	
1	0.75				P73T-0033Z	Spiral wound gasket SS316 winding / Non-asbestos filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-5	
1	1				P73T-00340	Spiral wound gasket SS316 winding / Non-asbestos filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-5	

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GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5				P73T-00341	Spiral wound gasket SS316 winding / Non-asbestos filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-5	
1	2				P73T-00342	Spiral wound gasket SS316 winding / Non-asbestos filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-5	
1	3				P73T-00343	Spiral wound gasket SS316 winding / Non-asbestos filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-5	
1	4				P73T-00344	Spiral wound gasket SS316 winding / Non-asbestos filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-5	
1	6				P73T-00345	Spiral wound gasket SS316 winding / Non-asbestos filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-5	
1	8				P73T-00346	Spiral wound gasket SS316 winding / Non-asbestos filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-5	
773	0.5				P73T-00347	Spiral wound gasket SS316 winding / Non-asbestos filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-5	
773	0.75				P73T-00348	Spiral wound gasket SS316 winding / Non-asbestos filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-5	
773	1				P73T-00349	Spiral wound gasket SS316 winding / Non-asbestos filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-5	
773	1.5				P73T-0034A	Spiral wound gasket SS316 winding / Non-asbestos filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-5	
773	2				P73T-0034B	Spiral wound gasket SS316 winding / Non-asbestos filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-5	
773	3				P73T-0034C	Spiral wound gasket SS316 winding / Non-asbestos filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-5	
773	4				P73T-0034D	Spiral wound gasket SS316 winding / Non-asbestos filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-5	
773	6				P73T-0034E	Spiral wound gasket SS316 winding / Non-asbestos filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-5	
773	8				P73T-0034F	Spiral wound gasket SS316 winding / Non-asbestos filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-5	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-8				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
773	0.5-8				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81K-00108	Gate valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	0.75				P81K-00109	Gate valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	1				P81K-0010A	Gate valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	1.5				P81K-0010B	Gate valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	2				P81L-00293	Gate valve ASTM A351 Grade CF8 Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	3				P81L-00294	Gate valve ASTM A351 Grade CF8 Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	4				P81L-00295	Gate valve ASTM A351 Grade CF8 Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	6				P81L-00296	Gate valve ASTM A351 Grade CF8 Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	8				P81L-00297	Gate valve ASTM A351 Grade CF8 Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
221	1.5				P81K-0010K	Gate valve ASTM A182 Grade F304/F304L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
714	0.5				P81K-001LC	Gate valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW - NPT Trim number 12 BB-BG-OS&Y Handwheel operated	
714	0.75				P81K-001FD	Gate valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW - NPT Trim number 12 BB-BG-OS&Y Handwheel operated	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82K-000NR	Globe valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	0.75				P82K-000NS	Globe valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	1				P82K-000NT	Globe valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	1.5				P82K-000NU	Globe valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	2				P82L-00195	Globe valve ASTM A351 Grade CF8 Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	3				P82L-00196	Globe valve ASTM A351 Grade CF8 Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	4				P82L-00197	Globe valve ASTM A351 Grade CF8 Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	6				P82L-001AD	Globe valve ASTM A351 Grade CF8 Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	

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GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	8				P82L-001AE	Globe valve ASTM A351 Grade CF8 Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83K-000LM	Check valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 Lift-type Bolted cover	
1	0.75				P83K-000LN	Check valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 Lift-type Bolted cover	
1	1				P83K-000LP	Check valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 Lift-type Bolted cover	
1	1.5				P83K-000LR	Check valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 Lift-type Bolted cover	
1	2				P83L-00196	Check valve ASTM A351 Grade CF8 Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	3				P83L-00197	Check valve ASTM A351 Grade CF8 Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	4				P83L-00198	Check valve ASTM A351 Grade CF8 Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	6				P83L-0019U	Check valve ASTM A351 Grade CF8 Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	8				P83L-0019V	Check valve ASTM A351 Grade CF8 Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	

BALL VALVE (Q)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P84K-000R2	Ball valve Long-pattern ASTM A182 Grade F304/F304L dual grade Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design	
1	0.75				P84K-000R3	Ball valve Long-pattern ASTM A182 Grade F304/F304L dual grade Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design	
1	1				P84K-000R4	Ball valve Long-pattern ASTM A182 Grade F304/F304L dual grade Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design	
1	1.5				P84K-000R5	Ball valve Long-pattern ASTM A182 Grade F304/F304L dual grade Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design	
1	2				P84L-0034S	Ball valve Long-pattern ASTM A351 Grade CF8 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design	
1	3				P84L-0034T	Ball valve Long-pattern ASTM A351 Grade CF8 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design	
1	4				P84L-0034U	Ball valve Long-pattern ASTM A351 Grade CF8 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design	
1	6				P84L-0034V	Ball valve Long-pattern ASTM A351 Grade CF8 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Reduced bore Fire tested design	
1	8				P84L-0034W	Ball valve Long-pattern ASTM A351 Grade CF8 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Reduced bore Fire tested design	
24	0.5				P84K-000R6	Ball valve Long-pattern ASTM A182 Grade F304/F304L dual grade Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	
24	0.75				P84K-000R7	Ball valve Long-pattern ASTM A182 Grade F304/F304L dual grade Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	
24	1				P84K-000R8	Ball valve Long-pattern ASTM A182 Grade F304/F304L dual grade Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	
24	1.5				P84K-000R9	Ball valve Long-pattern ASTM A182 Grade F304/F304L dual grade Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	
24	2				P84L-0034X	Ball valve Long-pattern ASTM A351 Grade CF8 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	
24	3				P84L-0034Y	Ball valve Long-pattern ASTM A351 Grade CF8 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	
24	4				P84L-0034Z	Ball valve Long-pattern ASTM A351 Grade CF8 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	
24	6				P84L-00350	Ball valve Long-pattern ASTM A351 Grade CF8 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design	
24	8				P84L-00351	Ball valve Long-pattern ASTM A351 Grade CF8 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design	

ORIFICE FLANGE (FO)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2		SCH10S		P66K-00312	Orifice flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	3		SCH10S		P66K-00313	Orifice flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	4		SCH10S		P66K-00314	Orifice flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	6		SCH10S		P66K-0031M	Orifice flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
200	2		SCH10S		P66K-0031E	Orifice flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
200	3		SCH10S		P66K-0031F	Orifice flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	4		SCH10S		P66K-0031G	Orifice flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	6		SCH10S		P66K-0031R	Orifice flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	

SPECT BLANK (SB)							
OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71K-00065	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	0.75				P71K-00066	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	1				P71K-00067	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71K-00068	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	2				P71K-0006A	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	3				P71K-0006B	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	4				P71K-0006C	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	6				P71K-0006D	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	8				P71K-0006E	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	

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BOLT TABLE (B_A31F05 , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	60	P80S-003V2		
0.75	4	0.500	65	P80S-003V3		
1	4	0.500	70	P80S-003V4		
1.5	4	0.500	75	P80S-003V5		
2	4	0.625	90	P80S-003XF		
3	4	0.625	100	P80S-003VA		
4	8	0.625	100	P80S-003VA		
6	8	0.750	110	P80S-003XK		
8	8	0.750	120	P80S-003XM		

BOLT TABLE (B_A31F05_773 , STUD ASME RF, OPTION CODE 773)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-003V4		
0.75	4	0.625	75	P80S-003XC		
1	4	0.625	80	P80S-003XD		
1.5	4	0.750	95	P80S-00414		
2	8	0.625	90	P80S-003XF		
3	8	0.750	110	P80S-003XK		
4	8	0.750	115	P80S-003XL		
6	12	0.750	125	P80S-003XN		
8	12	0.875	140	P80S-0041D		

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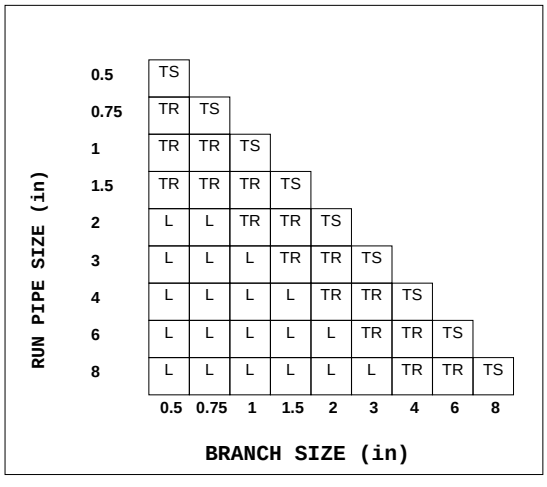
BRANCH TABLE (T_A31F05)



TS : STRAIGHT TEE
TR : REDUCING TEE
L : OUTLET

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Material : SS304L
Rating : ASME CLASS 150
Flange Face : RF
C.A.(mm) : 0.00
Gasket : Spiral Wound
Service : AT-CATALYST
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
24	FULL PORT (Q)
541	NPT(F) (CA,F,L)
773	CLASS 300 (B,F,G)
4608	VALVE WITH NIPPLES (V)

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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P01J-000UC	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE	
1	0.75		SCH80S		P01J-000UD	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE	
1	1		SCH80S		P01J-000UE	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE	
1	1.5		SCH80S		P01J-000UF	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P02J-000VD	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	0.75		SCH80S		P02J-000VE	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	1		SCH80S		P02J-000VF	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	1.5		SCH80S		P02J-000VG	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P03J-000UW	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	0.75		SCH80S		P03J-000UX	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	1		SCH80S		P03J-000UY	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	1.5		SCH80S		P03J-000UZ	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P21J-000V1	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	0.75		SCH80S		P21J-000V2	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	1		SCH80S		P21J-000V3	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	1.5		SCH80S		P21J-000V4	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH80S	SCH80S	P24J-003NV	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	1	0.5	SCH80S	SCH80S	P24J-003NW	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	1	0.75	SCH80S	SCH80S	P24J-003NX	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	1.5	0.5	SCH80S	SCH80S	P24J-003NY	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	1.5	0.75	SCH80S	SCH80S	P24J-003NZ	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	1.5	1	SCH80S	SCH80S	P24J-003P0	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH80S	SCH80S	P27J-002R0	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	1	0.5	SCH80S	SCH80S	P27J-002R1	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	1	0.75	SCH80S	SCH80S	P27J-002R2	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	1.5	0.5	SCH80S	SCH80S	P27J-002R3	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	1.5	0.75	SCH80S	SCH80S	P27J-002R4	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	1.5	1	SCH80S	SCH80S	P27J-002R5	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH80S	SCH80S	P28J-002NL	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	1	0.5	SCH80S	SCH80S	P28J-002NM	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	1	0.75	SCH80S	SCH80S	P28J-002NN	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	1.5	0.5	SCH80S	SCH80S	P28J-002NP	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	1.5	0.75	SCH80S	SCH80S	P28J-002NR	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	1.5	1	SCH80S	SCH80S	P28J-002NS	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	

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CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P29J-000T0	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	0.75		SCH80S		P29J-000T1	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	1		SCH80S		P29J-000T2	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	1.5		SCH80S		P29J-000T3	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
541	0.75				P29K-00020	Cap ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P41J-001FS	Straight nipple ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		SCH80S		P41J-001FT	Straight nipple ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		SCH80S		P41J-001FU	Straight nipple ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		SCH80S		P41J-001FV	Straight nipple ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
541	1	0.75			P31K-00911	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 NPT	
541	1.5	0.75			P31K-00916	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 NPT	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30K-0001G	Plug ASTM A182 Grade F304/F304L dual grade ASME B16.11 NPT Round head	
1	0.75				P30K-0001H	Plug ASTM A182 Grade F304/F304L dual grade ASME B16.11 NPT Round head	
1	1				P30K-0001J	Plug ASTM A182 Grade F304/F304L dual grade ASME B16.11 NPT Round head	
1	1.5				P30K-0001K	Plug ASTM A182 Grade F304/F304L dual grade ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P61K-002K3	Flange WN ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	0.75		SCH80S		P61K-002K4	Flange WN ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	1		SCH80S		P61K-002K5	Flange WN ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	1.5		SCH80S		P61K-002K6	Flange WN ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
541	0.5				P61K-0052M	Flange NPT ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
541	0.75				P61K-005ZX	Flange NPT ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
773	0.5		SCH80S		P61K-0027N	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
773	0.75		SCH80S		P61K-0027P	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
773	1		SCH80S		P61K-0027R	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
773	1.5		SCH80S		P61K-0027S	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67K-000K9	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	0.75				P67K-000KA	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	1				P67K-000KB	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	1.5				P67K-000KC	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-0034G	Spiral wound gasket SS316 winding / Non-asbestos filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-7	
1	0.75				P73T-0034H	Spiral wound gasket SS316 winding / Non-asbestos filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-7	
1	1				P73T-0034J	Spiral wound gasket SS316 winding / Non-asbestos filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-7	
1	1.5				P73T-0034K	Spiral wound gasket SS316 winding / Non-asbestos filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-7	
773	0.5				P73T-0034L	Spiral wound gasket SS316 winding / Non-asbestos filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-7	
773	0.75				P73T-0034M	Spiral wound gasket SS316 winding / Non-asbestos filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-7	
773	1				P73T-0034N	Spiral wound gasket SS316 winding / Non-asbestos filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-7	

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GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
773	1.5				P73T-0034P	Spiral wound gasket SS316 winding / Non-asbestos filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-7	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-1.5				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
773	0.5-1.5				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81K-00173	Gate valve ASTM A182 Grade F304/F304L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Bellow seal	
1	0.75				P81K-00174	Gate valve ASTM A182 Grade F304/F304L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Bellow seal	
1	1				P81K-00175	Gate valve ASTM A182 Grade F304/F304L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Bellow seal	
1	1.5				P81K-00176	Gate valve ASTM A182 Grade F304/F304L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Bellow seal	
4608	0.75				P81K-001PD	Gate valve ASTM A182 Grade F304/F304L dual grade Class 150 API 602 BW both sides w/ nipples BE - NPT ASTM A312-TP304(L) dual grade Seamless Sch80S-nipple Trim number 12 BB-BG-OS&Y Handwheel operated Bellow seal	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82K-000U1	Globe valve ASTM A182 Grade F304/F304L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Bellow seal	
1	0.75				P82K-000U2	Globe valve ASTM A182 Grade F304/F304L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Bellow seal	
1	1				P82K-000U3	Globe valve ASTM A182 Grade F304/F304L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Bellow seal	
1	1.5				P82K-000U4	Globe valve ASTM A182 Grade F304/F304L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Bellow seal	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83K-000SD	Check valve ASTM A182 Grade F304/F304L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover	
1	0.75				P83K-000SE	Check valve ASTM A182 Grade F304/F304L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover	
1	1				P83K-000SF	Check valve ASTM A182 Grade F304/F304L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover	
1	1.5				P83K-000SG	Check valve ASTM A182 Grade F304/F304L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover	

BALL VALVE (Q)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P84K-000R2	Ball valve Long-pattern ASTM A182 Grade F304/F304L dual grade Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design	
1	0.75				P84K-000R3	Ball valve Long-pattern ASTM A182 Grade F304/F304L dual grade Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design	
1	1				P84K-000R4	Ball valve Long-pattern ASTM A182 Grade F304/F304L dual grade Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design	
1	1.5				P84K-000R5	Ball valve Long-pattern ASTM A182 Grade F304/F304L dual grade Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design	
24	0.5				P84K-000R6	Ball valve Long-pattern ASTM A182 Grade F304/F304L dual grade Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	
24	0.75				P84K-000R7	Ball valve Long-pattern ASTM A182 Grade F304/F304L dual grade Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	
24	1				P84K-000R8	Ball valve Long-pattern ASTM A182 Grade F304/F304L dual grade Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	
24	1.5				P84K-000R9	Ball valve Long-pattern ASTM A182 Grade F304/F304L dual grade Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71K-00065	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	

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SPECT BLANK (SB)							
OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75				P71K-00066	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	1				P71K-00067	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71K-00068	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	

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BOLT TABLE (B_A41F05 , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	60	P80S-003V2		
0.75	4	0.500	65	P80S-003V3		
1	4	0.500	70	P80S-003V4		
1.5	4	0.500	75	P80S-003V5		

BOLT TABLE (B_A41F05_773 , STUD ASME RF, OPTION CODE 773)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-003V4		
0.75	4	0.625	75	P80S-003XC		
1	4	0.625	80	P80S-003XD		
1.5	4	0.750	95	P80S-00414		

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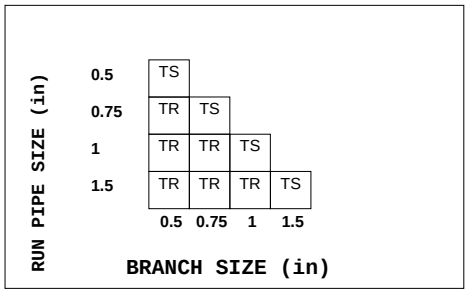
PIPING CLASS

A41F05 REV NO. 2

BRANCH TABLE (T_A41F05)



TR : REDUCING TEE
TS : STRAIGHT TEE

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PIPING CLASS

A4A4 REV NO. 2

Material : Killed CS
Rating : ASME CLASS 150
Flange Face : RF
C.A.(mm) : 6.00
Gasket : Spiral Wound
Service : PROCESS -WET LOW SEVERITY SOUR SERVICE SUBJECT TO NACE + AMINES OR CAUSTIC - STRESS RELIEVED
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
5	BOLTING CONFIRMING TO B7M / 2HM SHALL BE USED UNDER CONDITIONS (A) DIRECT EXPOSURE TO SOUR ENVIRONMENTS (B) WHEN THE BOLTING WILL BE BURIED OR INSULATED
27	PWHT OF CARBON STEEL PIPING IN WET H2S, CAUSTIC AND AMINE SERVICES SHALL BE IN ACCORDANCE WITH SECTION 10.2, 10.3, AND 10.4 OF PROJECT SPECIFICATION 3550-8440-SP-0002 MATERIALS REQUIREMENTS FOR PRESSURISED EQUIPMENT AND PIPING. FOR CAUSTIC AND AMINE SERVICE THE FOLLOWING SHALL APPLY: - PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF ALL SITE PIPING FABRICATION WELDS IS REQUIRED FOR ALL WALL THICKNESSES. FOR MODERATE AND SEVERE WET H2S SERVICE THE FOLLOWING SHALL APPLY: PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF SITE FABRICATION CIRCUMFERENTIAL OR BRANCH WELDS IS NOT REQUIRED IF WELDS ARE MULTIPASS AND IN ACCORDANCE WITH PARA 10.2.12 OF PROJECT SPECIFICATION 3550-8440-SP-0002. FOR SERVICES MEETING THE WET H2S CRITERIA AND CAUSTIC OR AMINE CRITERIA THE MORE STRINGENT PWHT REQUIREMENT SHALL GOVERN.

DETAIL NOTES :

NO.	DESCRIPTION
37	TO BE USED ONLY FOR ORIFICE FLANGE ASSEMLY UPTO 425 DEG C

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
200	WITH JACK SCREW (FO)
541	NPT(F) (CA,F)
773	CLASS 300 (B,F,G,V)
4001	ALTERNATIVE MATERIAL FOR INSTRUMENT CONNECTION (F,P,V)
4405	FLANGE NPT WITH ALTERNATIVE MATERIAL FOR INSTRUMENT CONNECTION (F)
4608	VALVE WITH NIPPLES (V)

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PIPING CLASS
A4A4 REV NO. 2

PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		XXS		P01A-0014U	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1.5		XXS		P01A-00162	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	2		SCH160		P01A-0019T	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	3		SCH160		P01A-001S5	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	4		SCH120		P01A-001TM	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	6		XS		P01A-000ZF	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	8		SCH60		P01A-001BK	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	10		XS		P01A-000Y2	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	12		SCH40		P01A-0018V	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	14		SCH40		P01A-0018U	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	16		XS		P01A-000YS	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	18		XS		P01A-00372	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	20		XS		P01A-00373	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	24		SCH30		P01A-0043R	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	30		SCH30		P01A-009R5	Pipe ASTM A671 Grade CC60 Class 22 EFW ASME B36.10M/B36.19M BE Amine service Moderate wet H2S service	
4001	0.5		SCH80S		P01J-002CY	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE Moderate wet H2S service	37

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P02A-00556	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	37
1	1		XXS		P02A-000XJ	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1.5		XXS		P02A-002N4	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	2		SCH160		P02A-000KW	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		SCH160		P02A-000U4	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		SCH120		P02A-000U5	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		XS		P02A-000DA	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		SCH60		P02A-000MC	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	10		XS		P02A-000BN	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	12		SCH40		P02A-000JE	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	14		SCH40		P02A-000JF	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	16		XS		P02A-000CE	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	18		XS		P02A-000M9	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	20		XS		P02A-001JX	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	24		SCH30		P02A-002JR	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	30		SCH30		P02A-0057M	90 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius Moderate wet H2S service Amine service	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		XXS		P03A-000U8	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1.5		XXS		P03A-002KD	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	2		SCH160		P03A-000HU	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		SCH160		P03A-000RB	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		SCH120		P03A-000RC	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		XS		P03A-000B8	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		SCH60		P03A-000K5	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	10		XS		P03A-000A3	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	12		SCH40		P03A-000GC	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	14		SCH40		P03A-000GD	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	16		XS		P03A-000AP	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	18		XS		P03A-001DZ	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	20		XS		P03A-001E0	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	24		SCH30		P03A-002G8	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	30		SCH30		P03A-004SE	45 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius Moderate wet H2S service Amine service	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		XXS		P21A-002DP	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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PIPING CLASS
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STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5		XXS		P21A-003KU	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2		SCH160		P21A-00245	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		SCH160		P21A-002AG	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		SCH120		P21A-002AH	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6		XS		P21A-001D4	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8		SCH60		P21A-0025S	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10		XS		P21A-001C0	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12		SCH40		P21A-0022P	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14		SCH40		P21A-0022R	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16		XS		P21A-001CG	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18		XS		P21A-002Y3	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20		XS		P21A-002Y4	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24		SCH30		P21A-003HA	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	30		SCH30		P21A-0058J	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Amine service Moderate wet H2S service	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5	1	XXS	XXS	P24A-00H61	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	SCH160	XXS	P24A-0044B	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	SCH160	XXS	P24A-003GG	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	SCH160	XXS	P24A-0045F	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	SCH160	SCH160	P24A-0045H	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	SCH120	SCH160	P24A-0045G	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	SCH120	SCH160	P24A-0045E	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	XS	SCH160	P24A-00GDY	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	XS	SCH120	P24A-00GDZ	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH60	SCH120	P24A-00L2A	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH60	XS	P24A-0062G	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	XS	SCH120	P24A-00GF8	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	XS	XS	P24A-00241	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	XS	SCH60	P24A-0062H	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	SCH40	XS	P24A-00AF9	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH40	SCH60	P24A-004PT	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH40	XS	P24A-007UZ	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	SCH40	XS	P24A-00AFC	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	SCH40	SCH60	P24A-003GM	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	SCH40	XS	P24A-00AFA	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	SCH40	SCH40	P24A-0033E	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	6	XS	XS	P24A-0025G	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	XS	SCH60	P24A-00GNU	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	XS	XS	P24A-00242	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	XS	SCH40	P24A-00445	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	XS	SCH40	P24A-0044A	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	8	XS	SCH60	P24A-00NBZ	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	10	XS	XS	P24A-00GMG	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	12	XS	SCH40	P24A-00GMH	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	14	XS	SCH40	P24A-00GS6	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	16	XS	XS	P24A-0087Y	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	8	XS	SCH60	P24A-00L1X	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	10	XS	XS	P24A-00GML	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	12	XS	SCH40	P24A-00GMM	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	14	XS	SCH40	P24A-00GS7	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	16	XS	XS	P24A-0087Z	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	18	XS	XS	P24A-00880	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24	10	SCH30	XS	P24A-00GUE	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24	12	SCH30	SCH40	P24A-00GS8	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24	14	SCH30	SCH40	P24A-00GS9	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24	16	SCH30	XS	P24A-00GSA	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24	18	SCH30	XS	P24A-00GSB	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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PIPING CLASS
A4A4 REV NO. 2

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	24	20	SCH30	XS	P24A-00GSC	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	30	10	SCH30	XS	P24A-00RFM	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Amine service Moderate wet H2S service	
1	30	12	SCH30	SCH40	P24A-00RFN	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Amine service Moderate wet H2S service	
1	30	14	SCH30	SCH40	P24A-00RFP	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Amine service Moderate wet H2S service	
1	30	16	SCH30	XS	P24A-00RFR	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Amine service Moderate wet H2S service	
1	30	18	SCH30	XS	P24A-00RFS	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Amine service Moderate wet H2S service	
1	30	20	SCH30	XS	P24A-00RFT	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Amine service Moderate wet H2S service	
1	30	24	SCH30	SCH30	P24A-00RFU	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Amine service Moderate wet H2S service	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5	1	XXS	XXS	P27A-004NR	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	SCH160	XXS	P27A-0029H	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	SCH160	XXS	P27A-0029K	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	SCH160	XXS	P27A-002NG	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	SCH160	SCH160	P27A-002NC	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	1.5	SCH120	XXS	P27A-002NH	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	SCH120	SCH160	P27A-002ND	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	SCH120	SCH160	P27A-002NM	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	XS	SCH160	P27A-007P7	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	XS	SCH120	P27A-007PZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH60	SCH120	P27A-007W6	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH60	XS	P27A-00436	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	XS	SCH120	P27A-004PY	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	XS	XS	P27A-001F2	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	XS	SCH60	P27A-00437	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	SCH40	XS	P27A-004W2	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH40	SCH60	P27A-00327	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH40	XS	P27A-0091W	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	SCH40	XS	P27A-003ZY	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	SCH40	SCH60	P27A-0029V	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	SCH40	XS	P27A-0091T	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	SCH40	SCH40	P27A-001ZZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	XS	SCH60	P27A-0043A	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	XS	XS	P27A-001EN	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	XS	SCH40	P27A-002KU	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	XS	SCH40	P27A-002KZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	10	XS	XS	P27A-005BV	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	12	XS	SCH40	P27A-005DV	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	14	XS	SCH40	P27A-005FW	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	16	XS	XS	P27A-005J1	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	12	XS	SCH40	P27A-005LZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	14	XS	SCH40	P27A-005P2	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	16	XS	XS	P27A-005SB	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	18	XS	XS	P27A-005TZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24	16	SCH30	XS	P27A-005XS	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24	18	SCH30	XS	P27A-005ZJ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24	20	SCH30	XS	P27A-00618	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	30	20	SCH30	XS	P27A-00JPH	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Amine service Moderate wet H2S service	
1	30	24	SCH30	SCH30	P27A-00JPJ	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Amine service Moderate wet H2S service	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5	1	XXS	XXS	P28A-008W0	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	SCH160	XXS	P28A-00289	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	SCH160	XXS	P28A-0028A	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	SCH160	XXS	P28A-002P1	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	SCH160	SCH160	P28A-002NY	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	4	1.5	SCH120	XXS	P28A-002P0	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	SCH120	SCH160	P28A-002NZ	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	SCH120	SCH160	P28A-002P2	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	XS	SCH160	P28A-0085V	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	XS	SCH120	P28A-0085W	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH60	SCH120	P28A-00AJW	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH60	XS	P28A-0042Y	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	XS	SCH120	P28A-0085X	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	XS	XS	P28A-001FR	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	XS	SCH60	P28A-0042Z	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	SCH40	XS	P28A-005T8	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH40	SCH60	P28A-0032P	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH40	XS	P28A-005T7	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	SCH40	XS	P28A-003ZS	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	SCH40	SCH60	P28A-0028W	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	SCH40	XS	P28A-005TA	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	SCH40	SCH40	P28A-001ZG	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	XS	SCH60	P28A-00432	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	XS	XS	P28A-001F9	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	XS	SCH40	P28A-002L9	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	XS	SCH40	P28A-002LD	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	10	XS	XS	P28A-008EE	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	12	XS	SCH40	P28A-008EF	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	14	XS	SCH40	P28A-0028M	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	16	XS	XS	P28A-0063K	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	12	XS	SCH40	P28A-008EH	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	14	XS	SCH40	P28A-008HJ	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	16	XS	XS	P28A-0063N	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	18	XS	XS	P28A-0063P	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24	16	SCH30	XS	P28A-008HK	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24	18	SCH30	XS	P28A-008HL	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24	20	SCH30	XS	P28A-008HM	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	30	20	SCH30	XS	P28A-00G0S	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Amine service Moderate wet H2S service	
1	30	24	SCH30	SCH30	P28A-00G0T	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Amine service Moderate wet H2S service	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		XXS		P29A-0033Z	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	1.5		XXS		P29A-00340	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	2		SCH160		P29A-001TK	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	3		SCH160		P29A-001TN	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	4		SCH120		P29A-001WM	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	6		XS		P29A-001TU	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	8		SCH60		P29A-001X5	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	10		XS		P29A-001TE	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	12		SCH40		P29A-001TF	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	14		SCH40		P29A-0036R	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	16		XS		P29A-001TH	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	18		XS		P29A-001TJ	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	20		XS		P29A-001TL	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	24		SCH30		P29A-003TB	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	30		SCH30		P29A-003TC	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
541	1				P29B-0000Z	Cap ASTM A105 Class 6000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1			10.60mm		P41A-001AT	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		10.60mm		P41A-001AU	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

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OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	1	SCH160	XXS	P31B-00B4A	Outlet ASTM A105 MSS SP-97 BW	
1	4	1	SCH120	XXS	P31B-00B08	Outlet ASTM A105 MSS SP-97 BW	
1	6	1	XS	XXS	P31B-00AYZ	Outlet ASTM A105 MSS SP-97 BW	
1	8	1	SCH60	XXS	P31B-00YDK	Outlet ASTM A105 MSS SP-97 BW	
1	10	1	XS	XXS	P31B-00BW4	Outlet ASTM A105 MSS SP-97 BW	
1	12	1	SCH40	XXS	P31B-00YDL	Outlet ASTM A105 MSS SP-97 BW	
1	14	1	SCH40	XXS	P31B-00YDN	Outlet ASTM A105 MSS SP-97 BW	
1	16	1	XS	XXS	P31B-00BCD	Outlet ASTM A105 MSS SP-97 BW	
1	18	1	XS	XXS	P31B-00B8W	Outlet ASTM A105 MSS SP-97 BW	
1	20	1	XS	XXS	P31B-00B88	Outlet ASTM A105 MSS SP-97 BW	
1	24	1	SCH30	XXS	P31B-00B4P	Outlet ASTM A105 MSS SP-97 BW	
1	30	1	SCH30	XXS	P31B-00B3Y	Outlet ASTM A105 MSS SP-97 BW	
1	4	1.5	SCH120	XXS	P31B-00BNX	Outlet ASTM A105 MSS SP-97 BW	
1	6	1.5	XS	XXS	P31B-00BJ4	Outlet ASTM A105 MSS SP-97 BW	
1	8	1.5	SCH60	XXS	P31B-00BFH	Outlet ASTM A105 MSS SP-97 BW	
1	10	1.5	XS	XXS	P31B-00CER	Outlet ASTM A105 MSS SP-97 BW	
1	12	1.5	SCH40	XXS	P31B-00YDM	Outlet ASTM A105 MSS SP-97 BW	
1	14	1.5	SCH40	XXS	P31B-00C9K	Outlet ASTM A105 MSS SP-97 BW	
1	16	1.5	XS	XXS	P31B-00C8P	Outlet ASTM A105 MSS SP-97 BW	
1	18	1.5	XS	XXS	P31B-00C48	Outlet ASTM A105 MSS SP-97 BW	
1	20	1.5	XS	XXS	P31B-00C3G	Outlet ASTM A105 MSS SP-97 BW	
1	24	1.5	SCH30	XXS	P31B-00BZ6	Outlet ASTM A105 MSS SP-97 BW	
1	30	1.5	SCH30	XXS	P31B-00BYA	Outlet ASTM A105 MSS SP-97 BW	
1	6	2	XS	SCH160	P31B-007SR	Outlet ASTM A105 MSS SP-97 BW	
1	8	2	SCH60	SCH160	P31B-0068W	Outlet ASTM A105 MSS SP-97 BW	
1	10	2	XS	SCH160	P31B-00ASR	Outlet ASTM A105 MSS SP-97 BW	
1	12	2	SCH40	SCH160	P31B-00ARM	Outlet ASTM A105 MSS SP-97 BW	
1	14	2	SCH40	SCH160	P31B-006PG	Outlet ASTM A105 MSS SP-97 BW	
1	16	2	XS	SCH160	P31B-00C6D	Outlet ASTM A105 MSS SP-97 BW	
1	18	2	XS	SCH160	P31B-006P6	Outlet ASTM A105 MSS SP-97 BW	
1	20	2	XS	SCH160	P31B-009ET	Outlet ASTM A105 MSS SP-97 BW	
1	24	2	SCH30	SCH160	P31B-0098J	Outlet ASTM A105 MSS SP-97 BW	
1	30	2	SCH30	SCH160	P31B-008VY	Outlet ASTM A105 MSS SP-97 BW	
1	8	3	SCH60	SCH160	P31B-00A35	Outlet ASTM A105 MSS SP-97 BW	
1	10	3	XS	SCH160	P31B-009D0	Outlet ASTM A105 MSS SP-97 BW	
1	12	3	SCH40	SCH160	P31B-0097B	Outlet ASTM A105 MSS SP-97 BW	
1	14	3	SCH40	SCH160	P31B-0091G	Outlet ASTM A105 MSS SP-97 BW	
1	16	3	XS	SCH160	P31B-00903	Outlet ASTM A105 MSS SP-97 BW	
1	18	3	XS	SCH160	P31B-008U0	Outlet ASTM A105 MSS SP-97 BW	
1	20	3	XS	SCH160	P31B-008LW	Outlet ASTM A105 MSS SP-97 BW	
1	24	3	SCH30	SCH160	P31B-008EN	Outlet ASTM A105 MSS SP-97 BW	
1	30	3	SCH30	SCH160	P31B-0082H	Outlet ASTM A105 MSS SP-97 BW	
1	12	4	SCH40	SCH120	P31B-00TU4	Outlet ASTM A105 MSS SP-97 BW	
1	14	4	SCH40	SCH120	P31B-008ZE	Outlet ASTM A105 MSS SP-97 BW	
1	16	4	XS	SCH120	P31B-00TU5	Outlet ASTM A105 MSS SP-97 BW	
1	18	4	XS	SCH120	P31B-00TU6	Outlet ASTM A105 MSS SP-97 BW	
1	20	4	XS	SCH120	P31B-00TU7	Outlet ASTM A105 MSS SP-97 BW	
1	24	4	SCH30	SCH120	P31B-00ETP	Outlet ASTM A105 MSS SP-97 BW	
1	30	4	SCH30	SCH120	P31B-00TUB	Outlet ASTM A105 MSS SP-97 BW	
1	18	6	XS	XS	P31B-008RR	Outlet ASTM A105 MSS SP-97 BW	
1	20	6	XS	XS	P31B-008K4	Outlet ASTM A105 MSS SP-97 BW	
1	24	6	SCH30	XS	P31B-00TU8	Outlet ASTM A105 MSS SP-97 BW	
1	30	6	SCH30	XS	P31B-00TUC	Outlet ASTM A105 MSS SP-97 BW	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P30B-0002F	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1½				P30B-0002G	Plug ASTM A105 ASME B16.11 NPT Round head	

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FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		XXS		P61B-003M2	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	1.5		XXS		P61B-003MC	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	2		SCH160		P61B-002F0	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	3		SCH160		P61B-003M3	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	4		SCH120		P61B-003MK	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	6		XS		P61B-003JF	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	8		SCH60		P61B-002F6	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	10		XS		P61B-003MD	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	12		SCH40		P61B-003EK	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	14		SCH40		P61B-002EX	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	16		XS		P61B-003MG	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	18		XS		P61B-002EZ	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	20		XS		P61B-003A7	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	24		SCH30		P61B-003MJ	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	30		SCH30		P61B-0045C	Flange WN ASTM A105 Class 150 ASME B16.47 Series B RF	
4001	0.5		SCH80S		P61K-005C8	Flange WN ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Moderate wet H2S service	37
4405	0.5				P61K-0069G	Flange NPT ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Moderate wet H2S service	37
541	1				P61B-003U1	Flange NPT ASTM A105 Class 150 ASME B16.5 RF	
773	1		XXS		P61B-003MB	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	1.5		XXS		P61B-003MR	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	2		SCH160		P61B-002R8	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	3		SCH160		P61B-003JL	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	4		SCH120		P61B-003MU	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	6		XS		P61B-001FE	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	8		SCH60		P61B-002RE	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	10		XS		P61B-001FD	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	12		SCH40		P61B-002FJ	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	14		SCH40		P61B-002FL	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	16		XS		P61B-001HU	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	18		XS		P61B-001T0	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	20		XS		P61B-003A5	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	24		SCH30		P61B-003MT	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	30		SCH30		P61B-001M7	Flange WN ASTM A105 Class 300 ASME B16.47 Series B RF	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P67B-000FK	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	1.5				P67B-000FL	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	2				P67B-000FT	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	3				P67B-000FW	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	4				P67B-000FX	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	6				P67B-000FY	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	8				P67B-000FZ	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	10				P67B-000FM	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	12				P67B-000FN	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	14				P67B-000FP	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	16				P67B-000FR	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	18				P67B-000FS	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	20				P67B-000FU	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	24				P67B-000FV	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	30				P67B-000G2	Blind flange ASTM A105 Class 150 ASME B16.47 Series B RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000L8	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000LA	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000LB	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

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GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2				P73T-000LH	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000LL	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000LM	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	6				P73T-000LN	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	8				P73T-000LP	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	10				P73T-000LC	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	12				P73T-000LD	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	14				P73T-000LE	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	16				P73T-000LF	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	18				P73T-000LG	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	20				P73T-000LJ	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	24				P73T-000LK	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	30				P73T-000LT	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	3				P73T-000G5	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	4				P73T-000G6	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	6				P73T-000G7	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	8				P73T-000G8	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	10				P73T-000FX	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	12				P73T-000FY	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	14				P73T-000FZ	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	16				P73T-000G0	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	18				P73T-000G1	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	20				P73T-000G3	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	24				P73T-000G4	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	30				P73T-000H9	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-16				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	18-24				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
1	30				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
773	1-10				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
773	12-30				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P81B-00201	Gate valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Amine service Moderate wet H2S service C.A.=6.0mm	
1	1.5				P81B-00202	Gate valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Amine service Moderate wet H2S service C.A.=6.0mm	
1	2				P81C-006J6	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Amine service Moderate wet H2S service C.A.=6.0mm	
1	3				P81C-006J7	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Amine service Moderate wet H2S service C.A.=6.0mm	
1	4				P81C-006J8	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Amine service Moderate wet H2S service C.A.=6.0mm	
1	6				P81C-006J9	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Amine service Moderate wet H2S service C.A.=6.0mm	

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GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	8				P81C-006JA	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Amine service Moderate wet H2S service C.A.=6.0mm	
1	10				P81C-006J4	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Amine service Moderate wet H2S service C.A.=6.0mm	
1	12				P81C-006J5	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Amine service Moderate wet H2S service C.A.=6.0mm	
1	14				P81C-006JB	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Amine service Moderate wet H2S service C.A.=6.0mm	
1	16				P81C-006JC	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Amine service Moderate wet H2S service C.A.=6.0mm	
1	18				P81C-006JD	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Amine service Moderate wet H2S service C.A.=6.0mm	
1	20				P81C-006JE	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Amine service Moderate wet H2S service C.A.=6.0mm	
4001	0.5				P81K-001DG	Gate valve ASTM A182 Grade F316/F316L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Amine service Moderate wet H2S service	37
4608	1				P81B-002VG	Gate valve ASTM A105 Class 150 API 602 BW both sides w/ nipples BE - NPT ASTM A106-B T=10.60MM-nipple Trim number 12 BB-BG-OS&Y Handwheel operated Amine service Moderate wet H2S service C.A.=6.0mm	
773	2				P81C-006LW	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Amine service Moderate wet H2S service C.A.=6.0mm	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P82B-001HL	Globe valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Amine service Moderate wet H2S service C.A.=6.0mm	
1	1.5				P82B-001HM	Globe valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Amine service Moderate wet H2S service C.A.=6.0mm	
1	2				P82C-00356	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Amine service Moderate wet H2S service C.A.=6.0mm	
1	3				P82C-00357	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Amine service Moderate wet H2S service C.A.=6.0mm	
1	4				P82C-00358	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Amine service Moderate wet H2S service C.A.=6.0mm	
1	6				P82C-003V2	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Amine service Moderate wet H2S service C.A.=6.0mm	
1	8				P82C-0046H	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Amine service Moderate wet H2S service C.A.=6.0mm	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P83B-00176	Check valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Amine service Moderate wet H2S service C.A.=6.0mm	
1	1.5				P83B-00177	Check valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Amine service Moderate wet H2S service C.A.=6.0mm	
1	2				P83C-0030X	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Amine service Moderate wet H2S service C.A.=6.0mm	
1	3				P83C-0030Y	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Amine service Moderate wet H2S service C.A.=6.0mm	
1	4				P83C-0030Z	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Amine service Moderate wet H2S service C.A.=6.0mm	
1	6				P83C-00310	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Amine service Moderate wet H2S service C.A.=6.0mm	
1	8				P83C-003B5	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Amine service Moderate wet H2S service C.A.=6.0mm	
1	10				P83C-003AY	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Amine service Moderate wet H2S service C.A.=6.0mm	
1	12				P83C-003AZ	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Amine service Moderate wet H2S service C.A.=6.0mm	
1	14				P83C-003B0	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Amine service Moderate wet H2S service C.A.=6.0mm	
1	16				P83C-003B1	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Amine service Moderate wet H2S service C.A.=6.0mm	
1	18				P83C-003B2	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Amine service Moderate wet H2S service C.A.=6.0mm	
1	20				P83C-003B3	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Amine service Moderate wet H2S service C.A.=6.0mm	
1	24				P83C-003B4	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Amine service Moderate wet H2S service C.A.=6.0mm	

ORIFICE FLANGE (FO)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	10		XS		P66B-00884	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
200	10		XS		P66B-0088J	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P71B-0008C	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71B-0008D	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	

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SPECT BLANK (SB)							
OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2				P71B-0000P	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	3				P71B-0000N	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	4				P71B-0000M	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	6				P71B-0000L	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	8				P71B-0000R	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	10				P71B-0000K	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	12				P71B-0000J	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	

PADDLE BLANK (PB)							
OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000AH	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	16				P72B-0000C	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	18				P72B-000AJ	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	20				P72B-000AK	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	24				P72B-000AL	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	30				P72B-000AM	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	

PADDLE SPACER (PS)							
OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000AT	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	16				P72B-0000B	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	18				P72B-000AU	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	20				P72B-000AV	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	24				P72B-000AW	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	30				P72B-000AX	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	

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BOLT TABLE (B_A4A4 , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	60	P80S-008SY		
1	4	0.500	70	P80S-008T0		
1.5	4	0.500	75	P80S-008T1		
2	4	0.625	85	P80S-0090A		
3	4	0.625	95	P80S-0090C		
4	8	0.625	95	P80S-0090C		
6	8	0.750	105	P80S-0090E		
8	8	0.750	110	P80S-0090F		
10	12	0.875	120	P80S-005Z9		
12	12	0.875	120	P80S-005Z9		
14	12	1.000	135	P80S-00619		
16	16	1.000	140	P80S-0061A		
18	16	1.125	150	P80S-0064L		
20	20	1.125	160	P80S-0064N		
24	20	1.250	175	P80S-00686		
30	44	0.750	145	P80S-0090N		

BOLT TABLE (B_A4A4_773 , STUD ASME RF, OPTION CODE 773)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70			
1	4	0.625	80	P80S-00909		
1.5	4	0.750	95	P80S-005Z4		
2	8	0.625	90	P80S-0090B		
3	8	0.750	110	P80S-0090F		
4	8	0.750	115	P80S-0090G		
6	12	0.750	125	P80S-0090J		
8	12	0.875	140	P80S-005ZD		
10	16	1.000	160	P80S-0061E		
12	16	1.125	175	P80S-0064S		
14	20	1.125	180	P80S-0064T		
16	20	1.250	190	P80S-00689		
18	24	1.250	200	P80S-0068B		
20	24	1.250	210	P80S-0068D		
24	24	1.500	235	P80S-006LB		
30	36	1.375	285	P80S-006HY		

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BRANCH TABLE (T_A4A4)

RUN PIPE SIZE (in) \ BRANCH SIZE (in)	0.5	1	1.5	2	3	4	6	8	10	12	14	16	18	20	24	30
0.5	TS															
1		TS														
1.5		TR	TS													
2		TR	TR	TS												
3		L	TR	TR	TS											
4	L	L	L	TR	TR	TS										
6	L	L	L	L	TR	TR	TS									
8		L	L	L	L	TR	TR	TS								
10		L	L	L	L	TR	TR	TR	TS							
12		L	L	L	L	L	TR	TR	TR	TS						
14		L	L	L	L	L	TR	TR	TR	TR	TS					
16		L	L	L	L	L	TR	TR	TR	TR	TR	TS				
18		L	L	L	L	L	L	TR	TR	TR	TR	TR	TS			
20		L	L	L	L	L	L	TR	TR	TR	TR	TR	TR	TS		
24		L	L	L	L	L	L	9PD	TR	TR	TR	TR	TR	TR	TS	
30		L	L	L	L	L	L	9PD	TR	TR	TR	TR	TR	TR	TR	TS

TR : REDUCING TEE
TS : STRAIGHT TEE
9PD : REINFORCING PAD 90 DEG
L : OUTLET

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PIPING CLASS

A4A5 **REV NO. 2**

Material : Killed CS
Rating : ASME CLASS 150
Flange Face : RF
C.A.(mm) : 6.00
Gasket : Spiral Wound
Service : PROCESS - WET SEVERE SOUR SERVICE SUBJECT TO NACE + HIC STD + AMINES OR CAUSTIC - STRESS RELIEVED
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
5	BOLTING CONFIRMING TO B7M / 2HM SHALL BE USED UNDER CONDITIONS (A) DIRECT EXPOSURE TO SOUR ENVIRONMENTS (B) WHEN THE BOLTING WILL BE BURIED OR INSULATED
27	PWHT OF CARBON STEEL PIPING IN WET H2S, CAUSTIC AND AMINE SERVICES SHALL BE IN ACCORDANCE WITH SECTION 10.2, 10.3, AND 10.4 OF PROJECT SPECIFICATION 3550-8440-SP-0002 MATERIALS REQUIREMENTS FOR PRESSURISED EQUIPMENT AND PIPING. FOR CAUSTIC AND AMINE SERVICE THE FOLLOWING SHALL APPLY: - PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF ALL SITE PIPING FABRICATION WELDS IS REQUIRED FOR ALL WALL THICKNESSES. FOR MODERATE AND SEVERE WET H2S SERVICE THE FOLLOWING SHALL APPLY: PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF SITE FABRICATION CIRCUMFERENTIAL OR BRANCH WELDS IS NOT REQUIRED IF WELDS ARE MULTIPASS AND IN ACCORDANCE WITH PARA 10.2.12 OF PROJECT SPECIFICATION 3550-8440-SP-0002. FOR SERVICES MEETING THE WET H2S CRITERIA AND CAUSTIC OR AMINE CRITERIA THE MORE STRINGENT PWHT REQUIREMENT SHALL GOVERN.

DETAIL NOTES :

NO.	DESCRIPTION
37	TO BE USED ONLY FOR ORIFICE FLANGE ASSEMLY UPTO 425 DEG C

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
200	WITH JACK SCREW (FO)
541	NPT(F) (CA,F)
773	CLASS 300 (B,F,G,V)
4001	ALTERNATIVE MATERIAL FOR INSTRUMENT CONNECTION (F,P,V)
4405	FLANGE NPT WITH ALTERNATIVE MATERIAL FOR INSTRUMENT CONNECTION (F)
4608	VALVE WITH NIPPLES (V)

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PIPING CLASS
A4A5 REV NO. 2

PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		XXS		P01A-0014U	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1.5		XXS		P01A-00162	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	2		SCH160		P01A-0019T	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	3		SCH160		P01A-001S5	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	4		SCH120		P01A-001TM	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	6		XS		P01A-000ZF	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	8		SCH60		P01A-001BK	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	10		XS		P01A-000Y2	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	12		SCH40		P01A-0018V	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	14		SCH40		P01A-0018U	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	16		XS		P01A-000YS	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	18		XS		P01A-00372	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	20		XS		P01A-00373	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	24		SCH30		P01A-0043R	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	30		SCH30		P01A-008LN	Pipe ASTM A671 Grade CC60 Class 22 EFW ASME B36.10M/B36.19M BE Severe wet H2S service Amine service	
4001	0.5		SCH80S		P01J-002ES	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE Severe wet H2S service	37

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		XXS		P02A-000XJ	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1.5		XXS		P02A-002N4	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	2		SCH160		P02A-000KW	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		SCH160		P02A-000U4	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		SCH120		P02A-000U5	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		XS		P02A-000DA	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		SCH60		P02A-000MC	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	10		XS		P02A-000BN	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	12		SCH40		P02A-000JE	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	14		SCH40		P02A-000JF	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	16		XS		P02A-000CE	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	18		XS		P02A-000M9	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	20		XS		P02A-001JX	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	24		SCH30		P02A-002JR	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	30		SCH30		P02A-004EE	90 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius Severe wet H2S service Amine service	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		XXS		P03A-000U8	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1.5		XXS		P03A-002KD	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	2		SCH160		P03A-000HU	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		SCH160		P03A-000RB	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		SCH120		P03A-000RC	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		XS		P03A-000B8	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		SCH60		P03A-000K5	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	10		XS		P03A-000A3	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	12		SCH40		P03A-000GC	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	14		SCH40		P03A-000GD	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	16		XS		P03A-000AP	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	18		XS		P03A-001DZ	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	20		XS		P03A-001E0	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	24		SCH30		P03A-002G8	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	30		SCH30		P03A-004BL	45 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius Severe wet H2S service Amine service	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		XXS		P21A-002DP	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5		XXS		P21A-003KU	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2		SCH160		P21A-00245	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		SCH160		P21A-002AG	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		SCH120		P21A-002AH	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6		XS		P21A-001D4	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8		SCH60		P21A-0025S	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10		XS		P21A-001C0	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12		SCH40		P21A-0022P	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14		SCH40		P21A-0022R	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16		XS		P21A-001CG	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18		XS		P21A-002Y3	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20		XS		P21A-002Y4	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24		SCH30		P21A-003HA	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	30		SCH30		P21A-004WS	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Severe wet H2S service Amine service	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5	1	XXS	XXS	P24A-00H61	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	SCH160	XXS	P24A-0044B	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	SCH160	XXS	P24A-003GG	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	SCH160	XXS	P24A-0045F	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	SCH160	SCH160	P24A-0045H	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	SCH120	SCH160	P24A-0045G	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	SCH120	SCH160	P24A-0045E	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	XS	SCH160	P24A-00GDY	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	XS	SCH120	P24A-00GDZ	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH60	SCH120	P24A-00L2A	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH60	XS	P24A-0062G	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	XS	SCH120	P24A-00GF8	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	XS	XS	P24A-00241	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	XS	SCH60	P24A-0062H	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	SCH40	XS	P24A-00AF9	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH40	SCH60	P24A-004PT	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH40	XS	P24A-007UZ	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	SCH40	XS	P24A-00AFC	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	SCH40	SCH60	P24A-003GM	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	SCH40	XS	P24A-00AFA	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	SCH40	SCH40	P24A-0033E	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	6	XS	XS	P24A-0025G	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	XS	SCH60	P24A-00GNU	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	XS	XS	P24A-00242	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	XS	SCH40	P24A-00445	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	XS	SCH40	P24A-0044A	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	8	XS	SCH60	P24A-00NBZ	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	10	XS	XS	P24A-00GMG	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	12	XS	SCH40	P24A-00GMH	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	14	XS	SCH40	P24A-00GS6	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	16	XS	XS	P24A-0087Y	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	8	XS	SCH60	P24A-00L1X	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	10	XS	XS	P24A-00GML	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	12	XS	SCH40	P24A-00GMM	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	14	XS	SCH40	P24A-00GS7	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	16	XS	XS	P24A-0087Z	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	18	XS	XS	P24A-00880	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24	10	SCH30	XS	P24A-00GUE	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24	12	SCH30	SCH40	P24A-00GS8	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24	14	SCH30	SCH40	P24A-00GS9	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24	16	SCH30	XS	P24A-00GSA	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24	18	SCH30	XS	P24A-00GSB	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24	20	SCH30	XS	P24A-00GSC	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	30	10	SCH30	XS	P24A-00NC0	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Severe wet H2S service Amine service	
1	30	12	SCH30	SCH40	P24A-00NC1	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Severe wet H2S service Amine service	
1	30	14	SCH30	SCH40	P24A-00NC2	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Severe wet H2S service Amine service	
1	30	16	SCH30	XS	P24A-00NC3	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Severe wet H2S service Amine service	
1	30	18	SCH30	XS	P24A-00NC4	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Severe wet H2S service Amine service	
1	30	20	SCH30	XS	P24A-00NC5	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Severe wet H2S service Amine service	
1	30	24	SCH30	SCH30	P24A-00NC6	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Severe wet H2S service Amine service	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5	1	XXS	XXS	P27A-004NR	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	SCH160	XXS	P27A-0029H	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	SCH160	XXS	P27A-0029K	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	SCH160	XXS	P27A-002NG	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	SCH160	SCH160	P27A-002NC	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	1.5	SCH120	XXS	P27A-002NH	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	SCH120	SCH160	P27A-002ND	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	SCH120	SCH160	P27A-002NM	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	XS	SCH160	P27A-007P7	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	XS	SCH120	P27A-007PZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH60	SCH120	P27A-007W6	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH60	XS	P27A-00436	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	XS	SCH120	P27A-004PY	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	XS	XS	P27A-001F2	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	XS	SCH60	P27A-00437	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	SCH40	XS	P27A-004W2	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH40	SCH60	P27A-00327	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH40	XS	P27A-0091W	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	SCH40	XS	P27A-003ZY	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	SCH40	SCH60	P27A-0029V	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	SCH40	XS	P27A-0091T	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	SCH40	SCH40	P27A-001ZZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	XS	SCH60	P27A-0043A	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	XS	XS	P27A-001EN	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	XS	SCH40	P27A-002KU	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	XS	SCH40	P27A-002KZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	10	XS	XS	P27A-005BV	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	12	XS	SCH40	P27A-005DV	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	14	XS	SCH40	P27A-005FW	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	16	XS	XS	P27A-005J1	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	12	XS	SCH40	P27A-005LZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	14	XS	SCH40	P27A-005P2	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	16	XS	XS	P27A-005SB	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	18	XS	XS	P27A-005TZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24	16	SCH30	XS	P27A-005XS	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24	18	SCH30	XS	P27A-005ZJ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24	20	SCH30	XS	P27A-00618	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	30	20	SCH30	XS	P27A-00H1R	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Severe wet H2S service Amine service	
1	30	24	SCH30	SCH30	P27A-00H1S	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Severe wet H2S service Amine service	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5	1	XXS	XXS	P28A-008W0	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	SCH160	XXS	P28A-00289	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	SCH160	XXS	P28A-0028A	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	SCH160	XXS	P28A-002P1	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	SCH160	SCH160	P28A-002NY	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	1.5	SCH120	XXS	P28A-002P0	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	4	2	SCH120	SCH160	P28A-002NZ	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	SCH120	SCH160	P28A-002P2	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	XS	SCH160	P28A-0085V	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	XS	SCH120	P28A-0085W	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH60	SCH120	P28A-00AJW	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH60	XS	P28A-0042Y	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	XS	SCH120	P28A-0085X	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	XS	XS	P28A-001FR	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	XS	SCH60	P28A-0042Z	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	SCH40	XS	P28A-005T8	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH40	SCH60	P28A-0032P	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH40	XS	P28A-005T7	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	SCH40	XS	P28A-003ZS	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	SCH40	SCH60	P28A-0028W	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	SCH40	XS	P28A-005TA	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	SCH40	SCH40	P28A-001ZG	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	XS	SCH60	P28A-00432	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	XS	XS	P28A-001F9	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	XS	SCH40	P28A-002L9	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	XS	SCH40	P28A-002LD	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	10	XS	XS	P28A-008EE	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	12	XS	SCH40	P28A-008EF	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	14	XS	SCH40	P28A-0028M	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	16	XS	XS	P28A-0063K	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	12	XS	SCH40	P28A-008EH	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	14	XS	SCH40	P28A-008HJ	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	16	XS	XS	P28A-0063N	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	18	XS	XS	P28A-0063P	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24	16	SCH30	XS	P28A-008HK	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24	18	SCH30	XS	P28A-008HL	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24	20	SCH30	XS	P28A-008HM	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	30	20	SCH30	XS	P28A-00E8Y	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Severe wet H2S service Amine service	
1	30	24	SCH30	SCH30	P28A-00E8Z	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Severe wet H2S service Amine service	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		XXS		P29A-00338	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5		XXS		P29A-00339	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	2		SCH160		P29A-001W3	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	3		SCH160		P29A-001W6	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	4		SCH120		P29A-001W9	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	6		XS		P29A-001WA	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	8		SCH60		P29A-0035F	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	10		XS		P29A-001VY	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	12		SCH40		P29A-001VZ	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	14		SCH40		P29A-001W0	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	16		XS		P29A-001W1	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	18		XS		P29A-001W2	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	20		XS		P29A-001W4	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	24		SCH30		P29A-001W5	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	30		SCH30		P29A-001W7	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
541	1				P29B-0000Z	Cap ASTM A105 Class 6000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		10.60mm		P41A-001AT	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		10.60mm		P41A-001AU	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

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OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	1	SCH160	XXS	P31B-00B4A	Outlet ASTM A105 MSS SP-97 BW	
1	4	1	SCH120	XXS	P31B-00B08	Outlet ASTM A105 MSS SP-97 BW	
1	6	1	XS	XXS	P31B-00AYZ	Outlet ASTM A105 MSS SP-97 BW	
1	8	1	SCH60	XXS	P31B-00YDK	Outlet ASTM A105 MSS SP-97 BW	
1	10	1	XS	XXS	P31B-00BW4	Outlet ASTM A105 MSS SP-97 BW	
1	12	1	SCH40	XXS	P31B-00YDL	Outlet ASTM A105 MSS SP-97 BW	
1	14	1	SCH40	XXS	P31B-00YDN	Outlet ASTM A105 MSS SP-97 BW	
1	16	1	XS	XXS	P31B-00BCD	Outlet ASTM A105 MSS SP-97 BW	
1	18	1	XS	XXS	P31B-00B8W	Outlet ASTM A105 MSS SP-97 BW	
1	20	1	XS	XXS	P31B-00B88	Outlet ASTM A105 MSS SP-97 BW	
1	24	1	SCH30	XXS	P31B-00B4P	Outlet ASTM A105 MSS SP-97 BW	
1	30	1	SCH30	XXS	P31B-00B3Y	Outlet ASTM A105 MSS SP-97 BW	
1	4	1.5	SCH120	XXS	P31B-00BNX	Outlet ASTM A105 MSS SP-97 BW	
1	6	1.5	XS	XXS	P31B-00BJ4	Outlet ASTM A105 MSS SP-97 BW	
1	8	1.5	SCH60	XXS	P31B-00BFH	Outlet ASTM A105 MSS SP-97 BW	
1	10	1.5	XS	XXS	P31B-00CER	Outlet ASTM A105 MSS SP-97 BW	
1	12	1.5	SCH40	XXS	P31B-00YDM	Outlet ASTM A105 MSS SP-97 BW	
1	14	1.5	SCH40	XXS	P31B-00C9K	Outlet ASTM A105 MSS SP-97 BW	
1	16	1.5	XS	XXS	P31B-00C8P	Outlet ASTM A105 MSS SP-97 BW	
1	18	1.5	XS	XXS	P31B-00C48	Outlet ASTM A105 MSS SP-97 BW	
1	20	1.5	XS	XXS	P31B-00C3G	Outlet ASTM A105 MSS SP-97 BW	
1	24	1.5	SCH30	XXS	P31B-00BZ6	Outlet ASTM A105 MSS SP-97 BW	
1	30	1.5	SCH30	XXS	P31B-00BYA	Outlet ASTM A105 MSS SP-97 BW	
1	6	2	XS	SCH160	P31B-007SR	Outlet ASTM A105 MSS SP-97 BW	
1	8	2	SCH60	SCH160	P31B-0068W	Outlet ASTM A105 MSS SP-97 BW	
1	10	2	XS	SCH160	P31B-00ASR	Outlet ASTM A105 MSS SP-97 BW	
1	12	2	SCH40	SCH160	P31B-00ARM	Outlet ASTM A105 MSS SP-97 BW	
1	14	2	SCH40	SCH160	P31B-006PG	Outlet ASTM A105 MSS SP-97 BW	
1	16	2	XS	SCH160	P31B-00C6D	Outlet ASTM A105 MSS SP-97 BW	
1	18	2	XS	SCH160	P31B-006P6	Outlet ASTM A105 MSS SP-97 BW	
1	20	2	XS	SCH160	P31B-009ET	Outlet ASTM A105 MSS SP-97 BW	
1	24	2	SCH30	SCH160	P31B-0098J	Outlet ASTM A105 MSS SP-97 BW	
1	30	2	SCH30	SCH160	P31B-008VY	Outlet ASTM A105 MSS SP-97 BW	
1	8	3	SCH60	SCH160	P31B-00A35	Outlet ASTM A105 MSS SP-97 BW	
1	10	3	XS	SCH160	P31B-009D0	Outlet ASTM A105 MSS SP-97 BW	
1	12	3	SCH40	SCH160	P31B-0097B	Outlet ASTM A105 MSS SP-97 BW	
1	14	3	SCH40	SCH160	P31B-0091G	Outlet ASTM A105 MSS SP-97 BW	
1	16	3	XS	SCH160	P31B-00903	Outlet ASTM A105 MSS SP-97 BW	
1	18	3	XS	SCH160	P31B-008U0	Outlet ASTM A105 MSS SP-97 BW	
1	20	3	XS	SCH160	P31B-008LW	Outlet ASTM A105 MSS SP-97 BW	
1	24	3	SCH30	SCH160	P31B-008EN	Outlet ASTM A105 MSS SP-97 BW	
1	30	3	SCH30	SCH160	P31B-0082H	Outlet ASTM A105 MSS SP-97 BW	
1	12	4	SCH40	SCH120	P31B-00TU4	Outlet ASTM A105 MSS SP-97 BW	
1	14	4	SCH40	SCH120	P31B-008ZE	Outlet ASTM A105 MSS SP-97 BW	
1	16	4	XS	SCH120	P31B-00TU5	Outlet ASTM A105 MSS SP-97 BW	
1	18	4	XS	SCH120	P31B-00TU6	Outlet ASTM A105 MSS SP-97 BW	
1	20	4	XS	SCH120	P31B-00TU7	Outlet ASTM A105 MSS SP-97 BW	
1	24	4	SCH30	SCH120	P31B-00ETP	Outlet ASTM A105 MSS SP-97 BW	
1	30	4	SCH30	SCH120	P31B-00TUB	Outlet ASTM A105 MSS SP-97 BW	
1	18	6	XS	XS	P31B-008RR	Outlet ASTM A105 MSS SP-97 BW	
1	20	6	XS	XS	P31B-008K4	Outlet ASTM A105 MSS SP-97 BW	
1	24	6	SCH30	XS	P31B-00TU8	Outlet ASTM A105 MSS SP-97 BW	
1	30	6	SCH30	XS	P31B-00TUC	Outlet ASTM A105 MSS SP-97 BW	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P30B-0002F	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1½				P30B-0002G	Plug ASTM A105 ASME B16.11 NPT Round head	

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FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		XXS		P61B-003M2	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	1.5		XXS		P61B-003MC	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	2		SCH160		P61B-002F0	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	3		SCH160		P61B-003M3	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	4		SCH120		P61B-003MK	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	6		XS		P61B-003JF	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	8		SCH60		P61B-002F6	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	10		XS		P61B-003MD	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	12		SCH40		P61B-003EK	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	14		SCH40		P61B-002EX	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	16		XS		P61B-003MG	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	18		XS		P61B-002EZ	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	20		XS		P61B-003A7	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	24		SCH30		P61B-003MJ	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	30		SCH30		P61B-0045C	Flange WN ASTM A105 Class 150 ASME B16.47 Series B RF	
4001	0.5		SCH80S		P61K-005FD	Flange WN ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	37
4405	0.5				P61K-0069H	Flange NPT ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	37
541	1				P61B-003U1	Flange NPT ASTM A105 Class 150 ASME B16.5 RF	
773	1		XXS		P61B-003MB	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	1.5		XXS		P61B-003MR	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	2		SCH160		P61B-002R8	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	3		SCH160		P61B-003JL	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	4		SCH120		P61B-003MU	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	6		XS		P61B-001FE	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	8		SCH60		P61B-002RE	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	10		XS		P61B-001FD	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	12		SCH40		P61B-002FJ	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	14		SCH40		P61B-002FL	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	16		XS		P61B-001HU	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	18		XS		P61B-001T0	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	20		XS		P61B-003A5	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	24		SCH30		P61B-003MT	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	30		SCH30		P61B-001M7	Flange WN ASTM A105 Class 300 ASME B16.47 Series B RF	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P67B-000FK	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	1.5				P67B-000FL	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	2				P67B-000FT	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	3				P67B-000FW	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	4				P67B-000FX	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	6				P67B-000FY	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	8				P67B-000FZ	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	10				P67B-000FM	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	12				P67B-000FN	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	14				P67B-000FP	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	16				P67B-000FR	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	18				P67B-000FS	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	20				P67B-000FU	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	24				P67B-000FV	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	30				P67B-000G2	Blind flange ASTM A105 Class 150 ASME B16.47 Series B RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000L8	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000LA	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000LB	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

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GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2				P73T-000LH	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000LL	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000LM	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	6				P73T-000LN	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	8				P73T-000LP	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	10				P73T-000LC	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	12				P73T-000LD	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	14				P73T-000LE	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	16				P73T-000LF	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	18				P73T-000LG	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	20				P73T-000LJ	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	24				P73T-000LK	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	30				P73T-000LT	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	3				P73T-000G5	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	4				P73T-000G6	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	6				P73T-000G7	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	8				P73T-000G8	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	10				P73T-000FX	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	12				P73T-000FY	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	14				P73T-000FZ	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	16				P73T-000G0	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	18				P73T-000G1	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	20				P73T-000G3	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	24				P73T-000G4	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	30				P73T-000H9	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-16				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	18-24				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
1	30				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
773	1-10				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
773	12-30				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P81B-00203	Gate valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service C.A.=6.0mm	
1	1.5				P81B-00204	Gate valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service C.A.=6.0mm	
1	2				P81C-006JH	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service C.A.=6.0mm	
1	3				P81C-006JJ	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service C.A.=6.0mm	
1	4				P81C-006JK	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service C.A.=6.0mm	
1	6				P81C-006JL	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service C.A.=6.0mm	

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GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	8				P81C-006JM	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service C.A.=6.0mm	
1	10				P81C-006JF	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service C.A.=6.0mm	
1	12				P81C-006JG	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service C.A.=6.0mm	
1	14				P81C-006JN	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Severe wet H2S service Amine service C.A.=6.0mm	
1	16				P81C-006JP	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Severe wet H2S service Amine service C.A.=6.0mm	
1	18				P81C-006JR	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Severe wet H2S service Amine service C.A.=6.0mm	
1	20				P81C-006JS	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Severe wet H2S service Amine service C.A.=6.0mm	
1	24				P81C-006JT	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Severe wet H2S service Amine service C.A.=6.0mm	
1	30				P81C-006JU	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.47-B RF Trim number 12 BB-BG-OS&Y Gear operated Severe wet H2S service Amine service C.A.=6.0mm	
4001	0.5				P81K-001AT	Gate valve ASTM A182 Grade F316/F316L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service	37
4608	1				P81B-002VH	Gate valve ASTM A105 Class 150 API 602 BW both sides w/ nipples BE - NPT ASTM A106-B T=10.60MM-nipple Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service C.A.=6.0mm	
773	1				P81B-002KK	Gate valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service C.A.=6.0mm	
773	2				P81C-0084T	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service C.A.=6.0mm	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P82B-001HN	Globe valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service C.A.=6.0mm	
1	1.5				P82B-001HP	Globe valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service C.A.=6.0mm	
1	2				P82C-00359	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service C.A.=6.0mm	
1	3				P82C-0035A	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service C.A.=6.0mm	
1	4				P82C-0035B	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service C.A.=6.0mm	
1	6				P82C-0035C	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service C.A.=6.0mm	
1	8				P82C-0035D	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service C.A.=6.0mm	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P83B-00178	Check valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Severe wet H2S service Amine service C.A.=6.0mm	
1	1.5				P83B-00179	Check valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Severe wet H2S service Amine service C.A.=6.0mm	
1	2				P83C-00316	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service Amine service C.A.=6.0mm	
1	3				P83C-00319	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service Amine service C.A.=6.0mm	
1	4				P83C-0031A	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service Amine service C.A.=6.0mm	
1	6				P83C-0031B	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service Amine service C.A.=6.0mm	
1	8				P83C-0031C	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service Amine service C.A.=6.0mm	
1	10				P83C-00311	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service Amine service C.A.=6.0mm	
1	12				P83C-00312	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service Amine service C.A.=6.0mm	
1	14				P83C-00313	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service Amine service C.A.=6.0mm	
1	16				P83C-00314	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service Amine service C.A.=6.0mm	
1	18				P83C-00315	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service Amine service C.A.=6.0mm	
1	20				P83C-00317	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service Amine service C.A.=6.0mm	
1	24				P83C-00318	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service Amine service C.A.=6.0mm	

DP CHECK VALVE (XDP)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	30				P88C-002HZ	Dual plate check valve ASTM A216 Grade WCB Class 150 API 594 Wafer-type ASME B16.47-B RF Trim number 12 Internal wetted parts SS316 Spring Inconel Retainerless-type Severe wet H2S service Amine service C.A.=6.0mm	

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ORIFICE FLANGE (FO)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	8		SCH60		P66B-0088F	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	10		XS		P66B-00884	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	12		SCH40		P66B-00885	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	14		SCH40		P66B-00886	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	16		XS		P66B-00887	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	18		XS		P66B-00888	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	20		XS		P66B-0088A	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	24		SCH30		P66B-0088B	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
200	8		SCH60		P66B-0088W	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	10		XS		P66B-0088J	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	12		SCH40		P66B-0088K	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	14		SCH40		P66B-0088L	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	16		XS		P66B-0088M	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	18		XS		P66B-0088N	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	20		XS		P66B-0088R	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	24		SCH30		P66B-0088S	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P71B-0008C	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71B-0008D	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	2				P71B-0000P	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	3				P71B-0000N	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	4				P71B-0000M	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	6				P71B-0000L	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	8				P71B-0000R	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	10				P71B-0000K	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	12				P71B-0000J	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	

PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000AH	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	16				P72B-0000C	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	18				P72B-000AJ	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	20				P72B-000AK	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	24				P72B-000AL	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	30				P72B-000AM	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	

PADDLE SPACER (PS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000AT	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	16				P72B-0000B	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	18				P72B-000AU	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	20				P72B-000AV	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	24				P72B-000AW	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	30				P72B-000AX	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	

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BOLT TABLE (B_A4A5 , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	60	P80S-008SY		
1	4	0.500	70	P80S-008T0		
1.5	4	0.500	75	P80S-008T1		
2	4	0.625	85	P80S-0090A		
3	4	0.625	95	P80S-0090C		
4	8	0.625	95	P80S-0090C		
6	8	0.750	105	P80S-0090E		
8	8	0.750	110	P80S-0090F		
10	12	0.875	120	P80S-005Z9		
12	12	0.875	120	P80S-005Z9		
14	12	1.000	135	P80S-00619		
16	16	1.000	140	P80S-0061A		
18	16	1.125	150	P80S-0064L		
20	20	1.125	160	P80S-0064N		
24	20	1.250	175	P80S-00686		
30	44	0.750	145	P80S-0090N		

BOLT TABLE (B_A4A5_773 , STUD ASME RF, OPTION CODE 773)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70			
1	4	0.625	80	P80S-00909		
1.5	4	0.750	95	P80S-005Z4		
2	8	0.625	90	P80S-0090B		
3	8	0.750	110	P80S-0090F		
4	8	0.750	115	P80S-0090G		
6	12	0.750	125	P80S-0090J		
8	12	0.875	140	P80S-005ZD		
10	16	1.000	160	P80S-0061E		
12	16	1.125	175	P80S-0064S		
14	20	1.125	180	P80S-0064T		
16	20	1.250	190	P80S-00689		
18	24	1.250	200	P80S-0068B		
20	24	1.250	210	P80S-0068D		
24	24	1.500	235	P80S-006LB		
30	36	1.375	285	P80S-006HY		

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BRANCH TABLE (T_A4A5)

RUN PIPE SIZE (in) \ BRANCH SIZE (in)	0.5	1	1.5	2	3	4	6	8	10	12	14	16	18	20	24	30
0.5	TS															
1		TS														
1.5		TR	TS													
2		TR	TR	TS												
3		L	TR	TR	TS											
4	L	L	L	TR	TR	TS										
6	L	L	L	L	TR	TR	TS									
8		L	L	L	L	TR	TR	TS								
10		L	L	L	L	TR	TR	TR	TS							
12		L	L	L	L	L	TR	TR	TR	TS						
14		L	L	L	L	L	TR	TR	TR	TR	TS					
16		L	L	L	L	L	TR	TR	TR	TR	TR	TS				
18		L	L	L	L	L	L	TR	TR	TR	TR	TR	TS			
20		L	L	L	L	L	L	TR	TR	TR	TR	TR	TR	TS		
24		L	L	L	L	L	L	9PD	TR	TR	TR	TR	TR	TR	TS	
30		L	L	L	L	L	L	9PD	TR	TR	TR	TR	TR	TR	TR	TS

TR : REDUCING TEE
TS : STRAIGHT TEE
9PD : REINFORCING PAD 90 DEG
L : OUTLET

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PIPING CLASS

A4AQ REV NO. 2

Material : Killed CS
Rating : ASME CLASS 150
Flange Face : RF
C.A.(mm) : 6.00
Gasket : Spiral Wound
Service : PROCESS - WET SOUR SERVICE SUBJECT TO NACE STD.:

Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
2	USE OF SOFT SEATED BALL, PLUG AND BUTTERFLY VALVES SHALL BE LIMITED TO MAXIMUM OF 204DEGC (400DEGF)
5	BOLTING CONFIRMING TO B7M / 2HM SHALL BE USED UNDER CONDITIONS (A) DIRECT EXPOSURE TO SOUR ENVIRONMENTS (B) WHEN THE BOLTING WILL BE BURIED OR INSULATED
27	PWHT OF CARBON STEEL PIPING IN WET H2S, CAUSTIC AND AMINE SERVICES SHALL BE IN ACCORDANCE WITH SECTION 10.2, 10.3, AND 10.4 OF PROJECT SPECIFICATION 3550-8440-SP-0002 MATERIALS REQUIREMENTS FOR PRESSURISED EQUIPMENT AND PIPING. FOR CAUSTIC AND AMINE SERVICE THE FOLLOWING SHALL APPLY: - PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF ALL SITE PIPING FABRICATION WELDS IS REQUIRED FOR ALL WALL THICKNESSES. FOR MODERATE AND SEVERE WET H2S SERVICE THE FOLLOWING SHALL APPLY: PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF SITE FABRICATION CIRCUMFERENTIAL OR BRANCH WELDS IS NOT REQUIRED IF WELDS ARE MULTIPASS AND IN ACCORDANCE WITH PARA 10.2.12 OF PROJECT SPECIFICATION 3550-8440-SP-0002. FOR SERVICES MEETING THE WET H2S CRITERIA AND CAUSTIC OR AMINE CRITERIA THE MORE STRINGENT PWHT REQUIREMENT SHALL GOVERN.

DETAIL NOTES :

NO.	DESCRIPTION
37	TO BE USED ONLY FOR ORIFICE FLANGE ASSEMLY UPTO 425 DEG C

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
200	WITH JACK SCREW (FO)
541	NPT(F) (CA,F,L)
773	CLASS 300 (B,F,G)
3001	INSULATION GASKET KIT AND BOLTS FOR FLANGE (G)
4001	ALTERNATIVE MATERIAL FOR INSTRUMENT CONNECTION (F,P,V)
4405	FLANGE NPT WITH ALTERNATIVE MATERIAL FOR INSTRUMENT CONNECTION (F)
4608	VALVE WITH NIPPLES (V)

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PIPING CLASS
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PIPE (P)							
OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		XXS		P01A-0014U	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1.5		XXS		P01A-00162	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	2		SCH160		P01A-0019T	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	3		SCH160		P01A-001S5	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	4		SCH120		P01A-001TM	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	6		XS		P01A-000ZF	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	8		SCH60		P01A-001BK	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	10		XS		P01A-000Y2	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	12		SCH40		P01A-0018V	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	14		SCH40		P01A-0018U	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	16		XS		P01A-000YS	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	18		XS		P01A-00372	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	20		XS		P01A-00373	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	24		SCH30		P01A-0043R	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	30		SCH30		P01A-008P1	Pipe ASTM A671 Grade CC60 Class 22 EFW ASME B36.10M/B36.19M BE Moderate wet H2S service	
1	36		SCH30		P01A-008P2	Pipe ASTM A671 Grade CC60 Class 22 EFW ASME B36.10M/B36.19M BE Moderate wet H2S service	
1	42		15.88mm		P01A-008P3	Pipe ASTM A671 Grade CC60 Class 22 EFW ASME B36.10M/B36.19M BE Moderate wet H2S service	
4001	0.5		SCH80S		P01J-002CY	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE Moderate wet H2S service	37

90 ELBOW (9L)							
OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		XXS		P02A-000XJ	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1.5		XXS		P02A-002N4	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	2		SCH160		P02A-000KW	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		SCH160		P02A-000U4	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		SCH120		P02A-000U5	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		XS		P02A-000DA	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		SCH60		P02A-000MC	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	10		XS		P02A-000BN	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	12		SCH40		P02A-000JE	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	14		SCH40		P02A-000JF	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	16		XS		P02A-000CE	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	18		XS		P02A-000M9	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	20		XS		P02A-001JX	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	24		SCH30		P02A-002JR	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	30		SCH30		P02A-004GD	90 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius Moderate wet H2S service	
1	36		SCH30		P02A-004GE	90 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius Moderate wet H2S service	
1	42		15.88mm		P02A-004GF	90 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius Moderate wet H2S service	

45 ELBOW (4L)							
OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		XXS		P03A-000U8	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1.5		XXS		P03A-002KD	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	2		SCH160		P03A-000HU	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		SCH160		P03A-000RB	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		SCH120		P03A-000RC	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		XS		P03A-000B8	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		SCH60		P03A-000K5	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	10		XS		P03A-000A3	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	12		SCH40		P03A-000GC	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	14		SCH40		P03A-000GD	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	16		XS		P03A-000AP	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	18		XS		P03A-001DZ	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	20		XS		P03A-001E0	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	24		SCH30		P03A-002G8	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	30		SCH30		P03A-004DK	45 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius Moderate wet H2S service	
1	36		SCH30		P03A-004DL	45 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius Moderate wet H2S service	
1	42		15.88mm		P03A-004DM	45 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius Moderate wet H2S service	

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STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		XXS		P21A-002DP	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5		XXS		P21A-003KU	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2		SCH160		P21A-00245	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		SCH160		P21A-002AG	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		SCH120		P21A-002AH	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6		XS		P21A-001D4	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8		SCH60		P21A-0025S	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10		XS		P21A-001C0	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12		SCH40		P21A-0022P	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14		SCH40		P21A-0022R	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16		XS		P21A-001CG	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18		XS		P21A-002Y3	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20		XS		P21A-002Y4	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24		SCH30		P21A-003HA	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	30		SCH30		P21A-004YV	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Moderate wet H2S service	
1	36		SCH30		P21A-004YW	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Moderate wet H2S service	
1	42		15.88mm		P21A-004YX	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Moderate wet H2S service	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5	1	XXS	XXS	P24A-00H61	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	SCH160	XXS	P24A-0044B	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	SCH160	XXS	P24A-003GG	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	SCH160	XXS	P24A-0045F	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	SCH160	SCH160	P24A-0045H	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	SCH120	SCH160	P24A-0045G	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	SCH120	SCH160	P24A-0045E	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	XS	SCH160	P24A-00GDY	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	XS	SCH120	P24A-00GDZ	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH60	SCH120	P24A-00L2A	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH60	XS	P24A-0062G	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	XS	SCH120	P24A-00GF8	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	XS	XS	P24A-00241	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	XS	SCH60	P24A-0062H	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	SCH40	XS	P24A-00AF9	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH40	SCH60	P24A-004PT	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH40	XS	P24A-007UZ	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	SCH40	XS	P24A-00AFC	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	SCH40	SCH60	P24A-003GM	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	SCH40	XS	P24A-00AFA	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	SCH40	SCH40	P24A-0033E	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	6	XS	XS	P24A-0025G	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	XS	SCH60	P24A-00GNU	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	XS	XS	P24A-00242	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	XS	SCH40	P24A-00445	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	XS	SCH40	P24A-0044A	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	8	XS	SCH60	P24A-00NBZ	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	10	XS	XS	P24A-00GMG	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	12	XS	SCH40	P24A-00GMH	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	14	XS	SCH40	P24A-00GS6	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	16	XS	XS	P24A-0087Y	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	8	XS	SCH60	P24A-00L1X	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	10	XS	XS	P24A-00GML	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	12	XS	SCH40	P24A-00GMM	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	14	XS	SCH40	P24A-00GS7	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	16	XS	XS	P24A-0087Z	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	18	XS	XS	P24A-00880	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24	10	SCH30	XS	P24A-00GUE	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24	12	SCH30	SCH40	P24A-00GS8	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	24	14	SCH30	SCH40	P24A-00GS9	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24	16	SCH30	XS	P24A-00GSA	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24	18	SCH30	XS	P24A-00GSB	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24	20	SCH30	XS	P24A-00GSC	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	30	10	SCH30	XS	P24A-00NTE	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Moderate wet H2S service	
1	30	12	SCH30	SCH40	P24A-00NTF	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Moderate wet H2S service	
1	30	14	SCH30	SCH40	P24A-00NTG	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Moderate wet H2S service	
1	30	16	SCH30	XS	P24A-00NTH	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Moderate wet H2S service	
1	30	18	SCH30	XS	P24A-00NTJ	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Moderate wet H2S service	
1	30	20	SCH30	XS	P24A-00NTK	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Moderate wet H2S service	
1	30	24	SCH30	SCH30	P24A-00NTL	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Moderate wet H2S service	
1	36	16	SCH30	XS	P24A-00NTM	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Moderate wet H2S service	
1	36	18	SCH30	XS	P24A-00NTN	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Moderate wet H2S service	
1	36	20	SCH30	XS	P24A-00NTP	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Moderate wet H2S service	
1	36	24	SCH30	SCH30	P24A-00NTR	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Moderate wet H2S service	
1	36	30	SCH30	SCH30	P24A-00NTS	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Moderate wet H2S service	
1	42	16	15.88mm	XS	P24A-00NVR	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Moderate wet H2S service	
1	42	18	15.88mm	XS	P24A-00NTT	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Moderate wet H2S service	
1	42	20	15.88mm	XS	P24A-00NTU	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Moderate wet H2S service	
1	42	24	15.88mm	SCH30	P24A-00NTV	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Moderate wet H2S service	
1	42	30	15.88mm	SCH30	P24A-00NTW	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Moderate wet H2S service	
1	42	36	15.88mm	SCH30	P24A-00NTX	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Moderate wet H2S service	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5	1	XXS	XXS	P27A-004NR	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	SCH160	XXS	P27A-0029H	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	SCH160	XXS	P27A-0029K	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	SCH160	XXS	P27A-002NG	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	SCH160	SCH160	P27A-002NC	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	1.5	SCH120	XXS	P27A-002NH	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	SCH120	SCH160	P27A-002ND	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	SCH120	SCH160	P27A-002NM	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	XS	SCH160	P27A-007P7	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	XS	SCH120	P27A-007PZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH60	SCH120	P27A-007W6	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH60	XS	P27A-00436	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	XS	SCH120	P27A-004PY	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	XS	XS	P27A-001F2	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	XS	SCH60	P27A-00437	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	SCH40	XS	P27A-004W2	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH40	SCH60	P27A-00327	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH40	XS	P27A-0091W	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	SCH40	XS	P27A-003ZY	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	SCH40	SCH60	P27A-0029V	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	SCH40	XS	P27A-0091T	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	SCH40	SCH40	P27A-001ZZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	XS	SCH60	P27A-0043A	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	XS	XS	P27A-001EN	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	XS	SCH40	P27A-002KU	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	XS	SCH40	P27A-002KZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	10	XS	XS	P27A-005BV	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	12	XS	SCH40	P27A-005DV	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	14	XS	SCH40	P27A-005FW	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	16	XS	XS	P27A-005J1	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	12	XS	SCH40	P27A-005LZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	14	XS	SCH40	P27A-005P2	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	16	XS	XS	P27A-005SB	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	18	XS	XS	P27A-005TZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	24	16	SCH30	XS	P27A-005XS	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24	18	SCH30	XS	P27A-005ZJ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24	20	SCH30	XS	P27A-00618	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	30	20	SCH30	XS	P27A-00HAS	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Moderate wet H2S service	
1	30	24	SCH30	SCH30	P27A-00HAT	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Moderate wet H2S service	
1	36	24	SCH30	SCH30	P27A-00HAU	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Moderate wet H2S service	
1	36	30	SCH30	SCH30	P27A-00HAV	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Moderate wet H2S service	
1	42	30	15.88mm	SCH30	P27A-00HAW	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Moderate wet H2S service	
1	42	36	15.88mm	SCH30	P27A-00HAX	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Moderate wet H2S service	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5	1	XXS	XXS	P28A-008W0	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	SCH160	XXS	P28A-00289	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	SCH160	XXS	P28A-0028A	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	SCH160	XXS	P28A-002P1	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	SCH160	SCH160	P28A-002NY	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	1.5	SCH120	XXS	P28A-002P0	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	SCH120	SCH160	P28A-002NZ	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	SCH120	SCH160	P28A-002P2	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	XS	SCH160	P28A-0085V	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	XS	SCH120	P28A-0085W	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH60	SCH120	P28A-00AJW	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH60	XS	P28A-0042Y	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	XS	SCH120	P28A-0085X	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	XS	XS	P28A-001FR	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	XS	SCH60	P28A-0042Z	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	SCH40	XS	P28A-005T8	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH40	SCH60	P28A-0032P	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH40	XS	P28A-005T7	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	SCH40	XS	P28A-003ZS	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	SCH40	SCH60	P28A-0028W	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	SCH40	XS	P28A-005TA	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	SCH40	SCH40	P28A-001ZG	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	XS	SCH60	P28A-00432	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	XS	XS	P28A-001F9	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	XS	SCH40	P28A-002L9	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	XS	SCH40	P28A-002LD	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	10	XS	XS	P28A-008EE	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	12	XS	SCH40	P28A-008EF	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	14	XS	SCH40	P28A-0028M	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	16	XS	XS	P28A-0063K	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	12	XS	SCH40	P28A-008EH	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	14	XS	SCH40	P28A-008HJ	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	16	XS	XS	P28A-0063N	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	18	XS	XS	P28A-0063P	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24	16	SCH30	XS	P28A-008HK	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24	18	SCH30	XS	P28A-008HL	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24	20	SCH30	XS	P28A-008HM	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	30	20	SCH30	XS	P28A-00EJF	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Moderate wet H2S service	
1	30	24	SCH30	SCH30	P28A-00EJG	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Moderate wet H2S service	
1	36	24	SCH30	SCH30	P28A-00EJH	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Moderate wet H2S service	
1	36	30	SCH30	SCH30	P28A-00EJJ	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Moderate wet H2S service	
1	42	30	15.88mm	SCH30	P28A-00EJK	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Moderate wet H2S service	
1	42	36	15.88mm	SCH30	P28A-00EJL	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Moderate wet H2S service	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		XXS		P29A-0033Z	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	

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CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5		XXS		P29A-00340	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	2		SCH160		P29A-001TK	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	3		SCH160		P29A-001TN	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	4		SCH120		P29A-001WM	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	6		XS		P29A-001TU	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	8		SCH60		P29A-001X5	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	10		XS		P29A-001TE	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	12		SCH40		P29A-001TF	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	14		SCH40		P29A-0036R	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	16		XS		P29A-001TH	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	18		XS		P29A-001TJ	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	20		XS		P29A-001TL	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	24		SCH30		P29A-003TB	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	30		SCH30		P29A-003TC	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	36		SCH30		P29A-003TD	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	42		15.88mm		P29A-003TE	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
541	1				P29B-0000Z	Cap ASTM A105 Class 6000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		10.60mm		P41A-001AT	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		10.60mm		P41A-001AU	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
541	1.5	1			P31B-005J1	Outlet ASTM A105 Class 6000 MSS SP-97 NPT	
541	2 - 2.5	1			P31B-005J3	Outlet ASTM A105 Class 6000 MSS SP-97 NPT	
541	3 - 10	1			P31B-007KG	Outlet ASTM A105 Class 6000 MSS SP-97 NPT	
541	12 and larger	1			P31B-0137G	Outlet ASTM A105 Class 6000 MSS SP-97 NPT	
1	3	1	SCH160	XXS	P31B-00B4A	Outlet ASTM A105 MSS SP-97 BW	
1	4	1	SCH120	XXS	P31B-00B08	Outlet ASTM A105 MSS SP-97 BW	
1	6	1	XS	XXS	P31B-00AYZ	Outlet ASTM A105 MSS SP-97 BW	
1	8	1	SCH60	XXS	P31B-00YDK	Outlet ASTM A105 MSS SP-97 BW	
1	10	1	XS	XXS	P31B-00BW4	Outlet ASTM A105 MSS SP-97 BW	
1	12	1	SCH40	XXS	P31B-00YDL	Outlet ASTM A105 MSS SP-97 BW	
1	14	1	SCH40	XXS	P31B-00YDN	Outlet ASTM A105 MSS SP-97 BW	
1	16	1	XS	XXS	P31B-00BCD	Outlet ASTM A105 MSS SP-97 BW	
1	18	1	XS	XXS	P31B-00B8W	Outlet ASTM A105 MSS SP-97 BW	
1	20	1	XS	XXS	P31B-00B88	Outlet ASTM A105 MSS SP-97 BW	
1	24	1	SCH30	XXS	P31B-00B4P	Outlet ASTM A105 MSS SP-97 BW	
1	30	1	SCH30	XXS	P31B-00B3Y	Outlet ASTM A105 MSS SP-97 BW	
1	36	1	SCH30	XXS	P31B-00B3R	Outlet ASTM A105 MSS SP-97 BW	
1	42	1	15.88mm	XXS	P31B-00AZV	Outlet ASTM A105 MSS SP-97 BW	
1	4	1.5	SCH120	XXS	P31B-00BNX	Outlet ASTM A105 MSS SP-97 BW	
1	6	1.5	XS	XXS	P31B-00BJ4	Outlet ASTM A105 MSS SP-97 BW	
1	8	1.5	SCH60	XXS	P31B-00BFH	Outlet ASTM A105 MSS SP-97 BW	
1	10	1.5	XS	XXS	P31B-00CER	Outlet ASTM A105 MSS SP-97 BW	
1	12	1.5	SCH40	XXS	P31B-00YDM	Outlet ASTM A105 MSS SP-97 BW	
1	14	1.5	SCH40	XXS	P31B-00C9K	Outlet ASTM A105 MSS SP-97 BW	
1	16	1.5	XS	XXS	P31B-00C8P	Outlet ASTM A105 MSS SP-97 BW	
1	18	1.5	XS	XXS	P31B-00C48	Outlet ASTM A105 MSS SP-97 BW	
1	20	1.5	XS	XXS	P31B-00C3G	Outlet ASTM A105 MSS SP-97 BW	
1	24	1.5	SCH30	XXS	P31B-00BZ6	Outlet ASTM A105 MSS SP-97 BW	
1	30	1.5	SCH30	XXS	P31B-00BYA	Outlet ASTM A105 MSS SP-97 BW	
1	36	1.5	SCH30	XXS	P31B-00BPE	Outlet ASTM A105 MSS SP-97 BW	
1	42	1.5	15.88mm	XXS	P31B-00BLV	Outlet ASTM A105 MSS SP-97 BW	
1	6	2	XS	SCH160	P31B-007SR	Outlet ASTM A105 MSS SP-97 BW	
1	8	2	SCH60	SCH160	P31B-0068W	Outlet ASTM A105 MSS SP-97 BW	
1	10	2	XS	SCH160	P31B-00ASR	Outlet ASTM A105 MSS SP-97 BW	

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OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	12	2	SCH40	SCH160	P31B-00ARM	Outlet ASTM A105 MSS SP-97 BW	
1	14	2	SCH40	SCH160	P31B-006PG	Outlet ASTM A105 MSS SP-97 BW	
1	16	2	XS	SCH160	P31B-00C6D	Outlet ASTM A105 MSS SP-97 BW	
1	18	2	XS	SCH160	P31B-006P6	Outlet ASTM A105 MSS SP-97 BW	
1	20	2	XS	SCH160	P31B-009ET	Outlet ASTM A105 MSS SP-97 BW	
1	24	2	SCH30	SCH160	P31B-0098J	Outlet ASTM A105 MSS SP-97 BW	
1	30	2	SCH30	SCH160	P31B-008VY	Outlet ASTM A105 MSS SP-97 BW	
1	36	2	SCH30	SCH160	P31B-008H1	Outlet ASTM A105 MSS SP-97 BW	
1	42	2	15.88mm	SCH160	P31B-008A0	Outlet ASTM A105 MSS SP-97 BW	
1	8	3	SCH60	SCH160	P31B-00A35	Outlet ASTM A105 MSS SP-97 BW	
1	10	3	XS	SCH160	P31B-009D0	Outlet ASTM A105 MSS SP-97 BW	
1	12	3	SCH40	SCH160	P31B-0097B	Outlet ASTM A105 MSS SP-97 BW	
1	14	3	SCH40	SCH160	P31B-0091G	Outlet ASTM A105 MSS SP-97 BW	
1	16	3	XS	SCH160	P31B-00903	Outlet ASTM A105 MSS SP-97 BW	
1	18	3	XS	SCH160	P31B-008U0	Outlet ASTM A105 MSS SP-97 BW	
1	20	3	XS	SCH160	P31B-008LW	Outlet ASTM A105 MSS SP-97 BW	
1	24	3	SCH30	SCH160	P31B-008EN	Outlet ASTM A105 MSS SP-97 BW	
1	30	3	SCH30	SCH160	P31B-0082H	Outlet ASTM A105 MSS SP-97 BW	
1	36	3	SCH30	SCH160	P31B-007PX	Outlet ASTM A105 MSS SP-97 BW	
1	42	3	15.88mm	SCH160	P31B-00AMS	Outlet ASTM A105 MSS SP-97 BW	
1	12	4	SCH40	SCH120	P31B-00TU4	Outlet ASTM A105 MSS SP-97 BW	
1	14	4	SCH40	SCH120	P31B-008ZE	Outlet ASTM A105 MSS SP-97 BW	
1	16	4	XS	SCH120	P31B-00TU5	Outlet ASTM A105 MSS SP-97 BW	
1	18	4	XS	SCH120	P31B-00TU6	Outlet ASTM A105 MSS SP-97 BW	
1	20	4	XS	SCH120	P31B-00TU7	Outlet ASTM A105 MSS SP-97 BW	
1	24	4	SCH30	SCH120	P31B-00ETP	Outlet ASTM A105 MSS SP-97 BW	
1	30	4	SCH30	SCH120	P31B-00TUB	Outlet ASTM A105 MSS SP-97 BW	
1	36	4	SCH30	SCH120	P31B-00PJ5	Outlet ASTM A105 MSS SP-97 BW	
1	42	4	15.88mm	SCH120	P31B-01115	Outlet ASTM A105 MSS SP-97 BW	
1	18	6	XS	XS	P31B-008RR	Outlet ASTM A105 MSS SP-97 BW	
1	20	6	XS	XS	P31B-008K4	Outlet ASTM A105 MSS SP-97 BW	
1	24	6	SCH30	XS	P31B-00TU8	Outlet ASTM A105 MSS SP-97 BW	
1	30	6	SCH30	XS	P31B-00TUC	Outlet ASTM A105 MSS SP-97 BW	
1	36	6	SCH30	XS	P31B-00TUF	Outlet ASTM A105 MSS SP-97 BW	
1	42	6	15.88mm	XS	P31B-010ZD	Outlet ASTM A105 MSS SP-97 BW	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P30B-0002F	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1.5				P30B-0002G	Plug ASTM A105 ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		XXS		P61B-003M2	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	1.5		XXS		P61B-003MC	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	2		SCH160		P61B-002F0	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	3		SCH160		P61B-003M3	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	4		SCH120		P61B-003MK	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	6		XS		P61B-003JF	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	8		SCH60		P61B-002F6	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	10		XS		P61B-003MD	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	12		SCH40		P61B-003EK	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	14		SCH40		P61B-002EX	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	16		XS		P61B-003MG	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	18		XS		P61B-002EZ	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	20		XS		P61B-003A7	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	24		SCH30		P61B-003MJ	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	30		SCH30		P61B-0045C	Flange WN ASTM A105 Class 150 ASME B16.47 Series B RF	
1	36		SCH30		P61B-004R7	Flange WN ASTM A105 Class 150 ASME B16.47 Series B RF	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	42		15.88mm		P61B-0048C	Flange WN ASTM A105 Class 150 ASME B16.47 Series B RF	
4001	0.5		SCH80S		P61K-005C8	Flange WN ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Moderate wet H2S service	37
4405	0.5				P61K-0069G	Flange NPT ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Moderate wet H2S service	37
541	1				P61B-003U1	Flange NPT ASTM A105 Class 150 ASME B16.5 RF	
773	1		XXS		P61B-003MB	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	1.5		XXS		P61B-003MR	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	2		SCH160		P61B-002R8	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	3		SCH160		P61B-003JL	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	4		SCH120		P61B-003MU	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	6		XS		P61B-001FE	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	8		SCH60		P61B-002RE	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	10		XS		P61B-001FD	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	12		SCH40		P61B-002FJ	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	14		SCH40		P61B-002FL	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	16		XS		P61B-001HU	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	18		XS		P61B-001T0	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	20		XS		P61B-003A5	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	24		SCH30		P61B-003MT	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	30		SCH30		P61B-001M7	Flange WN ASTM A105 Class 300 ASME B16.47 Series B RF	
773	36		SCH30		P61B-0067X	Flange WN ASTM A105 Class 300 ASME B16.47 Series B RF	
773	42		15.88mm		P61B-0079S	Flange WN ASTM A105 Class 300 ASME B16.47 Series B RF	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P67B-000FK	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	1.5				P67B-000FL	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	2				P67B-000FT	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	3				P67B-000FW	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	4				P67B-000FX	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	6				P67B-000FY	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	8				P67B-000FZ	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	10				P67B-000FM	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	12				P67B-000FN	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	14				P67B-000FP	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	16				P67B-000FR	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	18				P67B-000FS	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	20				P67B-000FU	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	24				P67B-000FV	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	30				P67B-000G2	Blind flange ASTM A105 Class 150 ASME B16.47 Series B RF	
1	36				P67B-000G5	Blind flange ASTM A105 Class 150 ASME B16.47 Series B RF	
1	42				P67B-000KZ	Blind flange ASTM A105 Class 150 ASME B16.47 Series B RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000L8	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000LA	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000LB	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000LH	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000LL	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000LM	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	6				P73T-000LN	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	8				P73T-000LP	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	10				P73T-000LC	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	12				P73T-000LD	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

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GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P73T-000LE	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	16				P73T-000LF	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	18				P73T-000LG	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	20				P73T-000LJ	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	24				P73T-000LK	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	30				P73T-000LT	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	36				P73T-000LW	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	42				P73T-000LZ	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
3001	1				P78U-00067	Insulation gasket kit Glass reinforced epoxy Class 150 Manufacturer-standard Flange ASME B16.5 RF	
773	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	3				P73T-000G5	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	4				P73T-000G6	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	6				P73T-000G7	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	8				P73T-000G8	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	10				P73T-000FX	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	12				P73T-000FY	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	14				P73T-000FZ	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	16				P73T-000G0	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	18				P73T-000G1	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	20				P73T-000G3	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	24				P73T-000G4	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	30				P73T-000H9	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	36				P73T-000HC	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	42				P73T-000KM	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-16				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	18-24				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
1	30-42				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
773	1-10				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
773	12-42				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P81B-0018V	Gate valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service C.A.=6.0mm	
1	1.5				P81B-0018W	Gate valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service C.A.=6.0mm	
1	2				P81C-004FL	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service C.A.=6.0mm	
1	3				P81C-004FM	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service C.A.=6.0mm	
1	4				P81C-004FN	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service C.A.=6.0mm	
1	6				P81C-004FP	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service C.A.=6.0mm	
1	8				P81C-004FR	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service C.A.=6.0mm	
1	10				P81C-004FJ	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service C.A.=6.0mm	

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GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	12				P81C-004FK	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service C.A.=6.0mm	
1	14				P81C-004FD	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Moderate wet H2S service C.A.=6.0mm	
1	16				P81C-004FE	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Moderate wet H2S service C.A.=6.0mm	
1	18				P81C-004FF	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Moderate wet H2S service C.A.=6.0mm	
1	20				P81C-004FG	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Moderate wet H2S service C.A.=6.0mm	
1	24				P81C-004FH	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Moderate wet H2S service C.A.=6.0mm	
4001	0.5				P81K-0010R	Gate valve ASTM A182 Grade F316/F316L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	37
4608	1				P81B-002YC	Gate valve ASTM A105 Class 150 API 602 BW both sides w/ nipples BE - NPT ASTM A106-B T=10.60MM-nipple Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service C.A.=6.0mm	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P82B-0011W	Globe valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service C.A.=6.0mm	
1	1.5				P82B-0011X	Globe valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service C.A.=6.0mm	
1	2				P82C-00276	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service C.A.=6.0mm	
1	3				P82C-00277	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service C.A.=6.0mm	
1	4				P82C-00278	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service C.A.=6.0mm	
1	6				P82C-00279	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service C.A.=6.0mm	
1	8				P82C-0027A	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service C.A.=6.0mm	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P83B-000U8	Check valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Moderate wet H2S service C.A.=6.0mm	
1	1.5				P83B-000U9	Check valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Moderate wet H2S service C.A.=6.0mm	
1	2				P83C-0022Y	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Moderate wet H2S service C.A.=6.0mm	
1	3				P83C-0022Z	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Moderate wet H2S service C.A.=6.0mm	
1	4				P83C-00230	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Moderate wet H2S service C.A.=6.0mm	
1	6				P83C-00231	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Moderate wet H2S service C.A.=6.0mm	
1	8				P83C-00232	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Moderate wet H2S service C.A.=6.0mm	
1	10				P83C-0022T	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Moderate wet H2S service C.A.=6.0mm	
1	12				P83C-0022U	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Moderate wet H2S service C.A.=6.0mm	
1	14				P83C-0022V	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Moderate wet H2S service C.A.=6.0mm	
1	16				P83C-0022W	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Moderate wet H2S service C.A.=6.0mm	
1	18				P83C-0022X	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Moderate wet H2S service C.A.=6.0mm	

BUTTERFLY VALVE (H)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	12				P86C-0024S	Offset design butterfly valve ASTM A216 Grade WCB Class 150 API 609 Category B Lug-type ASME B16.5 RF Disc CS Seat Stellite-6 Trim SS316 Triple eccentric design BG Gear operated Moderate wet H2S service C.A.=6.0mm	

NEEDLE VALVE (NV)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P82B-001KB	Needle valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service C.A.=6.0mm	
1	1.5				P82B-001KC	Needle valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service C.A.=6.0mm	

ORIFICE FLANGE (FO)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2		SCH160		P66B-00889	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	3		SCH160		P66B-0088C	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	

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ORIFICE FLANGE (FO)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	4		SCH120		P66B-0088D	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	6		XS		P66B-0088E	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	8		SCH60		P66B-0088F	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	10		XS		P66B-00884	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	12		SCH40		P66B-00885	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	14		SCH40		P66B-00886	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	16		XS		P66B-00887	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	18		XS		P66B-00888	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	20		XS		P66B-0088A	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	24		SCH30		P66B-0088B	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
200	2		SCH160		P66B-0088P	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	3		SCH160		P66B-0088T	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	4		SCH120		P66B-0088U	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	6		XS		P66B-0088V	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	8		SCH60		P66B-0088W	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	10		XS		P66B-0088J	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	12		SCH40		P66B-0088K	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	14		SCH40		P66B-0088L	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	16		XS		P66B-0088M	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	18		XS		P66B-0088N	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	20		XS		P66B-0088R	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	24		SCH30		P66B-0088S	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P71B-0008C	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71B-0008D	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	2				P71B-0000P	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	3				P71B-0000N	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	4				P71B-0000M	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	6				P71B-0000L	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	8				P71B-0000R	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	10				P71B-0000K	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	12				P71B-0000J	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	

PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000AH	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	16				P72B-0000C	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	18				P72B-000AJ	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	20				P72B-000AK	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	24				P72B-000AL	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	30				P72B-000AM	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	36				P72B-000AN	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	42				P72B-000AP	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	

PADDLE SPACER (PS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000AT	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	16				P72B-0000B	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	18				P72B-000AU	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	20				P72B-000AV	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	24				P72B-000AW	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	30				P72B-000AX	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	36				P72B-000AY	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	42				P72B-000AZ	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	

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BOLT TABLE (B_A4AQ , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	60	P80S-008SY		
1	4	0.500	70	P80S-008T0		
1.5	4	0.500	75	P80S-008T1		
2	4	0.625	85	P80S-0090A		
3	4	0.625	95	P80S-0090C		
4	8	0.625	95	P80S-0090C		
6	8	0.750	105	P80S-0090E		
8	8	0.750	110	P80S-0090F		
10	12	0.875	120	P80S-005Z9		
12	12	0.875	120	P80S-005Z9		
14	12	1.000	135	P80S-00619		
16	16	1.000	140	P80S-0061A		
18	16	1.125	150	P80S-0064L		
20	20	1.125	160	P80S-0064N		
24	20	1.250	175	P80S-00686		
30	44	0.750	145	P80S-0090N		
36	44	0.875	175	P80S-005ZL		
42	48	1.000	190	P80S-0061L		

BOLT TABLE (B_A4AQ_773 , STUD ASME RF, OPTION CODE 773)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70			
1	4	0.625	80	P80S-00909		
1.5	4	0.750	95	P80S-005Z4		
2	8	0.625	90	P80S-0090B		
3	8	0.750	110	P80S-0090F		
4	8	0.750	115	P80S-0090G		
6	12	0.750	125	P80S-0090J		
8	12	0.875	140	P80S-005ZD		
10	16	1.000	160	P80S-0061E		
12	16	1.125	175	P80S-0064S		
14	20	1.125	180	P80S-0064T		
16	20	1.250	190	P80S-00689		
18	24	1.250	200	P80S-0068B		
20	24	1.250	210	P80S-0068D		
24	24	1.500	235	P80S-006LB		
30	36	1.375	285	P80S-006HY		
36	32	1.625	320	P80S-00A5E		
42	36	1.750	355	P80S-00AEJ		

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BRANCH TABLE (T_A4AQ)

RUN PIPE SIZE (in) \ BRANCH SIZE (in)	0.5	1	1.5	2	3	4	6	8	10	12	14	16	18	20	24	30	36	42
0.5	TS																	
1		TS																
1.5		TR	TS															
2		TR	TR	TS														
3		L	TR	TR	TS													
4	L	L	L	TR	TR	TS												
6	L	L	L	L	TR	TR	TS											
8		L	L	L	L	TR	TR	TS										
10		L	L	L	L	TR	TR	TR	TS									
12		L	L	L	L	L	TR	TR	TR	TS								
14		L	L	L	L	L	TR	TR	TR	TR	TS							
16		L	L	L	L	L	TR	TR	TR	TR	TR	TS						
18		L	L	L	L	L	L	TR	TR	TR	TR	TR	TS					
20		L	L	L	L	L	L	TR	TR	TR	TR	TR	TR	TS				
24		L	L	L	L	L	L	9PD	TR	TR	TR	TR	TR	TR	TS			
30		L	L	L	L	L	L	9PD	TR	TR	TR	TR	TR	TR	TR	TS		
36		L	L	L	L	L	L	9PD	9PD	9PD	9PD	TR	TR	TR	TR	TR	TS	
42		L	L	L	L	L	L	9PD	9PD	9PD	9PD	TR	TR	TR	TR	TR	TR	TS

TS : STRAIGHT TEE
TR : REDUCING TEE
L : OUTLET
9PD : REINFORCING PAD 90 DEG

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PIPING CLASS

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Material : Killed CS
Rating : ASME CLASS 150
Flange Face : RF
C.A.(mm) : 6.00
Gasket : Spiral Wound
Service : PROCESS -WET LOW SEVERITY SOUR SERVICE SUBJECT TO NACE
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
2	USE OF SOFT SEATED BALL, PLUG AND BUTTERFLY VALVES SHALL BE LIMITED TO MAXIMUM OF 204DEGC (400DEGF)
5	BOLTING CONFIRMING TO B7M / 2HM SHALL BE USED UNDER CONDITIONS (A) DIRECT EXPOSURE TO SOUR ENVIRONMENTS (B) WHEN THE BOLTING WILL BE BURIED OR INSULATED
27	PWHT OF CARBON STEEL PIPING IN WET H2S, CAUSTIC AND AMINE SERVICES SHALL BE IN ACCORDANCE WITH SECTION 10.2, 10.3, AND 10.4 OF PROJECT SPECIFICATION 3550-8440-SP-0002 MATERIALS REQUIREMENTS FOR PRESSURISED EQUIPMENT AND PIPING. FOR CAUSTIC AND AMINE SERVICE THE FOLLOWING SHALL APPLY: - PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF ALL SITE PIPING FABRICATION WELDS IS REQUIRED FOR ALL WALL THICKNESSES. FOR MODERATE AND SEVERE WET H2S SERVICE THE FOLLOWING SHALL APPLY: PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF SITE FABRICATION CIRCUMFERENTIAL OR BRANCH WELDS IS NOT REQUIRED IF WELDS ARE MULTIPASS AND IN ACCORDANCE WITH PARA 10.2.12 OF PROJECT SPECIFICATION 3550-8440-SP-0002. FOR SERVICES MEETING THE WET H2S CRITERIA AND CAUSTIC OR AMINE CRITERIA THE MORE STRINGENT PWHT REQUIREMENT SHALL GOVERN.

DETAIL NOTES :

NO.	DESCRIPTION
37	TO BE USED ONLY FOR ORIFICE FLANGE ASSEMLY UPTO 425 DEG C

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
200	WITH JACK SCREW (FO)
541	NPT(F) (CA,F)
773	CLASS 300 (B,F,G)
4001	ALTERNATIVE MATERIAL FOR INSTRUMENT CONNECTION (F,P,V)
4405	FLANGE NPT WITH ALTERNATIVE MATERIAL FOR INSTRUMENT CONNECTION (F)
4608	VALVE WITH NIPPLES (V)

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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		XXS		P01A-007AE	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE Moderate wet H2S service Licensor-1	
1	1.5		XXS		P01A-007AF	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE Moderate wet H2S service Licensor-1	
1	2		SCH160		P01A-0079M	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Moderate wet H2S service Licensor-1	
1	3		SCH160		P01A-007AJ	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Moderate wet H2S service Licensor-1	
1	4		SCH120		P01A-007AK	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Moderate wet H2S service Licensor-1	
1	6		XS		P01A-0079R	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Moderate wet H2S service Licensor-1	
1	8		SCH60		P01A-007F0	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Moderate wet H2S service Licensor-1	
1	10		XS		P01A-007AG	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Moderate wet H2S service Licensor-1	
1	12		SCH40		P01A-007CH	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Moderate wet H2S service Licensor-1	
1	14		SCH40		P01A-007CJ	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Moderate wet H2S service Licensor-1	
1	16		XS		P01A-007EY	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Moderate wet H2S service Licensor-1	
1	18		SCH30		P01A-007EZ	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Moderate wet H2S service Licensor-1	
4001	0.5		SCH80S		P01J-002CY	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE Moderate wet H2S service	37

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		XXS		P02A-003SJ	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Moderate wet H2S service Licensor-1	
1	1.5		XXS		P02A-003SK	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Moderate wet H2S service Licensor-1	
1	2		SCH160		P02A-003RT	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Moderate wet H2S service Licensor-1	
1	3		SCH160		P02A-003SN	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Moderate wet H2S service Licensor-1	
1	4		SCH120		P02A-003SP	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Moderate wet H2S service Licensor-1	
1	6		XS		P02A-003RW	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Moderate wet H2S service Licensor-1	
1	8		SCH60		P02A-003X2	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Moderate wet H2S service Licensor-1	
1	10		XS		P02A-003SL	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Moderate wet H2S service Licensor-1	
1	12		SCH40		P02A-003UK	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Moderate wet H2S service Licensor-1	
1	14		SCH40		P02A-003UL	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Moderate wet H2S service Licensor-1	
1	16		XS		P02A-003X0	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Moderate wet H2S service Licensor-1	
1	18		SCH30		P02A-003X1	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Moderate wet H2S service Licensor-1	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		XXS		P03A-003P7	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Moderate wet H2S service Licensor-1	
1	1.5		XXS		P03A-003P8	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Moderate wet H2S service Licensor-1	
1	2		SCH160		P03A-003NF	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Moderate wet H2S service Licensor-1	
1	3		SCH160		P03A-003PB	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Moderate wet H2S service Licensor-1	
1	4		SCH120		P03A-003PC	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Moderate wet H2S service Licensor-1	
1	6		XS		P03A-003NJ	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Moderate wet H2S service Licensor-1	
1	8		SCH60		P03A-003UR	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Moderate wet H2S service Licensor-1	
1	10		XS		P03A-003P9	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Moderate wet H2S service Licensor-1	
1	12		SCH40		P03A-003S8	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Moderate wet H2S service Licensor-1	
1	14		SCH40		P03A-003S9	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Moderate wet H2S service Licensor-1	
1	16		XS		P03A-003UN	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Moderate wet H2S service Licensor-1	
1	18		SCH30		P03A-003UP	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Moderate wet H2S service Licensor-1	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		XXS		P21A-0049X	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	1.5		XXS		P21A-0049Y	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	2		SCH160		P21A-00496	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	3		SCH160		P21A-004A1	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	

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STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	4		SCH120		P21A-004A2	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	6		XS		P21A-00499	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	8		SCH60		P21A-004EH	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	10		XS		P21A-0049Z	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	12		SCH40		P21A-004C1	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	14		SCH40		P21A-004C2	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	16		XS		P21A-004EF	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	18		SCH30		P21A-004EG	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5	1	XXS	XXS	P24A-00K44	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	2	1	SCH160	XXS	P24A-00K45	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	2	1.5	SCH160	XXS	P24A-00K46	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	3	1.5	SCH160	XXS	P24A-00K47	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	3	2	SCH160	SCH160	P24A-00K48	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	4	2	SCH120	SCH160	P24A-00K49	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	4	3	SCH120	SCH160	P24A-00K4A	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	6	3	XS	SCH160	P24A-00K4B	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	6	4	XS	SCH120	P24A-00K4C	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	8	4	SCH60	SCH120	P24A-00L29	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	8	6	SCH60	XS	P24A-00KLE	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	10	4	XS	SCH120	P24A-00K4E	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	10	6	XS	XS	P24A-00K4F	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	10	8	XS	SCH60	P24A-00KLF	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	12	6	SCH40	XS	P24A-00KLH	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	12	8	SCH40	SCH60	P24A-00KLJ	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	12	10	SCH40	XS	P24A-00KLG	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	14	6	SCH40	XS	P24A-00KLL	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	14	8	SCH40	SCH60	P24A-00KLM	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	14	10	SCH40	XS	P24A-00KLK	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	14	12	SCH40	SCH40	P24A-00KC9	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	16	6	XS	XS	P24A-00KLS	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	16	8	XS	SCH60	P24A-00KLT	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	16	10	XS	XS	P24A-00KLN	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	16	12	XS	SCH40	P24A-00KLP	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	16	14	XS	SCH40	P24A-00KLR	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	18	8	SCH30	SCH60	P24A-00KLY	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	18	10	SCH30	XS	P24A-00KLU	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	18	12	SCH30	SCH40	P24A-00KLV	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	18	14	SCH30	SCH40	P24A-00KLW	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	18	16	SCH30	XS	P24A-00KLX	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5	1	XXS	XXS	P27A-00EP9	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	2	1	SCH160	XXS	P27A-00EPA	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	2	1.5	SCH160	XXS	P27A-00EPB	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	3	1.5	SCH160	XXS	P27A-00EPC	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	3	2	SCH160	SCH160	P27A-00EPD	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	4	1.5	SCH120	XXS	P27A-00EPE	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	4	2	SCH120	SCH160	P27A-00EPF	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	4	3	SCH120	SCH160	P27A-00EPG	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	6	3	XS	SCH160	P27A-00EPH	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	6	4	XS	SCH120	P27A-00EPJ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	

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CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	8	4	SCH60	SCH120	P27A-00F31	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	8	6	SCH60	XS	P27A-00F32	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	10	4	XS	SCH120	P27A-00EPL	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	10	6	XS	XS	P27A-00EPM	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	10	8	XS	SCH60	P27A-00F33	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	12	6	SCH40	XS	P27A-00F35	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	12	8	SCH40	SCH60	P27A-00F36	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	12	10	SCH40	XS	P27A-00F34	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	14	6	SCH40	XS	P27A-00F38	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	14	8	SCH40	SCH60	P27A-00F39	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	14	10	SCH40	XS	P27A-00F37	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	14	12	SCH40	SCH40	P27A-00EWT	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	16	8	XS	SCH60	P27A-00F3D	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	16	10	XS	XS	P27A-00F3A	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	16	12	XS	SCH40	P27A-00F3B	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	16	14	XS	SCH40	P27A-00F3C	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	18	10	SCH30	XS	P27A-00F3E	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	18	12	SCH30	SCH40	P27A-00F3F	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	18	14	SCH30	SCH40	P27A-00F3G	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	18	16	SCH30	XS	P27A-00F3H	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5	1	XXS	XXS	P28A-00BU1	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	2	1	SCH160	XXS	P28A-00BU2	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	2	1.5	SCH160	XXS	P28A-00BU3	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	3	1.5	SCH160	XXS	P28A-00BU4	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	3	2	SCH160	SCH160	P28A-00BU5	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	4	1.5	SCH120	XXS	P28A-00BU6	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	4	2	SCH120	SCH160	P28A-00BU7	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	4	3	SCH120	SCH160	P28A-00BU8	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	6	3	XS	SCH160	P28A-00BU9	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	6	4	XS	SCH120	P28A-00BUA	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	8	4	SCH60	SCH120	P28A-00C72	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	8	6	SCH60	XS	P28A-00C73	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	10	4	XS	SCH120	P28A-00BUC	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	10	6	XS	XS	P28A-00BUD	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	10	8	XS	SCH60	P28A-00C74	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	12	6	SCH40	XS	P28A-00C76	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	12	8	SCH40	SCH60	P28A-00C77	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	12	10	SCH40	XS	P28A-00C75	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	14	6	SCH40	XS	P28A-00C79	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	14	8	SCH40	SCH60	P28A-00C7A	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	14	10	SCH40	XS	P28A-00C78	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	14	12	SCH40	SCH40	P28A-00C0M	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	16	8	XS	SCH60	P28A-00C7E	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	16	10	XS	XS	P28A-00C7B	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	16	12	XS	SCH40	P28A-00C7C	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	16	14	XS	SCH40	P28A-00C7D	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	18	10	SCH30	XS	P28A-00C7F	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	18	12	SCH30	SCH40	P28A-00C7G	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	18	14	SCH30	SCH40	P28A-00C7H	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	

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ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	18	16	SCH30	XS	P28A-00C7J	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		XXS		P29A-00341	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	1.5		XXS		P29A-00342	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	2		SCH160		P29A-0032Y	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	3		SCH160		P29A-00345	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	4		SCH120		P29A-00346	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	6		XS		P29A-00331	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	8		SCH60		P29A-0039F	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	10		XS		P29A-00343	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	12		SCH40		P29A-0036G	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	14		SCH40		P29A-0036H	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	16		XS		P29A-0039D	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	18		SCH30		P29A-0039E	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
541	1				P29B-0006R	Cap ASTM A105 Class 6000 ASME B16.11 NPT Moderate wet H2S service Licensor-1	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		10.60mm		P41A-001AV	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Moderate wet H2S service Licensor-1	
1	1.5		10.60mm		P41A-001AW	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Moderate wet H2S service Licensor-1	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	1	SCH160	XXS	P31B-00XKY	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	4	1	SCH120	XXS	P31B-00XKZ	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	6	1	XS	XXS	P31B-00XL1	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	8	1	SCH60	XXS	P31B-00YDE	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	10	1	XS	XXS	P31B-00XL6	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	12	1	SCH40	XXS	P31B-00YDF	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	14	1	SCH40	XXS	P31B-00YDH	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	16	1	XS	XXS	P31B-00Y2L	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	18	1	SCH30	XXS	P31B-00YDJ	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	4	1.5	SCH120	XXS	P31B-00XL0	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	6	1.5	XS	XXS	P31B-00XL2	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	8	1.5	SCH60	XXS	P31B-00Y2A	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	10	1.5	XS	XXS	P31B-00XL7	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	12	1.5	SCH40	XXS	P31B-00YDG	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	14	1.5	SCH40	XXS	P31B-00Y2G	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	16	1.5	XS	XXS	P31B-00Y2M	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	18	1.5	SCH30	XXS	P31B-00Y2S	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	6	2	XS	SCH160	P31B-00XJ4	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	8	2	SCH60	SCH160	P31B-00Y2B	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	10	2	XS	SCH160	P31B-00XL8	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	12	2	SCH40	SCH160	P31B-00Y2D	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	14	2	SCH40	SCH160	P31B-00Y2H	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	16	2	XS	SCH160	P31B-00Y2N	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	18	2	SCH30	SCH160	P31B-00Y2T	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	8	3	SCH60	SCH160	P31B-00Y2C	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	10	3	XS	SCH160	P31B-00XL9	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	12	3	SCH40	SCH160	P31B-00Y2E	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	14	3	SCH40	SCH160	P31B-00Y2J	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	16	3	XS	SCH160	P31B-00Y2P	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	18	3	SCH30	SCH160	P31B-00Y2U	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	12	4	SCH40	SCH120	P31B-00Y2F	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	14	4	SCH40	SCH120	P31B-00Y2K	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	16	4	XS	SCH120	P31B-00Y2R	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	

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OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	18	4	SCH30	SCH120	P31B-00Y2V	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	18	6	SCH30	XS	P31B-00Y2W	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P30B-0006H	Plug ASTM A105 ASME B16.11 NPT Round head Moderate wet H2S service Licensor-1	
1	1.5				P30B-0006J	Plug ASTM A105 ASME B16.11 NPT Round head Moderate wet H2S service Licensor-1	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		XXS		P61B-00A7A	Flange WN ASTM A105 Class 150 ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	1.5		XXS		P61B-00A7B	Flange WN ASTM A105 Class 150 ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	2		SCH160		P61B-00A7H	Flange WN ASTM A105 Class 150 ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	3		SCH160		P61B-00A7J	Flange WN ASTM A105 Class 150 ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	4		SCH120		P61B-00A7K	Flange WN ASTM A105 Class 150 ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	6		XS		P61B-00A7L	Flange WN ASTM A105 Class 150 ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	8		SCH60		P61B-00A7M	Flange WN ASTM A105 Class 150 ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	10		XS		P61B-00A7C	Flange WN ASTM A105 Class 150 ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	12		SCH40		P61B-00A7D	Flange WN ASTM A105 Class 150 ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	14		SCH40		P61B-00A7E	Flange WN ASTM A105 Class 150 ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	16		XS		P61B-00A7F	Flange WN ASTM A105 Class 150 ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	18		SCH30		P61B-00A7G	Flange WN ASTM A105 Class 150 ASME B16.5 RF Moderate wet H2S service Licensor-1	
4001	0.5		SCH80S		P61K-005C8	Flange WN ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Moderate wet H2S service	37
4405	0.5				P61K-0069G	Flange NPT ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Moderate wet H2S service	37
541	1				P61B-00CX8	Flange NPT ASTM A105 Class 150 ASME B16.5 RF Moderate wet H2S service Licensor-1	
773	1		XXS		P61B-009XB	Flange WN ASTM A105 Class 300 ASME B16.5 RF Moderate wet H2S service Licensor-1	
773	1.5		XXS		P61B-009XC	Flange WN ASTM A105 Class 300 ASME B16.5 RF Moderate wet H2S service Licensor-1	
773	2		SCH160		P61B-009XF	Flange WN ASTM A105 Class 300 ASME B16.5 RF Moderate wet H2S service Licensor-1	
773	3		SCH160		P61B-009XG	Flange WN ASTM A105 Class 300 ASME B16.5 RF Moderate wet H2S service Licensor-1	
773	4		SCH120		P61B-009XH	Flange WN ASTM A105 Class 300 ASME B16.5 RF Moderate wet H2S service Licensor-1	
773	6		XS		P61B-009XJ	Flange WN ASTM A105 Class 300 ASME B16.5 RF Moderate wet H2S service Licensor-1	
773	8		SCH60		P61B-00A7R	Flange WN ASTM A105 Class 300 ASME B16.5 RF Moderate wet H2S service Licensor-1	
773	10		XS		P61B-009XD	Flange WN ASTM A105 Class 300 ASME B16.5 RF Moderate wet H2S service Licensor-1	
773	12		SCH40		P61B-00A30	Flange WN ASTM A105 Class 300 ASME B16.5 RF Moderate wet H2S service Licensor-1	
773	14		SCH40		P61B-00A31	Flange WN ASTM A105 Class 300 ASME B16.5 RF Moderate wet H2S service Licensor-1	
773	16		XS		P61B-00A7N	Flange WN ASTM A105 Class 300 ASME B16.5 RF Moderate wet H2S service Licensor-1	
773	18		SCH30		P61B-00A7P	Flange WN ASTM A105 Class 300 ASME B16.5 RF Moderate wet H2S service Licensor-1	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P67B-002H0	Blind flange ASTM A105 Class 150 ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	1.5				P67B-002H1	Blind flange ASTM A105 Class 150 ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	2				P67B-002H7	Blind flange ASTM A105 Class 150 ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	3				P67B-002HA	Blind flange ASTM A105 Class 150 ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	4				P67B-002HB	Blind flange ASTM A105 Class 150 ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	6				P67B-002HC	Blind flange ASTM A105 Class 150 ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	8				P67B-002HD	Blind flange ASTM A105 Class 150 ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	10				P67B-002H2	Blind flange ASTM A105 Class 150 ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	12				P67B-002H3	Blind flange ASTM A105 Class 150 ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	14				P67B-002H4	Blind flange ASTM A105 Class 150 ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	16				P67B-002H5	Blind flange ASTM A105 Class 150 ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	18				P67B-002H6	Blind flange ASTM A105 Class 150 ASME B16.5 RF Moderate wet H2S service Licensor-1	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5				P73T-000L8	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000LA	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

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GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5				P73T-000LB	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000LH	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000LL	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000LM	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	6				P73T-000LN	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	8				P73T-000LP	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	10				P73T-000LC	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	12				P73T-000LD	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	14				P73T-000LE	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	16				P73T-000LF	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	18				P73T-000LG	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	3				P73T-000G5	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	4				P73T-000G6	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	6				P73T-000G7	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	8				P73T-000G8	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	10				P73T-000FX	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	12				P73T-000FY	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	14				P73T-000FZ	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	16				P73T-000G0	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	18				P73T-000G1	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-16				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	18				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
773	1-10				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
773	12-18				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P81B-001FT	Gate valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service C.A.=6.0mm Licensor-1	
1	1.5				P81B-001FU	Gate valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service C.A.=6.0mm Licensor-1	
1	2				P81C-004ZD	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service C.A.=6.0mm Licensor-1	
1	3				P81C-004ZE	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service C.A.=6.0mm Licensor-1	
1	4				P81C-004ZF	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service C.A.=6.0mm Licensor-1	
1	6				P81C-004ZG	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service C.A.=6.0mm Licensor-1	
1	8				P81C-004ZH	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service C.A.=6.0mm Licensor-1	
1	10				P81C-004ZB	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service C.A.=6.0mm Licensor-1	
1	12				P81C-004ZC	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service C.A.=6.0mm Licensor-1	
1	14				P81C-004ZJ	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Moderate wet H2S service C.A.=6.0mm Licensor-1	
1	16				P81C-004ZK	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Moderate wet H2S service C.A.=6.0mm Licensor-1	
1	18				P81C-004ZL	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Moderate wet H2S service C.A.=6.0mm Licensor-1	

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GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
4001	0.5				P81K-0010R	Gate valve ASTM A182 Grade F316/F316L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	37
4608	1				P81B-002VK	Gate valve ASTM A105 Class 150 API 602 BW both sides w/ nipples BE - NPT ASTM A106-B T=10.60MM-nipple Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service C.A.=6.0mm Licensor-1	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P82B-0017J	Globe valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service C.A.=6.0mm Licensor-1	
1	1.5				P82B-0017K	Globe valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service C.A.=6.0mm Licensor-1	
1	2				P82C-002DU	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service C.A.=6.0mm Licensor-1	
1	3				P82C-002DV	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service C.A.=6.0mm Licensor-1	
1	4				P82C-002DW	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service C.A.=6.0mm Licensor-1	
1	6				P82C-002DX	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service C.A.=6.0mm Licensor-1	
1	8				P82C-002DY	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service C.A.=6.0mm Licensor-1	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P83B-000Z9	Check valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Moderate wet H2S service C.A.=6.0mm Licensor-1	
1	1.5				P83B-000ZA	Check valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Moderate wet H2S service C.A.=6.0mm Licensor-1	
1	2				P83C-002DM	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Moderate wet H2S service C.A.=6.0mm Licensor-1	
1	3				P83C-002DN	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Moderate wet H2S service C.A.=6.0mm Licensor-1	
1	4				P83C-002DP	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Moderate wet H2S service C.A.=6.0mm Licensor-1	
1	6				P83C-002DR	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Moderate wet H2S service C.A.=6.0mm Licensor-1	
1	8				P83C-002DS	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Moderate wet H2S service C.A.=6.0mm Licensor-1	
1	10				P83C-002DG	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Moderate wet H2S service C.A.=6.0mm Licensor-1	
1	12				P83C-002DH	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Moderate wet H2S service C.A.=6.0mm Licensor-1	
1	14				P83C-002DJ	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Moderate wet H2S service C.A.=6.0mm Licensor-1	
1	16				P83C-002DK	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Moderate wet H2S service C.A.=6.0mm Licensor-1	
1	18				P83C-002DL	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Moderate wet H2S service C.A.=6.0mm Licensor-1	

BUTTERFLY VALVE (H)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	12				P86C-0024T	Offset design butterfly valve ASTM A216 Grade WCB Class 150 API 609 Category B Lug-type ASME B16.5 RF Disc CS Seat Stellite-6 Trim SS316 Triple eccentric design BG Gear operated Moderate wet H2S service C.A.=6.0mm Licensor-1	

ORIFICE FLANGE (FO)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2		SCH160		P66B-0088Z	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Moderate wet H2S service Licensor-1	
1	3		SCH160		P66B-00890	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Moderate wet H2S service Licensor-1	
1	4		SCH120		P66B-00891	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Moderate wet H2S service Licensor-1	
1	6		XS		P66B-00892	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Moderate wet H2S service Licensor-1	
200	2		SCH160		P66B-00895	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Moderate wet H2S service with Jack screw Licensor-1	
200	3		SCH160		P66B-00896	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Moderate wet H2S service with Jack screw Licensor-1	
200	4		SCH120		P66B-00897	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Moderate wet H2S service with Jack screw Licensor-1	
200	6		XS		P66B-00898	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Moderate wet H2S service with Jack screw Licensor-1	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P71B-0009H	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service Licensor-1	

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SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5				P71B-0009J	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	2				P71B-0009M	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	3				P71B-0009N	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	4				P71B-0009P	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	6				P71B-0009R	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	8				P71B-0009S	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	10				P71B-0009K	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	12				P71B-0009L	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service Licensor-1	

PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000DG	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	16				P72B-000DH	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	18				P72B-000DJ	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service Licensor-1	

PADDLE SPACER (PS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000DS	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	16				P72B-000DT	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	18				P72B-000DU	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service Licensor-1	

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BOLT TABLE (B_A4AQ01 , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	60	P80S-008SY		
1	4	0.500	70	P80S-008T0		
1.5	4	0.500	75	P80S-008T1		
2	4	0.625	85	P80S-0090A		
3	4	0.625	95	P80S-0090C		
4	8	0.625	95	P80S-0090C		
6	8	0.750	105	P80S-0090E		
8	8	0.750	110	P80S-0090F		
10	12	0.875	120	P80S-005Z9		
12	12	0.875	120	P80S-005Z9		
14	12	1.000	135	P80S-00619		
16	16	1.000	140	P80S-0061A		
18	16	1.125	150	P80S-0064L		

BOLT TABLE (B_A4AQ01_773 , STUD ASME RF, OPTION CODE 773)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70			
1	4	0.625	80	P80S-00909		
1.5	4	0.750	95	P80S-005Z4		
2	8	0.625	90	P80S-0090B		
3	8	0.750	110	P80S-0090F		
4	8	0.750	115	P80S-0090G		
6	12	0.750	125	P80S-0090J		
8	12	0.875	140	P80S-005ZD		
10	16	1.000	160	P80S-0061E		
12	16	1.125	175	P80S-0064S		
14	20	1.125	180	P80S-0064T		
16	20	1.250	190	P80S-00689		
18	24	1.250	200	P80S-0068B		

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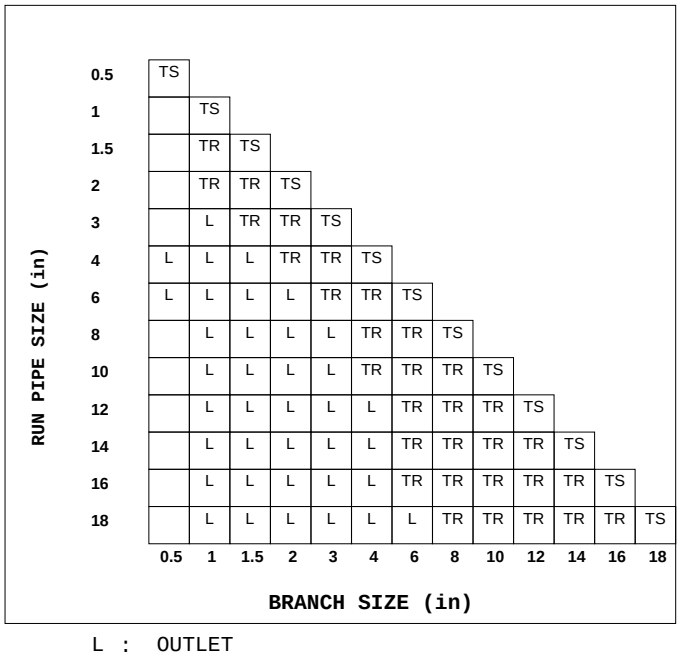
BRANCH TABLE (T_A4AQ01)



L : OUTLET
TR : REDUCING TEE
TS : STRAIGHT TEE

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Material : Killed CS
Rating : ASME CLASS 150
Flange Face : RF
C.A.(mm) : 6.00
Gasket : Spiral Wound
Service : PROCESS - WET SEVERE SOUR SERVICE SUBJECT TO NACE + HIC STD. : / SOUR WATER / NAPHTHA STABILISER OVHD CONDENSER OUTLET / WASH WATER / MHC STRIPPER OVERHEAD / NAPHTHA STABILISER OVHD / LEAN AMINE / RICH AMINE / SLOPS / and other various services

Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
2	USE OF SOFT SEATED BALL, PLUG AND BUTTERFLY VALVES SHALL BE LIMITED TO MAXIMUM OF 204DEGC (400DEGF)
5	BOLTING CONFIRMING TO B7M / 2HM SHALL BE USED UNDER CONDITIONS (A) DIRECT EXPOSURE TO SOUR ENVIRONMENTS (B) WHEN THE BOLTING WILL BE BURIED OR INSULATED
27	PWHT OF CARBON STEEL PIPING IN WET H2S, CAUSTIC AND AMINE SERVICES SHALL BE IN ACCORDANCE WITH SECTION 10.2, 10.3, AND 10.4 OF PROJECT SPECIFICATION 3550-8440-SP-0002 MATERIALS REQUIREMENTS FOR PRESSURISED EQUIPMENT AND PIPING. FOR CAUSTIC AND AMINE SERVICE THE FOLLOWING SHALL APPLY: - PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF ALL SITE PIPING FABRICATION WELDS IS REQUIRED FOR ALL WALL THICKNESSES. FOR MODERATE AND SEVERE WET H2S SERVICE THE FOLLOWING SHALL APPLY: PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF SITE FABRICATION CIRCUMFERENTIAL OR BRANCH WELDS IS NOT REQUIRED IF WELDS ARE MULTIPASS AND IN ACCORDANCE WITH PARA 10.2.12 OF PROJECT SPECIFICATION 3550-8440-SP-0002. FOR SERVICES MEETING THE WET H2S CRITERIA AND CAUSTIC OR AMINE CRITERIA THE MORE STRINGENT PWHT REQUIREMENT SHALL GOVERN.

DETAIL NOTES :

NO.	DESCRIPTION
37	TO BE USED ONLY FOR ORIFICE FLANGE ASSEMLY UPTO 425 DEG C

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
24	FULL PORT (Q)
200	WITH JACK SCREW (FO)
541	NPT(F) (CA,F,L)
773	CLASS 300 (B,F,G,V)
781	CLASS 600 (B,F,G)
4001	ALTERNATIVE MATERIAL FOR INSTRUMENT CONNECTION (F,P,V)
4405	FLANGE NPT WITH ALTERNATIVE MATERIAL FOR INSTRUMENT CONNECTION (F)
4608	VALVE WITH NIPPLES (V)

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PIPING CLASS
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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		XXS		P01A-0014U	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1.5		XXS		P01A-00162	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	2		SCH160		P01A-0019T	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	3		SCH160		P01A-001S5	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	4		SCH120		P01A-001TM	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	6		XS		P01A-000ZF	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	8		SCH60		P01A-001BK	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	10		XS		P01A-000Y2	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	12		SCH40		P01A-0018V	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	14		SCH40		P01A-0018U	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	16		XS		P01A-000YS	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	18		XS		P01A-00372	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	20		XS		P01A-00373	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	24		SCH30		P01A-0043R	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	30		SCH30		P01A-008PD	Pipe ASTM A671 Grade CC60 Class 22 EFW ASME B36.10M/B36.19M BE Severe wet H2S service	
1	36		XS		P01A-007TR	Pipe ASTM A671 Grade CC60 Class 22 EFW ASME B36.10M/B36.19M BE Severe wet H2S service	
1	42		14.27mm		P01A-007TS	Pipe ASTM A671 Grade CC60 Class 22 EFW ASME B36.10M/B36.19M BE Severe wet H2S service	
1	48		15.88mm		P01A-007TT	Pipe ASTM A671 Grade CC60 Class 22 EFW ASME B36.10M/B36.19M BE Severe wet H2S service	
1	52		15.88mm		P01A-007TU	Pipe ASTM A671 Grade CC60 Class 22 EFW ASME B36.10M/B36.19M BE Severe wet H2S service	
4001	0.5		SCH80S		P01J-002ES	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE Severe wet H2S service	37

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		XXS		P02A-000XJ	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1.5		XXS		P02A-002N4	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	2		SCH160		P02A-000KW	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		SCH160		P02A-000U4	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		SCH120		P02A-000U5	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		XS		P02A-000DA	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		SCH60		P02A-000MC	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	10		XS		P02A-000BN	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	12		SCH40		P02A-000JE	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	14		SCH40		P02A-000JF	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	16		XS		P02A-000CE	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	18		XS		P02A-000M9	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	20		XS		P02A-001JX	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	24		SCH30		P02A-002JR	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	30		SCH30		P02A-002JS	90 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius Severe wet H2S service	
1	36		XS		P02A-003Z9	90 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius Severe wet H2S service	
1	42		14.27mm		P02A-003ZB	90 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius Severe wet H2S service	
1	48		15.88mm		P02A-003ZC	90 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius Severe wet H2S service	
1	52		15.88mm		P02A-003ZA	90 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Long radius Severe wet H2S service	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		XXS		P03A-000U8	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1.5		XXS		P03A-002KD	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	2		SCH160		P03A-000HU	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		SCH160		P03A-000RB	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		SCH120		P03A-000RC	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		XS		P03A-000B8	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		SCH60		P03A-000K5	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	10		XS		P03A-000A3	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	12		SCH40		P03A-000GC	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	14		SCH40		P03A-000GD	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	16		XS		P03A-000AP	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	18		XS		P03A-001DZ	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	20		XS		P03A-001E0	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

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45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	24		SCH30		P03A-002G8	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	30		SCH30		P03A-002G9	45 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius Severe wet H2S service	
1	36		XS		P03A-003X8	45 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius Severe wet H2S service	
1	42		14.27mm		P03A-003XA	45 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius Severe wet H2S service	
1	48		15.88mm		P03A-003XB	45 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius Severe wet H2S service	
1	52		15.88mm		P03A-003X9	45 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Long radius Severe wet H2S service	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		XXS		P21A-002DP	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5		XXS		P21A-003KU	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2		SCH160		P21A-00245	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		SCH160		P21A-002AG	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		SCH120		P21A-002AH	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6		XS		P21A-001D4	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8		SCH60		P21A-0025S	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10		XS		P21A-001C0	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12		SCH40		P21A-0022P	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14		SCH40		P21A-0022R	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16		XS		P21A-001CG	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18		XS		P21A-002Y3	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20		XS		P21A-002Y4	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24		SCH30		P21A-003HA	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	30		SCH30		P21A-003HB	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Severe wet H2S service	
1	36		XS		P21A-004GP	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Severe wet H2S service	
1	42		14.27mm		P21A-004GS	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Severe wet H2S service	
1	48		15.88mm		P21A-004GT	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Severe wet H2S service	
1	52		15.88mm		P21A-004GR	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Severe wet H2S service	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5	1	XXS	XXS	P24A-00H61	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	SCH160	XXS	P24A-0044B	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	SCH160	XXS	P24A-003GG	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	SCH160	XXS	P24A-0045F	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	SCH160	SCH160	P24A-0045H	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	SCH120	SCH160	P24A-0045G	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	SCH120	SCH160	P24A-0045E	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	XS	SCH160	P24A-00GDY	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	XS	SCH120	P24A-00GDZ	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH60	SCH120	P24A-00L2A	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH60	XS	P24A-0062G	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	XS	SCH120	P24A-00GF8	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	XS	XS	P24A-00241	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	XS	SCH60	P24A-0062H	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	SCH40	XS	P24A-00AF9	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH40	SCH60	P24A-004PT	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH40	XS	P24A-007UZ	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	SCH40	XS	P24A-00AFC	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	SCH40	SCH60	P24A-003GM	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	SCH40	XS	P24A-00AFA	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	SCH40	SCH40	P24A-0033E	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	6	XS	XS	P24A-0025G	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	XS	SCH60	P24A-00GNU	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	XS	XS	P24A-00242	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	XS	SCH40	P24A-00445	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	XS	SCH40	P24A-0044A	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	8	XS	SCH60	P24A-00NBZ	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	10	XS	XS	P24A-00GMG	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	18	12	XS	SCH40	P24A-00GMH	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	14	XS	SCH40	P24A-00GS6	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	16	XS	XS	P24A-0087Y	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	8	XS	SCH60	P24A-00L1X	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	10	XS	XS	P24A-00GML	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	12	XS	SCH40	P24A-00GMM	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	14	XS	SCH40	P24A-00GS7	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	16	XS	XS	P24A-0087Z	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	18	XS	XS	P24A-00880	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24	10	SCH30	XS	P24A-00GUE	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24	12	SCH30	SCH40	P24A-00GS8	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24	14	SCH30	SCH40	P24A-00GS9	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24	16	SCH30	XS	P24A-00GSA	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24	18	SCH30	XS	P24A-00GSB	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24	20	SCH30	XS	P24A-00GSC	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	30	10	SCH30	XS	P24A-00GUF	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Severe wet H2S service	
1	30	12	SCH30	SCH40	P24A-00GUG	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Severe wet H2S service	
1	30	14	SCH30	SCH40	P24A-00GUH	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Severe wet H2S service	
1	30	16	SCH30	XS	P24A-00GSD	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Severe wet H2S service	
1	30	18	SCH30	XS	P24A-00GSE	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Severe wet H2S service	
1	30	20	SCH30	XS	P24A-00GSF	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Severe wet H2S service	
1	30	24	SCH30	SCH30	P24A-00GSG	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Severe wet H2S service	
1	36	16	XS	XS	P24A-00L2F	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Severe wet H2S service	
1	36	18	XS	XS	P24A-00NTY	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Severe wet H2S service	
1	36	20	XS	XS	P24A-00L2G	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Severe wet H2S service	
1	36	24	XS	SCH30	P24A-00NTZ	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Severe wet H2S service	
1	36	30	XS	SCH30	P24A-00NVS	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Severe wet H2S service	
1	42	16	14.27mm	XS	P24A-00L39	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Severe wet H2S service	
1	42	18	14.27mm	XS	P24A-00NU0	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Severe wet H2S service	
1	42	20	14.27mm	XS	P24A-00L35	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Severe wet H2S service	
1	42	24	14.27mm	SCH30	P24A-00NVT	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Severe wet H2S service	
1	42	30	14.27mm	SCH30	P24A-00NVU	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Severe wet H2S service	
1	42	36	14.27mm	XS	P24A-00L38	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Severe wet H2S service	
1	48	24	15.88mm	SCH30	P24A-00NU1	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Severe wet H2S service	
1	48	30	15.88mm	SCH30	P24A-00NU2	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Severe wet H2S service	
1	48	36	15.88mm	XS	P24A-00L32	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Severe wet H2S service	
1	48	42	15.88mm	14.27mm	P24A-00L33	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Severe wet H2S service	
1	52	30	15.88mm	SCH30	P24A-00NU3	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Severe wet H2S service	
1	52	36	15.88mm	XS	P24A-00L2X	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Severe wet H2S service	
1	52	42	15.88mm	14.27mm	P24A-00L2Y	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Severe wet H2S service	
1	52	48	15.88mm	15.88mm	P24A-00L2Z	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Severe wet H2S service	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5	1	XXS	XXS	P27A-004NR	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	SCH160	XXS	P27A-0029H	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	SCH160	XXS	P27A-0029K	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	SCH160	XXS	P27A-002NG	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	SCH160	SCH160	P27A-002NC	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	1.5	SCH120	XXS	P27A-002NH	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	SCH120	SCH160	P27A-002ND	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	SCH120	SCH160	P27A-002NM	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	XS	SCH160	P27A-007P7	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	XS	SCH120	P27A-007PZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH60	SCH120	P27A-007W6	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH60	XS	P27A-00436	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	XS	SCH120	P27A-004PY	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	XS	XS	P27A-001F2	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	XS	SCH60	P27A-00437	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	12	6	SCH40	XS	P27A-004W2	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH40	SCH60	P27A-00327	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH40	XS	P27A-0091W	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	SCH40	XS	P27A-003ZY	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	SCH40	SCH60	P27A-0029V	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	SCH40	XS	P27A-0091T	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	SCH40	SCH40	P27A-001ZZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	XS	SCH60	P27A-0043A	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	XS	XS	P27A-001EN	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	XS	SCH40	P27A-002KU	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	XS	SCH40	P27A-002KZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	10	XS	XS	P27A-005BV	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	12	XS	SCH40	P27A-005DV	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	14	XS	SCH40	P27A-005FW	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	16	XS	XS	P27A-005J1	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	12	XS	SCH40	P27A-005LZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	14	XS	SCH40	P27A-005P2	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	16	XS	XS	P27A-005SB	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	18	XS	XS	P27A-005TZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24	16	SCH30	XS	P27A-005XS	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24	18	SCH30	XS	P27A-005ZJ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24	20	SCH30	XS	P27A-00618	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	30	20	SCH30	XS	P27A-00BHZ	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Severe wet H2S service	
1	30	24	SCH30	SCH30	P27A-00BJ0	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Severe wet H2S service	
1	36	24	XS	SCH30	P27A-00HAY	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Severe wet H2S service	
1	36	30	XS	SCH30	P27A-00HAZ	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Severe wet H2S service	
1	42	30	14.27mm	SCH30	P27A-00HB0	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Severe wet H2S service	
1	42	36	14.27mm	XS	P27A-00FCC	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Severe wet H2S service	
1	48	42	15.88mm	14.27mm	P27A-00FCA	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Severe wet H2S service	
1	52	30	15.88mm	SCH30	P27A-00HB1	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Severe wet H2S service	
1	52	36	15.88mm	XS	P27A-00FC7	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Severe wet H2S service	
1	52	42	15.88mm	14.27mm	P27A-00FC8	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Severe wet H2S service	
1	52	48	15.88mm	15.88mm	P27A-00FC9	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Severe wet H2S service	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5	1	XXS	XXS	P28A-008W0	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	SCH160	XXS	P28A-00289	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	SCH160	XXS	P28A-0028A	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	SCH160	XXS	P28A-002P1	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	SCH160	SCH160	P28A-002NY	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	1.5	SCH120	XXS	P28A-002P0	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	SCH120	SCH160	P28A-002NZ	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	SCH120	SCH160	P28A-002P2	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	XS	SCH160	P28A-0085V	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	XS	SCH120	P28A-0085W	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH60	SCH120	P28A-00AJW	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH60	XS	P28A-0042Y	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	XS	SCH120	P28A-0085X	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	XS	XS	P28A-001FR	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	XS	SCH60	P28A-0042Z	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	SCH40	XS	P28A-005T8	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH40	SCH60	P28A-0032P	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH40	XS	P28A-005T7	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	SCH40	XS	P28A-003ZS	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	SCH40	SCH60	P28A-0028W	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	SCH40	XS	P28A-005TA	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	SCH40	SCH40	P28A-001ZG	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	XS	SCH60	P28A-00432	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	16	10	XS	XS	P28A-001F9	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	XS	SCH40	P28A-002L9	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	XS	SCH40	P28A-002LD	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	10	XS	XS	P28A-008EE	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	12	XS	SCH40	P28A-008EF	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	14	XS	SCH40	P28A-0028M	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	16	XS	XS	P28A-0063K	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	12	XS	SCH40	P28A-008EH	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	14	XS	SCH40	P28A-008HJ	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	16	XS	XS	P28A-0063N	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	18	XS	XS	P28A-0063P	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24	16	SCH30	XS	P28A-008HK	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24	18	SCH30	XS	P28A-008HL	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24	20	SCH30	XS	P28A-008HM	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	30	20	SCH30	XS	P28A-008HN	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Severe wet H2S service	
1	30	24	SCH30	SCH30	P28A-008HP	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Severe wet H2S service	
1	36	24	XS	SCH30	P28A-00EJM	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Severe wet H2S service	
1	36	30	XS	SCH30	P28A-00EJN	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Severe wet H2S service	
1	42	30	14.27mm	SCH30	P28A-00EJP	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Severe wet H2S service	
1	42	36	14.27mm	XS	P28A-00CH9	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Severe wet H2S service	
1	48	42	15.88mm	14.27mm	P28A-00CH7	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Severe wet H2S service	
1	52	30	15.88mm	SCH30	P28A-00EJR	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Severe wet H2S service	
1	52	36	15.88mm	XS	P28A-00CH0	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Severe wet H2S service	
1	52	42	15.88mm	14.27mm	P28A-00CH5	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Severe wet H2S service	
1	52	48	15.88mm	15.88mm	P28A-00CH6	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Severe wet H2S service	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		XXS		P29A-00338	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5		XXS		P29A-00339	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	2		SCH160		P29A-001W3	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	3		SCH160		P29A-001W6	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	4		SCH120		P29A-001W9	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	6		XS		P29A-001WA	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	8		SCH60		P29A-0035F	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	10		XS		P29A-001VY	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	12		SCH40		P29A-001VZ	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	14		SCH40		P29A-001W0	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	16		XS		P29A-001W1	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	18		XS		P29A-001W2	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	20		XS		P29A-001W4	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	24		SCH30		P29A-001W5	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	30		SCH30		P29A-001W7	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	36		XS		P29A-003C1	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	42		14.27mm		P29A-003C3	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	48		15.88mm		P29A-003C4	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	52		15.88mm		P29A-003C2	Cap ASTM A234 Grade WPB Seamless ASME B16.9-modified BW Severe wet H2S service	
541	1				P29B-0000Z	Cap ASTM A105 Class 6000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		10.60mm		P41A-001AT	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		10.60mm		P41A-001AU	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
541	.5	1			P31B-005J1	Outlet ASTM A105 Class 6000 MSS SP-97 NPT	
541	2 - 2.5	1			P31B-005J3	Outlet ASTM A105 Class 6000 MSS SP-97 NPT	
541	3 - 10	1			P31B-007KG	Outlet ASTM A105 Class 6000 MSS SP-97 NPT	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
541	12 and larger	1			P31B-0137G	Outlet ASTM A105 Class 6000 MSS SP-97 NPT	
1	3	1	SCH160	XXS	P31B-00B4A	Outlet ASTM A105 MSS SP-97 BW	
1	4	1	SCH120	XXS	P31B-00B08	Outlet ASTM A105 MSS SP-97 BW	
1	6	1	XS	XXS	P31B-00AYZ	Outlet ASTM A105 MSS SP-97 BW	
1	8	1	SCH60	XXS	P31B-00YDK	Outlet ASTM A105 MSS SP-97 BW	
1	10	1	XS	XXS	P31B-00BW4	Outlet ASTM A105 MSS SP-97 BW	
1	12	1	SCH40	XXS	P31B-00YDL	Outlet ASTM A105 MSS SP-97 BW	
1	14	1	SCH40	XXS	P31B-00YDN	Outlet ASTM A105 MSS SP-97 BW	
1	16	1	XS	XXS	P31B-00BCD	Outlet ASTM A105 MSS SP-97 BW	
1	18	1	XS	XXS	P31B-00B8W	Outlet ASTM A105 MSS SP-97 BW	
1	20	1	XS	XXS	P31B-00B88	Outlet ASTM A105 MSS SP-97 BW	
1	24	1	SCH30	XXS	P31B-00B4P	Outlet ASTM A105 MSS SP-97 BW	
1	30	1	SCH30	XXS	P31B-00B3Y	Outlet ASTM A105 MSS SP-97 BW	
1	36	1	XS	XXS	P31B-00YDU	Outlet ASTM A105 MSS SP-97 BW	
1	42	1	14.27mm	XXS	P31B-00YDR	Outlet ASTM A105 MSS SP-97 BW	
1	48	1	15.88mm	XXS	P31B-00AZN	Outlet ASTM A105 MSS SP-97 BW	
1	52	1	15.88mm	XXS	P31B-00AZH	Outlet ASTM A105 MSS SP-97 BW	
1	4	1.5	SCH120	XXS	P31B-00BNX	Outlet ASTM A105 MSS SP-97 BW	
1	6	1.5	XS	XXS	P31B-00BJ4	Outlet ASTM A105 MSS SP-97 BW	
1	8	1.5	SCH60	XXS	P31B-00BFH	Outlet ASTM A105 MSS SP-97 BW	
1	10	1.5	XS	XXS	P31B-00CER	Outlet ASTM A105 MSS SP-97 BW	
1	12	1.5	SCH40	XXS	P31B-00YDM	Outlet ASTM A105 MSS SP-97 BW	
1	14	1.5	SCH40	XXS	P31B-00C9K	Outlet ASTM A105 MSS SP-97 BW	
1	16	1.5	XS	XXS	P31B-00C8P	Outlet ASTM A105 MSS SP-97 BW	
1	18	1.5	XS	XXS	P31B-00C48	Outlet ASTM A105 MSS SP-97 BW	
1	20	1.5	XS	XXS	P31B-00C3G	Outlet ASTM A105 MSS SP-97 BW	
1	24	1.5	SCH30	XXS	P31B-00BZ6	Outlet ASTM A105 MSS SP-97 BW	
1	30	1.5	SCH30	XXS	P31B-00BYA	Outlet ASTM A105 MSS SP-97 BW	
1	36	1.5	XS	XXS	P31B-00YDV	Outlet ASTM A105 MSS SP-97 BW	
1	42	1.5	14.27mm	XXS	P31B-00YDS	Outlet ASTM A105 MSS SP-97 BW	
1	48	1.5	15.88mm	XXS	P31B-00BLE	Outlet ASTM A105 MSS SP-97 BW	
1	52	1.5	15.88mm	XXS	P31B-00BL8	Outlet ASTM A105 MSS SP-97 BW	
1	6	2	XS	SCH160	P31B-007SR	Outlet ASTM A105 MSS SP-97 BW	
1	8	2	SCH60	SCH160	P31B-0068W	Outlet ASTM A105 MSS SP-97 BW	
1	10	2	XS	SCH160	P31B-00ASR	Outlet ASTM A105 MSS SP-97 BW	
1	12	2	SCH40	SCH160	P31B-00ARM	Outlet ASTM A105 MSS SP-97 BW	
1	14	2	SCH40	SCH160	P31B-006PG	Outlet ASTM A105 MSS SP-97 BW	
1	16	2	XS	SCH160	P31B-00C6D	Outlet ASTM A105 MSS SP-97 BW	
1	18	2	XS	SCH160	P31B-006P6	Outlet ASTM A105 MSS SP-97 BW	
1	20	2	XS	SCH160	P31B-009ET	Outlet ASTM A105 MSS SP-97 BW	
1	24	2	SCH30	SCH160	P31B-0098J	Outlet ASTM A105 MSS SP-97 BW	
1	30	2	SCH30	SCH160	P31B-008VY	Outlet ASTM A105 MSS SP-97 BW	
1	36	2	XS	SCH160	P31B-008GZ	Outlet ASTM A105 MSS SP-97 BW	
1	42	2	14.27mm	SCH160	P31B-00EP5	Outlet ASTM A105 MSS SP-97 BW	
1	48	2	15.88mm	SCH160	P31B-0083Y	Outlet ASTM A105 MSS SP-97 BW	
1	52	2	15.88mm	SCH160	P31B-007YE	Outlet ASTM A105 MSS SP-97 BW	
1	8	3	SCH60	SCH160	P31B-00A35	Outlet ASTM A105 MSS SP-97 BW	
1	10	3	XS	SCH160	P31B-009D0	Outlet ASTM A105 MSS SP-97 BW	
1	12	3	SCH40	SCH160	P31B-0097B	Outlet ASTM A105 MSS SP-97 BW	
1	14	3	SCH40	SCH160	P31B-0091G	Outlet ASTM A105 MSS SP-97 BW	
1	16	3	XS	SCH160	P31B-00903	Outlet ASTM A105 MSS SP-97 BW	
1	18	3	XS	SCH160	P31B-008U0	Outlet ASTM A105 MSS SP-97 BW	
1	20	3	XS	SCH160	P31B-008LW	Outlet ASTM A105 MSS SP-97 BW	
1	24	3	SCH30	SCH160	P31B-008EN	Outlet ASTM A105 MSS SP-97 BW	
1	30	3	SCH30	SCH160	P31B-0082H	Outlet ASTM A105 MSS SP-97 BW	
1	36	3	XS	SCH160	P31B-00EUD	Outlet ASTM A105 MSS SP-97 BW	
1	42	3	14.27mm	SCH160	P31B-00TVP	Outlet ASTM A105 MSS SP-97 BW	
1	48	3	15.88mm	SCH160	P31B-00AFZ	Outlet ASTM A105 MSS SP-97 BW	
1	52	3	15.88mm	SCH160	P31B-00AF8	Outlet ASTM A105 MSS SP-97 BW	

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OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	12	4	SCH40	SCH120	P31B-00TU4	Outlet ASTM A105 MSS SP-97 BW	
1	14	4	SCH40	SCH120	P31B-008ZE	Outlet ASTM A105 MSS SP-97 BW	
1	16	4	XS	SCH120	P31B-00TU5	Outlet ASTM A105 MSS SP-97 BW	
1	18	4	XS	SCH120	P31B-00TU6	Outlet ASTM A105 MSS SP-97 BW	
1	20	4	XS	SCH120	P31B-00TU7	Outlet ASTM A105 MSS SP-97 BW	
1	24	4	SCH30	SCH120	P31B-00ETP	Outlet ASTM A105 MSS SP-97 BW	
1	30	4	SCH30	SCH120	P31B-00TUB	Outlet ASTM A105 MSS SP-97 BW	
1	36	4	XS	SCH120	P31B-00EUE	Outlet ASTM A105 MSS SP-97 BW	
1	42	4	14.27mm	SCH120	P31B-00YDT	Outlet ASTM A105 MSS SP-97 BW	
1	48	4	15.88mm	SCH120	P31B-00YDY	Outlet ASTM A105 MSS SP-97 BW	
1	52	4	15.88mm	SCH120	P31B-00YDZ	Outlet ASTM A105 MSS SP-97 BW	
1	18	6	XS	XS	P31B-008RR	Outlet ASTM A105 MSS SP-97 BW	
1	20	6	XS	XS	P31B-008K4	Outlet ASTM A105 MSS SP-97 BW	
1	24	6	SCH30	XS	P31B-00TU8	Outlet ASTM A105 MSS SP-97 BW	
1	30	6	SCH30	XS	P31B-00TUC	Outlet ASTM A105 MSS SP-97 BW	
1	36	6	XS	XS	P31B-00ENW	Outlet ASTM A105 MSS SP-97 BW	
1	42	6	14.27mm	XS	P31B-00EP8	Outlet ASTM A105 MSS SP-97 BW	
1	48	6	15.88mm	XS	P31B-00EXE	Outlet ASTM A105 MSS SP-97 BW	
1	52	6	15.88mm	XS	P31B-00EPT	Outlet ASTM A105 MSS SP-97 BW	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P30B-0002F	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1.5				P30B-0002G	Plug ASTM A105 ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		XXS		P61B-003M2	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	1.5		XXS		P61B-003MC	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	2		SCH160		P61B-002F0	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	3		SCH160		P61B-003M3	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	4		SCH120		P61B-003MK	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	6		XS		P61B-003JF	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	8		SCH60		P61B-002F6	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	10		XS		P61B-003MD	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	12		SCH40		P61B-003EK	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	14		SCH40		P61B-002EX	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	16		XS		P61B-003MG	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	18		XS		P61B-002EZ	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	20		XS		P61B-003A7	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	24		SCH30		P61B-003MJ	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	30		SCH30		P61B-0045C	Flange WN ASTM A105 Class 150 ASME B16.47 Series B RF	
1	36		XS		P61B-001UE	Flange WN ASTM A105 Class 150 ASME B16.47 Series B RF	
1	42		14.27mm		P61B-003LG	Flange WN ASTM A105 Class 150 ASME B16.47 Series B RF	
1	48		15.88mm		P61B-001NK	Flange WN ASTM A105 Class 150 ASME B16.47 Series B RF	
1	52		15.88mm		P61B-003LM	Flange WN ASTM A105 Class 150 ASME B16.47 Series B RF	
4001	0.5		SCH80S		P61K-005FD	Flange WN ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	37
4405	0.5				P61K-0069H	Flange NPT ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	37
541	1				P61B-003U1	Flange NPT ASTM A105 Class 150 ASME B16.5 RF	
773	1		XXS		P61B-003MB	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	1.5		XXS		P61B-003MR	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	2		SCH160		P61B-002R8	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	3		SCH160		P61B-003JL	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	4		SCH120		P61B-003MU	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	6		XS		P61B-001FE	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	8		SCH60		P61B-002RE	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	10		XS		P61B-001FD	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	12		SCH40		P61B-002FJ	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	14		SCH40		P61B-002FL	Flange WN ASTM A105 Class 300 ASME B16.5 RF	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
773	16		XS		P61B-001HU	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	18		XS		P61B-001T0	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	20		XS		P61B-003A5	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	24		SCH30		P61B-003MT	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	30		SCH30		P61B-001M7	Flange WN ASTM A105 Class 300 ASME B16.47 Series B RF	
773	36		XS		P61B-001N6	Flange WN ASTM A105 Class 300 ASME B16.47 Series B RF	
773	42		14.27mm		P61B-003ZZ	Flange WN ASTM A105 Class 300 ASME B16.47 Series B RF	
773	48		15.88mm		P61B-00402	Flange WN ASTM A105 Class 300 ASME B16.47 Series B RF	
773	52		15.88mm		P61B-00ABZ	Flange WN ASTM A105 Class 300 ASME B16.47 Series B RF	
781	2		SCH160		P61B-003T7	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	3		SCH160		P61B-003JS	Flange WN ASTM A105 Class 600 ASME B16.5 RF	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P67B-000FK	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	1.5				P67B-000FL	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	2				P67B-000FT	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	3				P67B-000FW	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	4				P67B-000FX	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	6				P67B-000FY	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	8				P67B-000FZ	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	10				P67B-000FM	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	12				P67B-000FN	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	14				P67B-000FP	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	16				P67B-000FR	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	18				P67B-000FS	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	20				P67B-000FU	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	24				P67B-000FV	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	30				P67B-000G2	Blind flange ASTM A105 Class 150 ASME B16.47 Series B RF	
1	36				P67B-000G5	Blind flange ASTM A105 Class 150 ASME B16.47 Series B RF	
1	42				P67B-000KZ	Blind flange ASTM A105 Class 150 ASME B16.47 Series B RF	
1	48				P67B-000L2	Blind flange ASTM A105 Class 150 ASME B16.47 Series B RF	
1	52				P67B-0016N	Blind flange ASTM A105 Class 150 ASME B16.47 Series B RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000L8	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000LA	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000LB	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000LH	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000LL	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000LM	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	6				P73T-000LN	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	8				P73T-000LP	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	10				P73T-000LC	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	12				P73T-000LD	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	14				P73T-000LE	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	16				P73T-000LF	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	18				P73T-000LG	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	20				P73T-000LJ	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	24				P73T-000LK	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	30				P73T-000LT	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	36				P73T-000LW	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	42				P73T-000LZ	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	48				P73T-000M2	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	52				P73T-001E2	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	3				P73T-000G5	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	4				P73T-000G6	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	6				P73T-000G7	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	8				P73T-000G8	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	10				P73T-000FX	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	12				P73T-000FY	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	14				P73T-000FZ	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	16				P73T-000G0	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	18				P73T-000G1	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	20				P73T-000G3	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	24				P73T-000G4	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	30				P73T-000H9	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	36				P73T-000HC	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	42				P73T-000KM	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	48				P73T-000KR	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	52				P73T-0024N	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	2				P73T-000JH	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	3				P73T-000JL	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-16				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	18-24				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
1	30-42				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	48-52				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
773	1-10				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
773	12-52				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
781	1-3				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P81B-0018X	Gate valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service C.A.=6.0mm	
1	1.5				P81B-0018Y	Gate valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service C.A.=6.0mm	
1	2				P81C-004G1	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service C.A.=6.0mm	
1	3				P81C-004G2	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service C.A.=6.0mm	
1	4				P81C-004G3	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service C.A.=6.0mm	
1	6				P81C-004G4	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service C.A.=6.0mm	
1	8				P81C-004G5	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service C.A.=6.0mm	
1	10				P81C-004FZ	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service C.A.=6.0mm	

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GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	12				P81C-004G0	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service C.A.=6.0mm	
1	14				P81C-004FU	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Severe wet H2S service C.A.=6.0mm	
1	16				P81C-004FV	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Severe wet H2S service C.A.=6.0mm	
1	18				P81C-004FW	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Severe wet H2S service C.A.=6.0mm	
1	20				P81C-004FX	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Severe wet H2S service C.A.=6.0mm	
1	24				P81C-004FY	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Severe wet H2S service C.A.=6.0mm	
1	30				P81C-004FS	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.47-B RF Trim number 12 BB-BG-OS&Y Gear operated Severe wet H2S service C.A.=6.0mm	
1	36				P81C-004FT	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.47-B RF Trim number 12 BB-BG-OS&Y Gear operated Severe wet H2S service C.A.=6.0mm	
1	42				P81C-00526	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.47-B RF Trim number 12 BB-BG-OS&Y Gear operated Severe wet H2S service C.A.=6.0mm	
1	48				P81C-00527	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.47-B RF Trim number 12 BB-BG-OS&Y Gear operated Severe wet H2S service C.A.=6.0mm	
4001	0.5				P81K-0014F	Gate valve ASTM A182 Grade F316/F316L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	37
4608	1				P81B-002VL	Gate valve ASTM A105 Class 150 API 602 BW both sides w/ nipples BE - NPT ASTM A106-B T=10.60MM-nipple Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service C.A.=6.0mm	
773	1				P81B-0019H	Gate valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service C.A.=6.0mm	
773	1.5				P81B-0019J	Gate valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service C.A.=6.0mm	
773	2				P81C-004K6	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service C.A.=6.0mm	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P82B-0011Y	Globe valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service C.A.=6.0mm	
1	1.5				P82B-0011Z	Globe valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service C.A.=6.0mm	
1	2				P82C-0027B	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service C.A.=6.0mm	
1	3				P82C-0027C	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service C.A.=6.0mm	
1	4				P82C-0027D	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service C.A.=6.0mm	
1	6				P82C-0027E	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service C.A.=6.0mm	
1	8				P82C-0027F	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service C.A.=6.0mm	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P83B-000UA	Check valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Severe wet H2S service C.A.=6.0mm	
1	1.5				P83B-000UB	Check valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Severe wet H2S service C.A.=6.0mm	
1	2				P83C-00238	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service C.A.=6.0mm	
1	3				P83C-0023B	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service C.A.=6.0mm	
1	4				P83C-0023C	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service C.A.=6.0mm	
1	6				P83C-0023D	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service C.A.=6.0mm	
1	8				P83C-0023E	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service C.A.=6.0mm	
1	10				P83C-00233	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service C.A.=6.0mm	
1	12				P83C-00234	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service C.A.=6.0mm	
1	14				P83C-00235	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service C.A.=6.0mm	
1	16				P83C-00236	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service C.A.=6.0mm	
1	18				P83C-00237	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service C.A.=6.0mm	
1	20				P83C-00239	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service C.A.=6.0mm	
1	24				P83C-0023A	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service C.A.=6.0mm	

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DP CHECK VALVE (XDP)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	30				P88C-0023E	Dual plate check valve ASTM A216 Grade WCB Class 150 API 594 Wafer-type ASME B16.47-B RF Trim number 12 Internal wetted parts SS316 Spring Inconel Retainerless-type Severe wet H2S service C.A.=6.0mm	

BALL VALVE (Q)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2				P84C-007M9	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design Severe wet H2S service C.A.=6.0mm	
24	2				P84C-007MA	Ball valve Long-pattern ASTM A216 Grade WCB Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design Severe wet H2S service C.A.=6.0mm	

BUTTERFLY VALVE (H)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	10				P86C-0024U	Offset design butterfly valve ASTM A216 Grade WCB Class 150 API 609 Category B Lug-type ASME B16.5 RF Disc CS Seat Stellite-6 Trim SS316 Triple eccentric design BG Gear operated Severe wet H2S service C.A.=6.0mm	
1	12				P86C-0024V	Offset design butterfly valve ASTM A216 Grade WCB Class 150 API 609 Category B Lug-type ASME B16.5 RF Disc CS Seat Stellite-6 Trim SS316 Triple eccentric design BG Gear operated Severe wet H2S service C.A.=6.0mm	

NEEDLE VALVE (NV)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P82B-001KD	Needle valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service C.A.=6.0mm	
1	1.5				P82B-001KE	Needle valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service C.A.=6.0mm	

ORIFICE FLANGE (FO)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2		SCH160		P66B-00889	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	3		SCH160		P66B-0088C	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	4		SCH120		P66B-0088D	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	6		XS		P66B-0088E	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	8		SCH60		P66B-0088F	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	10		XS		P66B-00884	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	12		SCH40		P66B-00885	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	14		SCH40		P66B-00886	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	16		XS		P66B-00887	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	18		XS		P66B-00888	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	20		XS		P66B-0088A	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	24		SCH30		P66B-0088B	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
200	2		SCH160		P66B-0088P	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	3		SCH160		P66B-0088T	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	4		SCH120		P66B-0088U	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	6		XS		P66B-0088V	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	8		SCH60		P66B-0088W	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	10		XS		P66B-0088J	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	12		SCH40		P66B-0088K	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	14		SCH40		P66B-0088L	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	16		XS		P66B-0088M	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	18		XS		P66B-0088N	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	20		XS		P66B-0088R	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	24		SCH30		P66B-0088S	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P71B-0008C	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71B-0008D	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	2				P71B-0000P	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	3				P71B-0000N	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	4				P71B-0000M	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	6				P71B-0000L	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	

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SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	8				P71B-0000R	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	10				P71B-0000K	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	12				P71B-0000J	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	

PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000AH	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	16				P72B-0000C	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	18				P72B-000AJ	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	20				P72B-000AK	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	24				P72B-000AL	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	30				P72B-000AM	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	36				P72B-000AN	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	42				P72B-000AP	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	48				P72B-000AR	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	52				P72B-000AS	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	

PADDLE SPACER (PS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000AT	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	16				P72B-0000B	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	18				P72B-000AU	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	20				P72B-000AV	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	24				P72B-000AW	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	30				P72B-000AX	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	36				P72B-000AY	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	42				P72B-000AZ	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	48				P72B-000B0	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	
1	52				P72B-000B1	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF	

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BOLT TABLE (B_A4AR , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	60	P80S-008SY		
1	4	0.500	70	P80S-008T0		
1.5	4	0.500	75	P80S-008T1		
2	4	0.625	85	P80S-0090A		
3	4	0.625	95	P80S-0090C		
4	8	0.625	95	P80S-0090C		
6	8	0.750	105	P80S-0090E		
8	8	0.750	110	P80S-0090F		
10	12	0.875	120	P80S-005Z9		
12	12	0.875	120	P80S-005Z9		
14	12	1.000	135	P80S-00619		
16	16	1.000	140	P80S-0061A		
18	16	1.125	150	P80S-0064L		
20	20	1.125	160	P80S-0064N		
24	20	1.250	175	P80S-00686		
30	44	0.750	145	P80S-0090N		
36	44	0.875	175	P80S-005ZL		
42	48	1.000	190	P80S-0061L		
48	44	1.125	210	P80S-0064Z		
52	52	1.125	220	P80S-00651		

BOLT TABLE (B_A4AR_773 , STUD ASME RF, OPTION CODE 773)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70			
1	4	0.625	80	P80S-00909		
1.5	4	0.750	95	P80S-005Z4		
2	8	0.625	90	P80S-0090B		
3	8	0.750	110	P80S-0090F		
4	8	0.750	115	P80S-0090G		
6	12	0.750	125	P80S-0090J		
8	12	0.875	140	P80S-005ZD		
10	16	1.000	160	P80S-0061E		
12	16	1.125	175	P80S-0064S		
14	20	1.125	180	P80S-0064T		
16	20	1.250	190	P80S-00689		
18	24	1.250	200	P80S-0068B		
20	24	1.250	210	P80S-0068D		
24	24	1.500	235	P80S-006LB		
30	36	1.375	285	P80S-006HY		
36	32	1.625	320	P80S-00A5E		
42	36	1.750	355	P80S-00AEJ		
48	40	1.875	380	P80S-00AW5		
52	48	1.875	410	P80S-00AWB		

BOLT TABLE (B_A4AR_781 , STUD ASME RF, OPTION CODE 781)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	80			
1	4	0.625	95	P80S-0090C		
1.5	4	0.750	110	P80S-0090F		
2	8	0.625	110	P80S-008T8		
3	8	0.750	130	P80S-0090K		
4	8	0.875	150			
6	12	1.000	175			
8	12	1.125	195			
10	16	1.250	250			
12	20	1.250	255			
14	20	1.375	270			
16	20	1.500	295			
18	20	1.625	320			
20	24	1.625	335			
24	24	1.875	380			
30	28	1.875	435			
36	28	2.250	510			
42	28	2.500	575			
48	32	2.750	635			
52	32	3.000	680			

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BRANCH TABLE (T_A4AR)

RUN PIPE SIZE (in) \ BRANCH SIZE (in)	0.5	1	1.5	2	3	4	6	8	10	12	14	16	18	20	24	30	36	42	48	52
0.5	TS																			
1		TS																		
1.5		TR	TS																	
2		TR	TR	TS																
3		L	TR	TR	TS															
4	L	L	L	TR	TR	TS														
6	L	L	L	L	TR	TR	TS													
8		L	L	L	L	TR	TR	TS												
10		L	L	L	L	TR	TR	TR	TS											
12		L	L	L	L	L	TR	TR	TR	TS										
14		L	L	L	L	L	TR	TR	TR	TR	TS									
16		L	L	L	L	L	TR	TR	TR	TR	TR	TS								
18		L	L	L	L	L	L	TR	TR	TR	TR	TR	TS							
20		L	L	L	L	L	L	TR	TR	TR	TR	TR	TR	TS						
24		L	L	L	L	L	L	9PD	TR	TR	TR	TR	TR	TR	TS					
30		L	L	L	L	L	L	9PD	TR	TR	TR	TR	TR	TR	TR	TS				
36		L	L	L	L	L	L	9PD	9PD	9PD	9PD	TR	TR	TR	TR	TR	TS			
42		L	L	L	L	L	L	9PD	9PD	9PD	9PD	TR	TR	TR	TR	TR	TR	TS		
48		L	L	L	L	L	L	9PD	9PD	9PD	9PD	9PD	9PD	9PD	TR	TR	TR	TR	TS	
52		L	L	L	L	L	L	9PD	9PD	9PD	9PD	9PD	9PD	9PD	9PD	TR	TR	TR	TR	TS

L : OUTLET
TR : REDUCING TEE
TS : STRAIGHT TEE
9PD : REINFORCING PAD 90 DEG

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PIPING CLASS

A4AR01 REV NO. 2

Material : Killed CS
Rating : ASME CLASS 150
Flange Face : RF
C.A.(mm) : 6.00
Gasket : Spiral Wound
Service : PROCESS - WET SEVERE SOUR SERVICE SUBJECT TO NACE + HIC STD.
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
2	USE OF SOFT SEATED BALL, PLUG AND BUTTERFLY VALVES SHALL BE LIMITED TO MAXIMUM OF 204DEGC (400DEGF)
5	BOLTING CONFIRMING TO B7M / 2HM SHALL BE USED UNDER CONDITIONS (A) DIRECT EXPOSURE TO SOUR ENVIRONMENTS (B) WHEN THE BOLTING WILL BE BURIED OR INSULATED
27	PWHT OF CARBON STEEL PIPING IN WET H2S, CAUSTIC AND AMINE SERVICES SHALL BE IN ACCORDANCE WITH SECTION 10.2, 10.3, AND 10.4 OF PROJECT SPECIFICATION 3550-8440-SP-0002 MATERIALS REQUIREMENTS FOR PRESSURISED EQUIPMENT AND PIPING. FOR CAUSTIC AND AMINE SERVICE THE FOLLOWING SHALL APPLY: - PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF ALL SITE PIPING FABRICATION WELDS IS REQUIRED FOR ALL WALL THICKNESSES. FOR MODERATE AND SEVERE WET H2S SERVICE THE FOLLOWING SHALL APPLY: PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF SITE FABRICATION CIRCUMFERENTIAL OR BRANCH WELDS IS NOT REQUIRED IF WELDS ARE MULTIPASS AND IN ACCORDANCE WITH PARA 10.2.12 OF PROJECT SPECIFICATION 3550-8440-SP-0002. FOR SERVICES MEETING THE WET H2S CRITERIA AND CAUSTIC OR AMINE CRITERIA THE MORE STRINGENT PWHT REQUIREMENT SHALL GOVERN.

DETAIL NOTES :

NO.	DESCRIPTION
37	TO BE USED ONLY FOR ORIFICE FLANGE ASSEMLY UPTO 425 DEG C

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
200	WITH JACK SCREW (FO)
541	NPT(F) (CA,F)
773	CLASS 300 (B,F,G,V)
781	CLASS 600 (B,F,G)
4001	ALTERNATIVE MATERIAL FOR INSTRUMENT CONNECTION (F,P,V)
4405	FLANGE NPT WITH ALTERNATIVE MATERIAL FOR INSTRUMENT CONNECTION (F)
4608	VALVE WITH NIPPLES (V)

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PIPING CLASS
A4AR01 REV NO. 2

PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		XXS		P01A-007AL	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE Severe wet H2S service Licensor-1	
1	1.5		XXS		P01A-007AM	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE Severe wet H2S service Licensor-1	
1	2		SCH160		P01A-007AU	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Severe wet H2S service Licensor-1	
1	3		SCH160		P01A-007AV	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Severe wet H2S service Licensor-1	
1	4		SCH120		P01A-007AW	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Severe wet H2S service Licensor-1	
1	6		XS		P01A-007AX	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Severe wet H2S service Licensor-1	
1	8		SCH60		P01A-007F3	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Severe wet H2S service Licensor-1	
1	10		XS		P01A-007AN	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Severe wet H2S service Licensor-1	
1	12		SCH40		P01A-007D8	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Severe wet H2S service Licensor-1	
1	14		SCH40		P01A-007D9	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Severe wet H2S service Licensor-1	
1	16		XS		P01A-007AS	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Severe wet H2S service Licensor-1	
1	18		XS		P01A-008P4	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Severe wet H2S service Licensor-1	
1	20		XS		P01A-007F1	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Severe wet H2S service Licensor-1	
1	24		SCH30		P01A-008P5	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Severe wet H2S service Licensor-1	
1	30		XS		P01A-007FV	Pipe ASTM A671 Grade CC60 Class 22 EFW ASME B36.10M/B36.19M BE Severe wet H2S service Licensor-1	
1	36		SCH30		P01A-008P6	Pipe ASTM A671 Grade CC60 Class 22 EFW ASME B36.10M/B36.19M BE Severe wet H2S service Licensor-1	
1	42		17.48mm		P01A-008P7	Pipe ASTM A671 Grade CC60 Class 22 EFW ASME B36.10M/B36.19M BE Severe wet H2S service Licensor-1	
1	48		17.48mm		P01A-008P8	Pipe ASTM A671 Grade CC60 Class 22 EFW ASME B36.10M/B36.19M BE Severe wet H2S service Licensor-1	
1	52		19.05mm		P01A-008P9	Pipe ASTM A671 Grade CC60 Class 22 EFW ASME B36.10M/B36.19M BE Severe wet H2S service Licensor-1	
1	54		19.05mm		P01A-009KB	Pipe ASTM A671 Grade CC60 Class 22 EFW ASME B36.10M/B36.19M BE Severe wet H2S service Licensor-1	
4001	0.5		SCH80S		P01J-002ES	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE Severe wet H2S service	37

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		XXS		P02A-003SS	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	1.5		XXS		P02A-003ST	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	2		SCH160		P02A-003SZ	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	3		SCH160		P02A-003T0	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	4		SCH120		P02A-003T1	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	6		XS		P02A-003T2	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	8		SCH60		P02A-003X5	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	10		XS		P02A-003SU	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	12		SCH40		P02A-003VA	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	14		SCH40		P02A-003VB	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	16		XS		P02A-003SX	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	18		XS		P02A-004GG	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	20		XS		P02A-003X3	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	24		SCH30		P02A-004GH	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	30		XS		P02A-003X6	90 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	36		SCH30		P02A-004GJ	90 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	42		17.48mm		P02A-004GK	90 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	48		17.48mm		P02A-004GL	90 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	52		19.05mm		P02A-004GM	90 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Long radius Severe wet H2S service Licensor-1	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		XXS		P03A-003PE	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	1.5		XXS		P03A-003PF	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	2		SCH160		P03A-003PM	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	

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45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3		SCH160		P03A-003PN	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	4		SCH120		P03A-003PP	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	6		XS		P03A-003PR	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	8		SCH60		P03A-003UU	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	10		XS		P03A-003PG	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	12		SCH40		P03A-003SZ	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	14		SCH40		P03A-003T0	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	16		XS		P03A-003PK	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	18		XS		P03A-004DN	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	20		XS		P03A-003US	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	24		SCH30		P03A-004DP	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	30		XS		P03A-003UV	45 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	36		SCH30		P03A-004DR	45 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	42		17.48mm		P03A-004DS	45 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	48		17.48mm		P03A-004DT	45 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	52		19.05mm		P03A-004DU	45 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Long radius Severe wet H2S service Licensor-1	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		XXS		P21A-004A4	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	1.5		XXS		P21A-004A5	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	2		SCH160		P21A-004AB	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	3		SCH160		P21A-004AC	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	4		SCH120		P21A-004AD	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	6		XS		P21A-004AE	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	8		SCH60		P21A-004EL	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	10		XS		P21A-004A6	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	12		SCH40		P21A-004CS	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	14		SCH40		P21A-004CT	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	16		XS		P21A-004A9	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	18		XS		P21A-004Z5	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	20		XS		P21A-004EJ	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	24		SCH30		P21A-004Z6	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	30		XS		P21A-004EM	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Severe wet H2S service Licensor-1	
1	36		SCH30		P21A-004YY	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Severe wet H2S service Licensor-1	
1	42		17.48mm		P21A-004YZ	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Severe wet H2S service Licensor-1	
1	48		17.48mm		P21A-004Z0	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Severe wet H2S service Licensor-1	
1	52		19.05mm		P21A-004Z1	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Severe wet H2S service Licensor-1	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5	1	XXS	XXS	P24A-00K4T	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	2	1	SCH160	XXS	P24A-00K4U	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	2	1.5	SCH160	XXS	P24A-00K4V	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	3	1.5	SCH160	XXS	P24A-00K4W	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	3	2	SCH160	SCH160	P24A-00K4X	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	4	2	SCH120	SCH160	P24A-00K4Y	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	4	3	SCH120	SCH160	P24A-00K4Z	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	6	3	XS	SCH160	P24A-00K50	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	6	4	XS	SCH120	P24A-00K51	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	8	4	SCH60	SCH120	P24A-00L3M	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	8	6	SCH60	XS	P24A-00KLZ	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	10	4	XS	SCH120	P24A-00K54	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	

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REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	10	6	XS	XS	P24A-00K55	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	10	8	XS	SCH60	P24A-00KM0	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	12	6	SCH40	XS	P24A-00KM2	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	12	8	SCH40	SCH60	P24A-00KM3	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	12	10	SCH40	XS	P24A-00KM1	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	14	6	SCH40	XS	P24A-00KM5	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	14	8	SCH40	SCH60	P24A-00KM6	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	14	10	SCH40	XS	P24A-00KM4	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	14	12	SCH40	SCH40	P24A-00KEX	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	16	6	XS	XS	P24A-00K5H	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	16	8	XS	SCH60	P24A-00KM9	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	16	10	XS	XS	P24A-00K5E	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	16	12	XS	SCH40	P24A-00KM7	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	16	14	XS	SCH40	P24A-00KM8	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	18	8	XS	SCH60	P24A-00NU8	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	18	10	XS	XS	P24A-00NU4	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	18	12	XS	SCH40	P24A-00NU5	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	18	14	XS	SCH40	P24A-00NU6	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	18	16	XS	XS	P24A-00NU7	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	20	8	XS	SCH60	P24A-00KMJ	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	20	10	XS	XS	P24A-00KMD	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	20	12	XS	SCH40	P24A-00KME	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	20	14	XS	SCH40	P24A-00KMF	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	20	16	XS	XS	P24A-00KMG	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	20	18	XS	XS	P24A-00NVV	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	24	10	SCH30	XS	P24A-00NU9	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	24	12	SCH30	SCH40	P24A-00NUA	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	24	14	SCH30	SCH40	P24A-00NUB	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	24	16	SCH30	XS	P24A-00NUC	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	24	18	SCH30	XS	P24A-00NUD	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	24	20	SCH30	XS	P24A-00NUE	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	30	10	XS	XS	P24A-00KMS	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Severe wet H2S service Licensor-1	
1	30	12	XS	SCH40	P24A-00L3N	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Severe wet H2S service Licensor-1	
1	30	14	XS	SCH40	P24A-00L3P	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Severe wet H2S service Licensor-1	
1	30	16	XS	XS	P24A-00KMT	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Severe wet H2S service Licensor-1	
1	30	18	XS	XS	P24A-00NUF	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Severe wet H2S service Licensor-1	
1	30	20	XS	XS	P24A-00KMU	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Severe wet H2S service Licensor-1	
1	30	24	XS	SCH30	P24A-00NUG	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Severe wet H2S service Licensor-1	
1	36	16	SCH30	XS	P24A-00NUH	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Severe wet H2S service Licensor-1	
1	36	18	SCH30	XS	P24A-00NUJ	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Severe wet H2S service Licensor-1	
1	36	20	SCH30	XS	P24A-00NUK	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Severe wet H2S service Licensor-1	
1	36	24	SCH30	SCH30	P24A-00NUL	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Severe wet H2S service Licensor-1	
1	36	30	SCH30	XS	P24A-00NUM	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Severe wet H2S service Licensor-1	
1	42	16	17.48mm	XS	P24A-00NUX	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Severe wet H2S service Licensor-1	
1	42	18	17.48mm	XS	P24A-00NUY	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Severe wet H2S service Licensor-1	
1	42	20	17.48mm	XS	P24A-00NUZ	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Severe wet H2S service Licensor-1	
1	42	24	17.48mm	SCH30	P24A-00NV0	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Severe wet H2S service Licensor-1	
1	42	30	17.48mm	XS	P24A-00NV1	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Severe wet H2S service Licensor-1	
1	42	36	17.48mm	SCH30	P24A-00NV2	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Severe wet H2S service Licensor-1	
1	48	24	17.48mm	SCH30	P24A-00NUN	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Severe wet H2S service Licensor-1	
1	48	30	17.48mm	XS	P24A-00NUP	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Severe wet H2S service Licensor-1	
1	48	36	17.48mm	SCH30	P24A-00NUR	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Severe wet H2S service Licensor-1	
1	48	42	17.48mm	17.48mm	P24A-00NUW	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Severe wet H2S service Licensor-1	
1	52	30	19.05mm	XS	P24A-00NUS	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Severe wet H2S service Licensor-1	
1	52	36	19.05mm	SCH30	P24A-00NUT	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Severe wet H2S service Licensor-1	
1	52	42	19.05mm	17.48mm	P24A-00NUU	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Severe wet H2S service Licensor-1	
1	52	48	19.05mm	17.48mm	P24A-00NUV	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Severe wet H2S service Licensor-1	

INDRA
01-SEP-2014

PIPING CLASS
A4AR01 REV NO. 2

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5	1	XXS	XXS	P27A-00EPX	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	2	1	SCH160	XXS	P27A-00EPY	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	2	1.5	SCH160	XXS	P27A-00EPZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	3	1.5	SCH160	XXS	P27A-00ER0	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	3	2	SCH160	SCH160	P27A-00ER1	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	4	1.5	SCH120	XXS	P27A-00ER2	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	4	2	SCH120	SCH160	P27A-00ER3	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	4	3	SCH120	SCH160	P27A-00ER4	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	6	3	XS	SCH160	P27A-00ER5	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	6	4	XS	SCH120	P27A-00ER6	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	8	4	SCH60	SCH120	P27A-00F3J	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	8	6	SCH60	XS	P27A-00F3K	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	10	4	XS	SCH120	P27A-00ER9	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	10	6	XS	XS	P27A-00ERA	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	10	8	XS	SCH60	P27A-00F3L	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	12	6	SCH40	XS	P27A-00F3N	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	12	8	SCH40	SCH60	P27A-00F3P	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	12	10	SCH40	XS	P27A-00F3M	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	14	6	SCH40	XS	P27A-00F3S	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	14	8	SCH40	SCH60	P27A-00F3T	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	14	10	SCH40	XS	P27A-00F3R	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	14	12	SCH40	SCH40	P27A-00EYT	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	16	8	XS	SCH60	P27A-00F3W	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	16	10	XS	XS	P27A-00ERK	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	16	12	XS	SCH40	P27A-00F3U	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	16	14	XS	SCH40	P27A-00F3V	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	18	10	XS	XS	P27A-00HB2	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	18	12	XS	SCH40	P27A-00HB3	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	18	14	XS	SCH40	P27A-00HB4	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	18	16	XS	XS	P27A-00HB5	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	20	12	XS	SCH40	P27A-00F3Z	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	20	14	XS	SCH40	P27A-00F40	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	20	16	XS	XS	P27A-00F41	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	20	18	XS	XS	P27A-00HB6	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	24	16	SCH30	XS	P27A-00HB7	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	24	18	SCH30	XS	P27A-00HB8	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	24	20	SCH30	XS	P27A-00HB9	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	30	20	XS	XS	P27A-00F46	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Severe wet H2S service Licensor-1	
1	30	24	XS	SCH30	P27A-00HBA	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Severe wet H2S service Licensor-1	
1	36	24	SCH30	SCH30	P27A-00HBB	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Severe wet H2S service Licensor-1	
1	36	30	SCH30	XS	P27A-00HBC	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Severe wet H2S service Licensor-1	
1	42	30	17.48mm	XS	P27A-00HBJ	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Severe wet H2S service Licensor-1	
1	42	36	17.48mm	SCH30	P27A-00HBK	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Severe wet H2S service Licensor-1	
1	48	42	17.48mm	17.48mm	P27A-00HBH	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Severe wet H2S service Licensor-1	
1	52	30	19.05mm	XS	P27A-00HBF	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Severe wet H2S service Licensor-1	
1	52	36	19.05mm	SCH30	P27A-00HBD	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Severe wet H2S service Licensor-1	
1	52	42	19.05mm	17.48mm	P27A-00HBG	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Severe wet H2S service Licensor-1	
1	52	48	19.05mm	17.48mm	P27A-00HBE	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Severe wet H2S service Licensor-1	
1	54	48	19.05mm	17.48mm	P27A-00JGG	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Severe wet H2S service Licensor-1	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5	1	XXS	XXS	P28A-00BUR	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	2	1	SCH160	XXS	P28A-00BUS	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	2	1.5	SCH160	XXS	P28A-00BUT	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	3	1.5	SCH160	XXS	P28A-00BUU	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	3	2	SCH160	SCH160	P28A-00BUV	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	

INDRA 01-SEP-2014

PIPING CLASS
A4AR01 REV NO. 2

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	4	1.5	SCH120	XXS	P28A-00BUW	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	4	2	SCH120	SCH160	P28A-00BUX	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	4	3	SCH120	SCH160	P28A-00BUY	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	6	3	XS	SCH160	P28A-00BUZ	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	6	4	XS	SCH120	P28A-00BV0	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	8	4	SCH60	SCH120	P28A-00C7K	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	8	6	SCH60	XS	P28A-00C7L	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	10	4	XS	SCH120	P28A-00BV3	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	10	6	XS	XS	P28A-00BV4	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	10	8	XS	SCH60	P28A-00C7M	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	12	6	SCH40	XS	P28A-00C7P	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	12	8	SCH40	SCH60	P28A-00C7R	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	12	10	SCH40	XS	P28A-00C7N	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	14	6	SCH40	XS	P28A-00C7T	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	14	8	SCH40	SCH60	P28A-00C7U	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	14	10	SCH40	XS	P28A-00C7S	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	14	12	SCH40	SCH40	P28A-00C2T	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	16	8	XS	SCH60	P28A-00C7X	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	16	10	XS	XS	P28A-00BVD	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	16	12	XS	SCH40	P28A-00C7V	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	16	14	XS	SCH40	P28A-00C7W	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	18	10	XS	XS	P28A-00EJS	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	18	12	XS	SCH40	P28A-00EJT	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	18	14	XS	SCH40	P28A-00EJU	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	18	16	XS	XS	P28A-00EJV	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	20	12	XS	SCH40	P28A-00C80	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	20	14	XS	SCH40	P28A-00C81	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	20	16	XS	XS	P28A-00C82	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	20	18	XS	XS	P28A-00EJW	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	24	16	SCH30	XS	P28A-00EJX	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	24	18	SCH30	XS	P28A-00EJY	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	24	20	SCH30	XS	P28A-00EJZ	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	30	20	XS	XS	P28A-00C87	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Severe wet H2S service Licensor-1	
1	30	24	XS	SCH30	P28A-00EK0	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Severe wet H2S service Licensor-1	
1	36	24	SCH30	SCH30	P28A-00EK1	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Severe wet H2S service Licensor-1	
1	36	30	SCH30	XS	P28A-00EK2	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Severe wet H2S service Licensor-1	
1	42	30	17.48mm	XS	P28A-00EK3	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Severe wet H2S service Licensor-1	
1	42	36	17.48mm	SCH30	P28A-00EK4	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Severe wet H2S service Licensor-1	
1	48	42	17.48mm	17.48mm	P28A-00EKF	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Severe wet H2S service Licensor-1	
1	52	30	19.05mm	XS	P28A-00EKG	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Severe wet H2S service Licensor-1	
1	52	36	19.05mm	SCH30	P28A-00EKH	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Severe wet H2S service Licensor-1	
1	52	42	19.05mm	17.48mm	P28A-00EKJ	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Severe wet H2S service Licensor-1	
1	52	48	19.05mm	17.48mm	P28A-00EKK	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Severe wet H2S service Licensor-1	
1	54	48	19.05mm	17.48mm	P28A-00FTH	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9-modified BW Severe wet H2S service Licensor-1	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		XXS		P29A-00348	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	1.5		XXS		P29A-00349	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	2		SCH160		P29A-0034F	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	3		SCH160		P29A-0034G	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	4		SCH120		P29A-0034H	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	6		XS		P29A-0034J	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	8		SCH60		P29A-0039N	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	10		XS		P29A-0034A	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	12		SCH40		P29A-00379	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	14		SCH40		P29A-0037A	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	

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CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	16		XS		P29A-0034D	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	18		XS		P29A-003TF	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	20		XS		P29A-0039G	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	24		SCH30		P29A-003TG	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	30		XS		P29A-0039J	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	36		SCH30		P29A-003TH	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	42		17.48mm		P29A-003TJ	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	48		17.48mm		P29A-003TK	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	52		19.05mm		P29A-003TL	Cap ASTM A234 Grade WPB Seamless ASME B16.9-modified BW Severe wet H2S service Licensor-1	
541	1				P29B-0006S	Cap ASTM A105 Class 6000 ASME B16.11 NPT Severe wet H2S service Licensor-1	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		10.60mm		P41A-001AX	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Severe wet H2S service Licensor-1	
1	1.5		10.60mm		P41A-001AY	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Severe wet H2S service Licensor-1	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	1	SCH160	XXS	P31B-00XLK	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	4	1	SCH120	XXS	P31B-00XLL	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	6	1	XS	XXS	P31B-00XLN	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	8	1	SCH60	XXS	P31B-00YE0	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	10	1	XS	XXS	P31B-00XLW	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	12	1	SCH40	XXS	P31B-00YE1	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	14	1	SCH40	XXS	P31B-00YE3	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	16	1	XS	XXS	P31B-00XMA	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	18	1	XS	XXS	P31B-010ZE	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	20	1	XS	XXS	P31B-00Y37	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	24	1	SCH30	XXS	P31B-010ZL	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	30	1	XS	XXS	P31B-00YE5	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	36	1	SCH30	XXS	P31B-010ZT	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	42	1	17.48mm	XXS	P31B-0110B	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	48	1	17.48mm	XXS	P31B-01106	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	52	1	19.05mm	XXS	P31B-01104	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	4	1.5	SCH120	XXS	P31B-00XLM	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	6	1.5	XS	XXS	P31B-00XLP	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	8	1.5	SCH60	XXS	P31B-00Y2X	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	10	1.5	XS	XXS	P31B-00XLX	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	12	1.5	SCH40	XXS	P31B-00YE2	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	14	1.5	SCH40	XXS	P31B-00Y33	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	16	1.5	XS	XXS	P31B-00XMB	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	18	1.5	XS	XXS	P31B-010ZF	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	20	1.5	XS	XXS	P31B-00Y38	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	24	1.5	SCH30	XXS	P31B-010ZM	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	30	1.5	XS	XXS	P31B-00YE6	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	36	1.5	SCH30	XXS	P31B-010ZU	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	42	1.5	17.48mm	XXS	P31B-0110C	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	48	1.5	17.48mm	XXS	P31B-01107	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	52	1.5	19.05mm	XXS	P31B-01105	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	6	2	XS	SCH160	P31B-00XLR	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	8	2	SCH60	SCH160	P31B-00Y2Y	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	10	2	XS	SCH160	P31B-00XLY	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	12	2	SCH40	SCH160	P31B-00Y30	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	14	2	SCH40	SCH160	P31B-00Y34	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	16	2	XS	SCH160	P31B-00XMC	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	18	2	XS	SCH160	P31B-010ZG	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	20	2	XS	SCH160	P31B-00Y39	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	24	2	SCH30	SCH160	P31B-010ZN	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	

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OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	30	2	XS	SCH160	P31B-00Y3K	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	36	2	SCH30	SCH160	P31B-010ZV	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	42	2	17.48mm	SCH160	P31B-0110D	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	48	2	17.48mm	SCH160	P31B-010ZZ	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	52	2	19.05mm	SCH160	P31B-01100	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	8	3	SCH60	SCH160	P31B-00Y2Z	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	10	3	XS	SCH160	P31B-00XLZ	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	12	3	SCH40	SCH160	P31B-00Y31	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	14	3	SCH40	SCH160	P31B-00Y35	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	16	3	XS	SCH160	P31B-00XMD	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	18	3	XS	SCH160	P31B-010ZH	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	20	3	XS	SCH160	P31B-00Y3A	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	24	3	SCH30	SCH160	P31B-010ZP	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	30	3	XS	SCH160	P31B-00Y3L	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	36	3	SCH30	SCH160	P31B-010ZW	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	42	3	17.48mm	SCH160	P31B-0110E	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	48	3	17.48mm	SCH160	P31B-01108	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	52	3	19.05mm	SCH160	P31B-01101	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	12	4	SCH40	SCH120	P31B-00Y32	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	14	4	SCH40	SCH120	P31B-00Y36	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	16	4	XS	SCH120	P31B-00XME	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	18	4	XS	SCH120	P31B-010ZJ	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	20	4	XS	SCH120	P31B-00Y3B	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	24	4	SCH30	SCH120	P31B-010ZR	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	30	4	XS	SCH120	P31B-00Y3M	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	36	4	SCH30	SCH120	P31B-010ZX	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	42	4	17.48mm	SCH120	P31B-0110F	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	48	4	17.48mm	SCH120	P31B-01109	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	52	4	19.05mm	SCH120	P31B-01102	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	18	6	XS	XS	P31B-010ZK	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	20	6	XS	XS	P31B-00Y3C	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	24	6	SCH30	XS	P31B-010ZS	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	30	6	XS	XS	P31B-00Y3N	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	36	6	SCH30	XS	P31B-010ZY	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	42	6	17.48mm	XS	P31B-0110G	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	48	6	17.48mm	XS	P31B-0110A	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	52	6	19.05mm	XS	P31B-01103	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P30B-0006K	Plug ASTM A105 ASME B16.11 NPT Round head Severe wet H2S service Licensor-1	
1	1.5				P30B-0006L	Plug ASTM A105 ASME B16.11 NPT Round head Severe wet H2S service Licensor-1	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		XXS		P61B-00A7S	Flange WN ASTM A105 Class 150 ASME B16.5 RF Severe wet H2S service Licensor-1	
1	1.5		XXS		P61B-00A7T	Flange WN ASTM A105 Class 150 ASME B16.5 RF Severe wet H2S service Licensor-1	
1	2		SCH160		P61B-00A7Z	Flange WN ASTM A105 Class 150 ASME B16.5 RF Severe wet H2S service Licensor-1	
1	3		SCH160		P61B-00A82	Flange WN ASTM A105 Class 150 ASME B16.5 RF Severe wet H2S service Licensor-1	
1	4		SCH120		P61B-00A83	Flange WN ASTM A105 Class 150 ASME B16.5 RF Severe wet H2S service Licensor-1	
1	6		XS		P61B-00A84	Flange WN ASTM A105 Class 150 ASME B16.5 RF Severe wet H2S service Licensor-1	
1	8		SCH60		P61B-00A85	Flange WN ASTM A105 Class 150 ASME B16.5 RF Severe wet H2S service Licensor-1	
1	10		XS		P61B-00A7U	Flange WN ASTM A105 Class 150 ASME B16.5 RF Severe wet H2S service Licensor-1	
1	12		SCH40		P61B-00A7V	Flange WN ASTM A105 Class 150 ASME B16.5 RF Severe wet H2S service Licensor-1	
1	14		SCH40		P61B-00A7W	Flange WN ASTM A105 Class 150 ASME B16.5 RF Severe wet H2S service Licensor-1	
1	16		XS		P61B-00A7X	Flange WN ASTM A105 Class 150 ASME B16.5 RF Severe wet H2S service Licensor-1	
1	18		XS		P61B-00BTU	Flange WN ASTM A105 Class 150 ASME B16.5 RF Severe wet H2S service Licensor-1	
1	20		XS		P61B-00A80	Flange WN ASTM A105 Class 150 ASME B16.5 RF Severe wet H2S service Licensor-1	
1	24		SCH30		P61B-00BTV	Flange WN ASTM A105 Class 150 ASME B16.5 RF Severe wet H2S service Licensor-1	

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FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	30		XS		P61B-00A86	Flange WN ASTM A105 Class 150 ASME B16.47 Series B RF Severe wet H2S service Licensor-1	
1	36		SCH30		P61B-00BTW	Flange WN ASTM A105 Class 150 ASME B16.47 Series B RF Severe wet H2S service Licensor-1	
1	42		17.48mm		P61B-00BTX	Flange WN ASTM A105 Class 150 ASME B16.47 Series B RF Severe wet H2S service Licensor-1	
1	48		17.48mm		P61B-00BTY	Flange WN ASTM A105 Class 150 ASME B16.47 Series B RF Severe wet H2S service Licensor-1	
1	52		19.05mm		P61B-00BTZ	Flange WN ASTM A105 Class 150 ASME B16.47 Series B RF Severe wet H2S service Licensor-1	
1	54		19.05mm		P61B-00DP5	Flange WN ASTM A105 Class 150 ASME B16.47 Series B RF Severe wet H2S service Licensor-1	
4001	0.5		SCH80S		P61K-005FD	Flange WN ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	37
4405	0.5				P61K-0069H	Flange NPT ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Severe wet H2S service	37
541	1				P61B-00CX7	Flange NPT ASTM A105 Class 150 ASME B16.5 RF Severe wet H2S service Licensor-1	
773	1		XXS		P61B-009XU	Flange WN ASTM A105 Class 300 ASME B16.5 RF Severe wet H2S service Licensor-1	
773	1.5		XXS		P61B-009XV	Flange WN ASTM A105 Class 300 ASME B16.5 RF Severe wet H2S service Licensor-1	
773	2		SCH160		P61B-009Y1	Flange WN ASTM A105 Class 300 ASME B16.5 RF Severe wet H2S service Licensor-1	
773	3		SCH160		P61B-009Y2	Flange WN ASTM A105 Class 300 ASME B16.5 RF Severe wet H2S service Licensor-1	
773	4		SCH120		P61B-009Y3	Flange WN ASTM A105 Class 300 ASME B16.5 RF Severe wet H2S service Licensor-1	
773	6		XS		P61B-009Y4	Flange WN ASTM A105 Class 300 ASME B16.5 RF Severe wet H2S service Licensor-1	
773	8		SCH60		P61B-00A8D	Flange WN ASTM A105 Class 300 ASME B16.5 RF Severe wet H2S service Licensor-1	
773	10		XS		P61B-009XW	Flange WN ASTM A105 Class 300 ASME B16.5 RF Severe wet H2S service Licensor-1	
773	12		SCH40		P61B-00A4L	Flange WN ASTM A105 Class 300 ASME B16.5 RF Severe wet H2S service Licensor-1	
773	14		SCH40		P61B-00A4M	Flange WN ASTM A105 Class 300 ASME B16.5 RF Severe wet H2S service Licensor-1	
773	16		XS		P61B-009XZ	Flange WN ASTM A105 Class 300 ASME B16.5 RF Severe wet H2S service Licensor-1	
773	18		XS		P61B-00BU0	Flange WN ASTM A105 Class 300 ASME B16.5 RF Severe wet H2S service Licensor-1	
773	20		XS		P61B-00A8B	Flange WN ASTM A105 Class 300 ASME B16.5 RF Severe wet H2S service Licensor-1	
773	24		SCH30		P61B-00BU1	Flange WN ASTM A105 Class 300 ASME B16.5 RF Severe wet H2S service Licensor-1	
773	30		XS		P61B-00A8E	Flange WN ASTM A105 Class 300 ASME B16.47 Series B RF Severe wet H2S service Licensor-1	
773	36		SCH30		P61B-00BU2	Flange WN ASTM A105 Class 300 ASME B16.47 Series B RF Severe wet H2S service Licensor-1	
773	42		17.48mm		P61B-00BU3	Flange WN ASTM A105 Class 300 ASME B16.47 Series B RF Severe wet H2S service Licensor-1	
773	48		17.48mm		P61B-00BU4	Flange WN ASTM A105 Class 300 ASME B16.47 Series B RF Severe wet H2S service Licensor-1	
773	52		19.05mm		P61B-00BU5	Flange WN ASTM A105 Class 300 ASME B16.47 Series B RF Severe wet H2S service Licensor-1	
773	54		19.05mm		P61B-00DUS	Flange WN ASTM A105 Class 300 ASME B16.47 Series B RF Severe wet H2S service Licensor-1	
781	6		XS		P61B-009YG	Flange WN ASTM A105 Class 600 ASME B16.5 RF Severe wet H2S service Licensor-1	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P67B-002HR	Blind flange ASTM A105 Class 150 ASME B16.5 RF Severe wet H2S service Licensor-1	
1	1.5				P67B-002HS	Blind flange ASTM A105 Class 150 ASME B16.5 RF Severe wet H2S service Licensor-1	
1	2				P67B-002HY	Blind flange ASTM A105 Class 150 ASME B16.5 RF Severe wet H2S service Licensor-1	
1	3				P67B-002J1	Blind flange ASTM A105 Class 150 ASME B16.5 RF Severe wet H2S service Licensor-1	
1	4				P67B-002J2	Blind flange ASTM A105 Class 150 ASME B16.5 RF Severe wet H2S service Licensor-1	
1	6				P67B-002J3	Blind flange ASTM A105 Class 150 ASME B16.5 RF Severe wet H2S service Licensor-1	
1	8				P67B-002J4	Blind flange ASTM A105 Class 150 ASME B16.5 RF Severe wet H2S service Licensor-1	
1	10				P67B-002HT	Blind flange ASTM A105 Class 150 ASME B16.5 RF Severe wet H2S service Licensor-1	
1	12				P67B-002HU	Blind flange ASTM A105 Class 150 ASME B16.5 RF Severe wet H2S service Licensor-1	
1	14				P67B-002HV	Blind flange ASTM A105 Class 150 ASME B16.5 RF Severe wet H2S service Licensor-1	
1	16				P67B-002HW	Blind flange ASTM A105 Class 150 ASME B16.5 RF Severe wet H2S service Licensor-1	
1	18				P67B-002HX	Blind flange ASTM A105 Class 150 ASME B16.5 RF Severe wet H2S service Licensor-1	
1	20				P67B-002HZ	Blind flange ASTM A105 Class 150 ASME B16.5 RF Severe wet H2S service Licensor-1	
1	24				P67B-002J0	Blind flange ASTM A105 Class 150 ASME B16.5 RF Severe wet H2S service Licensor-1	
1	30				P67B-002J5	Blind flange ASTM A105 Class 150 ASME B16.47 Series B RF Severe wet H2S service Licensor-1	
1	36				P67B-002J6	Blind flange ASTM A105 Class 150 ASME B16.47 Series B RF Severe wet H2S service Licensor-1	
1	42				P67B-002J7	Blind flange ASTM A105 Class 150 ASME B16.47 Series B RF Severe wet H2S service Licensor-1	
1	48				P67B-002J8	Blind flange ASTM A105 Class 150 ASME B16.47 Series B RF Severe wet H2S service Licensor-1	
1	52				P67B-002J9	Blind flange ASTM A105 Class 150 ASME B16.47 Series B RF Severe wet H2S service Licensor-1	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000L8	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000LA	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000LB	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

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GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2				P73T-000LH	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000LL	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000LM	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	6				P73T-000LN	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	8				P73T-000LP	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	10				P73T-000LC	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	12				P73T-000LD	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	14				P73T-000LE	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	16				P73T-000LF	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	18				P73T-000LG	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	20				P73T-000LJ	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	24				P73T-000LK	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	30				P73T-000LT	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	36				P73T-000LW	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	42				P73T-000LZ	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	48				P73T-000M2	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	52				P73T-001E2	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	3				P73T-000G5	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	4				P73T-000G6	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	6				P73T-000G7	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	8				P73T-000G8	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	10				P73T-000FX	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	12				P73T-000FY	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	14				P73T-000FZ	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	16				P73T-000G0	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	18				P73T-000G1	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	20				P73T-000G3	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	24				P73T-000G4	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	30				P73T-000H9	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	36				P73T-000HC	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	42				P73T-000KM	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	48				P73T-000KR	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	52				P73T-0024N	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	54				P73T-0040M	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	6				P73T-000JN	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-16				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	18-24				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
1	30-42				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	48-52				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	

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BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
773	1-10				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
773	12-54				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
781	6				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P81B-001FV	Gate valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service C.A.=6.0mm Licensor-1	
1	1.5				P81B-001FW	Gate valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service C.A.=6.0mm Licensor-1	
1	2				P81C-004ZP	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service C.A.=6.0mm Licensor-1	
1	3				P81C-004ZR	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service C.A.=6.0mm Licensor-1	
1	4				P81C-004ZS	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service C.A.=6.0mm Licensor-1	
1	6				P81C-004ZT	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service C.A.=6.0mm Licensor-1	
1	8				P81C-004ZU	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service C.A.=6.0mm Licensor-1	
1	10				P81C-004ZM	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service C.A.=6.0mm Licensor-1	
1	12				P81C-004ZN	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service C.A.=6.0mm Licensor-1	
1	14				P81C-004ZV	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Severe wet H2S service C.A.=6.0mm Licensor-1	
1	16				P81C-004ZW	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Severe wet H2S service C.A.=6.0mm Licensor-1	
1	18				P81C-004ZX	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Severe wet H2S service C.A.=6.0mm Licensor-1	
1	20				P81C-004ZY	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Severe wet H2S service C.A.=6.0mm Licensor-1	
1	24				P81C-004ZZ	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Severe wet H2S service C.A.=6.0mm Licensor-1	
1	30				P81C-00500	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.47-B RF Trim number 12 BB-BG-OS&Y Gear operated Severe wet H2S service C.A.=6.0mm Licensor-1	
1	36				P81C-00501	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.47-B RF Trim number 12 BB-BG-OS&Y Gear operated Severe wet H2S service C.A.=6.0mm Licensor-1	
1	42				P81C-00502	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.47-B RF Trim number 12 BB-BG-OS&Y Gear operated Severe wet H2S service C.A.=6.0mm Licensor-1	
1	48				P81C-00503	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.47-B RF Trim number 12 BB-BG-OS&Y Gear operated Severe wet H2S service C.A.=6.0mm Licensor-1	
4001	0.5				P81K-0014F	Gate valve ASTM A182 Grade F316/F316L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	37
4608	1				P81B-002VM	Gate valve ASTM A105 Class 150 API 602 BW both sides w/ nipples BE - NPT ASTM A106-B T=10.60MM-nipple Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service C.A.=6.0mm Licensor-1	
773	2				P81C-004SZ	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service C.A.=6.0mm Licensor-1	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P82B-0017L	Globe valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service C.A.=6.0mm Licensor-1	
1	1.5				P82B-0017M	Globe valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service C.A.=6.0mm Licensor-1	
1	2				P82C-002DZ	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service C.A.=6.0mm Licensor-1	
1	3				P82C-002E0	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service C.A.=6.0mm Licensor-1	
1	4				P82C-002E1	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service C.A.=6.0mm Licensor-1	
1	6				P82C-002E2	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service C.A.=6.0mm Licensor-1	
1	8				P82C-002E3	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service C.A.=6.0mm Licensor-1	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P83B-000ZB	Check valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Severe wet H2S service C.A.=6.0mm Licensor-1	
1	1.5				P83B-000ZC	Check valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Severe wet H2S service C.A.=6.0mm Licensor-1	
1	2				P83C-002DY	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service C.A.=6.0mm Licensor-1	
1	3				P83C-002E1	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service C.A.=6.0mm Licensor-1	
1	4				P83C-002E2	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service C.A.=6.0mm Licensor-1	
1	6				P83C-002E3	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service C.A.=6.0mm Licensor-1	

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CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	8				P83C-002E4	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service C.A.=6.0mm Licensor-1	
1	10				P83C-002DT	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service C.A.=6.0mm Licensor-1	
1	12				P83C-002DU	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service C.A.=6.0mm Licensor-1	
1	14				P83C-002DV	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service C.A.=6.0mm Licensor-1	
1	16				P83C-002DW	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service C.A.=6.0mm Licensor-1	
1	18				P83C-002DX	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service C.A.=6.0mm Licensor-1	
1	20				P83C-002DZ	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service C.A.=6.0mm Licensor-1	
1	24				P83C-002E0	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service C.A.=6.0mm Licensor-1	

DP CHECK VALVE (XDP)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	30				P88C-00261	Dual plate check valve ASTM A216 Grade WCB Class 150 API 594 Wafer-type ASME B16.47-B RF Trim number 12 Internal wetted parts SS316 Spring Inconel Retainerless-type Severe wet H2S service C.A.=6.0mm Licensor-1	

BUTTERFLY VALVE (H)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	10				P86C-0024W	Offset design butterfly valve ASTM A216 Grade WCB Class 150 API 609 Category B Lug-type ASME B16.5 RF Disc CS Seat Stellite-6 Trim SS316 Triple eccentric design BG Gear operated Severe wet H2S service C.A.=6.0mm Licensor-1	
1	12				P86C-002GC	Offset design butterfly valve ASTM A216 Grade WCB Class 150 API 609 Category B Lug-type ASME B16.5 RF Disc CS Seat Stellite-6 Trim SS316 Triple eccentric design BG Gear operated Severe wet H2S service C.A.=6.0mm Licensor-1	

ORIFICE FLANGE (FO)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2		SCH160		P66B-0089G	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Severe wet H2S service Licensor-1	
1	3		SCH160		P66B-0089J	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Severe wet H2S service Licensor-1	
1	4		SCH120		P66B-0089K	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Severe wet H2S service Licensor-1	
1	6		XS		P66B-0089L	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Severe wet H2S service Licensor-1	
1	8		SCH60		P66B-0089M	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Severe wet H2S service Licensor-1	
1	10		XS		P66B-0089B	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Severe wet H2S service Licensor-1	
1	12		SCH40		P66B-0089C	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Severe wet H2S service Licensor-1	
1	14		SCH40		P66B-0089D	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Severe wet H2S service Licensor-1	
1	16		XS		P66B-0089E	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Severe wet H2S service Licensor-1	
1	18		XS		P66B-0089F	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Severe wet H2S service Licensor-1	
1	20		XS		P66B-0089H	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Severe wet H2S service Licensor-1	
200	2		SCH160		P66B-0089W	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Severe wet H2S service with Jack screw Licensor-1	
200	3		SCH160		P66B-0089Y	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Severe wet H2S service with Jack screw Licensor-1	
200	4		SCH120		P66B-0089Z	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Severe wet H2S service with Jack screw Licensor-1	
200	6		XS		P66B-008A0	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Severe wet H2S service with Jack screw Licensor-1	
200	8		SCH60		P66B-008A1	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Severe wet H2S service with Jack screw Licensor-1	
200	10		XS		P66B-0089R	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Severe wet H2S service with Jack screw Licensor-1	
200	12		SCH40		P66B-0089S	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Severe wet H2S service with Jack screw Licensor-1	
200	14		SCH40		P66B-0089T	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Severe wet H2S service with Jack screw Licensor-1	
200	16		XS		P66B-0089U	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Severe wet H2S service with Jack screw Licensor-1	
200	18		XS		P66B-0089V	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Severe wet H2S service with Jack screw Licensor-1	
200	20		XS		P66B-0089X	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Severe wet H2S service with Jack screw Licensor-1	

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SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P71B-0009V	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service Licensor-1	
1	1.5				P71B-0009W	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service Licensor-1	
1	2				P71B-0009Z	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service Licensor-1	
1	3				P71B-000A0	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service Licensor-1	
1	4				P71B-000A1	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service Licensor-1	
1	6				P71B-000A2	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service Licensor-1	
1	8				P71B-000A3	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service Licensor-1	
1	10				P71B-0009X	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service Licensor-1	
1	12				P71B-0009Y	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service Licensor-1	

PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000E1	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service Licensor-1	
1	16				P72B-000E2	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service Licensor-1	
1	18				P72B-000E3	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service Licensor-1	
1	20				P72B-000E4	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service Licensor-1	
1	24				P72B-000E5	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service Licensor-1	
1	30				P72B-000E6	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF Severe wet H2S service Licensor-1	
1	36				P72B-000E7	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF Severe wet H2S service Licensor-1	
1	42				P72B-000E8	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF Severe wet H2S service Licensor-1	
1	48				P72B-000E9	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF Severe wet H2S service Licensor-1	
1	52				P72B-000EA	Paddle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF Severe wet H2S service Licensor-1	

PADDLE SPACER (PS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000EB	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service Licensor-1	
1	16				P72B-000EC	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service Licensor-1	
1	18				P72B-000ED	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service Licensor-1	
1	20				P72B-000EE	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service Licensor-1	
1	24				P72B-000EF	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service Licensor-1	
1	30				P72B-000EG	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF Severe wet H2S service Licensor-1	
1	36				P72B-000EH	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF Severe wet H2S service Licensor-1	
1	42				P72B-000EJ	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF Severe wet H2S service Licensor-1	
1	48				P72B-000EK	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF Severe wet H2S service Licensor-1	
1	52				P72B-000EL	Paddle spacer ASTM A105 Class 150 Standard-drawing Flange ASME B16.47-B RF Severe wet H2S service Licensor-1	

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PIPING CLASS
A4AR01 REV NO. 2

BOLT TABLE (B_A4AR01 , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	60	P80S-008SY		
1	4	0.500	70	P80S-008T0		
1.5	4	0.500	75	P80S-008T1		
2	4	0.625	85	P80S-0090A		
3	4	0.625	95	P80S-0090C		
4	8	0.625	95	P80S-0090C		
6	8	0.750	105	P80S-0090E		
8	8	0.750	110	P80S-0090F		
10	12	0.875	120	P80S-005Z9		
12	12	0.875	120	P80S-005Z9		
14	12	1.000	135	P80S-00619		
16	16	1.000	140	P80S-0061A		
18	16	1.125	150	P80S-0064L		
20	20	1.125	160	P80S-0064N		
24	20	1.250	175	P80S-00686		
30	44	0.750	145	P80S-0090N		
36	44	0.875	175	P80S-005ZL		
42	48	1.000	190	P80S-0061L		
48	44	1.125	210	P80S-0064Z		
52	52	1.125	220	P80S-00651		
54			0			

BOLT TABLE (B_A4AR01_773 , STUD ASME RF, OPTION CODE 773)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70			
1	4	0.625	80	P80S-00909		
1.5	4	0.750	95	P80S-005Z4		
2	8	0.625	90	P80S-0090B		
3	8	0.750	110	P80S-0090F		
4	8	0.750	115	P80S-0090G		
6	12	0.750	125	P80S-0090J		
8	12	0.875	140	P80S-005ZD		
10	16	1.000	160	P80S-0061E		
12	16	1.125	175	P80S-0064S		
14	20	1.125	180	P80S-0064T		
16	20	1.250	190	P80S-00689		
18	24	1.250	200	P80S-0068B		
20	24	1.250	210	P80S-0068D		
24	24	1.500	235	P80S-006LB		
30	36	1.375	285	P80S-006HY		
36	32	1.625	320	P80S-00A5E		
42	36	1.750	355	P80S-00AEJ		
48	40	1.875	380	P80S-00AW5		
52	48	1.875	410	P80S-00AWB		
54	48	1.875	400	P80S-00AW9		

BOLT TABLE (B_A4AR01_781 , STUD ASME RF, OPTION CODE 781)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	80			
1	4	0.625	95			
1.5	4	0.750	110			
2	8	0.625	110			
3	8	0.750	130			
4	8	0.875	150			
6	12	1.000	175	P80S-0061H		
8	12	1.125	195			
10	16	1.250	250			
12	20	1.250	255			
14	20	1.375	270			
16	20	1.500	295			
18	20	1.625	320			
20	24	1.625	335			
24	24	1.875	380			
30	28	1.875	435			
36	28	2.250	510			
42	28	2.500	575			
48	32	2.750	635			

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BOLT TABLE (B_A4AR01_781 , STUD ASME RF, OPTION CODE 781)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
52	32	3.000	680			
54			0			

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BRANCH TABLE (T_A4AR01)

RUN PIPE SIZE (in) \ BRANCH SIZE (in)	0.5	1	1.5	2	3	4	6	8	10	12	14	16	18	20	24	30	36	42	48	52	54
0.5	TS																				
1		TS																			
1.5		TR	TS																		
2		TR	TR	TS																	
3		L	TR	TR	TS																
4	L	L	L	TR	TR	TS															
6	L	L	L	L	TR	TR	TS														
8		L	L	L	L	TR	TR	TS													
10		L	L	L	L	TR	TR	TR	TS												
12		L	L	L	L	L	TR	TR	TR	TS											
14		L	L	L	L	L	TR	TR	TR	TR	TS										
16		L	L	L	L	L	TR	TR	TR	TR	TR	TS									
18		L	L	L	L	L	L	TR	TR	TR	TR	TR	TS								
20		L	L	L	L	L	L	TR	TR	TR	TR	TR	TR	TS							
24		L	L	L	L	L	L	9PD	TR	TR	TR	TR	TR	TR	TS						
30		L	L	L	L	L	L	9PD	TR	TR	TR	TR	TR	TR	TR	TS					
36		L	L	L	L	L	L	9PD	9PD	9PD	9PD	TR	TR	TR	TR	TR	TS				
42		L	L	L	L	L	L	9PD	9PD	9PD	9PD	TR	TR	TR	TR	TR	TR	TS			
48		L	L	L	L	L	L	9PD	9PD	9PD	9PD	9PD	9PD	9PD	TR	TR	TR	TR	TS		
52		L	L	L	L	L	L	9PD	9PD	9PD	9PD	9PD	9PD	9PD	9PD	TR	TR	TR	TR	TS	
54																					

TR : REDUCING TEE
TS : STRAIGHT TEE
9PD : REINFORCING PAD 90 DEG
L : OUTLET

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PIPING CLASS

A4AR03 REV NO. 2

Material : Killed CS
Rating : ASME CLASS 150
Flange Face : RF
C.A.(mm) : 6.00
Gasket : Spiral Wound
Service : PROCESS - WET SEVERE SOUR SERVICE SUBJECT TO NACE + HIC STD
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
2	USE OF SOFT SEATED BALL, PLUG AND BUTTERFLY VALVES SHALL BE LIMITED TO MAXIMUM OF 204DEGC (400DEGF)
5	BOLTING CONFIRMING TO B7M / 2HM SHALL BE USED UNDER CONDITIONS (A) DIRECT EXPOSURE TO SOUR ENVIRONMENTS (B) WHEN THE BOLTING WILL BE BURIED OR INSULATED
27	PWHT OF CARBON STEEL PIPING IN WET H2S, CAUSTIC AND AMINE SERVICES SHALL BE IN ACCORDANCE WITH SECTION 10.2, 10.3, AND 10.4 OF PROJECT SPECIFICATION 3550-8440-SP-0002 MATERIALS REQUIREMENTS FOR PRESSURISED EQUIPMENT AND PIPING. FOR CAUSTIC AND AMINE SERVICE THE FOLLOWING SHALL APPLY: - PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF ALL SITE PIPING FABRICATION WELDS IS REQUIRED FOR ALL WALL THICKNESSES. FOR MODERATE AND SEVERE WET H2S SERVICE THE FOLLOWING SHALL APPLY: PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF SITE FABRICATION CIRCUMFERENTIAL OR BRANCH WELDS IS NOT REQUIRED IF WELDS ARE MULTIPASS AND IN ACCORDANCE WITH PARA 10.2.12 OF PROJECT SPECIFICATION 3550-8440-SP-0002. FOR SERVICES MEETING THE WET H2S CRITERIA AND CAUSTIC OR AMINE CRITERIA THE MORE STRINGENT PWHT REQUIREMENT SHALL GOVERN.

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
541	NPT(F) (CA,F)
773	CLASS 300 (B,F,G)
4608	VALVE WITH NIPPLES (V)

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PIPING CLASS
A4AR03 REV NO. 2

PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		XXS		P01A-007F9	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE Severe wet H2S service Licensor-3	
1	1.5		XXS		P01A-007FA	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE Severe wet H2S service Licensor-3	
1	2		SCH160		P01A-007FB	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Severe wet H2S service Licensor-3	
1	3		SCH160		P01A-007FC	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Severe wet H2S service Licensor-3	
1	4		SCH120		P01A-007FD	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Severe wet H2S service Licensor-3	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		XXS		P02A-003XB	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-3	
1	1.5		XXS		P02A-003XC	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-3	
1	2		SCH160		P02A-003XD	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-3	
1	3		SCH160		P02A-003XE	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-3	
1	4		SCH120		P02A-003XF	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-3	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		XXS		P03A-003V0	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-3	
1	1.5		XXS		P03A-003V1	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-3	
1	2		SCH160		P03A-003V2	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-3	
1	3		SCH160		P03A-003V3	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-3	
1	4		SCH120		P03A-003V4	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-3	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		XXS		P21A-004ET	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	1.5		XXS		P21A-004EU	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	2		SCH160		P21A-004EV	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	3		SCH160		P21A-004EW	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	4		SCH120		P21A-004EX	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5	1	XXS	XXS	P24A-00KNC	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	2	1	SCH160	XXS	P24A-00KND	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	2	1.5	SCH160	XXS	P24A-00KNE	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	3	1.5	SCH160	XXS	P24A-00KNF	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	3	2	SCH160	SCH160	P24A-00KNG	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	4	2	SCH120	SCH160	P24A-00KNH	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	4	3	SCH120	SCH160	P24A-00KNJ	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5	1	XXS	XXS	P27A-00F4G	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	2	1	SCH160	XXS	P27A-00F4H	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	2	1.5	SCH160	XXS	P27A-00F4J	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	3	1.5	SCH160	XXS	P27A-00F4K	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	3	2	SCH160	SCH160	P27A-00F4L	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	4	1.5	SCH120	XXS	P27A-00F4M	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	4	2	SCH120	SCH160	P27A-00F4N	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	4	3	SCH120	SCH160	P27A-00F4P	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5	1	XXS	XXS	P28A-00C8H	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	

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ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2	1	SCH160	XXS	P28A-00C8J	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	2	1.5	SCH160	XXS	P28A-00C8K	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	3	1.5	SCH160	XXS	P28A-00C8L	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	3	2	SCH160	SCH160	P28A-00C8M	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	4	1.5	SCH120	XXS	P28A-00C8N	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	4	2	SCH120	SCH160	P28A-00C8P	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	4	3	SCH120	SCH160	P28A-00C8R	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		XXS		P29A-0039R	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	1.5		XXS		P29A-0039S	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	2		SCH160		P29A-0039T	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	3		SCH160		P29A-0039U	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	4		SCH120		P29A-0039V	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
541	1				P29B-0000Z	Cap ASTM A105 Class 6000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		10.60mm		P41A-001AZ	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Severe wet H2S service Licensor-3	
1	1.5		10.60mm		P41A-001B0	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Severe wet H2S service Licensor-3	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	1	SCH160	XXS	P31B-00B4A	Outlet ASTM A105 MSS SP-97 BW	
1	4	1	SCH120	XXS	P31B-00B08	Outlet ASTM A105 MSS SP-97 BW	
1	4	1.5	SCH120	XXS	P31B-00BNX	Outlet ASTM A105 MSS SP-97 BW	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P30B-0002F	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1.5				P30B-0002G	Plug ASTM A105 ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		XXS		P61B-003M2	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	1.5		XXS		P61B-003MC	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	2		SCH160		P61B-002F0	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	3		SCH160		P61B-003M3	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	4		SCH120		P61B-003MK	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
541	1				P61B-003U1	Flange NPT ASTM A105 Class 150 ASME B16.5 RF	
773	1		XXS		P61B-003MB	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	1.5		XXS		P61B-003MR	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	2		SCH160		P61B-002R8	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	3		SCH160		P61B-003JL	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	4		SCH120		P61B-003MU	Flange WN ASTM A105 Class 300 ASME B16.5 RF	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P67B-000FK	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	1.5				P67B-000FL	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	2				P67B-000FT	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	3				P67B-000FW	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	4				P67B-000FX	Blind flange ASTM A105 Class 150 ASME B16.5 RF	

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GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P73T-000LA	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000LB	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000LH	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000LL	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000LM	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	3				P73T-000G5	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	4				P73T-000G6	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1-4				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
773	1-4				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P81B-0018X	Gate valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service C.A.=6.0mm	
1	1.5				P81B-0018Y	Gate valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service C.A.=6.0mm	
1	2				P81C-004G1	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service C.A.=6.0mm	
1	3				P81C-004G2	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service C.A.=6.0mm	
1	4				P81C-004G3	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service C.A.=6.0mm	
4608	1				P81B-002VN	Gate valve ASTM A105 Class 150 API 602 BW both sides w/ nipples BE - NPT ASTM A106-B T=10.60MM-nipple Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service C.A.=6.0mm Licensor-3	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P82B-0011Y	Globe valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service C.A.=6.0mm	
1	1.5				P82B-0011Z	Globe valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service C.A.=6.0mm	
1	2				P82C-0027B	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service C.A.=6.0mm	
1	3				P82C-0027C	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service C.A.=6.0mm	
1	4				P82C-0027D	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service C.A.=6.0mm	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P83B-000UA	Check valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Severe wet H2S service C.A.=6.0mm	
1	1.5				P83B-000UB	Check valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Severe wet H2S service C.A.=6.0mm	
1	2				P83C-00238	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service C.A.=6.0mm	
1	3				P83C-0023B	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service C.A.=6.0mm	
1	4				P83C-0023C	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service C.A.=6.0mm	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P71B-0008C	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71B-0008D	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	2				P71B-0000P	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	3				P71B-0000N	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	4				P71B-0000M	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	

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BOLT TABLE (B_A4AR03 , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
1	4	0.500	70	P80S-008T0		
1.5	4	0.500	75	P80S-008T1		
2	4	0.625	85	P80S-0090A		
3	4	0.625	95	P80S-0090C		
4	8	0.625	95	P80S-0090C		

BOLT TABLE (B_A4AR03_773 , STUD ASME RF, OPTION CODE 773)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
1	4	0.625	80	P80S-00909		
1.5	4	0.750	95	P80S-005Z4		
2	8	0.625	90	P80S-0090B		
3	8	0.750	110	P80S-0090F		
4	8	0.750	115	P80S-0090G		

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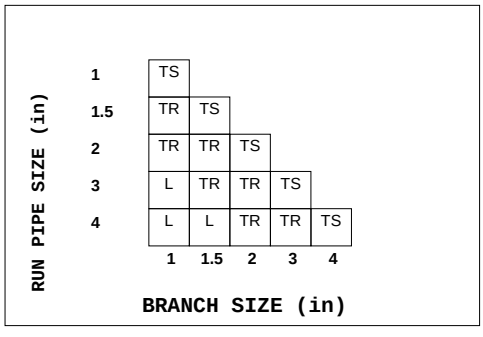
BRANCH TABLE (T_A4AR03)



TR : REDUCING TEE
TS : STRAIGHT TEE
L : OUTLET

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Material : Killed CS
Rating : ASME CLASS 150
Flange Face : RF
C.A.(mm) : 6.00
Gasket : Spiral Wound
Service : PROCESS - WET SEVERE SOUR SERVICE SUBJECT TO NACE + HIC STD.
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
2	USE OF SOFT SEATED BALL, PLUG AND BUTTERFLY VALVES SHALL BE LIMITED TO MAXIMUM OF 204DEGC (400DEGF)
5	BOLTING CONFIRMING TO B7M / 2HM SHALL BE USED UNDER CONDITIONS (A) DIRECT EXPOSURE TO SOUR ENVIRONMENTS (B) WHEN THE BOLTING WILL BE BURIED OR INSULATED
27	PWHT OF CARBON STEEL PIPING IN WET H2S, CAUSTIC AND AMINE SERVICES SHALL BE IN ACCORDANCE WITH SECTION 10.2, 10.3, AND 10.4 OF PROJECT SPECIFICATION 3550-8440-SP-0002 MATERIALS REQUIREMENTS FOR PRESSURISED EQUIPMENT AND PIPING. FOR CAUSTIC AND AMINE SERVICE THE FOLLOWING SHALL APPLY: - PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF ALL SITE PIPING FABRICATION WELDS IS REQUIRED FOR ALL WALL THICKNESSES. FOR MODERATE AND SEVERE WET H2S SERVICE THE FOLLOWING SHALL APPLY: PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF SITE FABRICATION CIRCUMFERENTIAL OR BRANCH WELDS IS NOT REQUIRED IF WELDS ARE MULTIPASS AND IN ACCORDANCE WITH PARA 10.2.12 OF PROJECT SPECIFICATION 3550-8440-SP-0002. FOR SERVICES MEETING THE WET H2S CRITERIA AND CAUSTIC OR AMINE CRITERIA THE MORE STRINGENT PWHT REQUIREMENT SHALL GOVERN.

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
541	NPT(F) (CA,F)
773	CLASS 300 (B,F,G)
4608	VALVE WITH NIPPLES (V)

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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		XXS		P01A-0014U	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1.5		XXS		P01A-00162	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	2		XXS		P01A-001R0	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	3		SCH160		P01A-001S5	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	4		SCH120		P01A-001TM	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	6		XS		P01A-000ZF	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	8		SCH60		P01A-001BK	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		XXS		P02A-000XJ	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1.5		XXS		P02A-002N4	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	2		XXS		P02A-00111	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		SCH160		P02A-000U4	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		SCH120		P02A-000U5	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		XS		P02A-000DA	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		SCH60		P02A-000MC	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		XXS		P03A-000U8	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1.5		XXS		P03A-002KD	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	2		XXS		P03A-000XH	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		SCH160		P03A-000RB	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		SCH120		P03A-000RC	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		XS		P03A-000B8	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		SCH60		P03A-000K5	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		XXS		P21A-002DP	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5		XXS		P21A-003KU	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2		XXS		P21A-002G3	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		SCH160		P21A-002AG	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		SCH120		P21A-002AH	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6		XS		P21A-001D4	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8		SCH60		P21A-0025S	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5	1	XXS	XXS	P24A-00H61	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	XXS	XXS	P24A-00H63	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	XXS	XXS	P24A-006TT	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	SCH160	XXS	P24A-0045F	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	SCH160	XXS	P24A-0056E	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	SCH120	XXS	P24A-00M3U	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	SCH120	SCH160	P24A-0045E	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	XS	SCH160	P24A-00GDY	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	XS	SCH120	P24A-00GDZ	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH60	SCH120	P24A-00L2A	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH60	XS	P24A-0062G	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5	1	XXS	XXS	P27A-004NR	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	XXS	XXS	P27A-0033N	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	XXS	XXS	P27A-00339	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	SCH160	XXS	P27A-002NG	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	SCH160	XXS	P27A-0038P	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	1.5	SCH120	XXS	P27A-002NH	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	SCH120	XXS	P27A-004KC	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	SCH120	SCH160	P27A-002NM	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	XS	SCH160	P27A-007P7	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	XS	SCH120	P27A-007PZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH60	SCH120	P27A-007W6	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH60	XS	P27A-00436	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5	1	XXS	XXS	P28A-008W0	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	XXS	XXS	P28A-004KN	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	XXS	XXS	P28A-004KP	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	SCH160	XXS	P28A-002P1	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	SCH160	XXS	P28A-00386	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	1.5	SCH120	XXS	P28A-002P0	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	SCH120	XXS	P28A-004KR	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	SCH120	SCH160	P28A-002P2	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	XS	SCH160	P28A-0085V	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	XS	SCH120	P28A-0085W	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH60	SCH120	P28A-00AJW	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH60	XS	P28A-0042Y	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		XXS		P29A-00338	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5		XXS		P29A-00339	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	2		XXS		P29A-0033A	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	3		SCH160		P29A-001W6	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	4		SCH120		P29A-001W9	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	6		XS		P29A-001WA	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	8		SCH60		P29A-0035F	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
541	1				P29B-0000Z	Cap ASTM A105 Class 6000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		10.60mm		P41A-001AT	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		10.60mm		P41A-001AU	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	1	SCH160	XXS	P31B-00B4A	Outlet ASTM A105 MSS SP-97 BW	
1	4	1	SCH120	XXS	P31B-00B08	Outlet ASTM A105 MSS SP-97 BW	
1	6	1	XS	XXS	P31B-00AYZ	Outlet ASTM A105 MSS SP-97 BW	
1	8	1	SCH60	XXS	P31B-00YDK	Outlet ASTM A105 MSS SP-97 BW	
1	4	1.5	SCH120	XXS	P31B-00BNX	Outlet ASTM A105 MSS SP-97 BW	
1	6	1.5	XS	XXS	P31B-00BJ4	Outlet ASTM A105 MSS SP-97 BW	
1	8	1.5	SCH60	XXS	P31B-00BFH	Outlet ASTM A105 MSS SP-97 BW	
1	6	2	XS	XXS	P31B-00ZHK	Outlet ASTM A105 MSS SP-97 BW	
1	8	2	SCH60	XXS	P31B-00AGN	Outlet ASTM A105 MSS SP-97 BW	
1	8	3	SCH60	SCH160	P31B-00A35	Outlet ASTM A105 MSS SP-97 BW	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P30B-0002F	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1.5				P30B-0002G	Plug ASTM A105 ASME B16.11 NPT Round head	

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FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		XXS		P61B-003M2	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	1.5		XXS		P61B-003MC	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	2		XXS		P61B-003MH	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	3		SCH160		P61B-003M3	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	4		SCH120		P61B-003MK	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	6		XS		P61B-003JF	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	8		SCH60		P61B-002F6	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
541	1				P61B-003U1	Flange NPT ASTM A105 Class 150 ASME B16.5 RF	
773	1		XXS		P61B-003MB	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	1.5		XXS		P61B-003MR	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	2		XXS		P61B-003MS	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	3		SCH160		P61B-003JL	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	4		SCH120		P61B-003MU	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	6		XS		P61B-001FE	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	8		SCH60		P61B-002RE	Flange WN ASTM A105 Class 300 ASME B16.5 RF	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P67B-000FK	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	1.5				P67B-000FL	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	2				P67B-000FT	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	3				P67B-000FW	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	4				P67B-000FX	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	6				P67B-000FY	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	8				P67B-000FZ	Blind flange ASTM A105 Class 150 ASME B16.5 RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P73T-000LA	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000LB	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000LH	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000LL	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000LM	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	6				P73T-000LN	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	8				P73T-000LP	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	3				P73T-000G5	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	4				P73T-000G6	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	6				P73T-000G7	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	8				P73T-000G8	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1-8				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
773	1-8				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P81B-0018X	Gate valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service C.A.=6.0mm	
1	1.5				P81B-0018Y	Gate valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service C.A.=6.0mm	

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GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2				P81C-006N1	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service C.A.=6.0mm Licensor-4	
1	3				P81C-006N2	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service C.A.=6.0mm Licensor-4	
1	4				P81C-006N3	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service C.A.=6.0mm Licensor-4	
1	6				P81C-006N4	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service C.A.=6.0mm Licensor-4	
1	8				P81C-006N5	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service C.A.=6.0mm Licensor-4	
4608	1				P81B-002VL	Gate valve ASTM A105 Class 150 API 602 BW both sides w/ nipples BE - NPT ASTM A106-B T=10.60MM-nipple Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service C.A.=6.0mm	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P82B-0011Y	Globe valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service C.A.=6.0mm	
1	1.5				P82B-0011Z	Globe valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service C.A.=6.0mm	
1	2				P82C-00375	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service C.A.=6.0mm Licensor-4	
1	3				P82C-00376	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service C.A.=6.0mm Licensor-4	
1	4				P82C-00377	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service C.A.=6.0mm Licensor-4	
1	6				P82C-00378	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service C.A.=6.0mm Licensor-4	
1	8				P82C-00379	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service C.A.=6.0mm Licensor-4	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P83B-000UA	Check valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Severe wet H2S service C.A.=6.0mm	
1	1.5				P83B-000UB	Check valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Severe wet H2S service C.A.=6.0mm	
1	2				P83C-0033M	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service C.A.=6.0mm Licensor-4	
1	3				P83C-0033N	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service C.A.=6.0mm Licensor-4	
1	4				P83C-0033P	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service C.A.=6.0mm Licensor-4	
1	6				P83C-0033R	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service C.A.=6.0mm Licensor-4	
1	8				P83C-0033S	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service C.A.=6.0mm Licensor-4	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P71B-0008C	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71B-0008D	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	2				P71B-0000P	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	3				P71B-0000N	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	4				P71B-0000M	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	6				P71B-0000L	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	8				P71B-0000R	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	

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BOLT TABLE (B_A4AR04 , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
1	4	0.500	70	P80S-008T0		
1.5	4	0.500	75	P80S-008T1		
2	4	0.625	85	P80S-0090A		
3	4	0.625	95	P80S-0090C		
4	8	0.625	95	P80S-0090C		
6	8	0.750	105	P80S-0090E		
8	8	0.750	110	P80S-0090F		

BOLT TABLE (B_A4AR04_773 , STUD ASME RF, OPTION CODE 773)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
1	4	0.625	80	P80S-00909		
1.5	4	0.750	95	P80S-005Z4		
2	8	0.625	90	P80S-0090B		
3	8	0.750	110	P80S-0090F		
4	8	0.750	115	P80S-0090G		
6	12	0.750	125	P80S-0090J		
8	12	0.875	140	P80S-005ZD		

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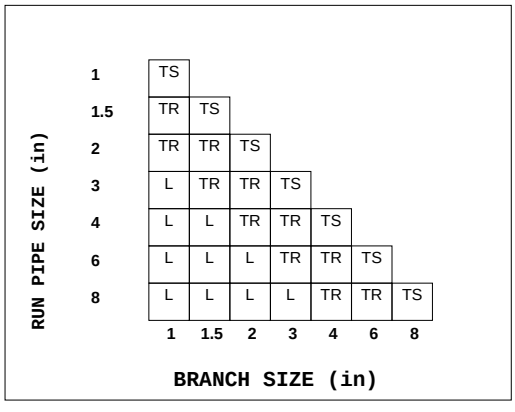
BRANCH TABLE (T_A4AR04)



TR : REDUCING TEE
L : OUTLET
TS : STRAIGHT TEE

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Material	:	Killed CS
Rating	:	ASME CLASS 150
Flange Face	:	RF
C.A.(mm)	:	6.00
Gasket	:	Spiral Wound
Service	:	PROCESS - CORROSIVE SERVICE:
Design Code	:	ASME B31.3
Heat Treatment	:	

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
541	NPT(F) (CA,F,L)
773	CLASS 300 (B,F,G)
4608	VALVE WITH NIPPLES (V)

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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		XXS		P01A-0014U	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1.5		XXS		P01A-00162	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	2		SCH160		P01A-0019T	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	3		SCH160		P01A-001S5	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	4		SCH120		P01A-001TM	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		XXS		P02A-000XJ	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1.5		XXS		P02A-002N4	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	2		SCH160		P02A-000KW	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		SCH160		P02A-000U4	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		SCH120		P02A-000U5	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		XXS		P03A-000U8	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1.5		XXS		P03A-002KD	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	2		SCH160		P03A-000HU	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		SCH160		P03A-000RB	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		SCH120		P03A-000RC	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		XXS		P21A-002DP	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5		XXS		P21A-003KU	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2		SCH160		P21A-00245	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		SCH160		P21A-002AG	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		SCH120		P21A-002AH	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5	1	XXS	XXS	P24A-00H61	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	SCH160	XXS	P24A-0044B	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	SCH160	XXS	P24A-003GG	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	SCH160	XXS	P24A-0045F	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	SCH160	SCH160	P24A-0045H	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	SCH120	SCH160	P24A-0045G	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	SCH120	SCH160	P24A-0045E	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5	1	XXS	XXS	P27A-004NR	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	SCH160	XXS	P27A-0029H	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	SCH160	XXS	P27A-0029K	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	SCH160	XXS	P27A-002NG	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	SCH160	SCH160	P27A-002NC	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	1.5	SCH120	XXS	P27A-002NH	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	SCH120	SCH160	P27A-002ND	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	SCH120	SCH160	P27A-002NM	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5	1	XXS	XXS	P28A-008W0	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	SCH160	XXS	P28A-00289	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	SCH160	XXS	P28A-0028A	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	SCH160	XXS	P28A-002P1	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	SCH160	SCH160	P28A-002NY	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	4	1.5	SCH120	XXS	P28A-002P0	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	SCH120	SCH160	P28A-002NZ	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	SCH120	SCH160	P28A-002P2	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		XXS		P29A-000W3	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5		XXS		P29A-0031N	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2		SCH160		P29A-000HR	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		SCH160		P29A-000KY	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		SCH120		P29A-000LY	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
541	1				P29B-0000Z	Cap ASTM A105 Class 6000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		10.60mm		P41A-001AT	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		10.60mm		P41A-001AU	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
541	1.5	1			P31B-005J1	Outlet ASTM A105 Class 6000 MSS SP-97 NPT	
541	2 - 2.5	1			P31B-005J3	Outlet ASTM A105 Class 6000 MSS SP-97 NPT	
541	3 - 10	1			P31B-007KG	Outlet ASTM A105 Class 6000 MSS SP-97 NPT	
1	3	1	SCH160	XXS	P31B-00B4A	Outlet ASTM A105 MSS SP-97 BW	
1	4	1	SCH120	XXS	P31B-00B08	Outlet ASTM A105 MSS SP-97 BW	
1	4	1.5	SCH120	XXS	P31B-00BNX	Outlet ASTM A105 MSS SP-97 BW	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P30B-0002F	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1.5				P30B-0002G	Plug ASTM A105 ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		XXS		P61B-003M2	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	1.5		XXS		P61B-003MC	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	2		SCH160		P61B-002F0	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	3		SCH160		P61B-003M3	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	4		SCH120		P61B-003MK	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
541	1				P61B-003U1	Flange NPT ASTM A105 Class 150 ASME B16.5 RF	
773	1		XXS		P61B-003MB	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	1.5		XXS		P61B-003MR	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	2		SCH160		P61B-002R8	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	3		SCH160		P61B-003JL	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	4		SCH120		P61B-003MU	Flange WN ASTM A105 Class 300 ASME B16.5 RF	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P67B-000FK	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	1.5				P67B-000FL	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	2				P67B-000FT	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	3				P67B-000FW	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	4				P67B-000FX	Blind flange ASTM A105 Class 150 ASME B16.5 RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P73T-000LA	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

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GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5				P73T-000LB	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000LH	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000LL	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000LM	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	3				P73T-000G5	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	4				P73T-000G6	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1-4				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
773	1-4				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P81B-001FZ	Gate valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated C.A.=6.0mm	
1	1.5				P81B-001G0	Gate valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated C.A.=6.0mm	
1	2				P81C-00507	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated C.A.=6.0mm	
1	3				P81C-00508	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated C.A.=6.0mm	
1	4				P81C-00509	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated C.A.=6.0mm	
4608	1				P81B-002VP	Gate valve ASTM A105 Class 150 API 602 BW both sides w/ nipples BE - NPT ASTM A106-B T=10.60MM-nipple Trim number 12 BB-BG-OS&Y Handwheel operated C.A.=6.0mm	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P82B-0017R	Globe valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated C.A.=6.0mm	
1	1.5				P82B-0017S	Globe valve ASTM A105 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated C.A.=6.0mm	
1	2				P82C-002E7	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated C.A.=6.0mm	
1	3				P82C-002E8	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated C.A.=6.0mm	
1	4				P82C-002E9	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated C.A.=6.0mm	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P71B-0008C	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71B-0008D	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	2				P71B-0000P	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	3				P71B-0000N	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	4				P71B-0000M	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	

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BOLT TABLE (B_A4AV03 , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
1	4	0.500	70	P80S-003V4		
1.5	4	0.500	75	P80S-003V5		
2	4	0.625	85	P80S-003XE		
3	4	0.625	95	P80S-003XG		
4	8	0.625	95	P80S-003XG		

BOLT TABLE (B_A4AV03_773 , STUD ASME RF, OPTION CODE 773)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
1	4	0.625	80	P80S-003XD		
1.5	4	0.750	95	P80S-00414		
2	8	0.625	90	P80S-003XF		
3	8	0.750	110	P80S-003XK		
4	8	0.750	115	P80S-003XL		

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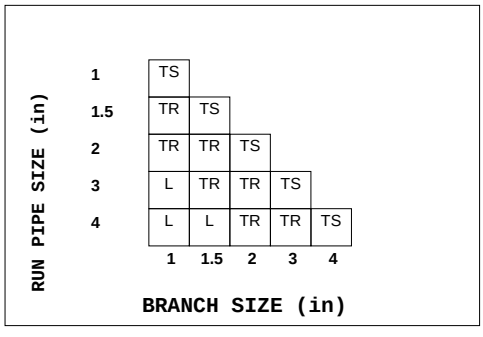
BRANCH TABLE (T_A4AV03)



TS : STRAIGHT TEE
TR : REDUCING TEE
L : OUTLET

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Material : 5Cr-1/2Mo
Rating : ASME CLASS 150
Flange Face : RF
C.A.(mm) : 6.00
Gasket : Spiral Wound
Service : Corrosive service, Cr-Mo steel with corr.allow. >3mm

Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
541	NPT(F) (CA,F)
773	CLASS 300 (B,F,G)
4608	VALVE WITH NIPPLES (V)

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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		XXS		P01F-000DB	Pipe ASTM A335 Grade P5 Seamless ASME B36.10M/B36.19M PE	
1	1.5		XXS		P01F-000DC	Pipe ASTM A335 Grade P5 Seamless ASME B36.10M/B36.19M PE	
1	2		SCH160		P01F-00036	Pipe ASTM A335 Grade P5 Seamless ASME B36.10M/B36.19M BE	
1	3		SCH160		P01F-0004G	Pipe ASTM A335 Grade P5 Seamless ASME B36.10M/B36.19M BE	
1	4		SCH120		P01F-0004X	Pipe ASTM A335 Grade P5 Seamless ASME B36.10M/B36.19M BE	
1	6		XS		P01F-00038	Pipe ASTM A335 Grade P5 Seamless ASME B36.10M/B36.19M BE	
1	8		SCH60		P01F-0004H	Pipe ASTM A335 Grade P5 Seamless ASME B36.10M/B36.19M BE	
1	10		XS		P01F-00039	Pipe ASTM A335 Grade P5 Seamless ASME B36.10M/B36.19M BE	
1	12		SCH40		P01F-00035	Pipe ASTM A335 Grade P5 Seamless ASME B36.10M/B36.19M BE	
1	14		SCH40		P01F-0004B	Pipe ASTM A335 Grade P5 Seamless ASME B36.10M/B36.19M BE	
1	16		XS		P01F-0004C	Pipe ASTM A335 Grade P5 Seamless ASME B36.10M/B36.19M BE	
1	18		SCH30		P01F-000DN	Pipe ASTM A691 Grade 5CR Class 22 EFW ASME B36.10M/B36.19M BE	
1	20		XS		P01F-000DP	Pipe ASTM A691 Grade 5CR Class 22 EFW ASME B36.10M/B36.19M BE	
1	24		XS		P01F-000DD	Pipe ASTM A691 Grade 5CR Class 22 EFW ASME B36.10M/B36.19M BE	
1	30		SCH30		P01F-001P2	Pipe ASTM A691 Grade 5CR Class 22 EFW ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		XXS		P02F-000D6	90 degree elbow ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW Long radius	
1	1.5		XXS		P02F-000D7	90 degree elbow ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW Long radius	
1	2		SCH160		P02F-00049	90 degree elbow ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW Long radius	
1	3		SCH160		P02F-000DD	90 degree elbow ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW Long radius	
1	4		SCH120		P02F-000DE	90 degree elbow ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW Long radius	
1	6		XS		P02F-0004B	90 degree elbow ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW Long radius	
1	8		SCH60		P02F-000CJ	90 degree elbow ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW Long radius	
1	10		XS		P02F-0004D	90 degree elbow ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW Long radius	
1	12		SCH40		P02F-00048	90 degree elbow ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW Long radius	
1	14		SCH40		P02F-000D8	90 degree elbow ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW Long radius	
1	16		XS		P02F-000D9	90 degree elbow ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW Long radius	
1	18		SCH30		P02F-000DA	90 degree elbow ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW Long radius	
1	20		XS		P02F-000DB	90 degree elbow ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW Long radius	
1	24		XS		P02F-000DC	90 degree elbow ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW Long radius	
1	30		SCH30		P02F-000HM	90 degree elbow ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		XXS		P03F-000CZ	45 degree elbow ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW Long radius	
1	1.5		XXS		P03F-000D0	45 degree elbow ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW Long radius	
1	2		SCH160		P03F-00046	45 degree elbow ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW Long radius	
1	3		SCH160		P03F-000D6	45 degree elbow ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW Long radius	
1	4		SCH120		P03F-000D7	45 degree elbow ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW Long radius	
1	6		XS		P03F-00048	45 degree elbow ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW Long radius	
1	8		SCH60		P03F-000CB	45 degree elbow ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW Long radius	
1	10		XS		P03F-0004A	45 degree elbow ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW Long radius	
1	12		SCH40		P03F-00045	45 degree elbow ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW Long radius	
1	14		SCH40		P03F-000D1	45 degree elbow ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW Long radius	
1	16		XS		P03F-000D2	45 degree elbow ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW Long radius	
1	18		SCH30		P03F-000D3	45 degree elbow ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW Long radius	
1	20		XS		P03F-000D4	45 degree elbow ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW Long radius	
1	24		XS		P03F-000D5	45 degree elbow ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW Long radius	
1	30		SCH30		P03F-000HC	45 degree elbow ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		XXS		P21F-000D1	Straight tee ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	1.5		XXS		P21F-000D2	Straight tee ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	2		SCH160		P21F-00047	Straight tee ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	3		SCH160		P21F-000DG	Straight tee ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	4		SCH120		P21F-000DH	Straight tee ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	6		XS		P21F-00049	Straight tee ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	8		SCH60		P21F-000C9	Straight tee ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	10		XS		P21F-0004A	Straight tee ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	12		SCH40		P21F-00046	Straight tee ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	14		SCH40		P21F-000DK	Straight tee ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	16		XS		P21F-000DL	Straight tee ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	18		SCH30		P21F-000DM	Straight tee ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	
1	20		XS		P21F-000DN	Straight tee ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	
1	24		XS		P21F-000D3	Straight tee ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	
1	30		SCH30		P21F-000HG	Straight tee ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5	1	XXS	XXS	P24F-0016W	Reducing tee ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	2	1	SCH160	XXS	P24F-00177	Reducing tee ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	2	1.5	SCH160	XXS	P24F-00178	Reducing tee ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	3	1.5	SCH160	XXS	P24F-0017H	Reducing tee ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	3	2	SCH160	SCH160	P24F-0017J	Reducing tee ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	4	2	SCH120	SCH160	P24F-0017K	Reducing tee ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	4	3	SCH120	SCH160	P24F-0017L	Reducing tee ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	6	3	XS	SCH160	P24F-0017M	Reducing tee ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	6	4	XS	SCH120	P24F-0017N	Reducing tee ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	8	4	SCH60	SCH120	P24F-0017P	Reducing tee ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	8	6	SCH60	XS	P24F-0012S	Reducing tee ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	10	4	XS	SCH120	P24F-0017R	Reducing tee ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	10	6	XS	XS	P24F-0012U	Reducing tee ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	10	8	XS	SCH60	P24F-0012V	Reducing tee ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	12	6	SCH40	XS	P24F-0009W	Reducing tee ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	12	8	SCH40	SCH60	P24F-0017T	Reducing tee ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	12	10	SCH40	XS	P24F-0017S	Reducing tee ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	14	6	SCH40	XS	P24F-0017W	Reducing tee ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	14	8	SCH40	SCH60	P24F-0017X	Reducing tee ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	14	10	SCH40	XS	P24F-0017U	Reducing tee ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	14	12	SCH40	SCH40	P24F-0017V	Reducing tee ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	16	6	XS	XS	P24F-00181	Reducing tee ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	16	8	XS	SCH60	P24F-00182	Reducing tee ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	16	10	XS	XS	P24F-0017Y	Reducing tee ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	16	12	XS	SCH40	P24F-0017Z	Reducing tee ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	16	14	XS	SCH40	P24F-00180	Reducing tee ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	18	8	SCH30	SCH60	P24F-00187	Reducing tee ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	
1	18	10	SCH30	XS	P24F-00183	Reducing tee ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	
1	18	12	SCH30	SCH40	P24F-00184	Reducing tee ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	
1	18	14	SCH30	SCH40	P24F-00185	Reducing tee ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	
1	18	16	SCH30	XS	P24F-00186	Reducing tee ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	
1	20	8	XS	SCH60	P24F-0018D	Reducing tee ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	
1	20	10	XS	XS	P24F-00188	Reducing tee ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	
1	20	12	XS	SCH40	P24F-00189	Reducing tee ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	
1	20	14	XS	SCH40	P24F-0018A	Reducing tee ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	
1	20	16	XS	XS	P24F-0018B	Reducing tee ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	
1	20	18	XS	SCH30	P24F-0018C	Reducing tee ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	
1	24	10	XS	XS	P24F-0018E	Reducing tee ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	
1	24	12	XS	SCH40	P24F-0018F	Reducing tee ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	
1	24	14	XS	SCH40	P24F-0018G	Reducing tee ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	
1	24	16	XS	XS	P24F-0018H	Reducing tee ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	
1	24	18	XS	SCH30	P24F-0018J	Reducing tee ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	
1	24	20	XS	XS	P24F-0018K	Reducing tee ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	
1	30	10	SCH30	XS	P24F-001YA	Reducing tee ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	
1	30	12	SCH30	SCH40	P24F-001YB	Reducing tee ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	
1	30	14	SCH30	SCH40	P24F-001YC	Reducing tee ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	

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REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	30	16	SCH30	XS	P24F-001YD	Reducing tee ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	
1	30	18	SCH30	SCH30	P24F-001YE	Reducing tee ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	
1	30	20	SCH30	XS	P24F-001YF	Reducing tee ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	
1	30	24	SCH30	XS	P24F-001YG	Reducing tee ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5	1	XXS	XXS	P27F-00108	Concentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	2	1	SCH160	XXS	P27F-0010L	Concentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	2	1.5	SCH160	XXS	P27F-0010M	Concentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	3	1.5	SCH160	XXS	P27F-0010V	Concentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	3	2	SCH160	SCH160	P27F-0010W	Concentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	4	1.5	SCH120	XXS	P27F-0010X	Concentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	4	2	SCH120	SCH160	P27F-0010Y	Concentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	4	3	SCH120	SCH160	P27F-0010Z	Concentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	6	3	XS	SCH160	P27F-00110	Concentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	6	4	XS	SCH120	P27F-00111	Concentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	8	4	SCH60	SCH120	P27F-00112	Concentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	8	6	SCH60	XS	P27F-000X3	Concentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	10	4	XS	SCH120	P27F-00113	Concentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	10	6	XS	XS	P27F-000X5	Concentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	10	8	XS	SCH60	P27F-000X6	Concentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	12	6	SCH40	XS	P27F-0008W	Concentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	12	8	SCH40	SCH60	P27F-00115	Concentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	12	10	SCH40	XS	P27F-00114	Concentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	14	6	SCH40	XS	P27F-00118	Concentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	14	8	SCH40	SCH60	P27F-00119	Concentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	14	10	SCH40	XS	P27F-00116	Concentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	14	12	SCH40	SCH40	P27F-00117	Concentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	16	8	XS	SCH60	P27F-0011D	Concentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	16	10	XS	XS	P27F-0011A	Concentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	16	12	XS	SCH40	P27F-0011B	Concentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	16	14	XS	SCH40	P27F-0011C	Concentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	18	10	SCH30	XS	P27F-0011E	Concentric reducer ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	
1	18	12	SCH30	SCH40	P27F-0011F	Concentric reducer ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	
1	18	14	SCH30	SCH40	P27F-0011G	Concentric reducer ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	
1	18	16	SCH30	XS	P27F-0011H	Concentric reducer ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	
1	20	12	XS	SCH40	P27F-0011J	Concentric reducer ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	
1	20	14	XS	SCH40	P27F-0011K	Concentric reducer ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	
1	20	16	XS	XS	P27F-0011L	Concentric reducer ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	
1	20	18	XS	SCH30	P27F-0011M	Concentric reducer ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	
1	24	16	XS	XS	P27F-0011N	Concentric reducer ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	
1	24	18	XS	SCH30	P27F-0011P	Concentric reducer ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	
1	24	20	XS	XS	P27F-0011V	Concentric reducer ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	
1	30	20	SCH30	XS	P27F-001FN	Concentric reducer ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	
1	30	24	SCH30	XS	P27F-001FP	Concentric reducer ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5	1	XXS	XXS	P28F-00108	Eccentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	2	1	SCH160	XXS	P28F-0010L	Eccentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	2	1.5	SCH160	XXS	P28F-0010M	Eccentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	3	1.5	SCH160	XXS	P28F-0010W	Eccentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	3	2	SCH160	SCH160	P28F-0010X	Eccentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	4	1.5	SCH120	XXS	P28F-0010Y	Eccentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	4	2	SCH120	SCH160	P28F-0010Z	Eccentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	4	3	SCH120	SCH160	P28F-00110	Eccentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	6	3	XS	SCH160	P28F-00111	Eccentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	6	4	XS	SCH120	P28F-00112	Eccentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	8	4	SCH60	SCH120	P28F-00113	Eccentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	8	6	SCH60	XS	P28F-000X3	Eccentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	10	4	XS	SCH120	P28F-00114	Eccentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	10	6	XS	XS	P28F-000X5	Eccentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	10	8	XS	SCH60	P28F-000X6	Eccentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	12	6	SCH40	XS	P28F-0008W	Eccentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	12	8	SCH40	SCH60	P28F-00116	Eccentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	12	10	SCH40	XS	P28F-00115	Eccentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	14	6	SCH40	XS	P28F-00119	Eccentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	14	8	SCH40	SCH60	P28F-0011A	Eccentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	14	10	SCH40	XS	P28F-00117	Eccentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	14	12	SCH40	SCH40	P28F-00118	Eccentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	16	8	XS	SCH60	P28F-0011E	Eccentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	16	10	XS	XS	P28F-0011B	Eccentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	16	12	XS	SCH40	P28F-0011C	Eccentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	16	14	XS	SCH40	P28F-0011D	Eccentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	18	10	SCH30	XS	P28F-0011F	Eccentric reducer ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	
1	18	12	SCH30	SCH40	P28F-0011G	Eccentric reducer ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	
1	18	14	SCH30	SCH40	P28F-0011H	Eccentric reducer ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	
1	18	16	SCH30	XS	P28F-0011J	Eccentric reducer ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	
1	20	12	XS	SCH40	P28F-0011K	Eccentric reducer ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	
1	20	14	XS	SCH40	P28F-0011L	Eccentric reducer ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	
1	20	16	XS	XS	P28F-0011M	Eccentric reducer ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	
1	20	18	XS	SCH30	P28F-0011N	Eccentric reducer ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	
1	24	16	XS	XS	P28F-0011P	Eccentric reducer ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	
1	24	18	XS	SCH30	P28F-0011R	Eccentric reducer ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	
1	24	20	XS	XS	P28F-0011S	Eccentric reducer ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	
1	30	20	SCH30	XS	P28F-001G4	Eccentric reducer ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	
1	30	24	SCH30	XS	P28F-001G5	Eccentric reducer ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		XXS		P29F-000CV	Cap ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	1.5		XXS		P29F-000CW	Cap ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	2		SCH160		P29F-00044	Cap ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	3		SCH160		P29F-000D2	Cap ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	4		SCH120		P29F-000D4	Cap ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	6		XS		P29F-00046	Cap ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	8		SCH60		P29F-000C7	Cap ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	10		XS		P29F-00049	Cap ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	12		SCH40		P29F-00043	Cap ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	14		SCH40		P29F-000CX	Cap ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	16		XS		P29F-000CY	Cap ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	18		SCH30		P29F-000CZ	Cap ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	20		XS		P29F-000D0	Cap ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	24		XS		P29F-000D1	Cap ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	30		SCH30		P29F-000GS	Cap ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
541	1				P29G-00023	Cap ASTM A182 Grade F5 Class 6000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		10.60mm		P41F-0003N	Straight nipple ASTM A335 Grade P5 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		10.60mm		P41F-0003P	Straight nipple ASTM A335 Grade P5 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	1	SCH160	XXS	P31G-001LX	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	4	1	SCH120	XXS	P31G-001LY	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	6	1	XS	XXS	P31G-001M0	Outlet ASTM A182 Grade F5 MSS SP-97 BW	

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OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	8	1	SCH60	XXS	P31G-001M2	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	10	1	XS	XXS	P31G-001M5	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	12	1	SCH40	XXS	P31G-001M8	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	14	1	SCH40	XXS	P31G-001MC	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	16	1	XS	XXS	P31G-001MH	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	18	1	SCH30	XXS	P31G-001MN	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	20	1	XS	XXS	P31G-001MV	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	24	1	XS	XXS	P31G-001L1	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	30	1	SCH30	XXS	P31G-002A3	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	4	1.5	SCH120	XXS	P31G-001LZ	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	6	1.5	XS	XXS	P31G-001M1	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	8	1.5	SCH60	XXS	P31G-001M3	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	10	1.5	XS	XXS	P31G-001M6	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	12	1.5	SCH40	XXS	P31G-001M9	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	14	1.5	SCH40	XXS	P31G-001MD	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	16	1.5	XS	XXS	P31G-001MJ	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	18	1.5	SCH30	XXS	P31G-001MP	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	20	1.5	XS	XXS	P31G-001MW	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	24	1.5	XS	XXS	P31G-001L2	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	30	1.5	SCH30	XXS	P31G-002A4	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	6	2	XS	SCH160	P31G-000EE	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	8	2	SCH60	SCH160	P31G-001GV	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	10	2	XS	SCH160	P31G-000EV	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	12	2	SCH40	SCH160	P31G-000ER	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	14	2	SCH40	SCH160	P31G-001ME	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	16	2	XS	SCH160	P31G-001MK	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	18	2	SCH30	SCH160	P31G-001MR	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	20	2	XS	SCH160	P31G-001MX	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	24	2	XS	SCH160	P31G-001LN	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	30	2	SCH30	SCH160	P31G-002A5	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	8	3	SCH60	SCH160	P31G-001M4	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	10	3	XS	SCH160	P31G-001M7	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	12	3	SCH40	SCH160	P31G-001MA	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	14	3	SCH40	SCH160	P31G-001MF	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	16	3	XS	SCH160	P31G-001ML	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	18	3	SCH30	SCH160	P31G-001MS	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	20	3	XS	SCH160	P31G-001MY	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	24	3	XS	SCH160	P31G-001LP	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	30	3	SCH30	SCH160	P31G-002A6	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	12	4	SCH40	SCH120	P31G-001MB	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	14	4	SCH40	SCH120	P31G-001MG	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	16	4	XS	SCH120	P31G-001MM	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	18	4	SCH30	SCH120	P31G-001MT	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	20	4	XS	SCH120	P31G-001MZ	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	24	4	XS	SCH120	P31G-001LR	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	30	4	SCH30	SCH120	P31G-002A7	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	18	6	SCH30	XS	P31G-001MU	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	20	6	XS	XS	P31G-001N0	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	24	6	XS	XS	P31G-001LS	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	30	6	SCH30	XS	P31G-002A8	Outlet ASTM A182 Grade F5 MSS SP-97 BW	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P30G-0000F	Plug ASTM A182 Grade F5 ASME B16.11 NPT Round head	
1	1.5				P30G-0000G	Plug ASTM A182 Grade F5 ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		XXS		P61G-000RC	Flange WN ASTM A182 Grade F5 Class 150 ASME B16.5 RF	

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FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5		XXS		P61G-000RD	Flange WN ASTM A182 Grade F5 Class 150 ASME B16.5 RF	
1	2		SCH160		P61G-000RK	Flange WN ASTM A182 Grade F5 Class 150 ASME B16.5 RF	
1	3		SCH160		P61G-000RN	Flange WN ASTM A182 Grade F5 Class 150 ASME B16.5 RF	
1	4		SCH120		P61G-000RP	Flange WN ASTM A182 Grade F5 Class 150 ASME B16.5 RF	
1	6		XS		P61G-000RR	Flange WN ASTM A182 Grade F5 Class 150 ASME B16.5 RF	
1	8		SCH60		P61G-000RS	Flange WN ASTM A182 Grade F5 Class 150 ASME B16.5 RF	
1	10		XS		P61G-000RE	Flange WN ASTM A182 Grade F5 Class 150 ASME B16.5 RF	
1	12		SCH40		P61G-000RF	Flange WN ASTM A182 Grade F5 Class 150 ASME B16.5 RF	
1	14		SCH40		P61G-000RG	Flange WN ASTM A182 Grade F5 Class 150 ASME B16.5 RF	
1	16		XS		P61G-000RH	Flange WN ASTM A182 Grade F5 Class 150 ASME B16.5 RF	
1	18		SCH30		P61G-000RJ	Flange WN ASTM A182 Grade F5 Class 150 ASME B16.5 RF	
1	20		XS		P61G-000RL	Flange WN ASTM A182 Grade F5 Class 150 ASME B16.5 RF	
1	24		XS		P61G-000RM	Flange WN ASTM A182 Grade F5 Class 150 ASME B16.5 RF	
1	30		SCH30		P61G-00127	Flange WN ASTM A182 Grade F5 Class 150 ASME B16.47 Series B RF	
541	1				P61G-0015P	Flange NPT ASTM A182 Grade F5 Class 150 ASME B16.5 RF	
773	1		XXS		P61G-000RU	Flange WN ASTM A182 Grade F5 Class 300 ASME B16.5 RF	
773	1.5		XXS		P61G-000RV	Flange WN ASTM A182 Grade F5 Class 300 ASME B16.5 RF	
773	2		SCH160		P61G-0007M	Flange WN ASTM A182 Grade F5 Class 300 ASME B16.5 RF	
773	3		SCH160		P61G-000S1	Flange WN ASTM A182 Grade F5 Class 300 ASME B16.5 RF	
773	4		SCH120		P61G-000S2	Flange WN ASTM A182 Grade F5 Class 300 ASME B16.5 RF	
773	6		XS		P61G-0007P	Flange WN ASTM A182 Grade F5 Class 300 ASME B16.5 RF	
773	8		SCH60		P61G-000NA	Flange WN ASTM A182 Grade F5 Class 300 ASME B16.5 RF	
773	10		XS		P61G-00085	Flange WN ASTM A182 Grade F5 Class 300 ASME B16.5 RF	
773	12		SCH40		P61G-0007L	Flange WN ASTM A182 Grade F5 Class 300 ASME B16.5 RF	
773	14		SCH40		P61G-000RW	Flange WN ASTM A182 Grade F5 Class 300 ASME B16.5 RF	
773	16		XS		P61G-000RX	Flange WN ASTM A182 Grade F5 Class 300 ASME B16.5 RF	
773	18		SCH30		P61G-000RY	Flange WN ASTM A182 Grade F5 Class 300 ASME B16.5 RF	
773	20		XS		P61G-000RZ	Flange WN ASTM A182 Grade F5 Class 300 ASME B16.5 RF	
773	24		XS		P61G-000S0	Flange WN ASTM A182 Grade F5 Class 300 ASME B16.5 RF	
773	30		SCH30		P61G-00128	Flange WN ASTM A182 Grade F5 Class 300 ASME B16.47 Series B RF	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P67G-0004J	Blind flange ASTM A182 Grade F5 Class 150 ASME B16.5 RF	
1	1.5				P67G-0004K	Blind flange ASTM A182 Grade F5 Class 150 ASME B16.5 RF	
1	2				P67G-000AS	Blind flange ASTM A182 Grade F5 Class 150 ASME B16.5 RF	
1	3				P67G-000AU	Blind flange ASTM A182 Grade F5 Class 150 ASME B16.5 RF	
1	4				P67G-000AV	Blind flange ASTM A182 Grade F5 Class 150 ASME B16.5 RF	
1	6				P67G-000AW	Blind flange ASTM A182 Grade F5 Class 150 ASME B16.5 RF	
1	8				P67G-000AX	Blind flange ASTM A182 Grade F5 Class 150 ASME B16.5 RF	
1	10				P67G-000AL	Blind flange ASTM A182 Grade F5 Class 150 ASME B16.5 RF	
1	12				P67G-000AM	Blind flange ASTM A182 Grade F5 Class 150 ASME B16.5 RF	
1	14				P67G-000AN	Blind flange ASTM A182 Grade F5 Class 150 ASME B16.5 RF	
1	16				P67G-000AP	Blind flange ASTM A182 Grade F5 Class 150 ASME B16.5 RF	
1	18				P67G-000AR	Blind flange ASTM A182 Grade F5 Class 150 ASME B16.5 RF	
1	20				P67G-000AT	Blind flange ASTM A182 Grade F5 Class 150 ASME B16.5 RF	
1	24				P67G-0004L	Blind flange ASTM A182 Grade F5 Class 150 ASME B16.5 RF	
1	30				P67G-0004M	Blind flange ASTM A182 Grade F5 Class 150 ASME B16.47 Series B RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P73T-003CT	Spiral wound gasket SS316 winding / Graphite-mica filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	1.5				P73T-003CU	Spiral wound gasket SS316 winding / Graphite-mica filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	2				P73T-003CW	Spiral wound gasket SS316 winding / Graphite-mica filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	3				P73T-003CX	Spiral wound gasket SS316 winding / Graphite-mica filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	4				P73T-003CY	Spiral wound gasket SS316 winding / Graphite-mica filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	6				P73T-003CZ	Spiral wound gasket SS316 winding / Graphite-mica filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	

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GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	8				P73T-003D0	Spiral wound gasket SS316 winding / Graphite-mica filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	10				P73T-003CV	Spiral wound gasket SS316 winding / Graphite-mica filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	12				P73T-003D1	Spiral wound gasket SS316 winding / Graphite-mica filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	14				P73T-003D2	Spiral wound gasket SS316 winding / Graphite-mica filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	16				P73T-003D3	Spiral wound gasket SS316 winding / Graphite-mica filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	18				P73T-003D4	Spiral wound gasket SS316 winding / Graphite-mica filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	20				P73T-003D5	Spiral wound gasket SS316 winding / Graphite-mica filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	24				P73T-003D6	Spiral wound gasket SS316 winding / Graphite-mica filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	30				P73T-003D7	Spiral wound gasket SS316 winding / Graphite-mica filler Class 150 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
773	1				P73T-003AP	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
773	1.5				P73T-003AR	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
773	2				P73T-003AX	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
773	3				P73T-003B0	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
773	4				P73T-003B1	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
773	6				P73T-003B2	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
773	8				P73T-003B3	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
773	10				P73T-003AS	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
773	12				P73T-003AT	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
773	14				P73T-003AU	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
773	16				P73T-003AV	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
773	18				P73T-003AW	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
773	20				P73T-003AY	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
773	24				P73T-003AZ	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
773	30				P73T-003BL	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1-16				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B16 / A194 Grade 4 ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	18-24				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B16 / A194 Grade 4 ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
1	30				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B16 / A194 Grade 4 ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
773	1-10				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B16 / A194 Grade 4 ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
773	12-30				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B16 / A194 Grade 4 ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P81G-000C7	Gate valve ASTM A182 Grade F5 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Fluid-2 C.A.=6.0mm	
1	1.5				P81G-000C8	Gate valve ASTM A182 Grade F5 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Fluid-2 C.A.=6.0mm	
1	2				P81H-000WZ	Gate valve ASTM A217 Grade C5 Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Fluid-2 C.A.=6.0mm	
1	3				P81H-000X0	Gate valve ASTM A217 Grade C5 Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Fluid-2 C.A.=6.0mm	
1	4				P81H-000X1	Gate valve ASTM A217 Grade C5 Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Fluid-2 C.A.=6.0mm	
1	6				P81H-000X2	Gate valve ASTM A217 Grade C5 Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Fluid-2 C.A.=6.0mm	
1	8				P81H-000X3	Gate valve ASTM A217 Grade C5 Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Fluid-2 C.A.=6.0mm	
1	10				P81H-000WX	Gate valve ASTM A217 Grade C5 Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Fluid-2 C.A.=6.0mm	
1	12				P81H-000WY	Gate valve ASTM A217 Grade C5 Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Fluid-2 C.A.=6.0mm	
1	14				P81H-000X4	Gate valve ASTM A217 Grade C5 Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Fluid-2 C.A.=6.0mm	

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GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	16				P81H-000X5	Gate valve ASTM A217 Grade C5 Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Fluid-2 C.A.=6.0mm	
1	18				P81H-000X6	Gate valve ASTM A217 Grade C5 Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Fluid-2 C.A.=6.0mm	
1	20				P81H-000X7	Gate valve ASTM A217 Grade C5 Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Fluid-2 C.A.=6.0mm	
1	24				P81H-000X8	Gate valve ASTM A217 Grade C5 Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Fluid-2 C.A.=6.0mm	
4608	1				P81G-000DG	Gate valve ASTM A182 Grade F5 Class 150 API 602 BW both sides w/ nipples BE - NPT ASTM A335-P5 T=10.60MM-nipple Trim number 12 BB-BG-OS&Y Handwheel operated Fluid-2 C.A.=6.0mm	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P71G-00012	Spectacle blank ASTM A182 Grade F5 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71G-00013	Spectacle blank ASTM A182 Grade F5 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	2				P71G-00016	Spectacle blank ASTM A182 Grade F5 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	3				P71G-00017	Spectacle blank ASTM A182 Grade F5 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	4				P71G-00018	Spectacle blank ASTM A182 Grade F5 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	6				P71G-00019	Spectacle blank ASTM A182 Grade F5 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	8				P71G-0001A	Spectacle blank ASTM A182 Grade F5 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	10				P71G-00014	Spectacle blank ASTM A182 Grade F5 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	12				P71G-00015	Spectacle blank ASTM A182 Grade F5 Class 150 Standard-drawing Flange ASME B16.5 RF	

PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72G-0000P	Paddle blank ASTM A182 Grade F5 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	16				P72G-0000R	Paddle blank ASTM A182 Grade F5 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	18				P72G-0000S	Paddle blank ASTM A182 Grade F5 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	20				P72G-0000T	Paddle blank ASTM A182 Grade F5 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	24				P72G-0000U	Paddle blank ASTM A182 Grade F5 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	30				P72G-0000V	Paddle blank ASTM A182 Grade F5 Class 150 Standard-drawing Flange ASME B16.47-B RF	

PADDLE SPACER (PS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72G-0000W	Paddle spacer ASTM A182 Grade F5 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	16				P72G-0000X	Paddle spacer ASTM A182 Grade F5 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	18				P72G-0000Y	Paddle spacer ASTM A182 Grade F5 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	20				P72G-0000Z	Paddle spacer ASTM A182 Grade F5 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	24				P72G-00010	Paddle spacer ASTM A182 Grade F5 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	30				P72G-00011	Paddle spacer ASTM A182 Grade F5 Class 150 Standard-drawing Flange ASME B16.47-B RF	

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BOLT TABLE (B_A4FV , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
1	4	0.500	70	P80S-00GN8		
1.5	4	0.500	75	P80S-00GN7		
2	4	0.625	85	P80S-00GLJ		
3	4	0.625	95	P80S-00GLG		
4	8	0.625	95	P80S-00GLG		
6	8	0.750	105	P80S-00GLE		
8	8	0.750	110	P80S-00GLD		
10	12	0.875	120	P80S-00FV9		
12	12	0.875	120	P80S-00FV9		
14	12	1.000	135	P80S-00FRE		
16	16	1.000	140	P80S-00FRD		
18	16	1.125	150	P80S-00FHD		
20	20	1.125	160	P80S-00FHB		
24	20	1.250	175	P80S-00FA1		
30	44	0.750	145	P80S-00FZS		

BOLT TABLE (B_A4FV_773 , STUD ASME RF, OPTION CODE 773)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
1	4	0.625	80	P80S-00GLK		
1.5	4	0.750	95	P80S-00FVE		
2	8	0.625	90	P80S-00GLH		
3	8	0.750	110	P80S-00GLD		
4	8	0.750	115	P80S-00GLC		
6	12	0.750	125	P80S-00GLA		
8	12	0.875	140	P80S-00FV5		
10	16	1.000	160	P80S-00FR9		
12	16	1.125	175	P80S-00FH8		
14	20	1.125	180	P80S-00FH7		
16	20	1.250	190	P80S-00F9Y		
18	24	1.250	200	P80S-00F9W		
20	24	1.250	210	P80S-00F9U		
24	24	1.500	235	P80S-00EYL		
30	36	1.375	285	P80S-00F2V		

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REV NO. 2

BRANCH TABLE (T_A4FV)

RUN PIPE SIZE (in) \ BRANCH SIZE (in)	1	1.5	2	3	4	6	8	10	12	14	16	18	20	24	30
1	TS														
1.5	TR	TS													
2	TR	TR	TS												
3	L	TR	TR	TS											
4	L	L	TR	TR	TS										
6	L	L	L	TR	TR	TS									
8	L	L	L	L	TR	TR	TS								
10	L	L	L	L	TR	TR	TR	TS							
12	L	L	L	L	L	TR	TR	TR	TS						
14	L	L	L	L	L	TR	TR	TR	TR	TS					
16	L	L	L	L	L	TR	TR	TR	TR	TR	TS				
18	L	L	L	L	L	L	TR	TR	TR	TR	TR	TS			
20	L	L	L	L	L	L	TR	TR	TR	TR	TR	TR	TS		
24	L	L	L	L	L	L	9PD	TR	TR	TR	TR	TR	TR	TS	
30	L	L	L	L	L	L	9PD	TR	TR	TR	TR	TR	TR	TR	TS

TR : REDUCING TEE
9PD : REINFORCING PAD 90 DEG
TS : STRAIGHT TEE
L : OUTLET

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PIPING CLASS

A4GQ REV NO. 2

Material : LTCS
Rating : ASME CLASS 150
Flange Face : RF
C.A.(mm) : 6.00
Gasket : Spiral Wound
Service : PROCESS -WET LOW SEVERE SOUR SERVICE SUBJECT TO NACE STD
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
5	BOLTING CONFIRMING TO B7M / 2HM SHALL BE USED UNDER CONDITIONS (A) DIRECT EXPOSURE TO SOUR ENVIRONMENTS (B) WHEN THE BOLTING WILL BE BURIED OR INSULATED
15	BOLTING CONFIRMING TO L7M / 7M SHALL BE USED UNDER CONDITIONS (A) DIRECT EXPOSURE TO SOUR ENVIRONMENTS (B) WHEN THE BOLTING WILL BE BURIED OR INSULATED
27	PWHT OF CARBON STEEL PIPING IN WET H2S, CAUSTIC AND AMINE SERVICES SHALL BE IN ACCORDANCE WITH SECTION 10.2, 10.3, AND 10.4 OF PROJECT SPECIFICATION 3550-8440-SP-0002 MATERIALS REQUIREMENTS FOR PRESSURISED EQUIPMENT AND PIPING. FOR CAUSTIC AND AMINE SERVICE THE FOLLOWING SHALL APPLY: - PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF ALL SITE PIPING FABRICATION WELDS IS REQUIRED FOR ALL WALL THICKNESSES. FOR MODERATE AND SEVERE WET H2S SERVICE THE FOLLOWING SHALL APPLY: PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF SITE FABRICATION CIRCUMFERENTIAL OR BRANCH WELDS IS NOT REQUIRED IF WELDS ARE MULTIPASS AND IN ACCORDANCE WITH PARA 10.2.12 OF PROJECT SPECIFICATION 3550-8440-SP-0002. FOR SERVICES MEETING THE WET H2S CRITERIA AND CAUSTIC OR AMINE CRITERIA THE MORE STRINGENT PWHT REQUIREMENT SHALL GOVERN.

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
200	WITH JACK SCREW (FO)
541	NPT(F) (CA,F,L)
773	CLASS 300 (B,F,G)
4001	ALTERNATIVE MATERIAL FOR INSTRUMENT CONNECTION (F,P,V)
4405	FLANGE NPT WITH ALTERNATIVE MATERIAL FOR INSTRUMENT CONNECTION (F)
4608	VALVE WITH NIPPLES (V)

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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		XXS		P01A-003WW	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE	
1	1.5		XXS		P01A-003WX	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE	
1	2		SCH160		P01A-0013F	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	3		SCH160		P01A-0022L	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	4		SCH120		P01A-002D5	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	6		XS		P01A-000Y5	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	8		SCH60		P01A-0042Z	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	10		XS		P01A-0022D	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	12		SCH40		P01A-0018G	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	14		SCH40		P01A-0019M	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	16		XS		P01A-0011L	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	18		XS		P01A-00378	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	20		XS		P01A-00379	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
4001	0.5		SCH80S		P01J-002CY	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE Moderate wet H2S service	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		XXS		P02A-002GH	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	1.5		XXS		P02A-002GJ	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	2		SCH160		P02A-000LB	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	3		SCH160		P02A-002GB	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	4		SCH120		P02A-0011D	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	6		XS		P02A-000C1	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	8		SCH60		P02A-002HV	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	10		XS		P02A-001AX	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	12		SCH40		P02A-000JZ	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	14		SCH40		P02A-000K0	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	16		XS		P02A-000FJ	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	18		XS		P02A-001K2	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	20		XS		P02A-001K3	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		XXS		P03A-002E4	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	1.5		XXS		P03A-002E5	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	2		SCH160		P03A-000J9	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	3		SCH160		P03A-002DU	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	4		SCH120		P03A-000XW	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	6		XS		P03A-000AC	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	8		SCH60		P03A-002FC	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	10		XS		P03A-0016V	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	12		SCH40		P03A-000GX	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	14		SCH40		P03A-000GY	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	16		XS		P03A-000DJ	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	18		XS		P03A-001E6	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	20		XS		P03A-001E7	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		XXS		P21A-003EF	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	1.5		XXS		P21A-003EG	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	2		SCH160		P21A-0024S	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	3		SCH160		P21A-003ET	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	4		SCH120		P21A-002GF	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	6		XS		P21A-001C4	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	8		SCH60		P21A-003GF	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10		XS		P21A-002RF	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12		SCH40		P21A-00239	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	

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STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14		SCH40		P21A-0023A	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16		XS		P21A-001ZZ	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	18		XS		P21A-002YA	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	20		XS		P21A-002YB	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5	1	XXS	XXS	P24A-00GBX	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	2	1	SCH160	XXS	P24A-00L5W	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	2	1.5	SCH160	XXS	P24A-00L5X	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	3	1.5	SCH160	XXS	P24A-00L5Y	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	3	2	SCH160	SCH160	P24A-00GCB	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	4	2	SCH120	SCH160	P24A-00GCC	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	4	3	SCH120	SCH160	P24A-00GCD	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	6	3	XS	SCH160	P24A-00L5Z	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	6	4	XS	SCH120	P24A-00L60	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	8	4	SCH60	SCH120	P24A-00R8Z	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	8	6	SCH60	XS	P24A-00GMY	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	4	XS	SCH120	P24A-00R90	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	6	XS	XS	P24A-006ZG	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	8	XS	SCH60	P24A-00GN0	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	6	SCH40	XS	P24A-00GN2	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	8	SCH40	SCH60	P24A-00GN3	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	10	SCH40	XS	P24A-00GN1	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	6	SCH40	XS	P24A-00GN5	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	8	SCH40	SCH60	P24A-00GN6	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	10	SCH40	XS	P24A-00GN4	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	12	SCH40	SCH40	P24A-0036F	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	6	XS	XS	P24A-00GN8	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	8	XS	SCH60	P24A-00GN9	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	10	XS	XS	P24A-00GN7	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	12	XS	SCH40	P24A-00676	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	14	XS	SCH40	P24A-00677	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	18	8	XS	SCH60	P24A-00R94	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	18	10	XS	XS	P24A-00R91	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	18	12	XS	SCH40	P24A-00R92	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	18	14	XS	SCH40	P24A-00R93	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	18	16	XS	XS	P24A-0088R	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	20	8	XS	SCH60	P24A-00GNK	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	20	10	XS	XS	P24A-00GNF	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	20	12	XS	SCH40	P24A-00GNG	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	20	14	XS	SCH40	P24A-00GNH	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	20	16	XS	XS	P24A-0088S	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	20	18	XS	XS	P24A-0088T	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5	1	XXS	XXS	P27A-00B9J	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	2	1	SCH160	XXS	P27A-00FDS	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	2	1.5	SCH160	XXS	P27A-00FDT	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	3	1.5	SCH160	XXS	P27A-00FDU	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	3	2	SCH160	SCH160	P27A-00BA6	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	4	1.5	SCH120	XXS	P27A-00FDV	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	4	2	SCH120	SCH160	P27A-00BA8	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	4	3	SCH120	SCH160	P27A-00BA9	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	6	3	XS	SCH160	P27A-00FDW	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	6	4	XS	SCH120	P27A-00FDX	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	8	4	SCH60	SCH120	P27A-00JF8	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	8	6	SCH60	XS	P27A-00BG0	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	10	4	XS	SCH120	P27A-00JF9	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	6	XS	XS	P27A-008BW	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	8	XS	SCH60	P27A-00BG1	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	6	SCH40	XS	P27A-0047Y	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	8	SCH40	SCH60	P27A-00BG3	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	10	SCH40	XS	P27A-00BG2	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	6	SCH40	XS	P27A-00481	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	8	SCH40	SCH60	P27A-00BG5	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	10	SCH40	XS	P27A-00BG4	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	12	SCH40	SCH40	P27A-00224	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	8	XS	SCH60	P27A-00BG6	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	10	XS	XS	P27A-008C2	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	12	XS	SCH40	P27A-00483	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	14	XS	SCH40	P27A-00484	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	18	10	XS	XS	P27A-00EBA	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	18	12	XS	SCH40	P27A-00JFA	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	18	14	XS	SCH40	P27A-00JFB	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	18	16	XS	XS	P27A-009CM	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	20	12	XS	SCH40	P27A-00BGB	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	20	14	XS	SCH40	P27A-00BGC	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	20	16	XS	XS	P27A-009CR	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	20	18	XS	XS	P27A-009CS	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5	1	XXS	XXS	P28A-0083J	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	2	1	SCH160	XXS	P28A-00CJP	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	2	1.5	SCH160	XXS	P28A-00CJR	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	3	1.5	SCH160	XXS	P28A-00CJS	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	3	2	SCH160	SCH160	P28A-00846	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	4	1.5	SCH120	XXS	P28A-00CJT	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	4	2	SCH120	SCH160	P28A-00848	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	4	3	SCH120	SCH160	P28A-00849	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	6	3	XS	SCH160	P28A-00CJU	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	6	4	XS	SCH120	P28A-00CJV	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	8	4	SCH60	SCH120	P28A-00FS9	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	8	6	SCH60	XS	P28A-008EN	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	4	XS	SCH120	P28A-00FSA	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	6	XS	XS	P28A-00520	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	8	XS	SCH60	P28A-008EP	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	6	SCH40	XS	P28A-0047P	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	8	SCH40	SCH60	P28A-008ES	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	10	SCH40	XS	P28A-008ER	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	6	SCH40	XS	P28A-0047T	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	8	SCH40	SCH60	P28A-008EU	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	10	SCH40	XS	P28A-008ET	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	12	SCH40	SCH40	P28A-0021T	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	8	XS	SCH60	P28A-008EV	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	10	XS	XS	P28A-00526	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	12	XS	SCH40	P28A-0047V	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	14	XS	SCH40	P28A-0047W	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	18	10	XS	XS	P28A-00BEB	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	18	12	XS	SCH40	P28A-00FSB	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	18	14	XS	SCH40	P28A-00FSC	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	18	16	XS	XS	P28A-0064T	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	20	12	XS	SCH40	P28A-008F0	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	20	14	XS	SCH40	P28A-008F1	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	20	16	XS	XS	P28A-0064W	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	20	18	XS	XS	P28A-0064X	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	

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CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		XXS		P29A-003CE	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service	
1	1.5		XXS		P29A-003CF	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service	
1	2		SCH160		P29A-003CG	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service	
1	3		SCH160		P29A-003CH	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service	
1	4		SCH120		P29A-003CJ	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service	
1	6		XS		P29A-001X1	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service	
1	8		SCH60		P29A-001X2	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service	
1	10		XS		P29A-001WY	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service	
1	12		SCH40		P29A-005MB	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service	
1	14		SCH40		P29A-005MC	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service	
1	16		XS		P29A-005L0	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service	
1	18		XS		P29A-005L1	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service	
1	20		XS		P29A-005L3	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service	
541	1				P29B-00017	Cap ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		10.60mm		P41A-001B3	Straight nipple ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		10.60mm		P41A-001B4	Straight nipple ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
541	1.5	1			P31B-004HU	Outlet ASTM A350 Grade LF2 Class 1 Class 6000 MSS SP-97 NPT	
541	2 - 2.5	1			P31B-004HW	Outlet ASTM A350 Grade LF2 Class 1 Class 6000 MSS SP-97 NPT	
541	3 - 10	1			P31B-007CR	Outlet ASTM A350 Grade LF2 Class 1 Class 6000 MSS SP-97 NPT	
541	12 and larger	1			P31B-0136M	Outlet ASTM A350 Grade LF2 Class 1 Class 6000 MSS SP-97 NPT	
1	3	1	SCH160	XXS	P31B-00NH0	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	4	1	SCH120	XXS	P31B-00YFL	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	6	1	XS	XXS	P31B-00YFN	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	8	1	SCH60	XXS	P31B-0135D	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	10	1	XS	XXS	P31B-0135G	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	12	1	SCH40	XXS	P31B-0135K	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	14	1	SCH40	XXS	P31B-0135P	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	16	1	XS	XXS	P31B-0135U	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	18	1	XS	XXS	P31B-0135Y	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	20	1	XS	XXS	P31B-01362	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	4	1.5	SCH120	XXS	P31B-00YFM	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	6	1.5	XS	XXS	P31B-00YFP	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	8	1.5	SCH60	XXS	P31B-0135E	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	10	1.5	XS	XXS	P31B-0135H	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	12	1.5	SCH40	XXS	P31B-0135L	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	14	1.5	SCH40	XXS	P31B-0135R	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	16	1.5	XS	XXS	P31B-0135V	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	18	1.5	XS	XXS	P31B-0135Z	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	20	1.5	XS	XXS	P31B-01363	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	6	2	XS	SCH160	P31B-00M9N	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	8	2	SCH60	SCH160	P31B-00TRC	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	10	2	XS	SCH160	P31B-00NN8	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	12	2	SCH40	SCH160	P31B-00MJA	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	14	2	SCH40	SCH160	P31B-00MJC	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	16	2	XS	SCH160	P31B-00MDZ	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	18	2	XS	SCH160	P31B-00W3A	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	20	2	XS	SCH160	P31B-00ME9	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	8	3	SCH60	SCH160	P31B-0135F	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	10	3	XS	SCH160	P31B-0135J	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	12	3	SCH40	SCH160	P31B-0135M	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	14	3	SCH40	SCH160	P31B-0135S	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	16	3	XS	SCH160	P31B-0135W	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	18	3	XS	SCH160	P31B-01360	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	

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OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	20	3	XS	SCH160	P31B-01364	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	12	4	SCH40	SCH120	P31B-0135N	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	14	4	SCH40	SCH120	P31B-0135T	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	16	4	XS	SCH120	P31B-0135X	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	18	4	XS	SCH120	P31B-01361	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	20	4	XS	SCH120	P31B-01365	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	18	6	XS	XS	P31B-00YLG	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	20	6	XS	XS	P31B-00MEC	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P30B-0002X	Plug ASTM A350 Grade LF2 Class 1 ASME B16.11 NPT Round head	
1	1.5				P30B-0002Y	Plug ASTM A350 Grade LF2 Class 1 ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		XXS		P61B-00DGS	Flange WN ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	1.5		XXS		P61B-00DGT	Flange WN ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	2		SCH160		P61B-003RT	Flange WN ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	3		SCH160		P61B-00CPR	Flange WN ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	4		SCH120		P61B-00CS4	Flange WN ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	6		XS		P61B-003RW	Flange WN ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	8		SCH60		P61B-0064W	Flange WN ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	10		XS		P61B-004RV	Flange WN ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	12		SCH40		P61B-0064T	Flange WN ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	14		SCH40		P61B-0064U	Flange WN ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	16		XS		P61B-003RG	Flange WN ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	18		XS		P61B-0032M	Flange WN ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	20		XS		P61B-003RH	Flange WN ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
4001	0.5		SCH80S		P61K-005C8	Flange WN ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Moderate wet H2S service	
4405	0.5				P61K-0069G	Flange NPT ASTM A182 Grade F316/F316L dual grade Class 150 ASME B16.5 RF Moderate wet H2S service	
541	1				P61B-008VP	Flange NPT ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
773	1		XXS		P61B-00AD2	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
773	1.5		XXS		P61B-00AD3	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
773	2		SCH160		P61B-003SF	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
773	3		SCH160		P61B-00AD4	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
773	4		SCH120		P61B-00AD5	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
773	6		XS		P61B-003SJ	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
773	8		SCH60		P61B-0064Y	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
773	10		XS		P61B-004H8	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
773	12		SCH40		P61B-001NV	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
773	14		SCH40		P61B-0021C	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
773	16		XS		P61B-001SP	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
773	18		XS		P61B-001UA	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
773	20		XS		P61B-001K7	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P67B-000K4	Blind flange ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	1.5				P67B-000K5	Blind flange ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	2				P67B-000KB	Blind flange ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	3				P67B-000KE	Blind flange ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	4				P67B-000KF	Blind flange ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	6				P67B-000KG	Blind flange ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	8				P67B-000KH	Blind flange ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	10				P67B-000K6	Blind flange ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	12				P67B-000K7	Blind flange ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	14				P67B-000K8	Blind flange ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	16				P67B-000K9	Blind flange ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	18				P67B-000KA	Blind flange ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	
1	20				P67B-000KC	Blind flange ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000L8	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000LA	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000LB	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000LH	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000LL	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000LM	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	6				P73T-000LN	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	8				P73T-000LP	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	10				P73T-000LC	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	12				P73T-000LD	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	14				P73T-000LE	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	16				P73T-000LF	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	18				P73T-000LG	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	20				P73T-000LJ	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	3				P73T-000G5	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	4				P73T-000G6	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	6				P73T-000G7	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	8				P73T-000G8	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	10				P73T-000FX	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	12				P73T-000FY	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	14				P73T-000FZ	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	16				P73T-000G0	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	18				P73T-000G1	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	20				P73T-000G3	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-16				See Attached Bolt Table	Bolt and Nut ASTM A320 Grade L7M / A194 Grade 7M ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	18-20				See Attached Bolt Table	Bolt and Nut ASTM A320 Grade L7M / A194 Grade 7M ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
773	1-10				See Attached Bolt Table	Bolt and Nut ASTM A320 Grade L7M / A194 Grade 7M ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
773	12-20				See Attached Bolt Table	Bolt and Nut ASTM A320 Grade L7M / A194 Grade 7M ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P81B-002UZ	Gate valve ASTM A350 Grade LF2 Class 1 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service C.A.=6.0mm	
1	1.5				P81B-002V0	Gate valve ASTM A350 Grade LF2 Class 1 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service C.A.=6.0mm	
1	2				P81C-008NF	Gate valve ASTM A352 Grade LCC Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service C.A.=6.0mm	

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GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3				P81C-008NG	Gate valve ASTM A352 Grade LCC Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service C.A.=6.0mm	
1	4				P81C-008NH	Gate valve ASTM A352 Grade LCC Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service C.A.=6.0mm	
1	6				P81C-008NJ	Gate valve ASTM A352 Grade LCC Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service C.A.=6.0mm	
1	8				P81C-008NK	Gate valve ASTM A352 Grade LCC Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service C.A.=6.0mm	
1	10				P81C-008ND	Gate valve ASTM A352 Grade LCC Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service C.A.=6.0mm	
1	12				P81C-008NE	Gate valve ASTM A352 Grade LCC Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service C.A.=6.0mm	
1	14				P81C-008NL	Gate valve ASTM A352 Grade LCC Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Moderate wet H2S service C.A.=6.0mm	
1	16				P81C-008NM	Gate valve ASTM A352 Grade LCC Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Moderate wet H2S service C.A.=6.0mm	
1	18				P81C-008NN	Gate valve ASTM A352 Grade LCC Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Moderate wet H2S service C.A.=6.0mm	
1	20				P81C-008NP	Gate valve ASTM A352 Grade LCC Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Moderate wet H2S service C.A.=6.0mm	
4001	0.5				P81K-0010R	Gate valve ASTM A182 Grade F316/F316L dual grade Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
4608	1				P81B-002VR	Gate valve ASTM A350 Grade LF2 Class 1 Class 150 API 602 BW both sides w/ nipples BE - NPT ASTM A333-6 T=10.60MM-nipple Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service C.A.=6.0mm	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P82B-00216	Globe valve ASTM A350 Grade LF2 Class 1 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service C.A.=6.0mm	
1	1.5				P82B-00217	Globe valve ASTM A350 Grade LF2 Class 1 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service C.A.=6.0mm	
1	2				P82C-00462	Globe valve ASTM A352 Grade LCC Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service C.A.=6.0mm	
1	3				P82C-00463	Globe valve ASTM A352 Grade LCC Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service C.A.=6.0mm	
1	4				P82C-00464	Globe valve ASTM A352 Grade LCC Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service C.A.=6.0mm	
1	6				P82C-00465	Globe valve ASTM A352 Grade LCC Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service C.A.=6.0mm	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P83B-001J2	Check valve ASTM A350 Grade LF2 Class 1 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Moderate wet H2S service C.A.=6.0mm	
1	1.5				P83B-001J3	Check valve ASTM A350 Grade LF2 Class 1 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Moderate wet H2S service C.A.=6.0mm	
1	2				P83C-003S3	Check valve ASTM A352 Grade LCC Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Moderate wet H2S service C.A.=6.0mm	
1	3				P83C-003S4	Check valve ASTM A352 Grade LCC Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Moderate wet H2S service C.A.=6.0mm	
1	4				P83C-003S5	Check valve ASTM A352 Grade LCC Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Moderate wet H2S service C.A.=6.0mm	
1	6				P83C-003S6	Check valve ASTM A352 Grade LCC Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Moderate wet H2S service C.A.=6.0mm	
1	8				P83C-003S7	Check valve ASTM A352 Grade LCC Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Moderate wet H2S service C.A.=6.0mm	
1	10				P83C-003RZ	Check valve ASTM A352 Grade LCC Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Moderate wet H2S service C.A.=6.0mm	
1	12				P83C-003S0	Check valve ASTM A352 Grade LCC Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Moderate wet H2S service C.A.=6.0mm	
1	14				P83C-003S1	Check valve ASTM A352 Grade LCC Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Moderate wet H2S service C.A.=6.0mm	
1	16				P83C-003S2	Check valve ASTM A352 Grade LCC Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Moderate wet H2S service C.A.=6.0mm	

ORIFICE FLANGE (FO)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	4		SCH120		P66B-008SR	Orifice flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
200	4		SCH120		P66B-008SS	Orifice flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P71B-0008V	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71B-0008W	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	2				P71B-0008Z	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	3				P71B-00090	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF	

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SPECT BLANK (SB)							
OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	4				P71B-00091	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	6				P71B-00092	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	8				P71B-00093	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	10				P71B-0008X	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	12				P71B-0008Y	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF	

PADDLE BLANK (PB)							
OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000CP	Paddle blank ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	16				P72B-000CR	Paddle blank ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	18				P72B-000CS	Paddle blank ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	20				P72B-000CT	Paddle blank ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF	

PADDLE SPACER (PS)							
OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000CV	Paddle spacer ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	16				P72B-000CW	Paddle spacer ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	18				P72B-000CX	Paddle spacer ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	20				P72B-000CY	Paddle spacer ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF	

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BOLT TABLE (B_A4GQ , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	60	P80S-009UJ		
1	4	0.500	70	P80S-009UL		
1.5	4	0.500	75	P80S-009UM		
2	4	0.625	85	P80S-00A03		
3	4	0.625	95	P80S-00A05		
4	8	0.625	95	P80S-00A05		
6	8	0.750	105	P80S-00A07		
8	8	0.750	110	P80S-00A08		
10	12	0.875	120	P80S-009XE		
12	12	0.875	120	P80S-009XE		
14	12	1.000	135	P80S-00A37		
16	16	1.000	140	P80S-00A38		
18	16	1.125	150	P80S-00A4M		
20	20	1.125	160	P80S-00A4P		

BOLT TABLE (B_A4GQ_773 , STUD ASME RF, OPTION CODE 773)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70			
1	4	0.625	80	P80S-00A02		
1.5	4	0.750	95	P80S-009X9		
2	8	0.625	90	P80S-00A04		
3	8	0.750	110	P80S-00A08		
4	8	0.750	115	P80S-00A09		
6	12	0.750	125	P80S-00A0B		
8	12	0.875	140	P80S-009XJ		
10	16	1.000	160	P80S-00A3C		
12	16	1.125	175	P80S-00A4T		
14	20	1.125	180	P80S-00A4U		
16	20	1.250	190	P80S-00CTM		
18	24	1.250	200	P80S-00CTP		
20	24	1.250	210	P80S-00CTS		

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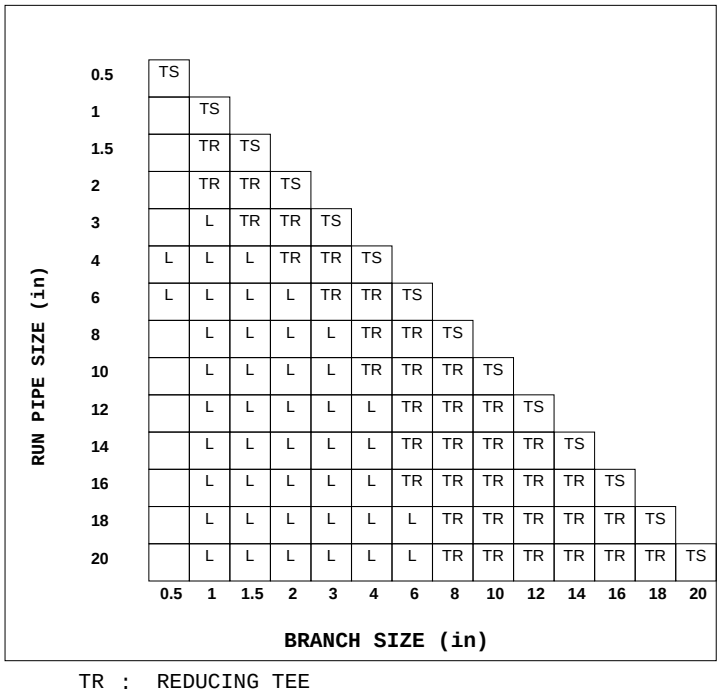
BRANCH TABLE (T_A4GQ)



TR : REDUCING TEE
TS : STRAIGHT TEE
L : OUTLET

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Material : LTCS
Rating : ASME CLASS 150
Flange Face : RF
C.A.(mm) : 6.00
Gasket : Spiral Wound
Service : PROCESS -WET SEVERE SOUR SERVICE SUBJECT TO NACE + HIC STD.:
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
2	USE OF SOFT SEATED BALL, PLUG AND BUTTERFLY VALVES SHALL BE LIMITED TO MAXIMUM OF 204DEGC (400DEGF)
5	BOLTING CONFIRMING TO B7M / 2HM SHALL BE USED UNDER CONDITIONS (A) DIRECT EXPOSURE TO SOUR ENVIRONMENTS (B) WHEN THE BOLTING WILL BE BURIED OR INSULATED
15	BOLTING CONFIRMING TO L7M / 7M SHALL BE USED UNDER CONDITIONS (A) DIRECT EXPOSURE TO SOUR ENVIRONMENTS (B) WHEN THE BOLTING WILL BE BURIED OR INSULATED
27	PWHT OF CARBON STEEL PIPING IN WET H2S, CAUSTIC AND AMINE SERVICES SHALL BE IN ACCORDANCE WITH SECTION 10.2, 10.3, AND 10.4 OF PROJECT SPECIFICATION 3550-8440-SP-0002 MATERIALS REQUIREMENTS FOR PRESSURISED EQUIPMENT AND PIPING. FOR CAUSTIC AND AMINE SERVICE THE FOLLOWING SHALL APPLY: - PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF ALL SITE PIPING FABRICATION WELDS IS REQUIRED FOR ALL WALL THICKNESSES. FOR MODERATE AND SEVERE WET H2S SERVICE THE FOLLOWING SHALL APPLY: PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF SITE FABRICATION CIRCUMFERENTIAL OR BRANCH WELDS IS NOT REQUIRED IF WELDS ARE MULTIPASS AND IN ACCORDANCE WITH PARA 10.2.12 OF PROJECT SPECIFICATION 3550-8440-SP-0002. FOR SERVICES MEETING THE WET H2S CRITERIA AND CAUSTIC OR AMINE CRITERIA THE MORE STRINGENT PWHT REQUIREMENT SHALL GOVERN.

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
541	NPT(F) (CA,F)
773	CLASS 300 (B,F,G)
4608	VALVE WITH NIPPLES (V)

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PIPING CLASS
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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		XXS		P01A-007FE	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE Severe wet H2S service Licensor-1	
1	1.5		XXS		P01A-007FF	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE Severe wet H2S service Licensor-1	
1	2		SCH160		P01A-007FM	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE Severe wet H2S service Licensor-1	
1	3		SCH160		P01A-007FR	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE Severe wet H2S service Licensor-1	
1	4		SCH120		P01A-007FS	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE Severe wet H2S service Licensor-1	
1	6		XS		P01A-007FT	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE Severe wet H2S service Licensor-1	
1	8		SCH60		P01A-007FU	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE Severe wet H2S service Licensor-1	
1	10		XS		P01A-007FG	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE Severe wet H2S service Licensor-1	
1	12		SCH40		P01A-007FH	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE Severe wet H2S service Licensor-1	
1	14		SCH40		P01A-007FJ	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE Severe wet H2S service Licensor-1	
1	16		XS		P01A-007FK	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE Severe wet H2S service Licensor-1	
1	18		XS		P01A-008PA	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE Severe wet H2S service Licensor-1	
1	20		XS		P01A-007FN	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE Severe wet H2S service Licensor-1	
1	24		SCH30		P01A-008PB	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE Severe wet H2S service Licensor-1	
1	30		SCH30		P01A-008PC	Pipe ASTM A671 Grade CC60 Class 22 EFW ASME B36.10M/B36.19M BE Severe wet H2S service Licensor-1	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		XXS		P02A-003XG	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	1.5		XXS		P02A-003XH	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	2		SCH160		P02A-003XP	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	3		SCH160		P02A-003XT	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	4		SCH120		P02A-003XU	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	6		XS		P02A-003XV	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	8		SCH60		P02A-003XW	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	10		XS		P02A-003XJ	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	12		SCH40		P02A-003XK	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	14		SCH40		P02A-003XL	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	16		XS		P02A-003XM	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	18		XS		P02A-004GN	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	20		XS		P02A-003XR	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	24		SCH30		P02A-004GP	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	30		SCH30		P02A-004GR	90 degree elbow ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		XXS		P03A-003V5	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	1.5		XXS		P03A-003V6	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	2		SCH160		P03A-003VC	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	3		SCH160		P03A-003VF	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	4		SCH120		P03A-003VG	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	6		XS		P03A-003VH	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	8		SCH60		P03A-003VJ	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	10		XS		P03A-003V7	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	12		SCH40		P03A-003V8	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	14		SCH40		P03A-003V9	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	16		XS		P03A-003VA	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	18		XS		P03A-004DV	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	20		XS		P03A-003VD	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	

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45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	24		SCH30		P03A-004DW	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	30		SCH30		P03A-004DX	45 degree elbow ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		XXS		P21A-004EY	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	1.5		XXS		P21A-004EZ	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	2		SCH160		P21A-004F5	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	3		SCH160		P21A-004F8	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	4		SCH120		P21A-004F9	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	6		XS		P21A-004FA	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	8		SCH60		P21A-004FB	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	10		XS		P21A-004F0	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	12		SCH40		P21A-004F1	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	14		SCH40		P21A-004F2	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	16		XS		P21A-004F3	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	18		XS		P21A-004Z2	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	20		XS		P21A-004F6	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	24		SCH30		P21A-004Z3	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	30		SCH30		P21A-004Z4	Straight tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Severe wet H2S service Licensor-1	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5	1	XXS	XXS	P24A-00KNK	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	2	1	SCH160	XXS	P24A-00KNL	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	2	1.5	SCH160	XXS	P24A-00KNM	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	3	1.5	SCH160	XXS	P24A-00KNN	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	3	2	SCH160	SCH160	P24A-00KNP	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	4	2	SCH120	SCH160	P24A-00KNR	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	4	3	SCH120	SCH160	P24A-00KNS	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	6	3	XS	SCH160	P24A-00KNT	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	6	4	XS	SCH120	P24A-00KNU	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	8	4	SCH60	SCH120	P24A-00L4B	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	8	6	SCH60	XS	P24A-00KNV	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	10	4	XS	SCH120	P24A-00KNW	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	10	6	XS	XS	P24A-00KNX	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	10	8	XS	SCH60	P24A-00KNY	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	12	6	SCH40	XS	P24A-00KP0	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	12	8	SCH40	SCH60	P24A-00KP1	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	12	10	SCH40	XS	P24A-00KNZ	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	14	6	SCH40	XS	P24A-00KP4	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	14	8	SCH40	SCH60	P24A-00KP5	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	14	10	SCH40	XS	P24A-00KP2	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	14	12	SCH40	SCH40	P24A-00KP3	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	16	6	XS	XS	P24A-00KP9	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	16	8	XS	SCH60	P24A-00KPA	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	16	10	XS	XS	P24A-00KP6	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	16	12	XS	SCH40	P24A-00KP7	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	16	14	XS	SCH40	P24A-00KP8	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	18	8	XS	SCH60	P24A-00NV7	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	18	10	XS	XS	P24A-00NV3	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	18	12	XS	SCH40	P24A-00NV4	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	18	14	XS	SCH40	P24A-00NV5	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	18	16	XS	XS	P24A-00NV6	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	20	8	XS	SCH60	P24A-00KPM	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	20	10	XS	XS	P24A-00KPG	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	20	12	XS	SCH40	P24A-00KPH	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	20	14	XS	SCH40	P24A-00KPJ	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	

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PIPING CLASS
A4GR01 REV NO. 2

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	20	16	XS	XS	P24A-00KPK	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	20	18	XS	XS	P24A-00NV8	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	24	10	SCH30	XS	P24A-00NV9	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	24	12	SCH30	SCH40	P24A-00NVA	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	24	14	SCH30	SCH40	P24A-00NVB	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	24	16	SCH30	XS	P24A-00NVC	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	24	18	SCH30	XS	P24A-00NVD	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	24	20	SCH30	XS	P24A-00NVE	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	30	10	SCH30	XS	P24A-00NVF	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Severe wet H2S service Licensor-1	
1	30	12	SCH30	SCH40	P24A-00NVG	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Severe wet H2S service Licensor-1	
1	30	14	SCH30	SCH40	P24A-00NVH	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Severe wet H2S service Licensor-1	
1	30	16	SCH30	XS	P24A-00NVJ	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Severe wet H2S service Licensor-1	
1	30	18	SCH30	XS	P24A-00NVK	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Severe wet H2S service Licensor-1	
1	30	20	SCH30	XS	P24A-00NVL	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Severe wet H2S service Licensor-1	
1	30	24	SCH30	SCH30	P24A-00NVM	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Severe wet H2S service Licensor-1	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5	1	XXS	XXS	P27A-00F4R	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	2	1	SCH160	XXS	P27A-00F4S	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	2	1.5	SCH160	XXS	P27A-00F4T	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	3	1.5	SCH160	XXS	P27A-00F4U	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	3	2	SCH160	SCH160	P27A-00F4V	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	4	1.5	SCH120	XXS	P27A-00F4W	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	4	2	SCH120	SCH160	P27A-00F4X	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	4	3	SCH120	SCH160	P27A-00F4Y	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	6	3	XS	SCH160	P27A-00F4Z	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	6	4	XS	SCH120	P27A-00F50	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	8	4	SCH60	SCH120	P27A-00F51	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	8	6	SCH60	XS	P27A-00F52	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	10	4	XS	SCH120	P27A-00F53	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	10	6	XS	XS	P27A-00F54	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	10	8	XS	SCH60	P27A-00F55	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	12	6	SCH40	XS	P27A-00F57	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	12	8	SCH40	SCH60	P27A-00F58	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	12	10	SCH40	XS	P27A-00F56	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	14	6	SCH40	XS	P27A-00F5B	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	14	8	SCH40	SCH60	P27A-00F5C	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	14	10	SCH40	XS	P27A-00F59	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	14	12	SCH40	SCH40	P27A-00F5A	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	16	8	XS	SCH60	P27A-00F5G	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	16	10	XS	XS	P27A-00F5D	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	16	12	XS	SCH40	P27A-00F5E	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	16	14	XS	SCH40	P27A-00F5F	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	18	10	XS	XS	P27A-00HBL	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	18	12	XS	SCH40	P27A-00HBM	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	18	14	XS	SCH40	P27A-00HBN	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	18	16	XS	XS	P27A-00HBP	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	

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CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	20	12	XS	SCH40	P27A-00F5M	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	20	14	XS	SCH40	P27A-00F5N	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	20	16	XS	XS	P27A-00F5P	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	20	18	XS	XS	P27A-00HBR	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	24	16	SCH30	XS	P27A-00HBS	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	24	18	SCH30	XS	P27A-00HBT	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	24	20	SCH30	XS	P27A-00HBU	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	30	20	SCH30	XS	P27A-00HBV	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Severe wet H2S service Licensor-1	
1	30	24	SCH30	SCH30	P27A-00HBW	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Severe wet H2S service Licensor-1	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5	1	XXS	XXS	P28A-00C8S	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	2	1	SCH160	XXS	P28A-00C8T	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	2	1.5	SCH160	XXS	P28A-00C8U	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	3	1.5	SCH160	XXS	P28A-00C8V	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	3	2	SCH160	SCH160	P28A-00C8W	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	4	1.5	SCH120	XXS	P28A-00C8X	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	4	2	SCH120	SCH160	P28A-00C8Y	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	4	3	SCH120	SCH160	P28A-00C8Z	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	6	3	XS	SCH160	P28A-00C90	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	6	4	XS	SCH120	P28A-00C91	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	8	4	SCH60	SCH120	P28A-00C92	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	8	6	SCH60	XS	P28A-00C93	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	10	4	XS	SCH120	P28A-00C94	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	10	6	XS	XS	P28A-00C95	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	10	8	XS	SCH60	P28A-00C96	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	12	6	SCH40	XS	P28A-00C98	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	12	8	SCH40	SCH60	P28A-00C99	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	12	10	SCH40	XS	P28A-00C97	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	14	6	SCH40	XS	P28A-00C9C	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	14	8	SCH40	SCH60	P28A-00C9D	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	14	10	SCH40	XS	P28A-00C9A	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	14	12	SCH40	SCH40	P28A-00C9B	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	16	8	XS	SCH60	P28A-00C9H	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	16	10	XS	XS	P28A-00C9E	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	16	12	XS	SCH40	P28A-00C9F	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	16	14	XS	SCH40	P28A-00C9G	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	18	10	XS	XS	P28A-00EK5	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	18	12	XS	SCH40	P28A-00EK6	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	18	14	XS	SCH40	P28A-00EK7	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	18	16	XS	XS	P28A-00EK8	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	20	12	XS	SCH40	P28A-00C9N	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	20	14	XS	SCH40	P28A-00C9P	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	20	16	XS	XS	P28A-00C9R	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	20	18	XS	XS	P28A-00EK9	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	24	16	SCH30	XS	P28A-00EKA	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	24	18	SCH30	XS	P28A-00EKB	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	24	20	SCH30	XS	P28A-00EKC	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	30	20	SCH30	XS	P28A-00EKD	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Severe wet H2S service Licensor-1	
1	30	24	SCH30	SCH30	P28A-00EKE	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Severe wet H2S service Licensor-1	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1			XXS		P29A-0039W	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	1.5		XXS		P29A-0039X	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	

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CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2		SCH160		P29A-003A3	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	3		SCH160		P29A-003A6	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	4		SCH120		P29A-003A8	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	6		XS		P29A-003A9	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	8		SCH60		P29A-003AA	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	10		XS		P29A-0039Y	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	12		SCH40		P29A-0039Z	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	14		SCH40		P29A-003A0	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	16		XS		P29A-003A1	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	18		XS		P29A-003TM	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	20		XS		P29A-003A4	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	24		SCH30		P29A-003TN	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	30		SCH30		P29A-003TP	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
541	1				P29B-0006T	Cap ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 NPT Severe wet H2S service Licensor-1	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		10.60mm		P41A-001B1	Straight nipple ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Severe wet H2S service Licensor-1	
1	1.5		10.60mm		P41A-001B2	Straight nipple ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Severe wet H2S service Licensor-1	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	1	SCH160	XXS	P31B-00Y4Y	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	4	1	SCH120	XXS	P31B-00Y4Z	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	6	1	XS	XXS	P31B-00Y51	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	8	1	SCH60	XXS	P31B-00YEF	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	10	1	XS	XXS	P31B-00Y57	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	12	1	SCH40	XXS	P31B-00YEG	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	14	1	SCH40	XXS	P31B-00YEJ	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	16	1	XS	XXS	P31B-00Y5J	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	18	1	XS	XXS	P31B-0110H	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	20	1	XS	XXS	P31B-00Y5V	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	24	1	SCH30	XXS	P31B-0110P	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	30	1	SCH30	XXS	P31B-0110W	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	4	1.5	SCH120	XXS	P31B-00Y50	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	6	1.5	XS	XXS	P31B-00Y52	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	8	1.5	SCH60	XXS	P31B-00Y54	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	10	1.5	XS	XXS	P31B-00Y58	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	12	1.5	SCH40	XXS	P31B-00YEH	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	14	1.5	SCH40	XXS	P31B-00Y5E	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	16	1.5	XS	XXS	P31B-00Y5K	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	18	1.5	XS	XXS	P31B-0110J	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	20	1.5	XS	XXS	P31B-00Y5W	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	24	1.5	SCH30	XXS	P31B-0110R	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	30	1.5	SCH30	XXS	P31B-0110X	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	6	2	XS	SCH160	P31B-00Y53	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	8	2	SCH60	SCH160	P31B-00Y55	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	10	2	XS	SCH160	P31B-00Y59	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	12	2	SCH40	SCH160	P31B-00Y5B	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	14	2	SCH40	SCH160	P31B-00Y5F	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	16	2	XS	SCH160	P31B-00Y5L	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	18	2	XS	SCH160	P31B-0110K	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	20	2	XS	SCH160	P31B-00Y5X	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	24	2	SCH30	SCH160	P31B-0110S	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	30	2	SCH30	SCH160	P31B-0110Y	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	8	3	SCH60	SCH160	P31B-00Y56	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	10	3	XS	SCH160	P31B-00Y5A	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	12	3	SCH40	SCH160	P31B-00Y5C	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Severe wet H2S service Licensor-1	

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OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14	3	SCH40	SCH160	P31B-00Y5G	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	16	3	XS	SCH160	P31B-00Y5M	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	18	3	XS	SCH160	P31B-0110L	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	20	3	XS	SCH160	P31B-00Y5Y	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	24	3	SCH30	SCH160	P31B-0110T	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	30	3	SCH30	SCH160	P31B-0110Z	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	12	4	SCH40	SCH120	P31B-00Y5D	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	14	4	SCH40	SCH120	P31B-00Y5H	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	16	4	XS	SCH120	P31B-00Y5N	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	18	4	XS	SCH120	P31B-0110M	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	20	4	XS	SCH120	P31B-00Y5Z	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	24	4	SCH30	SCH120	P31B-0110U	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	30	4	SCH30	SCH120	P31B-01110	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	18	6	XS	XS	P31B-0110N	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	20	6	XS	XS	P31B-00Y60	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	24	6	SCH30	XS	P31B-0110V	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	30	6	SCH30	XS	P31B-01111	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Severe wet H2S service Licensor-1	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P30B-0006U	Plug ASTM A350 Grade LF2 Class 1 ASME B16.11 NPT Round head Severe wet H2S service Licensor-1	
1	1.5				P30B-0006V	Plug ASTM A350 Grade LF2 Class 1 ASME B16.11 NPT Round head Severe wet H2S service Licensor-1	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		XXS		P61B-00A8K	Flange WN ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF Severe wet H2S service Licensor-1	
1	1.5		XXS		P61B-00A8L	Flange WN ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF Severe wet H2S service Licensor-1	
1	2		SCH160		P61B-00A8T	Flange WN ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF Severe wet H2S service Licensor-1	
1	3		SCH160		P61B-00A8W	Flange WN ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF Severe wet H2S service Licensor-1	
1	4		SCH120		P61B-00A8X	Flange WN ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF Severe wet H2S service Licensor-1	
1	6		XS		P61B-00A8Y	Flange WN ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF Severe wet H2S service Licensor-1	
1	8		SCH60		P61B-00A8Z	Flange WN ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF Severe wet H2S service Licensor-1	
1	10		XS		P61B-00A8M	Flange WN ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF Severe wet H2S service Licensor-1	
1	12		SCH40		P61B-00A8N	Flange WN ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF Severe wet H2S service Licensor-1	
1	14		SCH40		P61B-00A8P	Flange WN ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF Severe wet H2S service Licensor-1	
1	16		XS		P61B-00A8R	Flange WN ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF Severe wet H2S service Licensor-1	
1	18		XS		P61B-00BU6	Flange WN ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF Severe wet H2S service Licensor-1	
1	20		XS		P61B-00A8U	Flange WN ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF Severe wet H2S service Licensor-1	
1	24		SCH30		P61B-00BU7	Flange WN ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF Severe wet H2S service Licensor-1	
1	30		SCH30		P61B-00BU8	Flange WN ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.47 Series B RF Severe wet H2S service Licensor-1	
541	1				P61B-00CX6	Flange NPT ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF Severe wet H2S service Licensor-1	
773	1		XXS		P61B-00A91	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF Severe wet H2S service Licensor-1	
773	1.5		XXS		P61B-00A92	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF Severe wet H2S service Licensor-1	
773	2		SCH160		P61B-00A98	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF Severe wet H2S service Licensor-1	
773	3		SCH160		P61B-00A9B	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF Severe wet H2S service Licensor-1	
773	4		SCH120		P61B-00A9C	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF Severe wet H2S service Licensor-1	
773	6		XS		P61B-00A9D	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF Severe wet H2S service Licensor-1	
773	8		SCH60		P61B-00A9E	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF Severe wet H2S service Licensor-1	
773	10		XS		P61B-00A93	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF Severe wet H2S service Licensor-1	
773	12		SCH40		P61B-00A94	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF Severe wet H2S service Licensor-1	
773	14		SCH40		P61B-00A95	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF Severe wet H2S service Licensor-1	
773	16		XS		P61B-00A96	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF Severe wet H2S service Licensor-1	
773	18		XS		P61B-00BU9	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF Severe wet H2S service Licensor-1	
773	20		XS		P61B-00A99	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF Severe wet H2S service Licensor-1	
773	24		SCH30		P61B-00BUA	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF Severe wet H2S service Licensor-1	
773	30		SCH30		P61B-00BUB	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.47 Series B RF Severe wet H2S service Licensor-1	

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BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P67B-002JT	Blind flange ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF Severe wet H2S service Licensor-1	
1	1.5				P67B-002JU	Blind flange ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF Severe wet H2S service Licensor-1	
1	2				P67B-002K0	Blind flange ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF Severe wet H2S service Licensor-1	
1	3				P67B-002K3	Blind flange ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF Severe wet H2S service Licensor-1	
1	4				P67B-002K4	Blind flange ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF Severe wet H2S service Licensor-1	
1	6				P67B-002K5	Blind flange ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF Severe wet H2S service Licensor-1	
1	8				P67B-002K6	Blind flange ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF Severe wet H2S service Licensor-1	
1	10				P67B-002JV	Blind flange ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF Severe wet H2S service Licensor-1	
1	12				P67B-002JW	Blind flange ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF Severe wet H2S service Licensor-1	
1	14				P67B-002JX	Blind flange ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF Severe wet H2S service Licensor-1	
1	16				P67B-002JY	Blind flange ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF Severe wet H2S service Licensor-1	
1	18				P67B-002JZ	Blind flange ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF Severe wet H2S service Licensor-1	
1	20				P67B-002K1	Blind flange ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF Severe wet H2S service Licensor-1	
1	24				P67B-002K2	Blind flange ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.5 RF Severe wet H2S service Licensor-1	
1	30				P67B-002K7	Blind flange ASTM A350 Grade LF2 Class 1 Class 150 ASME B16.47 Series B RF Severe wet H2S service Licensor-1	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P73T-000LA	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000LB	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000LH	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000LL	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000LM	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	6				P73T-000LN	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	8				P73T-000LP	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	10				P73T-000LC	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	12				P73T-000LD	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	14				P73T-000LE	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	16				P73T-000LF	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	18				P73T-000LG	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	20				P73T-000LJ	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	24				P73T-000LK	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	30				P73T-000LT	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	3				P73T-000G5	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	4				P73T-000G6	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	6				P73T-000G7	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	8				P73T-000G8	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	10				P73T-000FX	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	12				P73T-000FY	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	14				P73T-000FZ	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	16				P73T-000G0	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	18				P73T-000G1	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	20				P73T-000G3	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	24				P73T-000G4	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	30				P73T-000H9	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	

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BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1-16				See Attached Bolt Table	Bolt and Nut ASTM A320 Grade L7M / A194 Grade 7M ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	18-24				See Attached Bolt Table	Bolt and Nut ASTM A320 Grade L7M / A194 Grade 7M ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
1	30				See Attached Bolt Table	Bolt and Nut ASTM A320 Grade L7M / A194 Grade 7M ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
773	1-10				See Attached Bolt Table	Bolt and Nut ASTM A320 Grade L7M / A194 Grade 7M ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
773	12-30				See Attached Bolt Table	Bolt and Nut ASTM A320 Grade L7M / A194 Grade 7M ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P81B-001G1	Gate valve ASTM A350 Grade LF2 Class 1 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service C.A.=6.0mm Licensor-1	
1	1.5				P81B-001G2	Gate valve ASTM A350 Grade LF2 Class 1 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service C.A.=6.0mm Licensor-1	
1	2				P81C-0050A	Gate valve ASTM A352 Grade LCC Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service C.A.=6.0mm Licensor-1	
1	3				P81C-0050B	Gate valve ASTM A352 Grade LCC Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service C.A.=6.0mm Licensor-1	
1	4				P81C-0050C	Gate valve ASTM A352 Grade LCC Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service C.A.=6.0mm Licensor-1	
1	6				P81C-0050D	Gate valve ASTM A352 Grade LCC Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service C.A.=6.0mm Licensor-1	
1	8				P81C-0050E	Gate valve ASTM A352 Grade LCC Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service C.A.=6.0mm Licensor-1	
4608	1				P81B-002VS	Gate valve ASTM A350 Grade LF2 Class 1 Class 150 API 602 BW both sides w/ nipples BE - NPT ASTM A333-6 T=10.60MM-nipple Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service C.A.=6.0mm Licensor-1	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P83B-000ZF	Check valve ASTM A350 Grade LF2 Class 1 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Severe wet H2S service C.A.=6.0mm Licensor-1	
1	1.5				P83B-000ZG	Check valve ASTM A350 Grade LF2 Class 1 Class 150 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Severe wet H2S service C.A.=6.0mm Licensor-1	
1	2				P83C-002E8	Check valve ASTM A352 Grade LCC Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service C.A.=6.0mm Licensor-1	
1	3				P83C-002E9	Check valve ASTM A352 Grade LCC Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service C.A.=6.0mm Licensor-1	
1	4				P83C-002EA	Check valve ASTM A352 Grade LCC Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service C.A.=6.0mm Licensor-1	
1	6				P83C-002EB	Check valve ASTM A352 Grade LCC Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service C.A.=6.0mm Licensor-1	
1	8				P83C-002EC	Check valve ASTM A352 Grade LCC Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service C.A.=6.0mm Licensor-1	
1	10				P83C-003B6	Check valve ASTM A352 Grade LCC Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service C.A.=6.0mm Licensor-1	
1	12				P83C-003B7	Check valve ASTM A352 Grade LCC Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service C.A.=6.0mm Licensor-1	
1	14				P83C-003B8	Check valve ASTM A352 Grade LCC Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service C.A.=6.0mm Licensor-1	
1	16				P83C-003B9	Check valve ASTM A352 Grade LCC Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service C.A.=6.0mm Licensor-1	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P71B-000AF	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service Licensor-1	
1	1.5				P71B-000AG	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service Licensor-1	
1	2				P71B-000AK	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service Licensor-1	
1	3				P71B-000AL	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service Licensor-1	
1	4				P71B-000AM	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service Licensor-1	
1	6				P71B-000AN	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service Licensor-1	
1	8				P71B-000AP	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service Licensor-1	
1	10				P71B-000AH	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service Licensor-1	
1	12				P71B-000AJ	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service Licensor-1	

PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000EY	Paddle blank ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service Licensor-1	

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PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	16				P72B-000EZ	Paddle blank ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service Licensor-1	
1	18				P72B-000F0	Paddle blank ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service Licensor-1	
1	20				P72B-000F1	Paddle blank ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service Licensor-1	
1	24				P72B-000F2	Paddle blank ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service Licensor-1	
1	30				P72B-000F3	Paddle blank ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.47-B RF Severe wet H2S service Licensor-1	

PADDLE SPACER (PS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000F4	Paddle spacer ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service Licensor-1	
1	16				P72B-000F5	Paddle spacer ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service Licensor-1	
1	18				P72B-000F6	Paddle spacer ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service Licensor-1	
1	20				P72B-000F7	Paddle spacer ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service Licensor-1	
1	24				P72B-000F8	Paddle spacer ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service Licensor-1	
1	30				P72B-000F9	Paddle spacer ASTM A350 Grade LF2 Class 1 Class 150 Standard-drawing Flange ASME B16.47-B RF Severe wet H2S service Licensor-1	

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BOLT TABLE (B_A4GR01 , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
1	4	0.500	70	P80S-009UL		
1.5	4	0.500	75	P80S-009UM		
2	4	0.625	85	P80S-00A03		
3	4	0.625	95	P80S-00A05		
4	8	0.625	95	P80S-00A05		
6	8	0.750	105	P80S-00A07		
8	8	0.750	110	P80S-00A08		
10	12	0.875	120	P80S-009XE		
12	12	0.875	120	P80S-009XE		
14	12	1.000	135	P80S-00A37		
16	16	1.000	140	P80S-00A38		
18	16	1.125	150	P80S-00A4M		
20	20	1.125	160	P80S-00A4P		
24	20	1.250	175	P80S-00CTJ		
30	44	0.750	145	P80S-00A0F		

BOLT TABLE (B_A4GR01_773 , STUD ASME RF, OPTION CODE 773)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
1	4	0.625	80	P80S-00A02		
1.5	4	0.750	95	P80S-009X9		
2	8	0.625	90	P80S-00A04		
3	8	0.750	110	P80S-00A08		
4	8	0.750	115	P80S-00A09		
6	12	0.750	125	P80S-00A0B		
8	12	0.875	140	P80S-009XJ		
10	16	1.000	160	P80S-00A3C		
12	16	1.125	175	P80S-00A4T		
14	20	1.125	180	P80S-00A4U		
16	20	1.250	190	P80S-00CTM		
18	24	1.250	200	P80S-00CTP		
20	24	1.250	210	P80S-00CTS		
24	24	1.500	235	P80S-00D4Z		
30	36	1.375	285	P80S-00D0P		

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A4GR01 REV NO. 2

BRANCH TABLE (T_A4GR01)

RUN PIPE SIZE (in) \ BRANCH SIZE (in)	1	1.5	2	3	4	6	8	10	12	14	16	18	20	24	30
1	TS														
1.5	TR	TS													
2	TR	TR	TS												
3	L	TR	TR	TS											
4	L	L	TR	TR	TS										
6	L	L	L	TR	TR	TS									
8	L	L	L	L	TR	TR	TS								
10	L	L	L	L	TR	TR	TR	TS							
12	L	L	L	L	L	TR	TR	TR	TS						
14	L	L	L	L	L	TR	TR	TR	TR	TS					
16	L	L	L	L	L	TR	TR	TR	TR	TR	TS				
18	L	L	L	L	L	L	TR	TR	TR	TR	TR	TS			
20	L	L	L	L	L	L	TR	TR	TR	TR	TR	TR	TS		
24	L	L	L	L	L	L	9PD	TR	TR	TR	TR	TR	TR	TS	
30	L	L	L	L	L	L	9PD	TR	TR	TR	TR	TR	TR	TR	TS

L : OUTLET
TS : STRAIGHT TEE
9PD : REINFORCING PAD 90 DEG
TR : REDUCING TEE

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PIPING CLASS

A61F05 REV NO. 2

Material : SS304L
Rating : ASME CLASS 150
Flange Face : RF
C.A.(mm) : 0.00
Gasket : Spiral Wound
Service : PELLET COOLING WATER, DEMINERALISED WATER, PELLIET
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
6	PIPE THICKNESS CALCULATION TO INCLUDE CORROSION AND EROSION ALLOWANCES DUE TO THE PROCESS CATALYST FLOW, AS PER PROCESS LICENSOR SPECIFICATIONS

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
24	FULL PORT (Q)
200	WITH JACK SCREW (FO)
541	NPT(F) (CA,L)
714	SW - NPT(F) (V)
773	CLASS 300 (B,F,G)

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PIPING CLASS
A61F05 REV NO. 2

PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P01J-000UC	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE	
1	0.75		SCH80S		P01J-000UD	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE	
1	1		SCH80S		P01J-000UE	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE	
1	1.5		SCH80S		P01J-000UF	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE	
1	2		SCH10S		P01J-000RD	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M BE	
1	3		SCH10S		P01J-000RE	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M BE	
1	4		SCH10S		P01J-000RF	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M BE	
1	6		SCH10S		P01J-000RG	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M BE	
1	8		SCH10S		P01J-001F7	Pipe ASTM A358 Grade 304/304L Class 1 dual grade EFW ASME B36.10M/B36.19M BE	
1	10		SCH10S		P01J-000S7	Pipe ASTM A358 Grade 304/304L Class 1 dual grade EFW ASME B36.10M/B36.19M BE	
1	12		SCH10S		P01J-000S8	Pipe ASTM A358 Grade 304/304L Class 1 dual grade EFW ASME B36.10M/B36.19M BE	
1	14		SCH10S		P01J-000S9	Pipe ASTM A358 Grade 304/304L Class 1 dual grade EFW ASME B36.10M/B36.19M BE	
1	16		SCH10S		P01J-000SA	Pipe ASTM A358 Grade 304/304L Class 1 dual grade EFW ASME B36.10M/B36.19M BE	
1	18		SCH10S		P01J-000SB	Pipe ASTM A358 Grade 304/304L Class 1 dual grade EFW ASME B36.10M/B36.19M BE	
1	20		SCH10S		P01J-000SC	Pipe ASTM A358 Grade 304/304L Class 1 dual grade EFW ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P02K-0001K	90 degree elbow ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	0.75				P02K-0001L	90 degree elbow ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	1				P02K-0001M	90 degree elbow ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	1.5				P02K-0001N	90 degree elbow ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	2		SCH10S		P02J-000J0	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	3		SCH10S		P02J-000J1	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	4		SCH10S		P02J-000J2	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	6		SCH10S		P02J-000J3	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	8		SCH10S		P02J-0017L	90 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius	
1	10		SCH10S		P02J-000JC	90 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius	
1	12		SCH10S		P02J-000JD	90 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius	
1	14		SCH10S		P02J-000JE	90 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius	
1	16		SCH10S		P02J-000JF	90 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius	
1	18		SCH10S		P02J-000JG	90 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius	
1	20		SCH10S		P02J-000JH	90 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius	

90FACTORY-MADE BEND (9FM)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P08J-0006U	90 degree factory-made bend ASTM A403 Grade WP304/WP304L Class S dual grade Seamless Standard-drawing BW 10DR Licensor-5	
1	0.75		SCH80S		P08J-0006V	90 degree factory-made bend ASTM A403 Grade WP304/WP304L Class S dual grade Seamless Standard-drawing BW 10DR Licensor-5	
1	1		SCH80S		P08J-0006W	90 degree factory-made bend ASTM A403 Grade WP304/WP304L Class S dual grade Seamless Standard-drawing BW 10DR Licensor-5	
1	1.5		SCH80S		P08J-0006X	90 degree factory-made bend ASTM A403 Grade WP304/WP304L Class S dual grade Seamless Standard-drawing BW 10DR Licensor-5	
1	2		SCH10S		P08J-00068	90 degree factory-made bend ASTM A403 Grade WP304/WP304L Class S dual grade Seamless Standard-drawing BW 10DR Licensor-5	
1	3		SCH10S		P08J-00069	90 degree factory-made bend ASTM A403 Grade WP304/WP304L Class S dual grade Seamless Standard-drawing BW 10DR Licensor-5	
1	4		SCH10S		P08J-0006A	90 degree factory-made bend ASTM A403 Grade WP304/WP304L Class S dual grade Seamless Standard-drawing BW 10DR Licensor-5	
1	6		SCH10S		P08J-0006B	90 degree factory-made bend ASTM A403 Grade WP304/WP304L Class S dual grade Seamless Standard-drawing BW 10DR Licensor-5	
1	8		SCH10S		P08J-0006E	90 degree factory-made bend ASTM A403 Grade WP304/WP304L Class WX dual grade Weld Standard-drawing BW 10DR Licensor-5	
1	10		SCH10S		P08J-0006C	90 degree factory-made bend ASTM A403 Grade WP304/WP304L Class WX dual grade Weld Standard-drawing BW 10DR Licensor-5	
1	12		SCH10S		P08J-0006D	90 degree factory-made bend ASTM A403 Grade WP304/WP304L Class WX dual grade Weld Standard-drawing BW 10DR Licensor-5	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P03K-0001G	45 degree elbow ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	

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45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75				P03K-0001H	45 degree elbow ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	1				P03K-0001J	45 degree elbow ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	1.5				P03K-0001K	45 degree elbow ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	2		SCH10S		P03J-000HS	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	3		SCH10S		P03J-000HT	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	4		SCH10S		P03J-000HU	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	6		SCH10S		P03J-000HV	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	8		SCH10S		P03J-0016G	45 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius	
1	10		SCH10S		P03J-000J4	45 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius	
1	12		SCH10S		P03J-000J5	45 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius	

45FACTORY-MADE BEND (4FM)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P09J-0006S	45 degree factory-made bend ASTM A403 Grade WP304/WP304L Class S dual grade Seamless Standard-drawing BW 10DR Licensor-5	
1	0.75		SCH80S		P09J-0006T	45 degree factory-made bend ASTM A403 Grade WP304/WP304L Class S dual grade Seamless Standard-drawing BW 10DR Licensor-5	
1	1		SCH80S		P09J-0006U	45 degree factory-made bend ASTM A403 Grade WP304/WP304L Class S dual grade Seamless Standard-drawing BW 10DR Licensor-5	
1	1.5		SCH80S		P09J-0006V	45 degree factory-made bend ASTM A403 Grade WP304/WP304L Class S dual grade Seamless Standard-drawing BW 10DR Licensor-5	
1	2		SCH10S		P09J-00066	45 degree factory-made bend ASTM A403 Grade WP304/WP304L Class S dual grade Seamless Standard-drawing BW 10DR Licensor-5	
1	3		SCH10S		P09J-00067	45 degree factory-made bend ASTM A403 Grade WP304/WP304L Class S dual grade Seamless Standard-drawing BW 10DR Licensor-5	
1	4		SCH10S		P09J-00068	45 degree factory-made bend ASTM A403 Grade WP304/WP304L Class S dual grade Seamless Standard-drawing BW 10DR Licensor-5	
1	6		SCH10S		P09J-00069	45 degree factory-made bend ASTM A403 Grade WP304/WP304L Class S dual grade Seamless Standard-drawing BW 10DR Licensor-5	
1	8		SCH10S		P09J-0006C	45 degree factory-made bend ASTM A403 Grade WP304/WP304L Class WX dual grade Weld Standard-drawing BW 10DR Licensor-5	
1	10		SCH10S		P09J-0006A	45 degree factory-made bend ASTM A403 Grade WP304/WP304L Class WX dual grade Weld Standard-drawing BW 10DR Licensor-5	
1	12		SCH10S		P09J-0006B	45 degree factory-made bend ASTM A403 Grade WP304/WP304L Class WX dual grade Weld Standard-drawing BW 10DR Licensor-5	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P21K-0001G	Straight tee ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	0.75				P21K-0001H	Straight tee ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	1				P21K-0001J	Straight tee ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	1.5				P21K-0001K	Straight tee ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	2		SCH10S		P21J-000HM	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	3		SCH10S		P21J-000HN	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	4		SCH10S		P21J-000HP	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	6		SCH10S		P21J-000HR	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	8		SCH10S		P21J-000ZZ	Straight tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	10		SCH10S		P21J-000J0	Straight tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	12		SCH10S		P21J-000J1	Straight tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	14		SCH10S		P21J-000J2	Straight tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	16		SCH10S		P21J-000J3	Straight tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	18		SCH10S		P21J-000J4	Straight tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	20		SCH10S		P21J-000J5	Straight tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75			P24K-0001X	Reducing tee ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	1.5	0.75			P24K-0001Z	Reducing tee ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	1.5	1			P24K-00020	Reducing tee ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	2	1	SCH10S	SCH80S	P24J-0065A	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	2	1.5	SCH10S	SCH80S	P24J-0065B	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	3	1.5	SCH10S	SCH80S	P24J-004SV	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	3	2	SCH10S	SCH10S	P24J-002H7	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	

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REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	4	2	SCH10S	SCH10S	P24J-002H8	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	4	3	SCH10S	SCH10S	P24J-002H9	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	6	3	SCH10S	SCH10S	P24J-002HA	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	6	4	SCH10S	SCH10S	P24J-002HB	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	8	4	SCH10S	SCH10S	P24J-004SY	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	8	6	SCH10S	SCH10S	P24J-004SZ	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	10	4	SCH10S	SCH10S	P24J-004T0	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	10	6	SCH10S	SCH10S	P24J-004T1	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	10	8	SCH10S	SCH10S	P24J-004T2	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	12	6	SCH10S	SCH10S	P24J-004T3	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	12	8	SCH10S	SCH10S	P24J-004T4	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	12	10	SCH10S	SCH10S	P24J-002HT	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	14	6	SCH10S	SCH10S	P24J-004T5	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	14	8	SCH10S	SCH10S	P24J-004T6	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	14	10	SCH10S	SCH10S	P24J-002HU	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	14	12	SCH10S	SCH10S	P24J-002HV	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	16	6	SCH10S	SCH10S	P24J-004T7	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	16	8	SCH10S	SCH10S	P24J-004T8	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	16	10	SCH10S	SCH10S	P24J-002HW	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	16	12	SCH10S	SCH10S	P24J-002HX	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	16	14	SCH10S	SCH10S	P24J-002HY	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	18	8	SCH10S	SCH10S	P24J-004T9	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	18	10	SCH10S	SCH10S	P24J-002HZ	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	18	12	SCH10S	SCH10S	P24J-002J0	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	18	14	SCH10S	SCH10S	P24J-002J1	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	18	16	SCH10S	SCH10S	P24J-002J2	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	20	8	SCH10S	SCH10S	P24J-0065C	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	20	10	SCH10S	SCH10S	P24J-002J3	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	20	12	SCH10S	SCH10S	P24J-002J4	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	20	14	SCH10S	SCH10S	P24J-002J5	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	20	16	SCH10S	SCH10S	P24J-002J6	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	20	18	SCH10S	SCH10S	P24J-002J7	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	SCH10S	SCH10S	P27J-001PS	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	4	2	SCH10S	SCH10S	P27J-001PT	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	4	3	SCH10S	SCH10S	P27J-001PU	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	6	3	SCH10S	SCH10S	P27J-001PV	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	6	4	SCH10S	SCH10S	P27J-001PW	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	8	4	SCH10S	SCH10S	P27J-003L1	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	8	6	SCH10S	SCH10S	P27J-003L2	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	10	4	SCH10S	SCH10S	P27J-003L3	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	10	6	SCH10S	SCH10S	P27J-003L4	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	10	8	SCH10S	SCH10S	P27J-003L5	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	12	6	SCH10S	SCH10S	P27J-003L6	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	12	8	SCH10S	SCH10S	P27J-003L7	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	12	10	SCH10S	SCH10S	P27J-001RD	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	14	6	SCH10S	SCH10S	P27J-003L8	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	14	8	SCH10S	SCH10S	P27J-003L9	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	14	10	SCH10S	SCH10S	P27J-001RF	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	14	12	SCH10S	SCH10S	P27J-001RG	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	16	8	SCH10S	SCH10S	P27J-003LA	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	16	10	SCH10S	SCH10S	P27J-001RJ	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	16	12	SCH10S	SCH10S	P27J-001RK	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	16	14	SCH10S	SCH10S	P27J-001RL	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	18	10	SCH10S	SCH10S	P27J-001RM	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	18	12	SCH10S	SCH10S	P27J-001RN	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	18	14	SCH10S	SCH10S	P27J-001RP	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	

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CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	18	16	SCH10S	SCH10S	P27J-001RR	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	20	12	SCH10S	SCH10S	P27J-001RS	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	20	14	SCH10S	SCH10S	P27J-001RT	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	20	16	SCH10S	SCH10S	P27J-001RU	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	20	18	SCH10S	SCH10S	P27J-001RV	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	SCH10S	SCH10S	P28J-001P8	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	4	2	SCH10S	SCH10S	P28J-001P9	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	4	3	SCH10S	SCH10S	P28J-001PA	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	6	3	SCH10S	SCH10S	P28J-001PB	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	6	4	SCH10S	SCH10S	P28J-001PC	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	8	4	SCH10S	SCH10S	P28J-003LP	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	8	6	SCH10S	SCH10S	P28J-003LR	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	10	4	SCH10S	SCH10S	P28J-003LS	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	10	6	SCH10S	SCH10S	P28J-003LT	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	10	8	SCH10S	SCH10S	P28J-003LU	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	12	6	SCH10S	SCH10S	P28J-003LV	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	12	8	SCH10S	SCH10S	P28J-003LW	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	12	10	SCH10S	SCH10S	P28J-001PW	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	14	6	SCH10S	SCH10S	P28J-003LX	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	14	8	SCH10S	SCH10S	P28J-003LY	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	14	10	SCH10S	SCH10S	P28J-001PY	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	14	12	SCH10S	SCH10S	P28J-001PZ	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	16	8	SCH10S	SCH10S	P28J-003LZ	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	16	10	SCH10S	SCH10S	P28J-001R1	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	16	12	SCH10S	SCH10S	P28J-001R2	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	16	14	SCH10S	SCH10S	P28J-001R3	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	18	10	SCH10S	SCH10S	P28J-001R4	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	18	12	SCH10S	SCH10S	P28J-001R5	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	18	14	SCH10S	SCH10S	P28J-001R6	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	18	16	SCH10S	SCH10S	P28J-001R7	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	20	12	SCH10S	SCH10S	P28J-001R8	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	20	14	SCH10S	SCH10S	P28J-001R9	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	20	16	SCH10S	SCH10S	P28J-001RA	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	20	18	SCH10S	SCH10S	P28J-001RB	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P29K-0001V	Cap ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	0.75				P29K-0001W	Cap ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	1				P29K-0001X	Cap ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	1.5				P29K-0001Y	Cap ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	2		SCH10S		P29J-000G1	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	3		SCH10S		P29J-000G2	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	4		SCH10S		P29J-000G3	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	6		SCH10S		P29J-000G4	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	8		SCH10S		P29J-000X3	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	10		SCH10S		P29J-000GB	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	12		SCH10S		P29J-000GC	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	14		SCH10S		P29J-000GD	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	16		SCH10S		P29J-000GE	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	18		SCH10S		P29J-000GF	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	20		SCH10S		P29J-000GG	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
541	0.75				P29K-00020	Cap ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 NPT	

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STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P41J-001FS	Straight nipple ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		SCH80S		P41J-001FT	Straight nipple ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		SCH80S		P41J-001FU	Straight nipple ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		SCH80S		P41J-001FV	Straight nipple ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

CON SWAGED NIPPLE (SNC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH80S	SCH80S	P42J-00081	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	SCH80S	SCH80S	P42J-00082	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	SCH80S	SCH80S	P42J-00083	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	SCH80S	SCH80S	P42J-00084	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	SCH80S	SCH80S	P42J-00085	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	SCH80S	SCH80S	P42J-00086	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	SCH10S	SCH80S	P42J-000F9	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	SCH10S	SCH80S	P42J-000F6	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	SCH10S	SCH80S	P42J-000F7	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	SCH10S	SCH80S	P42J-000F8	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	SCH10S	SCH80S	P42J-000AG	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	

ECC SWAGED NIPPLE (SNE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH80S	SCH80S	P43J-0008D	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	SCH80S	SCH80S	P43J-0008E	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	SCH80S	SCH80S	P43J-0008F	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	SCH80S	SCH80S	P43J-0008G	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	SCH80S	SCH80S	P43J-0008H	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	SCH80S	SCH80S	P43J-0008J	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	SCH10S	SCH80S	P43J-000CT	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	SCH10S	SCH80S	P43J-000CU	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	SCH10S	SCH80S	P43J-000CV	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	SCH10S	SCH80S	P43J-000CW	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	SCH10S	SCH80S	P43J-0008P	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	

COUPLING (CPS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P47K-00035	Coupling ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW - SW	
1	0.75				P47K-00036	Coupling ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW - SW	
1	1				P47K-00037	Coupling ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW - SW	
1	1.5				P47K-00038	Coupling ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW - SW	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2 - 2.5	0.75			P31K-00GFG	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 SW	
1	3 - 5	0.75			P31K-00GFH	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 SW	
1	6 - 12	0.75			P31K-008YY	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 SW	
1	14 - 36	0.75			P31K-008YC	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 SW	
1	3	1			P31K-008ZG	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 SW	
1	4 - 5	1			P31K-00GFL	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 SW	
1	6 - 10	1			P31K-008ZU	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 SW	

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OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	12 - 36	1			P31K-008Z6	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 SW	
1	4	1.5			P31K-0099M	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 SW	
1	5 - 6	1.5			P31K-00GFS	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 SW	
1	8 - 12	1.5			P31K-0099Z	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 SW	
1	14 - 24	1.5			P31K-00991	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 SW	
541	1	0.75			P31K-00911	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 NPT	
541	1.5	0.75			P31K-00916	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 NPT	
541	2 - 2.5	0.75			P31K-00GFJ	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 NPT	
541	3 - 5	0.75			P31K-00GFK	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 NPT	
541	6 - 12	0.75			P31K-0091X	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 NPT	
541	14 - 36	0.75			P31K-0091B	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 NPT	
1	6	2	SCH10S	SCH10S	P31K-005AV	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	8	2	SCH10S	SCH10S	P31K-007G1	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	10	2	SCH10S	SCH10S	P31K-005JV	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	12	2	SCH10S	SCH10S	P31K-005JX	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	14	2	SCH10S	SCH10S	P31K-005K0	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	16	2	SCH10S	SCH10S	P31K-005K3	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	18	2	SCH10S	SCH10S	P31K-005K5	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	20	2	SCH10S	SCH10S	P31K-005K8	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	8	3	SCH10S	SCH10S	P31K-007XV	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	10	3	SCH10S	SCH10S	P31K-007KK	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	12	3	SCH10S	SCH10S	P31K-007LF	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	14	3	SCH10S	SCH10S	P31K-007ME	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	16	3	SCH10S	SCH10S	P31K-007NJ	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	18	3	SCH10S	SCH10S	P31K-007PR	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	20	3	SCH10S	SCH10S	P31K-007RR	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	12	4	SCH10S	SCH10S	P31K-00812	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	14	4	SCH10S	SCH10S	P31K-00821	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	16	4	SCH10S	SCH10S	P31K-00837	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	18	4	SCH10S	SCH10S	P31K-0084E	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	20	4	SCH10S	SCH10S	P31K-0085E	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	18	6	SCH10S	SCH10S	P31K-008EY	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	20	6	SCH10S	SCH10S	P31K-008FP	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30K-0001G	Plug ASTM A182 Grade F304/F304L dual grade ASME B16.11 NPT Round head	
1	0.75				P30K-0001H	Plug ASTM A182 Grade F304/F304L dual grade ASME B16.11 NPT Round head	
1	1				P30K-0001J	Plug ASTM A182 Grade F304/F304L dual grade ASME B16.11 NPT Round head	
1	1.5				P30K-0001K	Plug ASTM A182 Grade F304/F304L dual grade ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P61K-003A4	Flange SW ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	0.75		SCH80S		P61K-003A5	Flange SW ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	1		SCH80S		P61K-003A6	Flange SW ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	1.5		SCH80S		P61K-003A7	Flange SW ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	2				P63B-0001Y	Lap joint ASTM A105 Class 150 ASME B16.5	
1	3				P63B-00021	Lap joint ASTM A105 Class 150 ASME B16.5	
1	4				P63B-00022	Lap joint ASTM A105 Class 150 ASME B16.5	
1	6				P63B-00024	Lap joint ASTM A105 Class 150 ASME B16.5	
1	8				P63B-00023	Lap joint ASTM A105 Class 150 ASME B16.5	
1	10				P63B-0001T	Lap joint ASTM A105 Class 150 ASME B16.5	
1	12				P63B-0001U	Lap joint ASTM A105 Class 150 ASME B16.5	
1	14				P63B-0001V	Lap joint ASTM A105 Class 150 ASME B16.5	
1	16				P63B-0001W	Lap joint ASTM A105 Class 150 ASME B16.5	
1	18				P63B-0001X	Lap joint ASTM A105 Class 150 ASME B16.5	
1	20				P63B-0001Z	Lap joint ASTM A105 Class 150 ASME B16.5	
773	0.5		SCH80S		P61K-003A9	Flange SW ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
773	0.75		SCH80S		P61K-003AA	Flange SW ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
773	1		SCH80S		P61K-003AB	Flange SW ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
773	1.5		SCH80S		P61K-003AC	Flange SW ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
773	2		SCH10S		P61K-0023W	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
773	3		SCH10S		P61K-0023X	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
773	4		SCH10S		P61K-0023Y	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
773	6		SCH10S		P61K-003AD	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
773	8		SCH10S		P61K-003AE	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
773	10		SCH10S		P61K-0024Y	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
773	12		SCH10S		P61K-0024Z	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
773	14		SCH10S		P61K-00250	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
773	16		SCH10S		P61K-00251	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
773	18		SCH10S		P61K-00252	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
773	20		SCH10S		P61K-00253	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67K-000K9	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	0.75				P67K-000KA	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	1				P67K-000KB	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	1.5				P67K-000KC	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	2				P67K-000KD	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	3				P67K-000KE	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	4				P67K-000KF	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	6				P67K-000KG	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	8				P67K-000L7	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	10				P67K-000L1	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	12				P67K-000L2	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	14				P67K-000L3	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	16				P67K-000L4	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	18				P67K-000L5	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	20				P67K-000L6	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	

STUB END (SE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2		SCH10S		P45J-0000G	Stub end Short-pattern ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	3		SCH10S		P45J-0000H	Stub end Short-pattern ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	4		SCH10S		P45J-0000J	Stub end Short-pattern ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	6		SCH10S		P45J-0000K	Stub end Short-pattern ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	8		SCH10S		P45J-0000T	Stub end Short-pattern ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	10		SCH10S		P45J-0000L	Stub end Short-pattern ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	12		SCH10S		P45J-0000M	Stub end Short-pattern ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	14		SCH10S		P45J-0000N	Stub end Short-pattern ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	16		SCH10S		P45J-0000P	Stub end Short-pattern ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	18		SCH10S		P45J-0000R	Stub end Short-pattern ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	20		SCH10S		P45J-0000S	Stub end Short-pattern ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P74U-001PC	Sheet gasket Non-asbestos Class 150 ASME B16.21 Flange ASME B16.5 RF 2.8mm-T Licensor-5 Type-2	
1	0.75				P74U-001PD	Sheet gasket Non-asbestos Class 150 ASME B16.21 Flange ASME B16.5 RF 2.8mm-T Licensor-5 Type-2	
1	1				P74U-001PE	Sheet gasket Non-asbestos Class 150 ASME B16.21 Flange ASME B16.5 RF 2.8mm-T Licensor-5 Type-2	
1	1.5				P74U-001PF	Sheet gasket Non-asbestos Class 150 ASME B16.21 Flange ASME B16.5 RF 2.8mm-T Licensor-5 Type-2	
1	2				P74U-001PM	Sheet gasket Non-asbestos Class 150 ASME B16.21 Flange ASME B16.5 RF 2.8mm-T Licensor-5 Type-2	
1	3				P74U-001PS	Sheet gasket Non-asbestos Class 150 ASME B16.21 Flange ASME B16.5 RF 2.8mm-T Licensor-5 Type-2	
1	4				P74U-001PT	Sheet gasket Non-asbestos Class 150 ASME B16.21 Flange ASME B16.5 RF 2.8mm-T Licensor-5 Type-2	
1	6				P74U-001PU	Sheet gasket Non-asbestos Class 150 ASME B16.21 Flange ASME B16.5 RF 2.8mm-T Licensor-5 Type-2	
1	8				P74U-001PV	Sheet gasket Non-asbestos Class 150 ASME B16.21 Flange ASME B16.5 RF 2.8mm-T Licensor-5 Type-2	
1	10				P74U-001PG	Sheet gasket Non-asbestos Class 150 ASME B16.21 Flange ASME B16.5 RF 2.8mm-T Licensor-5 Type-2	

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GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	12				P74U-001PH	Sheet gasket Non-asbestos Class 150 ASME B16.21 Flange ASME B16.5 RF 2.8mm-T Licensor-5 Type-2	
1	14				P74U-001PJ	Sheet gasket Non-asbestos Class 150 ASME B16.21 Flange ASME B16.5 RF 2.8mm-T Licensor-5 Type-2	
1	16				P74U-001PK	Sheet gasket Non-asbestos Class 150 ASME B16.21 Flange ASME B16.5 RF 2.8mm-T Licensor-5 Type-2	
1	18				P74U-001PL	Sheet gasket Non-asbestos Class 150 ASME B16.21 Flange ASME B16.5 RF 2.8mm-T Licensor-5 Type-2	
1	20				P74U-001PN	Sheet gasket Non-asbestos Class 150 ASME B16.21 Flange ASME B16.5 RF 2.8mm-T Licensor-5 Type-2	
773	0.5				P73T-00356	Spiral wound gasket SS316 winding / Non-asbestos filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-6	
773	0.75				P73T-00357	Spiral wound gasket SS316 winding / Non-asbestos filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-6	
773	1				P73T-00358	Spiral wound gasket SS316 winding / Non-asbestos filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-6	
773	1.5				P73T-00359	Spiral wound gasket SS316 winding / Non-asbestos filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-6	
773	2				P73T-0035A	Spiral wound gasket SS316 winding / Non-asbestos filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-6	
773	3				P73T-0035B	Spiral wound gasket SS316 winding / Non-asbestos filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-6	
773	4				P73T-0035C	Spiral wound gasket SS316 winding / Non-asbestos filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-6	
773	6				P73T-0035D	Spiral wound gasket SS316 winding / Non-asbestos filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-6	
773	8				P73T-00392	Spiral wound gasket SS316 winding / Non-asbestos filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-6	
773	10				P73T-0038W	Spiral wound gasket SS316 winding / Non-asbestos filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-6	
773	12				P73T-0038X	Spiral wound gasket SS316 winding / Non-asbestos filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-6	
773	14				P73T-0038Y	Spiral wound gasket SS316 winding / Non-asbestos filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-6	
773	16				P73T-0038Z	Spiral wound gasket SS316 winding / Non-asbestos filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-6	
773	18				P73T-00390	Spiral wound gasket SS316 winding / Non-asbestos filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-6	
773	20				P73T-00391	Spiral wound gasket SS316 winding / Non-asbestos filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-6	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-16				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	18-20				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
773	0.5-10				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
773	12-20				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81K-00108	Gate valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	0.75				P81K-00109	Gate valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	1				P81K-0010A	Gate valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	1.5				P81K-0010B	Gate valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	2				P81L-00293	Gate valve ASTM A351 Grade CF8 Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	3				P81L-00294	Gate valve ASTM A351 Grade CF8 Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	4				P81L-00295	Gate valve ASTM A351 Grade CF8 Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	6				P81L-00296	Gate valve ASTM A351 Grade CF8 Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	8				P81L-00297	Gate valve ASTM A351 Grade CF8 Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	10				P81L-002BX	Gate valve ASTM A351 Grade CF8 Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	12				P81L-002BY	Gate valve ASTM A351 Grade CF8 Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	14				P81L-002BZ	Gate valve ASTM A351 Grade CF8 Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated	
1	16				P81L-002C0	Gate valve ASTM A351 Grade CF8 Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated	
1	18				P81L-002C1	Gate valve ASTM A351 Grade CF8 Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated	
1	20				P81L-002C2	Gate valve ASTM A351 Grade CF8 Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated	
1	0.5				P81K-001LC	Gate valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW - NPT Trim number 12 BB-BG-OS&Y Handwheel operated	

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GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
714	0.75				P81K-001FD	Gate valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW - NPT Trim number 12 BB-BG-OS&Y Handwheel operated	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82K-000NR	Globe valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	0.75				P82K-000NS	Globe valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	1				P82K-000NT	Globe valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	1.5				P82K-000NU	Globe valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	2				P82L-00195	Globe valve ASTM A351 Grade CF8 Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	3				P82L-00196	Globe valve ASTM A351 Grade CF8 Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	4				P82L-00197	Globe valve ASTM A351 Grade CF8 Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	6				P82L-001AD	Globe valve ASTM A351 Grade CF8 Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	8				P82L-001AE	Globe valve ASTM A351 Grade CF8 Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83K-000LM	Check valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 Lift-type Bolted cover	
1	0.75				P83K-000LN	Check valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 Lift-type Bolted cover	
1	1				P83K-000LP	Check valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 Lift-type Bolted cover	
1	1.5				P83K-000LR	Check valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 Lift-type Bolted cover	
1	2				P83L-00196	Check valve ASTM A351 Grade CF8 Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	3				P83L-00197	Check valve ASTM A351 Grade CF8 Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	4				P83L-00198	Check valve ASTM A351 Grade CF8 Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	6				P83L-0019U	Check valve ASTM A351 Grade CF8 Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	8				P83L-0019V	Check valve ASTM A351 Grade CF8 Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	10				P83L-001AA	Check valve ASTM A351 Grade CF8 Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	12				P83L-001AB	Check valve ASTM A351 Grade CF8 Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	14				P83L-001AC	Check valve ASTM A351 Grade CF8 Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	16				P83L-001AD	Check valve ASTM A351 Grade CF8 Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	18				P83L-001AE	Check valve ASTM A351 Grade CF8 Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	

BALL VALVE (Q)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P84K-000R2	Ball valve Long-pattern ASTM A182 Grade F304/F304L dual grade Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design	
1	0.75				P84K-000R3	Ball valve Long-pattern ASTM A182 Grade F304/F304L dual grade Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design	
1	1				P84K-000R4	Ball valve Long-pattern ASTM A182 Grade F304/F304L dual grade Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design	
1	1.5				P84K-000R5	Ball valve Long-pattern ASTM A182 Grade F304/F304L dual grade Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design	
1	2				P84L-0034S	Ball valve Long-pattern ASTM A351 Grade CF8 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design	
1	3				P84L-0034T	Ball valve Long-pattern ASTM A351 Grade CF8 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design	
1	4				P84L-0034U	Ball valve Long-pattern ASTM A351 Grade CF8 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design	
1	6				P84L-0034V	Ball valve Long-pattern ASTM A351 Grade CF8 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Reduced bore Fire tested design	
1	8				P84L-0034W	Ball valve Long-pattern ASTM A351 Grade CF8 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Reduced bore Fire tested design	
1	10				P84L-00352	Ball valve Long-pattern ASTM A351 Grade CF8 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Reduced bore Fire tested design	
1	12				P84L-00353	Ball valve Long-pattern ASTM A351 Grade CF8 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Reduced bore Fire tested design	

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BALL VALVE (Q)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P84L-00354	Ball valve Long-pattern ASTM A351 Grade CF8 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Reduced bore Fire tested design	
1	16				P84L-00355	Ball valve Long-pattern ASTM A351 Grade CF8 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Reduced bore Fire tested design	
1	18				P84L-00356	Ball valve Long-pattern ASTM A351 Grade CF8 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Reduced bore Fire tested design	
1	20				P84L-00357	Ball valve Long-pattern ASTM A351 Grade CF8 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Reduced bore Fire tested design	
24	0.5				P84K-000R6	Ball valve Long-pattern ASTM A182 Grade F304/F304L dual grade Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	
24	0.75				P84K-000R7	Ball valve Long-pattern ASTM A182 Grade F304/F304L dual grade Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	
24	1				P84K-000R8	Ball valve Long-pattern ASTM A182 Grade F304/F304L dual grade Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	
24	1.5				P84K-000R9	Ball valve Long-pattern ASTM A182 Grade F304/F304L dual grade Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	
24	2				P84L-0034X	Ball valve Long-pattern ASTM A351 Grade CF8 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	
24	3				P84L-0034Y	Ball valve Long-pattern ASTM A351 Grade CF8 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	
24	4				P84L-0034Z	Ball valve Long-pattern ASTM A351 Grade CF8 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	
24	6				P84L-00350	Ball valve Long-pattern ASTM A351 Grade CF8 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design	
24	8				P84L-00351	Ball valve Long-pattern ASTM A351 Grade CF8 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design	
24	10				P84L-00359	Ball valve Long-pattern ASTM A351 Grade CF8 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design	
24	12				P84L-0035A	Ball valve Long-pattern ASTM A351 Grade CF8 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design	
24	14				P84L-0035B	Ball valve Long-pattern ASTM A351 Grade CF8 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design	
24	16				P84L-0035C	Ball valve Long-pattern ASTM A351 Grade CF8 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design	
24	18				P84L-0035D	Ball valve Long-pattern ASTM A351 Grade CF8 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design	
24	20				P84L-0035E	Ball valve Long-pattern ASTM A351 Grade CF8 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design	

BUTTERFLY VALVE (H)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	10				P86L-000ZF	Offset design butterfly valve ASTM A351 Grade CF8 Class 150 API 609 Category B Lug-type ASME B16.5 RF Disc SS316 Seat Stellite-6 Trim SS316 Triple eccentric design BG Gear operated	

ORIFICE FLANGE (FO)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	10		SCH10S		P66K-0030X	Orifice flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
200	10		SCH10S		P66K-00319	Orifice flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71K-00065	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	0.75				P71K-00066	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	1				P71K-00067	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71K-00068	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	2				P71K-0006A	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	3				P71K-0006B	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	4				P71K-0006C	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	6				P71K-0006D	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	8				P71K-0006E	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	10				P71K-00069	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	12				P71K-0006F	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	

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PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72K-0003T	Paddle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	16				P72K-0003U	Paddle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	18				P72K-0003V	Paddle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	20				P72K-0003W	Paddle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	

PADDLE SPACER (PS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72K-0003Y	Paddle spacer ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	16				P72K-0003Z	Paddle spacer ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	18				P72K-00040	Paddle spacer ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	20				P72K-00041	Paddle spacer ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	

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BOLT TABLE (B_A61F05 , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	60	P80S-003V2		
0.75	4	0.500	65	P80S-003V3		
1	4	0.500	70	P80S-003V4		
1.5	4	0.500	75	P80S-003V5		
2	4	0.625	90	P80S-003XF		
3	4	0.625	100	P80S-003VA		
4	8	0.625	100	P80S-003VA		
6	8	0.750	110	P80S-003XK		
8	8	0.750	120	P80S-003XM		
10	12	0.875	135	P80S-0041C		
12	12	0.875	135	P80S-0041C		
14	12	1.000	150	P80S-0043H		
16	16	1.000	155	P80S-0043J		
18	16	1.125	165	P80S-0046N		
20	20	1.125	175	P80S-0046S		

BOLT TABLE (B_A61F05_773 , STUD ASME RF, OPTION CODE 773)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-003V4		
0.75	4	0.625	75	P80S-003XC		
1	4	0.625	80	P80S-003XD		
1.5	4	0.750	95	P80S-00414		
2	8	0.625	90	P80S-003XF		
3	8	0.750	110	P80S-003XK		
4	8	0.750	115	P80S-003XL		
6	12	0.750	125	P80S-003XN		
8	12	0.875	140	P80S-0041D		
10	16	1.000	160	P80S-0043K		
12	16	1.125	175	P80S-0046S		
14	20	1.125	180	P80S-0046T		
16	20	1.250	190	P80S-004AK		
18	24	1.250	200	P80S-004AM		
20	24	1.250	210	P80S-004AP		

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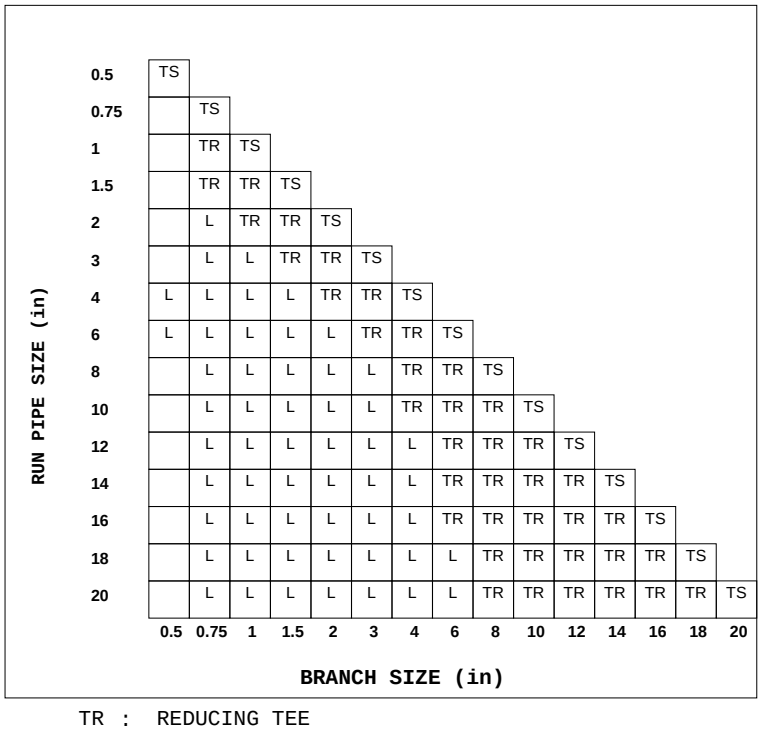
BRANCH TABLE (T_A61F05)



TR : REDUCING TEE
L : OUTLET
TS : STRAIGHT TEE

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PIPING CLASS

B0AC01 REV NO. 2

Material : Killed CS
Rating : ASME CLASS 300
Flange Face : RF
C.A.(mm) : 0.00
Gasket : Spiral Wound
Service : PROCESS - CATALYST : / CATALYST
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
6	PIPE THICKNESS CALCULATION TO INCLUDE CORROSION AND EROSION ALLOWANCES DUE TO THE PROCESS CATALYST FLOW, AS PER PROCESS LICENSOR SPECIFICATIONS

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
541	NPT(F) (CA,F,L)
781	CLASS 600 (B,F,G)
4208	45 DEGREE LATERAL STRAIGHT TEE (TLS)
4608	VALVE WITH NIPPLES (V)

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PIPING CLASS
B0AC01 REV NO. 2

PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		XXS		P01A-0078C	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE Licensor-1	
1	1.5		XXS		P01A-0078D	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE Licensor-1	
1	2		XXS		P01A-0078E	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Licensor-1	
1	3		XXS		P01A-0078F	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Licensor-1	
1	4		XXS		P01A-0078G	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Licensor-1	
1	6		XXS		P01A-0078H	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Licensor-1	
1	8		XXS		P01A-0078J	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Licensor-1	
1	10		XXS		P01A-0078K	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE Licensor-1	
1	12		XXS		P01A-007T5	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE Licensor-1	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		XXS		P02A-003PU	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	1.5		XXS		P02A-003PV	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	2		XXS		P02A-003PW	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	3		XXS		P02A-003PX	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	4		XXS		P02A-003PY	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	6		XXS		P02A-003PZ	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	8		XXS		P02A-003R0	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	10		XXS		P02A-003R1	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Licensor-1	
1	12		XXS		P02A-0045D	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Licensor-1	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		XXS		P03A-003MG	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	1.5		XXS		P03A-003MH	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	2		XXS		P03A-003MJ	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	3		XXS		P03A-003MK	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	4		XXS		P03A-003ML	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	6		XXS		P03A-003MM	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	8		XXS		P03A-003MN	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	10		XXS		P03A-003MP	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Licensor-1	
1	12		XXS		P03A-0042Y	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Licensor-1	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		XXS		P21A-0048B	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	1.5		XXS		P21A-0048C	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	2		XXS		P21A-0048D	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	3		XXS		P21A-0048E	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	4		XXS		P21A-0048F	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	6		XXS		P21A-0048G	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	8		XXS		P21A-0048H	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	10		XXS		P21A-0048J	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	12		XXS		P21A-004N8	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	

STRAIGHT LATERAL TEE (TLS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		XXS		P22A-000E9	Straight lateral-tee ASTM A234 Grade WPB Seamless ASME B16.9 BW 60 degree Licensor-1	
1	1.5		XXS		P22A-000FY	Straight lateral-tee ASTM A234 Grade WPB Seamless ASME B16.9 BW 60 degree Licensor-1	
1	2		XXS		P22A-000FZ	Straight lateral-tee ASTM A234 Grade WPB Seamless ASME B16.9 BW 60 degree Licensor-1	
1	3		XXS		P22A-000G0	Straight lateral-tee ASTM A234 Grade WPB Seamless ASME B16.9 BW 60 degree Licensor-1	
1	4		XXS		P22A-000G1	Straight lateral-tee ASTM A234 Grade WPB Seamless ASME B16.9 BW 60 degree Licensor-1	
1	6		XXS		P22A-000G2	Straight lateral-tee ASTM A234 Grade WPB Seamless ASME B16.9 BW 60 degree Licensor-1	
1	8		XXS		P22A-000G3	Straight lateral-tee ASTM A234 Grade WPB Seamless ASME B16.9 BW 60 degree Licensor-1	
1	10		XXS		P22A-000G4	Straight lateral-tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW 60 degree Licensor-1	
1	12		XXS		P22A-000G5	Straight lateral-tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW 60 degree Licensor-1	
1	8		XXS		P22A-000E8	Straight lateral-tee ASTM A234 Grade WPB Seamless ASME B16.9 BW 45 degree Licensor-1	

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STRAIGHT CROSS TEE (TCS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	10		XXS		P23A-0004W	Straight cross-tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	12		XXS		P23A-0004X	Straight cross-tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5	1	XXS	XXS	P24A-00JZS	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	2	1	XXS	XXS	P24A-00JZT	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	2	1.5	XXS	XXS	P24A-00JZU	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	3	1.5	XXS	XXS	P24A-00JZV	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	3	2	XXS	XXS	P24A-00JZW	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	4	2	XXS	XXS	P24A-00JZX	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	4	3	XXS	XXS	P24A-00JZY	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	6	3	XXS	XXS	P24A-00JZZ	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	6	4	XXS	XXS	P24A-00K00	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	8	4	XXS	XXS	P24A-00K03	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	8	6	XXS	XXS	P24A-00K04	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	10	4	XXS	XXS	P24A-00K05	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	10	6	XXS	XXS	P24A-00K01	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	10	8	XXS	XXS	P24A-00K02	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	12	6	XXS	XXS	P24A-00M20	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	12	8	XXS	XXS	P24A-00M21	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	12	10	XXS	XXS	P24A-00M1Z	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	

REDUCING LATERAL TEE (TLR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	XXS	XXS	P25A-002TG	Reducing lateral-tee ASTM A234 Grade WPB Seamless ASME B16.9 BW 45 degree Licensor-1	
1	4	2	XXS	XXS	P25A-002TE	Reducing lateral-tee ASTM A234 Grade WPB Seamless ASME B16.9 BW 45 degree Licensor-1	
1	6	4	XXS	XXS	P25A-002T7	Reducing lateral-tee ASTM A234 Grade WPB Seamless ASME B16.9 BW 45 degree Licensor-1	
1	8	4	XXS	XXS	P25A-002T2	Reducing lateral-tee ASTM A234 Grade WPB Seamless ASME B16.9 BW 45 degree Licensor-1	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5	1	XXS	XXS	P27A-00EK4	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	2	1	XXS	XXS	P27A-00EK6	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	2	1.5	XXS	XXS	P27A-00EK7	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	3	1.5	XXS	XXS	P27A-00EK8	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	3	2	XXS	XXS	P27A-00EK9	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	4	1.5	XXS	XXS	P27A-00EKA	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	4	2	XXS	XXS	P27A-00EKB	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	4	3	XXS	XXS	P27A-00EKC	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	6	3	XXS	XXS	P27A-00EKD	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	6	4	XXS	XXS	P27A-00EKE	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	8	4	XXS	XXS	P27A-00EKF	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	8	6	XXS	XXS	P27A-00EKG	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	10	4	XXS	XXS	P27A-00EKH	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	10	6	XXS	XXS	P27A-00EKJ	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	10	8	XXS	XXS	P27A-00EKK	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	12	6	XXS	XXS	P27A-00G3F	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	12	8	XXS	XXS	P27A-00G3G	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	12	10	XXS	XXS	P27A-00G3E	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5	1	XXS	XXS	P28A-00BNE	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	2	1	XXS	XXS	P28A-00BNG	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	2	1.5	XXS	XXS	P28A-00BNH	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	3	1.5	XXS	XXS	P28A-00BNJ	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	3	2	XXS	XXS	P28A-00BNK	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	

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ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	4	1.5	XXS	XXS	P28A-00BNL	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	4	2	XXS	XXS	P28A-00BNM	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	4	3	XXS	XXS	P28A-00BNN	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	6	3	XXS	XXS	P28A-00BNP	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	6	4	XXS	XXS	P28A-00BNR	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	8	4	XXS	XXS	P28A-00BNS	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	8	6	XXS	XXS	P28A-00BNT	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	10	4	XXS	XXS	P28A-00BNU	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	10	6	XXS	XXS	P28A-00BNV	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	10	8	XXS	XXS	P28A-00BNW	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	12	6	XXS	XXS	P28A-00D9P	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	12	8	XXS	XXS	P28A-00D9R	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	12	10	XXS	XXS	P28A-00D9N	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		XXS		P29A-0031W	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	1.5		XXS		P29A-0031X	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	2		XXS		P29A-0031Y	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	3		XXS		P29A-0031Z	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	4		XXS		P29A-00320	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	6		XXS		P29A-00321	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	8		XXS		P29A-00322	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	10		XXS		P29A-00323	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	12		XXS		P29A-003G4	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
541	1				P29B-0006N	Cap ASTM A105 Class 6000 ASME B16.11 NPT Licensor-1	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		10.60mm		P41A-001AR	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Licensor-1	
1	1.5		10.60mm		P41A-001AS	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Licensor-1	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
541	1.5	1			P31B-0118C	Outlet ASTM A105 Class 6000 MSS SP-97 NPT Licensor-1	
541	2 - 2.5	1			P31B-0136R	Outlet ASTM A105 Class 6000 MSS SP-97 NPT Licensor-1	
541	3 - 10	1			P31B-0136S	Outlet ASTM A105 Class 6000 MSS SP-97 NPT Licensor-1	
541	12 and larger	1			P31B-0136T	Outlet ASTM A105 Class 6000 MSS SP-97 NPT Licensor-1	
1	3	1	XXS	XXS	P31B-00XFL	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	4	1	XXS	XXS	P31B-00XFN	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	6	1	XXS	XXS	P31B-00XFR	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	8	1	XXS	XXS	P31B-00XG0	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	10	1	XXS	XXS	P31B-00XG3	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	12	1	XXS	XXS	P31B-00ZH1	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	4	1.5	XXS	XXS	P31B-00XFP	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	6	1.5	XXS	XXS	P31B-00XFS	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	8	1.5	XXS	XXS	P31B-00XG1	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	10	1.5	XXS	XXS	P31B-00XG4	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	12	1.5	XXS	XXS	P31B-00ZH2	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	6	2	XXS	XXS	P31B-00XFT	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	8	2	XXS	XXS	P31B-00XFU	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	10	2	XXS	XXS	P31B-00XFW	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	12	2	XXS	XXS	P31B-00ZH3	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	8	3	XXS	XXS	P31B-00XFV	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	10	3	XXS	XXS	P31B-00XFX	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	12	3	XXS	XXS	P31B-00ZGZ	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	12	4	XXS	XXS	P31B-00ZH4	Outlet ASTM A105 MSS SP-97 BW Licensor-1	

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LATROLET (LL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	1	XXS	XXS	P34B-001T7	Lateral-outlet ASTM A105 MSS SP-97 BW 45 degree Licensor-1	
1	8	1	XXS	XXS	P34B-001T8	Lateral-outlet ASTM A105 MSS SP-97 BW 45 degree Licensor-1	
1	12	1	XXS	XXS	P34B-001T9	Lateral-outlet ASTM A105 MSS SP-97 BW 45 degree Licensor-1	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P30B-00069	Plug ASTM A105 ASME B16.11 NPT Round head Licensor-1	
1	1.5				P30B-0006A	Plug ASTM A105 ASME B16.11 NPT Round head Licensor-1	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		XXS		P61B-009S3	Flange WN ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
1	1.5		XXS		P61B-009S4	Flange WN ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
1	2		XXS		P61B-009S6	Flange WN ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
1	3		XXS		P61B-009S7	Flange WN ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
1	4		XXS		P61B-009S8	Flange WN ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
1	6		XXS		P61B-009S9	Flange WN ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
1	8		XXS		P61B-009SA	Flange WN ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
1	10		XXS		P61B-009S5	Flange WN ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
1	12		XXS		P61B-00B1F	Flange WN ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
541	1				P61B-00CX5	Flange NPT ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
781	1		XXS		P61B-009WY	Flange WN ASTM A105 Class 600 ASME B16.5 RF Licensor-1	
781	1.5		XXS		P61B-009WZ	Flange WN ASTM A105 Class 600 ASME B16.5 RF Licensor-1	
781	2		XXS		P61B-00A9K	Flange WN ASTM A105 Class 600 ASME B16.5 RF Licensor-1	
781	3		XXS		P61B-00A9L	Flange WN ASTM A105 Class 600 ASME B16.5 RF Licensor-1	
781	4		XXS		P61B-00A9M	Flange WN ASTM A105 Class 600 ASME B16.5 RF Licensor-1	
781	6		XXS		P61B-00A9N	Flange WN ASTM A105 Class 600 ASME B16.5 RF Licensor-1	
781	8		XXS		P61B-00A9P	Flange WN ASTM A105 Class 600 ASME B16.5 RF Licensor-1	
781	10		XXS		P61B-00A9J	Flange WN ASTM A105 Class 600 ASME B16.5 RF Licensor-1	
781	12		XXS		P61B-00B1J	Flange WN ASTM A105 Class 600 ASME B16.5 RF Licensor-1	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P67B-002EK	Blind flange ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
1	1.5				P67B-002EL	Blind flange ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
1	2				P67B-002ET	Blind flange ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
1	3				P67B-002EU	Blind flange ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
1	4				P67B-002EV	Blind flange ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
1	6				P67B-002EW	Blind flange ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
1	8				P67B-002EX	Blind flange ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
1	10				P67B-002EM	Blind flange ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
1	12				P67B-002EN	Blind flange ASTM A105 Class 300 ASME B16.5 RF Licensor-1	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000G5	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000G6	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	6				P73T-000G7	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	8				P73T-000G8	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	10				P73T-000FX	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	12				P73T-000FY	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1				P73T-000JA	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

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GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
781	1.5				P73T-000JB	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	2				P73T-000JH	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	3				P73T-000JL	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	4				P73T-000JM	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	6				P73T-000JN	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	8				P73T-000JP	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	10				P73T-000JC	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	12				P73T-000JD	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1-10				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	12				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
781	1-6				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
781	8-12				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P81B-001VM	Gate valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated C.A.=6.0mm Licensor-1	
1	1.5				P81B-001VN	Gate valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated C.A.=6.0mm Licensor-1	
1	2				P81C-0062Z	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated C.A.=6.0mm Licensor-1	
1	3				P81C-00630	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated C.A.=6.0mm Licensor-1	
1	4				P81C-00631	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated C.A.=6.0mm Licensor-1	
1	6				P81C-00632	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated C.A.=6.0mm Licensor-1	
1	8				P81C-00918	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated C.A.=6.0mm Licensor-1	
4608	1				P81B-002VT	Gate valve ASTM A105 Class 300 API 602 BW both sides w/ nipples BE - NPT ASTM A106-B T=10.60MM-nipple Trim number 12 BB-BG-OS&Y Handwheel operated C.A.=6.0mm Licensor-1	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P82B-001G5	Globe valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated C.A.=6.0mm Licensor-1	
1	1.5				P82B-001G6	Globe valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated C.A.=6.0mm Licensor-1	
1	2				P82C-002ZG	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated C.A.=6.0mm Licensor-1	
1	3				P82C-002ZH	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated C.A.=6.0mm Licensor-1	
1	4				P82C-002ZJ	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated C.A.=6.0mm Licensor-1	
1	6				P82C-002ZK	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated C.A.=6.0mm Licensor-1	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P83B-0015W	Check valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover C.A.=6.0mm Licensor-1	
1	1.5				P83B-0015X	Check valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover C.A.=6.0mm Licensor-1	
1	2				P83C-002YH	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover C.A.=6.0mm Licensor-1	
1	3				P83C-002YJ	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover C.A.=6.0mm Licensor-1	
1	4				P83C-002YK	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover C.A.=6.0mm Licensor-1	
1	6				P83C-002YL	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover C.A.=6.0mm Licensor-1	
1	8				P83C-0044F	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover C.A.=6.0mm Licensor-1	

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BALL VALVE (Q)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P84B-001GJ	Ball valve Long-pattern ASTM A105 Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design C.A.=6.0mm Licensor-1	
1	1.5				P84B-001GK	Ball valve Long-pattern ASTM A105 Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design C.A.=6.0mm Licensor-1	
1	2				P84C-006R8	Ball valve Long-pattern ASTM A216 Grade WCB Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design C.A.=6.0mm Licensor-1	
1	3				P84C-006R9	Ball valve Long-pattern ASTM A216 Grade WCB Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design C.A.=6.0mm Licensor-1	
1	4				P84C-006RA	Ball valve Long-pattern ASTM A216 Grade WCB Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Gear operated Full bore Fire tested design C.A.=6.0mm Licensor-1	
1	6				P84C-006RD	Ball valve Long-pattern ASTM A216 Grade WCB Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design C.A.=6.0mm Licensor-1	
1	8				P84C-006RE	Ball valve Long-pattern ASTM A216 Grade WCB Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design C.A.=6.0mm Licensor-1	
1	10				P84C-006RB	Ball valve Long-pattern ASTM A216 Grade WCB Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design C.A.=6.0mm Licensor-1	
1	12				P84C-006RC	Ball valve Long-pattern ASTM A216 Grade WCB Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design C.A.=6.0mm Licensor-1	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P71B-000AT	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	1.5				P71B-000AU	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	2				P71B-000AW	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	3				P71B-000AX	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	4				P71B-000AY	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	6				P71B-000AZ	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	8				P71B-000B0	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	10				P71B-000AV	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	12				P71B-000BN	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF Licensor-1	

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PIPING CLASS
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BOLT TABLE (B_B0AC01 , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
1	4	0.625	80	P80S-003XD		
1.5	4	0.750	95	P80S-00414		
2	8	0.625	90	P80S-003XF		
3	8	0.750	110	P80S-003XK		
4	8	0.750	115	P80S-003XL		
6	12	0.750	125	P80S-003XN		
8	12	0.875	140	P80S-0041D		
10	16	1.000	160	P80S-0043K		
12	16	1.125	175	P80S-0046S		

BOLT TABLE (B_B0AC01_781 , STUD ASME RF, OPTION CODE 781)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
1	4	0.625	95	P80S-003XG		
1.5	4	0.750	110	P80S-003XK		
2	8	0.625	110	P80S-003VC		
3	8	0.750	130	P80S-003XP		
4	8	0.875	150	P80S-0041F		
6	12	1.000	175	P80S-0043P		
8	12	1.125	195	P80S-0046W		
10	16	1.250	250	P80S-004AY		
12	20	1.250	255	P80S-004AZ		

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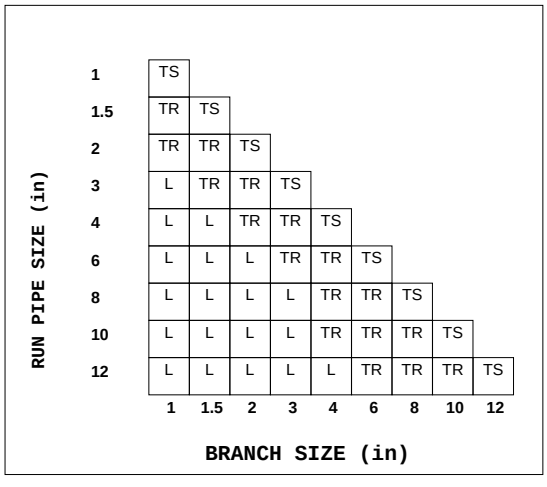
BRANCH TABLE (T_B0AC01)



L : OUTLET
TS : STRAIGHT TEE
TR : REDUCING TEE

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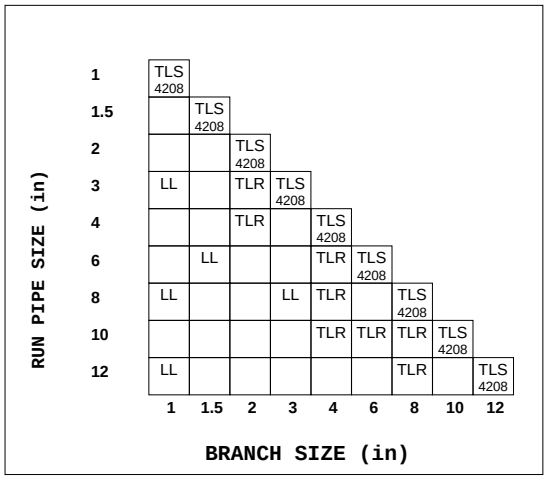
BRANCH TABLE (T_B0AC01_2)



LL : LATROLET
TLS : STRAIGHT LATERAL TEE
TLR : REDUCING LATERAL TEE

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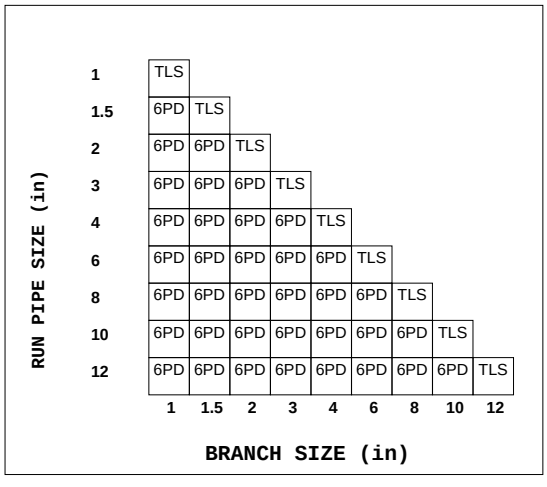
BRANCH TABLE (T_B0AC01_3)



6PD : REINFORCING PAD 60 DEG
TLS : STRAIGHT LATERAL TEE

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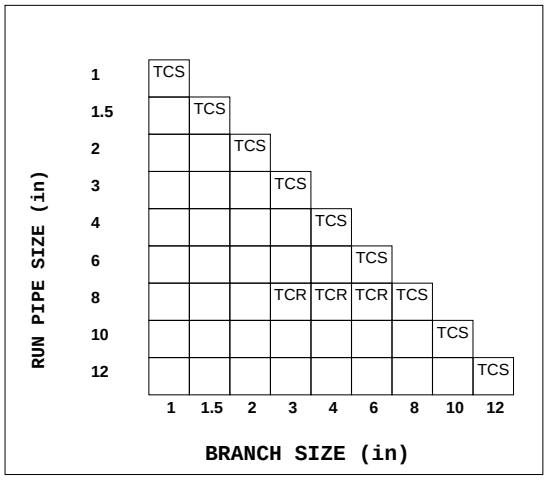
BRANCH TABLE (T_B0AC01_4)



TCR : REDUCING CROSS TEE
TCS : STRAIGHT CROSS TEE

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PIPING CLASS

B0AC03 REV NO. 2

Material : Killed CS
Rating : ASME CLASS 300
Flange Face : RF
C.A.(mm) : 0.00
Gasket : Spiral Wound
Service : PROCESS - CATALYST : / CATALYST
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
6	PIPE THICKNESS CALCULATION TO INCLUDE CORROSION AND EROSION ALLOWANCES DUE TO THE PROCESS CATALYST FLOW, AS PER PROCESS LICENSOR SPECIFICATIONS

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
541	NPT(F) (L)
781	CLASS 600 (B,F,G)

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PIPING CLASS
B0AC03 REV NO. 2

PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		XXS		P01A-0014U	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1.5		XXS		P01A-00162	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	2		XXS		P01A-001R0	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	3		XXS		P01A-001SB	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	4		XXS		P01A-001TV	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	6		XXS		P01A-001VH	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	8		XXS		P01A-001WR	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	10		XXS		P01A-0079W	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		XXS		P02A-000XJ	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1.5		XXS		P02A-002N4	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	2		XXS		P02A-00111	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		XXS		P02A-002JA	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		XXS		P02A-002K0	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		XXS		P02A-002K1	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		XXS		P02A-003SR	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	10		XXS		P02A-003RY	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		XXS		P03A-000U8	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1.5		XXS		P03A-002KD	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	2		XXS		P03A-000XH	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		XXS		P03A-002FU	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		XXS		P03A-002GH	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		XXS		P03A-002GJ	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		XXS		P03A-003PD	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	10		XXS		P03A-003NL	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		XXS		P21A-002DP	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5		XXS		P21A-003KU	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2		XXS		P21A-002G3	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		XXS		P21A-003GV	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		XXS		P21A-003HF	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6		XXS		P21A-003HG	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8		XXS		P21A-004A3	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10		XXS		P21A-0049B	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5	1	XXS	XXS	P24A-00H61	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	XXS	XXS	P24A-00H63	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	XXS	XXS	P24A-006TT	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	XXS	XXS	P24A-00K07	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	XXS	XXS	P24A-00GPM	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	XXS	XXS	P24A-00GT8	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	XXS	XXS	P24A-00GT9	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	XXS	XXS	P24A-00K08	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	XXS	XXS	P24A-00K09	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	XXS	XXS	P24A-00K4L	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	XXS	XXS	P24A-00K4M	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	XXS	XXS	P24A-00K4N	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	6	XXS	XXS	P24A-00K4P	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	8	XXS	XXS	P24A-00K4R	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	

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CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5	1	XXS	XXS	P27A-004NR	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	XXS	XXS	P27A-0033N	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	XXS	XXS	P27A-00339	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	XXS	XXS	P27A-006BZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	XXS	XXS	P27A-006C9	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	1.5	XXS	XXS	P27A-0073V	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	XXS	XXS	P27A-0074A	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	XXS	XXS	P27A-0074Z	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	XXS	XXS	P27A-007PA	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	XXS	XXS	P27A-007R2	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	XXS	XXS	P27A-007WJ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	XXS	XXS	P27A-007XR	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	XXS	XXS	P27A-00EPT	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	6	XXS	XXS	P27A-00EPU	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	8	XXS	XXS	P27A-00EPV	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5	1	XXS	XXS	P28A-008W0	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	XXS	XXS	P28A-004KN	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	XXS	XXS	P28A-004KP	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	XXS	XXS	P28A-00BP2	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	XXS	XXS	P28A-008GE	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	1.5	XXS	XXS	P28A-00BP3	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	XXS	XXS	P28A-008JV	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	XXS	XXS	P28A-008JW	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	XXS	XXS	P28A-00BP4	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	XXS	XXS	P28A-00BP5	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	XXS	XXS	P28A-00BUJ	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	XXS	XXS	P28A-00BUK	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	XXS	XXS	P28A-00BUL	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	6	XXS	XXS	P28A-00BUM	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	8	XXS	XXS	P28A-00BUN	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		XXS		P29A-000W3	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5		XXS		P29A-0031N	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2		XXS		P29A-000YP	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		XXS		P29A-000L4	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		XXS		P29A-000M5	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6		XXS		P29A-000N9	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8		XXS		P29A-000PH	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10		XXS		P29A-00347	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		10.60mm		P41A-001AT	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		10.60mm		P41A-001AU	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
541	1.5	1			P31B-005J1	Outlet ASTM A105 Class 6000 MSS SP-97 NPT	
541	2 - 2.5	1			P31B-005J3	Outlet ASTM A105 Class 6000 MSS SP-97 NPT	
541	3 - 10	1			P31B-007KG	Outlet ASTM A105 Class 6000 MSS SP-97 NPT	
1	3	1	XXS	XXS	P31B-00B48	Outlet ASTM A105 MSS SP-97 BW	
1		1	XXS	XXS	P31B-00B04	Outlet ASTM A105 MSS SP-97 BW	
1	6	1	XXS	XXS	P31B-00AYY	Outlet ASTM A105 MSS SP-97 BW	

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OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	8	1	XXS	XXS	P31B-00XLF	Outlet ASTM A105 MSS SP-97 BW	
1	10	1	XXS	XXS	P31B-00XLH	Outlet ASTM A105 MSS SP-97 BW	
1	4	1.5	XXS	XXS	P31B-00BMC	Outlet ASTM A105 MSS SP-97 BW	
1	6	1.5	XXS	XXS	P31B-00BJ3	Outlet ASTM A105 MSS SP-97 BW	
1	8	1.5	XXS	XXS	P31B-00XLG	Outlet ASTM A105 MSS SP-97 BW	
1	10	1.5	XXS	XXS	P31B-00XLJ	Outlet ASTM A105 MSS SP-97 BW	
1	6	2	XXS	XXS	P31B-007SA	Outlet ASTM A105 MSS SP-97 BW	
1	8	2	XXS	XXS	P31B-00AGM	Outlet ASTM A105 MSS SP-97 BW	
1	10	2	XXS	XXS	P31B-00ARY	Outlet ASTM A105 MSS SP-97 BW	
1	8	3	XXS	XXS	P31B-009XT	Outlet ASTM A105 MSS SP-97 BW	
1	10	3	XXS	XXS	P31B-0097J	Outlet ASTM A105 MSS SP-97 BW	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P30B-0002F	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1.5				P30B-0002G	Plug ASTM A105 ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		XXS		P61B-003MB	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	1.5		XXS		P61B-003MR	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	2		XXS		P61B-003MS	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	3		XXS		P61B-0090D	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	4		XXS		P61B-009SC	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	6		XXS		P61B-009SD	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	8		XXS		P61B-00A9S	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	10		XXS		P61B-00A9R	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
781	1		XXS		P61B-003TC	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	1.5		XXS		P61B-009N1	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	2		XXS		P61B-003JR	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	3		XXS		P61B-0092V	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	4		XXS		P61B-0092W	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	6		XXS		P61B-00A9U	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	8		XXS		P61B-00A9V	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	10		XXS		P61B-00A9T	Flange WN ASTM A105 Class 600 ASME B16.5 RF	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P67B-000GK	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	1.5				P67B-000GL	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	2				P67B-000GM	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	3				P67B-000GN	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	4				P67B-000GP	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	6				P67B-000GY	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	8				P67B-000GZ	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	10				P67B-000GR	Blind flange ASTM A105 Class 300 ASME B16.5 RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000G5	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000G6	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	6				P73T-000G7	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	8				P73T-000G8	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

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GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	10				P73T-000FX	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1				P73T-000JA	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1.5				P73T-000JB	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	2				P73T-000JH	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	3				P73T-000JL	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	4				P73T-000JM	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	6				P73T-000JN	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	8				P73T-000JP	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	10				P73T-000JC	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1-10				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
781	1-6				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
781	8-10				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	

BALL VALVE (Q)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P84B-001GN	Ball valve Long-pattern ASTM A105 Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design C.A.=6.0mm	
1	1.5				P84B-001GP	Ball valve Long-pattern ASTM A105 Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design C.A.=6.0mm	
1	2				P84C-006RF	Ball valve Long-pattern ASTM A216 Grade WCB Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design C.A.=6.0mm	
1	3				P84C-006RG	Ball valve Long-pattern ASTM A216 Grade WCB Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design C.A.=6.0mm	
1	4				P84C-006RH	Ball valve Long-pattern ASTM A216 Grade WCB Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Gear operated Full bore Fire tested design C.A.=6.0mm	
1	6				P84C-006RK	Ball valve Long-pattern ASTM A216 Grade WCB Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design C.A.=6.0mm	
1	8				P84C-006RL	Ball valve Long-pattern ASTM A216 Grade WCB Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design C.A.=6.0mm	
1	10				P84C-006RJ	Ball valve Long-pattern ASTM A216 Grade WCB Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design C.A.=6.0mm	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P71B-000B3	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71B-000B4	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	2				P71B-000B6	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	3				P71B-000B7	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	4				P71B-000B8	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	6				P71B-000B9	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	8				P71B-000BA	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	10				P71B-000B5	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	

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BOLT TABLE (B_B0AC03 , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
1	4	0.625	80	P80S-003XD		
1.5	4	0.750	95	P80S-00414		
2	8	0.625	90	P80S-003XF		
3	8	0.750	110	P80S-003XK		
4	8	0.750	115	P80S-003XL		
6	12	0.750	125	P80S-003XN		
8	12	0.875	140	P80S-0041D		
10	16	1.000	160	P80S-0043K		

BOLT TABLE (B_B0AC03_781 , STUD ASME RF, OPTION CODE 781)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
1	4	0.625	95	P80S-003XG		
1.5	4	0.750	110	P80S-003XK		
2	8	0.625	110	P80S-003VC		
3	8	0.750	130	P80S-003XP		
4	8	0.875	150	P80S-0041F		
6	12	1.000	175	P80S-0043P		
8	12	1.125	195	P80S-0046W		
10	16	1.250	250	P80S-004AY		

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BRANCH TABLE (T_B0AC03)

RUN PIPE SIZE (in) \ BRANCH SIZE (in)	1	1.5	2	3	4	6	8	10
1	TS							
1.5	TR	TS						
2	TR	TR	TS					
3	L	TR	TR	TS				
4	L	L	TR	TR	TS			
6	L	L	L	TR	TR	TS		
8	L	L	L	L	TR	TR	TS	
10	L	L	L	L	TR	TR	TR	TS

L : OUTLET
TS : STRAIGHT TEE
TR : REDUCING TEE

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Material : Killed CS
Rating : ASME CLASS 300
Flange Face : RF
C.A.(mm) : 0.00
Gasket : Spiral Wound
Service : PROCESS - CATALYST : / CATALYST
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
6	PIPE THICKNESS CALCULATION TO INCLUDE CORROSION AND EROSION ALLOWANCES DUE TO THE PROCESS CATALYST FLOW, AS PER PROCESS LICENSOR SPECIFICATIONS

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
541	NPT(F) (L)
781	CLASS 600 (B,F,G)

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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		XXS		P01A-0014U	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1.5		XXS		P01A-00162	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	2		XXS		P01A-001R0	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	3		XXS		P01A-001SB	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	4		XXS		P01A-001TV	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	6		XXS		P01A-001VH	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	8		XXS		P01A-001WR	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	10		XXS		P01A-0079W	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		XXS		P02A-000XJ	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1.5		XXS		P02A-002N4	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	2		XXS		P02A-00111	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		XXS		P02A-002JA	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		XXS		P02A-002K0	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		XXS		P02A-002K1	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		XXS		P02A-003SR	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	10		XXS		P02A-003RY	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		XXS		P03A-000U8	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1.5		XXS		P03A-002KD	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	2		XXS		P03A-000XH	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		XXS		P03A-002FU	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		XXS		P03A-002GH	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		XXS		P03A-002GJ	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		XXS		P03A-003PD	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	10		XXS		P03A-003NL	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		XXS		P21A-002DP	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5		XXS		P21A-003KU	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2		XXS		P21A-002G3	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		XXS		P21A-003GV	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		XXS		P21A-003HF	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6		XXS		P21A-003HG	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8		XXS		P21A-004A3	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10		XXS		P21A-0049B	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5	1	XXS	XXS	P24A-00H61	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	XXS	XXS	P24A-00H63	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	XXS	XXS	P24A-006TT	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	XXS	XXS	P24A-00K07	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	XXS	XXS	P24A-00GPM	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	XXS	XXS	P24A-00GT8	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	XXS	XXS	P24A-00GT9	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	XXS	XXS	P24A-00K08	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	XXS	XXS	P24A-00K09	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	XXS	XXS	P24A-00K4L	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	XXS	XXS	P24A-00K4M	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	XXS	XXS	P24A-00K4N	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	6	XXS	XXS	P24A-00K4P	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	8	XXS	XXS	P24A-00K4R	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	

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CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5	1	XXS	XXS	P27A-004NR	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	XXS	XXS	P27A-0033N	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	XXS	XXS	P27A-00339	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	XXS	XXS	P27A-006BZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	XXS	XXS	P27A-006C9	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	1.5	XXS	XXS	P27A-0073V	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	XXS	XXS	P27A-0074A	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	XXS	XXS	P27A-0074Z	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	XXS	XXS	P27A-007PA	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	XXS	XXS	P27A-007R2	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	XXS	XXS	P27A-007WJ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	XXS	XXS	P27A-007XR	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	XXS	XXS	P27A-00EPT	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	6	XXS	XXS	P27A-00EPU	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	8	XXS	XXS	P27A-00EPV	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5	1	XXS	XXS	P28A-008W0	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	XXS	XXS	P28A-004KN	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	XXS	XXS	P28A-004KP	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	XXS	XXS	P28A-00BP2	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	XXS	XXS	P28A-008GE	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	1.5	XXS	XXS	P28A-00BP3	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	XXS	XXS	P28A-008JV	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	XXS	XXS	P28A-008JW	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	XXS	XXS	P28A-00BP4	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	XXS	XXS	P28A-00BP5	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	XXS	XXS	P28A-00BUJ	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	XXS	XXS	P28A-00BUK	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	XXS	XXS	P28A-00BUL	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	6	XXS	XXS	P28A-00BUM	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	8	XXS	XXS	P28A-00BUN	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		XXS		P29A-000W3	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5		XXS		P29A-0031N	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2		XXS		P29A-000YP	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		XXS		P29A-000L4	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		XXS		P29A-000M5	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6		XXS		P29A-000N9	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8		XXS		P29A-000PH	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10		XXS		P29A-00347	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		10.60mm		P41A-001AT	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		10.60mm		P41A-001AU	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
541	1.5	1			P31B-005J1	Outlet ASTM A105 Class 6000 MSS SP-97 NPT	
541	2 - 2.5	1			P31B-005J3	Outlet ASTM A105 Class 6000 MSS SP-97 NPT	
541	3 - 10	1			P31B-007KG	Outlet ASTM A105 Class 6000 MSS SP-97 NPT	
1	3	1	XXS	XXS	P31B-00B48	Outlet ASTM A105 MSS SP-97 BW	
1		1	XXS	XXS	P31B-00B04	Outlet ASTM A105 MSS SP-97 BW	
1	6	1	XXS	XXS	P31B-00AYY	Outlet ASTM A105 MSS SP-97 BW	

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OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	8	1	XXS	XXS	P31B-00XLF	Outlet ASTM A105 MSS SP-97 BW	
1	10	1	XXS	XXS	P31B-00XLH	Outlet ASTM A105 MSS SP-97 BW	
1	4	1.5	XXS	XXS	P31B-00BMC	Outlet ASTM A105 MSS SP-97 BW	
1	6	1.5	XXS	XXS	P31B-00BJ3	Outlet ASTM A105 MSS SP-97 BW	
1	8	1.5	XXS	XXS	P31B-00XLG	Outlet ASTM A105 MSS SP-97 BW	
1	10	1.5	XXS	XXS	P31B-00XLJ	Outlet ASTM A105 MSS SP-97 BW	
1	6	2	XXS	XXS	P31B-007SA	Outlet ASTM A105 MSS SP-97 BW	
1	8	2	XXS	XXS	P31B-00AGM	Outlet ASTM A105 MSS SP-97 BW	
1	10	2	XXS	XXS	P31B-00ARY	Outlet ASTM A105 MSS SP-97 BW	
1	8	3	XXS	XXS	P31B-009XT	Outlet ASTM A105 MSS SP-97 BW	
1	10	3	XXS	XXS	P31B-0097J	Outlet ASTM A105 MSS SP-97 BW	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P30B-0002F	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1.5				P30B-0002G	Plug ASTM A105 ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		XXS		P61B-003MB	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	1.5		XXS		P61B-003MR	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	2		XXS		P61B-003MS	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	3		XXS		P61B-0090D	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	4		XXS		P61B-009SC	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	6		XXS		P61B-009SD	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	8		XXS		P61B-00A9S	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	10		XXS		P61B-00A9R	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
781	1		XXS		P61B-003TC	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	1.5		XXS		P61B-009N1	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	2		XXS		P61B-003JR	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	3		XXS		P61B-0092V	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	4		XXS		P61B-0092W	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	6		XXS		P61B-00A9U	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	8		XXS		P61B-00A9V	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	10		XXS		P61B-00A9T	Flange WN ASTM A105 Class 600 ASME B16.5 RF	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P67B-000GK	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	1.5				P67B-000GL	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	2				P67B-000GM	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	3				P67B-000GN	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	4				P67B-000GP	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	6				P67B-000GY	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	8				P67B-000GZ	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	10				P67B-000GR	Blind flange ASTM A105 Class 300 ASME B16.5 RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000G5	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000G6	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	6				P73T-000G7	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	8				P73T-000G8	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

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GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	10				P73T-000FX	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1				P73T-000JA	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1.5				P73T-000JB	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	2				P73T-000JH	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	3				P73T-000JL	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	4				P73T-000JM	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	6				P73T-000JN	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	8				P73T-000JP	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	10				P73T-000JC	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1-10				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
781	1-6				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
781	8-10				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	

BALL VALVE (Q)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P84B-001GN	Ball valve Long-pattern ASTM A105 Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design C.A.=6.0mm	
1	1.5				P84B-001GP	Ball valve Long-pattern ASTM A105 Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design C.A.=6.0mm	
1	2				P84C-006RF	Ball valve Long-pattern ASTM A216 Grade WCB Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design C.A.=6.0mm	
1	3				P84C-006RG	Ball valve Long-pattern ASTM A216 Grade WCB Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design C.A.=6.0mm	
1	4				P84C-006RH	Ball valve Long-pattern ASTM A216 Grade WCB Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Gear operated Full bore Fire tested design C.A.=6.0mm	
1	6				P84C-006RK	Ball valve Long-pattern ASTM A216 Grade WCB Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design C.A.=6.0mm	
1	8				P84C-006RL	Ball valve Long-pattern ASTM A216 Grade WCB Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design C.A.=6.0mm	
1	10				P84C-006RJ	Ball valve Long-pattern ASTM A216 Grade WCB Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design C.A.=6.0mm	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P71B-000B3	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71B-000B4	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	2				P71B-000B6	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	3				P71B-000B7	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	4				P71B-000B8	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	6				P71B-000B9	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	8				P71B-000BA	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	10				P71B-000B5	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	

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BOLT TABLE (B_B0AC04 , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
1	4	0.625	80	P80S-003XD		
1.5	4	0.750	95	P80S-00414		
2	8	0.625	90	P80S-003XF		
3	8	0.750	110	P80S-003XK		
4	8	0.750	115	P80S-003XL		
6	12	0.750	125	P80S-003XN		
8	12	0.875	140	P80S-0041D		
10	16	1.000	160	P80S-0043K		

BOLT TABLE (B_B0AC04_781 , STUD ASME RF, OPTION CODE 781)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
1	4	0.625	95	P80S-003XG		
1.5	4	0.750	110	P80S-003XK		
2	8	0.625	110	P80S-003VC		
3	8	0.750	130	P80S-003XP		
4	8	0.875	150	P80S-0041F		
6	12	1.000	175	P80S-0043P		
8	12	1.125	195	P80S-0046W		
10	16	1.250	250	P80S-004AY		

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BRANCH TABLE (T_B0AC04)

RUN PIPE SIZE (in) \ BRANCH SIZE (in)	1	1.5	2	3	4	6	8	10
1	TS							
1.5	TR	TS						
2	TR	TR	TS					
3	L	TR	TR	TS				
4	L	L	TR	TR	TS			
6	L	L	L	TR	TR	TS		
8	L	L	L	L	TR	TR	TS	
10	L	L	L	L	TR	TR	TR	TS

TS : STRAIGHT TEE
L : OUTLET
TR : REDUCING TEE

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Material : SS304L
Rating : ASME CLASS 300
Flange Face : RF
C.A.(mm) : 0.00
Gasket : Spiral Wound
Service : EFFLUENT
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
541	NPT(F) (CA,L)
714	SW - NPT(F) (V)
781	CLASS 600 (B,F,G)
3001	INSULATION GASKET KIT AND BOLTS FOR FLANGE (G)

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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P01J-000UC	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE	
1	0.75		SCH80S		P01J-000UD	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE	
1	1		SCH80S		P01J-000UE	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE	
1	1.5		SCH80S		P01J-000UF	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE	
1	2		SCH10S		P01J-000RD	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M BE	
1	3		SCH10S		P01J-000RE	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M BE	
1	4		SCH10S		P01J-000RF	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M BE	
1	6		SCH40S		P01J-000RH	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P02K-0001K	90 degree elbow ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	0.75				P02K-0001L	90 degree elbow ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	1				P02K-0001M	90 degree elbow ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	1.5				P02K-0001N	90 degree elbow ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	2		SCH10S		P02J-000J0	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	3		SCH10S		P02J-000J1	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	4		SCH10S		P02J-000J2	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	6		SCH40S		P02J-000J4	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P03K-0001G	45 degree elbow ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	0.75				P03K-0001H	45 degree elbow ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	1				P03K-0001J	45 degree elbow ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	1.5				P03K-0001K	45 degree elbow ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	2		SCH10S		P03J-000HS	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	3		SCH10S		P03J-000HT	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	4		SCH10S		P03J-000HU	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	6		SCH40S		P03J-000HW	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P21K-0001G	Straight tee ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	0.75				P21K-0001H	Straight tee ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	1				P21K-0001J	Straight tee ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	1.5				P21K-0001K	Straight tee ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	2		SCH10S		P21J-000HM	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	3		SCH10S		P21J-000HN	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	4		SCH10S		P21J-000HP	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	6		SCH40S		P21J-000HS	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75			P24K-0001X	Reducing tee ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	1.5	0.75			P24K-0001Z	Reducing tee ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	1.5	1			P24K-00020	Reducing tee ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	2	1	SCH10S	SCH80S	P24J-0065A	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	2	1.5	SCH10S	SCH80S	P24J-0065B	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	3	1.5	SCH10S	SCH80S	P24J-004SV	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	3	2	SCH10S	SCH10S	P24J-002H7	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	4	2	SCH10S	SCH10S	P24J-002H8	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	4	3	SCH10S	SCH10S	P24J-002H9	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	6	3	SCH40S	SCH10S	P24J-002HC	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	6	4	SCH40S	SCH10S	P24J-002HD	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	

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CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	SCH10S	SCH10S	P27J-001PS	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	4	2	SCH10S	SCH10S	P27J-001PT	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	4	3	SCH10S	SCH10S	P27J-001PU	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	6	3	SCH40S	SCH10S	P27J-001PX	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	6	4	SCH40S	SCH10S	P27J-001PY	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	SCH10S	SCH10S	P28J-001P8	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	4	2	SCH10S	SCH10S	P28J-001P9	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	4	3	SCH10S	SCH10S	P28J-001PA	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	6	3	SCH40S	SCH10S	P28J-001PD	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	6	4	SCH40S	SCH10S	P28J-001PE	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P29K-0001V	Cap ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	0.75				P29K-0001W	Cap ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	1				P29K-0001X	Cap ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	1.5				P29K-0001Y	Cap ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	2		SCH10S		P29J-000G1	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	3		SCH10S		P29J-000G2	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	4		SCH10S		P29J-000G3	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	6		SCH40S		P29J-000G5	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
541	0.75				P29K-00020	Cap ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P41J-001FS	Straight nipple ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		SCH80S		P41J-001FT	Straight nipple ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		SCH80S		P41J-001FU	Straight nipple ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		SCH80S		P41J-001FV	Straight nipple ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

CON SWAGED NIPPLE (SNC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH80S	SCH80S	P42J-00081	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	SCH80S	SCH80S	P42J-00082	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	SCH80S	SCH80S	P42J-00083	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	SCH80S	SCH80S	P42J-00084	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	SCH80S	SCH80S	P42J-00085	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	SCH80S	SCH80S	P42J-00086	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	SCH10S	SCH80S	P42J-000F9	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	SCH10S	SCH80S	P42J-000F6	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	SCH10S	SCH80S	P42J-000F7	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	SCH10S	SCH80S	P42J-000F8	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	SCH10S	SCH80S	P42J-000AG	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	

ECC SWAGED NIPPLE (SNE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH80S	SCH80S	P43J-0008D	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	SCH80S	SCH80S	P43J-0008E	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	SCH80S	SCH80S	P43J-0008F	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	

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ECC SWAGED NIPPLE (SNE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5	0.5	SCH80S	SCH80S	P43J-0008G	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	SCH80S	SCH80S	P43J-0008H	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	SCH80S	SCH80S	P43J-0008J	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	SCH10S	SCH80S	P43J-000CT	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	SCH10S	SCH80S	P43J-000CU	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	SCH10S	SCH80S	P43J-000CV	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	SCH10S	SCH80S	P43J-000CW	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	SCH10S	SCH80S	P43J-0008P	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	

COUPLING (CPS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P47K-00035	Coupling ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW - SW	
1	0.75				P47K-00036	Coupling ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW - SW	
1	1				P47K-00037	Coupling ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW - SW	
1	1.5				P47K-00038	Coupling ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW - SW	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2 - 2.5	0.75			P31K-00GFG	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 SW	
1	3 - 5	0.75			P31K-00GFH	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 SW	
1	6 - 12	0.75			P31K-008YY	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 SW	
1	3	1			P31K-008ZG	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 SW	
1	4 - 5	1			P31K-00GFL	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 SW	
1	6 - 10	1			P31K-008ZU	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 SW	
1	4	1.5			P31K-0099M	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 SW	
1	5 - 6	1.5			P31K-00GFS	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 SW	
541	1	0.75			P31K-00911	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 NPT	
541	1.5	0.75			P31K-00916	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 NPT	
541	2 - 2.5	0.75			P31K-00GFJ	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 NPT	
541	3 - 5	0.75			P31K-00GFK	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 NPT	
541	6 - 12	0.75			P31K-0091X	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 NPT	
1	6	2	SCH40S	SCH10S	P31K-005AW	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30K-0001G	Plug ASTM A182 Grade F304/F304L dual grade ASME B16.11 NPT Round head	
1	0.75				P30K-0001H	Plug ASTM A182 Grade F304/F304L dual grade ASME B16.11 NPT Round head	
1	1				P30K-0001J	Plug ASTM A182 Grade F304/F304L dual grade ASME B16.11 NPT Round head	
1	1.5				P30K-0001K	Plug ASTM A182 Grade F304/F304L dual grade ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P61K-003A9	Flange SW ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
1	0.75		SCH80S		P61K-003AA	Flange SW ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
1	1		SCH80S		P61K-003AB	Flange SW ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
1	1.5		SCH80S		P61K-003AC	Flange SW ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
1	2		SCH10S		P61K-0023W	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
1	3		SCH10S		P61K-0023X	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
1	4		SCH10S		P61K-0023Y	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
1	6		SCH40S		P61K-0023Z	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
781	0.5		SCH80S		P61K-003AT	Flange SW ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 RF	
781	0.75		SCH80S		P61K-003AU	Flange SW ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 RF	
781	1		SCH80S		P61K-003AV	Flange SW ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 RF	
781	1.5		SCH80S		P61K-003AW	Flange SW ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 RF	
781	2		SCH10S		P61K-00290	Flange WN ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 RF	

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FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
781	3		SCH10S		P61K-003D3	Flange WN ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 RF	
781	4		SCH10S		P61K-0046H	Flange WN ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 RF	
781	6		SCH40S		P61K-00293	Flange WN ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 RF	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67K-000KH	Blind flange ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
1	0.75				P67K-000KJ	Blind flange ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
1	1				P67K-000KK	Blind flange ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
1	1.5				P67K-000KL	Blind flange ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
1	2				P67K-000KP	Blind flange ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
1	3				P67K-000KR	Blind flange ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
1	4				P67K-000KS	Blind flange ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
1	6				P67K-000KT	Blind flange ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000FT	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000FU	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000G5	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000G6	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	6				P73T-000G7	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
3001	6				P78U-0006E	Insulation gasket kit Glass reinforced epoxy Class 300 Manufacturer-standard Flange ASME B16.5 RF	
781	0.5				P73T-000J8	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	0.75				P73T-000J9	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1				P73T-000JA	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1.5				P73T-000JB	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	2				P73T-000JH	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	3				P73T-000JL	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	4				P73T-000JM	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	6				P73T-000JN	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-6				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
781	0.5-6				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81K-00108	Gate valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	0.75				P81K-00109	Gate valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	1				P81K-0010A	Gate valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	1.5				P81K-0010B	Gate valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	2				P81L-0022J	Gate valve ASTM A351 Grade CF8 Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	3				P81L-0022K	Gate valve ASTM A351 Grade CF8 Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	4				P81L-0022L	Gate valve ASTM A351 Grade CF8 Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	

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GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	6				P81L-0022M	Gate valve ASTM A351 Grade CF8 Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
714	0.5				P81K-001LC	Gate valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW - NPT Trim number 12 BB-BG-OS&Y Handwheel operated	
714	0.75				P81K-001FD	Gate valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW - NPT Trim number 12 BB-BG-OS&Y Handwheel operated	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82K-000NR	Globe valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	0.75				P82K-000NS	Globe valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	1				P82K-000NT	Globe valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	1.5				P82K-000NU	Globe valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	2				P82L-0013X	Globe valve ASTM A351 Grade CF8 Class 300 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	3				P82L-0013Y	Globe valve ASTM A351 Grade CF8 Class 300 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	4				P82L-0013Z	Globe valve ASTM A351 Grade CF8 Class 300 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	6				P82L-00140	Globe valve ASTM A351 Grade CF8 Class 300 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83K-000LM	Check valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 Lift-type Bolted cover	
1	0.75				P83K-000LN	Check valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 Lift-type Bolted cover	
1	1				P83K-000LP	Check valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 Lift-type Bolted cover	
1	1.5				P83K-000LR	Check valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 Lift-type Bolted cover	
1	2				P83L-0013U	Check valve ASTM A351 Grade CF8 Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	3				P83L-0013V	Check valve ASTM A351 Grade CF8 Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	4				P83L-0013W	Check valve ASTM A351 Grade CF8 Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	6				P83L-001AX	Check valve ASTM A351 Grade CF8 Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71K-0007C	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 300 Standard-drawing Flange ASME B16.5 RF	
1	0.75				P71K-0007D	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 300 Standard-drawing Flange ASME B16.5 RF	
1	1				P71K-0007E	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 300 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71K-0007F	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 300 Standard-drawing Flange ASME B16.5 RF	
1	2				P71K-0007G	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 300 Standard-drawing Flange ASME B16.5 RF	
1	3				P71K-0007H	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 300 Standard-drawing Flange ASME B16.5 RF	
1	4				P71K-0007J	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 300 Standard-drawing Flange ASME B16.5 RF	
1	6				P71K-0007K	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 300 Standard-drawing Flange ASME B16.5 RF	

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BOLT TABLE (B_B0JP , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-003V4		
0.75	4	0.625	75	P80S-003XC		
1	4	0.625	80	P80S-003XD		
1.5	4	0.750	95	P80S-00414		
2	8	0.625	90	P80S-003XF		
3	8	0.750	110	P80S-003XK		
4	8	0.750	115	P80S-003XL		
6	12	0.750	125	P80S-003XN		

BOLT TABLE (B_B0JP_781 , STUD ASME RF, OPTION CODE 781)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	80	P80S-003V6		
0.75	4	0.625	90	P80S-003XF		
1	4	0.625	95	P80S-003XG		
1.5	4	0.750	110	P80S-003XK		
2	8	0.625	110	P80S-003VC		
3	8	0.750	130	P80S-003XP		
4	8	0.875	150	P80S-0041F		
6	12	1.000	175	P80S-0043P		

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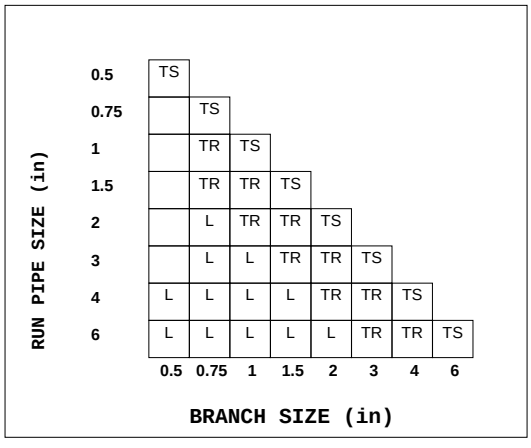
BRANCH TABLE (T_B0JP)



L : OUTLET
TS : STRAIGHT TEE
TR : REDUCING TEE

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PIPING CLASS

B0JQ REV NO. 2

Material : SS304L
Rating : ASME CLASS 300
Flange Face : RF
C.A.(mm) : 0.80
Gasket : Spiral Wound
Service : PROCESS - WET SOUR SERVICE SUBJECT TO NACE STD. : / RICH AMINE / SOUR GAS / SOUR WATER

Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
2	USE OF SOFT SEATED BALL, PLUG AND BUTTERFLY VALVES SHALL BE LIMITED TO MAXIMUM OF 204DEGC (400DEGF)
5	BOLTING CONFIRMING TO B7M / 2HM SHALL BE USED UNDER CONDITIONS (A) DIRECT EXPOSURE TO SOUR ENVIRONMENTS (B) WHEN THE BOLTING WILL BE BURIED OR INSULATED

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
541	NPT(F) (CA,F,L)
781	CLASS 600 (B,F,G)
4608	VALVE WITH NIPPLES (V)

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PIPING CLASS
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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P01J-002C1	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE Moderate wet H2S service	
1	0.75		SCH80S		P01J-002C2	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE Moderate wet H2S service	
1	1		SCH80S		P01J-002C3	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE Moderate wet H2S service	
1	1.5		SCH80S		P01J-002C4	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE Moderate wet H2S service	
1	2		SCH10S		P01J-002C5	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M BE Moderate wet H2S service	
1	3		SCH10S		P01J-002C6	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M BE Moderate wet H2S service	
1	4		SCH40S		P01J-002C7	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M BE Moderate wet H2S service	
1	6		SCH40S		P01J-002C8	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M BE Moderate wet H2S service	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P02J-001VE	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius Moderate wet H2S service	
1	0.75		SCH80S		P02J-001VF	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius Moderate wet H2S service	
1	1		SCH80S		P02J-001VG	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius Moderate wet H2S service	
1	1.5		SCH80S		P02J-001VH	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius Moderate wet H2S service	
1	2		SCH10S		P02J-001VJ	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius Moderate wet H2S service	
1	3		SCH10S		P02J-001VK	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius Moderate wet H2S service	
1	4		SCH40S		P02J-001VL	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius Moderate wet H2S service	
1	6		SCH40S		P02J-001VM	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius Moderate wet H2S service	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P03J-001SW	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius Moderate wet H2S service	
1	0.75		SCH80S		P03J-001SX	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius Moderate wet H2S service	
1	1		SCH80S		P03J-001SY	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius Moderate wet H2S service	
1	1.5		SCH80S		P03J-001SZ	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius Moderate wet H2S service	
1	2		SCH10S		P03J-001T0	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius Moderate wet H2S service	
1	3		SCH10S		P03J-001T1	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius Moderate wet H2S service	
1	4		SCH40S		P03J-001T2	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius Moderate wet H2S service	
1	6		SCH40S		P03J-001T3	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius Moderate wet H2S service	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P21J-001JE	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	0.75		SCH80S		P21J-001JF	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	1		SCH80S		P21J-001JG	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	1.5		SCH80S		P21J-001JH	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	2		SCH10S		P21J-001JJ	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	3		SCH10S		P21J-001JK	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	4		SCH40S		P21J-001JL	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	6		SCH40S		P21J-001JM	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75	SCH80S	SCH80S	P24J-006UA	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	1.0	0.75	SCH80S	SCH80S	P24J-006UB	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	

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REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5	1	SCH80S	SCH80S	P24J-006UC	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	2	1	SCH10S	SCH80S	P24J-006UD	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	2	1.5	SCH10S	SCH80S	P24J-006UE	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	3	1.5	SCH10S	SCH80S	P24J-006UF	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	3	2	SCH10S	SCH10S	P24J-006UG	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	4	2	SCH40S	SCH10S	P24J-006UH	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	4	3	SCH40S	SCH10S	P24J-006UJ	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	6	3	SCH40S	SCH10S	P24J-006UK	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	6	4	SCH40S	SCH40S	P24J-006UL	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH80S	SCH80S	P27J-005MW	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	1	0.5	SCH80S	SCH80S	P27J-005MX	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	1	0.75	SCH80S	SCH80S	P27J-005MY	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	1.5	0.5	SCH80S	SCH80S	P27J-005MZ	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	1.5	0.75	SCH80S	SCH80S	P27J-005N0	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	1.5	1	SCH80S	SCH80S	P27J-005N1	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	2	0.75	SCH10S	SCH80S	P27J-005N2	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	2	1	SCH10S	SCH80S	P27J-005N3	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	2	1.5	SCH10S	SCH80S	P27J-005N4	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	3	1.5	SCH10S	SCH80S	P27J-005N5	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	3	2	SCH10S	SCH10S	P27J-005N6	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	4	1.5	SCH40S	SCH80S	P27J-005N7	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	4	2	SCH40S	SCH10S	P27J-005N8	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	4	3	SCH40S	SCH10S	P27J-005N9	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	6	3	SCH40S	SCH10S	P27J-005NA	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	6	4	SCH40S	SCH40S	P27J-005NB	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH80S	SCH80S	P28J-005NR	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	1	0.5	SCH80S	SCH80S	P28J-005NS	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	1	0.75	SCH80S	SCH80S	P28J-005NT	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	1.5	0.5	SCH80S	SCH80S	P28J-005NU	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	1.5	0.75	SCH80S	SCH80S	P28J-005NV	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	1.5	1	SCH80S	SCH80S	P28J-005NW	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	2	0.75	SCH10S	SCH80S	P28J-005NX	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	2	1	SCH10S	SCH80S	P28J-005NY	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	2	1.5	SCH10S	SCH80S	P28J-005NZ	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	3	1.5	SCH10S	SCH80S	P28J-005P0	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	3	2	SCH10S	SCH10S	P28J-005P1	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	4	1.5	SCH40S	SCH80S	P28J-005P2	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	4	2	SCH40S	SCH10S	P28J-005P3	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	4	3	SCH40S	SCH10S	P28J-005P4	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	

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ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	6	3	SCH40S	SCH10S	P28J-005P5	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	6	4	SCH40S	SCH40S	P28J-005P6	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P29J-001CH	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	0.75		SCH80S		P29J-001CJ	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	1		SCH80S		P29J-001CK	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	1.5		SCH80S		P29J-001CL	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	2		SCH10S		P29J-001CM	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	3		SCH10S		P29J-001CN	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	4		SCH40S		P29J-001CP	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	6		SCH40S		P29J-001CR	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
541	0.75				P29K-00047	Cap ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 NPT Moderate wet H2S service	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P41J-001T8	Straight nipple ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Moderate wet H2S service	
1	0.75		SCH80S		P41J-001T9	Straight nipple ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Moderate wet H2S service	
1	1		SCH160		P41J-001V3	Straight nipple ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Moderate wet H2S service	
1	1.5		SCH80S		P41J-001TB	Straight nipple ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Moderate wet H2S service	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
541	1	0.75			P31K-00FM2	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 NPT Moderate wet H2S service	
541	1.5	0.75			P31K-00FM1	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 NPT Moderate wet H2S service	
1	2	0.75	SCH10S	SCH80S	P31K-00EEL	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Moderate wet H2S service	
1	3	0.75	SCH10S	SCH80S	P31K-00EEM	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Moderate wet H2S service	
1	4	0.75	SCH40S	SCH80S	P31K-00EEP	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Moderate wet H2S service	
1	6	0.75	SCH40S	SCH80S	P31K-00EET	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Moderate wet H2S service	
1	3	1	SCH10S	SCH80S	P31K-00EEN	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Moderate wet H2S service	
1	4	1	SCH40S	SCH80S	P31K-00EER	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Moderate wet H2S service	
1	6	1	SCH40S	SCH80S	P31K-00EEU	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Moderate wet H2S service	
1	4	1.5	SCH40S	SCH80S	P31K-00EES	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Moderate wet H2S service	
1	6	1.5	SCH40S	SCH80S	P31K-00EEV	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Moderate wet H2S service	
1	6	2	SCH40S	SCH10S	P31K-00EEW	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Moderate wet H2S service	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30K-0004X	Plug ASTM A182 Grade F304/F304L dual grade ASME B16.11 NPT Round head Moderate wet H2S service	
1	0.75				P30K-0004Y	Plug ASTM A182 Grade F304/F304L dual grade ASME B16.11 NPT Round head Moderate wet H2S service	
1	1				P30K-0004Z	Plug ASTM A182 Grade F304/F304L dual grade ASME B16.11 NPT Round head Moderate wet H2S service	
1	1.5				P30K-00050	Plug ASTM A182 Grade F304/F304L dual grade ASME B16.11 NPT Round head Moderate wet H2S service	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P61K-0059G	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF Moderate wet H2S service	
1	0.75		SCH80S		P61K-0059H	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF Moderate wet H2S service	
1	1		SCH80S		P61K-0059J	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF Moderate wet H2S service	
1	1.5		SCH80S		P61K-0059K	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF Moderate wet H2S service	
1	2		SCH10S		P61K-0059L	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF Moderate wet H2S service	

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FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3		SCH10S		P61K-0059M	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF Moderate wet H2S service	
1	4		SCH40S		P61K-0059N	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF Moderate wet H2S service	
1	6		SCH40S		P61K-0059P	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF Moderate wet H2S service	
541	0.5				P61K-0069J	Flange NPT ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF Moderate wet H2S service	
541	0.75				P61K-00608	Flange NPT ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF Moderate wet H2S service	
781	0.5		SCH80S		P61K-0059R	Flange WN ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 RF Moderate wet H2S service	
781	0.75		SCH80S		P61K-0059S	Flange WN ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 RF Moderate wet H2S service	
781	1		SCH80S		P61K-0059T	Flange WN ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 RF Moderate wet H2S service	
781	1.5		SCH80S		P61K-0059U	Flange WN ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 RF Moderate wet H2S service	
781	2		SCH10S		P61K-0059V	Flange WN ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 RF Moderate wet H2S service	
781	3		SCH10S		P61K-0059W	Flange WN ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 RF Moderate wet H2S service	
781	4		SCH40S		P61K-0059X	Flange WN ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 RF Moderate wet H2S service	
781	6		SCH40S		P61K-0059Y	Flange WN ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 RF Moderate wet H2S service	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67K-001H8	Blind flange ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF Moderate wet H2S service	
1	0.75				P67K-001H9	Blind flange ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF Moderate wet H2S service	
1	1				P67K-001HA	Blind flange ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF Moderate wet H2S service	
1	1.5				P67K-001HB	Blind flange ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF Moderate wet H2S service	
1	2				P67K-001HC	Blind flange ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF Moderate wet H2S service	
1	3				P67K-001HD	Blind flange ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF Moderate wet H2S service	
1	4				P67K-001HE	Blind flange ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF Moderate wet H2S service	
1	6				P67K-001HF	Blind flange ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF Moderate wet H2S service	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000FT	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000FU	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000G5	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000G6	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	6				P73T-000G7	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	0.5				P73T-000J8	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	0.75				P73T-000J9	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1				P73T-000JA	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1.5				P73T-000JB	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	2				P73T-000JH	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	3				P73T-000JL	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	4				P73T-000JM	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	6				P73T-000JN	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

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BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-6				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
781	0.5-6				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81K-00113	Gate valve ASTM A182 Grade F304/F304L dual grade Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	0.75				P81K-00114	Gate valve ASTM A182 Grade F304/F304L dual grade Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	1				P81K-00115	Gate valve ASTM A182 Grade F304/F304L dual grade Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	1.5				P81K-00116	Gate valve ASTM A182 Grade F304/F304L dual grade Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	2				P81L-0029A	Gate valve ASTM A351 Grade CF8 Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	3				P81L-0029B	Gate valve ASTM A351 Grade CF8 Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	4				P81L-0029C	Gate valve ASTM A351 Grade CF8 Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	6				P81L-0029D	Gate valve ASTM A351 Grade CF8 Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
4608	0.75				P81K-001PG	Gate valve ASTM A182 Grade F304/F304L dual grade Class 300 API 602 BW both sides w/ nipples BE - NPT ASTM A312-TP304(L) dual grade Seamless Sch80S-nipple Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71K-000AK	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 300 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service	
1	0.75				P71K-000AL	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 300 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service	
1	1				P71K-000AM	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 300 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service	
1	1.5				P71K-000AN	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 300 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service	
1	2				P71K-000AP	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 300 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service	
1	3				P71K-000AR	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 300 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service	
1	4				P71K-000AS	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 300 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service	
1	6				P71K-000AT	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 300 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service	

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BOLT TABLE (B_B0JQ , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-008T0		
0.75	4	0.625	75	P80S-00908		
1	4	0.625	80	P80S-00909		
1.5	4	0.750	95	P80S-005Z4		
2	8	0.625	90	P80S-0090B		
3	8	0.750	110	P80S-0090F		
4	8	0.750	115	P80S-0090G		
6	12	0.750	125	P80S-0090J		

BOLT TABLE (B_B0JQ_781 , STUD ASME RF, OPTION CODE 781)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	80	P80S-008T2		
0.75	4	0.625	90	P80S-0090B		
1	4	0.625	95	P80S-0090C		
1.5	4	0.750	110	P80S-0090F		
2	8	0.625	110	P80S-008T8		
3	8	0.750	130	P80S-0090K		
4	8	0.875	150	P80S-005ZF		
6	12	1.000	175	P80S-0061H		

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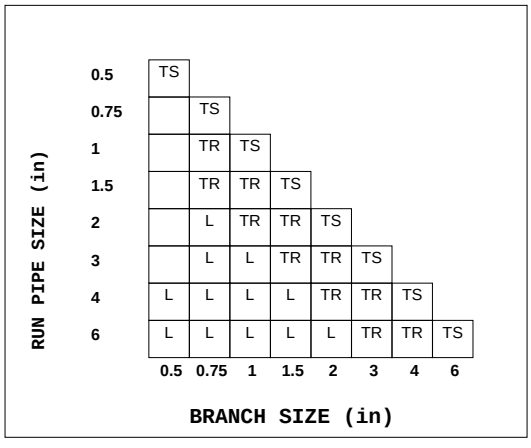
BRANCH TABLE (T_B0JQ)



L : OUTLET
TR : REDUCING TEE
TS : STRAIGHT TEE

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Material : SS304L
Rating : ASME CLASS 300
Flange Face : RF
C.A.(mm) : 0.00
Gasket : Spiral Wound
Service : PROCESS -WET SEVERE SOUR SERVICE SUBJECT TO NACE STD
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
5	BOLTING CONFIRMING TO B7M / 2HM SHALL BE USED UNDER CONDITIONS (A) DIRECT EXPOSURE TO SOUR ENVIRONMENTS (B) WHEN THE BOLTING WILL BE BURIED OR INSULATED
27	PWHT OF CARBON STEEL PIPING IN WET H2S, CAUSTIC AND AMINE SERVICES SHALL BE IN ACCORDANCE WITH SECTION 10.2, 10.3, AND 10.4 OF PROJECT SPECIFICATION 3550-8440-SP-0002 MATERIALS REQUIREMENTS FOR PRESSURISED EQUIPMENT AND PIPING. FOR CAUSTIC AND AMINE SERVICE THE FOLLOWING SHALL APPLY: - PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF ALL SITE PIPING FABRICATION WELDS IS REQUIRED FOR ALL WALL THICKNESSES. FOR MODERATE AND SEVERE WET H2S SERVICE THE FOLLOWING SHALL APPLY: PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF SITE FABRICATION CIRCUMFERENTIAL OR BRANCH WELDS IS NOT REQUIRED IF WELDS ARE MULTIPASS AND IN ACCORDANCE WITH PARA 10.2.12 OF PROJECT SPECIFICATION 3550-8440-SP-0002. FOR SERVICES MEETING THE WET H2S CRITERIA AND CAUSTIC OR AMINE CRITERIA THE MORE STRINGENT PWHT REQUIREMENT SHALL GOVERN.

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
541	NPT(F) (CA,F,L)
781	CLASS 600 (B,F,G)
4608	VALVE WITH NIPPLES (V)

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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P01J-002CF	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE Severe wet H2S service	
1	0.75		SCH80S		P01J-002CG	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE Severe wet H2S service	
1	1		SCH80S		P01J-002CH	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE Severe wet H2S service	
1	1.5		SCH80S		P01J-002CJ	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE Severe wet H2S service	
1	2		SCH10S		P01J-002CK	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M BE Severe wet H2S service	
1	3		SCH10S		P01J-002CL	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M BE Severe wet H2S service	
1	4		SCH10S		P01J-002CM	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M BE Severe wet H2S service	
1	6		SCH40S		P01J-002GY	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M BE Severe wet H2S service	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P02J-001VV	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	0.75		SCH80S		P02J-001VW	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	1		SCH80S		P02J-001VX	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	1.5		SCH80S		P02J-001VY	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	2		SCH10S		P02J-001VZ	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	3		SCH10S		P02J-001W0	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	4		SCH10S		P02J-001W1	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	6		SCH40S		P02J-00209	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P03J-001TA	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	0.75		SCH80S		P03J-001TB	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	1		SCH80S		P03J-001TC	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	1.5		SCH80S		P03J-001TD	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	2		SCH10S		P03J-001TE	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	3		SCH10S		P03J-001TF	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	4		SCH10S		P03J-001TG	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	6		SCH40S		P03J-001ZW	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P21J-001JN	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	0.75		SCH80S		P21J-001JP	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1		SCH80S		P21J-001JR	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5		SCH80S		P21J-001JS	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	2		SCH10S		P21J-001JT	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	3		SCH10S		P21J-001JU	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	4		SCH10S		P21J-001JV	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	6		SCH40S		P21J-001P9	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75	SCH80S	SCH80S	P24J-006UM	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1.0	0.75	SCH80S	SCH80S	P24J-006UN	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	

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REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5	1	SCH80S	SCH80S	P24J-006UP	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	2	1	SCH10S	SCH80S	P24J-006UR	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	2	1.5	SCH10S	SCH80S	P24J-006US	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	3	1.5	SCH10S	SCH80S	P24J-006UT	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	3	2	SCH10S	SCH10S	P24J-006UU	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	4	2	SCH10S	SCH10S	P24J-006UV	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	4	3	SCH10S	SCH10S	P24J-006UW	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	6	3	SCH40S	SCH10S	P24J-007HA	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	6	4	SCH40S	SCH10S	P24J-007HB	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH80S	SCH80S	P27J-005NC	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1	0.5	SCH80S	SCH80S	P27J-005ND	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1	0.75	SCH80S	SCH80S	P27J-005NE	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5	0.5	SCH80S	SCH80S	P27J-005NF	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5	0.75	SCH80S	SCH80S	P27J-005NG	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5	1	SCH80S	SCH80S	P27J-005NH	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	2	0.75	SCH10S	SCH80S	P27J-005NJ	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	2	1	SCH10S	SCH80S	P27J-005NK	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	2	1.5	SCH10S	SCH80S	P27J-005NL	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	3	1.5	SCH10S	SCH80S	P27J-005NM	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	3	2	SCH10S	SCH10S	P27J-005NN	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	4	1.5	SCH10S	SCH80S	P27J-005NP	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	4	2	SCH10S	SCH10S	P27J-005NR	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	4	3	SCH10S	SCH10S	P27J-005NS	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	6	3	SCH40S	SCH10S	P27J-006AP	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	6	4	SCH40S	SCH10S	P27J-006AR	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH80S	SCH80S	P28J-005P7	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1	0.5	SCH80S	SCH80S	P28J-005P8	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1	0.75	SCH80S	SCH80S	P28J-005P9	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5	0.5	SCH80S	SCH80S	P28J-005PA	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5	0.75	SCH80S	SCH80S	P28J-005PB	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5	1	SCH80S	SCH80S	P28J-005PC	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	2	0.75	SCH10S	SCH80S	P28J-005PD	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	2	1	SCH10S	SCH80S	P28J-005PE	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	2	1.5	SCH10S	SCH80S	P28J-005PF	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	3	1.5	SCH10S	SCH80S	P28J-005PG	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	3	2	SCH10S	SCH10S	P28J-005PH	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	4	1.5	SCH10S	SCH80S	P28J-005PJ	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	4	2	SCH10S	SCH10S	P28J-005PK	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	4	3	SCH10S	SCH10S	P28J-005PL	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	6	3	SCH40S	SCH10S	P28J-006C1	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	6	4	SCH40S	SCH10S	P28J-006C2	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P29J-001CY	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	0.75		SCH80S		P29J-001CZ	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1		SCH80S		P29J-001D0	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5		SCH80S		P29J-001D1	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	2		SCH10S		P29J-001D2	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	3		SCH10S		P29J-001D3	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	4		SCH10S		P29J-001D4	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	6		SCH40S		P29J-002D1	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
541	0.75				P29K-00046	Cap ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 NPT Severe wet H2S service	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
541	1	0.75			P31K-00FLV	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 NPT Severe wet H2S service	
541	1.5	0.75			P31K-00FLU	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 NPT Severe wet H2S service	
541	2 - 2.5	0.75			P31K-00GFC	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 NPT Severe wet H2S service	
541	3 - 5	0.75			P31K-00GFD	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 NPT Severe wet H2S service	
541	6 - 12	0.75			P31K-00GFE	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 NPT Severe wet H2S service	
1	2	0.75	SCH10S	SCH80S	P31K-00EFT	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	3	0.75	SCH10S	SCH80S	P31K-00EFU	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	4	0.75	SCH10S	SCH80S	P31K-00EFW	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	6	0.75	SCH40S	SCH80S	P31K-00EWX	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	3	1	SCH10S	SCH80S	P31K-00EFV	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	4	1	SCH10S	SCH80S	P31K-00EFX	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	6	1	SCH40S	SCH80S	P31K-00EWY	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	4	1.5	SCH10S	SCH80S	P31K-00EFY	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	6	1.5	SCH40S	SCH80S	P31K-00EWZ	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	6	2	SCH40S	SCH10S	P31K-00F5T	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30K-00051	Plug ASTM A182 Grade F304/F304L dual grade ASME B16.11 NPT Round head Severe wet H2S service	
1	0.75				P30K-00052	Plug ASTM A182 Grade F304/F304L dual grade ASME B16.11 NPT Round head Severe wet H2S service	
1	1				P30K-00053	Plug ASTM A182 Grade F304/F304L dual grade ASME B16.11 NPT Round head Severe wet H2S service	
1	1.5				P30K-00054	Plug ASTM A182 Grade F304/F304L dual grade ASME B16.11 NPT Round head Severe wet H2S service	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P61K-005AH	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
1	0.75		SCH80S		P61K-005AJ	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
1	1		SCH80S		P61K-005AK	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
1	1.5		SCH80S		P61K-005AL	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
1	2		SCH10S		P61K-005AM	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
1	3		SCH10S		P61K-005AN	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
1	4		SCH10S		P61K-005AP	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
1	6		SCH40S		P61K-005LK	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
541	0.5				P61K-0069K	Flange NPT ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
541	0.75				P61K-005YB	Flange NPT ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
781	0.5		SCH80S		P61K-005AR	Flange WN ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 RF Severe wet H2S service	
781	0.75		SCH80S		P61K-005AS	Flange WN ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 RF Severe wet H2S service	
781	1		SCH80S		P61K-005AT	Flange WN ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 RF Severe wet H2S service	

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FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
781	1.5		SCH80S		P61K-005AU	Flange WN ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 RF Severe wet H2S service	
781	2		SCH10S		P61K-005AV	Flange WN ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 RF Severe wet H2S service	
781	3		SCH10S		P61K-005AW	Flange WN ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 RF Severe wet H2S service	
781	4		SCH10S		P61K-005AX	Flange WN ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 RF Severe wet H2S service	
781	6		SCH40S		P61K-005LW	Flange WN ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 RF Severe wet H2S service	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67K-001HV	Blind flange ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
1	0.75				P67K-001HW	Blind flange ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
1	1				P67K-001HX	Blind flange ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
1	1.5				P67K-001HY	Blind flange ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
1	2				P67K-001HZ	Blind flange ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
1	3				P67K-001J0	Blind flange ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
1	4				P67K-001J1	Blind flange ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
1	6				P67K-001PJ	Blind flange ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000FT	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000FU	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000G5	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000G6	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	6				P73T-000G7	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	0.5				P73T-000J8	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	0.75				P73T-000J9	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1				P73T-000JA	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1.5				P73T-000JB	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	2				P73T-000JH	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	3				P73T-000JL	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	4				P73T-000JM	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	6				P73T-000JN	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-6				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
781	0.5-6				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81K-00154	Gate valve ASTM A182 Grade F304/F304L dual grade Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	0.75				P81K-00155	Gate valve ASTM A182 Grade F304/F304L dual grade Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	1				P81K-00156	Gate valve ASTM A182 Grade F304/F304L dual grade Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	1.5				P81K-00157	Gate valve ASTM A182 Grade F304/F304L dual grade Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	2				P81L-0029E	Gate valve ASTM A351 Grade CF8 Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	3				P81L-0029F	Gate valve ASTM A351 Grade CF8 Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	4				P81L-0029G	Gate valve ASTM A351 Grade CF8 Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	

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GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	6				P81L-002D1	Gate valve ASTM A351 Grade CF8 Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
4608	0.75				P81K-001NM	Gate valve ASTM A182 Grade F304/F304L dual grade Class 300 API 602 BW both sides w/ nipples BE - NPT ASTM A312-TP304(L) dual grade Seamless Sch80S-nipple Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82K-000SE	Globe valve ASTM A182 Grade F304/F304L dual grade Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	0.75				P82K-000SF	Globe valve ASTM A182 Grade F304/F304L dual grade Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	1				P82K-000SG	Globe valve ASTM A182 Grade F304/F304L dual grade Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	1.5				P82K-000SH	Globe valve ASTM A182 Grade F304/F304L dual grade Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	2				P82L-0019A	Globe valve ASTM A351 Grade CF8 Class 300 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	3				P82L-0019B	Globe valve ASTM A351 Grade CF8 Class 300 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	4				P82L-0019C	Globe valve ASTM A351 Grade CF8 Class 300 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	6				P82L-001AX	Globe valve ASTM A351 Grade CF8 Class 300 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83K-000PX	Check valve ASTM A182 Grade F304/F304L dual grade Class 300 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Severe wet H2S service	
1	0.75				P83K-000PY	Check valve ASTM A182 Grade F304/F304L dual grade Class 300 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Severe wet H2S service	
1	1				P83K-000PZ	Check valve ASTM A182 Grade F304/F304L dual grade Class 300 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Severe wet H2S service	
1	1.5				P83K-000R0	Check valve ASTM A182 Grade F304/F304L dual grade Class 300 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Severe wet H2S service	
1	2				P83L-0019B	Check valve ASTM A351 Grade CF8 Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service	
1	3				P83L-0019C	Check valve ASTM A351 Grade CF8 Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service	
1	4				P83L-0019D	Check valve ASTM A351 Grade CF8 Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service	
1	6				P83L-001B4	Check valve ASTM A351 Grade CF8 Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71K-000AU	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 300 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	
1	0.75				P71K-000AV	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 300 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	
1	1				P71K-000AW	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 300 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	
1	1.5				P71K-000AX	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 300 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	
1	2				P71K-000AY	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 300 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	
1	3				P71K-000AZ	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 300 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	
1	4				P71K-000B0	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 300 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	
1	6				P71K-000ES	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 300 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	

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BOLT TABLE (B_B0JR , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-008T0		
0.75	4	0.625	75	P80S-00908		
1	4	0.625	80	P80S-00909		
1.5	4	0.750	95	P80S-005Z4		
2	8	0.625	90	P80S-0090B		
3	8	0.750	110	P80S-0090F		
4	8	0.750	115	P80S-0090G		
6	12	0.750	125	P80S-0090J		

BOLT TABLE (B_B0JR_781 , STUD ASME RF, OPTION CODE 781)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	80	P80S-008T2		
0.75	4	0.625	90	P80S-0090B		
1	4	0.625	95	P80S-0090C		
1.5	4	0.750	110	P80S-0090F		
2	8	0.625	110	P80S-008T8		
3	8	0.750	130	P80S-0090K		
4	8	0.875	150	P80S-005ZF		
6	12	1.000	175	P80S-0061H		

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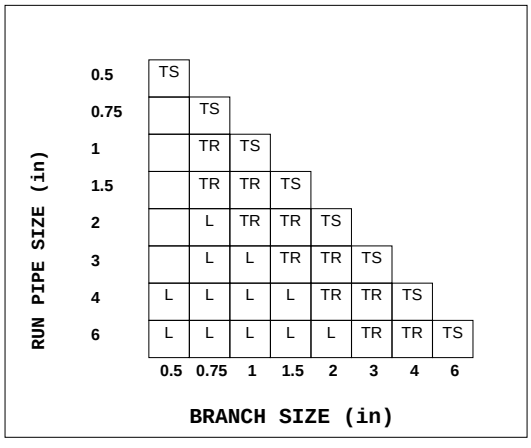
BRANCH TABLE (T_B0JR)



TS : STRAIGHT TEE
TR : REDUCING TEE
L : OUTLET

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PIPING CLASS

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Material : SS304L
Rating : ASME CLASS 300
Flange Face : RF
C.A.(mm) : 0.00
Gasket : Spiral Wound
Service : PROCESS - WET SEVERE SOUR SERVICE SUBJECT TO NACE + HIC STD.
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
5	BOLTING CONFIRMING TO B7M / 2HM SHALL BE USED UNDER CONDITIONS (A) DIRECT EXPOSURE TO SOUR ENVIRONMENTS (B) WHEN THE BOLTING WILL BE BURIED OR INSULATED
27	PWHT OF CARBON STEEL PIPING IN WET H2S, CAUSTIC AND AMINE SERVICES SHALL BE IN ACCORDANCE WITH SECTION 10.2, 10.3, AND 10.4 OF PROJECT SPECIFICATION 3550-8440-SP-0002 MATERIALS REQUIREMENTS FOR PRESSURISED EQUIPMENT AND PIPING. FOR CAUSTIC AND AMINE SERVICE THE FOLLOWING SHALL APPLY: - PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF ALL SITE PIPING FABRICATION WELDS IS REQUIRED FOR ALL WALL THICKNESSES. FOR MODERATE AND SEVERE WET H2S SERVICE THE FOLLOWING SHALL APPLY: PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF SITE FABRICATION CIRCUMFERENTIAL OR BRANCH WELDS IS NOT REQUIRED IF WELDS ARE MULTIPASS AND IN ACCORDANCE WITH PARA 10.2.12 OF PROJECT SPECIFICATION 3550-8440-SP-0002. FOR SERVICES MEETING THE WET H2S CRITERIA AND CAUSTIC OR AMINE CRITERIA THE MORE STRINGENT PWHT REQUIREMENT SHALL GOVERN.

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
541	NPT(F) (CA,F,L)
781	CLASS 600 (B,F,G)
4608	VALVE WITH NIPPLES (V)

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PIPING CLASS
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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P01J-002CF	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE Severe wet H2S service	
1	0.75		SCH80S		P01J-002CG	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE Severe wet H2S service	
1	1		SCH80S		P01J-002CH	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE Severe wet H2S service	
1	1.5		SCH80S		P01J-002CJ	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE Severe wet H2S service	
1	2		SCH10S		P01J-002CK	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M BE Severe wet H2S service	
1	3		SCH10S		P01J-002CL	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M BE Severe wet H2S service	
1	4		SCH10S		P01J-002CM	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M BE Severe wet H2S service	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P02J-001VV	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	0.75		SCH80S		P02J-001VW	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	1		SCH80S		P02J-001VX	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	1.5		SCH80S		P02J-001VY	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	2		SCH10S		P02J-001VZ	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	3		SCH10S		P02J-001W0	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	4		SCH10S		P02J-001W1	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P03J-001TA	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	0.75		SCH80S		P03J-001TB	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	1		SCH80S		P03J-001TC	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	1.5		SCH80S		P03J-001TD	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	2		SCH10S		P03J-001TE	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	3		SCH10S		P03J-001TF	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	4		SCH10S		P03J-001TG	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P21J-001JN	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	0.75		SCH80S		P21J-001JP	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1		SCH80S		P21J-001JR	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5		SCH80S		P21J-001JS	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	2		SCH10S		P21J-001JT	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	3		SCH10S		P21J-001JU	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	4		SCH10S		P21J-001JV	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75	SCH80S	SCH80S	P24J-006UM	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5	0.75	SCH80S	SCH80S	P24J-006UN	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5	1	SCH80S	SCH80S	P24J-006UP	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	2	1	SCH10S	SCH80S	P24J-006UR	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	2	1.5	SCH10S	SCH80S	P24J-006US	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	3	1.5	SCH10S	SCH80S	P24J-006UT	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	

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REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	SCH10S	SCH10S	P24J-006UU	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	4	2	SCH10S	SCH10S	P24J-006UV	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	4	3	SCH10S	SCH10S	P24J-006UW	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH80S	SCH80S	P27J-005NC	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1	0.5	SCH80S	SCH80S	P27J-005ND	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1	0.75	SCH80S	SCH80S	P27J-005NE	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5	0.5	SCH80S	SCH80S	P27J-005NF	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5	0.75	SCH80S	SCH80S	P27J-005NG	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5	1	SCH80S	SCH80S	P27J-005NH	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	2	0.75	SCH10S	SCH80S	P27J-005NJ	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	2	1	SCH10S	SCH80S	P27J-005NK	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	2	1.5	SCH10S	SCH80S	P27J-005NL	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	3	1.5	SCH10S	SCH80S	P27J-005NM	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	3	2	SCH10S	SCH10S	P27J-005NN	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	4	1.5	SCH10S	SCH80S	P27J-005NP	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	4	2	SCH10S	SCH10S	P27J-005NR	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	4	3	SCH10S	SCH10S	P27J-005NS	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH80S	SCH80S	P28J-005P7	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1	0.5	SCH80S	SCH80S	P28J-005P8	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1	0.75	SCH80S	SCH80S	P28J-005P9	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5	0.5	SCH80S	SCH80S	P28J-005PA	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5	0.75	SCH80S	SCH80S	P28J-005PB	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5	1	SCH80S	SCH80S	P28J-005PC	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	2	0.75	SCH10S	SCH80S	P28J-005PD	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	2	1	SCH10S	SCH80S	P28J-005PE	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	2	1.5	SCH10S	SCH80S	P28J-005PF	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	3	1.5	SCH10S	SCH80S	P28J-005PG	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	3	2	SCH10S	SCH10S	P28J-005PH	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	4	1.5	SCH10S	SCH80S	P28J-005PJ	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	4	2	SCH10S	SCH10S	P28J-005PK	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	4	3	SCH10S	SCH10S	P28J-005PL	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P29J-001CY	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	0.75		SCH80S		P29J-001CZ	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1		SCH80S		P29J-001D0	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5		SCH80S		P29J-001D1	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	2		SCH10S		P29J-001D2	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	3		SCH10S		P29J-001D3	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	

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CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	4		SCH10S		P29J-001D4	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
541	0.75				P29K-00046	Cap ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 NPT Severe wet H2S service	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P41J-001TC	Straight nipple ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Severe wet H2S service	
1	0.75		SCH80S		P41J-001TD	Straight nipple ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Severe wet H2S service	
1	1		SCH80S		P41J-001TE	Straight nipple ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Severe wet H2S service	
1	1.5		SCH80S		P41J-001TF	Straight nipple ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Severe wet H2S service	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
541	1	0.75			P31K-00FLV	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 NPT Severe wet H2S service	
541	1.5	0.75			P31K-00FLU	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 NPT Severe wet H2S service	
541	2 - 2.5	0.75			P31K-00GFC	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 NPT Severe wet H2S service	
541	3 - 5	0.75			P31K-00GFD	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 NPT Severe wet H2S service	
1	2	0.75	SCH10S	SCH80S	P31K-00EFT	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	3	0.75	SCH10S	SCH80S	P31K-00EFU	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	4	0.75	SCH10S	SCH80S	P31K-00EFW	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	3	1	SCH10S	SCH80S	P31K-00EFV	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	4	1	SCH10S	SCH80S	P31K-00EFX	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	4	1.5	SCH10S	SCH80S	P31K-00EFY	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30K-00051	Plug ASTM A182 Grade F304/F304L dual grade ASME B16.11 NPT Round head Severe wet H2S service	
1	0.75				P30K-00052	Plug ASTM A182 Grade F304/F304L dual grade ASME B16.11 NPT Round head Severe wet H2S service	
1	1				P30K-00053	Plug ASTM A182 Grade F304/F304L dual grade ASME B16.11 NPT Round head Severe wet H2S service	
1	1.5				P30K-00054	Plug ASTM A182 Grade F304/F304L dual grade ASME B16.11 NPT Round head Severe wet H2S service	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P61K-005AH	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
1	0.75		SCH80S		P61K-005AJ	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
1	1		SCH80S		P61K-005AK	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
1	1.5		SCH80S		P61K-005AL	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
1	2		SCH10S		P61K-005AM	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
1	3		SCH10S		P61K-005AN	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
1	4		SCH10S		P61K-005AP	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
541	0.5				P61K-0069K	Flange NPT ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
541	0.75				P61K-005YB	Flange NPT ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
781	0.5		SCH80S		P61K-005AR	Flange WN ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 RF Severe wet H2S service	
781	0.75		SCH80S		P61K-005AS	Flange WN ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 RF Severe wet H2S service	
781	1		SCH80S		P61K-005AT	Flange WN ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 RF Severe wet H2S service	
781	1.5		SCH80S		P61K-005AU	Flange WN ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 RF Severe wet H2S service	
781	2		SCH10S		P61K-005AV	Flange WN ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 RF Severe wet H2S service	
781	3		SCH10S		P61K-005AW	Flange WN ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 RF Severe wet H2S service	
781	4		SCH10S		P61K-005AX	Flange WN ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 RF Severe wet H2S service	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67K-001HV	Blind flange ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
1	0.75				P67K-001HW	Blind flange ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
1	1				P67K-001HX	Blind flange ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
1	1.5				P67K-001HY	Blind flange ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
1	2				P67K-001HZ	Blind flange ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	

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BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3				P67K-001J0	Blind flange ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
1	4				P67K-001J1	Blind flange ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000FT	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000FU	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000G5	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000G6	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	0.5				P73T-000J8	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	0.75				P73T-000J9	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1				P73T-000JA	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1.5				P73T-000JB	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	2				P73T-000JH	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	3				P73T-000JL	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	4				P73T-000JM	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-4				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
781	0.5-4				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81K-00154	Gate valve ASTM A182 Grade F304/F304L dual grade Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	0.75				P81K-00155	Gate valve ASTM A182 Grade F304/F304L dual grade Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	1				P81K-00156	Gate valve ASTM A182 Grade F304/F304L dual grade Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	1.5				P81K-00157	Gate valve ASTM A182 Grade F304/F304L dual grade Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	2				P81L-0029E	Gate valve ASTM A351 Grade CF8 Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	3				P81L-0029F	Gate valve ASTM A351 Grade CF8 Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	4				P81L-0029G	Gate valve ASTM A351 Grade CF8 Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
4608	0.75				P81K-001NM	Gate valve ASTM A182 Grade F304/F304L dual grade Class 300 API 602 BW both sides w/ nipples BE - NPT ASTM A312-TP304(L) dual grade Seamless Sch80S-nipple Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82K-000SE	Globe valve ASTM A182 Grade F304/F304L dual grade Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	0.75				P82K-000SF	Globe valve ASTM A182 Grade F304/F304L dual grade Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	1				P82K-000SG	Globe valve ASTM A182 Grade F304/F304L dual grade Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	1.5				P82K-000SH	Globe valve ASTM A182 Grade F304/F304L dual grade Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	2				P82L-0019A	Globe valve ASTM A351 Grade CF8 Class 300 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	3				P82L-0019B	Globe valve ASTM A351 Grade CF8 Class 300 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	4				P82L-0019C	Globe valve ASTM A351 Grade CF8 Class 300 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	

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CHECK VALVE (X)							
OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83K-000PX	Check valve ASTM A182 Grade F304/F304L dual grade Class 300 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Severe wet H2S service	
1	0.75				P83K-000PY	Check valve ASTM A182 Grade F304/F304L dual grade Class 300 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Severe wet H2S service	
1	1				P83K-000PZ	Check valve ASTM A182 Grade F304/F304L dual grade Class 300 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Severe wet H2S service	
1	1.5				P83K-000R0	Check valve ASTM A182 Grade F304/F304L dual grade Class 300 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Severe wet H2S service	
1	2				P83L-0019B	Check valve ASTM A351 Grade CF8 Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service	
1	3				P83L-0019C	Check valve ASTM A351 Grade CF8 Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service	
1	4				P83L-0019D	Check valve ASTM A351 Grade CF8 Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service	

SPECT BLANK (SB)							
OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71K-000AU	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 300 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	
1	0.75				P71K-000AV	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 300 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	
1	1				P71K-000AW	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 300 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	
1	1.5				P71K-000AX	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 300 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	
1	2				P71K-000AY	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 300 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	
1	3				P71K-000AZ	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 300 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	
1	4				P71K-000B0	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 300 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	

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BOLT TABLE (B_B0JR01 , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-008T0		
0.75	4	0.625	75	P80S-00908		
1	4	0.625	80	P80S-00909		
1.5	4	0.750	95	P80S-005Z4		
2	8	0.625	90	P80S-0090B		
3	8	0.750	110	P80S-0090F		
4	8	0.750	115	P80S-0090G		

BOLT TABLE (B_B0JR01_781 , STUD ASME RF, OPTION CODE 781)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	80	P80S-008T2		
0.75	4	0.625	90	P80S-0090B		
1	4	0.625	95	P80S-0090C		
1.5	4	0.750	110	P80S-0090F		
2	8	0.625	110	P80S-008T8		
3	8	0.750	130	P80S-0090K		
4	8	0.875	150	P80S-005ZF		

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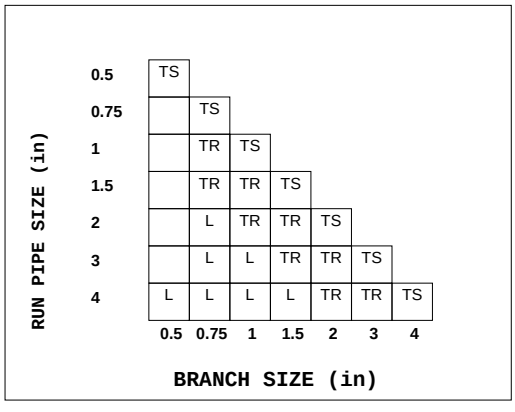
BRANCH TABLE (T_B0JR01)



L : OUTLET
TR : REDUCING TEE
TS : STRAIGHT TEE

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PIPING CLASS

B0JR03 REV NO. 2

Material : SS304L
Rating : ASME CLASS 300
Flange Face : RF
C.A.(mm) : 0.00
Gasket : Spiral Wound
Service : PROCESS - WET SEVERE SOUR SERVICE SUBJECT TO NACE + HIC STD.
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
5	BOLTING CONFIRMING TO B7M / 2HM SHALL BE USED UNDER CONDITIONS (A) DIRECT EXPOSURE TO SOUR ENVIRONMENTS (B) WHEN THE BOLTING WILL BE BURIED OR INSULATED
27	PWHT OF CARBON STEEL PIPING IN WET H2S, CAUSTIC AND AMINE SERVICES SHALL BE IN ACCORDANCE WITH SECTION 10.2, 10.3, AND 10.4 OF PROJECT SPECIFICATION 3550-8440-SP-0002 MATERIALS REQUIREMENTS FOR PRESSURISED EQUIPMENT AND PIPING. FOR CAUSTIC AND AMINE SERVICE THE FOLLOWING SHALL APPLY: - PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF ALL SITE PIPING FABRICATION WELDS IS REQUIRED FOR ALL WALL THICKNESSES. FOR MODERATE AND SEVERE WET H2S SERVICE THE FOLLOWING SHALL APPLY: PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF SITE FABRICATION CIRCUMFERENTIAL OR BRANCH WELDS IS NOT REQUIRED IF WELDS ARE MULTIPASS AND IN ACCORDANCE WITH PARA 10.2.12 OF PROJECT SPECIFICATION 3550-8440-SP-0002. FOR SERVICES MEETING THE WET H2S CRITERIA AND CAUSTIC OR AMINE CRITERIA THE MORE STRINGENT PWHT REQUIREMENT SHALL GOVERN.

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
541	NPT(F) (CA,F,L)
781	CLASS 600 (B,F,G)
4608	VALVE WITH NIPPLES (V)

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PIPING CLASS
B0JR03 REV NO. 2

PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P01J-002CF	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE Severe wet H2S service	
1	0.75		SCH80S		P01J-002CG	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE Severe wet H2S service	
1	1		SCH80S		P01J-002CH	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE Severe wet H2S service	
1	1.5		SCH80S		P01J-002CJ	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE Severe wet H2S service	
1	2		SCH10S		P01J-002CK	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M BE Severe wet H2S service	
1	3		SCH10S		P01J-002CL	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M BE Severe wet H2S service	
1	4		SCH10S		P01J-002CM	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M BE Severe wet H2S service	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P02J-001VV	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	0.75		SCH80S		P02J-001VW	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	1		SCH80S		P02J-001VX	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	1.5		SCH80S		P02J-001VY	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	2		SCH10S		P02J-001VZ	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	3		SCH10S		P02J-001W0	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	4		SCH10S		P02J-001W1	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P03J-001TA	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	0.75		SCH80S		P03J-001TB	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	1		SCH80S		P03J-001TC	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	1.5		SCH80S		P03J-001TD	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	2		SCH10S		P03J-001TE	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	3		SCH10S		P03J-001TF	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	4		SCH10S		P03J-001TG	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P21J-001JN	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	0.75		SCH80S		P21J-001JP	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1		SCH80S		P21J-001JR	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5		SCH80S		P21J-001JS	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	2		SCH10S		P21J-001JT	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	3		SCH10S		P21J-001JU	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	4		SCH10S		P21J-001JV	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75	SCH80S	SCH80S	P24J-006UM	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5	0.75	SCH80S	SCH80S	P24J-006UN	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5	1	SCH80S	SCH80S	P24J-006UP	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	2	1	SCH10S	SCH80S	P24J-006UR	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	2	1.5	SCH10S	SCH80S	P24J-006US	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	3	1.5	SCH10S	SCH80S	P24J-006UT	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	

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REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	SCH10S	SCH10S	P24J-006UU	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	4	2	SCH10S	SCH10S	P24J-006UV	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	4	3	SCH10S	SCH10S	P24J-006UW	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH80S	SCH80S	P27J-005NC	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1	0.5	SCH80S	SCH80S	P27J-005ND	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1	0.75	SCH80S	SCH80S	P27J-005NE	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5	0.5	SCH80S	SCH80S	P27J-005NF	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5	0.75	SCH80S	SCH80S	P27J-005NG	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5	1	SCH80S	SCH80S	P27J-005NH	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	2	0.75	SCH10S	SCH80S	P27J-005NJ	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	2	1	SCH10S	SCH80S	P27J-005NK	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	2	1.5	SCH10S	SCH80S	P27J-005NL	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	3	1.5	SCH10S	SCH80S	P27J-005NM	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	3	2	SCH10S	SCH10S	P27J-005NN	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	4	1.5	SCH10S	SCH80S	P27J-005NP	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	4	2	SCH10S	SCH10S	P27J-005NR	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	4	3	SCH10S	SCH10S	P27J-005NS	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH80S	SCH80S	P28J-005P7	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1	0.5	SCH80S	SCH80S	P28J-005P8	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1	0.75	SCH80S	SCH80S	P28J-005P9	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5	0.5	SCH80S	SCH80S	P28J-005PA	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5	0.75	SCH80S	SCH80S	P28J-005PB	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5	1	SCH80S	SCH80S	P28J-005PC	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	2	0.75	SCH10S	SCH80S	P28J-005PD	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	2	1	SCH10S	SCH80S	P28J-005PE	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	2	1.5	SCH10S	SCH80S	P28J-005PF	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	3	1.5	SCH10S	SCH80S	P28J-005PG	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	3	2	SCH10S	SCH10S	P28J-005PH	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	4	1.5	SCH10S	SCH80S	P28J-005PJ	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	4	2	SCH10S	SCH10S	P28J-005PK	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	4	3	SCH10S	SCH10S	P28J-005PL	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P29J-001CY	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	0.75		SCH80S		P29J-001CZ	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1		SCH80S		P29J-001D0	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5		SCH80S		P29J-001D1	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	2		SCH10S		P29J-001D2	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	3		SCH10S		P29J-001D3	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	

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CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	4		SCH10S		P29J-001D4	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
541	0.75				P29K-00046	Cap ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 NPT Severe wet H2S service	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P41J-001TC	Straight nipple ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Severe wet H2S service	
1	0.75		SCH80S		P41J-001TD	Straight nipple ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Severe wet H2S service	
1	1		SCH80S		P41J-001TE	Straight nipple ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Severe wet H2S service	
1	1.5		SCH80S		P41J-001TF	Straight nipple ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Severe wet H2S service	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
541	1	0.75			P31K-00FLV	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 NPT Severe wet H2S service	
541	1.5	0.75			P31K-00FLU	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 NPT Severe wet H2S service	
541	2 - 2.5	0.75			P31K-00GFC	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 NPT Severe wet H2S service	
541	3 - 5	0.75			P31K-00GFD	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 NPT Severe wet H2S service	
1	2	0.75	SCH10S	SCH80S	P31K-00EFT	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	3	0.75	SCH10S	SCH80S	P31K-00EFU	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	4	0.75	SCH10S	SCH80S	P31K-00EFW	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	3	1	SCH10S	SCH80S	P31K-00EFV	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	4	1	SCH10S	SCH80S	P31K-00EFX	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	4	1.5	SCH10S	SCH80S	P31K-00EFY	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30K-00051	Plug ASTM A182 Grade F304/F304L dual grade ASME B16.11 NPT Round head Severe wet H2S service	
1	0.75				P30K-00052	Plug ASTM A182 Grade F304/F304L dual grade ASME B16.11 NPT Round head Severe wet H2S service	
1	1				P30K-00053	Plug ASTM A182 Grade F304/F304L dual grade ASME B16.11 NPT Round head Severe wet H2S service	
1	1.5				P30K-00054	Plug ASTM A182 Grade F304/F304L dual grade ASME B16.11 NPT Round head Severe wet H2S service	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P61K-005AH	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
1	0.75		SCH80S		P61K-005AJ	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
1	1		SCH80S		P61K-005AK	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
1	1.5		SCH80S		P61K-005AL	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
1	2		SCH10S		P61K-005AM	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
1	3		SCH10S		P61K-005AN	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
1	4		SCH10S		P61K-005AP	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
541	0.5				P61K-0069K	Flange NPT ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
541	0.75				P61K-005YB	Flange NPT ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
781	0.5		SCH80S		P61K-005AR	Flange WN ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 RF Severe wet H2S service	
781	0.75		SCH80S		P61K-005AS	Flange WN ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 RF Severe wet H2S service	
781	1		SCH80S		P61K-005AT	Flange WN ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 RF Severe wet H2S service	
781	1.5		SCH80S		P61K-005AU	Flange WN ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 RF Severe wet H2S service	
781	2		SCH10S		P61K-005AV	Flange WN ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 RF Severe wet H2S service	
781	3		SCH10S		P61K-005AW	Flange WN ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 RF Severe wet H2S service	
781	4		SCH10S		P61K-005AX	Flange WN ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 RF Severe wet H2S service	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67K-001HV	Blind flange ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
1	0.75				P67K-001HW	Blind flange ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
1	1				P67K-001HX	Blind flange ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
1	1.5				P67K-001HY	Blind flange ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
1	2				P67K-001HZ	Blind flange ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	

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BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3				P67K-001J0	Blind flange ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
1	4				P67K-001J1	Blind flange ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000FT	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000FU	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000G5	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000G6	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	0.5				P73T-000J8	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	0.75				P73T-000J9	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1				P73T-000JA	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1.5				P73T-000JB	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	2				P73T-000JH	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	3				P73T-000JL	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	4				P73T-000JM	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-4				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
781	0.5-4				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81K-00154	Gate valve ASTM A182 Grade F304/F304L dual grade Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	0.75				P81K-00155	Gate valve ASTM A182 Grade F304/F304L dual grade Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	1				P81K-00156	Gate valve ASTM A182 Grade F304/F304L dual grade Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	1.5				P81K-00157	Gate valve ASTM A182 Grade F304/F304L dual grade Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	2				P81L-0029E	Gate valve ASTM A351 Grade CF8 Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	3				P81L-0029F	Gate valve ASTM A351 Grade CF8 Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	4				P81L-0029G	Gate valve ASTM A351 Grade CF8 Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
4608	0.75				P81K-001NM	Gate valve ASTM A182 Grade F304/F304L dual grade Class 300 API 602 BW both sides w/ nipples BE - NPT ASTM A312-TP304(L) dual grade Seamless Sch80S-nipple Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82K-000SE	Globe valve ASTM A182 Grade F304/F304L dual grade Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	0.75				P82K-000SF	Globe valve ASTM A182 Grade F304/F304L dual grade Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	1				P82K-000SG	Globe valve ASTM A182 Grade F304/F304L dual grade Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	1.5				P82K-000SH	Globe valve ASTM A182 Grade F304/F304L dual grade Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	2				P82L-0019A	Globe valve ASTM A351 Grade CF8 Class 300 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	3				P82L-0019B	Globe valve ASTM A351 Grade CF8 Class 300 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	4				P82L-0019C	Globe valve ASTM A351 Grade CF8 Class 300 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	

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CHECK VALVE (X)							
OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83K-000PX	Check valve ASTM A182 Grade F304/F304L dual grade Class 300 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Severe wet H2S service	
1	0.75				P83K-000PY	Check valve ASTM A182 Grade F304/F304L dual grade Class 300 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Severe wet H2S service	
1	1				P83K-000PZ	Check valve ASTM A182 Grade F304/F304L dual grade Class 300 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Severe wet H2S service	
1	1.5				P83K-000R0	Check valve ASTM A182 Grade F304/F304L dual grade Class 300 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Severe wet H2S service	
1	2				P83L-0019B	Check valve ASTM A351 Grade CF8 Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service	
1	3				P83L-0019C	Check valve ASTM A351 Grade CF8 Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service	
1	4				P83L-0019D	Check valve ASTM A351 Grade CF8 Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service	

SPECT BLANK (SB)							
OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71K-000AU	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 300 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	
1	0.75				P71K-000AV	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 300 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	
1	1				P71K-000AW	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 300 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	
1	1.5				P71K-000AX	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 300 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	
1	2				P71K-000AY	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 300 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	
1	3				P71K-000AZ	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 300 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	
1	4				P71K-000B0	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 300 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	

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BOLT TABLE (B_B0JR03 , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-008T0		
0.75	4	0.625	75	P80S-00908		
1	4	0.625	80	P80S-00909		
1.5	4	0.750	95	P80S-005Z4		
2	8	0.625	90	P80S-0090B		
3	8	0.750	110	P80S-0090F		
4	8	0.750	115	P80S-0090G		

BOLT TABLE (B_B0JR03_781 , STUD ASME RF, OPTION CODE 781)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	80	P80S-008T2		
0.75	4	0.625	90	P80S-0090B		
1	4	0.625	95	P80S-0090C		
1.5	4	0.750	110	P80S-0090F		
2	8	0.625	110	P80S-008T8		
3	8	0.750	130	P80S-0090K		
4	8	0.875	150	P80S-005ZF		

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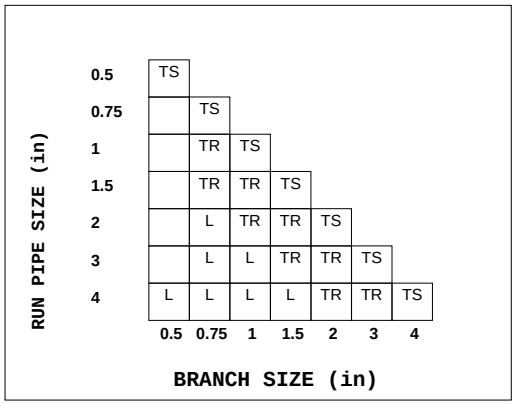
B0JR03 REV NO. 2

BRANCH TABLE (T_B0JR03)



TR : REDUCING TEE
L : OUTLET
TS : STRAIGHT TEE

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PIPING CLASS

B0JS REV NO. 2

Material : SS304L
Rating : ASME CLASS 300
Flange Face : RF
C.A.(mm) : 0.00
Gasket : Spiral Wound
Service : UTILITY , CORROSIVE : / STEAM AND CONDENSATE
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
3	STIFFENER RINGS, IF NEEDED, SHALL BE PROVIDED AS PER ASME SEC.VIII, DIV.1 FOR FULL VACUUM CONDITION

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
541	NPT(F) (CA,L)
714	SW - NPT(F) (V)
781	CLASS 600 (B,F,G)

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PIPING CLASS
B0JS REV NO. 2

PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P01J-000UC	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE	
1	0.75		SCH80S		P01J-000UD	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE	
1	1		SCH80S		P01J-000UE	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE	
1	1.5		SCH80S		P01J-000UF	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE	
1	2		SCH10S		P01J-000RD	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M BE	
1	3		SCH10S		P01J-000RE	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M BE	
1	4		SCH10S		P01J-000RF	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M BE	
1	6		SCH40S		P01J-000RH	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M BE	
1	8		SCH40S		P01J-000WC	Pipe ASTM A358 Grade 304/304L Class 1 dual grade EFW ASME B36.10M/B36.19M BE	
1	10		SCH40S		P01J-000W6	Pipe ASTM A358 Grade 304/304L Class 1 dual grade EFW ASME B36.10M/B36.19M BE	
1	12		SCH10S		P01J-000S8	Pipe ASTM A358 Grade 304/304L Class 1 dual grade EFW ASME B36.10M/B36.19M BE	
1	14		SCH10S		P01J-000S9	Pipe ASTM A358 Grade 304/304L Class 1 dual grade EFW ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P02K-0001K	90 degree elbow ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	0.75				P02K-0001L	90 degree elbow ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	1				P02K-0001M	90 degree elbow ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	1.5				P02K-0001N	90 degree elbow ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	2		SCH10S		P02J-000J0	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	3		SCH10S		P02J-000J1	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	4		SCH10S		P02J-000J2	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	6		SCH40S		P02J-000J4	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	8		SCH40S		P02J-000J7	90 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius	
1	10		SCH40S		P02J-000J5	90 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius	
1	12		SCH10S		P02J-000JD	90 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius	
1	14		SCH10S		P02J-000JE	90 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P03K-0001G	45 degree elbow ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	0.75				P03K-0001H	45 degree elbow ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	1				P03K-0001J	45 degree elbow ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	1.5				P03K-0001K	45 degree elbow ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	2		SCH10S		P03J-000HS	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	3		SCH10S		P03J-000HT	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	4		SCH10S		P03J-000HU	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	6		SCH40S		P03J-000HW	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	8		SCH40S		P03J-000HZ	45 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius	
1	10		SCH40S		P03J-000HX	45 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius	
1	12		SCH10S		P03J-000J5	45 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius	
1	14		SCH10S		P03J-000J6	45 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P21K-0001G	Straight tee ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	0.75				P21K-0001H	Straight tee ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	1				P21K-0001J	Straight tee ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	1.5				P21K-0001K	Straight tee ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	2		SCH10S		P21J-000HM	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	3		SCH10S		P21J-000HN	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	4		SCH10S		P21J-000HP	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	6		SCH40S		P21J-000HS	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	

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STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	8		SCH40S		P21J-000HV	Straight tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	10		SCH40S		P21J-000HT	Straight tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	12		SCH10S		P21J-000J1	Straight tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	14		SCH10S		P21J-000J2	Straight tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75			P24K-0001X	Reducing tee ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	1.5	0.75			P24K-0001Z	Reducing tee ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	1.5	1			P24K-00020	Reducing tee ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	2	1	SCH10S	SCH80S	P24J-0065A	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	2	1.5	SCH10S	SCH80S	P24J-0065B	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	3	1.5	SCH10S	SCH80S	P24J-004SV	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	3	2	SCH10S	SCH10S	P24J-002H7	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	4	2	SCH10S	SCH10S	P24J-002H8	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	4	3	SCH10S	SCH10S	P24J-002H9	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	6	3	SCH40S	SCH10S	P24J-002HC	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	6	4	SCH40S	SCH10S	P24J-002HD	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	8	4	SCH40S	SCH10S	P24J-002HE	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	8	6	SCH40S	SCH40S	P24J-002HF	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	10	4	SCH40S	SCH10S	P24J-002HG	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	10	6	SCH40S	SCH40S	P24J-002HH	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	10	8	SCH40S	SCH40S	P24J-002HJ	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	12	6	SCH10S	SCH40S	P24J-006DK	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	12	8	SCH10S	SCH40S	P24J-007JP	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	12	10	SCH10S	SCH40S	P24J-007FA	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	14	6	SCH10S	SCH40S	P24J-006EA	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	14	8	SCH10S	SCH40S	P24J-007JS	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	14	10	SCH10S	SCH40S	P24J-007JR	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	14	12	SCH10S	SCH10S	P24J-002HV	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	SCH10S	SCH10S	P27J-001PS	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	4	2	SCH10S	SCH10S	P27J-001PT	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	4	3	SCH10S	SCH10S	P27J-001PU	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	6	3	SCH40S	SCH10S	P27J-001PX	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	6	4	SCH40S	SCH10S	P27J-001PY	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	8	4	SCH40S	SCH10S	P27J-001PZ	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	8	6	SCH40S	SCH40S	P27J-001R0	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	10	4	SCH40S	SCH10S	P27J-001R1	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	10	6	SCH40S	SCH40S	P27J-001R2	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	10	8	SCH40S	SCH40S	P27J-001R3	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	12	6	SCH10S	SCH40S	P27J-001RE	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	12	8	SCH10S	SCH40S	P27J-004JE	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	12	10	SCH10S	SCH40S	P27J-004MU	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	14	6	SCH10S	SCH40S	P27J-001RH	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	14	8	SCH10S	SCH40S	P27J-004JG	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	14	10	SCH10S	SCH40S	P27J-004JF	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	14	12	SCH10S	SCH10S	P27J-001RG	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	SCH10S	SCH10S	P28J-001P8	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	4	2	SCH10S	SCH10S	P28J-001P9	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	4	3	SCH10S	SCH10S	P28J-001PA	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	6	3	SCH40S	SCH10S	P28J-001PD	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	6	4	SCH40S	SCH10S	P28J-001PE	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	8	4	SCH40S	SCH10S	P28J-001PF	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	8	6	SCH40S	SCH40S	P28J-001PG	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	10	4	SCH40S	SCH10S	P28J-001PH	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	10	6	SCH40S	SCH40S	P28J-001PJ	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	10	8	SCH40S	SCH40S	P28J-001PK	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	12	6	SCH10S	SCH40S	P28J-001PX	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	12	8	SCH10S	SCH40S	P28J-004JY	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	12	10	SCH10S	SCH40S	P28J-004NB	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	14	6	SCH10S	SCH40S	P28J-001R0	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	14	8	SCH10S	SCH40S	P28J-004K0	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	14	10	SCH10S	SCH40S	P28J-004JZ	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	14	12	SCH10S	SCH10S	P28J-001PZ	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P29K-0001V	Cap ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	0.75				P29K-0001W	Cap ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	1				P29K-0001X	Cap ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	1.5				P29K-0001Y	Cap ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	2		SCH10S		P29J-000G1	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	3		SCH10S		P29J-000G2	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	4		SCH10S		P29J-000G3	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	6		SCH40S		P29J-000G5	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	8		SCH40S		P29J-000LU	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	10		SCH40S		P29J-000KM	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	12		SCH10S		P29J-000GC	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	14		SCH10S		P29J-000GD	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
541	0.75				P29K-00020	Cap ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P41J-001FS	Straight nipple ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		SCH80S		P41J-001FT	Straight nipple ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		SCH80S		P41J-001FU	Straight nipple ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		SCH80S		P41J-001FV	Straight nipple ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

CON SWAGED NIPPLE (SNC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH80S	SCH80S	P42J-00081	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	SCH80S	SCH80S	P42J-00082	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	SCH80S	SCH80S	P42J-00083	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	SCH80S	SCH80S	P42J-00084	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	SCH80S	SCH80S	P42J-00085	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	SCH80S	SCH80S	P42J-00086	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	SCH10S	SCH80S	P42J-000F9	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	SCH10S	SCH80S	P42J-000F6	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	SCH10S	SCH80S	P42J-000F7	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	SCH10S	SCH80S	P42J-000F8	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	SCH10S	SCH80S	P42J-000AG	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	

ECC SWAGED NIPPLE (SNE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH80S	SCH80S	P43J-0008D	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	

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ECC SWAGED NIPPLE (SNE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.5	SCH80S	SCH80S	P43J-0008E	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	SCH80S	SCH80S	P43J-0008F	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	SCH80S	SCH80S	P43J-0008G	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	SCH80S	SCH80S	P43J-0008H	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	SCH80S	SCH80S	P43J-0008J	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	SCH10S	SCH80S	P43J-000CT	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	SCH10S	SCH80S	P43J-000CU	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	SCH10S	SCH80S	P43J-000CV	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	SCH10S	SCH80S	P43J-000CW	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	SCH10S	SCH80S	P43J-0008P	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	

COUPLING (CPS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P47K-00035	Coupling ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW - SW	
1	0.75				P47K-00036	Coupling ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW - SW	
1	1				P47K-00037	Coupling ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW - SW	
1	1.5				P47K-00038	Coupling ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW - SW	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2 - 2.5	0.75			P31K-00GFG	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 SW	
1	3 - 5	0.75			P31K-00GFH	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 SW	
1	6 - 12	0.75			P31K-008YY	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 SW	
1	14 - 36	0.75			P31K-008YC	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 SW	
1	3	1			P31K-008ZG	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 SW	
1	4 - 5	1			P31K-00GFL	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 SW	
1	6 - 10	1			P31K-008ZU	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 SW	
1	12 - 36	1			P31K-008Z6	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 SW	
1	4	1.5			P31K-0099M	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 SW	
1	5 - 6	1.5			P31K-00GFS	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 SW	
1	8 - 12	1.5			P31K-0099Z	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 SW	
1	14 - 24	1.5			P31K-00991	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 SW	
541	1	0.75			P31K-00911	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 NPT	
541	1.5	0.75			P31K-00916	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 NPT	
541	2 - 2.5	0.75			P31K-00GFJ	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 NPT	
541	3 - 5	0.75			P31K-00GFK	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 NPT	
541	6 - 12	0.75			P31K-0091X	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 NPT	
541	14 - 36	0.75			P31K-0091B	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 NPT	
1	6	2	SCH40S	SCH10S	P31K-005AW	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	8	2	SCH40S	SCH10S	P31K-005AX	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	10	2	SCH40S	SCH10S	P31K-005AZ	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	12	2	SCH10S	SCH10S	P31K-005JX	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	14	2	SCH10S	SCH10S	P31K-005K0	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	8	3	SCH40S	SCH10S	P31K-005AY	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	10	3	SCH40S	SCH10S	P31K-005B0	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	12	3	SCH10S	SCH10S	P31K-007LF	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	14	3	SCH10S	SCH10S	P31K-007ME	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	12	4	SCH10S	SCH10S	P31K-00812	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	14	4	SCH10S	SCH10S	P31K-00821	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30K-0001G	Plug ASTM A182 Grade F304/F304L dual grade ASME B16.11 NPT Round head	
1	0.75				P30K-0001H	Plug ASTM A182 Grade F304/F304L dual grade ASME B16.11 NPT Round head	
1	1				P30K-0001J	Plug ASTM A182 Grade F304/F304L dual grade ASME B16.11 NPT Round head	

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PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5				P30K-0001K	Plug ASTM A182 Grade F304/F304L dual grade ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P61K-003A9	Flange SW ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
1	0.75		SCH80S		P61K-003AA	Flange SW ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
1	1		SCH80S		P61K-003AB	Flange SW ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
1	1.5		SCH80S		P61K-003AC	Flange SW ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
1	2		SCH10S		P61K-0023W	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
1	3		SCH10S		P61K-0023X	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
1	4		SCH10S		P61K-0023Y	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
1	6		SCH40S		P61K-0023Z	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
1	8		SCH40S		P61K-00240	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
1	10		SCH40S		P61K-0023U	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
1	12		SCH10S		P61K-0024Z	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
1	14		SCH10S		P61K-00250	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
781	0.5		SCH80S		P61K-003AT	Flange SW ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 RF	
781	0.75		SCH80S		P61K-003AU	Flange SW ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 RF	
781	1		SCH80S		P61K-003AV	Flange SW ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 RF	
781	1.5		SCH80S		P61K-003AW	Flange SW ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 RF	
781	2		SCH10S		P61K-00290	Flange WN ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 RF	
781	3		SCH10S		P61K-003D3	Flange WN ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 RF	
781	4		SCH10S		P61K-0046H	Flange WN ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 RF	
781	6		SCH40S		P61K-00293	Flange WN ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 RF	
781	8		SCH40S		P61K-0046J	Flange WN ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 RF	
781	10		SCH40S		P61K-002C6	Flange WN ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 RF	
781	12		SCH10S		P61K-002NV	Flange WN ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 RF	
781	14		SCH10S		P61K-002NW	Flange WN ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 RF	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67K-000KH	Blind flange ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
1	0.75				P67K-000KJ	Blind flange ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
1	1				P67K-000KK	Blind flange ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
1	1.5				P67K-000KL	Blind flange ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
1	2				P67K-000KP	Blind flange ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
1	3				P67K-000KR	Blind flange ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
1	4				P67K-000KS	Blind flange ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
1	6				P67K-000KT	Blind flange ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
1	8				P67K-000KU	Blind flange ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
1	10				P67K-000KM	Blind flange ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
1	12				P67K-000KN	Blind flange ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
1	14				P67K-000M8	Blind flange ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000FT	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000FU	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000G5	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000G6	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	6				P73T-000G7	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	8				P73T-000G8	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

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GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	10				P73T-000FX	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	12				P73T-000FY	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	14				P73T-000FZ	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	0.5				P73T-000J8	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	0.75				P73T-000J9	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1				P73T-000JA	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1.5				P73T-000JB	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	2				P73T-000JH	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	3				P73T-000JL	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	4				P73T-000JM	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	6				P73T-000JN	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	8				P73T-000JP	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	10				P73T-000JC	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	12				P73T-000JD	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	14				P73T-000JE	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-10				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	12-14				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
781	0.5-6				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
781	8-14				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81K-00108	Gate valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	0.75				P81K-00109	Gate valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	1				P81K-0010A	Gate valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	1.5				P81K-0010B	Gate valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	2				P81L-0022J	Gate valve ASTM A351 Grade CF8 Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	3				P81L-0022K	Gate valve ASTM A351 Grade CF8 Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	4				P81L-0022L	Gate valve ASTM A351 Grade CF8 Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	6				P81L-0022M	Gate valve ASTM A351 Grade CF8 Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	8				P81L-0022N	Gate valve ASTM A351 Grade CF8 Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	10				P81L-0022P	Gate valve ASTM A351 Grade CF8 Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated	
714	0.5				P81K-001LC	Gate valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW - NPT Trim number 12 BB-BG-OS&Y Handwheel operated	
714	0.75				P81K-001FD	Gate valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW - NPT Trim number 12 BB-BG-OS&Y Handwheel operated	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82K-000NR	Globe valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	0.75				P82K-000NS	Globe valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	1				P82K-000NT	Globe valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	1.5				P82K-000NU	Globe valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	2				P82L-0013X	Globe valve ASTM A351 Grade CF8 Class 300 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	3				P82L-0013Y	Globe valve ASTM A351 Grade CF8 Class 300 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	

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GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	4				P82L-0013Z	Globe valve ASTM A351 Grade CF8 Class 300 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83K-000LM	Check valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 Lift-type Bolted cover	
1	0.75				P83K-000LN	Check valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 Lift-type Bolted cover	
1	1				P83K-000LP	Check valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 Lift-type Bolted cover	
1	1.5				P83K-000LR	Check valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 Lift-type Bolted cover	
1	2				P83L-0013U	Check valve ASTM A351 Grade CF8 Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	3				P83L-0013V	Check valve ASTM A351 Grade CF8 Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	4				P83L-0013W	Check valve ASTM A351 Grade CF8 Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71K-0007C	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 300 Standard-drawing Flange ASME B16.5 RF	
1	0.75				P71K-0007D	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 300 Standard-drawing Flange ASME B16.5 RF	
1	1				P71K-0007E	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 300 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71K-0007F	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 300 Standard-drawing Flange ASME B16.5 RF	
1	2				P71K-0007G	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 300 Standard-drawing Flange ASME B16.5 RF	
1	3				P71K-0007H	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 300 Standard-drawing Flange ASME B16.5 RF	
1	4				P71K-0007J	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 300 Standard-drawing Flange ASME B16.5 RF	
1	6				P71K-0007K	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 300 Standard-drawing Flange ASME B16.5 RF	
1	8				P71K-0007N	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 300 Standard-drawing Flange ASME B16.5 RF	
1	10				P71K-0007L	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 300 Standard-drawing Flange ASME B16.5 RF	
1	12				P71K-0007M	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 300 Standard-drawing Flange ASME B16.5 RF	

PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72K-0004M	Paddle blank ASTM A182 Grade F304/F304L dual grade Class 300 Standard-drawing Flange ASME B16.5 RF	

PADDLE SPACER (PS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72K-0004N	Paddle spacer ASTM A182 Grade F304/F304L dual grade Class 300 Standard-drawing Flange ASME B16.5 RF	

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BOLT TABLE (B_B0JS , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-003V4		
0.75	4	0.625	75	P80S-003XC		
1	4	0.625	80	P80S-003XD		
1.5	4	0.750	95	P80S-00414		
2	8	0.625	90	P80S-003XF		
3	8	0.750	110	P80S-003XK		
4	8	0.750	115	P80S-003XL		
6	12	0.750	125	P80S-003XN		
8	12	0.875	140	P80S-0041D		
10	16	1.000	160	P80S-0043K		
12	16	1.125	175	P80S-0046S		
14	20	1.125	180	P80S-0046T		

BOLT TABLE (B_B0JS_781 , STUD ASME RF, OPTION CODE 781)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	80	P80S-003V6		
0.75	4	0.625	90	P80S-003XF		
1	4	0.625	95	P80S-003XG		
1.5	4	0.750	110	P80S-003XK		
2	8	0.625	110	P80S-003VC		
3	8	0.750	130	P80S-003XP		
4	8	0.875	150	P80S-0041F		
6	12	1.000	175	P80S-0043P		
8	12	1.125	195	P80S-0046W		
10	16	1.250	250	P80S-004AY		
12	20	1.250	255	P80S-004AZ		
14	20	1.375	270	P80S-003E7		

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BRANCH TABLE (T_B0JS)

RUN PIPE SIZE (in) \ BRANCH SIZE (in)	0.5	0.75	1	1.5	2	3	4	6	8	10	12	14
0.5	TS											
0.75		TS										
1		TR	TS									
1.5		TR	TR	TS								
2		L	TR	TR	TS							
3		L	L	TR	TR	TS						
4	L	L	L	L	TR	TR	TS					
6	L	L	L	L	L	TR	TR	TS				
8		L	L	L	L	L	TR	TR	TS			
10		L	L	L	L	L	TR	TR	TR	TS		
12		L	L	L	L	L	L	TR	TR	TR	TS	
14		L	L	L	L	L	L	TR	TR	TR	TR	TS

TS : STRAIGHT TEE
TR : REDUCING TEE
L : OUTLET

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Material : SS304L
Rating : ASME CLASS 300
Flange Face : RF
C.A.(mm) : 0.00
Gasket : Spiral Wound
Service : UTILITY - WATER SERVICE : DEMINERALISED WATER
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
541	NPT(F) (CA,L)
714	SW - NPT(F) (V)
781	CLASS 600 (B,F,G)

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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P01J-000UC	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE	
1	0.75		SCH80S		P01J-000UD	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE	
1	1		SCH80S		P01J-000UE	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE	
1	1.5		SCH80S		P01J-000UF	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE	
1	2		SCH10S		P01J-000RD	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M BE	
1	3		SCH10S		P01J-000RE	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M BE	
1	4		SCH10S		P01J-000RF	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M BE	
1	6		SCH40S		P01J-000RH	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M BE	
1	8		SCH40S		P01J-000WC	Pipe ASTM A358 Grade 304/304L Class 1 dual grade EFW ASME B36.10M/B36.19M BE	
1	10		SCH40S		P01J-000W6	Pipe ASTM A358 Grade 304/304L Class 1 dual grade EFW ASME B36.10M/B36.19M BE	
1	12		SCH10S		P01J-000S8	Pipe ASTM A358 Grade 304/304L Class 1 dual grade EFW ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P02K-0001K	90 degree elbow ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	0.75				P02K-0001L	90 degree elbow ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	1				P02K-0001M	90 degree elbow ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	1.5				P02K-0001N	90 degree elbow ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	2		SCH10S		P02J-000J0	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	3		SCH10S		P02J-000J1	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	4		SCH10S		P02J-000J2	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	6		SCH40S		P02J-000J4	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	8		SCH40S		P02J-000J7	90 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius	
1	10		SCH40S		P02J-000J5	90 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius	
1	12		SCH10S		P02J-000JD	90 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P03K-0001G	45 degree elbow ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	0.75				P03K-0001H	45 degree elbow ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	1				P03K-0001J	45 degree elbow ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	1.5				P03K-0001K	45 degree elbow ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	2		SCH10S		P03J-000HS	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	3		SCH10S		P03J-000HT	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	4		SCH10S		P03J-000HU	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	6		SCH40S		P03J-000HW	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	8		SCH40S		P03J-000HZ	45 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius	
1	10		SCH40S		P03J-000HX	45 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius	
1	12		SCH10S		P03J-000J5	45 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P21K-0001G	Straight tee ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	0.75				P21K-0001H	Straight tee ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	1				P21K-0001J	Straight tee ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	1.5				P21K-0001K	Straight tee ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	2		SCH10S		P21J-000HM	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	3		SCH10S		P21J-000HN	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	4		SCH10S		P21J-000HP	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	6		SCH40S		P21J-000HS	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	8		SCH40S		P21J-000HV	Straight tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	10		SCH40S		P21J-000HT	Straight tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	12		SCH10S		P21J-000J1	Straight tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	

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REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75			P24K-0001X	Reducing tee ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	1.5	0.75			P24K-0001Z	Reducing tee ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	1.5	1			P24K-00020	Reducing tee ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	2	1	SCH10S	SCH80S	P24J-0065A	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	2	1.5	SCH10S	SCH80S	P24J-0065B	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	3	1.5	SCH10S	SCH80S	P24J-004SV	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	3	2	SCH10S	SCH10S	P24J-002H7	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	4	2	SCH10S	SCH10S	P24J-002H8	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	4	3	SCH10S	SCH10S	P24J-002H9	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	6	3	SCH40S	SCH10S	P24J-002HC	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	6	4	SCH40S	SCH10S	P24J-002HD	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	8	4	SCH40S	SCH10S	P24J-002HE	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	8	6	SCH40S	SCH40S	P24J-002HF	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	10	4	SCH40S	SCH10S	P24J-002HG	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	10	6	SCH40S	SCH40S	P24J-002HH	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	10	8	SCH40S	SCH40S	P24J-002HJ	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	12	6	SCH10S	SCH40S	P24J-006DK	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	12	8	SCH10S	SCH40S	P24J-007JP	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	12	10	SCH10S	SCH40S	P24J-007FA	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	SCH10S	SCH10S	P27J-001PS	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	4	2	SCH10S	SCH10S	P27J-001PT	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	4	3	SCH10S	SCH10S	P27J-001PU	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	6	3	SCH40S	SCH10S	P27J-001PX	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	6	4	SCH40S	SCH10S	P27J-001PY	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	8	4	SCH40S	SCH10S	P27J-001PZ	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	8	6	SCH40S	SCH40S	P27J-001R0	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	10	4	SCH40S	SCH10S	P27J-001R1	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	10	6	SCH40S	SCH40S	P27J-001R2	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	10	8	SCH40S	SCH40S	P27J-001R3	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	12	6	SCH10S	SCH40S	P27J-001RE	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	12	8	SCH10S	SCH40S	P27J-004JE	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	12	10	SCH10S	SCH40S	P27J-004MU	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	SCH10S	SCH10S	P28J-001P8	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	4	2	SCH10S	SCH10S	P28J-001P9	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	4	3	SCH10S	SCH10S	P28J-001PA	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	6	3	SCH40S	SCH10S	P28J-001PD	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	6	4	SCH40S	SCH10S	P28J-001PE	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	8	4	SCH40S	SCH10S	P28J-001PF	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	8	6	SCH40S	SCH40S	P28J-001PG	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	10	4	SCH40S	SCH10S	P28J-001PH	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	10	6	SCH40S	SCH40S	P28J-001PJ	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	10	8	SCH40S	SCH40S	P28J-001PK	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	12	6	SCH10S	SCH40S	P28J-001PX	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	12	8	SCH10S	SCH40S	P28J-004JY	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	12	10	SCH10S	SCH40S	P28J-004NB	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P29K-0001V	Cap ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	0.75				P29K-0001W	Cap ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	1				P29K-0001X	Cap ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	1.5				P29K-0001Y	Cap ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	2		SCH10S		P29J-000G1	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	

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CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3		SCH10S		P29J-000G2	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	4		SCH10S		P29J-000G3	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	6		SCH40S		P29J-000G5	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	8		SCH40S		P29J-000LU	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	10		SCH40S		P29J-000KM	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	12		SCH10S		P29J-000GC	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
541	0.75				P29K-00020	Cap ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P41J-001FS	Straight nipple ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		SCH80S		P41J-001FT	Straight nipple ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		SCH80S		P41J-001FU	Straight nipple ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		SCH80S		P41J-001FV	Straight nipple ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

CON SWAGED NIPPLE (SNC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH80S	SCH80S	P42J-00081	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	SCH80S	SCH80S	P42J-00082	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	SCH80S	SCH80S	P42J-00083	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	SCH80S	SCH80S	P42J-00084	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	SCH80S	SCH80S	P42J-00085	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	SCH80S	SCH80S	P42J-00086	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	SCH10S	SCH80S	P42J-000F9	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	SCH10S	SCH80S	P42J-000F6	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	SCH10S	SCH80S	P42J-000F7	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	SCH10S	SCH80S	P42J-000F8	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	SCH10S	SCH80S	P42J-000AG	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	

ECC SWAGED NIPPLE (SNE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH80S	SCH80S	P43J-0008D	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	SCH80S	SCH80S	P43J-0008E	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	SCH80S	SCH80S	P43J-0008F	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	SCH80S	SCH80S	P43J-0008G	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	SCH80S	SCH80S	P43J-0008H	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	SCH80S	SCH80S	P43J-0008J	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	SCH10S	SCH80S	P43J-000CT	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	SCH10S	SCH80S	P43J-000CU	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	SCH10S	SCH80S	P43J-000CV	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	SCH10S	SCH80S	P43J-000CW	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	SCH10S	SCH80S	P43J-0008P	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	

COUPLING (CPS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P47K-00035	Coupling ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW - SW	
1	0.75				P47K-00036	Coupling ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW - SW	
1	1				P47K-00037	Coupling ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW - SW	
1	1.5				P47K-00038	Coupling ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW - SW	

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OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2 - 2.5	0.75			P31K-00GFG	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 SW	
1	3 - 5	0.75			P31K-00GFH	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 SW	
1	6 - 12	0.75			P31K-008YY	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 SW	
1	3	1			P31K-008ZG	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 SW	
1	4 - 5	1			P31K-00GFL	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 SW	
1	6 - 10	1			P31K-008ZU	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 SW	
1	12 - 36	1			P31K-008Z6	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 SW	
1	4	1.5			P31K-0099M	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 SW	
1	5 - 6	1.5			P31K-00GFS	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 SW	
1	8 - 12	1.5			P31K-0099Z	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 SW	
541	1	0.75			P31K-00911	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 NPT	
541	1.5	0.75			P31K-00916	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 NPT	
541	2 - 2.5	0.75			P31K-00GFJ	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 NPT	
541	3 - 5	0.75			P31K-00GFK	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 NPT	
541	6 - 12	0.75			P31K-0091X	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 NPT	
1	6	2	SCH40S	SCH10S	P31K-005AW	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	8	2	SCH40S	SCH10S	P31K-005AX	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	10	2	SCH40S	SCH10S	P31K-005AZ	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	12	2	SCH10S	SCH10S	P31K-005JX	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	8	3	SCH40S	SCH10S	P31K-005AY	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	10	3	SCH40S	SCH10S	P31K-005B0	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	12	3	SCH10S	SCH10S	P31K-007LF	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	12	4	SCH10S	SCH10S	P31K-00812	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30K-0001G	Plug ASTM A182 Grade F304/F304L dual grade ASME B16.11 NPT Round head	
1	0.75				P30K-0001H	Plug ASTM A182 Grade F304/F304L dual grade ASME B16.11 NPT Round head	
1	1				P30K-0001J	Plug ASTM A182 Grade F304/F304L dual grade ASME B16.11 NPT Round head	
1	1.5				P30K-0001K	Plug ASTM A182 Grade F304/F304L dual grade ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P61K-003A9	Flange SW ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
1	0.75		SCH80S		P61K-003AA	Flange SW ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
1	1		SCH80S		P61K-003AB	Flange SW ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
1	1.5		SCH80S		P61K-003AC	Flange SW ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
1	2		SCH10S		P61K-0023W	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
1	3		SCH10S		P61K-0023X	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
1	4		SCH10S		P61K-0023Y	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
1	6		SCH40S		P61K-0023Z	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
1	8		SCH40S		P61K-00240	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
1	10		SCH40S		P61K-0023U	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
1	12		SCH10S		P61K-0024Z	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
781	0.5		SCH80S		P61K-003AT	Flange SW ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 RF	
781	0.75		SCH80S		P61K-003AU	Flange SW ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 RF	
781	1		SCH80S		P61K-003AV	Flange SW ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 RF	
781	1.5		SCH80S		P61K-003AW	Flange SW ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 RF	
781	2		SCH10S		P61K-00290	Flange WN ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 RF	
781	3		SCH10S		P61K-003D3	Flange WN ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 RF	
781	4		SCH10S		P61K-0046H	Flange WN ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 RF	
781	6		SCH40S		P61K-00293	Flange WN ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 RF	
781	8		SCH40S		P61K-0046J	Flange WN ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 RF	
781	10		SCH40S		P61K-002C6	Flange WN ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 RF	
781	12		SCH10S		P61K-002NV	Flange WN ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 RF	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67K-000KH	Blind flange ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	

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BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75				P67K-000KJ	Blind flange ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
1	1				P67K-000KK	Blind flange ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
1	1.5				P67K-000KL	Blind flange ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
1	2				P67K-000KP	Blind flange ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
1	3				P67K-000KR	Blind flange ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
1	4				P67K-000KS	Blind flange ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
1	6				P67K-000KT	Blind flange ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
1	8				P67K-000KU	Blind flange ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
1	10				P67K-000KM	Blind flange ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
1	12				P67K-000KN	Blind flange ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000FT	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000FU	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000G5	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000G6	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	6				P73T-000G7	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	8				P73T-000G8	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	10				P73T-000FX	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	12				P73T-000FY	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	0.5				P73T-000J8	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	0.75				P73T-000J9	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1				P73T-000JA	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1.5				P73T-000JB	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	2				P73T-000JH	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	3				P73T-000JL	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	4				P73T-000JM	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	6				P73T-000JN	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	8				P73T-000JP	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	10				P73T-000JC	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	12				P73T-000JD	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-10				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	12				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
781	0.5-6				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
781	8-12				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81K-00108	Gate valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	0.75				P81K-00109	Gate valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	1				P81K-0010A	Gate valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	

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GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5				P81K-0010B	Gate valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	2				P81L-0022J	Gate valve ASTM A351 Grade CF8 Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	3				P81L-0022K	Gate valve ASTM A351 Grade CF8 Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	4				P81L-0022L	Gate valve ASTM A351 Grade CF8 Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	6				P81L-0022M	Gate valve ASTM A351 Grade CF8 Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	8				P81L-0022N	Gate valve ASTM A351 Grade CF8 Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	10				P81L-0022P	Gate valve ASTM A351 Grade CF8 Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated	
1	12				P81L-0022R	Gate valve ASTM A351 Grade CF8 Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated	
714	0.5				P81K-001LC	Gate valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW - NPT Trim number 12 BB-BG-OS&Y Handwheel operated	
714	0.75				P81K-001FD	Gate valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW - NPT Trim number 12 BB-BG-OS&Y Handwheel operated	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82K-000NR	Globe valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	0.75				P82K-000NS	Globe valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	1				P82K-000NT	Globe valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	1.5				P82K-000NU	Globe valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	2				P82L-0013X	Globe valve ASTM A351 Grade CF8 Class 300 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	3				P82L-0013Y	Globe valve ASTM A351 Grade CF8 Class 300 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	4				P82L-0013Z	Globe valve ASTM A351 Grade CF8 Class 300 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83K-000LM	Check valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 Lift-type Bolted cover	
1	0.75				P83K-000LN	Check valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 Lift-type Bolted cover	
1	1				P83K-000LP	Check valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 Lift-type Bolted cover	
1	1.5				P83K-000LR	Check valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 Lift-type Bolted cover	
1	2				P83L-0013U	Check valve ASTM A351 Grade CF8 Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	3				P83L-0013V	Check valve ASTM A351 Grade CF8 Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	4				P83L-0013W	Check valve ASTM A351 Grade CF8 Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71K-0007C	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 300 Standard-drawing Flange ASME B16.5 RF	
1	0.75				P71K-0007D	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 300 Standard-drawing Flange ASME B16.5 RF	
1	1				P71K-0007E	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 300 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71K-0007F	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 300 Standard-drawing Flange ASME B16.5 RF	
1	2				P71K-0007G	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 300 Standard-drawing Flange ASME B16.5 RF	
1	3				P71K-0007H	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 300 Standard-drawing Flange ASME B16.5 RF	
1	4				P71K-0007J	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 300 Standard-drawing Flange ASME B16.5 RF	
1	6				P71K-0007K	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 300 Standard-drawing Flange ASME B16.5 RF	
1	8				P71K-0007N	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 300 Standard-drawing Flange ASME B16.5 RF	
1	10				P71K-0007L	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 300 Standard-drawing Flange ASME B16.5 RF	
1	12				P71K-0007M	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 300 Standard-drawing Flange ASME B16.5 RF	

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PIPING CLASS
B0JW REV NO. 2

BOLT TABLE (B_B0JW , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-003V4		
0.75	4	0.625	75	P80S-003XC		
1	4	0.625	80	P80S-003XD		
1.5	4	0.750	95	P80S-00414		
2	8	0.625	90	P80S-003XF		
3	8	0.750	110	P80S-003XK		
4	8	0.750	115	P80S-003XL		
6	12	0.750	125	P80S-003XN		
8	12	0.875	140	P80S-0041D		
10	16	1.000	160	P80S-0043K		
12	16	1.125	175	P80S-0046S		

BOLT TABLE (B_B0JW_781 , STUD ASME RF, OPTION CODE 781)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	80	P80S-003V6		
0.75	4	0.625	90	P80S-003XF		
1	4	0.625	95	P80S-003XG		
1.5	4	0.750	110	P80S-003XK		
2	8	0.625	110	P80S-003VC		
3	8	0.750	130	P80S-003XP		
4	8	0.875	150	P80S-0041F		
6	12	1.000	175	P80S-0043P		
8	12	1.125	195	P80S-0046W		
10	16	1.250	250	P80S-004AY		
12	20	1.250	255	P80S-004AZ		

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PIPING CLASS

B0JW REV NO. 2

BRANCH TABLE (T_B0JW)

RUN PIPE SIZE (in) \ BRANCH SIZE (in)	0.5	0.75	1	1.5	2	3	4	6	8	10	12
0.5	TS										
0.75		TS									
1		TR	TS								
1.5		TR	TR	TS							
2		L	TR	TR	TS						
3		L	L	TR	TR	TS					
4	L	L	L	L	TR	TR	TS				
6	L	L	L	L	L	TR	TR	TS			
8		L	L	L	L	L	TR	TR	TS		
10		L	L	L	L	L	TR	TR	TR	TS	
12		L	L	L	L	L	L	TR	TR	TR	TS

TR : REDUCING TEE
TS : STRAIGHT TEE
L : OUTLET

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PIPING CLASS

B0JY REV NO. 2

Material : SS304L
Rating : ASME CLASS 300
Flange Face : RF
C.A.(mm) : 0.00
Gasket : Spiral Wound
Service : PROCESS - CHEMICAL DOSING : / CHEMICALS
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
2	USE OF SOFT SEATED BALL, PLUG AND BUTTERFLY VALVES SHALL BE LIMITED TO MAXIMUM OF 204DEGC (400DEGF)

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
541	NPT(F) (CA,F,L)
781	CLASS 600 (B,F,G)
3001	INSULATION GASKET KIT AND BOLTS FOR FLANGE (G)
4608	VALVE WITH NIPPLES (V)

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PIPING CLASS
B0JY REV NO. 2

PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P01J-000UC	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE	
1	0.75		SCH80S		P01J-000UD	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE	
1	1		SCH80S		P01J-000UE	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE	
1	1.5		SCH80S		P01J-000UF	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE	
1	2		SCH10S		P01J-000RD	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P02J-000VD	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	0.75		SCH80S		P02J-000VE	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	1		SCH80S		P02J-000VF	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	1.5		SCH80S		P02J-000VG	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	2		SCH10S		P02J-000J0	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P03J-000UW	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	0.75		SCH80S		P03J-000UX	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	1		SCH80S		P03J-000UY	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	1.5		SCH80S		P03J-000UZ	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	2		SCH10S		P03J-000HS	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P21J-000V1	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	0.75		SCH80S		P21J-000V2	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	1		SCH80S		P21J-000V3	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	1.5		SCH80S		P21J-000V4	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	2		SCH10S		P21J-000HM	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75	SCH80S	SCH80S	P24J-003NX	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	1.5	0.75	SCH80S	SCH80S	P24J-003NZ	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	1.5	1	SCH80S	SCH80S	P24J-003P0	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	2	1	SCH10S	SCH80S	P24J-0065A	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	2	1.5	SCH10S	SCH80S	P24J-0065B	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH80S	SCH80S	P27J-002R0	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	1	0.5	SCH80S	SCH80S	P27J-002R1	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	1	0.75	SCH80S	SCH80S	P27J-002R2	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	1.5	0.5	SCH80S	SCH80S	P27J-002R3	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	1.5	0.75	SCH80S	SCH80S	P27J-002R4	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	1.5	1	SCH80S	SCH80S	P27J-002R5	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	2	0.75	SCH10S	SCH80S	P27J-004KS	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	2	1	SCH10S	SCH80S	P27J-004J0	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	2	1.5	SCH10S	SCH80S	P27J-004J1	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH80S	SCH80S	P28J-002NL	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	1	0.5	SCH80S	SCH80S	P28J-002NM	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	

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ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75	SCH80S	SCH80S	P28J-002NN	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	1.5	0.5	SCH80S	SCH80S	P28J-002NP	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	1.5	0.75	SCH80S	SCH80S	P28J-002NR	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	1.5	1	SCH80S	SCH80S	P28J-002NS	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	2	0.75	SCH10S	SCH80S	P28J-004L9	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	2	1	SCH10S	SCH80S	P28J-004JH	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	2	1.5	SCH10S	SCH80S	P28J-004JJ	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P29J-000T0	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	0.75		SCH80S		P29J-000T1	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	1		SCH80S		P29J-000T2	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	1.5		SCH80S		P29J-000T3	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	2		SCH10S		P29J-000G1	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
541	0.75				P29K-00020	Cap ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P41J-001FS	Straight nipple ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		SCH80S		P41J-001FT	Straight nipple ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		SCH80S		P41J-001FU	Straight nipple ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		SCH80S		P41J-001FV	Straight nipple ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
541	1	0.75			P31K-00911	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 NPT	
541	1.5	0.75			P31K-00916	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 NPT	
541	2 - 2.5	0.75			P31K-00GFJ	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 NPT	
1	2	0.75	SCH10S	SCH80S	P31K-00DM8	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30K-0001G	Plug ASTM A182 Grade F304/F304L dual grade ASME B16.11 NPT Round head	
1	0.75				P30K-0001H	Plug ASTM A182 Grade F304/F304L dual grade ASME B16.11 NPT Round head	
1	1				P30K-0001J	Plug ASTM A182 Grade F304/F304L dual grade ASME B16.11 NPT Round head	
1	1.5				P30K-0001K	Plug ASTM A182 Grade F304/F304L dual grade ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P61K-0027N	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
1	0.75		SCH80S		P61K-0027P	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
1	1		SCH80S		P61K-0027R	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
1	1.5		SCH80S		P61K-0027S	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
1	2		SCH10S		P61K-0023W	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
541	0.5				P61K-0069L	Flange NPT ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
541	0.75				P61K-00605	Flange NPT ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
781	0.5		SCH80S		P61K-002KH	Flange WN ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 RF	
781	0.75		SCH80S		P61K-002KJ	Flange WN ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 RF	
781	1		SCH80S		P61K-002KK	Flange WN ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 RF	
781	1.5		SCH80S		P61K-002KL	Flange WN ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 RF	
781	2		SCH10S		P61K-00290	Flange WN ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 RF	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67K-000KH	Blind flange ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	

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BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75				P67K-000KJ	Blind flange ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
1	1				P67K-000KK	Blind flange ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
1	1.5				P67K-000KL	Blind flange ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
1	2				P67K-000KP	Blind flange ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000FT	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000FU	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
3001	1				P78U-00069	Insulation gasket kit Glass reinforced epoxy Class 300 Manufacturer-standard Flange ASME B16.5 RF	
781	0.5				P73T-000J8	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	0.75				P73T-000J9	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1				P73T-000JA	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1.5				P73T-000JB	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	2				P73T-000JH	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-2				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
781	0.5-2				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81K-001BK	Gate valve ASTM A182 Grade F304/F304L dual grade Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Fluid-1	
1	0.75				P81K-001BL	Gate valve ASTM A182 Grade F304/F304L dual grade Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Fluid-1	
1	1				P81K-001BM	Gate valve ASTM A182 Grade F304/F304L dual grade Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Fluid-1	
1	1.5				P81K-001BN	Gate valve ASTM A182 Grade F304/F304L dual grade Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Fluid-1	
1	2				P81L-002S2	Gate valve ASTM A351 Grade CF8 Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Fluid-1	
4608	0.75				P81K-001NN	Gate valve ASTM A182 Grade F304/F304L dual grade Class 300 API 602 BW both sides w/ nipples BE - NPT ASTM A312-TP304(L) dual grade Seamless Sch80S-nipple Trim number 12 BB-BG-OS&Y Handwheel operated Fluid-1	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82K-000X5	Globe valve ASTM A182 Grade F304/F304L dual grade Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Fluid-1	
1	0.75				P82K-000X6	Globe valve ASTM A182 Grade F304/F304L dual grade Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Fluid-1	
1	1				P82K-000X7	Globe valve ASTM A182 Grade F304/F304L dual grade Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Fluid-1	
1	1.5				P82K-000X8	Globe valve ASTM A182 Grade F304/F304L dual grade Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Fluid-1	
1	2				P82L-001GT	Globe valve ASTM A351 Grade CF8 Class 300 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Fluid-1	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83K-000R1	Check valve ASTM A182 Grade F304/F304L dual grade Class 300 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover	
1	0.75				P83K-000R2	Check valve ASTM A182 Grade F304/F304L dual grade Class 300 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover	
1	1				P83K-000R3	Check valve ASTM A182 Grade F304/F304L dual grade Class 300 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover	
1	1.5				P83K-000R4	Check valve ASTM A182 Grade F304/F304L dual grade Class 300 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover	
1	2				P83L-0013U	Check valve ASTM A351 Grade CF8 Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	

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SPECT BLANK (SB)							
OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71K-0007C	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 300 Standard-drawing Flange ASME B16.5 RF	
1	0.75				P71K-0007D	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 300 Standard-drawing Flange ASME B16.5 RF	
1	1				P71K-0007E	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 300 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71K-0007F	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 300 Standard-drawing Flange ASME B16.5 RF	
1	2				P71K-0007G	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 300 Standard-drawing Flange ASME B16.5 RF	

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BOLT TABLE (B_B0JY , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-003V4		
0.75	4	0.625	75	P80S-003XC		
1	4	0.625	80	P80S-003XD		
1.5	4	0.750	95	P80S-00414		
2	8	0.625	90	P80S-003XF		

BOLT TABLE (B_B0JY_781 , STUD ASME RF, OPTION CODE 781)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	80	P80S-003V6		
0.75	4	0.625	90	P80S-003XF		
1	4	0.625	95	P80S-003XG		
1.5	4	0.750	110	P80S-003XK		
2	8	0.625	110	P80S-003VC		

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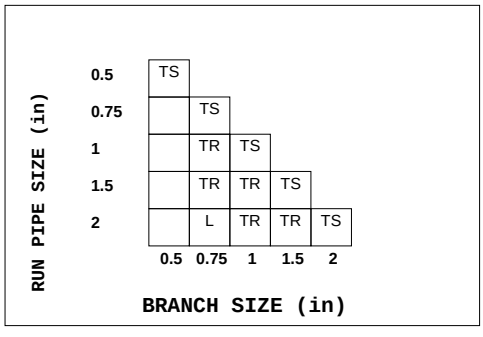
BRANCH TABLE (T_B0JY)



TS : STRAIGHT TEE
TR : REDUCING TEE
L : OUTLET

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PIPING CLASS

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Material : SS304L
Rating : ASME CLASS 300
Flange Face : RF
C.A.(mm) : 0.00
Gasket : Spiral Wound
Service : PROCESS - CHEMICAL DOSING
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
2	USE OF SOFT SEATED BALL, PLUG AND BUTTERFLY VALVES SHALL BE LIMITED TO MAXIMUM OF 204DEGC (400DEGF)

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
541	NPT(F) (CA,F,L)
781	CLASS 600 (B,F,G)
4608	VALVE WITH NIPPLES (V)

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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P01J-000UC	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE	
1	0.75		SCH80S		P01J-000UD	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE	
1	1		SCH80S		P01J-000UE	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE	
1	1.5		SCH80S		P01J-000UF	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE	
1	2		SCH10S		P01J-000RD	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M BE	
1	3		SCH10S		P01J-000RE	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M BE	
1	4		SCH10S		P01J-000RF	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P02J-000VD	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	0.75		SCH80S		P02J-000VE	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	1		SCH80S		P02J-000VF	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	1.5		SCH80S		P02J-000VG	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	2		SCH10S		P02J-000J0	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	3		SCH10S		P02J-000J1	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	4		SCH10S		P02J-000J2	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P03J-000UW	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	0.75		SCH80S		P03J-000UX	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	1		SCH80S		P03J-000UY	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	1.5		SCH80S		P03J-000UZ	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	2		SCH10S		P03J-000HS	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	3		SCH10S		P03J-000HT	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	4		SCH10S		P03J-000HU	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P21J-000V1	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	0.75		SCH80S		P21J-000V2	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	1		SCH80S		P21J-000V3	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	1.5		SCH80S		P21J-000V4	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	2		SCH10S		P21J-000HM	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	3		SCH10S		P21J-000HN	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	4		SCH10S		P21J-000HP	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75	SCH80S	SCH80S	P24J-003NX	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	1.5	0.75	SCH80S	SCH80S	P24J-003NZ	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	1.5	1	SCH80S	SCH80S	P24J-003P0	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	2	1	SCH10S	SCH80S	P24J-0065A	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	2	1.5	SCH10S	SCH80S	P24J-0065B	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	3	1.5	SCH10S	SCH80S	P24J-004SV	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	3	2	SCH10S	SCH10S	P24J-002H7	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	4	2	SCH10S	SCH10S	P24J-002H8	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	4	3	SCH10S	SCH10S	P24J-002H9	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH80S	SCH80S	P27J-002R0	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	

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CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.5	SCH80S	SCH80S	P27J-002R1	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	1	0.75	SCH80S	SCH80S	P27J-002R2	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	1.5	0.5	SCH80S	SCH80S	P27J-002R3	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	1.5	0.75	SCH80S	SCH80S	P27J-002R4	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	1.5	1	SCH80S	SCH80S	P27J-002R5	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	2	0.75	SCH10S	SCH80S	P27J-004KS	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	2	1	SCH10S	SCH80S	P27J-004J0	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	2	1.5	SCH10S	SCH80S	P27J-004J1	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	3	1.5	SCH10S	SCH80S	P27J-003LL	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	3	2	SCH10S	SCH10S	P27J-001PS	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	4	1.5	SCH10S	SCH80S	P27J-003LM	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	4	2	SCH10S	SCH10S	P27J-001PT	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	4	3	SCH10S	SCH10S	P27J-001PU	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH80S	SCH80S	P28J-002NL	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	1	0.5	SCH80S	SCH80S	P28J-002NM	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	1	0.75	SCH80S	SCH80S	P28J-002NN	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	1.5	0.5	SCH80S	SCH80S	P28J-002NP	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	1.5	0.75	SCH80S	SCH80S	P28J-002NR	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	1.5	1	SCH80S	SCH80S	P28J-002NS	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	2	0.75	SCH10S	SCH80S	P28J-004L9	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	2	1	SCH10S	SCH80S	P28J-004JH	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	2	1.5	SCH10S	SCH80S	P28J-004JJ	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	3	1.5	SCH10S	SCH80S	P28J-003M9	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	3	2	SCH10S	SCH10S	P28J-001P8	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	4	1.5	SCH10S	SCH80S	P28J-003MA	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	4	2	SCH10S	SCH10S	P28J-001P9	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	4	3	SCH10S	SCH10S	P28J-001PA	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P29J-000T0	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	0.75		SCH80S		P29J-000T1	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	1		SCH80S		P29J-000T2	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	1.5		SCH80S		P29J-000T3	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	2		SCH10S		P29J-000G1	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	3		SCH10S		P29J-000G2	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	4		SCH10S		P29J-000G3	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
541	0.75				P29K-00020	Cap ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P41J-001FS	Straight nipple ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		SCH80S		P41J-001FT	Straight nipple ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		SCH80S		P41J-001FU	Straight nipple ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		SCH80S		P41J-001FV	Straight nipple ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
541	1	0.75			P31K-00911	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 NPT	
541	1.5	0.75			P31K-00916	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 NPT	
541	2 - 2.5	0.75			P31K-00GFJ	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 NPT	
541	3 - 5	0.75			P31K-00GFK	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 NPT	
1	2	0.75	SCH10S	SCH80S	P31K-00DM8	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	3	0.75	SCH10S	SCH80S	P31K-00BWW	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	

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OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	4	0.75	SCH10S	SCH80S	P31K-00BX1	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	3	1	SCH10S	SCH80S	P31K-00BWX	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	4	1	SCH10S	SCH80S	P31K-00BX2	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	4	1.5	SCH10S	SCH80S	P31K-00BX3	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30K-0001G	Plug ASTM A182 Grade F304/F304L dual grade ASME B16.11 NPT Round head	
1	0.75				P30K-0001H	Plug ASTM A182 Grade F304/F304L dual grade ASME B16.11 NPT Round head	
1	1				P30K-0001J	Plug ASTM A182 Grade F304/F304L dual grade ASME B16.11 NPT Round head	
1	1.5				P30K-0001K	Plug ASTM A182 Grade F304/F304L dual grade ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P61K-0027N	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
1	0.75		SCH80S		P61K-0027P	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
1	1		SCH80S		P61K-0027R	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
1	1.5		SCH80S		P61K-0027S	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
1	2		SCH10S		P61K-0023W	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
1	3		SCH10S		P61K-0023X	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
1	4		SCH10S		P61K-0023Y	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
541	0.5				P61K-0069L	Flange NPT ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
541	0.75				P61K-00605	Flange NPT ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
781	0.5		SCH80S		P61K-002KH	Flange WN ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 RF	
781	0.75		SCH80S		P61K-002KJ	Flange WN ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 RF	
781	1		SCH80S		P61K-002KK	Flange WN ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 RF	
781	1.5		SCH80S		P61K-002KL	Flange WN ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 RF	
781	2		SCH10S		P61K-00290	Flange WN ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 RF	
781	3		SCH10S		P61K-003D3	Flange WN ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 RF	
781	4		SCH10S		P61K-0046H	Flange WN ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 RF	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67K-000KH	Blind flange ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
1	0.75				P67K-000KJ	Blind flange ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
1	1				P67K-000KK	Blind flange ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
1	1.5				P67K-000KL	Blind flange ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
1	2				P67K-000KP	Blind flange ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
1	3				P67K-000KR	Blind flange ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
1	4				P67K-000KS	Blind flange ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000FT	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000FU	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000G5	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000G6	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	0.5				P73T-000J8	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	0.75				P73T-000J9	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1				P73T-000JA	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1.5				P73T-000JB	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

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GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
781	2				P73T-000JH	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	3				P73T-000JL	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	4				P73T-000JM	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-4				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
781	0.5-4				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81K-001BK	Gate valve ASTM A182 Grade F304/F304L dual grade Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Fluid-1	
1	0.75				P81K-001BL	Gate valve ASTM A182 Grade F304/F304L dual grade Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Fluid-1	
1	1				P81K-001BM	Gate valve ASTM A182 Grade F304/F304L dual grade Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Fluid-1	
1	1.5				P81K-001BN	Gate valve ASTM A182 Grade F304/F304L dual grade Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Fluid-1	
1	2				P81L-002S2	Gate valve ASTM A351 Grade CF8 Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Fluid-1	
4608	0.75				P81K-001NN	Gate valve ASTM A182 Grade F304/F304L dual grade Class 300 API 602 BW both sides w/ nipples BE - NPT ASTM A312-TP304(L) dual grade Seamless Sch80S-nipple Trim number 12 BB-BG-OS&Y Handwheel operated Fluid-1	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71K-0007C	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 300 Standard-drawing Flange ASME B16.5 RF	
1	0.75				P71K-0007D	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 300 Standard-drawing Flange ASME B16.5 RF	
1	1				P71K-0007E	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 300 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71K-0007F	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 300 Standard-drawing Flange ASME B16.5 RF	
1	2				P71K-0007G	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 300 Standard-drawing Flange ASME B16.5 RF	
1	3				P71K-0007H	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 300 Standard-drawing Flange ASME B16.5 RF	
1	4				P71K-0007J	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 300 Standard-drawing Flange ASME B16.5 RF	

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BOLT TABLE (B_B0JY01 , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-003V4		
0.75	4	0.625	75	P80S-003XC		
1	4	0.625	80	P80S-003XD		
1.5	4	0.750	95	P80S-00414		
2	8	0.625	90	P80S-003XF		
3	8	0.750	110	P80S-003XK		
4	8	0.750	115	P80S-003XL		

BOLT TABLE (B_B0JY01_781 , STUD ASME RF, OPTION CODE 781)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	80	P80S-003V6		
0.75	4	0.625	90	P80S-003XF		
1	4	0.625	95	P80S-003XG		
1.5	4	0.750	110	P80S-003XK		
2	8	0.625	110	P80S-003VC		
3	8	0.750	130	P80S-003XP		
4	8	0.875	150	P80S-0041F		

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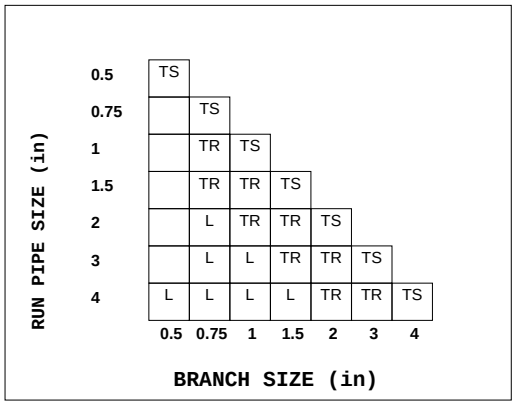
BRANCH TABLE (T_B0JY01)



TS : STRAIGHT TEE
L : OUTLET
TR : REDUCING TEE

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PIPING CLASS

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Material : SS304L
Rating : ASME CLASS 300
Flange Face : RF
C.A.(mm) : 0.00
Gasket : Spiral Wound
Service : PROCESS - CHEMICAL DOSING
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
2	USE OF SOFT SEATED BALL, PLUG AND BUTTERFLY VALVES SHALL BE LIMITED TO MAXIMUM OF 204DEGC (400DEGF)

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
541	NPT(F) (CA,F,L)
781	CLASS 600 (B,F,G)
4608	VALVE WITH NIPPLES (V)

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PIPING CLASS
B0JY04 REV NO. 2

PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P01J-000UC	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE	
1	0.75		SCH80S		P01J-000UD	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE	
1	1		SCH80S		P01J-000UE	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE	
1	1.5		SCH80S		P01J-000UF	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE	
1	2		SCH10S		P01J-000RD	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M BE	
1	3		SCH10S		P01J-000RE	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M BE	
1	4		SCH10S		P01J-000RF	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P02J-000VD	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	0.75		SCH80S		P02J-000VE	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	1		SCH80S		P02J-000VF	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	1.5		SCH80S		P02J-000VG	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	2		SCH10S		P02J-000J0	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	3		SCH10S		P02J-000J1	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	4		SCH10S		P02J-000J2	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P03J-000UW	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	0.75		SCH80S		P03J-000UX	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	1		SCH80S		P03J-000UY	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	1.5		SCH80S		P03J-000UZ	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	2		SCH10S		P03J-000HS	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	3		SCH10S		P03J-000HT	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	4		SCH10S		P03J-000HU	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P21J-000V1	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	0.75		SCH80S		P21J-000V2	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	1		SCH80S		P21J-000V3	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	1.5		SCH80S		P21J-000V4	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	2		SCH10S		P21J-000HM	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	3		SCH10S		P21J-000HN	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	4		SCH10S		P21J-000HP	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75	SCH80S	SCH80S	P24J-003NX	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	1.5	0.75	SCH80S	SCH80S	P24J-003NZ	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	1.5	1	SCH80S	SCH80S	P24J-003P0	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	2	1	SCH10S	SCH80S	P24J-0065A	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	2	1.5	SCH10S	SCH80S	P24J-0065B	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	3	1.5	SCH10S	SCH80S	P24J-004SV	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	3	2	SCH10S	SCH10S	P24J-002H7	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	4	2	SCH10S	SCH10S	P24J-002H8	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	4	3	SCH10S	SCH10S	P24J-002H9	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH80S	SCH80S	P27J-002R0	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	

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CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.5	SCH80S	SCH80S	P27J-002R1	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	1	0.75	SCH80S	SCH80S	P27J-002R2	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	1.5	0.5	SCH80S	SCH80S	P27J-002R3	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	1.5	0.75	SCH80S	SCH80S	P27J-002R4	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	1.5	1	SCH80S	SCH80S	P27J-002R5	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	2	0.75	SCH10S	SCH80S	P27J-004KS	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	2	1	SCH10S	SCH80S	P27J-004J0	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	2	1.5	SCH10S	SCH80S	P27J-004J1	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	3	1.5	SCH10S	SCH80S	P27J-003LL	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	3	2	SCH10S	SCH10S	P27J-001PS	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	4	1.5	SCH10S	SCH80S	P27J-003LM	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	4	2	SCH10S	SCH10S	P27J-001PT	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	4	3	SCH10S	SCH10S	P27J-001PU	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH80S	SCH80S	P28J-002NL	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	1	0.5	SCH80S	SCH80S	P28J-002NM	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	1	0.75	SCH80S	SCH80S	P28J-002NN	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	1.5	0.5	SCH80S	SCH80S	P28J-002NP	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	1.5	0.75	SCH80S	SCH80S	P28J-002NR	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	1.5	1	SCH80S	SCH80S	P28J-002NS	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	2	0.75	SCH10S	SCH80S	P28J-004L9	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	2	1	SCH10S	SCH80S	P28J-004JH	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	2	1.5	SCH10S	SCH80S	P28J-004JJ	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	3	1.5	SCH10S	SCH80S	P28J-003M9	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	3	2	SCH10S	SCH10S	P28J-001P8	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	4	1.5	SCH10S	SCH80S	P28J-003MA	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	4	2	SCH10S	SCH10S	P28J-001P9	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	4	3	SCH10S	SCH10S	P28J-001PA	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P29J-000T0	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	0.75		SCH80S		P29J-000T1	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	1		SCH80S		P29J-000T2	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	1.5		SCH80S		P29J-000T3	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	2		SCH10S		P29J-000G1	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	3		SCH10S		P29J-000G2	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	4		SCH10S		P29J-000G3	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
541	0.75				P29K-00020	Cap ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P41J-001FS	Straight nipple ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		SCH80S		P41J-001FT	Straight nipple ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		SCH80S		P41J-001FU	Straight nipple ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		SCH80S		P41J-001FV	Straight nipple ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
541	1	0.75			P31K-00911	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 NPT	
541	1.5	0.75			P31K-00916	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 NPT	
541	2 - 2.5	0.75			P31K-00GFJ	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 NPT	
541	3 - 5	0.75			P31K-00GFK	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 NPT	
1	2	0.75	SCH10S	SCH80S	P31K-00DM8	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	3	0.75	SCH10S	SCH80S	P31K-00BWW	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	

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OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	4	0.75	SCH10S	SCH80S	P31K-00BX1	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	3	1	SCH10S	SCH80S	P31K-00BWX	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	4	1	SCH10S	SCH80S	P31K-00BX2	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	4	1.5	SCH10S	SCH80S	P31K-00BX3	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30K-0001G	Plug ASTM A182 Grade F304/F304L dual grade ASME B16.11 NPT Round head	
1	0.75				P30K-0001H	Plug ASTM A182 Grade F304/F304L dual grade ASME B16.11 NPT Round head	
1	1				P30K-0001J	Plug ASTM A182 Grade F304/F304L dual grade ASME B16.11 NPT Round head	
1	1.5				P30K-0001K	Plug ASTM A182 Grade F304/F304L dual grade ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P61K-0027N	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
1	0.75		SCH80S		P61K-0027P	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
1	1		SCH80S		P61K-0027R	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
1	1.5		SCH80S		P61K-0027S	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
1	2		SCH10S		P61K-0023W	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
1	3		SCH10S		P61K-0023X	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
1	4		SCH10S		P61K-0023Y	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
541	0.5				P61K-0069L	Flange NPT ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
541	0.75				P61K-00605	Flange NPT ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
781	0.5		SCH80S		P61K-002KH	Flange WN ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 RF	
781	0.75		SCH80S		P61K-002KJ	Flange WN ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 RF	
781	1		SCH80S		P61K-002KK	Flange WN ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 RF	
781	1.5		SCH80S		P61K-002KL	Flange WN ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 RF	
781	2		SCH10S		P61K-00290	Flange WN ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 RF	
781	3		SCH10S		P61K-003D3	Flange WN ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 RF	
781	4		SCH10S		P61K-0046H	Flange WN ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 RF	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67K-000KH	Blind flange ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
1	0.75				P67K-000KJ	Blind flange ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
1	1				P67K-000KK	Blind flange ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
1	1.5				P67K-000KL	Blind flange ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
1	2				P67K-000KP	Blind flange ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
1	3				P67K-000KR	Blind flange ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
1	4				P67K-000KS	Blind flange ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000FT	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000FU	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000G5	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000G6	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	0.5				P73T-000J8	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	0.75				P73T-000J9	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1				P73T-000JA	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1.5				P73T-000JB	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

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GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
781	2				P73T-000JH	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	3				P73T-000JL	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	4				P73T-000JM	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-4				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
781	0.5-4				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81K-001BK	Gate valve ASTM A182 Grade F304/F304L dual grade Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Fluid-1	
1	0.75				P81K-001BL	Gate valve ASTM A182 Grade F304/F304L dual grade Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Fluid-1	
1	1				P81K-001BM	Gate valve ASTM A182 Grade F304/F304L dual grade Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Fluid-1	
1	1.5				P81K-001BN	Gate valve ASTM A182 Grade F304/F304L dual grade Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Fluid-1	
1	2				P81L-002S2	Gate valve ASTM A351 Grade CF8 Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Fluid-1	
4608	0.75				P81K-001NN	Gate valve ASTM A182 Grade F304/F304L dual grade Class 300 API 602 BW both sides w/ nipples BE - NPT ASTM A312-TP304(L) dual grade Seamless Sch80S-nipple Trim number 12 BB-BG-OS&Y Handwheel operated Fluid-1	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83K-000R1	Check valve ASTM A182 Grade F304/F304L dual grade Class 300 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover	
1	0.75				P83K-000R2	Check valve ASTM A182 Grade F304/F304L dual grade Class 300 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover	
1	1				P83K-000R3	Check valve ASTM A182 Grade F304/F304L dual grade Class 300 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover	
1	1.5				P83K-000R4	Check valve ASTM A182 Grade F304/F304L dual grade Class 300 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71K-0007C	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 300 Standard-drawing Flange ASME B16.5 RF	
1	0.75				P71K-0007D	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 300 Standard-drawing Flange ASME B16.5 RF	
1	1				P71K-0007E	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 300 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71K-0007F	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 300 Standard-drawing Flange ASME B16.5 RF	
1	2				P71K-0007G	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 300 Standard-drawing Flange ASME B16.5 RF	
1	3				P71K-0007H	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 300 Standard-drawing Flange ASME B16.5 RF	
1	4				P71K-0007J	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 300 Standard-drawing Flange ASME B16.5 RF	

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BOLT TABLE (B_B0JY04 , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-003V4		
0.75	4	0.625	75	P80S-003XC		
1	4	0.625	80	P80S-003XD		
1.5	4	0.750	95	P80S-00414		
2	8	0.625	90	P80S-003XF		
3	8	0.750	110	P80S-003XK		
4	8	0.750	115	P80S-003XL		

BOLT TABLE (B_B0JY04_781 , STUD ASME RF, OPTION CODE 781)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	80	P80S-003V6		
0.75	4	0.625	90	P80S-003XF		
1	4	0.625	95	P80S-003XG		
1.5	4	0.750	110	P80S-003XK		
2	8	0.625	110	P80S-003VC		
3	8	0.750	130	P80S-003XP		
4	8	0.875	150	P80S-0041F		

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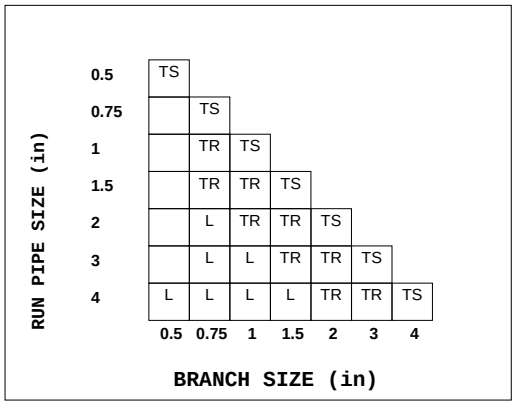
BRANCH TABLE (T_B0JY04)



L : OUTLET
TS : STRAIGHT TEE
TR : REDUCING TEE

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PIPING CLASS

B0KC01 REV NO. 2

Material : SS304H
Rating : ASME CLASS 300
Flange Face : RF
C.A.(mm) : 0.00
Gasket : Spiral Wound
Service : PROCESS - CATALYST : / CATALYST
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
6	PIPE THICKNESS CALCULATION TO INCLUDE CORROSION AND EROSION ALLOWANCES DUE TO THE PROCESS CATALYST FLOW, AS PER PROCESS LICENSOR SPECIFICATIONS
7	MATERIAL SHALL HAVE 0.04% MIN. CARBON CONTENT
24	FOR ALL RELEVANT PIPING CLASSES WITH LINE DESIGN TEMPERATURE ABOVE 427DEGC, IN SPIRAL WOUND GASKET, SUITABLE GASKET FILLER MATERIAL SUCH AS COMBINATION OF MICA LAYERS AND GRAPHITE FILLERS OR EQUIVALENT SHALL BE REVIEWED AND SELECTED OR AS DEFINED BY THE LICENSOR

DETAIL NOTES :

NO.	DESCRIPTION
39	TO BE USED FOR IA/NIROGEN INJECTION LINE ONLY.

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
24	FULL PORT (V)
521	SW (V,X)
541	NPT(F) (CA,F,L)
781	CLASS 600 (B,F,G)
4608	VALVE WITH NIPPLES (V)

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PIPING CLASS
B0KC01 REV NO. 2

PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		XXS		P01J-002A4	Pipe ASTM A312 Grade TP304H Seamless ASME B36.10M/B36.19M PE	
1	1.5		XXS		P01J-002A5	Pipe ASTM A312 Grade TP304H Seamless ASME B36.10M/B36.19M PE	
1	2		XXS		P01J-002A6	Pipe ASTM A312 Grade TP304H Seamless ASME B36.10M/B36.19M BE	
1	3		XXS		P01J-002A7	Pipe ASTM A312 Grade TP304H Seamless ASME B36.10M/B36.19M BE	
1	4		XXS		P01J-002A8	Pipe ASTM A312 Grade TP304H Seamless ASME B36.10M/B36.19M BE	
1	6		XXS		P01J-002HN	Pipe ASTM A312 Grade TP304H Seamless ASME B36.10M/B36.19M BE	
1	8		XXS		P01J-002HP	Pipe ASTM A358 Grade 304H Class 1 EFW ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		XXS		P02J-001TD	90 degree elbow ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW Long radius	
1	1.5		XXS		P02J-001TE	90 degree elbow ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW Long radius	
1	2		XXS		P02J-001TF	90 degree elbow ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW Long radius	
1	3		XXS		P02J-001TG	90 degree elbow ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW Long radius	
1	4		XXS		P02J-001TH	90 degree elbow ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW Long radius	
1	6		XXS		P02J-0020P	90 degree elbow ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW Long radius	
1	8		XXS		P02J-0020R	90 degree elbow ASTM A403 Grade WP304H Class WX Weld ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		XXS		P03J-001PT	45 degree elbow ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW Long radius	
1	1.5		XXS		P03J-001PU	45 degree elbow ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW Long radius	
1	2		XXS		P03J-001PV	45 degree elbow ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW Long radius	
1	3		XXS		P03J-001PW	45 degree elbow ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW Long radius	
1	4		XXS		P03J-001PX	45 degree elbow ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW Long radius	
1	6		XXS		P03J-0020F	45 degree elbow ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW Long radius	
1	8		XXS		P03J-0020G	45 degree elbow ASTM A403 Grade WP304H Class WX Weld ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		XXS		P21J-001G9	Straight tee ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	1.5		XXS		P21J-001GA	Straight tee ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	2		XXS		P21J-001GB	Straight tee ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	3		XXS		P21J-001GC	Straight tee ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	4		XXS		P21J-001GD	Straight tee ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	6		XXS		P21J-001PM	Straight tee ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	8		XXS		P21J-001PN	Straight tee ASTM A403 Grade WP304H Class WX Weld ASME B16.9 BW	

STRAIGHT LATERAL TEE (TLS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		XXS		P22J-00076	Straight lateral-tee ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW 60 degree	
1	1.5		XXS		P22J-00077	Straight lateral-tee ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW 60 degree	
1	2		XXS		P22J-00078	Straight lateral-tee ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW 60 degree	
1	3		XXS		P22J-00079	Straight lateral-tee ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW 60 degree	
1	4		XXS		P22J-0007A	Straight lateral-tee ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW 60 degree	
1	6		XXS		P22J-0007B	Straight lateral-tee ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW 60 degree	
1	8		XXS		P22J-0007C	Straight lateral-tee ASTM A403 Grade WP304H Class WX Weld ASME B16.9 BW 60 degree	

STRAIGHT CROSS TEE (TCS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	8		XXS		P23J-00018	Straight cross-tee ASTM A403 Grade WP304H Class WX Weld ASME B16.9 BW	
1	12		XXS		P23J-00019	Straight cross-tee ASTM A403 Grade WP304H Class WX Weld ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5	1	XXS	XXS	P24J-0069R	Reducing tee ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	2	1	XXS	XXS	P24J-0069S	Reducing tee ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	2	1.5	XXS	XXS	P24J-0069T	Reducing tee ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	

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REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	1.5	XXS	XXS	P24J-0069U	Reducing tee ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	3	2	XXS	XXS	P24J-0069V	Reducing tee ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	4	2	XXS	XXS	P24J-0069W	Reducing tee ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	4	3	XXS	XXS	P24J-0069X	Reducing tee ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	6	3	XXS	XXS	P24J-0078R	Reducing tee ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	6	4	XXS	XXS	P24J-0078S	Reducing tee ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	8	4	XXS	XXS	P24J-0078T	Reducing tee ASTM A403 Grade WP304H Class WX Weld ASME B16.9 BW	
1	8	6	XXS	XXS	P24J-0078U	Reducing tee ASTM A403 Grade WP304H Class WX Weld ASME B16.9 BW	

REDUCING LATERAL TEE (TLR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	8	4	XXS	XXS	P25J-001N2	Reducing lateral-tee ASTM A403 Grade WP304H Class WX Weld ASME B16.9 BW 45 degree	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5	1	XXS	XXS	P27J-00592	Concentric reducer ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	2	1	XXS	XXS	P27J-00594	Concentric reducer ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	2	1.5	XXS	XXS	P27J-00595	Concentric reducer ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	3	1.5	XXS	XXS	P27J-00596	Concentric reducer ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	3	2	XXS	XXS	P27J-00597	Concentric reducer ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	4	1.5	XXS	XXS	P27J-00598	Concentric reducer ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	4	2	XXS	XXS	P27J-00599	Concentric reducer ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	4	3	XXS	XXS	P27J-0059A	Concentric reducer ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	6	3	XXS	XXS	P27J-0062Z	Concentric reducer ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	6	4	XXS	XXS	P27J-00630	Concentric reducer ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	8	4	XXS	XXS	P27J-00631	Concentric reducer ASTM A403 Grade WP304H Class WX Weld ASME B16.9 BW	
1	8	6	XXS	XXS	P27J-00632	Concentric reducer ASTM A403 Grade WP304H Class WX Weld ASME B16.9 BW	
1	12	6	XXS	XXS	P27J-007A7	Concentric reducer ASTM A403 Grade WP304H Class WX Weld ASME B16.9 BW	
1	12	8	XXS	XXS	P27J-007A8	Concentric reducer ASTM A403 Grade WP304H Class WX Weld ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5	1	XXS	XXS	P28J-0059X	Eccentric reducer ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	2	1	XXS	XXS	P28J-0059Z	Eccentric reducer ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	2	1.5	XXS	XXS	P28J-005A0	Eccentric reducer ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	3	1.5	XXS	XXS	P28J-005A1	Eccentric reducer ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	3	2	XXS	XXS	P28J-005A2	Eccentric reducer ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	4	1.5	XXS	XXS	P28J-005A3	Eccentric reducer ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	4	2	XXS	XXS	P28J-005A4	Eccentric reducer ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	4	3	XXS	XXS	P28J-005A5	Eccentric reducer ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	6	3	XXS	XXS	P28J-0063W	Eccentric reducer ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	6	4	XXS	XXS	P28J-0063X	Eccentric reducer ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	8	4	XXS	XXS	P28J-0063Y	Eccentric reducer ASTM A403 Grade WP304H Class WX Weld ASME B16.9 BW	
1	8	6	XXS	XXS	P28J-0063Z	Eccentric reducer ASTM A403 Grade WP304H Class WX Weld ASME B16.9 BW	
1	12	6	XXS	XXS	P28J-007BP	Eccentric reducer ASTM A403 Grade WP304H Class WX Weld ASME B16.9 BW	
1	12	8	XXS	XXS	P28J-007BR	Eccentric reducer ASTM A403 Grade WP304H Class WX Weld ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		XXS		P29J-001AH	Cap ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	1.5		XXS		P29J-001AJ	Cap ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	2		XXS		P29J-001AK	Cap ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	3		XXS		P29J-001AL	Cap ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	4		XXS		P29J-001AM	Cap ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	6		XXS		P29J-003WB	Cap ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	8		XXS		P29J-003WC	Cap ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	12		XXS		P29J-0044X	Cap ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	1				P29K-0004D	Cap ASTM A182 Grade F304H Class 6000 ASME B16.11 NPT	

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STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		XXS		P41J-001U1	Straight nipple ASTM A312 Grade TP304H Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		XXS		P41J-001U2	Straight nipple ASTM A312 Grade TP304H Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
541	1.5	1			P31K-00GSM	Outlet ASTM A182 Grade F304H Class 6000 MSS SP-97 NPT	
541	2 - 2.5	1			P31K-00GSN	Outlet ASTM A182 Grade F304H Class 6000 MSS SP-97 NPT	
541	3 - 10	1			P31K-00GSP	Outlet ASTM A182 Grade F304H Class 6000 MSS SP-97 NPT	
541	12 and larger	1			P31K-00GSR	Outlet ASTM A182 Grade F304H Class 6000 MSS SP-97 NPT	
1	3	1	XXS	XXS	P31K-00DS0	Outlet ASTM A182 Grade F304H MSS SP-97 BW	
1	4	1	XXS	XXS	P31K-00DS2	Outlet ASTM A182 Grade F304H MSS SP-97 BW	
1	6	1	XXS	XXS	P31K-00F07	Outlet ASTM A182 Grade F304H MSS SP-97 BW	
1	8	1	XXS	XXS	P31K-00F0B	Outlet ASTM A182 Grade F304H MSS SP-97 BW	
1	4	1.5	XXS	XXS	P31K-00DS3	Outlet ASTM A182 Grade F304H MSS SP-97 BW	
1	6	1.5	XXS	XXS	P31K-00F08	Outlet ASTM A182 Grade F304H MSS SP-97 BW	
1	8	1.5	XXS	XXS	P31K-00F0C	Outlet ASTM A182 Grade F304H MSS SP-97 BW	
1	6	2	XXS	XXS	P31K-00F09	Outlet ASTM A182 Grade F304H MSS SP-97 BW	
1	8	2	XXS	XXS	P31K-00F0D	Outlet ASTM A182 Grade F304H MSS SP-97 BW	
1	8	3	XXS	XXS	P31K-00F0E	Outlet ASTM A182 Grade F304H MSS SP-97 BW	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P30K-0004P	Plug ASTM A182 Grade F304H ASME B16.11 NPT Round head	
1	1.5				P30K-0004R	Plug ASTM A182 Grade F304H ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		XXS		P61K-004XZ	Flange WN ASTM A182 Grade F304H Class 300 ASME B16.5 RF	
1	1.5		XXS		P61K-004Y0	Flange WN ASTM A182 Grade F304H Class 300 ASME B16.5 RF	
1	2		XXS		P61K-004Y1	Flange WN ASTM A182 Grade F304H Class 300 ASME B16.5 RF	
1	3		XXS		P61K-004Y2	Flange WN ASTM A182 Grade F304H Class 300 ASME B16.5 RF	
1	4		XXS		P61K-004Y3	Flange WN ASTM A182 Grade F304H Class 300 ASME B16.5 RF	
1	6		XXS		P61K-005MX	Flange WN ASTM A182 Grade F304H Class 300 ASME B16.5 RF	
1	8		XXS		P61K-005MY	Flange WN ASTM A182 Grade F304H Class 300 ASME B16.5 RF	
541	1				P61K-006SM	Flange NPT ASTM A182 Grade F304H Class 300 ASME B16.5 RF	
781	1		XXS		P61K-004Y6	Flange WN ASTM A182 Grade F304H Class 600 ASME B16.5 RF	
781	1.5		XXS		P61K-004Y7	Flange WN ASTM A182 Grade F304H Class 600 ASME B16.5 RF	
781	2		XXS		P61K-004Y8	Flange WN ASTM A182 Grade F304H Class 600 ASME B16.5 RF	
781	3		XXS		P61K-004Y9	Flange WN ASTM A182 Grade F304H Class 600 ASME B16.5 RF	
781	4		XXS		P61K-004YA	Flange WN ASTM A182 Grade F304H Class 600 ASME B16.5 RF	
781	6		XXS		P61K-005MZ	Flange WN ASTM A182 Grade F304H Class 600 ASME B16.5 RF	
781	8		XXS		P61K-005N0	Flange WN ASTM A182 Grade F304H Class 600 ASME B16.5 RF	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P67K-001G1	Blind flange ASTM A182 Grade F304H Class 300 ASME B16.5 RF	
1	1.5				P67K-001G2	Blind flange ASTM A182 Grade F304H Class 300 ASME B16.5 RF	
1	2				P67K-001G3	Blind flange ASTM A182 Grade F304H Class 300 ASME B16.5 RF	
1	3				P67K-001G4	Blind flange ASTM A182 Grade F304H Class 300 ASME B16.5 RF	
1	4				P67K-001G5	Blind flange ASTM A182 Grade F304H Class 300 ASME B16.5 RF	
1	6				P67K-001GC	Blind flange ASTM A182 Grade F304H Class 300 ASME B16.5 RF	
1	8				P67K-001GD	Blind flange ASTM A182 Grade F304H Class 300 ASME B16.5 RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P73T-003AP	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	1.5				P73T-003AR	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	

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GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2				P73T-003AX	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	3				P73T-003B0	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	4				P73T-003B1	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	6				P73T-003B2	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	8				P73T-003B3	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
781	1				P73T-003B6	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
781	1.5				P73T-003B7	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
781	2				P73T-003BD	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
781	3				P73T-003BG	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
781	4				P73T-003BH	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
781	6				P73T-003BJ	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
781	8				P73T-003BK	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1-10				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B8M Class 2 / A194 Grade 8MA ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
781	1-6				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B8M Class 2 / A194 Grade 8MA ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
781	8				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B8M Class 2 / A194 Grade 8MA ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P81K-001CB	Gate valve ASTM A182 Grade F304H Class 300 API 602 Flange ASME B16.5 RF Trim SS304H Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Fluid-2 C.A.=6.0mm	
1	1.5				P81K-001CC	Gate valve ASTM A182 Grade F304H Class 300 API 602 Flange ASME B16.5 RF Trim SS304H Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Fluid-2 C.A.=6.0mm	
1	2				P81L-002SV	Gate valve ASTM A351 Grade CF10 Class 300 API 600 Flange ASME B16.5 RF Trim SS304H Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Fluid-2 C.A.=6.0mm	
1	3				P81L-002SW	Gate valve ASTM A351 Grade CF10 Class 300 API 600 Flange ASME B16.5 RF Trim SS304H Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Fluid-2 C.A.=6.0mm	
1	4				P81L-002SX	Gate valve ASTM A351 Grade CF10 Class 300 API 600 Flange ASME B16.5 RF Trim SS304H Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Fluid-2 C.A.=6.0mm	
1	6				P81L-003GN	Gate valve ASTM A351 Grade CF10 Class 300 API 600 Flange ASME B16.5 RF Trim SS304H Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Fluid-2 C.A.=6.0mm	
1	8				P81L-003GP	Gate valve ASTM A351 Grade CF10 Class 300 API 600 Flange ASME B16.5 RF Trim SS304H Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Fluid-2 C.A.=6.0mm	
24	1				P81K-001TS	Gate valve ASTM A182 Grade F304H Class 300 API 602 Flange ASME B16.5 RF Trim SS304H Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Full bore Fluid-2 C.A.=6.0mm	
4608	1				P81K-001TT	Gate valve ASTM A182 Grade F304H Class 300 API 602 BW both sides w/ nipples BE - NPT ASTM A312-TP304H Seamless XXS-nipple Trim SS304H Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Fluid-2 C.A.=6.0mm	
521	1				P81K-001UA	Gate valve ASTM A182 Grade F304H Class 800 API 602 SW Trim SS304H Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Fluid-2 C.A.=6.0mm	39

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P82K-000XU	Globe valve ASTM A182 Grade F304H Class 300 API 602 Flange ASME B16.5 RF Trim SS304H Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Fluid-2 C.A.=6.0mm	
1	1.5				P82K-000XV	Globe valve ASTM A182 Grade F304H Class 300 API 602 Flange ASME B16.5 RF Trim SS304H Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Fluid-2 C.A.=6.0mm	
1	2				P82L-001H8	Globe valve ASTM A351 Grade CF10 Class 300 BS 1873 Flange ASME B16.5 RF Trim SS304H Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Fluid-2 C.A.=6.0mm	
1	3				P82L-001H9	Globe valve ASTM A351 Grade CF10 Class 300 BS 1873 Flange ASME B16.5 RF Trim SS304H Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Fluid-2 C.A.=6.0mm	
1	4				P82L-001HA	Globe valve ASTM A351 Grade CF10 Class 300 BS 1873 Flange ASME B16.5 RF Trim SS304H Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Fluid-2 C.A.=6.0mm	
1	6				P82L-001HB	Globe valve ASTM A351 Grade CF10 Class 300 BS 1873 Flange ASME B16.5 RF Trim SS304H Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Fluid-2 C.A.=6.0mm	
1	8				P82L-00215	Globe valve ASTM A351 Grade CF10 Class 300 BS 1873 Flange ASME B16.5 RF Trim SS304H Body and disc seats Stellite-6 BB-BG-OS&Y Gear operated Fluid-2 C.A.=6.0mm	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P83K-0010W	Check valve ASTM A182 Grade F304H Class 300 API 602 Flange ASME B16.5 RF Trim SS304H Body and disc seats Stellite-6 Lift-type Bolted cover C.A.=6.0mm	
1	1.5				P83K-0010X	Check valve ASTM A182 Grade F304H Class 300 API 602 Flange ASME B16.5 RF Trim SS304H Body and disc seats Stellite-6 Lift-type Bolted cover C.A.=6.0mm	

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CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2				P83L-0021J	Check valve ASTM A351 Grade CF10 Class 300 BS 1868 Flange ASME B16.5 RF Trim SS304H Body and disc seats Stellite-6 Swing-type Bolted cover C.A.=6.0mm	
1	3				P83L-0021K	Check valve ASTM A351 Grade CF10 Class 300 BS 1868 Flange ASME B16.5 RF Trim SS304H Body and disc seats Stellite-6 Swing-type Bolted cover C.A.=6.0mm	
1	4				P83L-0021L	Check valve ASTM A351 Grade CF10 Class 300 BS 1868 Flange ASME B16.5 RF Trim SS304H Body and disc seats Stellite-6 Swing-type Bolted cover C.A.=6.0mm	
1	6				P83L-0021M	Check valve ASTM A351 Grade CF10 Class 300 BS 1868 Flange ASME B16.5 RF Trim SS304H Body and disc seats Stellite-6 Swing-type Bolted cover C.A.=6.0mm	
1	8				P83L-0021N	Check valve ASTM A351 Grade CF10 Class 300 BS 1868 Flange ASME B16.5 RF Trim SS304H Body and disc seats Stellite-6 Swing-type Bolted cover C.A.=6.0mm	
521	1				P83K-00110	Check valve ASTM A182 Grade F304H Class 800 API 602 SW Trim SS304H Body and disc seats Stellite-6 Lift-type Bolted cover C.A.=6.0mm	39

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P71K-0007S	Spectacle blank ASTM A182 Grade F304H Class 300 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71K-0007T	Spectacle blank ASTM A182 Grade F304H Class 300 Standard-drawing Flange ASME B16.5 RF	
1	2				P71K-0007U	Spectacle blank ASTM A182 Grade F304H Class 300 Standard-drawing Flange ASME B16.5 RF	
1	3				P71K-0007V	Spectacle blank ASTM A182 Grade F304H Class 300 Standard-drawing Flange ASME B16.5 RF	
1	4				P71K-0007W	Spectacle blank ASTM A182 Grade F304H Class 300 Standard-drawing Flange ASME B16.5 RF	
1	6				P71K-0007Z	Spectacle blank ASTM A182 Grade F304H Class 300 Standard-drawing Flange ASME B16.5 RF	
1	8				P71K-00080	Spectacle blank ASTM A182 Grade F304H Class 300 Standard-drawing Flange ASME B16.5 RF	

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BOLT TABLE (B_B0KC01 , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
1	4	0.625	80	P80S-00K7M		
1.5	4	0.750	95	P80S-00K2B		
2	8	0.625	90	P80S-00K7K		
3	8	0.750	110	P80S-00K7F		
4	8	0.750	115	P80S-00K7E		
6	12	0.750	125	P80S-00K7C		
8	12	0.875	140	P80S-00K22		
10	16	1.000	160	P80S-00JY5		
12	16	1.125	175			

BOLT TABLE (B_B0KC01_781 , STUD ASME RF, OPTION CODE 781)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
1	4	0.625	95	P80S-00K7J		
1.5	4	0.750	110	P80S-00K7F		
2	8	0.625	110	P80S-00K93		
3	8	0.750	130	P80S-00K6N		
4	8	0.875	150	P80S-00K20		
6	12	1.000	175	P80S-00JY2		
8	12	1.125	195	P80S-00JR1		
10	16	1.250	250			
12	20	1.250	255			

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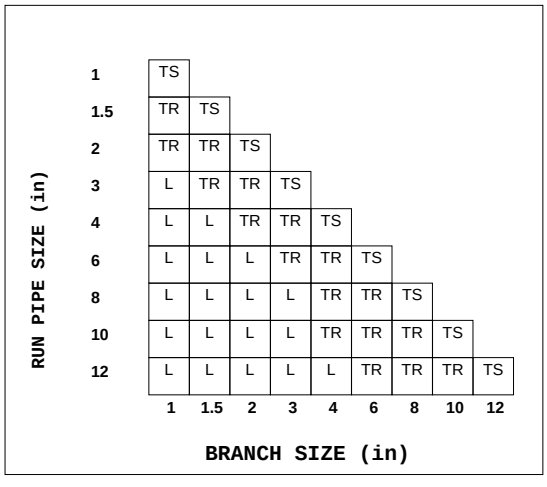
BRANCH TABLE (T_B0KC01)



TS : STRAIGHT TEE
TR : REDUCING TEE
L : OUTLET

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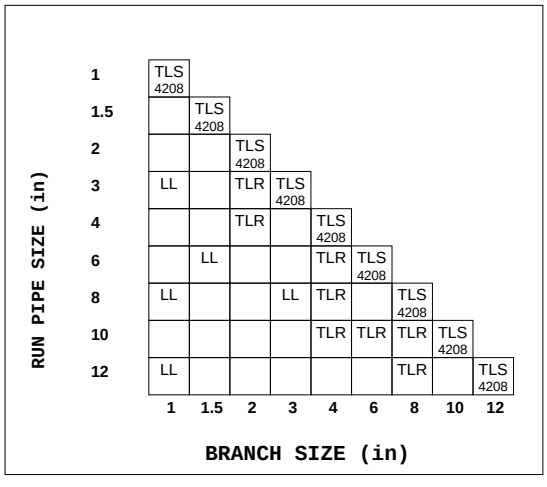
BRANCH TABLE (T_B0KC01_2)



LL : LATROLET
TLS : STRAIGHT LATERAL TEE
TLR : REDUCING LATERAL TEE

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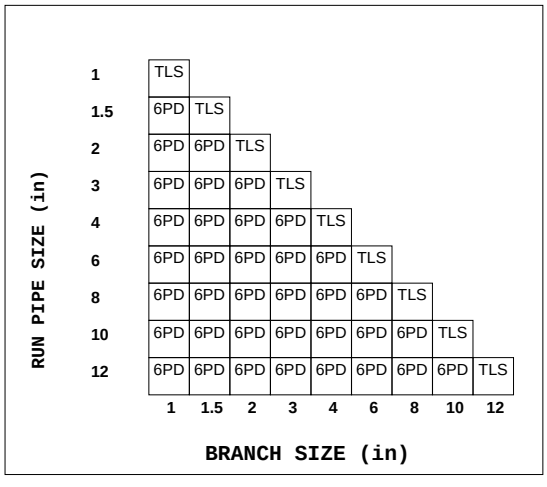
BRANCH TABLE (T_B0KC01_3)



TLS : STRAIGHT LATERAL TEE
6PD : REINFORCING PAD 60 DEG

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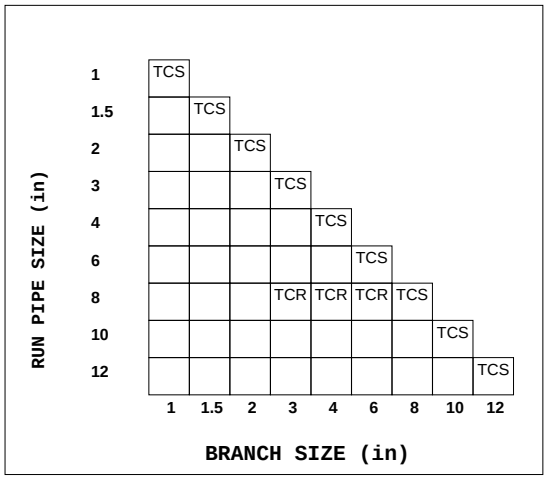
BRANCH TABLE (T_B0KC01_4)



TCR : REDUCING CROSS TEE
TCS : STRAIGHT CROSS TEE

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PIPING CLASS

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Material : SS304H
Rating : ASME CLASS 300
Flange Face : RF
C.A.(mm) : 0.00
Gasket : Spiral Wound
Service : PROCESS - GENERAL PROCESS, NON SOUR, NON CORROSIVE:
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
7	MATERIAL SHALL HAVE 0.04% MIN. CARBON CONTENT
24	FOR ALL RELEVANT PIPING CLASSES WITH LINE DESIGN TEMPERATURE ABOVE 427DEGC, IN SPIRAL WOUND GASKET, SUITABLE GASKET FILLER MATERIAL SUCH AS COMBINATION OF MICA LAYERS AND GRAPHITE FILLERS OR EQUIVALENT SHALL BE REVIEWED AND SELECTED OR AS DEFINED BY THE LICENSOR

DETAIL NOTES :

NO.	DESCRIPTION
39	TO BE USED FOR IA/NIROGEN INJECTION LINE ONLY.

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
24	FULL PORT (V)
200	WITH JACK SCREW (FO)
521	SW (V,X)
541	NPT(F) (CA,F,L)
781	CLASS 600 (B,F,G)
4608	VALVE WITH NIPPLES (V)

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PIPING CLASS
B0KP01 REV NO. 2

PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P01J-0028H	Pipe ASTM A312 Grade TP304H Seamless ASME B36.10M/B36.19M PE	
1	0.75		SCH80S		P01J-0028J	Pipe ASTM A312 Grade TP304H Seamless ASME B36.10M/B36.19M PE	
1	1		SCH80S		P01J-0028K	Pipe ASTM A312 Grade TP304H Seamless ASME B36.10M/B36.19M PE	
1	1.5		SCH80S		P01J-0028L	Pipe ASTM A312 Grade TP304H Seamless ASME B36.10M/B36.19M PE	
1	2		SCH10S		P01J-002A9	Pipe ASTM A312 Grade TP304H Seamless ASME B36.10M/B36.19M BE	
1	3		SCH10S		P01J-002AA	Pipe ASTM A312 Grade TP304H Seamless ASME B36.10M/B36.19M BE	
1	4		SCH10S		P01J-002AB	Pipe ASTM A312 Grade TP304H Seamless ASME B36.10M/B36.19M BE	
1	6		SCH40S		P01J-0028R	Pipe ASTM A312 Grade TP304H Seamless ASME B36.10M/B36.19M BE	
1	8		SCH40S		P01J-002AJ	Pipe ASTM A358 Grade 304H Class 1 EFW ASME B36.10M/B36.19M BE	
1	10		SCH40S		P01J-002AC	Pipe ASTM A358 Grade 304H Class 1 EFW ASME B36.10M/B36.19M BE	
1	12		SCH10S		P01J-002NK	Pipe ASTM A358 Grade 304H Class 1 EFW ASME B36.10M/B36.19M BE	
1	14		SCH10S		P01J-002NL	Pipe ASTM A358 Grade 304H Class 1 EFW ASME B36.10M/B36.19M BE	
1	16		SCH10S		P01J-002NM	Pipe ASTM A358 Grade 304H Class 1 EFW ASME B36.10M/B36.19M BE	
1	18		SCH10S		P01J-002NN	Pipe ASTM A358 Grade 304H Class 1 EFW ASME B36.10M/B36.19M BE	
1	20		SCH10S		P01J-002NP	Pipe ASTM A358 Grade 304H Class 1 EFW ASME B36.10M/B36.19M BE	
1	24		SCH10S		P01J-002Z1	Pipe ASTM A358 Grade 304H Class 1 EFW ASME B36.10M/B36.19M BE	
1	30		SCH10S		P01J-002Z2	Pipe ASTM A358 Grade 304H Class 1 EFW ASME B36.10M/B36.19M BE	
1	36		SCH10		P01J-002Z3	Pipe ASTM A358 Grade 304H Class 1 EFW ASME B36.10M/B36.19M BE	
1	42		STD		P01J-002Z4	Pipe ASTM A358 Grade 304H Class 1 EFW ASME B36.10M/B36.19M BE	
1	48		STD		P01J-002Z5	Pipe ASTM A358 Grade 304H Class 1 EFW ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P02J-001RV	90 degree elbow ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW Long radius	
1	0.75		SCH80S		P02J-001RW	90 degree elbow ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW Long radius	
1	1		SCH80S		P02J-001RX	90 degree elbow ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW Long radius	
1	1.5		SCH80S		P02J-001RY	90 degree elbow ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW Long radius	
1	2		SCH10S		P02J-001TJ	90 degree elbow ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW Long radius	
1	3		SCH10S		P02J-001TK	90 degree elbow ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW Long radius	
1	4		SCH10S		P02J-001TL	90 degree elbow ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW Long radius	
1	6		SCH40S		P02J-001S2	90 degree elbow ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW Long radius	
1	8		SCH40S		P02J-001TU	90 degree elbow ASTM A403 Grade WP304H Class WX Weld ASME B16.9 BW Long radius	
1	10		SCH40S		P02J-001TM	90 degree elbow ASTM A403 Grade WP304H Class WX Weld ASME B16.9 BW Long radius	
1	12		SCH10S		P02J-0022N	90 degree elbow ASTM A403 Grade WP304H Class WX Weld ASME B16.9 BW Long radius	
1	14		SCH10S		P02J-0022P	90 degree elbow ASTM A403 Grade WP304H Class WX Weld ASME B16.9 BW Long radius	
1	16		SCH10S		P02J-0022R	90 degree elbow ASTM A403 Grade WP304H Class WX Weld ASME B16.9 BW Long radius	
1	18		SCH10S		P02J-0022S	90 degree elbow ASTM A403 Grade WP304H Class WX Weld ASME B16.9 BW Long radius	
1	20		SCH10S		P02J-0022T	90 degree elbow ASTM A403 Grade WP304H Class WX Weld ASME B16.9 BW Long radius	
1	24		SCH10S		P02J-002AY	90 degree elbow ASTM A403 Grade WP304H Class WX Weld ASME B16.9 BW Long radius	
1	30		SCH10S		P02J-002AZ	90 degree elbow ASTM A403 Grade WP304H Class WX Weld ASME B16.9 BW Long radius	
1	36		SCH10		P02J-002B0	90 degree elbow ASTM A403 Grade WP304H Class WX Weld ASME B16.9 BW Long radius	
1	42		STD		P02J-002B1	90 degree elbow ASTM A403 Grade WP304H Class WX Weld ASME B16.9 BW Long radius	
1	48		STD		P02J-002B2	90 degree elbow ASTM A403 Grade WP304H Class WX Weld ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P03J-001N8	45 degree elbow ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW Long radius	
1	0.75		SCH80S		P03J-001N9	45 degree elbow ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW Long radius	
1	1		SCH80S		P03J-001NA	45 degree elbow ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW Long radius	
1	1.5		SCH80S		P03J-001NB	45 degree elbow ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW Long radius	
1	2		SCH10S		P03J-001PY	45 degree elbow ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW Long radius	
1	3		SCH10S		P03J-001PZ	45 degree elbow ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW Long radius	
1	4		SCH10S		P03J-001R0	45 degree elbow ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW Long radius	
1	6		SCH40S		P03J-001NF	45 degree elbow ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW Long radius	
1	8		SCH40S		P03J-001R7	45 degree elbow ASTM A403 Grade WP304H Class WX Weld ASME B16.9 BW Long radius	
1	10		SCH40S		P03J-001R1	45 degree elbow ASTM A403 Grade WP304H Class WX Weld ASME B16.9 BW Long radius	
1	12		SCH10S		P03J-0022E	45 degree elbow ASTM A403 Grade WP304H Class WX Weld ASME B16.9 BW Long radius	
1	14		SCH10S		P03J-0022F	45 degree elbow ASTM A403 Grade WP304H Class WX Weld ASME B16.9 BW Long radius	
1	16		SCH10S		P03J-0022G	45 degree elbow ASTM A403 Grade WP304H Class WX Weld ASME B16.9 BW Long radius	

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45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	18		SCH10S		P03J-0022H	45 degree elbow ASTM A403 Grade WP304H Class WX Weld ASME B16.9 BW Long radius	
1	20		SCH10S		P03J-0022J	45 degree elbow ASTM A403 Grade WP304H Class WX Weld ASME B16.9 BW Long radius	
1	24		SCH10S		P03J-002AM	45 degree elbow ASTM A403 Grade WP304H Class WX Weld ASME B16.9 BW Long radius	
1	30		SCH10S		P03J-002AN	45 degree elbow ASTM A403 Grade WP304H Class WX Weld ASME B16.9 BW Long radius	
1	36		SCH10		P03J-002AP	45 degree elbow ASTM A403 Grade WP304H Class WX Weld ASME B16.9 BW Long radius	
1	42		STD		P03J-002AR	45 degree elbow ASTM A403 Grade WP304H Class WX Weld ASME B16.9 BW Long radius	
1	48		STD		P03J-002AS	45 degree elbow ASTM A403 Grade WP304H Class WX Weld ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P21J-001ER	Straight tee ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	0.75		SCH80S		P21J-001ES	Straight tee ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	1		SCH80S		P21J-001ET	Straight tee ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	1.5		SCH80S		P21J-001EU	Straight tee ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	2		SCH10S		P21J-001GE	Straight tee ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	3		SCH10S		P21J-001GF	Straight tee ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	4		SCH10S		P21J-001GG	Straight tee ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	6		SCH40S		P21J-001EY	Straight tee ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	8		SCH40S		P21J-001GP	Straight tee ASTM A403 Grade WP304H Class WX Weld ASME B16.9 BW	
1	10		SCH40S		P21J-001GH	Straight tee ASTM A403 Grade WP304H Class WX Weld ASME B16.9 BW	
1	12		SCH10S		P21J-001SN	Straight tee ASTM A403 Grade WP304H Class WX Weld ASME B16.9 BW	
1	14		SCH10S		P21J-001SP	Straight tee ASTM A403 Grade WP304H Class WX Weld ASME B16.9 BW	
1	16		SCH10S		P21J-001SR	Straight tee ASTM A403 Grade WP304H Class WX Weld ASME B16.9 BW	
1	18		SCH10S		P21J-001SS	Straight tee ASTM A403 Grade WP304H Class WX Weld ASME B16.9 BW	
1	20		SCH10S		P21J-001ST	Straight tee ASTM A403 Grade WP304H Class WX Weld ASME B16.9 BW	
1	24		SCH10S		P21J-0028J	Straight tee ASTM A403 Grade WP304H Class WX Weld ASME B16.9 BW	
1	30		SCH10S		P21J-0028K	Straight tee ASTM A403 Grade WP304H Class WX Weld ASME B16.9 BW	
1	36		SCH10		P21J-0028L	Straight tee ASTM A403 Grade WP304H Class WX Weld ASME B16.9 BW	
1	42		STD		P21J-0028M	Straight tee ASTM A403 Grade WP304H Class WX Weld ASME B16.9 BW	
1	48		STD		P21J-0028N	Straight tee ASTM A403 Grade WP304H Class WX Weld ASME B16.9 BW	

STRAIGHT LATERAL TEE (TLS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75		SCH80S		P22J-0006E	Straight lateral-tee ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW 60 degree	
1	1		SCH80S		P22J-0006F	Straight lateral-tee ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW 60 degree	
1	1.5		SCH80S		P22J-0006G	Straight lateral-tee ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW 60 degree	
1	2		SCH10S		P22J-0006H	Straight lateral-tee ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW 60 degree	
1	3		SCH10S		P22J-0006J	Straight lateral-tee ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW 60 degree	
1	4		SCH10S		P22J-0006K	Straight lateral-tee ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW 60 degree	
1	6		SCH40S		P22J-0006L	Straight lateral-tee ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW 60 degree	
1	8		SCH40S		P22J-0006M	Straight lateral-tee ASTM A403 Grade WP304H Class WX Weld ASME B16.9 BW 60 degree	
1	10		SCH40S		P22J-0006N	Straight lateral-tee ASTM A403 Grade WP304H Class WX Weld ASME B16.9 BW 60 degree	
1	12		SCH10S		P22J-0006P	Straight lateral-tee ASTM A403 Grade WP304H Class WX Weld ASME B16.9 BW 60 degree	
1	14		SCH10S		P22J-0006R	Straight lateral-tee ASTM A403 Grade WP304H Class WX Weld ASME B16.9 BW 60 degree	
1	16		SCH10S		P22J-0006S	Straight lateral-tee ASTM A403 Grade WP304H Class WX Weld ASME B16.9 BW 60 degree	
1	18		SCH10S		P22J-0006T	Straight lateral-tee ASTM A403 Grade WP304H Class WX Weld ASME B16.9 BW 60 degree	
1	20		SCH10S		P22J-0006U	Straight lateral-tee ASTM A403 Grade WP304H Class WX Weld ASME B16.9 BW 60 degree	
1	24		SCH10S		P22J-0006V	Straight lateral-tee ASTM A403 Grade WP304H Class WX Weld ASME B16.9 BW 60 degree	
1	30		SCH10S		P22J-0006W	Straight lateral-tee ASTM A403 Grade WP304H Class WX Weld ASME B16.9 BW 60 degree	
1	36		SCH10		P22J-0006X	Straight lateral-tee ASTM A403 Grade WP304H Class WX Weld ASME B16.9 BW 60 degree	
1	42		STD		P22J-0006Y	Straight lateral-tee ASTM A403 Grade WP304H Class WX Weld ASME B16.9 BW 60 degree	
1	48		STD		P22J-0006Z	Straight lateral-tee ASTM A403 Grade WP304H Class WX Weld ASME B16.9 BW 60 degree	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75	SCH80S	SCH80S	P24J-0066G	Reducing tee ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	1.5	0.75	SCH80S	SCH80S	P24J-0066H	Reducing tee ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	1.5	1	SCH80S	SCH80S	P24J-0066J	Reducing tee ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	2	1	SCH10S	SCH80S	P24J-0069Y	Reducing tee ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	

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REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2	1.5	SCH10S	SCH80S	P24J-0069Z	Reducing tee ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	3	1.5	SCH10S	SCH80S	P24J-006A0	Reducing tee ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	3	2	SCH10S	SCH10S	P24J-006A1	Reducing tee ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	4	2	SCH10S	SCH10S	P24J-006A2	Reducing tee ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	4	3	SCH10S	SCH10S	P24J-006A3	Reducing tee ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	6	3	SCH40S	SCH10S	P24J-006A4	Reducing tee ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	6	4	SCH40S	SCH10S	P24J-006A5	Reducing tee ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	8	4	SCH40S	SCH10S	P24J-006A6	Reducing tee ASTM A403 Grade WP304H Class WX Weld ASME B16.9 BW	
1	8	6	SCH40S	SCH40S	P24J-006A7	Reducing tee ASTM A403 Grade WP304H Class WX Weld ASME B16.9 BW	
1	10	4	SCH40S	SCH10S	P24J-006A8	Reducing tee ASTM A403 Grade WP304H Class WX Weld ASME B16.9 BW	
1	10	6	SCH40S	SCH40S	P24J-006A9	Reducing tee ASTM A403 Grade WP304H Class WX Weld ASME B16.9 BW	
1	10	8	SCH40S	SCH40S	P24J-006AA	Reducing tee ASTM A403 Grade WP304H Class WX Weld ASME B16.9 BW	
1	12	6	SCH10S	SCH40S	P24J-007JU	Reducing tee ASTM A403 Grade WP304H Class WX Weld ASME B16.9 BW	
1	12	8	SCH10S	SCH40S	P24J-007JV	Reducing tee ASTM A403 Grade WP304H Class WX Weld ASME B16.9 BW	
1	12	10	SCH10S	SCH40S	P24J-007JT	Reducing tee ASTM A403 Grade WP304H Class WX Weld ASME B16.9 BW	
1	14	6	SCH10S	SCH40S	P24J-007JY	Reducing tee ASTM A403 Grade WP304H Class WX Weld ASME B16.9 BW	
1	14	8	SCH10S	SCH40S	P24J-007JZ	Reducing tee ASTM A403 Grade WP304H Class WX Weld ASME B16.9 BW	
1	14	10	SCH10S	SCH40S	P24J-007JW	Reducing tee ASTM A403 Grade WP304H Class WX Weld ASME B16.9 BW	
1	14	12	SCH10S	SCH10S	P24J-007JX	Reducing tee ASTM A403 Grade WP304H Class WX Weld ASME B16.9 BW	
1	16	6	SCH10S	SCH40S	P24J-007K3	Reducing tee ASTM A403 Grade WP304H Class WX Weld ASME B16.9 BW	
1	16	8	SCH10S	SCH40S	P24J-007K4	Reducing tee ASTM A403 Grade WP304H Class WX Weld ASME B16.9 BW	
1	16	10	SCH10S	SCH40S	P24J-007K0	Reducing tee ASTM A403 Grade WP304H Class WX Weld ASME B16.9 BW	
1	16	12	SCH10S	SCH10S	P24J-007K1	Reducing tee ASTM A403 Grade WP304H Class WX Weld ASME B16.9 BW	
1	16	14	SCH10S	SCH10S	P24J-007K2	Reducing tee ASTM A403 Grade WP304H Class WX Weld ASME B16.9 BW	
1	18	8	SCH10S	SCH40S	P24J-007K9	Reducing tee ASTM A403 Grade WP304H Class WX Weld ASME B16.9 BW	
1	18	10	SCH10S	SCH40S	P24J-007K5	Reducing tee ASTM A403 Grade WP304H Class WX Weld ASME B16.9 BW	
1	18	12	SCH10S	SCH10S	P24J-007K6	Reducing tee ASTM A403 Grade WP304H Class WX Weld ASME B16.9 BW	
1	18	14	SCH10S	SCH10S	P24J-007K7	Reducing tee ASTM A403 Grade WP304H Class WX Weld ASME B16.9 BW	
1	18	16	SCH10S	SCH10S	P24J-007K8	Reducing tee ASTM A403 Grade WP304H Class WX Weld ASME B16.9 BW	
1	20	8	SCH10S	SCH40S	P24J-007KF	Reducing tee ASTM A403 Grade WP304H Class WX Weld ASME B16.9 BW	
1	20	10	SCH10S	SCH40S	P24J-007KA	Reducing tee ASTM A403 Grade WP304H Class WX Weld ASME B16.9 BW	
1	20	12	SCH10S	SCH10S	P24J-007KB	Reducing tee ASTM A403 Grade WP304H Class WX Weld ASME B16.9 BW	
1	20	14	SCH10S	SCH10S	P24J-007KC	Reducing tee ASTM A403 Grade WP304H Class WX Weld ASME B16.9 BW	
1	20	16	SCH10S	SCH10S	P24J-007KD	Reducing tee ASTM A403 Grade WP304H Class WX Weld ASME B16.9 BW	
1	20	18	SCH10S	SCH10S	P24J-007KE	Reducing tee ASTM A403 Grade WP304H Class WX Weld ASME B16.9 BW	
1	24	10	SCH10S	SCH40S	P24J-008JY	Reducing tee ASTM A403 Grade WP304H Class WX Weld ASME B16.9 BW	
1	24	12	SCH10S	SCH10S	P24J-008JZ	Reducing tee ASTM A403 Grade WP304H Class WX Weld ASME B16.9 BW	
1	24	14	SCH10S	SCH10S	P24J-008K0	Reducing tee ASTM A403 Grade WP304H Class WX Weld ASME B16.9 BW	
1	24	16	SCH10S	SCH10S	P24J-008K1	Reducing tee ASTM A403 Grade WP304H Class WX Weld ASME B16.9 BW	
1	24	18	SCH10S	SCH10S	P24J-008K2	Reducing tee ASTM A403 Grade WP304H Class WX Weld ASME B16.9 BW	
1	24	20	SCH10S	SCH10S	P24J-008K3	Reducing tee ASTM A403 Grade WP304H Class WX Weld ASME B16.9 BW	
1	30	10	SCH10S	SCH40S	P24J-008K4	Reducing tee ASTM A403 Grade WP304H Class WX Weld ASME B16.9 BW	
1	30	12	SCH10S	SCH10S	P24J-008JS	Reducing tee ASTM A403 Grade WP304H Class WX Weld ASME B16.9 BW	
1	30	14	SCH10S	SCH10S	P24J-008JT	Reducing tee ASTM A403 Grade WP304H Class WX Weld ASME B16.9 BW	
1	30	16	SCH10S	SCH10S	P24J-008JU	Reducing tee ASTM A403 Grade WP304H Class WX Weld ASME B16.9 BW	
1	30	18	SCH10S	SCH10S	P24J-008JV	Reducing tee ASTM A403 Grade WP304H Class WX Weld ASME B16.9 BW	
1	30	20	SCH10S	SCH10S	P24J-008JW	Reducing tee ASTM A403 Grade WP304H Class WX Weld ASME B16.9 BW	
1	30	24	SCH10S	SCH10S	P24J-008JX	Reducing tee ASTM A403 Grade WP304H Class WX Weld ASME B16.9 BW	
1	36	16	SCH10	SCH10S	P24J-008JL	Reducing tee ASTM A403 Grade WP304H Class WX Weld ASME B16.9 BW	
1	36	18	SCH10	SCH10S	P24J-008JM	Reducing tee ASTM A403 Grade WP304H Class WX Weld ASME B16.9 BW	
1	36	20	SCH10	SCH10S	P24J-008JN	Reducing tee ASTM A403 Grade WP304H Class WX Weld ASME B16.9 BW	
1	36	24	SCH10	SCH10S	P24J-008JP	Reducing tee ASTM A403 Grade WP304H Class WX Weld ASME B16.9 BW	
1	36	30	SCH10	SCH10S	P24J-008JR	Reducing tee ASTM A403 Grade WP304H Class WX Weld ASME B16.9 BW	
1	42	16	STD	SCH10S	P24J-008JE	Reducing tee ASTM A403 Grade WP304H Class WX Weld ASME B16.9 BW	
1	42	18	STD	SCH10S	P24J-008JF	Reducing tee ASTM A403 Grade WP304H Class WX Weld ASME B16.9 BW	
1	42	20	STD	SCH10S	P24J-008JG	Reducing tee ASTM A403 Grade WP304H Class WX Weld ASME B16.9 BW	
1	42	24	STD	SCH10S	P24J-008JH	Reducing tee ASTM A403 Grade WP304H Class WX Weld ASME B16.9 BW	
1	42	30	STD	SCH10S	P24J-008JJ	Reducing tee ASTM A403 Grade WP304H Class WX Weld ASME B16.9 BW	
1	42	36	STD	SCH10	P24J-008JK	Reducing tee ASTM A403 Grade WP304H Class WX Weld ASME B16.9 BW	

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REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	48	24	STD	SCH10S	P24J-008JA	Reducing tee ASTM A403 Grade WP304H Class WX Weld ASME B16.9 BW	
1	48	30	STD	SCH10S	P24J-008JB	Reducing tee ASTM A403 Grade WP304H Class WX Weld ASME B16.9 BW	
1	48	36	STD	SCH10	P24J-008JC	Reducing tee ASTM A403 Grade WP304H Class WX Weld ASME B16.9 BW	
1	48	42	STD	STD	P24J-008JD	Reducing tee ASTM A403 Grade WP304H Class WX Weld ASME B16.9 BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH80S	SCH80S	P27J-00558	Concentric reducer ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	1	0.5	SCH80S	SCH80S	P27J-00559	Concentric reducer ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	1	0.75	SCH80S	SCH80S	P27J-0055A	Concentric reducer ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	1.5	0.5	SCH80S	SCH80S	P27J-0055B	Concentric reducer ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	1.5	0.75	SCH80S	SCH80S	P27J-0055C	Concentric reducer ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	1.5	1	SCH80S	SCH80S	P27J-0055D	Concentric reducer ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	2	0.75	SCH10S	SCH80S	P27J-0059B	Concentric reducer ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	2	1	SCH10S	SCH80S	P27J-0059C	Concentric reducer ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	2	1.5	SCH10S	SCH80S	P27J-0059D	Concentric reducer ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	3	1.5	SCH10S	SCH80S	P27J-0059E	Concentric reducer ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	3	2	SCH10S	SCH10S	P27J-0059F	Concentric reducer ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	4	1.5	SCH10S	SCH80S	P27J-0059G	Concentric reducer ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	4	2	SCH10S	SCH10S	P27J-0059H	Concentric reducer ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	4	3	SCH10S	SCH10S	P27J-0059J	Concentric reducer ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	6	3	SCH40S	SCH10S	P27J-0059K	Concentric reducer ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	6	4	SCH40S	SCH10S	P27J-0059L	Concentric reducer ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	8	4	SCH40S	SCH10S	P27J-0059M	Concentric reducer ASTM A403 Grade WP304H Class WX Weld ASME B16.9 BW	
1	8	6	SCH40S	SCH40S	P27J-0059N	Concentric reducer ASTM A403 Grade WP304H Class WX Weld ASME B16.9 BW	
1	10	4	SCH40S	SCH10S	P27J-0059P	Concentric reducer ASTM A403 Grade WP304H Class WX Weld ASME B16.9 BW	
1	10	6	SCH40S	SCH40S	P27J-0059R	Concentric reducer ASTM A403 Grade WP304H Class WX Weld ASME B16.9 BW	
1	10	8	SCH40S	SCH40S	P27J-0059S	Concentric reducer ASTM A403 Grade WP304H Class WX Weld ASME B16.9 BW	
1	12	6	SCH10S	SCH40S	P27J-006BS	Concentric reducer ASTM A403 Grade WP304H Class WX Weld ASME B16.9 BW	
1	12	8	SCH10S	SCH40S	P27J-006BT	Concentric reducer ASTM A403 Grade WP304H Class WX Weld ASME B16.9 BW	
1	12	10	SCH10S	SCH40S	P27J-006BR	Concentric reducer ASTM A403 Grade WP304H Class WX Weld ASME B16.9 BW	
1	14	6	SCH10S	SCH40S	P27J-006BW	Concentric reducer ASTM A403 Grade WP304H Class WX Weld ASME B16.9 BW	
1	14	8	SCH10S	SCH40S	P27J-006BX	Concentric reducer ASTM A403 Grade WP304H Class WX Weld ASME B16.9 BW	
1	14	10	SCH10S	SCH40S	P27J-006BU	Concentric reducer ASTM A403 Grade WP304H Class WX Weld ASME B16.9 BW	
1	14	12	SCH10S	SCH10S	P27J-006BV	Concentric reducer ASTM A403 Grade WP304H Class WX Weld ASME B16.9 BW	
1	16	8	SCH10S	SCH40S	P27J-006C1	Concentric reducer ASTM A403 Grade WP304H Class WX Weld ASME B16.9 BW	
1	16	10	SCH10S	SCH40S	P27J-006BY	Concentric reducer ASTM A403 Grade WP304H Class WX Weld ASME B16.9 BW	
1	16	12	SCH10S	SCH10S	P27J-006BZ	Concentric reducer ASTM A403 Grade WP304H Class WX Weld ASME B16.9 BW	
1	16	14	SCH10S	SCH10S	P27J-006C0	Concentric reducer ASTM A403 Grade WP304H Class WX Weld ASME B16.9 BW	
1	18	10	SCH10S	SCH40S	P27J-006C2	Concentric reducer ASTM A403 Grade WP304H Class WX Weld ASME B16.9 BW	
1	18	12	SCH10S	SCH10S	P27J-006C3	Concentric reducer ASTM A403 Grade WP304H Class WX Weld ASME B16.9 BW	
1	18	14	SCH10S	SCH10S	P27J-006C4	Concentric reducer ASTM A403 Grade WP304H Class WX Weld ASME B16.9 BW	
1	18	16	SCH10S	SCH10S	P27J-006C5	Concentric reducer ASTM A403 Grade WP304H Class WX Weld ASME B16.9 BW	
1	20	12	SCH10S	SCH10S	P27J-006C6	Concentric reducer ASTM A403 Grade WP304H Class WX Weld ASME B16.9 BW	
1	20	14	SCH10S	SCH10S	P27J-006C7	Concentric reducer ASTM A403 Grade WP304H Class WX Weld ASME B16.9 BW	
1	20	16	SCH10S	SCH10S	P27J-006C8	Concentric reducer ASTM A403 Grade WP304H Class WX Weld ASME B16.9 BW	
1	20	18	SCH10S	SCH10S	P27J-006C9	Concentric reducer ASTM A403 Grade WP304H Class WX Weld ASME B16.9 BW	
1	24	16	SCH10S	SCH10S	P27J-0076C	Concentric reducer ASTM A403 Grade WP304H Class WX Weld ASME B16.9 BW	
1	24	18	SCH10S	SCH10S	P27J-0076D	Concentric reducer ASTM A403 Grade WP304H Class WX Weld ASME B16.9 BW	
1	24	20	SCH10S	SCH10S	P27J-0076E	Concentric reducer ASTM A403 Grade WP304H Class WX Weld ASME B16.9 BW	
1	30	20	SCH10S	SCH10S	P27J-0076F	Concentric reducer ASTM A403 Grade WP304H Class WX Weld ASME B16.9 BW	
1	30	24	SCH10S	SCH10S	P27J-0076G	Concentric reducer ASTM A403 Grade WP304H Class WX Weld ASME B16.9 BW	
1	36	24	SCH10	SCH10S	P27J-0076H	Concentric reducer ASTM A403 Grade WP304H Class WX Weld ASME B16.9 BW	
1	36	30	SCH10	SCH10S	P27J-0076J	Concentric reducer ASTM A403 Grade WP304H Class WX Weld ASME B16.9 BW	
1	42	30	STD	SCH10S	P27J-0076K	Concentric reducer ASTM A403 Grade WP304H Class WX Weld ASME B16.9 BW	
1	42	36	STD	SCH10	P27J-0076L	Concentric reducer ASTM A403 Grade WP304H Class WX Weld ASME B16.9 BW	
1	48	42	STD	STD	P27J-0076M	Concentric reducer ASTM A403 Grade WP304H Class WX Weld ASME B16.9 BW	

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ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH80S	SCH80S	P28J-00563	Eccentric reducer ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	1	0.5	SCH80S	SCH80S	P28J-00564	Eccentric reducer ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	1	0.75	SCH80S	SCH80S	P28J-00565	Eccentric reducer ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	1.5	0.5	SCH80S	SCH80S	P28J-00566	Eccentric reducer ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	1.5	0.75	SCH80S	SCH80S	P28J-00567	Eccentric reducer ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	1.5	1	SCH80S	SCH80S	P28J-00568	Eccentric reducer ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	2	0.75	SCH10S	SCH80S	P28J-005A6	Eccentric reducer ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	2	1	SCH10S	SCH80S	P28J-005A7	Eccentric reducer ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	2	1.5	SCH10S	SCH80S	P28J-005A8	Eccentric reducer ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	3	1.5	SCH10S	SCH80S	P28J-005A9	Eccentric reducer ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	3	2	SCH10S	SCH10S	P28J-005AA	Eccentric reducer ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	4	1.5	SCH10S	SCH80S	P28J-005AB	Eccentric reducer ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	4	2	SCH10S	SCH10S	P28J-005AC	Eccentric reducer ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	4	3	SCH10S	SCH10S	P28J-005AD	Eccentric reducer ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	6	3	SCH40S	SCH10S	P28J-005AE	Eccentric reducer ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	6	4	SCH40S	SCH10S	P28J-005AF	Eccentric reducer ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	8	4	SCH40S	SCH10S	P28J-005AG	Eccentric reducer ASTM A403 Grade WP304H Class WX Weld ASME B16.9 BW	
1	8	6	SCH40S	SCH40S	P28J-005AH	Eccentric reducer ASTM A403 Grade WP304H Class WX Weld ASME B16.9 BW	
1	10	4	SCH40S	SCH10S	P28J-005AJ	Eccentric reducer ASTM A403 Grade WP304H Class WX Weld ASME B16.9 BW	
1	10	6	SCH40S	SCH40S	P28J-005AK	Eccentric reducer ASTM A403 Grade WP304H Class WX Weld ASME B16.9 BW	
1	10	8	SCH40S	SCH40S	P28J-005AL	Eccentric reducer ASTM A403 Grade WP304H Class WX Weld ASME B16.9 BW	
1	12	6	SCH10S	SCH40S	P28J-006D3	Eccentric reducer ASTM A403 Grade WP304H Class WX Weld ASME B16.9 BW	
1	12	8	SCH10S	SCH40S	P28J-006D4	Eccentric reducer ASTM A403 Grade WP304H Class WX Weld ASME B16.9 BW	
1	12	10	SCH10S	SCH40S	P28J-006D2	Eccentric reducer ASTM A403 Grade WP304H Class WX Weld ASME B16.9 BW	
1	14	6	SCH10S	SCH40S	P28J-006D7	Eccentric reducer ASTM A403 Grade WP304H Class WX Weld ASME B16.9 BW	
1	14	8	SCH10S	SCH40S	P28J-006D8	Eccentric reducer ASTM A403 Grade WP304H Class WX Weld ASME B16.9 BW	
1	14	10	SCH10S	SCH40S	P28J-006D5	Eccentric reducer ASTM A403 Grade WP304H Class WX Weld ASME B16.9 BW	
1	14	12	SCH10S	SCH10S	P28J-006D6	Eccentric reducer ASTM A403 Grade WP304H Class WX Weld ASME B16.9 BW	
1	16	8	SCH10S	SCH40S	P28J-006DC	Eccentric reducer ASTM A403 Grade WP304H Class WX Weld ASME B16.9 BW	
1	16	10	SCH10S	SCH40S	P28J-006D9	Eccentric reducer ASTM A403 Grade WP304H Class WX Weld ASME B16.9 BW	
1	16	12	SCH10S	SCH10S	P28J-006DA	Eccentric reducer ASTM A403 Grade WP304H Class WX Weld ASME B16.9 BW	
1	16	14	SCH10S	SCH10S	P28J-006DB	Eccentric reducer ASTM A403 Grade WP304H Class WX Weld ASME B16.9 BW	
1	18	10	SCH10S	SCH40S	P28J-006DD	Eccentric reducer ASTM A403 Grade WP304H Class WX Weld ASME B16.9 BW	
1	18	12	SCH10S	SCH10S	P28J-006DE	Eccentric reducer ASTM A403 Grade WP304H Class WX Weld ASME B16.9 BW	
1	18	14	SCH10S	SCH10S	P28J-006DF	Eccentric reducer ASTM A403 Grade WP304H Class WX Weld ASME B16.9 BW	
1	18	16	SCH10S	SCH10S	P28J-006DG	Eccentric reducer ASTM A403 Grade WP304H Class WX Weld ASME B16.9 BW	
1	20	12	SCH10S	SCH10S	P28J-006DH	Eccentric reducer ASTM A403 Grade WP304H Class WX Weld ASME B16.9 BW	
1	20	14	SCH10S	SCH10S	P28J-006DJ	Eccentric reducer ASTM A403 Grade WP304H Class WX Weld ASME B16.9 BW	
1	20	16	SCH10S	SCH10S	P28J-006DK	Eccentric reducer ASTM A403 Grade WP304H Class WX Weld ASME B16.9 BW	
1	20	18	SCH10S	SCH10S	P28J-006DL	Eccentric reducer ASTM A403 Grade WP304H Class WX Weld ASME B16.9 BW	
1	24	16	SCH10S	SCH10S	P28J-0077V	Eccentric reducer ASTM A403 Grade WP304H Class WX Weld ASME B16.9 BW	
1	24	18	SCH10S	SCH10S	P28J-0077W	Eccentric reducer ASTM A403 Grade WP304H Class WX Weld ASME B16.9 BW	
1	24	20	SCH10S	SCH10S	P28J-0077X	Eccentric reducer ASTM A403 Grade WP304H Class WX Weld ASME B16.9 BW	
1	30	20	SCH10S	SCH10S	P28J-0077Y	Eccentric reducer ASTM A403 Grade WP304H Class WX Weld ASME B16.9 BW	
1	30	24	SCH10S	SCH10S	P28J-0077Z	Eccentric reducer ASTM A403 Grade WP304H Class WX Weld ASME B16.9 BW	
1	36	24	SCH10	SCH10S	P28J-00780	Eccentric reducer ASTM A403 Grade WP304H Class WX Weld ASME B16.9 BW	
1	36	30	SCH10	SCH10S	P28J-00781	Eccentric reducer ASTM A403 Grade WP304H Class WX Weld ASME B16.9 BW	
1	42	30	STD	SCH10S	P28J-00782	Eccentric reducer ASTM A403 Grade WP304H Class WX Weld ASME B16.9 BW	
1	42	36	STD	SCH10	P28J-00783	Eccentric reducer ASTM A403 Grade WP304H Class WX Weld ASME B16.9 BW	
1	48	42	STD	STD	P28J-00784	Eccentric reducer ASTM A403 Grade WP304H Class WX Weld ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P29J-0019H	Cap ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	0.75		SCH80S		P29J-0019J	Cap ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	1		SCH80S		P29J-0019K	Cap ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	1.5		SCH80S		P29J-0019L	Cap ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	2		SCH10S		P29J-001AU	Cap ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	3		SCH10S		P29J-001AW	Cap ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	

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CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	4		SCH10S		P29J-001AX	Cap ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	6		SCH40S		P29J-0019R	Cap ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	8		SCH40S		P29J-001AY	Cap ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	10		SCH40S		P29J-001AN	Cap ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	12		SCH10S		P29J-003XS	Cap ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	14		SCH10S		P29J-003XT	Cap ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	16		SCH10S		P29J-003XU	Cap ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	18		SCH10S		P29J-003XV	Cap ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	20		SCH10S		P29J-003XW	Cap ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	24		SCH10S		P29J-00444	Cap ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	30		SCH10S		P29J-00445	Cap ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	36		SCH10		P29J-00446	Cap ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	42		STD		P29J-00447	Cap ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	48		STD		P29J-00448	Cap ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
541	0.75				P29K-0004C	Cap ASTM A182 Grade F304H Class 3000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P41J-001U3	Straight nipple ASTM A312 Grade TP304H Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		SCH80S		P41J-001U4	Straight nipple ASTM A312 Grade TP304H Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		SCH80S		P41J-001U5	Straight nipple ASTM A312 Grade TP304H Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		SCH80S		P41J-001U6	Straight nipple ASTM A312 Grade TP304H Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
541	1	0.75			P31K-00FNB	Outlet ASTM A182 Grade F304H Class 3000 MSS SP-97 NPT	
541	1.5	0.75			P31K-00FNA	Outlet ASTM A182 Grade F304H Class 3000 MSS SP-97 NPT	
541	2 - 2.5	0.75			P31K-00GH9	Outlet ASTM A182 Grade F304H Class 3000 MSS SP-97 NPT	
541	3 - 5	0.75			P31K-00GHA	Outlet ASTM A182 Grade F304H Class 3000 MSS SP-97 NPT	
541	6 - 12	0.75			P31K-00GHB	Outlet ASTM A182 Grade F304H Class 3000 MSS SP-97 NPT	
541	14 - 36	0.75			P31K-00GHF	Outlet ASTM A182 Grade F304H Class 3000 MSS SP-97 NPT	
541	38 and larger	0.75			P31K-00GM5	Outlet ASTM A182 Grade F304H Class 3000 MSS SP-97 NPT	
1	2	0.75	SCH10S	SCH80S	P31K-00DS4	Outlet ASTM A182 Grade F304H MSS SP-97 BW	
1	3	0.75	SCH10S	SCH80S	P31K-00DS5	Outlet ASTM A182 Grade F304H MSS SP-97 BW	
1	4	0.75	SCH10S	SCH80S	P31K-00DS7	Outlet ASTM A182 Grade F304H MSS SP-97 BW	
1	6	0.75	SCH40S	SCH80S	P31K-00DN8	Outlet ASTM A182 Grade F304H MSS SP-97 BW	
1	8	0.75	SCH40S	SCH80S	P31K-00DSB	Outlet ASTM A182 Grade F304H MSS SP-97 BW	
1	10	0.75	SCH40S	SCH80S	P31K-00DSG	Outlet ASTM A182 Grade F304H MSS SP-97 BW	
1	12	0.75	SCH10S	SCH80S	P31K-00F66	Outlet ASTM A182 Grade F304H MSS SP-97 BW	
1	14	0.75	SCH10S	SCH80S	P31K-00F6C	Outlet ASTM A182 Grade F304H MSS SP-97 BW	
1	16	0.75	SCH10S	SCH80S	P31K-00F6J	Outlet ASTM A182 Grade F304H MSS SP-97 BW	
1	18	0.75	SCH10S	SCH80S	P31K-00F6R	Outlet ASTM A182 Grade F304H MSS SP-97 BW	
1	20	0.75	SCH10S	SCH80S	P31K-00F6Y	Outlet ASTM A182 Grade F304H MSS SP-97 BW	
1	24	0.75	SCH10S	SCH80S	P31K-00GM6	Outlet ASTM A182 Grade F304H MSS SP-97 BW	
1	30	0.75	SCH10S	SCH80S	P31K-00GMD	Outlet ASTM A182 Grade F304H MSS SP-97 BW	
1	36	0.75	SCH10	SCH80S	P31K-00GMY	Outlet ASTM A182 Grade F304H MSS SP-97 BW	
1	42	0.75	STD	SCH80S	P31K-00GMR	Outlet ASTM A182 Grade F304H MSS SP-97 BW	
1	48	0.75	STD	SCH80S	P31K-00GN5	Outlet ASTM A182 Grade F304H MSS SP-97 BW	
1	3	1	SCH10S	SCH80S	P31K-00DS6	Outlet ASTM A182 Grade F304H MSS SP-97 BW	
1	4	1	SCH10S	SCH80S	P31K-00DS8	Outlet ASTM A182 Grade F304H MSS SP-97 BW	
1	6	1	SCH40S	SCH80S	P31K-00DN9	Outlet ASTM A182 Grade F304H MSS SP-97 BW	
1	8	1	SCH40S	SCH80S	P31K-00DSC	Outlet ASTM A182 Grade F304H MSS SP-97 BW	
1	10	1	SCH40S	SCH80S	P31K-00DSH	Outlet ASTM A182 Grade F304H MSS SP-97 BW	
1	12	1	SCH10S	SCH80S	P31K-00F67	Outlet ASTM A182 Grade F304H MSS SP-97 BW	
1	14	1	SCH10S	SCH80S	P31K-00F6D	Outlet ASTM A182 Grade F304H MSS SP-97 BW	
1	16	1	SCH10S	SCH80S	P31K-00F6K	Outlet ASTM A182 Grade F304H MSS SP-97 BW	
1	18	1	SCH10S	SCH80S	P31K-00F6S	Outlet ASTM A182 Grade F304H MSS SP-97 BW	
1	20	1	SCH10S	SCH80S	P31K-00F6Z	Outlet ASTM A182 Grade F304H MSS SP-97 BW	
1	24	1	SCH10S	SCH80S	P31K-00GM7	Outlet ASTM A182 Grade F304H MSS SP-97 BW	

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OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	30	1	SCH10S	SCH80S	P31K-00GME	Outlet ASTM A182 Grade F304H MSS SP-97 BW	
1	36	1	SCH10	SCH80S	P31K-00GMZ	Outlet ASTM A182 Grade F304H MSS SP-97 BW	
1	42	1	STD	SCH80S	P31K-00GMS	Outlet ASTM A182 Grade F304H MSS SP-97 BW	
1	48	1	STD	SCH80S	P31K-00GN6	Outlet ASTM A182 Grade F304H MSS SP-97 BW	
1	4	1.5	SCH10S	SCH80S	P31K-00DS9	Outlet ASTM A182 Grade F304H MSS SP-97 BW	
1	6	1.5	SCH40S	SCH80S	P31K-00DNA	Outlet ASTM A182 Grade F304H MSS SP-97 BW	
1	8	1.5	SCH40S	SCH80S	P31K-00DSD	Outlet ASTM A182 Grade F304H MSS SP-97 BW	
1	10	1.5	SCH40S	SCH80S	P31K-00DSJ	Outlet ASTM A182 Grade F304H MSS SP-97 BW	
1	12	1.5	SCH10S	SCH80S	P31K-00F68	Outlet ASTM A182 Grade F304H MSS SP-97 BW	
1	14	1.5	SCH10S	SCH80S	P31K-00F6E	Outlet ASTM A182 Grade F304H MSS SP-97 BW	
1	16	1.5	SCH10S	SCH80S	P31K-00F6L	Outlet ASTM A182 Grade F304H MSS SP-97 BW	
1	18	1.5	SCH10S	SCH80S	P31K-00F6T	Outlet ASTM A182 Grade F304H MSS SP-97 BW	
1	20	1.5	SCH10S	SCH80S	P31K-00F70	Outlet ASTM A182 Grade F304H MSS SP-97 BW	
1	24	1.5	SCH10S	SCH80S	P31K-00GM8	Outlet ASTM A182 Grade F304H MSS SP-97 BW	
1	30	1.5	SCH10S	SCH80S	P31K-00GMF	Outlet ASTM A182 Grade F304H MSS SP-97 BW	
1	36	1.5	SCH10	SCH80S	P31K-00GN0	Outlet ASTM A182 Grade F304H MSS SP-97 BW	
1	42	1.5	STD	SCH80S	P31K-00GMT	Outlet ASTM A182 Grade F304H MSS SP-97 BW	
1	48	1.5	STD	SCH80S	P31K-00GN7	Outlet ASTM A182 Grade F304H MSS SP-97 BW	
1	6	2	SCH40S	SCH10S	P31K-00DSA	Outlet ASTM A182 Grade F304H MSS SP-97 BW	
1	8	2	SCH40S	SCH10S	P31K-00DSE	Outlet ASTM A182 Grade F304H MSS SP-97 BW	
1	10	2	SCH40S	SCH10S	P31K-00DSK	Outlet ASTM A182 Grade F304H MSS SP-97 BW	
1	12	2	SCH10S	SCH10S	P31K-00F69	Outlet ASTM A182 Grade F304H MSS SP-97 BW	
1	14	2	SCH10S	SCH10S	P31K-00F6F	Outlet ASTM A182 Grade F304H MSS SP-97 BW	
1	16	2	SCH10S	SCH10S	P31K-00F6M	Outlet ASTM A182 Grade F304H MSS SP-97 BW	
1	18	2	SCH10S	SCH10S	P31K-00F6U	Outlet ASTM A182 Grade F304H MSS SP-97 BW	
1	20	2	SCH10S	SCH10S	P31K-00F71	Outlet ASTM A182 Grade F304H MSS SP-97 BW	
1	24	2	SCH10S	SCH10S	P31K-00GM9	Outlet ASTM A182 Grade F304H MSS SP-97 BW	
1	30	2	SCH10S	SCH10S	P31K-00GMG	Outlet ASTM A182 Grade F304H MSS SP-97 BW	
1	36	2	SCH10	SCH10S	P31K-00GN1	Outlet ASTM A182 Grade F304H MSS SP-97 BW	
1	42	2	STD	SCH10S	P31K-00GMU	Outlet ASTM A182 Grade F304H MSS SP-97 BW	
1	48	2	STD	SCH10S	P31K-00GML	Outlet ASTM A182 Grade F304H MSS SP-97 BW	
1	8	3	SCH40S	SCH10S	P31K-00DSF	Outlet ASTM A182 Grade F304H MSS SP-97 BW	
1	10	3	SCH40S	SCH10S	P31K-00DSL	Outlet ASTM A182 Grade F304H MSS SP-97 BW	
1	12	3	SCH10S	SCH10S	P31K-00F6A	Outlet ASTM A182 Grade F304H MSS SP-97 BW	
1	14	3	SCH10S	SCH10S	P31K-00F6G	Outlet ASTM A182 Grade F304H MSS SP-97 BW	
1	16	3	SCH10S	SCH10S	P31K-00F6N	Outlet ASTM A182 Grade F304H MSS SP-97 BW	
1	18	3	SCH10S	SCH10S	P31K-00F6V	Outlet ASTM A182 Grade F304H MSS SP-97 BW	
1	20	3	SCH10S	SCH10S	P31K-00F72	Outlet ASTM A182 Grade F304H MSS SP-97 BW	
1	24	3	SCH10S	SCH10S	P31K-00GMA	Outlet ASTM A182 Grade F304H MSS SP-97 BW	
1	30	3	SCH10S	SCH10S	P31K-00GMH	Outlet ASTM A182 Grade F304H MSS SP-97 BW	
1	36	3	SCH10	SCH10S	P31K-00GN2	Outlet ASTM A182 Grade F304H MSS SP-97 BW	
1	42	3	STD	SCH10S	P31K-00GMV	Outlet ASTM A182 Grade F304H MSS SP-97 BW	
1	48	3	STD	SCH10S	P31K-00GMM	Outlet ASTM A182 Grade F304H MSS SP-97 BW	
1	12	4	SCH10S	SCH10S	P31K-00F6B	Outlet ASTM A182 Grade F304H MSS SP-97 BW	
1	14	4	SCH10S	SCH10S	P31K-00F6H	Outlet ASTM A182 Grade F304H MSS SP-97 BW	
1	16	4	SCH10S	SCH10S	P31K-00F6P	Outlet ASTM A182 Grade F304H MSS SP-97 BW	
1	18	4	SCH10S	SCH10S	P31K-00F6W	Outlet ASTM A182 Grade F304H MSS SP-97 BW	
1	20	4	SCH10S	SCH10S	P31K-00F73	Outlet ASTM A182 Grade F304H MSS SP-97 BW	
1	24	4	SCH10S	SCH10S	P31K-00GMB	Outlet ASTM A182 Grade F304H MSS SP-97 BW	
1	30	4	SCH10S	SCH10S	P31K-00GMJ	Outlet ASTM A182 Grade F304H MSS SP-97 BW	
1	36	4	SCH10	SCH10S	P31K-00GN3	Outlet ASTM A182 Grade F304H MSS SP-97 BW	
1	42	4	STD	SCH10S	P31K-00GMW	Outlet ASTM A182 Grade F304H MSS SP-97 BW	
1	48	4	STD	SCH10S	P31K-00GMN	Outlet ASTM A182 Grade F304H MSS SP-97 BW	
1	18	6	SCH10S	SCH40S	P31K-00F6X	Outlet ASTM A182 Grade F304H MSS SP-97 BW	
1	20	6	SCH10S	SCH40S	P31K-00F74	Outlet ASTM A182 Grade F304H MSS SP-97 BW	
1	24	6	SCH10S	SCH40S	P31K-00GMC	Outlet ASTM A182 Grade F304H MSS SP-97 BW	
1	30	6	SCH10S	SCH40S	P31K-00GMK	Outlet ASTM A182 Grade F304H MSS SP-97 BW	
1	36	6	SCH10	SCH40S	P31K-00GN4	Outlet ASTM A182 Grade F304H MSS SP-97 BW	
1	42	6	STD	SCH40S	P31K-00GMX	Outlet ASTM A182 Grade F304H MSS SP-97 BW	

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OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	48	6	STD	SCH40S	P31K-00GMP	Outlet ASTM A182 Grade F304H MSS SP-97 BW	

LATROLET (LL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2	0.75	SCH10S	SCH80S	P34K-000Z1	Lateral-outlet ASTM A182 Grade F304H MSS SP-97 BW 45 degree	
1	3	0.75	SCH10S	SCH80S	P34K-000ZA	Lateral-outlet ASTM A182 Grade F304H MSS SP-97 BW 45 degree	
1	4	0.75	SCH10S	SCH80S	P34K-000Z4	Lateral-outlet ASTM A182 Grade F304H MSS SP-97 BW 45 degree	
1	6	0.75	SCH40S	SCH80S	P34K-000ZB	Lateral-outlet ASTM A182 Grade F304H MSS SP-97 BW 45 degree	
1	8	0.75	SCH40S	SCH80S	P34K-000Z5	Lateral-outlet ASTM A182 Grade F304H MSS SP-97 BW 45 degree	
1	12	0.75	SCH10S	SCH80S	P34K-000ZC	Lateral-outlet ASTM A182 Grade F304H MSS SP-97 BW 45 degree	
1	14	0.75	SCH10S	SCH80S	P34K-000ZD	Lateral-outlet ASTM A182 Grade F304H MSS SP-97 BW 45 degree	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30K-0004M	Plug ASTM A182 Grade F304H ASME B16.11 NPT Round head	
1	0.75				P30K-0004N	Plug ASTM A182 Grade F304H ASME B16.11 NPT Round head	
1	1				P30K-0004P	Plug ASTM A182 Grade F304H ASME B16.11 NPT Round head	
1	1.5				P30K-0004R	Plug ASTM A182 Grade F304H ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P61K-004YB	Flange WN ASTM A182 Grade F304H Class 300 ASME B16.5 RF	
1	0.75		SCH80S		P61K-004YC	Flange WN ASTM A182 Grade F304H Class 300 ASME B16.5 RF	
1	1		SCH80S		P61K-004YD	Flange WN ASTM A182 Grade F304H Class 300 ASME B16.5 RF	
1	1.5		SCH80S		P61K-004YE	Flange WN ASTM A182 Grade F304H Class 300 ASME B16.5 RF	
1	2		SCH10S		P61K-004YL	Flange WN ASTM A182 Grade F304H Class 300 ASME B16.5 RF	
1	3		SCH10S		P61K-004YN	Flange WN ASTM A182 Grade F304H Class 300 ASME B16.5 RF	
1	4		SCH10S		P61K-004YP	Flange WN ASTM A182 Grade F304H Class 300 ASME B16.5 RF	
1	6		SCH40S		P61K-004YR	Flange WN ASTM A182 Grade F304H Class 300 ASME B16.5 RF	
1	8		SCH40S		P61K-004YS	Flange WN ASTM A182 Grade F304H Class 300 ASME B16.5 RF	
1	10		SCH40S		P61K-004YF	Flange WN ASTM A182 Grade F304H Class 300 ASME B16.5 RF	
1	12		SCH10S		P61K-005WB	Flange WN ASTM A182 Grade F304H Class 300 ASME B16.5 RF	
1	14		SCH10S		P61K-005WC	Flange WN ASTM A182 Grade F304H Class 300 ASME B16.5 RF	
1	16		SCH10S		P61K-005WD	Flange WN ASTM A182 Grade F304H Class 300 ASME B16.5 RF	
1	18		SCH10S		P61K-005WE	Flange WN ASTM A182 Grade F304H Class 300 ASME B16.5 RF	
1	20		SCH10S		P61K-005WF	Flange WN ASTM A182 Grade F304H Class 300 ASME B16.5 RF	
1	24		SCH10S		P61K-006ET	Flange WN ASTM A182 Grade F304H Class 300 ASME B16.5 RF	
1	30		SCH10S		P61K-006EU	Flange WN ASTM A182 Grade F304H Class 300 ASME B16.47 Series B RF	
1	36		SCH10		P61K-006EV	Flange WN ASTM A182 Grade F304H Class 300 ASME B16.47 Series B RF	
1	42		STD		P61K-006EW	Flange WN ASTM A182 Grade F304H Class 300 ASME B16.47 Series B RF	
1	48		STD		P61K-006EX	Flange WN ASTM A182 Grade F304H Class 300 ASME B16.47 Series B RF	
541	0.5				P61K-0069M	Flange NPT ASTM A182 Grade F304H Class 300 ASME B16.5 RF	
541	0.75				P61K-00604	Flange NPT ASTM A182 Grade F304H Class 300 ASME B16.5 RF	
781	0.5		SCH80S		P61K-004TC	Flange WN ASTM A182 Grade F304H Class 600 ASME B16.5 RF	
781	0.75		SCH80S		P61K-004TD	Flange WN ASTM A182 Grade F304H Class 600 ASME B16.5 RF	
781	1		SCH80S		P61K-004TE	Flange WN ASTM A182 Grade F304H Class 600 ASME B16.5 RF	
781	1.5		SCH80S		P61K-004TF	Flange WN ASTM A182 Grade F304H Class 600 ASME B16.5 RF	
781	2		SCH10S		P61K-004YY	Flange WN ASTM A182 Grade F304H Class 600 ASME B16.5 RF	
781	3		SCH10S		P61K-004Z0	Flange WN ASTM A182 Grade F304H Class 600 ASME B16.5 RF	
781	4		SCH10S		P61K-004Z1	Flange WN ASTM A182 Grade F304H Class 600 ASME B16.5 RF	
781	6		SCH40S		P61K-004TK	Flange WN ASTM A182 Grade F304H Class 600 ASME B16.5 RF	
781	8		SCH40S		P61K-004Z2	Flange WN ASTM A182 Grade F304H Class 600 ASME B16.5 RF	
781	10		SCH40S		P61K-004YT	Flange WN ASTM A182 Grade F304H Class 600 ASME B16.5 RF	
781	12		SCH10S		P61K-005WG	Flange WN ASTM A182 Grade F304H Class 600 ASME B16.5 RF	
781	14		SCH10S		P61K-005WH	Flange WN ASTM A182 Grade F304H Class 600 ASME B16.5 RF	
781	16		SCH10S		P61K-005WJ	Flange WN ASTM A182 Grade F304H Class 600 ASME B16.5 RF	
781	18		SCH10S		P61K-005WK	Flange WN ASTM A182 Grade F304H Class 600 ASME B16.5 RF	
781	20		SCH10S		P61K-005WL	Flange WN ASTM A182 Grade F304H Class 600 ASME B16.5 RF	
781	24		SCH10S		P61K-006EY	Flange WN ASTM A182 Grade F304H Class 600 ASME B16.5 RF	

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BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67K-001FZ	Blind flange ASTM A182 Grade F304H Class 300 ASME B16.5 RF	
1	0.75				P67K-001G0	Blind flange ASTM A182 Grade F304H Class 300 ASME B16.5 RF	
1	1				P67K-001G1	Blind flange ASTM A182 Grade F304H Class 300 ASME B16.5 RF	
1	1.5				P67K-001G2	Blind flange ASTM A182 Grade F304H Class 300 ASME B16.5 RF	
1	2				P67K-001G3	Blind flange ASTM A182 Grade F304H Class 300 ASME B16.5 RF	
1	3				P67K-001G4	Blind flange ASTM A182 Grade F304H Class 300 ASME B16.5 RF	
1	4				P67K-001G5	Blind flange ASTM A182 Grade F304H Class 300 ASME B16.5 RF	
1	6				P67K-001GC	Blind flange ASTM A182 Grade F304H Class 300 ASME B16.5 RF	
1	8				P67K-001GD	Blind flange ASTM A182 Grade F304H Class 300 ASME B16.5 RF	
1	10				P67K-001G6	Blind flange ASTM A182 Grade F304H Class 300 ASME B16.5 RF	
1	12				P67K-001G7	Blind flange ASTM A182 Grade F304H Class 300 ASME B16.5 RF	
1	14				P67K-001G8	Blind flange ASTM A182 Grade F304H Class 300 ASME B16.5 RF	
1	16				P67K-001G9	Blind flange ASTM A182 Grade F304H Class 300 ASME B16.5 RF	
1	18				P67K-001GA	Blind flange ASTM A182 Grade F304H Class 300 ASME B16.5 RF	
1	20				P67K-001GB	Blind flange ASTM A182 Grade F304H Class 300 ASME B16.5 RF	
1	24				P67K-0020Y	Blind flange ASTM A182 Grade F304H Class 300 ASME B16.5 RF	
1	30				P67K-0020U	Blind flange ASTM A182 Grade F304H Class 300 ASME B16.47 Series B RF	
1	36				P67K-0020V	Blind flange ASTM A182 Grade F304H Class 300 ASME B16.47 Series B RF	
1	42				P67K-0020W	Blind flange ASTM A182 Grade F304H Class 300 ASME B16.47 Series B RF	
1	48				P67K-0020X	Blind flange ASTM A182 Grade F304H Class 300 ASME B16.47 Series B RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-003AM	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	0.75				P73T-003AN	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	1				P73T-003AP	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	1.5				P73T-003AR	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	2				P73T-003AX	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	3				P73T-003B0	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	4				P73T-003B1	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	6				P73T-003B2	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	8				P73T-003B3	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	10				P73T-003AS	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	12				P73T-003AT	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	14				P73T-003AU	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	16				P73T-003AV	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	18				P73T-003AW	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	20				P73T-003AY	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	24				P73T-003AZ	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	30				P73T-003BL	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	36				P73T-003DU	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	42				P73T-003DV	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	48				P73T-003DW	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
781	0.5				P73T-003B4	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
781	0.75				P73T-003B5	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
781	1				P73T-003B6	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
781	1.5				P73T-003B7	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
781	2				P73T-003BD	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
781	3				P73T-003BG	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
781	4				P73T-003BH	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	

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GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
781	6				P73T-003BJ	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
781	8				P73T-003BK	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
781	10				P73T-003B8	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
781	12				P73T-003B9	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
781	14				P73T-003BA	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
781	16				P73T-003BB	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
781	18				P73T-003BC	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
781	20				P73T-003BE	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
781	24				P73T-003BF	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-10				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B8M Class 2 / A194 Grade 8MA ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	12-48				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B8M Class 2 / A194 Grade 8MA ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
781	0.5-6				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B8M Class 2 / A194 Grade 8MA ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
781	8-30				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B8M Class 2 / A194 Grade 8MA ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81K-001BP	Gate valve ASTM A182 Grade F304H Class 300 API 602 Flange ASME B16.5 RF Trim SS304H Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Fluid-2	
1	0.75				P81K-001BR	Gate valve ASTM A182 Grade F304H Class 300 API 602 Flange ASME B16.5 RF Trim SS304H Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Fluid-2	
1	1				P81K-001BS	Gate valve ASTM A182 Grade F304H Class 300 API 602 Flange ASME B16.5 RF Trim SS304H Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Fluid-2	
1	1.5				P81K-001BT	Gate valve ASTM A182 Grade F304H Class 300 API 602 Flange ASME B16.5 RF Trim SS304H Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Fluid-2	
1	2				P81L-002S3	Gate valve ASTM A351 Grade CF10 Class 300 API 600 Flange ASME B16.5 RF Trim SS304H Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Fluid-2	
1	3				P81L-002S4	Gate valve ASTM A351 Grade CF10 Class 300 API 600 Flange ASME B16.5 RF Trim SS304H Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Fluid-2	
1	4				P81L-002S5	Gate valve ASTM A351 Grade CF10 Class 300 API 600 Flange ASME B16.5 RF Trim SS304H Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Fluid-2	
1	6				P81L-002S6	Gate valve ASTM A351 Grade CF10 Class 300 API 600 Flange ASME B16.5 RF Trim SS304H Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Fluid-2	
1	8				P81L-002S7	Gate valve ASTM A351 Grade CF10 Class 300 API 600 Flange ASME B16.5 RF Trim SS304H Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Fluid-2	
1	10				P81L-002S8	Gate valve ASTM A351 Grade CF10 Class 300 API 600 Flange ASME B16.5 RF Trim SS304H Body and disc seats Stellite-6 BB-BG-OS&Y Gear operated Fluid-2	
1	12				P81L-002S9	Gate valve ASTM A351 Grade CF10 Class 300 API 600 Flange ASME B16.5 RF Trim SS304H Body and disc seats Stellite-6 BB-BG-OS&Y Gear operated Fluid-2	
1	14				P81L-002SA	Gate valve ASTM A351 Grade CF10 Class 300 API 600 Flange ASME B16.5 RF Trim SS304H Body and disc seats Stellite-6 BB-BG-OS&Y Gear operated Fluid-2	
1	16				P81L-002SB	Gate valve ASTM A351 Grade CF10 Class 300 API 600 Flange ASME B16.5 RF Trim SS304H Body and disc seats Stellite-6 BB-BG-OS&Y Gear operated Fluid-2	
1	18				P81L-0037N	Gate valve ASTM A351 Grade CF10 Class 300 API 600 Flange ASME B16.5 RF Trim SS304H Body and disc seats Stellite-6 BB-BG-OS&Y Gear operated Fluid-2	
1	20				P81L-0037P	Gate valve ASTM A351 Grade CF10 Class 300 API 600 Flange ASME B16.5 RF Trim SS304H Body and disc seats Stellite-6 BB-BG-OS&Y Gear operated Fluid-2	
1	48				P81L-003GR	Gate valve ASTM A351 Grade CF10 Class 300 API 600 Flange ASME B16.47-B RF Trim SS304H Body and disc seats Stellite-6 BB-BG-OS&Y Gear operated Fluid-2	
24	0.75				P81K-001TG	Gate valve ASTM A182 Grade F304H Class 300 API 602 Flange ASME B16.5 RF Trim SS304H Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Full bore Fluid-2	
4608	0.75				P81K-001NP	Gate valve ASTM A182 Grade F304H Class 300 API 602 BW both sides w/ nipples BE - NPT ASTM A312-TP304H Seamless Sch80S-nipple Trim SS304H Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Fluid-2	
4608	1				P81K-001TE	Gate valve ASTM A182 Grade F304H Class 300 API 602 BW both sides w/ nipples BE - NPT ASTM A312-TP304H Seamless Sch80S-nipple Trim SS304H Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Fluid-2	
521	0.75				P81K-001UB	Gate valve ASTM A182 Grade F304H Class 800 API 602 SW Trim SS304H Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Fluid-2	39
521	1.5				P81K-001UC	Gate valve ASTM A182 Grade F304H Class 800 API 602 SW Trim SS304H Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Fluid-2	39

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82K-000X9	Globe valve ASTM A182 Grade F304H Class 300 API 602 Flange ASME B16.5 RF Trim SS304H Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Fluid-2	
1	0.75				P82K-000XA	Globe valve ASTM A182 Grade F304H Class 300 API 602 Flange ASME B16.5 RF Trim SS304H Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Fluid-2	

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GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P82K-000XB	Globe valve ASTM A182 Grade F304H Class 300 API 602 Flange ASME B16.5 RF Trim SS304H Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Fluid-2	
1	1.5				P82K-000XC	Globe valve ASTM A182 Grade F304H Class 300 API 602 Flange ASME B16.5 RF Trim SS304H Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Fluid-2	
1	2				P82L-001GU	Globe valve ASTM A351 Grade CF10 Class 300 BS 1873 Flange ASME B16.5 RF Trim SS304H Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Fluid-2	
1	3				P82L-001GV	Globe valve ASTM A351 Grade CF10 Class 300 BS 1873 Flange ASME B16.5 RF Trim SS304H Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Fluid-2	
1	4				P82L-001GW	Globe valve ASTM A351 Grade CF10 Class 300 BS 1873 Flange ASME B16.5 RF Trim SS304H Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Fluid-2	
1	6				P82L-001GX	Globe valve ASTM A351 Grade CF10 Class 300 BS 1873 Flange ASME B16.5 RF Trim SS304H Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Fluid-2	
1	8				P82L-001XV	Globe valve ASTM A351 Grade CF10 Class 300 BS 1873 Flange ASME B16.5 RF Trim SS304H Body and disc seats Stellite-6 BB-BG-OS&Y Gear operated Fluid-2	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83K-000ST	Check valve ASTM A182 Grade F304H Class 300 API 602 Flange ASME B16.5 RF Trim SS304H Body and disc seats Stellite-6 Lift-type Bolted cover	
1	0.75				P83K-000SU	Check valve ASTM A182 Grade F304H Class 300 API 602 Flange ASME B16.5 RF Trim SS304H Body and disc seats Stellite-6 Lift-type Bolted cover	
1	1				P83K-000SV	Check valve ASTM A182 Grade F304H Class 300 API 602 Flange ASME B16.5 RF Trim SS304H Body and disc seats Stellite-6 Lift-type Bolted cover	
1	1.5				P83K-000SW	Check valve ASTM A182 Grade F304H Class 300 API 602 Flange ASME B16.5 RF Trim SS304H Body and disc seats Stellite-6 Lift-type Bolted cover	
1	2				P83L-001BH	Check valve ASTM A351 Grade CF10 Class 300 BS 1868 Flange ASME B16.5 RF Trim SS304H Body and disc seats Stellite-6 Swing-type Bolted cover	
1	3				P83L-001BJ	Check valve ASTM A351 Grade CF10 Class 300 BS 1868 Flange ASME B16.5 RF Trim SS304H Body and disc seats Stellite-6 Swing-type Bolted cover	
1	4				P83L-001BK	Check valve ASTM A351 Grade CF10 Class 300 BS 1868 Flange ASME B16.5 RF Trim SS304H Body and disc seats Stellite-6 Swing-type Bolted cover	
1	6				P83L-001FR	Check valve ASTM A351 Grade CF10 Class 300 BS 1868 Flange ASME B16.5 RF Trim SS304H Body and disc seats Stellite-6 Swing-type Bolted cover	
1	8				P83L-001FS	Check valve ASTM A351 Grade CF10 Class 300 BS 1868 Flange ASME B16.5 RF Trim SS304H Body and disc seats Stellite-6 Swing-type Bolted cover	
521	0.75				P83K-00111	Check valve ASTM A182 Grade F304H Class 800 API 602 SW Trim SS304H Body and disc seats Stellite-6 Lift-type Bolted cover	39
521	1.5				P83K-00112	Check valve ASTM A182 Grade F304H Class 800 API 602 SW Trim SS304H Body and disc seats Stellite-6 Lift-type Bolted cover	39

ORIFICE FLANGE (FO)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	6		SCH40S		P66K-003W9	Orifice flange WN ASTM A182 Grade F304H Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
200	6		SCH40S		P66K-003WA	Orifice flange WN ASTM A182 Grade F304H Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71K-0007P	Spectacle blank ASTM A182 Grade F304H Class 300 Standard-drawing Flange ASME B16.5 RF	
1	0.75				P71K-0007R	Spectacle blank ASTM A182 Grade F304H Class 300 Standard-drawing Flange ASME B16.5 RF	
1	1				P71K-0007S	Spectacle blank ASTM A182 Grade F304H Class 300 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71K-0007T	Spectacle blank ASTM A182 Grade F304H Class 300 Standard-drawing Flange ASME B16.5 RF	
1	2				P71K-0007U	Spectacle blank ASTM A182 Grade F304H Class 300 Standard-drawing Flange ASME B16.5 RF	
1	3				P71K-0007V	Spectacle blank ASTM A182 Grade F304H Class 300 Standard-drawing Flange ASME B16.5 RF	
1	4				P71K-0007W	Spectacle blank ASTM A182 Grade F304H Class 300 Standard-drawing Flange ASME B16.5 RF	
1	6				P71K-0007Z	Spectacle blank ASTM A182 Grade F304H Class 300 Standard-drawing Flange ASME B16.5 RF	
1	8				P71K-00080	Spectacle blank ASTM A182 Grade F304H Class 300 Standard-drawing Flange ASME B16.5 RF	
1	10				P71K-0007X	Spectacle blank ASTM A182 Grade F304H Class 300 Standard-drawing Flange ASME B16.5 RF	
1	12				P71K-0007Y	Spectacle blank ASTM A182 Grade F304H Class 300 Standard-drawing Flange ASME B16.5 RF	

PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72K-0004P	Paddle blank ASTM A182 Grade F304H Class 300 Standard-drawing Flange ASME B16.5 RF	
1	16				P72K-0004R	Paddle blank ASTM A182 Grade F304H Class 300 Standard-drawing Flange ASME B16.5 RF	
1	18				P72K-0004S	Paddle blank ASTM A182 Grade F304H Class 300 Standard-drawing Flange ASME B16.5 RF	
1	20				P72K-0004T	Paddle blank ASTM A182 Grade F304H Class 300 Standard-drawing Flange ASME B16.5 RF	
1	24				P72K-000LH	Paddle blank ASTM A182 Grade F304H Class 300 Standard-drawing Flange ASME B16.5 RF	
1	30				P72K-000LJ	Paddle blank ASTM A182 Grade F304H Class 300 Standard-drawing Flange ASME B16.47-B RF	
1	36				P72K-000LK	Paddle blank ASTM A182 Grade F304H Class 300 Standard-drawing Flange ASME B16.47-B RF	
1	42				P72K-000LL	Paddle blank ASTM A182 Grade F304H Class 300 Standard-drawing Flange ASME B16.47-B RF	
1	48				P72K-000LM	Paddle blank ASTM A182 Grade F304H Class 300 Standard-drawing Flange ASME B16.47-B RF	

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PADDLE SPACER (PS)							
OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72K-0004U	Paddle spacer ASTM A182 Grade F304H Class 300 Standard-drawing Flange ASME B16.5 RF	
1	16				P72K-0004V	Paddle spacer ASTM A182 Grade F304H Class 300 Standard-drawing Flange ASME B16.5 RF	
1	18				P72K-0004W	Paddle spacer ASTM A182 Grade F304H Class 300 Standard-drawing Flange ASME B16.5 RF	
1	20				P72K-0004X	Paddle spacer ASTM A182 Grade F304H Class 300 Standard-drawing Flange ASME B16.5 RF	
1	24				P72K-000LT	Paddle spacer ASTM A182 Grade F304H Class 300 Standard-drawing Flange ASME B16.5 RF	
1	30				P72K-000LN	Paddle spacer ASTM A182 Grade F304H Class 300 Standard-drawing Flange ASME B16.47-B RF	
1	36				P72K-000LP	Paddle spacer ASTM A182 Grade F304H Class 300 Standard-drawing Flange ASME B16.47-B RF	
1	42				P72K-000LR	Paddle spacer ASTM A182 Grade F304H Class 300 Standard-drawing Flange ASME B16.47-B RF	
1	48				P72K-000LS	Paddle spacer ASTM A182 Grade F304H Class 300 Standard-drawing Flange ASME B16.47-B RF	

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BOLT TABLE (B_B0KP01 , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-00KAS		
0.75	4	0.625	75	P80S-00K7N		
1	4	0.625	80	P80S-00K7M		
1.5	4	0.750	95	P80S-00K2B		
2	8	0.625	90	P80S-00K7K		
3	8	0.750	110	P80S-00K7F		
4	8	0.750	115	P80S-00K7E		
6	12	0.750	125	P80S-00K7C		
8	12	0.875	140	P80S-00K22		
10	16	1.000	160	P80S-00JY5		
12	16	1.125	175	P80S-00JR5		
14	20	1.125	180	P80S-00JR4		
16	20	1.250	190	P80S-00JGY		
18	24	1.250	200	P80S-00JGW		
20	24	1.250	210	P80S-00JGU		
24	24	1.500	235	P80S-00KZL		
30	36	1.375	285	P80S-00L3V		
36	32	1.625	320	P80S-00KME		
42	36	1.750	355	P80S-00KS7		
48	40	1.875	380	P80S-00JDD		

BOLT TABLE (B_B0KP01_781 , STUD ASME RF, OPTION CODE 781)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	80	P80S-00KAP		
0.75	4	0.625	90	P80S-00K7K		
1	4	0.625	95	P80S-00K7J		
1.5	4	0.750	110	P80S-00K7F		
2	8	0.625	110	P80S-00K93		
3	8	0.750	130	P80S-00K6N		
4	8	0.875	150	P80S-00K20		
6	12	1.000	175	P80S-00JY2		
8	12	1.125	195	P80S-00JR1		
10	16	1.250	250	P80S-00JGK		
12	20	1.250	255	P80S-00JGJ		
14	20	1.375	270	P80S-00L3Y		
16	20	1.500	295	P80S-00KZ8		
18	20	1.625	320	P80S-00KME		
20	24	1.625	335	P80S-00KMB		
24	24	1.875	380	P80S-00JDD		
30	28	1.875	435	P80S-00JD2		
36	28	2.250	510			
42	28	2.500	575			
48	32	2.750	635			

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BRANCH TABLE (T_B0KP01)

RUN PIPE SIZE (in) \ BRANCH SIZE (in)	0.5	0.75	1	1.5	2	3	4	6	8	10	12	14	16	18	20	24	30	36	42	48
0.5	TS																			
0.75		TS																		
1		TR	TS																	
1.5		TR	TR	TS																
2		L	TR	TR	TS															
3		L	L	TR	TR	TS														
4	L	L	L	L	TR	TR	TS													
6	L	L	L	L	L	TR	TR	TS												
8		L	L	L	L	L	TR	TR	TS											
10		L	L	L	L	L	TR	TR	TR	TS										
12		L	L	L	L	L	L	TR	TR	TR	TS									
14		L	L	L	L	L	L	TR	TR	TR	TR	TS								
16		L	L	L	L	L	L	TR	TR	TR	TR	TR	TS							
18		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TS						
20		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TR	TS					
24		L	L	L	L	L	L	L	9PD	TR	TR	TR	TR	TR	TR	TS				
30		L	L	L	L	L	L	L	9PD	TR	TR	TR	TR	TR	TR	TR	TS			
36		L	L	L	L	L	L	L	9PD	9PD	9PD	9PD	TR	TR	TR	TR	TR	TS		
42		L	L	L	L	L	L	L	9PD	9PD	9PD	9PD	TR	TR	TR	TR	TR	TR	TS	
48		L	L	L	L	L	L	L	9PD	9PD	9PD	9PD	9PD	9PD	9PD	TR	TR	TR	TR	TS

9PD : REINFORCING PAD 90 DEG
TS : STRAIGHT TEE
TR : REDUCING TEE
L : OUTLET

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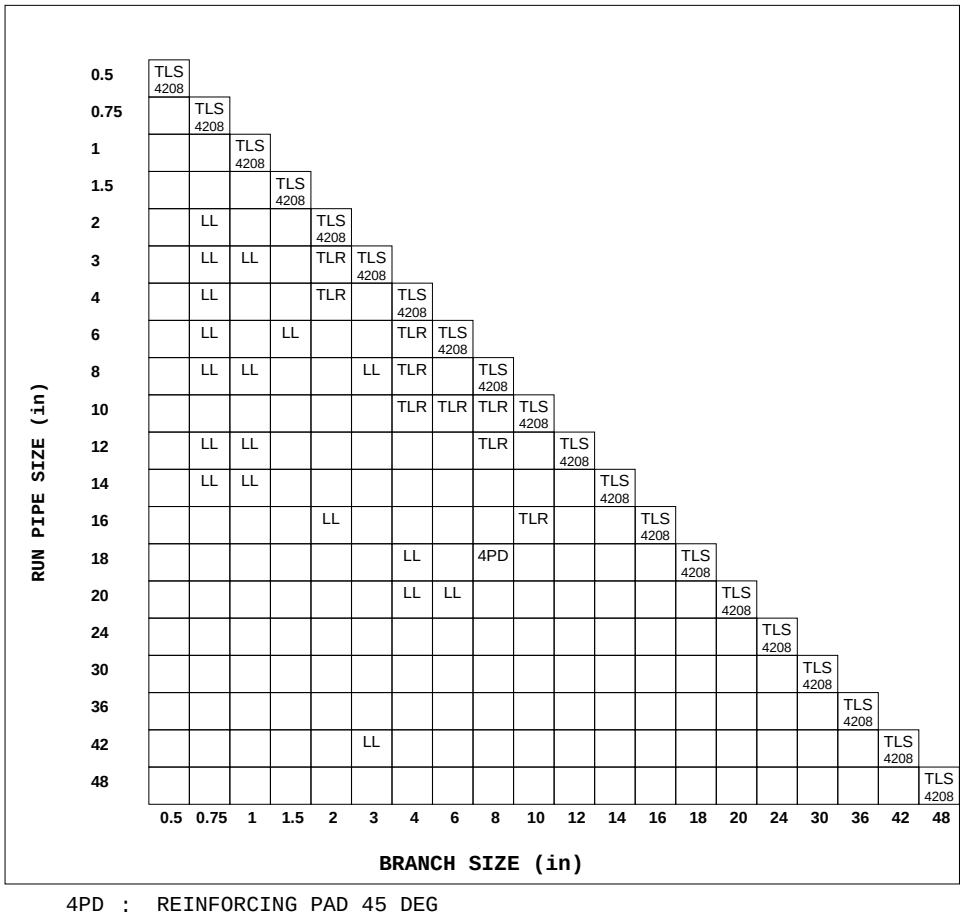
01-SEP-2014

PIPING CLASS

B0KP01 REV NO. 2

BRANCH TABLE (T_B0KP01_2)

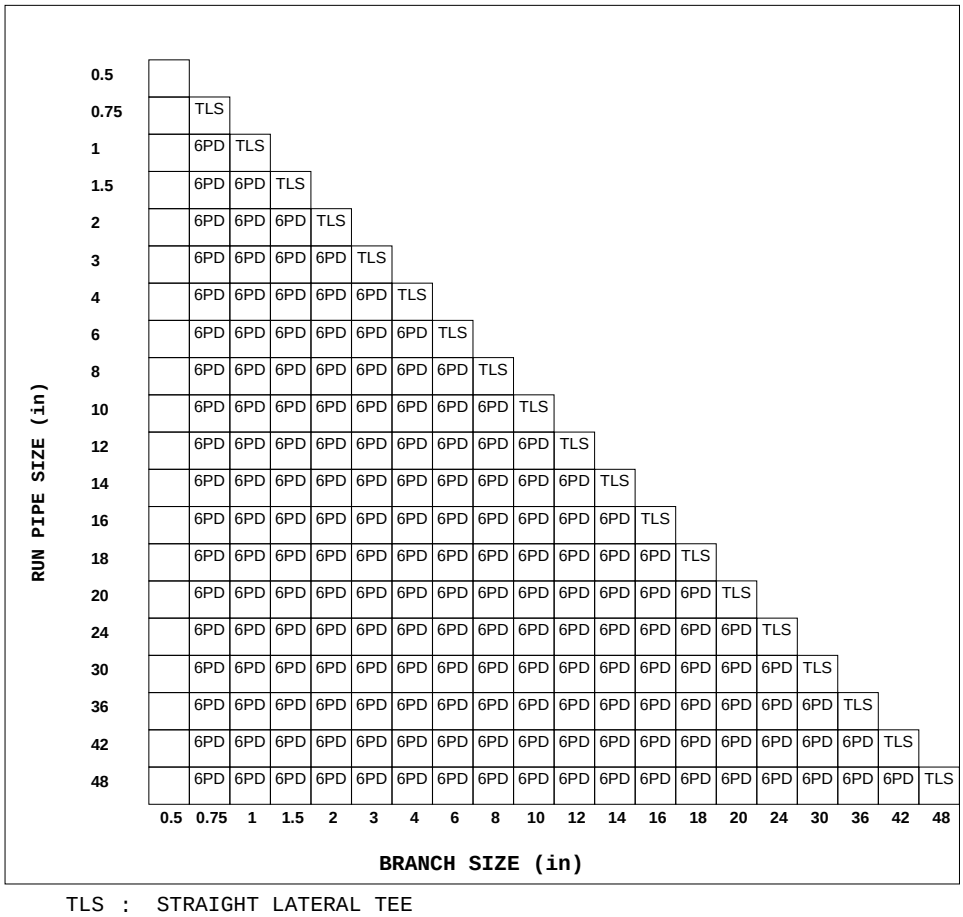


4PD : REINFORCING PAD 45 DEG
LL : LATROLET
TLS : STRAIGHT LATERAL TEE
TLR : REDUCING LATERAL TEE

INDRA
01-SEP-2014

PIPING CLASS
B0KP01 REV NO. 2

BRANCH TABLE (T_B0KP01_3)



RUN PIPE SIZE (in)	0.5	0.75	1	1.5	2	3	4	6	8	10	12	14	16	18	20	24	30	36	42	48
0.5																				
0.75		TLS																		
1		6PD	TLS																	
1.5		6PD	6PD	TLS																
2		6PD	6PD	6PD	TLS															
3		6PD	6PD	6PD	6PD	TLS														
4		6PD	6PD	6PD	6PD	6PD	TLS													
6		6PD	6PD	6PD	6PD	6PD	6PD	TLS												
8		6PD	6PD	6PD	6PD	6PD	6PD	6PD	TLS											
10		6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	TLS										
12		6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	TLS									
14		6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	TLS								
16		6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	TLS							
18		6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	TLS						
20		6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	TLS					
24		6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	TLS				
30		6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	TLS			
36		6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	TLS		
42		6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	TLS	
48		6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	TLS

TLS : STRAIGHT LATERAL TEE
6PD : REINFORCING PAD 60 DEG

INDRA
01-SEP-2014

PIPING CLASS

B0L5 REV NO. 2

Material	:	SS316L
Rating	:	ASME CLASS 300
Flange Face	:	RF
C.A.(mm)	:	0.00
Gasket	:	Spiral Wound
Service	:	PROCESS - WET SEVERE SOUR SERVICE SUBJECT TO NACE + HIC STD + AMINES OR CAUSTIC - STRESS RELIEVED
Design Code	:	ASME B31.3
Heat Treatment	:	

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
5	BOLTING CONFIRMING TO B7M / 2HM SHALL BE USED UNDER CONDITIONS (A) DIRECT EXPOSURE TO SOUR ENVIRONMENTS (B) WHEN THE BOLTING WILL BE BURIED OR INSULATED
27	PWHT OF CARBON STEEL PIPING IN WET H2S, CAUSTIC AND AMINE SERVICES SHALL BE IN ACCORDANCE WITH SECTION 10.2, 10.3, AND 10.4 OF PROJECT SPECIFICATION 3550-8440-SP-0002 MATERIALS REQUIREMENTS FOR PRESSURISED EQUIPMENT AND PIPING. FOR CAUSTIC AND AMINE SERVICE THE FOLLOWING SHALL APPLY: - PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF ALL SITE PIPING FABRICATION WELDS IS REQUIRED FOR ALL WALL THICKNESSES. FOR MODERATE AND SEVERE WET H2S SERVICE THE FOLLOWING SHALL APPLY: PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF SITE FABRICATION CIRCUMFERENTIAL OR BRANCH WELDS IS NOT REQUIRED IF WELDS ARE MULTIPASS AND IN ACCORDANCE WITH PARA 10.2.12 OF PROJECT SPECIFICATION 3550-8440-SP-0002. FOR SERVICES MEETING THE WET H2S CRITERIA AND CAUSTIC OR AMINE CRITERIA THE MORE STRINGENT PWHT REQUIREMENT SHALL GOVERN.

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
541	NPT(F) (CA,F,L)
781	CLASS 600 (B,F,G)
4608	VALVE WITH NIPPLES (V)

INDRA
01-SEP-2014

PIPING CLASS
B0L5 REV NO. 2

PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P01J-002ES	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE Severe wet H2S service	
1	0.75		SCH80S		P01J-002ET	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE Severe wet H2S service	
1	1		SCH80S		P01J-002EU	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE Severe wet H2S service	
1	1.5		SCH80S		P01J-002EV	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE Severe wet H2S service	
1	2		SCH10S		P01J-002EW	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M BE Severe wet H2S service	
1	3		SCH10S		P01J-002EX	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M BE Severe wet H2S service	
1	4		SCH10S		P01J-002EY	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M BE Severe wet H2S service	
1	6		SCH40S		P01J-002GH	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M BE Severe wet H2S service	
1	8		SCH40S		P01J-002GK	Pipe ASTM A358 Grade 316/316L Class 1 dual grade EFW ASME B36.10M/B36.19M BE Severe wet H2S service	
1	10		SCH40S		P01J-002GJ	Pipe ASTM A358 Grade 316/316L Class 1 dual grade EFW ASME B36.10M/B36.19M BE Severe wet H2S service	
1	12		SCH10S		P01J-002F1	Pipe ASTM A358 Grade 316/316L Class 1 dual grade EFW ASME B36.10M/B36.19M BE Severe wet H2S service	
1	14		SCH10S		P01J-002F2	Pipe ASTM A358 Grade 316/316L Class 1 dual grade EFW ASME B36.10M/B36.19M BE Severe wet H2S service	
1	16		SCH10S		P01J-002F3	Pipe ASTM A358 Grade 316/316L Class 1 dual grade EFW ASME B36.10M/B36.19M BE Severe wet H2S service	
1	18		SCH10S		P01J-002F4	Pipe ASTM A358 Grade 316/316L Class 1 dual grade EFW ASME B36.10M/B36.19M BE Severe wet H2S service	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P02J-001Y0	90 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	0.75		SCH80S		P02J-001Y1	90 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	1		SCH80S		P02J-001Y2	90 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	1.5		SCH80S		P02J-001Y3	90 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	2		SCH10S		P02J-001Y4	90 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	3		SCH10S		P02J-001Y5	90 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	4		SCH10S		P02J-001Y6	90 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	6		SCH40S		P02J-00201	90 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	8		SCH40S		P02J-00200	90 degree elbow ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Long radius Severe wet H2S service	
1	10		SCH40S		P02J-001ZZ	90 degree elbow ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Long radius Severe wet H2S service	
1	12		SCH10S		P02J-001Y9	90 degree elbow ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Long radius Severe wet H2S service	
1	14		SCH10S		P02J-001YA	90 degree elbow ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Long radius Severe wet H2S service	
1	16		SCH10S		P02J-001YB	90 degree elbow ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Long radius Severe wet H2S service	
1	18		SCH10S		P02J-001YC	90 degree elbow ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Long radius Severe wet H2S service	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P03J-001VR	45 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	0.75		SCH80S		P03J-001VS	45 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	1		SCH80S		P03J-001VT	45 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	1.5		SCH80S		P03J-001VU	45 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	2		SCH10S		P03J-001VV	45 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	3		SCH10S		P03J-001VW	45 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	4		SCH10S		P03J-001VX	45 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	6		SCH40S		P03J-001ZK	45 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	8		SCH40S		P03J-001ZM	45 degree elbow ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Long radius Severe wet H2S service	
1	10		SCH40S		P03J-001ZL	45 degree elbow ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Long radius Severe wet H2S service	
1	12		SCH10S		P03J-001VG	45 degree elbow ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Long radius Severe wet H2S service	

INDRA 01-SEP-2014

PIPING CLASS
B0L5 REV NO. 2

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14		SCH10S		P03J-001VH	45 degree elbow ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Long radius Severe wet H2S service	
1	16		SCH10S		P03J-001VJ	45 degree elbow ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Long radius Severe wet H2S service	
1	18		SCH10S		P03J-001VK	45 degree elbow ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Long radius Severe wet H2S service	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P21J-001M5	Straight tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	0.75		SCH80S		P21J-001M6	Straight tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1		SCH80S		P21J-001M7	Straight tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5		SCH80S		P21J-001M8	Straight tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	2		SCH10S		P21J-001M9	Straight tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	3		SCH10S		P21J-001MA	Straight tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	4		SCH10S		P21J-001MB	Straight tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	6		SCH40S		P21J-001NZ	Straight tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	8		SCH40S		P21J-001P1	Straight tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	10		SCH40S		P21J-001P0	Straight tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	12		SCH10S		P21J-001ME	Straight tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	14		SCH10S		P21J-001MF	Straight tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	16		SCH10S		P21J-001MG	Straight tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	18		SCH10S		P21J-001MH	Straight tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75	SCH80S	SCH80S	P24J-0070F	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5	0.75	SCH80S	SCH80S	P24J-0070J	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5	1	SCH80S	SCH80S	P24J-0070K	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	2	1	SCH10S	SCH80S	P24J-0070S	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	2	1.5	SCH10S	SCH80S	P24J-0070T	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	3	1.5	SCH10S	SCH80S	P24J-0070U	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	3	2	SCH10S	SCH10S	P24J-0070V	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	4	2	SCH10S	SCH10S	P24J-0070W	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	4	3	SCH10S	SCH10S	P24J-0070X	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	6	3	SCH40S	SCH10S	P24J-0075A	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	6	4	SCH40S	SCH10S	P24J-0075B	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	8	4	SCH40S	SCH10S	P24J-0075C	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	8	6	SCH40S	SCH40S	P24J-0075D	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	10	4	SCH40S	SCH10S	P24J-0075E	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	10	6	SCH40S	SCH40S	P24J-0075F	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	10	8	SCH40S	SCH40S	P24J-0075G	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	12	6	SCH10S	SCH40S	P24J-0075J	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	12	8	SCH10S	SCH40S	P24J-0075K	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	12	10	SCH10S	SCH40S	P24J-0075H	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	14	6	SCH10S	SCH40S	P24J-0075M	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	14	8	SCH10S	SCH40S	P24J-0075N	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	14	10	SCH10S	SCH40S	P24J-0075L	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	

INDRA
01-SEP-2014

PIPING CLASS
B0L5 REV NO. 2

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14	12	SCH10S	SCH10S	P24J-00719	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	16	6	SCH10S	SCH40S	P24J-0075R	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	16	8	SCH10S	SCH40S	P24J-0075S	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	16	10	SCH10S	SCH40S	P24J-0075P	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	16	12	SCH10S	SCH10S	P24J-0071D	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	16	14	SCH10S	SCH10S	P24J-0071E	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	18	8	SCH10S	SCH40S	P24J-0075U	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	18	10	SCH10S	SCH40S	P24J-0075T	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	18	12	SCH10S	SCH10S	P24J-0071J	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	18	14	SCH10S	SCH10S	P24J-0071K	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	18	16	SCH10S	SCH10S	P24J-0071L	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH80S	SCH80S	P27J-005XP	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1	0.5	SCH80S	SCH80S	P27J-005V5	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1	0.75	SCH80S	SCH80S	P27J-005V6	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5	0.5	SCH80S	SCH80S	P27J-005V7	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5	0.75	SCH80S	SCH80S	P27J-005V8	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5	1	SCH80S	SCH80S	P27J-005V9	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	2	0.75	SCH10S	SCH80S	P27J-005VA	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	2	1	SCH10S	SCH80S	P27J-005VB	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	2	1.5	SCH10S	SCH80S	P27J-005VC	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	3	1.5	SCH10S	SCH80S	P27J-005VD	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	3	2	SCH10S	SCH10S	P27J-005VE	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	4	1.5	SCH10S	SCH80S	P27J-005VF	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	4	2	SCH10S	SCH10S	P27J-005VG	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	4	3	SCH10S	SCH10S	P27J-005VH	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	6	3	SCH40S	SCH10S	P27J-0060F	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	6	4	SCH40S	SCH10S	P27J-0060G	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	8	4	SCH40S	SCH10S	P27J-0060H	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	8	6	SCH40S	SCH40S	P27J-0060J	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	10	4	SCH40S	SCH10S	P27J-0060K	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	10	6	SCH40S	SCH40S	P27J-0060L	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	10	8	SCH40S	SCH40S	P27J-0060M	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	12	6	SCH10S	SCH40S	P27J-0060P	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	12	8	SCH10S	SCH40S	P27J-0060R	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	12	10	SCH10S	SCH40S	P27J-0060N	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	14	6	SCH10S	SCH40S	P27J-0060T	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	14	8	SCH10S	SCH40S	P27J-0060U	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	14	10	SCH10S	SCH40S	P27J-0060S	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	14	12	SCH10S	SCH10S	P27J-005VW	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	16	8	SCH10S	SCH40S	P27J-0060W	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	16	10	SCH10S	SCH40S	P27J-0060V	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	16	12	SCH10S	SCH10S	P27J-005W0	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	

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CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	16	14	SCH10S	SCH10S	P27J-005W1	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	18	10	SCH10S	SCH40S	P27J-0060X	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	18	12	SCH10S	SCH10S	P27J-005W4	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	18	14	SCH10S	SCH10S	P27J-005W5	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	18	16	SCH10S	SCH10S	P27J-005W6	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH80S	SCH80S	P28J-005YL	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1	0.5	SCH80S	SCH80S	P28J-005W1	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1	0.75	SCH80S	SCH80S	P28J-005W2	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5	0.5	SCH80S	SCH80S	P28J-005W3	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5	0.75	SCH80S	SCH80S	P28J-005W4	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5	1	SCH80S	SCH80S	P28J-005W5	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	2	0.75	SCH10S	SCH80S	P28J-005W6	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	2	1	SCH10S	SCH80S	P28J-005W7	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	2	1.5	SCH10S	SCH80S	P28J-005W8	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	3	1.5	SCH10S	SCH80S	P28J-005W9	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	3	2	SCH10S	SCH10S	P28J-005WA	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	4	1.5	SCH10S	SCH80S	P28J-005WB	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	4	2	SCH10S	SCH10S	P28J-005WC	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	4	3	SCH10S	SCH10S	P28J-005WD	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	6	3	SCH40S	SCH10S	P28J-0061C	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	6	4	SCH40S	SCH10S	P28J-0061D	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	8	4	SCH40S	SCH10S	P28J-0061E	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	8	6	SCH40S	SCH40S	P28J-0061F	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	10	4	SCH40S	SCH10S	P28J-0061G	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	10	6	SCH40S	SCH40S	P28J-0061H	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	10	8	SCH40S	SCH40S	P28J-0061J	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	12	6	SCH10S	SCH40S	P28J-0061L	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	12	8	SCH10S	SCH40S	P28J-0061M	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	12	10	SCH10S	SCH40S	P28J-0061K	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	14	6	SCH10S	SCH40S	P28J-0061P	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	14	8	SCH10S	SCH40S	P28J-0061R	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	14	10	SCH10S	SCH40S	P28J-0061N	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	14	12	SCH10S	SCH10S	P28J-005WS	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	16	8	SCH10S	SCH40S	P28J-0061T	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	16	10	SCH10S	SCH40S	P28J-0061S	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	16	12	SCH10S	SCH10S	P28J-005WW	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	16	14	SCH10S	SCH10S	P28J-005WX	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	18	10	SCH10S	SCH40S	P28J-0061U	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	18	12	SCH10S	SCH10S	P28J-005X0	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	18	14	SCH10S	SCH10S	P28J-005X1	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	18	16	SCH10S	SCH10S	P28J-005X2	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	

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PIPING CLASS
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CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P29J-002M5	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	0.75		SCH80S		P29J-002M6	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1		SCH80S		P29J-002M7	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5		SCH80S		P29J-002M8	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	2		SCH10S		P29J-002ME	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	3		SCH10S		P29J-002MH	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	4		SCH10S		P29J-002MK	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	6		SCH40S		P29J-003MK	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	8		SCH40S		P29J-003U1	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	10		SCH40S		P29J-002SS	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	12		SCH10S		P29J-002MA	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	14		SCH10S		P29J-002MB	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	16		SCH10S		P29J-002MC	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	18		SCH10S		P29J-002MD	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
541	0.75				P29K-00049	Cap ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 NPT Severe wet H2S service	
541	1				P29K-0004L	Cap ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 NPT Severe wet H2S service	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P41J-001U7	Straight nipple ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Severe wet H2S service	
1	0.75		SCH80S		P41J-001U8	Straight nipple ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Severe wet H2S service	
1	1		SCH80S		P41J-001U9	Straight nipple ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Severe wet H2S service	
1	1.5		SCH80S		P41J-001UA	Straight nipple ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Severe wet H2S service	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
541	1	0.75			P31K-00FMB	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 NPT Severe wet H2S service	
541	1.5	0.75			P31K-00FMA	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 NPT Severe wet H2S service	
541	2 - 2.5	0.75			P31K-00GFX	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 NPT Severe wet H2S service	
541	3 - 5	0.75			P31K-00GFY	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 NPT Severe wet H2S service	
541	6 - 12	0.75			P31K-00GFZ	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 NPT Severe wet H2S service	
541	14 - 36	0.75			P31K-00GG0	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 NPT Severe wet H2S service	
1	2	0.75	SCH10S	SCH80S	P31K-00ENM	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	3	0.75	SCH10S	SCH80S	P31K-00ENS	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	4	0.75	SCH10S	SCH80S	P31K-00EP3	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	6	0.75	SCH40S	SCH80S	P31K-00EVL	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	8	0.75	SCH40S	SCH80S	P31K-00EVR	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	10	0.75	SCH40S	SCH80S	P31K-00EVW	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	12	0.75	SCH10S	SCH80S	P31K-00ER2	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	14	0.75	SCH10S	SCH80S	P31K-00ER8	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	16	0.75	SCH10S	SCH80S	P31K-00ERE	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	18	0.75	SCH10S	SCH80S	P31K-00ERL	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	3	1	SCH10S	SCH80S	P31K-00ENT	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	4	1	SCH10S	SCH80S	P31K-00EP4	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	6	1	SCH40S	SCH80S	P31K-00EVM	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	8	1	SCH40S	SCH80S	P31K-00EVS	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	10	1	SCH40S	SCH80S	P31K-00EVX	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	12	1	SCH10S	SCH80S	P31K-00ER3	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	14	1	SCH10S	SCH80S	P31K-00ER9	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	16	1	SCH10S	SCH80S	P31K-00ERF	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	18	1	SCH10S	SCH80S	P31K-00ERM	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	4	1.5	SCH10S	SCH80S	P31K-00EP5	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	6	1.5	SCH40S	SCH80S	P31K-00EVN	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	

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OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	8	1.5	SCH40S	SCH80S	P31K-00EVT	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	10	1.5	SCH40S	SCH80S	P31K-00EVY	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	12	1.5	SCH10S	SCH80S	P31K-00ER4	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	14	1.5	SCH10S	SCH80S	P31K-00ERA	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	16	1.5	SCH10S	SCH80S	P31K-00ERG	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	18	1.5	SCH10S	SCH80S	P31K-00ERN	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	6	2	SCH40S	SCH10S	P31K-00EVP	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	8	2	SCH40S	SCH10S	P31K-00EVU	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	10	2	SCH40S	SCH10S	P31K-00EVZ	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	12	2	SCH10S	SCH10S	P31K-00ER5	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	14	2	SCH10S	SCH10S	P31K-00ERB	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	16	2	SCH10S	SCH10S	P31K-00ERH	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	18	2	SCH10S	SCH10S	P31K-00ERP	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	8	3	SCH40S	SCH10S	P31K-00EVV	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	10	3	SCH40S	SCH10S	P31K-00EW0	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	12	3	SCH10S	SCH10S	P31K-00ER6	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	14	3	SCH10S	SCH10S	P31K-00ERC	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	16	3	SCH10S	SCH10S	P31K-00ERJ	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	18	3	SCH10S	SCH10S	P31K-00ERR	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	12	4	SCH10S	SCH10S	P31K-00ER7	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	14	4	SCH10S	SCH10S	P31K-00ERD	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	16	4	SCH10S	SCH10S	P31K-00ERK	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	18	4	SCH10S	SCH10S	P31K-00ERS	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	18	6	SCH10S	SCH40S	P31K-00EW1	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30K-0005H	Plug ASTM A182 Grade F316/F316L dual grade ASME B16.11 NPT Round head Severe wet H2S service	
1	0.75				P30K-0005J	Plug ASTM A182 Grade F316/F316L dual grade ASME B16.11 NPT Round head Severe wet H2S service	
1	1				P30K-0005K	Plug ASTM A182 Grade F316/F316L dual grade ASME B16.11 NPT Round head Severe wet H2S service	
1	1.5				P30K-0005L	Plug ASTM A182 Grade F316/F316L dual grade ASME B16.11 NPT Round head Severe wet H2S service	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P61K-005FX	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
1	0.75		SCH80S		P61K-005FY	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
1	1		SCH80S		P61K-005FZ	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
1	1.5		SCH80S		P61K-005G0	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
1	2		SCH10S		P61K-005G6	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
1	3		SCH10S		P61K-005G9	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
1	4		SCH10S		P61K-005GA	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
1	6		SCH40S		P61K-005JM	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
1	8		SCH40S		P61K-005JN	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
1	10		SCH40S		P61K-005JL	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
1	12		SCH10S		P61K-005G2	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
1	14		SCH10S		P61K-005G3	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
1	16		SCH10S		P61K-005G4	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
1	18		SCH10S		P61K-005G5	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
541	0.5				P61K-0069N	Flange NPT ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
541	0.75				P61K-00602	Flange NPT ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
781	0.5		SCH80S		P61K-005JP	Flange WN ASTM A182 Grade F316/F316L dual grade Class 600 ASME B16.5 RF Severe wet H2S service	
781	0.75		SCH80S		P61K-005JR	Flange WN ASTM A182 Grade F316/F316L dual grade Class 600 ASME B16.5 RF Severe wet H2S service	
781	1		SCH80S		P61K-005JS	Flange WN ASTM A182 Grade F316/F316L dual grade Class 600 ASME B16.5 RF Severe wet H2S service	
781	1.5		SCH80S		P61K-005JT	Flange WN ASTM A182 Grade F316/F316L dual grade Class 600 ASME B16.5 RF Severe wet H2S service	
781	2		SCH10S		P61K-005JZ	Flange WN ASTM A182 Grade F316/F316L dual grade Class 600 ASME B16.5 RF Severe wet H2S service	
781	3		SCH10S		P61K-005K2	Flange WN ASTM A182 Grade F316/F316L dual grade Class 600 ASME B16.5 RF Severe wet H2S service	
781	4		SCH10S		P61K-005K3	Flange WN ASTM A182 Grade F316/F316L dual grade Class 600 ASME B16.5 RF Severe wet H2S service	
781	6		SCH40S		P61K-005K4	Flange WN ASTM A182 Grade F316/F316L dual grade Class 600 ASME B16.5 RF Severe wet H2S service	
781	8		SCH40S		P61K-005K5	Flange WN ASTM A182 Grade F316/F316L dual grade Class 600 ASME B16.5 RF Severe wet H2S service	

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FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
781	10		SCH40S		P61K-005JU	Flange WN ASTM A182 Grade F316/F316L dual grade Class 600 ASME B16.5 RF Severe wet H2S service	
781	12		SCH10S		P61K-005JV	Flange WN ASTM A182 Grade F316/F316L dual grade Class 600 ASME B16.5 RF Severe wet H2S service	
781	14		SCH10S		P61K-005JW	Flange WN ASTM A182 Grade F316/F316L dual grade Class 600 ASME B16.5 RF Severe wet H2S service	
781	16		SCH10S		P61K-005JX	Flange WN ASTM A182 Grade F316/F316L dual grade Class 600 ASME B16.5 RF Severe wet H2S service	
781	18		SCH10S		P61K-005JY	Flange WN ASTM A182 Grade F316/F316L dual grade Class 600 ASME B16.5 RF Severe wet H2S service	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67K-001N6	Blind flange ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
1	0.75				P67K-001N7	Blind flange ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
1	1				P67K-001N8	Blind flange ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
1	1.5				P67K-001N9	Blind flange ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
1	2				P67K-001NF	Blind flange ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
1	3				P67K-001NJ	Blind flange ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
1	4				P67K-001NK	Blind flange ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
1	6				P67K-001NL	Blind flange ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
1	8				P67K-001NM	Blind flange ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
1	10				P67K-001NA	Blind flange ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
1	12				P67K-001NB	Blind flange ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
1	14				P67K-001NC	Blind flange ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
1	16				P67K-001ND	Blind flange ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
1	18				P67K-001NE	Blind flange ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000FT	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000FU	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000G5	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000G6	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	6				P73T-000G7	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	8				P73T-000G8	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	10				P73T-000FX	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	12				P73T-000FY	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	14				P73T-000FZ	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	16				P73T-000G0	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	18				P73T-000G1	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	0.5				P73T-000J8	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	0.75				P73T-000J9	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1				P73T-000JA	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1.5				P73T-000JB	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	2				P73T-000JH	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	3				P73T-000JL	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	4				P73T-000JM	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	6				P73T-000JN	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	8				P73T-000JP	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	10				P73T-000JC	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	12				P73T-000JD	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

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GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
781	14				P73T-000JE	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	16				P73T-000JF	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	18				P73T-000JG	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-10				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	12-18				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
781	0.5-6				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
781	8-18				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81K-001AX	Gate valve ASTM A182 Grade F316/F316L dual grade Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service	
1	0.75				P81K-001AY	Gate valve ASTM A182 Grade F316/F316L dual grade Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service	
1	1				P81K-001AZ	Gate valve ASTM A182 Grade F316/F316L dual grade Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service	
1	1.5				P81K-001B0	Gate valve ASTM A182 Grade F316/F316L dual grade Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service	
1	2				P81L-002RC	Gate valve ASTM A351 Grade CF8M Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service	
1	3				P81L-002RD	Gate valve ASTM A351 Grade CF8M Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service	
1	4				P81L-002RE	Gate valve ASTM A351 Grade CF8M Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service	
1	6				P81L-002RF	Gate valve ASTM A351 Grade CF8M Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service	
1	8				P81L-002RG	Gate valve ASTM A351 Grade CF8M Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service	
1	10				P81L-002RH	Gate valve ASTM A351 Grade CF8M Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Severe wet H2S service Amine service	
1	12				P81L-002RJ	Gate valve ASTM A351 Grade CF8M Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Severe wet H2S service Amine service	
1	14				P81L-002RK	Gate valve ASTM A351 Grade CF8M Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Severe wet H2S service Amine service	
1	16				P81L-002Z2	Gate valve ASTM A351 Grade CF8M Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Severe wet H2S service Amine service	
1	18				P81L-002Z3	Gate valve ASTM A351 Grade CF8M Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Severe wet H2S service Amine service	
4608	0.75				P81K-001NU	Gate valve ASTM A182 Grade F316/F316L dual grade Class 300 API 602 BW both sides w/ nipples BE - NPT ASTM A312-TP316(L) dual grade Seamless Sch80S-nipple Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service	
4608	1				P81K-001UE	Gate valve ASTM A182 Grade F316/F316L dual grade Class 300 API 602 BW both sides w/ nipples BE - NPT ASTM A312-TP316(L) dual grade Seamless Sch80S-nipple Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82K-000WV	Globe valve ASTM A182 Grade F316/F316L dual grade Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service	
1	0.75				P82K-000WW	Globe valve ASTM A182 Grade F316/F316L dual grade Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service	
1	1				P82K-000WX	Globe valve ASTM A182 Grade F316/F316L dual grade Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service	
1	1.5				P82K-000WY	Globe valve ASTM A182 Grade F316/F316L dual grade Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service	
1	2				P82L-001GF	Globe valve ASTM A351 Grade CF8M Class 300 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service	
1	3				P82L-001GG	Globe valve ASTM A351 Grade CF8M Class 300 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service	
1	4				P82L-001GH	Globe valve ASTM A351 Grade CF8M Class 300 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service	
1	6				P82L-001GJ	Globe valve ASTM A351 Grade CF8M Class 300 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service	
1	8				P82L-001XW	Globe valve ASTM A351 Grade CF8M Class 300 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Severe wet H2S service Amine service	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83K-000UF	Check valve ASTM A182 Grade F316/F316L dual grade Class 300 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Severe wet H2S service Amine service	

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CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75				P83K-000UG	Check valve ASTM A182 Grade F316/F316L dual grade Class 300 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Severe wet H2S service Amine service	
1	1				P83K-000UH	Check valve ASTM A182 Grade F316/F316L dual grade Class 300 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Severe wet H2S service Amine service	
1	1.5				P83K-000UJ	Check valve ASTM A182 Grade F316/F316L dual grade Class 300 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Severe wet H2S service Amine service	
1	2				P83L-001EZ	Check valve ASTM A351 Grade CF8M Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service Amine service	
1	3				P83L-001F0	Check valve ASTM A351 Grade CF8M Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service Amine service	
1	4				P83L-001F1	Check valve ASTM A351 Grade CF8M Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service Amine service	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71K-000DU	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 300 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	
1	0.75				P71K-000DV	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 300 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	
1	1				P71K-000DW	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 300 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	
1	1.5				P71K-000DX	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 300 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	
1	2				P71K-000E0	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 300 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	
1	3				P71K-000E1	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 300 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	
1	4				P71K-000E2	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 300 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	
1	6				P71K-000E3	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 300 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	
1	8				P71K-000E4	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 300 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	
1	10				P71K-000DY	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 300 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	
1	12				P71K-000DZ	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 300 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	

PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72K-000EM	Paddle blank ASTM A182 Grade F316/F316L dual grade Class 300 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	
1	16				P72K-000EN	Paddle blank ASTM A182 Grade F316/F316L dual grade Class 300 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	
1	18				P72K-000EP	Paddle blank ASTM A182 Grade F316/F316L dual grade Class 300 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	

PADDLE SPACER (PS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72K-000ET	Paddle spacer ASTM A182 Grade F316/F316L dual grade Class 300 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	
1	16				P72K-000EU	Paddle spacer ASTM A182 Grade F316/F316L dual grade Class 300 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	
1	18				P72K-000EV	Paddle spacer ASTM A182 Grade F316/F316L dual grade Class 300 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	

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BOLT TABLE (B_B0L5 , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-008T0		
0.75	4	0.625	75	P80S-00908		
1	4	0.625	80	P80S-00909		
1.5	4	0.750	95	P80S-005Z4		
2	8	0.625	90	P80S-0090B		
3	8	0.750	110	P80S-0090F		
4	8	0.750	115	P80S-0090G		
6	12	0.750	125	P80S-0090J		
8	12	0.875	140	P80S-005ZD		
10	16	1.000	160	P80S-0061E		
12	16	1.125	175	P80S-0064S		
14	20	1.125	180	P80S-0064T		
16	20	1.250	190	P80S-00689		
18	24	1.250	200	P80S-0068B		

BOLT TABLE (B_B0L5_781 , STUD ASME RF, OPTION CODE 781)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	80	P80S-008T2		
0.75	4	0.625	90	P80S-0090B		
1	4	0.625	95	P80S-0090C		
1.5	4	0.750	110	P80S-0090F		
2	8	0.625	110	P80S-008T8		
3	8	0.750	130	P80S-0090K		
4	8	0.875	150	P80S-005ZF		
6	12	1.000	175	P80S-0061H		
8	12	1.125	195	P80S-0064W		
10	16	1.250	250	P80S-0068M		
12	20	1.250	255	P80S-0068N		
14	20	1.375	270	P80S-006HV		
16	20	1.500	295	P80S-006LP		
18	20	1.625	320	P80S-00A5E		

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PIPING CLASS

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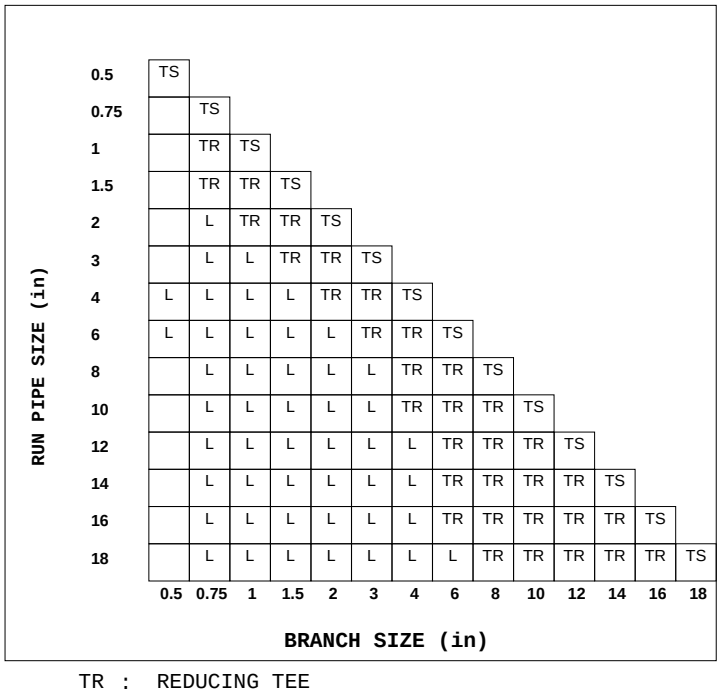
BRANCH TABLE (T_B0L5)



TR : REDUCING TEE
L : OUTLET
TS : STRAIGHT TEE

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PIPING CLASS

B0L501 REV NO. 2

Material : SS316L
Rating : ASME CLASS 300
Flange Face : RF
C.A.(mm) : 0.00
Gasket : Spiral Wound
Service : PROCESS - WET SEVERE SOUR SERVICE SUBJECT TO NACE + HIC STD + AMINES OR CAUSTIC - STRESS RELIEVED
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
5	BOLTING CONFIRMING TO B7M / 2HM SHALL BE USED UNDER CONDITIONS (A) DIRECT EXPOSURE TO SOUR ENVIRONMENTS (B) WHEN THE BOLTING WILL BE BURIED OR INSULATED
27	PWHT OF CARBON STEEL PIPING IN WET H2S, CAUSTIC AND AMINE SERVICES SHALL BE IN ACCORDANCE WITH SECTION 10.2, 10.3, AND 10.4 OF PROJECT SPECIFICATION 3550-8440-SP-0002 MATERIALS REQUIREMENTS FOR PRESSURISED EQUIPMENT AND PIPING. FOR CAUSTIC AND AMINE SERVICE THE FOLLOWING SHALL APPLY: - PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF ALL SITE PIPING FABRICATION WELDS IS REQUIRED FOR ALL WALL THICKNESSES. FOR MODERATE AND SEVERE WET H2S SERVICE THE FOLLOWING SHALL APPLY: PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF SITE FABRICATION CIRCUMFERENTIAL OR BRANCH WELDS IS NOT REQUIRED IF WELDS ARE MULTIPASS AND IN ACCORDANCE WITH PARA 10.2.12 OF PROJECT SPECIFICATION 3550-8440-SP-0002. FOR SERVICES MEETING THE WET H2S CRITERIA AND CAUSTIC OR AMINE CRITERIA THE MORE STRINGENT PWHT REQUIREMENT SHALL GOVERN.

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
541	NPT(F) (CA,F,L)
781	CLASS 600 (B,F,G)
4608	VALVE WITH NIPPLES (V)

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PIPING CLASS
B0L501 REV NO. 2

PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P01J-002ES	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE Severe wet H2S service	
1	0.75		SCH80S		P01J-002ET	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE Severe wet H2S service	
1	1		SCH80S		P01J-002EU	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE Severe wet H2S service	
1	1.5		SCH80S		P01J-002EV	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE Severe wet H2S service	
1	2		SCH10S		P01J-002EW	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M BE Severe wet H2S service	
1	3		SCH10S		P01J-002EX	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M BE Severe wet H2S service	
1	4		SCH10S		P01J-002EY	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M BE Severe wet H2S service	
1	6		SCH40S		P01J-002GH	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M BE Severe wet H2S service	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P02J-001Y0	90 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	0.75		SCH80S		P02J-001Y1	90 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	1		SCH80S		P02J-001Y2	90 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	1.5		SCH80S		P02J-001Y3	90 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	2		SCH10S		P02J-001Y4	90 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	3		SCH10S		P02J-001Y5	90 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	4		SCH10S		P02J-001Y6	90 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	6		SCH40S		P02J-00201	90 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P03J-001VR	45 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	0.75		SCH80S		P03J-001VS	45 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	1		SCH80S		P03J-001VT	45 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	1.5		SCH80S		P03J-001VU	45 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	2		SCH10S		P03J-001VV	45 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	3		SCH10S		P03J-001VW	45 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	4		SCH10S		P03J-001VX	45 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	6		SCH40S		P03J-001ZK	45 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P21J-001M5	Straight tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	0.75		SCH80S		P21J-001M6	Straight tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1		SCH80S		P21J-001M7	Straight tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5		SCH80S		P21J-001M8	Straight tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	2		SCH10S		P21J-001M9	Straight tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	3		SCH10S		P21J-001MA	Straight tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	4		SCH10S		P21J-001MB	Straight tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	6		SCH40S		P21J-001NZ	Straight tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75	SCH80S	SCH80S	P24J-0070F	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5	0.75	SCH80S	SCH80S	P24J-0070J	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	

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REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5	1	SCH80S	SCH80S	P24J-0070K	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	2	1	SCH10S	SCH80S	P24J-0070S	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	2	1.5	SCH10S	SCH80S	P24J-0070T	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	3	1.5	SCH10S	SCH80S	P24J-0070U	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	3	2	SCH10S	SCH10S	P24J-0070V	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	4	2	SCH10S	SCH10S	P24J-0070W	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	4	3	SCH10S	SCH10S	P24J-0070X	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	6	3	SCH40S	SCH10S	P24J-0075A	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	6	4	SCH40S	SCH10S	P24J-0075B	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH80S	SCH80S	P27J-005XP	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1	0.5	SCH80S	SCH80S	P27J-005V5	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1	0.75	SCH80S	SCH80S	P27J-005V6	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5	0.5	SCH80S	SCH80S	P27J-005V7	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5	0.75	SCH80S	SCH80S	P27J-005V8	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5	1	SCH80S	SCH80S	P27J-005V9	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	2	0.75	SCH10S	SCH80S	P27J-005VA	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	2	1	SCH10S	SCH80S	P27J-005VB	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	2	1.5	SCH10S	SCH80S	P27J-005VC	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	3	1.5	SCH10S	SCH80S	P27J-005VD	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	3	2	SCH10S	SCH10S	P27J-005VE	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	4	1.5	SCH10S	SCH80S	P27J-005VF	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	4	2	SCH10S	SCH10S	P27J-005VG	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	4	3	SCH10S	SCH10S	P27J-005VH	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	6	3	SCH40S	SCH10S	P27J-0060F	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	6	4	SCH40S	SCH10S	P27J-0060G	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH80S	SCH80S	P28J-005YL	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1	0.5	SCH80S	SCH80S	P28J-005W1	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1	0.75	SCH80S	SCH80S	P28J-005W2	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5	0.5	SCH80S	SCH80S	P28J-005W3	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5	0.75	SCH80S	SCH80S	P28J-005W4	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5	1	SCH80S	SCH80S	P28J-005W5	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	2	0.75	SCH10S	SCH80S	P28J-005W6	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	2	1	SCH10S	SCH80S	P28J-005W7	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	2	1.5	SCH10S	SCH80S	P28J-005W8	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	3	1.5	SCH10S	SCH80S	P28J-005W9	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	3	2	SCH10S	SCH10S	P28J-005WA	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	4	1.5	SCH10S	SCH80S	P28J-005WB	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	4	2	SCH10S	SCH10S	P28J-005WC	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	4	3	SCH10S	SCH10S	P28J-005WD	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	

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ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	6	3	SCH40S	SCH10S	P28J-0061C	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	6	4	SCH40S	SCH10S	P28J-0061D	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P29J-002M5	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	0.75		SCH80S		P29J-002M6	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1		SCH80S		P29J-002M7	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5		SCH80S		P29J-002M8	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	2		SCH10S		P29J-002ME	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	3		SCH10S		P29J-002MH	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	4		SCH10S		P29J-002MK	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	6		SCH40S		P29J-003MK	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
541	0.75				P29K-00049	Cap ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 NPT Severe wet H2S service	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P41J-001U7	Straight nipple ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Severe wet H2S service	
1	0.75		SCH80S		P41J-001U8	Straight nipple ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Severe wet H2S service	
1	1		SCH80S		P41J-001U9	Straight nipple ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Severe wet H2S service	
1	1.5		SCH80S		P41J-001UA	Straight nipple ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Severe wet H2S service	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
541	1	0.75			P31K-00FMB	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 NPT Severe wet H2S service	
541	1.5	0.75			P31K-00FMA	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 NPT Severe wet H2S service	
541	2 - 2.5	0.75			P31K-00GFX	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 NPT Severe wet H2S service	
541	3 - 5	0.75			P31K-00GFY	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 NPT Severe wet H2S service	
541	6 - 12	0.75			P31K-00GFZ	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 NPT Severe wet H2S service	
1	2	0.75	SCH10S	SCH80S	P31K-00ENM	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	3	0.75	SCH10S	SCH80S	P31K-00ENS	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	4	0.75	SCH10S	SCH80S	P31K-00EP3	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	6	0.75	SCH40S	SCH80S	P31K-00EVL	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	3	1	SCH10S	SCH80S	P31K-00ENT	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	4	1	SCH10S	SCH80S	P31K-00EP4	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	6	1	SCH40S	SCH80S	P31K-00EVM	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	4	1.5	SCH10S	SCH80S	P31K-00EP5	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	6	1.5	SCH40S	SCH80S	P31K-00EVN	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	6	2	SCH40S	SCH10S	P31K-00EVP	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30K-0005H	Plug ASTM A182 Grade F316/F316L dual grade ASME B16.11 NPT Round head Severe wet H2S service	
1	0.75				P30K-0005J	Plug ASTM A182 Grade F316/F316L dual grade ASME B16.11 NPT Round head Severe wet H2S service	
1	1				P30K-0005K	Plug ASTM A182 Grade F316/F316L dual grade ASME B16.11 NPT Round head Severe wet H2S service	
1	1.5				P30K-0005L	Plug ASTM A182 Grade F316/F316L dual grade ASME B16.11 NPT Round head Severe wet H2S service	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P61K-005FX	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
1	0.75		SCH80S		P61K-005FY	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
1	1		SCH80S		P61K-005FZ	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
1	1.5		SCH80S		P61K-005G0	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	

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FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2		SCH10S		P61K-005G6	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
1	3		SCH10S		P61K-005G9	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
1	4		SCH10S		P61K-005GA	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
1	6		SCH40S		P61K-005JM	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
541	0.5				P61K-0069N	Flange NPT ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
541	0.75				P61K-00602	Flange NPT ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
781	0.5		SCH80S		P61K-005JP	Flange WN ASTM A182 Grade F316/F316L dual grade Class 600 ASME B16.5 RF Severe wet H2S service	
781	0.75		SCH80S		P61K-005JR	Flange WN ASTM A182 Grade F316/F316L dual grade Class 600 ASME B16.5 RF Severe wet H2S service	
781	1		SCH80S		P61K-005JS	Flange WN ASTM A182 Grade F316/F316L dual grade Class 600 ASME B16.5 RF Severe wet H2S service	
781	1.5		SCH80S		P61K-005JT	Flange WN ASTM A182 Grade F316/F316L dual grade Class 600 ASME B16.5 RF Severe wet H2S service	
781	2		SCH10S		P61K-005JZ	Flange WN ASTM A182 Grade F316/F316L dual grade Class 600 ASME B16.5 RF Severe wet H2S service	
781	3		SCH10S		P61K-005K2	Flange WN ASTM A182 Grade F316/F316L dual grade Class 600 ASME B16.5 RF Severe wet H2S service	
781	4		SCH10S		P61K-005K3	Flange WN ASTM A182 Grade F316/F316L dual grade Class 600 ASME B16.5 RF Severe wet H2S service	
781	6		SCH40S		P61K-005K4	Flange WN ASTM A182 Grade F316/F316L dual grade Class 600 ASME B16.5 RF Severe wet H2S service	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67K-001N6	Blind flange ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
1	0.75				P67K-001N7	Blind flange ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
1	1				P67K-001N8	Blind flange ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
1	1.5				P67K-001N9	Blind flange ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
1	2				P67K-001NF	Blind flange ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
1	3				P67K-001NJ	Blind flange ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
1	4				P67K-001NK	Blind flange ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
1	6				P67K-001NL	Blind flange ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000FT	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000FU	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000G5	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000G6	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	6				P73T-000G7	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	0.5				P73T-000J8	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	0.75				P73T-000J9	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1				P73T-000JA	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1.5				P73T-000JB	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	2				P73T-000JH	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	3				P73T-000JL	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	4				P73T-000JM	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	6				P73T-000JN	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-6				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
781	0.5-6				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	

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GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81K-001AX	Gate valve ASTM A182 Grade F316/F316L dual grade Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service	
1	0.75				P81K-001AY	Gate valve ASTM A182 Grade F316/F316L dual grade Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service	
1	1				P81K-001AZ	Gate valve ASTM A182 Grade F316/F316L dual grade Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service	
1	1.5				P81K-001B0	Gate valve ASTM A182 Grade F316/F316L dual grade Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service	
1	2				P81L-002RC	Gate valve ASTM A351 Grade CF8M Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service	
1	3				P81L-002RD	Gate valve ASTM A351 Grade CF8M Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service	
1	4				P81L-002RE	Gate valve ASTM A351 Grade CF8M Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service	
1	6				P81L-002RF	Gate valve ASTM A351 Grade CF8M Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service	
4608	0.75				P81K-001NU	Gate valve ASTM A182 Grade F316/F316L dual grade Class 300 API 602 BW both sides w/ nipples BE - NPT ASTM A312-TP316(L) dual grade Seamless Sch80S-nipple Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82K-000WV	Globe valve ASTM A182 Grade F316/F316L dual grade Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service	
1	0.75				P82K-000WW	Globe valve ASTM A182 Grade F316/F316L dual grade Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service	
1	1				P82K-000WX	Globe valve ASTM A182 Grade F316/F316L dual grade Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service	
1	1.5				P82K-000WY	Globe valve ASTM A182 Grade F316/F316L dual grade Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service	
1	2				P82L-001GF	Globe valve ASTM A351 Grade CF8M Class 300 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service	
1	3				P82L-001GG	Globe valve ASTM A351 Grade CF8M Class 300 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service	
1	4				P82L-001GH	Globe valve ASTM A351 Grade CF8M Class 300 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service	
1	6				P82L-001GJ	Globe valve ASTM A351 Grade CF8M Class 300 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83K-000UF	Check valve ASTM A182 Grade F316/F316L dual grade Class 300 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Severe wet H2S service Amine service	
1	0.75				P83K-000UG	Check valve ASTM A182 Grade F316/F316L dual grade Class 300 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Severe wet H2S service Amine service	
1	1				P83K-000UH	Check valve ASTM A182 Grade F316/F316L dual grade Class 300 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Severe wet H2S service Amine service	
1	1.5				P83K-000UJ	Check valve ASTM A182 Grade F316/F316L dual grade Class 300 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Severe wet H2S service Amine service	
1	2				P83L-001EZ	Check valve ASTM A351 Grade CF8M Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service Amine service	
1	3				P83L-001F0	Check valve ASTM A351 Grade CF8M Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service Amine service	
1	4				P83L-001F1	Check valve ASTM A351 Grade CF8M Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service Amine service	
1	6				P83L-001F2	Check valve ASTM A351 Grade CF8M Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service Amine service	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71K-000DU	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 300 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	
1	0.75				P71K-000DV	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 300 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	
1	1				P71K-000DW	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 300 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	
1	1.5				P71K-000DX	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 300 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	
1	2				P71K-000E0	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 300 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	
1	3				P71K-000E1	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 300 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	
1	4				P71K-000E2	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 300 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	
1	6				P71K-000E3	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 300 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	

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BOLT TABLE (B_B0L501 , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-008T0		
0.75	4	0.625	75	P80S-00908		
1	4	0.625	80	P80S-00909		
1.5	4	0.750	95	P80S-005Z4		
2	8	0.625	90	P80S-0090B		
3	8	0.750	110	P80S-0090F		
4	8	0.750	115	P80S-0090G		
6	12	0.750	125	P80S-0090J		

BOLT TABLE (B_B0L501_781 , STUD ASME RF, OPTION CODE 781)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	80	P80S-008T2		
0.75	4	0.625	90	P80S-0090B		
1	4	0.625	95	P80S-0090C		
1.5	4	0.750	110	P80S-0090F		
2	8	0.625	110	P80S-008T8		
3	8	0.750	130	P80S-0090K		
4	8	0.875	150	P80S-005ZF		
6	12	1.000	175	P80S-0061H		

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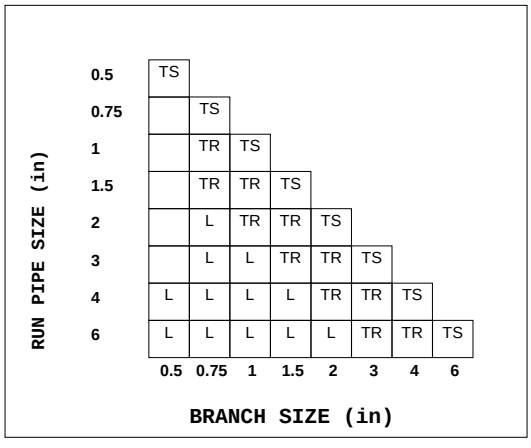
BRANCH TABLE (T_B0L501)



L : OUTLET
TS : STRAIGHT TEE
TR : REDUCING TEE

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PIPING CLASS

B0LH04 REV NO. 2

Material : SS316L
Rating : ASME CLASS 300
Flange Face : RF
C.A.(mm) : 0.00
Gasket : Spiral Wound
Service : PROCESS - HYDROGEN OR HYDROGEN RICH HYDROCARBON MIXTURE : / PROCESS WITH HYDROGEN
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
24	FOR ALL RELEVANT PIPING CLASSES WITH LINE DESIGN TEMPERATURE ABOVE 427DEGC, IN SPIRAL WOUND GASKET, SUITABLE GASKET FILLER MATERIAL SUCH AS COMBINATION OF MICA LAYERS AND GRAPHITE FILLERS OR EQUIVALENT SHALL BE REVIEWED AND SELECTED OR AS DEFINED BY THE LICENSOR

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
541	NPT(F) (CA,L)
714	SW - NPT(F) (V)
781	CLASS 600 (B,F,G)

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PIPING CLASS
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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P01J-0014A	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE	
1	0.75		SCH80S		P01J-0014B	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE	
1	1		SCH80S		P01J-0014C	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE	
1	1.5		SCH80S		P01J-0014D	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P02K-0000G	90 degree elbow ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	0.75				P02K-0000H	90 degree elbow ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	1				P02K-0000J	90 degree elbow ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	1.5				P02K-0000K	90 degree elbow ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P03K-0000D	45 degree elbow ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	0.75				P03K-0000E	45 degree elbow ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	1				P03K-0000F	45 degree elbow ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	1.5				P03K-0000G	45 degree elbow ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P21K-0000G	Straight tee ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	0.75				P21K-0000H	Straight tee ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	1				P21K-0000J	Straight tee ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	1.5				P21K-0000K	Straight tee ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75			P24K-0000M	Reducing tee ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	1.5	0.75			P24K-0000P	Reducing tee ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	1.5	1			P24K-0000R	Reducing tee ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P29K-00021	Cap ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	0.75				P29K-00022	Cap ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	1				P29K-00023	Cap ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	1.5				P29K-00024	Cap ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
541	0.75				P29K-00002	Cap ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P41J-001UY	Straight nipple ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		SCH160		P41J-001UZ	Straight nipple ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		SCH160		P41J-001V0	Straight nipple ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		SCH160		P41J-001V1	Straight nipple ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

CON SWAGED NIPPLE (SNC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH80S	SCH80S	P42J-0008N	Concentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	SCH80S	SCH80S	P42J-0008M	Concentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	SCH80S	SCH80S	P42J-0008P	Concentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	SCH80S	SCH80S	P42J-0008R	Concentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	SCH80S	SCH80S	P42J-0008S	Concentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	

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CON SWAGED NIPPLE (SNC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5	1	SCH80S	SCH80S	P42J-0008T	Concentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	

ECC SWAGED NIPPLE (SNE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH80S	SCH80S	P43J-0008R	Eccentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	SCH80S	SCH80S	P43J-0008S	Eccentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	SCH80S	SCH80S	P43J-0008T	Eccentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	SCH80S	SCH80S	P43J-0008U	Eccentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	SCH80S	SCH80S	P43J-0008V	Eccentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	SCH80S	SCH80S	P43J-0008W	Eccentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	

COUPLING (CPS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P47K-0000G	Coupling ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW - SW	
1	0.75				P47K-0000H	Coupling ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW - SW	
1	1				P47K-0000J	Coupling ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW - SW	
1	1.5				P47K-0000K	Coupling ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW - SW	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
541	1	0.75			P31K-001XH	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 NPT	
541	1.5	0.75			P31K-001XM	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 NPT	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30K-0001L	Plug ASTM A182 Grade F316/F316L dual grade ASME B16.11 NPT Round head	
1	0.75				P30K-0001M	Plug ASTM A182 Grade F316/F316L dual grade ASME B16.11 NPT Round head	
1	1				P30K-0001N	Plug ASTM A182 Grade F316/F316L dual grade ASME B16.11 NPT Round head	
1	1.5				P30K-0001P	Plug ASTM A182 Grade F316/F316L dual grade ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P61K-003AK	Flange SW ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF	
1	0.75		SCH80S		P61K-003AL	Flange SW ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF	
1	1		SCH80S		P61K-003AM	Flange SW ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF	
1	1.5		SCH80S		P61K-003AN	Flange SW ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF	
781	0.5		SCH80S		P61K-003HT	Flange SW ASTM A182 Grade F316/F316L dual grade Class 600 ASME B16.5 RF	
781	0.75		SCH80S		P61K-003HU	Flange SW ASTM A182 Grade F316/F316L dual grade Class 600 ASME B16.5 RF	
781	1		SCH80S		P61K-0042H	Flange SW ASTM A182 Grade F316/F316L dual grade Class 600 ASME B16.5 RF	
781	1.5		SCH80S		P61K-0042J	Flange SW ASTM A182 Grade F316/F316L dual grade Class 600 ASME B16.5 RF	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67K-0007H	Blind flange ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF	
1	0.75				P67K-0007G	Blind flange ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF	
1	1				P67K-0007F	Blind flange ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF	
1	1.5				P67K-0007E	Blind flange ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000FT	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000FU	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

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GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
781	0.5				P73T-000J8	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	0.75				P73T-000J9	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1				P73T-000JA	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1.5				P73T-000JB	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-1.5				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
781	0.5-1.5				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81K-0010V	Gate valve ASTM A182 Grade F316/F316L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	0.75				P81K-0010W	Gate valve ASTM A182 Grade F316/F316L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	1				P81K-0010X	Gate valve ASTM A182 Grade F316/F316L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	1.5				P81K-0010Y	Gate valve ASTM A182 Grade F316/F316L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
714	0.5				P81K-001LF	Gate valve ASTM A182 Grade F316/F316L dual grade Class 800 API 602 SW - NPT Trim number 12 BB-BG-OS&Y Handwheel operated	
714	0.75				P81K-001G3	Gate valve ASTM A182 Grade F316/F316L dual grade Class 800 API 602 SW - NPT Trim number 12 BB-BG-OS&Y Handwheel operated	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82K-000P3	Globe valve ASTM A182 Grade F316/F316L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	0.75				P82K-000P4	Globe valve ASTM A182 Grade F316/F316L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	1				P82K-000P5	Globe valve ASTM A182 Grade F316/F316L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	1.5				P82K-000P6	Globe valve ASTM A182 Grade F316/F316L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83K-000P6	Check valve ASTM A182 Grade F316/F316L dual grade Class 800 API 602 SW Trim number 12 Lift-type Bolted cover	
1	0.75				P83K-000P7	Check valve ASTM A182 Grade F316/F316L dual grade Class 800 API 602 SW Trim number 12 Lift-type Bolted cover	
1	1				P83K-000P8	Check valve ASTM A182 Grade F316/F316L dual grade Class 800 API 602 SW Trim number 12 Lift-type Bolted cover	
1	1.5				P83K-000P9	Check valve ASTM A182 Grade F316/F316L dual grade Class 800 API 602 SW Trim number 12 Lift-type Bolted cover	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71K-00081	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 300 Standard-drawing Flange ASME B16.5 RF	
1	0.75				P71K-00082	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 300 Standard-drawing Flange ASME B16.5 RF	
1	1				P71K-00083	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 300 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71K-00084	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 300 Standard-drawing Flange ASME B16.5 RF	

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BOLT TABLE (B_B0LH04 , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-003V4		
0.75	4	0.625	75	P80S-003XC		
1	4	0.625	80	P80S-003XD		
1.5	4	0.750	95	P80S-00414		

BOLT TABLE (B_B0LH04_781 , STUD ASME RF, OPTION CODE 781)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	80	P80S-003V6		
0.75	4	0.625	90	P80S-003XF		
1	4	0.625	95	P80S-003XG		
1.5	4	0.750	110	P80S-003XK		

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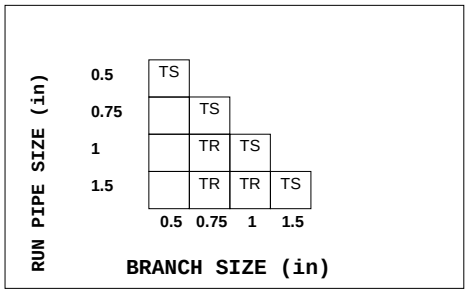
BRANCH TABLE (T_B0LH04)



TR : REDUCING TEE
TS : STRAIGHT TEE

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PIPING CLASS

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Material : SS316L
Rating : ASME CLASS 300
Flange Face : RF
C.A.(mm) : 1.00
Gasket : Spiral Wound
Service : PROCESS - WET SOUR SERVICE SUBJECT TO NACE STD.:

Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
2	USE OF SOFT SEATED BALL, PLUG AND BUTTERFLY VALVES SHALL BE LIMITED TO MAXIMUM OF 204DEGC (400DEGF)
5	BOLTING CONFIRMING TO B7M / 2HM SHALL BE USED UNDER CONDITIONS (A) DIRECT EXPOSURE TO SOUR ENVIRONMENTS (B) WHEN THE BOLTING WILL BE BURIED OR INSULATED

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
541	NPT(F) (CA,F,L)
781	CLASS 600 (B,F,G)
4608	VALVE WITH NIPPLES (V)

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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P01J-002CY	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE Moderate wet H2S service	
1	0.75		SCH80S		P01J-002CZ	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE Moderate wet H2S service	
1	1		SCH80S		P01J-002D0	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE Moderate wet H2S service	
1	1.5		SCH80S		P01J-002D1	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE Moderate wet H2S service	
1	2		SCH40S		P01J-002D2	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M BE Moderate wet H2S service	
1	3		SCH10S		P01J-002D3	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M BE Moderate wet H2S service	
1	4		SCH40S		P01J-002D4	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M BE Moderate wet H2S service	
1	6		SCH40S		P01J-002D5	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M BE Moderate wet H2S service	
1	8		SCH40S		P01J-002D6	Pipe ASTM A358 Grade 316/316L Class 1 dual grade EFW ASME B36.10M/B36.19M BE Moderate wet H2S service	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P02J-001WB	90 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Moderate wet H2S service	
1	0.75		SCH80S		P02J-001WC	90 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Moderate wet H2S service	
1	1		SCH80S		P02J-001WD	90 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Moderate wet H2S service	
1	1.5		SCH80S		P02J-001WE	90 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Moderate wet H2S service	
1	2		SCH40S		P02J-001WF	90 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Moderate wet H2S service	
1	3		SCH10S		P02J-001WG	90 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Moderate wet H2S service	
1	4		SCH40S		P02J-001WH	90 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Moderate wet H2S service	
1	6		SCH40S		P02J-001WJ	90 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Moderate wet H2S service	
1	8		SCH40S		P02J-001WK	90 degree elbow ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Long radius Moderate wet H2S service	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P03J-001TT	45 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Moderate wet H2S service	
1	0.75		SCH80S		P03J-001TU	45 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Moderate wet H2S service	
1	1		SCH80S		P03J-001TV	45 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Moderate wet H2S service	
1	1.5		SCH80S		P03J-001TW	45 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Moderate wet H2S service	
1	2		SCH40S		P03J-001TX	45 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Moderate wet H2S service	
1	3		SCH10S		P03J-001TY	45 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Moderate wet H2S service	
1	4		SCH40S		P03J-001TZ	45 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Moderate wet H2S service	
1	6		SCH40S		P03J-001U0	45 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Moderate wet H2S service	
1	8		SCH40S		P03J-001U1	45 degree elbow ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Long radius Moderate wet H2S service	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P21J-001KB	Straight tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	0.75		SCH80S		P21J-001KC	Straight tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	1		SCH80S		P21J-001KD	Straight tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	1.5		SCH80S		P21J-001KE	Straight tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	2		SCH40S		P21J-001KF	Straight tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	3		SCH10S		P21J-001KG	Straight tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	4		SCH40S		P21J-001KH	Straight tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	6		SCH40S		P21J-001KJ	Straight tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	8		SCH40S		P21J-001KK	Straight tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	

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REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75	SCH80S	SCH80S	P24J-006WG	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	1.5	0.75	SCH80S	SCH80S	P24J-006WH	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	1.5	1	SCH80S	SCH80S	P24J-006WJ	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	2	1	SCH40S	SCH80S	P24J-006WK	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	2	1.5	SCH40S	SCH80S	P24J-006WL	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	3	1.5	SCH10S	SCH80S	P24J-006WM	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	3	2	SCH10S	SCH40S	P24J-006WN	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	4	2	SCH40S	SCH40S	P24J-006WP	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	4	3	SCH40S	SCH10S	P24J-006WR	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	6	3	SCH40S	SCH10S	P24J-006WS	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	6	4	SCH40S	SCH40S	P24J-006WT	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	8	4	SCH40S	SCH40S	P24J-006WU	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	8	6	SCH40S	SCH40S	P24J-006WV	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH80S	SCH80S	P27J-005R6	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	1	0.5	SCH80S	SCH80S	P27J-005R7	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	1	0.75	SCH80S	SCH80S	P27J-005R8	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	1.5	0.5	SCH80S	SCH80S	P27J-005R9	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	1.5	0.75	SCH80S	SCH80S	P27J-005RA	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	1.5	1	SCH80S	SCH80S	P27J-005RB	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	2	0.75	SCH40S	SCH80S	P27J-005RC	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	2	1	SCH40S	SCH80S	P27J-005RD	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	2	1.5	SCH40S	SCH80S	P27J-005RE	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	3	1.5	SCH10S	SCH80S	P27J-005RF	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	3	2	SCH10S	SCH40S	P27J-005RG	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	4	1.5	SCH40S	SCH80S	P27J-005RH	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	4	2	SCH40S	SCH40S	P27J-005RJ	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	4	3	SCH40S	SCH10S	P27J-005RK	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	6	3	SCH40S	SCH10S	P27J-005RL	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	6	4	SCH40S	SCH40S	P27J-005RM	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	8	4	SCH40S	SCH40S	P27J-005RN	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	8	6	SCH40S	SCH40S	P27J-005RP	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH80S	SCH80S	P28J-005S2	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	1	0.5	SCH80S	SCH80S	P28J-005S3	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	1	0.75	SCH80S	SCH80S	P28J-005S4	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	1.5	0.5	SCH80S	SCH80S	P28J-005S5	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	1.5	0.75	SCH80S	SCH80S	P28J-005S6	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	1.5	1	SCH80S	SCH80S	P28J-005S7	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	2	0.75	SCH40S	SCH80S	P28J-005S8	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	2	1	SCH40S	SCH80S	P28J-005S9	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2	1.5	SCH40S	SCH80S	P28J-005SA	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	3	1.5	SCH10S	SCH80S	P28J-005SB	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	3	2	SCH10S	SCH40S	P28J-005SC	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	4	1.5	SCH40S	SCH80S	P28J-005SD	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	4	2	SCH40S	SCH40S	P28J-005SE	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	4	3	SCH40S	SCH10S	P28J-005SF	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	6	3	SCH40S	SCH10S	P28J-005SG	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	6	4	SCH40S	SCH40S	P28J-005SH	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	8	4	SCH40S	SCH40S	P28J-005SJ	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	8	6	SCH40S	SCH40S	P28J-005SK	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P29J-002KG	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	0.75		SCH80S		P29J-002KH	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	1		SCH80S		P29J-002KJ	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	1.5		SCH80S		P29J-002KK	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	2		SCH40S		P29J-002KL	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	3		SCH10S		P29J-002KM	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	4		SCH40S		P29J-002KN	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	6		SCH40S		P29J-002KP	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	8		SCH40S		P29J-002KR	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
541	0.75				P29K-00048	Cap ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 NPT Moderate wet H2S service	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P41J-001VM	Straight nipple ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Moderate wet H2S service	
1	0.75		SCH160		P41J-001VN	Straight nipple ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Moderate wet H2S service	
1	1		SCH160		P41J-001VP	Straight nipple ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Moderate wet H2S service	
1	1.5		SCH80S		P41J-001TY	Straight nipple ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Moderate wet H2S service	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
541	1	0.75			P31K-00FM7	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 NPT Moderate wet H2S service	
541	1.5	0.75			P31K-00FM6	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 NPT Moderate wet H2S service	
541	2 - 2.5	0.75			P31K-00GFU	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 NPT Moderate wet H2S service	
541	3 - 5	0.75			P31K-00GFV	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 NPT Moderate wet H2S service	
541	6 - 12	0.75			P31K-00GFW	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 NPT Moderate wet H2S service	
1	2	0.75	SCH40S	SCH80S	P31K-00EHK	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Moderate wet H2S service	
1	3	0.75	SCH10S	SCH80S	P31K-00EHM	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Moderate wet H2S service	
1	4	0.75	SCH40S	SCH80S	P31K-00EHP	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Moderate wet H2S service	
1	6	0.75	SCH40S	SCH80S	P31K-00EHT	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Moderate wet H2S service	
1	8	0.75	SCH40S	SCH80S	P31K-00EHX	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Moderate wet H2S service	
1	3	1	SCH10S	SCH80S	P31K-00EHN	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Moderate wet H2S service	
1	4	1	SCH40S	SCH80S	P31K-00EHR	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Moderate wet H2S service	
1	6	1	SCH40S	SCH80S	P31K-00EHU	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Moderate wet H2S service	
1	8	1	SCH40S	SCH80S	P31K-00EHY	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Moderate wet H2S service	
1	4	1.5	SCH40S	SCH80S	P31K-00EHS	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Moderate wet H2S service	
1	6	1.5	SCH40S	SCH80S	P31K-00EHV	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Moderate wet H2S service	
1	8	1.5	SCH40S	SCH80S	P31K-00EHZ	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Moderate wet H2S service	
1	6	2	SCH40S	SCH40S	P31K-00EHW	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Moderate wet H2S service	

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OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	8	2	SCH40S	SCH40S	P31K-00EJ0	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Moderate wet H2S service	
1	8	3	SCH40S	SCH10S	P31K-00EJ1	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Moderate wet H2S service	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30K-00055	Plug ASTM A182 Grade F316/F316L dual grade ASME B16.11 NPT Round head Moderate wet H2S service	
1	0.75				P30K-00056	Plug ASTM A182 Grade F316/F316L dual grade ASME B16.11 NPT Round head Moderate wet H2S service	
1	1				P30K-00057	Plug ASTM A182 Grade F316/F316L dual grade ASME B16.11 NPT Round head Moderate wet H2S service	
1	1.5				P30K-00058	Plug ASTM A182 Grade F316/F316L dual grade ASME B16.11 NPT Round head Moderate wet H2S service	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P61K-005BE	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Moderate wet H2S service	
1	0.75		SCH80S		P61K-005BF	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Moderate wet H2S service	
1	1		SCH80S		P61K-005BG	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Moderate wet H2S service	
1	1.5		SCH80S		P61K-005BH	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Moderate wet H2S service	
1	2		SCH40S		P61K-005BJ	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Moderate wet H2S service	
1	3		SCH10S		P61K-005BK	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Moderate wet H2S service	
1	4		SCH40S		P61K-005BL	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Moderate wet H2S service	
1	6		SCH40S		P61K-005BM	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Moderate wet H2S service	
1	8		SCH40S		P61K-005BN	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Moderate wet H2S service	
541	0.5				P61K-0069S	Flange NPT ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Moderate wet H2S service	
541	0.75				P61K-00603	Flange NPT ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Moderate wet H2S service	
781	0.5		SCH80S		P61K-005BP	Flange WN ASTM A182 Grade F316/F316L dual grade Class 600 ASME B16.5 RF Moderate wet H2S service	
781	0.75		SCH80S		P61K-005BR	Flange WN ASTM A182 Grade F316/F316L dual grade Class 600 ASME B16.5 RF Moderate wet H2S service	
781	1		SCH80S		P61K-005BS	Flange WN ASTM A182 Grade F316/F316L dual grade Class 600 ASME B16.5 RF Moderate wet H2S service	
781	1.5		SCH80S		P61K-005BT	Flange WN ASTM A182 Grade F316/F316L dual grade Class 600 ASME B16.5 RF Moderate wet H2S service	
781	2		SCH40S		P61K-005BU	Flange WN ASTM A182 Grade F316/F316L dual grade Class 600 ASME B16.5 RF Moderate wet H2S service	
781	3		SCH10S		P61K-005BV	Flange WN ASTM A182 Grade F316/F316L dual grade Class 600 ASME B16.5 RF Moderate wet H2S service	
781	4		SCH40S		P61K-005BW	Flange WN ASTM A182 Grade F316/F316L dual grade Class 600 ASME B16.5 RF Moderate wet H2S service	
781	6		SCH40S		P61K-005BX	Flange WN ASTM A182 Grade F316/F316L dual grade Class 600 ASME B16.5 RF Moderate wet H2S service	
781	8		SCH40S		P61K-005BY	Flange WN ASTM A182 Grade F316/F316L dual grade Class 600 ASME B16.5 RF Moderate wet H2S service	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67K-001JJ	Blind flange ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Moderate wet H2S service	
1	0.75				P67K-001JK	Blind flange ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Moderate wet H2S service	
1	1				P67K-001JL	Blind flange ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Moderate wet H2S service	
1	1.5				P67K-001JM	Blind flange ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Moderate wet H2S service	
1	2				P67K-001JN	Blind flange ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Moderate wet H2S service	
1	3				P67K-001JP	Blind flange ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Moderate wet H2S service	
1	4				P67K-001JR	Blind flange ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Moderate wet H2S service	
1	6				P67K-001JS	Blind flange ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Moderate wet H2S service	
1	8				P67K-001JT	Blind flange ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Moderate wet H2S service	

REDUCING FLANGE (FR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5		SCH80S	P62K-000CA	Reducing flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Moderate wet H2S service	

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GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000FT	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000FU	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000G5	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000G6	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	6				P73T-000G7	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	8				P73T-000G8	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	0.5				P73T-000J8	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	0.75				P73T-000J9	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1				P73T-000JA	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1.5				P73T-000JB	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	2				P73T-000JH	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	3				P73T-000JL	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	4				P73T-000JM	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	6				P73T-000JN	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	8				P73T-000JP	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-8				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
781	0.5-6				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
781	8				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81K-00117	Gate valve ASTM A182 Grade F316/F316L dual grade Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	0.75				P81K-00118	Gate valve ASTM A182 Grade F316/F316L dual grade Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	1				P81K-00119	Gate valve ASTM A182 Grade F316/F316L dual grade Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	1.5				P81K-0011A	Gate valve ASTM A182 Grade F316/F316L dual grade Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	2				P81L-0029Z	Gate valve ASTM A351 Grade CF8M Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	3				P81L-002A0	Gate valve ASTM A351 Grade CF8M Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	4				P81L-002A1	Gate valve ASTM A351 Grade CF8M Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	6				P81L-002A2	Gate valve ASTM A351 Grade CF8M Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	8				P81L-002A3	Gate valve ASTM A351 Grade CF8M Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
4608	0.75				P81K-001NV	Gate valve ASTM A182 Grade F316/F316L dual grade Class 300 API 602 BW both sides w/ nipples BE - NPT ASTM A312-TP316(L) dual grade Seamless Sch160-nipple Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82K-0011K	Globe valve ASTM A182 Grade F316/F316L dual grade Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	0.75				P82K-0011L	Globe valve ASTM A182 Grade F316/F316L dual grade Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	1				P82K-0011M	Globe valve ASTM A182 Grade F316/F316L dual grade Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	1.5				P82K-0011N	Globe valve ASTM A182 Grade F316/F316L dual grade Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	2				P82L-001NY	Globe valve ASTM A351 Grade CF8M Class 300 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	

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GLOBE VALVE (W)							
OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3				P82L-001NZ	Globe valve ASTM A351 Grade CF8M Class 300 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	4				P82L-001P0	Globe valve ASTM A351 Grade CF8M Class 300 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	6				P82L-001P1	Globe valve ASTM A351 Grade CF8M Class 300 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	

CHECK VALVE (X)							
OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83K-000M8	Check valve ASTM A182 Grade F316/F316L dual grade Class 300 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Moderate wet H2S service	
1	0.75				P83K-000M9	Check valve ASTM A182 Grade F316/F316L dual grade Class 300 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Moderate wet H2S service	
1	1				P83K-000MA	Check valve ASTM A182 Grade F316/F316L dual grade Class 300 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Moderate wet H2S service	
1	1.5				P83K-000MB	Check valve ASTM A182 Grade F316/F316L dual grade Class 300 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Moderate wet H2S service	
1	2				P83L-0019K	Check valve ASTM A351 Grade CF8M Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Moderate wet H2S service	
1	3				P83L-0019L	Check valve ASTM A351 Grade CF8M Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Moderate wet H2S service	
1	4				P83L-0019M	Check valve ASTM A351 Grade CF8M Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Moderate wet H2S service	

SPECT BLANK (SB)							
OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71K-000BU	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 300 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service	
1	0.75				P71K-000BV	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 300 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service	
1	1				P71K-000BW	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 300 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service	
1	1.5				P71K-000BX	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 300 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service	
1	2				P71K-000BY	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 300 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service	
1	3				P71K-000BZ	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 300 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service	
1	4				P71K-000C0	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 300 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service	
1	6				P71K-000C1	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 300 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service	
1	8				P71K-000C2	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 300 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service	

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BOLT TABLE (B_B0LQ , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-008T0		
0.75	4	0.625	75	P80S-00908		
1	4	0.625	80	P80S-00909		
1.5	4	0.750	95	P80S-005Z4		
2	8	0.625	90	P80S-0090B		
3	8	0.750	110	P80S-0090F		
4	8	0.750	115	P80S-0090G		
6	12	0.750	125	P80S-0090J		
8	12	0.875	140	P80S-005ZD		

BOLT TABLE (B_B0LQ_781 , STUD ASME RF, OPTION CODE 781)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	80	P80S-008T2		
0.75	4	0.625	90	P80S-0090B		
1	4	0.625	95	P80S-0090C		
1.5	4	0.750	110	P80S-0090F		
2	8	0.625	110	P80S-008T8		
3	8	0.750	130	P80S-0090K		
4	8	0.875	150	P80S-005ZF		
6	12	1.000	175	P80S-0061H		
8	12	1.125	195	P80S-0064W		

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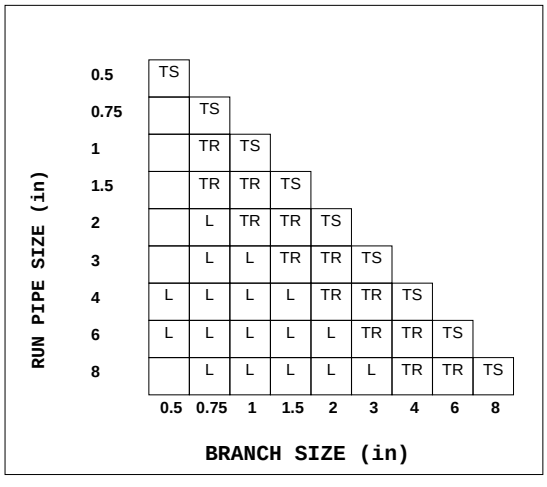
BRANCH TABLE (T_B0LQ)



L : OUTLET
TS : STRAIGHT TEE
TR : REDUCING TEE

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Material : SS316L
Rating : ASME CLASS 300
Flange Face : RF
C.A.(mm) : 1.00
Gasket : Spiral Wound
Service : PROCESS -WET SOUR SERVICE SUBJECT TO NACE STD.:
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
2	USE OF SOFT SEATED BALL, PLUG AND BUTTERFLY VALVES SHALL BE LIMITED TO MAXIMUM OF 204DEGC (400DEGF)
5	BOLTING CONFIRMING TO B7M / 2HM SHALL BE USED UNDER CONDITIONS (A) DIRECT EXPOSURE TO SOUR ENVIRONMENTS (B) WHEN THE BOLTING WILL BE BURIED OR INSULATED

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
541	NPT(F) (CA,F,L)
781	CLASS 600 (B,F,G)
4608	VALVE WITH NIPPLES (V)

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PIPING CLASS
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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P01J-002CY	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE Moderate wet H2S service	
1	0.75		SCH80S		P01J-002CZ	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE Moderate wet H2S service	
1	1		SCH80S		P01J-002D0	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE Moderate wet H2S service	
1	1.5		SCH80S		P01J-002D1	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE Moderate wet H2S service	
1	2		SCH40S		P01J-002D2	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M BE Moderate wet H2S service	
1	3		SCH10S		P01J-002D3	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M BE Moderate wet H2S service	
1	4		SCH40S		P01J-002D4	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M BE Moderate wet H2S service	
1	6		SCH40S		P01J-002D5	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M BE Moderate wet H2S service	
1	8		SCH40S		P01J-002D6	Pipe ASTM A358 Grade 316/316L Class 1 dual grade EFW ASME B36.10M/B36.19M BE Moderate wet H2S service	
1	10		SCH40S		P01J-002HM	Pipe ASTM A358 Grade 316/316L Class 1 dual grade EFW ASME B36.10M/B36.19M BE Moderate wet H2S service	
1	12		SCH10S		P01J-002DB	Pipe ASTM A358 Grade 316/316L Class 1 dual grade EFW ASME B36.10M/B36.19M BE Moderate wet H2S service	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P02J-001WB	90 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Moderate wet H2S service	
1	0.75		SCH80S		P02J-001WC	90 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Moderate wet H2S service	
1	1		SCH80S		P02J-001WD	90 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Moderate wet H2S service	
1	1.5		SCH80S		P02J-001WE	90 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Moderate wet H2S service	
1	2		SCH40S		P02J-001WF	90 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Moderate wet H2S service	
1	3		SCH10S		P02J-001WG	90 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Moderate wet H2S service	
1	4		SCH40S		P02J-001WH	90 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Moderate wet H2S service	
1	6		SCH40S		P02J-001WJ	90 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Moderate wet H2S service	
1	8		SCH40S		P02J-001WK	90 degree elbow ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Long radius Moderate wet H2S service	
1	10		SCH40S		P02J-0020M	90 degree elbow ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Long radius Moderate wet H2S service	
1	12		SCH10S		P02J-001WR	90 degree elbow ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Long radius Moderate wet H2S service	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P03J-001TT	45 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Moderate wet H2S service	
1	0.75		SCH80S		P03J-001TU	45 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Moderate wet H2S service	
1	1		SCH80S		P03J-001TV	45 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Moderate wet H2S service	
1	1.5		SCH80S		P03J-001TW	45 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Moderate wet H2S service	
1	2		SCH40S		P03J-001TX	45 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Moderate wet H2S service	
1	3		SCH10S		P03J-001TY	45 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Moderate wet H2S service	
1	4		SCH40S		P03J-001TZ	45 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Moderate wet H2S service	
1	6		SCH40S		P03J-001U0	45 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Moderate wet H2S service	
1	8		SCH40S		P03J-001U1	45 degree elbow ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Long radius Moderate wet H2S service	
1	10		SCH40S		P03J-0020E	45 degree elbow ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Long radius Moderate wet H2S service	
1	12		SCH10S		P03J-001U6	45 degree elbow ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Long radius Moderate wet H2S service	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P21J-001KB	Straight tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	0.75		SCH80S		P21J-001KC	Straight tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	1		SCH80S		P21J-001KD	Straight tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	1.5		SCH80S		P21J-001KE	Straight tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	

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STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2		SCH40S		P21J-001KF	Straight tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	3		SCH10S		P21J-001KG	Straight tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	4		SCH40S		P21J-001KH	Straight tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	6		SCH40S		P21J-001KJ	Straight tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	8		SCH40S		P21J-001KK	Straight tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	10		SCH40S		P21J-001PP	Straight tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	12		SCH10S		P21J-001KR	Straight tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75	SCH80S	SCH80S	P24J-006WG	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	1.5	0.75	SCH80S	SCH80S	P24J-006WH	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	1.5	1	SCH80S	SCH80S	P24J-006WJ	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	2	1	SCH40S	SCH80S	P24J-006WK	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	2	1.5	SCH40S	SCH80S	P24J-006WL	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	3	1.5	SCH10S	SCH80S	P24J-006WM	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	3	2	SCH10S	SCH40S	P24J-006WN	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	4	2	SCH40S	SCH40S	P24J-006WP	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	4	3	SCH40S	SCH10S	P24J-006WR	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	6	3	SCH40S	SCH10S	P24J-006WS	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	6	4	SCH40S	SCH40S	P24J-006WT	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	8	4	SCH40S	SCH40S	P24J-006WU	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	8	6	SCH40S	SCH40S	P24J-006WV	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	10	4	SCH40S	SCH40S	P24J-0078V	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	10	6	SCH40S	SCH40S	P24J-0078W	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	10	8	SCH40S	SCH40S	P24J-0078X	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	12	6	SCH10S	SCH40S	P24J-0078Z	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	12	8	SCH10S	SCH40S	P24J-00790	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	12	10	SCH10S	SCH40S	P24J-0078Y	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH80S	SCH80S	P27J-005R6	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	1	0.5	SCH80S	SCH80S	P27J-005R7	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	1	0.75	SCH80S	SCH80S	P27J-005R8	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	1.5	0.5	SCH80S	SCH80S	P27J-005R9	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	1.5	0.75	SCH80S	SCH80S	P27J-005RA	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	1.5	1	SCH80S	SCH80S	P27J-005RB	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	2	0.75	SCH40S	SCH80S	P27J-005RC	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	2	1	SCH40S	SCH80S	P27J-005RD	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	2	1.5	SCH40S	SCH80S	P27J-005RE	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	3	1.5	SCH10S	SCH80S	P27J-005RF	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	3	2	SCH10S	SCH40S	P27J-005RG	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	4	1.5	SCH40S	SCH80S	P27J-005RH	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	4	2	SCH40S	SCH40S	P27J-005RJ	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	

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CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	4	3	SCH40S	SCH10S	P27J-005RK	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	6	3	SCH40S	SCH10S	P27J-005RL	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	6	4	SCH40S	SCH40S	P27J-005RM	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	8	4	SCH40S	SCH40S	P27J-005RN	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	8	6	SCH40S	SCH40S	P27J-005RP	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	10	4	SCH40S	SCH40S	P27J-0062T	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	10	6	SCH40S	SCH40S	P27J-0062U	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	10	8	SCH40S	SCH40S	P27J-0062V	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	12	6	SCH10S	SCH40S	P27J-0062X	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	12	8	SCH10S	SCH40S	P27J-0062Y	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	12	10	SCH10S	SCH40S	P27J-0062W	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH80S	SCH80S	P28J-005S2	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	1	0.5	SCH80S	SCH80S	P28J-005S3	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	1	0.75	SCH80S	SCH80S	P28J-005S4	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	1.5	0.5	SCH80S	SCH80S	P28J-005S5	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	1.5	0.75	SCH80S	SCH80S	P28J-005S6	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	1.5	1	SCH80S	SCH80S	P28J-005S7	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	2	0.75	SCH40S	SCH80S	P28J-005S8	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	2	1	SCH40S	SCH80S	P28J-005S9	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	2	1.5	SCH40S	SCH80S	P28J-005SA	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	3	1.5	SCH10S	SCH80S	P28J-005SB	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	3	2	SCH10S	SCH40S	P28J-005SC	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	4	1.5	SCH40S	SCH80S	P28J-005SD	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	4	2	SCH40S	SCH40S	P28J-005SE	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	4	3	SCH40S	SCH10S	P28J-005SF	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	6	3	SCH40S	SCH10S	P28J-005SG	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	6	4	SCH40S	SCH40S	P28J-005SH	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	8	4	SCH40S	SCH40S	P28J-005SJ	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	8	6	SCH40S	SCH40S	P28J-005SK	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	10	4	SCH40S	SCH40S	P28J-0063T	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	10	6	SCH40S	SCH40S	P28J-0063U	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	10	8	SCH40S	SCH40S	P28J-0063V	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	12	6	SCH10S	SCH40S	P28J-00641	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	12	8	SCH10S	SCH40S	P28J-00642	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	
1	12	10	SCH10S	SCH40S	P28J-00640	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Moderate wet H2S service	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P29J-002KG	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	0.75		SCH80S		P29J-002KH	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	1		SCH80S		P29J-002KJ	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	1.5		SCH80S		P29J-002KK	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	

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CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2		SCH40S		P29J-002KL	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	3		SCH10S		P29J-002KM	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	4		SCH40S		P29J-002KN	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	6		SCH40S		P29J-002KP	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	8		SCH40S		P29J-002KR	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	10		SCH40S		P29J-003WA	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
1	12		SCH10S		P29J-002KT	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Moderate wet H2S service	
541	0.75				P29K-00048	Cap ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 NPT Moderate wet H2S service	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P41J-001VM	Straight nipple ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Moderate wet H2S service	
1	0.75		SCH160		P41J-001VN	Straight nipple ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Moderate wet H2S service	
1	1		SCH160		P41J-001VP	Straight nipple ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Moderate wet H2S service	
1	1.5		SCH80S		P41J-001TY	Straight nipple ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Moderate wet H2S service	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
541	1	0.75			P31K-00FM7	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 NPT Moderate wet H2S service	
541	1.5	0.75			P31K-00FM6	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 NPT Moderate wet H2S service	
1	2	0.75	SCH40S	SCH80S	P31K-00EHK	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Moderate wet H2S service	
1	3	0.75	SCH10S	SCH80S	P31K-00EHM	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Moderate wet H2S service	
1	4	0.75	SCH40S	SCH80S	P31K-00EHP	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Moderate wet H2S service	
1	6	0.75	SCH40S	SCH80S	P31K-00EHT	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Moderate wet H2S service	
1	8	0.75	SCH40S	SCH80S	P31K-00EHX	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Moderate wet H2S service	
1	10	0.75	SCH40S	SCH80S	P31K-00EZZ	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Moderate wet H2S service	
1	12	0.75	SCH10S	SCH80S	P31K-00EJL	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Moderate wet H2S service	
1	3	1	SCH10S	SCH80S	P31K-00EHN	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Moderate wet H2S service	
1	4	1	SCH40S	SCH80S	P31K-00EHR	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Moderate wet H2S service	
1	6	1	SCH40S	SCH80S	P31K-00EHU	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Moderate wet H2S service	
1	8	1	SCH40S	SCH80S	P31K-00EHY	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Moderate wet H2S service	
1	10	1	SCH40S	SCH80S	P31K-00F00	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Moderate wet H2S service	
1	12	1	SCH10S	SCH80S	P31K-00EJM	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Moderate wet H2S service	
1	4	1.5	SCH40S	SCH80S	P31K-00EHS	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Moderate wet H2S service	
1	6	1.5	SCH40S	SCH80S	P31K-00EHV	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Moderate wet H2S service	
1	8	1.5	SCH40S	SCH80S	P31K-00EHZ	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Moderate wet H2S service	
1	10	1.5	SCH40S	SCH80S	P31K-00F01	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Moderate wet H2S service	
1	12	1.5	SCH10S	SCH80S	P31K-00EJN	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Moderate wet H2S service	
1	6	2	SCH40S	SCH40S	P31K-00EHW	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Moderate wet H2S service	
1	8	2	SCH40S	SCH40S	P31K-00EJ0	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Moderate wet H2S service	
1	10	2	SCH40S	SCH40S	P31K-00F02	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Moderate wet H2S service	
1	12	2	SCH10S	SCH40S	P31K-00F04	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Moderate wet H2S service	
1	8	3	SCH40S	SCH10S	P31K-00EJ1	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Moderate wet H2S service	
1	10	3	SCH40S	SCH10S	P31K-00F03	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Moderate wet H2S service	
1	12	3	SCH10S	SCH10S	P31K-00EJR	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Moderate wet H2S service	
1	12	4	SCH10S	SCH40S	P31K-00F05	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Moderate wet H2S service	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30K-00055	Plug ASTM A182 Grade F316/F316L dual grade ASME B16.11 NPT Round head Moderate wet H2S service	
1	0.75				P30K-00056	Plug ASTM A182 Grade F316/F316L dual grade ASME B16.11 NPT Round head Moderate wet H2S service	
1	1				P30K-00057	Plug ASTM A182 Grade F316/F316L dual grade ASME B16.11 NPT Round head Moderate wet H2S service	
1	1.5				P30K-00058	Plug ASTM A182 Grade F316/F316L dual grade ASME B16.11 NPT Round head Moderate wet H2S service	

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FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P61K-005BE	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Moderate wet H2S service	
1	0.75		SCH80S		P61K-005BF	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Moderate wet H2S service	
1	1		SCH80S		P61K-005BG	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Moderate wet H2S service	
1	1.5		SCH80S		P61K-005BH	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Moderate wet H2S service	
1	2		SCH40S		P61K-005BJ	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Moderate wet H2S service	
1	3		SCH10S		P61K-005BK	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Moderate wet H2S service	
1	4		SCH40S		P61K-005BL	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Moderate wet H2S service	
1	6		SCH40S		P61K-005BM	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Moderate wet H2S service	
1	8		SCH40S		P61K-005BN	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Moderate wet H2S service	
1	10		SCH40S		P61K-005MU	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Moderate wet H2S service	
1	12		SCH10S		P61K-005CT	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Moderate wet H2S service	
541	0.5				P61K-0069S	Flange NPT ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Moderate wet H2S service	
541	0.75				P61K-00603	Flange NPT ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Moderate wet H2S service	
781	0.5		SCH80S		P61K-005BP	Flange WN ASTM A182 Grade F316/F316L dual grade Class 600 ASME B16.5 RF Moderate wet H2S service	
781	0.75		SCH80S		P61K-005BR	Flange WN ASTM A182 Grade F316/F316L dual grade Class 600 ASME B16.5 RF Moderate wet H2S service	
781	1		SCH80S		P61K-005BS	Flange WN ASTM A182 Grade F316/F316L dual grade Class 600 ASME B16.5 RF Moderate wet H2S service	
781	1.5		SCH80S		P61K-005BT	Flange WN ASTM A182 Grade F316/F316L dual grade Class 600 ASME B16.5 RF Moderate wet H2S service	
781	2		SCH40S		P61K-005BU	Flange WN ASTM A182 Grade F316/F316L dual grade Class 600 ASME B16.5 RF Moderate wet H2S service	
781	3		SCH10S		P61K-005BV	Flange WN ASTM A182 Grade F316/F316L dual grade Class 600 ASME B16.5 RF Moderate wet H2S service	
781	4		SCH40S		P61K-005BW	Flange WN ASTM A182 Grade F316/F316L dual grade Class 600 ASME B16.5 RF Moderate wet H2S service	
781	6		SCH40S		P61K-005BX	Flange WN ASTM A182 Grade F316/F316L dual grade Class 600 ASME B16.5 RF Moderate wet H2S service	
781	8		SCH40S		P61K-005BY	Flange WN ASTM A182 Grade F316/F316L dual grade Class 600 ASME B16.5 RF Moderate wet H2S service	
781	10		SCH40S		P61K-005MV	Flange WN ASTM A182 Grade F316/F316L dual grade Class 600 ASME B16.5 RF Moderate wet H2S service	
781	12		SCH10S		P61K-005MW	Flange WN ASTM A182 Grade F316/F316L dual grade Class 600 ASME B16.5 RF Moderate wet H2S service	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67K-001JJ	Blind flange ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Moderate wet H2S service	
1	0.75				P67K-001JK	Blind flange ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Moderate wet H2S service	
1	1				P67K-001JL	Blind flange ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Moderate wet H2S service	
1	1.5				P67K-001JM	Blind flange ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Moderate wet H2S service	
1	2				P67K-001JN	Blind flange ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Moderate wet H2S service	
1	3				P67K-001JP	Blind flange ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Moderate wet H2S service	
1	4				P67K-001JR	Blind flange ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Moderate wet H2S service	
1	6				P67K-001JS	Blind flange ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Moderate wet H2S service	
1	8				P67K-001JT	Blind flange ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Moderate wet H2S service	
1	10				P67K-001PW	Blind flange ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Moderate wet H2S service	
1	12				P67K-001PX	Blind flange ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Moderate wet H2S service	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000FT	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000FU	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

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GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000G5	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000G6	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	6				P73T-000G7	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	8				P73T-000G8	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	10				P73T-000FX	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	12				P73T-000FY	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	0.5				P73T-000J8	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	0.75				P73T-000J9	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1				P73T-000JA	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1.5				P73T-000JB	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	2				P73T-000JH	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	3				P73T-000JL	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	4				P73T-000JM	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	6				P73T-000JN	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	8				P73T-000JP	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	10				P73T-000JC	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	12				P73T-000JD	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-10				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	12				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
781	0.5-6				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
781	8-12				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81K-00117	Gate valve ASTM A182 Grade F316/F316L dual grade Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	0.75				P81K-00118	Gate valve ASTM A182 Grade F316/F316L dual grade Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	1				P81K-00119	Gate valve ASTM A182 Grade F316/F316L dual grade Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	1.5				P81K-0011A	Gate valve ASTM A182 Grade F316/F316L dual grade Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	2				P81L-0029Z	Gate valve ASTM A351 Grade CF8M Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	3				P81L-002A0	Gate valve ASTM A351 Grade CF8M Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	4				P81L-002A1	Gate valve ASTM A351 Grade CF8M Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	6				P81L-002A2	Gate valve ASTM A351 Grade CF8M Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	8				P81L-002A3	Gate valve ASTM A351 Grade CF8M Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	10				P81L-002E7	Gate valve ASTM A351 Grade CF8M Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Moderate wet H2S service	
1	12				P81L-002E8	Gate valve ASTM A351 Grade CF8M Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Moderate wet H2S service	
4608	0.75				P81K-001NV	Gate valve ASTM A182 Grade F316/F316L dual grade Class 300 API 602 BW both sides w/ nipples BE - NPT ASTM A312-TP316(L) dual grade Seamless Sch160-nipple Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83K-000M8	Check valve ASTM A182 Grade F316/F316L dual grade Class 300 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Moderate wet H2S service	
1	0.75				P83K-000M9	Check valve ASTM A182 Grade F316/F316L dual grade Class 300 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Moderate wet H2S service	

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CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P83K-000MA	Check valve ASTM A182 Grade F316/F316L dual grade Class 300 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Moderate wet H2S service	
1	1.5				P83K-000MB	Check valve ASTM A182 Grade F316/F316L dual grade Class 300 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Moderate wet H2S service	
1	2				P83L-0019K	Check valve ASTM A351 Grade CF8M Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Moderate wet H2S service	
1	3				P83L-0019L	Check valve ASTM A351 Grade CF8M Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Moderate wet H2S service	
1	4				P83L-0019M	Check valve ASTM A351 Grade CF8M Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Moderate wet H2S service	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71K-000BU	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 300 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service	
1	0.75				P71K-000BV	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 300 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service	
1	1				P71K-000BW	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 300 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service	
1	1.5				P71K-000BX	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 300 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service	
1	2				P71K-000BY	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 300 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service	
1	3				P71K-000BZ	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 300 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service	
1	4				P71K-000C0	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 300 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service	
1	6				P71K-000C1	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 300 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service	
1	8				P71K-000C2	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 300 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service	
1	10				P71K-000EZ	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 300 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service	
1	12				P71K-000F0	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 300 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service	

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BOLT TABLE (B_B0LQ03 , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-008T0		
0.75	4	0.625	75	P80S-00908		
1	4	0.625	80	P80S-00909		
1.5	4	0.750	95	P80S-005Z4		
2	8	0.625	90	P80S-0090B		
3	8	0.750	110	P80S-0090F		
4	8	0.750	115	P80S-0090G		
6	12	0.750	125	P80S-0090J		
8	12	0.875	140	P80S-005ZD		
10	16	1.000	160	P80S-0061E		
12	16	1.125	175	P80S-0064S		

BOLT TABLE (B_B0LQ03_781 , STUD ASME RF, OPTION CODE 781)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	80	P80S-008T2		
0.75	4	0.625	90	P80S-0090B		
1	4	0.625	95	P80S-0090C		
1.5	4	0.750	110	P80S-0090F		
2	8	0.625	110	P80S-008T8		
3	8	0.750	130	P80S-0090K		
4	8	0.875	150	P80S-005ZF		
6	12	1.000	175	P80S-0061H		
8	12	1.125	195	P80S-0064W		
10	16	1.250	250	P80S-0068M		
12	20	1.250	255	P80S-0068N		

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BRANCH TABLE (T_B0LQ03)

RUN PIPE SIZE (in) \ BRANCH SIZE (in)	0.5	0.75	1	1.5	2	3	4	6	8	10	12
0.5	TS										
0.75		TS									
1		TR	TS								
1.5		TR	TR	TS							
2		L	TR	TR	TS						
3		L	L	TR	TR	TS					
4	L	L	L	L	TR	TR	TS				
6	L	L	L	L	L	TR	TR	TS			
8		L	L	L	L	L	TR	TR	TS		
10		L	L	L	L	L	TR	TR	TR	TS	
12		L	L	L	L	L	L	TR	TR	TR	TS

TR : REDUCING TEE
L : OUTLET
TS : STRAIGHT TEE

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PIPING CLASS

B0LR REV NO. 2

Material : SS316L
Rating : ASME CLASS 300
Flange Face : RF
C.A.(mm) : 0.00
Gasket : Spiral Wound
Service : PROCESS -WET SEVERE SOUR SERVICE SUBJECT TO NACE STD
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
5	BOLTING CONFIRMING TO B7M / 2HM SHALL BE USED UNDER CONDITIONS (A) DIRECT EXPOSURE TO SOUR ENVIRONMENTS (B) WHEN THE BOLTING WILL BE BURIED OR INSULATED
27	PWHT OF CARBON STEEL PIPING IN WET H2S, CAUSTIC AND AMINE SERVICES SHALL BE IN ACCORDANCE WITH SECTION 10.2, 10.3, AND 10.4 OF PROJECT SPECIFICATION 3550-8440-SP-0002 MATERIALS REQUIREMENTS FOR PRESSURISED EQUIPMENT AND PIPING. FOR CAUSTIC AND AMINE SERVICE THE FOLLOWING SHALL APPLY: - PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF ALL SITE PIPING FABRICATION WELDS IS REQUIRED FOR ALL WALL THICKNESSES. FOR MODERATE AND SEVERE WET H2S SERVICE THE FOLLOWING SHALL APPLY: PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF SITE FABRICATION CIRCUMFERENTIAL OR BRANCH WELDS IS NOT REQUIRED IF WELDS ARE MULTIPASS AND IN ACCORDANCE WITH PARA 10.2.12 OF PROJECT SPECIFICATION 3550-8440-SP-0002. FOR SERVICES MEETING THE WET H2S CRITERIA AND CAUSTIC OR AMINE CRITERIA THE MORE STRINGENT PWHT REQUIREMENT SHALL GOVERN.

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
541	NPT(F) (CA,F,L)
781	CLASS 600 (B,F,G)
4602	DISSIMILAR TYPE CHECK VALVE (XDP)
4608	VALVE WITH NIPPLES (V)

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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P01J-002ES	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE Severe wet H2S service	
1	0.75		SCH80S		P01J-002ET	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE Severe wet H2S service	
1	1		SCH80S		P01J-002EU	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE Severe wet H2S service	
1	1.5		SCH80S		P01J-002EV	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE Severe wet H2S service	
1	2		SCH10S		P01J-002EW	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M BE Severe wet H2S service	
1	3		SCH10S		P01J-002EX	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M BE Severe wet H2S service	
1	4		SCH10S		P01J-002EY	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M BE Severe wet H2S service	
1	6		SCH40S		P01J-002GH	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M BE Severe wet H2S service	
1	8		SCH40S		P01J-002GK	Pipe ASTM A358 Grade 316/316L Class 1 dual grade EFW ASME B36.10M/B36.19M BE Severe wet H2S service	
1	10		SCH40S		P01J-002GJ	Pipe ASTM A358 Grade 316/316L Class 1 dual grade EFW ASME B36.10M/B36.19M BE Severe wet H2S service	
1	12		SCH10S		P01J-002F1	Pipe ASTM A358 Grade 316/316L Class 1 dual grade EFW ASME B36.10M/B36.19M BE Severe wet H2S service	
1	14		SCH10S		P01J-002F2	Pipe ASTM A358 Grade 316/316L Class 1 dual grade EFW ASME B36.10M/B36.19M BE Severe wet H2S service	
1	16		SCH10S		P01J-002F3	Pipe ASTM A358 Grade 316/316L Class 1 dual grade EFW ASME B36.10M/B36.19M BE Severe wet H2S service	
1	18		SCH10S		P01J-002F4	Pipe ASTM A358 Grade 316/316L Class 1 dual grade EFW ASME B36.10M/B36.19M BE Severe wet H2S service	
1	20		SCH10S		P01J-002F5	Pipe ASTM A358 Grade 316/316L Class 1 dual grade EFW ASME B36.10M/B36.19M BE Severe wet H2S service	
1	24		SCH10S		P01J-002F6	Pipe ASTM A358 Grade 316/316L Class 1 dual grade EFW ASME B36.10M/B36.19M BE Severe wet H2S service	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P02J-001Y0	90 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	0.75		SCH80S		P02J-001Y1	90 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	1		SCH80S		P02J-001Y2	90 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	1.5		SCH80S		P02J-001Y3	90 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	2		SCH10S		P02J-001Y4	90 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	3		SCH10S		P02J-001Y5	90 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	4		SCH10S		P02J-001Y6	90 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	6		SCH40S		P02J-00201	90 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	8		SCH40S		P02J-00200	90 degree elbow ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Long radius Severe wet H2S service	
1	10		SCH40S		P02J-001ZZ	90 degree elbow ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Long radius Severe wet H2S service	
1	12		SCH10S		P02J-001Y9	90 degree elbow ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Long radius Severe wet H2S service	
1	14		SCH10S		P02J-001YA	90 degree elbow ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Long radius Severe wet H2S service	
1	16		SCH10S		P02J-001YB	90 degree elbow ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Long radius Severe wet H2S service	
1	18		SCH10S		P02J-001YC	90 degree elbow ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Long radius Severe wet H2S service	
1	20		SCH10S		P02J-001YD	90 degree elbow ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Long radius Severe wet H2S service	
1	24		SCH10S		P02J-001YE	90 degree elbow ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Long radius Severe wet H2S service	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P03J-001VR	45 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	0.75		SCH80S		P03J-001VS	45 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	1		SCH80S		P03J-001VT	45 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	1.5		SCH80S		P03J-001VU	45 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	2		SCH10S		P03J-001VV	45 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	3		SCH10S		P03J-001VW	45 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	4		SCH10S		P03J-001VX	45 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	

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45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	6		SCH40S		P03J-001ZK	45 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	8		SCH40S		P03J-001ZM	45 degree elbow ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Long radius Severe wet H2S service	
1	10		SCH40S		P03J-001ZL	45 degree elbow ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Long radius Severe wet H2S service	
1	12		SCH10S		P03J-001VG	45 degree elbow ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Long radius Severe wet H2S service	
1	14		SCH10S		P03J-001VH	45 degree elbow ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Long radius Severe wet H2S service	
1	16		SCH10S		P03J-001VJ	45 degree elbow ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Long radius Severe wet H2S service	
1	18		SCH10S		P03J-001VK	45 degree elbow ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Long radius Severe wet H2S service	
1	20		SCH10S		P03J-001VL	45 degree elbow ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Long radius Severe wet H2S service	
1	24		SCH10S		P03J-001VM	45 degree elbow ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Long radius Severe wet H2S service	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P21J-001M5	Straight tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	0.75		SCH80S		P21J-001M6	Straight tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1		SCH80S		P21J-001M7	Straight tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5		SCH80S		P21J-001M8	Straight tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	2		SCH10S		P21J-001M9	Straight tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	3		SCH10S		P21J-001MA	Straight tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	4		SCH10S		P21J-001MB	Straight tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	6		SCH40S		P21J-001NZ	Straight tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	8		SCH40S		P21J-001P1	Straight tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	10		SCH40S		P21J-001P0	Straight tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	12		SCH10S		P21J-001ME	Straight tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	14		SCH10S		P21J-001MF	Straight tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	16		SCH10S		P21J-001MG	Straight tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	18		SCH10S		P21J-001MH	Straight tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	20		SCH10S		P21J-001MJ	Straight tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	24		SCH10S		P21J-001MK	Straight tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75	SCH80S	SCH80S	P24J-0070F	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5	0.75	SCH80S	SCH80S	P24J-0070J	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5	1	SCH80S	SCH80S	P24J-0070K	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	2	1	SCH10S	SCH80S	P24J-0070S	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	2	1.5	SCH10S	SCH80S	P24J-0070T	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	3	1.5	SCH10S	SCH80S	P24J-0070U	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	3	2	SCH10S	SCH10S	P24J-0070V	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	4	2	SCH10S	SCH10S	P24J-0070W	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	4	3	SCH10S	SCH10S	P24J-0070X	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	6	3	SCH40S	SCH10S	P24J-0075A	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	6	4	SCH40S	SCH10S	P24J-0075B	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	8	4	SCH40S	SCH10S	P24J-0075C	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	8	6	SCH40S	SCH40S	P24J-0075D	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	10	4	SCH40S	SCH10S	P24J-0075E	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	

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REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	10	6	SCH40S	SCH40S	P24J-0075F	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	10	8	SCH40S	SCH40S	P24J-0075G	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	12	6	SCH10S	SCH40S	P24J-0075J	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	12	8	SCH10S	SCH40S	P24J-0075K	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	12	10	SCH10S	SCH40S	P24J-0075H	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	14	6	SCH10S	SCH40S	P24J-0075M	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	14	8	SCH10S	SCH40S	P24J-0075N	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	14	10	SCH10S	SCH40S	P24J-0075L	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	14	12	SCH10S	SCH10S	P24J-00719	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	16	6	SCH10S	SCH40S	P24J-0075R	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	16	8	SCH10S	SCH40S	P24J-0075S	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	16	10	SCH10S	SCH40S	P24J-0075P	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	16	12	SCH10S	SCH10S	P24J-0071D	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	16	14	SCH10S	SCH10S	P24J-0071E	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	18	8	SCH10S	SCH40S	P24J-0075U	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	18	10	SCH10S	SCH40S	P24J-0075T	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	18	12	SCH10S	SCH10S	P24J-0071J	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	18	14	SCH10S	SCH10S	P24J-0071K	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	18	16	SCH10S	SCH10S	P24J-0071L	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	20	8	SCH10S	SCH40S	P24J-0075W	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	20	10	SCH10S	SCH40S	P24J-0075V	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	20	12	SCH10S	SCH10S	P24J-0071P	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	20	14	SCH10S	SCH10S	P24J-0071R	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	20	16	SCH10S	SCH10S	P24J-0071S	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	20	18	SCH10S	SCH10S	P24J-0071T	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	24	10	SCH10S	SCH40S	P24J-0075X	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	24	12	SCH10S	SCH10S	P24J-0071W	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	24	14	SCH10S	SCH10S	P24J-0071X	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	24	16	SCH10S	SCH10S	P24J-0071Y	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	24	18	SCH10S	SCH10S	P24J-0071Z	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	24	20	SCH10S	SCH10S	P24J-00720	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH80S	SCH80S	P27J-005XP	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1	0.5	SCH80S	SCH80S	P27J-005V5	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1	0.75	SCH80S	SCH80S	P27J-005V6	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5	0.5	SCH80S	SCH80S	P27J-005V7	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5	0.75	SCH80S	SCH80S	P27J-005V8	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5	1	SCH80S	SCH80S	P27J-005V9	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	2	0.75	SCH10S	SCH80S	P27J-005VA	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	2	1	SCH10S	SCH80S	P27J-005VB	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	2	1.5	SCH10S	SCH80S	P27J-005VC	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	3	1.5	SCH10S	SCH80S	P27J-005VD	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	3	2	SCH10S	SCH10S	P27J-005VE	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	4	1.5	SCH10S	SCH80S	P27J-005VF	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	4	2	SCH10S	SCH10S	P27J-005VG	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	4	3	SCH10S	SCH10S	P27J-005VH	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	6	3	SCH40S	SCH10S	P27J-0060F	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	6	4	SCH40S	SCH10S	P27J-0060G	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	8	4	SCH40S	SCH10S	P27J-0060H	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	8	6	SCH40S	SCH40S	P27J-0060J	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	10	4	SCH40S	SCH10S	P27J-0060K	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	10	6	SCH40S	SCH40S	P27J-0060L	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	10	8	SCH40S	SCH40S	P27J-0060M	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	12	6	SCH10S	SCH40S	P27J-0060P	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	12	8	SCH10S	SCH40S	P27J-0060R	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	12	10	SCH10S	SCH40S	P27J-0060N	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	14	6	SCH10S	SCH40S	P27J-0060T	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	14	8	SCH10S	SCH40S	P27J-0060U	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	14	10	SCH10S	SCH40S	P27J-0060S	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	14	12	SCH10S	SCH10S	P27J-005VW	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	16	8	SCH10S	SCH40S	P27J-0060W	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	16	10	SCH10S	SCH40S	P27J-0060V	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	16	12	SCH10S	SCH10S	P27J-005W0	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	16	14	SCH10S	SCH10S	P27J-005W1	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	18	10	SCH10S	SCH40S	P27J-0060X	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	18	12	SCH10S	SCH10S	P27J-005W4	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	18	14	SCH10S	SCH10S	P27J-005W5	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	18	16	SCH10S	SCH10S	P27J-005W6	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	20	12	SCH10S	SCH10S	P27J-005W7	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	20	14	SCH10S	SCH10S	P27J-005W8	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	20	16	SCH10S	SCH10S	P27J-005W9	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	20	18	SCH10S	SCH10S	P27J-005WA	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	24	16	SCH10S	SCH10S	P27J-005WB	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	24	18	SCH10S	SCH10S	P27J-005WC	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	24	20	SCH10S	SCH10S	P27J-005WD	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH80S	SCH80S	P28J-005YL	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1	0.5	SCH80S	SCH80S	P28J-005W1	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1	0.75	SCH80S	SCH80S	P28J-005W2	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5	0.5	SCH80S	SCH80S	P28J-005W3	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5	0.75	SCH80S	SCH80S	P28J-005W4	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5	1	SCH80S	SCH80S	P28J-005W5	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	2	0.75	SCH10S	SCH80S	P28J-005W6	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	2	1	SCH10S	SCH80S	P28J-005W7	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	3	1.5	SCH10S	SCH80S	P28J-005W8	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	3	1.5	SCH10S	SCH80S	P28J-005W9	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	SCH10S	SCH10S	P28J-005WA	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	4	1.5	SCH10S	SCH80S	P28J-005WB	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	4	2	SCH10S	SCH10S	P28J-005WC	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	4	3	SCH10S	SCH10S	P28J-005WD	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	6	3	SCH40S	SCH10S	P28J-0061C	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	6	4	SCH40S	SCH10S	P28J-0061D	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	8	4	SCH40S	SCH10S	P28J-0061E	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	8	6	SCH40S	SCH40S	P28J-0061F	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	10	4	SCH40S	SCH10S	P28J-0061G	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	10	6	SCH40S	SCH40S	P28J-0061H	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	10	8	SCH40S	SCH40S	P28J-0061J	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	12	6	SCH10S	SCH40S	P28J-0061L	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	12	8	SCH10S	SCH40S	P28J-0061M	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	12	10	SCH10S	SCH40S	P28J-0061K	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	14	6	SCH10S	SCH40S	P28J-0061P	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	14	8	SCH10S	SCH40S	P28J-0061R	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	14	10	SCH10S	SCH40S	P28J-0061N	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	14	12	SCH10S	SCH10S	P28J-005WS	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	16	8	SCH10S	SCH40S	P28J-0061T	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	16	10	SCH10S	SCH40S	P28J-0061S	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	16	12	SCH10S	SCH10S	P28J-005WW	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	16	14	SCH10S	SCH10S	P28J-005WX	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	18	10	SCH10S	SCH40S	P28J-0061U	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	18	12	SCH10S	SCH10S	P28J-005X0	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	18	14	SCH10S	SCH10S	P28J-005X1	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	18	16	SCH10S	SCH10S	P28J-005X2	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	20	12	SCH10S	SCH10S	P28J-005X3	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	20	14	SCH10S	SCH10S	P28J-005X4	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	20	16	SCH10S	SCH10S	P28J-005X5	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	20	18	SCH10S	SCH10S	P28J-005X6	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	24	16	SCH10S	SCH10S	P28J-005X7	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	24	18	SCH10S	SCH10S	P28J-005X8	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	24	20	SCH10S	SCH10S	P28J-005X9	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P29J-002M5	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	0.75		SCH80S		P29J-002M6	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1		SCH80S		P29J-002M7	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5		SCH80S		P29J-002M8	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	2		SCH10S		P29J-002ME	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	3		SCH10S		P29J-002MH	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	4		SCH10S		P29J-002MK	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	[illegible]		SCH40S		P29J-003MK	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	8		SCH40S		P29J-003U1	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	

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CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	10		SCH40S		P29J-002SS	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	12		SCH10S		P29J-002MA	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	14		SCH10S		P29J-002MB	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	16		SCH10S		P29J-002MC	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	18		SCH10S		P29J-002MD	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	20		SCH10S		P29J-002MF	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	24		SCH10S		P29J-002MG	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
541	0.75				P29K-00049	Cap ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 NPT Severe wet H2S service	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P41J-001U7	Straight nipple ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Severe wet H2S service	
1	0.75		SCH80S		P41J-001U8	Straight nipple ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Severe wet H2S service	
1	1		SCH80S		P41J-001U9	Straight nipple ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Severe wet H2S service	
1	1.5		SCH80S		P41J-001UA	Straight nipple ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Severe wet H2S service	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
541	1	0.75			P31K-00FMB	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 NPT Severe wet H2S service	
541	1.5	0.75			P31K-00FMA	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 NPT Severe wet H2S service	
541	2 - 2.5	0.75			P31K-00GFX	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 NPT Severe wet H2S service	
541	3 - 5	0.75			P31K-00GFY	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 NPT Severe wet H2S service	
541	6 - 12	0.75			P31K-00GFZ	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 NPT Severe wet H2S service	
541	14 - 36	0.75			P31K-00GG0	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 NPT Severe wet H2S service	
1	2	0.75	SCH10S	SCH80S	P31K-00ENM	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	3	0.75	SCH10S	SCH80S	P31K-00ENS	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	4	0.75	SCH10S	SCH80S	P31K-00EP3	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	6	0.75	SCH40S	SCH80S	P31K-00EVL	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	8	0.75	SCH40S	SCH80S	P31K-00EVR	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	10	0.75	SCH40S	SCH80S	P31K-00EVW	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	12	0.75	SCH10S	SCH80S	P31K-00ER2	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	14	0.75	SCH10S	SCH80S	P31K-00ER8	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	16	0.75	SCH10S	SCH80S	P31K-00ERE	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	18	0.75	SCH10S	SCH80S	P31K-00ERL	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	20	0.75	SCH10S	SCH80S	P31K-00ERU	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	24	0.75	SCH10S	SCH80S	P31K-00ES1	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	3	1	SCH10S	SCH80S	P31K-00ENT	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	4	1	SCH10S	SCH80S	P31K-00EP4	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	6	1	SCH40S	SCH80S	P31K-00EVM	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	8	1	SCH40S	SCH80S	P31K-00EVS	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	10	1	SCH40S	SCH80S	P31K-00EVX	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	12	1	SCH10S	SCH80S	P31K-00ER3	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	14	1	SCH10S	SCH80S	P31K-00ER9	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	16	1	SCH10S	SCH80S	P31K-00ERF	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	18	1	SCH10S	SCH80S	P31K-00ERM	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	20	1	SCH10S	SCH80S	P31K-00ERV	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	24	1	SCH10S	SCH80S	P31K-00ES2	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	4	1.5	SCH10S	SCH80S	P31K-00EP5	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	6	1.5	SCH40S	SCH80S	P31K-00EVN	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	8	1.5	SCH40S	SCH80S	P31K-00EVT	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	10	1.5	SCH40S	SCH80S	P31K-00EVY	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	12	1.5	SCH10S	SCH80S	P31K-00ER4	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	14	1.5	SCH10S	SCH80S	P31K-00ERA	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	16	1.5	SCH10S	SCH80S	P31K-00ERG	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	18	1.5	SCH10S	SCH80S	P31K-00ERN	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	

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OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	20	1.5	SCH10S	SCH80S	P31K-00ERW	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	24	1.5	SCH10S	SCH80S	P31K-00ES3	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	6	2	SCH40S	SCH10S	P31K-00EVP	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	8	2	SCH40S	SCH10S	P31K-00EVU	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	10	2	SCH40S	SCH10S	P31K-00EVZ	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	12	2	SCH10S	SCH10S	P31K-00ER5	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	14	2	SCH10S	SCH10S	P31K-00ERB	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	16	2	SCH10S	SCH10S	P31K-00ERH	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	18	2	SCH10S	SCH10S	P31K-00ERP	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	20	2	SCH10S	SCH10S	P31K-00ERX	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	24	2	SCH10S	SCH10S	P31K-00ES4	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	8	3	SCH40S	SCH10S	P31K-00EVV	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	10	3	SCH40S	SCH10S	P31K-00EW0	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	12	3	SCH10S	SCH10S	P31K-00ER6	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	14	3	SCH10S	SCH10S	P31K-00ERC	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	16	3	SCH10S	SCH10S	P31K-00ERJ	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	18	3	SCH10S	SCH10S	P31K-00ERR	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	20	3	SCH10S	SCH10S	P31K-00ERY	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	24	3	SCH10S	SCH10S	P31K-00ES5	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	12	4	SCH10S	SCH10S	P31K-00ER7	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	14	4	SCH10S	SCH10S	P31K-00ERD	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	16	4	SCH10S	SCH10S	P31K-00ERK	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	18	4	SCH10S	SCH10S	P31K-00ERS	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	20	4	SCH10S	SCH10S	P31K-00ERZ	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	24	4	SCH10S	SCH10S	P31K-00ES6	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	18	6	SCH10S	SCH40S	P31K-00EW1	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	20	6	SCH10S	SCH40S	P31K-00EW2	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	24	6	SCH10S	SCH40S	P31K-00EW3	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30K-0005H	Plug ASTM A182 Grade F316/F316L dual grade ASME B16.11 NPT Round head Severe wet H2S service	
1	0.75				P30K-0005J	Plug ASTM A182 Grade F316/F316L dual grade ASME B16.11 NPT Round head Severe wet H2S service	
1	1				P30K-0005K	Plug ASTM A182 Grade F316/F316L dual grade ASME B16.11 NPT Round head Severe wet H2S service	
1	1.5				P30K-0005L	Plug ASTM A182 Grade F316/F316L dual grade ASME B16.11 NPT Round head Severe wet H2S service	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P61K-005FX	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
1	0.75		SCH80S		P61K-005FY	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
1	1		SCH80S		P61K-005FZ	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
1	1.5		SCH80S		P61K-005G0	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
1	2		SCH10S		P61K-005G6	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
1	3		SCH10S		P61K-005G9	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
1	4		SCH10S		P61K-005GA	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
1	6		SCH40S		P61K-005JM	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
1	8		SCH40S		P61K-005JN	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
1	10		SCH40S		P61K-005JL	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
1	12		SCH10S		P61K-005G2	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
1	14		SCH10S		P61K-005G3	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
1	16		SCH10S		P61K-005G4	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
1	18		SCH10S		P61K-005G5	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
1	20		SCH10S		P61K-005G7	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
1	24		SCH10S		P61K-005G8	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
541	0.5				P61K-0069N	Flange NPT ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
541	0.75				P61K-00602	Flange NPT ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
781	0.5		SCH80S		P61K-005JP	Flange WN ASTM A182 Grade F316/F316L dual grade Class 600 ASME B16.5 RF Severe wet H2S service	
781	0.75		SCH80S		P61K-005JR	Flange WN ASTM A182 Grade F316/F316L dual grade Class 600 ASME B16.5 RF Severe wet H2S service	
781	1		SCH80S		P61K-005JS	Flange WN ASTM A182 Grade F316/F316L dual grade Class 600 ASME B16.5 RF Severe wet H2S service	

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FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
781	1.5		SCH80S		P61K-005JT	Flange WN ASTM A182 Grade F316/F316L dual grade Class 600 ASME B16.5 RF Severe wet H2S service	
781	2		SCH10S		P61K-005JZ	Flange WN ASTM A182 Grade F316/F316L dual grade Class 600 ASME B16.5 RF Severe wet H2S service	
781	3		SCH10S		P61K-005K2	Flange WN ASTM A182 Grade F316/F316L dual grade Class 600 ASME B16.5 RF Severe wet H2S service	
781	4		SCH10S		P61K-005K3	Flange WN ASTM A182 Grade F316/F316L dual grade Class 600 ASME B16.5 RF Severe wet H2S service	
781	6		SCH40S		P61K-005K4	Flange WN ASTM A182 Grade F316/F316L dual grade Class 600 ASME B16.5 RF Severe wet H2S service	
781	8		SCH40S		P61K-005K5	Flange WN ASTM A182 Grade F316/F316L dual grade Class 600 ASME B16.5 RF Severe wet H2S service	
781	10		SCH40S		P61K-005JU	Flange WN ASTM A182 Grade F316/F316L dual grade Class 600 ASME B16.5 RF Severe wet H2S service	
781	12		SCH10S		P61K-005JV	Flange WN ASTM A182 Grade F316/F316L dual grade Class 600 ASME B16.5 RF Severe wet H2S service	
781	14		SCH10S		P61K-005JW	Flange WN ASTM A182 Grade F316/F316L dual grade Class 600 ASME B16.5 RF Severe wet H2S service	
781	16		SCH10S		P61K-005JX	Flange WN ASTM A182 Grade F316/F316L dual grade Class 600 ASME B16.5 RF Severe wet H2S service	
781	18		SCH10S		P61K-005JY	Flange WN ASTM A182 Grade F316/F316L dual grade Class 600 ASME B16.5 RF Severe wet H2S service	
781	20		SCH10S		P61K-005K0	Flange WN ASTM A182 Grade F316/F316L dual grade Class 600 ASME B16.5 RF Severe wet H2S service	
781	24		SCH10S		P61K-005K1	Flange WN ASTM A182 Grade F316/F316L dual grade Class 600 ASME B16.5 RF Severe wet H2S service	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67K-001N6	Blind flange ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
1	0.75				P67K-001N7	Blind flange ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
1	1				P67K-001N8	Blind flange ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
1	1.5				P67K-001N9	Blind flange ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
1	2				P67K-001NF	Blind flange ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
1	3				P67K-001NJ	Blind flange ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
1	4				P67K-001NK	Blind flange ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
1	6				P67K-001NL	Blind flange ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
1	8				P67K-001NM	Blind flange ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
1	10				P67K-001NA	Blind flange ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
1	12				P67K-001NB	Blind flange ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
1	14				P67K-001NC	Blind flange ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
1	16				P67K-001ND	Blind flange ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
1	18				P67K-001NE	Blind flange ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
1	20				P67K-001NG	Blind flange ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
1	24				P67K-001NH	Blind flange ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000FT	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000FU	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000G5	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000G6	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	6				P73T-000G7	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	8				P73T-000G8	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	10				P73T-000FX	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	12				P73T-000FY	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	14				P73T-000FZ	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	16				P73T-000G0	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	18				P73T-000G1	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	20				P73T-000G3	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	24				P73T-000G4	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	0.5				P73T-000J8	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	0.75				P73T-000J9	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

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GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
781	1				P73T-000JA	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1.5				P73T-000JB	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	2				P73T-000JH	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	3				P73T-000JL	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	4				P73T-000JM	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	6				P73T-000JN	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	8				P73T-000JP	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	10				P73T-000JC	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	12				P73T-000JD	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	14				P73T-000JE	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	16				P73T-000JF	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	18				P73T-000JG	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	20				P73T-000JJ	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	24				P73T-000JK	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-10				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	12-24				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
781	0.5-6				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
781	8-24				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81K-0015M	Gate valve ASTM A182 Grade F316/F316L dual grade Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	0.75				P81K-0015N	Gate valve ASTM A182 Grade F316/F316L dual grade Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	1				P81K-0015P	Gate valve ASTM A182 Grade F316/F316L dual grade Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	1.5				P81K-0015R	Gate valve ASTM A182 Grade F316/F316L dual grade Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	2				P81L-002CH	Gate valve ASTM A351 Grade CF8M Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	3				P81L-002CJ	Gate valve ASTM A351 Grade CF8M Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	4				P81L-002CK	Gate valve ASTM A351 Grade CF8M Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	6				P81L-002CL	Gate valve ASTM A351 Grade CF8M Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	8				P81L-002CM	Gate valve ASTM A351 Grade CF8M Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	10				P81L-002CN	Gate valve ASTM A351 Grade CF8M Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Severe wet H2S service	
1	12				P81L-002CP	Gate valve ASTM A351 Grade CF8M Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Severe wet H2S service	
1	14				P81L-002CR	Gate valve ASTM A351 Grade CF8M Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Severe wet H2S service	
1	16				P81L-002CS	Gate valve ASTM A351 Grade CF8M Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Severe wet H2S service	
4608	0.75				P81K-001NW	Gate valve ASTM A182 Grade F316/F316L dual grade Class 300 API 602 BW both sides w/ nipples BE - NPT ASTM A312-TP316(L) dual grade Seamless Sch80S-nipple Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82K-000SX	Globe valve ASTM A182 Grade F316/F316L dual grade Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	0.75				P82K-000SY	Globe valve ASTM A182 Grade F316/F316L dual grade Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	1				P82K-000SZ	Globe valve ASTM A182 Grade F316/F316L dual grade Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	1.5				P82K-000T0	Globe valve ASTM A182 Grade F316/F316L dual grade Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	

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GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2				P82L-001AL	Globe valve ASTM A351 Grade CF8M Class 300 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	3				P82L-001AM	Globe valve ASTM A351 Grade CF8M Class 300 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	4				P82L-001AN	Globe valve ASTM A351 Grade CF8M Class 300 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	6				P82L-001AP	Globe valve ASTM A351 Grade CF8M Class 300 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	8				P82L-001XX	Globe valve ASTM A351 Grade CF8M Class 300 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Severe wet H2S service	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83K-000SX	Check valve ASTM A182 Grade F316/F316L dual grade Class 300 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Severe wet H2S service	
1	0.75				P83K-000SY	Check valve ASTM A182 Grade F316/F316L dual grade Class 300 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Severe wet H2S service	
1	1				P83K-000SZ	Check valve ASTM A182 Grade F316/F316L dual grade Class 300 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Severe wet H2S service	
1	1.5				P83K-000T0	Check valve ASTM A182 Grade F316/F316L dual grade Class 300 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Severe wet H2S service	
1	2				P83L-001BL	Check valve ASTM A351 Grade CF8M Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service	
1	3				P83L-001BM	Check valve ASTM A351 Grade CF8M Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service	
1	4				P83L-001BN	Check valve ASTM A351 Grade CF8M Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service	

DP CHECK VALVE (XDP)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
4602	2				P88L-00156	Dual plate check valve ASTM A351 Grade CF8M Class 300 API 594 Wafer-type ASME B16.5 RF Trim number 12 Internal wetted parts SS316 Spring Inconel Retainerless-type Severe wet H2S service	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71K-000DU	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 300 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	
1	0.75				P71K-000DV	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 300 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	
1	1				P71K-000DW	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 300 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	
1	1.5				P71K-000DX	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 300 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	
1	2				P71K-000E0	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 300 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	
1	3				P71K-000E1	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 300 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	
1	4				P71K-000E2	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 300 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	
1	6				P71K-000E3	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 300 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	
1	8				P71K-000E4	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 300 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	
1	10				P71K-000DY	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 300 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	
1	12				P71K-000DZ	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 300 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	

PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72K-000EM	Paddle blank ASTM A182 Grade F316/F316L dual grade Class 300 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	
1	16				P72K-000EN	Paddle blank ASTM A182 Grade F316/F316L dual grade Class 300 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	
1	18				P72K-000EP	Paddle blank ASTM A182 Grade F316/F316L dual grade Class 300 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	
1	20				P72K-000ER	Paddle blank ASTM A182 Grade F316/F316L dual grade Class 300 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	
1	24				P72K-000ES	Paddle blank ASTM A182 Grade F316/F316L dual grade Class 300 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	

PADDLE SPACER (PS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72K-000ET	Paddle spacer ASTM A182 Grade F316/F316L dual grade Class 300 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	
1	16				P72K-000EU	Paddle spacer ASTM A182 Grade F316/F316L dual grade Class 300 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	
1	18				P72K-000EV	Paddle spacer ASTM A182 Grade F316/F316L dual grade Class 300 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	

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PADDLE SPACER (PS)							
OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	20				P72K-000EW	Paddle spacer ASTM A182 Grade F316/F316L dual grade Class 300 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	
1	24				P72K-000EX	Paddle spacer ASTM A182 Grade F316/F316L dual grade Class 300 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	

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BOLT TABLE (B_B0LR , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-008T0		
0.75	4	0.625	75	P80S-00908		
1	4	0.625	80	P80S-00909		
1.5	4	0.750	95	P80S-005Z4		
2	8	0.625	90	P80S-0090B		
3	8	0.750	110	P80S-0090F		
4	8	0.750	115	P80S-0090G		
6	12	0.750	125	P80S-0090J		
8	12	0.875	140	P80S-005ZD		
10	16	1.000	160	P80S-0061E		
12	16	1.125	175	P80S-0064S		
14	20	1.125	180	P80S-0064T		
16	20	1.250	190	P80S-00689		
18	24	1.250	200	P80S-0068B		
20	24	1.250	210	P80S-0068D		
24	24	1.500	235	P80S-006LB		

BOLT TABLE (B_B0LR_781 , STUD ASME RF, OPTION CODE 781)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	80	P80S-008T2		
0.75	4	0.625	90	P80S-0090B		
1	4	0.625	95	P80S-0090C		
1.5	4	0.750	110	P80S-0090F		
2	8	0.625	110	P80S-008T8		
3	8	0.750	130	P80S-0090K		
4	8	0.875	150	P80S-005ZF		
6	12	1.000	175	P80S-0061H		
8	12	1.125	195	P80S-0064W		
10	16	1.250	250	P80S-0068M		
12	20	1.250	255	P80S-0068N		
14	20	1.375	270	P80S-006HV		
16	20	1.500	295	P80S-006LP		
18	20	1.625	320	P80S-00A5E		
20	24	1.625	335	P80S-00A5H		
24	24	1.875	380	P80S-00AW5		

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BRANCH TABLE (T_B0LR)

RUN PIPE SIZE (in) \ BRANCH SIZE (in)	0.5	0.75	1	1.5	2	3	4	6	8	10	12	14	16	18	20	24
0.5	TS															
0.75		TS														
1		TR	TS													
1.5		TR	TR	TS												
2		L	TR	TR	TS											
3		L	L	TR	TR	TS										
4	L	L	L	L	TR	TR	TS									
6	L	L	L	L	L	TR	TR	TS								
8		L	L	L	L	L	TR	TR	TS							
10		L	L	L	L	L	TR	TR	TR	TS						
12		L	L	L	L	L	L	TR	TR	TR	TS					
14		L	L	L	L	L	L	TR	TR	TR	TR	TS				
16		L	L	L	L	L	L	TR	TR	TR	TR	TR	TS			
18		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TS		
20		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TR	TS	
24		L	L	L	L	L	L	L	9PD	TR	TR	TR	TR	TR	TR	TS

9PD : REINFORCING PAD 90 DEG
TS : STRAIGHT TEE
L : OUTLET
TR : REDUCING TEE

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Material : SS316L
Rating : ASME CLASS 300
Flange Face : RF
C.A.(mm) : 0.00
Gasket : Spiral Wound
Service : PROCESS - WET SEVERE SOUR SERVICE SUBJECT TO NACE + HIC STD.
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
5	BOLTING CONFIRMING TO B7M / 2HM SHALL BE USED UNDER CONDITIONS (A) DIRECT EXPOSURE TO SOUR ENVIRONMENTS (B) WHEN THE BOLTING WILL BE BURIED OR INSULATED
27	PWHT OF CARBON STEEL PIPING IN WET H2S, CAUSTIC AND AMINE SERVICES SHALL BE IN ACCORDANCE WITH SECTION 10.2, 10.3, AND 10.4 OF PROJECT SPECIFICATION 3550-8440-SP-0002 MATERIALS REQUIREMENTS FOR PRESSURISED EQUIPMENT AND PIPING. FOR CAUSTIC AND AMINE SERVICE THE FOLLOWING SHALL APPLY: - PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF ALL SITE PIPING FABRICATION WELDS IS REQUIRED FOR ALL WALL THICKNESSES. FOR MODERATE AND SEVERE WET H2S SERVICE THE FOLLOWING SHALL APPLY: PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF SITE FABRICATION CIRCUMFERENTIAL OR BRANCH WELDS IS NOT REQUIRED IF WELDS ARE MULTIPASS AND IN ACCORDANCE WITH PARA 10.2.12 OF PROJECT SPECIFICATION 3550-8440-SP-0002. FOR SERVICES MEETING THE WET H2S CRITERIA AND CAUSTIC OR AMINE CRITERIA THE MORE STRINGENT PWHT REQUIREMENT SHALL GOVERN.

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
541	NPT(F) (CA,F,L)
781	CLASS 600 (B,F,G)
4608	VALVE WITH NIPPLES (V)

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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P01J-002ES	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE Severe wet H2S service	
1	0.75		SCH80S		P01J-002ET	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE Severe wet H2S service	
1	1		SCH80S		P01J-002EU	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE Severe wet H2S service	
1	1.5		SCH80S		P01J-002EV	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE Severe wet H2S service	
1	2		SCH10S		P01J-002EW	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M BE Severe wet H2S service	
1	3		SCH10S		P01J-002EX	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M BE Severe wet H2S service	
1	4		SCH10S		P01J-002EY	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M BE Severe wet H2S service	
1	6		SCH40S		P01J-002GH	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M BE Severe wet H2S service	
1	8		SCH40S		P01J-002GK	Pipe ASTM A358 Grade 316/316L Class 1 dual grade EFW ASME B36.10M/B36.19M BE Severe wet H2S service	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P02J-001Y0	90 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	0.75		SCH80S		P02J-001Y1	90 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	1		SCH80S		P02J-001Y2	90 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	1.5		SCH80S		P02J-001Y3	90 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	2		SCH10S		P02J-001Y4	90 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	3		SCH10S		P02J-001Y5	90 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	4		SCH10S		P02J-001Y6	90 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	6		SCH40S		P02J-00201	90 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	8		SCH40S		P02J-00200	90 degree elbow ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Long radius Severe wet H2S service	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P03J-001VR	45 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	0.75		SCH80S		P03J-001VS	45 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	1		SCH80S		P03J-001VT	45 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	1.5		SCH80S		P03J-001VU	45 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	2		SCH10S		P03J-001VV	45 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	3		SCH10S		P03J-001VW	45 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	4		SCH10S		P03J-001VX	45 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	6		SCH40S		P03J-001ZK	45 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	8		SCH40S		P03J-001ZM	45 degree elbow ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Long radius Severe wet H2S service	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P21J-001M5	Straight tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	0.75		SCH80S		P21J-001M6	Straight tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1		SCH80S		P21J-001M7	Straight tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5		SCH80S		P21J-001M8	Straight tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	2		SCH10S		P21J-001M9	Straight tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	3		SCH10S		P21J-001MA	Straight tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	4		SCH10S		P21J-001MB	Straight tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	6		SCH40S		P21J-001NZ	Straight tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	8		SCH40S		P21J-001P1	Straight tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	

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REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75	SCH80S	SCH80S	P24J-0070F	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5	0.75	SCH80S	SCH80S	P24J-0070J	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5	1	SCH80S	SCH80S	P24J-0070K	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	2	1	SCH10S	SCH80S	P24J-0070S	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	2	1.5	SCH10S	SCH80S	P24J-0070T	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	3	1.5	SCH10S	SCH80S	P24J-0070U	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	3	2	SCH10S	SCH10S	P24J-0070V	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	4	2	SCH10S	SCH10S	P24J-0070W	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	4	3	SCH10S	SCH10S	P24J-0070X	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	6	3	SCH40S	SCH10S	P24J-0075A	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	6	4	SCH40S	SCH10S	P24J-0075B	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	8	4	SCH40S	SCH10S	P24J-0075C	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	8	6	SCH40S	SCH40S	P24J-0075D	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH80S	SCH80S	P27J-005XP	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1	0.5	SCH80S	SCH80S	P27J-005V5	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1	0.75	SCH80S	SCH80S	P27J-005V6	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5	0.5	SCH80S	SCH80S	P27J-005V7	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5	0.75	SCH80S	SCH80S	P27J-005V8	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5	1	SCH80S	SCH80S	P27J-005V9	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	2	0.75	SCH10S	SCH80S	P27J-005VA	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	2	1	SCH10S	SCH80S	P27J-005VB	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	2	1.5	SCH10S	SCH80S	P27J-005VC	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	3	1.5	SCH10S	SCH80S	P27J-005VD	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	3	2	SCH10S	SCH10S	P27J-005VE	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	4	1.5	SCH10S	SCH80S	P27J-005VF	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	4	2	SCH10S	SCH10S	P27J-005VG	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	4	3	SCH10S	SCH10S	P27J-005VH	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	6	3	SCH40S	SCH10S	P27J-0060F	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	6	4	SCH40S	SCH10S	P27J-0060G	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	8	4	SCH40S	SCH10S	P27J-0060H	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	8	6	SCH40S	SCH40S	P27J-0060J	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH80S	SCH80S	P28J-005YL	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1	0.5	SCH80S	SCH80S	P28J-005W1	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1	0.75	SCH80S	SCH80S	P28J-005W2	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5	0.5	SCH80S	SCH80S	P28J-005W3	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5	0.75	SCH80S	SCH80S	P28J-005W4	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5	1	SCH80S	SCH80S	P28J-005W5	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	2	0.75	SCH10S	SCH80S	P28J-005W6	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	2	1	SCH10S	SCH80S	P28J-005W7	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	

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ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2	1.5	SCH10S	SCH80S	P28J-005W8	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	3	1.5	SCH10S	SCH80S	P28J-005W9	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	3	2	SCH10S	SCH10S	P28J-005WA	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	4	1.5	SCH10S	SCH80S	P28J-005WB	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	4	2	SCH10S	SCH10S	P28J-005WC	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	4	3	SCH10S	SCH10S	P28J-005WD	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	6	3	SCH40S	SCH10S	P28J-0061C	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	6	4	SCH40S	SCH10S	P28J-0061D	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	8	4	SCH40S	SCH10S	P28J-0061E	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	8	6	SCH40S	SCH40S	P28J-0061F	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P29J-002M5	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	0.75		SCH80S		P29J-002M6	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1		SCH80S		P29J-002M7	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5		SCH80S		P29J-002M8	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	2		SCH10S		P29J-002ME	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	3		SCH10S		P29J-002MH	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	4		SCH10S		P29J-002MK	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	6		SCH40S		P29J-003MK	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	8		SCH40S		P29J-003U1	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
541	0.75				P29K-00049	Cap ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 NPT Severe wet H2S service	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P41J-001U7	Straight nipple ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Severe wet H2S service	
1	0.75		SCH80S		P41J-001U8	Straight nipple ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Severe wet H2S service	
1	1		SCH80S		P41J-001U9	Straight nipple ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Severe wet H2S service	
1	1.5		SCH80S		P41J-001UA	Straight nipple ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Severe wet H2S service	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
541	1	0.75			P31K-00FMB	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 NPT Severe wet H2S service	
541	1.5	0.75			P31K-00FMA	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 NPT Severe wet H2S service	
541	2 - 2.5	0.75			P31K-00GFX	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 NPT Severe wet H2S service	
541	3 - 5	0.75			P31K-00GFY	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 NPT Severe wet H2S service	
541	6 - 12	0.75			P31K-00GFZ	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 NPT Severe wet H2S service	
1	2	0.75	SCH10S	SCH80S	P31K-00ENM	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	3	0.75	SCH10S	SCH80S	P31K-00ENS	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	4	0.75	SCH10S	SCH80S	P31K-00EP3	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	6	0.75	SCH40S	SCH80S	P31K-00EVL	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	8	0.75	SCH40S	SCH80S	P31K-00EVR	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	3	1	SCH10S	SCH80S	P31K-00ENT	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	4	1	SCH10S	SCH80S	P31K-00EP4	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	6	1	SCH40S	SCH80S	P31K-00EVM	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	8	1	SCH40S	SCH80S	P31K-00EVS	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	4	1.5	SCH10S	SCH80S	P31K-00EP5	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	6	1.5	SCH40S	SCH80S	P31K-00EVN	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	8	1.5	SCH40S	SCH80S	P31K-00EVT	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	6	2	SCH40S	SCH10S	P31K-00EVP	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	

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OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	8	2	SCH40S	SCH10S	P31K-00EVU	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	8	3	SCH40S	SCH10S	P31K-00EVV	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30K-0005H	Plug ASTM A182 Grade F316/F316L dual grade ASME B16.11 NPT Round head Severe wet H2S service	
1	0.75				P30K-0005J	Plug ASTM A182 Grade F316/F316L dual grade ASME B16.11 NPT Round head Severe wet H2S service	
1	1				P30K-0005K	Plug ASTM A182 Grade F316/F316L dual grade ASME B16.11 NPT Round head Severe wet H2S service	
1	1.5				P30K-0005L	Plug ASTM A182 Grade F316/F316L dual grade ASME B16.11 NPT Round head Severe wet H2S service	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P61K-005FX	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
1	0.75		SCH80S		P61K-005FY	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
1	1		SCH80S		P61K-005FZ	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
1	1.5		SCH80S		P61K-005G0	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
1	2		SCH10S		P61K-005G6	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
1	3		SCH10S		P61K-005G9	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
1	4		SCH10S		P61K-005GA	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
1	6		SCH40S		P61K-005JM	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
1	8		SCH40S		P61K-005JN	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
541	0.5				P61K-0069N	Flange NPT ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
541	0.75				P61K-00602	Flange NPT ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
781	0.5		SCH80S		P61K-005JP	Flange WN ASTM A182 Grade F316/F316L dual grade Class 600 ASME B16.5 RF Severe wet H2S service	
781	0.75		SCH80S		P61K-005JR	Flange WN ASTM A182 Grade F316/F316L dual grade Class 600 ASME B16.5 RF Severe wet H2S service	
781	1		SCH80S		P61K-005JS	Flange WN ASTM A182 Grade F316/F316L dual grade Class 600 ASME B16.5 RF Severe wet H2S service	
781	1.5		SCH80S		P61K-005JT	Flange WN ASTM A182 Grade F316/F316L dual grade Class 600 ASME B16.5 RF Severe wet H2S service	
781	2		SCH10S		P61K-005JZ	Flange WN ASTM A182 Grade F316/F316L dual grade Class 600 ASME B16.5 RF Severe wet H2S service	
781	3		SCH10S		P61K-005K2	Flange WN ASTM A182 Grade F316/F316L dual grade Class 600 ASME B16.5 RF Severe wet H2S service	
781	4		SCH10S		P61K-005K3	Flange WN ASTM A182 Grade F316/F316L dual grade Class 600 ASME B16.5 RF Severe wet H2S service	
781	6		SCH40S		P61K-005K4	Flange WN ASTM A182 Grade F316/F316L dual grade Class 600 ASME B16.5 RF Severe wet H2S service	
781	8		SCH40S		P61K-005K5	Flange WN ASTM A182 Grade F316/F316L dual grade Class 600 ASME B16.5 RF Severe wet H2S service	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67K-001N6	Blind flange ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
1	0.75				P67K-001N7	Blind flange ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
1	1				P67K-001N8	Blind flange ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
1	1.5				P67K-001N9	Blind flange ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
1	2				P67K-001NF	Blind flange ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
1	3				P67K-001NJ	Blind flange ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
1	4				P67K-001NK	Blind flange ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
1	6				P67K-001NL	Blind flange ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
1	8				P67K-001NM	Blind flange ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000FT	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000FU	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000G5	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000G6	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	6				P73T-000G7	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

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GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	8				P73T-000G8	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	0.5				P73T-000J8	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	0.75				P73T-000J9	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1				P73T-000JA	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1.5				P73T-000JB	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	2				P73T-000JH	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	3				P73T-000JL	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	4				P73T-000JM	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	6				P73T-000JN	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	8				P73T-000JP	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-8				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
781	0.5-6				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
781	8				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81K-0015M	Gate valve ASTM A182 Grade F316/F316L dual grade Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	0.75				P81K-0015N	Gate valve ASTM A182 Grade F316/F316L dual grade Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	1				P81K-0015P	Gate valve ASTM A182 Grade F316/F316L dual grade Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	1.5				P81K-0015R	Gate valve ASTM A182 Grade F316/F316L dual grade Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	2				P81L-002CH	Gate valve ASTM A351 Grade CF8M Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	3				P81L-002CJ	Gate valve ASTM A351 Grade CF8M Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	4				P81L-002CK	Gate valve ASTM A351 Grade CF8M Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	6				P81L-002CL	Gate valve ASTM A351 Grade CF8M Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	8				P81L-002CM	Gate valve ASTM A351 Grade CF8M Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
4608	0.75				P81K-001NW	Gate valve ASTM A182 Grade F316/F316L dual grade Class 300 API 602 BW both sides w/ nipples BE - NPT ASTM A312-TP316(L) dual grade Seamless Sch80S-nipple Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82K-000SX	Globe valve ASTM A182 Grade F316/F316L dual grade Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	0.75				P82K-000SY	Globe valve ASTM A182 Grade F316/F316L dual grade Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	1				P82K-000SZ	Globe valve ASTM A182 Grade F316/F316L dual grade Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	1.5				P82K-000T0	Globe valve ASTM A182 Grade F316/F316L dual grade Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	2				P82L-001AL	Globe valve ASTM A351 Grade CF8M Class 300 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	3				P82L-001AM	Globe valve ASTM A351 Grade CF8M Class 300 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	4				P82L-001AN	Globe valve ASTM A351 Grade CF8M Class 300 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	6				P82L-001AP	Globe valve ASTM A351 Grade CF8M Class 300 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	8				P82L-001XX	Globe valve ASTM A351 Grade CF8M Class 300 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Severe wet H2S service	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83K-000SX	Check valve ASTM A182 Grade F316/F316L dual grade Class 300 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Severe wet H2S service	
1	0.75				P83K-000SY	Check valve ASTM A182 Grade F316/F316L dual grade Class 300 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Severe wet H2S service	

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CHECK VALVE (X)							
OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P83K-000SZ	Check valve ASTM A182 Grade F316/F316L dual grade Class 300 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Severe wet H2S service	
1	1.5				P83K-000T0	Check valve ASTM A182 Grade F316/F316L dual grade Class 300 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Severe wet H2S service	
1	2				P83L-001BL	Check valve ASTM A351 Grade CF8M Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service	
1	3				P83L-001BM	Check valve ASTM A351 Grade CF8M Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service	
1	4				P83L-001BN	Check valve ASTM A351 Grade CF8M Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service	

SPECT BLANK (SB)							
OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71K-000DU	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 300 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	
1	0.75				P71K-000DV	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 300 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	
1	1				P71K-000DW	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 300 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	
1	1.5				P71K-000DX	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 300 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	
1	2				P71K-000E0	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 300 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	
1	3				P71K-000E1	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 300 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	
1	4				P71K-000E2	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 300 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	
1	6				P71K-000E3	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 300 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	
1	8				P71K-000E4	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 300 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	

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BOLT TABLE (B_B0LR01 , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-008T0		
0.75	4	0.625	75	P80S-00908		
1	4	0.625	80	P80S-00909		
1.5	4	0.750	95	P80S-005Z4		
2	8	0.625	90	P80S-0090B		
3	8	0.750	110	P80S-0090F		
4	8	0.750	115	P80S-0090G		
6	12	0.750	125	P80S-0090J		
8	12	0.875	140	P80S-005ZD		

BOLT TABLE (B_B0LR01_781 , STUD ASME RF, OPTION CODE 781)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	80	P80S-008T2		
0.75	4	0.625	90	P80S-0090B		
1	4	0.625	95	P80S-0090C		
1.5	4	0.750	110	P80S-0090F		
2	8	0.625	110	P80S-008T8		
3	8	0.750	130	P80S-0090K		
4	8	0.875	150	P80S-005ZF		
6	12	1.000	175	P80S-0061H		
8	12	1.125	195	P80S-0064W		

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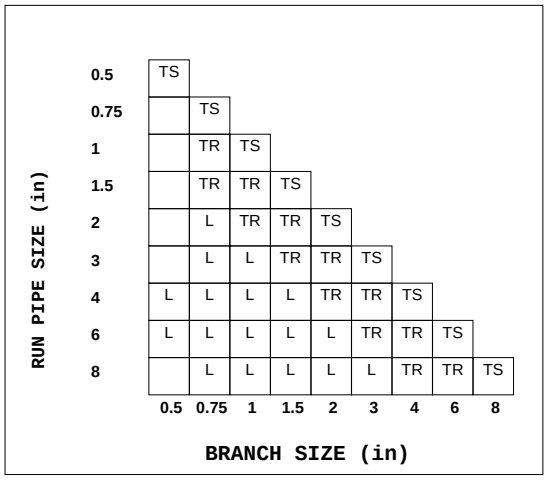
BRANCH TABLE (T_B0LR01)



RUN PIPE SIZE (in) \ BRANCH SIZE (in)	0.5	0.75	1	1.5	2	3	4	6	8
0.5	TS								
0.75		TS							
1		TR	TS						
1.5		TR	TR	TS					
2		L	TR	TR	TS				
3		L	L	TR	TR	TS			
4	L	L	L	L	TR	TR	TS		
6	L	L	L	L	L	TR	TR	TS	
8		L	L	L	L	L	TR	TR	TS

TR : REDUCING TEE
L : OUTLET
TS : STRAIGHT TEE

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PIPING CLASS

B0LR03 REV NO. 2

Material : SS316L
Rating : ASME CLASS 300
Flange Face : RF
C.A.(mm) : 0.00
Gasket : Spiral Wound
Service : PROCESS - WET SEVERE SOUR SERVICE SUBJECT TO NACE + HIC STD.
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
5	BOLTING CONFIRMING TO B7M / 2HM SHALL BE USED UNDER CONDITIONS (A) DIRECT EXPOSURE TO SOUR ENVIRONMENTS (B) WHEN THE BOLTING WILL BE BURIED OR INSULATED
27	PWHT OF CARBON STEEL PIPING IN WET H2S, CAUSTIC AND AMINE SERVICES SHALL BE IN ACCORDANCE WITH SECTION 10.2, 10.3, AND 10.4 OF PROJECT SPECIFICATION 3550-8440-SP-0002 MATERIALS REQUIREMENTS FOR PRESSURISED EQUIPMENT AND PIPING. FOR CAUSTIC AND AMINE SERVICE THE FOLLOWING SHALL APPLY: - PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF ALL SITE PIPING FABRICATION WELDS IS REQUIRED FOR ALL WALL THICKNESSES. FOR MODERATE AND SEVERE WET H2S SERVICE THE FOLLOWING SHALL APPLY: PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF SITE FABRICATION CIRCUMFERENTIAL OR BRANCH WELDS IS NOT REQUIRED IF WELDS ARE MULTIPASS AND IN ACCORDANCE WITH PARA 10.2.12 OF PROJECT SPECIFICATION 3550-8440-SP-0002. FOR SERVICES MEETING THE WET H2S CRITERIA AND CAUSTIC OR AMINE CRITERIA THE MORE STRINGENT PWHT REQUIREMENT SHALL GOVERN.

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
541	NPT(F) (CA,F,L)
781	CLASS 600 (B,F,G)
4602	DISSIMILAR TYPE CHECK VALVE (XDP)
4608	VALVE WITH NIPPLES (V)

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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P01J-002ES	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE Severe wet H2S service	
1	0.75		SCH80S		P01J-002ET	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE Severe wet H2S service	
1	1		SCH80S		P01J-002EU	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE Severe wet H2S service	
1	1.5		SCH80S		P01J-002EV	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE Severe wet H2S service	
1	2		SCH10S		P01J-002EW	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M BE Severe wet H2S service	
1	3		SCH10S		P01J-002EX	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M BE Severe wet H2S service	
1	4		SCH10S		P01J-002EY	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M BE Severe wet H2S service	
1	6		SCH40S		P01J-002GH	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M BE Severe wet H2S service	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P02J-001Y0	90 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	0.75		SCH80S		P02J-001Y1	90 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	1		SCH80S		P02J-001Y2	90 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	1.5		SCH80S		P02J-001Y3	90 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	2		SCH10S		P02J-001Y4	90 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	3		SCH10S		P02J-001Y5	90 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	4		SCH10S		P02J-001Y6	90 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	6		SCH40S		P02J-00201	90 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P03J-001VR	45 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	0.75		SCH80S		P03J-001VS	45 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	1		SCH80S		P03J-001VT	45 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	1.5		SCH80S		P03J-001VU	45 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	2		SCH10S		P03J-001VV	45 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	3		SCH10S		P03J-001VW	45 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	4		SCH10S		P03J-001VX	45 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	6		SCH40S		P03J-001ZK	45 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P21J-001M5	Straight tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	0.75		SCH80S		P21J-001M6	Straight tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1		SCH80S		P21J-001M7	Straight tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5		SCH80S		P21J-001M8	Straight tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	2		SCH10S		P21J-001M9	Straight tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	3		SCH10S		P21J-001MA	Straight tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	4		SCH10S		P21J-001MB	Straight tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	6		SCH40S		P21J-001NZ	Straight tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75	SCH80S	SCH80S	P24J-0070F	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5	0.75	SCH80S	SCH80S	P24J-0070J	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	

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REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5	1	SCH80S	SCH80S	P24J-0070K	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	2	1	SCH10S	SCH80S	P24J-0070S	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	2	1.5	SCH10S	SCH80S	P24J-0070T	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	3	1.5	SCH10S	SCH80S	P24J-0070U	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	3	2	SCH10S	SCH10S	P24J-0070V	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	4	2	SCH10S	SCH10S	P24J-0070W	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	4	3	SCH10S	SCH10S	P24J-0070X	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	6	3	SCH40S	SCH10S	P24J-0075A	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	6	4	SCH40S	SCH10S	P24J-0075B	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH80S	SCH80S	P27J-005XP	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1	0.5	SCH80S	SCH80S	P27J-005V5	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1	0.75	SCH80S	SCH80S	P27J-005V6	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5	0.5	SCH80S	SCH80S	P27J-005V7	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5	0.75	SCH80S	SCH80S	P27J-005V8	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5	1	SCH80S	SCH80S	P27J-005V9	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	2	0.75	SCH10S	SCH80S	P27J-005VA	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	2	1	SCH10S	SCH80S	P27J-005VB	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	2	1.5	SCH10S	SCH80S	P27J-005VC	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	3	1.5	SCH10S	SCH80S	P27J-005VD	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	3	2	SCH10S	SCH10S	P27J-005VE	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	4	1.5	SCH10S	SCH80S	P27J-005VF	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	4	2	SCH10S	SCH10S	P27J-005VG	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	4	3	SCH10S	SCH10S	P27J-005VH	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	6	3	SCH40S	SCH10S	P27J-0060F	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	6	4	SCH40S	SCH10S	P27J-0060G	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH80S	SCH80S	P28J-005YL	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1	0.5	SCH80S	SCH80S	P28J-005W1	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1	0.75	SCH80S	SCH80S	P28J-005W2	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5	0.5	SCH80S	SCH80S	P28J-005W3	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5	0.75	SCH80S	SCH80S	P28J-005W4	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5	1	SCH80S	SCH80S	P28J-005W5	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	2	0.75	SCH10S	SCH80S	P28J-005W6	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	2	1	SCH10S	SCH80S	P28J-005W7	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	2	1.5	SCH10S	SCH80S	P28J-005W8	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	3	1.5	SCH10S	SCH80S	P28J-005W9	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	3	2	SCH10S	SCH10S	P28J-005WA	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	4	1.5	SCH10S	SCH80S	P28J-005WB	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	4	2	SCH10S	SCH10S	P28J-005WC	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	4	3	SCH10S	SCH10S	P28J-005WD	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	

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ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	6	3	SCH40S	SCH10S	P28J-0061C	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	6	4	SCH40S	SCH10S	P28J-0061D	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P29J-002M5	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	0.75		SCH80S		P29J-002M6	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1		SCH80S		P29J-002M7	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5		SCH80S		P29J-002M8	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	2		SCH10S		P29J-002ME	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	3		SCH10S		P29J-002MH	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	4		SCH10S		P29J-002MK	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	6		SCH40S		P29J-003MK	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
541	0.75				P29K-00049	Cap ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 NPT Severe wet H2S service	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P41J-001U7	Straight nipple ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Severe wet H2S service	
1	0.75		SCH80S		P41J-001U8	Straight nipple ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Severe wet H2S service	
1	1		SCH80S		P41J-001U9	Straight nipple ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Severe wet H2S service	
1	1.5		SCH80S		P41J-001UA	Straight nipple ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Severe wet H2S service	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
541	1	0.75			P31K-00FMB	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 NPT Severe wet H2S service	
541	1.5	0.75			P31K-00FMA	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 NPT Severe wet H2S service	
541	2 - 2.5	0.75			P31K-00GFX	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 NPT Severe wet H2S service	
541	3 - 5	0.75			P31K-00GFY	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 NPT Severe wet H2S service	
541	6 - 12	0.75			P31K-00GFZ	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 NPT Severe wet H2S service	
1	2	0.75	SCH10S	SCH80S	P31K-00ENM	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	3	0.75	SCH10S	SCH80S	P31K-00ENS	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	4	0.75	SCH10S	SCH80S	P31K-00EP3	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	6	0.75	SCH40S	SCH80S	P31K-00EVL	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	3	1	SCH10S	SCH80S	P31K-00ENT	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	4	1	SCH10S	SCH80S	P31K-00EP4	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	6	1	SCH40S	SCH80S	P31K-00EVM	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	4	1.5	SCH10S	SCH80S	P31K-00EP5	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	6	1.5	SCH40S	SCH80S	P31K-00EVN	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	6	2	SCH40S	SCH10S	P31K-00EVP	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30K-0005H	Plug ASTM A182 Grade F316/F316L dual grade ASME B16.11 NPT Round head Severe wet H2S service	
1	0.75				P30K-0005J	Plug ASTM A182 Grade F316/F316L dual grade ASME B16.11 NPT Round head Severe wet H2S service	
1	1				P30K-0005K	Plug ASTM A182 Grade F316/F316L dual grade ASME B16.11 NPT Round head Severe wet H2S service	
1	1.5				P30K-0005L	Plug ASTM A182 Grade F316/F316L dual grade ASME B16.11 NPT Round head Severe wet H2S service	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P61K-005FX	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
1	0.75		SCH80S		P61K-005FY	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
1	1		SCH80S		P61K-005FZ	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
1	1.5		SCH80S		P61K-005G0	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	

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FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2		SCH10S		P61K-005G6	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
1	3		SCH10S		P61K-005G9	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
1	4		SCH10S		P61K-005GA	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
1	6		SCH40S		P61K-005JM	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
541	0.5				P61K-0069N	Flange NPT ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
541	0.75				P61K-00602	Flange NPT ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
781	0.5		SCH80S		P61K-005JP	Flange WN ASTM A182 Grade F316/F316L dual grade Class 600 ASME B16.5 RF Severe wet H2S service	
781	0.75		SCH80S		P61K-005JR	Flange WN ASTM A182 Grade F316/F316L dual grade Class 600 ASME B16.5 RF Severe wet H2S service	
781	1		SCH80S		P61K-005JS	Flange WN ASTM A182 Grade F316/F316L dual grade Class 600 ASME B16.5 RF Severe wet H2S service	
781	1.5		SCH80S		P61K-005JT	Flange WN ASTM A182 Grade F316/F316L dual grade Class 600 ASME B16.5 RF Severe wet H2S service	
781	2		SCH10S		P61K-005JZ	Flange WN ASTM A182 Grade F316/F316L dual grade Class 600 ASME B16.5 RF Severe wet H2S service	
781	3		SCH10S		P61K-005K2	Flange WN ASTM A182 Grade F316/F316L dual grade Class 600 ASME B16.5 RF Severe wet H2S service	
781	4		SCH10S		P61K-005K3	Flange WN ASTM A182 Grade F316/F316L dual grade Class 600 ASME B16.5 RF Severe wet H2S service	
781	6		SCH40S		P61K-005K4	Flange WN ASTM A182 Grade F316/F316L dual grade Class 600 ASME B16.5 RF Severe wet H2S service	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67K-001N6	Blind flange ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
1	0.75				P67K-001N7	Blind flange ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
1	1				P67K-001N8	Blind flange ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
1	1.5				P67K-001N9	Blind flange ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
1	2				P67K-001NF	Blind flange ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
1	3				P67K-001NJ	Blind flange ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
1	4				P67K-001NK	Blind flange ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
1	6				P67K-001NL	Blind flange ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000FT	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000FU	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000G5	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000G6	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	6				P73T-000G7	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	0.5				P73T-000J8	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	0.75				P73T-000J9	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1				P73T-000JA	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1.5				P73T-000JB	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	2				P73T-000JH	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	3				P73T-000JL	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	4				P73T-000JM	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	6				P73T-000JN	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-6				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
781	0.5-6				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	

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PIPING CLASS
B0LR03 REV NO. 2

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81K-0015M	Gate valve ASTM A182 Grade F316/F316L dual grade Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	0.75				P81K-0015N	Gate valve ASTM A182 Grade F316/F316L dual grade Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	1				P81K-0015P	Gate valve ASTM A182 Grade F316/F316L dual grade Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	1.5				P81K-0015R	Gate valve ASTM A182 Grade F316/F316L dual grade Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	2				P81L-002CH	Gate valve ASTM A351 Grade CF8M Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	3				P81L-002CJ	Gate valve ASTM A351 Grade CF8M Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	4				P81L-002CK	Gate valve ASTM A351 Grade CF8M Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	6				P81L-002CL	Gate valve ASTM A351 Grade CF8M Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
4608	0.75				P81K-001NW	Gate valve ASTM A182 Grade F316/F316L dual grade Class 300 API 602 BW both sides w/ nipples BE - NPT ASTM A312-TP316(L) dual grade Seamless Sch80S-nipple Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82K-000SX	Globe valve ASTM A182 Grade F316/F316L dual grade Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	0.75				P82K-000SY	Globe valve ASTM A182 Grade F316/F316L dual grade Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	1				P82K-000SZ	Globe valve ASTM A182 Grade F316/F316L dual grade Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	1.5				P82K-000T0	Globe valve ASTM A182 Grade F316/F316L dual grade Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	2				P82L-001AL	Globe valve ASTM A351 Grade CF8M Class 300 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	3				P82L-001AM	Globe valve ASTM A351 Grade CF8M Class 300 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	4				P82L-001AN	Globe valve ASTM A351 Grade CF8M Class 300 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	6				P82L-001AP	Globe valve ASTM A351 Grade CF8M Class 300 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83K-000SX	Check valve ASTM A182 Grade F316/F316L dual grade Class 300 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Severe wet H2S service	
1	0.75				P83K-000SY	Check valve ASTM A182 Grade F316/F316L dual grade Class 300 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Severe wet H2S service	
1	1				P83K-000SZ	Check valve ASTM A182 Grade F316/F316L dual grade Class 300 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Severe wet H2S service	
1	1.5				P83K-000T0	Check valve ASTM A182 Grade F316/F316L dual grade Class 300 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Severe wet H2S service	
1	2				P83L-001BL	Check valve ASTM A351 Grade CF8M Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service	
1	3				P83L-001BM	Check valve ASTM A351 Grade CF8M Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service	
1	4				P83L-001BN	Check valve ASTM A351 Grade CF8M Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service	
1	6				P83L-001HN	Check valve ASTM A351 Grade CF8M Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service	

DP CHECK VALVE (XDP)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
4602	6				P88L-001C0	Dual plate check valve ASTM A351 Grade CF8M Class 300 API 594 Wafer-type ASME B16.5 RF Trim number 12 Internal wetted parts SS316 Spring Inconel Retainerless-type Severe wet H2S service	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71K-000DU	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 300 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	
1	0.75				P71K-000DV	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 300 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	
1	1				P71K-000DW	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 300 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	
1	1.5				P71K-000DX	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 300 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	
1	2				P71K-000E0	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 300 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	
1	3				P71K-000E1	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 300 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	
1	4				P71K-000E2	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 300 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	
1	6				P71K-000E3	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 300 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	

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PIPING CLASS
B0LR03 REV NO. 2

BOLT TABLE (B_B0LR03 , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-008T0		
0.75	4	0.625	75	P80S-00908		
1	4	0.625	80	P80S-00909		
1.5	4	0.750	95	P80S-005Z4		
2	8	0.625	90	P80S-0090B		
3	8	0.750	110	P80S-0090F		
4	8	0.750	115	P80S-0090G		
6	12	0.750	125	P80S-0090J		

BOLT TABLE (B_B0LR03_781 , STUD ASME RF, OPTION CODE 781)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	80	P80S-008T2		
0.75	4	0.625	90	P80S-0090B		
1	4	0.625	95	P80S-0090C		
1.5	4	0.750	110	P80S-0090F		
2	8	0.625	110	P80S-008T8		
3	8	0.750	130	P80S-0090K		
4	8	0.875	150	P80S-005ZF		
6	12	1.000	175	P80S-0061H		

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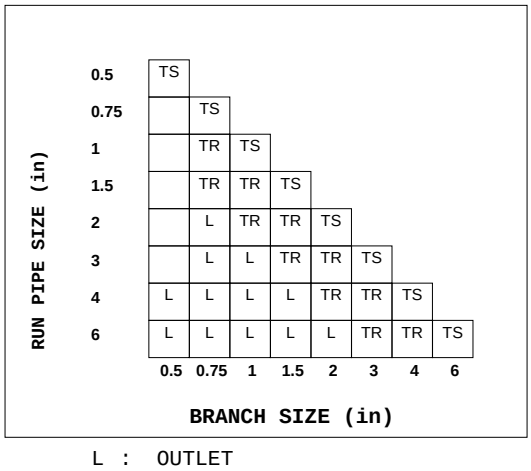
BRANCH TABLE (T_B0LR03)



L : OUTLET
TS : STRAIGHT TEE
TR : REDUCING TEE

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PIPING CLASS

B0MH01 REV NO. 2

Material : SS321
Rating : ASME CLASS 300
Flange Face : RF
C.A.(mm) : 1.00
Gasket : Spiral Wound
Service : PROCESS - HYDROGEN OR HYDROGEN RICH HYDROCARBON MIXTURE:
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
16	PIPE CLASS SHALL BE USED WITHIN THE NORMAL OPERATING PRESSURE/TEMPERATURE LIMITS SPECIFIED IN API RP 941. PRESSURE / TEMPERATURE SPECIFIED IN THE PIPE CLASS EXCEEDING API RP 941 LIMITS SHOULD BE REGARDED AS UPSET CONDITIONS RATHER THAN FOR CONTINUOUS SERVICE
24	FOR ALL RELEVANT PIPING CLASSES WITH LINE DESIGN TEMPERATURE ABOVE 427DEGC, IN SPIRAL WOUND GASKET, SUITABLE GASKET FILLER MATERIAL SUCH AS COMBINATION OF MICA LAYERS AND GRAPHITE FILLERS OR EQUIVALENT SHALL BE REVIEWED AND SELECTED OR AS DEFINED BY THE LICENSOR

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
541	NPT(F) (CA,L)
714	SW - NPT(F) (V)
781	CLASS 600 (B,F,G)

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PIPING CLASS
B0MH01 REV NO. 2

PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P01J-001FB	Pipe ASTM A312 Grade TP321 Seamless ASME B36.10M/B36.19M PE	
1	0.75		SCH80S		P01J-001FC	Pipe ASTM A312 Grade TP321 Seamless ASME B36.10M/B36.19M PE	
1	1		SCH80S		P01J-001FD	Pipe ASTM A312 Grade TP321 Seamless ASME B36.10M/B36.19M PE	
1	1.5		SCH80S		P01J-001FE	Pipe ASTM A312 Grade TP321 Seamless ASME B36.10M/B36.19M PE	
1	2		SCH40S		P01J-0027C	Pipe ASTM A312 Grade TP321 Seamless ASME B36.10M/B36.19M BE	
1	3		SCH10S		P01J-001T1	Pipe ASTM A312 Grade TP321 Seamless ASME B36.10M/B36.19M BE	
1	4		SCH40S		P01J-0027E	Pipe ASTM A312 Grade TP321 Seamless ASME B36.10M/B36.19M BE	
1	6		SCH40S		P01J-0027F	Pipe ASTM A312 Grade TP321 Seamless ASME B36.10M/B36.19M BE	
1	8		SCH40S		P01J-001HM	Pipe ASTM A358 Grade 321 Class 1 EFW ASME B36.10M/B36.19M BE	
1	10		SCH40S		P01J-001TE	Pipe ASTM A358 Grade 321 Class 1 EFW ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P02K-0002E	90 degree elbow ASTM A182 Grade F321 Class 3000 ASME B16.11 SW	
1	0.75				P02K-0002F	90 degree elbow ASTM A182 Grade F321 Class 3000 ASME B16.11 SW	
1	1				P02K-0002G	90 degree elbow ASTM A182 Grade F321 Class 3000 ASME B16.11 SW	
1	1.5				P02K-0002H	90 degree elbow ASTM A182 Grade F321 Class 3000 ASME B16.11 SW	
1	2		SCH40S		P02J-001NC	90 degree elbow ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Long radius	
1	3		SCH10S		P02J-001RN	90 degree elbow ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Long radius	
1	4		SCH40S		P02J-001NE	90 degree elbow ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Long radius	
1	6		SCH40S		P02J-001NF	90 degree elbow ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Long radius	
1	8		SCH40S		P02J-001A2	90 degree elbow ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Long radius	
1	10		SCH40S		P02J-001FS	90 degree elbow ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P03K-0002B	45 degree elbow ASTM A182 Grade F321 Class 3000 ASME B16.11 SW	
1	0.75				P03K-0002C	45 degree elbow ASTM A182 Grade F321 Class 3000 ASME B16.11 SW	
1	1				P03K-0002D	45 degree elbow ASTM A182 Grade F321 Class 3000 ASME B16.11 SW	
1	1.5				P03K-0002E	45 degree elbow ASTM A182 Grade F321 Class 3000 ASME B16.11 SW	
1	2		SCH40S		P03J-001LR	45 degree elbow ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Long radius	
1	3		SCH10S		P03J-001N2	45 degree elbow ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Long radius	
1	4		SCH40S		P03J-001LT	45 degree elbow ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Long radius	
1	6		SCH40S		P03J-001LU	45 degree elbow ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Long radius	
1	8		SCH40S		P03J-0018Y	45 degree elbow ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Long radius	
1	10		SCH40S		P03J-001E4	45 degree elbow ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P21K-0002D	Straight tee ASTM A182 Grade F321 Class 3000 ASME B16.11 SW	
1	0.75				P21K-0002E	Straight tee ASTM A182 Grade F321 Class 3000 ASME B16.11 SW	
1	1				P21K-0002F	Straight tee ASTM A182 Grade F321 Class 3000 ASME B16.11 SW	
1	1.5				P21K-0002G	Straight tee ASTM A182 Grade F321 Class 3000 ASME B16.11 SW	
1	2		SCH40S		P21J-001DA	Straight tee ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW	
1	3		SCH10S		P21J-001EJ	Straight tee ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW	
1	4		SCH40S		P21J-001DC	Straight tee ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW	
1	6		SCH40S		P21J-001DD	Straight tee ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW	
1	8		SCH40S		P21J-0012E	Straight tee ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW	
1	10		SCH40S		P21J-0017Y	Straight tee ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75			P24K-0003B	Reducing tee ASTM A182 Grade F321 Class 3000 ASME B16.11 SW	
1	1.5	0.75			P24K-0003C	Reducing tee ASTM A182 Grade F321 Class 3000 ASME B16.11 SW	
1	1.5	1			P24K-0003D	Reducing tee ASTM A182 Grade F321 Class 3000 ASME B16.11 SW	
1	2	1	SCH40S	SCH80S	P24J-006CM	Reducing tee ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW	
1	2	1.5	SCH40S	SCH80S	P24J-006CN	Reducing tee ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW	
1	3	1.5	SCH10S	SCH80S	P24J-0065P	Reducing tee ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW	

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REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	SCH10S	SCH40S	P24J-006CP	Reducing tee ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW	
1	4	2	SCH40S	SCH40S	P24J-0060W	Reducing tee ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW	
1	4	3	SCH40S	SCH10S	P24J-006CR	Reducing tee ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW	
1	6	3	SCH40S	SCH10S	P24J-006CS	Reducing tee ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW	
1	6	4	SCH40S	SCH40S	P24J-0060Z	Reducing tee ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW	
1	8	4	SCH40S	SCH40S	P24J-006CT	Reducing tee ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW	
1	8	6	SCH40S	SCH40S	P24J-006CU	Reducing tee ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW	
1	10	4	SCH40S	SCH40S	P24J-006CV	Reducing tee ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW	
1	10	6	SCH40S	SCH40S	P24J-006CW	Reducing tee ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW	
1	10	8	SCH40S	SCH40S	P24J-0067H	Reducing tee ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	SCH10S	SCH40S	P27J-005BV	Concentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW	
1	4	2	SCH40S	SCH40S	P27J-0050J	Concentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW	
1	4	3	SCH40S	SCH10S	P27J-005BW	Concentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW	
1	6	3	SCH40S	SCH10S	P27J-005BX	Concentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW	
1	6	4	SCH40S	SCH40S	P27J-0050M	Concentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW	
1	8	4	SCH40S	SCH40S	P27J-005BY	Concentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW	
1	8	6	SCH40S	SCH40S	P27J-005BZ	Concentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW	
1	10	4	SCH40S	SCH40S	P27J-005C0	Concentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW	
1	10	6	SCH40S	SCH40S	P27J-005C1	Concentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW	
1	10	8	SCH40S	SCH40S	P27J-0056B	Concentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	SCH10S	SCH40S	P28J-005CP	Eccentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW	
1	4	2	SCH40S	SCH40S	P28J-0051A	Eccentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW	
1	4	3	SCH40S	SCH10S	P28J-005CR	Eccentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW	
1	6	3	SCH40S	SCH10S	P28J-005CS	Eccentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW	
1	6	4	SCH40S	SCH40S	P28J-0051D	Eccentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW	
1	8	4	SCH40S	SCH40S	P28J-005CT	Eccentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW	
1	8	6	SCH40S	SCH40S	P28J-005CU	Eccentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW	
1	10	4	SCH40S	SCH40S	P28J-005CV	Eccentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW	
1	10	6	SCH40S	SCH40S	P28J-005CW	Eccentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW	
1	10	8	SCH40S	SCH40S	P28J-00576	Eccentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P29K-0002W	Cap ASTM A182 Grade F321 Class 3000 ASME B16.11 SW	
1	0.75				P29K-0002X	Cap ASTM A182 Grade F321 Class 3000 ASME B16.11 SW	
1	1				P29K-0002Y	Cap ASTM A182 Grade F321 Class 3000 ASME B16.11 SW	
1	1.5				P29K-0002Z	Cap ASTM A182 Grade F321 Class 3000 ASME B16.11 SW	
1	2		SCH40S		P29J-0018E	Cap ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW	
1	3		SCH10S		P29J-0019E	Cap ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW	
1	4		SCH40S		P29J-0018J	Cap ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW	
1	6		SCH40S		P29J-0018K	Cap ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW	
1	8		SCH40S		P29J-000ZL	Cap ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW	
1	10		SCH40S		P29J-0013R	Cap ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW	
541	0.75				P29K-0003U	Cap ASTM A182 Grade F321 Class 3000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P41J-001VR	Straight nipple ASTM A312 Grade TP321 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		SCH160		P41J-001VS	Straight nipple ASTM A312 Grade TP321 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		SCH160		P41J-001V4	Straight nipple ASTM A312 Grade TP321 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		SCH80S		P41J-001UE	Straight nipple ASTM A312 Grade TP321 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

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CON SWAGED NIPPLE (SNC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH80S	SCH80S	P42J-000AH	Concentric swaged nipple ASTM A403 Grade WP321 Class S Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	SCH80S	SCH80S	P42J-000AJ	Concentric swaged nipple ASTM A403 Grade WP321 Class S Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	SCH80S	SCH80S	P42J-000AK	Concentric swaged nipple ASTM A403 Grade WP321 Class S Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	SCH80S	SCH80S	P42J-000AL	Concentric swaged nipple ASTM A403 Grade WP321 Class S Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	SCH80S	SCH80S	P42J-000AM	Concentric swaged nipple ASTM A403 Grade WP321 Class S Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	SCH80S	SCH80S	P42J-000AN	Concentric swaged nipple ASTM A403 Grade WP321 Class S Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	SCH40S	SCH80S	P42J-000GG	Concentric swaged nipple ASTM A403 Grade WP321 Class S Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	SCH40S	SCH80S	P42J-000GH	Concentric swaged nipple ASTM A403 Grade WP321 Class S Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	SCH40S	SCH80S	P42J-000GJ	Concentric swaged nipple ASTM A403 Grade WP321 Class S Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	SCH40S	SCH80S	P42J-000GK	Concentric swaged nipple ASTM A403 Grade WP321 Class S Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	SCH10S	SCH80S	P42J-000G1	Concentric swaged nipple ASTM A403 Grade WP321 Class S Seamless MSS SP-95 BE(L) - PE(S)	

ECC SWAGED NIPPLE (SNE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH80S	SCH80S	P43J-0008X	Eccentric swaged nipple ASTM A403 Grade WP321 Class S Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	SCH80S	SCH80S	P43J-0008Y	Eccentric swaged nipple ASTM A403 Grade WP321 Class S Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	SCH80S	SCH80S	P43J-0008Z	Eccentric swaged nipple ASTM A403 Grade WP321 Class S Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	SCH80S	SCH80S	P43J-00090	Eccentric swaged nipple ASTM A403 Grade WP321 Class S Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	SCH80S	SCH80S	P43J-00091	Eccentric swaged nipple ASTM A403 Grade WP321 Class S Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	SCH80S	SCH80S	P43J-00092	Eccentric swaged nipple ASTM A403 Grade WP321 Class S Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	SCH40S	SCH80S	P43J-000DG	Eccentric swaged nipple ASTM A403 Grade WP321 Class S Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	SCH40S	SCH80S	P43J-000DH	Eccentric swaged nipple ASTM A403 Grade WP321 Class S Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	SCH40S	SCH80S	P43J-000DJ	Eccentric swaged nipple ASTM A403 Grade WP321 Class S Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	SCH40S	SCH80S	P43J-000DK	Eccentric swaged nipple ASTM A403 Grade WP321 Class S Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	SCH10S	SCH80S	P43J-000D3	Eccentric swaged nipple ASTM A403 Grade WP321 Class S Seamless MSS SP-95 BE(L) - PE(S)	

COUPLING (CPS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P47K-00048	Coupling ASTM A182 Grade F321 Class 3000 ASME B16.11 SW - SW	
1	0.75				P47K-00049	Coupling ASTM A182 Grade F321 Class 3000 ASME B16.11 SW - SW	
1	1				P47K-0004A	Coupling ASTM A182 Grade F321 Class 3000 ASME B16.11 SW - SW	
1	1.5				P47K-0004B	Coupling ASTM A182 Grade F321 Class 3000 ASME B16.11 SW - SW	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2 - 2.5	0.75			P31K-00GGP	Outlet ASTM A182 Grade F321 Class 3000 MSS SP-97 SW	
1	3 - 5	0.75			P31K-00GGR	Outlet ASTM A182 Grade F321 Class 3000 MSS SP-97 SW	
1	6 - 12	0.75			P31K-00GGS	Outlet ASTM A182 Grade F321 Class 3000 MSS SP-97 SW	
1	3	1			P31K-00GGU	Outlet ASTM A182 Grade F321 Class 3000 MSS SP-97 SW	
1	4 - 5	1			P31K-00GGV	Outlet ASTM A182 Grade F321 Class 3000 MSS SP-97 SW	
1	6 - 10	1			P31K-00GGW	Outlet ASTM A182 Grade F321 Class 3000 MSS SP-97 SW	
1	4	1.5			P31K-00DHR	Outlet ASTM A182 Grade F321 Class 3000 MSS SP-97 SW	
1	5 - 6	1.5			P31K-00GGY	Outlet ASTM A182 Grade F321 Class 3000 MSS SP-97 SW	
1	8 - 12	1.5			P31K-00GGZ	Outlet ASTM A182 Grade F321 Class 3000 MSS SP-97 SW	
541	1	0.75			P31K-00FN3	Outlet ASTM A182 Grade F321 Class 3000 MSS SP-97 NPT	
541	1.5	0.75			P31K-00FN2	Outlet ASTM A182 Grade F321 Class 3000 MSS SP-97 NPT	
541	2 - 2.5	0.75			P31K-00GH1	Outlet ASTM A182 Grade F321 Class 3000 MSS SP-97 NPT	
541	3 - 5	0.75			P31K-00GH2	Outlet ASTM A182 Grade F321 Class 3000 MSS SP-97 NPT	
541	6 - 12	0.75			P31K-00GH3	Outlet ASTM A182 Grade F321 Class 3000 MSS SP-97 NPT	
1	6	2	SCH40S	SCH40S	P31K-00DEB	Outlet ASTM A182 Grade F321 MSS SP-97 BW	
1	8	2	SCH40S	SCH40S	P31K-00DVD	Outlet ASTM A182 Grade F321 MSS SP-97 BW	
1	10	2	SCH40S	SCH40S	P31K-00DVF	Outlet ASTM A182 Grade F321 MSS SP-97 BW	
1	8	3	SCH40S	SCH10S	P31K-00DVE	Outlet ASTM A182 Grade F321 MSS SP-97 BW	
1	10	3	SCH40S	SCH10S	P31K-00DVG	Outlet ASTM A182 Grade F321 MSS SP-97 BW	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30K-0002L	Plug ASTM A182 Grade F321 ASME B16.11 NPT Round head	

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PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75				P30K-0002M	Plug ASTM A182 Grade F321 ASME B16.11 NPT Round head	
1	1				P30K-0002N	Plug ASTM A182 Grade F321 ASME B16.11 NPT Round head	
1	1.5				P30K-0002P	Plug ASTM A182 Grade F321 ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P61K-004P5	Flange SW ASTM A182 Grade F321 Class 300 ASME B16.5 RF	
1	0.75		SCH80S		P61K-004P6	Flange SW ASTM A182 Grade F321 Class 300 ASME B16.5 RF	
1	1		SCH80S		P61K-004T2	Flange SW ASTM A182 Grade F321 Class 300 ASME B16.5 RF	
1	1.5		SCH80S		P61K-004T3	Flange SW ASTM A182 Grade F321 Class 300 ASME B16.5 RF	
1	2		SCH40S		P61K-004PE	Flange WN ASTM A182 Grade F321 Class 300 ASME B16.5 RF	
1	3		SCH10S		P61K-004T8	Flange WN ASTM A182 Grade F321 Class 300 ASME B16.5 RF	
1	4		SCH40S		P61K-004PJ	Flange WN ASTM A182 Grade F321 Class 300 ASME B16.5 RF	
1	6		SCH40S		P61K-004PK	Flange WN ASTM A182 Grade F321 Class 300 ASME B16.5 RF	
1	8		SCH40S		P61K-003PL	Flange WN ASTM A182 Grade F321 Class 300 ASME B16.5 RF	
1	10		SCH40S		P61K-0040K	Flange WN ASTM A182 Grade F321 Class 300 ASME B16.5 RF	
781	0.5		SCH80S		P61K-003B0	Flange SW ASTM A182 Grade F321 Class 600 ASME B16.5 RF	
781	0.75		SCH80S		P61K-003B1	Flange SW ASTM A182 Grade F321 Class 600 ASME B16.5 RF	
781	1		SCH80S		P61K-003B2	Flange SW ASTM A182 Grade F321 Class 600 ASME B16.5 RF	
781	1.5		SCH80S		P61K-003B3	Flange SW ASTM A182 Grade F321 Class 600 ASME B16.5 RF	
781	2		SCH40S		P61K-0050A	Flange WN ASTM A182 Grade F321 Class 600 ASME B16.5 RF	
781	3		SCH10S		P61K-0050B	Flange WN ASTM A182 Grade F321 Class 600 ASME B16.5 RF	
781	4		SCH40S		P61K-0050C	Flange WN ASTM A182 Grade F321 Class 600 ASME B16.5 RF	
781	6		SCH40S		P61K-0050D	Flange WN ASTM A182 Grade F321 Class 600 ASME B16.5 RF	
781	8		SCH40S		P61K-004UW	Flange WN ASTM A182 Grade F321 Class 600 ASME B16.5 RF	
781	10		SCH40S		P61K-004UP	Flange WN ASTM A182 Grade F321 Class 600 ASME B16.5 RF	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67K-00145	Blind flange ASTM A182 Grade F321 Class 300 ASME B16.5 RF	
1	0.75				P67K-00146	Blind flange ASTM A182 Grade F321 Class 300 ASME B16.5 RF	
1	1				P67K-00147	Blind flange ASTM A182 Grade F321 Class 300 ASME B16.5 RF	
1	1.5				P67K-00148	Blind flange ASTM A182 Grade F321 Class 300 ASME B16.5 RF	
1	2				P67K-00163	Blind flange ASTM A182 Grade F321 Class 300 ASME B16.5 RF	
1	3				P67K-00164	Blind flange ASTM A182 Grade F321 Class 300 ASME B16.5 RF	
1	4				P67K-00165	Blind flange ASTM A182 Grade F321 Class 300 ASME B16.5 RF	
1	6				P67K-00166	Blind flange ASTM A182 Grade F321 Class 300 ASME B16.5 RF	
1	8				P67K-0014C	Blind flange ASTM A182 Grade F321 Class 300 ASME B16.5 RF	
1	10				P67K-00149	Blind flange ASTM A182 Grade F321 Class 300 ASME B16.5 RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-00407	Spiral wound gasket SS321 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS321	
1	0.75				P73T-00408	Spiral wound gasket SS321 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS321	
1	1				P73T-00409	Spiral wound gasket SS321 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS321	
1	1.5				P73T-0040A	Spiral wound gasket SS321 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS321	
1	2				P73T-0040G	Spiral wound gasket SS321 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS321	
1	3				P73T-0040H	Spiral wound gasket SS321 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS321	
1	4				P73T-0040J	Spiral wound gasket SS321 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS321	
1	6				P73T-0040K	Spiral wound gasket SS321 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS321	
1	8				P73T-0040L	Spiral wound gasket SS321 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS321	
1	10				P73T-0040B	Spiral wound gasket SS321 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS321	
781	0.5				P73T-003HR	Spiral wound gasket SS321 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS321	
781	0.75				P73T-003HS	Spiral wound gasket SS321 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS321	

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GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
781	1				P73T-003HT	Spiral wound gasket SS321 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS321	
781	1.5				P73T-003HU	Spiral wound gasket SS321 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS321	
781	2				P73T-003HY	Spiral wound gasket SS321 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS321	
781	3				P73T-003HZ	Spiral wound gasket SS321 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS321	
781	4				P73T-003J0	Spiral wound gasket SS321 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS321	
781	6				P73T-003J1	Spiral wound gasket SS321 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS321	
781	8				P73T-003J2	Spiral wound gasket SS321 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS321	
781	10				P73T-003HV	Spiral wound gasket SS321 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS321	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-10				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
781	0.5-6				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
781	8-10				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81K-001KB	Gate valve ASTM A182 Grade F321 Class 800 API 602 SW Trim SS347 BB-BG-OS&Y Handwheel operated Fluid-2	
1	0.75				P81K-001KC	Gate valve ASTM A182 Grade F321 Class 800 API 602 SW Trim SS347 BB-BG-OS&Y Handwheel operated Fluid-2	
1	1				P81K-001KD	Gate valve ASTM A182 Grade F321 Class 800 API 602 SW Trim SS347 BB-BG-OS&Y Handwheel operated Fluid-2	
1	1.5				P81K-001KE	Gate valve ASTM A182 Grade F321 Class 800 API 602 SW Trim SS347 BB-BG-OS&Y Handwheel operated Fluid-2	
1	2				P81L-0033W	Gate valve ASTM A351 Grade CF8C Class 300 API 600 Flange ASME B16.5 RF Trim SS347 BB-BG-OS&Y Handwheel operated Fluid-2	
1	3				P81L-0033X	Gate valve ASTM A351 Grade CF8C Class 300 API 600 Flange ASME B16.5 RF Trim SS347 BB-BG-OS&Y Handwheel operated Fluid-2	
1	4				P81L-0033Y	Gate valve ASTM A351 Grade CF8C Class 300 API 600 Flange ASME B16.5 RF Trim SS347 BB-BG-OS&Y Handwheel operated Fluid-2	
1	6				P81L-0033Z	Gate valve ASTM A351 Grade CF8C Class 300 API 600 Flange ASME B16.5 RF Trim SS347 BB-BG-OS&Y Handwheel operated Fluid-2	
1	8				P81L-00340	Gate valve ASTM A351 Grade CF8C Class 300 API 600 Flange ASME B16.5 RF Trim SS347 BB-BG-OS&Y Handwheel operated Fluid-2	
1	10				P81L-00341	Gate valve ASTM A351 Grade CF8C Class 300 API 600 Flange ASME B16.5 RF Trim SS347 BB-BG-OS&Y Gear operated Fluid-2	
714	0.5				P81K-001LH	Gate valve ASTM A182 Grade F321 Class 800 API 602 SW - NPT Trim SS347 BB-BG-OS&Y Handwheel operated Fluid-2	
714	0.75				P81K-001KF	Gate valve ASTM A182 Grade F321 Class 800 API 602 SW - NPT Trim SS347 BB-BG-OS&Y Handwheel operated Fluid-2	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82K-0012A	Globe valve ASTM A182 Grade F321 Class 800 API 602 SW Trim SS347 BB-BG-OS&Y Handwheel operated Fluid-2	
1	0.75				P82K-0012B	Globe valve ASTM A182 Grade F321 Class 800 API 602 SW Trim SS347 BB-BG-OS&Y Handwheel operated Fluid-2	
1	1				P82K-0012C	Globe valve ASTM A182 Grade F321 Class 800 API 602 SW Trim SS347 BB-BG-OS&Y Handwheel operated Fluid-2	
1	1.5				P82K-0012D	Globe valve ASTM A182 Grade F321 Class 800 API 602 SW Trim SS347 BB-BG-OS&Y Handwheel operated Fluid-2	
1	2				P82L-001R1	Globe valve ASTM A351 Grade CF8C Class 300 BS 1873 Flange ASME B16.5 RF Trim SS347 BB-BG-OS&Y Handwheel operated Fluid-2	
1	3				P82L-001R2	Globe valve ASTM A351 Grade CF8C Class 300 BS 1873 Flange ASME B16.5 RF Trim SS347 BB-BG-OS&Y Handwheel operated Fluid-2	
1	4				P82L-001R3	Globe valve ASTM A351 Grade CF8C Class 300 BS 1873 Flange ASME B16.5 RF Trim SS347 BB-BG-OS&Y Handwheel operated Fluid-2	
1	6				P82L-001R4	Globe valve ASTM A351 Grade CF8C Class 300 BS 1873 Flange ASME B16.5 RF Trim SS347 BB-BG-OS&Y Handwheel operated Fluid-2	
1	8				P82L-001XY	Globe valve ASTM A351 Grade CF8C Class 300 BS 1873 Flange ASME B16.5 RF Trim SS347 BB-BG-OS&Y Gear operated Fluid-2	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83K-000PE	Check valve ASTM A182 Grade F321 Class 800 API 602 SW Trim SS347 Lift-type Bolted cover	
1	0.75				P83K-000PF	Check valve ASTM A182 Grade F321 Class 800 API 602 SW Trim SS347 Lift-type Bolted cover	
1	1				P83K-000PG	Check valve ASTM A182 Grade F321 Class 800 API 602 SW Trim SS347 Lift-type Bolted cover	

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CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5				P83K-000PH	Check valve ASTM A182 Grade F321 Class 800 API 602 SW Trim SS347 Lift-type Bolted cover	
1	2				P83L-00143	Check valve ASTM A351 Grade CF8C Class 300 BS 1868 Flange ASME B16.5 RF Trim SS347 Swing-type Bolted cover	
1	3				P83L-00144	Check valve ASTM A351 Grade CF8C Class 300 BS 1868 Flange ASME B16.5 RF Trim SS347 Swing-type Bolted cover	
1	4				P83L-00145	Check valve ASTM A351 Grade CF8C Class 300 BS 1868 Flange ASME B16.5 RF Trim SS347 Swing-type Bolted cover	
1	6				P83L-00146	Check valve ASTM A351 Grade CF8C Class 300 BS 1868 Flange ASME B16.5 RF Trim SS347 Swing-type Bolted cover	
1	8				P83L-00147	Check valve ASTM A351 Grade CF8C Class 300 BS 1868 Flange ASME B16.5 RF Trim SS347 Swing-type Bolted cover	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71K-0008C	Spectacle blank ASTM A182 Grade F321 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	0.75				P71K-0008D	Spectacle blank ASTM A182 Grade F321 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	1				P71K-0008E	Spectacle blank ASTM A182 Grade F321 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71K-0008F	Spectacle blank ASTM A182 Grade F321 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	2				P71K-0008H	Spectacle blank ASTM A182 Grade F321 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	3				P71K-0008J	Spectacle blank ASTM A182 Grade F321 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	4				P71K-0008K	Spectacle blank ASTM A182 Grade F321 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	6				P71K-0008L	Spectacle blank ASTM A182 Grade F321 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	8				P71K-0008M	Spectacle blank ASTM A182 Grade F321 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	10				P71K-0008G	Spectacle blank ASTM A182 Grade F321 Class 300 Standard-drawing Flange ASME B16.5 RF	

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BOLT TABLE (B_B0MH01 , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-003V4		
0.75	4	0.625	75	P80S-003XC		
1	4	0.625	80	P80S-003XD		
1.5	4	0.750	95	P80S-00414		
2	8	0.625	90	P80S-003XF		
3	8	0.750	110	P80S-003XK		
4	8	0.750	115	P80S-003XL		
6	12	0.750	125	P80S-003XN		
8	12	0.875	140	P80S-0041D		
10	16	1.000	160	P80S-0043K		

BOLT TABLE (B_B0MH01_781 , STUD ASME RF, OPTION CODE 781)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	80	P80S-003V6		
0.75	4	0.625	90	P80S-003XF		
1	4	0.625	95	P80S-003XG		
1.5	4	0.750	110	P80S-003XK		
2	8	0.625	110	P80S-003VC		
3	8	0.750	130	P80S-003XP		
4	8	0.875	150	P80S-0041F		
6	12	1.000	175	P80S-0043P		
8	12	1.125	195	P80S-0046W		
10	16	1.250	250	P80S-004AY		

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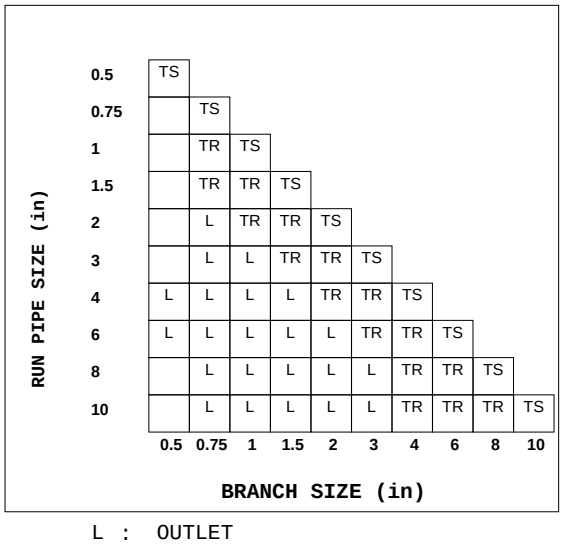
BRANCH TABLE (T_B0MH01)



L : OUTLET
TR : REDUCING TEE
TS : STRAIGHT TEE

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PIPING CLASS

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Material : SS321
Rating : ASME CLASS 300
Flange Face : RF
C.A.(mm) : 0.80
Gasket : Spiral Wound
Service : PROCESS- GENERAL PROCESS NON SOUR NON CORROSIVE
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
541	NPT(F) (CA,L)
714	SW - NPT(F) (V)
781	CLASS 600 (B,F,G)

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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P01J-001FB	Pipe ASTM A312 Grade TP321 Seamless ASME B36.10M/B36.19M PE	
1	0.75		SCH80S		P01J-001FC	Pipe ASTM A312 Grade TP321 Seamless ASME B36.10M/B36.19M PE	
1	1		SCH80S		P01J-001FD	Pipe ASTM A312 Grade TP321 Seamless ASME B36.10M/B36.19M PE	
1	1.5		SCH80S		P01J-001FE	Pipe ASTM A312 Grade TP321 Seamless ASME B36.10M/B36.19M PE	
1	2		SCH10S		P01J-001T0	Pipe ASTM A312 Grade TP321 Seamless ASME B36.10M/B36.19M BE	
1	3		SCH10S		P01J-001T1	Pipe ASTM A312 Grade TP321 Seamless ASME B36.10M/B36.19M BE	
1	4		SCH40S		P01J-0027E	Pipe ASTM A312 Grade TP321 Seamless ASME B36.10M/B36.19M BE	
1	6		SCH40S		P01J-0027F	Pipe ASTM A312 Grade TP321 Seamless ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P02K-0002E	90 degree elbow ASTM A182 Grade F321 Class 3000 ASME B16.11 SW	
1	0.75				P02K-0002F	90 degree elbow ASTM A182 Grade F321 Class 3000 ASME B16.11 SW	
1	1				P02K-0002G	90 degree elbow ASTM A182 Grade F321 Class 3000 ASME B16.11 SW	
1	1.5				P02K-0002H	90 degree elbow ASTM A182 Grade F321 Class 3000 ASME B16.11 SW	
1	2		SCH10S		P02J-001RM	90 degree elbow ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Long radius	
1	3		SCH10S		P02J-001RN	90 degree elbow ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Long radius	
1	4		SCH40S		P02J-001NE	90 degree elbow ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Long radius	
1	6		SCH40S		P02J-001NF	90 degree elbow ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P03K-0002B	45 degree elbow ASTM A182 Grade F321 Class 3000 ASME B16.11 SW	
1	0.75				P03K-0002C	45 degree elbow ASTM A182 Grade F321 Class 3000 ASME B16.11 SW	
1	1				P03K-0002D	45 degree elbow ASTM A182 Grade F321 Class 3000 ASME B16.11 SW	
1	1.5				P03K-0002E	45 degree elbow ASTM A182 Grade F321 Class 3000 ASME B16.11 SW	
1	2		SCH10S		P03J-001N1	45 degree elbow ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Long radius	
1	3		SCH10S		P03J-001N2	45 degree elbow ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Long radius	
1	4		SCH40S		P03J-001LT	45 degree elbow ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Long radius	
1	6		SCH40S		P03J-001LU	45 degree elbow ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P21K-0002D	Straight tee ASTM A182 Grade F321 Class 3000 ASME B16.11 SW	
1	0.75				P21K-0002E	Straight tee ASTM A182 Grade F321 Class 3000 ASME B16.11 SW	
1	1				P21K-0002F	Straight tee ASTM A182 Grade F321 Class 3000 ASME B16.11 SW	
1	1.5				P21K-0002G	Straight tee ASTM A182 Grade F321 Class 3000 ASME B16.11 SW	
1	2		SCH10S		P21J-001EH	Straight tee ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW	
1	3		SCH10S		P21J-001EJ	Straight tee ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW	
1	4		SCH40S		P21J-001DC	Straight tee ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW	
1	6		SCH40S		P21J-001DD	Straight tee ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75			P24K-0003B	Reducing tee ASTM A182 Grade F321 Class 3000 ASME B16.11 SW	
1	1.5	0.75			P24K-0003C	Reducing tee ASTM A182 Grade F321 Class 3000 ASME B16.11 SW	
1	1.5	1			P24K-0003D	Reducing tee ASTM A182 Grade F321 Class 3000 ASME B16.11 SW	
1	2	1	SCH10S	SCH80S	P24J-0065M	Reducing tee ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW	
1	2	1.5	SCH10S	SCH80S	P24J-0065N	Reducing tee ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW	
1	3	1.5	SCH10S	SCH80S	P24J-0065P	Reducing tee ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW	
1	3	2	SCH10S	SCH10S	P24J-0065R	Reducing tee ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW	
1	4	2	SCH40S	SCH10S	P24J-007KG	Reducing tee ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW	
1	4	3	SCH40S	SCH10S	P24J-006CR	Reducing tee ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW	
1	6	3	SCH40S	SCH10S	P24J-006CS	Reducing tee ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW	
1	6	4	SCH40S	SCH40S	P24J-0060Z	Reducing tee ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW	

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CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	SCH10S	SCH10S	P27J-0054K	Concentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW	
1	4	2	SCH40S	SCH10S	P27J-006CA	Concentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW	
1	4	3	SCH40S	SCH10S	P27J-005BW	Concentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW	
1	6	3	SCH40S	SCH10S	P27J-005BX	Concentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW	
1	6	4	SCH40S	SCH40S	P27J-0050M	Concentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	SCH10S	SCH10S	P28J-0055E	Eccentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW	
1	4	2	SCH40S	SCH10S	P28J-006DM	Eccentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW	
1	4	3	SCH40S	SCH10S	P28J-005CR	Eccentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW	
1	6	3	SCH40S	SCH10S	P28J-005CS	Eccentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW	
1	6	4	SCH40S	SCH40S	P28J-0051D	Eccentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P29K-0002W	Cap ASTM A182 Grade F321 Class 3000 ASME B16.11 SW	
1	0.75				P29K-0002X	Cap ASTM A182 Grade F321 Class 3000 ASME B16.11 SW	
1	1				P29K-0002Y	Cap ASTM A182 Grade F321 Class 3000 ASME B16.11 SW	
1	1.5				P29K-0002Z	Cap ASTM A182 Grade F321 Class 3000 ASME B16.11 SW	
1	2		SCH10S		P29J-0019D	Cap ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW	
1	3		SCH10S		P29J-0019E	Cap ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW	
1	4		SCH40S		P29J-0018J	Cap ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW	
1	6		SCH40S		P29J-0018K	Cap ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW	
541	0.75				P29K-0003U	Cap ASTM A182 Grade F321 Class 3000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P41J-001UB	Straight nipple ASTM A312 Grade TP321 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		SCH80S		P41J-001UC	Straight nipple ASTM A312 Grade TP321 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		SCH160		P41J-001V4	Straight nipple ASTM A312 Grade TP321 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		SCH80S		P41J-001UE	Straight nipple ASTM A312 Grade TP321 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

CON SWAGED NIPPLE (SNC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH80S	SCH80S	P42J-000AH	Concentric swaged nipple ASTM A403 Grade WP321 Class S Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	SCH80S	SCH80S	P42J-000AJ	Concentric swaged nipple ASTM A403 Grade WP321 Class S Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	SCH80S	SCH80S	P42J-000AK	Concentric swaged nipple ASTM A403 Grade WP321 Class S Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	SCH80S	SCH80S	P42J-000AL	Concentric swaged nipple ASTM A403 Grade WP321 Class S Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	SCH80S	SCH80S	P42J-000AM	Concentric swaged nipple ASTM A403 Grade WP321 Class S Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	SCH80S	SCH80S	P42J-000AN	Concentric swaged nipple ASTM A403 Grade WP321 Class S Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	SCH10S	SCH80S	P42J-000FX	Concentric swaged nipple ASTM A403 Grade WP321 Class S Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	SCH10S	SCH80S	P42J-000FY	Concentric swaged nipple ASTM A403 Grade WP321 Class S Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	SCH10S	SCH80S	P42J-000FZ	Concentric swaged nipple ASTM A403 Grade WP321 Class S Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	SCH10S	SCH80S	P42J-000G0	Concentric swaged nipple ASTM A403 Grade WP321 Class S Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	SCH10S	SCH80S	P42J-000G1	Concentric swaged nipple ASTM A403 Grade WP321 Class S Seamless MSS SP-95 BE(L) - PE(S)	

ECC SWAGED NIPPLE (SNE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH80S	SCH80S	P43J-0008X	Eccentric swaged nipple ASTM A403 Grade WP321 Class S Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	SCH80S	SCH80S	P43J-0008Y	Eccentric swaged nipple ASTM A403 Grade WP321 Class S Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	SCH80S	SCH80S	P43J-0008Z	Eccentric swaged nipple ASTM A403 Grade WP321 Class S Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	SCH80S	SCH80S	P43J-00090	Eccentric swaged nipple ASTM A403 Grade WP321 Class S Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	SCH80S	SCH80S	P43J-00091	Eccentric swaged nipple ASTM A403 Grade WP321 Class S Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	SCH80S	SCH80S	P43J-00092	Eccentric swaged nipple ASTM A403 Grade WP321 Class S Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	SCH10S	SCH80S	P43J-000CZ	Eccentric swaged nipple ASTM A403 Grade WP321 Class S Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	SCH10S	SCH80S	P43J-000D0	Eccentric swaged nipple ASTM A403 Grade WP321 Class S Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	SCH10S	SCH80S	P43J-000D1	Eccentric swaged nipple ASTM A403 Grade WP321 Class S Seamless MSS SP-95 BE(L) - PE(S)	

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ECC SWAGED NIPPLE (SNE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2	1.5	SCH10S	SCH80S	P43J-000D2	Eccentric swaged nipple ASTM A403 Grade WP321 Class S Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	SCH10S	SCH80S	P43J-000D3	Eccentric swaged nipple ASTM A403 Grade WP321 Class S Seamless MSS SP-95 BE(L) - PE(S)	

COUPLING (CPS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P47K-00048	Coupling ASTM A182 Grade F321 Class 3000 ASME B16.11 SW - SW	
1	0.75				P47K-00049	Coupling ASTM A182 Grade F321 Class 3000 ASME B16.11 SW - SW	
1	1				P47K-0004A	Coupling ASTM A182 Grade F321 Class 3000 ASME B16.11 SW - SW	
1	1.5				P47K-0004B	Coupling ASTM A182 Grade F321 Class 3000 ASME B16.11 SW - SW	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2 - 2.5	0.75			P31K-00GGP	Outlet ASTM A182 Grade F321 Class 3000 MSS SP-97 SW	
1	3 - 5	0.75			P31K-00GGR	Outlet ASTM A182 Grade F321 Class 3000 MSS SP-97 SW	
1	6 - 12	0.75			P31K-00GGS	Outlet ASTM A182 Grade F321 Class 3000 MSS SP-97 SW	
1	3	1			P31K-00GGU	Outlet ASTM A182 Grade F321 Class 3000 MSS SP-97 SW	
1	4 - 5	1			P31K-00GGV	Outlet ASTM A182 Grade F321 Class 3000 MSS SP-97 SW	
1	6 - 10	1			P31K-00GGW	Outlet ASTM A182 Grade F321 Class 3000 MSS SP-97 SW	
1	4	1.5			P31K-00DHR	Outlet ASTM A182 Grade F321 Class 3000 MSS SP-97 SW	
1	5 - 6	1.5			P31K-00GGY	Outlet ASTM A182 Grade F321 Class 3000 MSS SP-97 SW	
541	1	0.75			P31K-00FN3	Outlet ASTM A182 Grade F321 Class 3000 MSS SP-97 NPT	
541	1.5	0.75			P31K-00FN2	Outlet ASTM A182 Grade F321 Class 3000 MSS SP-97 NPT	
541	2 - 2.5	0.75			P31K-00GH1	Outlet ASTM A182 Grade F321 Class 3000 MSS SP-97 NPT	
541	3 - 5	0.75			P31K-00GH2	Outlet ASTM A182 Grade F321 Class 3000 MSS SP-97 NPT	
541	6 - 12	0.75			P31K-00GH3	Outlet ASTM A182 Grade F321 Class 3000 MSS SP-97 NPT	
1	6	2	SCH40S	SCH10S	P31K-00F75	Outlet ASTM A182 Grade F321 MSS SP-97 BW	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30K-0002L	Plug ASTM A182 Grade F321 ASME B16.11 NPT Round head	
1	0.75				P30K-0002M	Plug ASTM A182 Grade F321 ASME B16.11 NPT Round head	
1	1				P30K-0002N	Plug ASTM A182 Grade F321 ASME B16.11 NPT Round head	
1	1.5				P30K-0002P	Plug ASTM A182 Grade F321 ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P61K-004P5	Flange SW ASTM A182 Grade F321 Class 300 ASME B16.5 RF	
1	0.75		SCH80S		P61K-004P6	Flange SW ASTM A182 Grade F321 Class 300 ASME B16.5 RF	
1	1		SCH80S		P61K-004T2	Flange SW ASTM A182 Grade F321 Class 300 ASME B16.5 RF	
1	1.5		SCH80S		P61K-004T3	Flange SW ASTM A182 Grade F321 Class 300 ASME B16.5 RF	
1	2		SCH10S		P61K-004T7	Flange WN ASTM A182 Grade F321 Class 300 ASME B16.5 RF	
1	3		SCH10S		P61K-004T8	Flange WN ASTM A182 Grade F321 Class 300 ASME B16.5 RF	
1	4		SCH40S		P61K-004PJ	Flange WN ASTM A182 Grade F321 Class 300 ASME B16.5 RF	
1	6		SCH40S		P61K-004PK	Flange WN ASTM A182 Grade F321 Class 300 ASME B16.5 RF	
781	0.5		SCH80S		P61K-003B0	Flange SW ASTM A182 Grade F321 Class 600 ASME B16.5 RF	
781	0.75		SCH80S		P61K-003B1	Flange SW ASTM A182 Grade F321 Class 600 ASME B16.5 RF	
781	1		SCH80S		P61K-003B2	Flange SW ASTM A182 Grade F321 Class 600 ASME B16.5 RF	
781	1.5		SCH80S		P61K-003B3	Flange SW ASTM A182 Grade F321 Class 600 ASME B16.5 RF	
781	2		SCH10S		P61K-005WM	Flange WN ASTM A182 Grade F321 Class 600 ASME B16.5 RF	
781	3		SCH10S		P61K-0050B	Flange WN ASTM A182 Grade F321 Class 600 ASME B16.5 RF	
781	4		SCH40S		P61K-0050C	Flange WN ASTM A182 Grade F321 Class 600 ASME B16.5 RF	
781	6		SCH40S		P61K-0050D	Flange WN ASTM A182 Grade F321 Class 600 ASME B16.5 RF	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67K-00145	Blind flange ASTM A182 Grade F321 Class 300 ASME B16.5 RF	
1	0.75				P67K-00146	Blind flange ASTM A182 Grade F321 Class 300 ASME B16.5 RF	
1	1				P67K-00147	Blind flange ASTM A182 Grade F321 Class 300 ASME B16.5 RF	

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BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5				P67K-00148	Blind flange ASTM A182 Grade F321 Class 300 ASME B16.5 RF	
1	2				P67K-00163	Blind flange ASTM A182 Grade F321 Class 300 ASME B16.5 RF	
1	3				P67K-00164	Blind flange ASTM A182 Grade F321 Class 300 ASME B16.5 RF	
1	4				P67K-00165	Blind flange ASTM A182 Grade F321 Class 300 ASME B16.5 RF	
1	6				P67K-00166	Blind flange ASTM A182 Grade F321 Class 300 ASME B16.5 RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-00407	Spiral wound gasket SS321 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS321	
1	0.75				P73T-00408	Spiral wound gasket SS321 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS321	
1	1				P73T-00409	Spiral wound gasket SS321 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS321	
1	1.5				P73T-0040A	Spiral wound gasket SS321 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS321	
1	2				P73T-0040G	Spiral wound gasket SS321 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS321	
1	3				P73T-0040H	Spiral wound gasket SS321 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS321	
1	4				P73T-0040J	Spiral wound gasket SS321 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS321	
1	6				P73T-0040K	Spiral wound gasket SS321 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS321	
781	0.5				P73T-003HR	Spiral wound gasket SS321 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS321	
781	0.75				P73T-003HS	Spiral wound gasket SS321 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS321	
781	1				P73T-003HT	Spiral wound gasket SS321 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS321	
781	1.5				P73T-003HU	Spiral wound gasket SS321 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS321	
781	2				P73T-003HY	Spiral wound gasket SS321 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS321	
781	3				P73T-003HZ	Spiral wound gasket SS321 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS321	
781	4				P73T-003J0	Spiral wound gasket SS321 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS321	
781	6				P73T-003J1	Spiral wound gasket SS321 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS321	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-6				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
781	0.5-6				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81K-001KB	Gate valve ASTM A182 Grade F321 Class 800 API 602 SW Trim SS347 BB-BG-OS&Y Handwheel operated Fluid-2	
1	0.75				P81K-001KC	Gate valve ASTM A182 Grade F321 Class 800 API 602 SW Trim SS347 BB-BG-OS&Y Handwheel operated Fluid-2	
1	1				P81K-001KD	Gate valve ASTM A182 Grade F321 Class 800 API 602 SW Trim SS347 BB-BG-OS&Y Handwheel operated Fluid-2	
1	1.5				P81K-001KE	Gate valve ASTM A182 Grade F321 Class 800 API 602 SW Trim SS347 BB-BG-OS&Y Handwheel operated Fluid-2	
1	2				P81L-0033W	Gate valve ASTM A351 Grade CF8C Class 300 API 600 Flange ASME B16.5 RF Trim SS347 BB-BG-OS&Y Handwheel operated Fluid-2	
1	3				P81L-0033X	Gate valve ASTM A351 Grade CF8C Class 300 API 600 Flange ASME B16.5 RF Trim SS347 BB-BG-OS&Y Handwheel operated Fluid-2	
1	4				P81L-0033Y	Gate valve ASTM A351 Grade CF8C Class 300 API 600 Flange ASME B16.5 RF Trim SS347 BB-BG-OS&Y Handwheel operated Fluid-2	
1	6				P81L-0033Z	Gate valve ASTM A351 Grade CF8C Class 300 API 600 Flange ASME B16.5 RF Trim SS347 BB-BG-OS&Y Handwheel operated Fluid-2	
714	0.5				P81K-001LH	Gate valve ASTM A182 Grade F321 Class 800 API 602 SW - NPT Trim SS347 BB-BG-OS&Y Handwheel operated Fluid-2	
714	0.75				P81K-001KF	Gate valve ASTM A182 Grade F321 Class 800 API 602 SW - NPT Trim SS347 BB-BG-OS&Y Handwheel operated Fluid-2	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82K-0012A	Globe valve ASTM A182 Grade F321 Class 800 API 602 SW Trim SS347 BB-BG-OS&Y Handwheel operated Fluid-2	
1	0.75				P82K-0012B	Globe valve ASTM A182 Grade F321 Class 800 API 602 SW Trim SS347 BB-BG-OS&Y Handwheel operated Fluid-2	
1	1				P82K-0012C	Globe valve ASTM A182 Grade F321 Class 800 API 602 SW Trim SS347 BB-BG-OS&Y Handwheel operated Fluid-2	

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GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5				P82K-0012D	Globe valve ASTM A182 Grade F321 Class 800 API 602 SW Trim SS347 BB-BG-OS&Y Handwheel operated Fluid-2	
1	2				P82L-001R1	Globe valve ASTM A351 Grade CF8C Class 300 BS 1873 Flange ASME B16.5 RF Trim SS347 BB-BG-OS&Y Handwheel operated Fluid-2	
1	3				P82L-001R2	Globe valve ASTM A351 Grade CF8C Class 300 BS 1873 Flange ASME B16.5 RF Trim SS347 BB-BG-OS&Y Handwheel operated Fluid-2	
1	4				P82L-001R3	Globe valve ASTM A351 Grade CF8C Class 300 BS 1873 Flange ASME B16.5 RF Trim SS347 BB-BG-OS&Y Handwheel operated Fluid-2	
1	6				P82L-001R4	Globe valve ASTM A351 Grade CF8C Class 300 BS 1873 Flange ASME B16.5 RF Trim SS347 BB-BG-OS&Y Handwheel operated Fluid-2	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83K-000PE	Check valve ASTM A182 Grade F321 Class 800 API 602 SW Trim SS347 Lift-type Bolted cover	
1	0.75				P83K-000PF	Check valve ASTM A182 Grade F321 Class 800 API 602 SW Trim SS347 Lift-type Bolted cover	
1	1				P83K-000PG	Check valve ASTM A182 Grade F321 Class 800 API 602 SW Trim SS347 Lift-type Bolted cover	
1	1.5				P83K-000PH	Check valve ASTM A182 Grade F321 Class 800 API 602 SW Trim SS347 Lift-type Bolted cover	
1	2				P83L-00143	Check valve ASTM A351 Grade CF8C Class 300 BS 1868 Flange ASME B16.5 RF Trim SS347 Swing-type Bolted cover	
1	3				P83L-00144	Check valve ASTM A351 Grade CF8C Class 300 BS 1868 Flange ASME B16.5 RF Trim SS347 Swing-type Bolted cover	
1	4				P83L-00145	Check valve ASTM A351 Grade CF8C Class 300 BS 1868 Flange ASME B16.5 RF Trim SS347 Swing-type Bolted cover	
1	6				P83L-00146	Check valve ASTM A351 Grade CF8C Class 300 BS 1868 Flange ASME B16.5 RF Trim SS347 Swing-type Bolted cover	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71K-0008C	Spectacle blank ASTM A182 Grade F321 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	0.75				P71K-0008D	Spectacle blank ASTM A182 Grade F321 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	1				P71K-0008E	Spectacle blank ASTM A182 Grade F321 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71K-0008F	Spectacle blank ASTM A182 Grade F321 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	2				P71K-0008H	Spectacle blank ASTM A182 Grade F321 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	3				P71K-0008J	Spectacle blank ASTM A182 Grade F321 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	4				P71K-0008K	Spectacle blank ASTM A182 Grade F321 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	6				P71K-0008L	Spectacle blank ASTM A182 Grade F321 Class 300 Standard-drawing Flange ASME B16.5 RF	

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BOLT TABLE (B_B0MP01 , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-003V4		
0.75	4	0.625	75	P80S-003XC		
1	4	0.625	80	P80S-003XD		
1.5	4	0.750	95	P80S-00414		
2	8	0.625	90	P80S-003XF		
3	8	0.750	110	P80S-003XK		
4	8	0.750	115	P80S-003XL		
6	12	0.750	125	P80S-003XN		

BOLT TABLE (B_B0MP01_781 , STUD ASME RF, OPTION CODE 781)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	80	P80S-003V6		
0.75	4	0.625	90	P80S-003XF		
1	4	0.625	95	P80S-003XG		
1.5	4	0.750	110	P80S-003XK		
2	8	0.625	110	P80S-003VC		
3	8	0.750	130	P80S-003XP		
4	8	0.875	150	P80S-0041F		
6	12	1.000	175	P80S-0043P		

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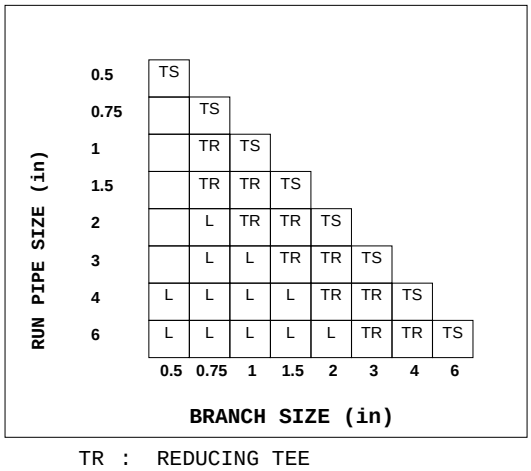
BRANCH TABLE (T_B0MP01)



RUN PIPE SIZE (in) \ BRANCH SIZE (in)	0.5	0.75	1	1.5	2	3	4	6
0.5	TS							
0.75		TS						
1		TR	TS					
1.5		TR	TR	TS				
2		L	TR	TR	TS			
3		L	L	TR	TR	TS		
4	L	L	L	L	TR	TR	TS	
6	L	L	L	L	L	TR	TR	TS

TR : REDUCING TEE
L : OUTLET
TS : STRAIGHT TEE

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Material : FBE Coated CS
Rating : ASME CLASS 300
Flange Face : RF
C.A.(mm) : 0.00
Gasket : Sheet
Service : EFFLUENT
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
999	HOLD ITEMS. ORDER PLACEMENT SHALL NOT BE DONE BEFORE RELEASING HOLD.

DETAIL NOTES :

NO.	DESCRIPTION
999	HOLD ITEMS. ORDER PLACEMENT SHALL NOT BE DONE BEFORE RELEASING HOLD.

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
211	FF (B,F,G)
4602	DISSIMILAR TYPE CHECK VALVE (XDP)

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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2		XS		P01A-008L4	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE FBE lined	999
1	3		STD		P01A-008L5	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE FBE lined	999
1	4		STD		P01A-008L6	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE FBE lined	999
1	6		STD		P01A-008L7	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE FBE lined	999
1	8		SCH20		P01A-008L8	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE FBE lined	999
1	10		SCH30		P01A-008SW	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE FBE lined	999
1	12		STD		P01A-008SX	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE FBE lined	999

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2		XS		P02A-004E1	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW FBE lined Long radius	999
1	3		STD		P02A-004E2	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW FBE lined Long radius	999
1	4		STD		P02A-004E3	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW FBE lined Long radius	999
1	6		STD		P02A-004E4	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW FBE lined Long radius	999
1	8		SCH20		P02A-004E5	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW FBE lined Long radius	999
1	10		SCH30		P02A-004HX	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW FBE lined Long radius	999
1	12		STD		P02A-004HY	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW FBE lined Long radius	999

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2		XS		P03A-004B7	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW FBE lined Long radius	999
1	3		STD		P03A-004B8	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW FBE lined Long radius	999
1	4		STD		P03A-004B9	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW FBE lined Long radius	999
1	6		STD		P03A-004BA	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW FBE lined Long radius	999
1	8		SCH20		P03A-004BB	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW FBE lined Long radius	999
1	10		SCH30		P03A-004FG	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW FBE lined Long radius	999
1	12		STD		P03A-004FH	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW FBE lined Long radius	999

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2		XS		P21A-004W7	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW FBE lined	999
1	3		STD		P21A-004W8	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW FBE lined	999
1	4		STD		P21A-004W9	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW FBE lined	999
1	6		STD		P21A-004WA	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW FBE lined	999
1	8		SCH20		P21A-004WB	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW FBE lined	999
1	10		SCH30		P21A-004ZU	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW FBE lined	999
1	12		STD		P21A-004ZV	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW FBE lined	999

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	STD	XS	P24A-00N8T	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW FBE lined	999
1	4	2	STD	XS	P24A-00N8U	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW FBE lined	999
1	4	3	STD	STD	P24A-00N8V	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW FBE lined	999
1	6	3	STD	STD	P24A-00N8W	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW FBE lined	999
1	6	4	STD	STD	P24A-00N8X	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW FBE lined	999
1	8	4	SCH20	STD	P24A-00N8Y	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW FBE lined	999
1	8	6	SCH20	STD	P24A-00N8Z	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW FBE lined	999
1	10	4	SCH30	STD	P24A-00P1B	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW FBE lined	999
1	10	6	SCH30	STD	P24A-00P1C	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW FBE lined	999
1	10	8	SCH30	SCH20	P24A-00P1D	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW FBE lined	999
1	12	6	STD	STD	P24A-00P1F	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW FBE lined	999
1	12	8	STD	SCH20	P24A-00P1G	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW FBE lined	999
1	12	10	STD	SCH30	P24A-00P1E	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW FBE lined	999

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	STD	XS	P27A-00GZF	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW FBE lined	999
1	4	2	STD	XS	P27A-00GZG	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW FBE lined	999

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CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	4	3	STD	STD	P27A-00GZH	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW FBE lined	999
1	6	3	STD	STD	P27A-00GZJ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW FBE lined	999
1	6	4	STD	STD	P27A-00GZK	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW FBE lined	999
1	8	4	SCH20	STD	P27A-00GZL	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW FBE lined	999
1	8	6	SCH20	STD	P27A-00GZM	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW FBE lined	999
1	10	4	SCH30	STD	P27A-00HK0	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW FBE lined	999
1	10	6	SCH30	STD	P27A-00HK1	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW FBE lined	999
1	10	8	SCH30	SCH20	P27A-00HK2	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW FBE lined	999
1	12	6	STD	STD	P27A-00HK4	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW FBE lined	999
1	12	8	STD	SCH20	P27A-00HK5	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW FBE lined	999
1	12	10	STD	SCH30	P27A-00HK3	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW FBE lined	999

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	STD	XS	P28A-00E6N	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW FBE lined	999
1	4	2	STD	XS	P28A-00E6P	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW FBE lined	999
1	4	3	STD	STD	P28A-00E6R	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW FBE lined	999
1	6	3	STD	STD	P28A-00E6S	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW FBE lined	999
1	6	4	STD	STD	P28A-00E6T	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW FBE lined	999
1	8	4	SCH20	STD	P28A-00E6U	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW FBE lined	999
1	8	6	SCH20	STD	P28A-00E6V	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW FBE lined	999
1	10	4	SCH30	STD	P28A-00EU2	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW FBE lined	999
1	10	6	SCH30	STD	P28A-00EU3	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW FBE lined	999
1	10	8	SCH30	SCH20	P28A-00EU4	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW FBE lined	999
1	12	6	STD	STD	P28A-00EU6	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW FBE lined	999
1	12	8	STD	SCH20	P28A-00EU7	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW FBE lined	999
1	12	10	STD	SCH30	P28A-00EU5	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW FBE lined	999

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2		XS		P29A-003PR	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW FBE lined	999
1	3		STD		P29A-003PU	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW FBE lined	999
1	4		STD		P29A-003PV	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW FBE lined	999
1	6		STD		P29A-003PW	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW FBE lined	999
1	8		SCH20		P29A-003PX	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW FBE lined	999
1	10		SCH30		P29A-003VR	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW FBE lined	999
1	12		STD		P29A-003VS	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW FBE lined	999

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	6	2	STD	XS	P31B-010MX	Outlet ASTM A105 MSS SP-97 BW FBE lined	999
1	8	2	SCH20	XS	P31B-010MY	Outlet ASTM A105 MSS SP-97 BW FBE lined	999
1	10	2	SCH30	XS	P31B-0117W	Outlet ASTM A105 MSS SP-97 BW FBE lined	999
1	12	2	STD	XS	P31B-0117Y	Outlet ASTM A105 MSS SP-97 BW FBE lined	999
1	8	3	SCH20	STD	P31B-010MZ	Outlet ASTM A105 MSS SP-97 BW FBE lined	999
1	10	3	SCH30	STD	P31B-0117X	Outlet ASTM A105 MSS SP-97 BW FBE lined	999
1	12	3	STD	STD	P31B-0117Z	Outlet ASTM A105 MSS SP-97 BW FBE lined	999
1	12	4	STD	STD	P31B-01180	Outlet ASTM A105 MSS SP-97 BW FBE lined	999

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2		XS		P61B-00BN3	Flange WN ASTM A105 Class 300 ASME B16.5 RF FBE lined	999
1	3		STD		P61B-00BN6	Flange WN ASTM A105 Class 300 ASME B16.5 RF FBE lined	999
1	4		STD		P61B-00BN7	Flange WN ASTM A105 Class 300 ASME B16.5 RF FBE lined	999
1	6		STD		P61B-00BN8	Flange WN ASTM A105 Class 300 ASME B16.5 RF FBE lined	999
1	8		SCH20		P61B-00BN9	Flange WN ASTM A105 Class 300 ASME B16.5 RF FBE lined	999
1	10		SCH30		P61B-00CVU	Flange WN ASTM A105 Class 300 ASME B16.5 RF FBE lined	999
1	12		STD		P61B-00CVV	Flange WN ASTM A105 Class 300 ASME B16.5 RF FBE lined	999

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FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
211	2		XS		P61B-00CVY	Flange WN ASTM A105 Class 300 ASME B16.5 FF FBE lined	999
211	3		STD		P61B-00CVZ	Flange WN ASTM A105 Class 300 ASME B16.5 FF FBE lined	999
211	4		STD		P61B-00CW0	Flange WN ASTM A105 Class 300 ASME B16.5 FF FBE lined	999
211	6		STD		P61B-00CW1	Flange WN ASTM A105 Class 300 ASME B16.5 FF FBE lined	999
211	8		SCH20		P61B-00CW2	Flange WN ASTM A105 Class 300 ASME B16.5 FF FBE lined	999
211	10		SCH30		P61B-00CVW	Flange WN ASTM A105 Class 300 ASME B16.5 FF FBE lined	999
211	12		STD		P61B-00CVX	Flange WN ASTM A105 Class 300 ASME B16.5 FF FBE lined	999

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2				P67B-002X1	Blind flange ASTM A105 Class 300 ASME B16.5 RF FBE lined	999
1	3				P67B-002X2	Blind flange ASTM A105 Class 300 ASME B16.5 RF FBE lined	999
1	4				P67B-002X3	Blind flange ASTM A105 Class 300 ASME B16.5 RF FBE lined	999
1	6				P67B-002X4	Blind flange ASTM A105 Class 300 ASME B16.5 RF FBE lined	999
1	8				P67B-002X5	Blind flange ASTM A105 Class 300 ASME B16.5 RF FBE lined	999
1	10				P67B-002WZ	Blind flange ASTM A105 Class 300 ASME B16.5 RF FBE lined	999
1	12				P67B-002X0	Blind flange ASTM A105 Class 300 ASME B16.5 RF FBE lined	999

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2				P74U-000VM	Sheet gasket Synthetic fiber Class 300 ASME B16.21 Flange ASME B16.5 RF 1.5mm-T	999
1	3				P74U-000VN	Sheet gasket Synthetic fiber Class 300 ASME B16.21 Flange ASME B16.5 RF 1.5mm-T	999
1	4				P74U-000VP	Sheet gasket Synthetic fiber Class 300 ASME B16.21 Flange ASME B16.5 RF 1.5mm-T	999
1	6				P74U-000VR	Sheet gasket Synthetic fiber Class 300 ASME B16.21 Flange ASME B16.5 RF 1.5mm-T	999
1	8				P74U-000VS	Sheet gasket Synthetic fiber Class 300 ASME B16.21 Flange ASME B16.5 RF 1.5mm-T	999
1	10				P74U-000VL	Sheet gasket Synthetic fiber Class 300 ASME B16.21 Flange ASME B16.5 RF 1.5mm-T	999
1	12				P74U-000W2	Sheet gasket Synthetic fiber Class 300 ASME B16.21 Flange ASME B16.5 RF 1.5mm-T	999
211	2				P74U-001FX	Sheet gasket Synthetic fiber Class 300 ASME B16.21 Flange ASME B16.5 FF 1.5mm-T	999
211	3				P74U-001FY	Sheet gasket Synthetic fiber Class 300 ASME B16.21 Flange ASME B16.5 FF 1.5mm-T	999
211	4				P74U-001HP	Sheet gasket Synthetic fiber Class 300 ASME B16.21 Flange ASME B16.5 FF 1.5mm-T	999
211	6				P74U-001HR	Sheet gasket Synthetic fiber Class 300 ASME B16.21 Flange ASME B16.5 FF 1.5mm-T	999
211	8				P74U-001HS	Sheet gasket Synthetic fiber Class 300 ASME B16.21 Flange ASME B16.5 FF 1.5mm-T	999
211	10				P74U-001HN	Sheet gasket Synthetic fiber Class 300 ASME B16.21 Flange ASME B16.5 FF 1.5mm-T	999
211	12				P74U-001JD	Sheet gasket Synthetic fiber Class 300 ASME B16.21 Flange ASME B16.5 FF 1.5mm-T	999

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2-10				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	999
1	12				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	999
211	2-10				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	999
211	12				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	999

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2				P81D-0003M	Gate valve ASTM A395 Class 300 Manufacturer-standard Flange ASME B16.5 RF FBE lined Trim Aluminum-bronze BB-BG-OS&Y Handwheel operated	999
1	3				P81D-0003N	Gate valve ASTM A395 Class 300 Manufacturer-standard Flange ASME B16.5 RF FBE lined Trim Aluminum-bronze BB-BG-OS&Y Handwheel operated	999
1	4				P81D-0003P	Gate valve ASTM A395 Class 300 Manufacturer-standard Flange ASME B16.5 RF FBE lined Trim Aluminum-bronze BB-BG-OS&Y Handwheel operated	999
1	6				P81D-0003R	Gate valve ASTM A395 Class 300 Manufacturer-standard Flange ASME B16.5 RF FBE lined Trim Aluminum-bronze BB-BG-OS&Y Handwheel operated	999
1	8				P81D-0003S	Gate valve ASTM A395 Class 300 Manufacturer-standard Flange ASME B16.5 RF FBE lined Trim Aluminum-bronze BB-BG-OS&Y Handwheel operated	999
1	10				P81D-0003T	Gate valve ASTM A395 Class 300 Manufacturer-standard Flange ASME B16.5 RF FBE lined Trim Aluminum-bronze BB-BG-OS&Y Gear operated	999
1	12				P81D-0003U	Gate valve ASTM A395 Class 300 Manufacturer-standard Flange ASME B16.5 RF FBE lined Trim Aluminum-bronze BB-BG-OS&Y Gear operated	999

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GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2				P82D-0000T	Globe valve ASTM A395 Class 300 Manufacturer-standard Flange ASME B16.5 RF FBE lined Trim Aluminum-bronze BB-BG-OS&Y Handwheel operated	999
1	3				P82D-0000U	Globe valve ASTM A395 Class 300 Manufacturer-standard Flange ASME B16.5 RF FBE lined Trim Aluminum-bronze BB-BG-OS&Y Handwheel operated	999
1	4				P82D-0000V	Globe valve ASTM A395 Class 300 Manufacturer-standard Flange ASME B16.5 RF FBE lined Trim Aluminum-bronze BB-BG-OS&Y Handwheel operated	999
1	6				P82D-0000W	Globe valve ASTM A395 Class 300 Manufacturer-standard Flange ASME B16.5 RF FBE lined Trim Aluminum-bronze BB-BG-OS&Y Handwheel operated	999
1	8				P82D-0000X	Globe valve ASTM A395 Class 300 Manufacturer-standard Flange ASME B16.5 RF FBE lined Trim Aluminum-bronze BB-BG-OS&Y Handwheel operated	999

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2				P83D-0001W	Check valve ASTM A395 Class 300 Manufacturer-standard Flange ASME B16.5 RF FBE lined Trim Aluminum-bronze Swing-type Bolted cover	999
1	3				P83D-0001X	Check valve ASTM A395 Class 300 Manufacturer-standard Flange ASME B16.5 RF FBE lined Trim Aluminum-bronze Swing-type Bolted cover	999
1	4				P83D-0001Y	Check valve ASTM A395 Class 300 Manufacturer-standard Flange ASME B16.5 RF FBE lined Trim Aluminum-bronze Swing-type Bolted cover	999
1	6				P83D-0001Z	Check valve ASTM A395 Class 300 Manufacturer-standard Flange ASME B16.5 RF FBE lined Trim Aluminum-bronze Swing-type Bolted cover	999
1	8				P83D-00020	Check valve ASTM A395 Class 300 Manufacturer-standard Flange ASME B16.5 RF FBE lined Trim Aluminum-bronze Swing-type Bolted cover	999
1	10				P83D-0001U	Check valve ASTM A395 Class 300 Manufacturer-standard Flange ASME B16.5 RF FBE lined Trim Aluminum-bronze Swing-type Bolted cover	999
1	12				P83D-0001V	Check valve ASTM A395 Class 300 Manufacturer-standard Flange ASME B16.5 RF FBE lined Trim Aluminum-bronze Swing-type Bolted cover	999

DP CHECK VALVE (XDP)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
4602	3				P88D-0000X	Dual plate check valve ASTM A395 Class 300 Manufacturer-standard Wafer-type ASME B16.5 RF FBE lined Trim Aluminum-bronze Internal wetted parts Aluminum-bronze Retainerless-type	999
4602	4				P88D-0000Y	Dual plate check valve ASTM A395 Class 300 Manufacturer-standard Wafer-type ASME B16.5 RF FBE lined Trim Aluminum-bronze Internal wetted parts Aluminum-bronze Retainerless-type	999

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2				P71B-000GC	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF FBE lined	999
1	3				P71B-000GD	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF FBE lined	999
1	4				P71B-000GE	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF FBE lined	999
1	6				P71B-000GF	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF FBE lined	999
1	8				P71B-000GG	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF FBE lined	999
1	10				P71B-000GA	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF FBE lined	999
1	12				P71B-000GB	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF FBE lined	999

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BOLT TABLE (B_B0QP , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
2	8	0.625	90	P80S-003XF		
3	8	0.750	110	P80S-003XK		
4	8	0.750	115	P80S-003XL		
6	12	0.750	125	P80S-003XN		
8	12	0.875	140	P80S-0041D		
10	16	1.000	160	P80S-0043K		
12	16	1.125	175	P80S-0046S		

BOLT TABLE (B_B0QP_211 , MACHINE ASME FF, OPTION CODE 211)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
2	8	0.625	85	P80S-003XE		
3	8	0.750	105	P80S-003XJ		
4	8	0.750	110	P80S-003XK		
6	12	0.750	120	P80S-003XM		
8	12	0.875	135	P80S-0041C		
10	16	1.000	155	P80S-0043J		
12	16	1.125	170	P80S-0046R		

BOLT TABLE (B_B0QP_781 , STUD ASME RF, OPTION CODE 781)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
2	8	0.625	110			
3	8	0.750	130			
4	8	0.875	150			
6	12	1.000	175			
8	12	1.125	195			
10	16	1.250	250			
12	20	1.250	255			

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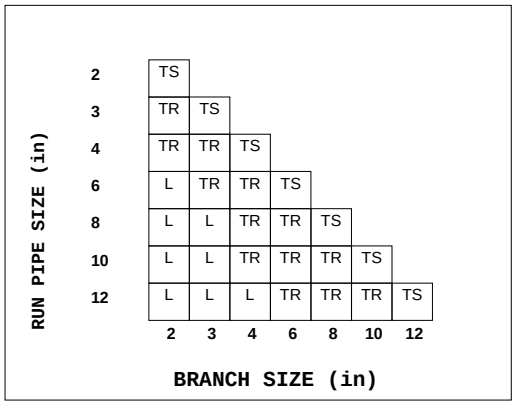
BRANCH TABLE (T_B0QP)



TR : REDUCING TEE
L : OUTLET
TS : STRAIGHT TEE

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PIPING CLASS

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Material : 70%CU-30%NI
Rating : ASME CLASS 300
Flange Face : RF
C.A.(mm) : 0.00
Gasket : Spiral Wound
Service : CAUSTIC SERVICE
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
5	BOLTING CONFIRMING TO B7M / 2HM SHALL BE USED UNDER CONDITIONS (A) DIRECT EXPOSURE TO SOUR ENVIRONMENTS (B) WHEN THE BOLTING WILL BE BURIED OR INSULATED

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
541	NPT(F) (CA,F,L)
781	CLASS 600 (B,F,G)
4608	VALVE WITH NIPPLES (V)

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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P01M-000CJ	Pipe ASTM B165 UNS N04400 Seamless ASME B36.10M/B36.19M PE	
1	0.75		SCH80S		P01M-000CK	Pipe ASTM B165 UNS N04400 Seamless ASME B36.10M/B36.19M PE	
1	1		SCH80S		P01M-000CL	Pipe ASTM B165 UNS N04400 Seamless ASME B36.10M/B36.19M PE	
1	1.5		SCH80S		P01M-000CM	Pipe ASTM B165 UNS N04400 Seamless ASME B36.10M/B36.19M PE	
1	2		SCH10S		P01M-000GB	Pipe ASTM B165 UNS N04400 Seamless ASME B36.10M/B36.19M BE	
1	3		SCH10S		P01M-000CP	Pipe ASTM B165 UNS N04400 Seamless ASME B36.10M/B36.19M BE	
1	4		SCH10S		P01M-000CR	Pipe ASTM B165 UNS N04400 Seamless ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P02M-000ET	90 degree elbow ASTM B366 Grade WPNC Class S Seamless ASME B16.9 BW Long radius	
1	0.75		SCH80S		P02M-000EU	90 degree elbow ASTM B366 Grade WPNC Class S Seamless ASME B16.9 BW Long radius	
1	1		SCH80S		P02M-000EV	90 degree elbow ASTM B366 Grade WPNC Class S Seamless ASME B16.9 BW Long radius	
1	1.5		SCH80S		P02M-000EW	90 degree elbow ASTM B366 Grade WPNC Class S Seamless ASME B16.9 BW Long radius	
1	2		SCH10S		P02M-000EX	90 degree elbow ASTM B366 Grade WPNC Class S Seamless ASME B16.9 BW Long radius	
1	3		SCH10S		P02M-000BL	90 degree elbow ASTM B366 Grade WPNC Class S Seamless ASME B16.9 BW Long radius	
1	4		SCH10S		P02M-000BM	90 degree elbow ASTM B366 Grade WPNC Class S Seamless ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P03M-001FP	45 degree elbow ASTM B366 Grade WPNC Class S Seamless ASME B16.9 BW Long radius	
1	0.75		SCH80S		P03M-001FR	45 degree elbow ASTM B366 Grade WPNC Class S Seamless ASME B16.9 BW Long radius	
1	1		SCH80S		P03M-001FS	45 degree elbow ASTM B366 Grade WPNC Class S Seamless ASME B16.9 BW Long radius	
1	1.5		SCH80S		P03M-001FT	45 degree elbow ASTM B366 Grade WPNC Class S Seamless ASME B16.9 BW Long radius	
1	2		SCH10S		P03M-001FU	45 degree elbow ASTM B366 Grade WPNC Class S Seamless ASME B16.9 BW Long radius	
1	3		SCH10S		P03M-001CM	45 degree elbow ASTM B366 Grade WPNC Class S Seamless ASME B16.9 BW Long radius	
1	4		SCH10S		P03M-001CN	45 degree elbow ASTM B366 Grade WPNC Class S Seamless ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P21M-000D6	Straight tee ASTM B366 Grade WPNC Class S Seamless ASME B16.9 BW	
1	0.75		SCH80S		P21M-000D7	Straight tee ASTM B366 Grade WPNC Class S Seamless ASME B16.9 BW	
1	1		SCH80S		P21M-000D8	Straight tee ASTM B366 Grade WPNC Class S Seamless ASME B16.9 BW	
1	1.5		SCH80S		P21M-000D9	Straight tee ASTM B366 Grade WPNC Class S Seamless ASME B16.9 BW	
1	2		SCH10S		P21M-000DA	Straight tee ASTM B366 Grade WPNC Class S Seamless ASME B16.9 BW	
1	3		SCH10S		P21M-000A2	Straight tee ASTM B366 Grade WPNC Class S Seamless ASME B16.9 BW	
1	4		SCH10S		P21M-000A3	Straight tee ASTM B366 Grade WPNC Class S Seamless ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75	SCH80S	SCH80S	P24M-000ZY	Reducing tee ASTM B366 Grade WPNC Class S Seamless ASME B16.9 BW	
1	1.5	0.75	SCH80S	SCH80S	P24M-000ZZ	Reducing tee ASTM B366 Grade WPNC Class S Seamless ASME B16.9 BW	
1	1.5	1	SCH80S	SCH80S	P24M-00100	Reducing tee ASTM B366 Grade WPNC Class S Seamless ASME B16.9 BW	
1	2	1	SCH10S	SCH80S	P24M-00101	Reducing tee ASTM B366 Grade WPNC Class S Seamless ASME B16.9 BW	
1	2	1.5	SCH10S	SCH80S	P24M-00102	Reducing tee ASTM B366 Grade WPNC Class S Seamless ASME B16.9 BW	
1	3	1.5	SCH10S	SCH80S	P24M-000V0	Reducing tee ASTM B366 Grade WPNC Class S Seamless ASME B16.9 BW	
1	3	2	SCH10S	SCH10S	P24M-00103	Reducing tee ASTM B366 Grade WPNC Class S Seamless ASME B16.9 BW	
1	4	2	SCH10S	SCH10S	P24M-00104	Reducing tee ASTM B366 Grade WPNC Class S Seamless ASME B16.9 BW	
1	4	3	SCH10S	SCH10S	P24M-000TV	Reducing tee ASTM B366 Grade WPNC Class S Seamless ASME B16.9 BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH80S	SCH80S	P27M-000ZG	Concentric reducer ASTM B366 Grade WPNC Class S Seamless ASME B16.9 BW	
1	1	0.5	SCH80S	SCH80S	P27M-000ZH	Concentric reducer ASTM B366 Grade WPNC Class S Seamless ASME B16.9 BW	
1	1	0.75	SCH80S	SCH80S	P27M-000ZJ	Concentric reducer ASTM B366 Grade WPNC Class S Seamless ASME B16.9 BW	
1	1.5	0.5	SCH80S	SCH80S	P27M-000ZK	Concentric reducer ASTM B366 Grade WPNC Class S Seamless ASME B16.9 BW	
1	1.5	0.75	SCH80S	SCH80S	P27M-000ZL	Concentric reducer ASTM B366 Grade WPNC Class S Seamless ASME B16.9 BW	
1	1.5	1	SCH80S	SCH80S	P27M-000ZM	Concentric reducer ASTM B366 Grade WPNC Class S Seamless ASME B16.9 BW	

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CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2	0.75	SCH10S	SCH80S	P27M-000ZN	Concentric reducer ASTM B366 Grade WPNC Class S Seamless ASME B16.9 BW	
1	2	1	SCH10S	SCH80S	P27M-000ZP	Concentric reducer ASTM B366 Grade WPNC Class S Seamless ASME B16.9 BW	
1	2	1.5	SCH10S	SCH80S	P27M-000ZR	Concentric reducer ASTM B366 Grade WPNC Class S Seamless ASME B16.9 BW	
1	3	1.5	SCH10S	SCH80S	P27M-000ZS	Concentric reducer ASTM B366 Grade WPNC Class S Seamless ASME B16.9 BW	
1	3	2	SCH10S	SCH10S	P27M-000ZT	Concentric reducer ASTM B366 Grade WPNC Class S Seamless ASME B16.9 BW	
1	4	1.5	SCH10S	SCH80S	P27M-000ZU	Concentric reducer ASTM B366 Grade WPNC Class S Seamless ASME B16.9 BW	
1	4	2	SCH10S	SCH10S	P27M-000ZV	Concentric reducer ASTM B366 Grade WPNC Class S Seamless ASME B16.9 BW	
1	4	3	SCH10S	SCH10S	P27M-000SZ	Concentric reducer ASTM B366 Grade WPNC Class S Seamless ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH80S	SCH80S	P28M-0011G	Eccentric reducer ASTM B366 Grade WPNC Class S Seamless ASME B16.9 BW	
1	1	0.5	SCH80S	SCH80S	P28M-0011H	Eccentric reducer ASTM B366 Grade WPNC Class S Seamless ASME B16.9 BW	
1	1	0.75	SCH80S	SCH80S	P28M-0011J	Eccentric reducer ASTM B366 Grade WPNC Class S Seamless ASME B16.9 BW	
1	1.5	0.5	SCH80S	SCH80S	P28M-0011K	Eccentric reducer ASTM B366 Grade WPNC Class S Seamless ASME B16.9 BW	
1	1.5	0.75	SCH80S	SCH80S	P28M-0011L	Eccentric reducer ASTM B366 Grade WPNC Class S Seamless ASME B16.9 BW	
1	1.5	1	SCH80S	SCH80S	P28M-0011M	Eccentric reducer ASTM B366 Grade WPNC Class S Seamless ASME B16.9 BW	
1	2	0.75	SCH10S	SCH80S	P28M-0011N	Eccentric reducer ASTM B366 Grade WPNC Class S Seamless ASME B16.9 BW	
1	2	1	SCH10S	SCH80S	P28M-0011P	Eccentric reducer ASTM B366 Grade WPNC Class S Seamless ASME B16.9 BW	
1	2	1.5	SCH10S	SCH80S	P28M-0011R	Eccentric reducer ASTM B366 Grade WPNC Class S Seamless ASME B16.9 BW	
1	3	1.5	SCH10S	SCH80S	P28M-0011S	Eccentric reducer ASTM B366 Grade WPNC Class S Seamless ASME B16.9 BW	
1	3	2	SCH10S	SCH10S	P28M-0011T	Eccentric reducer ASTM B366 Grade WPNC Class S Seamless ASME B16.9 BW	
1	4	1.5	SCH10S	SCH80S	P28M-0011U	Eccentric reducer ASTM B366 Grade WPNC Class S Seamless ASME B16.9 BW	
1	4	2	SCH10S	SCH10S	P28M-0011V	Eccentric reducer ASTM B366 Grade WPNC Class S Seamless ASME B16.9 BW	
1	4	3	SCH10S	SCH10S	P28M-000U0	Eccentric reducer ASTM B366 Grade WPNC Class S Seamless ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P29M-000AR	Cap ASTM B366 Grade WPNC Class S Seamless ASME B16.9 BW	
1	0.75		SCH80S		P29M-000AS	Cap ASTM B366 Grade WPNC Class S Seamless ASME B16.9 BW	
1	1		SCH80S		P29M-000AT	Cap ASTM B366 Grade WPNC Class S Seamless ASME B16.9 BW	
1	1.5		SCH80S		P29M-000AU	Cap ASTM B366 Grade WPNC Class S Seamless ASME B16.9 BW	
1	2		SCH10S		P29M-000AV	Cap ASTM B366 Grade WPNC Class S Seamless ASME B16.9 BW	
1	3		SCH10S		P29M-0008A	Cap ASTM B366 Grade WPNC Class S Seamless ASME B16.9 BW	
1	4		SCH10S		P29M-0008B	Cap ASTM B366 Grade WPNC Class S Seamless ASME B16.9 BW	
541	0.75				P29P-00017	Cap ASTM B564 UNS N04400 Class 3000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P41M-000AR	Straight nipple ASTM B165 UNS N04400 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		SCH80S		P41M-000AS	Straight nipple ASTM B165 UNS N04400 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		SCH80S		P41M-000AT	Straight nipple ASTM B165 UNS N04400 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		SCH80S		P41M-000AU	Straight nipple ASTM B165 UNS N04400 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
541	1	0.75			P31P-00273	Outlet ASTM B564 UNS N04400 Class 3000 MSS SP-97 NPT	
541	1.5	0.75			P31P-00272	Outlet ASTM B564 UNS N04400 Class 3000 MSS SP-97 NPT	
541	2 - 2.5	0.75			P31P-0028H	Outlet ASTM B564 UNS N04400 Class 3000 MSS SP-97 NPT	
541	3 - 5	0.75			P31P-0028J	Outlet ASTM B564 UNS N04400 Class 3000 MSS SP-97 NPT	
1	2	0.75	SCH10S	SCH80S	P31P-0026V	Outlet ASTM B564 UNS N04400 MSS SP-97 BW	
1	3	0.75	SCH10S	SCH80S	P31P-0026W	Outlet ASTM B564 UNS N04400 MSS SP-97 BW	
1	4	0.75	SCH10S	SCH80S	P31P-0026Y	Outlet ASTM B564 UNS N04400 MSS SP-97 BW	
1	3	1	SCH10S	SCH80S	P31P-0026X	Outlet ASTM B564 UNS N04400 MSS SP-97 BW	
1	4	1	SCH10S	SCH80S	P31P-0026Z	Outlet ASTM B564 UNS N04400 MSS SP-97 BW	
1	4	1.5	SCH10S	SCH80S	P31P-00270	Outlet ASTM B564 UNS N04400 MSS SP-97 BW	

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PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30P-0000Y	Plug ASTM B564 UNS N04400 ASME B16.11 NPT Round head	
1	0.75				P30P-0000Z	Plug ASTM B564 UNS N04400 ASME B16.11 NPT Round head	
1	1				P30P-00010	Plug ASTM B564 UNS N04400 ASME B16.11 NPT Round head	
1	1.5				P30P-00011	Plug ASTM B564 UNS N04400 ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P61P-0011D	Flange WN ASTM B564 UNS N04400 Class 300 ASME B16.5 RF	
1	0.75		SCH80S		P61P-0011E	Flange WN ASTM B564 UNS N04400 Class 300 ASME B16.5 RF	
1	1		SCH80S		P61P-0011F	Flange WN ASTM B564 UNS N04400 Class 300 ASME B16.5 RF	
1	1.5		SCH80S		P61P-0011G	Flange WN ASTM B564 UNS N04400 Class 300 ASME B16.5 RF	
1	2		SCH10S		P61P-0011H	Flange WN ASTM B564 UNS N04400 Class 300 ASME B16.5 RF	
1	3		SCH10S		P61P-0011J	Flange WN ASTM B564 UNS N04400 Class 300 ASME B16.5 RF	
1	4		SCH10S		P61P-0011K	Flange WN ASTM B564 UNS N04400 Class 300 ASME B16.5 RF	
541	0.5				P61P-0012S	Flange NPT ASTM B564 UNS N04400 Class 300 ASME B16.5 RF	
541	0.75				P61P-0011L	Flange NPT ASTM B564 UNS N04400 Class 300 ASME B16.5 RF	
781	0.5		SCH80S		P61P-0011M	Flange WN ASTM B564 UNS N04400 Class 600 ASME B16.5 RF	
781	0.75		SCH80S		P61P-0011N	Flange WN ASTM B564 UNS N04400 Class 600 ASME B16.5 RF	
781	1		SCH80S		P61P-0011P	Flange WN ASTM B564 UNS N04400 Class 600 ASME B16.5 RF	
781	1.5		SCH80S		P61P-0011R	Flange WN ASTM B564 UNS N04400 Class 600 ASME B16.5 RF	
781	2		SCH10S		P61P-0011S	Flange WN ASTM B564 UNS N04400 Class 600 ASME B16.5 RF	
781	3		SCH10S		P61P-0011T	Flange WN ASTM B564 UNS N04400 Class 600 ASME B16.5 RF	
781	4		SCH10S		P61P-0011U	Flange WN ASTM B564 UNS N04400 Class 600 ASME B16.5 RF	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67P-000BE	Blind flange ASTM B564 UNS N04400 Class 300 ASME B16.5 RF	
1	0.75				P67P-000BF	Blind flange ASTM B564 UNS N04400 Class 300 ASME B16.5 RF	
1	1				P67P-000A6	Blind flange ASTM B564 UNS N04400 Class 300 ASME B16.5 RF	
1	1.5				P67P-000A9	Blind flange ASTM B564 UNS N04400 Class 300 ASME B16.5 RF	
1	2				P67P-0008U	Blind flange ASTM B564 UNS N04400 Class 300 ASME B16.5 RF	
1	3				P67P-0008V	Blind flange ASTM B564 UNS N04400 Class 300 ASME B16.5 RF	
1	4				P67P-0008W	Blind flange ASTM B564 UNS N04400 Class 300 ASME B16.5 RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-00361	Spiral wound gasket UNS N04400 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring UNS N04400	
1	0.75				P73T-00362	Spiral wound gasket UNS N04400 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring UNS N04400	
1	1				P73T-0035N	Spiral wound gasket UNS N04400 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring UNS N04400	
1	1.5				P73T-0035P	Spiral wound gasket UNS N04400 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring UNS N04400	
1	2				P73T-0035R	Spiral wound gasket UNS N04400 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring UNS N04400	
1	3				P73T-0035S	Spiral wound gasket UNS N04400 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring UNS N04400	
1	4				P73T-00364	Spiral wound gasket UNS N04400 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring UNS N04400	
781	0.5				P73T-0041K	Spiral wound gasket UNS N04400 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring UNS N04400	
781	0.75				P73T-0041L	Spiral wound gasket UNS N04400 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring UNS N04400	
781	1				P73T-0041M	Spiral wound gasket UNS N04400 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring UNS N04400	
781	1.5				P73T-0041N	Spiral wound gasket UNS N04400 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring UNS N04400	
781	2				P73T-0041P	Spiral wound gasket UNS N04400 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring UNS N04400	
781	3				P73T-0041R	Spiral wound gasket UNS N04400 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring UNS N04400	
781	4				P73T-0041S	Spiral wound gasket UNS N04400 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring UNS N04400	

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BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-4				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
781	0.5-4				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81P-00046	Gate valve ASTM B564 UNS N04400 Class 300 API 602 Flange ASME B16.5 RF Trim UNS N04400 BB-BG-OS&Y Handwheel operated Caustic service	
1	0.75				P81P-00047	Gate valve ASTM B564 UNS N04400 Class 300 API 602 Flange ASME B16.5 RF Trim UNS N04400 BB-BG-OS&Y Handwheel operated Caustic service	
1	1				P81P-00048	Gate valve ASTM B564 UNS N04400 Class 300 API 602 Flange ASME B16.5 RF Trim UNS N04400 BB-BG-OS&Y Handwheel operated Caustic service	
1	1.5				P81P-00049	Gate valve ASTM B564 UNS N04400 Class 300 API 602 Flange ASME B16.5 RF Trim UNS N04400 BB-BG-OS&Y Handwheel operated Caustic service	
4608	0.75				P81P-0004U	Gate valve ASTM B564 UNS N04400 Class 300 API 602 BW both sides w/ nipples BE - NPT ASTM B165-N04400 Sch80S-nipple Trim UNS N04400 BB-BG-OS&Y Handwheel operated Caustic service	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83P-00041	Check valve ASTM B564 UNS N04400 Class 300 API 602 Flange ASME B16.5 RF Trim UNS N04400 Lift-type Bolted cover Caustic service	
1	0.75				P83P-00042	Check valve ASTM B564 UNS N04400 Class 300 API 602 Flange ASME B16.5 RF Trim UNS N04400 Lift-type Bolted cover Caustic service	
1	1				P83P-00043	Check valve ASTM B564 UNS N04400 Class 300 API 602 Flange ASME B16.5 RF Trim UNS N04400 Lift-type Bolted cover Caustic service	
1	1.5				P83P-00044	Check valve ASTM B564 UNS N04400 Class 300 API 602 Flange ASME B16.5 RF Trim UNS N04400 Lift-type Bolted cover Caustic service	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71P-0001W	Spectacle blank ASTM B564 UNS N04400 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	0.75				P71P-0001X	Spectacle blank ASTM B564 UNS N04400 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	1				P71P-0001Y	Spectacle blank ASTM B564 UNS N04400 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71P-0001Z	Spectacle blank ASTM B564 UNS N04400 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	2				P71P-0001B	Spectacle blank ASTM B564 UNS N04400 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	3				P71P-0001C	Spectacle blank ASTM B564 UNS N04400 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	4				P71P-0001D	Spectacle blank ASTM B564 UNS N04400 Class 300 Standard-drawing Flange ASME B16.5 RF	

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BOLT TABLE (B_B0YN , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-003V4		
0.75	4	0.625	75	P80S-003XC		
1	4	0.625	80	P80S-003XD		
1.5	4	0.750	95	P80S-00414		
2	8	0.625	90	P80S-003XF		
3	8	0.750	110	P80S-003XK		
4	8	0.750	115	P80S-003XL		

BOLT TABLE (B_B0YN_781 , STUD ASME RF, OPTION CODE 781)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	80	P80S-003V6		
0.75	4	0.625	90	P80S-003XF		
1	4	0.625	95	P80S-003XG		
1.5	4	0.750	110	P80S-003XK		
2	8	0.625	110	P80S-003VC		
3	8	0.750	130	P80S-003XP		
4	8	0.875	150	P80S-0041F		

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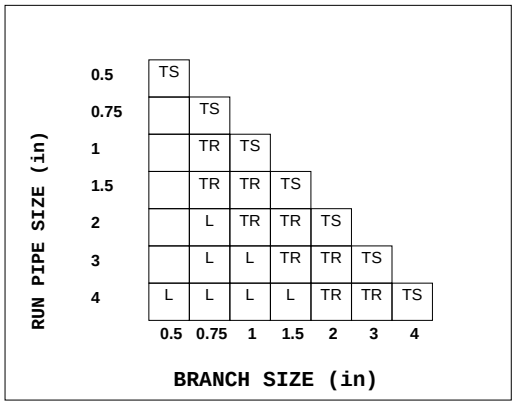
BRANCH TABLE (T_B0YN)



TR : REDUCING TEE
TS : STRAIGHT TEE
L : OUTLET

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PIPING CLASS

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Material : SS304L
Rating : ASME CLASS 300
Flange Face : RF
C.A.(mm) : 0.00
Gasket : Spiral Wound
Service : PROPYLENE, LIQUID STABILIZER, MINERAL OIL, SEAL OIL
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
24	FULL PORT (Q)
541	NPT(F) (CA,L)
714	SW - NPT(F) (V)
781	CLASS 600 (B,F,G)

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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P01J-000UC	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE	
1	0.75		SCH80S		P01J-000UD	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE	
1	1		SCH80S		P01J-000UE	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE	
1	1.5		SCH80S		P01J-000UF	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE	
1	2		SCH10S		P01J-000RD	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P02K-0001K	90 degree elbow ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	0.75				P02K-0001L	90 degree elbow ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	1				P02K-0001M	90 degree elbow ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	1.5				P02K-0001N	90 degree elbow ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	2		SCH10S		P02J-000J0	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P03K-0001G	45 degree elbow ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	0.75				P03K-0001H	45 degree elbow ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	1				P03K-0001J	45 degree elbow ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	1.5				P03K-0001K	45 degree elbow ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	2		SCH10S		P03J-000HS	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P21K-0001G	Straight tee ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	0.75				P21K-0001H	Straight tee ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	1				P21K-0001J	Straight tee ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	1.5				P21K-0001K	Straight tee ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	2		SCH10S		P21J-000HM	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75			P24K-0001X	Reducing tee ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	1.5	0.75			P24K-0001Z	Reducing tee ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	1.5	1			P24K-00020	Reducing tee ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	2	1	SCH10S	SCH80S	P24J-0065A	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	2	1.5	SCH10S	SCH80S	P24J-0065B	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P29K-0001V	Cap ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	0.75				P29K-0001W	Cap ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	1				P29K-0001X	Cap ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	1.5				P29K-0001Y	Cap ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	2		SCH10S		P29J-000G1	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
541	0.75				P29K-00020	Cap ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P41J-001FS	Straight nipple ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		SCH80S		P41J-001FT	Straight nipple ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		SCH80S		P41J-001FU	Straight nipple ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		SCH80S		P41J-001FV	Straight nipple ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

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CON SWAGED NIPPLE (SNC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH80S	SCH80S	P42J-00081	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	SCH80S	SCH80S	P42J-00082	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	SCH80S	SCH80S	P42J-00083	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	SCH80S	SCH80S	P42J-00084	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	SCH80S	SCH80S	P42J-00085	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	SCH80S	SCH80S	P42J-00086	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	SCH10S	SCH80S	P42J-000F9	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	SCH10S	SCH80S	P42J-000F6	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	SCH10S	SCH80S	P42J-000F7	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	SCH10S	SCH80S	P42J-000F8	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	

ECC SWAGED NIPPLE (SNE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH80S	SCH80S	P43J-0008D	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	SCH80S	SCH80S	P43J-0008E	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	SCH80S	SCH80S	P43J-0008F	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	SCH80S	SCH80S	P43J-0008G	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	SCH80S	SCH80S	P43J-0008H	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	SCH80S	SCH80S	P43J-0008J	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	SCH10S	SCH80S	P43J-000CT	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	SCH10S	SCH80S	P43J-000CU	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	SCH10S	SCH80S	P43J-000CV	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	SCH10S	SCH80S	P43J-000CW	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	

COUPLING (CPS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P47K-00035	Coupling ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW - SW	
1	0.75				P47K-00036	Coupling ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW - SW	
1	1				P47K-00037	Coupling ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW - SW	
1	1.5				P47K-00038	Coupling ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW - SW	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2 - 2.5	0.75			P31K-00GFG	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 SW	
541	1	0.75			P31K-00911	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 NPT	
541	1.5	0.75			P31K-00916	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 NPT	
541	2 - 2.5	0.75			P31K-00GFJ	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 NPT	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30K-0001G	Plug ASTM A182 Grade F304/F304L dual grade ASME B16.11 NPT Round head	
1	0.75				P30K-0001H	Plug ASTM A182 Grade F304/F304L dual grade ASME B16.11 NPT Round head	
1	1				P30K-0001J	Plug ASTM A182 Grade F304/F304L dual grade ASME B16.11 NPT Round head	
1	1.5				P30K-0001K	Plug ASTM A182 Grade F304/F304L dual grade ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P61K-003A9	Flange SW ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
1	0.75		SCH80S		P61K-003AA	Flange SW ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
1	1		SCH80S		P61K-003AB	Flange SW ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
1	1.5		SCH80S		P61K-003AC	Flange SW ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	

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FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2		SCH10S		P61K-0023W	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
781	0.5		SCH80S		P61K-003AT	Flange SW ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 RF	
781	0.75		SCH80S		P61K-003AU	Flange SW ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 RF	
781	1		SCH80S		P61K-003AV	Flange SW ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 RF	
781	1.5		SCH80S		P61K-003AW	Flange SW ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 RF	
781	2		SCH10S		P61K-00290	Flange WN ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 RF	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67K-000KH	Blind flange ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
1	0.75				P67K-000KJ	Blind flange ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
1	1				P67K-000KK	Blind flange ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
1	1.5				P67K-000KL	Blind flange ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
1	2				P67K-000KP	Blind flange ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-0033S	Spiral wound gasket SS316 winding / Non-asbestos filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-9	
1	0.75				P73T-0033T	Spiral wound gasket SS316 winding / Non-asbestos filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-9	
1	1				P73T-0033U	Spiral wound gasket SS316 winding / Non-asbestos filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-9	
1	1.5				P73T-0033V	Spiral wound gasket SS316 winding / Non-asbestos filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-9	
1	2				P73T-0033W	Spiral wound gasket SS316 winding / Non-asbestos filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-9	
781	0.5				P73T-0034R	Spiral wound gasket SS316 winding / Non-asbestos filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-9	
781	0.75				P73T-0034S	Spiral wound gasket SS316 winding / Non-asbestos filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-9	
781	1				P73T-0034T	Spiral wound gasket SS316 winding / Non-asbestos filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-9	
781	1.5				P73T-0034U	Spiral wound gasket SS316 winding / Non-asbestos filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-9	
781	2				P73T-0034V	Spiral wound gasket SS316 winding / Non-asbestos filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-9	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-2				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
781	0.5-2				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81K-00108	Gate valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	0.75				P81K-00109	Gate valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	1				P81K-0010A	Gate valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	1.5				P81K-0010B	Gate valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	2				P81L-0022J	Gate valve ASTM A351 Grade CF8 Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
714	0.5				P81K-001LC	Gate valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW - NPT Trim number 12 BB-BG-OS&Y Handwheel operated	
714	0.75				P81K-001FD	Gate valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW - NPT Trim number 12 BB-BG-OS&Y Handwheel operated	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82K-000NR	Globe valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	0.75				P82K-000NS	Globe valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	1				P82K-000NT	Globe valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	1.5				P82K-000NU	Globe valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	2				P82L-0013X	Globe valve ASTM A351 Grade CF8 Class 300 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	

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CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83K-000LM	Check valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 Lift-type Bolted cover	
1	0.75				P83K-000LN	Check valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 Lift-type Bolted cover	
1	1				P83K-000LP	Check valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 Lift-type Bolted cover	
1	1.5				P83K-000LR	Check valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 Lift-type Bolted cover	
1	2				P83L-0013U	Check valve ASTM A351 Grade CF8 Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	

BALL VALVE (Q)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P84K-000RA	Ball valve Long-pattern ASTM A182 Grade F304/F304L dual grade Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design	
1	0.75				P84K-000RB	Ball valve Long-pattern ASTM A182 Grade F304/F304L dual grade Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design	
1	1				P84K-000RC	Ball valve Long-pattern ASTM A182 Grade F304/F304L dual grade Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design	
1	1.5				P84K-000RD	Ball valve Long-pattern ASTM A182 Grade F304/F304L dual grade Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design	
1	2				P84L-0035V	Ball valve Long-pattern ASTM A351 Grade CF8 Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design	
24	0.5				P84K-000RE	Ball valve Long-pattern ASTM A182 Grade F304/F304L dual grade Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	
24	0.75				P84K-000RF	Ball valve Long-pattern ASTM A182 Grade F304/F304L dual grade Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	
24	1				P84K-000RG	Ball valve Long-pattern ASTM A182 Grade F304/F304L dual grade Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	
24	1.5				P84K-000RH	Ball valve Long-pattern ASTM A182 Grade F304/F304L dual grade Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	
24	2				P84L-0035W	Ball valve Long-pattern ASTM A351 Grade CF8 Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71K-0007C	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 300 Standard-drawing Flange ASME B16.5 RF	
1	0.75				P71K-0007D	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 300 Standard-drawing Flange ASME B16.5 RF	
1	1				P71K-0007E	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 300 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71K-0007F	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 300 Standard-drawing Flange ASME B16.5 RF	
1	2				P71K-0007G	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 300 Standard-drawing Flange ASME B16.5 RF	

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BOLT TABLE (B_B11F05 , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-003V4		
0.75	4	0.625	75	P80S-003XC		
1	4	0.625	80	P80S-003XD		
1.5	4	0.750	95	P80S-00414		
2	8	0.625	90	P80S-003XF		

BOLT TABLE (B_B11F05_781 , STUD ASME RF, OPTION CODE 781)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	80	P80S-003V6		
0.75	4	0.625	90	P80S-003XF		
1	4	0.625	95	P80S-003XG		
1.5	4	0.750	110	P80S-003XK		
2	8	0.625	110	P80S-003VC		

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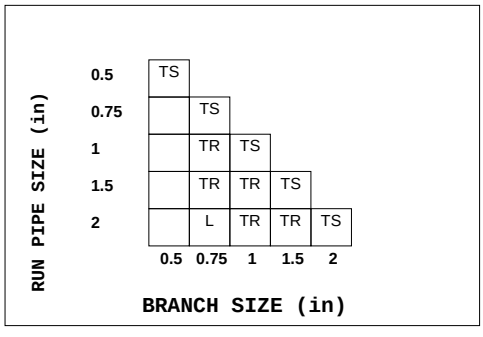
BRANCH TABLE (T_B11F05)



TR : REDUCING TEE
L : OUTLET
TS : STRAIGHT TEE

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PIPING CLASS

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Material	:	CS
Rating	:	ASME CLASS 300
Flange Face	:	RF
C.A.(mm)	:	1.50
Gasket	:	Spiral Wound
Service	:	
Design Code	:	ASME B31.4
Heat Treatment	:	

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

DETAIL NOTES :

OPTION CODES:

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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5		XS		P01A-009KC	Pipe API5L PSL2 Grade X52 Seamless ASME B36.10M/B36.19M PE Polyethylene coated	
1	2		XS		P01A-009KD	Pipe API5L PSL2 Grade X52 Seamless ASME B36.10M/B36.19M BE Polyethylene coated	
1	4		STD		P01A-009KE	Pipe API5L PSL2 Grade X52 Seamless ASME B36.10M/B36.19M BE Polyethylene coated	
1	48		14.27mm		P01A-009KF	Pipe API5L PSL2 Grade X52 SAW ASME B36.10M/B36.19M BE Polyethylene coated	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	48		14.27mm		P02A-004Y6	90 degree elbow MSS SP-75 Class WPHY-52 Weld ASME B16.9 BW 3DR	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	48		14.27mm		P03A-004HN	45 degree elbow MSS SP-75 Class WPHY-52 Weld ASME B16.9 BW 3DR	

SP-ANGLE ELBOW (SL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	48		14.27mm		P04A-00062	Special angle elbow MSS SP-75 Class WPHY-52 Weld ASME B16.9 BW 30 degree 3DR	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	48		14.27mm		P21A-00521	Straight tee MSS SP-75 Class WPHY-52 Weld ASME B16.9 BW	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2		XS		P61B-00D0F	Flange WN ASTM A694 Grade F52 Class 300 ASME B16.5 RF	
1	4		STD		P61B-00D0G	Flange WN ASTM A694 Grade F52 Class 300 ASME B16.5 RF	
1	48		14.27mm		P61B-00D0H	Flange WN ASTM A694 Grade F52 Class 300 ASME B16.47 Series A RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000G6	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	48				P73T-002NM	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.47-A RF 4.5mm-T Outer-ring CS Inner-ring SS316	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5-4				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 Galvanized UNC Stud-bolt with two Heavy HEX nuts	
1	48				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 Galvanized 8UN Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5				P81B-002V1	Gate valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	2				P81C-007M4	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	4				P81C-007M5	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	

BALL VALVE (Q)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	48				P84C-0077V	Ball valve Long-pattern ASTM A216 Grade WCB Class 300 API 6D Flange ASME B16.47-A RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Top-entry Gear operated Full bore Fire tested design	

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BOLT TABLE (B_B19P , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
1.5	4	0.750	95	P80S-017XN		
2	8	0.625	90	P80S-017UV		
4	8	0.750	115	P80S-017V0		
48	40	1.875	380	P80S-01E5L		

BOLT TABLE (B_B19P_781 , STUD ASME RF, OPTION CODE 781)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
1.5	4	0.750	110			
2	8	0.625	110			
4	8	0.875	150			
48	32	2.750	635			

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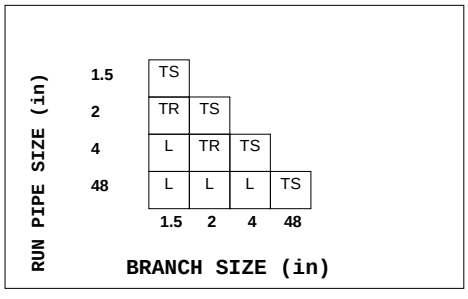
BRANCH TABLE (T_B19P)



L : OUTLET
TR : REDUCING TEE
TS : STRAIGHT TEE

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Material : Killed CS
Rating : ASME CLASS 300
Flange Face : RF
C.A.(mm) : 1.50
Gasket : Spiral Wound
Service : PROCESS -WET LOW SEVERITY SOUR SERVICE SUBJECT TO NACE + AMINES OR CAUSTIC - STRESS RELIEVED
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
2	USE OF SOFT SEATED BALL, PLUG AND BUTTERFLY VALVES SHALL BE LIMITED TO MAXIMUM OF 204DEGC (400DEGF)
5	BOLTING CONFIRMING TO B7M / 2HM SHALL BE USED UNDER CONDITIONS (A) DIRECT EXPOSURE TO SOUR ENVIRONMENTS (B) WHEN THE BOLTING WILL BE BURIED OR INSULATED
27	PWHT OF CARBON STEEL PIPING IN WET H2S, CAUSTIC AND AMINE SERVICES SHALL BE IN ACCORDANCE WITH SECTION 10.2, 10.3, AND 10.4 OF PROJECT SPECIFICATION 3550-8440-SP-0002 MATERIALS REQUIREMENTS FOR PRESSURISED EQUIPMENT AND PIPING. FOR CAUSTIC AND AMINE SERVICE THE FOLLOWING SHALL APPLY: - PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF ALL SITE PIPING FABRICATION WELDS IS REQUIRED FOR ALL WALL THICKNESSES. FOR MODERATE AND SEVERE WET H2S SERVICE THE FOLLOWING SHALL APPLY: PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF SITE FABRICATION CIRCUMFERENTIAL OR BRANCH WELDS IS NOT REQUIRED IF WELDS ARE MULTIPASS AND IN ACCORDANCE WITH PARA 10.2.12 OF PROJECT SPECIFICATION 3550-8440-SP-0002. FOR SERVICES MEETING THE WET H2S CRITERIA AND CAUSTIC OR AMINE CRITERIA THE MORE STRINGENT PWHT REQUIREMENT SHALL GOVERN.

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
24	FULL PORT (Q)
200	WITH JACK SCREW (FO)
541	NPT(F) (CA,F)
781	CLASS 600 (B,F,G)
797	CLASS 1500 (B,F,G)
805	CLASS 2500 (B,F,G)
4601	Y-PATTERN (W)
4608	VALVE WITH NIPPLES (V)

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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P01A-000XM	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	0.75		XS		P01A-000XN	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1		XS		P01A-000XP	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1.5		XS		P01A-000XV	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	2		XS		P01A-000YX	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	3		STD		P01A-000YM	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	4		STD		P01A-000YU	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	6		STD		P01A-000Z3	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	8		SCH20		P01A-001AT	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	10		SCH30		P01A-0016U	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	12		STD		P01A-000XT	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	14		STD		P01A-000Y1	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P02A-000UR	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	0.75		XS		P02A-000UN	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1		XS		P02A-000UL	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1.5		XS		P02A-000UJ	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	2		XS		P02A-000CP	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		STD		P02A-000CU	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		STD		P02A-000CZ	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		STD		P02A-000D6	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		SCH20		P02A-000GZ	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	10		SCH30		P02A-000M3	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	12		STD		P02A-000BZ	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	14		STD		P02A-000C8	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P03A-0018K	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	0.75		XS		P03A-0018L	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1		XS		P03A-0018M	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1.5		XS		P03A-0018N	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	2		XS		P03A-000AS	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		STD		P03A-000AX	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		STD		P03A-000B1	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		STD		P03A-000B9	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		SCH20		P03A-000EX	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	10		SCH30		P03A-000JT	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	12		STD		P03A-000A9	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	14		STD		P03A-000AG	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P21A-002TV	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	0.75		XS		P21A-002TW	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1		XS		P21A-002TX	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5		XS		P21A-002TY	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2		XS		P21A-001CJ	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		STD		P21A-001CU	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		STD		P21A-001CW	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6		STD		P21A-001D2	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8		SCH20		P21A-00215	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10		SCH30		P21A-00259	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12		STD		P21A-001C1	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14		STD		P21A-001C8	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75	XS	XS	P24A-006WW	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.75	XS	XS	P24A-006WY	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	1	XS	XS	P24A-006WZ	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	XS	XS	P24A-00238	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	XS	XS	P24A-0023H	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	STD	XS	P24A-00214	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	STD	XS	P24A-002HW	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P24A-002HY	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P24A-0021K	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	STD	P24A-0021A	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P24A-00229	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH20	STD	P24A-00J21	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH20	STD	P24A-005J4	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	SCH30	STD	P24A-00GNR	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	SCH30	STD	P24A-0060W	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	SCH30	SCH20	P24A-005KE	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	STD	STD	P24A-0022S	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	STD	SCH20	P24A-0060X	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	STD	SCH30	P24A-0060K	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	STD	STD	P24A-0026N	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	STD	SCH20	P24A-00KSG	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	STD	SCH30	P24A-0060L	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	STD	STD	P24A-0022R	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	XS	XS	P27A-004M6	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.5	XS	XS	P27A-004ME	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.75	XS	XS	P27A-004MM	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.5	XS	XS	P27A-004N2	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.75	XS	XS	P27A-004NC	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	1	XS	XS	P27A-004NP	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	0.75	XS	XS	P27A-001CZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	XS	XS	P27A-001DL	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	XS	XS	P27A-001E2	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	STD	XS	P27A-001AU	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	STD	XS	P27A-001MZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	1.5	STD	XS	P27A-001AW	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P27A-001N0	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P27A-00189	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	STD	P27A-001AZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P27A-001GW	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH20	STD	P27A-003K2	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH20	STD	P27A-003K3	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	SCH30	STD	P27A-003MK	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	SCH30	STD	P27A-003ML	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	SCH30	SCH20	P27A-003MM	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	STD	STD	P27A-0018X	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	STD	SCH20	P27A-0041Y	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	STD	SCH30	P27A-0041H	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	STD	STD	P27A-0019L	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	STD	SCH20	P27A-003MC	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	STD	SCH30	P27A-003MB	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	STD	STD	P27A-0018W	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	XS	XS	P28A-004V6	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.5	XS	XS	P28A-004V7	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75	XS	XS	P28A-004V8	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.5	XS	XS	P28A-004V9	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.75	XS	XS	P28A-004VA	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	1	XS	XS	P28A-004VB	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	0.75	XS	XS	P28A-001CU	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	XS	XS	P28A-001DS	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	XS	XS	P28A-001EE	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	STD	XS	P28A-001A3	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	STD	XS	P28A-001N5	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	1.5	STD	XS	P28A-001A4	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P28A-001N6	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P28A-0018B	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	STD	P28A-001AS	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P28A-00182	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH20	STD	P28A-003JU	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH20	STD	P28A-003JV	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	SCH30	STD	P28A-003MD	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	SCH30	STD	P28A-003ME	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	SCH30	SCH20	P28A-003MF	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	STD	STD	P28A-00191	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	STD	SCH20	P28A-0041S	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	STD	SCH30	P28A-0041B	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	STD	STD	P28A-0019R	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	STD	SCH20	P28A-003M6	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	STD	SCH30	P28A-003M5	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	STD	STD	P28A-0018Z	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P29A-0035U	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	0.75		XS		P29A-0035V	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	1		XS		P29A-0035W	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	1.5		XS		P29A-0035X	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	2		XS		P29A-001VG	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	3		STD		P29A-001VK	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	4		STD		P29A-001VN	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	6		STD		P29A-001VS	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	8		SCH20		P29A-00364	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	10		SCH30		P29A-003B5	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	12		STD		P29A-001VC	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	14		STD		P29A-001VD	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
541	0.75				P29B-0000C	Cap ASTM A105 Class 3000 ASME B16.11 NPT	
541	1				P29B-0000D	Cap ASTM A105 Class 3000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P41A-000B5	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		SCH160		P41A-000B6	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		SCH160		P41A-000B7	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		SCH160		P41A-000B8	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2	0.75	XS	XS	P31B-00CP3	Outlet ASTM A105 MSS SP-97 BW	
1	3	0.75	STD	XS	P31B-00CMN	Outlet ASTM A105 MSS SP-97 BW	
1	4	0.75	STD	XS	P31B-00CLM	Outlet ASTM A105 MSS SP-97 BW	
1	6	0.75	STD	XS	P31B-00CKD	Outlet ASTM A105 MSS SP-97 BW	
1	8	0.75	SCH20	XS	P31B-00Y4E	Outlet ASTM A105 MSS SP-97 BW	
1	10	0.75	SCH30	XS	P31B-00YF2	Outlet ASTM A105 MSS SP-97 BW	

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OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	12	0.75	STD	XS	P31B-00CRY	Outlet ASTM A105 MSS SP-97 BW	
1	14	0.75	STD	XS	P31B-00NHM	Outlet ASTM A105 MSS SP-97 BW	
1	3	1	STD	XS	P31B-00B4D	Outlet ASTM A105 MSS SP-97 BW	
1	4	1	STD	XS	P31B-00AYW	Outlet ASTM A105 MSS SP-97 BW	
1	6	1	STD	XS	P31B-00AZ6	Outlet ASTM A105 MSS SP-97 BW	
1	8	1	SCH20	XS	P31B-00Y4N	Outlet ASTM A105 MSS SP-97 BW	
1	10	1	SCH30	XS	P31B-00YF3	Outlet ASTM A105 MSS SP-97 BW	
1	12	1	STD	XS	P31B-00BW8	Outlet ASTM A105 MSS SP-97 BW	
1	14	1	STD	XS	P31B-00NHN	Outlet ASTM A105 MSS SP-97 BW	
1	4	1.5	STD	XS	P31B-00BNZ	Outlet ASTM A105 MSS SP-97 BW	
1	6	1.5	STD	XS	P31B-00BJB	Outlet ASTM A105 MSS SP-97 BW	
1	8	1.5	SCH20	XS	P31B-00Y4X	Outlet ASTM A105 MSS SP-97 BW	
1	10	1.5	SCH30	XS	P31B-00YF4	Outlet ASTM A105 MSS SP-97 BW	
1	12	1.5	STD	XS	P31B-00CE3	Outlet ASTM A105 MSS SP-97 BW	
1	14	1.5	STD	XS	P31B-00NHP	Outlet ASTM A105 MSS SP-97 BW	
1	6	2	STD	XS	P31B-007SH	Outlet ASTM A105 MSS SP-97 BW	
1	8	2	SCH20	XS	P31B-00NY2	Outlet ASTM A105 MSS SP-97 BW	
1	10	2	SCH30	XS	P31B-00NVF	Outlet ASTM A105 MSS SP-97 BW	
1	12	2	STD	XS	P31B-00CBN	Outlet ASTM A105 MSS SP-97 BW	
1	14	2	STD	XS	P31B-00CAE	Outlet ASTM A105 MSS SP-97 BW	
1	8	3	SCH20	STD	P31B-00P11	Outlet ASTM A105 MSS SP-97 BW	
1	10	3	SCH30	STD	P31B-00NYK	Outlet ASTM A105 MSS SP-97 BW	
1	12	3	STD	STD	P31B-0096N	Outlet ASTM A105 MSS SP-97 BW	
1	14	3	STD	STD	P31B-0090T	Outlet ASTM A105 MSS SP-97 BW	
1	12	4	STD	STD	P31B-008ZW	Outlet ASTM A105 MSS SP-97 BW	
1	14	4	STD	STD	P31B-008YM	Outlet ASTM A105 MSS SP-97 BW	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30B-0002D	Plug ASTM A105 ASME B16.11 NPT Round head	
1	0.75				P30B-0002E	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1				P30B-0002F	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1.5				P30B-0002G	Plug ASTM A105 ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P61B-0032Z	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	0.75		XS		P61B-0032X	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	1		XS		P61B-0032U	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	1.5		XS		P61B-0032S	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	2		XS		P61B-001HW	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	3		STD		P61B-001LJ	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	4		STD		P61B-001MC	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	6		STD		P61B-001N2	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	8		SCH20		P61B-002LJ	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	10		SCH30		P61B-003LX	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	12		STD		P61B-001LE	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	14		STD		P61B-001M9	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
541	0.5				P61B-003U3	Flange NPT ASTM A105 Class 300 ASME B16.5 RF	
541	0.75				P61B-003U4	Flange NPT ASTM A105 Class 300 ASME B16.5 RF	
781	0.5		XS		P61B-003TJ	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	0.75		XS		P61B-003TK	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	1		XS		P61B-003TL	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	1.5		XS		P61B-003TM	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	2		XS		P61B-001DH	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	3		STD		P61B-001TW	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	4		STD		P61B-001VV	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	6		STD		P61B-001JW	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	8		SCH20		P61B-003F0	Flange WN ASTM A105 Class 600 ASME B16.5 RF	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
781	10		SCH30		P61B-003TN	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	12		STD		P61B-001P9	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	14		STD		P61B-001PL	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
797	6		STD		P61B-009W9	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
805	8		SCH20		P61B-00DHM	Flange WN ASTM A105 Class 2500 ASME B16.5 RJ	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67B-000GH	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	0.75				P67B-000GJ	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	1				P67B-000GK	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	1.5				P67B-000GL	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	2				P67B-000GM	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	3				P67B-000GN	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	4				P67B-000GP	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	6				P67B-000GY	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	8				P67B-000GZ	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	10				P67B-000GR	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	12				P67B-000GS	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	14				P67B-000GT	Blind flange ASTM A105 Class 300 ASME B16.5 RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000FT	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000FU	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000G5	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000G6	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	6				P73T-000G7	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	8				P73T-000G8	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	10				P73T-000FX	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	12				P73T-000FY	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	14				P73T-000FZ	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	0.5				P73T-000J8	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	0.75				P73T-000J9	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1				P73T-000JA	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1.5				P73T-000JB	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	2				P73T-000JH	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	3				P73T-000JL	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	4				P73T-000JM	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	6				P73T-000JN	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	8				P73T-000JP	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	10				P73T-000JC	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	12				P73T-000JD	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	14				P73T-000JE	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
797	6				P75T-0008C	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	8				P75T-000MD	Ring joint gasket Soft iron Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	

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BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-10				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	12-14				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
781	0.5-6				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
781	8-14				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
797	6				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
805	6-8				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81B-002EA	Gate valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Amine service	
1	0.75				P81B-002EB	Gate valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Amine service	
1	1				P81B-002EC	Gate valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Amine service	
1	1.5				P81B-002ED	Gate valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Amine service	
1	2				P81C-007FU	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Amine service	
1	3				P81C-007FV	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Amine service	
1	4				P81C-007FW	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Amine service	
1	6				P81C-007FX	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Amine service	
1	8				P81C-00919	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Gear operated Moderate wet H2S service Amine service	
1	10				P81C-007FZ	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Gear operated Moderate wet H2S service Amine service	
1	12				P81C-007G0	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Gear operated Moderate wet H2S service Amine service	
1	14				P81C-007G1	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Gear operated Moderate wet H2S service Amine service	
4608	0.75				P81B-002W8	Gate valve ASTM A105 Class 300 API 602 BW both sides w/ nipples BE - NPT ASTM A106-B Sch160-nipple Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Amine service	
4608	1				P81B-0038Y	Gate valve ASTM A105 Class 300 API 602 BW both sides w/ nipples BE - NPT ASTM A106-B Sch160-nipple Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Amine service	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82B-001TN	Globe valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Amine service	
1	0.75				P82B-001TP	Globe valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Amine service	
1	1				P82B-001TR	Globe valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Amine service	
1	1.5				P82B-001TS	Globe valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Amine service	
1	2				P82C-003S4	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Amine service	
1	3				P82C-003S5	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Amine service	
1	4				P82C-003S6	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Amine service	
1	6				P82C-003S7	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Amine service	
1	8				P82C-004CG	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Gear operated Moderate wet H2S service Amine service	
4601	0.75				P82B-00221	Y-pattern globe valve ASTM A105 Class 300 ASME B16.34 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Amine service	
4601	1				P82B-00222	Y-pattern globe valve ASTM A105 Class 300 ASME B16.34 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Amine service	
4601	1.5				P82B-00223	Y-pattern globe valve ASTM A105 Class 300 ASME B16.34 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Amine service	
4601	2				P82C-0047Z	Y-pattern globe valve ASTM A216 Grade WCB Class 300 ASME B16.34 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Amine service	
4601	3				P82C-00480	Y-pattern globe valve ASTM A216 Grade WCB Class 300 ASME B16.34 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Amine service	
4601	14				P82C-003S9	Y-pattern globe valve ASTM A216 Grade WCB Class 300 ASME B16.34 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Gear operated Moderate wet H2S service Amine service	

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CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83B-001CC	Check valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 Lift-type Bolted cover Moderate wet H2S service Amine service	
1	0.75				P83B-001CD	Check valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 Lift-type Bolted cover Moderate wet H2S service Amine service	
1	1				P83B-001CE	Check valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 Lift-type Bolted cover Moderate wet H2S service Amine service	
1	1.5				P83B-001CF	Check valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 Lift-type Bolted cover Moderate wet H2S service Amine service	
1	2				P83C-0037V	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 Swing-type Bolted cover Moderate wet H2S service Amine service	
1	3				P83C-0037W	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 Swing-type Bolted cover Moderate wet H2S service Amine service	
1	4				P83C-0037X	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 Swing-type Bolted cover Moderate wet H2S service Amine service	
1	6				P83C-0037Y	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 Swing-type Bolted cover Moderate wet H2S service Amine service	
1	8				P83C-0037Z	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 Swing-type Bolted cover Moderate wet H2S service Amine service	
1	10				P83C-0037S	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 Swing-type Bolted cover Moderate wet H2S service Amine service	
1	12				P83C-0037T	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 Swing-type Bolted cover Moderate wet H2S service Amine service	
1	14				P83C-0037U	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 Swing-type Bolted cover Moderate wet H2S service Amine service	

BALL VALVE (Q)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P84B-001JV	Ball valve Long-pattern ASTM A105 Class 300 API 608 Flange ASME B16.5 RF Ball SS316L Seat R-PTFE Trim SS316L Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design Moderate wet H2S service Amine service	
1	0.75				P84B-001JW	Ball valve Long-pattern ASTM A105 Class 300 API 608 Flange ASME B16.5 RF Ball SS316L Seat R-PTFE Trim SS316L Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design Moderate wet H2S service Amine service	
1	1				P84B-001JX	Ball valve Long-pattern ASTM A105 Class 300 API 608 Flange ASME B16.5 RF Ball SS316L Seat R-PTFE Trim SS316L Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design Moderate wet H2S service Amine service	
1	1.5				P84B-001JY	Ball valve Long-pattern ASTM A105 Class 300 API 608 Flange ASME B16.5 RF Ball SS316L Seat R-PTFE Trim SS316L Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design Moderate wet H2S service Amine service	
1	2				P84C-006YA	Ball valve Long-pattern ASTM A216 Grade WCB Class 300 API 608 Flange ASME B16.5 RF Ball SS316L Seat R-PTFE Trim SS316L Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design Moderate wet H2S service Amine service	
1	3				P84C-006YB	Ball valve Long-pattern ASTM A216 Grade WCB Class 300 API 608 Flange ASME B16.5 RF Ball SS316L Seat R-PTFE Trim SS316L Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design Moderate wet H2S service Amine service	
1	4				P84C-006YC	Ball valve Long-pattern ASTM A216 Grade WCB Class 300 API 608 Flange ASME B16.5 RF Ball SS316L Seat R-PTFE Trim SS316L Floating-type Side-entry Gear operated Reduced bore Fire tested design Moderate wet H2S service Amine service	
24	0.5				P84B-001JZ	Ball valve Long-pattern ASTM A105 Class 300 API 608 Flange ASME B16.5 RF Ball SS316L Seat R-PTFE Trim SS316L Floating-type Side-entry Wrench lever operated Full bore Fire tested design Moderate wet H2S service Amine service	
24	0.75				P84B-001K0	Ball valve Long-pattern ASTM A105 Class 300 API 608 Flange ASME B16.5 RF Ball SS316L Seat R-PTFE Trim SS316L Floating-type Side-entry Wrench lever operated Full bore Fire tested design Moderate wet H2S service Amine service	
24	1				P84B-001K1	Ball valve Long-pattern ASTM A105 Class 300 API 608 Flange ASME B16.5 RF Ball SS316L Seat R-PTFE Trim SS316L Floating-type Side-entry Wrench lever operated Full bore Fire tested design Moderate wet H2S service Amine service	
24	1.5				P84B-001K2	Ball valve Long-pattern ASTM A105 Class 300 API 608 Flange ASME B16.5 RF Ball SS316L Seat R-PTFE Trim SS316L Floating-type Side-entry Wrench lever operated Full bore Fire tested design Moderate wet H2S service Amine service	
24	2				P84C-006YD	Ball valve Long-pattern ASTM A216 Grade WCB Class 300 API 608 Flange ASME B16.5 RF Ball SS316L Seat R-PTFE Trim SS316L Floating-type Side-entry Wrench lever operated Full bore Fire tested design Moderate wet H2S service Amine service	
24	3				P84C-006YE	Ball valve Long-pattern ASTM A216 Grade WCB Class 300 API 608 Flange ASME B16.5 RF Ball SS316L Seat R-PTFE Trim SS316L Floating-type Side-entry Wrench lever operated Full bore Fire tested design Moderate wet H2S service Amine service	
24	4				P84C-006YF	Ball valve Long-pattern ASTM A216 Grade WCB Class 300 API 608 Flange ASME B16.5 RF Ball SS316L Seat R-PTFE Trim SS316L Floating-type Side-entry Gear operated Full bore Fire tested design Moderate wet H2S service Amine service	

BUTTERFLY VALVE (H)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	10				P86C-0024X	Offset design butterfly valve ASTM A216 Grade WCB Class 300 API 609 Category B Lug-type ASME B16.5 RF Disc CS Seat Stellite-6 Trim SS316L Triple eccentric design BG Gear operated Moderate wet H2S service Amine service	
1	12				P86C-0024Y	Offset design butterfly valve ASTM A216 Grade WCB Class 300 API 609 Category B Lug-type ASME B16.5 RF Disc CS Seat Stellite-6 Trim SS316L Triple eccentric design BG Gear operated Moderate wet H2S service Amine service	
1	14				P86C-0024Z	Offset design butterfly valve ASTM A216 Grade WCB Class 300 API 609 Category B Lug-type ASME B16.5 RF Disc CS Seat Stellite-6 Trim SS316L Triple eccentric design BG Gear operated Moderate wet H2S service Amine service	

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NEEDLE VALVE (NV)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82B-001TT	Needle valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Amine service	
1	0.75				P82B-001TU	Needle valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Amine service	
1	1				P82B-001TV	Needle valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Amine service	
1	1.5				P82B-001TW	Needle valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Amine service	

ORIFICE FLANGE (FO)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2		XS		P66B-0084B	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	3		STD		P66B-0084C	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	4		STD		P66B-0084D	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	6		STD		P66B-0084E	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	8		SCH20		P66B-0084F	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	10		SCH30		P66B-0086Z	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	12		STD		P66B-008A2	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	14		STD		P66B-008A3	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
200	2		XS		P66B-00843	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	3		STD		P66B-00844	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	4		STD		P66B-00845	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	6		STD		P66B-00846	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	8		SCH20		P66B-00847	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	10		SCH30		P66B-00874	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	12		STD		P66B-008A4	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	14		STD		P66B-008A5	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71B-000B1	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	0.75				P71B-000B2	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	1				P71B-000B3	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71B-000B4	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	2				P71B-000B6	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	3				P71B-000B7	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	4				P71B-000B8	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	6				P71B-000B9	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	8				P71B-000BA	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	10				P71B-000B5	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	12				P71B-000BB	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	

PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000FA	Paddle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	

PADDLE SPACER (PS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000FG	Paddle spacer ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	

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BOLT TABLE (B_B1A402 , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-008T0		
0.75	4	0.625	75	P80S-00908		
1	4	0.625	80	P80S-00909		
1.5	4	0.750	95	P80S-005Z4		
2	8	0.625	90	P80S-0090B		
3	8	0.750	110	P80S-0090F		
4	8	0.750	115	P80S-0090G		
6	12	0.750	125	P80S-0090J		
8	12	0.875	140	P80S-005ZD		
10	16	1.000	160	P80S-0061E		
12	16	1.125	175	P80S-0064S		
14	20	1.125	180	P80S-0064T		

BOLT TABLE (B_B1A402_781 , STUD ASME RF, OPTION CODE 781)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	80	P80S-008T2		
0.75	4	0.625	90	P80S-0090B		
1	4	0.625	95	P80S-0090C		
1.5	4	0.750	110	P80S-0090F		
2	8	0.625	110	P80S-008T8		
3	8	0.750	130	P80S-0090K		
4	8	0.875	150	P80S-005ZF		
6	12	1.000	175	P80S-0061H		
8	12	1.125	195	P80S-0064W		
10	16	1.250	250	P80S-0068M		
12	20	1.250	255	P80S-0068N		
14	20	1.375	270	P80S-006HV		

BOLT TABLE (B_B1A402_797 , STUD ASME RJ, OPTION CODE 797)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	110		R12	
0.75	4	0.750	115		R14	
1	4	0.875	130		R16	
1.5	4	1.000	140		R20	
2	8	0.875	150		R24	
3	8	1.125	180		R35	
4	8	1.250	230		R39	
6	12	1.375	300	P80S-006J1	R46	P75T-0008C
8	12	1.625	345		R50	
10	12	1.875	395		R54	
12	16	2.000	445		R58	
14	16	2.250	490		R63	

BOLT TABLE (B_B1A402_805 , STUD ASME RJ, OPTION CODE 805)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	125		R13	
0.75	4	0.750	130		R16	
1	4	0.875	140		R18	
1.5	4	1.125	175		R23	
2	8	1.000	180		R26	
3	8	1.250	260		R32	
4	8	1.500	305		R38	
6	8	2.000	410	P80S-00BBD	R47	
8	12	2.000	450	P80S-00BH6	R51	P75T-000MD
10	12	2.500	575		R55	
12	12	2.750	635		R60	
14	14	3.000	695		R64	

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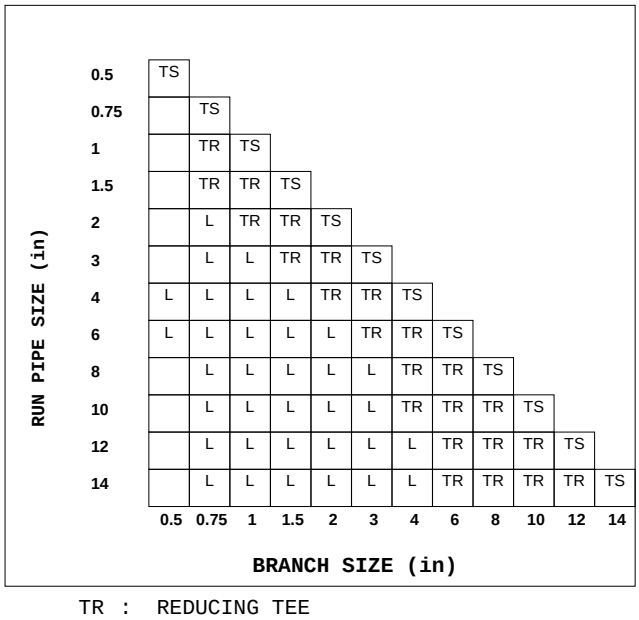
BRANCH TABLE (T_B1A402)



TR : REDUCING TEE
TS : STRAIGHT TEE
L : OUTLET

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PIPING CLASS

B1A8 REV NO. 2

Material	:	Killed CS
Rating	:	ASME CLASS 300
Flange Face	:	RF
C.A.(mm)	:	1.50
Gasket	:	Spiral Wound
Service	:	PROCESS - BENZENE SERVICE (5% WT) OR MORE BENZENE
Design Code	:	ASME B31.3
Heat Treatment	:	

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED

DETAIL NOTES :

NO.	DESCRIPTION
38	TO BE USED FOR STAND PIPE

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
200	WITH JACK SCREW (FO)
541	NPT(F) (CA,L)
714	SW - NPT(F) (V)
781	CLASS 600 (B,F,G)
4212	WELDOLET FOR STAND PIPE (L)

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PIPING CLASS
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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P01A-000XM	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	0.75		XS		P01A-000XN	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1		XS		P01A-000XP	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1.5		XS		P01A-000XV	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	2		XS		P01A-000YX	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	3		STD		P01A-000YM	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	4		STD		P01A-000YU	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	6		STD		P01A-000Z3	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	8		SCH20		P01A-001AT	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	10		SCH30		P01A-0016U	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	12		STD		P01A-000XT	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	14		STD		P01A-000Y1	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P02B-00014	90 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	0.75				P02B-00015	90 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	1				P02B-00016	90 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5				P02B-00017	90 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	2		XS		P02A-000CP	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		STD		P02A-000CU	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		STD		P02A-000CZ	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		STD		P02A-000D6	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		SCH20		P02A-000GZ	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	10		SCH30		P02A-000M3	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	12		STD		P02A-000BZ	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	14		STD		P02A-000C8	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P03B-00017	45 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	0.75				P03B-00018	45 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	1				P03B-00019	45 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5				P03B-0001A	45 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	2		XS		P03A-000AS	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		STD		P03A-000AX	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		STD		P03A-000B1	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		STD		P03A-000B9	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		SCH20		P03A-000EX	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	10		SCH30		P03A-000JT	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	12		STD		P03A-000A9	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	14		STD		P03A-000AG	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P21B-00017	Straight tee ASTM A105 Class 3000 ASME B16.11 SW	
1	0.75				P21B-00018	Straight tee ASTM A105 Class 3000 ASME B16.11 SW	
1	1				P21B-00019	Straight tee ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5				P21B-0001A	Straight tee ASTM A105 Class 3000 ASME B16.11 SW	
1	2		XS		P21A-001CJ	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		STD		P21A-001CU	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		STD		P21A-001CW	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6		STD		P21A-001D2	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8		SCH20		P21A-00215	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10		SCH30		P21A-00259	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12		STD		P21A-001C1	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14		STD		P21A-001C8	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75			P24B-0002L	Reducing tee ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5	0.75			P24B-0002N	Reducing tee ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5	1			P24B-0002P	Reducing tee ASTM A105 Class 3000 ASME B16.11 SW	
1	2	1	XS	XS	P24A-00238	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	XS	XS	P24A-0023H	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	STD	XS	P24A-00214	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	STD	XS	P24A-002HW	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P24A-002HY	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P24A-0021K	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	STD	P24A-0021A	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P24A-00229	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH20	STD	P24A-00J21	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH20	STD	P24A-005J4	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	SCH30	STD	P24A-00GNR	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	SCH30	STD	P24A-0060W	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	SCH30	SCH20	P24A-005KE	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	STD	STD	P24A-0022S	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	STD	SCH20	P24A-0060X	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	STD	SCH30	P24A-0060K	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	STD	STD	P24A-0026N	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	STD	SCH20	P24A-00KSG	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	STD	SCH30	P24A-0060L	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	STD	STD	P24A-0022R	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	STD	XS	P27A-001MZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P27A-001N0	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P27A-00189	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	STD	P27A-001AZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P27A-001GW	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH20	STD	P27A-003K2	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH20	STD	P27A-003K3	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	SCH30	STD	P27A-003MK	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	SCH30	STD	P27A-003ML	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	SCH30	SCH20	P27A-003MM	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	STD	STD	P27A-0018X	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	STD	SCH20	P27A-0041Y	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	STD	SCH30	P27A-0041H	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	STD	STD	P27A-0019L	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	STD	SCH20	P27A-003MC	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	STD	SCH30	P27A-003MB	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	STD	STD	P27A-0018W	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	STD	XS	P28A-001N5	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P28A-001N6	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P28A-0018B	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	STD	P28A-001AS	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P28A-00182	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH20	STD	P28A-003JU	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH20	STD	P28A-003JV	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	SCH30	STD	P28A-003MD	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	SCH30	STD	P28A-003ME	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	SCH30	SCH20	P28A-003MF	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	STD	STD	P28A-00191	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	STD	SCH20	P28A-0041S	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	STD	SCH30	P28A-0041B	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14	6	STD	STD	P28A-0019R	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	STD	SCH20	P28A-003M6	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	STD	SCH30	P28A-003M5	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	STD	STD	P28A-0018Z	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P29B-0001J	Cap ASTM A105 Class 3000 ASME B16.11 SW	
1	0.75				P29B-0001F	Cap ASTM A105 Class 3000 ASME B16.11 SW	
1	1				P29B-0001G	Cap ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5				P29B-0001H	Cap ASTM A105 Class 3000 ASME B16.11 SW	
1	2		XS		P29A-000A1	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		STD		P29A-000BK	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		STD		P29A-000A3	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6		STD		P29A-000A9	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8		SCH20		P29A-000EY	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10		SCH30		P29A-000K7	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12		STD		P29A-000A7	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14		STD		P29A-000AJ	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
541	0.75				P29B-0000C	Cap ASTM A105 Class 3000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P41A-000B5	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		SCH160		P41A-000B6	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		SCH160		P41A-000B7	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		SCH160		P41A-000B8	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

CON SWAGED NIPPLE (SNC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	XS	XS	P42A-00036	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	XS	XS	P42A-00038	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	XS	XS	P42A-0003B	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	XS	XS	P42A-00035	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	XS	XS	P42A-00039	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	XS	XS	P42A-0003C	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	XS	XS	P42A-0008C	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	XS	XS	P42A-0008D	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	XS	XS	P42A-0008E	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	XS	XS	P42A-0008F	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	STD	XS	P42A-0007V	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	

ECC SWAGED NIPPLE (SNE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	XS	XS	P43A-00036	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	XS	XS	P43A-00037	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	XS	XS	P43A-00038	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	XS	XS	P43A-00039	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	XS	XS	P43A-0003A	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	XS	XS	P43A-0003B	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	XS	XS	P43A-00042	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	XS	XS	P43A-00043	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	XS	XS	P43A-00044	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	XS	XS	P43A-00045	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	STD	XS	P43A-0003J	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	

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COUPLING (CPS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P47B-0001D	Coupling ASTM A105 Class 3000 ASME B16.11 SW - SW	
1	0.75				P47B-0001E	Coupling ASTM A105 Class 3000 ASME B16.11 SW - SW	
1	1				P47B-0001F	Coupling ASTM A105 Class 3000 ASME B16.11 SW - SW	
1	1.5				P47B-0001G	Coupling ASTM A105 Class 3000 ASME B16.11 SW - SW	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2 - 2.5	0.75			P31B-0137J	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	3 - 5	0.75			P31B-0137K	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	6 - 12	0.75			P31B-007AB	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	14 - 36	0.75			P31B-007AJ	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	3	1			P31B-007A7	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	4 - 5	1			P31B-0138Z	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	6 - 10	1			P31B-007A4	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	12 - 36	1			P31B-007AA	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	4	1.5			P31B-005SN	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	5 - 6	1.5			P31B-01390	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	8 - 12	1.5			P31B-0079U	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	14 - 24	1.5			P31B-007A0	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
541	1	0.75			P31B-00551	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
541	1.5	0.75			P31B-00555	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
541	2 - 2.5	0.75			P31B-0137H	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
541	3 - 5	0.75			P31B-01376	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
541	6 - 12	0.75			P31B-007GR	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
541	14 - 36	0.75			P31B-007GY	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
1	6	2	STD	XS	P31B-007SH	Outlet ASTM A105 MSS SP-97 BW	
1	8	2	SCH20	XS	P31B-00NY2	Outlet ASTM A105 MSS SP-97 BW	
1	10	2	SCH30	XS	P31B-00NVF	Outlet ASTM A105 MSS SP-97 BW	
1	12	2	STD	XS	P31B-00CBN	Outlet ASTM A105 MSS SP-97 BW	
1	14	2	STD	XS	P31B-00CAE	Outlet ASTM A105 MSS SP-97 BW	
1	8	3	SCH20	STD	P31B-00P11	Outlet ASTM A105 MSS SP-97 BW	
1	10	3	SCH30	STD	P31B-00NYK	Outlet ASTM A105 MSS SP-97 BW	
1	12	3	STD	STD	P31B-0096N	Outlet ASTM A105 MSS SP-97 BW	
1	14	3	STD	STD	P31B-0090T	Outlet ASTM A105 MSS SP-97 BW	
1	12	4	STD	STD	P31B-008ZW	Outlet ASTM A105 MSS SP-97 BW	
1	14	4	STD	STD	P31B-008YM	Outlet ASTM A105 MSS SP-97 BW	
4212	3	2	STD	XS	P31B-00UUU	Outlet ASTM A105 MSS SP-97 BW	38

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30B-0002D	Plug ASTM A105 ASME B16.11 NPT Round head	
1	0.75				P30B-0002E	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1				P30B-0002F	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1.5				P30B-0002G	Plug ASTM A105 ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P61B-001HC	Flange SW ASTM A105 Class 300 ASME B16.5 RF	
1	0.75		XS		P61B-001HS	Flange SW ASTM A105 Class 300 ASME B16.5 RF	
1	1		XS		P61B-001EF	Flange SW ASTM A105 Class 300 ASME B16.5 RF	
1	1.5		XS		P61B-001F2	Flange SW ASTM A105 Class 300 ASME B16.5 RF	
1	2		XS		P61B-001HW	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	3		STD		P61B-001LJ	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	4		STD		P61B-001MC	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	6		STD		P61B-001N2	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	8		SCH20		P61B-002LJ	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	10		SCH30		P61B-003LX	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	12		STD		P61B-001LE	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	14		STD		P61B-001M9	Flange WN ASTM A105 Class 300 ASME B16.5 RF	

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FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
781	0.5		XS		P61B-001FF	Flange SW ASTM A105 Class 600 ASME B16.5 RF	
781	0.75		XS		P61B-001FH	Flange SW ASTM A105 Class 600 ASME B16.5 RF	
781	1		XS		P61B-001DR	Flange SW ASTM A105 Class 600 ASME B16.5 RF	
781	1.5		XS		P61B-001DV	Flange SW ASTM A105 Class 600 ASME B16.5 RF	
781	2		XS		P61B-001DH	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	3		STD		P61B-001TW	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	4		STD		P61B-001VV	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	6		STD		P61B-001JW	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	8		SCH20		P61B-003F0	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	10		SCH30		P61B-003TN	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	12		STD		P61B-001P9	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	14		STD		P61B-001PL	Flange WN ASTM A105 Class 600 ASME B16.5 RF	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67B-000GH	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	0.75				P67B-000GJ	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	1				P67B-000GK	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	1.5				P67B-000GL	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	2				P67B-000GM	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	3				P67B-000GN	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	4				P67B-000GP	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	6				P67B-000GY	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	8				P67B-000GZ	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	10				P67B-000GR	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	12				P67B-000GS	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	14				P67B-000GT	Blind flange ASTM A105 Class 300 ASME B16.5 RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000FT	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000FU	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000G5	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000G6	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	6				P73T-000G7	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	8				P73T-000G8	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	10				P73T-000FX	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	12				P73T-000FY	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	14				P73T-000FZ	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	0.5				P73T-000J8	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	0.75				P73T-000J9	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1				P73T-000JA	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1.5				P73T-000JB	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	2				P73T-000JH	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	3				P73T-000JL	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	4				P73T-000JM	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	6				P73T-000JN	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	8				P73T-000JP	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

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GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
781	10				P73T-000JC	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	12				P73T-000JD	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	14				P73T-000JE	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-10				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	12-14				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
781	0.5-6				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
781	8-14				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81B-002G5	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated Benzene service	
1	0.75				P81B-002G6	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated Benzene service	
1	1				P81B-002G7	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated Benzene service	
1	1.5				P81B-002G8	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated Benzene service	
1	2				P81C-007NC	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated Benzene service	
1	3				P81C-007ND	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated Benzene service	
1	4				P81C-007NE	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated Benzene service	
1	6				P81C-007NF	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated Benzene service	
1	8				P81C-0091A	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated Benzene service	
1	10				P81C-007NH	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated Benzene service	
1	12				P81C-007NJ	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated Benzene service	
1	14				P81C-007NK	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated Benzene service	
714	0.5				P81B-002S8	Gate valve ASTM A105 Class 800 API 602 SW - NPT Trim number 8 BB-BG-OS&Y Handwheel operated Benzene service	
714	0.75				P81B-002G9	Gate valve ASTM A105 Class 800 API 602 SW - NPT Trim number 8 BB-BG-OS&Y Handwheel operated Benzene service	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82B-001UP	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated Benzene service	
1	0.75				P82B-001UR	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated Benzene service	
1	1				P82B-001US	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated Benzene service	
1	1.5				P82B-001UT	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated Benzene service	
1	2				P82C-003VS	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated Benzene service	
1	3				P82C-003VT	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated Benzene service	
1	4				P82C-003VU	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated Benzene service	
1	6				P82C-003VV	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated Benzene service	
1	8				P82C-004CH	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated Benzene service	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83B-000FX	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover	
1	0.75				P83B-000ER	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover	
1	1				P83B-000ES	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover	
1	1.5				P83B-000ET	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover	
1	2				P83C-0013H	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	

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CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3				P83C-0013L	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	4				P83C-0013M	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	6				P83C-0013N	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	8				P83C-0013P	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	10				P83C-0013D	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	12				P83C-0013E	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	14				P83C-0023R	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	

ORIFICE FLANGE (FO)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2		XS		P66B-0084B	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	3		STD		P66B-0084C	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	4		STD		P66B-0084D	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	6		STD		P66B-0084E	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	8		SCH20		P66B-0084F	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	10		SCH30		P66B-0086Z	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	12		STD		P66B-008A2	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	14		STD		P66B-008A3	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
200	2		XS		P66B-00843	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	3		STD		P66B-00844	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	4		STD		P66B-00845	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	6		STD		P66B-00846	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	8		SCH20		P66B-00847	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	10		SCH30		P66B-00874	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	12		STD		P66B-008A4	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	14		STD		P66B-008A5	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71B-000B1	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	0.75				P71B-000B2	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	1				P71B-000B3	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71B-000B4	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	2				P71B-000B6	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	3				P71B-000B7	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	4				P71B-000B8	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	6				P71B-000B9	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	8				P71B-000BA	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	10				P71B-000B5	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	12				P71B-000BB	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	

PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000FA	Paddle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	

PADDLE SPACER (PS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000FG	Paddle spacer ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	

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BOLT TABLE (B_B1A8 , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-003V4		
0.75	4	0.625	75	P80S-003XC		
1	4	0.625	80	P80S-003XD		
1.5	4	0.750	95	P80S-00414		
2	8	0.625	90	P80S-003XF		
3	8	0.750	110	P80S-003XK		
4	8	0.750	115	P80S-003XL		
6	12	0.750	125	P80S-003XN		
8	12	0.875	140	P80S-0041D		
10	16	1.000	160	P80S-0043K		
12	16	1.125	175	P80S-0046S		
14	20	1.125	180	P80S-0046T		

BOLT TABLE (B_B1A8_781 , STUD ASME RF, OPTION CODE 781)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	80	P80S-003V6		
0.75	4	0.625	90	P80S-003XF		
1	4	0.625	95	P80S-003XG		
1.5	4	0.750	110	P80S-003XK		
2	8	0.625	110	P80S-003VC		
3	8	0.750	130	P80S-003XP		
4	8	0.875	150	P80S-0041F		
6	12	1.000	175	P80S-0043P		
8	12	1.125	195	P80S-0046W		
10	16	1.250	250	P80S-004AY		
12	20	1.250	255	P80S-004AZ		
14	20	1.375	270	P80S-003E7		

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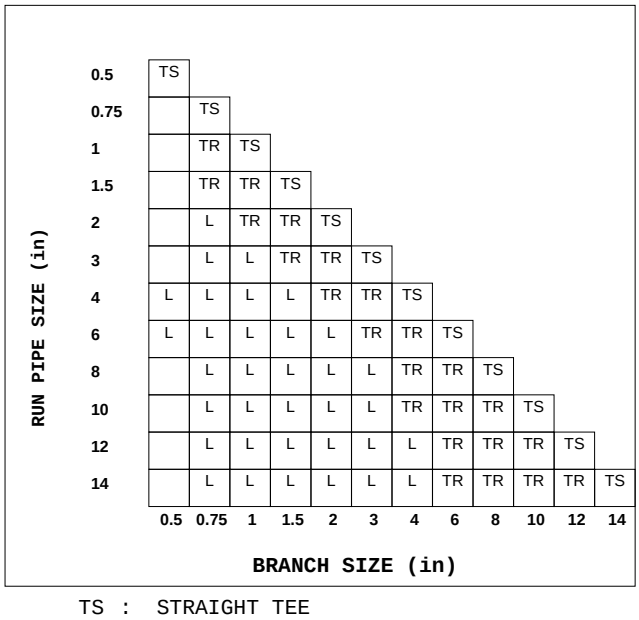
BRANCH TABLE (T_B1A8)



TS : STRAIGHT TEE
TR : REDUCING TEE
L : OUTLET

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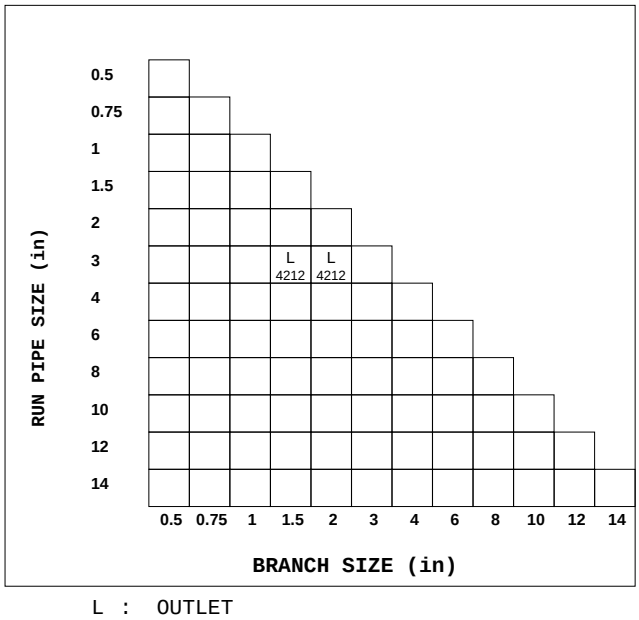
BRANCH TABLE (T_B1A8_4)



L : OUTLET

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PIPING CLASS

B1A804 REV NO. 2

Material : Killed CS
Rating : ASME CLASS 300
Flange Face : RF
C.A.(mm) : 1.50
Gasket : Spiral Wound
Service : PROCESS - BENZENE SERVICE (5% WT)
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED

DETAIL NOTES :

NO.	DESCRIPTION
38	TO BE USED FOR STAND PIPE

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
200	WITH JACK SCREW (FO)
221	RF (V)
541	NPT(F) (CA,L)
714	SW - NPT(F) (V)
781	CLASS 600 (B,F,G)
4212	WELDOLET FOR STAND PIPE (L)

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PIPING CLASS
B1A804 REV NO. 2

PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P01A-000XM	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	0.75		XS		P01A-000XN	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1		XS		P01A-000XP	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1.5		XS		P01A-000XV	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	2		XS		P01A-000YX	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	3		STD		P01A-000YM	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	4		STD		P01A-000YU	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	6		STD		P01A-000Z3	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	8		SCH20		P01A-001AT	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	10		SCH30		P01A-0016U	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	12		STD		P01A-000XT	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	14		STD		P01A-000Y1	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	16		SCH20		P01A-0018E	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	18		SCH20		P01A-00438	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE	
1	20		STD		P01A-0042G	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P02B-00014	90 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	0.75				P02B-00015	90 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	1				P02B-00016	90 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5				P02B-00017	90 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	2		XS		P02A-000CP	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		STD		P02A-000CU	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		STD		P02A-000CZ	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		STD		P02A-000D6	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		SCH20		P02A-000GZ	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	10		SCH30		P02A-000M3	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	12		STD		P02A-000BZ	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	14		STD		P02A-000C8	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	16		SCH20		P02A-000GM	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	18		SCH20		P02A-000LT	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	20		STD		P02A-0010J	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P03B-00017	45 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	0.75				P03B-00018	45 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	1				P03B-00019	45 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5				P03B-0001A	45 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	2		XS		P03A-000AS	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		STD		P03A-000AX	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		STD		P03A-000B1	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		STD		P03A-000B9	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		SCH20		P03A-000EX	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	10		SCH30		P03A-000JT	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	12		STD		P03A-000A9	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	14		STD		P03A-000AG	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	16		SCH20		P03A-000EM	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	18		SCH20		P03A-001DX	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	20		STD		P03A-000X1	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P21B-00017	Straight tee ASTM A105 Class 3000 ASME B16.11 SW	
1	0.75				P21B-00018	Straight tee ASTM A105 Class 3000 ASME B16.11 SW	
1	1				P21B-00019	Straight tee ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5				P21B-0001A	Straight tee ASTM A105 Class 3000 ASME B16.11 SW	
1	2		XS		P21A-001CJ	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3		STD		P21A-001CU	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		STD		P21A-001CW	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6		STD		P21A-001D2	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8		SCH20		P21A-00215	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10		SCH30		P21A-00259	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12		STD		P21A-001C1	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14		STD		P21A-001C8	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16		SCH20		P21A-0020X	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18		SCH20		P21A-001PJ	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20		STD		P21A-001C7	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75			P24B-0002L	Reducing tee ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5	0.75			P24B-0002N	Reducing tee ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5	1			P24B-0002P	Reducing tee ASTM A105 Class 3000 ASME B16.11 SW	
1	2	1	XS	XS	P24A-00238	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	XS	XS	P24A-0023H	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	STD	XS	P24A-00214	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	STD	XS	P24A-002HW	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P24A-002HY	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P24A-0021K	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	STD	P24A-0021A	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P24A-00229	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH20	STD	P24A-00J21	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH20	STD	P24A-005J4	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	SCH30	STD	P24A-00GNR	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	SCH30	STD	P24A-0060W	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	SCH30	SCH20	P24A-005KE	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	STD	STD	P24A-0022S	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	STD	SCH20	P24A-0060X	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	STD	SCH30	P24A-0060K	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	STD	STD	P24A-0026N	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	STD	SCH20	P24A-00KSG	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	STD	SCH30	P24A-0060L	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	STD	STD	P24A-0022R	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	6	SCH20	STD	P24A-00GU4	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	SCH20	SCH20	P24A-002XW	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	SCH20	SCH30	P24A-00KSH	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	SCH20	STD	P24A-00GP7	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	SCH20	STD	P24A-006YK	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	8	SCH20	SCH20	P24A-002XC	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	10	SCH20	SCH30	P24A-00BF6	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	12	SCH20	STD	P24A-00BH2	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	14	SCH20	STD	P24A-00BJN	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	16	SCH20	SCH20	P24A-002X5	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	8	STD	SCH20	P24A-00K0N	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	10	STD	SCH30	P24A-00BT8	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	12	STD	STD	P24A-004W2	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	14	STD	STD	P24A-004U1	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	16	STD	SCH20	P24A-006W3	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	18	STD	SCH20	P24A-006WD	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	STD	XS	P27A-001MZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P27A-001N0	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P27A-00189	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	STD	P27A-001AZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	6	4	STD	STD	P27A-001GW	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH20	STD	P27A-003K2	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH20	STD	P27A-003K3	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	SCH30	STD	P27A-003MK	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	SCH30	STD	P27A-003ML	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	SCH30	SCH20	P27A-003MM	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	STD	STD	P27A-0018X	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	STD	SCH20	P27A-0041Y	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	STD	SCH30	P27A-0041H	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	STD	STD	P27A-0019L	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	STD	SCH20	P27A-003MC	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	STD	SCH30	P27A-003MB	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	STD	STD	P27A-0018W	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	SCH20	SCH20	P27A-001WX	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	SCH20	SCH30	P27A-003NC	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	SCH20	STD	P27A-0055Z	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	SCH20	STD	P27A-0057G	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	10	SCH20	SCH30	P27A-0084J	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	12	SCH20	STD	P27A-00BGN	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	14	SCH20	STD	P27A-00BGP	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	16	SCH20	SCH20	P27A-001WN	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	12	STD	STD	P27A-0018G	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	14	STD	STD	P27A-0019K	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	16	STD	SCH20	P27A-0082M	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	18	STD	SCH20	P27A-0084N	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	STD	XS	P28A-001N5	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P28A-001N6	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P28A-0018B	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	STD	P28A-001AS	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P28A-00182	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH20	STD	P28A-003JU	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH20	STD	P28A-003JV	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	SCH30	STD	P28A-003MD	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	SCH30	STD	P28A-003ME	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	SCH30	SCH20	P28A-003MF	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	STD	STD	P28A-00191	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	STD	SCH20	P28A-0041S	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	STD	SCH30	P28A-0041B	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	STD	STD	P28A-0019R	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	STD	SCH20	P28A-003M6	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	STD	SCH30	P28A-003M5	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	STD	STD	P28A-0018Z	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	SCH20	SCH20	P28A-001T6	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	SCH20	SCH30	P28A-003N6	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	SCH20	STD	P28A-00519	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	SCH20	STD	P28A-0051A	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	10	SCH20	SCH30	P28A-004UL	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	12	SCH20	STD	P28A-008FP	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	14	SCH20	STD	P28A-008FR	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	16	SCH20	SCH20	P28A-001T1	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	12	STD	STD	P28A-0018X	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	14	STD	STD	P28A-001A8	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	16	STD	SCH20	P28A-004SK	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	18	STD	SCH20	P28A-004UN	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	

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CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P29B-0001J	Cap ASTM A105 Class 3000 ASME B16.11 SW	
1	0.75				P29B-0001F	Cap ASTM A105 Class 3000 ASME B16.11 SW	
1	1				P29B-0001G	Cap ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5				P29B-0001H	Cap ASTM A105 Class 3000 ASME B16.11 SW	
1	2		XS		P29A-000A1	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		STD		P29A-000BK	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		STD		P29A-000A3	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6		STD		P29A-000A9	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8		SCH20		P29A-000EY	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10		SCH30		P29A-000K7	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12		STD		P29A-000A7	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14		STD		P29A-000AJ	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16		SCH20		P29A-000F3	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18		SCH20		P29A-000E0	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20		STD		P29A-000B2	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
541	0.75				P29B-0000C	Cap ASTM A105 Class 3000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P41A-000B5	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		SCH160		P41A-000B6	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		SCH160		P41A-000B7	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		SCH160		P41A-000B8	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

CON SWAGED NIPPLE (SNC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	XS	XS	P42A-00036	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	XS	XS	P42A-00038	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	XS	XS	P42A-0003B	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	XS	XS	P42A-00035	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	XS	XS	P42A-00039	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	XS	XS	P42A-0003C	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	XS	XS	P42A-0008C	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	XS	XS	P42A-0008D	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	XS	XS	P42A-0008E	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	XS	XS	P42A-0008F	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	STD	XS	P42A-0007V	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	

ECC SWAGED NIPPLE (SNE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	XS	XS	P43A-00036	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	XS	XS	P43A-00037	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	XS	XS	P43A-00038	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	XS	XS	P43A-00039	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	XS	XS	P43A-0003A	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	XS	XS	P43A-0003B	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	XS	XS	P43A-00042	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	XS	XS	P43A-00043	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	XS	XS	P43A-00044	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	XS	XS	P43A-00045	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	STD	XS	P43A-0003J	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	

COUPLING (CPS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P47B-0001D	Coupling ASTM A105 Class 3000 ASME B16.11 SW - SW	
1	0.75				P47B-0001E	Coupling ASTM A105 Class 3000 ASME B16.11 SW - SW	
1	1				P47B-0001F	Coupling ASTM A105 Class 3000 ASME B16.11 SW - SW	
1	1.5				P47B-0001G	Coupling ASTM A105 Class 3000 ASME B16.11 SW - SW	

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OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2 - 2.5	0.75			P31B-0137J	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	3 - 5	0.75			P31B-0137K	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	6 - 12	0.75			P31B-007AB	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	14 - 36	0.75			P31B-007AJ	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	3	1			P31B-007A7	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	4 - 5	1			P31B-0138Z	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	6 - 10	1			P31B-007A4	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	12 - 36	1			P31B-007AA	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	4	1.5			P31B-005SN	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	5 - 6	1.5			P31B-01390	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	8 - 12	1.5			P31B-0079U	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	14 - 24	1.5			P31B-007A0	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
4212	3	1.5			P31B-005SL	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
541	1	0.75			P31B-00551	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
541	1.5	0.75			P31B-00555	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
541	2 - 2.5	0.75			P31B-0137H	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
541	3 - 5	0.75			P31B-01376	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
541	6 - 12	0.75			P31B-007GR	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
541	14 - 36	0.75			P31B-007GY	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
1	6	2	STD	XS	P31B-007SH	Outlet ASTM A105 MSS SP-97 BW	
1	8	2	SCH20	XS	P31B-00NY2	Outlet ASTM A105 MSS SP-97 BW	
1	10	2	SCH30	XS	P31B-00NVF	Outlet ASTM A105 MSS SP-97 BW	
1	12	2	STD	XS	P31B-00CBN	Outlet ASTM A105 MSS SP-97 BW	
1	14	2	STD	XS	P31B-00CAE	Outlet ASTM A105 MSS SP-97 BW	
1	16	2	SCH20	XS	P31B-00TF8	Outlet ASTM A105 MSS SP-97 BW	
1	18	2	SCH20	XS	P31B-00NVX	Outlet ASTM A105 MSS SP-97 BW	
1	20	2	STD	XS	P31B-00994	Outlet ASTM A105 MSS SP-97 BW	
1	8	3	SCH20	STD	P31B-00P11	Outlet ASTM A105 MSS SP-97 BW	
1	10	3	SCH30	STD	P31B-00NYK	Outlet ASTM A105 MSS SP-97 BW	
1	12	3	STD	STD	P31B-0096N	Outlet ASTM A105 MSS SP-97 BW	
1	14	3	STD	STD	P31B-0090T	Outlet ASTM A105 MSS SP-97 BW	
1	16	3	SCH20	STD	P31B-00TU2	Outlet ASTM A105 MSS SP-97 BW	
1	18	3	SCH20	STD	P31B-00NZ4	Outlet ASTM A105 MSS SP-97 BW	
1	20	3	STD	STD	P31B-008FA	Outlet ASTM A105 MSS SP-97 BW	
1	12	4	STD	STD	P31B-008ZW	Outlet ASTM A105 MSS SP-97 BW	
1	14	4	STD	STD	P31B-008YM	Outlet ASTM A105 MSS SP-97 BW	
1	16	4	SCH20	STD	P31B-00TU3	Outlet ASTM A105 MSS SP-97 BW	
1	18	4	SCH20	STD	P31B-00P1V	Outlet ASTM A105 MSS SP-97 BW	
1	20	4	STD	STD	P31B-008D3	Outlet ASTM A105 MSS SP-97 BW	
1	18	6	SCH20	STD	P31B-00P48	Outlet ASTM A105 MSS SP-97 BW	
1	20	6	STD	STD	P31B-008PZ	Outlet ASTM A105 MSS SP-97 BW	
4212	3	2	STD	XS	P31B-00UUU	Outlet ASTM A105 MSS SP-97 BW	38

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30B-0002D	Plug ASTM A105 ASME B16.11 NPT Round head	
1	0.75				P30B-0002E	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1				P30B-0002F	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1.5				P30B-0002G	Plug ASTM A105 ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P61B-001HC	Flange SW ASTM A105 Class 300 ASME B16.5 RF	
1	0.75		XS		P61B-001HS	Flange SW ASTM A105 Class 300 ASME B16.5 RF	
1	1		XS		P61B-001EF	Flange SW ASTM A105 Class 300 ASME B16.5 RF	
1	1.5		XS		P61B-001F2	Flange SW ASTM A105 Class 300 ASME B16.5 RF	
1	2		XS		P61B-001HW	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	3		STD		P61B-001LJ	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	4		STD		P61B-001MC	Flange WN ASTM A105 Class 300 ASME B16.5 RF	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	6		STD		P61B-001N2	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	8		SCH20		P61B-002LJ	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	10		SCH30		P61B-003LX	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	12		STD		P61B-001LE	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	14		STD		P61B-001M9	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	16		SCH20		P61B-002MS	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	18		SCH20		P61B-002MT	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	20		STD		P61B-001NT	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
781	0.5		XS		P61B-001FF	Flange SW ASTM A105 Class 600 ASME B16.5 RF	
781	0.75		XS		P61B-001FH	Flange SW ASTM A105 Class 600 ASME B16.5 RF	
781	1		XS		P61B-001DR	Flange SW ASTM A105 Class 600 ASME B16.5 RF	
781	1.5		XS		P61B-001DV	Flange SW ASTM A105 Class 600 ASME B16.5 RF	
781	2		XS		P61B-001DH	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	3		STD		P61B-001TW	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	4		STD		P61B-001VV	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	6		STD		P61B-001JW	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	8		SCH20		P61B-003F0	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	10		SCH30		P61B-003TN	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	12		STD		P61B-001P9	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	14		STD		P61B-001PL	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	16		SCH20		P61B-00798	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	18		SCH20		P61B-003TP	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	20		STD		P61B-003GP	Flange WN ASTM A105 Class 600 ASME B16.5 RF	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67B-000GH	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	0.75				P67B-000GJ	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	1				P67B-000GK	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	1.5				P67B-000GL	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	2				P67B-000GM	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	3				P67B-000GN	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	4				P67B-000GP	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	6				P67B-000GY	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	8				P67B-000GZ	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	10				P67B-000GR	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	12				P67B-000GS	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	14				P67B-000GT	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	16				P67B-000GU	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	18				P67B-000GV	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	20				P67B-000GW	Blind flange ASTM A105 Class 300 ASME B16.5 RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000FT	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000FU	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000G5	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000G6	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	6				P73T-000G7	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	8				P73T-000G8	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	10				P73T-000FX	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	12				P73T-000FY	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P73T-000FZ	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	16				P73T-000G0	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	18				P73T-000G1	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	20				P73T-000G3	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	0.5				P73T-000J8	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	0.75				P73T-000J9	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1				P73T-000JA	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1.5				P73T-000JB	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	2				P73T-000JH	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	3				P73T-000JL	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	4				P73T-000JM	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	6				P73T-000JN	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	8				P73T-000JP	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	10				P73T-000JC	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	12				P73T-000JD	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	14				P73T-000JE	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	16				P73T-000JF	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	18				P73T-000JG	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	20				P73T-000JJ	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-10				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	12-20				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
781	0.5-6				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
781	8-20				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81B-002G5	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated Benzene service	
1	0.75				P81B-002G6	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated Benzene service	
1	1				P81B-002G7	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated Benzene service	
1	1.5				P81B-002G8	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated Benzene service	
1	2				P81C-007NC	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated Benzene service	
1	3				P81C-007ND	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated Benzene service	
1	4				P81C-007NE	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated Benzene service	
1	6				P81C-007NF	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated Benzene service	
1	8				P81C-0091A	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated Benzene service	
1	10				P81C-007NH	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated Benzene service	
1	12				P81C-007NJ	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated Benzene service	
1	14				P81C-007NK	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated Benzene service	
1	16				P81C-007NL	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated Benzene service	
1	18				P81C-007NM	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated Benzene service	
1	20				P81C-007NN	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated Benzene service	
221	1				P81B-0038Z	Gate valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated Benzene service	

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GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
221	1.5				P81B-00390	Gate valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated Benzene service	
714	0.5				P81B-002S8	Gate valve ASTM A105 Class 800 API 602 SW - NPT Trim number 8 BB-BG-OS&Y Handwheel operated Benzene service	
714	0.75				P81B-002G9	Gate valve ASTM A105 Class 800 API 602 SW - NPT Trim number 8 BB-BG-OS&Y Handwheel operated Benzene service	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82B-001UP	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated Benzene service	
1	0.75				P82B-001UR	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated Benzene service	
1	1				P82B-001US	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated Benzene service	
1	1.5				P82B-001UT	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated Benzene service	
1	2				P82C-003VS	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated Benzene service	
1	3				P82C-003VT	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated Benzene service	
1	4				P82C-003VU	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated Benzene service	
1	6				P82C-003VV	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated Benzene service	
1	8				P82C-004CH	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated Benzene service	
1	10				P82C-003VX	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated Benzene service	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83B-000FX	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover	
1	0.75				P83B-000ER	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover	
1	1				P83B-000ES	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover	
1	1.5				P83B-000ET	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover	
1	2				P83C-0013H	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	3				P83C-0013L	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	4				P83C-0013M	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	6				P83C-0013N	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	8				P83C-0013P	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	10				P83C-0013D	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	12				P83C-0013E	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	14				P83C-0023R	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	16				P83C-0013F	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	18				P83C-0013G	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	20				P83C-0013J	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	

ORIFICE FLANGE (FO)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2		XS		P66B-0084B	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	3		STD		P66B-0084C	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	4		STD		P66B-0084D	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	6		STD		P66B-0084E	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	8		SCH20		P66B-0084F	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	10		SCH30		P66B-0086Z	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	12		STD		P66B-008A2	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	14		STD		P66B-008A3	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	16		SCH20		P66B-0083Y	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	18		SCH20		P66B-0084R	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	20		STD		P66B-0084S	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
200	2		XS		P66B-00843	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	3		STD		P66B-00844	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	

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ORIFICE FLANGE (FO)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
200	4		STD		P66B-00845	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	6		STD		P66B-00846	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	8		SCH20		P66B-00847	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	10		SCH30		P66B-00874	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	12		STD		P66B-008A4	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	14		STD		P66B-008A5	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	16		SCH20		P66B-0083Z	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	18		SCH20		P66B-0084T	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	20		STD		P66B-0084U	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71B-000B1	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	0.75				P71B-000B2	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	1				P71B-000B3	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71B-000B4	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	2				P71B-000B6	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	3				P71B-000B7	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	4				P71B-000B8	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	6				P71B-000B9	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	8				P71B-000BA	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	10				P71B-000B5	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	12				P71B-000BB	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	

PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000FA	Paddle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	16				P72B-000FB	Paddle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	18				P72B-000FC	Paddle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	20				P72B-000FD	Paddle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	

PADDLE SPACER (PS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000FG	Paddle spacer ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	16				P72B-000FH	Paddle spacer ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	18				P72B-000FJ	Paddle spacer ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	20				P72B-000FK	Paddle spacer ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	

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BOLT TABLE (B_B1A804 , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-003V4		
0.75	4	0.625	75	P80S-003XC		
1	4	0.625	80	P80S-003XD		
1.5	4	0.750	95	P80S-00414		
2	8	0.625	90	P80S-003XF		
3	8	0.750	110	P80S-003XK		
4	8	0.750	115	P80S-003XL		
6	12	0.750	125	P80S-003XN		
8	12	0.875	140	P80S-0041D		
10	16	1.000	160	P80S-0043K		
12	16	1.125	175	P80S-0046S		
14	20	1.125	180	P80S-0046T		
16	20	1.250	190	P80S-004AK		
18	24	1.250	200	P80S-004AM		
20	24	1.250	210	P80S-004AP		

BOLT TABLE (B_B1A804_781 , STUD ASME RF, OPTION CODE 781)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	80	P80S-003V6		
0.75	4	0.625	90	P80S-003XF		
1	4	0.625	95	P80S-003XG		
1.5	4	0.750	110	P80S-003XK		
2	8	0.625	110	P80S-003VC		
3	8	0.750	130	P80S-003XP		
4	8	0.875	150	P80S-0041F		
6	12	1.000	175	P80S-0043P		
8	12	1.125	195	P80S-0046W		
10	16	1.250	250	P80S-004AY		
12	20	1.250	255	P80S-004AZ		
14	20	1.375	270	P80S-003E7		
16	20	1.500	295	P80S-003FL		
18	20	1.625	320	P80S-005TT		
20	24	1.625	335	P80S-005TW		

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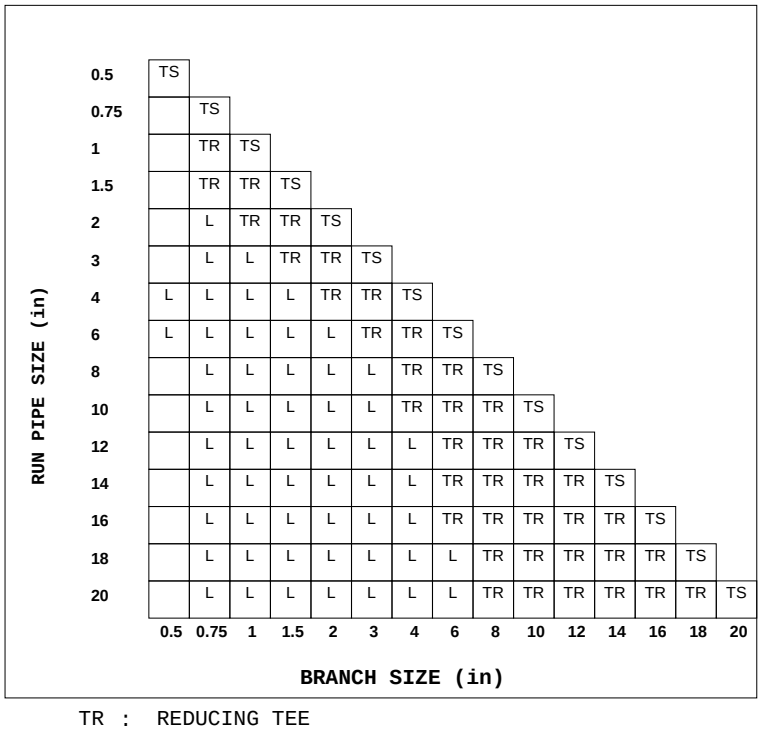
BRANCH TABLE (T_B1A804)



TR : REDUCING TEE
TS : STRAIGHT TEE
L : OUTLET

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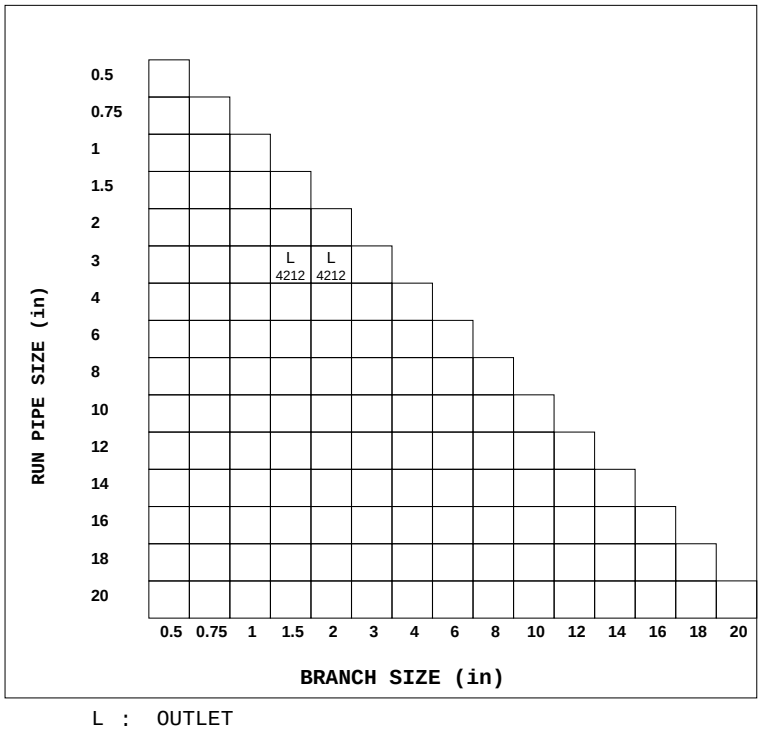
BRANCH TABLE (T_B1A804_4)



L : OUTLET

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Material : Killed CS
Rating : ASME CLASS 300
Flange Face : RF
C.A.(mm) : 1.50
Gasket : Spiral Wound
Service : PROCESS - BENZENE SERVICE (5% WT) + HYDROGEN
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
2	USE OF SOFT SEATED BALL, PLUG AND BUTTERFLY VALVES SHALL BE LIMITED TO MAXIMUM OF 204DEGC (400DEGF)
16	PIPE CLASS SHALL BE USED WITHIN THE NORMAL OPERATING PRESSURE/TEMPERATURE LIMITS SPECIFIED IN API RP 941. PRESSURE / TEMPERATURE SPECIFIED IN THE PIPE CLASS EXCEEDING API RP 941 LIMITS SHOULD BE REGARDED AS UPSET CONDITIONS RATHER THAN FOR CONTINUOUS SERVICE

DETAIL NOTES :

NO.	DESCRIPTION
38	TO BE USED FOR STAND PIPE

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
24	FULL PORT (Q)
200	WITH JACK SCREW (FO)
541	NPT(F) (CA,L)
714	SW - NPT(F) (V)
781	CLASS 600 (B,F,G)
4212	WELDOLET FOR STAND PIPE (L)
4602	DISSIMILAR TYPE CHECK VALVE (XDP)

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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P01A-000XM	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	0.75		XS		P01A-000XN	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1		XS		P01A-000XP	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1.5		XS		P01A-000XV	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	2		XS		P01A-000YX	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	3		STD		P01A-000YM	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	4		STD		P01A-000YU	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	6		STD		P01A-000Z3	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	8		SCH20		P01A-001AT	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	10		SCH30		P01A-0016U	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	12		STD		P01A-000XT	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	14		STD		P01A-000Y1	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	16		SCH20		P01A-0018E	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	18		SCH20		P01A-00438	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE	
1	20		STD		P01A-0042G	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE	
1	24		STD		P01A-0042H	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P02B-00014	90 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	0.75				P02B-00015	90 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	1				P02B-00016	90 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5				P02B-00017	90 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	2		XS		P02A-000CP	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		STD		P02A-000CU	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		STD		P02A-000CZ	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		STD		P02A-000D6	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		SCH20		P02A-000GZ	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	10		SCH30		P02A-000M3	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	12		STD		P02A-000BZ	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	14		STD		P02A-000C8	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	16		SCH20		P02A-000GM	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	18		SCH20		P02A-000LT	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	20		STD		P02A-0010J	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	24		STD		P02A-0010K	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P03B-00017	45 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	0.75				P03B-00018	45 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	1				P03B-00019	45 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5				P03B-0001A	45 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	2		XS		P03A-000AS	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		STD		P03A-000AX	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		STD		P03A-000B1	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		STD		P03A-000B9	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		SCH20		P03A-000EX	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	10		SCH30		P03A-000JT	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	12		STD		P03A-000A9	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	14		STD		P03A-000AG	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	16		SCH20		P03A-000EM	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	18		SCH20		P03A-001DX	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	20		STD		P03A-000X1	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	24		STD		P03A-000X2	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P21B-00017	Straight tee ASTM A105 Class 3000 ASME B16.11 SW	
1	0.75				P21B-00018	Straight tee ASTM A105 Class 3000 ASME B16.11 SW	

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STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P21B-00019	Straight tee ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5				P21B-0001A	Straight tee ASTM A105 Class 3000 ASME B16.11 SW	
1	2		XS		P21A-001CJ	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		STD		P21A-001CU	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		STD		P21A-001CW	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6		STD		P21A-001D2	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8		SCH20		P21A-00215	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10		SCH30		P21A-00259	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12		STD		P21A-001C1	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14		STD		P21A-001C8	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16		SCH20		P21A-0020X	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18		SCH20		P21A-001PJ	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20		STD		P21A-001C7	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24		STD		P21A-001CC	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75			P24B-0002L	Reducing tee ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5	0.75			P24B-0002N	Reducing tee ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5	1			P24B-0002P	Reducing tee ASTM A105 Class 3000 ASME B16.11 SW	
1	2	1	XS	XS	P24A-00238	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	XS	XS	P24A-0023H	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	STD	XS	P24A-00214	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	STD	XS	P24A-002HW	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P24A-002HY	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P24A-0021K	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	STD	P24A-0021A	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P24A-00229	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH20	STD	P24A-00J21	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH20	STD	P24A-005J4	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	SCH30	STD	P24A-00GNR	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	SCH30	STD	P24A-0060W	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	SCH30	SCH20	P24A-005KE	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	STD	STD	P24A-0022S	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	STD	SCH20	P24A-0060X	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	STD	SCH30	P24A-0060K	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	STD	STD	P24A-0026N	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	STD	SCH20	P24A-00KSG	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	STD	SCH30	P24A-0060L	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	STD	STD	P24A-0022R	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	6	SCH20	STD	P24A-00GU4	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	SCH20	SCH20	P24A-002XW	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	SCH20	SCH30	P24A-00KSH	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	SCH20	STD	P24A-00GP7	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	SCH20	STD	P24A-006YK	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	8	SCH20	SCH20	P24A-002XC	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	10	SCH20	SCH30	P24A-00BF6	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	12	SCH20	STD	P24A-00BH2	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	14	SCH20	STD	P24A-00BJN	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	16	SCH20	SCH20	P24A-002X5	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	8	STD	SCH20	P24A-00K0N	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	10	STD	SCH30	P24A-00BT8	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	12	STD	STD	P24A-004W2	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	14	STD	STD	P24A-004U1	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	16	STD	SCH20	P24A-006W3	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	18	STD	SCH20	P24A-006WD	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	10	STD	SCH30	P24A-00C5X	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	12	STD	STD	P24A-004UC	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	14	STD	STD	P24A-004T3	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	

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REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	24	16	STD	SCH20	P24A-00CAD	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	18	STD	SCH20	P24A-006WF	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	20	STD	STD	P24A-004SV	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	STD	XS	P27A-001MZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P27A-001N0	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P27A-00189	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	STD	P27A-001AZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P27A-001GW	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH20	STD	P27A-003K2	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH20	STD	P27A-003K3	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	SCH30	STD	P27A-003MK	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	SCH30	STD	P27A-003ML	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	SCH30	SCH20	P27A-003MM	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	STD	STD	P27A-0018X	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	STD	SCH20	P27A-0041Y	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	STD	SCH30	P27A-0041H	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	STD	STD	P27A-0019L	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	STD	SCH20	P27A-003MC	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	STD	SCH30	P27A-003MB	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	STD	STD	P27A-0018W	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	SCH20	SCH20	P27A-001WX	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	SCH20	SCH30	P27A-003NC	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	SCH20	STD	P27A-0055Z	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	SCH20	STD	P27A-0057G	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	10	SCH20	SCH30	P27A-0084J	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	12	SCH20	STD	P27A-00BGN	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	14	SCH20	STD	P27A-00BGP	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	16	SCH20	SCH20	P27A-001WN	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	12	STD	STD	P27A-0018G	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	14	STD	STD	P27A-0019K	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	16	STD	SCH20	P27A-0082M	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	18	STD	SCH20	P27A-0084N	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	16	STD	SCH20	P27A-0084T	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	18	STD	SCH20	P27A-0084U	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	20	STD	STD	P27A-001A8	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	STD	XS	P28A-001N5	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P28A-001N6	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P28A-0018B	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	STD	P28A-001AS	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P28A-00182	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH20	STD	P28A-003JU	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH20	STD	P28A-003JV	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	SCH30	STD	P28A-003MD	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	SCH30	STD	P28A-003ME	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	SCH30	SCH20	P28A-003MF	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	STD	STD	P28A-00191	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	STD	SCH20	P28A-0041S	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	STD	SCH30	P28A-0041B	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	STD	STD	P28A-0019R	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	STD	SCH20	P28A-003M6	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	STD	SCH30	P28A-003M5	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	STD	STD	P28A-0018Z	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	SCH20	SCH20	P28A-001T6	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	16	10	SCH20	SCH30	P28A-003N6	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	SCH20	STD	P28A-00519	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	SCH20	STD	P28A-0051A	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	10	SCH20	SCH30	P28A-004UL	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	12	SCH20	STD	P28A-008FP	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	14	SCH20	STD	P28A-008FR	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	16	SCH20	SCH20	P28A-001T1	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	12	STD	STD	P28A-0018X	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	14	STD	STD	P28A-001A8	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	16	STD	SCH20	P28A-004SK	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	18	STD	SCH20	P28A-004UN	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	16	STD	SCH20	P28A-004UR	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	18	STD	SCH20	P28A-004US	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	20	STD	STD	P28A-001AW	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P29B-0001J	Cap ASTM A105 Class 3000 ASME B16.11 SW	
1	0.75				P29B-0001F	Cap ASTM A105 Class 3000 ASME B16.11 SW	
1	1				P29B-0001G	Cap ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5				P29B-0001H	Cap ASTM A105 Class 3000 ASME B16.11 SW	
1	2		XS		P29A-000A1	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		STD		P29A-000BK	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		STD		P29A-000A3	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6		STD		P29A-000A9	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8		SCH20		P29A-000EY	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10		SCH30		P29A-000K7	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12		STD		P29A-000A7	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14		STD		P29A-000AJ	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16		SCH20		P29A-000F3	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18		SCH20		P29A-000E0	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20		STD		P29A-000B2	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24		STD		P29A-000B8	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
541	0.75				P29B-0000C	Cap ASTM A105 Class 3000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P41A-000B5	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		SCH160		P41A-000B6	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		SCH160		P41A-000B7	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		SCH160		P41A-000B8	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

CON SWAGED NIPPLE (SNC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	XS	XS	P42A-00036	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	XS	XS	P42A-00038	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	XS	XS	P42A-0003B	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	XS	XS	P42A-00035	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	XS	XS	P42A-00039	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	XS	XS	P42A-0003C	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	XS	XS	P42A-0008C	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	XS	XS	P42A-0008D	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	XS	XS	P42A-0008E	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	XS	XS	P42A-0008F	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	STD	XS	P42A-0007V	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	

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ECC SWAGED NIPPLE (SNE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	XS	XS	P43A-00036	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	XS	XS	P43A-00037	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	XS	XS	P43A-00038	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	XS	XS	P43A-00039	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	XS	XS	P43A-0003A	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	XS	XS	P43A-0003B	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	XS	XS	P43A-00042	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	XS	XS	P43A-00043	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	XS	XS	P43A-00044	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	XS	XS	P43A-00045	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	STD	XS	P43A-0003J	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	

COUPLING (CPS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P47B-0001D	Coupling ASTM A105 Class 3000 ASME B16.11 SW - SW	
1	0.75				P47B-0001E	Coupling ASTM A105 Class 3000 ASME B16.11 SW - SW	
1	1				P47B-0001F	Coupling ASTM A105 Class 3000 ASME B16.11 SW - SW	
1	1.5				P47B-0001G	Coupling ASTM A105 Class 3000 ASME B16.11 SW - SW	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2 - 2.5	0.75			P31B-0137J	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	3 - 5	0.75			P31B-0137K	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	6 - 12	0.75			P31B-007AB	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	14 - 36	0.75			P31B-007AJ	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	3	1			P31B-007A7	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	4 - 5	1			P31B-0138Z	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	6 - 10	1			P31B-007A4	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	12 - 36	1			P31B-007AA	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	4	1.5			P31B-005SN	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	5 - 6	1.5			P31B-01390	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	8 - 12	1.5			P31B-0079U	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	14 - 24	1.5			P31B-007A0	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
541	1	0.75			P31B-00551	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
541	1.5	0.75			P31B-00555	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
541	2 - 2.5	0.75			P31B-0137H	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
541	3 - 5	0.75			P31B-01376	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
541	6 - 12	0.75			P31B-007GR	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
541	14 - 36	0.75			P31B-007GY	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
1	6	2	STD	XS	P31B-007SH	Outlet ASTM A105 MSS SP-97 BW	
1	8	2	SCH20	XS	P31B-00NY2	Outlet ASTM A105 MSS SP-97 BW	
1	10	2	SCH30	XS	P31B-00NVF	Outlet ASTM A105 MSS SP-97 BW	
1	12	2	STD	XS	P31B-00CBN	Outlet ASTM A105 MSS SP-97 BW	
1	14	2	STD	XS	P31B-00CAE	Outlet ASTM A105 MSS SP-97 BW	
1	16	2	SCH20	XS	P31B-00TF8	Outlet ASTM A105 MSS SP-97 BW	
1	18	2	SCH20	XS	P31B-00NVX	Outlet ASTM A105 MSS SP-97 BW	
1	20	2	STD	XS	P31B-00994	Outlet ASTM A105 MSS SP-97 BW	
1	24	2	STD	XS	P31B-0092Z	Outlet ASTM A105 MSS SP-97 BW	
1	8	3	SCH20	STD	P31B-00P11	Outlet ASTM A105 MSS SP-97 BW	
1	10	3	SCH30	STD	P31B-00NYK	Outlet ASTM A105 MSS SP-97 BW	
1	12	3	STD	STD	P31B-0096N	Outlet ASTM A105 MSS SP-97 BW	
1	14	3	STD	STD	P31B-0090T	Outlet ASTM A105 MSS SP-97 BW	
1	16	3	SCH20	STD	P31B-00TU2	Outlet ASTM A105 MSS SP-97 BW	
1	18	3	SCH20	STD	P31B-00NZ4	Outlet ASTM A105 MSS SP-97 BW	
1	20	3	STD	STD	P31B-008FA	Outlet ASTM A105 MSS SP-97 BW	
1	24	3	STD	STD	P31B-00895	Outlet ASTM A105 MSS SP-97 BW	
1	12	4	STD	STD	P31B-008ZW	Outlet ASTM A105 MSS SP-97 BW	
1	14	4	STD	STD	P31B-008YM	Outlet ASTM A105 MSS SP-97 BW	
1	16	4	SCH20	STD	P31B-00TU3	Outlet ASTM A105 MSS SP-97 BW	

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OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	18	4	SCH20	STD	P31B-00P1V	Outlet ASTM A105 MSS SP-97 BW	
1	20	4	STD	STD	P31B-008D3	Outlet ASTM A105 MSS SP-97 BW	
1	24	4	STD	STD	P31B-0086X	Outlet ASTM A105 MSS SP-97 BW	
1	18	6	SCH20	STD	P31B-00P48	Outlet ASTM A105 MSS SP-97 BW	
1	20	6	STD	STD	P31B-008PZ	Outlet ASTM A105 MSS SP-97 BW	
1	24	6	STD	STD	P31B-008JD	Outlet ASTM A105 MSS SP-97 BW	
4212	3	2	STD	XS	P31B-00UUU	Outlet ASTM A105 MSS SP-97 BW	38

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30B-0002D	Plug ASTM A105 ASME B16.11 NPT Round head	
1	0.75				P30B-0002E	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1				P30B-0002F	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1.5				P30B-0002G	Plug ASTM A105 ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P61B-001HC	Flange SW ASTM A105 Class 300 ASME B16.5 RF	
1	0.75		XS		P61B-001HS	Flange SW ASTM A105 Class 300 ASME B16.5 RF	
1	1		XS		P61B-001EF	Flange SW ASTM A105 Class 300 ASME B16.5 RF	
1	1.5		XS		P61B-001F2	Flange SW ASTM A105 Class 300 ASME B16.5 RF	
1	2		XS		P61B-001HW	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	3		STD		P61B-001LJ	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	4		STD		P61B-001MC	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	6		STD		P61B-001N2	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	8		SCH20		P61B-002LJ	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	10		SCH30		P61B-003LX	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	12		STD		P61B-001LE	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	14		STD		P61B-001M9	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	16		SCH20		P61B-002MS	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	18		SCH20		P61B-002MT	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	20		STD		P61B-001NT	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	24		STD		P61B-001PA	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
781	0.5		XS		P61B-001FF	Flange SW ASTM A105 Class 600 ASME B16.5 RF	
781	0.75		XS		P61B-001FH	Flange SW ASTM A105 Class 600 ASME B16.5 RF	
781	1		XS		P61B-001DR	Flange SW ASTM A105 Class 600 ASME B16.5 RF	
781	1.5		XS		P61B-001DV	Flange SW ASTM A105 Class 600 ASME B16.5 RF	
781	2		XS		P61B-001DH	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	3		STD		P61B-001TW	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	4		STD		P61B-001VV	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	6		STD		P61B-001JW	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	8		SCH20		P61B-003F0	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	10		SCH30		P61B-003TN	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	12		STD		P61B-001P9	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	14		STD		P61B-001PL	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	16		SCH20		P61B-00798	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	18		SCH20		P61B-003TP	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	20		STD		P61B-003GP	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	24		STD		P61B-003GM	Flange WN ASTM A105 Class 600 ASME B16.5 RF	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67B-000GH	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	0.75				P67B-000GJ	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	1				P67B-000GK	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	1.5				P67B-000GL	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	2				P67B-000GM	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	3				P67B-000GN	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	4				P67B-000GP	Blind flange ASTM A105 Class 300 ASME B16.5 RF	

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BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	6				P67B-000GY	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	8				P67B-000GZ	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	10				P67B-000GR	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	12				P67B-000GS	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	14				P67B-000GT	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	16				P67B-000GU	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	18				P67B-000GV	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	20				P67B-000GW	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	24				P67B-000GX	Blind flange ASTM A105 Class 300 ASME B16.5 RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000FT	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000FU	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000G5	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000G6	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	6				P73T-000G7	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	8				P73T-000G8	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	10				P73T-000FX	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	12				P73T-000FY	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	14				P73T-000FZ	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	16				P73T-000G0	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	18				P73T-000G1	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	20				P73T-000G3	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	24				P73T-000G4	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	0.5				P73T-000J8	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	0.75				P73T-000J9	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1				P73T-000JA	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1.5				P73T-000JB	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	2				P73T-000JH	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	3				P73T-000JL	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	4				P73T-000JM	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	6				P73T-000JN	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	8				P73T-000JP	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	10				P73T-000JC	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	12				P73T-000JD	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	14				P73T-000JE	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	16				P73T-000JF	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	18				P73T-000JG	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	20				P73T-000JJ	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	24				P73T-000JK	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

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BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-10				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	12-24				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
781	0.5-6				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
781	8-24				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81B-002G5	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated Benzene service	
1	0.75				P81B-002G6	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated Benzene service	
1	1				P81B-002G7	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated Benzene service	
1	1.5				P81B-002G8	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated Benzene service	
1	2				P81C-007NC	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated Benzene service	
1	3				P81C-007ND	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated Benzene service	
1	4				P81C-007NE	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated Benzene service	
1	6				P81C-007NF	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated Benzene service	
1	8				P81C-0091A	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated Benzene service	
1	10				P81C-007NH	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated Benzene service	
1	12				P81C-007NJ	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated Benzene service	
1	14				P81C-007NK	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated Benzene service	
1	16				P81C-007NL	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated Benzene service	
1	18				P81C-007NM	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated Benzene service	
714	0.5				P81B-002S8	Gate valve ASTM A105 Class 800 API 602 SW - NPT Trim number 8 BB-BG-OS&Y Handwheel operated Benzene service	
714	0.75				P81B-002G9	Gate valve ASTM A105 Class 800 API 602 SW - NPT Trim number 8 BB-BG-OS&Y Handwheel operated Benzene service	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82B-001UP	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated Benzene service	
1	0.75				P82B-001UR	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated Benzene service	
1	1				P82B-001US	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated Benzene service	
1	1.5				P82B-001UT	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated Benzene service	
1	2				P82C-003VS	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated Benzene service	
1	3				P82C-003VT	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated Benzene service	
1	4				P82C-003VU	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated Benzene service	
1	6				P82C-003VV	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated Benzene service	
1	8				P82C-004CH	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated Benzene service	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83B-000FX	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover	
1	0.75				P83B-000ER	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover	
1	1				P83B-000ES	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover	
1	1.5				P83B-000ET	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover	
1	2				P83C-0013H	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	3				P83C-0013L	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	4				P83C-0013M	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	6				P83C-0013N	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	8				P83C-0013P	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	

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CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	10				P83C-0013D	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	12				P83C-0013E	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	14				P83C-0023R	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	16				P83C-0013F	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	

DP CHECK VALVE (XDP)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
4602	12				P88C-003C5	Dual plate check valve ASTM A216 Grade WCB Class 300 API 594 Wafer-type ASME B16.5 RF Trim number 8 Internal wetted parts 13Cr Spring Inconel Retainerless-type	
4602	14				P88C-003C6	Dual plate check valve ASTM A216 Grade WCB Class 300 API 594 Wafer-type ASME B16.5 RF Trim number 8 Internal wetted parts 13Cr Spring Inconel Retainerless-type	
4602	16				P88C-003C7	Dual plate check valve ASTM A216 Grade WCB Class 300 API 594 Wafer-type ASME B16.5 RF Trim number 8 Internal wetted parts 13Cr Spring Inconel Retainerless-type	

BALL VALVE (Q)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P84B-001LU	Ball valve Long-pattern ASTM A105 Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design Benzene service	
1	0.75				P84B-001LV	Ball valve Long-pattern ASTM A105 Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design Benzene service	
1	1				P84B-001LW	Ball valve Long-pattern ASTM A105 Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design Benzene service	
1	1.5				P84B-001LX	Ball valve Long-pattern ASTM A105 Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design Benzene service	
1	2				P84C-007PW	Ball valve Long-pattern ASTM A216 Grade WCB Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design Benzene service	
1	3				P84C-007PX	Ball valve Long-pattern ASTM A216 Grade WCB Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design Benzene service	
1	4				P84C-007PY	Ball valve Long-pattern ASTM A216 Grade WCB Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Gear operated Reduced bore Fire tested design Benzene service	
1	6				P84C-007PZ	Ball valve Long-pattern ASTM A216 Grade WCB Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Reduced bore Fire tested design Benzene service	
24	0.5				P84B-001LY	Ball valve Long-pattern ASTM A105 Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design Benzene service	
24	0.75				P84B-001LZ	Ball valve Long-pattern ASTM A105 Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design Benzene service	
24	1				P84B-001M0	Ball valve Long-pattern ASTM A105 Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design Benzene service	
24	1.5				P84B-001M1	Ball valve Long-pattern ASTM A105 Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design Benzene service	
24	2				P84C-007R0	Ball valve Long-pattern ASTM A216 Grade WCB Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design Benzene service	
24	3				P84C-007R1	Ball valve Long-pattern ASTM A216 Grade WCB Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design Benzene service	
24	4				P84C-007R2	Ball valve Long-pattern ASTM A216 Grade WCB Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Gear operated Full bore Fire tested design Benzene service	
24	6				P84C-007R3	Ball valve Long-pattern ASTM A216 Grade WCB Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design Benzene service	

ORIFICE FLANGE (FO)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2		XS		P66B-0084B	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	3		STD		P66B-0084C	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	4		STD		P66B-0084D	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	6		STD		P66B-0084E	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	8		SCH20		P66B-0084F	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	10		SCH30		P66B-0086Z	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	12		STD		P66B-008A2	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
200	2		XS		P66B-00843	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	3		STD		P66B-00844	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	4		STD		P66B-00845	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	6		STD		P66B-00846	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	

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ORIFICE FLANGE (FO)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
200	8		SCH20		P66B-00847	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	10		SCH30		P66B-00874	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	12		STD		P66B-008A4	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71B-000B1	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	0.75				P71B-000B2	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	1				P71B-000B3	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71B-000B4	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	2				P71B-000B6	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	3				P71B-000B7	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	4				P71B-000B8	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	6				P71B-000B9	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	8				P71B-000BA	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	10				P71B-000B5	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	12				P71B-000BB	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	

PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000FA	Paddle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	16				P72B-000FB	Paddle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	18				P72B-000FC	Paddle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	20				P72B-000FD	Paddle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	24				P72B-000FE	Paddle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	

PADDLE SPACER (PS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000FG	Paddle spacer ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	16				P72B-000FH	Paddle spacer ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	18				P72B-000FJ	Paddle spacer ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	20				P72B-000FK	Paddle spacer ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	24				P72B-000FL	Paddle spacer ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	

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BOLT TABLE (B_B1A904 , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-003V4		
0.75	4	0.625	75	P80S-003XC		
1	4	0.625	80	P80S-003XD		
1.5	4	0.750	95	P80S-00414		
2	8	0.625	90	P80S-003XF		
3	8	0.750	110	P80S-003XK		
4	8	0.750	115	P80S-003XL		
6	12	0.750	125	P80S-003XN		
8	12	0.875	140	P80S-0041D		
10	16	1.000	160	P80S-0043K		
12	16	1.125	175	P80S-0046S		
14	20	1.125	180	P80S-0046T		
16	20	1.250	190	P80S-004AK		
18	24	1.250	200	P80S-004AM		
20	24	1.250	210	P80S-004AP		
24	24	1.500	235	P80S-003F8		

BOLT TABLE (B_B1A904_781 , STUD ASME RF, OPTION CODE 781)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	80	P80S-003V6		
0.75	4	0.625	90	P80S-003XF		
1	4	0.625	95	P80S-003XG		
1.5	4	0.750	110	P80S-003XK		
2	8	0.625	110	P80S-003VC		
3	8	0.750	130	P80S-003XP		
4	8	0.875	150	P80S-0041F		
6	12	1.000	175	P80S-0043P		
8	12	1.125	195	P80S-0046W		
10	16	1.250	250	P80S-004AY		
12	20	1.250	255	P80S-004AZ		
14	20	1.375	270	P80S-003E7		
16	20	1.500	295	P80S-003FL		
18	20	1.625	320	P80S-005TT		
20	24	1.625	335	P80S-005TW		
24	24	1.875	380	P80S-008P4		

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BRANCH TABLE (T_B1A904)

RUN PIPE SIZE (in) \ BRANCH SIZE (in)	0.5	0.75	1	1.5	2	3	4	6	8	10	12	14	16	18	20	24
0.5	TS															
0.75		TS														
1		TR	TS													
1.5		TR	TR	TS												
2		L	TR	TR	TS											
3		L	L	TR	TR	TS										
4	L	L	L	L	TR	TR	TS									
6	L	L	L	L	L	TR	TR	TS								
8		L	L	L	L	L	TR	TR	TS							
10		L	L	L	L	L	TR	TR	TR	TS						
12		L	L	L	L	L	L	TR	TR	TR	TS					
14		L	L	L	L	L	L	TR	TR	TR	TR	TS				
16		L	L	L	L	L	L	TR	TR	TR	TR	TR	TS			
18		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TS		
20		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TR	TS	
24		L	L	L	L	L	L	L	9PD	TR	TR	TR	TR	TR	TR	TS

TS : STRAIGHT TEE
9PD : REINFORCING PAD 90 DEG
TR : REDUCING TEE
L : OUTLET

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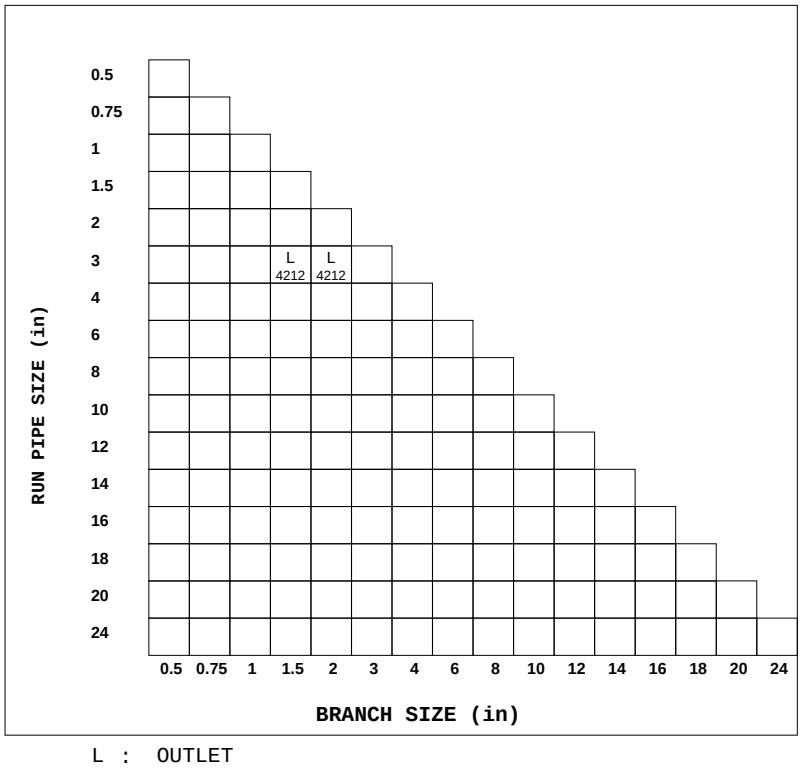
BRANCH TABLE (T_B1A904_4)



L : OUTLET

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PIPING CLASS

B1AA REV NO. 2

Material : Killed CS
Rating : ASME CLASS 300
Flange Face : RF
C.A.(mm) : 1.50
Gasket : Spiral Wound
Service : UTILITY - CATEGORY "D" FLUID : / DRY INSTRUMENT AIR
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
541	NPT(F) (CA,L)
714	SW - NPT(F) (V)
781	CLASS 600 (B,F,G)

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PIPING CLASS
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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P01A-000XM	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	0.75		XS		P01A-000XN	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1		XS		P01A-000XP	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1.5		XS		P01A-000XV	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	2		XS		P01A-000YX	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	3		STD		P01A-000YM	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	4		STD		P01A-000YU	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	6		STD		P01A-000Z3	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	8		SCH20		P01A-001AT	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	10		SCH30		P01A-0016U	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P02B-00014	90 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	0.75				P02B-00015	90 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	1				P02B-00016	90 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5				P02B-00017	90 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	2		XS		P02A-000CP	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		STD		P02A-000CU	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		STD		P02A-000CZ	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		STD		P02A-000D6	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		SCH20		P02A-000GZ	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	10		SCH30		P02A-000M3	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P03B-00017	45 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	0.75				P03B-00018	45 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	1				P03B-00019	45 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5				P03B-0001A	45 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	2		XS		P03A-000AS	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		STD		P03A-000AX	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		STD		P03A-000B1	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		STD		P03A-000B9	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		SCH20		P03A-000EX	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	10		SCH30		P03A-000JT	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P21B-00017	Straight tee ASTM A105 Class 3000 ASME B16.11 SW	
1	0.75				P21B-00018	Straight tee ASTM A105 Class 3000 ASME B16.11 SW	
1	1				P21B-00019	Straight tee ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5				P21B-0001A	Straight tee ASTM A105 Class 3000 ASME B16.11 SW	
1	2		XS		P21A-001CJ	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		STD		P21A-001CU	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		STD		P21A-001CW	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6		STD		P21A-001D2	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8		SCH20		P21A-00215	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10		SCH30		P21A-00259	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75			P24B-0002L	Reducing tee ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5	0.75			P24B-0002N	Reducing tee ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5	1			P24B-0002P	Reducing tee ASTM A105 Class 3000 ASME B16.11 SW	
1	2	1	XS	XS	P24A-00238	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	XS	XS	P24A-0023H	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	STD	XS	P24A-00214	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	STD	XS	P24A-002HW	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P24A-002HY	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P24A-0021K	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	STD	P24A-0021A	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P24A-00229	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH20	STD	P24A-00J21	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH20	STD	P24A-005J4	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	SCH30	STD	P24A-00GNR	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	SCH30	STD	P24A-0060W	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	SCH30	SCH20	P24A-005KE	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	STD	XS	P27A-001MZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P27A-001N0	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P27A-00189	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	STD	P27A-001AZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P27A-001GW	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH20	STD	P27A-003K2	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH20	STD	P27A-003K3	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	SCH30	STD	P27A-003MK	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	SCH30	STD	P27A-003ML	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	SCH30	SCH20	P27A-003MM	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	STD	XS	P28A-001N5	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P28A-001N6	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P28A-0018B	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	STD	P28A-001AS	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P28A-00182	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH20	STD	P28A-003JU	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH20	STD	P28A-003JV	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	SCH30	STD	P28A-003MD	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	SCH30	STD	P28A-003ME	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	SCH30	SCH20	P28A-003MF	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P29B-0001J	Cap ASTM A105 Class 3000 ASME B16.11 SW	
1	0.75				P29B-0001F	Cap ASTM A105 Class 3000 ASME B16.11 SW	
1	1				P29B-0001G	Cap ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5				P29B-0001H	Cap ASTM A105 Class 3000 ASME B16.11 SW	
1	2		XS		P29A-000A1	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		STD		P29A-000BK	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		STD		P29A-000A3	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6		STD		P29A-000A9	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8		SCH20		P29A-000EY	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10		SCH30		P29A-000K7	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
541	0.75				P29B-0000C	Cap ASTM A105 Class 3000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P41A-000B5	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		SCH160		P41A-000B6	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		SCH160		P41A-000B7	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		SCH160		P41A-000B8	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

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CON SWAGED NIPPLE (SNC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	XS	XS	P42A-00036	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	XS	XS	P42A-00038	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	XS	XS	P42A-0003B	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	XS	XS	P42A-00035	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	XS	XS	P42A-00039	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	XS	XS	P42A-0003C	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	XS	XS	P42A-0008C	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	XS	XS	P42A-0008D	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	XS	XS	P42A-0008E	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	XS	XS	P42A-0008F	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	STD	XS	P42A-0007V	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	

ECC SWAGED NIPPLE (SNE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	XS	XS	P43A-00036	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	XS	XS	P43A-00037	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	XS	XS	P43A-00038	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	XS	XS	P43A-00039	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	XS	XS	P43A-0003A	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	XS	XS	P43A-0003B	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	XS	XS	P43A-00042	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	XS	XS	P43A-00043	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	XS	XS	P43A-00044	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	XS	XS	P43A-00045	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	STD	XS	P43A-0003J	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	

COUPLING (CPS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P47B-0001D	Coupling ASTM A105 Class 3000 ASME B16.11 SW - SW	
1	0.75				P47B-0001E	Coupling ASTM A105 Class 3000 ASME B16.11 SW - SW	
1	1				P47B-0001F	Coupling ASTM A105 Class 3000 ASME B16.11 SW - SW	
1	1.5				P47B-0001G	Coupling ASTM A105 Class 3000 ASME B16.11 SW - SW	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2 - 2.5	0.75			P31B-0137J	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	3 - 5	0.75			P31B-0137K	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	6 - 12	0.75			P31B-007AB	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	3	1			P31B-007A7	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	4 - 5	1			P31B-0138Z	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	6 - 10	1			P31B-007A4	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	4	1.5			P31B-005SN	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	5 - 6	1.5			P31B-01390	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	8 - 12	1.5			P31B-0079U	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
541	1	0.75			P31B-00551	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
541	1.5	0.75			P31B-00555	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
541	2 - 2.5	0.75			P31B-0137H	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
541	3 - 5	0.75			P31B-01376	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
541	6 - 12	0.75			P31B-007GR	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
1	6	2	STD	XS	P31B-007SH	Outlet ASTM A105 MSS SP-97 BW	
1	8	2	SCH20	XS	P31B-00NY2	Outlet ASTM A105 MSS SP-97 BW	
1	10	2	SCH30	XS	P31B-00NVF	Outlet ASTM A105 MSS SP-97 BW	
1	8	3	SCH20	STD	P31B-00P11	Outlet ASTM A105 MSS SP-97 BW	
1	10	3	SCH30	STD	P31B-00NYK	Outlet ASTM A105 MSS SP-97 BW	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30B-0002D	Plug ASTM A105 ASME B16.11 NPT Round head	

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PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75				P30B-0002E	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1				P30B-0002F	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1.5				P30B-0002G	Plug ASTM A105 ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P61B-001HC	Flange SW ASTM A105 Class 300 ASME B16.5 RF	
1	0.75		XS		P61B-001HS	Flange SW ASTM A105 Class 300 ASME B16.5 RF	
1	1		XS		P61B-001EF	Flange SW ASTM A105 Class 300 ASME B16.5 RF	
1	1.5		XS		P61B-001F2	Flange SW ASTM A105 Class 300 ASME B16.5 RF	
1	2		XS		P61B-001HW	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	3		STD		P61B-001LJ	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	4		STD		P61B-001MC	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	6		STD		P61B-001N2	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	8		SCH20		P61B-002LJ	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	10		SCH30		P61B-003LX	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
781	0.5		XS		P61B-001FF	Flange SW ASTM A105 Class 600 ASME B16.5 RF	
781	0.75		XS		P61B-001FH	Flange SW ASTM A105 Class 600 ASME B16.5 RF	
781	1		XS		P61B-001DR	Flange SW ASTM A105 Class 600 ASME B16.5 RF	
781	1.5		XS		P61B-001DV	Flange SW ASTM A105 Class 600 ASME B16.5 RF	
781	2		XS		P61B-001DH	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	3		STD		P61B-001TW	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	4		STD		P61B-001VV	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	6		STD		P61B-001JW	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	8		SCH20		P61B-003F0	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	10		SCH30		P61B-003TN	Flange WN ASTM A105 Class 600 ASME B16.5 RF	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67B-000GH	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	0.75				P67B-000GJ	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	1				P67B-000GK	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	1.5				P67B-000GL	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	2				P67B-000GM	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	3				P67B-000GN	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	4				P67B-000GP	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	6				P67B-000GY	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	8				P67B-000GZ	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	10				P67B-000GR	Blind flange ASTM A105 Class 300 ASME B16.5 RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000FT	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000FU	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000G5	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000G6	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	6				P73T-000G7	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	8				P73T-000G8	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	10				P73T-000FX	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	0.5				P73T-000J8	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	0.75				P73T-000J9	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

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GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
781	1				P73T-000JA	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1.5				P73T-000JB	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	2				P73T-000JH	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	3				P73T-000JL	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	4				P73T-000JM	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	6				P73T-000JN	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	8				P73T-000JP	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	10				P73T-000JC	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-10				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
781	0.5-6				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
781	8-10				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81B-000P4	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	0.75				P81B-000NX	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	1				P81B-000NY	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	1.5				P81B-000NZ	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	2				P81C-002D6	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	3				P81C-002D7	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	4				P81C-002D8	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	6				P81C-002D9	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	8				P81C-0086V	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated	
1	10				P81C-002DB	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated	
714	0.5				P81B-0015L	Gate valve ASTM A105 Class 800 API 602 SW - NPT Trim number 8 BB-BG-OS&Y Handwheel operated	
714	0.75				P81B-002F4	Gate valve ASTM A105 Class 800 API 602 SW - NPT Trim number 8 BB-BG-OS&Y Handwheel operated	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82B-000K0	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	0.75				P82B-000HB	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	1				P82B-000HC	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	1.5				P82B-000HD	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	2				P82C-00114	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	3				P82C-00115	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	4				P82C-00116	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	6				P82C-00117	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	8				P82C-0011A	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83B-000FX	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover	
1	0.75				P83B-000ER	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover	
1	1				P83B-000ES	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover	
1	1.5				P83B-000ET	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover	
1	2				P83C-0013H	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	3				P83C-0013L	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	

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CHECK VALVE (X)							
OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	4				P83C-0013M	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	6				P83C-0013N	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	8				P83C-0013P	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	10				P83C-0013D	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	

SPECT BLANK (SB)							
OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71B-000B1	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	0.75				P71B-000B2	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	1				P71B-000B3	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71B-000B4	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	2				P71B-000B6	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	3				P71B-000B7	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	4				P71B-000B8	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	6				P71B-000B9	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	8				P71B-000BA	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	10				P71B-000B5	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	

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BOLT TABLE (B_B1AA , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-003V4		
0.75	4	0.625	75	P80S-003XC		
1	4	0.625	80	P80S-003XD		
1.5	4	0.750	95	P80S-00414		
2	8	0.625	90	P80S-003XF		
3	8	0.750	110	P80S-003XK		
4	8	0.750	115	P80S-003XL		
6	12	0.750	125	P80S-003XN		
8	12	0.875	140	P80S-0041D		
10	16	1.000	160	P80S-0043K		

BOLT TABLE (B_B1AA_781 , STUD ASME RF, OPTION CODE 781)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	80	P80S-003V6		
0.75	4	0.625	90	P80S-003XF		
1	4	0.625	95	P80S-003XG		
1.5	4	0.750	110	P80S-003XK		
2	8	0.625	110	P80S-003VC		
3	8	0.750	130	P80S-003XP		
4	8	0.875	150	P80S-0041F		
6	12	1.000	175	P80S-0043P		
8	12	1.125	195	P80S-0046W		
10	16	1.250	250	P80S-004AY		

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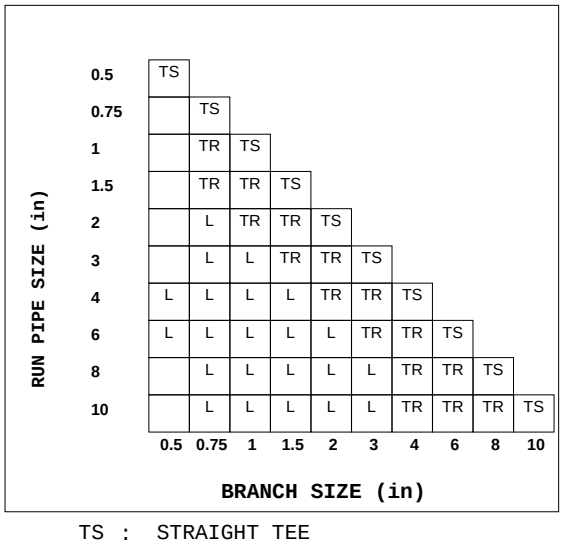
BRANCH TABLE (T_B1AA)



TS : STRAIGHT TEE
L : OUTLET
TR : REDUCING TEE

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PIPING CLASS

B1AA04 REV NO. 2

Material : Killed CS
Rating : ASME CLASS 300
Flange Face : RF
C.A.(mm) : 1.50
Gasket : Spiral Wound
Service : UTILITY - CATEGORY "D" FLUID : / DRY INSTRUMENT AIR >=2"NB
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
541	NPT(F) (CA,L)
714	SW - NPT(F) (V)
781	CLASS 600 (B,F,G)

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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P01A-000XM	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	0.75		XS		P01A-000XN	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1		XS		P01A-000XP	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1.5		XS		P01A-000XV	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	2		XS		P01A-000YX	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P02B-00014	90 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	0.75				P02B-00015	90 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	1				P02B-00016	90 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5				P02B-00017	90 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	2		XS		P02A-000CP	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P03B-00017	45 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	0.75				P03B-00018	45 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	1				P03B-00019	45 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5				P03B-0001A	45 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	2		XS		P03A-000AS	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P21B-00017	Straight tee ASTM A105 Class 3000 ASME B16.11 SW	
1	0.75				P21B-00018	Straight tee ASTM A105 Class 3000 ASME B16.11 SW	
1	1				P21B-00019	Straight tee ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5				P21B-0001A	Straight tee ASTM A105 Class 3000 ASME B16.11 SW	
1	2		XS		P21A-001CJ	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75			P24B-0002L	Reducing tee ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5	0.75			P24B-0002N	Reducing tee ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5	1			P24B-0002P	Reducing tee ASTM A105 Class 3000 ASME B16.11 SW	
1	2	1	XS	XS	P24A-00238	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	XS	XS	P24A-0023H	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P29B-0001J	Cap ASTM A105 Class 3000 ASME B16.11 SW	
1	0.75				P29B-0001F	Cap ASTM A105 Class 3000 ASME B16.11 SW	
1	1				P29B-0001G	Cap ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5				P29B-0001H	Cap ASTM A105 Class 3000 ASME B16.11 SW	
1	2		XS		P29A-000A1	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
541	0.75				P29B-0000C	Cap ASTM A105 Class 3000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P41A-000B5	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		SCH160		P41A-000B6	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		SCH160		P41A-000B7	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		SCH160		P41A-000B8	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

CON SWAGED NIPPLE (SNC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	XS	XS	P42A-00036	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	

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CON SWAGED NIPPLE (SNC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.5	XS	XS	P42A-00038	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	XS	XS	P42A-0003B	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	XS	XS	P42A-00035	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	XS	XS	P42A-00039	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	XS	XS	P42A-0003C	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	XS	XS	P42A-0008C	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	XS	XS	P42A-0008D	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	XS	XS	P42A-0008E	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	XS	XS	P42A-0008F	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	

ECC SWAGED NIPPLE (SNE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	XS	XS	P43A-00036	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	XS	XS	P43A-00037	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	XS	XS	P43A-00038	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	XS	XS	P43A-00039	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	XS	XS	P43A-0003A	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	XS	XS	P43A-0003B	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	XS	XS	P43A-00042	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	XS	XS	P43A-00043	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	XS	XS	P43A-00044	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	XS	XS	P43A-00045	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	

COUPLING (CPS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P47B-0001D	Coupling ASTM A105 Class 3000 ASME B16.11 SW - SW	
1	0.75				P47B-0001E	Coupling ASTM A105 Class 3000 ASME B16.11 SW - SW	
1	1				P47B-0001F	Coupling ASTM A105 Class 3000 ASME B16.11 SW - SW	
1	1.5				P47B-0001G	Coupling ASTM A105 Class 3000 ASME B16.11 SW - SW	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2 - 2.5	0.75			P31B-0137J	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
541	1	0.75			P31B-00551	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
541	1.5	0.75			P31B-00555	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
541	2 - 2.5	0.75			P31B-0137H	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30B-0002D	Plug ASTM A105 ASME B16.11 NPT Round head	
1	0.75				P30B-0002E	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1				P30B-0002F	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1.5				P30B-0002G	Plug ASTM A105 ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P61B-001HC	Flange SW ASTM A105 Class 300 ASME B16.5 RF	
1	0.75		XS		P61B-001HS	Flange SW ASTM A105 Class 300 ASME B16.5 RF	
1	1		XS		P61B-001EF	Flange SW ASTM A105 Class 300 ASME B16.5 RF	
1	1.5		XS		P61B-001F2	Flange SW ASTM A105 Class 300 ASME B16.5 RF	
1	2		XS		P61B-001HW	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
781	0.5		XS		P61B-001FF	Flange SW ASTM A105 Class 600 ASME B16.5 RF	
781	0.75		XS		P61B-001FH	Flange SW ASTM A105 Class 600 ASME B16.5 RF	
781	1		XS		P61B-001DR	Flange SW ASTM A105 Class 600 ASME B16.5 RF	
781	1.5		XS		P61B-001DV	Flange SW ASTM A105 Class 600 ASME B16.5 RF	
781	2		XS		P61B-001DH	Flange WN ASTM A105 Class 600 ASME B16.5 RF	

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BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67B-000GH	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	0.75				P67B-000GJ	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	1				P67B-000GK	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	1.5				P67B-000GL	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	2				P67B-000GM	Blind flange ASTM A105 Class 300 ASME B16.5 RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000FT	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000FU	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	0.5				P73T-000J8	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	0.75				P73T-000J9	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1				P73T-000JA	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1.5				P73T-000JB	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	2				P73T-000JH	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-2				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
781	0.5-2				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81B-000P4	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	0.75				P81B-000NX	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	1				P81B-000NY	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	1.5				P81B-000NZ	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	2				P81C-002D6	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
714	0.5				P81B-0015L	Gate valve ASTM A105 Class 800 API 602 SW - NPT Trim number 8 BB-BG-OS&Y Handwheel operated	
714	0.75				P81B-002F4	Gate valve ASTM A105 Class 800 API 602 SW - NPT Trim number 8 BB-BG-OS&Y Handwheel operated	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82B-000K0	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	0.75				P82B-000HB	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	1				P82B-000HC	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	1.5				P82B-000HD	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	2				P82C-00114	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83B-000FX	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover	
1	0.75				P83B-000ER	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover	
1	1				P83B-000ES	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover	
1	1.5				P83B-000ET	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover	
1	2				P83C-0013H	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	

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SPECT BLANK (SB)							
OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71B-000B1	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	0.75				P71B-000B2	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	1				P71B-000B3	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71B-000B4	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	2				P71B-000B6	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	

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BOLT TABLE (B_B1AA04 , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-003V4		
0.75	4	0.625	75	P80S-003XC		
1	4	0.625	80	P80S-003XD		
1.5	4	0.750	95	P80S-00414		
2	8	0.625	90	P80S-003XF		

BOLT TABLE (B_B1AA04_781 , STUD ASME RF, OPTION CODE 781)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	80	P80S-003V6		
0.75	4	0.625	90	P80S-003XF		
1	4	0.625	95	P80S-003XG		
1.5	4	0.750	110	P80S-003XK		
2	8	0.625	110	P80S-003VC		

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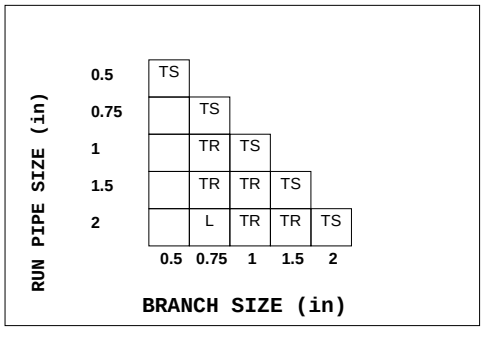
BRANCH TABLE (T_B1AA04)



TS : STRAIGHT TEE
TR : REDUCING TEE
L : OUTLET

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PIPING CLASS

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Material : Killed CS
Rating : ASME CLASS 300
Flange Face : RF
C.A.(mm) : 1.50
Gasket : Spiral Wound
Service : PROCESS - CATALYST
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
6	PIPE THICKNESS CALCULATION TO INCLUDE CORROSION AND EROSION ALLOWANCES DUE TO THE PROCESS CATALYST FLOW, AS PER PROCESS LICENSOR SPECIFICATIONS

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
541	NPT(F) (L)
781	CLASS 600 (B,F,G)

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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P01A-000XM	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	0.75		XS		P01A-000XN	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1		XS		P01A-000XP	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1.5		XS		P01A-000XV	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	2		XS		P01A-000YX	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	3		STD		P01A-000YM	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	4		STD		P01A-000YU	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	6		STD		P01A-000Z3	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P02A-000UR	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	0.75		XS		P02A-000UN	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1		XS		P02A-000UL	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1.5		XS		P02A-000UJ	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	2		XS		P02A-000CP	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		STD		P02A-000CU	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		STD		P02A-000CZ	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		STD		P02A-000D6	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P03A-0018K	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	0.75		XS		P03A-0018L	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1		XS		P03A-0018M	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1.5		XS		P03A-0018N	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	2		XS		P03A-000AS	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		STD		P03A-000AX	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		STD		P03A-000B1	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		STD		P03A-000B9	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P21A-002TV	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	0.75		XS		P21A-002TW	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1		XS		P21A-002TX	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5		XS		P21A-002TY	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2		XS		P21A-001CJ	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		STD		P21A-001CU	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		STD		P21A-001CW	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6		STD		P21A-001D2	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75	XS	XS	P24A-006WW	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.75	XS	XS	P24A-006WY	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	1	XS	XS	P24A-006WZ	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	XS	XS	P24A-00238	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	XS	XS	P24A-0023H	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	STD	XS	P24A-00214	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	STD	XS	P24A-002HW	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P24A-002HY	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P24A-0021K	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	STD	P24A-0021A	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P24A-00229	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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PIPING CLASS
B1AC REV NO. 2

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	XS	XS	P27A-004M6	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.5	XS	XS	P27A-004ME	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.75	XS	XS	P27A-004MM	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.5	XS	XS	P27A-004N2	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.75	XS	XS	P27A-004NC	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	1	XS	XS	P27A-004NP	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	0.75	XS	XS	P27A-001CZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	XS	XS	P27A-001DL	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	XS	XS	P27A-001E2	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	STD	XS	P27A-001AU	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	STD	XS	P27A-001MZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	1.5	STD	XS	P27A-001AW	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P27A-001N0	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P27A-00189	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	STD	P27A-001AZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P27A-001GW	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	XS	XS	P28A-004V6	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.5	XS	XS	P28A-004V7	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.75	XS	XS	P28A-004V8	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.5	XS	XS	P28A-004V9	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.75	XS	XS	P28A-004VA	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	1	XS	XS	P28A-004VB	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	0.75	XS	XS	P28A-001CU	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	XS	XS	P28A-001DS	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	XS	XS	P28A-001EE	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	STD	XS	P28A-001A3	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	STD	XS	P28A-001N5	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	1.5	STD	XS	P28A-001A4	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P28A-001N6	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P28A-0018B	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	STD	P28A-001AS	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P28A-00182	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P29A-002KS	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	0.75		XS		P29A-002KT	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1		XS		P29A-002KU	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5		XS		P29A-002KV	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2		XS		P29A-000A1	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		STD		P29A-000BK	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		STD		P29A-000A3	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6		STD		P29A-000A9	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P41A-000B5	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		SCH160		P41A-000B6	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		SCH160		P41A-000B7	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		SCH160		P41A-000B8	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
541		0.75			P31B-00551	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
541	1.5	0.75			P31B-00555	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	

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OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
541	2 - 2.5	0.75			P31B-0137H	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
541	3 - 5	0.75			P31B-01376	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
541	6 - 12	0.75			P31B-007GR	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
1	2	0.75	XS	XS	P31B-00CP3	Outlet ASTM A105 MSS SP-97 BW	
1	3	0.75	STD	XS	P31B-00CMN	Outlet ASTM A105 MSS SP-97 BW	
1	4	0.75	STD	XS	P31B-00CLM	Outlet ASTM A105 MSS SP-97 BW	
1	6	0.75	STD	XS	P31B-00CKD	Outlet ASTM A105 MSS SP-97 BW	
1	3	1	STD	XS	P31B-00B4D	Outlet ASTM A105 MSS SP-97 BW	
1	4	1	STD	XS	P31B-00AYW	Outlet ASTM A105 MSS SP-97 BW	
1	6	1	STD	XS	P31B-00AZ6	Outlet ASTM A105 MSS SP-97 BW	
1	4	1.5	STD	XS	P31B-00BNZ	Outlet ASTM A105 MSS SP-97 BW	
1	6	1.5	STD	XS	P31B-00BJB	Outlet ASTM A105 MSS SP-97 BW	
1	6	2	STD	XS	P31B-007SH	Outlet ASTM A105 MSS SP-97 BW	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30B-0002D	Plug ASTM A105 ASME B16.11 NPT Round head	
1	0.75				P30B-0002E	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1				P30B-0002F	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1.5				P30B-0002G	Plug ASTM A105 ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P61B-0032Z	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	0.75		XS		P61B-0032X	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	1		XS		P61B-0032U	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	1.5		XS		P61B-0032S	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	2		XS		P61B-001HW	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	3		STD		P61B-001LJ	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	4		STD		P61B-001MC	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	6		STD		P61B-001N2	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
781	0.5		XS		P61B-003TJ	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	0.75		XS		P61B-003TK	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	1		XS		P61B-003TL	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	1.5		XS		P61B-003TM	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	2		XS		P61B-001DH	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	3		STD		P61B-001TW	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	4		STD		P61B-001VV	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	6		STD		P61B-001JW	Flange WN ASTM A105 Class 600 ASME B16.5 RF	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67B-000GH	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	0.75				P67B-000GJ	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	1				P67B-000GK	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	1.5				P67B-000GL	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	2				P67B-000GM	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	3				P67B-000GN	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	4				P67B-000GP	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	6				P67B-000GY	Blind flange ASTM A105 Class 300 ASME B16.5 RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000FT	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000FU	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

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GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000G5	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000G6	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	6				P73T-000G7	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	0.5				P73T-000J8	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	0.75				P73T-000J9	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1				P73T-000JA	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1.5				P73T-000JB	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	2				P73T-000JH	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	3				P73T-000JL	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	4				P73T-000JM	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	6				P73T-000JN	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-6				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
781	0.5-6				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	

BALL VALVE (Q)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P84B-0012W	Ball valve Long-pattern ASTM A105 Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	
1	0.75				P84B-0012X	Ball valve Long-pattern ASTM A105 Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	
1	1				P84B-0012Y	Ball valve Long-pattern ASTM A105 Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	
1	1.5				P84B-0012Z	Ball valve Long-pattern ASTM A105 Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	
1	2				P84C-005VM	Ball valve Long-pattern ASTM A216 Grade WCB Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	
1	3				P84C-005VN	Ball valve Long-pattern ASTM A216 Grade WCB Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	
1	4				P84C-005VT	Ball valve Long-pattern ASTM A216 Grade WCB Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Gear operated Full bore Fire tested design	
1	6				P84C-005VR	Ball valve Long-pattern ASTM A216 Grade WCB Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design	

NEEDLE VALVE (NV)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82B-001VE	Needle valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated	
1	0.75				P82B-001VF	Needle valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated	
1	1				P82B-001VG	Needle valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated	
1	1.5				P82B-001VH	Needle valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71B-000B1	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	0.75				P71B-000B2	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	1				P71B-000B3	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71B-000B4	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	2				P71B-000B6	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	3				P71B-000B7	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	4				P71B-000B8	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	6				P71B-000B9	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	

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BOLT TABLE (B_B1AC , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-003V4		
0.75	4	0.625	75	P80S-003XC		
1	4	0.625	80	P80S-003XD		
1.5	4	0.750	95	P80S-00414		
2	8	0.625	90	P80S-003XF		
3	8	0.750	110	P80S-003XK		
4	8	0.750	115	P80S-003XL		
6	12	0.750	125	P80S-003XN		

BOLT TABLE (B_B1AC_781 , STUD ASME RF, OPTION CODE 781)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	80	P80S-003V6		
0.75	4	0.625	90	P80S-003XF		
1	4	0.625	95	P80S-003XG		
1.5	4	0.750	110	P80S-003XK		
2	8	0.625	110	P80S-003VC		
3	8	0.750	130	P80S-003XP		
4	8	0.875	150	P80S-0041F		
6	12	1.000	175	P80S-0043P		

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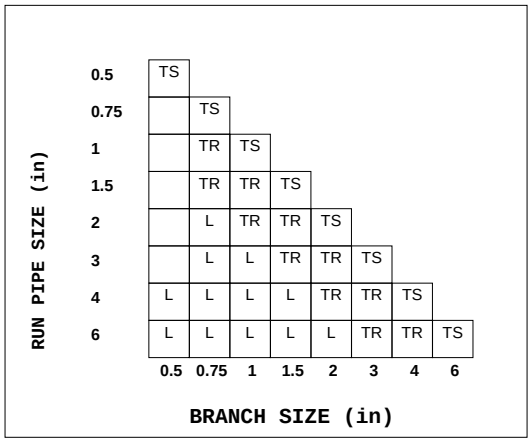
BRANCH TABLE (T_B1AC)



RUN PIPE SIZE (in) \ BRANCH SIZE (in)	0.5	0.75	1	1.5	2	3	4	6
0.5	TS							
0.75		TS						
1		TR	TS					
1.5		TR	TR	TS				
2		L	TR	TR	TS			
3		L	L	TR	TR	TS		
4	L	L	L	L	TR	TR	TS	
6	L	L	L	L	L	TR	TR	TS

L : OUTLET
TR : REDUCING TEE
TS : STRAIGHT TEE

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B1AC01 REV NO. 2

Material : Killed CS
Rating : ASME CLASS 300
Flange Face : RF
C.A.(mm) : 1.50
Gasket : Spiral Wound
Service : PROCESS - CATALYST
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
6	PIPE THICKNESS CALCULATION TO INCLUDE CORROSION AND EROSION ALLOWANCES DUE TO THE PROCESS CATALYST FLOW, AS PER PROCESS LICENSOR SPECIFICATIONS

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
200	WITH JACK SCREW (FO)
541	NPT(F) (CA,L)
781	CLASS 600 (B,F,G)
4608	VALVE WITH NIPPLES (V)

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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P01A-007AZ	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE Licensor-1	
1	0.75		XS		P01A-007B0	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE Licensor-1	
1	1		XS		P01A-007B1	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE Licensor-1	
1	1.5		XS		P01A-007B2	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE Licensor-1	
1	2		XS		P01A-0078Y	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Licensor-1	
1	3		STD		P01A-0078Z	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Licensor-1	
1	4		STD		P01A-007B3	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Licensor-1	
1	6		STD		P01A-007B8	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Licensor-1	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P02A-003T4	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	0.75		XS		P02A-003T5	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	1		XS		P02A-003T6	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	1.5		XS		P02A-003T7	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	2		XS		P02A-003R7	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	3		STD		P02A-003R8	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	4		STD		P02A-003T8	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	6		STD		P02A-003TG	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P03A-003PT	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	0.75		XS		P03A-003PU	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	1		XS		P03A-003PV	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	1.5		XS		P03A-003PW	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	2		XS		P03A-003MW	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	3		STD		P03A-003MX	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	4		STD		P03A-003PX	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	6		STD		P03A-003R5	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P21A-004AG	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	0.75		XS		P21A-004AH	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	1		XS		P21A-004AJ	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	1.5		XS		P21A-004AK	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	2		XS		P21A-0048L	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	3		STD		P21A-0048M	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	4		STD		P21A-004AL	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	6		STD		P21A-004AS	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75	XS	XS	P24A-00K5R	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	1.5	0.75	XS	XS	P24A-00K5S	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	1.5	1	XS	XS	P24A-00K5T	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	2	1	XS	XS	P24A-00K5U	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	2	1.5	XS	XS	P24A-00K5V	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	3	1.5	STD	XS	P24A-00K5W	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	3	2	STD	XS	P24A-00K0Y	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	4	2	STD	XS	P24A-00K5X	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	4	3	STD	STD	P24A-00K5Y	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	6	3	STD	STD	P24A-00K64	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	6	4	STD	STD	P24A-00K65	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	

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CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	XS	XS	P27A-00ERU	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	1	0.5	XS	XS	P27A-00ERV	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	1	0.75	XS	XS	P27A-00ERW	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	1.5	0.5	XS	XS	P27A-00ERX	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	1.5	0.75	XS	XS	P27A-00ERY	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	1.5	1	XS	XS	P27A-00ERZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	2	0.75	XS	XS	P27A-00ES0	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	2	1	XS	XS	P27A-00ES1	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	2	1.5	XS	XS	P27A-00ES2	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	3	1.5	STD	XS	P27A-00ES3	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	3	2	STD	XS	P27A-00EL1	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	4	1.5	STD	XS	P27A-00ES4	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	4	2	STD	XS	P27A-00ES5	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	4	3	STD	STD	P27A-00ES6	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	6	3	STD	STD	P27A-00ES9	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	6	4	STD	STD	P27A-00ESA	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	XS	XS	P28A-00BVM	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	1	0.5	XS	XS	P28A-00BVN	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	1	0.75	XS	XS	P28A-00BVP	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	1.5	0.5	XS	XS	P28A-00BVR	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	1.5	0.75	XS	XS	P28A-00BVS	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	1.5	1	XS	XS	P28A-00BVT	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	2	0.75	XS	XS	P28A-00BVU	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	2	1	XS	XS	P28A-00BVV	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	2	1.5	XS	XS	P28A-00BVW	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	3	1.5	STD	XS	P28A-00BVX	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	3	2	STD	XS	P28A-00BPS	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	4	1.5	STD	XS	P28A-00BVY	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	4	2	STD	XS	P28A-00BVZ	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	4	3	STD	STD	P28A-00BW0	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	6	3	STD	STD	P28A-00BW3	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	6	4	STD	STD	P28A-00BW4	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P29A-0034L	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	0.75		XS		P29A-0034M	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	1		XS		P29A-0034N	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	1.5		XS		P29A-0034P	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	2		XS		P29A-00326	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	3		STD		P29A-00327	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	4		STD		P29A-0034R	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	6		STD		P29A-00353	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
541	0.75				P29B-00067	Cap ASTM A105 Class 3000 ASME B16.11 NPT Licensor-1	
541	1				P29B-0006J	Cap ASTM A105 Class 3000 ASME B16.11 NPT Licensor-1	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P41A-0017A	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Licensor-1	
1	0.75		SCH160		P41A-0017B	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Licensor-1	
1	1		SCH160		P41A-0017C	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Licensor-1	
1	1.5		SCH160		P41A-0017D	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Licensor-1	

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OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
541	1	0.75			P31B-0118R	Outlet ASTM A105 Class 3000 MSS SP-97 NPT Licensor-1	
541	1.5	0.75			P31B-0118P	Outlet ASTM A105 Class 3000 MSS SP-97 NPT Licensor-1	
541	2 - 2.5	0.75			P31B-0138V	Outlet ASTM A105 Class 3000 MSS SP-97 NPT Licensor-1	
541	3 - 5	0.75			P31B-0138W	Outlet ASTM A105 Class 3000 MSS SP-97 NPT Licensor-1	
541	6 - 12	0.75			P31B-0138X	Outlet ASTM A105 Class 3000 MSS SP-97 NPT Licensor-1	
1	2	0.75	XS	XS	P31B-00XML	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	3	0.75	STD	XS	P31B-00XMM	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	4	0.75	STD	XS	P31B-00XMP	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	6	0.75	STD	XS	P31B-010SS	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	3	1	STD	XS	P31B-00XMN	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	4	1	STD	XS	P31B-00XMR	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	6	1	STD	XS	P31B-010ST	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	4	1.5	STD	XS	P31B-00XMS	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	6	1.5	STD	XS	P31B-010SU	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	6	2	STD	XS	P31B-00XMV	Outlet ASTM A105 MSS SP-97 BW Licensor-1	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30B-00067	Plug ASTM A105 ASME B16.11 NPT Round head Licensor-1	
1	0.75				P30B-00068	Plug ASTM A105 ASME B16.11 NPT Round head Licensor-1	
1	1				P30B-00069	Plug ASTM A105 ASME B16.11 NPT Round head Licensor-1	
1	1.5				P30B-0006A	Plug ASTM A105 ASME B16.11 NPT Round head Licensor-1	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P61B-009YS	Flange WN ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
1	0.75		XS		P61B-009YT	Flange WN ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
1	1		XS		P61B-009YU	Flange WN ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
1	1.5		XS		P61B-009YV	Flange WN ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
1	2		XS		P61B-009YW	Flange WN ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
1	3		STD		P61B-009YX	Flange WN ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
1	4		STD		P61B-009YY	Flange WN ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
1	6		STD		P61B-00A07	Flange WN ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
781	0.5		XS		P61B-00BPY	Flange WN ASTM A105 Class 600 ASME B16.5 RF Licensor-1	
781	0.75		XS		P61B-00BPZ	Flange WN ASTM A105 Class 600 ASME B16.5 RF Licensor-1	
781	1		XS		P61B-00BR0	Flange WN ASTM A105 Class 600 ASME B16.5 RF Licensor-1	
781	1.5		XS		P61B-00BR1	Flange WN ASTM A105 Class 600 ASME B16.5 RF Licensor-1	
781	2		XS		P61B-009TD	Flange WN ASTM A105 Class 600 ASME B16.5 RF Licensor-1	
781	3		STD		P61B-009TE	Flange WN ASTM A105 Class 600 ASME B16.5 RF Licensor-1	
781	4		STD		P61B-00A10	Flange WN ASTM A105 Class 600 ASME B16.5 RF Licensor-1	
781	6		STD		P61B-00A11	Flange WN ASTM A105 Class 600 ASME B16.5 RF Licensor-1	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67B-002G3	Blind flange ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
1	0.75				P67B-002G4	Blind flange ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
1	1				P67B-002EK	Blind flange ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
1	1.5				P67B-002EL	Blind flange ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
1	2				P67B-002ET	Blind flange ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
1	3				P67B-002EU	Blind flange ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
1	4				P67B-002EV	Blind flange ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
1	6				P67B-002EW	Blind flange ASTM A105 Class 300 ASME B16.5 RF Licensor-1	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000FT	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000FU	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

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GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000G5	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000G6	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	6				P73T-000G7	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	0.5				P73T-000J8	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	0.75				P73T-000J9	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1				P73T-000JA	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1.5				P73T-000JB	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	2				P73T-000JH	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	3				P73T-000JL	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	4				P73T-000JM	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	6				P73T-000JN	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-6				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
781	0.5-6				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81B-001UG	Gate valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Licensor-1	
1	0.75				P81B-001UH	Gate valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Licensor-1	
1	1				P81B-001UJ	Gate valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Licensor-1	
1	1.5				P81B-001UK	Gate valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Licensor-1	
1	2				P81C-0061W	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Licensor-1	
1	3				P81C-0061X	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Licensor-1	
1	4				P81C-0061Y	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Licensor-1	
1	6				P81C-0061Z	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Licensor-1	
4608	0.75				P81B-002W9	Gate valve ASTM A105 Class 300 API 602 BW both sides w/ nipples BE - NPT ASTM A106-B Sch160-nipple Trim number 5 BB-BG-OS&Y Handwheel operated Licensor-1	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3				P82C-0039R	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Licensor-1	
1	4				P82C-00466	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Licensor-1	
1	6				P82C-004FC	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Licensor-1	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5				P83B-00152	Check valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 5 Lift-type Bolted cover Licensor-1	
1	2				P83C-002XV	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 5 Swing-type Bolted cover Licensor-1	
1	3				P83C-002XW	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 5 Swing-type Bolted cover Licensor-1	
1	4				P83C-002XX	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 5 Swing-type Bolted cover Licensor-1	
1	6				P83C-002XY	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 5 Swing-type Bolted cover Licensor-1	

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BALL VALVE (Q)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P84B-00150	Ball valve Long-pattern ASTM A105 Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design Licensor-1	
1	0.75				P84B-00151	Ball valve Long-pattern ASTM A105 Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design Licensor-1	
1	1				P84B-00152	Ball valve Long-pattern ASTM A105 Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design Licensor-1	
1	1.5				P84B-00153	Ball valve Long-pattern ASTM A105 Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design Licensor-1	
1	2				P84C-005ZV	Ball valve Long-pattern ASTM A216 Grade WCB Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design Licensor-1	
1	3				P84C-005ZW	Ball valve Long-pattern ASTM A216 Grade WCB Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design Licensor-1	
1	4				P84C-005ZX	Ball valve Long-pattern ASTM A216 Grade WCB Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Gear operated Full bore Fire tested design Licensor-1	
1	6				P84C-00604	Ball valve Long-pattern ASTM A216 Grade WCB Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design Licensor-1	

ORIFICE FLANGE (FO)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	6		STD		P66B-0085K	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Licensor-1	
200	6		STD		P66B-0085U	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw Licensor-1	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71B-000AR	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	0.75				P71B-000AS	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	1				P71B-000AT	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	1.5				P71B-000AU	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	2				P71B-000AW	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	3				P71B-000AX	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	4				P71B-000AY	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	6				P71B-000AZ	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF Licensor-1	

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BOLT TABLE (B_B1AC01 , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-003V4		
0.75	4	0.625	75	P80S-003XC		
1	4	0.625	80	P80S-003XD		
1.5	4	0.750	95	P80S-00414		
2	8	0.625	90	P80S-003XF		
3	8	0.750	110	P80S-003XK		
4	8	0.750	115	P80S-003XL		
6	12	0.750	125	P80S-003XN		

BOLT TABLE (B_B1AC01_781 , STUD ASME RF, OPTION CODE 781)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	80	P80S-003V6		
0.75	4	0.625	90	P80S-003XF		
1	4	0.625	95	P80S-003XG		
1.5	4	0.750	110	P80S-003XK		
2	8	0.625	110	P80S-003VC		
3	8	0.750	130	P80S-003XP		
4	8	0.875	150	P80S-0041F		
6	12	1.000	175	P80S-0043P		

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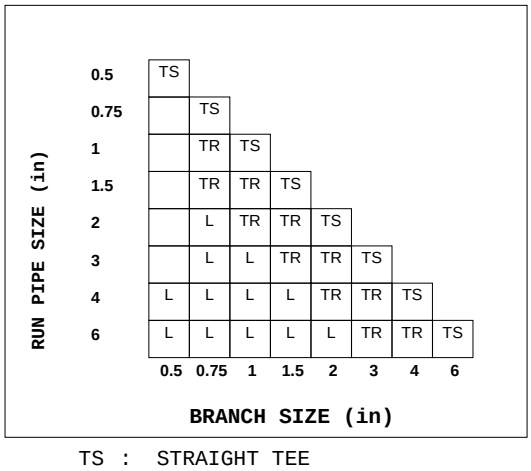
BRANCH TABLE (T_B1AC01)



TS : STRAIGHT TEE
TR : REDUCING TEE
L : OUTLET

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PIPING CLASS

B1AD

REV NO. 2

Material : Killed CS
Rating : ASME CLASS 300
Flange Face : RF
C.A.(mm) : 1.50
Gasket : Spiral Wound
Service : UTILITY - HYDROCARBON : / JET FUEL OIL / FUEL OIL / FUEL GAS / HSFO (TO HHP & HP STEAM BOILERS)

Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
2	USE OF SOFT SEATED BALL, PLUG AND BUTTERFLY VALVES SHALL BE LIMITED TO MAXIMUM OF 204DEGC (400DEGF)

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
24	FULL PORT (Q)
200	WITH JACK SCREW (FO)
221	RF (V)
541	NPT(F) (CA,L)
714	SW - NPT(F) (V)
781	CLASS 600 (B,F,G)
4602	DISSIMILAR TYPE CHECK VALVE (XDP)

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PIPING CLASS
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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P01A-000XM	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	0.75		XS		P01A-000XN	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1		XS		P01A-000XP	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1.5		XS		P01A-000XV	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	2		XS		P01A-000YX	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	3		STD		P01A-000YM	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	4		STD		P01A-000YU	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	6		STD		P01A-000Z3	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	8		SCH20		P01A-001AT	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	10		SCH30		P01A-0016U	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	12		STD		P01A-000XT	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	14		STD		P01A-000Y1	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	16		SCH20		P01A-0018E	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P02B-00014	90 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	0.75				P02B-00015	90 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	1				P02B-00016	90 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5				P02B-00017	90 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	2		XS		P02A-000CP	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		STD		P02A-000CU	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		STD		P02A-000CZ	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		STD		P02A-000D6	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		SCH20		P02A-000GZ	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	10		SCH30		P02A-000M3	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	12		STD		P02A-000BZ	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	14		STD		P02A-000C8	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	16		SCH20		P02A-000GM	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P03B-00017	45 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	0.75				P03B-00018	45 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	1				P03B-00019	45 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5				P03B-0001A	45 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	2		XS		P03A-000AS	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		STD		P03A-000AX	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		STD		P03A-000B1	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		STD		P03A-000B9	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		SCH20		P03A-000EX	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	10		SCH30		P03A-000JT	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	12		STD		P03A-000A9	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	14		STD		P03A-000AG	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	16		SCH20		P03A-000EM	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P21B-00017	Straight tee ASTM A105 Class 3000 ASME B16.11 SW	
1	0.75				P21B-00018	Straight tee ASTM A105 Class 3000 ASME B16.11 SW	
1	1				P21B-00019	Straight tee ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5				P21B-0001A	Straight tee ASTM A105 Class 3000 ASME B16.11 SW	
1	2		XS		P21A-001CJ	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		STD		P21A-001CU	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		STD		P21A-001CW	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6		STD		P21A-001D2	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8		SCH20		P21A-00215	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10		SCH30		P21A-00259	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12		STD		P21A-001C1	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14		STD		P21A-001C8	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16		SCH20		P21A-0020X	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75			P24B-0002L	Reducing tee ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5	0.75			P24B-0002N	Reducing tee ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5	1			P24B-0002P	Reducing tee ASTM A105 Class 3000 ASME B16.11 SW	
1	2	1	XS	XS	P24A-00238	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	XS	XS	P24A-0023H	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	STD	XS	P24A-00214	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	STD	XS	P24A-002HW	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P24A-002HY	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P24A-0021K	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	STD	P24A-0021A	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P24A-00229	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH20	STD	P24A-00J21	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH20	STD	P24A-005J4	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	SCH30	STD	P24A-00GNR	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	SCH30	STD	P24A-0060W	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	SCH30	SCH20	P24A-005KE	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	STD	STD	P24A-0022S	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	STD	SCH20	P24A-0060X	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	STD	SCH30	P24A-0060K	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	STD	STD	P24A-0026N	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	STD	SCH20	P24A-00KSG	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	STD	SCH30	P24A-0060L	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	STD	STD	P24A-0022R	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	6	SCH20	STD	P24A-00GU4	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	SCH20	SCH20	P24A-002XW	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	SCH20	SCH30	P24A-00KSH	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	SCH20	STD	P24A-00GP7	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	SCH20	STD	P24A-006YK	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	STD	XS	P27A-001MZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P27A-001N0	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P27A-00189	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	STD	P27A-001AZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P27A-001GW	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH20	STD	P27A-003K2	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH20	STD	P27A-003K3	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	SCH30	STD	P27A-003MK	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	SCH30	STD	P27A-003ML	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	SCH30	SCH20	P27A-003MM	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	STD	STD	P27A-0018X	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	STD	SCH20	P27A-0041Y	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	STD	SCH30	P27A-0041H	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	STD	STD	P27A-0019L	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	STD	SCH20	P27A-003MC	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	STD	SCH30	P27A-003MB	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	STD	STD	P27A-0018W	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	SCH20	SCH20	P27A-001WX	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	SCH20	SCH30	P27A-003NC	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	SCH20	STD	P27A-0055Z	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	SCH20	STD	P27A-0057G	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	STD	XS	P28A-001N5	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P28A-001N6	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P28A-0018B	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	STD	P28A-001AS	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P28A-00182	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH20	STD	P28A-003JU	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH20	STD	P28A-003JV	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	SCH30	STD	P28A-003MD	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	SCH30	STD	P28A-003ME	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	SCH30	SCH20	P28A-003MF	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	STD	STD	P28A-00191	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	STD	SCH20	P28A-0041S	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	STD	SCH30	P28A-0041B	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	STD	STD	P28A-0019R	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	STD	SCH20	P28A-003M6	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	STD	SCH30	P28A-003M5	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	STD	STD	P28A-0018Z	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	SCH20	SCH20	P28A-001T6	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	SCH20	SCH30	P28A-003N6	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	SCH20	STD	P28A-00519	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	SCH20	STD	P28A-0051A	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P29B-0001J	Cap ASTM A105 Class 3000 ASME B16.11 SW	
1	0.75				P29B-0001F	Cap ASTM A105 Class 3000 ASME B16.11 SW	
1	1				P29B-0001G	Cap ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5				P29B-0001H	Cap ASTM A105 Class 3000 ASME B16.11 SW	
1	2		XS		P29A-000A1	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		STD		P29A-000BK	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		STD		P29A-000A3	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6		STD		P29A-000A9	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8		SCH20		P29A-000EY	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10		SCH30		P29A-000K7	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12		STD		P29A-000A7	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14		STD		P29A-000AJ	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16		SCH20		P29A-000F3	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
541	0.75				P29B-0000C	Cap ASTM A105 Class 3000 ASME B16.11 NPT	
541	1				P29B-0000D	Cap ASTM A105 Class 3000 ASME B16.11 NPT	
541	1.5				P29B-0000E	Cap ASTM A105 Class 3000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P41A-000B5	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		SCH160		P41A-000B6	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		SCH160		P41A-000B7	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		SCH160		P41A-000B8	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

CON SWAGED NIPPLE (SNC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	XS	XS	P42A-00036	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	XS	XS	P42A-00038	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	XS	XS	P42A-0003B	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	XS	XS	P42A-00035	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	XS	XS	P42A-00039	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	XS	XS	P42A-0003C	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	XS	XS	P42A-0008C	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	XS	XS	P42A-0008D	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	XS	XS	P42A-0008E	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2	1.5	XS	XS	P42A-0008F	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	STD	XS	P42A-0007V	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	

ECC SWAGED NIPPLE (SNE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	XS	XS	P43A-00036	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	XS	XS	P43A-00037	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	XS	XS	P43A-00038	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	XS	XS	P43A-00039	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	XS	XS	P43A-0003A	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	XS	XS	P43A-0003B	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	XS	XS	P43A-00042	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	XS	XS	P43A-00043	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	XS	XS	P43A-00044	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	XS	XS	P43A-00045	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	STD	XS	P43A-0003J	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	

COUPLING (CPS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P47B-0001D	Coupling ASTM A105 Class 3000 ASME B16.11 SW - SW	
1	0.75				P47B-0001E	Coupling ASTM A105 Class 3000 ASME B16.11 SW - SW	
1	1				P47B-0001F	Coupling ASTM A105 Class 3000 ASME B16.11 SW - SW	
1	1.5				P47B-0001G	Coupling ASTM A105 Class 3000 ASME B16.11 SW - SW	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2 - 2.5	0.75			P31B-0137J	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	3 - 5	0.75			P31B-0137K	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	6 - 12	0.75			P31B-007AB	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	14 - 36	0.75			P31B-007AJ	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	3	1			P31B-007A7	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	4 - 5	1			P31B-0138Z	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	6 - 10	1			P31B-007A4	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	12 - 36	1			P31B-007AA	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	4	1.5			P31B-005SN	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	5 - 6	1.5			P31B-01390	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	8 - 12	1.5			P31B-0079U	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	14 - 24	1.5			P31B-007A0	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
541	1	0.75			P31B-00551	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
541	1.5	0.75			P31B-00555	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
541	2 - 2.5	0.75			P31B-0137H	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
541	3 - 5	0.75			P31B-01376	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
541	6 - 12	0.75			P31B-007GR	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
541	14 - 36	0.75			P31B-007GY	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
1	6	2	STD	XS	P31B-007SH	Outlet ASTM A105 MSS SP-97 BW	
1	8	2	SCH20	XS	P31B-00NY2	Outlet ASTM A105 MSS SP-97 BW	
1	10	2	SCH30	XS	P31B-00NVF	Outlet ASTM A105 MSS SP-97 BW	
1	12	2	STD	XS	P31B-00CBN	Outlet ASTM A105 MSS SP-97 BW	
1	14	2	STD	XS	P31B-00CAE	Outlet ASTM A105 MSS SP-97 BW	
1	16	2	SCH20	XS	P31B-00TF8	Outlet ASTM A105 MSS SP-97 BW	
1	8	3	SCH20	STD	P31B-00P11	Outlet ASTM A105 MSS SP-97 BW	
1	10	3	SCH30	STD	P31B-00NYK	Outlet ASTM A105 MSS SP-97 BW	
1	12	3	STD	STD	P31B-0096N	Outlet ASTM A105 MSS SP-97 BW	
1	14	3	STD	STD	P31B-0090T	Outlet ASTM A105 MSS SP-97 BW	
1	16	3	SCH20	STD	P31B-00TU2	Outlet ASTM A105 MSS SP-97 BW	
1	12	4	STD	STD	P31B-008ZW	Outlet ASTM A105 MSS SP-97 BW	
1	14	4	STD	STD	P31B-008YM	Outlet ASTM A105 MSS SP-97 BW	
1	16	4	SCH20	STD	P31B-00TU3	Outlet ASTM A105 MSS SP-97 BW	

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PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30B-0002D	Plug ASTM A105 ASME B16.11 NPT Round head	
1	0.75				P30B-0002E	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1				P30B-0002F	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1.5				P30B-0002G	Plug ASTM A105 ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P61B-001HC	Flange SW ASTM A105 Class 300 ASME B16.5 RF	
1	0.75		XS		P61B-001HS	Flange SW ASTM A105 Class 300 ASME B16.5 RF	
1	1		XS		P61B-001EF	Flange SW ASTM A105 Class 300 ASME B16.5 RF	
1	1.5		XS		P61B-001F2	Flange SW ASTM A105 Class 300 ASME B16.5 RF	
1	2		XS		P61B-001HW	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	3		STD		P61B-001LJ	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	4		STD		P61B-001MC	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	6		STD		P61B-001N2	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	8		SCH20		P61B-002LJ	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	10		SCH30		P61B-003LX	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	12		STD		P61B-001LE	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	14		STD		P61B-001M9	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	16		SCH20		P61B-002MS	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
781	0.5		XS		P61B-001FF	Flange SW ASTM A105 Class 600 ASME B16.5 RF	
781	0.75		XS		P61B-001FH	Flange SW ASTM A105 Class 600 ASME B16.5 RF	
781	1		XS		P61B-001DR	Flange SW ASTM A105 Class 600 ASME B16.5 RF	
781	1.5		XS		P61B-001DV	Flange SW ASTM A105 Class 600 ASME B16.5 RF	
781	2		XS		P61B-001DH	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	3		STD		P61B-001TW	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	4		STD		P61B-001VV	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	6		STD		P61B-001JW	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	8		SCH20		P61B-003F0	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	10		SCH30		P61B-003TN	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	12		STD		P61B-001P9	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	14		STD		P61B-001PL	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	16		SCH20		P61B-00798	Flange WN ASTM A105 Class 600 ASME B16.5 RF	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67B-000GH	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	0.75				P67B-000GJ	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	1				P67B-000GK	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	1.5				P67B-000GL	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	2				P67B-000GM	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	3				P67B-000GN	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	4				P67B-000GP	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	6				P67B-000GY	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	8				P67B-000GZ	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	10				P67B-000GR	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	12				P67B-000GS	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	14				P67B-000GT	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	16				P67B-000GU	Blind flange ASTM A105 Class 300 ASME B16.5 RF	

REDUCING FLANGE (FR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5		XS	P62B-000N0	Reducing flange SW ASTM A105 Class 300 ASME B16.5 RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000FT	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000FU	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

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GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000G5	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000G6	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	6				P73T-000G7	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	8				P73T-000G8	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	10				P73T-000FX	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	12				P73T-000FY	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	14				P73T-000FZ	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	16				P73T-000G0	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	0.5				P73T-000J8	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	0.75				P73T-000J9	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1				P73T-000JA	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1.5				P73T-000JB	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	2				P73T-000JH	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	3				P73T-000JL	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	4				P73T-000JM	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	6				P73T-000JN	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	8				P73T-000JP	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	10				P73T-000JC	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	12				P73T-000JD	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	14				P73T-000JE	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	16				P73T-000JF	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-10				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	12-16				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
781	0.5-6				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
781	8-16				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81B-000P4	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	0.75				P81B-000NX	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	1				P81B-000NY	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	1.5				P81B-000NZ	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	2				P81C-002D6	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	3				P81C-002D7	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	4				P81C-002D8	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	6				P81C-002D9	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	8				P81C-0086V	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated	
1	10				P81C-002DB	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated	
1	12				P81C-002DC	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated	
1	14				P81C-0034H	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated	

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GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	16				P81C-002DD	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated	
221	1				P81B-0037X	Gate valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
714	0.5				P81B-0015L	Gate valve ASTM A105 Class 800 API 602 SW - NPT Trim number 8 BB-BG-OS&Y Handwheel operated	
714	0.75				P81B-002F4	Gate valve ASTM A105 Class 800 API 602 SW - NPT Trim number 8 BB-BG-OS&Y Handwheel operated	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82B-000K0	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	0.75				P82B-000HB	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	1				P82B-000HC	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	1.5				P82B-000HD	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	2				P82C-00114	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	3				P82C-00115	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	4				P82C-00116	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	6				P82C-00117	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83B-000FX	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover	
1	0.75				P83B-000ER	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover	
1	1				P83B-000ES	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover	
1	1.5				P83B-000ET	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover	
1	2				P83C-0013H	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	3				P83C-0013L	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	4				P83C-0013M	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	6				P83C-0013N	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	8				P83C-0013P	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	10				P83C-0013D	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	12				P83C-0013E	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	14				P83C-0023R	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	16				P83C-0013F	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	

DP CHECK VALVE (XDP)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
4602	6				P88C-0035R	Dual plate check valve ASTM A216 Grade WCB Class 300 API 594 Wafer-type ASME B16.5 RF Trim number 8 Internal wetted parts 13Cr Spring Inconel Retainerless-type	
4602	8				P88C-003C9	Dual plate check valve ASTM A216 Grade WCB Class 300 API 594 Wafer-type ASME B16.5 RF Trim number 8 Internal wetted parts 13Cr Spring Inconel Retainerless-type	

BALL VALVE (Q)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P84B-0012S	Ball valve Long-pattern ASTM A105 Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design	
1	0.75				P84B-0012T	Ball valve Long-pattern ASTM A105 Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design	
1	1				P84B-0012U	Ball valve Long-pattern ASTM A105 Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design	
1	1.5				P84B-0012V	Ball valve Long-pattern ASTM A105 Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design	
24	0.5				P84B-0012W	Ball valve Long-pattern ASTM A105 Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	
24	0.75				P84B-0012X	Ball valve Long-pattern ASTM A105 Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	
24	1				P84B-0012Y	Ball valve Long-pattern ASTM A105 Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	
24	1.5				P84B-0012Z	Ball valve Long-pattern ASTM A105 Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	

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PLUG VALVE (PV)

OPTION CODE	SIZE L / RUN	SIZE S / BRN	WALL THICKNESS (L)	WALL THICKNESS (S)	IDENT CODE	DESCRIPTION	NOTE
1	0.5				P85B-0000W	Plug valve Short-pattern ASTM A105 Class 300 API 599 Flange ASME B16.5 RF Plug SS316 Seat PTFE Trim SS316 Nonlubricated taper plug BC-BG Wrench lever operated Regular port	
1	0.75				P85B-0000X	Plug valve Short-pattern ASTM A105 Class 300 API 599 Flange ASME B16.5 RF Plug SS316 Seat PTFE Trim SS316 Nonlubricated taper plug BC-BG Wrench lever operated Regular port	
1	1				P85B-0000K	Plug valve Short-pattern ASTM A105 Class 300 API 599 Flange ASME B16.5 RF Plug SS316 Seat PTFE Trim SS316 Nonlubricated taper plug BC-BG Wrench lever operated Regular port	

NEEDLE VALVE (NV)

OPTION CODE	SIZE L / RUN	SIZE S / BRN	WALL THICKNESS (L)	WALL THICKNESS (S)	IDENT CODE	DESCRIPTION	NOTE
1	0.5				P82B-001JU	Needle valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	0.75				P82B-000YB	Needle valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	1				P82B-000YC	Needle valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	1.5				P82B-000YD	Needle valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	

ORIFICE FLANGE (FO)

OPTION CODE	SIZE L / RUN	SIZE S / BRN	WALL THICKNESS (L)	WALL THICKNESS (S)	IDENT CODE	DESCRIPTION	NOTE
1	2		XS		P66B-0084B	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	3		STD		P66B-0084C	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	4		STD		P66B-0084D	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	6		STD		P66B-0084E	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	8		SCH20		P66B-0084F	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	10		SCH30		P66B-0086Z	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	12		STD		P66B-008A2	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	14		STD		P66B-008A3	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	16		SCH20		P66B-0083Y	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
200	2		XS		P66B-00843	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	3		STD		P66B-00844	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	4		STD		P66B-00845	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	6		STD		P66B-00846	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	8		SCH20		P66B-00847	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	10		SCH30		P66B-00874	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	12		STD		P66B-008A4	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	14		STD		P66B-008A5	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	16		SCH20		P66B-0083Z	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	

SPECT BLANK (SB)

OPTION CODE	SIZE L / RUN	SIZE S / BRN	WALL THICKNESS (L)	WALL THICKNESS (S)	IDENT CODE	DESCRIPTION	NOTE
1	0.5				P71B-000B1	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	0.75				P71B-000B2	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	1				P71B-000B3	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71B-000B4	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	2				P71B-000B6	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	3				P71B-000B7	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	4				P71B-000B8	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	6				P71B-000B9	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	8				P71B-000BA	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	10				P71B-000B5	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	12				P71B-000BB	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	

PADDLE BLANK (PB)

OPTION CODE	SIZE L / RUN	SIZE S / BRN	WALL THICKNESS (L)	WALL THICKNESS (S)	IDENT CODE	DESCRIPTION	NOTE
1	14				P72B-000FA	Paddle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	16				P72B-000FB	Paddle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	

PADDLE SPACER (PS)

OPTION CODE	SIZE L / RUN	SIZE S / BRN	WALL THICKNESS (L)	WALL THICKNESS (S)	IDENT CODE	DESCRIPTION	NOTE
1	14				P72B-000FG	Paddle spacer ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	16				P72B-000FH	Paddle spacer ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	

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BOLT TABLE (B_B1AD , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-003V4		
0.75	4	0.625	75	P80S-003XC		
1	4	0.625	80	P80S-003XD		
1.5	4	0.750	95	P80S-00414		
2	8	0.625	90	P80S-003XF		
3	8	0.750	110	P80S-003XK		
4	8	0.750	115	P80S-003XL		
6	12	0.750	125	P80S-003XN		
8	12	0.875	140	P80S-0041D		
10	16	1.000	160	P80S-0043K		
12	16	1.125	175	P80S-0046S		
14	20	1.125	180	P80S-0046T		
16	20	1.250	190	P80S-004AK		

BOLT TABLE (B_B1AD_781 , STUD ASME RF, OPTION CODE 781)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	80	P80S-003V6		
0.75	4	0.625	90	P80S-003XF		
1	4	0.625	95	P80S-003XG		
1.5	4	0.750	110	P80S-003XK		
2	8	0.625	110	P80S-003VC		
3	8	0.750	130	P80S-003XP		
4	8	0.875	150	P80S-0041F		
6	12	1.000	175	P80S-0043P		
8	12	1.125	195	P80S-0046W		
10	16	1.250	250	P80S-004AY		
12	20	1.250	255	P80S-004AZ		
14	20	1.375	270	P80S-003E7		
16	20	1.500	295	P80S-003FL		

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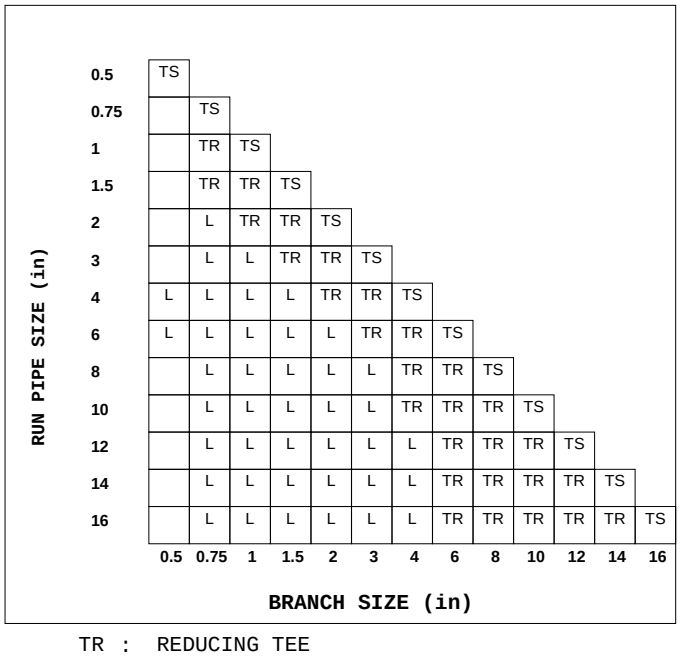
BRANCH TABLE (T_B1AD)



TR : REDUCING TEE
TS : STRAIGHT TEE
L : OUTLET

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Material	:	Killed CS
Rating	:	ASME CLASS 300
Flange Face	:	RF
C.A.(mm)	:	1.50
Gasket	:	Spiral Wound
Service	:	UTILITY - HYDROCARBON : / JET FUEL OIL / FUEL OIL / FUEL GAS / HSFO (TO HHP & HP STEAM BOILERS)
Design Code	:	ASME B31.3
Heat Treatment	:	

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
2	USE OF SOFT SEATED BALL, PLUG AND BUTTERFLY VALVES SHALL BE LIMITED TO MAXIMUM OF 204DEGC (400DEGF)

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
541	NPT(F) (CA,L)
714	SW - NPT(F) (V)
781	CLASS 600 (B,F,G)

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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P01A-007AZ	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE Licensor-1	
1	0.75		XS		P01A-007B0	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE Licensor-1	
1	1		XS		P01A-007B1	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE Licensor-1	
1	1.5		XS		P01A-007B2	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE Licensor-1	
1	2		XS		P01A-0078Y	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Licensor-1	
1	3		STD		P01A-0078Z	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Licensor-1	
1	4		STD		P01A-007B3	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Licensor-1	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P02B-0007G	90 degree elbow ASTM A105 Class 3000 ASME B16.11 SW Licensor-1	
1	0.75				P02B-0007H	90 degree elbow ASTM A105 Class 3000 ASME B16.11 SW Licensor-1	
1	1				P02B-0007J	90 degree elbow ASTM A105 Class 3000 ASME B16.11 SW Licensor-1	
1	1.5				P02B-0007K	90 degree elbow ASTM A105 Class 3000 ASME B16.11 SW Licensor-1	
1	2		XS		P02A-003R7	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	3		STD		P02A-003R8	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	4		STD		P02A-003T8	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P03B-00074	45 degree elbow ASTM A105 Class 3000 ASME B16.11 SW Licensor-1	
1	0.75				P03B-00075	45 degree elbow ASTM A105 Class 3000 ASME B16.11 SW Licensor-1	
1	1				P03B-00076	45 degree elbow ASTM A105 Class 3000 ASME B16.11 SW Licensor-1	
1	1.5				P03B-00077	45 degree elbow ASTM A105 Class 3000 ASME B16.11 SW Licensor-1	
1	2		XS		P03A-003MW	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	3		STD		P03A-003MX	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	4		STD		P03A-003PX	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P21B-00074	Straight tee ASTM A105 Class 3000 ASME B16.11 SW Licensor-1	
1	0.75				P21B-00075	Straight tee ASTM A105 Class 3000 ASME B16.11 SW Licensor-1	
1	1				P21B-00076	Straight tee ASTM A105 Class 3000 ASME B16.11 SW Licensor-1	
1	1.5				P21B-00077	Straight tee ASTM A105 Class 3000 ASME B16.11 SW Licensor-1	
1	2		XS		P21A-0048L	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	3		STD		P21A-0048M	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	4		STD		P21A-004AL	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75			P24B-000BZ	Reducing tee ASTM A105 Class 3000 ASME B16.11 SW Licensor-1	
1	1.5	0.75			P24B-000C0	Reducing tee ASTM A105 Class 3000 ASME B16.11 SW Licensor-1	
1	1.5	1			P24B-000C1	Reducing tee ASTM A105 Class 3000 ASME B16.11 SW Licensor-1	
1	2	1	XS	XS	P24A-00K5U	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	2	1.5	XS	XS	P24A-00K5V	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	3	1.5	STD	XS	P24A-00K5W	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	3	2	STD	XS	P24A-00K0Y	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	4	2	STD	XS	P24A-00K5X	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	4	3	STD	STD	P24A-00K5Y	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	STD	XS	P27A-00EL1	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	4	2	STD	XS	P27A-00ES5	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	4	3	STD	STD	P27A-00ES6	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	

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ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	STD	XS	P28A-00BPS	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	4	2	STD	XS	P28A-00BVZ	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	4	3	STD	STD	P28A-00BW0	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P29B-0005L	Cap ASTM A105 Class 3000 ASME B16.11 SW Licensor-1	
1	0.75				P29B-0005M	Cap ASTM A105 Class 3000 ASME B16.11 SW Licensor-1	
1	1				P29B-0005N	Cap ASTM A105 Class 3000 ASME B16.11 SW Licensor-1	
1	1.5				P29B-0005P	Cap ASTM A105 Class 3000 ASME B16.11 SW Licensor-1	
1	2		XS		P29A-00326	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	3		STD		P29A-00327	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	4		STD		P29A-0034R	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
541	0.75				P29B-00067	Cap ASTM A105 Class 3000 ASME B16.11 NPT Licensor-1	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P41A-0017A	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Licensor-1	
1	0.75		SCH160		P41A-0017B	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Licensor-1	
1	1		SCH160		P41A-0017C	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Licensor-1	
1	1.5		SCH160		P41A-0017D	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Licensor-1	

CON SWAGED NIPPLE (SNC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	XS	XS	P42A-000UN	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S) Licensor-1	
1	1	0.5	XS	XS	P42A-000UP	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S) Licensor-1	
1	1	0.75	XS	XS	P42A-000UR	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S) Licensor-1	
1	1.5	0.5	XS	XS	P42A-000US	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S) Licensor-1	
1	1.5	0.75	XS	XS	P42A-000UT	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S) Licensor-1	
1	1.5	1	XS	XS	P42A-000UU	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S) Licensor-1	
1	2	0.5	XS	XS	P42A-000UV	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S) Licensor-1	
1	2	0.75	XS	XS	P42A-000UW	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S) Licensor-1	
1	2	1	XS	XS	P42A-000UX	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S) Licensor-1	
1	2	1.5	XS	XS	P42A-000UY	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S) Licensor-1	
1	3	1.5	STD	XS	P42A-000UZ	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S) Licensor-1	

ECC SWAGED NIPPLE (SNE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	XS	XS	P43A-000KS	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S) Licensor-1	
1	1	0.5	XS	XS	P43A-000KT	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S) Licensor-1	
1	1	0.75	XS	XS	P43A-000KU	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S) Licensor-1	
1	1.5	0.5	XS	XS	P43A-000KV	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S) Licensor-1	
1	1.5	0.75	XS	XS	P43A-000KW	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S) Licensor-1	
1	1.5	1	XS	XS	P43A-000KX	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S) Licensor-1	
1	2	0.5	XS	XS	P43A-000KY	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S) Licensor-1	
1	2	0.75	XS	XS	P43A-000KZ	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S) Licensor-1	
1	2	1	XS	XS	P43A-000L0	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S) Licensor-1	
1	2	1.5	XS	XS	P43A-000L1	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S) Licensor-1	
1	3	1.5	STD	XS	P43A-000L2	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S) Licensor-1	

COUPLING (CPS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P47B-0007V	Coupling ASTM A105 Class 3000 ASME B16.11 SW - SW Licensor-1	
1	0.75				P47B-0007W	Coupling ASTM A105 Class 3000 ASME B16.11 SW - SW Licensor-1	
1	1				P47B-0007X	Coupling ASTM A105 Class 3000 ASME B16.11 SW - SW Licensor-1	
1	1.5				P47B-0007Y	Coupling ASTM A105 Class 3000 ASME B16.11 SW - SW Licensor-1	

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OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2 - 2.5	0.75			P31B-0138H	Outlet ASTM A105 Class 3000 MSS SP-97 SW Licensor-1	
1	3 - 5	0.75			P31B-0138J	Outlet ASTM A105 Class 3000 MSS SP-97 SW Licensor-1	
1	3	1			P31B-0138M	Outlet ASTM A105 Class 3000 MSS SP-97 SW Licensor-1	
1	4 - 5	1			P31B-0138N	Outlet ASTM A105 Class 3000 MSS SP-97 SW Licensor-1	
1	4	1.5			P31B-010L4	Outlet ASTM A105 Class 3000 MSS SP-97 SW Licensor-1	
541	1	0.75			P31B-0118R	Outlet ASTM A105 Class 3000 MSS SP-97 NPT Licensor-1	
541	1.5	0.75			P31B-0118P	Outlet ASTM A105 Class 3000 MSS SP-97 NPT Licensor-1	
541	2 - 2.5	0.75			P31B-0138V	Outlet ASTM A105 Class 3000 MSS SP-97 NPT Licensor-1	
541	3 - 5	0.75			P31B-0138W	Outlet ASTM A105 Class 3000 MSS SP-97 NPT Licensor-1	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30B-00067	Plug ASTM A105 ASME B16.11 NPT Round head Licensor-1	
1	0.75				P30B-00068	Plug ASTM A105 ASME B16.11 NPT Round head Licensor-1	
1	1				P30B-00069	Plug ASTM A105 ASME B16.11 NPT Round head Licensor-1	
1	1.5				P30B-0006A	Plug ASTM A105 ASME B16.11 NPT Round head Licensor-1	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P61B-009ZW	Flange SW ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
1	0.75		XS		P61B-009ZX	Flange SW ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
1	1		XS		P61B-009ZY	Flange SW ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
1	1.5		XS		P61B-009ZZ	Flange SW ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
1	2		XS		P61B-009YW	Flange WN ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
1	3		STD		P61B-009YX	Flange WN ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
1	4		STD		P61B-009YY	Flange WN ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
781	0.5		XS		P61B-00AB7	Flange SW ASTM A105 Class 600 ASME B16.5 RF Licensor-1	
781	0.75		XS		P61B-00AB8	Flange SW ASTM A105 Class 600 ASME B16.5 RF Licensor-1	
781	1		XS		P61B-00AB9	Flange SW ASTM A105 Class 600 ASME B16.5 RF Licensor-1	
781	1.5		XS		P61B-00ABA	Flange SW ASTM A105 Class 600 ASME B16.5 RF Licensor-1	
781	2		XS		P61B-009TD	Flange WN ASTM A105 Class 600 ASME B16.5 RF Licensor-1	
781	3		STD		P61B-009TE	Flange WN ASTM A105 Class 600 ASME B16.5 RF Licensor-1	
781	4		STD		P61B-00A10	Flange WN ASTM A105 Class 600 ASME B16.5 RF Licensor-1	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67B-002G3	Blind flange ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
1	0.75				P67B-002G4	Blind flange ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
1	1				P67B-002EK	Blind flange ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
1	1.5				P67B-002EL	Blind flange ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
1	2				P67B-002ET	Blind flange ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
1	3				P67B-002EU	Blind flange ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
1	4				P67B-002EV	Blind flange ASTM A105 Class 300 ASME B16.5 RF Licensor-1	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000FT	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000FU	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000G5	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000G6	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	0.5				P73T-000J8	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	0.75				P73T-000J9	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

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GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
781	1				P73T-000JA	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1.5				P73T-000JB	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	2				P73T-000JH	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	3				P73T-000JL	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	4				P73T-000JM	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-4				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
781	0.5-4				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81B-001CX	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated Licensor-1	
1	0.75				P81B-001CY	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated Licensor-1	
1	1				P81B-001CZ	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated Licensor-1	
1	1.5				P81B-001D0	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated Licensor-1	
1	2				P81C-004VG	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated Licensor-1	
1	3				P81C-004VH	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated Licensor-1	
1	4				P81C-004VJ	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated Licensor-1	
714	0.5				P81B-002S7	Gate valve ASTM A105 Class 800 API 602 SW - NPT Trim number 8 BB-BG-OS&Y Handwheel operated Licensor-1	
714	0.75				P81B-002F5	Gate valve ASTM A105 Class 800 API 602 SW - NPT Trim number 8 BB-BG-OS&Y Handwheel operated Licensor-1	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82B-0014L	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated Licensor-1	
1	0.75				P82B-0014M	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated Licensor-1	
1	1				P82B-0014N	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated Licensor-1	
1	1.5				P82B-0014P	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated Licensor-1	
1	2				P82C-002C8	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated Licensor-1	
1	3				P82C-002C9	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated Licensor-1	
1	4				P82C-002CA	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated Licensor-1	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83B-000WE	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover Licensor-1	
1	0.75				P83B-000WF	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover Licensor-1	
1	1				P83B-000WG	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover Licensor-1	
1	1.5				P83B-000WH	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover Licensor-1	
1	2				P83C-002AT	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover Licensor-1	
1	3				P83C-002AV	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover Licensor-1	
1	4				P83C-002AW	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover Licensor-1	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71B-000AR	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	0.75				P71B-000AS	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	1				P71B-000AT	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	1.5				P71B-000AU	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF Licensor-1	

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SPECT BLANK (SB)							
OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2				P71B-000AW	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	3				P71B-000AX	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	4				P71B-000AY	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF Licensor-1	

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BOLT TABLE (B_B1AD01 , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-003V4		
0.75	4	0.625	75	P80S-003XC		
1	4	0.625	80	P80S-003XD		
1.5	4	0.750	95	P80S-00414		
2	8	0.625	90	P80S-003XF		
3	8	0.750	110	P80S-003XK		
4	8	0.750	115	P80S-003XL		

BOLT TABLE (B_B1AD01_781 , STUD ASME RF, OPTION CODE 781)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	80	P80S-003V6		
0.75	4	0.625	90	P80S-003XF		
1	4	0.625	95	P80S-003XG		
1.5	4	0.750	110	P80S-003XK		
2	8	0.625	110	P80S-003VC		
3	8	0.750	130	P80S-003XP		
4	8	0.875	150	P80S-0041F		

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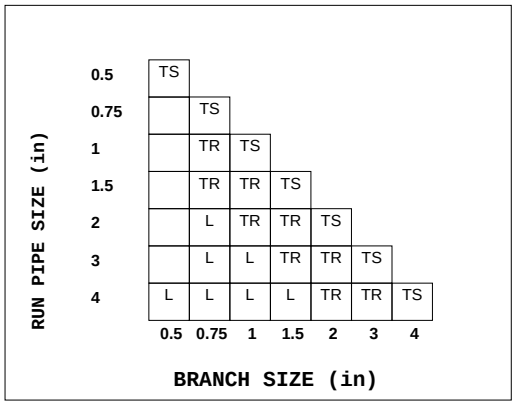
BRANCH TABLE (T_B1AD01)



TS : STRAIGHT TEE
L : OUTLET
TR : REDUCING TEE

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PIPING CLASS

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Material : CS (ASME)
Rating : ASME CLASS 300
Flange Face : RF
C.A.(mm) : 1.50
Gasket : Spiral Wound
Service : UTILITY - POWER PIPING : / MEDIUM PRESSURE STEAM / LP BOILER FEED WATER

Design Code : ASME B31.1
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
200	WITH JACK SCREW (FO)
221	RF (V)
541	NPT(F) (CA,L)
714	SW - NPT(F) (V)
781	CLASS 600 (B,F,G)
797	CLASS 1500 (B,F,G)

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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P01A-002RW	Pipe ASME SA106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	0.75		XS		P01A-002RX	Pipe ASME SA106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1		XS		P01A-002RY	Pipe ASME SA106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1.5		XS		P01A-002RZ	Pipe ASME SA106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	2		XS		P01A-002S2	Pipe ASME SA106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	3		STD		P01A-0042B	Pipe ASME SA106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	4		STD		P01A-0042C	Pipe ASME SA106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	6		STD		P01A-0042D	Pipe ASME SA106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	8		SCH20		P01A-00283	Pipe ASME SA106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	10		SCH20		P01A-0027Y	Pipe ASME SA106 Grade B Seamless ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P02B-0002N	90 degree elbow ASME SA105 Class 3000 ASME B16.11 SW	
1	0.75				P02B-0002R	90 degree elbow ASME SA105 Class 3000 ASME B16.11 SW	
1	1				P02B-0002P	90 degree elbow ASME SA105 Class 3000 ASME B16.11 SW	
1	1.5				P02B-0002M	90 degree elbow ASME SA105 Class 3000 ASME B16.11 SW	
1	2		XS		P02A-002HF	90 degree elbow ASME SA234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		STD		P02A-002HG	90 degree elbow ASME SA234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		STD		P02A-002HH	90 degree elbow ASME SA234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		STD		P02A-002HJ	90 degree elbow ASME SA234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		SCH20		P02A-003R6	90 degree elbow ASME SA234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	10		SCH20		P02A-003R4	90 degree elbow ASME SA234 Grade WPB Seamless ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P03B-0002L	45 degree elbow ASME SA105 Class 3000 ASME B16.11 SW	
1	0.75				P03B-0002K	45 degree elbow ASME SA105 Class 3000 ASME B16.11 SW	
1	1				P03B-0002J	45 degree elbow ASME SA105 Class 3000 ASME B16.11 SW	
1	1.5				P03B-0002H	45 degree elbow ASME SA105 Class 3000 ASME B16.11 SW	
1	2		XS		P03A-002EZ	45 degree elbow ASME SA234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		STD		P03A-002F0	45 degree elbow ASME SA234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		STD		P03A-002F1	45 degree elbow ASME SA234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		STD		P03A-002F2	45 degree elbow ASME SA234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		SCH20		P03A-003MV	45 degree elbow ASME SA234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	10		SCH20		P03A-003MT	45 degree elbow ASME SA234 Grade WPB Seamless ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P21B-0002L	Straight tee ASME SA105 Class 3000 ASME B16.11 SW	
1	0.75				P21B-0002K	Straight tee ASME SA105 Class 3000 ASME B16.11 SW	
1	1				P21B-0002J	Straight tee ASME SA105 Class 3000 ASME B16.11 SW	
1	1.5				P21B-0002H	Straight tee ASME SA105 Class 3000 ASME B16.11 SW	
1	2		XS		P21A-002PV	Straight tee ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	3		STD		P21A-003G4	Straight tee ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	4		STD		P21A-003G5	Straight tee ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	6		STD		P21A-003G6	Straight tee ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	8		SCH20		P21A-002DA	Straight tee ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	10		SCH20		P21A-002D9	Straight tee ASME SA234 Grade WPB Seamless ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75			P24B-00051	Reducing tee ASME SA105 Class 3000 ASME B16.11 SW	
1	1.5	0.75			P24B-0004Z	Reducing tee ASME SA105 Class 3000 ASME B16.11 SW	
1	1.5	1			P24B-0004Y	Reducing tee ASME SA105 Class 3000 ASME B16.11 SW	
1	2	1	XS	XS	P24A-00K0D	Reducing tee ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	XS	XS	P24A-006AC	Reducing tee ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	STD	XS	P24A-00K0E	Reducing tee ASME SA234 Grade WPB Seamless ASME B16.9 BW	

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REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	STD	XS	P24A-00GLY	Reducing tee ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P24A-00GLZ	Reducing tee ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P24A-00GM0	Reducing tee ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	STD	P24A-00GM1	Reducing tee ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P24A-00GM2	Reducing tee ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH20	STD	P24A-00K0F	Reducing tee ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH20	STD	P24A-00K0G	Reducing tee ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	SCH20	STD	P24A-00K0H	Reducing tee ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	SCH20	STD	P24A-00K0J	Reducing tee ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	SCH20	SCH20	P24A-004JZ	Reducing tee ASME SA234 Grade WPB Seamless ASME B16.9 BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	STD	XS	P27A-00BFE	Concentric reducer ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P27A-00BFF	Concentric reducer ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P27A-00BFG	Concentric reducer ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	STD	P27A-00BFH	Concentric reducer ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P27A-00BFJ	Concentric reducer ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH20	STD	P27A-00EKT	Concentric reducer ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH20	STD	P27A-00EKU	Concentric reducer ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	SCH20	STD	P27A-00EKV	Concentric reducer ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	SCH20	STD	P27A-00EKW	Concentric reducer ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	SCH20	SCH20	P27A-002XW	Concentric reducer ASME SA234 Grade WPB Seamless ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	STD	XS	P28A-008DX	Eccentric reducer ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P28A-008DY	Eccentric reducer ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P28A-008DZ	Eccentric reducer ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	STD	P28A-008E0	Eccentric reducer ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P28A-008E1	Eccentric reducer ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH20	STD	P28A-00BPC	Eccentric reducer ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH20	STD	P28A-00BPD	Eccentric reducer ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	SCH20	STD	P28A-00BPE	Eccentric reducer ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	SCH20	STD	P28A-00BPF	Eccentric reducer ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	SCH20	SCH20	P28A-002Z0	Eccentric reducer ASME SA234 Grade WPB Seamless ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P29B-00022	Cap ASME SA105 Class 3000 ASME B16.11 SW	
1	0.75				P29B-00021	Cap ASME SA105 Class 3000 ASME B16.11 SW	
1	1				P29B-00020	Cap ASME SA105 Class 3000 ASME B16.11 SW	
1	1.5				P29B-0001Z	Cap ASME SA105 Class 3000 ASME B16.11 SW	
1	2		XS		P29A-0015L	Cap ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	3		STD		P29A-001T5	Cap ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	4		STD		P29A-001T6	Cap ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	6		STD		P29A-001T7	Cap ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	8		SCH20		P29A-000VX	Cap ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	10		SCH20		P29A-000VU	Cap ASME SA234 Grade WPB Seamless ASME B16.9 BW	
541	0.75				P29B-0001X	Cap ASME SA105 Class 3000 ASME B16.11 NPT	
541	1				P29B-0001W	Cap ASME SA105 Class 3000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P41A-000J1	Straight nipple ASME SA106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		SCH160		P41A-000J0	Straight nipple ASME SA106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		SCH160		P41A-000HZ	Straight nipple ASME SA106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		SCH160		P41A-000HY	Straight nipple ASME SA106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

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CON SWAGED NIPPLE (SNC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	XS	XS	P42A-000AB	Concentric swaged nipple ASME SA234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	XS	XS	P42A-000AC	Concentric swaged nipple ASME SA234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	XS	XS	P42A-000AD	Concentric swaged nipple ASME SA234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	XS	XS	P42A-000AE	Concentric swaged nipple ASME SA234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	XS	XS	P42A-000AF	Concentric swaged nipple ASME SA234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	XS	XS	P42A-000AG	Concentric swaged nipple ASME SA234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	XS	XS	P42A-000TU	Concentric swaged nipple ASME SA234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	XS	XS	P42A-000TV	Concentric swaged nipple ASME SA234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	XS	XS	P42A-000TW	Concentric swaged nipple ASME SA234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	XS	XS	P42A-000TX	Concentric swaged nipple ASME SA234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	STD	XS	P42A-000TY	Concentric swaged nipple ASME SA234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	

ECC SWAGED NIPPLE (SNE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	XS	XS	P43A-000JS	Eccentric swaged nipple ASME SA234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	XS	XS	P43A-000JT	Eccentric swaged nipple ASME SA234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	XS	XS	P43A-000JU	Eccentric swaged nipple ASME SA234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	XS	XS	P43A-000JV	Eccentric swaged nipple ASME SA234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	XS	XS	P43A-000JW	Eccentric swaged nipple ASME SA234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	XS	XS	P43A-000JX	Eccentric swaged nipple ASME SA234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	XS	XS	P43A-000JY	Eccentric swaged nipple ASME SA234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	XS	XS	P43A-000JZ	Eccentric swaged nipple ASME SA234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	XS	XS	P43A-000K0	Eccentric swaged nipple ASME SA234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	XS	XS	P43A-000K1	Eccentric swaged nipple ASME SA234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	STD	XS	P43A-000K2	Eccentric swaged nipple ASME SA234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	

COUPLING (CPS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P47B-0002Z	Coupling ASME SA105 Class 3000 ASME B16.11 SW - SW	
1	0.75				P47B-0002Y	Coupling ASME SA105 Class 3000 ASME B16.11 SW - SW	
1	1				P47B-0002X	Coupling ASME SA105 Class 3000 ASME B16.11 SW - SW	
1	1.5				P47B-0002W	Coupling ASME SA105 Class 3000 ASME B16.11 SW - SW	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2 - 2.5	0.75			P31B-01392	Outlet ASME SA105 Class 3000 MSS SP-97 SW	
1	3 - 5	0.75			P31B-01393	Outlet ASME SA105 Class 3000 MSS SP-97 SW	
1	6 - 12	0.75			P31B-00DGW	Outlet ASME SA105 Class 3000 MSS SP-97 SW	
1	3	1			P31B-00DGE	Outlet ASME SA105 Class 3000 MSS SP-97 SW	
1	4 - 5	1			P31B-01394	Outlet ASME SA105 Class 3000 MSS SP-97 SW	
1	6 - 10	1			P31B-00DG7	Outlet ASME SA105 Class 3000 MSS SP-97 SW	
1	4	1.5			P31B-00DFE	Outlet ASME SA105 Class 3000 MSS SP-97 SW	
1	5 - 6	1.5			P31B-01395	Outlet ASME SA105 Class 3000 MSS SP-97 SW	
1	8 - 12	1.5			P31B-00DF3	Outlet ASME SA105 Class 3000 MSS SP-97 SW	
541	1	0.75			P31B-00DR2	Outlet ASME SA105 Class 3000 MSS SP-97 NPT	
541	1.5	0.75			P31B-00DPX	Outlet ASME SA105 Class 3000 MSS SP-97 NPT	
541	2 - 2.5	0.75			P31B-01396	Outlet ASME SA105 Class 3000 MSS SP-97 NPT	
541	3 - 5	0.75			P31B-01397	Outlet ASME SA105 Class 3000 MSS SP-97 NPT	
541	6 - 12	0.75			P31B-00DPE	Outlet ASME SA105 Class 3000 MSS SP-97 NPT	
1	6	2	STD	XS	P31B-00TP9	Outlet ASME SA105 MSS SP-97 BW	
1	8	2	SCH20	XS	P31B-00XGB	Outlet ASME SA105 MSS SP-97 BW	
1	10	2	SCH20	XS	P31B-00XGD	Outlet ASME SA105 MSS SP-97 BW	
1	8	3	SCH20	STD	P31B-00XGC	Outlet ASME SA105 MSS SP-97 BW	
1	10	3	SCH20	STD	P31B-00XGE	Outlet ASME SA105 MSS SP-97 BW	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30B-00034	Plug ASME SA105 ASME B16.11 NPT Round head	

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PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75				P30B-00035	Plug ASME SA105 ASME B16.11 NPT Round head	
1	1				P30B-00036	Plug ASME SA105 ASME B16.11 NPT Round head	
1	1.5				P30B-00037	Plug ASME SA105 ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P61B-009SX	Flange SW ASME SA105 Class 300 ASME B16.5 RF	
1	0.75		XS		P61B-009SY	Flange SW ASME SA105 Class 300 ASME B16.5 RF	
1	1		XS		P61B-009SZ	Flange SW ASME SA105 Class 300 ASME B16.5 RF	
1	1.5		XS		P61B-009T0	Flange SW ASME SA105 Class 300 ASME B16.5 RF	
1	2		XS		P61B-0064D	Flange WN ASME SA105 Class 300 ASME B16.5 RF	
1	3		STD		P61B-0064E	Flange WN ASME SA105 Class 300 ASME B16.5 RF	
1	4		STD		P61B-0064F	Flange WN ASME SA105 Class 300 ASME B16.5 RF	
1	6		STD		P61B-0064G	Flange WN ASME SA105 Class 300 ASME B16.5 RF	
1	8		SCH20		P61B-003B9	Flange WN ASME SA105 Class 300 ASME B16.5 RF	
1	10		SCH20		P61B-003B6	Flange WN ASME SA105 Class 300 ASME B16.5 RF	
781	0.5		XS		P61B-00AC0	Flange SW ASME SA105 Class 600 ASME B16.5 RF	
781	0.75		XS		P61B-00AC1	Flange SW ASME SA105 Class 600 ASME B16.5 RF	
781	1		XS		P61B-00AC2	Flange SW ASME SA105 Class 600 ASME B16.5 RF	
781	1.5		XS		P61B-00AC3	Flange SW ASME SA105 Class 600 ASME B16.5 RF	
781	2		XS		P61B-003Y5	Flange WN ASME SA105 Class 600 ASME B16.5 RF	
781	3		STD		P61B-00681	Flange WN ASME SA105 Class 600 ASME B16.5 RF	
781	4		STD		P61B-00682	Flange WN ASME SA105 Class 600 ASME B16.5 RF	
781	6		STD		P61B-00683	Flange WN ASME SA105 Class 600 ASME B16.5 RF	
781	8		SCH20		P61B-00AC5	Flange WN ASME SA105 Class 600 ASME B16.5 RF	
781	10		SCH20		P61B-00AC4	Flange WN ASME SA105 Class 600 ASME B16.5 RF	
797	0.5		XS		P61B-00BVF	Flange SW ASME SA105 Class 1500 ASME B16.5 RJ	
797	0.75		XS		P61B-00BVG	Flange SW ASME SA105 Class 1500 ASME B16.5 RJ	
797	1		XS		P61B-00BVH	Flange SW ASME SA105 Class 1500 ASME B16.5 RJ	
797	1.5		XS		P61B-00BVJ	Flange SW ASME SA105 Class 1500 ASME B16.5 RJ	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67B-001WC	Blind flange ASME SA105 Class 300 ASME B16.5 RF	
1	0.75				P67B-001WD	Blind flange ASME SA105 Class 300 ASME B16.5 RF	
1	1				P67B-001WE	Blind flange ASME SA105 Class 300 ASME B16.5 RF	
1	1.5				P67B-001WF	Blind flange ASME SA105 Class 300 ASME B16.5 RF	
1	2				P67B-0012L	Blind flange ASME SA105 Class 300 ASME B16.5 RF	
1	3				P67B-001WH	Blind flange ASME SA105 Class 300 ASME B16.5 RF	
1	4				P67B-001WJ	Blind flange ASME SA105 Class 300 ASME B16.5 RF	
1	6				P67B-001WK	Blind flange ASME SA105 Class 300 ASME B16.5 RF	
1	8				P67B-001WL	Blind flange ASME SA105 Class 300 ASME B16.5 RF	
1	10				P67B-001WG	Blind flange ASME SA105 Class 300 ASME B16.5 RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000FT	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000FU	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000G5	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000G6	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	6				P73T-000G7	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	8				P73T-000G8	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

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GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	10				P73T-000FX	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	0.5				P73T-000J8	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	0.75				P73T-000J9	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1				P73T-000JA	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1.5				P73T-000JB	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	2				P73T-000JH	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	3				P73T-000JL	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	4				P73T-000JM	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	6				P73T-000JN	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	8				P73T-000JP	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	10				P73T-000JC	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
797	0.5				P75T-000JT	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	0.75				P75T-000JU	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	1				P75T-000JV	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	1.5				P75T-000JW	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-10				See Attached Bolt Table	Bolt and Nut ASME SA193 Grade B7 / SA194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
781	0.5-6				See Attached Bolt Table	Bolt and Nut ASME SA193 Grade B7 / SA194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
781	8-10				See Attached Bolt Table	Bolt and Nut ASME SA193 Grade B7 / SA194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
797	0.5-2				See Attached Bolt Table	Bolt and Nut ASME SA193 Grade B7 / SA194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81B-000RB	Gate valve ASME SA105 Class 800 API 602 SW Trim number 5 BB-BG-OS&Y Handwheel operated	
1	0.75				P81B-000RC	Gate valve ASME SA105 Class 800 API 602 SW Trim number 5 BB-BG-OS&Y Handwheel operated	
1	1				P81B-000RD	Gate valve ASME SA105 Class 800 API 602 SW Trim number 5 BB-BG-OS&Y Handwheel operated	
1	1.5				P81B-000RE	Gate valve ASME SA105 Class 800 API 602 SW Trim number 5 BB-BG-OS&Y Handwheel operated	
1	2				P81C-004GC	Gate valve ASME SA216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated	
1	3				P81C-004GD	Gate valve ASME SA216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated	
1	4				P81C-004GE	Gate valve ASME SA216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated	
1	6				P81C-004GF	Gate valve ASME SA216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated	
1	8				P81C-0091B	Gate valve ASME SA216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Gear operated	
1	10				P81C-004GB	Gate valve ASME SA216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Gear operated	
221	1				P81B-00391	Gate valve ASME SA105 Class 300 API 602 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated	
714	0.5				P81B-0015P	Gate valve ASME SA105 Class 800 API 602 SW - NPT Trim number 5 BB-BG-OS&Y Handwheel operated	
714	0.75				P81B-002F6	Gate valve ASME SA105 Class 800 API 602 SW - NPT Trim number 5 BB-BG-OS&Y Handwheel operated	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82B-000KX	Globe valve ASME SA105 Class 800 API 602 SW Trim number 5 BB-BG-OS&Y Handwheel operated	
1	0.75				P82B-000KY	Globe valve ASME SA105 Class 800 API 602 SW Trim number 5 BB-BG-OS&Y Handwheel operated	
1	1				P82B-000KZ	Globe valve ASME SA105 Class 800 API 602 SW Trim number 5 BB-BG-OS&Y Handwheel operated	
1	1.5				P82B-000L0	Globe valve ASME SA105 Class 800 API 602 SW Trim number 5 BB-BG-OS&Y Handwheel operated	
1	2				P82C-0027G	Globe valve ASME SA216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated	
1	3				P82C-0027H	Globe valve ASME SA216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated	
1	4				P82C-002PY	Globe valve ASME SA216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated	
1	6				P82C-002PZ	Globe valve ASME SA216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated	

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GLOBE VALVE (W)							
OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	8				P82C-004CJ	Globe valve ASME SA216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Gear operated	

CHECK VALVE (X)							
OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83B-000GM	Check valve ASME SA105 Class 800 API 602 SW Trim number 5 Lift-type Bolted cover	
1	0.75				P83B-000GN	Check valve ASME SA105 Class 800 API 602 SW Trim number 5 Lift-type Bolted cover	
1	1				P83B-000GP	Check valve ASME SA105 Class 800 API 602 SW Trim number 5 Lift-type Bolted cover	
1	1.5				P83B-000GR	Check valve ASME SA105 Class 800 API 602 SW Trim number 5 Lift-type Bolted cover	
1	2				P83C-0023L	Check valve ASME SA216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 5 Swing-type Bolted cover	
1	3				P83C-0023M	Check valve ASME SA216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 5 Swing-type Bolted cover	
1	4				P83C-0023N	Check valve ASME SA216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 5 Swing-type Bolted cover	
1	6				P83C-0023P	Check valve ASME SA216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 5 Swing-type Bolted cover	

ORIFICE FLANGE (FO)							
OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2		XS		P66B-0084Z	Orifice flange WN ASME SA105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	3		STD		P66B-00850	Orifice flange WN ASME SA105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	4		STD		P66B-00851	Orifice flange WN ASME SA105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	6		STD		P66B-00852	Orifice flange WN ASME SA105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	8		SCH20		P66B-00853	Orifice flange WN ASME SA105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
200	2		XS		P66B-00858	Orifice flange WN ASME SA105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	3		STD		P66B-00859	Orifice flange WN ASME SA105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	4		STD		P66B-0085A	Orifice flange WN ASME SA105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	6		STD		P66B-0085B	Orifice flange WN ASME SA105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	8		SCH20		P66B-0085C	Orifice flange WN ASME SA105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	

SPECT BLANK (SB)							
OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71B-000BC	Spectacle blank ASME SA105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	0.75				P71B-000BD	Spectacle blank ASME SA105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	1				P71B-000BE	Spectacle blank ASME SA105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71B-000BF	Spectacle blank ASME SA105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	2				P71B-000BH	Spectacle blank ASME SA105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	3				P71B-000BJ	Spectacle blank ASME SA105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	4				P71B-000BK	Spectacle blank ASME SA105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	6				P71B-000BL	Spectacle blank ASME SA105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	8				P71B-000BM	Spectacle blank ASME SA105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	10				P71B-000BG	Spectacle blank ASME SA105 Class 300 Standard-drawing Flange ASME B16.5 RF	

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BOLT TABLE (B_B1AG , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-00MEG		
0.75	4	0.625	75	P80S-00MAR		
1	4	0.625	80	P80S-00MAP		
1.5	4	0.750	95	P80S-00M37		
2	8	0.625	90	P80S-00MAM		
3	8	0.750	110	P80S-00MAH		
4	8	0.750	115	P80S-00M8C		
6	12	0.750	125	P80S-00M8A		
8	12	0.875	140	P80S-00M2Y		
10	16	1.000	160	P80S-00LYA		

BOLT TABLE (B_B1AG_781 , STUD ASME RF, OPTION CODE 781)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	80	P80S-00MEE		
0.75	4	0.625	90	P80S-00MAM		
1	4	0.625	95	P80S-00MAL		
1.5	4	0.750	110	P80S-00MAH		
2	8	0.625	110	P80S-00MC4		
3	8	0.750	130	P80S-00M89		
4	8	0.875	150	P80S-00M2W		
6	12	1.000	175	P80S-00LY7		
8	12	1.125	195	P80S-00LND		
10	16	1.250	250	P80S-00LC0		

BOLT TABLE (B_B1AG_797 , STUD ASME RJ, OPTION CODE 797)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	110	P80S-00MAH	R12	P75T-000JT
0.75	4	0.750	115	P80S-00M8C	R14	P75T-000JU
1	4	0.875	130	P80S-00M30	R16	P75T-000JV
1.5	4	1.000	140	P80S-00LYE	R20	P75T-000JW
2	8	0.875	150	P80S-00M2W	R24	
3	8	1.125	180		R35	
4	8	1.250	230		R39	
6	12	1.375	300		R46	
8	12	1.625	345		R50	
10	12	1.875	395		R54	

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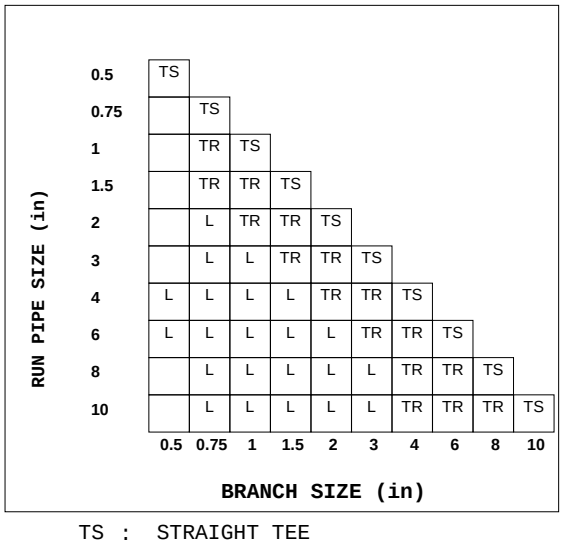
BRANCH TABLE (T_B1AG)



TS : STRAIGHT TEE
TR : REDUCING TEE
L : OUTLET

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Material : Killed CS
Rating : ASME CLASS 300
Flange Face : RF
C.A.(mm) : 1.50
Gasket : Spiral Wound
Service : PROCESS - HYDROGEN OR HYDROGEN RICH HYDROCARBON MIXTURE : / HYDROGEN / PROCESS WITH HYDROGEN

Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
2	USE OF SOFT SEATED BALL, PLUG AND BUTTERFLY VALVES SHALL BE LIMITED TO MAXIMUM OF 204DEGC (400DEGF)
16	PIPE CLASS SHALL BE USED WITHIN THE NORMAL OPERATING PRESSURE/TEMPERATURE LIMITS SPECIFIED IN API RP 941. PRESSURE / TEMPERATURE SPECIFIED IN THE PIPE CLASS EXCEEDING API RP 941 LIMITS SHOULD BE REGARDED AS UPSET CONDITIONS RATHER THAN FOR CONTINUOUS SERVICE

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
200	WITH JACK SCREW (FO)
541	NPT(F) (CA,L)
714	SW - NPT(F) (V)
781	CLASS 600 (B,F,FR,G)
797	CLASS 1500 (B,F,G)

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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P01A-000XM	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	0.75		XS		P01A-000XN	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1		XS		P01A-000XP	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1.5		XS		P01A-000XV	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	2		XS		P01A-000YX	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	3		STD		P01A-000YM	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	4		STD		P01A-000YU	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	6		STD		P01A-000Z3	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	8		SCH20		P01A-001AT	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	10		SCH30		P01A-0016U	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	12		STD		P01A-000XT	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	14		STD		P01A-000Y1	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	16		SCH20		P01A-0018E	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	18		SCH20		P01A-00438	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE	
1	20		STD		P01A-0042G	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE	
1	24		STD		P01A-0042H	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE	
1	30		STD		P01A-0042J	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P02B-00014	90 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	0.75				P02B-00015	90 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	1				P02B-00016	90 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5				P02B-00017	90 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	2		XS		P02A-000CP	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		STD		P02A-000CU	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		STD		P02A-000CZ	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		STD		P02A-000D6	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		SCH20		P02A-000GZ	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	10		SCH30		P02A-000M3	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	12		STD		P02A-000BZ	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	14		STD		P02A-000C8	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	16		SCH20		P02A-000GM	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	18		SCH20		P02A-000LT	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	20		STD		P02A-0010J	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	24		STD		P02A-0010K	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	30		STD		P02A-000F3	90 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P03B-00017	45 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	0.75				P03B-00018	45 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	1				P03B-00019	45 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5				P03B-0001A	45 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	2		XS		P03A-000AS	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		STD		P03A-000AX	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		STD		P03A-000B1	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		STD		P03A-000B9	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		SCH20		P03A-000EX	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	10		SCH30		P03A-000JT	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	12		STD		P03A-000A9	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	14		STD		P03A-000AG	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	16		SCH20		P03A-000EM	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	18		SCH20		P03A-001DX	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	20		STD		P03A-000X1	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	24		STD		P03A-000X2	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	30		STD		P03A-000D0	45 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius	

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STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P21B-00017	Straight tee ASTM A105 Class 3000 ASME B16.11 SW	
1	0.75				P21B-00018	Straight tee ASTM A105 Class 3000 ASME B16.11 SW	
1	1				P21B-00019	Straight tee ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5				P21B-0001A	Straight tee ASTM A105 Class 3000 ASME B16.11 SW	
1	2		XS		P21A-001CJ	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		STD		P21A-001CU	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		STD		P21A-001CW	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6		STD		P21A-001D2	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8		SCH20		P21A-00215	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10		SCH30		P21A-00259	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12		STD		P21A-001C1	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14		STD		P21A-001C8	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16		SCH20		P21A-0020X	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18		SCH20		P21A-001PJ	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20		STD		P21A-001C7	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24		STD		P21A-001CC	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30		STD		P21A-001YC	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75			P24B-0002L	Reducing tee ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5	0.75			P24B-0002N	Reducing tee ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5	1			P24B-0002P	Reducing tee ASTM A105 Class 3000 ASME B16.11 SW	
1	2	1	XS	XS	P24A-00238	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	XS	XS	P24A-0023H	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	STD	XS	P24A-00214	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	STD	XS	P24A-002HW	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P24A-002HY	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P24A-0021K	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	STD	P24A-0021A	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P24A-00229	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH20	STD	P24A-00J21	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH20	STD	P24A-005J4	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	SCH30	STD	P24A-00GNR	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	SCH30	STD	P24A-0060W	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	SCH30	SCH20	P24A-005KE	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	STD	STD	P24A-0022S	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	STD	SCH20	P24A-0060X	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	STD	SCH30	P24A-0060K	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	STD	STD	P24A-0026N	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	STD	SCH20	P24A-00KSG	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	STD	SCH30	P24A-0060L	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	STD	STD	P24A-0022R	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	6	SCH20	STD	P24A-00GU4	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	SCH20	SCH20	P24A-002XW	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	SCH20	SCH30	P24A-00KSH	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	SCH20	STD	P24A-00GP7	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	SCH20	STD	P24A-006YK	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	8	SCH20	SCH20	P24A-002XC	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	10	SCH20	SCH30	P24A-00BF6	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	12	SCH20	STD	P24A-00BH2	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	14	SCH20	STD	P24A-00BJN	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	16	SCH20	SCH20	P24A-002X5	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	8	STD	SCH20	P24A-00K0N	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	10	STD	SCH30	P24A-00BT8	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	12	STD	STD	P24A-004W2	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	14	STD	STD	P24A-004U1	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	16	STD	SCH20	P24A-006W3	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	18	STD	SCH20	P24A-006WD	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	

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REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	24	10	STD	SCH30	P24A-00C5X	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	12	STD	STD	P24A-004UC	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	14	STD	STD	P24A-004T3	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	16	STD	SCH20	P24A-00CAD	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	18	STD	SCH20	P24A-006WF	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	20	STD	STD	P24A-004SV	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	10	STD	SCH30	P24A-00CXV	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	12	STD	STD	P24A-00CZ5	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	14	STD	STD	P24A-00D0P	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	16	STD	SCH20	P24A-003VS	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	18	STD	SCH20	P24A-003VT	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	20	STD	STD	P24A-0087D	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	24	STD	STD	P24A-005XW	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	STD	XS	P27A-001MZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P27A-001N0	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P27A-00189	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	STD	P27A-001AZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P27A-001GW	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH20	STD	P27A-003K2	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH20	STD	P27A-003K3	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	SCH30	STD	P27A-003MK	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	SCH30	STD	P27A-003ML	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	SCH30	SCH20	P27A-003MM	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	STD	STD	P27A-0018X	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	STD	SCH20	P27A-0041Y	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	STD	SCH30	P27A-0041H	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	STD	STD	P27A-0019L	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	STD	SCH20	P27A-003MC	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	STD	SCH30	P27A-003MB	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	STD	STD	P27A-0018W	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	SCH20	SCH20	P27A-001WX	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	SCH20	SCH30	P27A-003NC	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	SCH20	STD	P27A-0055Z	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	SCH20	STD	P27A-0057G	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	10	SCH20	SCH30	P27A-0084J	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	12	SCH20	STD	P27A-00BGN	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	14	SCH20	STD	P27A-00BGP	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	16	SCH20	SCH20	P27A-001WN	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	12	STD	STD	P27A-0018G	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	14	STD	STD	P27A-0019K	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	16	STD	SCH20	P27A-0082M	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	18	STD	SCH20	P27A-0084N	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	16	STD	SCH20	P27A-0084T	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	18	STD	SCH20	P27A-0084U	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	20	STD	STD	P27A-001A8	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	20	STD	STD	P27A-001S0	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	24	STD	STD	P27A-001M7	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	STD	XS	P28A-001N5	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P28A-001N6	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P28A-0018B	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	STD	P28A-001AS	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P28A-00182	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH20	STD	P28A-003JU	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	8	6	SCH20	STD	P28A-003JV	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	SCH30	STD	P28A-003MD	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	SCH30	STD	P28A-003ME	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	SCH30	SCH20	P28A-003MF	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	STD	STD	P28A-00191	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	STD	SCH20	P28A-0041S	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	STD	SCH30	P28A-0041B	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	STD	STD	P28A-0019R	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	STD	SCH20	P28A-003M6	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	STD	SCH30	P28A-003M5	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	STD	STD	P28A-0018Z	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	SCH20	SCH20	P28A-001T6	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	SCH20	SCH30	P28A-003N6	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	SCH20	STD	P28A-00519	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	SCH20	STD	P28A-0051A	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	10	SCH20	SCH30	P28A-004UL	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	12	SCH20	STD	P28A-008FP	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	14	SCH20	STD	P28A-008FR	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	16	SCH20	SCH20	P28A-001T1	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	12	STD	STD	P28A-0018X	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	14	STD	STD	P28A-001A8	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	16	STD	SCH20	P28A-004SK	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	18	STD	SCH20	P28A-004UN	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	16	STD	SCH20	P28A-004UR	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	18	STD	SCH20	P28A-004US	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	20	STD	STD	P28A-001AW	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	20	STD	STD	P28A-001LZ	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	24	STD	STD	P28A-001N1	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P29B-0001J	Cap ASTM A105 Class 3000 ASME B16.11 SW	
1	0.75				P29B-0001F	Cap ASTM A105 Class 3000 ASME B16.11 SW	
1	1				P29B-0001G	Cap ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5				P29B-0001H	Cap ASTM A105 Class 3000 ASME B16.11 SW	
1	2		XS		P29A-000A1	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		STD		P29A-000BK	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		STD		P29A-000A3	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6		STD		P29A-000A9	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8		SCH20		P29A-000EY	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10		SCH30		P29A-000K7	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12		STD		P29A-000A7	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14		STD		P29A-000AJ	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16		SCH20		P29A-000F3	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18		SCH20		P29A-000E0	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20		STD		P29A-000B2	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24		STD		P29A-000B8	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	30		STD		P29A-000DU	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
541	0.75				P29B-0000C	Cap ASTM A105 Class 3000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P41A-000B5	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		SCH160		P41A-000B6	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		SCH160		P41A-000B7	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		SCH160		P41A-000B8	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

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CON SWAGED NIPPLE (SNC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	XS	XS	P42A-00036	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	XS	XS	P42A-00038	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	XS	XS	P42A-0003B	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	XS	XS	P42A-00035	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	XS	XS	P42A-00039	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	XS	XS	P42A-0003C	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	XS	XS	P42A-0008C	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	XS	XS	P42A-0008D	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	XS	XS	P42A-0008E	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	XS	XS	P42A-0008F	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	STD	XS	P42A-0007V	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	

ECC SWAGED NIPPLE (SNE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	XS	XS	P43A-00036	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	XS	XS	P43A-00037	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	XS	XS	P43A-00038	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	XS	XS	P43A-00039	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	XS	XS	P43A-0003A	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	XS	XS	P43A-0003B	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	XS	XS	P43A-00042	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	XS	XS	P43A-00043	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	XS	XS	P43A-00044	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	XS	XS	P43A-00045	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	STD	XS	P43A-0003J	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	

COUPLING (CPS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P47B-0001D	Coupling ASTM A105 Class 3000 ASME B16.11 SW - SW	
1	0.75				P47B-0001E	Coupling ASTM A105 Class 3000 ASME B16.11 SW - SW	
1	1				P47B-0001F	Coupling ASTM A105 Class 3000 ASME B16.11 SW - SW	
1	1.5				P47B-0001G	Coupling ASTM A105 Class 3000 ASME B16.11 SW - SW	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2 - 2.5	0.75			P31B-0137J	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	3 - 5	0.75			P31B-0137K	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	6 - 12	0.75			P31B-007AB	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	14 - 36	0.75			P31B-007AJ	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	3	1			P31B-007A7	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	4 - 5	1			P31B-0138Z	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	6 - 10	1			P31B-007A4	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	12 - 36	1			P31B-007AA	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	4	1.5			P31B-005SN	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	5 - 6	1.5			P31B-01390	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	8 - 12	1.5			P31B-0079U	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	14 - 24	1.5			P31B-007A0	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	26 - 36	1.5			P31B-01391	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
541	1	0.75			P31B-00551	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
541	1.5	0.75			P31B-00555	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
541	2 - 2.5	0.75			P31B-0137H	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
541	3 - 5	0.75			P31B-01376	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
541	6 - 12	0.75			P31B-007GR	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
541	14 - 36	0.75			P31B-007GY	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
1	6	2	STD	XS	P31B-007SH	Outlet ASTM A105 MSS SP-97 BW	
1	8	2	SCH20	XS	P31B-00NY2	Outlet ASTM A105 MSS SP-97 BW	
1	10	2	SCH30	XS	P31B-00NVF	Outlet ASTM A105 MSS SP-97 BW	
1	12	2	STD	XS	P31B-00CBN	Outlet ASTM A105 MSS SP-97 BW	
1	14	2	STD	XS	P31B-00CAE	Outlet ASTM A105 MSS SP-97 BW	

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OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	16	2	SCH20	XS	P31B-00TF8	Outlet ASTM A105 MSS SP-97 BW	
1	18	2	SCH20	XS	P31B-00NVX	Outlet ASTM A105 MSS SP-97 BW	
1	20	2	STD	XS	P31B-00994	Outlet ASTM A105 MSS SP-97 BW	
1	24	2	STD	XS	P31B-0092Z	Outlet ASTM A105 MSS SP-97 BW	
1	30	2	STD	XS	P31B-008P5	Outlet ASTM A105 MSS SP-97 BW	
1	8	3	SCH20	STD	P31B-00P11	Outlet ASTM A105 MSS SP-97 BW	
1	10	3	SCH30	STD	P31B-00NYK	Outlet ASTM A105 MSS SP-97 BW	
1	12	3	STD	STD	P31B-0096N	Outlet ASTM A105 MSS SP-97 BW	
1	14	3	STD	STD	P31B-0090T	Outlet ASTM A105 MSS SP-97 BW	
1	16	3	SCH20	STD	P31B-00TU2	Outlet ASTM A105 MSS SP-97 BW	
1	18	3	SCH20	STD	P31B-00NZ4	Outlet ASTM A105 MSS SP-97 BW	
1	20	3	STD	STD	P31B-008FA	Outlet ASTM A105 MSS SP-97 BW	
1	24	3	STD	STD	P31B-00895	Outlet ASTM A105 MSS SP-97 BW	
1	30	3	STD	STD	P31B-007WY	Outlet ASTM A105 MSS SP-97 BW	
1	12	4	STD	STD	P31B-008ZW	Outlet ASTM A105 MSS SP-97 BW	
1	14	4	STD	STD	P31B-008YM	Outlet ASTM A105 MSS SP-97 BW	
1	16	4	SCH20	STD	P31B-00TU3	Outlet ASTM A105 MSS SP-97 BW	
1	18	4	SCH20	STD	P31B-00P1V	Outlet ASTM A105 MSS SP-97 BW	
1	20	4	STD	STD	P31B-008D3	Outlet ASTM A105 MSS SP-97 BW	
1	24	4	STD	STD	P31B-0086X	Outlet ASTM A105 MSS SP-97 BW	
1	30	4	STD	STD	P31B-007US	Outlet ASTM A105 MSS SP-97 BW	
1	18	6	SCH20	STD	P31B-00P48	Outlet ASTM A105 MSS SP-97 BW	
1	20	6	STD	STD	P31B-008PZ	Outlet ASTM A105 MSS SP-97 BW	
1	24	6	STD	STD	P31B-008JD	Outlet ASTM A105 MSS SP-97 BW	
1	30	6	STD	STD	P31B-008BS	Outlet ASTM A105 MSS SP-97 BW	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30B-0002D	Plug ASTM A105 ASME B16.11 NPT Round head	
1	0.75				P30B-0002E	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1				P30B-0002F	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1.5				P30B-0002G	Plug ASTM A105 ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P61B-001HC	Flange SW ASTM A105 Class 300 ASME B16.5 RF	
1	0.75		XS		P61B-001HS	Flange SW ASTM A105 Class 300 ASME B16.5 RF	
1	1		XS		P61B-001EF	Flange SW ASTM A105 Class 300 ASME B16.5 RF	
1	1.5		XS		P61B-001F2	Flange SW ASTM A105 Class 300 ASME B16.5 RF	
1	2		XS		P61B-001HW	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	3		STD		P61B-001LJ	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	4		STD		P61B-001MC	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	6		STD		P61B-001N2	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	8		SCH20		P61B-002LJ	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	10		SCH30		P61B-003LX	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	12		STD		P61B-001LE	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	14		STD		P61B-001M9	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	16		SCH20		P61B-002MS	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	18		SCH20		P61B-002MT	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	20		STD		P61B-001NT	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	24		STD		P61B-001PA	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	30		STD		P61B-003SW	Flange WN ASTM A105 Class 300 ASME B16.47 Series B RF	
781	0.5		XS		P61B-001FF	Flange SW ASTM A105 Class 600 ASME B16.5 RF	
781	0.75		XS		P61B-001FH	Flange SW ASTM A105 Class 600 ASME B16.5 RF	
781	1		XS		P61B-001DR	Flange SW ASTM A105 Class 600 ASME B16.5 RF	
781	1.5		XS		P61B-001DV	Flange SW ASTM A105 Class 600 ASME B16.5 RF	
781	2		XS		P61B-001DH	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	3		STD		P61B-001TW	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	4		STD		P61B-001VV	Flange WN ASTM A105 Class 600 ASME B16.5 RF	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
781	6		STD		P61B-001JW	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	8		SCH20		P61B-003F0	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	10		SCH30		P61B-003TN	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	12		STD		P61B-001P9	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	14		STD		P61B-001PL	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	16		SCH20		P61B-00798	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	18		SCH20		P61B-003TP	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	20		STD		P61B-003GP	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	24		STD		P61B-003GM	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	30		STD		P61B-00685	Flange WN ASTM A105 Class 600 ASME B16.47 Series B RF	
797	2		XS		P61B-0065C	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67B-000GH	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	0.75				P67B-000GJ	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	1				P67B-000GK	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	1.5				P67B-000GL	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	2				P67B-000GM	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	3				P67B-000GN	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	4				P67B-000GP	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	6				P67B-000GY	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	8				P67B-000GZ	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	10				P67B-000GR	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	12				P67B-000GS	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	14				P67B-000GT	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	16				P67B-000GU	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	18				P67B-000GV	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	20				P67B-000GW	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	24				P67B-000GX	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	30				P67B-000H2	Blind flange ASTM A105 Class 300 ASME B16.47 Series B RF	

REDUCING FLANGE (FR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
781	6	4		STD	P62B-000R5	Reducing flange WN ASTM A105 Class 600 ASME B16.5 RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000FT	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000FU	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000G5	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000G6	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	6				P73T-000G7	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	8				P73T-000G8	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	10				P73T-000FX	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	12				P73T-000FY	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	14				P73T-000FZ	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	16				P73T-000G0	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	18				P73T-000G1	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	20				P73T-000G3	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

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GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	24				P73T-000G4	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	30				P73T-000H9	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	0.5				P73T-000J8	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	0.75				P73T-000J9	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1				P73T-000JA	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1.5				P73T-000JB	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	2				P73T-000JH	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	3				P73T-000JL	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	4				P73T-000JM	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	6				P73T-000JN	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	8				P73T-000JP	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	10				P73T-000JC	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	12				P73T-000JD	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	14				P73T-000JE	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	16				P73T-000JF	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	18				P73T-000JG	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	20				P73T-000JJ	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	24				P73T-000JK	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	30				P73T-000JT	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
797	2				P75T-0008A	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-10				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	12-30				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
781	0.5-6				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
781	8-30				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
797	1-2				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81B-000P4	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	0.75				P81B-000NX	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	1				P81B-000NY	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	1.5				P81B-000NZ	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	2				P81C-002D6	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	3				P81C-002D7	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	4				P81C-002D8	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	6				P81C-002D9	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	8				P81C-0086V	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated	
1	10				P81C-002DB	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated	
1	12				P81C-002DC	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated	
1	14				P81C-0034H	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated	
1	16				P81C-002DD	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated	
1	18				P81C-002DE	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated	
744	0.5				P81B-0015L	Gate valve ASTM A105 Class 800 API 602 SW - NPT Trim number 8 BB-BG-OS&Y Handwheel operated	
744	0.75				P81B-002F4	Gate valve ASTM A105 Class 800 API 602 SW - NPT Trim number 8 BB-BG-OS&Y Handwheel operated	

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GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82B-000K0	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	0.75				P82B-000HB	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	1				P82B-000HC	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	1.5				P82B-000HD	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	2				P82C-00114	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	3				P82C-00115	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	4				P82C-00116	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	6				P82C-00117	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	8				P82C-0011A	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83B-000FX	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover	
1	0.75				P83B-000ER	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover	
1	1				P83B-000ES	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover	
1	1.5				P83B-000ET	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover	
1	2				P83C-0013H	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	3				P83C-0013L	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	4				P83C-0013M	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	6				P83C-0013N	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	8				P83C-0013P	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	10				P83C-0013D	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	12				P83C-0013E	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	14				P83C-0023R	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	16				P83C-0013F	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	

BUTTERFLY VALVE (H)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	10				P86C-0023E	Offset design butterfly valve ASTM A216 Grade WCB Class 300 API 609 Category B Lug-type ASME B16.5 RF Disc CS Seat Stellite-6 Trim 13Cr Triple eccentric design BG Gear operated	

ORIFICE FLANGE (FO)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2		XS		P66B-0084B	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	3		STD		P66B-0084C	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	4		STD		P66B-0084D	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	6		STD		P66B-0084E	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	8		SCH20		P66B-0084F	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	10		SCH30		P66B-0086Z	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
200	2		XS		P66B-00843	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	3		STD		P66B-00844	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	4		STD		P66B-00845	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	6		STD		P66B-00846	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	8		SCH20		P66B-00847	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	10		SCH30		P66B-00874	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71B-000B1	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	0.75				P71B-000B2	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	1				P71B-000B3	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71B-000B4	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	2				P71B-000B6	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	3				P71B-000B7	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	

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SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	4				P71B-000B8	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	6				P71B-000B9	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	8				P71B-000BA	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	10				P71B-000B5	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	12				P71B-000BB	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	

PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000FA	Paddle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	16				P72B-000FB	Paddle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	18				P72B-000FC	Paddle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	20				P72B-000FD	Paddle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	24				P72B-000FE	Paddle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	30				P72B-000FF	Paddle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.47-B RF	

PADDLE SPACER (PS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000FG	Paddle spacer ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	16				P72B-000FH	Paddle spacer ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	18				P72B-000FJ	Paddle spacer ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	20				P72B-000FK	Paddle spacer ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	24				P72B-000FL	Paddle spacer ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	30				P72B-000FM	Paddle spacer ASTM A105 Class 300 Standard-drawing Flange ASME B16.47-B RF	

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BOLT TABLE (B_B1AH , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-003V4		
0.75	4	0.625	75	P80S-003XC		
1	4	0.625	80	P80S-003XD		
1.5	4	0.750	95	P80S-00414		
2	8	0.625	90	P80S-003XF		
3	8	0.750	110	P80S-003XK		
4	8	0.750	115	P80S-003XL		
6	12	0.750	125	P80S-003XN		
8	12	0.875	140	P80S-0041D		
10	16	1.000	160	P80S-0043K		
12	16	1.125	175	P80S-0046S		
14	20	1.125	180	P80S-0046T		
16	20	1.250	190	P80S-004AK		
18	24	1.250	200	P80S-004AM		
20	24	1.250	210	P80S-004AP		
24	24	1.500	235	P80S-003F8		
30	36	1.375	285	P80S-003EA		

BOLT TABLE (B_B1AH_781 , STUD ASME RF, OPTION CODE 781)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	80	P80S-003V6		
0.75	4	0.625	90	P80S-003XF		
1	4	0.625	95	P80S-003XG		
1.5	4	0.750	110	P80S-003XK		
2	8	0.625	110	P80S-003VC		
3	8	0.750	130	P80S-003XP		
4	8	0.875	150	P80S-0041F		
6	12	1.000	175	P80S-0043P		
8	12	1.125	195	P80S-0046W		
10	16	1.250	250	P80S-004AY		
12	20	1.250	255	P80S-004AZ		
14	20	1.375	270	P80S-003E7		
16	20	1.500	295	P80S-003FL		
18	20	1.625	320	P80S-005TT		
20	24	1.625	335	P80S-005TW		
24	24	1.875	380	P80S-008P4		
30	28	1.875	435	P80S-008PF		

BOLT TABLE (B_B1AH_797 , STUD ASME RJ, OPTION CODE 797)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	110		R12	
0.75	4	0.750	115		R14	
1	4	0.875	130	P80S-0041B	R16	
1.5	4	1.000	140		R20	
2	8	0.875	150	P80S-0041F	R24	P75T-0008A
3	8	1.125	180		R35	
4	8	1.250	230		R39	
6	12	1.375	300		R46	
8	12	1.625	345		R50	
10	12	1.875	395		R54	
12	16	2.000	445		R58	
14	16	2.250	490		R63	
16	16	2.500	540		R67	
18	16	2.750	590		R71	
20	16	3.000	650		R75	
24	16	3.500	745		R79	

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BRANCH TABLE (T_B1AH)

RUN PIPE SIZE (in) \ BRANCH SIZE (in)	0.5	0.75	1	1.5	2	3	4	6	8	10	12	14	16	18	20	24	30
0.5	TS																
0.75		TS															
1		TR	TS														
1.5		TR	TR	TS													
2		L	TR	TR	TS												
3		L	L	TR	TR	TS											
4	L	L	L	L	TR	TR	TS										
6	L	L	L	L	L	TR	TR	TS									
8		L	L	L	L	L	TR	TR	TS								
10		L	L	L	L	L	TR	TR	TR	TS							
12		L	L	L	L	L	L	TR	TR	TR	TS						
14		L	L	L	L	L	L	TR	TR	TR	TR	TS					
16		L	L	L	L	L	L	TR	TR	TR	TR	TR	TS				
18		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TS			
20		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TR	TS		
24		L	L	L	L	L	L	L	9PD	TR	TR	TR	TR	TR	TR	TS	
30		L	L	L	L	L	L	L	9PD	TR	TR	TR	TR	TR	TR	TR	TS

TS : STRAIGHT TEE
L : OUTLET
9PD : REINFORCING PAD 90 DEG
TR : REDUCING TEE

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B1AH

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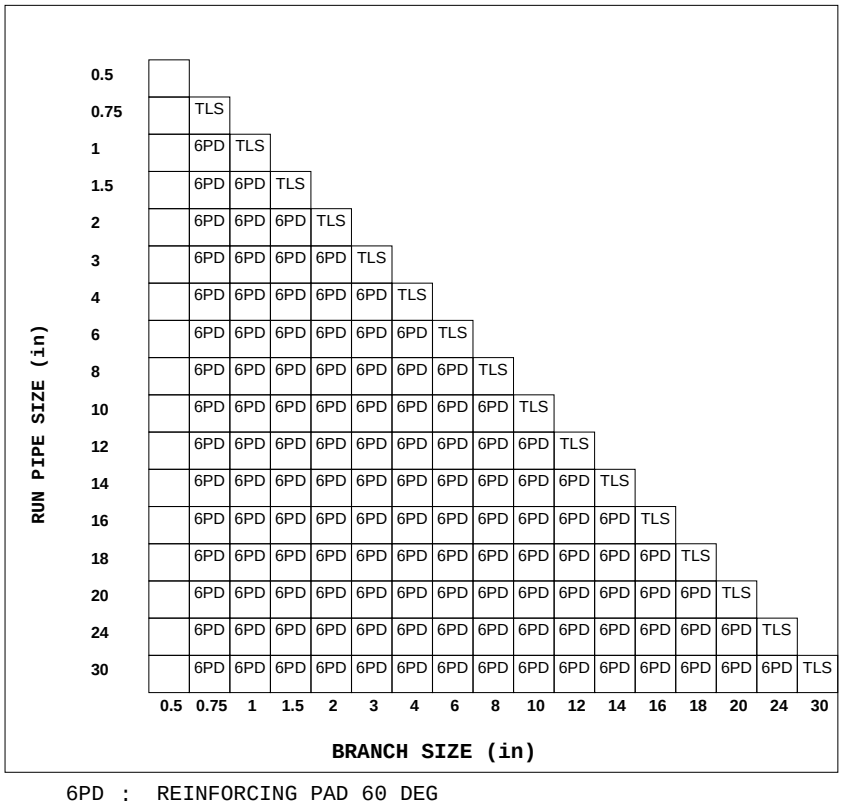
BRANCH TABLE (T_B1AH_3)



RUN PIPE SIZE (in)	0.5	0.75	1	1.5	2	3	4	6	8	10	12	14	16	18	20	24	30
0.5																	
0.75		TLS															
1		6PD	TLS														
1.5		6PD	6PD	TLS													
2		6PD	6PD	6PD	TLS												
3		6PD	6PD	6PD	6PD	TLS											
4		6PD	6PD	6PD	6PD	6PD	TLS										
6		6PD	6PD	6PD	6PD	6PD	6PD	TLS									
8		6PD	6PD	6PD	6PD	6PD	6PD	6PD	TLS								
10		6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	TLS							
12		6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	TLS						
14		6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	TLS					
16		6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	TLS				
18		6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	TLS			
20		6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	TLS		
24		6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	TLS	
30		6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	TLS

6PD : REINFORCING PAD 60 DEG
TLS : STRAIGHT LATERAL TEE

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PIPING CLASS

B1AH01 REV NO. 2

Material : Killed CS
Rating : ASME CLASS 300
Flange Face : RF
C.A.(mm) : 1.50
Gasket : Spiral Wound
Service : PROCESS - HYDROGEN OR HYDROGEN RICH HYDROCARBON MIXTURE : / HYDROGEN / PROCESS WITH HYDROGEN
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
2	USE OF SOFT SEATED BALL, PLUG AND BUTTERFLY VALVES SHALL BE LIMITED TO MAXIMUM OF 204DEGC (400DEGF)
16	PIPE CLASS SHALL BE USED WITHIN THE NORMAL OPERATING PRESSURE/TEMPERATURE LIMITS SPECIFIED IN API RP 941. PRESSURE / TEMPERATURE SPECIFIED IN THE PIPE CLASS EXCEEDING API RP 941 LIMITS SHOULD BE REGARDED AS UPSET CONDITIONS RATHER THAN FOR CONTINUOUS SERVICE

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
200	WITH JACK SCREW (FO)
541	NPT(F) (CA,L)
714	SW - NPT(F) (V)
781	CLASS 600 (B,F,G)
797	CLASS 1500 (B,F,G)

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PIPING CLASS
B1AH01 REV NO. 2

PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P01A-007AZ	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE Licensor-1	
1	0.75		XS		P01A-007B0	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE Licensor-1	
1	1		XS		P01A-007B1	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE Licensor-1	
1	1.5		XS		P01A-007B2	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE Licensor-1	
1	2		XS		P01A-0078Y	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Licensor-1	
1	3		STD		P01A-0078Z	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Licensor-1	
1	4		STD		P01A-007B3	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Licensor-1	
1	6		STD		P01A-007B8	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Licensor-1	
1	8		SCH20		P01A-007B9	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Licensor-1	
1	10		SCH30		P01A-007GE	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Licensor-1	
1	12		STD		P01A-007GF	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Licensor-1	
1	14		STD		P01A-007SF	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Licensor-1	
1	16		SCH20		P01A-007B7	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Licensor-1	
1	18		SCH20		P01A-007U4	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE Hydrogen service Licensor-1	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P02B-0007G	90 degree elbow ASTM A105 Class 3000 ASME B16.11 SW Licensor-1	
1	0.75				P02B-0007H	90 degree elbow ASTM A105 Class 3000 ASME B16.11 SW Licensor-1	
1	1				P02B-0007J	90 degree elbow ASTM A105 Class 3000 ASME B16.11 SW Licensor-1	
1	1.5				P02B-0007K	90 degree elbow ASTM A105 Class 3000 ASME B16.11 SW Licensor-1	
1	2		XS		P02A-003R7	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	3		STD		P02A-003R8	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	4		STD		P02A-003T8	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	6		STD		P02A-003TG	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	8		SCH20		P02A-003TH	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	10		SCH30		P02A-003YN	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	12		STD		P02A-003YP	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	14		STD		P02A-00458	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	16		SCH20		P02A-003TC	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	18		SCH20		P02A-003TD	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P03B-00074	45 degree elbow ASTM A105 Class 3000 ASME B16.11 SW Licensor-1	
1	0.75				P03B-00075	45 degree elbow ASTM A105 Class 3000 ASME B16.11 SW Licensor-1	
1	1				P03B-00076	45 degree elbow ASTM A105 Class 3000 ASME B16.11 SW Licensor-1	
1	1.5				P03B-00077	45 degree elbow ASTM A105 Class 3000 ASME B16.11 SW Licensor-1	
1	2		XS		P03A-003MW	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	3		STD		P03A-003MX	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	4		STD		P03A-003PX	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	6		STD		P03A-003R5	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	8		SCH20		P03A-003R6	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	10		SCH30		P03A-003WB	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	12		STD		P03A-003WC	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	14		STD		P03A-0042X	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	16		SCH20		P03A-003R1	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	18		SCH20		P03A-003R2	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P21B-00074	Straight tee ASTM A105 Class 3000 ASME B16.11 SW Licensor-1	
1	0.75				P21B-00075	Straight tee ASTM A105 Class 3000 ASME B16.11 SW Licensor-1	
1	1				P21B-00076	Straight tee ASTM A105 Class 3000 ASME B16.11 SW Licensor-1	
1	1.5				P21B-00077	Straight tee ASTM A105 Class 3000 ASME B16.11 SW Licensor-1	
1	2		XS		P21A-0048L	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	3		STD		P21A-0048M	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	4		STD		P21A-004AL	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	6		STD		P21A-004AS	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	

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STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	8		SCH20		P21A-004AT	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	10		SCH30		P21A-004FY	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	12		STD		P21A-004FZ	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	14		STD		P21A-004N5	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	16		SCH20		P21A-004AR	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	18		SCH20		P21A-004NL	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Hydrogen service Licensor-1	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75			P24B-000BZ	Reducing tee ASTM A105 Class 3000 ASME B16.11 SW Licensor-1	
1	1.5	0.75			P24B-000C0	Reducing tee ASTM A105 Class 3000 ASME B16.11 SW Licensor-1	
1	1.5	1			P24B-000C1	Reducing tee ASTM A105 Class 3000 ASME B16.11 SW Licensor-1	
1	2	1	XS	XS	P24A-00K5U	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	2	1.5	XS	XS	P24A-00K5V	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	3	1.5	STD	XS	P24A-00K5W	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	3	2	STD	XS	P24A-00K0Y	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	4	2	STD	XS	P24A-00K5X	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	4	3	STD	STD	P24A-00K5Y	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	6	3	STD	STD	P24A-00K64	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	6	4	STD	STD	P24A-00K65	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	8	4	SCH20	STD	P24A-00K66	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	8	6	SCH20	STD	P24A-00K67	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	10	4	SCH30	STD	P24A-00KSJ	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	10	6	SCH30	STD	P24A-00KSK	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	10	8	SCH30	SCH20	P24A-00KSL	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	12	6	STD	STD	P24A-00KSN	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	12	8	STD	SCH20	P24A-00KSP	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	12	10	STD	SCH30	P24A-00KSM	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	14	6	STD	STD	P24A-00M0R	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	14	8	STD	SCH20	P24A-00M0S	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	14	10	STD	SCH30	P24A-00M0N	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	14	12	STD	STD	P24A-00M0P	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	16	6	SCH20	STD	P24A-00K6M	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	16	8	SCH20	SCH20	P24A-00K6N	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	16	10	SCH20	SCH30	P24A-00KST	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	16	12	SCH20	STD	P24A-00KSU	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	16	14	SCH20	STD	P24A-00M0T	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	18	8	SCH20	SCH20	P24A-00M66	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Hydrogen service Licensor-1	
1	18	10	SCH20	SCH30	P24A-00M62	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Hydrogen service Licensor-1	
1	18	12	SCH20	STD	P24A-00M63	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Hydrogen service Licensor-1	
1	18	14	SCH20	STD	P24A-00M64	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Hydrogen service Licensor-1	
1	18	16	SCH20	SCH20	P24A-00M65	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Hydrogen service Licensor-1	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	STD	XS	P27A-00EL1	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	4	2	STD	XS	P27A-00ES5	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	4	3	STD	STD	P27A-00ES6	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	6	3	STD	STD	P27A-00ES9	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	6	4	STD	STD	P27A-00ESA	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	8	4	SCH20	STD	P27A-00ESB	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	8	6	SCH20	STD	P27A-00ESC	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	10	4	SCH30	STD	P27A-00F7C	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	10	6	SCH30	STD	P27A-00F7D	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	10	8	SCH30	SCH20	P27A-00F7E	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	12	6	STD	STD	P27A-00F7G	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	12	8	STD	SCH20	P27A-00F7H	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	12	10	STD	SCH30	P27A-00F7F	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	14	6	STD	STD	P27A-00G2P	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	

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CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14	8	STD	SCH20	P27A-00G2R	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	14	10	STD	SCH30	P27A-00G2M	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	14	12	STD	STD	P27A-00G2N	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	16	8	SCH20	SCH20	P27A-00EST	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	16	10	SCH20	SCH30	P27A-00F7L	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	16	12	SCH20	STD	P27A-00F7M	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	16	14	SCH20	STD	P27A-00G2S	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	18	10	SCH20	SCH30	P27A-00G4X	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Hydrogen service Licensor-1	
1	18	12	SCH20	STD	P27A-00G4Y	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Hydrogen service Licensor-1	
1	18	14	SCH20	STD	P27A-00G4Z	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Hydrogen service Licensor-1	
1	18	16	SCH20	SCH20	P27A-00G50	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Hydrogen service Licensor-1	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	STD	XS	P28A-00BPS	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	4	2	STD	XS	P28A-00BVZ	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	4	3	STD	STD	P28A-00BW0	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	6	3	STD	STD	P28A-00BW3	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	6	4	STD	STD	P28A-00BW4	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	8	4	SCH20	STD	P28A-00BW5	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	8	6	SCH20	STD	P28A-00BW6	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	10	4	SCH30	STD	P28A-00CBD	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	10	6	SCH30	STD	P28A-00CBE	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	10	8	SCH30	SCH20	P28A-00CBF	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	12	6	STD	STD	P28A-00CBH	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	12	8	STD	SCH20	P28A-00CBJ	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	12	10	STD	SCH30	P28A-00CBG	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	14	6	STD	STD	P28A-00D8Y	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	14	8	STD	SCH20	P28A-00D8Z	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	14	10	STD	SCH30	P28A-00D8W	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	14	12	STD	STD	P28A-00D8X	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	16	8	SCH20	SCH20	P28A-00BWL	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	16	10	SCH20	SCH30	P28A-00CBM	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	16	12	SCH20	STD	P28A-00CBN	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	16	14	SCH20	STD	P28A-00D90	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	18	10	SCH20	SCH30	P28A-00DBW	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Hydrogen service Licensor-1	
1	18	12	SCH20	STD	P28A-00DBX	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Hydrogen service Licensor-1	
1	18	14	SCH20	STD	P28A-00DBY	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Hydrogen service Licensor-1	
1	18	16	SCH20	SCH20	P28A-00DBZ	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Hydrogen service Licensor-1	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P29B-0005L	Cap ASTM A105 Class 3000 ASME B16.11 SW Licensor-1	
1	0.75				P29B-0005M	Cap ASTM A105 Class 3000 ASME B16.11 SW Licensor-1	
1	1				P29B-0005N	Cap ASTM A105 Class 3000 ASME B16.11 SW Licensor-1	
1	1.5				P29B-0005P	Cap ASTM A105 Class 3000 ASME B16.11 SW Licensor-1	
1	2		XS		P29A-00326	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	3		STD		P29A-00327	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	4		STD		P29A-0034R	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	6		STD		P29A-00353	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	8		SCH20		P29A-00354	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	10		SCH30		P29A-003B3	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	12		STD		P29A-003B4	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	14		STD		P29A-003G0	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	16		SCH20		P29A-0034V	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	18		SCH20		P29A-0034W	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
541	1.75				P29B-00067	Cap ASTM A105 Class 3000 ASME B16.11 NPT Licensor-1	

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STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P41A-0017A	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Licensor-1	
1	0.75		SCH160		P41A-0017B	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Licensor-1	
1	1		SCH160		P41A-0017C	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Licensor-1	
1	1.5		SCH160		P41A-0017D	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Licensor-1	

CON SWAGED NIPPLE (SNC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	XS	XS	P42A-000UN	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S) Licensor-1	
1	1	0.5	XS	XS	P42A-000UP	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S) Licensor-1	
1	1	0.75	XS	XS	P42A-000UR	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S) Licensor-1	
1	1.5	0.5	XS	XS	P42A-000US	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S) Licensor-1	
1	1.5	0.75	XS	XS	P42A-000UT	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S) Licensor-1	
1	1.5	1	XS	XS	P42A-000UU	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S) Licensor-1	
1	2	0.5	XS	XS	P42A-000UV	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S) Licensor-1	
1	2	0.75	XS	XS	P42A-000UW	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S) Licensor-1	
1	2	1	XS	XS	P42A-000UX	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S) Licensor-1	
1	2	1.5	XS	XS	P42A-000UY	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S) Licensor-1	
1	3	1.5	STD	XS	P42A-000UZ	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S) Licensor-1	

ECC SWAGED NIPPLE (SNE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	XS	XS	P43A-000KS	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S) Licensor-1	
1	1	0.5	XS	XS	P43A-000KT	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S) Licensor-1	
1	1	0.75	XS	XS	P43A-000KU	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S) Licensor-1	
1	1.5	0.5	XS	XS	P43A-000KV	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S) Licensor-1	
1	1.5	0.75	XS	XS	P43A-000KW	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S) Licensor-1	
1	1.5	1	XS	XS	P43A-000KX	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S) Licensor-1	
1	2	0.5	XS	XS	P43A-000KY	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S) Licensor-1	
1	2	0.75	XS	XS	P43A-000KZ	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S) Licensor-1	
1	2	1	XS	XS	P43A-000L0	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S) Licensor-1	
1	2	1.5	XS	XS	P43A-000L1	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S) Licensor-1	
1	3	1.5	STD	XS	P43A-000L2	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S) Licensor-1	

COUPLING (CPS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P47B-0007V	Coupling ASTM A105 Class 3000 ASME B16.11 SW - SW Licensor-1	
1	0.75				P47B-0007W	Coupling ASTM A105 Class 3000 ASME B16.11 SW - SW Licensor-1	
1	1				P47B-0007X	Coupling ASTM A105 Class 3000 ASME B16.11 SW - SW Licensor-1	
1	1.5				P47B-0007Y	Coupling ASTM A105 Class 3000 ASME B16.11 SW - SW Licensor-1	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2 - 2.5	0.75			P31B-0138H	Outlet ASTM A105 Class 3000 MSS SP-97 SW Licensor-1	
1	3 - 5	0.75			P31B-0138J	Outlet ASTM A105 Class 3000 MSS SP-97 SW Licensor-1	
1	6 - 12	0.75			P31B-0138K	Outlet ASTM A105 Class 3000 MSS SP-97 SW Licensor-1	
1	14 - 36	0.75			P31B-0138L	Outlet ASTM A105 Class 3000 MSS SP-97 SW Licensor-1	
1	3	1			P31B-0138M	Outlet ASTM A105 Class 3000 MSS SP-97 SW Licensor-1	
1	4 - 5	1			P31B-0138N	Outlet ASTM A105 Class 3000 MSS SP-97 SW Licensor-1	
1	6 - 10	1			P31B-0138P	Outlet ASTM A105 Class 3000 MSS SP-97 SW Licensor-1	
1	12 - 36	1			P31B-0138R	Outlet ASTM A105 Class 3000 MSS SP-97 SW Licensor-1	
1	4	1.5			P31B-010L4	Outlet ASTM A105 Class 3000 MSS SP-97 SW Licensor-1	
1	5 - 6	1.5			P31B-0138S	Outlet ASTM A105 Class 3000 MSS SP-97 SW Licensor-1	
1	8 - 12	1.5			P31B-0138U	Outlet ASTM A105 Class 3000 MSS SP-97 SW Licensor-1	
1	14 - 24	1.5			P31B-0138T	Outlet ASTM A105 Class 3000 MSS SP-97 SW Licensor-1	
541	1	0.75			P31B-0118R	Outlet ASTM A105 Class 3000 MSS SP-97 NPT Licensor-1	
541	1.5	0.75			P31B-0118P	Outlet ASTM A105 Class 3000 MSS SP-97 NPT Licensor-1	
541	2 - 2.5	0.75			P31B-0138V	Outlet ASTM A105 Class 3000 MSS SP-97 NPT Licensor-1	
541	3 - 5	0.75			P31B-0138W	Outlet ASTM A105 Class 3000 MSS SP-97 NPT Licensor-1	

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OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
541	6 - 12	0.75			P31B-0138X	Outlet ASTM A105 Class 3000 MSS SP-97 NPT Licensor-1	
541	14 - 36	0.75			P31B-0138Y	Outlet ASTM A105 Class 3000 MSS SP-97 NPT Licensor-1	
1	6	2	STD	XS	P31B-00XMV	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	8	2	SCH20	XS	P31B-00XMW	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	10	2	SCH30	XS	P31B-00Y8G	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	12	2	STD	XS	P31B-00Y8J	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	14	2	STD	XS	P31B-00ZFZ	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	16	2	SCH20	XS	P31B-00XN6	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	18	2	SCH20	XS	P31B-00XN9	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	8	3	SCH20	STD	P31B-00XMX	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	10	3	SCH30	STD	P31B-00Y8H	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	12	3	STD	STD	P31B-00Y8K	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	14	3	STD	STD	P31B-00ZG0	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	16	3	SCH20	STD	P31B-00XN7	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	18	3	SCH20	STD	P31B-00XNA	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	12	4	STD	STD	P31B-00Y8L	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	14	4	STD	STD	P31B-00ZG1	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	16	4	SCH20	STD	P31B-00XN8	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	18	4	SCH20	STD	P31B-00XNB	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	18	6	SCH20	STD	P31B-00XNC	Outlet ASTM A105 MSS SP-97 BW Licensor-1	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30B-00067	Plug ASTM A105 ASME B16.11 NPT Round head Licensor-1	
1	0.75				P30B-00068	Plug ASTM A105 ASME B16.11 NPT Round head Licensor-1	
1	1				P30B-00069	Plug ASTM A105 ASME B16.11 NPT Round head Licensor-1	
1	1.5				P30B-0006A	Plug ASTM A105 ASME B16.11 NPT Round head Licensor-1	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P61B-009ZW	Flange SW ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
1	0.75		XS		P61B-009ZX	Flange SW ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
1	1		XS		P61B-009ZY	Flange SW ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
1	1.5		XS		P61B-009ZZ	Flange SW ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
1	2		XS		P61B-009YW	Flange WN ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
1	3		STD		P61B-009YX	Flange WN ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
1	4		STD		P61B-009YY	Flange WN ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
1	6		STD		P61B-00A07	Flange WN ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
1	8		SCH20		P61B-00A08	Flange WN ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
1	10		SCH30		P61B-00ABG	Flange WN ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
1	12		STD		P61B-00ABH	Flange WN ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
1	14		STD		P61B-00B0U	Flange WN ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
1	16		SCH20		P61B-00A03	Flange WN ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
1	18		SCH20		P61B-00A04	Flange WN ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
781	0.5		XS		P61B-00AB7	Flange SW ASTM A105 Class 600 ASME B16.5 RF Licensor-1	
781	0.75		XS		P61B-00AB8	Flange SW ASTM A105 Class 600 ASME B16.5 RF Licensor-1	
781	1		XS		P61B-00AB9	Flange SW ASTM A105 Class 600 ASME B16.5 RF Licensor-1	
781	1.5		XS		P61B-00ABA	Flange SW ASTM A105 Class 600 ASME B16.5 RF Licensor-1	
781	2		XS		P61B-009TD	Flange WN ASTM A105 Class 600 ASME B16.5 RF Licensor-1	
781	3		STD		P61B-009TE	Flange WN ASTM A105 Class 600 ASME B16.5 RF Licensor-1	
781	4		STD		P61B-00A10	Flange WN ASTM A105 Class 600 ASME B16.5 RF Licensor-1	
781	6		STD		P61B-00A11	Flange WN ASTM A105 Class 600 ASME B16.5 RF Licensor-1	
781	8		SCH20		P61B-00ABB	Flange WN ASTM A105 Class 600 ASME B16.5 RF Licensor-1	
781	10		SCH30		P61B-00ABJ	Flange WN ASTM A105 Class 600 ASME B16.5 RF Licensor-1	
781	12		STD		P61B-00ABK	Flange WN ASTM A105 Class 600 ASME B16.5 RF Licensor-1	
781	14		STD		P61B-00B0T	Flange WN ASTM A105 Class 600 ASME B16.5 RF Licensor-1	
781	16		SCH20		P61B-00ABL	Flange WN ASTM A105 Class 600 ASME B16.5 RF Licensor-1	
781	18		SCH20		P61B-00ABM	Flange WN ASTM A105 Class 600 ASME B16.5 RF Licensor-1	
797	2		XS		P61B-009TN	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ Licensor-1	

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BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67B-002G3	Blind flange ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
1	0.75				P67B-002G4	Blind flange ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
1	1				P67B-002EK	Blind flange ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
1	1.5				P67B-002EL	Blind flange ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
1	2				P67B-002ET	Blind flange ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
1	3				P67B-002EU	Blind flange ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
1	4				P67B-002EV	Blind flange ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
1	6				P67B-002EW	Blind flange ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
1	8				P67B-002EX	Blind flange ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
1	10				P67B-002EM	Blind flange ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
1	12				P67B-002EN	Blind flange ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
1	14				P67B-002EP	Blind flange ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
1	16				P67B-002ER	Blind flange ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
1	18				P67B-002ES	Blind flange ASTM A105 Class 300 ASME B16.5 RF Licensor-1	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000FT	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000FU	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000G5	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000G6	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	6				P73T-000G7	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	8				P73T-000G8	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	10				P73T-000FX	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	12				P73T-000FY	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	14				P73T-000FZ	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	16				P73T-000G0	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	18				P73T-000G1	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	0.5				P73T-000J8	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	0.75				P73T-000J9	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1				P73T-000JA	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1.5				P73T-000JB	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	2				P73T-000JH	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	3				P73T-000JL	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	4				P73T-000JM	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	6				P73T-000JN	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	8				P73T-000JP	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	10				P73T-000JC	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	12				P73T-000JD	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	14				P73T-000JE	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	16				P73T-000JF	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	18				P73T-000JG	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
797	2				P75T-0008A	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	

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BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-10				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	12-18				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
781	0.5-6				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
781	8-18				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
797	1-2				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81B-001CX	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated Licensor-1	
1	0.75				P81B-001CY	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated Licensor-1	
1	1				P81B-001CZ	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated Licensor-1	
1	1.5				P81B-001D0	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated Licensor-1	
1	2				P81C-004VG	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated Licensor-1	
1	3				P81C-004VH	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated Licensor-1	
1	4				P81C-004VJ	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated Licensor-1	
1	6				P81C-004VK	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated Licensor-1	
1	8				P81C-0091C	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated Licensor-1	
1	10				P81C-004VM	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated Licensor-1	
1	12				P81C-004VN	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated Licensor-1	
1	14				P81C-004VP	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated Licensor-1	
1	16				P81C-004VR	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated Licensor-1	
1	18				P81C-004VS	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated Licensor-1	
714	0.5				P81B-002S7	Gate valve ASTM A105 Class 800 API 602 SW - NPT Trim number 8 BB-BG-OS&Y Handwheel operated Licensor-1	
714	0.75				P81B-002F5	Gate valve ASTM A105 Class 800 API 602 SW - NPT Trim number 8 BB-BG-OS&Y Handwheel operated Licensor-1	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82B-0014L	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated Licensor-1	
1	0.75				P82B-0014M	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated Licensor-1	
1	1				P82B-0014N	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated Licensor-1	
1	1.5				P82B-0014P	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated Licensor-1	
1	2				P82C-002C8	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated Licensor-1	
1	3				P82C-002C9	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated Licensor-1	
1	4				P82C-002CA	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated Licensor-1	
1	6				P82C-002CB	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated Licensor-1	
1	8				P82C-004CK	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated Licensor-1	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83B-000WE	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover Licensor-1	
1	0.75				P83B-000WF	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover Licensor-1	
1	1				P83B-000WG	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover Licensor-1	
1	1.5				P83B-000WH	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover Licensor-1	
1	2				P83C-002AT	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover Licensor-1	
1	3				P83C-002AV	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover Licensor-1	
1	4				P83C-002AW	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover Licensor-1	
1	6				P83C-002AX	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover Licensor-1	

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CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	8				P83C-002AY	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover Licensor-1	
1	10				P83C-002AM	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover Licensor-1	
1	12				P83C-002AN	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover Licensor-1	
1	14				P83C-002AP	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover Licensor-1	
1	16				P83C-002AR	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover Licensor-1	
1	18				P83C-002AS	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover Licensor-1	

NEEDLE VALVE (NV)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82B-001X6	Needle valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated Licensor-1	

ORIFICE FLANGE (FO)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2		XS		P66B-0085G	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Licensor-1	
1	3		STD		P66B-0085H	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Licensor-1	
1	4		STD		P66B-0085J	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Licensor-1	
1	6		STD		P66B-0085K	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Licensor-1	
1	8		SCH20		P66B-0085L	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Licensor-1	
200	2		XS		P66B-0085R	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw Licensor-1	
200	3		STD		P66B-0085S	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw Licensor-1	
200	4		STD		P66B-0085T	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw Licensor-1	
200	6		STD		P66B-0085U	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw Licensor-1	
200	8		SCH20		P66B-0085V	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw Licensor-1	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71B-000AR	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	0.75				P71B-000AS	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	1				P71B-000AT	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	1.5				P71B-000AU	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	2				P71B-000AW	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	3				P71B-000AX	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	4				P71B-000AY	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	6				P71B-000AZ	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	8				P71B-000B0	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	10				P71B-000AV	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	12				P71B-000BN	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF Licensor-1	

PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000FN	Paddle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	16				P72B-000FP	Paddle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	18				P72B-000FR	Paddle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF Licensor-1	

PADDLE SPACER (PS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000FV	Paddle spacer ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	16				P72B-000FW	Paddle spacer ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	18				P72B-000FX	Paddle spacer ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF Licensor-1	

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BOLT TABLE (B_B1AH01 , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-003V4		
0.75	4	0.625	75	P80S-003XC		
1	4	0.625	80	P80S-003XD		
1.5	4	0.750	95	P80S-00414		
2	8	0.625	90	P80S-003XF		
3	8	0.750	110	P80S-003XK		
4	8	0.750	115	P80S-003XL		
6	12	0.750	125	P80S-003XN		
8	12	0.875	140	P80S-0041D		
10	16	1.000	160	P80S-0043K		
12	16	1.125	175	P80S-0046S		
14	20	1.125	180	P80S-0046T		
16	20	1.250	190	P80S-004AK		
18	24	1.250	200	P80S-004AM		

BOLT TABLE (B_B1AH01_781 , STUD ASME RF, OPTION CODE 781)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	80	P80S-003V6		
0.75	4	0.625	90	P80S-003XF		
1	4	0.625	95	P80S-003XG		
1.5	4	0.750	110	P80S-003XK		
2	8	0.625	110	P80S-003VC		
3	8	0.750	130	P80S-003XP		
4	8	0.875	150	P80S-0041F		
6	12	1.000	175	P80S-0043P		
8	12	1.125	195	P80S-0046W		
10	16	1.250	250	P80S-004AY		
12	20	1.250	255	P80S-004AZ		
14	20	1.375	270	P80S-003E7		
16	20	1.500	295	P80S-003FL		
18	20	1.625	320	P80S-005TT		

BOLT TABLE (B_B1AH01_797 , STUD ASME RJ, OPTION CODE 797)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	110		R12	
0.75	4	0.750	115		R14	
1	4	0.875	130	P80S-0041B	R16	
1.5	4	1.000	140		R20	
2	8	0.875	150	P80S-0041F	R24	P75T-0008A
3	8	1.125	180		R35	
4	8	1.250	230		R39	
6	12	1.375	300		R46	
8	12	1.625	345		R50	
10	12	1.875	395		R54	
12	16	2.000	445		R58	
14	16	2.250	490		R63	
16	16	2.500	540		R67	
18	16	2.750	590		R71	

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BRANCH TABLE (T_B1AH01)

RUN PIPE SIZE (in) \ BRANCH SIZE (in)	0.5	0.75	1	1.5	2	3	4	6	8	10	12	14	16	18
0.5	TS													
0.75		TS												
1		TR	TS											
1.5		TR	TR	TS										
2		L	TR	TR	TS									
3		L	L	TR	TR	TS								
4	L	L	L	L	TR	TR	TS							
6	L	L	L	L	L	TR	TR	TS						
8		L	L	L	L	L	TR	TR	TS					
10		L	L	L	L	L	TR	TR	TR	TS				
12		L	L	L	L	L	L	TR	TR	TR	TS			
14		L	L	L	L	L	L	TR	TR	TR	TR	TS		
16		L	L	L	L	L	L	TR	TR	TR	TR	TR	TS	
18		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TS

TS : STRAIGHT TEE
TR : REDUCING TEE
L : OUTLET

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PIPING CLASS

B1AH02 REV NO. 2

Material : Killed CS
Rating : ASME CLASS 300
Flange Face : RF
C.A.(mm) : 1.50
Gasket : Spiral Wound
Service : PROCESS - HYDROGEN OR HYDROGEN RICH HYDROCARBON MIXTURES
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
2	USE OF SOFT SEATED BALL, PLUG AND BUTTERFLY VALVES SHALL BE LIMITED TO MAXIMUM OF 204DEGC (400DEGF)
16	PIPE CLASS SHALL BE USED WITHIN THE NORMAL OPERATING PRESSURE/TEMPERATURE LIMITS SPECIFIED IN API RP 941. PRESSURE / TEMPERATURE SPECIFIED IN THE PIPE CLASS EXCEEDING API RP 941 LIMITS SHOULD BE REGARDED AS UPSET CONDITIONS RATHER THAN FOR CONTINUOUS SERVICE

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
24	FULL PORT (Q)
200	WITH JACK SCREW (FO)
541	NPT(F) (CA,L)
714	SW - NPT(F) (V)
781	CLASS 600 (B,F,G)
797	CLASS 1500 (B,F,G)
2489	CLASS 600 RJ (B,F,G)
4601	Y-PATTERN (W)

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PIPING CLASS
B1AH02 REV NO. 2

PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P01A-000XM	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	0.75		XS		P01A-000XN	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1		XS		P01A-000XP	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1.5		XS		P01A-000XV	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	2		XS		P01A-000YX	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	3		STD		P01A-000YM	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	4		STD		P01A-000YU	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	6		STD		P01A-000Z3	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	8		SCH20		P01A-001AT	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	10		SCH30		P01A-0016U	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	12		STD		P01A-000XT	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	14		STD		P01A-000Y1	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	16		SCH20		P01A-0018E	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P02B-00014	90 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	0.75				P02B-00015	90 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	1				P02B-00016	90 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5				P02B-00017	90 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	2		XS		P02A-000CP	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		STD		P02A-000CU	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		STD		P02A-000CZ	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		STD		P02A-000D6	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		SCH20		P02A-000GZ	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	10		SCH30		P02A-000M3	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	12		STD		P02A-000BZ	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	14		STD		P02A-000C8	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	16		SCH20		P02A-000GM	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P03B-00017	45 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	0.75				P03B-00018	45 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	1				P03B-00019	45 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5				P03B-0001A	45 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	2		XS		P03A-000AS	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		STD		P03A-000AX	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		STD		P03A-000B1	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		STD		P03A-000B9	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		SCH20		P03A-000EX	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	10		SCH30		P03A-000JT	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	12		STD		P03A-000A9	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	14		STD		P03A-000AG	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	16		SCH20		P03A-000EM	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P21B-00017	Straight tee ASTM A105 Class 3000 ASME B16.11 SW	
1	0.75				P21B-00018	Straight tee ASTM A105 Class 3000 ASME B16.11 SW	
1	1				P21B-00019	Straight tee ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5				P21B-0001A	Straight tee ASTM A105 Class 3000 ASME B16.11 SW	
1	2		XS		P21A-001CJ	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		STD		P21A-001CU	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		STD		P21A-001CW	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6		STD		P21A-001D2	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8		SCH20		P21A-00215	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10		SCH30		P21A-00259	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12		STD		P21A-001C1	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14		STD		P21A-001C8	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16		SCH20		P21A-0020X	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75			P24B-0002L	Reducing tee ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5	0.75			P24B-0002N	Reducing tee ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5	1			P24B-0002P	Reducing tee ASTM A105 Class 3000 ASME B16.11 SW	
1	2	1	XS	XS	P24A-00238	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	XS	XS	P24A-0023H	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	STD	XS	P24A-00214	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	STD	XS	P24A-002HW	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P24A-002HY	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P24A-0021K	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	STD	P24A-0021A	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P24A-00229	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH20	STD	P24A-00J21	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH20	STD	P24A-005J4	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	SCH30	STD	P24A-00GNR	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	SCH30	STD	P24A-0060W	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	SCH30	SCH20	P24A-005KE	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	STD	STD	P24A-0022S	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	STD	SCH20	P24A-0060X	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	STD	SCH30	P24A-0060K	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	STD	STD	P24A-0026N	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	STD	SCH20	P24A-00KSG	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	STD	SCH30	P24A-0060L	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	STD	STD	P24A-0022R	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	6	SCH20	STD	P24A-00GU4	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	SCH20	SCH20	P24A-002XW	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	SCH20	SCH30	P24A-00KSH	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	SCH20	STD	P24A-00GP7	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	SCH20	STD	P24A-006YK	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	STD	XS	P27A-001MZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P27A-001N0	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P27A-00189	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	STD	P27A-001AZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P27A-001GW	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH20	STD	P27A-003K2	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH20	STD	P27A-003K3	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	SCH30	STD	P27A-003MK	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	SCH30	STD	P27A-003ML	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	SCH30	SCH20	P27A-003MM	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	STD	STD	P27A-0018X	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	STD	SCH20	P27A-0041Y	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	STD	SCH30	P27A-0041H	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	STD	STD	P27A-0019L	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	STD	SCH20	P27A-003MC	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	STD	SCH30	P27A-003MB	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	STD	STD	P27A-0018W	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	SCH20	SCH20	P27A-001WX	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	SCH20	SCH30	P27A-003NC	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	SCH20	STD	P27A-0055Z	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	SCH20	STD	P27A-0057G	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	STD	XS	P28A-001N5	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P28A-001N6	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P28A-0018B	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	STD	P28A-001AS	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P28A-00182	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH20	STD	P28A-003JU	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH20	STD	P28A-003JV	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	SCH30	STD	P28A-003MD	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	SCH30	STD	P28A-003ME	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	SCH30	SCH20	P28A-003MF	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	STD	STD	P28A-00191	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	STD	SCH20	P28A-0041S	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	STD	SCH30	P28A-0041B	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	STD	STD	P28A-0019R	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	STD	SCH20	P28A-003M6	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	STD	SCH30	P28A-003M5	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	STD	STD	P28A-0018Z	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	SCH20	SCH20	P28A-001T6	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	SCH20	SCH30	P28A-003N6	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	SCH20	STD	P28A-00519	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	SCH20	STD	P28A-0051A	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P29B-0001J	Cap ASTM A105 Class 3000 ASME B16.11 SW	
1	0.75				P29B-0001F	Cap ASTM A105 Class 3000 ASME B16.11 SW	
1	1				P29B-0001G	Cap ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5				P29B-0001H	Cap ASTM A105 Class 3000 ASME B16.11 SW	
1	2		XS		P29A-000A1	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		STD		P29A-000BK	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		STD		P29A-000A3	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6		STD		P29A-000A9	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8		SCH20		P29A-000EY	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10		SCH30		P29A-000K7	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12		STD		P29A-000A7	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14		STD		P29A-000AJ	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16		SCH20		P29A-000F3	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
541	0.75				P29B-0000C	Cap ASTM A105 Class 3000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P41A-000B5	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		SCH160		P41A-000B6	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		SCH160		P41A-000B7	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		SCH160		P41A-000B8	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

CON SWAGED NIPPLE (SNC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	XS	XS	P42A-00036	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	XS	XS	P42A-00038	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	XS	XS	P42A-0003B	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	XS	XS	P42A-00035	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	XS	XS	P42A-00039	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	XS	XS	P42A-0003C	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	XS	XS	P42A-0008C	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	XS	XS	P42A-0008D	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	XS	XS	P42A-0008E	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	XS	XS	P42A-0008F	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	STD	XS	P42A-0007V	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	

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ECC SWAGED NIPPLE (SNE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	XS	XS	P43A-00036	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	XS	XS	P43A-00037	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	XS	XS	P43A-00038	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	XS	XS	P43A-00039	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	XS	XS	P43A-0003A	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	XS	XS	P43A-0003B	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	XS	XS	P43A-00042	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	XS	XS	P43A-00043	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	XS	XS	P43A-00044	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	XS	XS	P43A-00045	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	STD	XS	P43A-0003J	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	

COUPLING (CPS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P47B-0001D	Coupling ASTM A105 Class 3000 ASME B16.11 SW - SW	
1	0.75				P47B-0001E	Coupling ASTM A105 Class 3000 ASME B16.11 SW - SW	
1	1				P47B-0001F	Coupling ASTM A105 Class 3000 ASME B16.11 SW - SW	
1	1.5				P47B-0001G	Coupling ASTM A105 Class 3000 ASME B16.11 SW - SW	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2 - 2.5	0.75			P31B-0137J	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	3 - 5	0.75			P31B-0137K	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	6 - 12	0.75			P31B-007AB	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	14 - 36	0.75			P31B-007AJ	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	3	1			P31B-007A7	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	4 - 5	1			P31B-0138Z	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	6 - 10	1			P31B-007A4	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	12 - 36	1			P31B-007AA	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	4	1.5			P31B-005SN	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	5 - 6	1.5			P31B-01390	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	8 - 12	1.5			P31B-0079U	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	14 - 24	1.5			P31B-007A0	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
541	1	0.75			P31B-00551	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
541	1.5	0.75			P31B-00555	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
541	2 - 2.5	0.75			P31B-0137H	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
541	3 - 5	0.75			P31B-01376	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
541	6 - 12	0.75			P31B-007GR	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
541	14 - 36	0.75			P31B-007GY	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
1	6	2	STD	XS	P31B-007SH	Outlet ASTM A105 MSS SP-97 BW	
1	8	2	SCH20	XS	P31B-00NY2	Outlet ASTM A105 MSS SP-97 BW	
1	10	2	SCH30	XS	P31B-00NVF	Outlet ASTM A105 MSS SP-97 BW	
1	12	2	STD	XS	P31B-00CBN	Outlet ASTM A105 MSS SP-97 BW	
1	14	2	STD	XS	P31B-00CAE	Outlet ASTM A105 MSS SP-97 BW	
1	16	2	SCH20	XS	P31B-00TF8	Outlet ASTM A105 MSS SP-97 BW	
1	8	3	SCH20	STD	P31B-00P11	Outlet ASTM A105 MSS SP-97 BW	
1	10	3	SCH30	STD	P31B-00NYK	Outlet ASTM A105 MSS SP-97 BW	
1	12	3	STD	STD	P31B-0096N	Outlet ASTM A105 MSS SP-97 BW	
1	14	3	STD	STD	P31B-0090T	Outlet ASTM A105 MSS SP-97 BW	
1	16	3	SCH20	STD	P31B-00TU2	Outlet ASTM A105 MSS SP-97 BW	
1	12	4	STD	STD	P31B-008ZW	Outlet ASTM A105 MSS SP-97 BW	
1	14	4	STD	STD	P31B-008YM	Outlet ASTM A105 MSS SP-97 BW	
1	16	4	SCH20	STD	P31B-00TU3	Outlet ASTM A105 MSS SP-97 BW	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30B-0002D	Plug ASTM A105 ASME B16.11 NPT Round head	
1	0.75				P30B-0002E	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1				P30B-0002F	Plug ASTM A105 ASME B16.11 NPT Round head	

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PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5				P30B-0002G	Plug ASTM A105 ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P61B-001HC	Flange SW ASTM A105 Class 300 ASME B16.5 RF	
1	0.75		XS		P61B-001HS	Flange SW ASTM A105 Class 300 ASME B16.5 RF	
1	1		XS		P61B-001EF	Flange SW ASTM A105 Class 300 ASME B16.5 RF	
1	1.5		XS		P61B-001F2	Flange SW ASTM A105 Class 300 ASME B16.5 RF	
1	2		XS		P61B-001HW	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	3		STD		P61B-001LJ	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	4		STD		P61B-001MC	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	6		STD		P61B-001N2	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	8		SCH20		P61B-002LJ	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	10		SCH30		P61B-003LX	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	12		STD		P61B-001LE	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	14		STD		P61B-001M9	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	16		SCH20		P61B-002MS	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
2489	4		STD		P61B-00D40	Flange WN ASTM A105 Class 600 ASME B16.5 RJ	
781	0.5		XS		P61B-001FF	Flange SW ASTM A105 Class 600 ASME B16.5 RF	
781	0.75		XS		P61B-001FH	Flange SW ASTM A105 Class 600 ASME B16.5 RF	
781	1		XS		P61B-001DR	Flange SW ASTM A105 Class 600 ASME B16.5 RF	
781	1.5		XS		P61B-001DV	Flange SW ASTM A105 Class 600 ASME B16.5 RF	
781	2		XS		P61B-001DH	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	3		STD		P61B-001TW	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	4		STD		P61B-001VV	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	6		STD		P61B-001JW	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	8		SCH20		P61B-003F0	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	10		SCH30		P61B-003TN	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	12		STD		P61B-001P9	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	14		STD		P61B-001PL	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	16		SCH20		P61B-00798	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
797	0.75		XS		P61B-009T4	Flange SW ASTM A105 Class 1500 ASME B16.5 RJ	
797	1		XS		P61B-009T5	Flange SW ASTM A105 Class 1500 ASME B16.5 RJ	
797	1.5		XS		P61B-009T6	Flange SW ASTM A105 Class 1500 ASME B16.5 RJ	
797	2		XS		P61B-0065C	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
797	3		STD		P61B-009W7	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
797	4		STD		P61B-009W8	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
797	6		STD		P61B-009W9	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
797	8		SCH20		P61B-00BM0	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67B-000GH	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	0.75				P67B-000GJ	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	1				P67B-000GK	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	1.5				P67B-000GL	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	2				P67B-000GM	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	3				P67B-000GN	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	4				P67B-000GP	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	6				P67B-000GY	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	8				P67B-000GZ	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	10				P67B-000GR	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	12				P67B-000GS	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	14				P67B-000GT	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	16				P67B-000GU	Blind flange ASTM A105 Class 300 ASME B16.5 RF	

REDUCING FLANGE (FR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2	0.75		XS	P62B-000ND	Reducing flange WN ASTM A105 Class 300 ASME B16.5 RF	

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REDUCING FLANGE (FR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2	1		XS	P62B-000MA	Reducing flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	2	1.5		XS	P62B-000MB	Reducing flange WN ASTM A105 Class 300 ASME B16.5 RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000FT	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000FU	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000G5	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000G6	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	6				P73T-000G7	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	8				P73T-000G8	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	10				P73T-000FX	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	12				P73T-000FY	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	14				P73T-000FZ	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	16				P73T-000G0	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
2489	4				P75T-000NG	Ring joint gasket Soft iron Class 600 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
781	0.5				P73T-000J8	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	0.75				P73T-000J9	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1				P73T-000JA	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1.5				P73T-000JB	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	2				P73T-000JH	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	3				P73T-000JL	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	4				P73T-000JM	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	6				P73T-000JN	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	8				P73T-000JP	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	10				P73T-000JC	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	12				P73T-000JD	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	14				P73T-000JE	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	16				P73T-000JF	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
797	0.75				P75T-000JU	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	1				P75T-000JV	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	1.5				P75T-000JW	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	2				P75T-0008A	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	3				P75T-0008E	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	4				P75T-0008D	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	6				P75T-0008C	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	8				P75T-0008B	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-10				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	12-16				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
2489	4				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
781	0.5-6				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
781	8-16				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	

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BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
797	0.5-2				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
797	3-8				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81B-002WA	Gate valve ASTM A105 Class 800 API 602 SW Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated	
1	0.75				P81B-002WB	Gate valve ASTM A105 Class 800 API 602 SW Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated	
1	1				P81B-002WC	Gate valve ASTM A105 Class 800 API 602 SW Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated	
1	1.5				P81B-002WD	Gate valve ASTM A105 Class 800 API 602 SW Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated	
1	2				P81C-008PL	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated	
1	3				P81C-008PM	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated	
1	4				P81C-008PN	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated	
1	6				P81C-008PP	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated	
1	8				P81C-0091D	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Gear operated	
1	10				P81C-008PS	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Gear operated	
1	12				P81C-008PT	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Gear operated	
1	14				P81C-008PU	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Gear operated	
1	16				P81C-008PV	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Gear operated	
714	0.5				P81B-002WE	Gate valve ASTM A105 Class 800 API 602 SW - NPT Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated	
714	0.75				P81B-002WF	Gate valve ASTM A105 Class 800 API 602 SW - NPT Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82B-0022A	Globe valve ASTM A105 Class 800 API 602 SW Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated	
1	0.75				P82B-0022B	Globe valve ASTM A105 Class 800 API 602 SW Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated	
1	1				P82B-0022C	Globe valve ASTM A105 Class 800 API 602 SW Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated	
1	1.5				P82B-0022D	Globe valve ASTM A105 Class 800 API 602 SW Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated	
1	2				P82C-0046W	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated	
1	3				P82C-0046X	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated	
1	4				P82C-0046Y	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated	
1	6				P82C-0046Z	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated	
1	8				P82C-004CL	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Gear operated	
4601	0.75				P82B-001AB	Y-pattern globe valve ASTM A105 Class 300 ASME B16.34 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated	
4601	1				P82B-001AC	Y-pattern globe valve ASTM A105 Class 300 ASME B16.34 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated	
4601	1.5				P82B-001AD	Y-pattern globe valve ASTM A105 Class 300 ASME B16.34 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated	
4601	2				P82C-002M3	Y-pattern globe valve ASTM A216 Grade WCB Class 300 ASME B16.34 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated	
4601	3				P82C-0039S	Y-pattern globe valve ASTM A216 Grade WCB Class 300 ASME B16.34 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated	
4601	4				P82C-0039T	Y-pattern globe valve ASTM A216 Grade WCB Class 300 ASME B16.34 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83B-001JH	Check valve ASTM A105 Class 800 API 602 SW Trim SS316L Body and disc seats Stellite-6 Lift-type Bolted cover	
1	0.75				P83B-001JJ	Check valve ASTM A105 Class 800 API 602 SW Trim SS316L Body and disc seats Stellite-6 Lift-type Bolted cover	
1	1				P83B-001JK	Check valve ASTM A105 Class 800 API 602 SW Trim SS316L Body and disc seats Stellite-6 Lift-type Bolted cover	
1	1.5				P83B-001JL	Check valve ASTM A105 Class 800 API 602 SW Trim SS316L Body and disc seats Stellite-6 Lift-type Bolted cover	
1	2				P83C-003T0	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 Swing-type Bolted cover	

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CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3				P83C-003T1	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 Swing-type Bolted cover	
1	4				P83C-003T2	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 Swing-type Bolted cover	
1	6				P83C-003T3	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 Swing-type Bolted cover	
1	8				P83C-003T4	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 Swing-type Bolted cover	
1	10				P83C-003SW	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 Swing-type Bolted cover	
1	12				P83C-003SX	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 Swing-type Bolted cover	
1	14				P83C-003SY	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 Swing-type Bolted cover	
1	16				P83C-003SZ	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 Swing-type Bolted cover	

BALL VALVE (Q)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	4				P84C-006UE	Ball valve Long-pattern ASTM A216 Grade WCB Class 300 API 608 Flange ASME B16.5 RF Ball SS316L Seat R-PTFE Trim SS316L Floating-type Side-entry Gear operated Reduced bore Fire tested design	
1	6				P84C-006UK	Ball valve Long-pattern ASTM A216 Grade WCB Class 300 API 608 Flange ASME B16.5 RF Ball SS316L Seat R-PTFE Trim SS316L Trunnion-type Side-entry Gear operated Reduced bore Fire tested design	
1	8				P84C-006UL	Ball valve Long-pattern ASTM A216 Grade WCB Class 300 API 608 Flange ASME B16.5 RF Ball SS316L Seat R-PTFE Trim SS316L Trunnion-type Side-entry Gear operated Reduced bore Fire tested design	
1	10				P84C-006UF	Ball valve Long-pattern ASTM A216 Grade WCB Class 300 API 608 Flange ASME B16.5 RF Ball SS316L Seat R-PTFE Trim SS316L Trunnion-type Side-entry Gear operated Reduced bore Fire tested design	
24	4				P84C-006UM	Ball valve Long-pattern ASTM A216 Grade WCB Class 300 API 608 Flange ASME B16.5 RF Ball SS316L Seat R-PTFE Trim SS316L Floating-type Side-entry Gear operated Full bore Fire tested design	
24	6				P84C-006UT	Ball valve Long-pattern ASTM A216 Grade WCB Class 300 API 608 Flange ASME B16.5 RF Ball SS316L Seat R-PTFE Trim SS316L Trunnion-type Side-entry Gear operated Full bore Fire tested design	
24	8				P84C-006UU	Ball valve Long-pattern ASTM A216 Grade WCB Class 300 API 608 Flange ASME B16.5 RF Ball SS316L Seat R-PTFE Trim SS316L Trunnion-type Side-entry Gear operated Full bore Fire tested design	
24	10				P84C-006UN	Ball valve Long-pattern ASTM A216 Grade WCB Class 300 API 608 Flange ASME B16.5 RF Ball SS316L Seat R-PTFE Trim SS316L Trunnion-type Side-entry Gear operated Full bore Fire tested design	

BUTTERFLY VALVE (H)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	10				P86C-002B2	Offset design butterfly valve ASTM A216 Grade WCB Class 300 API 609 Category B Lug-type ASME B16.5 RF Disc SS316L Seat Stellite-6 Trim SS316L Triple eccentric design BG Gear operated	

NEEDLE VALVE (NV)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82B-00226	Needle valve ASTM A105 Class 800 API 602 SW Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated	
1	0.75				P82B-00227	Needle valve ASTM A105 Class 800 API 602 SW Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated	
1	1				P82B-00228	Needle valve ASTM A105 Class 800 API 602 SW Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated	
1	1.5				P82B-00229	Needle valve ASTM A105 Class 800 API 602 SW Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated	

ORIFICE FLANGE (FO)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2		XS		P66B-0084B	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	3		STD		P66B-0084C	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	4		STD		P66B-0084D	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	6		STD		P66B-0084E	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	8		SCH20		P66B-0084F	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	10		SCH30		P66B-0086Z	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	12		STD		P66B-008A2	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
200	2		XS		P66B-00843	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	3		STD		P66B-00844	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	4		STD		P66B-00845	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	6		STD		P66B-00846	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	8		SCH20		P66B-00847	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	10		SCH30		P66B-00874	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	12		STD		P66B-008A4	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
	0.5				P71B-000B1	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	

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SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75				P71B-000B2	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	1				P71B-000B3	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71B-000B4	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	2				P71B-000B6	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	3				P71B-000B7	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	4				P71B-000B8	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	6				P71B-000B9	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	8				P71B-000BA	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	10				P71B-000B5	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	12				P71B-000BB	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	

PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000FA	Paddle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	16				P72B-000FB	Paddle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	

PADDLE SPACER (PS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000FG	Paddle spacer ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	16				P72B-000FH	Paddle spacer ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	

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BOLT TABLE (B_B1AH02 , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-003V4		
0.75	4	0.625	75	P80S-003XC		
1	4	0.625	80	P80S-003XD		
1.5	4	0.750	95	P80S-00414		
2	8	0.625	90	P80S-003XF		
3	8	0.750	110	P80S-003XK		
4	8	0.750	115	P80S-003XL		
6	12	0.750	125	P80S-003XN		
8	12	0.875	140	P80S-0041D		
10	16	1.000	160	P80S-0043K		
12	16	1.125	175	P80S-0046S		
14	20	1.125	180	P80S-0046T		
16	20	1.250	190	P80S-004AK		

BOLT TABLE (B_B1AH02_2489 , STUD ASME RJ, OPTION CODE 2489)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	80		R11	
0.75	4	0.625	90		R13	
1	4	0.625	95		R16	
1.5	4	0.750	110		R20	
2	8	0.625	115		R23	
3	8	0.750	135		R31	
4	8	0.875	150	P80S-0041F	R37	P75T-000NG
6	12	1.000	175		R45	
8	12	1.125	200		R49	
10	16	1.250	255		R53	
12	20	1.250	260		R57	
14	20	1.375	275		R61	
16	20	1.500	300		R65	

BOLT TABLE (B_B1AH02_781 , STUD ASME RF, OPTION CODE 781)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	80	P80S-003V6		
0.75	4	0.625	90	P80S-003XF		
1	4	0.625	95	P80S-003XG		
1.5	4	0.750	110	P80S-003XK		
2	8	0.625	110	P80S-003VC		
3	8	0.750	130	P80S-003XP		
4	8	0.875	150	P80S-0041F		
6	12	1.000	175	P80S-0043P		
8	12	1.125	195	P80S-0046W		
10	16	1.250	250	P80S-004AY		
12	20	1.250	255	P80S-004AZ		
14	20	1.375	270	P80S-003E7		
16	20	1.500	295	P80S-003FL		

BOLT TABLE (B_B1AH02_797 , STUD ASME RJ, OPTION CODE 797)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	110	P80S-003XK	R12	
0.75	4	0.750	115	P80S-003XL	R14	P75T-000JU
1	4	0.875	130	P80S-0041B	R16	P75T-000JV
1.5	4	1.000	140	P80S-0043F	R20	P75T-000JW
2	8	0.875	150	P80S-0041F	R24	P75T-0008A
3	8	1.125	180	P80S-0046T	R35	P75T-0008E
4	8	1.250	230	P80S-004AU	R39	P75T-0008D
6	12	1.375	300	P80S-003ED	R46	P75T-0008C
8	12	1.625	345	P80S-005TY	R50	P75T-0008B
10	12	1.875	395		R54	
12	16	2.000	445		R58	
14	16	2.250	490		R63	
16	16	2.500	540		R67	

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BRANCH TABLE (T_B1AH02)

RUN PIPE SIZE (in) \ BRANCH SIZE (in)	0.5	0.75	1	1.5	2	3	4	6	8	10	12	14	16
0.5	TS												
0.75		TS											
1		TR	TS										
1.5		TR	TR	TS									
2		L	TR	TR	TS								
3		L	L	TR	TR	TS							
4	L	L	L	L	TR	TR	TS						
6	L	L	L	L	L	TR	TR	TS					
8		L	L	L	L	L	TR	TR	TS				
10		L	L	L	L	L	TR	TR	TR	TS			
12		L	L	L	L	L	L	TR	TR	TR	TS		
14		L	L	L	L	L	L	TR	TR	TR	TR	TS	
16		L	L	L	L	L	L	TR	TR	TR	TR	TR	TS

TR : REDUCING TEE
TS : STRAIGHT TEE
L : OUTLET

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PIPING CLASS

B1AH03 REV NO. 2

Material : Killed CS
Rating : ASME CLASS 300
Flange Face : RF
C.A.(mm) : 1.50
Gasket : Spiral Wound
Service : PROCESS - HYDROGEN OR HYDROGEN RICH HYDROCARBON MIXTURES
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
2	USE OF SOFT SEATED BALL, PLUG AND BUTTERFLY VALVES SHALL BE LIMITED TO MAXIMUM OF 204DEGC (400DEGF)
16	PIPE CLASS SHALL BE USED WITHIN THE NORMAL OPERATING PRESSURE/TEMPERATURE LIMITS SPECIFIED IN API RP 941. PRESSURE / TEMPERATURE SPECIFIED IN THE PIPE CLASS EXCEEDING API RP 941 LIMITS SHOULD BE REGARDED AS UPSET CONDITIONS RATHER THAN FOR CONTINUOUS SERVICE

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
541	NPT(F) (CA,L)
714	SW - NPT(F) (V)
781	CLASS 600 (B,F,G)

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PIPING CLASS
B1AH03 REV NO. 2

PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P01A-000XM	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	0.75		XS		P01A-000XN	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1		XS		P01A-000XP	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1.5		XS		P01A-000XV	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	2		XS		P01A-000YX	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	3		STD		P01A-000YM	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	4		STD		P01A-000YU	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	6		STD		P01A-000Z3	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P02B-00014	90 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	0.75				P02B-00015	90 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	1				P02B-00016	90 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5				P02B-00017	90 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	2		XS		P02A-000CP	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		STD		P02A-000CU	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		STD		P02A-000CZ	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		STD		P02A-000D6	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P03B-00017	45 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	0.75				P03B-00018	45 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	1				P03B-00019	45 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5				P03B-0001A	45 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	2		XS		P03A-000AS	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		STD		P03A-000AX	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		STD		P03A-000B1	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		STD		P03A-000B9	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P21B-00017	Straight tee ASTM A105 Class 3000 ASME B16.11 SW	
1	0.75				P21B-00018	Straight tee ASTM A105 Class 3000 ASME B16.11 SW	
1	1				P21B-00019	Straight tee ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5				P21B-0001A	Straight tee ASTM A105 Class 3000 ASME B16.11 SW	
1	2		XS		P21A-001CJ	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		STD		P21A-001CU	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		STD		P21A-001CW	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6		STD		P21A-001D2	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75			P24B-0002L	Reducing tee ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5	0.75			P24B-0002N	Reducing tee ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5	1			P24B-0002P	Reducing tee ASTM A105 Class 3000 ASME B16.11 SW	
1	2	1	XS	XS	P24A-00238	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	XS	XS	P24A-0023H	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	STD	XS	P24A-00214	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	STD	XS	P24A-002HW	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P24A-002HY	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P24A-0021K	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	STD	P24A-0021A	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P24A-00229	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	STD	XS	P27A-001MZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P27A-001N0	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P27A-00189	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	STD	P27A-001AZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P27A-001GW	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	STD	XS	P28A-001N5	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P28A-001N6	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P28A-0018B	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	STD	P28A-001AS	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P28A-00182	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P29B-0001J	Cap ASTM A105 Class 3000 ASME B16.11 SW	
1	0.75				P29B-0001F	Cap ASTM A105 Class 3000 ASME B16.11 SW	
1	1				P29B-0001G	Cap ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5				P29B-0001H	Cap ASTM A105 Class 3000 ASME B16.11 SW	
1	2		XS		P29A-000A1	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		STD		P29A-000BK	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		STD		P29A-000A3	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6		STD		P29A-000A9	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
541	0.75				P29B-0000C	Cap ASTM A105 Class 3000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P41A-000B5	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		SCH160		P41A-000B6	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		SCH160		P41A-000B7	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		SCH160		P41A-000B8	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

CON SWAGED NIPPLE (SNC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	XS	XS	P42A-00036	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	XS	XS	P42A-00038	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	XS	XS	P42A-0003B	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	XS	XS	P42A-00035	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	XS	XS	P42A-00039	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	XS	XS	P42A-0003C	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	XS	XS	P42A-0008C	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	XS	XS	P42A-0008D	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	XS	XS	P42A-0008E	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	XS	XS	P42A-0008F	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	STD	XS	P42A-0007V	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	

ECC SWAGED NIPPLE (SNE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	XS	XS	P43A-00036	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	XS	XS	P43A-00037	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	XS	XS	P43A-00038	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	XS	XS	P43A-00039	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	XS	XS	P43A-0003A	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	XS	XS	P43A-0003B	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	XS	XS	P43A-00042	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	XS	XS	P43A-00043	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	XS	XS	P43A-00044	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	

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ECC SWAGED NIPPLE (SNE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2	1.5	XS	XS	P43A-00045	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	STD	XS	P43A-0003J	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	

COUPLING (CPS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P47B-0001D	Coupling ASTM A105 Class 3000 ASME B16.11 SW - SW	
1	0.75				P47B-0001E	Coupling ASTM A105 Class 3000 ASME B16.11 SW - SW	
1	1				P47B-0001F	Coupling ASTM A105 Class 3000 ASME B16.11 SW - SW	
1	1.5				P47B-0001G	Coupling ASTM A105 Class 3000 ASME B16.11 SW - SW	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2 - 2.5	0.75			P31B-0137J	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	3 - 5	0.75			P31B-0137K	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	6 - 12	0.75			P31B-007AB	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	3	1			P31B-007A7	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	4 - 5	1			P31B-0138Z	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	6 - 10	1			P31B-007A4	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	4	1.5			P31B-005SN	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	5 - 6	1.5			P31B-01390	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
541	1	0.75			P31B-00551	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
541	1.5	0.75			P31B-00555	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
541	2 - 2.5	0.75			P31B-0137H	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
541	3 - 5	0.75			P31B-01376	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
541	6 - 12	0.75			P31B-007GR	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
1	6	2	STD	XS	P31B-007SH	Outlet ASTM A105 MSS SP-97 BW	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30B-0002D	Plug ASTM A105 ASME B16.11 NPT Round head	
1	0.75				P30B-0002E	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1				P30B-0002F	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1.5				P30B-0002G	Plug ASTM A105 ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P61B-001HC	Flange SW ASTM A105 Class 300 ASME B16.5 RF	
1	0.75		XS		P61B-001HS	Flange SW ASTM A105 Class 300 ASME B16.5 RF	
1	1		XS		P61B-001EF	Flange SW ASTM A105 Class 300 ASME B16.5 RF	
1	1.5		XS		P61B-001F2	Flange SW ASTM A105 Class 300 ASME B16.5 RF	
1	2		XS		P61B-001HW	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	3		STD		P61B-001LJ	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	4		STD		P61B-001MC	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	6		STD		P61B-001N2	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
781	0.5		XS		P61B-001FF	Flange SW ASTM A105 Class 600 ASME B16.5 RF	
781	0.75		XS		P61B-001FH	Flange SW ASTM A105 Class 600 ASME B16.5 RF	
781	1		XS		P61B-001DR	Flange SW ASTM A105 Class 600 ASME B16.5 RF	
781	1.5		XS		P61B-001DV	Flange SW ASTM A105 Class 600 ASME B16.5 RF	
781	2		XS		P61B-001DH	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	3		STD		P61B-001TW	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	4		STD		P61B-001VV	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	6		STD		P61B-001JW	Flange WN ASTM A105 Class 600 ASME B16.5 RF	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67B-000GH	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	0.75				P67B-000GJ	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	1				P67B-000GK	Blind flange ASTM A105 Class 300 ASME B16.5 RF	

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BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5				P67B-000GL	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	2				P67B-000GM	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	3				P67B-000GN	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	4				P67B-000GP	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	6				P67B-000GY	Blind flange ASTM A105 Class 300 ASME B16.5 RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000FT	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000FU	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000G5	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000G6	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	6				P73T-000G7	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	0.5				P73T-000J8	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	0.75				P73T-000J9	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1				P73T-000JA	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1.5				P73T-000JB	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	2				P73T-000JH	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	3				P73T-000JL	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	4				P73T-000JM	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	6				P73T-000JN	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-6				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
781	0.5-6				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81B-000P4	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	0.75				P81B-000NX	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	1				P81B-000NY	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	1.5				P81B-000NZ	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	2				P81C-002D6	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	3				P81C-002D7	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	4				P81C-002D8	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	6				P81C-002D9	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
714	0.5				P81B-0015L	Gate valve ASTM A105 Class 800 API 602 SW - NPT Trim number 8 BB-BG-OS&Y Handwheel operated	
714	0.75				P81B-002F4	Gate valve ASTM A105 Class 800 API 602 SW - NPT Trim number 8 BB-BG-OS&Y Handwheel operated	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82B-000K0	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	0.75				P82B-000HB	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	1				P82B-000HC	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	1.5				P82B-000HD	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	2				P82C-00114	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	

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GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3				P82C-00115	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	4				P82C-00116	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	6				P82C-00117	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83B-000FX	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover	
1	0.75				P83B-000ER	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover	
1	1				P83B-000ES	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover	
1	1.5				P83B-000ET	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover	
1	2				P83C-0013H	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	3				P83C-0013L	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	4				P83C-0013M	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	6				P83C-0013N	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71B-000B1	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	0.75				P71B-000B2	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	1				P71B-000B3	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71B-000B4	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	2				P71B-000B6	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	3				P71B-000B7	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	4				P71B-000B8	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	6				P71B-000B9	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	

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BOLT TABLE (B_B1AH03 , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-003V4		
0.75	4	0.625	75	P80S-003XC		
1	4	0.625	80	P80S-003XD		
1.5	4	0.750	95	P80S-00414		
2	8	0.625	90	P80S-003XF		
3	8	0.750	110	P80S-003XK		
4	8	0.750	115	P80S-003XL		
6	12	0.750	125	P80S-003XN		

BOLT TABLE (B_B1AH03_781 , STUD ASME RF, OPTION CODE 781)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	80	P80S-003V6		
0.75	4	0.625	90	P80S-003XF		
1	4	0.625	95	P80S-003XG		
1.5	4	0.750	110	P80S-003XK		
2	8	0.625	110	P80S-003VC		
3	8	0.750	130	P80S-003XP		
4	8	0.875	150	P80S-0041F		
6	12	1.000	175	P80S-0043P		

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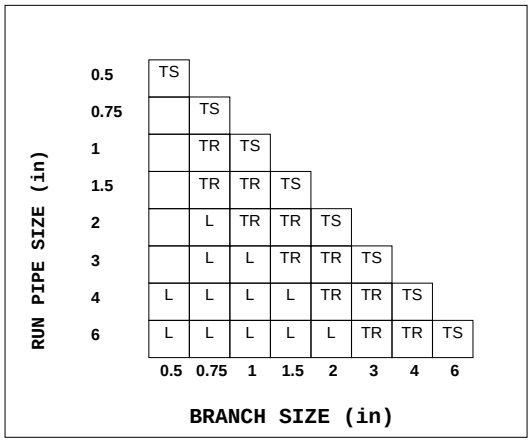
BRANCH TABLE (T_B1AH03)



TR : REDUCING TEE
TS : STRAIGHT TEE
L : OUTLET

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PIPING CLASS

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Material : Killed CS
Rating : ASME CLASS 300
Flange Face : RF
C.A.(mm) : 1.50
Gasket : Spiral Wound
Service : PROCESS - HYDROGEN OR HYDROGEN RICH HYDROCARBON MIXTURES
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
2	USE OF SOFT SEATED BALL, PLUG AND BUTTERFLY VALVES SHALL BE LIMITED TO MAXIMUM OF 204DEGC (400DEGF)
16	PIPE CLASS SHALL BE USED WITHIN THE NORMAL OPERATING PRESSURE/TEMPERATURE LIMITS SPECIFIED IN API RP 941. PRESSURE / TEMPERATURE SPECIFIED IN THE PIPE CLASS EXCEEDING API RP 941 LIMITS SHOULD BE REGARDED AS UPSET CONDITIONS RATHER THAN FOR CONTINUOUS SERVICE

DETAIL NOTES :

NO.	DESCRIPTION
38	TO BE USED FOR STAND PIPE

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
24	FULL PORT (Q)
200	WITH JACK SCREW (FO)
541	NPT(F) (CA,L)
714	SW - NPT(F) (V)
781	CLASS 600 (B,F,G)
4212	WELDOLET FOR STAND PIPE (L)
4602	DISSIMILAR TYPE CHECK VALVE (XDP)

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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P01A-000XM	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	0.75		XS		P01A-000XN	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1		XS		P01A-000XP	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1.5		XS		P01A-000XV	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	2		XS		P01A-000YX	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	3		STD		P01A-000YM	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	4		STD		P01A-000YU	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	6		STD		P01A-000Z3	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	8		SCH20		P01A-001AT	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	10		SCH30		P01A-0016U	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	12		STD		P01A-000XT	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	14		STD		P01A-000Y1	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	16		SCH20		P01A-0018E	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	18		SCH20		P01A-00438	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE	
1	20		STD		P01A-0042G	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE	
1	24		STD		P01A-0042H	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P02B-00014	90 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	0.75				P02B-00015	90 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	1				P02B-00016	90 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5				P02B-00017	90 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	2		XS		P02A-000CP	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		STD		P02A-000CU	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		STD		P02A-000CZ	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		STD		P02A-000D6	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		SCH20		P02A-000GZ	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	10		SCH30		P02A-000M3	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	12		STD		P02A-000BZ	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	14		STD		P02A-000C8	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	16		SCH20		P02A-000GM	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	18		SCH20		P02A-000LT	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	20		STD		P02A-0010J	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	24		STD		P02A-0010K	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P03B-00017	45 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	0.75				P03B-00018	45 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	1				P03B-00019	45 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5				P03B-0001A	45 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	2		XS		P03A-000AS	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		STD		P03A-000AX	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		STD		P03A-000B1	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		STD		P03A-000B9	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		SCH20		P03A-000EX	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	10		SCH30		P03A-000JT	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	12		STD		P03A-000A9	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	14		STD		P03A-000AG	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	16		SCH20		P03A-000EM	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	18		SCH20		P03A-001DX	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	20		STD		P03A-000X1	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	24		STD		P03A-000X2	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P21B-00017	Straight tee ASTM A105 Class 3000 ASME B16.11 SW	
1	0.75				P21B-00018	Straight tee ASTM A105 Class 3000 ASME B16.11 SW	

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STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P21B-00019	Straight tee ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5				P21B-0001A	Straight tee ASTM A105 Class 3000 ASME B16.11 SW	
1	2		XS		P21A-001CJ	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		STD		P21A-001CU	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		STD		P21A-001CW	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6		STD		P21A-001D2	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8		SCH20		P21A-00215	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10		SCH30		P21A-00259	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12		STD		P21A-001C1	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14		STD		P21A-001C8	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16		SCH20		P21A-0020X	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18		SCH20		P21A-001PJ	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20		STD		P21A-001C7	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24		STD		P21A-001CC	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75			P24B-0002L	Reducing tee ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5	0.75			P24B-0002N	Reducing tee ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5	1			P24B-0002P	Reducing tee ASTM A105 Class 3000 ASME B16.11 SW	
1	2	1	XS	XS	P24A-00238	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	XS	XS	P24A-0023H	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	STD	XS	P24A-00214	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	STD	XS	P24A-002HW	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P24A-002HY	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P24A-0021K	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	STD	P24A-0021A	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P24A-00229	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH20	STD	P24A-00J21	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH20	STD	P24A-005J4	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	SCH30	STD	P24A-00GNR	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	SCH30	STD	P24A-0060W	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	SCH30	SCH20	P24A-005KE	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	STD	STD	P24A-0022S	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	STD	SCH20	P24A-0060X	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	STD	SCH30	P24A-0060K	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	STD	STD	P24A-0026N	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	STD	SCH20	P24A-00KSG	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	STD	SCH30	P24A-0060L	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	STD	STD	P24A-0022R	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	6	SCH20	STD	P24A-00GU4	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	SCH20	SCH20	P24A-002XW	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	SCH20	SCH30	P24A-00KSH	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	SCH20	STD	P24A-00GP7	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	SCH20	STD	P24A-006YK	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	8	SCH20	SCH20	P24A-002XC	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	10	SCH20	SCH30	P24A-00BF6	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	12	SCH20	STD	P24A-00BH2	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	14	SCH20	STD	P24A-00BJN	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	16	SCH20	SCH20	P24A-002X5	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	8	STD	SCH20	P24A-00K0N	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	10	STD	SCH30	P24A-00BT8	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	12	STD	STD	P24A-004W2	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	14	STD	STD	P24A-004U1	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	16	STD	SCH20	P24A-006W3	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	18	STD	SCH20	P24A-006WD	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	10	STD	SCH30	P24A-00C5X	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	12	STD	STD	P24A-004UC	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	14	STD	STD	P24A-004T3	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	

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REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	24	16	STD	SCH20	P24A-00CAD	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	18	STD	SCH20	P24A-006WF	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	20	STD	STD	P24A-004SV	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	STD	XS	P27A-001MZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P27A-001N0	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P27A-00189	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	STD	P27A-001AZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P27A-001GW	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH20	STD	P27A-003K2	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH20	STD	P27A-003K3	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	SCH30	STD	P27A-003MK	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	SCH30	STD	P27A-003ML	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	SCH30	SCH20	P27A-003MM	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	STD	STD	P27A-0018X	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	STD	SCH20	P27A-0041Y	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	STD	SCH30	P27A-0041H	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	STD	STD	P27A-0019L	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	STD	SCH20	P27A-003MC	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	STD	SCH30	P27A-003MB	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	STD	STD	P27A-0018W	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	SCH20	SCH20	P27A-001WX	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	SCH20	SCH30	P27A-003NC	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	SCH20	STD	P27A-0055Z	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	SCH20	STD	P27A-0057G	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	10	SCH20	SCH30	P27A-0084J	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	12	SCH20	STD	P27A-00BGN	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	14	SCH20	STD	P27A-00BGP	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	16	SCH20	SCH20	P27A-001WN	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	12	STD	STD	P27A-0018G	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	14	STD	STD	P27A-0019K	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	16	STD	SCH20	P27A-0082M	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	18	STD	SCH20	P27A-0084N	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	16	STD	SCH20	P27A-0084T	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	18	STD	SCH20	P27A-0084U	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	20	STD	STD	P27A-001A8	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	STD	XS	P28A-001N5	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P28A-001N6	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P28A-0018B	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	STD	P28A-001AS	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P28A-00182	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH20	STD	P28A-003JU	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH20	STD	P28A-003JV	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	SCH30	STD	P28A-003MD	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	SCH30	STD	P28A-003ME	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	SCH30	SCH20	P28A-003MF	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	STD	STD	P28A-00191	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	STD	SCH20	P28A-0041S	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	STD	SCH30	P28A-0041B	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	STD	STD	P28A-0019R	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	STD	SCH20	P28A-003M6	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	STD	SCH30	P28A-003M5	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	STD	STD	P28A-0018Z	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	SCH20	SCH20	P28A-001T6	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	16	10	SCH20	SCH30	P28A-003N6	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	SCH20	STD	P28A-00519	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	SCH20	STD	P28A-0051A	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	10	SCH20	SCH30	P28A-004UL	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	12	SCH20	STD	P28A-008FP	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	14	SCH20	STD	P28A-008FR	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	16	SCH20	SCH20	P28A-001T1	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	12	STD	STD	P28A-0018X	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	14	STD	STD	P28A-001A8	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	16	STD	SCH20	P28A-004SK	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	18	STD	SCH20	P28A-004UN	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	16	STD	SCH20	P28A-004UR	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	18	STD	SCH20	P28A-004US	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	20	STD	STD	P28A-001AW	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P29B-0001J	Cap ASTM A105 Class 3000 ASME B16.11 SW	
1	0.75				P29B-0001F	Cap ASTM A105 Class 3000 ASME B16.11 SW	
1	1				P29B-0001G	Cap ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5				P29B-0001H	Cap ASTM A105 Class 3000 ASME B16.11 SW	
1	2		XS		P29A-000A1	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		STD		P29A-000BK	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		STD		P29A-000A3	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6		STD		P29A-000A9	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8		SCH20		P29A-000EY	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10		SCH30		P29A-000K7	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12		STD		P29A-000A7	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14		STD		P29A-000AJ	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16		SCH20		P29A-000F3	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18		SCH20		P29A-000E0	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20		STD		P29A-000B2	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24		STD		P29A-000B8	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
541	0.75				P29B-0000C	Cap ASTM A105 Class 3000 ASME B16.11 NPT	
541	1				P29B-0000D	Cap ASTM A105 Class 3000 ASME B16.11 NPT	
541	1.5				P29B-0000E	Cap ASTM A105 Class 3000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P41A-000B5	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		SCH160		P41A-000B6	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		SCH160		P41A-000B7	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		SCH160		P41A-000B8	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

CON SWAGED NIPPLE (SNC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	XS	XS	P42A-00036	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	XS	XS	P42A-00038	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	XS	XS	P42A-0003B	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	XS	XS	P42A-00035	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	XS	XS	P42A-00039	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	XS	XS	P42A-0003C	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	XS	XS	P42A-0008C	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	XS	XS	P42A-0008D	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	XS	XS	P42A-0008E	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	XS	XS	P42A-0008F	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	STD	XS	P42A-0007V	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	

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ECC SWAGED NIPPLE (SNE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	XS	XS	P43A-00036	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	XS	XS	P43A-00037	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	XS	XS	P43A-00038	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	XS	XS	P43A-00039	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	XS	XS	P43A-0003A	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	XS	XS	P43A-0003B	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	XS	XS	P43A-00042	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	XS	XS	P43A-00043	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	XS	XS	P43A-00044	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	XS	XS	P43A-00045	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	STD	XS	P43A-0003J	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	

COUPLING (CPS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P47B-0001D	Coupling ASTM A105 Class 3000 ASME B16.11 SW - SW	
1	0.75				P47B-0001E	Coupling ASTM A105 Class 3000 ASME B16.11 SW - SW	
1	1				P47B-0001F	Coupling ASTM A105 Class 3000 ASME B16.11 SW - SW	
1	1.5				P47B-0001G	Coupling ASTM A105 Class 3000 ASME B16.11 SW - SW	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2 - 2.5	0.75			P31B-0137J	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	3 - 5	0.75			P31B-0137K	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	6 - 12	0.75			P31B-007AB	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	14 - 36	0.75			P31B-007AJ	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	3	1			P31B-007A7	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	4 - 5	1			P31B-0138Z	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	6 - 10	1			P31B-007A4	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	12 - 36	1			P31B-007AA	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	4	1.5			P31B-005SN	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	5 - 6	1.5			P31B-01390	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	8 - 12	1.5			P31B-0079U	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	14 - 24	1.5			P31B-007A0	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
541	1	0.75			P31B-00551	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
541	1.5	0.75			P31B-00555	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
541	2 - 2.5	0.75			P31B-0137H	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
541	3 - 5	0.75			P31B-01376	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
541	6 - 12	0.75			P31B-007GR	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
541	14 - 36	0.75			P31B-007GY	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
1	6	2	STD	XS	P31B-007SH	Outlet ASTM A105 MSS SP-97 BW	
1	8	2	SCH20	XS	P31B-00NY2	Outlet ASTM A105 MSS SP-97 BW	
1	10	2	SCH30	XS	P31B-00NVF	Outlet ASTM A105 MSS SP-97 BW	
1	12	2	STD	XS	P31B-00CBN	Outlet ASTM A105 MSS SP-97 BW	
1	14	2	STD	XS	P31B-00CAE	Outlet ASTM A105 MSS SP-97 BW	
1	16	2	SCH20	XS	P31B-00TF8	Outlet ASTM A105 MSS SP-97 BW	
1	18	2	SCH20	XS	P31B-00NVX	Outlet ASTM A105 MSS SP-97 BW	
1	20	2	STD	XS	P31B-00994	Outlet ASTM A105 MSS SP-97 BW	
1	24	2	STD	XS	P31B-0092Z	Outlet ASTM A105 MSS SP-97 BW	
1	8	3	SCH20	STD	P31B-00P11	Outlet ASTM A105 MSS SP-97 BW	
1	10	3	SCH30	STD	P31B-00NYK	Outlet ASTM A105 MSS SP-97 BW	
1	12	3	STD	STD	P31B-0096N	Outlet ASTM A105 MSS SP-97 BW	
1	14	3	STD	STD	P31B-0090T	Outlet ASTM A105 MSS SP-97 BW	
1	16	3	SCH20	STD	P31B-00TU2	Outlet ASTM A105 MSS SP-97 BW	
1	18	3	SCH20	STD	P31B-00NZ4	Outlet ASTM A105 MSS SP-97 BW	
1	20	3	STD	STD	P31B-008FA	Outlet ASTM A105 MSS SP-97 BW	
1	24	3	STD	STD	P31B-00895	Outlet ASTM A105 MSS SP-97 BW	
1	12	4	STD	STD	P31B-008ZW	Outlet ASTM A105 MSS SP-97 BW	
1	14	4	STD	STD	P31B-008YM	Outlet ASTM A105 MSS SP-97 BW	
1	16	4	SCH20	STD	P31B-00TU3	Outlet ASTM A105 MSS SP-97 BW	

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OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	18	4	SCH20	STD	P31B-00P1V	Outlet ASTM A105 MSS SP-97 BW	
1	20	4	STD	STD	P31B-008D3	Outlet ASTM A105 MSS SP-97 BW	
1	24	4	STD	STD	P31B-0086X	Outlet ASTM A105 MSS SP-97 BW	
1	18	6	SCH20	STD	P31B-00P48	Outlet ASTM A105 MSS SP-97 BW	
1	20	6	STD	STD	P31B-008PZ	Outlet ASTM A105 MSS SP-97 BW	
1	24	6	STD	STD	P31B-008JD	Outlet ASTM A105 MSS SP-97 BW	
4212	3	2	STD	XS	P31B-00UUU	Outlet ASTM A105 MSS SP-97 BW	38

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30B-0002D	Plug ASTM A105 ASME B16.11 NPT Round head	
1	0.75				P30B-0002E	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1				P30B-0002F	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1.5				P30B-0002G	Plug ASTM A105 ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P61B-001HC	Flange SW ASTM A105 Class 300 ASME B16.5 RF	
1	0.75		XS		P61B-001HS	Flange SW ASTM A105 Class 300 ASME B16.5 RF	
1	1		XS		P61B-001EF	Flange SW ASTM A105 Class 300 ASME B16.5 RF	
1	1.5		XS		P61B-001F2	Flange SW ASTM A105 Class 300 ASME B16.5 RF	
1	2		XS		P61B-001HW	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	3		STD		P61B-001LJ	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	4		STD		P61B-001MC	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	6		STD		P61B-001N2	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	8		SCH20		P61B-002LJ	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	10		SCH30		P61B-003LX	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	12		STD		P61B-001LE	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	14		STD		P61B-001M9	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	16		SCH20		P61B-002MS	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	18		SCH20		P61B-002MT	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	20		STD		P61B-001NT	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	24		STD		P61B-001PA	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
781	0.5		XS		P61B-001FF	Flange SW ASTM A105 Class 600 ASME B16.5 RF	
781	0.75		XS		P61B-001FH	Flange SW ASTM A105 Class 600 ASME B16.5 RF	
781	1		XS		P61B-001DR	Flange SW ASTM A105 Class 600 ASME B16.5 RF	
781	1.5		XS		P61B-001DV	Flange SW ASTM A105 Class 600 ASME B16.5 RF	
781	2		XS		P61B-001DH	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	3		STD		P61B-001TW	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	4		STD		P61B-001VV	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	6		STD		P61B-001JW	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	8		SCH20		P61B-003F0	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	10		SCH30		P61B-003TN	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	12		STD		P61B-001P9	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	14		STD		P61B-001PL	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	16		SCH20		P61B-00798	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	18		SCH20		P61B-003TP	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	20		STD		P61B-003GP	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	24		STD		P61B-003GM	Flange WN ASTM A105 Class 600 ASME B16.5 RF	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67B-000GH	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	0.75				P67B-000GJ	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	1				P67B-000GK	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	1.5				P67B-000GL	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	2				P67B-000GM	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	3				P67B-000GN	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	4				P67B-000GP	Blind flange ASTM A105 Class 300 ASME B16.5 RF	

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BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	6				P67B-000GY	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	8				P67B-000GZ	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	10				P67B-000GR	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	12				P67B-000GS	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	14				P67B-000GT	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	16				P67B-000GU	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	18				P67B-000GV	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	20				P67B-000GW	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	24				P67B-000GX	Blind flange ASTM A105 Class 300 ASME B16.5 RF	

REDUCING FLANGE (FR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5		XS	P62B-000N0	Reducing flange SW ASTM A105 Class 300 ASME B16.5 RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000FT	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000FU	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000G5	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000G6	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	6				P73T-000G7	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	8				P73T-000G8	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	10				P73T-000FX	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	12				P73T-000FY	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	14				P73T-000FZ	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	16				P73T-000G0	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	18				P73T-000G1	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	20				P73T-000G3	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	24				P73T-000G4	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	0.5				P73T-000J8	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	0.75				P73T-000J9	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1				P73T-000JA	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1.5				P73T-000JB	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	2				P73T-000JH	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	3				P73T-000JL	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	4				P73T-000JM	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	6				P73T-000JN	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	8				P73T-000JP	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	10				P73T-000JC	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	12				P73T-000JD	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	14				P73T-000JE	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	16				P73T-000JF	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	18				P73T-000JG	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	20				P73T-000JJ	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	24				P73T-000JK	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

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BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-10				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	12-24				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
781	0.5-6				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
781	8-24				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81B-000P4	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	0.75				P81B-000NX	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	1				P81B-000NY	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	1.5				P81B-000NZ	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	2				P81C-002D6	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	3				P81C-002D7	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	4				P81C-002D8	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	6				P81C-002D9	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	8				P81C-0086V	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated	
1	10				P81C-002DB	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated	
1	12				P81C-002DC	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated	
1	14				P81C-0034H	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated	
1	16				P81C-002DD	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated	
1	18				P81C-002DE	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated	
714	0.5				P81B-0015L	Gate valve ASTM A105 Class 800 API 602 SW - NPT Trim number 8 BB-BG-OS&Y Handwheel operated	
714	0.75				P81B-002F4	Gate valve ASTM A105 Class 800 API 602 SW - NPT Trim number 8 BB-BG-OS&Y Handwheel operated	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82B-000K0	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	0.75				P82B-000HB	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	1				P82B-000HC	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	1.5				P82B-000HD	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	2				P82C-00114	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	3				P82C-00115	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	4				P82C-00116	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	6				P82C-00117	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	8				P82C-0011A	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83B-000FX	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover	
1	0.75				P83B-000ER	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover	
1	1				P83B-000ES	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover	
1	1.5				P83B-000ET	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover	
1	2				P83C-0013H	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	3				P83C-0013L	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	4				P83C-0013M	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	6				P83C-0013N	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	8				P83C-0013P	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	10				P83C-0013D	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	12				P83C-0013E	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	

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CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P83C-0023R	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	16				P83C-0013F	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	

DP CHECK VALVE (XDP)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
4602	8				P88C-003C9	Dual plate check valve ASTM A216 Grade WCB Class 300 API 594 Wafer-type ASME B16.5 RF Trim number 8 Internal wetted parts 13Cr Spring Inconel Retainerless-type	
4602	10				P88C-003C8	Dual plate check valve ASTM A216 Grade WCB Class 300 API 594 Wafer-type ASME B16.5 RF Trim number 8 Internal wetted parts 13Cr Spring Inconel Retainerless-type	
4602	12				P88C-003C5	Dual plate check valve ASTM A216 Grade WCB Class 300 API 594 Wafer-type ASME B16.5 RF Trim number 8 Internal wetted parts 13Cr Spring Inconel Retainerless-type	
4602	14				P88C-003C6	Dual plate check valve ASTM A216 Grade WCB Class 300 API 594 Wafer-type ASME B16.5 RF Trim number 8 Internal wetted parts 13Cr Spring Inconel Retainerless-type	
4602	16				P88C-003C7	Dual plate check valve ASTM A216 Grade WCB Class 300 API 594 Wafer-type ASME B16.5 RF Trim number 8 Internal wetted parts 13Cr Spring Inconel Retainerless-type	

BALL VALVE (Q)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P84B-0012S	Ball valve Long-pattern ASTM A105 Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design	
1	0.75				P84B-0012T	Ball valve Long-pattern ASTM A105 Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design	
1	1				P84B-0012U	Ball valve Long-pattern ASTM A105 Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design	
1	1.5				P84B-0012V	Ball valve Long-pattern ASTM A105 Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design	
1	2				P84C-005VG	Ball valve Long-pattern ASTM A216 Grade WCB Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design	
1	3				P84C-005VH	Ball valve Long-pattern ASTM A216 Grade WCB Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design	
1	4				P84C-005VU	Ball valve Long-pattern ASTM A216 Grade WCB Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Gear operated Reduced bore Fire tested design	
1	6				P84C-005VK	Ball valve Long-pattern ASTM A216 Grade WCB Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Reduced bore Fire tested design	
24	0.5				P84B-0012W	Ball valve Long-pattern ASTM A105 Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	
24	0.75				P84B-0012X	Ball valve Long-pattern ASTM A105 Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	
24	1				P84B-0012Y	Ball valve Long-pattern ASTM A105 Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	
24	1.5				P84B-0012Z	Ball valve Long-pattern ASTM A105 Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	
24	2				P84C-005VM	Ball valve Long-pattern ASTM A216 Grade WCB Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	
24	3				P84C-005VN	Ball valve Long-pattern ASTM A216 Grade WCB Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	
24	4				P84C-005VT	Ball valve Long-pattern ASTM A216 Grade WCB Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Gear operated Full bore Fire tested design	
24	6				P84C-005VR	Ball valve Long-pattern ASTM A216 Grade WCB Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design	

BUTTERFLY VALVE (H)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	10				P86C-0023E	Offset design butterfly valve ASTM A216 Grade WCB Class 300 API 609 Category B Lug-type ASME B16.5 RF Disc CS Seat Stellite-6 Trim 13Cr Triple eccentric design BG Gear operated	

NEEDLE VALVE (NV)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75				P82B-000YB	Needle valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	

ORIFICE FLANGE (FO)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2		XS		P66B-0084B	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	3		STD		P66B-0084C	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	4		STD		P66B-0084D	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	6		STD		P66B-0084E	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	8		SCH20		P66B-0084F	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	10		SCH30		P66B-0086Z	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	12		STD		P66B-008A2	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	14		STD		P66B-008A3	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
200	2		XS		P66B-00843	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	3		STD		P66B-00844	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	

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ORIFICE FLANGE (FO)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
200	4		STD		P66B-00845	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	6		STD		P66B-00846	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	8		SCH20		P66B-00847	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	10		SCH30		P66B-00874	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	12		STD		P66B-008A4	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	14		STD		P66B-008A5	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71B-000B1	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	0.75				P71B-000B2	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	1				P71B-000B3	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71B-000B4	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	2				P71B-000B6	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	3				P71B-000B7	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	4				P71B-000B8	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	6				P71B-000B9	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	8				P71B-000BA	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	10				P71B-000B5	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	12				P71B-000BB	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	

PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000FA	Paddle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	16				P72B-000FB	Paddle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	18				P72B-000FC	Paddle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	20				P72B-000FD	Paddle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	24				P72B-000FE	Paddle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	

PADDLE SPACER (PS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000FG	Paddle spacer ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	16				P72B-000FH	Paddle spacer ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	18				P72B-000FJ	Paddle spacer ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	20				P72B-000FK	Paddle spacer ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	24				P72B-000FL	Paddle spacer ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	

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BOLT TABLE (B_B1AH04 , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-003V4		
0.75	4	0.625	75	P80S-003XC		
1	4	0.625	80	P80S-003XD		
1.5	4	0.750	95	P80S-00414		
2	8	0.625	90	P80S-003XF		
3	8	0.750	110	P80S-003XK		
4	8	0.750	115	P80S-003XL		
6	12	0.750	125	P80S-003XN		
8	12	0.875	140	P80S-0041D		
10	16	1.000	160	P80S-0043K		
12	16	1.125	175	P80S-0046S		
14	20	1.125	180	P80S-0046T		
16	20	1.250	190	P80S-004AK		
18	24	1.250	200	P80S-004AM		
20	24	1.250	210	P80S-004AP		
24	24	1.500	235	P80S-003F8		

BOLT TABLE (B_B1AH04_781 , STUD ASME RF, OPTION CODE 781)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	80	P80S-003V6		
0.75	4	0.625	90	P80S-003XF		
1	4	0.625	95	P80S-003XG		
1.5	4	0.750	110	P80S-003XK		
2	8	0.625	110	P80S-003VC		
3	8	0.750	130	P80S-003XP		
4	8	0.875	150	P80S-0041F		
6	12	1.000	175	P80S-0043P		
8	12	1.125	195	P80S-0046W		
10	16	1.250	250	P80S-004AY		
12	20	1.250	255	P80S-004AZ		
14	20	1.375	270	P80S-003E7		
16	20	1.500	295	P80S-003FL		
18	20	1.625	320	P80S-005TT		
20	24	1.625	335	P80S-005TW		
24	24	1.875	380	P80S-008P4		

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BRANCH TABLE (T_B1AH04)

RUN PIPE SIZE (in) \ BRANCH SIZE (in)	0.5	0.75	1	1.5	2	3	4	6	8	10	12	14	16	18	20	24
0.5	TS															
0.75		TS														
1		TR	TS													
1.5		TR	TR	TS												
2		L	TR	TR	TS											
3		L	L	TR	TR	TS										
4	L	L	L	L	TR	TR	TS									
6	L	L	L	L	L	TR	TR	TS								
8		L	L	L	L	L	TR	TR	TS							
10		L	L	L	L	L	TR	TR	TR	TS						
12		L	L	L	L	L	L	TR	TR	TR	TS					
14		L	L	L	L	L	L	TR	TR	TR	TR	TS				
16		L	L	L	L	L	L	TR	TR	TR	TR	TR	TS			
18		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TS		
20		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TR	TS	
24		L	L	L	L	L	L	L	9PD	TR	TR	TR	TR	TR	TR	TS

L : OUTLET
TR : REDUCING TEE
9PD : REINFORCING PAD 90 DEG
TS : STRAIGHT TEE

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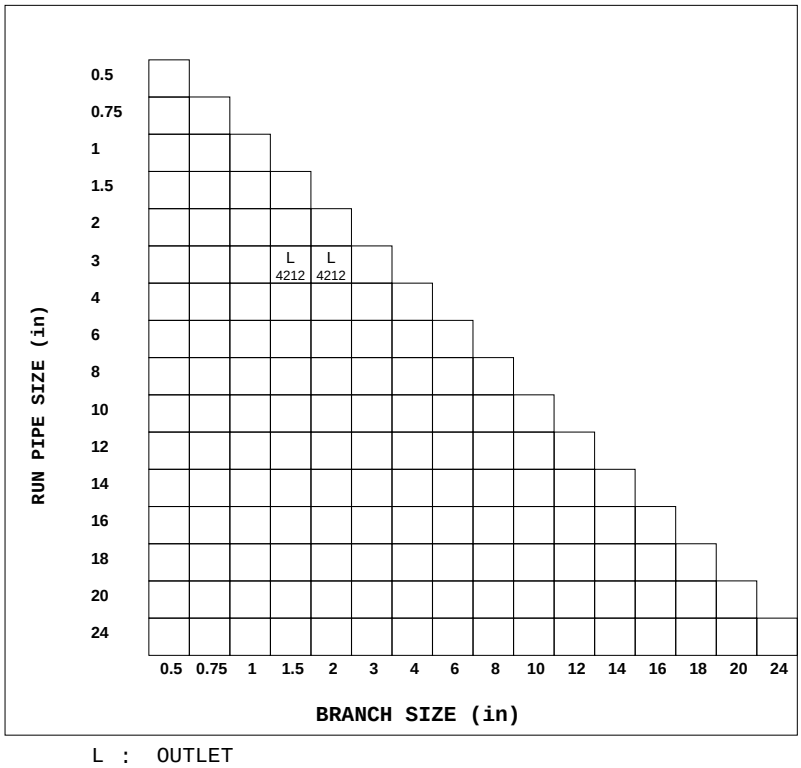
BRANCH TABLE (T_B1AH04_4)



L : OUTLET

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01-SEP-2014

PIPING CLASS

B1AP REV NO. 2

Material	:	Killed CS
Rating	:	ASME CLASS 300
Flange Face	:	RF
C.A.(mm)	:	1.50
Gasket	:	Spiral Wound
Service	:	PROCESS - NON SOUR, NON CORROSIVE: / DESALTED CRUDE / KEROSENE / AGO / NAPHTHA STABILISER BOTTOMS / C4 LPG / SOUR LPG / FLASHED CRUDE / DEETHANISER / DIESEL PRODUCT / AGO AND HAGO PRODUCT AFTER COOLER / SWEET LPG / HYDROCARBONS / HGU PROCESS / NITROGEN /
Design Code	:	ASME B31.3
Heat Treatment	:	

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
2	USE OF SOFT SEATED BALL, PLUG AND BUTTERFLY VALVES SHALL BE LIMITED TO MAXIMUM OF 204DEGC (400DEGF)

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
24	FULL PORT (Q)
200	WITH JACK SCREW (FO)
541	NPT(F) (CA,L)
714	SW - NPT(F) (V)
781	CLASS 600 (B,F,G)
4602	DISSIMILAR TYPE CHECK VALVE (XDP)

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PIPING CLASS
B1AP REV NO. 2

PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P01A-000XM	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	0.75		XS		P01A-000XN	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1		XS		P01A-000XP	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1.5		XS		P01A-000XV	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	2		XS		P01A-000YX	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	3		STD		P01A-000YM	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	4		STD		P01A-000YU	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	6		STD		P01A-000Z3	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	8		SCH20		P01A-001AT	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	10		SCH30		P01A-0016U	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	12		STD		P01A-000XT	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	14		STD		P01A-000Y1	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	16		STD		P01A-000Y9	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	18		STD		P01A-0042F	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE	
1	20		STD		P01A-0042G	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE	
1	24		STD		P01A-0042H	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE	
1	30		SCH10		P01A-0078N	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE	
1	36		STD		P01A-00439	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P02B-00014	90 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	0.75				P02B-00015	90 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	1				P02B-00016	90 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5				P02B-00017	90 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	2		XS		P02A-000CP	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		STD		P02A-000CU	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		STD		P02A-000CZ	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		STD		P02A-000D6	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		SCH20		P02A-000GZ	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	10		SCH30		P02A-000M3	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	12		STD		P02A-000BZ	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	14		STD		P02A-000C8	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	16		STD		P02A-000CH	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	18		STD		P02A-0010H	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	20		STD		P02A-0010J	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	24		STD		P02A-0010K	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	30		SCH10		P02A-0017Y	90 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius	
1	36		STD		P02A-001GL	90 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P03B-00017	45 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	0.75				P03B-00018	45 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	1				P03B-00019	45 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5				P03B-0001A	45 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	2		XS		P03A-000AS	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		STD		P03A-000AX	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		STD		P03A-000B1	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		STD		P03A-000B9	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		SCH20		P03A-000EX	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	10		SCH30		P03A-000JT	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	12		STD		P03A-000A9	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	14		STD		P03A-000AG	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	16		STD		P03A-000AM	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	18		STD		P03A-000X0	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	20		STD		P03A-000X1	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	24		STD		P03A-000X2	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	30		SCH10		P03A-0013X	45 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius	

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45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	36		STD		P03A-001BS	45 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P21B-00017	Straight tee ASTM A105 Class 3000 ASME B16.11 SW	
1	0.75				P21B-00018	Straight tee ASTM A105 Class 3000 ASME B16.11 SW	
1	1				P21B-00019	Straight tee ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5				P21B-0001A	Straight tee ASTM A105 Class 3000 ASME B16.11 SW	
1	2		XS		P21A-001CJ	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		STD		P21A-001CU	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		STD		P21A-001CW	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6		STD		P21A-001D2	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8		SCH20		P21A-00215	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10		SCH30		P21A-00259	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12		STD		P21A-001C1	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14		STD		P21A-001C8	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16		STD		P21A-001CD	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18		STD		P21A-001BW	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20		STD		P21A-001C7	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24		STD		P21A-001CC	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30		SCH10		P21A-001Y7	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	36		STD		P21A-001G4	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75			P24B-0002L	Reducing tee ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5	0.75			P24B-0002N	Reducing tee ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5	1			P24B-0002P	Reducing tee ASTM A105 Class 3000 ASME B16.11 SW	
1	2	1	XS	XS	P24A-00238	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	XS	XS	P24A-0023H	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	STD	XS	P24A-00214	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	STD	XS	P24A-002HW	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P24A-002HY	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P24A-0021K	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	STD	P24A-0021A	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P24A-00229	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH20	STD	P24A-00J21	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH20	STD	P24A-005J4	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	SCH30	STD	P24A-00GNR	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	SCH30	STD	P24A-0060W	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	SCH30	SCH20	P24A-005KE	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	STD	STD	P24A-0022S	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	STD	SCH20	P24A-0060X	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	STD	SCH30	P24A-0060K	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	STD	STD	P24A-0026N	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	STD	SCH20	P24A-00KSG	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	STD	SCH30	P24A-0060L	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	STD	STD	P24A-0022R	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	6	STD	STD	P24A-001ZC	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	STD	SCH20	P24A-00L3W	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	STD	SCH30	P24A-00N27	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	STD	STD	P24A-001Y9	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	STD	STD	P24A-001Z4	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	8	STD	SCH20	P24A-003XU	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	10	STD	SCH30	P24A-00BFR	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	12	STD	STD	P24A-004U7	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	14	STD	STD	P24A-004SP	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	16	STD	STD	P24A-004VA	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	8	STD	SCH20	P24A-00K0N	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	

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REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	20	10	STD	SCH30	P24A-00BT8	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	12	STD	STD	P24A-004W2	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	14	STD	STD	P24A-004U1	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	16	STD	STD	P24A-004SF	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	18	STD	STD	P24A-004VE	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	10	STD	SCH30	P24A-00C5X	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	12	STD	STD	P24A-004UC	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	14	STD	STD	P24A-004T3	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	16	STD	STD	P24A-004VY	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	18	STD	STD	P24A-004U5	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	20	STD	STD	P24A-004SV	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	10	SCH10	SCH30	P24A-00L4F	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	12	SCH10	STD	P24A-00L4G	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	14	SCH10	STD	P24A-00D0E	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	16	SCH10	STD	P24A-00D2A	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	18	SCH10	STD	P24A-00770	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	20	SCH10	STD	P24A-008EE	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	24	SCH10	STD	P24A-00D89	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	36	16	STD	STD	P24A-00DRC	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	36	18	STD	STD	P24A-00DSL	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	36	20	STD	STD	P24A-0087K	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	36	24	STD	STD	P24A-00DVT	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	36	30	STD	SCH10	P24A-007KA	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	STD	XS	P27A-001MZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P27A-001N0	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P27A-00189	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	STD	P27A-001AZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P27A-001GW	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH20	STD	P27A-003K2	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH20	STD	P27A-003K3	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	SCH30	STD	P27A-003MK	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	SCH30	STD	P27A-003ML	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	SCH30	SCH20	P27A-003MM	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	STD	STD	P27A-0018X	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	STD	SCH20	P27A-0041Y	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	STD	SCH30	P27A-0041H	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	STD	STD	P27A-0019L	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	STD	SCH20	P27A-003MC	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	STD	SCH30	P27A-003MB	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	STD	STD	P27A-0018W	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	STD	SCH20	P27A-0059V	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	STD	SCH30	P27A-0054N	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	STD	STD	P27A-0019G	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	STD	STD	P27A-001A7	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	10	STD	SCH30	P27A-0082J	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	12	STD	STD	P27A-00192	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	14	STD	STD	P27A-001AB	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	16	STD	STD	P27A-001B2	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	12	STD	STD	P27A-0018G	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	14	STD	STD	P27A-0019K	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	16	STD	STD	P27A-001AD	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	18	STD	STD	P27A-001B1	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	16	STD	STD	P27A-0018C	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	18	STD	STD	P27A-00190	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	20	STD	STD	P27A-001A8	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	20	SCH10	STD	P27A-009HM	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	

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PIPING CLASS
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CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	30	24	SCH10	STD	P27A-00EKM	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	36	24	STD	STD	P27A-00BGR	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	36	30	STD	SCH10	P27A-008W4	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	STD	XS	P28A-001N5	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P28A-001N6	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P28A-0018B	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	STD	P28A-001AS	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P28A-00182	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH20	STD	P28A-003JU	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH20	STD	P28A-003JV	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	SCH30	STD	P28A-003MD	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	SCH30	STD	P28A-003ME	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	SCH30	SCH20	P28A-003MF	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	STD	STD	P28A-00191	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	STD	SCH20	P28A-0041S	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	STD	SCH30	P28A-0041B	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	STD	STD	P28A-0019R	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	STD	SCH20	P28A-003M6	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	STD	SCH30	P28A-003M5	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	STD	STD	P28A-0018Z	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	STD	SCH20	P28A-00CHM	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	STD	SCH30	P28A-00E3U	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	STD	STD	P28A-0019N	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	STD	STD	P28A-001AC	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	10	STD	SCH30	P28A-004SG	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	12	STD	STD	P28A-001A5	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	14	STD	STD	P28A-001AX	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	16	STD	STD	P28A-001BY	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	12	STD	STD	P28A-0018X	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	14	STD	STD	P28A-001A8	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	16	STD	STD	P28A-001AY	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	18	STD	STD	P28A-001BW	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	16	STD	STD	P28A-0018K	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	18	STD	STD	P28A-0019K	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	20	STD	STD	P28A-001AW	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	20	SCH10	STD	P28A-0069X	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	24	SCH10	STD	P28A-00BP7	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	36	24	STD	STD	P28A-008FS	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	36	30	STD	SCH10	P28A-005LP	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P29B-0001J	Cap ASTM A105 Class 3000 ASME B16.11 SW	
1	0.75				P29B-0001F	Cap ASTM A105 Class 3000 ASME B16.11 SW	
1	1				P29B-0001G	Cap ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5				P29B-0001H	Cap ASTM A105 Class 3000 ASME B16.11 SW	
1	2		XS		P29A-000A1	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		STD		P29A-000BK	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		STD		P29A-000A3	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6		STD		P29A-000A9	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8		SCH20		P29A-000EY	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10		SCH30		P29A-000K7	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12		STD		P29A-000A7	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14		STD		P29A-000AJ	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16		STD		P29A-000AR	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18		STD		P29A-000AU	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	20		STD		P29A-000B2	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24		STD		P29A-000B8	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	30		SCH10		P29A-0013C	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	36		STD		P29A-001AF	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
541	0.75				P29B-0000C	Cap ASTM A105 Class 3000 ASME B16.11 NPT	
541	1				P29B-0000D	Cap ASTM A105 Class 3000 ASME B16.11 NPT	
541	1.5				P29B-0000E	Cap ASTM A105 Class 3000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P41A-000B5	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		SCH160		P41A-000B6	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		SCH160		P41A-000B7	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		SCH160		P41A-000B8	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

CON SWAGED NIPPLE (SNC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	XS	XS	P42A-00036	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	XS	XS	P42A-00038	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	XS	XS	P42A-0003B	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	XS	XS	P42A-00035	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	XS	XS	P42A-00039	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	XS	XS	P42A-0003C	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	XS	XS	P42A-0008C	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	XS	XS	P42A-0008D	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	XS	XS	P42A-0008E	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	XS	XS	P42A-0008F	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	STD	XS	P42A-0007V	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	

ECC SWAGED NIPPLE (SNE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	XS	XS	P43A-00036	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	XS	XS	P43A-00037	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	XS	XS	P43A-00038	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	XS	XS	P43A-00039	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	XS	XS	P43A-0003A	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	XS	XS	P43A-0003B	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	XS	XS	P43A-00042	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	XS	XS	P43A-00043	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	XS	XS	P43A-00044	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	XS	XS	P43A-00045	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	STD	XS	P43A-0003J	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	

COUPLING (CPS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P47B-0001D	Coupling ASTM A105 Class 3000 ASME B16.11 SW - SW	
1	0.75				P47B-0001E	Coupling ASTM A105 Class 3000 ASME B16.11 SW - SW	
1	1				P47B-0001F	Coupling ASTM A105 Class 3000 ASME B16.11 SW - SW	
1	1.5				P47B-0001G	Coupling ASTM A105 Class 3000 ASME B16.11 SW - SW	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2 - 2.5	0.75			P31B-0137J	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	3 - 5	0.75			P31B-0137K	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	6 - 12	0.75			P31B-007AB	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	14 - 36	0.75			P31B-007AJ	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	3	1			P31B-007A7	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	4 - 5	1			P31B-0138Z	Outlet ASTM A105 Class 3000 MSS SP-97 SW	

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OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	6 - 10	1			P31B-007A4	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	12 - 36	1			P31B-007AA	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	4	1.5			P31B-005SN	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	5 - 6	1.5			P31B-01390	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	8 - 12	1.5			P31B-0079U	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	14 - 24	1.5			P31B-007A0	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	26 - 36	1.5			P31B-01391	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
541	1	0.75			P31B-00551	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
541	1.5	0.75			P31B-00555	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
541	2 - 2.5	0.75			P31B-0137H	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
541	3 - 5	0.75			P31B-01376	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
541	6 - 12	0.75			P31B-007GR	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
541	14 - 36	0.75			P31B-007GY	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
1	6	2	STD	XS	P31B-007SH	Outlet ASTM A105 MSS SP-97 BW	
1	8	2	SCH20	XS	P31B-00NY2	Outlet ASTM A105 MSS SP-97 BW	
1	10	2	SCH30	XS	P31B-00NVF	Outlet ASTM A105 MSS SP-97 BW	
1	12	2	STD	XS	P31B-00CBN	Outlet ASTM A105 MSS SP-97 BW	
1	14	2	STD	XS	P31B-00CAE	Outlet ASTM A105 MSS SP-97 BW	
1	16	2	STD	XS	P31B-00C1T	Outlet ASTM A105 MSS SP-97 BW	
1	18	2	STD	XS	P31B-009FJ	Outlet ASTM A105 MSS SP-97 BW	
1	20	2	STD	XS	P31B-00994	Outlet ASTM A105 MSS SP-97 BW	
1	24	2	STD	XS	P31B-0092Z	Outlet ASTM A105 MSS SP-97 BW	
1	30	2	SCH10	XS	P31B-00PJF	Outlet ASTM A105 MSS SP-97 BW	
1	36	2	STD	XS	P31B-00NX8	Outlet ASTM A105 MSS SP-97 BW	
1	8	3	SCH20	STD	P31B-00P11	Outlet ASTM A105 MSS SP-97 BW	
1	10	3	SCH30	STD	P31B-00NYK	Outlet ASTM A105 MSS SP-97 BW	
1	12	3	STD	STD	P31B-0096N	Outlet ASTM A105 MSS SP-97 BW	
1	14	3	STD	STD	P31B-0090T	Outlet ASTM A105 MSS SP-97 BW	
1	16	3	STD	STD	P31B-008UN	Outlet ASTM A105 MSS SP-97 BW	
1	18	3	STD	STD	P31B-008MK	Outlet ASTM A105 MSS SP-97 BW	
1	20	3	STD	STD	P31B-008FA	Outlet ASTM A105 MSS SP-97 BW	
1	24	3	STD	STD	P31B-00895	Outlet ASTM A105 MSS SP-97 BW	
1	30	3	SCH10	STD	P31B-00PJG	Outlet ASTM A105 MSS SP-97 BW	
1	36	3	STD	STD	P31B-007P2	Outlet ASTM A105 MSS SP-97 BW	
1	12	4	STD	STD	P31B-008ZW	Outlet ASTM A105 MSS SP-97 BW	
1	14	4	STD	STD	P31B-008YM	Outlet ASTM A105 MSS SP-97 BW	
1	16	4	STD	STD	P31B-008SH	Outlet ASTM A105 MSS SP-97 BW	
1	18	4	STD	STD	P31B-008KB	Outlet ASTM A105 MSS SP-97 BW	
1	20	4	STD	STD	P31B-008D3	Outlet ASTM A105 MSS SP-97 BW	
1	24	4	STD	STD	P31B-0086X	Outlet ASTM A105 MSS SP-97 BW	
1	30	4	SCH10	STD	P31B-00PJH	Outlet ASTM A105 MSS SP-97 BW	
1	36	4	STD	STD	P31B-00AER	Outlet ASTM A105 MSS SP-97 BW	
1	18	6	STD	STD	P31B-008RX	Outlet ASTM A105 MSS SP-97 BW	
1	20	6	STD	STD	P31B-008PZ	Outlet ASTM A105 MSS SP-97 BW	
1	24	6	STD	STD	P31B-008JD	Outlet ASTM A105 MSS SP-97 BW	
1	30	6	SCH10	STD	P31B-00PJJ	Outlet ASTM A105 MSS SP-97 BW	
1	36	6	STD	STD	P31B-0085H	Outlet ASTM A105 MSS SP-97 BW	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30B-0002D	Plug ASTM A105 ASME B16.11 NPT Round head	
1	0.75				P30B-0002E	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1				P30B-0002F	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1.5				P30B-0002G	Plug ASTM A105 ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P61B-001HC	Flange SW ASTM A105 Class 300 ASME B16.5 RF	
1	0.75		XS		P61B-001HS	Flange SW ASTM A105 Class 300 ASME B16.5 RF	

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FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		XS		P61B-001EF	Flange SW ASTM A105 Class 300 ASME B16.5 RF	
1	1.5		XS		P61B-001F2	Flange SW ASTM A105 Class 300 ASME B16.5 RF	
1	2		XS		P61B-001HW	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	3		STD		P61B-001LJ	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	4		STD		P61B-001MC	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	6		STD		P61B-001N2	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	8		SCH20		P61B-002LJ	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	10		SCH30		P61B-003LX	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	12		STD		P61B-001LE	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	14		STD		P61B-001M9	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	16		STD		P61B-001MH	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	18		STD		P61B-001N9	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	20		STD		P61B-001NT	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	24		STD		P61B-001PA	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	30		SCH10		P61B-004R8	Flange WN ASTM A105 Class 300 ASME B16.47 Series B RF	
1	36		STD		P61B-004RB	Flange WN ASTM A105 Class 300 ASME B16.47 Series B RF	
781	0.5		XS		P61B-001FF	Flange SW ASTM A105 Class 600 ASME B16.5 RF	
781	0.75		XS		P61B-001FH	Flange SW ASTM A105 Class 600 ASME B16.5 RF	
781	1		XS		P61B-001DR	Flange SW ASTM A105 Class 600 ASME B16.5 RF	
781	1.5		XS		P61B-001DV	Flange SW ASTM A105 Class 600 ASME B16.5 RF	
781	2		XS		P61B-001DH	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	3		STD		P61B-001TW	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	4		STD		P61B-001VV	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	6		STD		P61B-001JW	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	8		SCH20		P61B-003F0	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	10		SCH30		P61B-003TN	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	12		STD		P61B-001P9	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	14		STD		P61B-001PL	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	16		STD		P61B-003FB	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	18		STD		P61B-003FA	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	20		STD		P61B-003GP	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	24		STD		P61B-003GM	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	30		SCH10		P61B-00ABF	Flange WN ASTM A105 Class 600 ASME B16.47 Series B RF	
781	36		STD		P61B-00BUJ	Flange WN ASTM A105 Class 600 ASME B16.47 Series B RF	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67B-000GH	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	0.75				P67B-000GJ	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	1				P67B-000GK	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	1.5				P67B-000GL	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	2				P67B-000GM	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	3				P67B-000GN	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	4				P67B-000GP	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	6				P67B-000GY	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	8				P67B-000GZ	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	10				P67B-000GR	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	12				P67B-000GS	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	14				P67B-000GT	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	16				P67B-000GU	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	18				P67B-000GV	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	20				P67B-000GW	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	24				P67B-000GX	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	30				P67B-000H2	Blind flange ASTM A105 Class 300 ASME B16.47 Series B RF	
1	36				P67B-000H5	Blind flange ASTM A105 Class 300 ASME B16.47 Series B RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000FT	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

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GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75				P73T-000FU	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000G5	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000G6	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	6				P73T-000G7	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	8				P73T-000G8	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	10				P73T-000FX	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	12				P73T-000FY	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	14				P73T-000FZ	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	16				P73T-000G0	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	18				P73T-000G1	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	20				P73T-000G3	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	24				P73T-000G4	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	30				P73T-000H9	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	36				P73T-000HC	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	0.5				P73T-000J8	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	0.75				P73T-000J9	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1				P73T-000JA	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1.5				P73T-000JB	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	2				P73T-000JH	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	3				P73T-000JL	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	4				P73T-000JM	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	6				P73T-000JN	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	8				P73T-000JP	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	10				P73T-000JC	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	12				P73T-000JD	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	14				P73T-000JE	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	16				P73T-000JF	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	18				P73T-000JG	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	20				P73T-000JJ	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	24				P73T-000JK	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	30				P73T-000JT	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	36				P73T-000JW	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-10				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	12-36				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
781	0.5-6				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
781	8-36				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	

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GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81B-000P4	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	0.75				P81B-000NX	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	1				P81B-000NY	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	1.5				P81B-000NZ	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	2				P81C-002D6	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	3				P81C-002D7	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	4				P81C-002D8	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	6				P81C-002D9	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	8				P81C-0086V	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated	
1	10				P81C-002DB	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated	
1	12				P81C-002DC	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated	
1	14				P81C-0034H	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated	
1	16				P81C-002DD	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated	
1	18				P81C-002DE	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated	
1	20				P81C-002DF	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated	
1	24				P81C-002DG	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated	
1	30				P81C-004H1	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.47-B RF Trim number 8 BB-BG-OS&Y Gear operated	
1	36				P81C-004HX	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.47-B RF Trim number 8 BB-BG-OS&Y Gear operated	
714	0.5				P81B-0015L	Gate valve ASTM A105 Class 800 API 602 SW - NPT Trim number 8 BB-BG-OS&Y Handwheel operated	
714	0.75				P81B-002F4	Gate valve ASTM A105 Class 800 API 602 SW - NPT Trim number 8 BB-BG-OS&Y Handwheel operated	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82B-000K0	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	0.75				P82B-000HB	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	1				P82B-000HC	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	1.5				P82B-000HD	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	2				P82C-00114	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	3				P82C-00115	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	4				P82C-00116	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	6				P82C-00117	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	8				P82C-0011A	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83B-000FX	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover	
1	0.75				P83B-000ER	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover	
1	1				P83B-000ES	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover	
1	1.5				P83B-000ET	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover	
1	2				P83C-0013H	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	3				P83C-0013L	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	4				P83C-0013M	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	6				P83C-0013N	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	8				P83C-0013P	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	10				P83C-0013D	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	12				P83C-0013E	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	14				P83C-0023R	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	16				P83C-0013F	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	18				P83C-0013G	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	

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CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	20				P83C-0013J	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	

DP CHECK VALVE (XDP)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
4602	6				P88C-0035R	Dual plate check valve ASTM A216 Grade WCB Class 300 API 594 Wafer-type ASME B16.5 RF Trim number 8 Internal wetted parts 13Cr Spring Inconel Retainerless-type	

BALL VALVE (Q)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P84B-0012S	Ball valve Long-pattern ASTM A105 Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design	
1	0.75				P84B-0012T	Ball valve Long-pattern ASTM A105 Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design	
1	1				P84B-0012U	Ball valve Long-pattern ASTM A105 Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design	
1	1.5				P84B-0012V	Ball valve Long-pattern ASTM A105 Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design	
1	2				P84C-005VG	Ball valve Long-pattern ASTM A216 Grade WCB Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design	
1	3				P84C-005VH	Ball valve Long-pattern ASTM A216 Grade WCB Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design	
1	4				P84C-005VU	Ball valve Long-pattern ASTM A216 Grade WCB Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Gear operated Reduced bore Fire tested design	
1	6				P84C-005VK	Ball valve Long-pattern ASTM A216 Grade WCB Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Reduced bore Fire tested design	
1	8				P84C-005VL	Ball valve Long-pattern ASTM A216 Grade WCB Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Reduced bore Fire tested design	
1	10				P84C-005VJ	Ball valve Long-pattern ASTM A216 Grade WCB Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Reduced bore Fire tested design	
24	0.5				P84B-0012W	Ball valve Long-pattern ASTM A105 Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	
24	0.75				P84B-0012X	Ball valve Long-pattern ASTM A105 Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	
24	1				P84B-0012Y	Ball valve Long-pattern ASTM A105 Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	
24	1.5				P84B-0012Z	Ball valve Long-pattern ASTM A105 Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	
24	2				P84C-005VM	Ball valve Long-pattern ASTM A216 Grade WCB Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	
24	3				P84C-005VN	Ball valve Long-pattern ASTM A216 Grade WCB Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	
24	4				P84C-005VT	Ball valve Long-pattern ASTM A216 Grade WCB Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Gear operated Full bore Fire tested design	
24	6				P84C-005VR	Ball valve Long-pattern ASTM A216 Grade WCB Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design	
24	8				P84C-005VS	Ball valve Long-pattern ASTM A216 Grade WCB Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design	
24	10				P84C-005VP	Ball valve Long-pattern ASTM A216 Grade WCB Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design	

BUTTERFLY VALVE (H)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	12				P86C-0023G	Offset design butterfly valve ASTM A216 Grade WCB Class 300 API 609 Category B Lug-type ASME B16.5 RF Disc CS Seat Stellite-6 Trim 13Cr Triple eccentric design BG Gear operated	
1	14				P86C-0023H	Offset design butterfly valve ASTM A216 Grade WCB Class 300 API 609 Category B Lug-type ASME B16.5 RF Disc CS Seat Stellite-6 Trim 13Cr Triple eccentric design BG Gear operated	
1	16				P86C-0023J	Offset design butterfly valve ASTM A216 Grade WCB Class 300 API 609 Category B Lug-type ASME B16.5 RF Disc CS Seat Stellite-6 Trim 13Cr Triple eccentric design BG Gear operated	
1	18				P86C-0023K	Offset design butterfly valve ASTM A216 Grade WCB Class 300 API 609 Category B Lug-type ASME B16.5 RF Disc CS Seat Stellite-6 Trim 13Cr Triple eccentric design BG Gear operated	
1	20				P86C-0018M	Offset design butterfly valve ASTM A216 Grade WCB Class 300 API 609 Category B Double flanged ASME B16.5 RF Disc CS Seat Stellite-6 Trim 13Cr Triple eccentric design BG Gear operated	

NEEDLE VALVE (NV)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82B-001JU	Needle valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	

ORIFICE FLANGE (FO)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2		XS		P66B-0084B	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	3		STD		P66B-0084C	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	4		STD		P66B-0084D	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	6		STD		P66B-0084E	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	8		SCH20		P66B-0084F	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	10		SCH30		P66B-0086Z	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	

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ORIFICE FLANGE (FO)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	12		STD		P66B-008A2	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	14		STD		P66B-008A3	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	16		STD		P66B-008C0	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	18		STD		P66B-008K2	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	20		STD		P66B-0084S	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
200	2		XS		P66B-00843	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	3		STD		P66B-00844	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	4		STD		P66B-00845	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	6		STD		P66B-00846	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	8		SCH20		P66B-00847	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	10		SCH30		P66B-00874	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	12		STD		P66B-008A4	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	14		STD		P66B-008A5	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	16		STD		P66B-008C2	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	18		STD		P66B-008K3	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	20		STD		P66B-0084U	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71B-000B1	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	0.75				P71B-000B2	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	1				P71B-000B3	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71B-000B4	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	2				P71B-000B6	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	3				P71B-000B7	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	4				P71B-000B8	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	6				P71B-000B9	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	8				P71B-000BA	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	10				P71B-000B5	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	12				P71B-000BB	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	

PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000FA	Paddle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	16				P72B-000FB	Paddle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	18				P72B-000FC	Paddle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	20				P72B-000FD	Paddle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	24				P72B-000FE	Paddle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	30				P72B-000FF	Paddle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.47-B RF	
1	36				P72B-000M0	Paddle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.47-B RF	

PADDLE SPACER (PS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000FG	Paddle spacer ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	16				P72B-000FH	Paddle spacer ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	18				P72B-000FJ	Paddle spacer ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	20				P72B-000FK	Paddle spacer ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	24				P72B-000FL	Paddle spacer ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	30				P72B-000FM	Paddle spacer ASTM A105 Class 300 Standard-drawing Flange ASME B16.47-B RF	
1	36				P72B-000M3	Paddle spacer ASTM A105 Class 300 Standard-drawing Flange ASME B16.47-B RF	

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BOLT TABLE (B_B1AP , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-003V4		
0.75	4	0.625	75	P80S-003XC		
1	4	0.625	80	P80S-003XD		
1.5	4	0.750	95	P80S-00414		
2	8	0.625	90	P80S-003XF		
3	8	0.750	110	P80S-003XK		
4	8	0.750	115	P80S-003XL		
6	12	0.750	125	P80S-003XN		
8	12	0.875	140	P80S-0041D		
10	16	1.000	160	P80S-0043K		
12	16	1.125	175	P80S-0046S		
14	20	1.125	180	P80S-0046T		
16	20	1.250	190	P80S-004AK		
18	24	1.250	200	P80S-004AM		
20	24	1.250	210	P80S-004AP		
24	24	1.500	235	P80S-003F8		
30	36	1.375	285	P80S-003EA		
36	32	1.625	320	P80S-005TT		

BOLT TABLE (B_B1AP_781 , STUD ASME RF, OPTION CODE 781)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	80	P80S-003V6		
0.75	4	0.625	90	P80S-003XF		
1	4	0.625	95	P80S-003XG		
1.5	4	0.750	110	P80S-003XK		
2	8	0.625	110	P80S-003VC		
3	8	0.750	130	P80S-003XP		
4	8	0.875	150	P80S-0041F		
6	12	1.000	175	P80S-0043P		
8	12	1.125	195	P80S-0046W		
10	16	1.250	250	P80S-004AY		
12	20	1.250	255	P80S-004AZ		
14	20	1.375	270	P80S-003E7		
16	20	1.500	295	P80S-003FL		
18	20	1.625	320	P80S-005TT		
20	24	1.625	335	P80S-005TW		
24	24	1.875	380	P80S-008P4		
30	28	1.875	435	P80S-008PF		
36	28	2.250	510	P80S-00P4E		

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BRANCH TABLE (T_B1AP)

RUN PIPE SIZE (in) \ BRANCH SIZE (in)	0.5	0.75	1	1.5	2	3	4	6	8	10	12	14	16	18	20	24	30	36
0.5	TS																	
0.75		TS																
1		TR	TS															
1.5		TR	TR	TS														
2		L	TR	TR	TS													
3		L	L	TR	TR	TS												
4	L	L	L	L	TR	TR	TS											
6	L	L	L	L	L	TR	TR	TS										
8		L	L	L	L	L	TR	TR	TS									
10		L	L	L	L	L	TR	TR	TR	TS								
12		L	L	L	L	L	L	TR	TR	TR	TS							
14		L	L	L	L	L	L	TR	TR	TR	TR	TS						
16		L	L	L	L	L	L	TR	TR	TR	TR	TR	TS					
18		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TS				
20		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TR	TS			
24		L	L	L	L	L	L	L	9PD	TR	TR	TR	TR	TR	TR	TS		
30		L	L	L	L	L	L	L	9PD	TR	TR	TR	TR	TR	TR	TR	TS	
36		L	L	L	L	L	L	L	9PD	9PD	9PD	9PD	TR	TR	TR	TR	TR	TS

L : OUTLET
TR : REDUCING TEE
9PD : REINFORCING PAD 90 DEG
TS : STRAIGHT TEE

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PIPING CLASS

B1AP01 REV NO. 2

Material : Killed CS
Rating : ASME CLASS 300
Flange Face : RF
C.A.(mm) : 1.50
Gasket : Spiral Wound
Service : PROCESS - GENERAL PROCESS NON SOUR, NON CORROSIVE
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
2	USE OF SOFT SEATED BALL, PLUG AND BUTTERFLY VALVES SHALL BE LIMITED TO MAXIMUM OF 204DEGC (400DEGF)

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
24	FULL PORT (Q)
200	WITH JACK SCREW (FO)
541	NPT(F) (CA,L)
714	SW - NPT(F) (V)
781	CLASS 600 (B,F,G)
4602	DISSIMILAR TYPE CHECK VALVE (XDP)

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PIPING CLASS
B1AP01 REV NO. 2

PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P01A-007AZ	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE Licensor-1	
1	0.75		XS		P01A-007B0	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE Licensor-1	
1	1		XS		P01A-007B1	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE Licensor-1	
1	1.5		XS		P01A-007B2	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE Licensor-1	
1	2		XS		P01A-0078Y	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Licensor-1	
1	3		STD		P01A-0078Z	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Licensor-1	
1	4		STD		P01A-007B3	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Licensor-1	
1	6		STD		P01A-007B8	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Licensor-1	
1	8		SCH20		P01A-007B9	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Licensor-1	
1	10		SCH30		P01A-007GE	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Licensor-1	
1	12		STD		P01A-007GF	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Licensor-1	
1	14		STD		P01A-007SF	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Licensor-1	
1	16		SCH20		P01A-007B7	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Licensor-1	
1	18		SCH20		P01A-007BA	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE Licensor-1	
1	20		STD		P01A-007BB	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE Licensor-1	
1	24		STD		P01A-007BC	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE Licensor-1	
1	30		STD		P01A-007TY	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE Licensor-1	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P02B-0007G	90 degree elbow ASTM A105 Class 3000 ASME B16.11 SW Licensor-1	
1	0.75				P02B-0007H	90 degree elbow ASTM A105 Class 3000 ASME B16.11 SW Licensor-1	
1	1				P02B-0007J	90 degree elbow ASTM A105 Class 3000 ASME B16.11 SW Licensor-1	
1	1.5				P02B-0007K	90 degree elbow ASTM A105 Class 3000 ASME B16.11 SW Licensor-1	
1	2		XS		P02A-003R7	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	3		STD		P02A-003R8	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	4		STD		P02A-003T8	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	6		STD		P02A-003TG	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	8		SCH20		P02A-003TH	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	10		SCH30		P02A-003YN	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	12		STD		P02A-003YP	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	14		STD		P02A-00458	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	16		SCH20		P02A-003TC	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	18		SCH20		P02A-003TD	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	20		STD		P02A-003TE	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	24		STD		P02A-003TF	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	30		STD		P02A-0045P	90 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius Licensor-1	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P03B-00074	45 degree elbow ASTM A105 Class 3000 ASME B16.11 SW Licensor-1	
1	0.75				P03B-00075	45 degree elbow ASTM A105 Class 3000 ASME B16.11 SW Licensor-1	
1	1				P03B-00076	45 degree elbow ASTM A105 Class 3000 ASME B16.11 SW Licensor-1	
1	1.5				P03B-00077	45 degree elbow ASTM A105 Class 3000 ASME B16.11 SW Licensor-1	
1	2		XS		P03A-003MW	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	3		STD		P03A-003MX	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	4		STD		P03A-003PX	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	6		STD		P03A-003R5	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	8		SCH20		P03A-003R6	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	10		SCH30		P03A-003WB	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	12		STD		P03A-003WC	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	14		STD		P03A-0042X	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	16		SCH20		P03A-003R1	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	18		SCH20		P03A-003R2	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	20		STD		P03A-003R3	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	24		STD		P03A-003R4	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	30		STD		P03A-0043A	45 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius Licensor-1	

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STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P21B-00074	Straight tee ASTM A105 Class 3000 ASME B16.11 SW Licensor-1	
1	0.75				P21B-00075	Straight tee ASTM A105 Class 3000 ASME B16.11 SW Licensor-1	
1	1				P21B-00076	Straight tee ASTM A105 Class 3000 ASME B16.11 SW Licensor-1	
1	1.5				P21B-00077	Straight tee ASTM A105 Class 3000 ASME B16.11 SW Licensor-1	
1	2		XS		P21A-0048L	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	3		STD		P21A-0048M	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	4		STD		P21A-004AL	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	6		STD		P21A-004AS	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	8		SCH20		P21A-004AT	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	10		SCH30		P21A-004FY	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	12		STD		P21A-004FZ	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	14		STD		P21A-004N5	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	16		SCH20		P21A-004AR	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	18		SCH20		P21A-004AU	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	20		STD		P21A-004AV	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	24		STD		P21A-004AW	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	30		STD		P21A-004NG	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75			P24B-000BZ	Reducing tee ASTM A105 Class 3000 ASME B16.11 SW Licensor-1	
1	1.5	0.75			P24B-000C0	Reducing tee ASTM A105 Class 3000 ASME B16.11 SW Licensor-1	
1	1.5	1			P24B-000C1	Reducing tee ASTM A105 Class 3000 ASME B16.11 SW Licensor-1	
1	2	1	XS	XS	P24A-00K5U	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	2	1.5	XS	XS	P24A-00K5V	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	3	1.5	STD	XS	P24A-00K5W	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	3	2	STD	XS	P24A-00K0Y	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	4	2	STD	XS	P24A-00K5X	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	4	3	STD	STD	P24A-00K5Y	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	6	3	STD	STD	P24A-00K64	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	6	4	STD	STD	P24A-00K65	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	8	4	SCH20	STD	P24A-00K66	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	8	6	SCH20	STD	P24A-00K67	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	10	4	SCH30	STD	P24A-00KSJ	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	10	6	SCH30	STD	P24A-00KSK	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	10	8	SCH30	SCH20	P24A-00KSL	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	12	6	STD	STD	P24A-00KSN	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	12	8	STD	SCH20	P24A-00KSP	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	12	10	STD	SCH30	P24A-00KSM	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	14	6	STD	STD	P24A-00M0R	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	14	8	STD	SCH20	P24A-00M0S	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	14	10	STD	SCH30	P24A-00M0N	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	14	12	STD	STD	P24A-00M0P	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	16	6	SCH20	STD	P24A-00K6M	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	16	8	SCH20	SCH20	P24A-00K6N	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	16	10	SCH20	SCH30	P24A-00KST	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	16	12	SCH20	STD	P24A-00KSU	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	16	14	SCH20	STD	P24A-00M0T	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	18	8	SCH20	SCH20	P24A-00K6U	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	18	10	SCH20	SCH30	P24A-00KSV	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	18	12	SCH20	STD	P24A-00KSW	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	18	14	SCH20	STD	P24A-00M0U	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	18	16	SCH20	SCH20	P24A-00K6T	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	20	8	STD	SCH20	P24A-00K70	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	20	10	STD	SCH30	P24A-00KSY	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	20	12	STD	STD	P24A-00KSZ	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	20	14	STD	STD	P24A-00M0V	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	20	16	STD	SCH20	P24A-00K6Y	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	20	18	STD	SCH20	P24A-00K6Z	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	

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REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	24	10	STD	SCH30	P24A-00KT1	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	24	12	STD	STD	P24A-00KT2	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	24	14	STD	STD	P24A-00M0W	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	24	16	STD	SCH20	P24A-00K73	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	24	18	STD	SCH20	P24A-00K74	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	24	20	STD	STD	P24A-00K75	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	30	10	STD	SCH30	P24A-00NET	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	30	12	STD	STD	P24A-00NEU	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	30	14	STD	STD	P24A-00NEV	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	30	16	STD	SCH20	P24A-00M4L	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	30	18	STD	SCH20	P24A-00M4M	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	30	20	STD	STD	P24A-00M4N	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	30	24	STD	STD	P24A-00M4P	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	STD	XS	P27A-00EL1	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	4	2	STD	XS	P27A-00ES5	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	4	3	STD	STD	P27A-00ES6	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	6	3	STD	STD	P27A-00ES9	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	6	4	STD	STD	P27A-00ESA	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	8	4	SCH20	STD	P27A-00ESB	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	8	6	SCH20	STD	P27A-00ESC	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	10	4	SCH30	STD	P27A-00F7C	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	10	6	SCH30	STD	P27A-00F7D	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	10	8	SCH30	SCH20	P27A-00F7E	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	12	6	STD	STD	P27A-00F7G	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	12	8	STD	SCH20	P27A-00F7H	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	12	10	STD	SCH30	P27A-00F7F	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	14	6	STD	STD	P27A-00G2P	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	14	8	STD	SCH20	P27A-00G2R	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	14	10	STD	SCH30	P27A-00G2M	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	14	12	STD	STD	P27A-00G2N	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	16	8	SCH20	SCH20	P27A-00EST	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	16	10	SCH20	SCH30	P27A-00F7L	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	16	12	SCH20	STD	P27A-00F7M	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	16	14	SCH20	STD	P27A-00G2S	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	18	10	SCH20	SCH30	P27A-00F7P	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	18	12	SCH20	STD	P27A-00F7R	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	18	14	SCH20	STD	P27A-00G2T	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	18	16	SCH20	SCH20	P27A-00ESX	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	20	12	STD	STD	P27A-00F7T	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	20	14	STD	STD	P27A-00G2U	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	20	16	STD	SCH20	P27A-00ET0	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	20	18	STD	SCH20	P27A-00ET1	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	24	16	STD	SCH20	P27A-00ET2	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	24	18	STD	SCH20	P27A-00ET3	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	24	20	STD	STD	P27A-00ET4	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	30	20	STD	STD	P27A-00GKG	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	30	24	STD	STD	P27A-00GKH	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	STD	XS	P28A-00BPS	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	4	2	STD	XS	P28A-00BVZ	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	4	3	STD	STD	P28A-00BW0	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	6	3	STD	STD	P28A-00BW3	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	6	4	STD	STD	P28A-00BW4	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	8	4	SCH20	STD	P28A-00BW5	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	8	6	SCH20	STD	P28A-00BW6	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	10	4	SCH30	STD	P28A-00CBD	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	10	6	SCH30	STD	P28A-00CBE	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	10	8	SCH30	SCH20	P28A-00CBF	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	12	6	STD	STD	P28A-00CBH	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	12	8	STD	SCH20	P28A-00CBJ	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	12	10	STD	SCH30	P28A-00CBG	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	14	6	STD	STD	P28A-00D8Y	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	14	8	STD	SCH20	P28A-00D8Z	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	14	10	STD	SCH30	P28A-00D8W	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	14	12	STD	STD	P28A-00D8X	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	16	8	SCH20	SCH20	P28A-00BWL	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	16	10	SCH20	SCH30	P28A-00CBM	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	16	12	SCH20	STD	P28A-00CBN	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	16	14	SCH20	STD	P28A-00D90	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	18	10	SCH20	SCH30	P28A-00CBR	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	18	12	SCH20	STD	P28A-00CBS	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	18	14	SCH20	STD	P28A-00D91	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	18	16	SCH20	SCH20	P28A-00BWR	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	20	12	STD	STD	P28A-00CBU	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	20	14	STD	STD	P28A-00D92	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	20	16	STD	SCH20	P28A-00BWU	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	20	18	STD	SCH20	P28A-00BWV	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	24	16	STD	SCH20	P28A-00BWW	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	24	18	STD	SCH20	P28A-00BWX	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	24	20	STD	STD	P28A-00BWY	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	30	20	STD	STD	P28A-00DBD	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	30	24	STD	STD	P28A-00DBE	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P29B-0005L	Cap ASTM A105 Class 3000 ASME B16.11 SW Licensor-1	
1	0.75				P29B-0005M	Cap ASTM A105 Class 3000 ASME B16.11 SW Licensor-1	
1	1				P29B-0005N	Cap ASTM A105 Class 3000 ASME B16.11 SW Licensor-1	
1	1.5				P29B-0005P	Cap ASTM A105 Class 3000 ASME B16.11 SW Licensor-1	
1	2		XS		P29A-00326	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	3		STD		P29A-00327	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	4		STD		P29A-0034R	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	6		STD		P29A-00353	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	8		SCH20		P29A-00354	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	10		SCH30		P29A-003B3	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	12		STD		P29A-003B4	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	14		STD		P29A-003G0	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	16		SCH20		P29A-0034V	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	18		SCH20		P29A-0034W	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	20		STD		P29A-0034X	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	24		STD		P29A-0034Y	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	30		STD		P29A-003GG	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
541	0.75				P29B-00067	Cap ASTM A105 Class 3000 ASME B16.11 NPT Licensor-1	
541	1				P29B-0006J	Cap ASTM A105 Class 3000 ASME B16.11 NPT Licensor-1	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P41A-0017A	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Licensor-1	
1	0.75		SCH160		P41A-0017B	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Licensor-1	
1	1		SCH160		P41A-0017C	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Licensor-1	
1	1.5		SCH160		P41A-0017D	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Licensor-1	

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CON SWAGED NIPPLE (SNC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	XS	XS	P42A-000UN	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S) Licensor-1	
1	1	0.5	XS	XS	P42A-000UP	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S) Licensor-1	
1	1	0.75	XS	XS	P42A-000UR	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S) Licensor-1	
1	1.5	0.5	XS	XS	P42A-000US	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S) Licensor-1	
1	1.5	0.75	XS	XS	P42A-000UT	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S) Licensor-1	
1	1.5	1	XS	XS	P42A-000UU	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S) Licensor-1	
1	2	0.5	XS	XS	P42A-000UV	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S) Licensor-1	
1	2	0.75	XS	XS	P42A-000UW	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S) Licensor-1	
1	2	1	XS	XS	P42A-000UX	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S) Licensor-1	
1	2	1.5	XS	XS	P42A-000UY	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S) Licensor-1	
1	3	1.5	STD	XS	P42A-000UZ	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S) Licensor-1	

ECC SWAGED NIPPLE (SNE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	XS	XS	P43A-000KS	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S) Licensor-1	
1	1	0.5	XS	XS	P43A-000KT	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S) Licensor-1	
1	1	0.75	XS	XS	P43A-000KU	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S) Licensor-1	
1	1.5	0.5	XS	XS	P43A-000KV	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S) Licensor-1	
1	1.5	0.75	XS	XS	P43A-000KW	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S) Licensor-1	
1	1.5	1	XS	XS	P43A-000KX	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S) Licensor-1	
1	2	0.5	XS	XS	P43A-000KY	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S) Licensor-1	
1	2	0.75	XS	XS	P43A-000KZ	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S) Licensor-1	
1	2	1	XS	XS	P43A-000L0	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S) Licensor-1	
1	2	1.5	XS	XS	P43A-000L1	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S) Licensor-1	
1	3	1.5	STD	XS	P43A-000L2	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S) Licensor-1	

COUPLING (CPS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P47B-0007V	Coupling ASTM A105 Class 3000 ASME B16.11 SW - SW Licensor-1	
1	0.75				P47B-0007W	Coupling ASTM A105 Class 3000 ASME B16.11 SW - SW Licensor-1	
1	1				P47B-0007X	Coupling ASTM A105 Class 3000 ASME B16.11 SW - SW Licensor-1	
1	1.5				P47B-0007Y	Coupling ASTM A105 Class 3000 ASME B16.11 SW - SW Licensor-1	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2 - 2.5	0.75			P31B-0138H	Outlet ASTM A105 Class 3000 MSS SP-97 SW Licensor-1	
1	3 - 5	0.75			P31B-0138J	Outlet ASTM A105 Class 3000 MSS SP-97 SW Licensor-1	
1	6 - 12	0.75			P31B-0138K	Outlet ASTM A105 Class 3000 MSS SP-97 SW Licensor-1	
1	14 - 36	0.75			P31B-0138L	Outlet ASTM A105 Class 3000 MSS SP-97 SW Licensor-1	
1	3	1			P31B-0138M	Outlet ASTM A105 Class 3000 MSS SP-97 SW Licensor-1	
1	4 - 5	1			P31B-0138N	Outlet ASTM A105 Class 3000 MSS SP-97 SW Licensor-1	
1	6 - 10	1			P31B-0138P	Outlet ASTM A105 Class 3000 MSS SP-97 SW Licensor-1	
1	12 - 36	1			P31B-0138R	Outlet ASTM A105 Class 3000 MSS SP-97 SW Licensor-1	
1	4	1.5			P31B-010L4	Outlet ASTM A105 Class 3000 MSS SP-97 SW Licensor-1	
1	5 - 6	1.5			P31B-0138S	Outlet ASTM A105 Class 3000 MSS SP-97 SW Licensor-1	
1	8 - 12	1.5			P31B-0138U	Outlet ASTM A105 Class 3000 MSS SP-97 SW Licensor-1	
1	14 - 24	1.5			P31B-0138T	Outlet ASTM A105 Class 3000 MSS SP-97 SW Licensor-1	
1	26 - 36	1.5			P31B-0139A	Outlet ASTM A105 Class 3000 MSS SP-97 SW Licensor-1	
541	1	0.75			P31B-0118R	Outlet ASTM A105 Class 3000 MSS SP-97 NPT Licensor-1	
541	1.5	0.75			P31B-0118P	Outlet ASTM A105 Class 3000 MSS SP-97 NPT Licensor-1	
541	2 - 2.5	0.75			P31B-0138V	Outlet ASTM A105 Class 3000 MSS SP-97 NPT Licensor-1	
541	3 - 5	0.75			P31B-0138W	Outlet ASTM A105 Class 3000 MSS SP-97 NPT Licensor-1	
541	6 - 12	0.75			P31B-0138X	Outlet ASTM A105 Class 3000 MSS SP-97 NPT Licensor-1	
541	14 - 36	0.75			P31B-0138Y	Outlet ASTM A105 Class 3000 MSS SP-97 NPT Licensor-1	
1	6	2	STD	XS	P31B-00XMV	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	8	2	SCH20	XS	P31B-00XMW	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	10	2	SCH30	XS	P31B-00Y8G	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	12	2	STD	XS	P31B-00Y8J	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	14	2	STD	XS	P31B-00ZFZ	Outlet ASTM A105 MSS SP-97 BW Licensor-1	

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OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	16	2	SCH20	XS	P31B-00XN6	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	18	2	SCH20	XS	P31B-00XN9	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	20	2	STD	XS	P31B-00XND	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	24	2	STD	XS	P31B-00XNH	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	30	2	STD	XS	P31B-00ZHA	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	8	3	SCH20	STD	P31B-00XMX	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	10	3	SCH30	STD	P31B-00Y8H	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	12	3	STD	STD	P31B-00Y8K	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	14	3	STD	STD	P31B-00ZG0	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	16	3	SCH20	STD	P31B-00XN7	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	18	3	SCH20	STD	P31B-00XNA	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	20	3	STD	STD	P31B-00XNE	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	24	3	STD	STD	P31B-00XNJ	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	30	3	STD	STD	P31B-00ZHB	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	12	4	STD	STD	P31B-00Y8L	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	14	4	STD	STD	P31B-00ZG1	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	16	4	SCH20	STD	P31B-00XN8	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	18	4	SCH20	STD	P31B-00XNB	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	20	4	STD	STD	P31B-00XNF	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	24	4	STD	STD	P31B-00XNK	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	30	4	STD	STD	P31B-00ZHC	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	18	6	SCH20	STD	P31B-00XNC	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	20	6	STD	STD	P31B-00XNG	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	24	6	STD	STD	P31B-00XNL	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	30	6	STD	STD	P31B-00ZHD	Outlet ASTM A105 MSS SP-97 BW Licensor-1	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30B-00067	Plug ASTM A105 ASME B16.11 NPT Round head Licensor-1	
1	0.75				P30B-00068	Plug ASTM A105 ASME B16.11 NPT Round head Licensor-1	
1	1				P30B-00069	Plug ASTM A105 ASME B16.11 NPT Round head Licensor-1	
1	1.5				P30B-0006A	Plug ASTM A105 ASME B16.11 NPT Round head Licensor-1	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P61B-009ZW	Flange SW ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
1	0.75		XS		P61B-009ZX	Flange SW ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
1	1		XS		P61B-009ZY	Flange SW ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
1	1.5		XS		P61B-009ZZ	Flange SW ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
1	2		XS		P61B-009YW	Flange WN ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
1	3		STD		P61B-009YX	Flange WN ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
1	4		STD		P61B-009YY	Flange WN ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
1	6		STD		P61B-00A07	Flange WN ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
1	8		SCH20		P61B-00A08	Flange WN ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
1	10		SCH30		P61B-00ABG	Flange WN ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
1	12		STD		P61B-00ABH	Flange WN ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
1	14		STD		P61B-00B0U	Flange WN ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
1	16		SCH20		P61B-00A03	Flange WN ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
1	18		SCH20		P61B-00A04	Flange WN ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
1	20		STD		P61B-00A05	Flange WN ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
1	24		STD		P61B-00A06	Flange WN ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
1	30		STD		P61B-00B1P	Flange WN ASTM A105 Class 300 ASME B16.47 Series B RF Licensor-1	
781	0.5		XS		P61B-00AB7	Flange SW ASTM A105 Class 600 ASME B16.5 RF Licensor-1	
781	0.75		XS		P61B-00AB8	Flange SW ASTM A105 Class 600 ASME B16.5 RF Licensor-1	
781	1		XS		P61B-00AB9	Flange SW ASTM A105 Class 600 ASME B16.5 RF Licensor-1	
781	1.5		XS		P61B-00ABA	Flange SW ASTM A105 Class 600 ASME B16.5 RF Licensor-1	
781	2		XS		P61B-009TD	Flange WN ASTM A105 Class 600 ASME B16.5 RF Licensor-1	
781	3		STD		P61B-009TE	Flange WN ASTM A105 Class 600 ASME B16.5 RF Licensor-1	
781	4		STD		P61B-00A10	Flange WN ASTM A105 Class 600 ASME B16.5 RF Licensor-1	

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FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
781	6		STD		P61B-00A11	Flange WN ASTM A105 Class 600 ASME B16.5 RF Licensor-1	
781	8		SCH20		P61B-00ABB	Flange WN ASTM A105 Class 600 ASME B16.5 RF Licensor-1	
781	10		SCH30		P61B-00ABJ	Flange WN ASTM A105 Class 600 ASME B16.5 RF Licensor-1	
781	12		STD		P61B-00ABK	Flange WN ASTM A105 Class 600 ASME B16.5 RF Licensor-1	
781	14		STD		P61B-00B0T	Flange WN ASTM A105 Class 600 ASME B16.5 RF Licensor-1	
781	16		SCH20		P61B-00ABL	Flange WN ASTM A105 Class 600 ASME B16.5 RF Licensor-1	
781	18		SCH20		P61B-00ABM	Flange WN ASTM A105 Class 600 ASME B16.5 RF Licensor-1	
781	20		STD		P61B-00ABN	Flange WN ASTM A105 Class 600 ASME B16.5 RF Licensor-1	
781	24		STD		P61B-00ABP	Flange WN ASTM A105 Class 600 ASME B16.5 RF Licensor-1	
781	30		STD		P61B-00BRW	Flange WN ASTM A105 Class 600 ASME B16.47 Series B RF Licensor-1	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67B-002G3	Blind flange ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
1	0.75				P67B-002G4	Blind flange ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
1	1				P67B-002EK	Blind flange ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
1	1.5				P67B-002EL	Blind flange ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
1	2				P67B-002ET	Blind flange ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
1	3				P67B-002EU	Blind flange ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
1	4				P67B-002EV	Blind flange ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
1	6				P67B-002EW	Blind flange ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
1	8				P67B-002EX	Blind flange ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
1	10				P67B-002EM	Blind flange ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
1	12				P67B-002EN	Blind flange ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
1	14				P67B-002EP	Blind flange ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
1	16				P67B-002ER	Blind flange ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
1	18				P67B-002ES	Blind flange ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
1	20				P67B-002G5	Blind flange ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
1	24				P67B-002G6	Blind flange ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
1	30				P67B-002GT	Blind flange ASTM A105 Class 300 ASME B16.47 Series B RF Licensor-1	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000FT	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000FU	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000G5	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000G6	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	6				P73T-000G7	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	8				P73T-000G8	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	10				P73T-000FX	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	12				P73T-000FY	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	14				P73T-000FZ	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	16				P73T-000G0	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	18				P73T-000G1	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	20				P73T-000G3	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	24				P73T-000G4	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	30				P73T-000H9	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	0.5				P73T-000J8	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	0.75				P73T-000J9	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

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GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
781	1				P73T-000JA	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1.5				P73T-000JB	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	2				P73T-000JH	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	3				P73T-000JL	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	4				P73T-000JM	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	6				P73T-000JN	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	8				P73T-000JP	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	10				P73T-000JC	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	12				P73T-000JD	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	14				P73T-000JE	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	16				P73T-000JF	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	18				P73T-000JG	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	20				P73T-000JJ	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	24				P73T-000JK	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	30				P73T-000JT	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-10				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	12-30				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
781	0.5-6				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
781	8-30				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81B-001CX	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated Licensor-1	
1	0.75				P81B-001CY	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated Licensor-1	
1	1				P81B-001CZ	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated Licensor-1	
1	1.5				P81B-001D0	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated Licensor-1	
1	2				P81C-004VG	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated Licensor-1	
1	3				P81C-004VH	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated Licensor-1	
1	4				P81C-004VJ	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated Licensor-1	
1	6				P81C-004VK	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated Licensor-1	
1	8				P81C-0091C	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated Licensor-1	
1	10				P81C-004VM	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated Licensor-1	
1	12				P81C-004VN	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated Licensor-1	
1	14				P81C-004VP	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated Licensor-1	
1	16				P81C-004VR	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated Licensor-1	
1	18				P81C-004VS	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated Licensor-1	
1	20				P81C-004VT	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated Licensor-1	
1	24				P81C-004VU	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated Licensor-1	
1	30				P81C-004VV	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.47-B RF Trim number 8 BB-BG-OS&Y Gear operated Licensor-1	
714	0.5				P81B-002S7	Gate valve ASTM A105 Class 800 API 602 SW - NPT Trim number 8 BB-BG-OS&Y Handwheel operated Licensor-1	
714	0.75				P81B-002F5	Gate valve ASTM A105 Class 800 API 602 SW - NPT Trim number 8 BB-BG-OS&Y Handwheel operated Licensor-1	

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GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82B-0014L	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated Licensor-1	
1	0.75				P82B-0014M	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated Licensor-1	
1	1				P82B-0014N	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated Licensor-1	
1	1.5				P82B-0014P	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated Licensor-1	
1	2				P82C-002C8	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated Licensor-1	
1	3				P82C-002C9	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated Licensor-1	
1	4				P82C-002CA	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated Licensor-1	
1	6				P82C-002CB	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated Licensor-1	
1	8				P82C-004CK	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated Licensor-1	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83B-000WE	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover Licensor-1	
1	0.75				P83B-000WF	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover Licensor-1	
1	1				P83B-000WG	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover Licensor-1	
1	1.5				P83B-000WH	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover Licensor-1	
1	2				P83C-002AT	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover Licensor-1	
1	3				P83C-002AV	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover Licensor-1	
1	4				P83C-002AW	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover Licensor-1	
1	6				P83C-002AX	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover Licensor-1	
1	8				P83C-002AY	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover Licensor-1	
1	10				P83C-002AM	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover Licensor-1	
1	12				P83C-002AN	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover Licensor-1	
1	14				P83C-002AP	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover Licensor-1	
1	16				P83C-002AR	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover Licensor-1	
1	18				P83C-002AS	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover Licensor-1	
1	20				P83C-002AU	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover Licensor-1	

DP CHECK VALVE (XDP)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
4602	10				P88C-003CA	Dual plate check valve ASTM A216 Grade WCB Class 300 API 594 Wafer-type ASME B16.5 RF Trim number 8 Internal wetted parts 13Cr Spring Inconel Retainerless-type Licensor-1	

BALL VALVE (Q)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P84B-0014W	Ball valve Long-pattern ASTM A105 Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design Licensor-1	
1	0.75				P84B-0014X	Ball valve Long-pattern ASTM A105 Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design Licensor-1	
1	1				P84B-0014Y	Ball valve Long-pattern ASTM A105 Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design Licensor-1	
1	1.5				P84B-0014Z	Ball valve Long-pattern ASTM A105 Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design Licensor-1	
1	2				P84C-005ZG	Ball valve Long-pattern ASTM A216 Grade WCB Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design Licensor-1	
1	3				P84C-005ZH	Ball valve Long-pattern ASTM A216 Grade WCB Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design Licensor-1	
1	4				P84C-005ZJ	Ball valve Long-pattern ASTM A216 Grade WCB Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Gear operated Reduced bore Fire tested design Licensor-1	
1	6				P84C-005ZT	Ball valve Long-pattern ASTM A216 Grade WCB Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Reduced bore Fire tested design Licensor-1	
1	8				P84C-005ZU	Ball valve Long-pattern ASTM A216 Grade WCB Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Reduced bore Fire tested design Licensor-1	
1	10				P84C-005ZK	Ball valve Long-pattern ASTM A216 Grade WCB Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Reduced bore Fire tested design Licensor-1	

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BALL VALVE (Q)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
24	0.5				P84B-00150	Ball valve Long-pattern ASTM A105 Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design Licensor-1	
24	0.75				P84B-00151	Ball valve Long-pattern ASTM A105 Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design Licensor-1	
24	1				P84B-00152	Ball valve Long-pattern ASTM A105 Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design Licensor-1	
24	1.5				P84B-00153	Ball valve Long-pattern ASTM A105 Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design Licensor-1	
24	2				P84C-005ZV	Ball valve Long-pattern ASTM A216 Grade WCB Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design Licensor-1	
24	3				P84C-005ZW	Ball valve Long-pattern ASTM A216 Grade WCB Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design Licensor-1	
24	4				P84C-005ZX	Ball valve Long-pattern ASTM A216 Grade WCB Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Gear operated Full bore Fire tested design Licensor-1	
24	6				P84C-00604	Ball valve Long-pattern ASTM A216 Grade WCB Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design Licensor-1	
24	8				P84C-00605	Ball valve Long-pattern ASTM A216 Grade WCB Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design Licensor-1	
24	10				P84C-005ZY	Ball valve Long-pattern ASTM A216 Grade WCB Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design Licensor-1	

BUTTERFLY VALVE (H)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	12				P86C-0023L	Offset design butterfly valve ASTM A216 Grade WCB Class 300 API 609 Category B Lug-type ASME B16.5 RF Disc CS Seat Stellite-6 Trim 13Cr Triple eccentric design BG Gear operated Licensor-1	
1	14				P86C-0023M	Offset design butterfly valve ASTM A216 Grade WCB Class 300 API 609 Category B Lug-type ASME B16.5 RF Disc CS Seat Stellite-6 Trim 13Cr Triple eccentric design BG Gear operated Licensor-1	
1	16				P86C-0023N	Offset design butterfly valve ASTM A216 Grade WCB Class 300 API 609 Category B Lug-type ASME B16.5 RF Disc CS Seat Stellite-6 Trim 13Cr Triple eccentric design BG Gear operated Licensor-1	
1	18				P86C-0023P	Offset design butterfly valve ASTM A216 Grade WCB Class 300 API 609 Category B Lug-type ASME B16.5 RF Disc CS Seat Stellite-6 Trim 13Cr Triple eccentric design BG Gear operated Licensor-1	
1	20				P86C-0023R	Offset design butterfly valve ASTM A216 Grade WCB Class 300 API 609 Category B Double flanged ASME B16.5 RF Disc CS Seat Stellite-6 Trim 13Cr Triple eccentric design BG Gear operated Licensor-1	
1	30				P86C-0023S	Offset design butterfly valve ASTM A216 Grade WCB Class 300 API 609 Category B Double flanged ASME B16.47-B RF Disc CS Seat Stellite-6 Trim 13Cr Triple eccentric design BG Gear operated Licensor-1	

ORIFICE FLANGE (FO)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2		XS		P66B-0085G	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Licensor-1	
1	3		STD		P66B-0085H	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Licensor-1	
1	4		STD		P66B-0085J	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Licensor-1	
1	6		STD		P66B-0085K	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Licensor-1	
1	8		SCH20		P66B-0085L	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Licensor-1	
1	10		SCH30		P66B-0087B	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Licensor-1	
1	12		STD		P66B-008A6	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Licensor-1	
1	14		STD		P66B-008A7	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Licensor-1	
1	16		SCH20		P66B-008A8	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Licensor-1	
1	18		SCH20		P66B-008A9	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Licensor-1	
1	20		STD		P66B-008AA	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Licensor-1	
200	2		XS		P66B-0085R	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw Licensor-1	
200	3		STD		P66B-0085S	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw Licensor-1	
200	4		STD		P66B-0085T	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw Licensor-1	
200	6		STD		P66B-0085U	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw Licensor-1	
200	8		SCH20		P66B-0085V	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw Licensor-1	
200	10		SCH30		P66B-0087F	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw Licensor-1	
200	12		STD		P66B-008AB	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw Licensor-1	
200	14		STD		P66B-008AC	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw Licensor-1	
200	16		SCH20		P66B-008AD	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw Licensor-1	
200	18		SCH20		P66B-008AE	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw Licensor-1	
200	20		STD		P66B-008AF	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw Licensor-1	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71B-000AR	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	0.75				P71B-000AS	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	1				P71B-000AT	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	1.5				P71B-000AU	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	2				P71B-000AW	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF Licensor-1	

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SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3				P71B-000AX	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	4				P71B-000AY	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	6				P71B-000AZ	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	8				P71B-000B0	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	10				P71B-000AV	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	12				P71B-000BN	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF Licensor-1	

PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000FN	Paddle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	16				P72B-000FP	Paddle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	18				P72B-000FR	Paddle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	20				P72B-000FS	Paddle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	24				P72B-000FT	Paddle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	30				P72B-000FU	Paddle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.47-B RF Licensor-1	

PADDLE SPACER (PS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000FV	Paddle spacer ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	16				P72B-000FW	Paddle spacer ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	18				P72B-000FX	Paddle spacer ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	20				P72B-000FY	Paddle spacer ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	24				P72B-000FZ	Paddle spacer ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	30				P72B-000G0	Paddle spacer ASTM A105 Class 300 Standard-drawing Flange ASME B16.47-B RF Licensor-1	

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PIPING CLASS
B1AP01 REV NO. 2

BOLT TABLE (B_B1AP01 , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-003V4		
0.75	4	0.625	75	P80S-003XC		
1	4	0.625	80	P80S-003XD		
1.5	4	0.750	95	P80S-00414		
2	8	0.625	90	P80S-003XF		
3	8	0.750	110	P80S-003XK		
4	8	0.750	115	P80S-003XL		
6	12	0.750	125	P80S-003XN		
8	12	0.875	140	P80S-0041D		
10	16	1.000	160	P80S-0043K		
12	16	1.125	175	P80S-0046S		
14	20	1.125	180	P80S-0046T		
16	20	1.250	190	P80S-004AK		
18	24	1.250	200	P80S-004AM		
20	24	1.250	210	P80S-004AP		
24	24	1.500	235	P80S-003F8		
30	36	1.375	285	P80S-003EA		

BOLT TABLE (B_B1AP01_781 , STUD ASME RF, OPTION CODE 781)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	80	P80S-003V6		
0.75	4	0.625	90	P80S-003XF		
1	4	0.625	95	P80S-003XG		
1.5	4	0.750	110	P80S-003XK		
2	8	0.625	110	P80S-003VC		
3	8	0.750	130	P80S-003XP		
4	8	0.875	150	P80S-0041F		
6	12	1.000	175	P80S-0043P		
8	12	1.125	195	P80S-0046W		
10	16	1.250	250	P80S-004AY		
12	20	1.250	255	P80S-004AZ		
14	20	1.375	270	P80S-003E7		
16	20	1.500	295	P80S-003FL		
18	20	1.625	320	P80S-005TT		
20	24	1.625	335	P80S-005TW		
24	24	1.875	380	P80S-008P4		
30	28	1.875	435	P80S-008PF		

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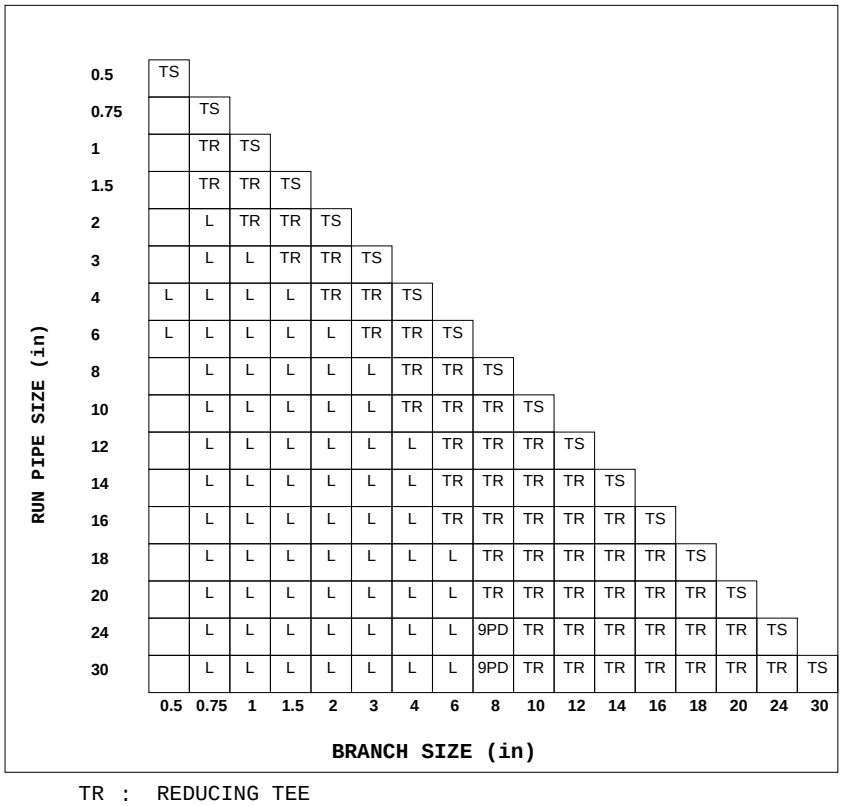
PIPING CLASS

B1AP01 REV NO. 2

BRANCH TABLE (T_B1AP01)



RUN PIPE SIZE (in)	0.5	0.75	1	1.5	2	3	4	6	8	10	12	14	16	18	20	24	30
0.5	TS																
0.75		TS															
1		TR	TS														
1.5		TR	TR	TS													
2		L	TR	TR	TS												
3		L	L	TR	TR	TS											
4	L	L	L	L	TR	TR	TS										
6	L	L	L	L	L	TR	TR	TS									
8		L	L	L	L	L	TR	TR	TS								
10		L	L	L	L	L	TR	TR	TR	TS							
12		L	L	L	L	L	L	TR	TR	TR	TS						
14		L	L	L	L	L	L	TR	TR	TR	TR	TS					
16		L	L	L	L	L	L	TR	TR	TR	TR	TR	TS				
18		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TS			
20		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TR	TS		
24		L	L	L	L	L	L	L	9PD	TR	TR	TR	TR	TR	TR	TS	
30		L	L	L	L	L	L	L	9PD	TR	TR	TR	TR	TR	TR	TR	TS

TR : REDUCING TEE
L : OUTLET
9PD : REINFORCING PAD 90 DEG
TS : STRAIGHT TEE

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PIPING CLASS

B1AP02 REV NO. 2

Material : Killed CS
Rating : ASME CLASS 300
Flange Face : RF
C.A.(mm) : 1.50
Gasket : Spiral Wound
Service : PROCESS - GENERAL PROCESS NON SOUR, NON CORROSIVE
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
2	USE OF SOFT SEATED BALL, PLUG AND BUTTERFLY VALVES SHALL BE LIMITED TO MAXIMUM OF 204DEGC (400DEGF)

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
24	FULL PORT (Q)
200	WITH JACK SCREW (FO)
541	NPT(F) (CA,L)
714	SW - NPT(F) (V)
781	CLASS 600 (B,F,G)
4601	Y-PATTERN (W)

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PIPING CLASS
B1AP02 REV NO. 2

PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P01A-000XM	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	0.75		XS		P01A-000XN	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1		XS		P01A-000XP	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1.5		XS		P01A-000XV	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	2		XS		P01A-000YX	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	3		STD		P01A-000YM	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	4		STD		P01A-000YU	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	6		STD		P01A-000Z3	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	8		SCH20		P01A-001AT	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	10		SCH30		P01A-0016U	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	12		STD		P01A-000XT	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	14		STD		P01A-000Y1	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	16		SCH20		P01A-0018E	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P02B-00014	90 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	0.75				P02B-00015	90 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	1				P02B-00016	90 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5				P02B-00017	90 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	2		XS		P02A-000CP	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		STD		P02A-000CU	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		STD		P02A-000CZ	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		STD		P02A-000D6	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		SCH20		P02A-000GZ	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	10		SCH30		P02A-000M3	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	12		STD		P02A-000BZ	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	14		STD		P02A-000C8	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	16		SCH20		P02A-000GM	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P03B-00017	45 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	0.75				P03B-00018	45 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	1				P03B-00019	45 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5				P03B-0001A	45 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	2		XS		P03A-000AS	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		STD		P03A-000AX	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		STD		P03A-000B1	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		STD		P03A-000B9	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		SCH20		P03A-000EX	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	10		SCH30		P03A-000JT	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	12		STD		P03A-000A9	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	14		STD		P03A-000AG	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	16		SCH20		P03A-000EM	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P21B-00017	Straight tee ASTM A105 Class 3000 ASME B16.11 SW	
1	0.75				P21B-00018	Straight tee ASTM A105 Class 3000 ASME B16.11 SW	
1	1				P21B-00019	Straight tee ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5				P21B-0001A	Straight tee ASTM A105 Class 3000 ASME B16.11 SW	
1	2		XS		P21A-001CJ	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		STD		P21A-001CU	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		STD		P21A-001CW	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6		STD		P21A-001D2	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8		SCH20		P21A-00215	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10		SCH30		P21A-00259	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12		STD		P21A-001C1	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14		STD		P21A-001C8	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16		SCH20		P21A-0020X	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75			P24B-0002L	Reducing tee ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5	0.75			P24B-0002N	Reducing tee ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5	1			P24B-0002P	Reducing tee ASTM A105 Class 3000 ASME B16.11 SW	
1	2	1	XS	XS	P24A-00238	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	XS	XS	P24A-0023H	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	STD	XS	P24A-00214	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	STD	XS	P24A-002HW	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P24A-002HY	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P24A-0021K	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	STD	P24A-0021A	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P24A-00229	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH20	STD	P24A-00J21	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH20	STD	P24A-005J4	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	SCH30	STD	P24A-00GNR	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	SCH30	STD	P24A-0060W	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	SCH30	SCH20	P24A-005KE	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	STD	STD	P24A-0022S	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	STD	SCH20	P24A-0060X	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	STD	SCH30	P24A-0060K	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	STD	STD	P24A-0026N	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	STD	SCH20	P24A-00KSG	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	STD	SCH30	P24A-0060L	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	STD	STD	P24A-0022R	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	6	SCH20	STD	P24A-00GU4	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	SCH20	SCH20	P24A-002XW	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	SCH20	SCH30	P24A-00KSH	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	SCH20	STD	P24A-00GP7	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	SCH20	STD	P24A-006YK	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	STD	XS	P27A-001MZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P27A-001N0	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P27A-00189	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	STD	P27A-001AZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P27A-001GW	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH20	STD	P27A-003K2	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH20	STD	P27A-003K3	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	SCH30	STD	P27A-003MK	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	SCH30	STD	P27A-003ML	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	SCH30	SCH20	P27A-003MM	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	STD	STD	P27A-0018X	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	STD	SCH20	P27A-0041Y	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	STD	SCH30	P27A-0041H	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	STD	STD	P27A-0019L	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	STD	SCH20	P27A-003MC	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	STD	SCH30	P27A-003MB	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	STD	STD	P27A-0018W	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	SCH20	SCH20	P27A-001WX	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	SCH20	SCH30	P27A-003NC	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	SCH20	STD	P27A-0055Z	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	SCH20	STD	P27A-0057G	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	STD	XS	P28A-001N5	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P28A-001N6	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P28A-0018B	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	STD	P28A-001AS	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P28A-00182	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH20	STD	P28A-003JU	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH20	STD	P28A-003JV	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	SCH30	STD	P28A-003MD	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	SCH30	STD	P28A-003ME	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	SCH30	SCH20	P28A-003MF	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	STD	STD	P28A-00191	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	STD	SCH20	P28A-0041S	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	STD	SCH30	P28A-0041B	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	STD	STD	P28A-0019R	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	STD	SCH20	P28A-003M6	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	STD	SCH30	P28A-003M5	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	STD	STD	P28A-0018Z	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	SCH20	SCH20	P28A-001T6	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	SCH20	SCH30	P28A-003N6	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	SCH20	STD	P28A-00519	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	SCH20	STD	P28A-0051A	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P29B-0001J	Cap ASTM A105 Class 3000 ASME B16.11 SW	
1	0.75				P29B-0001F	Cap ASTM A105 Class 3000 ASME B16.11 SW	
1	1				P29B-0001G	Cap ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5				P29B-0001H	Cap ASTM A105 Class 3000 ASME B16.11 SW	
1	2		XS		P29A-000A1	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		STD		P29A-000BK	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		STD		P29A-000A3	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6		STD		P29A-000A9	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8		SCH20		P29A-000EY	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10		SCH30		P29A-000K7	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12		STD		P29A-000A7	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14		STD		P29A-000AJ	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16		SCH20		P29A-000F3	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
541	0.75				P29B-0000C	Cap ASTM A105 Class 3000 ASME B16.11 NPT	
541	1				P29B-0000D	Cap ASTM A105 Class 3000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P41A-000B5	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		SCH160		P41A-000B6	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		SCH160		P41A-000B7	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		SCH160		P41A-000B8	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

CON SWAGED NIPPLE (SNC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	XS	XS	P42A-00036	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	XS	XS	P42A-00038	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	XS	XS	P42A-0003B	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	XS	XS	P42A-00035	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	XS	XS	P42A-00039	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	XS	XS	P42A-0003C	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	XS	XS	P42A-0008C	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	XS	XS	P42A-0008D	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	XS	XS	P42A-0008E	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	XS	XS	P42A-0008F	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	

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CON SWAGED NIPPLE (SNC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	1.5	STD	XS	P42A-0007V	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	

ECC SWAGED NIPPLE (SNE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	XS	XS	P43A-00036	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	XS	XS	P43A-00037	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	XS	XS	P43A-00038	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	XS	XS	P43A-00039	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	XS	XS	P43A-0003A	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	XS	XS	P43A-0003B	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	XS	XS	P43A-00042	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	XS	XS	P43A-00043	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	XS	XS	P43A-00044	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	XS	XS	P43A-00045	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	STD	XS	P43A-0003J	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	

COUPLING (CPS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P47B-0001D	Coupling ASTM A105 Class 3000 ASME B16.11 SW - SW	
1	0.75				P47B-0001E	Coupling ASTM A105 Class 3000 ASME B16.11 SW - SW	
1	1				P47B-0001F	Coupling ASTM A105 Class 3000 ASME B16.11 SW - SW	
1	1.5				P47B-0001G	Coupling ASTM A105 Class 3000 ASME B16.11 SW - SW	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2 - 2.5	0.75			P31B-0137J	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	3 - 5	0.75			P31B-0137K	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	6 - 12	0.75			P31B-007AB	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	14 - 36	0.75			P31B-007AJ	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	3	1			P31B-007A7	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	4 - 5	1			P31B-0138Z	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	6 - 10	1			P31B-007A4	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	12 - 36	1			P31B-007AA	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	4	1.5			P31B-005SN	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	5 - 6	1.5			P31B-01390	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	8 - 12	1.5			P31B-0079U	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	14 - 24	1.5			P31B-007A0	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
541	1	0.75			P31B-00551	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
541	1.5	0.75			P31B-00555	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
541	2 - 2.5	0.75			P31B-0137H	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
541	3 - 5	0.75			P31B-01376	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
541	6 - 12	0.75			P31B-007GR	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
541	14 - 36	0.75			P31B-007GY	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
1	6	2	STD	XS	P31B-007SH	Outlet ASTM A105 MSS SP-97 BW	
1	8	2	SCH20	XS	P31B-00NY2	Outlet ASTM A105 MSS SP-97 BW	
1	10	2	SCH30	XS	P31B-00NVF	Outlet ASTM A105 MSS SP-97 BW	
1	12	2	STD	XS	P31B-00CBN	Outlet ASTM A105 MSS SP-97 BW	
1	14	2	STD	XS	P31B-00CAE	Outlet ASTM A105 MSS SP-97 BW	
1	16	2	SCH20	XS	P31B-00TF8	Outlet ASTM A105 MSS SP-97 BW	
1	8	3	SCH20	STD	P31B-00P11	Outlet ASTM A105 MSS SP-97 BW	
1	10	3	SCH30	STD	P31B-00NYK	Outlet ASTM A105 MSS SP-97 BW	
1	12	3	STD	STD	P31B-0096N	Outlet ASTM A105 MSS SP-97 BW	
1	14	3	STD	STD	P31B-0090T	Outlet ASTM A105 MSS SP-97 BW	
1	16	3	SCH20	STD	P31B-00TU2	Outlet ASTM A105 MSS SP-97 BW	
1	12	4	STD	STD	P31B-008ZW	Outlet ASTM A105 MSS SP-97 BW	
1	14	4	STD	STD	P31B-008YM	Outlet ASTM A105 MSS SP-97 BW	
1	16	4	SCH20	STD	P31B-00TU3	Outlet ASTM A105 MSS SP-97 BW	

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PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30B-0002D	Plug ASTM A105 ASME B16.11 NPT Round head	
1	0.75				P30B-0002E	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1				P30B-0002F	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1.5				P30B-0002G	Plug ASTM A105 ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P61B-001HC	Flange SW ASTM A105 Class 300 ASME B16.5 RF	
1	0.75		XS		P61B-001HS	Flange SW ASTM A105 Class 300 ASME B16.5 RF	
1	1		XS		P61B-001EF	Flange SW ASTM A105 Class 300 ASME B16.5 RF	
1	1.5		XS		P61B-001F2	Flange SW ASTM A105 Class 300 ASME B16.5 RF	
1	2		XS		P61B-001HW	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	3		STD		P61B-001LJ	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	4		STD		P61B-001MC	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	6		STD		P61B-001N2	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	8		SCH20		P61B-002LJ	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	10		SCH30		P61B-003LX	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	12		STD		P61B-001LE	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	14		STD		P61B-001M9	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	16		SCH20		P61B-002MS	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
781	0.5		XS		P61B-001FF	Flange SW ASTM A105 Class 600 ASME B16.5 RF	
781	0.75		XS		P61B-001FH	Flange SW ASTM A105 Class 600 ASME B16.5 RF	
781	1		XS		P61B-001DR	Flange SW ASTM A105 Class 600 ASME B16.5 RF	
781	1.5		XS		P61B-001DV	Flange SW ASTM A105 Class 600 ASME B16.5 RF	
781	2		XS		P61B-001DH	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	3		STD		P61B-001TW	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	4		STD		P61B-001VV	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	6		STD		P61B-001JW	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	8		SCH20		P61B-003F0	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	10		SCH30		P61B-003TN	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	12		STD		P61B-001P9	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	14		STD		P61B-001PL	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	16		SCH20		P61B-00798	Flange WN ASTM A105 Class 600 ASME B16.5 RF	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67B-000GH	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	0.75				P67B-000GJ	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	1				P67B-000GK	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	1.5				P67B-000GL	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	2				P67B-000GM	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	3				P67B-000GN	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	4				P67B-000GP	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	6				P67B-000GY	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	8				P67B-000GZ	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	10				P67B-000GR	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	12				P67B-000GS	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	14				P67B-000GT	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	16				P67B-000GU	Blind flange ASTM A105 Class 300 ASME B16.5 RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000FT	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000FU	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

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GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3				P73T-000G5	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000G6	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	6				P73T-000G7	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	8				P73T-000G8	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	10				P73T-000FX	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	12				P73T-000FY	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	14				P73T-000FZ	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	16				P73T-000G0	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	0.5				P73T-000J8	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	0.75				P73T-000J9	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1				P73T-000JA	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1.5				P73T-000JB	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	2				P73T-000JH	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	3				P73T-000JL	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	4				P73T-000JM	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	6				P73T-000JN	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	8				P73T-000JP	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	10				P73T-000JC	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	12				P73T-000JD	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	14				P73T-000JE	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	16				P73T-000JF	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-10				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	12-16				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
781	0.5-6				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
781	8-16				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81B-000P4	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	0.75				P81B-000NX	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	1				P81B-000NY	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	1.5				P81B-000NZ	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	2				P81C-002D6	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	3				P81C-002D7	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	4				P81C-002D8	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	6				P81C-002D9	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	8				P81C-0086V	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated	
1	10				P81C-002DB	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated	
1	12				P81C-002DC	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated	
1	14				P81C-0034H	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated	
1	16				P81C-002DD	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated	
714	0.5				P81B-0015L	Gate valve ASTM A105 Class 800 API 602 SW - NPT Trim number 8 BB-BG-OS&Y Handwheel operated	
714	0.75				P81B-002F4	Gate valve ASTM A105 Class 800 API 602 SW - NPT Trim number 8 BB-BG-OS&Y Handwheel operated	

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GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82B-000K0	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	0.75				P82B-000HB	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	1				P82B-000HC	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	1.5				P82B-000HD	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	2				P82C-00114	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	3				P82C-00115	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	4				P82C-00116	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	6				P82C-00117	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	8				P82C-0011A	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated	
4601	0.75				P82B-001AB	Y-pattern globe valve ASTM A105 Class 300 ASME B16.34 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83B-000FX	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover	
1	0.75				P83B-000ER	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover	
1	1				P83B-000ES	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover	
1	1.5				P83B-000ET	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover	
1	2				P83C-0013H	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	3				P83C-0013L	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	4				P83C-0013M	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	6				P83C-0013N	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	8				P83C-0013P	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	10				P83C-0013D	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	12				P83C-0013E	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	14				P83C-0023R	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	16				P83C-0013F	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	

BALL VALVE (Q)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P84B-001L3	Ball valve Long-pattern ASTM A105 Class 300 API 608 Flange ASME B16.5 RF Ball SS316L Seat R-PTFE Trim SS316L Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design	
1	0.75				P84B-001L4	Ball valve Long-pattern ASTM A105 Class 300 API 608 Flange ASME B16.5 RF Ball SS316L Seat R-PTFE Trim SS316L Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design	
1	1				P84B-001L5	Ball valve Long-pattern ASTM A105 Class 300 API 608 Flange ASME B16.5 RF Ball SS316L Seat R-PTFE Trim SS316L Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design	
1	1.5				P84B-001L6	Ball valve Long-pattern ASTM A105 Class 300 API 608 Flange ASME B16.5 RF Ball SS316L Seat R-PTFE Trim SS316L Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design	
1	2				P84C-006UC	Ball valve Long-pattern ASTM A216 Grade WCB Class 300 API 608 Flange ASME B16.5 RF Ball SS316L Seat R-PTFE Trim SS316L Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design	
1	3				P84C-006UD	Ball valve Long-pattern ASTM A216 Grade WCB Class 300 API 608 Flange ASME B16.5 RF Ball SS316L Seat R-PTFE Trim SS316L Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design	
1	4				P84C-006UE	Ball valve Long-pattern ASTM A216 Grade WCB Class 300 API 608 Flange ASME B16.5 RF Ball SS316L Seat R-PTFE Trim SS316L Floating-type Side-entry Gear operated Reduced bore Fire tested design	
1	6				P84C-006UK	Ball valve Long-pattern ASTM A216 Grade WCB Class 300 API 608 Flange ASME B16.5 RF Ball SS316L Seat R-PTFE Trim SS316L Trunnion-type Side-entry Gear operated Reduced bore Fire tested design	
1	8				P84C-006UL	Ball valve Long-pattern ASTM A216 Grade WCB Class 300 API 608 Flange ASME B16.5 RF Ball SS316L Seat R-PTFE Trim SS316L Trunnion-type Side-entry Gear operated Reduced bore Fire tested design	
1	10				P84C-006UF	Ball valve Long-pattern ASTM A216 Grade WCB Class 300 API 608 Flange ASME B16.5 RF Ball SS316L Seat R-PTFE Trim SS316L Trunnion-type Side-entry Gear operated Reduced bore Fire tested design	
24	0.5				P84B-001L7	Ball valve Long-pattern ASTM A105 Class 300 API 608 Flange ASME B16.5 RF Ball SS316L Seat R-PTFE Trim SS316L Floating-type Side-entry Wrench lever operated Full bore Fire tested design	
24	0.75				P84B-001L8	Ball valve Long-pattern ASTM A105 Class 300 API 608 Flange ASME B16.5 RF Ball SS316L Seat R-PTFE Trim SS316L Floating-type Side-entry Wrench lever operated Full bore Fire tested design	
24	1				P84B-001L9	Ball valve Long-pattern ASTM A105 Class 300 API 608 Flange ASME B16.5 RF Ball SS316L Seat R-PTFE Trim SS316L Floating-type Side-entry Wrench lever operated Full bore Fire tested design	
24	1.5				P84B-001LA	Ball valve Long-pattern ASTM A105 Class 300 API 608 Flange ASME B16.5 RF Ball SS316L Seat R-PTFE Trim SS316L Floating-type Side-entry Wrench lever operated Full bore Fire tested design	
24	2				P84C-006UA	Ball valve Long-pattern ASTM A216 Grade WCB Class 300 API 608 Flange ASME B16.5 RF Ball SS316L Seat R-PTFE Trim SS316L Floating-type Side-entry Wrench lever operated Full bore Fire tested design	
24	3				P84C-006UB	Ball valve Long-pattern ASTM A216 Grade WCB Class 300 API 608 Flange ASME B16.5 RF Ball SS316L Seat R-PTFE Trim SS316L Floating-type Side-entry Wrench lever operated Full bore Fire tested design	
24	4				P84C-006UM	Ball valve Long-pattern ASTM A216 Grade WCB Class 300 API 608 Flange ASME B16.5 RF Ball SS316L Seat R-PTFE Trim SS316L Floating-type Side-entry Gear operated Full bore Fire tested design	
24	6				P84C-006UT	Ball valve Long-pattern ASTM A216 Grade WCB Class 300 API 608 Flange ASME B16.5 RF Ball SS316L Seat R-PTFE Trim SS316L Trunnion-type Side-entry Gear operated Full bore Fire tested design	

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BALL VALVE (Q)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
24	8				P84C-006UU	Ball valve Long-pattern ASTM A216 Grade WCB Class 300 API 608 Flange ASME B16.5 RF Ball SS316L Seat R-PTFE Trim SS316L Trunnion-type Side-entry Gear operated Full bore Fire tested design	
24	10				P84C-006UN	Ball valve Long-pattern ASTM A216 Grade WCB Class 300 API 608 Flange ASME B16.5 RF Ball SS316L Seat R-PTFE Trim SS316L Trunnion-type Side-entry Gear operated Full bore Fire tested design	

BUTTERFLY VALVE (H)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	12				P86C-0023G	Offset design butterfly valve ASTM A216 Grade WCB Class 300 API 609 Category B Lug-type ASME B16.5 RF Disc CS Seat Stellite-6 Trim 13Cr Triple eccentric design BG Gear operated	
1	14				P86C-0023H	Offset design butterfly valve ASTM A216 Grade WCB Class 300 API 609 Category B Lug-type ASME B16.5 RF Disc CS Seat Stellite-6 Trim 13Cr Triple eccentric design BG Gear operated	
1	16				P86C-0023J	Offset design butterfly valve ASTM A216 Grade WCB Class 300 API 609 Category B Lug-type ASME B16.5 RF Disc CS Seat Stellite-6 Trim 13Cr Triple eccentric design BG Gear operated	

NEEDLE VALVE (NV)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82B-001JU	Needle valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	0.75				P82B-000YB	Needle valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	1				P82B-000YC	Needle valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	1.5				P82B-000YD	Needle valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	

ORIFICE FLANGE (FO)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2		XS		P66B-0084B	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	3		STD		P66B-0084C	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	4		STD		P66B-0084D	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	6		STD		P66B-0084E	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	8		SCH20		P66B-0084F	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	10		SCH30		P66B-0086Z	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
200	2		XS		P66B-00843	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	3		STD		P66B-00844	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	4		STD		P66B-00845	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	6		STD		P66B-00846	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	8		SCH20		P66B-00847	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	10		SCH30		P66B-00874	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71B-000B1	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	0.75				P71B-000B2	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	1				P71B-000B3	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71B-000B4	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	2				P71B-000B6	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	3				P71B-000B7	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	4				P71B-000B8	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	6				P71B-000B9	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	8				P71B-000BA	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	10				P71B-000B5	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	12				P71B-000BB	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	

PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000FA	Paddle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	16				P72B-000FB	Paddle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	

PADDLE SPACER (PS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000FG	Paddle spacer ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	16				P72B-000FH	Paddle spacer ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	

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BOLT TABLE (B_B1AP02 , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-003V4		
0.75	4	0.625	75	P80S-003XC		
1	4	0.625	80	P80S-003XD		
1.5	4	0.750	95	P80S-00414		
2	8	0.625	90	P80S-003XF		
3	8	0.750	110	P80S-003XK		
4	8	0.750	115	P80S-003XL		
6	12	0.750	125	P80S-003XN		
8	12	0.875	140	P80S-0041D		
10	16	1.000	160	P80S-0043K		
12	16	1.125	175	P80S-0046S		
14	20	1.125	180	P80S-0046T		
16	20	1.250	190	P80S-004AK		

BOLT TABLE (B_B1AP02_781 , STUD ASME RF, OPTION CODE 781)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	80	P80S-003V6		
0.75	4	0.625	90	P80S-003XF		
1	4	0.625	95	P80S-003XG		
1.5	4	0.750	110	P80S-003XK		
2	8	0.625	110	P80S-003VC		
3	8	0.750	130	P80S-003XP		
4	8	0.875	150	P80S-0041F		
6	12	1.000	175	P80S-0043P		
8	12	1.125	195	P80S-0046W		
10	16	1.250	250	P80S-004AY		
12	20	1.250	255	P80S-004AZ		
14	20	1.375	270	P80S-003E7		
16	20	1.500	295	P80S-003FL		

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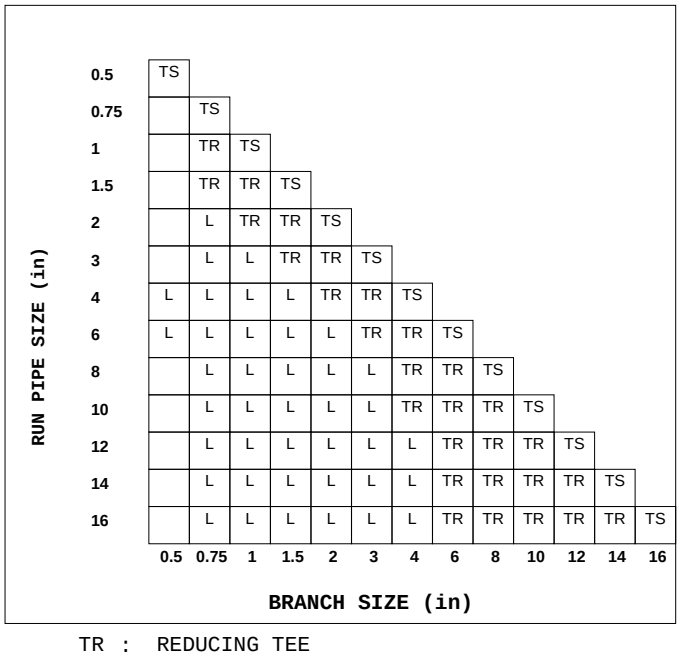
BRANCH TABLE (T_B1AP02)



TR : REDUCING TEE
L : OUTLET
TS : STRAIGHT TEE

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PIPING CLASS

B1AP04 REV NO. 2

Material : Killed CS
Rating : ASME CLASS 300
Flange Face : RF
C.A.(mm) : 1.50
Gasket : Spiral Wound
Service : PROCESS - GENERAL PROCESS NON SOUR, NON CORROSIVE
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
2	USE OF SOFT SEATED BALL, PLUG AND BUTTERFLY VALVES SHALL BE LIMITED TO MAXIMUM OF 204DEGC (400DEGF)

DETAIL NOTES :

NO.	DESCRIPTION
38	TO BE USED FOR STAND PIPE

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
24	FULL PORT (Q)
200	WITH JACK SCREW (FO)
221	RF (V)
541	NPT(F) (CA,L)
714	SW - NPT(F) (V)
781	CLASS 600 (B,F,G)
3001	INSULATION GASKET KIT AND BOLTS FOR FLANGE (G)
3487	INSULATION GASKET KIT AND BOLTS FOR FLANGE CLASS 600 RF (G)
4212	WELDOLET FOR STAND PIPE (L)
4602	DISSIMILAR TYPE CHECK VALVE (XDP)

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PIPING CLASS
B1AP04 REV NO. 2

PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P01A-000XM	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	0.75		XS		P01A-000XN	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1		XS		P01A-000XP	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1.5		XS		P01A-000XV	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	2		XS		P01A-000YX	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	3		STD		P01A-000YM	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	4		STD		P01A-000YU	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	5		STD		P01A-001UB	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	6		STD		P01A-000Z3	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	8		SCH20		P01A-001AT	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	10		SCH30		P01A-0016U	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	12		STD		P01A-000XT	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	14		STD		P01A-000Y1	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	16		STD		P01A-000Y9	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	18		SCH20		P01A-00438	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE	
1	20		STD		P01A-0042G	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE	
1	24		STD		P01A-0042H	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE	
1	26		STD		P01A-0090C	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE	
1	30		STD		P01A-0042J	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P02B-00014	90 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	0.75				P02B-00015	90 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	1				P02B-00016	90 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5				P02B-00017	90 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	2		XS		P02A-000CP	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		STD		P02A-000CU	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		STD		P02A-000CZ	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		STD		P02A-000D6	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		SCH20		P02A-000GZ	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	10		SCH30		P02A-000M3	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	12		STD		P02A-000BZ	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	14		STD		P02A-000C8	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	16		STD		P02A-000CH	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	18		SCH20		P02A-000LT	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	20		STD		P02A-0010J	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	24		STD		P02A-0010K	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	26		STD		P02A-000F0	90 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius	
1	30		STD		P02A-000F3	90 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P03B-00017	45 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	0.75				P03B-00018	45 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	1				P03B-00019	45 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5				P03B-0001A	45 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	2		XS		P03A-000AS	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		STD		P03A-000AX	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		STD		P03A-000B1	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		STD		P03A-000B9	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		SCH20		P03A-000EX	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	10		SCH30		P03A-000JT	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	12		STD		P03A-000A9	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	14		STD		P03A-000AG	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	16		STD		P03A-000AM	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	18		SCH20		P03A-001DX	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	20		STD		P03A-000X1	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	24		STD		P03A-000X2	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

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45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	26		STD		P03A-000CW	45 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius	
1	30		STD		P03A-000D0	45 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P21B-00017	Straight tee ASTM A105 Class 3000 ASME B16.11 SW	
1	0.75				P21B-00018	Straight tee ASTM A105 Class 3000 ASME B16.11 SW	
1	1				P21B-00019	Straight tee ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5				P21B-0001A	Straight tee ASTM A105 Class 3000 ASME B16.11 SW	
1	2		XS		P21A-001CJ	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		STD		P21A-001CU	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		STD		P21A-001CW	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6		STD		P21A-001D2	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8		SCH20		P21A-00215	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10		SCH30		P21A-00259	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12		STD		P21A-001C1	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14		STD		P21A-001C8	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16		STD		P21A-001CD	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18		SCH20		P21A-001PJ	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20		STD		P21A-001C7	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24		STD		P21A-001CC	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	26		STD		P21A-001VH	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30		STD		P21A-001YC	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75			P24B-0002L	Reducing tee ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5	0.75			P24B-0002N	Reducing tee ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5	1			P24B-0002P	Reducing tee ASTM A105 Class 3000 ASME B16.11 SW	
1	2	1	XS	XS	P24A-00238	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	XS	XS	P24A-0023H	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	STD	XS	P24A-00214	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	STD	XS	P24A-002HW	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P24A-002HY	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P24A-0021K	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	STD	P24A-0021A	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P24A-00229	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH20	STD	P24A-00J21	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH20	STD	P24A-005J4	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	SCH30	STD	P24A-00GNR	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	SCH30	STD	P24A-0060W	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	SCH30	SCH20	P24A-005KE	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	STD	STD	P24A-0022S	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	STD	SCH20	P24A-0060X	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	STD	SCH30	P24A-0060K	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	STD	STD	P24A-0026N	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	STD	SCH20	P24A-00KSG	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	STD	SCH30	P24A-0060L	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	STD	STD	P24A-0022R	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	6	STD	STD	P24A-001ZC	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	STD	SCH20	P24A-00L3W	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	STD	SCH30	P24A-00N27	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	STD	STD	P24A-001Y9	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	STD	STD	P24A-001Z4	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	8	SCH20	SCH20	P24A-002XC	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	10	SCH20	SCH30	P24A-00BF6	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	12	SCH20	STD	P24A-00BH2	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	14	SCH20	STD	P24A-00BJN	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	16	SCH20	STD	P24A-00L69	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	

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REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	20	8	STD	SCH20	P24A-00K0N	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	10	STD	SCH30	P24A-00BT8	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	12	STD	STD	P24A-004W2	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	14	STD	STD	P24A-004U1	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	16	STD	STD	P24A-004SF	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	18	STD	SCH20	P24A-006WD	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	10	STD	SCH30	P24A-00C5X	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	12	STD	STD	P24A-004UC	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	14	STD	STD	P24A-004T3	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	16	STD	STD	P24A-004VY	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	18	STD	SCH20	P24A-006WF	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	20	STD	STD	P24A-004SV	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	26	12	STD	STD	P24A-00CFD	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	26	14	STD	STD	P24A-00CG7	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	26	16	STD	STD	P24A-00CH3	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	26	18	STD	SCH20	P24A-00AHK	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	26	20	STD	STD	P24A-005G0	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	26	24	STD	STD	P24A-005G1	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	10	STD	SCH30	P24A-00CXV	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	12	STD	STD	P24A-00CZ5	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	14	STD	STD	P24A-00D0P	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	16	STD	STD	P24A-00D2N	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	18	STD	SCH20	P24A-003VT	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	20	STD	STD	P24A-0087D	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	24	STD	STD	P24A-005XW	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	26	STD	STD	P24A-007VX	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	STD	XS	P27A-001MZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P27A-001N0	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P27A-00189	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	STD	P27A-001AZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P27A-001GW	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	5	STD	STD	P27A-007R4	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH20	STD	P27A-003K2	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH20	STD	P27A-003K3	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	SCH30	STD	P27A-003MK	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	SCH30	STD	P27A-003ML	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	SCH30	SCH20	P27A-003MM	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	STD	STD	P27A-0018X	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	STD	SCH20	P27A-0041Y	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	STD	SCH30	P27A-0041H	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	STD	STD	P27A-0019L	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	STD	SCH20	P27A-003MC	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	STD	SCH30	P27A-003MB	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	STD	STD	P27A-0018W	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	STD	SCH20	P27A-0059V	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	STD	SCH30	P27A-0054N	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	STD	STD	P27A-0019G	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	STD	STD	P27A-001A7	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	10	SCH20	SCH30	P27A-0084J	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	12	SCH20	STD	P27A-00BGN	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	14	SCH20	STD	P27A-00BGP	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	16	SCH20	STD	P27A-00FE4	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	12	STD	STD	P27A-0018G	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	14	STD	STD	P27A-0019K	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	16	STD	STD	P27A-001AD	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	18	STD	SCH20	P27A-0084N	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	

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CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	24	16	STD	STD	P27A-0018C	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	18	STD	SCH20	P27A-0084U	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	20	STD	STD	P27A-001A8	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	26	18	STD	SCH20	P27A-003KL	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	26	20	STD	STD	P27A-001RZ	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	26	24	STD	STD	P27A-001M5	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	20	STD	STD	P27A-001S0	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	24	STD	STD	P27A-001M7	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	26	STD	STD	P27A-001MV	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	STD	XS	P28A-001N5	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P28A-001N6	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P28A-0018B	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	STD	P28A-001AS	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P28A-00182	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	5	STD	STD	P28A-00F3X	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH20	STD	P28A-003JU	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH20	STD	P28A-003JV	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	SCH30	STD	P28A-003MD	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	SCH30	STD	P28A-003ME	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	SCH30	SCH20	P28A-003MF	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	STD	STD	P28A-00191	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	STD	SCH20	P28A-0041S	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	STD	SCH30	P28A-0041B	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	STD	STD	P28A-0019R	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	STD	SCH20	P28A-003M6	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	STD	SCH30	P28A-003M5	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	STD	STD	P28A-0018Z	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	STD	SCH20	P28A-00CHM	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	STD	SCH30	P28A-00E3U	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	STD	STD	P28A-0019N	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	STD	STD	P28A-001AC	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	10	SCH20	SCH30	P28A-004UL	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	12	SCH20	STD	P28A-008FP	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	14	SCH20	STD	P28A-008FR	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	16	SCH20	STD	P28A-00CK2	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	12	STD	STD	P28A-0018X	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	14	STD	STD	P28A-001A8	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	16	STD	STD	P28A-001AY	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	18	STD	SCH20	P28A-004UN	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	16	STD	STD	P28A-0018K	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	18	STD	SCH20	P28A-004US	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	20	STD	STD	P28A-001AW	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	26	18	STD	SCH20	P28A-003KC	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	26	20	STD	STD	P28A-001M3	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	26	24	STD	STD	P28A-001MW	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	20	STD	STD	P28A-001LZ	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	24	STD	STD	P28A-001N1	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	26	STD	STD	P28A-001NA	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P29B-0001J	Cap ASTM A105 Class 3000 ASME B16.11 SW	
1	0.75				P29B-0001F	Cap ASTM A105 Class 3000 ASME B16.11 SW	
1	1				P29B-0001G	Cap ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5				P29B-0001H	Cap ASTM A105 Class 3000 ASME B16.11 SW	
1	2		XS		P29A-000A1	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3		STD		P29A-000BK	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		STD		P29A-000A3	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6		STD		P29A-000A9	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8		SCH20		P29A-000EY	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10		SCH30		P29A-000K7	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12		STD		P29A-000A7	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14		STD		P29A-000AJ	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16		STD		P29A-000AR	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18		SCH20		P29A-000E0	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20		STD		P29A-000B2	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24		STD		P29A-000B8	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	26		STD		P29A-000DN	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	30		STD		P29A-000DU	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
541	0.75				P29B-0000C	Cap ASTM A105 Class 3000 ASME B16.11 NPT	
541	1				P29B-0000D	Cap ASTM A105 Class 3000 ASME B16.11 NPT	
541	1.5				P29B-0000E	Cap ASTM A105 Class 3000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P41A-000B5	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		SCH160		P41A-000B6	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		SCH160		P41A-000B7	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		SCH160		P41A-000B8	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

CON SWAGED NIPPLE (SNC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	XS	XS	P42A-00036	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	XS	XS	P42A-00038	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	XS	XS	P42A-0003B	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	XS	XS	P42A-00035	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	XS	XS	P42A-00039	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	XS	XS	P42A-0003C	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	XS	XS	P42A-0008C	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	XS	XS	P42A-0008D	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	XS	XS	P42A-0008E	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	XS	XS	P42A-0008F	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	STD	XS	P42A-0007V	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	

ECC SWAGED NIPPLE (SNE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	XS	XS	P43A-00036	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	XS	XS	P43A-00037	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	XS	XS	P43A-00038	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	XS	XS	P43A-00039	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	XS	XS	P43A-0003A	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	XS	XS	P43A-0003B	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	XS	XS	P43A-00042	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	XS	XS	P43A-00043	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	XS	XS	P43A-00044	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	XS	XS	P43A-00045	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	STD	XS	P43A-0003J	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	

COUPLING (CPS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P47B-0001D	Coupling ASTM A105 Class 3000 ASME B16.11 SW - SW	
1	0.75				P47B-0001E	Coupling ASTM A105 Class 3000 ASME B16.11 SW - SW	
1	1				P47B-0001F	Coupling ASTM A105 Class 3000 ASME B16.11 SW - SW	
1	1.5				P47B-0001G	Coupling ASTM A105 Class 3000 ASME B16.11 SW - SW	

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OUTLET (L)							
OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2 - 2.5	0.75			P31B-0137J	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	3 - 5	0.75			P31B-0137K	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	6 - 12	0.75			P31B-007AB	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	14 - 36	0.75			P31B-007AJ	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	3	1			P31B-007A7	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	4 - 5	1			P31B-0138Z	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	6 - 10	1			P31B-007A4	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	12 - 36	1			P31B-007AA	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	4	1.5			P31B-005SN	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	5 - 6	1.5			P31B-01390	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	8 - 12	1.5			P31B-0079U	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	14 - 24	1.5			P31B-007A0	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	26 - 36	1.5			P31B-01391	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
4212	3	1.5			P31B-005SL	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
541	1	0.75			P31B-00551	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
541	1.5	0.75			P31B-00555	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
541	2 - 2.5	0.75			P31B-0137H	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
541	3 - 5	0.75			P31B-01376	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
541	6 - 12	0.75			P31B-007GR	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
541	14 - 36	0.75			P31B-007GY	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
1	5	2	STD	XS	P31B-011P8	Outlet ASTM A105 MSS SP-97 BW	
1	6	2	STD	XS	P31B-007SH	Outlet ASTM A105 MSS SP-97 BW	
1	8	2	SCH20	XS	P31B-00NY2	Outlet ASTM A105 MSS SP-97 BW	
1	10	2	SCH30	XS	P31B-00NVF	Outlet ASTM A105 MSS SP-97 BW	
1	12	2	STD	XS	P31B-00CBN	Outlet ASTM A105 MSS SP-97 BW	
1	14	2	STD	XS	P31B-00CAE	Outlet ASTM A105 MSS SP-97 BW	
1	16	2	STD	XS	P31B-00C1T	Outlet ASTM A105 MSS SP-97 BW	
1	18	2	SCH20	XS	P31B-00NVX	Outlet ASTM A105 MSS SP-97 BW	
1	20	2	STD	XS	P31B-00994	Outlet ASTM A105 MSS SP-97 BW	
1	24	2	STD	XS	P31B-0092Z	Outlet ASTM A105 MSS SP-97 BW	
1	26	2	STD	XS	P31B-0091X	Outlet ASTM A105 MSS SP-97 BW	
1	30	2	STD	XS	P31B-008P5	Outlet ASTM A105 MSS SP-97 BW	
1	8	3	SCH20	STD	P31B-00P11	Outlet ASTM A105 MSS SP-97 BW	
1	10	3	SCH30	STD	P31B-00NYK	Outlet ASTM A105 MSS SP-97 BW	
1	12	3	STD	STD	P31B-0096N	Outlet ASTM A105 MSS SP-97 BW	
1	14	3	STD	STD	P31B-0090T	Outlet ASTM A105 MSS SP-97 BW	
1	16	3	STD	STD	P31B-008UN	Outlet ASTM A105 MSS SP-97 BW	
1	18	3	SCH20	STD	P31B-00NZ4	Outlet ASTM A105 MSS SP-97 BW	
1	20	3	STD	STD	P31B-008FA	Outlet ASTM A105 MSS SP-97 BW	
1	24	3	STD	STD	P31B-00895	Outlet ASTM A105 MSS SP-97 BW	
1	26	3	STD	STD	P31B-0083K	Outlet ASTM A105 MSS SP-97 BW	
1	30	3	STD	STD	P31B-007WY	Outlet ASTM A105 MSS SP-97 BW	
1	12	4	STD	STD	P31B-008ZW	Outlet ASTM A105 MSS SP-97 BW	
1	14	4	STD	STD	P31B-008YM	Outlet ASTM A105 MSS SP-97 BW	
1	16	4	STD	STD	P31B-008SH	Outlet ASTM A105 MSS SP-97 BW	
1	18	4	SCH20	STD	P31B-00P1V	Outlet ASTM A105 MSS SP-97 BW	
1	20	4	STD	STD	P31B-008D3	Outlet ASTM A105 MSS SP-97 BW	
1	24	4	STD	STD	P31B-0086X	Outlet ASTM A105 MSS SP-97 BW	
1	26	4	STD	STD	P31B-0081E	Outlet ASTM A105 MSS SP-97 BW	
1	30	4	STD	STD	P31B-007US	Outlet ASTM A105 MSS SP-97 BW	
1	18	6	SCH20	STD	P31B-00P48	Outlet ASTM A105 MSS SP-97 BW	
1	20	6	STD	STD	P31B-008PZ	Outlet ASTM A105 MSS SP-97 BW	
1	24	6	STD	STD	P31B-008JD	Outlet ASTM A105 MSS SP-97 BW	
1	26	6	STD	STD	P31B-008HU	Outlet ASTM A105 MSS SP-97 BW	
1	30	6	STD	STD	P31B-008BS	Outlet ASTM A105 MSS SP-97 BW	
4212	3	2	STD	XS	P31B-00UUU	Outlet ASTM A105 MSS SP-97 BW	38

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PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30B-0002D	Plug ASTM A105 ASME B16.11 NPT Round head	
1	0.75				P30B-0002E	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1				P30B-0002F	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1.5				P30B-0002G	Plug ASTM A105 ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P61B-001HC	Flange SW ASTM A105 Class 300 ASME B16.5 RF	
1	0.75		XS		P61B-001HS	Flange SW ASTM A105 Class 300 ASME B16.5 RF	
1	1		XS		P61B-001EF	Flange SW ASTM A105 Class 300 ASME B16.5 RF	
1	1.5		XS		P61B-001F2	Flange SW ASTM A105 Class 300 ASME B16.5 RF	
1	2		XS		P61B-001HW	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	3		STD		P61B-001LJ	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	4		STD		P61B-001MC	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	5		STD		P61B-00D0X	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	6		STD		P61B-001N2	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	8		SCH20		P61B-002LJ	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	10		SCH30		P61B-003LX	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	12		STD		P61B-001LE	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	14		STD		P61B-001M9	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	16		STD		P61B-001MH	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	18		SCH20		P61B-002MT	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	20		STD		P61B-001NT	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	24		STD		P61B-001PA	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	26		STD		P61B-003LZ	Flange WN ASTM A105 Class 300 ASME B16.47 Series B RF	
1	30		STD		P61B-003SW	Flange WN ASTM A105 Class 300 ASME B16.47 Series B RF	
781	0.5		XS		P61B-001FF	Flange SW ASTM A105 Class 600 ASME B16.5 RF	
781	0.75		XS		P61B-001FH	Flange SW ASTM A105 Class 600 ASME B16.5 RF	
781	1		XS		P61B-001DR	Flange SW ASTM A105 Class 600 ASME B16.5 RF	
781	1.5		XS		P61B-001DV	Flange SW ASTM A105 Class 600 ASME B16.5 RF	
781	2		XS		P61B-001DH	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	3		STD		P61B-001TW	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	4		STD		P61B-001VV	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	6		STD		P61B-001JW	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	8		SCH20		P61B-003F0	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	10		SCH30		P61B-003TN	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	12		STD		P61B-001P9	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	14		STD		P61B-001PL	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	16		STD		P61B-003FB	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	18		SCH20		P61B-003TP	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	20		STD		P61B-003GP	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	24		STD		P61B-003GM	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	30		STD		P61B-00685	Flange WN ASTM A105 Class 600 ASME B16.47 Series B RF	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67B-000GH	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	0.75				P67B-000GJ	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	1				P67B-000GK	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	1.5				P67B-000GL	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	2				P67B-000GM	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	3				P67B-000GN	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	4				P67B-000GP	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	6				P67B-000GY	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	8				P67B-000GZ	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	10				P67B-000GR	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	12				P67B-000GS	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	14				P67B-000GT	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	16				P67B-000GU	Blind flange ASTM A105 Class 300 ASME B16.5 RF	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	18				P67B-000GV	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	20				P67B-000GW	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	24				P67B-000GX	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	30				P67B-000H2	Blind flange ASTM A105 Class 300 ASME B16.47 Series B RF	

REDUCING FLANGE (FR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5		XS	P62B-000N0	Reducing flange SW ASTM A105 Class 300 ASME B16.5 RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000FT	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000FU	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000G5	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000G6	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	5				P73T-0041T	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	6				P73T-000G7	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	8				P73T-000G8	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	10				P73T-000FX	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	12				P73T-000FY	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	14				P73T-000FZ	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	16				P73T-000G0	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	18				P73T-000G1	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	20				P73T-000G3	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	24				P73T-000G4	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	26				P73T-000G9	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	30				P73T-000H9	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
3001	2				P78U-0006A	Insulation gasket kit Glass reinforced epoxy Class 300 Manufacturer-standard Flange ASME B16.5 RF	
3001	3				P78U-0006B	Insulation gasket kit Glass reinforced epoxy Class 300 Manufacturer-standard Flange ASME B16.5 RF	
3487	2				P78U-0006C	Insulation gasket kit Glass reinforced epoxy Class 600 Manufacturer-standard Flange ASME B16.5 RF	
3487	3				P78U-0006D	Insulation gasket kit Glass reinforced epoxy Class 600 Manufacturer-standard Flange ASME B16.5 RF	
781	0.5				P73T-000J8	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	0.75				P73T-000J9	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1				P73T-000JA	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1.5				P73T-000JB	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	2				P73T-000JH	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	3				P73T-000JL	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	4				P73T-000JM	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	6				P73T-000JN	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	8				P73T-000JP	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	10				P73T-000JC	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	12				P73T-000JD	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	14				P73T-000JE	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	16				P73T-000JF	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

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GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
781	18				P73T-000JG	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	20				P73T-000JJ	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	24				P73T-000JK	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	30				P73T-000JT	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-10				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	12-30				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
781	0.5-6				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
781	8-30				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81B-000P4	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	0.75				P81B-000NX	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	1				P81B-000NY	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	1.5				P81B-000NZ	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	2				P81C-002D6	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	3				P81C-002D7	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	4				P81C-002D8	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	6				P81C-002D9	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	8				P81C-0086V	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated	
1	10				P81C-002DB	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated	
1	12				P81C-002DC	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated	
1	14				P81C-0034H	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated	
1	16				P81C-002DD	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated	
1	18				P81C-002DE	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated	
1	20				P81C-002DF	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated	
1	24				P81C-002DG	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated	
1	30				P81C-004H1	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.47-B RF Trim number 8 BB-BG-OS&Y Gear operated	
221	1				P81B-0037X	Gate valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
221	1.5				P81B-00392	Gate valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
714	0.5				P81B-0015L	Gate valve ASTM A105 Class 800 API 602 SW - NPT Trim number 8 BB-BG-OS&Y Handwheel operated	
714	0.75				P81B-002F4	Gate valve ASTM A105 Class 800 API 602 SW - NPT Trim number 8 BB-BG-OS&Y Handwheel operated	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82B-000K0	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	0.75				P82B-000HB	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	1				P82B-000HC	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	1.5				P82B-000HD	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	2				P82C-00114	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	3				P82C-00115	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	4				P82C-00116	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	6				P82C-00117	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	8				P82C-0011A	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated	
1	10				P82C-00118	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated	

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CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83B-000FX	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover	
1	0.75				P83B-000ER	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover	
1	1				P83B-000ES	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover	
1	1.5				P83B-000ET	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover	
1	2				P83C-0013H	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	3				P83C-0013L	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	4				P83C-0013M	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	6				P83C-0013N	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	8				P83C-0013P	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	10				P83C-0013D	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	12				P83C-0013E	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	14				P83C-0023R	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	16				P83C-0013F	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	18				P83C-0013G	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	20				P83C-0013J	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	

DP CHECK VALVE (XDP)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
4602	2				P88C-003CB	Dual plate check valve ASTM A216 Grade WCB Class 300 API 594 Wafer-type ASME B16.5 RF Trim number 8 Internal wetted parts 13Cr Spring Inconel Retainerless-type	
4602	3				P88C-003CC	Dual plate check valve ASTM A216 Grade WCB Class 300 API 594 Wafer-type ASME B16.5 RF Trim number 8 Internal wetted parts 13Cr Spring Inconel Retainerless-type	
4602	4				P88C-0035P	Dual plate check valve ASTM A216 Grade WCB Class 300 API 594 Wafer-type ASME B16.5 RF Trim number 8 Internal wetted parts 13Cr Spring Inconel Retainerless-type	
4602	6				P88C-0035R	Dual plate check valve ASTM A216 Grade WCB Class 300 API 594 Wafer-type ASME B16.5 RF Trim number 8 Internal wetted parts 13Cr Spring Inconel Retainerless-type	
4602	8				P88C-003C9	Dual plate check valve ASTM A216 Grade WCB Class 300 API 594 Wafer-type ASME B16.5 RF Trim number 8 Internal wetted parts 13Cr Spring Inconel Retainerless-type	

BALL VALVE (Q)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P84B-0012S	Ball valve Long-pattern ASTM A105 Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design	
1	0.75				P84B-0012T	Ball valve Long-pattern ASTM A105 Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design	
1	1				P84B-0012U	Ball valve Long-pattern ASTM A105 Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design	
1	1.5				P84B-0012V	Ball valve Long-pattern ASTM A105 Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design	
1	2				P84C-005VG	Ball valve Long-pattern ASTM A216 Grade WCB Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design	
1	3				P84C-005VH	Ball valve Long-pattern ASTM A216 Grade WCB Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design	
1	4				P84C-005VU	Ball valve Long-pattern ASTM A216 Grade WCB Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Gear operated Reduced bore Fire tested design	
1	6				P84C-005VK	Ball valve Long-pattern ASTM A216 Grade WCB Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Reduced bore Fire tested design	
1	8				P84C-005VL	Ball valve Long-pattern ASTM A216 Grade WCB Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Reduced bore Fire tested design	
1	10				P84C-005VJ	Ball valve Long-pattern ASTM A216 Grade WCB Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Reduced bore Fire tested design	
24	0.5				P84B-0012W	Ball valve Long-pattern ASTM A105 Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	
24	0.75				P84B-0012X	Ball valve Long-pattern ASTM A105 Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	
24	1				P84B-0012Y	Ball valve Long-pattern ASTM A105 Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	
24	1.5				P84B-0012Z	Ball valve Long-pattern ASTM A105 Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	
24	2				P84C-005VM	Ball valve Long-pattern ASTM A216 Grade WCB Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	
24	3				P84C-005VN	Ball valve Long-pattern ASTM A216 Grade WCB Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	
24	4				P84C-005VT	Ball valve Long-pattern ASTM A216 Grade WCB Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Gear operated Full bore Fire tested design	
24	6				P84C-005VR	Ball valve Long-pattern ASTM A216 Grade WCB Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design	
24	8				P84C-005VS	Ball valve Long-pattern ASTM A216 Grade WCB Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design	
24	10				P84C-005VP	Ball valve Long-pattern ASTM A216 Grade WCB Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design	

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BUTTERFLY VALVE (H)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	10				P86C-0023E	Offset design butterfly valve ASTM A216 Grade WCB Class 300 API 609 Category B Lug-type ASME B16.5 RF Disc CS Seat Stellite-6 Trim 13Cr Triple eccentric design BG Gear operated	
1	12				P86C-0023G	Offset design butterfly valve ASTM A216 Grade WCB Class 300 API 609 Category B Lug-type ASME B16.5 RF Disc CS Seat Stellite-6 Trim 13Cr Triple eccentric design BG Gear operated	
1	14				P86C-0023H	Offset design butterfly valve ASTM A216 Grade WCB Class 300 API 609 Category B Lug-type ASME B16.5 RF Disc CS Seat Stellite-6 Trim 13Cr Triple eccentric design BG Gear operated	
1	16				P86C-0023J	Offset design butterfly valve ASTM A216 Grade WCB Class 300 API 609 Category B Lug-type ASME B16.5 RF Disc CS Seat Stellite-6 Trim 13Cr Triple eccentric design BG Gear operated	
1	18				P86C-0023K	Offset design butterfly valve ASTM A216 Grade WCB Class 300 API 609 Category B Lug-type ASME B16.5 RF Disc CS Seat Stellite-6 Trim 13Cr Triple eccentric design BG Gear operated	
1	20				P86C-0018M	Offset design butterfly valve ASTM A216 Grade WCB Class 300 API 609 Category B Double flanged ASME B16.5 RF Disc CS Seat Stellite-6 Trim 13Cr Triple eccentric design BG Gear operated	

ORIFICE FLANGE (FO)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2		XS		P66B-0084B	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	3		STD		P66B-0084C	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	4		STD		P66B-0084D	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	6		STD		P66B-0084E	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	8		SCH20		P66B-0084F	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	10		SCH30		P66B-0086Z	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	12		STD		P66B-008A2	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	14		STD		P66B-008A3	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	16		STD		P66B-008C0	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	18		SCH20		P66B-0084R	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	20		STD		P66B-0084S	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
200	2		XS		P66B-00843	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	3		STD		P66B-00844	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	4		STD		P66B-00845	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	6		STD		P66B-00846	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	8		SCH20		P66B-00847	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	10		SCH30		P66B-00874	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	12		STD		P66B-008A4	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	14		STD		P66B-008A5	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	16		STD		P66B-008C2	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	18		SCH20		P66B-0084T	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	20		STD		P66B-0084U	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71B-000B1	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	0.75				P71B-000B2	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	1				P71B-000B3	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71B-000B4	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	2				P71B-000B6	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	3				P71B-000B7	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	4				P71B-000B8	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	6				P71B-000B9	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	8				P71B-000BA	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	10				P71B-000B5	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	12				P71B-000BB	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	

PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000FA	Paddle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	16				P72B-000FB	Paddle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	18				P72B-000FC	Paddle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	20				P72B-000FD	Paddle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	24				P72B-000FE	Paddle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	26				P72B-000XK	Paddle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.47-B RF	
1	30				P72B-000FF	Paddle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.47-B RF	

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PADDLE SPACER (PS)							
OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000FG	Paddle spacer ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	16				P72B-000FH	Paddle spacer ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	18				P72B-000FJ	Paddle spacer ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	20				P72B-000FK	Paddle spacer ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	24				P72B-000FL	Paddle spacer ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	26				P72B-000XL	Paddle spacer ASTM A105 Class 300 Standard-drawing Flange ASME B16.47-B RF	
1	30				P72B-000FM	Paddle spacer ASTM A105 Class 300 Standard-drawing Flange ASME B16.47-B RF	

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BOLT TABLE (B_B1AP04 , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-003V4		
0.75	4	0.625	75	P80S-003XC		
1	4	0.625	80	P80S-003XD		
1.5	4	0.750	95	P80S-00414		
2	8	0.625	90	P80S-003XF		
3	8	0.750	110	P80S-003XK		
4	8	0.750	115	P80S-003XL		
5	8	0.750	120	P80S-003XM		
6	12	0.750	125	P80S-003XN		
8	12	0.875	140	P80S-0041D		
10	16	1.000	160	P80S-0043K		
12	16	1.125	175	P80S-0046S		
14	20	1.125	180	P80S-0046T		
16	20	1.250	190	P80S-004AK		
18	24	1.250	200	P80S-004AM		
20	24	1.250	210	P80S-004AP		
24	24	1.500	235	P80S-003F8		
26	32	1.250	270	P80S-004B2		
30	36	1.375	285	P80S-003EA		

BOLT TABLE (B_B1AP04_781 , STUD ASME RF, OPTION CODE 781)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	80	P80S-003V6		
0.75	4	0.625	90	P80S-003XF		
1	4	0.625	95	P80S-003XG		
1.5	4	0.750	110	P80S-003XK		
2	8	0.625	110	P80S-003VC		
3	8	0.750	130	P80S-003XP		
4	8	0.875	150	P80S-0041F		
5	8	1.000	165	P80S-0043L		
6	12	1.000	175	P80S-0043P		
8	12	1.125	195	P80S-0046W		
10	16	1.250	250	P80S-004AY		
12	20	1.250	255	P80S-004AZ		
14	20	1.375	270	P80S-003E7		
16	20	1.500	295	P80S-003FL		
18	20	1.625	320	P80S-005TT		
20	24	1.625	335	P80S-005TW		
24	24	1.875	380	P80S-008P4		
26			0			
30	28	1.875	435	P80S-008PF		

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BRANCH TABLE (T_B1AP04)

RUN PIPE SIZE (in) \ BRANCH SIZE (in)	0.5	0.75	1	1.5	2	3	4	5	6	8	10	12	14	16	18	20	24	26	30
0.5	TS																		
0.75		TS																	
1		TR	TS																
1.5		TR	TR	TS															
2		L	TR	TR	TS														
3		L	L	TR	TR	TS													
4	L	L	L	L	TR	TR	TS												
5					L														
6	L	L	L	L	L	TR	TR		TS										
8		L	L	L	L	L	TR		TR	TS									
10		L	L	L	L	L	TR		TR	TR	TS								
12		L	L	L	L	L	L		TR	TR	TR	TS							
14		L	L	L	L	L	L		TR	TR	TR	TR	TS						
16		L	L	L	L	L	L		TR	TR	TR	TR	TR	TS					
18		L	L	L	L	L	L		L	TR	TR	TR	TR	TR	TS				
20		L	L	L	L	L	L		L	TR	TR	TR	TR	TR	TR	TS			
24		L	L	L	L	L	L		L	9PD	TR	TR	TR	TR	TR	TR	TS		
26		L	L	L	L	L	L		L	9PD	9PD	TR	TR	TR	TR	TR	TR	TS	
30		L	L	L	L	L	L		L	9PD	TR	TR	TR	TR	TR	TR	TR	TR	TS

TR : REDUCING TEE
TS : STRAIGHT TEE
L : OUTLET
9PD : REINFORCING PAD 90 DEG

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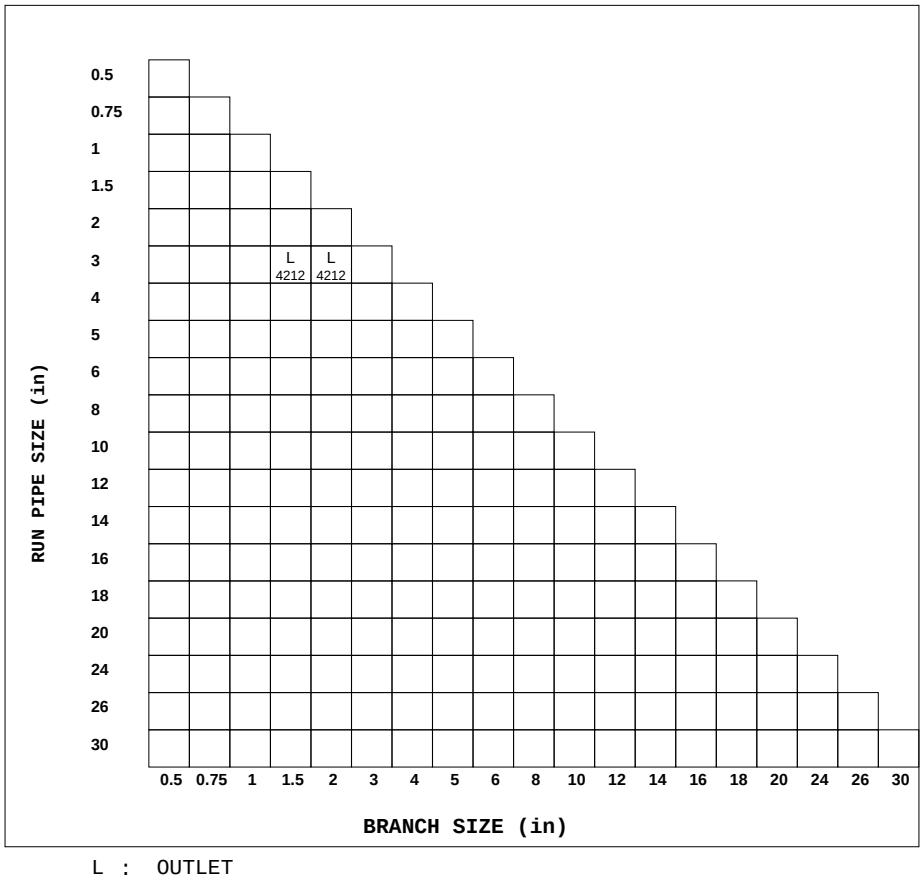
BRANCH TABLE (T_B1AP04_4)



L : OUTLET

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PIPING CLASS

B1APCM **REV NO. 2**

Material : Killed CS
Rating : ASME CLASS 300
Flange Face : RF
C.A.(mm) : 1.50
Gasket : Spiral Wound
Service : PROCESS - GENERAL PROCESS NON SOUR, NON CORROSIVE (CONTRO TRACE)
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
200	WITH JACK SCREW (FO)
541	NPT(F) (CA,L)
781	CLASS 600 (B,F,G)
4610	JACKETED VALVE (1.5" X 0.75") (PV)
4611	JACKETED VALVE (3" X 2") (PV)

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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P01A-000XM	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	0.75		XS		P01A-000XN	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1		XS		P01A-000XP	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1.5		XS		P01A-000XV	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	2		XS		P01A-000YX	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	3		STD		P01A-000YM	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	4		STD		P01A-000YU	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P02B-00014	90 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	0.75				P02B-00015	90 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	1				P02B-00016	90 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5				P02B-00017	90 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	2		XS		P02A-000CP	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		STD		P02A-000CU	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		STD		P02A-000CZ	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P03B-00017	45 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	0.75				P03B-00018	45 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	1				P03B-00019	45 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5				P03B-0001A	45 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	2		XS		P03A-000AS	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		STD		P03A-000AX	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		STD		P03A-000B1	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P21B-00017	Straight tee ASTM A105 Class 3000 ASME B16.11 SW	
1	0.75				P21B-00018	Straight tee ASTM A105 Class 3000 ASME B16.11 SW	
1	1				P21B-00019	Straight tee ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5				P21B-0001A	Straight tee ASTM A105 Class 3000 ASME B16.11 SW	
1	2		XS		P21A-001CJ	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		STD		P21A-001CU	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		STD		P21A-001CW	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75			P24B-0002L	Reducing tee ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5	0.75			P24B-0002N	Reducing tee ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5	1			P24B-0002P	Reducing tee ASTM A105 Class 3000 ASME B16.11 SW	
1	2	1	XS	XS	P24A-00238	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	XS	XS	P24A-0023H	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	STD	XS	P24A-00214	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	STD	XS	P24A-002HW	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P24A-002HY	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P24A-0021K	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	STD	XS	P27A-001MZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P27A-001N0	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P27A-00189	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	STD	XS	P28A-001N5	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P28A-001N6	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P28A-0018B	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P29B-0001J	Cap ASTM A105 Class 3000 ASME B16.11 SW	
1	0.75				P29B-0001F	Cap ASTM A105 Class 3000 ASME B16.11 SW	
1	1				P29B-0001G	Cap ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5				P29B-0001H	Cap ASTM A105 Class 3000 ASME B16.11 SW	
1	2		XS		P29A-000A1	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		STD		P29A-000BK	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		STD		P29A-000A3	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
541	0.75				P29B-0000C	Cap ASTM A105 Class 3000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P41A-000B5	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		SCH160		P41A-000B6	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		SCH160		P41A-000B7	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		SCH160		P41A-000B8	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

CON SWAGED NIPPLE (SNC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	XS	XS	P42A-00036	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	XS	XS	P42A-00038	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	XS	XS	P42A-0003B	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	XS	XS	P42A-00035	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	XS	XS	P42A-00039	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	XS	XS	P42A-0003C	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	XS	XS	P42A-0008C	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	XS	XS	P42A-0008D	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	XS	XS	P42A-0008E	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	XS	XS	P42A-0008F	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	STD	XS	P42A-0007V	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	

ECC SWAGED NIPPLE (SNE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	XS	XS	P43A-00036	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	XS	XS	P43A-00037	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	XS	XS	P43A-00038	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	XS	XS	P43A-00039	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	XS	XS	P43A-0003A	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	XS	XS	P43A-0003B	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	XS	XS	P43A-00042	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	XS	XS	P43A-00043	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	XS	XS	P43A-00044	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	XS	XS	P43A-00045	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	STD	XS	P43A-0003J	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	

COUPLING (CPS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P47B-0001D	Coupling ASTM A105 Class 3000 ASME B16.11 SW - SW	
1	0.75				P47B-0001E	Coupling ASTM A105 Class 3000 ASME B16.11 SW - SW	
1	1				P47B-0001F	Coupling ASTM A105 Class 3000 ASME B16.11 SW - SW	
1	1.5				P47B-0001G	Coupling ASTM A105 Class 3000 ASME B16.11 SW - SW	

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OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2 - 2.5	0.75			P31B-0137J	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	3 - 5	0.75			P31B-0137K	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	6 - 12	0.75			P31B-007AB	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	3	1			P31B-007A7	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	4 - 5	1			P31B-0138Z	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	6 - 10	1			P31B-007A4	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	4	1.5			P31B-005SN	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	5 - 6	1.5			P31B-01390	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
541	1	0.75			P31B-00551	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
541	1.5	0.75			P31B-00555	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
541	2 - 2.5	0.75			P31B-0137H	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
541	3 - 5	0.75			P31B-01376	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
541	6 - 12	0.75			P31B-007GR	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
1	6	2	STD	XS	P31B-007SH	Outlet ASTM A105 MSS SP-97 BW	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30B-0002D	Plug ASTM A105 ASME B16.11 NPT Round head	
1	0.75				P30B-0002E	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1				P30B-0002F	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1.5				P30B-0002G	Plug ASTM A105 ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P61B-001HC	Flange SW ASTM A105 Class 300 ASME B16.5 RF	
1	0.75		XS		P61B-001HS	Flange SW ASTM A105 Class 300 ASME B16.5 RF	
1	1		XS		P61B-001EF	Flange SW ASTM A105 Class 300 ASME B16.5 RF	
1	1.5		XS		P61B-001F2	Flange SW ASTM A105 Class 300 ASME B16.5 RF	
1	2		XS		P61B-001HW	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	3		STD		P61B-001LJ	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	4		STD		P61B-001MC	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
781	0.5		XS		P61B-001FF	Flange SW ASTM A105 Class 600 ASME B16.5 RF	
781	0.75		XS		P61B-001FH	Flange SW ASTM A105 Class 600 ASME B16.5 RF	
781	1		XS		P61B-001DR	Flange SW ASTM A105 Class 600 ASME B16.5 RF	
781	1.5		XS		P61B-001DV	Flange SW ASTM A105 Class 600 ASME B16.5 RF	
781	2		XS		P61B-001DH	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	3		STD		P61B-001TW	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	4		STD		P61B-001VV	Flange WN ASTM A105 Class 600 ASME B16.5 RF	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67B-000GH	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	0.75				P67B-000GJ	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	1				P67B-000GK	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	1.5				P67B-000GL	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	2				P67B-000GM	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	3				P67B-000GN	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	4				P67B-000GP	Blind flange ASTM A105 Class 300 ASME B16.5 RF	

REDUCING FLANGE (FR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5		XS	P62B-000N0	Reducing flange SW ASTM A105 Class 300 ASME B16.5 RF	
1	1.5	0.5		XS	P62B-000NK	Reducing flange SW ASTM A105 Class 300 ASME B16.5 RF	
1	1.5	0.75		XS	P62B-000M9	Reducing flange SW ASTM A105 Class 300 ASME B16.5 RF	
1	2	0.75		XS	P62B-000ND	Reducing flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	2	1		XS	P62B-000MA	Reducing flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	3	1.5		XS	P62B-000MB	Reducing flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	3	1.5		XS	P62B-000MC	Reducing flange WN ASTM A105 Class 300 ASME B16.5 RF	

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REDUCING FLANGE (FR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2		XS	P62B-000MD	Reducing flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	4	2		XS	P62B-000AZ	Reducing flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	4	3		STD	P62B-000AX	Reducing flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	6	3		STD	P62B-000ME	Reducing flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	6	4		STD	P62B-000MF	Reducing flange WN ASTM A105 Class 300 ASME B16.5 RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000FT	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000FU	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000G5	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000G6	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	0.5				P73T-000J8	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	0.75				P73T-000J9	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1				P73T-000JA	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1.5				P73T-000JB	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	2				P73T-000JH	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	3				P73T-000JL	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	4				P73T-000JM	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-6				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
781	0.5-6				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5	0.5			P83B-001H5	Jacketed check valve ASTM A105 Class 300 API 600-modified Flange ASME B16.5 RF Trim number 8 Lift-type Bolted cover Full jacketed	
1	2	1			P83C-003PJ	Jacketed check valve ASTM A216 Grade WCB Class 300 API 600-modified Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover Full jacketed	
1	3	1.5			P83C-003PK	Jacketed check valve ASTM A216 Grade WCB Class 300 API 600-modified Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover Full jacketed	
1	4	3			P83C-003PL	Jacketed check valve ASTM A216 Grade WCB Class 300 API 600-modified Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover Full jacketed	
1	6	4			P83C-003RN	Jacketed check valve ASTM A216 Grade WCB Class 300 API 600-modified Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover Full jacketed	

PLUG VALVE (PV)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5	0.5			P85B-0000L	Jacketed plug valve Short-pattern ASTM A105 Class 300 API 599 Flange ASME B16.5 RF Plug SS316 Seat PTFE Trim SS316 Nonlubricated taper plug BC-BG Wrench lever operated Regular port Full jacketed	
1	2	1			P85C-0007W	Jacketed plug valve Short-pattern ASTM A216 Grade WCB Class 300 API 599 Flange ASME B16.5 RF Plug SS316 Seat PTFE Trim SS316 Nonlubricated taper plug BC-BG Wrench lever operated Regular port Full jacketed	
1	3	1.5			P85C-0007X	Jacketed plug valve Short-pattern ASTM A216 Grade WCB Class 300 API 599 Flange ASME B16.5 RF Plug SS316 Seat PTFE Trim SS316 Nonlubricated taper plug BC-BG Wrench lever operated Regular port Full jacketed	
1	4	3			P85C-000AW	Jacketed plug valve Short-pattern ASTM A216 Grade WCB Class 300 API 599 Flange ASME B16.5 RF Plug SS316 Seat PTFE Trim SS316 Nonlubricated taper plug BC-BG Wrench lever operated Regular port Full jacketed	
1	6	4			P85C-0008C	Jacketed plug valve Short-pattern ASTM A216 Grade WCB Class 300 API 599 Flange ASME B16.5 RF Plug SS316 Seat PTFE Trim SS316 Nonlubricated taper plug BC-BG Gear operated Regular port Full jacketed	
4610	1.5	0.75			P85B-00010	Jacketed plug valve Short-pattern ASTM A105 Class 300 API 599 Flange ASME B16.5 RF Plug SS316 Seat PTFE Trim SS316 Nonlubricated taper plug BC-BG Wrench lever operated Regular port Full jacketed Type-10	
4611	2	2			P85C-000AT	Jacketed plug valve Short-pattern ASTM A216 Grade WCB Class 300 API 599 Flange ASME B16.5 RF Plug SS316 Seat PTFE Trim SS316 Nonlubricated taper plug BC-BG Wrench lever operated Regular port Full jacketed Type-10	

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ORIFICE FLANGE (FO)							
OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2		XS		P66B-0084B	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	3		STD		P66B-0084C	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	4		STD		P66B-0084D	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
200	2		XS		P66B-00843	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	3		STD		P66B-00844	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	4		STD		P66B-00845	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	

SPECT BLANK (SB)							
OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71B-000B1	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	0.75				P71B-000B2	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	1				P71B-000B3	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71B-000B4	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	2				P71B-000B6	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	3				P71B-000B7	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	4				P71B-000B8	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	

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BOLT TABLE (B_B1APCM , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-003V4		
0.75	4	0.625	75	P80S-003XC		
1	4	0.625	80	P80S-003XD		
1.5	4	0.750	95	P80S-00414		
2	8	0.625	90	P80S-003XF		
3	8	0.750	110	P80S-003XK		
4	8	0.750	115	P80S-003XL		
6	12	0.750	125	P80S-003XN		

BOLT TABLE (B_B1APCM_781 , STUD ASME RF, OPTION CODE 781)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	80	P80S-003V6		
0.75	4	0.625	90	P80S-003XF		
1	4	0.625	95	P80S-003XG		
1.5	4	0.750	110	P80S-003XK		
2	8	0.625	110	P80S-003VC		
3	8	0.750	130	P80S-003XP		
4	8	0.875	150	P80S-0041F		
6	12	1.000	175	P80S-0043P		

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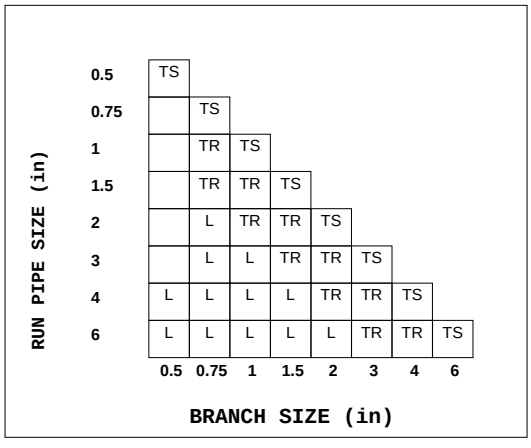
BRANCH TABLE (T_B1APCM)



TR : REDUCING TEE
L : OUTLET
TS : STRAIGHT TEE

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Material : Killed CS
Rating : ASME CLASS 300
Flange Face : RF
C.A.(mm) : 1.50
Gasket : Spiral Wound
Service : PROCESS -WET LOW SEVERITY SOUR SERVICE SUBJECT TO NACE
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
2	USE OF SOFT SEATED BALL, PLUG AND BUTTERFLY VALVES SHALL BE LIMITED TO MAXIMUM OF 204DEGC (400DEGF)
5	BOLTING CONFIRMING TO B7M / 2HM SHALL BE USED UNDER CONDITIONS (A) DIRECT EXPOSURE TO SOUR ENVIRONMENTS (B) WHEN THE BOLTING WILL BE BURIED OR INSULATED
27	PWHT OF CARBON STEEL PIPING IN WET H2S, CAUSTIC AND AMINE SERVICES SHALL BE IN ACCORDANCE WITH SECTION 10.2, 10.3, AND 10.4 OF PROJECT SPECIFICATION 3550-8440-SP-0002 MATERIALS REQUIREMENTS FOR PRESSURISED EQUIPMENT AND PIPING. FOR CAUSTIC AND AMINE SERVICE THE FOLLOWING SHALL APPLY: - PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF ALL SITE PIPING FABRICATION WELDS IS REQUIRED FOR ALL WALL THICKNESSES. FOR MODERATE AND SEVERE WET H2S SERVICE THE FOLLOWING SHALL APPLY: PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF SITE FABRICATION CIRCUMFERENTIAL OR BRANCH WELDS IS NOT REQUIRED IF WELDS ARE MULTIPASS AND IN ACCORDANCE WITH PARA 10.2.12 OF PROJECT SPECIFICATION 3550-8440-SP-0002. FOR SERVICES MEETING THE WET H2S CRITERIA AND CAUSTIC OR AMINE CRITERIA THE MORE STRINGENT PWHT REQUIREMENT SHALL GOVERN.

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
24	FULL PORT (Q)
200	WITH JACK SCREW (FO)
541	NPT(F) (CA,F)
781	CLASS 600 (B,F,G)
797	CLASS 1500 (B,F,G)
4202	SHORT RADIUS (9L)
4601	Y-PATTERN (W)
4608	VALVE WITH NIPPLES (V)

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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P01A-000XM	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	0.75		XS		P01A-000XN	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1		XS		P01A-000XP	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1.5		XS		P01A-000XV	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	2		XS		P01A-000YX	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	3		STD		P01A-000YM	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	4		STD		P01A-000YU	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	6		STD		P01A-000Z3	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	8		SCH20		P01A-001AT	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	10		SCH30		P01A-0016U	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	12		STD		P01A-000XT	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	14		STD		P01A-000Y1	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	16		SCH20		P01A-0018E	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	18		SCH20		P01A-00370	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P02A-000UR	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	0.75		XS		P02A-000UN	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1		XS		P02A-000UL	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1.5		XS		P02A-000UJ	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	2		XS		P02A-000CP	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		STD		P02A-000CU	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		STD		P02A-000CZ	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		STD		P02A-000D6	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		SCH20		P02A-000GZ	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	10		SCH30		P02A-000M3	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	12		STD		P02A-000BZ	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	14		STD		P02A-000C8	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	16		SCH20		P02A-000GM	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	18		SCH20		P02A-000LT	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
4202	18		SCH20		P02A-001L7	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Short radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P03A-0018K	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	0.75		XS		P03A-0018L	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1		XS		P03A-0018M	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1.5		XS		P03A-0018N	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	2		XS		P03A-000AS	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		STD		P03A-000AX	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		STD		P03A-000B1	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		STD		P03A-000B9	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		SCH20		P03A-000EX	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	10		SCH30		P03A-000JT	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	12		STD		P03A-000A9	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	14		STD		P03A-000AG	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	16		SCH20		P03A-000EM	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	18		SCH20		P03A-001DX	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P21A-002TV	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	0.75		XS		P21A-002TW	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1		XS		P21A-002TX	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5		XS		P21A-002TY	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2		XS		P21A-001CJ	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		STD		P21A-001CU	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		STD		P21A-001CW	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	6		STD		P21A-001D2	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8		SCH20		P21A-00215	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10		SCH30		P21A-00259	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12		STD		P21A-001C1	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14		STD		P21A-001C8	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16		SCH20		P21A-0020X	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18		SCH20		P21A-002Y1	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75	XS	XS	P24A-006WW	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.75	XS	XS	P24A-006WY	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	1	XS	XS	P24A-006WZ	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	XS	XS	P24A-00238	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	XS	XS	P24A-0023H	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	STD	XS	P24A-00214	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	STD	XS	P24A-002HW	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P24A-002HY	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P24A-0021K	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	STD	P24A-0021A	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P24A-00229	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH20	STD	P24A-00J21	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH20	STD	P24A-005J4	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	SCH30	STD	P24A-00GNR	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	SCH30	STD	P24A-0060W	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	SCH30	SCH20	P24A-005KE	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	STD	STD	P24A-0022S	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	STD	SCH20	P24A-0060X	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	STD	SCH30	P24A-0060K	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	STD	STD	P24A-0026N	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	STD	SCH20	P24A-00KSG	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	STD	SCH30	P24A-0060L	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	STD	STD	P24A-0022R	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	6	SCH20	STD	P24A-00GU4	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	SCH20	SCH20	P24A-002XW	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	SCH20	SCH30	P24A-00KSH	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	SCH20	STD	P24A-00GP7	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	SCH20	STD	P24A-006YK	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	8	SCH20	SCH20	P24A-00K8W	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	10	SCH20	SCH30	P24A-00M3A	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	12	SCH20	STD	P24A-00M4Y	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	14	SCH20	STD	P24A-00877	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	16	SCH20	SCH20	P24A-00GAJ	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	XS	XS	P27A-004M6	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.5	XS	XS	P27A-004ME	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.75	XS	XS	P27A-004MM	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.5	XS	XS	P27A-004N2	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.75	XS	XS	P27A-004NC	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	1	XS	XS	P27A-004NP	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	0.75	XS	XS	P27A-001CZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	XS	XS	P27A-001DL	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	XS	XS	P27A-001E2	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	STD	XS	P27A-001AU	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	STD	XS	P27A-001MZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	1.5	STD	XS	P27A-001AW	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P27A-001N0	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	4	3	STD	STD	P27A-00189	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	STD	P27A-001AZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P27A-001GW	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH20	STD	P27A-003K2	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH20	STD	P27A-003K3	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	SCH30	STD	P27A-003MK	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	SCH30	STD	P27A-003ML	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	SCH30	SCH20	P27A-003MM	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	STD	STD	P27A-0018X	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	STD	SCH20	P27A-0041Y	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	STD	SCH30	P27A-0041H	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	STD	STD	P27A-0019L	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	STD	SCH20	P27A-003MC	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	STD	SCH30	P27A-003MB	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	STD	STD	P27A-0018W	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	SCH20	SCH20	P27A-001WX	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	SCH20	SCH30	P27A-003NC	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	SCH20	STD	P27A-0055Z	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	SCH20	STD	P27A-0057G	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	10	SCH20	SCH30	P27A-005AY	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	12	SCH20	STD	P27A-005D4	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	14	SCH20	STD	P27A-005F4	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	16	SCH20	SCH20	P27A-005H6	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	XS	XS	P28A-004V6	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.5	XS	XS	P28A-004V7	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.75	XS	XS	P28A-004V8	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.5	XS	XS	P28A-004V9	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.75	XS	XS	P28A-004VA	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	1	XS	XS	P28A-004VB	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	0.75	XS	XS	P28A-001CU	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	XS	XS	P28A-001DS	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	XS	XS	P28A-001EE	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	STD	XS	P28A-001A3	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	STD	XS	P28A-001N5	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	1.5	STD	XS	P28A-001A4	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P28A-001N6	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P28A-0018B	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	STD	P28A-001AS	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P28A-00182	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH20	STD	P28A-003JU	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH20	STD	P28A-003JV	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	SCH30	STD	P28A-003MD	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	SCH30	STD	P28A-003ME	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	SCH30	SCH20	P28A-003MF	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	STD	STD	P28A-00191	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	STD	SCH20	P28A-0041S	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	STD	SCH30	P28A-0041B	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	STD	STD	P28A-0019R	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	STD	SCH20	P28A-003M6	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	STD	SCH30	P28A-003M5	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	STD	STD	P28A-0018Z	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	SCH20	SCH20	P28A-001T6	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	SCH20	SCH30	P28A-003N6	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	SCH20	STD	P28A-00519	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	SCH20	STD	P28A-0051A	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	10	SCH20	SCH30	P28A-00635	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	18	12	SCH20	STD	P28A-00636	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	14	SCH20	STD	P28A-00637	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	16	SCH20	SCH20	P28A-0082L	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P29A-0035U	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	0.75		XS		P29A-0035V	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	1		XS		P29A-0035W	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	1.5		XS		P29A-0035X	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	2		XS		P29A-001VG	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	3		STD		P29A-001VK	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	4		STD		P29A-001VN	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	6		STD		P29A-001VS	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	8		SCH20		P29A-00364	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	10		SCH30		P29A-003B5	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	12		STD		P29A-001VC	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	14		STD		P29A-001VD	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	16		SCH20		P29A-00361	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	18		SCH20		P29A-00362	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
541	0.75				P29B-0000C	Cap ASTM A105 Class 3000 ASME B16.11 NPT	
541	1				P29B-0000D	Cap ASTM A105 Class 3000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P41A-000B5	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		SCH160		P41A-000B6	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		SCH160		P41A-000B7	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		SCH160		P41A-000B8	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2	0.75	XS	XS	P31B-00CP3	Outlet ASTM A105 MSS SP-97 BW	
1	3	0.75	STD	XS	P31B-00CMN	Outlet ASTM A105 MSS SP-97 BW	
1	4	0.75	STD	XS	P31B-00CLM	Outlet ASTM A105 MSS SP-97 BW	
1	6	0.75	STD	XS	P31B-00CKD	Outlet ASTM A105 MSS SP-97 BW	
1	8	0.75	SCH20	XS	P31B-00Y4E	Outlet ASTM A105 MSS SP-97 BW	
1	10	0.75	SCH30	XS	P31B-00YF2	Outlet ASTM A105 MSS SP-97 BW	
1	12	0.75	STD	XS	P31B-00CRY	Outlet ASTM A105 MSS SP-97 BW	
1	14	0.75	STD	XS	P31B-00NHM	Outlet ASTM A105 MSS SP-97 BW	
1	16	0.75	SCH20	XS	P31B-00Y4A	Outlet ASTM A105 MSS SP-97 BW	
1	18	0.75	SCH20	XS	P31B-00Y4B	Outlet ASTM A105 MSS SP-97 BW	
1	3	1	STD	XS	P31B-00B4D	Outlet ASTM A105 MSS SP-97 BW	
1	4	1	STD	XS	P31B-00AYW	Outlet ASTM A105 MSS SP-97 BW	
1	6	1	STD	XS	P31B-00AZ6	Outlet ASTM A105 MSS SP-97 BW	
1	8	1	SCH20	XS	P31B-00Y4N	Outlet ASTM A105 MSS SP-97 BW	
1	10	1	SCH30	XS	P31B-00YF3	Outlet ASTM A105 MSS SP-97 BW	
1	12	1	STD	XS	P31B-00BW8	Outlet ASTM A105 MSS SP-97 BW	
1	14	1	STD	XS	P31B-00NHN	Outlet ASTM A105 MSS SP-97 BW	
1	16	1	SCH20	XS	P31B-00Y4J	Outlet ASTM A105 MSS SP-97 BW	
1	18	1	SCH20	XS	P31B-00Y4K	Outlet ASTM A105 MSS SP-97 BW	
1	4	1.5	STD	XS	P31B-00BNZ	Outlet ASTM A105 MSS SP-97 BW	
1	6	1.5	STD	XS	P31B-00BJB	Outlet ASTM A105 MSS SP-97 BW	
1	8	1.5	SCH20	XS	P31B-00Y4X	Outlet ASTM A105 MSS SP-97 BW	
1	10	1.5	SCH30	XS	P31B-00YF4	Outlet ASTM A105 MSS SP-97 BW	
1	12	1.5	STD	XS	P31B-00CE3	Outlet ASTM A105 MSS SP-97 BW	
1	14	1.5	STD	XS	P31B-00NHP	Outlet ASTM A105 MSS SP-97 BW	
1	16	1.5	SCH20	XS	P31B-00Y4T	Outlet ASTM A105 MSS SP-97 BW	
1	18	1.5	SCH20	XS	P31B-00Y4U	Outlet ASTM A105 MSS SP-97 BW	

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OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	6	2	STD	XS	P31B-007SH	Outlet ASTM A105 MSS SP-97 BW	
1	8	2	SCH20	XS	P31B-00NY2	Outlet ASTM A105 MSS SP-97 BW	
1	10	2	SCH30	XS	P31B-00NVF	Outlet ASTM A105 MSS SP-97 BW	
1	12	2	STD	XS	P31B-00CBN	Outlet ASTM A105 MSS SP-97 BW	
1	14	2	STD	XS	P31B-00CAE	Outlet ASTM A105 MSS SP-97 BW	
1	16	2	SCH20	XS	P31B-00TF8	Outlet ASTM A105 MSS SP-97 BW	
1	18	2	SCH20	XS	P31B-00NVX	Outlet ASTM A105 MSS SP-97 BW	
1	8	3	SCH20	STD	P31B-00P11	Outlet ASTM A105 MSS SP-97 BW	
1	10	3	SCH30	STD	P31B-00NYK	Outlet ASTM A105 MSS SP-97 BW	
1	12	3	STD	STD	P31B-0096N	Outlet ASTM A105 MSS SP-97 BW	
1	14	3	STD	STD	P31B-0090T	Outlet ASTM A105 MSS SP-97 BW	
1	16	3	SCH20	STD	P31B-00TU2	Outlet ASTM A105 MSS SP-97 BW	
1	18	3	SCH20	STD	P31B-00NZ4	Outlet ASTM A105 MSS SP-97 BW	
1	12	4	STD	STD	P31B-008ZW	Outlet ASTM A105 MSS SP-97 BW	
1	14	4	STD	STD	P31B-008YM	Outlet ASTM A105 MSS SP-97 BW	
1	16	4	SCH20	STD	P31B-00TU3	Outlet ASTM A105 MSS SP-97 BW	
1	18	4	SCH20	STD	P31B-00P1V	Outlet ASTM A105 MSS SP-97 BW	
1	18	6	SCH20	STD	P31B-00P48	Outlet ASTM A105 MSS SP-97 BW	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30B-0002D	Plug ASTM A105 ASME B16.11 NPT Round head	
1	0.75				P30B-0002E	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1				P30B-0002F	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1.5				P30B-0002G	Plug ASTM A105 ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P61B-0032Z	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	0.75		XS		P61B-0032X	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	1		XS		P61B-0032U	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	1.5		XS		P61B-0032S	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	2		XS		P61B-001HW	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	3		STD		P61B-001LJ	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	4		STD		P61B-001MC	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	6		STD		P61B-001N2	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	8		SCH20		P61B-002LJ	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	10		SCH30		P61B-003LX	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	12		STD		P61B-001LE	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	14		STD		P61B-001M9	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	16		SCH20		P61B-002MS	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	18		SCH20		P61B-002MT	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
541	0.5				P61B-003U3	Flange NPT ASTM A105 Class 300 ASME B16.5 RF	
541	0.75				P61B-003U4	Flange NPT ASTM A105 Class 300 ASME B16.5 RF	
781	0.5		XS		P61B-003TJ	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	0.75		XS		P61B-003TK	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	1		XS		P61B-003TL	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	1.5		XS		P61B-003TM	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	2		XS		P61B-001DH	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	3		STD		P61B-001TW	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	4		STD		P61B-001VV	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	6		STD		P61B-001JW	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	8		SCH20		P61B-003F0	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	10		SCH30		P61B-003TN	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	12		STD		P61B-001P9	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	14		STD		P61B-001PL	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	16		SCH20		P61B-00798	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	18		SCH20		P61B-003TP	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
797	10		SCH30		P61B-00BRX	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	

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BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67B-000GH	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	0.75				P67B-000GJ	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	1				P67B-000GK	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	1.5				P67B-000GL	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	2				P67B-000GM	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	3				P67B-000GN	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	4				P67B-000GP	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	6				P67B-000GY	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	8				P67B-000GZ	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	10				P67B-000GR	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	12				P67B-000GS	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	14				P67B-000GT	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	16				P67B-000GU	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	18				P67B-000GV	Blind flange ASTM A105 Class 300 ASME B16.5 RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000FT	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000FU	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000G5	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000G6	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	6				P73T-000G7	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	8				P73T-000G8	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	10				P73T-000FX	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	12				P73T-000FY	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	14				P73T-000FZ	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	16				P73T-000G0	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	18				P73T-000G1	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	0.5				P73T-000J8	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	0.75				P73T-000J9	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1				P73T-000JA	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1.5				P73T-000JB	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	2				P73T-000JH	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	3				P73T-000JL	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	4				P73T-000JM	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	6				P73T-000JN	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	8				P73T-000JP	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	10				P73T-000JC	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	12				P73T-000JD	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	14				P73T-000JE	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	16				P73T-000JF	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	18				P73T-000JG	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
797	10				P75T-0008L	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	

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BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-10				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	12-18				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
781	0.5-6				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
781	8-18				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
797	10				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81B-001TK	Gate valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	0.75				P81B-001TL	Gate valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	1				P81B-001TM	Gate valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	1.5				P81B-001TN	Gate valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	2				P81C-005ZL	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	3				P81C-005ZM	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	4				P81C-005ZN	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	6				P81C-005ZP	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	8				P81C-0091E	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Gear operated Moderate wet H2S service	
1	10				P81C-005ZS	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Gear operated Moderate wet H2S service	
1	12				P81C-005ZT	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Gear operated Moderate wet H2S service	
1	14				P81C-005ZU	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Gear operated Moderate wet H2S service	
1	16				P81C-005ZV	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Gear operated Moderate wet H2S service	
1	18				P81C-005ZW	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Gear operated Moderate wet H2S service	
4608	0.75				P81B-002WG	Gate valve ASTM A105 Class 300 API 602 BW both sides w/ nipples BE - NPT ASTM A106-B Sch160-nipple Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
4608	1				P81B-00393	Gate valve ASTM A105 Class 300 API 602 BW both sides w/ nipples BE - NPT ASTM A106-B Sch160-nipple Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82B-001F1	Globe valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	0.75				P82B-001F2	Globe valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	1				P82B-001F3	Globe valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	1.5				P82B-001F4	Globe valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	2				P82C-002YJ	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	3				P82C-002YK	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	4				P82C-002YL	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	6				P82C-002YM	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	8				P82C-004CM	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Gear operated Moderate wet H2S service	
4601	0.75				P82B-001AV	Y-pattern globe valve ASTM A105 Class 300 ASME B16.34 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
4601	1				P82B-001AW	Y-pattern globe valve ASTM A105 Class 300 ASME B16.34 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
4601	1.5				P82B-001AX	Y-pattern globe valve ASTM A105 Class 300 ASME B16.34 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
4601	2				P82C-002MD	Y-pattern globe valve ASTM A216 Grade WCB Class 300 ASME B16.34 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
4601	3				P82C-002ME	Y-pattern globe valve ASTM A216 Grade WCB Class 300 ASME B16.34 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
4601	14				P82C-002MF	Y-pattern globe valve ASTM A216 Grade WCB Class 300 ASME B16.34 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Gear operated Moderate wet H2S service	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83B-0014L	Check valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 Lift-type Bolted cover Moderate wet H2S service	

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CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75				P83B-0014M	Check valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 Lift-type Bolted cover Moderate wet H2S service	
1	1				P83B-0014N	Check valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 Lift-type Bolted cover Moderate wet H2S service	
1	1.5				P83B-0014P	Check valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 Lift-type Bolted cover Moderate wet H2S service	
1	2				P83C-002X9	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 Swing-type Bolted cover Moderate wet H2S service	
1	3				P83C-002XA	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 Swing-type Bolted cover Moderate wet H2S service	
1	4				P83C-002XB	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 Swing-type Bolted cover Moderate wet H2S service	
1	6				P83C-002XC	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 Swing-type Bolted cover Moderate wet H2S service	
1	8				P83C-002XD	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 Swing-type Bolted cover Moderate wet H2S service	
1	10				P83C-002X8	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 Swing-type Bolted cover Moderate wet H2S service	
1	12				P83C-002YY	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 Swing-type Bolted cover Moderate wet H2S service	
1	14				P83C-002YZ	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 Swing-type Bolted cover Moderate wet H2S service	
1	16				P83C-002Z0	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 Swing-type Bolted cover Moderate wet H2S service	
1	18				P83C-002Z1	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 Swing-type Bolted cover Moderate wet H2S service	

BALL VALVE (Q)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	4				P84C-006UX	Ball valve Long-pattern ASTM A216 Grade WCB Class 300 API 608 Flange ASME B16.5 RF Ball SS316L Seat R-PTFE Trim SS316L Floating-type Side-entry Gear operated Reduced bore Fire tested design Moderate wet H2S service	
24	4				P84C-006UY	Ball valve Long-pattern ASTM A216 Grade WCB Class 300 API 608 Flange ASME B16.5 RF Ball SS316L Seat R-PTFE Trim SS316L Floating-type Side-entry Gear operated Full bore Fire tested design Moderate wet H2S service	

BUTTERFLY VALVE (H)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	10				P86C-00250	Offset design butterfly valve ASTM A216 Grade WCB Class 300 API 609 Category B Lug-type ASME B16.5 RF Disc CS Seat Stellite-6 Trim SS316L Triple eccentric design BG Gear operated Moderate wet H2S service	
1	12				P86C-00251	Offset design butterfly valve ASTM A216 Grade WCB Class 300 API 609 Category B Lug-type ASME B16.5 RF Disc CS Seat Stellite-6 Trim SS316L Triple eccentric design BG Gear operated Moderate wet H2S service	
1	14				P86C-00252	Offset design butterfly valve ASTM A216 Grade WCB Class 300 API 609 Category B Lug-type ASME B16.5 RF Disc CS Seat Stellite-6 Trim SS316L Triple eccentric design BG Gear operated Moderate wet H2S service	

NEEDLE VALVE (NV)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82B-001JV	Needle valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	0.75				P82B-001JW	Needle valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	1				P82B-001JX	Needle valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	1.5				P82B-001JY	Needle valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	

ORIFICE FLANGE (FO)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2		XS		P66B-0084B	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	3		STD		P66B-0084C	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	4		STD		P66B-0084D	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	6		STD		P66B-0084E	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	8		SCH20		P66B-0084F	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	10		SCH30		P66B-0086Z	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	12		STD		P66B-008A2	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	14		STD		P66B-008A3	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
200	2		XS		P66B-00843	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	3		STD		P66B-00844	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	4		STD		P66B-00845	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	6		STD		P66B-00846	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	8		SCH20		P66B-00847	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	

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ORIFICE FLANGE (FO)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
200	10		SCH30		P66B-00874	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	12		STD		P66B-008A4	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	14		STD		P66B-008A5	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71B-000B1	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	0.75				P71B-000B2	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	1				P71B-000B3	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71B-000B4	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	2				P71B-000B6	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	3				P71B-000B7	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	4				P71B-000B8	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	6				P71B-000B9	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	8				P71B-000BA	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	10				P71B-000B5	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	12				P71B-000BB	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	

PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000FA	Paddle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	16				P72B-000FB	Paddle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	18				P72B-000FC	Paddle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	

PADDLE SPACER (PS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000FG	Paddle spacer ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	16				P72B-000FH	Paddle spacer ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	18				P72B-000FJ	Paddle spacer ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	

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BOLT TABLE (B_B1AQ02 , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-008T0		
0.75	4	0.625	75	P80S-00908		
1	4	0.625	80	P80S-00909		
1.5	4	0.750	95	P80S-005Z4		
2	8	0.625	90	P80S-0090B		
3	8	0.750	110	P80S-0090F		
4	8	0.750	115	P80S-0090G		
6	12	0.750	125	P80S-0090J		
8	12	0.875	140	P80S-005ZD		
10	16	1.000	160	P80S-0061E		
12	16	1.125	175	P80S-0064S		
14	20	1.125	180	P80S-0064T		
16	20	1.250	190	P80S-00689		
18	24	1.250	200	P80S-0068B		

BOLT TABLE (B_B1AQ02_781 , STUD ASME RF, OPTION CODE 781)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	80	P80S-008T2		
0.75	4	0.625	90	P80S-0090B		
1	4	0.625	95	P80S-0090C		
1.5	4	0.750	110	P80S-0090F		
2	8	0.625	110	P80S-008T8		
3	8	0.750	130	P80S-0090K		
4	8	0.875	150	P80S-005ZF		
6	12	1.000	175	P80S-0061H		
8	12	1.125	195	P80S-0064W		
10	16	1.250	250	P80S-0068M		
12	20	1.250	255	P80S-0068N		
14	20	1.375	270	P80S-006HV		
16	20	1.500	295	P80S-006LP		
18	20	1.625	320	P80S-00A5E		

BOLT TABLE (B_B1AQ02_797 , STUD ASME RJ, OPTION CODE 797)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	110		R12	
0.75	4	0.750	115		R14	
1	4	0.875	130		R16	
1.5	4	1.000	140		R20	
2	8	0.875	150		R24	
3	8	1.125	180		R35	
4	8	1.250	230		R39	
6	12	1.375	300		R46	
8	12	1.625	345		R50	
10	12	1.875	395	P80S-00AW8	R54	P75T-0008L
12	16	2.000	445		R58	
14	16	2.250	490		R63	
16	16	2.500	540		R67	
18	16	2.750	590		R71	

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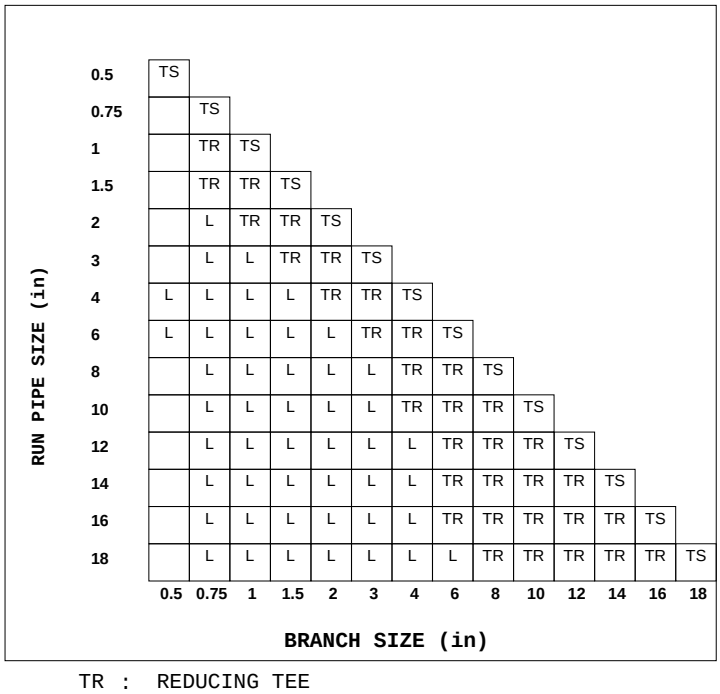
BRANCH TABLE (T_B1AQ02)



TR : REDUCING TEE
TS : STRAIGHT TEE
L : OUTLET

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Material : Killed CS
Rating : ASME CLASS 300
Flange Face : RF
C.A.(mm) : 1.50
Gasket : Spiral Wound
Service : PROCESS - WET SEVERE SOUR SERVICE SUBJECT TO NACE + HIC STD.
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
2	USE OF SOFT SEATED BALL, PLUG AND BUTTERFLY VALVES SHALL BE LIMITED TO MAXIMUM OF 204DEGC (400DEGF)
5	BOLTING CONFIRMING TO B7M / 2HM SHALL BE USED UNDER CONDITIONS (A) DIRECT EXPOSURE TO SOUR ENVIRONMENTS (B) WHEN THE BOLTING WILL BE BURIED OR INSULATED
27	PWHT OF CARBON STEEL PIPING IN WET H2S, CAUSTIC AND AMINE SERVICES SHALL BE IN ACCORDANCE WITH SECTION 10.2, 10.3, AND 10.4 OF PROJECT SPECIFICATION 3550-8440-SP-0002 MATERIALS REQUIREMENTS FOR PRESSURISED EQUIPMENT AND PIPING. FOR CAUSTIC AND AMINE SERVICE THE FOLLOWING SHALL APPLY: - PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF ALL SITE PIPING FABRICATION WELDS IS REQUIRED FOR ALL WALL THICKNESSES. FOR MODERATE AND SEVERE WET H2S SERVICE THE FOLLOWING SHALL APPLY: PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF SITE FABRICATION CIRCUMFERENTIAL OR BRANCH WELDS IS NOT REQUIRED IF WELDS ARE MULTIPASS AND IN ACCORDANCE WITH PARA 10.2.12 OF PROJECT SPECIFICATION 3550-8440-SP-0002. FOR SERVICES MEETING THE WET H2S CRITERIA AND CAUSTIC OR AMINE CRITERIA THE MORE STRINGENT PWHT REQUIREMENT SHALL GOVERN.

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
200	WITH JACK SCREW (FO)
541	NPT(F) (CA,F)
781	CLASS 600 (B,F,G)
4601	Y-PATTERN (W)
4608	VALVE WITH NIPPLES (V)

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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P01A-000XM	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	0.75		XS		P01A-000XN	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1		XS		P01A-000XP	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1.5		XS		P01A-000XV	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	2		XS		P01A-000YX	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	3		STD		P01A-000YM	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	4		STD		P01A-000YU	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	6		STD		P01A-000Z3	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	8		SCH20		P01A-001AT	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	10		SCH30		P01A-0016U	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	12		STD		P01A-000XT	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P02A-000UR	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	0.75		XS		P02A-000UN	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1		XS		P02A-000UL	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1.5		XS		P02A-000UJ	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	2		XS		P02A-000CP	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		STD		P02A-000CU	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		STD		P02A-000CZ	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		STD		P02A-000D6	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		SCH20		P02A-000GZ	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	10		SCH30		P02A-000M3	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	12		STD		P02A-000BZ	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P03A-0018K	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	0.75		XS		P03A-0018L	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1		XS		P03A-0018M	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1.5		XS		P03A-0018N	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	2		XS		P03A-000AS	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		STD		P03A-000AX	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		STD		P03A-000B1	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		STD		P03A-000B9	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		SCH20		P03A-000EX	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	10		SCH30		P03A-000JT	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	12		STD		P03A-000A9	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P21A-002TV	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	0.75		XS		P21A-002TW	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1		XS		P21A-002TX	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5		XS		P21A-002TY	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2		XS		P21A-001CJ	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		STD		P21A-001CU	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		STD		P21A-001CW	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6		STD		P21A-001D2	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8		SCH20		P21A-00215	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10		SCH30		P21A-00259	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12		STD		P21A-001C1	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75	XS	XS	P24A-006WW	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.75	XS	XS	P24A-006WY	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5	1	XS	XS	P24A-006WZ	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	XS	XS	P24A-00238	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	XS	XS	P24A-0023H	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	STD	XS	P24A-00214	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	STD	XS	P24A-002HW	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P24A-002HY	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P24A-0021K	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	STD	P24A-0021A	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P24A-00229	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH20	STD	P24A-00J21	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH20	STD	P24A-005J4	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	SCH30	STD	P24A-00GNR	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	SCH30	STD	P24A-0060W	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	SCH30	SCH20	P24A-005KE	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	STD	STD	P24A-0022S	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	STD	SCH20	P24A-0060X	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	STD	SCH30	P24A-0060K	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	XS	XS	P27A-004M6	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.5	XS	XS	P27A-004ME	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.75	XS	XS	P27A-004MM	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.5	XS	XS	P27A-004N2	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.75	XS	XS	P27A-004NC	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	1	XS	XS	P27A-004NP	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	0.75	XS	XS	P27A-001CZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	XS	XS	P27A-001DL	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	XS	XS	P27A-001E2	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	STD	XS	P27A-001AU	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	STD	XS	P27A-001MZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	1.5	STD	XS	P27A-001AW	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P27A-001N0	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P27A-00189	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	STD	P27A-001AZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P27A-001GW	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH20	STD	P27A-003K2	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH20	STD	P27A-003K3	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	SCH30	STD	P27A-003MK	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	SCH30	STD	P27A-003ML	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	SCH30	SCH20	P27A-003MM	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	STD	STD	P27A-0018X	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	STD	SCH20	P27A-0041Y	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	STD	SCH30	P27A-0041H	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	XS	XS	P28A-004V6	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.5	XS	XS	P28A-004V7	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.75	XS	XS	P28A-004V8	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.5	XS	XS	P28A-004V9	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.75	XS	XS	P28A-004VA	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	1	XS	XS	P28A-004VB	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	0.75	XS	XS	P28A-001CU	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	XS	XS	P28A-001DS	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	XS	XS	P28A-001EE	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	STD	XS	P28A-001A3	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	STD	XS	P28A-001N5	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	1.5	STD	XS	P28A-001A4	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	4	2	STD	XS	P28A-001N6	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P28A-0018B	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	STD	P28A-001AS	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P28A-00182	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH20	STD	P28A-003JU	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH20	STD	P28A-003JV	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	SCH30	STD	P28A-003MD	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	SCH30	STD	P28A-003ME	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	SCH30	SCH20	P28A-003MF	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	STD	STD	P28A-00191	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	STD	SCH20	P28A-0041S	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	STD	SCH30	P28A-0041B	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P29A-003B6	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	0.75		XS		P29A-003B7	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	1		XS		P29A-003B8	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5		XS		P29A-003B9	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	2		XS		P29A-00381	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	3		STD		P29A-00383	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	4		STD		P29A-00384	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	6		STD		P29A-00385	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	8		SCH20		P29A-0038W	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	10		SCH30		P29A-003BA	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	12		STD		P29A-003G8	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
541	0.75				P29B-0000C	Cap ASTM A105 Class 3000 ASME B16.11 NPT	
541	1				P29B-0000D	Cap ASTM A105 Class 3000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P41A-000B5	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		SCH160		P41A-000B6	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		SCH160		P41A-000B7	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		SCH160		P41A-000B8	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2	0.75	XS	XS	P31B-00CP3	Outlet ASTM A105 MSS SP-97 BW	
1	3	0.75	STD	XS	P31B-00CMN	Outlet ASTM A105 MSS SP-97 BW	
1	4	0.75	STD	XS	P31B-00CLM	Outlet ASTM A105 MSS SP-97 BW	
1	6	0.75	STD	XS	P31B-00CKD	Outlet ASTM A105 MSS SP-97 BW	
1	8	0.75	SCH20	XS	P31B-00Y4E	Outlet ASTM A105 MSS SP-97 BW	
1	10	0.75	SCH30	XS	P31B-00YF2	Outlet ASTM A105 MSS SP-97 BW	
1	12	0.75	STD	XS	P31B-00CRY	Outlet ASTM A105 MSS SP-97 BW	
1	3	1	STD	XS	P31B-00B4D	Outlet ASTM A105 MSS SP-97 BW	
1	4	1	STD	XS	P31B-00AYW	Outlet ASTM A105 MSS SP-97 BW	
1	6	1	STD	XS	P31B-00AZ6	Outlet ASTM A105 MSS SP-97 BW	
1	8	1	SCH20	XS	P31B-00Y4N	Outlet ASTM A105 MSS SP-97 BW	
1	10	1	SCH30	XS	P31B-00YF3	Outlet ASTM A105 MSS SP-97 BW	
1	12	1	STD	XS	P31B-00BW8	Outlet ASTM A105 MSS SP-97 BW	
1	4	1.5	STD	XS	P31B-00BNZ	Outlet ASTM A105 MSS SP-97 BW	
1	6	1.5	STD	XS	P31B-00BJB	Outlet ASTM A105 MSS SP-97 BW	
1	8	1.5	SCH20	XS	P31B-00Y4X	Outlet ASTM A105 MSS SP-97 BW	
1	10	1.5	SCH30	XS	P31B-00YF4	Outlet ASTM A105 MSS SP-97 BW	
1	12	1.5	STD	XS	P31B-00CE3	Outlet ASTM A105 MSS SP-97 BW	
1	6	2	STD	XS	P31B-007SH	Outlet ASTM A105 MSS SP-97 BW	
1	8	2	SCH20	XS	P31B-00NY2	Outlet ASTM A105 MSS SP-97 BW	
1	10	2	SCH30	XS	P31B-00NVF	Outlet ASTM A105 MSS SP-97 BW	

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OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	12	2	STD	XS	P31B-00CBN	Outlet ASTM A105 MSS SP-97 BW	
1	8	3	SCH20	STD	P31B-00P11	Outlet ASTM A105 MSS SP-97 BW	
1	10	3	SCH30	STD	P31B-00NYK	Outlet ASTM A105 MSS SP-97 BW	
1	12	3	STD	STD	P31B-0096N	Outlet ASTM A105 MSS SP-97 BW	
1	12	4	STD	STD	P31B-008ZW	Outlet ASTM A105 MSS SP-97 BW	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30B-0002D	Plug ASTM A105 ASME B16.11 NPT Round head	
1	0.75				P30B-0002E	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1				P30B-0002F	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1.5				P30B-0002G	Plug ASTM A105 ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P61B-0032Z	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	0.75		XS		P61B-0032X	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	1		XS		P61B-0032U	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	1.5		XS		P61B-0032S	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	2		XS		P61B-001HW	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	3		STD		P61B-001LJ	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	4		STD		P61B-001MC	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	6		STD		P61B-001N2	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	8		SCH20		P61B-002LJ	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	10		SCH30		P61B-003LX	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	12		STD		P61B-001LE	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
541	0.5				P61B-003U3	Flange NPT ASTM A105 Class 300 ASME B16.5 RF	
541	0.75				P61B-003U4	Flange NPT ASTM A105 Class 300 ASME B16.5 RF	
781	0.5		XS		P61B-003TJ	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	0.75		XS		P61B-003TK	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	1		XS		P61B-003TL	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	1.5		XS		P61B-003TM	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	2		XS		P61B-001DH	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	3		STD		P61B-001TW	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	4		STD		P61B-001VV	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	6		STD		P61B-001JW	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	8		SCH20		P61B-003F0	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	10		SCH30		P61B-003TN	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	12		STD		P61B-001P9	Flange WN ASTM A105 Class 600 ASME B16.5 RF	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67B-000GH	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	0.75				P67B-000GJ	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	1				P67B-000GK	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	1.5				P67B-000GL	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	2				P67B-000GM	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	3				P67B-000GN	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	4				P67B-000GP	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	6				P67B-000GY	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	8				P67B-000GZ	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	10				P67B-000GR	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	12				P67B-000GS	Blind flange ASTM A105 Class 300 ASME B16.5 RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000FT	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000FU	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

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GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000G5	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000G6	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	6				P73T-000G7	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	8				P73T-000G8	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	10				P73T-000FX	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	12				P73T-000FY	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	0.5				P73T-000J8	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	0.75				P73T-000J9	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1				P73T-000JA	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1.5				P73T-000JB	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	2				P73T-000JH	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	3				P73T-000JL	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	4				P73T-000JM	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	6				P73T-000JN	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	8				P73T-000JP	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	10				P73T-000JC	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	12				P73T-000JD	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-10				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	12				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
781	0.5-6				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
781	8-12				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81B-001TP	Gate valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	0.75				P81B-001TR	Gate valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	1				P81B-001TS	Gate valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	1.5				P81B-001TT	Gate valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	2				P81C-005ZZ	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	3				P81C-00600	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	4				P81C-00601	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	6				P81C-00602	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	8				P81C-0091F	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Gear operated Severe wet H2S service	
1	10				P81C-00604	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Gear operated Severe wet H2S service	
1	12				P81C-00605	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Gear operated Severe wet H2S service	
4608	0.75				P81B-002WH	Gate valve ASTM A105 Class 300 API 602 BW both sides w/ nipples BE - NPT ASTM A106-B Sch160-nipple Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
4608	1				P81B-00394	Gate valve ASTM A105 Class 300 API 602 BW both sides w/ nipples BE - NPT ASTM A106-B Sch160-nipple Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Severe wet H2S service	

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GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82B-001F5	Globe valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	0.75				P82B-001F6	Globe valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	1				P82B-001F7	Globe valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	1.5				P82B-001F8	Globe valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	2				P82C-002YP	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	3				P82C-002YR	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	4				P82C-002YS	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	6				P82C-002YT	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	8				P82C-004CN	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Gear operated Severe wet H2S service	
4601	0.75				P82B-001A8	Y-pattern globe valve ASTM A105 Class 300 ASME B16.34 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
4601	1				P82B-001A9	Y-pattern globe valve ASTM A105 Class 300 ASME B16.34 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
4601	1.5				P82B-001AA	Y-pattern globe valve ASTM A105 Class 300 ASME B16.34 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
4601	2				P82C-002LY	Y-pattern globe valve ASTM A216 Grade WCB Class 300 ASME B16.34 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
4601	3				P82C-002LZ	Y-pattern globe valve ASTM A216 Grade WCB Class 300 ASME B16.34 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
4601	4				P82C-002M0	Y-pattern globe valve ASTM A216 Grade WCB Class 300 ASME B16.34 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
4601	6				P82C-002M1	Y-pattern globe valve ASTM A216 Grade WCB Class 300 ASME B16.34 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
4601	8				P82C-002M2	Y-pattern globe valve ASTM A216 Grade WCB Class 300 ASME B16.34 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Severe wet H2S service	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83B-0014R	Check valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 Lift-type Bolted cover Severe wet H2S service	
1	0.75				P83B-0014S	Check valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 Lift-type Bolted cover Severe wet H2S service	
1	1				P83B-0014T	Check valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 Lift-type Bolted cover Severe wet H2S service	
1	1.5				P83B-0014U	Check valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 Lift-type Bolted cover Severe wet H2S service	
1	2				P83C-002XK	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 Swing-type Bolted cover Severe wet H2S service	
1	3				P83C-002XN	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 Swing-type Bolted cover Severe wet H2S service	
1	4				P83C-002XP	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 Swing-type Bolted cover Severe wet H2S service	
1	6				P83C-002XR	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 Swing-type Bolted cover Severe wet H2S service	
1	8				P83C-002XS	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 Swing-type Bolted cover Severe wet H2S service	
1	10				P83C-002XE	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 Swing-type Bolted cover Severe wet H2S service	
1	12				P83C-002XF	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 Swing-type Bolted cover Severe wet H2S service	

BUTTERFLY VALVE (H)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	10				P86C-00253	Offset design butterfly valve ASTM A216 Grade WCB Class 300 API 609 Category B Lug-type ASME B16.5 RF Disc CS Seat Stellite-6 Trim SS316L Triple eccentric design BG Gear operated Severe wet H2S service	

NEEDLE VALVE (NV)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82B-001JZ	Needle valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	0.75				P82B-001K0	Needle valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	1				P82B-001K1	Needle valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	1.5				P82B-001K2	Needle valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Severe wet H2S service	

ORIFICE FLANGE (FO)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2		XS		P66B-0084B	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	3		STD		P66B-0084C	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	

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ORIFICE FLANGE (FO)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	4		STD		P66B-0084D	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	6		STD		P66B-0084E	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
200	2		XS		P66B-00843	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	3		STD		P66B-00844	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	4		STD		P66B-00845	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	6		STD		P66B-00846	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71B-000B1	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	0.75				P71B-000B2	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	1				P71B-000B3	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71B-000B4	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	2				P71B-000B6	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	3				P71B-000B7	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	4				P71B-000B8	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	6				P71B-000B9	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	8				P71B-000BA	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	10				P71B-000B5	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	12				P71B-000BB	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	

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BOLT TABLE (B_B1AR02 , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-008T0		
0.75	4	0.625	75	P80S-00908		
1	4	0.625	80	P80S-00909		
1.5	4	0.750	95	P80S-005Z4		
2	8	0.625	90	P80S-0090B		
3	8	0.750	110	P80S-0090F		
4	8	0.750	115	P80S-0090G		
6	12	0.750	125	P80S-0090J		
8	12	0.875	140	P80S-005ZD		
10	16	1.000	160	P80S-0061E		
12	16	1.125	175	P80S-0064S		

BOLT TABLE (B_B1AR02_781 , STUD ASME RF, OPTION CODE 781)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	80	P80S-008T2		
0.75	4	0.625	90	P80S-0090B		
1	4	0.625	95	P80S-0090C		
1.5	4	0.750	110	P80S-0090F		
2	8	0.625	110	P80S-008T8		
3	8	0.750	130	P80S-0090K		
4	8	0.875	150	P80S-005ZF		
6	12	1.000	175	P80S-0061H		
8	12	1.125	195	P80S-0064W		
10	16	1.250	250	P80S-0068M		
12	20	1.250	255	P80S-0068N		

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BRANCH TABLE (T_B1AR02)

RUN PIPE SIZE (in) \ BRANCH SIZE (in)	0.5	0.75	1	1.5	2	3	4	6	8	10	12
0.5	TS										
0.75		TS									
1		TR	TS								
1.5		TR	TR	TS							
2		L	TR	TR	TS						
3		L	L	TR	TR	TS					
4	L	L	L	L	TR	TR	TS				
6	L	L	L	L	L	TR	TR	TS			
8		L	L	L	L	L	TR	TR	TS		
10		L	L	L	L	L	TR	TR	TR	TS	
12		L	L	L	L	L	L	TR	TR	TR	TS

TR : REDUCING TEE
TS : STRAIGHT TEE
L : OUTLET

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PIPING CLASS

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Material : Killed CS
Rating : ASME CLASS 300
Flange Face : RF
C.A.(mm) : 1.50
Gasket : Spiral Wound
Service : UTILITY : / MEDIUM PRESSURE STEAM / BLOWDOWN STEAM

Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
200	WITH JACK SCREW (FO)
541	NPT(F) (CA,L)
714	SW - NPT(F) (V)
781	CLASS 600 (B,F,G)
789	CLASS 900 (B,F,G)
797	CLASS 1500 (B,F,G)
4204	SOCKOLET ON CAP (CAP=NPS4) (LC)
4205	SOCKOLET ON CAP (CAP=NPS6) (LC)
4206	SOCKOLET ON CAP (CAP=NPS8) (LC)
4207	SOCKOLETT ON CAP (CAP=NPS10 AND LARGER) (LC)
4602	DISSIMILAR TYPE CHECK VALVE (X,XDP)

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PIPING CLASS
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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P01A-000XM	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	0.75		XS		P01A-000XN	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1		XS		P01A-000XP	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1.5		XS		P01A-000XV	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	2		XS		P01A-000YX	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	3		STD		P01A-000YM	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	4		XS		P01A-000Z9	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	6		XS		P01A-000ZF	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	8		SCH20		P01A-001AT	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	10		SCH30		P01A-0016U	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	12		SCH20		P01A-0016H	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	14		SCH20		P01A-0017A	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	16		SCH20		P01A-0018E	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	18		SCH20		P01A-00438	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE	
1	20		STD		P01A-0042G	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE	
1	24		XS		P01A-0043X	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE	
1	30		XS		P01A-008MM	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P02B-00014	90 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	0.75				P02B-00015	90 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	1				P02B-00016	90 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5				P02B-00017	90 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	2		XS		P02A-000CP	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		STD		P02A-000CU	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		XS		P02A-000D3	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		XS		P02A-000DA	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		SCH20		P02A-000GZ	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	10		SCH30		P02A-000M3	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	12		SCH20		P02A-000H4	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	14		SCH20		P02A-000FX	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	16		SCH20		P02A-000GM	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	18		SCH20		P02A-000LT	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	20		STD		P02A-0010J	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	24		XS		P02A-000MB	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	30		XS		P02A-000D0	90 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P03B-00017	45 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	0.75				P03B-00018	45 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	1				P03B-00019	45 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5				P03B-0001A	45 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	2		XS		P03A-000AS	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		STD		P03A-000AX	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		XS		P03A-000B3	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		XS		P03A-000B8	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		SCH20		P03A-000EX	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	10		SCH30		P03A-000JT	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	12		SCH20		P03A-000F2	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	14		SCH20		P03A-000DW	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	16		SCH20		P03A-000EM	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	18		SCH20		P03A-001DX	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	20		STD		P03A-000X1	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	24		XS		P03A-001E1	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	30		XS		P03A-000B5	45 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius	

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PIPING CLASS
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STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P21B-00017	Straight tee ASTM A105 Class 3000 ASME B16.11 SW	
1	0.75				P21B-00018	Straight tee ASTM A105 Class 3000 ASME B16.11 SW	
1	1				P21B-00019	Straight tee ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5				P21B-0001A	Straight tee ASTM A105 Class 3000 ASME B16.11 SW	
1	2		XS		P21A-001CJ	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		STD		P21A-001CU	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		XS		P21A-001CV	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6		XS		P21A-001D4	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8		SCH20		P21A-00215	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10		SCH30		P21A-00259	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12		SCH20		P21A-0021A	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14		SCH20		P21A-00206	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16		SCH20		P21A-0020X	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18		SCH20		P21A-001PJ	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20		STD		P21A-001C7	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24		XS		P21A-001UM	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30		XS		P21A-001CX	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75			P24B-0002L	Reducing tee ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5	0.75			P24B-0002N	Reducing tee ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5	1			P24B-0002P	Reducing tee ASTM A105 Class 3000 ASME B16.11 SW	
1	2	1	XS	XS	P24A-00238	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	XS	XS	P24A-0023H	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	STD	XS	P24A-00214	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	STD	XS	P24A-002HW	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	XS	XS	P24A-0023E	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	XS	STD	P24A-006FZ	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	XS	STD	P24A-006G0	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	XS	XS	P24A-00243	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH20	XS	P24A-00N83	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH20	XS	P24A-00N84	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	SCH30	XS	P24A-00N23	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	SCH30	XS	P24A-00N24	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	SCH30	SCH20	P24A-005KE	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	SCH20	XS	P24A-00GX6	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH20	SCH20	P24A-002U4	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH20	SCH30	P24A-00NFN	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	SCH20	XS	P24A-00L6S	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	SCH20	SCH20	P24A-002U7	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	SCH20	SCH30	P24A-003ER	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	SCH20	SCH20	P24A-002YR	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	6	SCH20	XS	P24A-00K13	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	SCH20	SCH20	P24A-002XW	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	SCH20	SCH30	P24A-00KSH	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	SCH20	SCH20	P24A-002U1	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	SCH20	SCH20	P24A-002XF	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	8	SCH20	SCH20	P24A-002XC	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	10	SCH20	SCH30	P24A-00BF6	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	12	SCH20	SCH20	P24A-002W3	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	14	SCH20	SCH20	P24A-002WT	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	16	SCH20	SCH20	P24A-002X5	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	8	STD	SCH20	P24A-00K0N	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	10	STD	SCH30	P24A-00BT8	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	12	STD	SCH20	P24A-00BUS	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	14	STD	SCH20	P24A-00BWB	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	16	STD	SCH20	P24A-006W3	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	18	STD	SCH20	P24A-006WD	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	

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REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	24	10	XS	SCH30	P24A-00C5Z	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	12	XS	SCH20	P24A-00NFP	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	14	XS	SCH20	P24A-003XZ	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	16	XS	SCH20	P24A-003Y0	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	18	XS	SCH20	P24A-00CBR	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	20	XS	STD	P24A-006W6	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	10	XS	SCH30	P24A-00NFR	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	12	XS	SCH20	P24A-0043G	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	14	XS	SCH20	P24A-0043H	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	16	XS	SCH20	P24A-0043J	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	18	XS	SCH20	P24A-0043K	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	20	XS	STD	P24A-004ST	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	24	XS	XS	P24A-005KV	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	STD	XS	P27A-001MZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	XS	XS	P27A-001E4	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	XS	STD	P27A-0048S	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	XS	STD	P27A-0048T	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	XS	XS	P27A-001EB	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH20	XS	P27A-00GYP	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH20	XS	P27A-00GYR	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	SCH30	XS	P27A-003N5	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	SCH30	XS	P27A-003N6	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	SCH30	SCH20	P27A-003MM	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	SCH20	XS	P27A-00BLP	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH20	SCH20	P27A-001UU	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH20	SCH30	P27A-00CUC	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	SCH20	XS	P27A-003NA	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	SCH20	SCH20	P27A-001V4	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	SCH20	SCH30	P27A-0028G	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	SCH20	SCH20	P27A-001U1	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	SCH20	SCH20	P27A-001WX	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	SCH20	SCH30	P27A-003NC	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	SCH20	SCH20	P27A-001UF	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	SCH20	SCH20	P27A-001V2	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	10	SCH20	SCH30	P27A-0084J	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	12	SCH20	SCH20	P27A-001UE	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	14	SCH20	SCH20	P27A-001UY	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	16	SCH20	SCH20	P27A-001WN	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	12	STD	SCH20	P27A-00CMZ	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	14	STD	SCH20	P27A-0082L	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	16	STD	SCH20	P27A-0082M	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	18	STD	SCH20	P27A-0084N	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	16	XS	SCH20	P27A-002GR	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	18	XS	SCH20	P27A-00H4D	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	20	XS	STD	P27A-0082T	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	20	XS	STD	P27A-0018E	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	24	XS	XS	P27A-003NT	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	STD	XS	P28A-001N5	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	XS	XS	P28A-001EJ	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	XS	STD	P28A-0048H	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	XS	STD	P28A-0048J	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	XS	XS	P28A-001ER	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH20	XS	P28A-00E5Y	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	8	6	SCH20	XS	P28A-00E5Z	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	SCH30	XS	P28A-003MZ	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	SCH30	XS	P28A-003N0	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	SCH30	SCH20	P28A-003MF	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	SCH20	XS	P28A-008LZ	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH20	SCH20	P28A-001V1	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH20	SCH30	P28A-009VN	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	SCH20	XS	P28A-003N4	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	SCH20	SCH20	P28A-001WH	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	SCH20	SCH30	P28A-00279	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	SCH20	SCH20	P28A-001UC	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	SCH20	SCH20	P28A-001T6	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	SCH20	SCH30	P28A-003N6	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	SCH20	SCH20	P28A-001UX	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	SCH20	SCH20	P28A-001WG	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	10	SCH20	SCH30	P28A-004UL	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	12	SCH20	SCH20	P28A-001UJ	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	14	SCH20	SCH20	P28A-001WD	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	16	SCH20	SCH20	P28A-001T1	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	12	STD	SCH20	P28A-009MM	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	14	STD	SCH20	P28A-004SJ	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	16	STD	SCH20	P28A-004SK	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	18	STD	SCH20	P28A-004UN	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	16	XS	SCH20	P28A-002GJ	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	18	XS	SCH20	P28A-00EBP	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	20	XS	STD	P28A-004SR	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	20	XS	STD	P28A-0018H	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	24	XS	XS	P28A-003NL	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P29B-0001J	Cap ASTM A105 Class 3000 ASME B16.11 SW	
1	0.75				P29B-0001F	Cap ASTM A105 Class 3000 ASME B16.11 SW	
1	1				P29B-0001G	Cap ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5				P29B-0001H	Cap ASTM A105 Class 3000 ASME B16.11 SW	
1	2		XS		P29A-000A1	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		STD		P29A-000BK	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		XS		P29A-000B9	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6		XS		P29A-000BF	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8		SCH20		P29A-000EY	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10		SCH30		P29A-000K7	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12		SCH20		P29A-000E8	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14		SCH20		P29A-000EA	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16		SCH20		P29A-000F3	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18		SCH20		P29A-000E0	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20		STD		P29A-000B2	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24		XS		P29A-000R5	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	30		XS		P29A-000BP	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
541	0.75				P29B-0000C	Cap ASTM A105 Class 3000 ASME B16.11 NPT	
541	1				P29B-0000D	Cap ASTM A105 Class 3000 ASME B16.11 NPT	
541	1.5				P29B-0000E	Cap ASTM A105 Class 3000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P41A-000B5	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		SCH160		P41A-000B6	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		SCH160		P41A-000B7	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		SCH160		P41A-000B8	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

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CON SWAGED NIPPLE (SNC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	XS	XS	P42A-00036	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	XS	XS	P42A-00038	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	XS	XS	P42A-0003B	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	XS	XS	P42A-00035	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	XS	XS	P42A-00039	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	XS	XS	P42A-0003C	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	XS	XS	P42A-0008C	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	XS	XS	P42A-0008D	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	XS	XS	P42A-0008E	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	XS	XS	P42A-0008F	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	STD	XS	P42A-0007V	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	

ECC SWAGED NIPPLE (SNE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	XS	XS	P43A-00036	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	XS	XS	P43A-00037	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	XS	XS	P43A-00038	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	XS	XS	P43A-00039	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	XS	XS	P43A-0003A	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	XS	XS	P43A-0003B	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	XS	XS	P43A-00042	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	XS	XS	P43A-00043	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	XS	XS	P43A-00044	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	XS	XS	P43A-00045	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	STD	XS	P43A-0003J	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	

COUPLING (CPS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P47B-0001D	Coupling ASTM A105 Class 3000 ASME B16.11 SW - SW	
1	0.75				P47B-0001E	Coupling ASTM A105 Class 3000 ASME B16.11 SW - SW	
1	1				P47B-0001F	Coupling ASTM A105 Class 3000 ASME B16.11 SW - SW	
1	1.5				P47B-0001G	Coupling ASTM A105 Class 3000 ASME B16.11 SW - SW	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2 - 2.5	0.75			P31B-0137J	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	3 - 5	0.75			P31B-0137K	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	6 - 12	0.75			P31B-007AB	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	14 - 36	0.75			P31B-007AJ	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	3	1			P31B-007A7	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	4 - 5	1			P31B-0138Z	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	6 - 10	1			P31B-007A4	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	12 - 36	1			P31B-007AA	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	4	1.5			P31B-005SN	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	5 - 6	1.5			P31B-01390	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	8 - 12	1.5			P31B-0079U	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	14 - 24	1.5			P31B-007A0	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	26 - 36	1.5			P31B-01391	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
541	1	0.75			P31B-00551	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
541	1.5	0.75			P31B-00555	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
541	2 - 2.5	0.75			P31B-0137H	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
541	3 - 5	0.75			P31B-01376	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
541	6 - 12	0.75			P31B-007GR	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
541	14 - 36	0.75			P31B-007GY	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
1	6	2	XS	XS	P31B-007SG	Outlet ASTM A105 MSS SP-97 BW	
1	8	2	SCH20	XS	P31B-00NY2	Outlet ASTM A105 MSS SP-97 BW	
1	10	2	SCH30	XS	P31B-00NVF	Outlet ASTM A105 MSS SP-97 BW	
1	12	2	SCH20	XS	P31B-00TFA	Outlet ASTM A105 MSS SP-97 BW	
1	14	2	SCH20	XS	P31B-00TF9	Outlet ASTM A105 MSS SP-97 BW	

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OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	16	2	SCH20	XS	P31B-00TF8	Outlet ASTM A105 MSS SP-97 BW	
1	18	2	SCH20	XS	P31B-00NVX	Outlet ASTM A105 MSS SP-97 BW	
1	20	2	STD	XS	P31B-00994	Outlet ASTM A105 MSS SP-97 BW	
1	24	2	XS	XS	P31B-0092Y	Outlet ASTM A105 MSS SP-97 BW	
1	30	2	XS	XS	P31B-008P4	Outlet ASTM A105 MSS SP-97 BW	
1	8	3	SCH20	STD	P31B-00P11	Outlet ASTM A105 MSS SP-97 BW	
1	10	3	SCH30	STD	P31B-00NYK	Outlet ASTM A105 MSS SP-97 BW	
1	12	3	SCH20	STD	P31B-00USE	Outlet ASTM A105 MSS SP-97 BW	
1	14	3	SCH20	STD	P31B-00UPH	Outlet ASTM A105 MSS SP-97 BW	
1	16	3	SCH20	STD	P31B-00TU2	Outlet ASTM A105 MSS SP-97 BW	
1	18	3	SCH20	STD	P31B-00NZ4	Outlet ASTM A105 MSS SP-97 BW	
1	20	3	STD	STD	P31B-008FA	Outlet ASTM A105 MSS SP-97 BW	
1	24	3	XS	STD	P31B-00894	Outlet ASTM A105 MSS SP-97 BW	
1	30	3	XS	STD	P31B-007WX	Outlet ASTM A105 MSS SP-97 BW	
1	12	4	SCH20	XS	P31B-00TW6	Outlet ASTM A105 MSS SP-97 BW	
1	14	4	SCH20	XS	P31B-00P1M	Outlet ASTM A105 MSS SP-97 BW	
1	16	4	SCH20	XS	P31B-00P1S	Outlet ASTM A105 MSS SP-97 BW	
1	18	4	SCH20	XS	P31B-00P1W	Outlet ASTM A105 MSS SP-97 BW	
1	20	4	STD	XS	P31B-00P21	Outlet ASTM A105 MSS SP-97 BW	
1	24	4	XS	XS	P31B-00823	Outlet ASTM A105 MSS SP-97 BW	
1	30	4	XS	XS	P31B-00ENH	Outlet ASTM A105 MSS SP-97 BW	
1	18	6	SCH20	XS	P31B-00P49	Outlet ASTM A105 MSS SP-97 BW	
1	20	6	STD	XS	P31B-00P4D	Outlet ASTM A105 MSS SP-97 BW	
1	24	6	XS	XS	P31B-008J7	Outlet ASTM A105 MSS SP-97 BW	
1	30	6	XS	XS	P31B-00ENJ	Outlet ASTM A105 MSS SP-97 BW	

OLET ON CAP (LC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P36B-000AR	Outlet on cap ASTM A105 Class 3000 MSS SP-97 SW Cap=NPS2	
1	0.75				P36B-0001R	Outlet on cap ASTM A105 Class 3000 MSS SP-97 SW Cap=NPS2	
1	1				P36B-000AS	Outlet on cap ASTM A105 Class 3000 MSS SP-97 SW Cap=NPS2	
1	1.5				P36B-000AT	Outlet on cap ASTM A105 Class 3000 MSS SP-97 SW Cap=NPS2	
4204	0.5				P36B-000AU	Outlet on cap ASTM A105 Class 3000 MSS SP-97 SW Cap=NPS4	
4204	0.75				P36B-0001M	Outlet on cap ASTM A105 Class 3000 MSS SP-97 SW Cap=NPS4	
4204	1				P36B-0008D	Outlet on cap ASTM A105 Class 3000 MSS SP-97 SW Cap=NPS4	
4204	1.5				P36B-000AV	Outlet on cap ASTM A105 Class 3000 MSS SP-97 SW Cap=NPS4	
4205	0.5				P36B-000AW	Outlet on cap ASTM A105 Class 3000 MSS SP-97 SW Cap=NPS6	
4205	0.75				P36B-0001N	Outlet on cap ASTM A105 Class 3000 MSS SP-97 SW Cap=NPS6	
4205	1				P36B-0008L	Outlet on cap ASTM A105 Class 3000 MSS SP-97 SW Cap=NPS6	
4205	1.5				P36B-000AX	Outlet on cap ASTM A105 Class 3000 MSS SP-97 SW Cap=NPS6	
4206	0.5				P36B-000AY	Outlet on cap ASTM A105 Class 3000 MSS SP-97 SW Cap=NPS8	
4206	0.75				P36B-0005S	Outlet on cap ASTM A105 Class 3000 MSS SP-97 SW Cap=NPS8	
4206	1				P36B-0008M	Outlet on cap ASTM A105 Class 3000 MSS SP-97 SW Cap=NPS8	
4206	1.5				P36B-0001D	Outlet on cap ASTM A105 Class 3000 MSS SP-97 SW Cap=NPS8	
4207	0.5				P36B-000AZ	Outlet on cap ASTM A105 Class 3000 MSS SP-97 SW Cap=NPS10 and larger	
4207	0.75				P36B-000AP	Outlet on cap ASTM A105 Class 3000 MSS SP-97 SW Cap=NPS10 and larger	
4207	1				P36B-0001H	Outlet on cap ASTM A105 Class 3000 MSS SP-97 SW Cap=NPS10 and larger	
4207	1.5				P36B-00088	Outlet on cap ASTM A105 Class 3000 MSS SP-97 SW Cap=NPS10 and larger	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30B-0002D	Plug ASTM A105 ASME B16.11 NPT Round head	
1	0.75				P30B-0002E	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1				P30B-0002F	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1.5				P30B-0002G	Plug ASTM A105 ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P61B-001HC	Flange SW ASTM A105 Class 300 ASME B16.5 RF	

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FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75		XS		P61B-001HS	Flange SW ASTM A105 Class 300 ASME B16.5 RF	
1	1		XS		P61B-001EF	Flange SW ASTM A105 Class 300 ASME B16.5 RF	
1	1.5		XS		P61B-001F2	Flange SW ASTM A105 Class 300 ASME B16.5 RF	
1	2		XS		P61B-001HW	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	3		STD		P61B-001LJ	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	4		XS		P61B-001F5	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	6		XS		P61B-001FE	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	8		SCH20		P61B-002LJ	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	10		SCH30		P61B-003LX	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	12		SCH20		P61B-002MP	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	14		SCH20		P61B-002MR	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	16		SCH20		P61B-002MS	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	18		SCH20		P61B-002MT	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	20		STD		P61B-001NT	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	24		XS		P61B-002RA	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	30		XS		P61B-001KT	Flange WN ASTM A105 Class 300 ASME B16.47 Series B RF	
781	0.5		XS		P61B-001FF	Flange SW ASTM A105 Class 600 ASME B16.5 RF	
781	0.75		XS		P61B-001FH	Flange SW ASTM A105 Class 600 ASME B16.5 RF	
781	1		XS		P61B-001DR	Flange SW ASTM A105 Class 600 ASME B16.5 RF	
781	1.5		XS		P61B-001DV	Flange SW ASTM A105 Class 600 ASME B16.5 RF	
781	2		XS		P61B-001DH	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	3		STD		P61B-001TW	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	4		XS		P61B-001SH	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	6		XS		P61B-001T1	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	8		SCH20		P61B-003F0	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	10		SCH30		P61B-003TN	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	12		SCH20		P61B-00651	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	14		SCH20		P61B-0079A	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	16		SCH20		P61B-00798	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	18		SCH20		P61B-003TP	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	20		STD		P61B-003GP	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	24		XS		P61B-003T9	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	30		XS		P61B-003GZ	Flange WN ASTM A105 Class 600 ASME B16.47 Series B RF	
789	3		STD		P61B-006SP	Flange WN ASTM A105 Class 900 ASME B16.5 RJ	
797	0.5		XS		P61B-009T3	Flange SW ASTM A105 Class 1500 ASME B16.5 RJ	
797	0.75		XS		P61B-009T4	Flange SW ASTM A105 Class 1500 ASME B16.5 RJ	
797	1		XS		P61B-009T5	Flange SW ASTM A105 Class 1500 ASME B16.5 RJ	
797	1.5		XS		P61B-009T6	Flange SW ASTM A105 Class 1500 ASME B16.5 RJ	
797	2		XS		P61B-0065C	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67B-000GH	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	0.75				P67B-000GJ	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	1				P67B-000GK	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	1.5				P67B-000GL	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	2				P67B-000GM	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	3				P67B-000GN	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	4				P67B-000GP	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	6				P67B-000GY	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	8				P67B-000GZ	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	10				P67B-000GR	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	12				P67B-000GS	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	14				P67B-000GT	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	16				P67B-000GU	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	18				P67B-000GV	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	20				P67B-000GW	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	24				P67B-000GX	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	30				P67B-000H2	Blind flange ASTM A105 Class 300 ASME B16.47 Series B RF	

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GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000FT	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000FU	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000G5	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000G6	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	6				P73T-000G7	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	8				P73T-000G8	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	10				P73T-000FX	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	12				P73T-000FY	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	14				P73T-000FZ	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	16				P73T-000G0	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	18				P73T-000G1	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	20				P73T-000G3	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	24				P73T-000G4	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	30				P73T-000H9	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	0.5				P73T-000J8	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	0.75				P73T-000J9	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1				P73T-000JA	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1.5				P73T-000JB	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	2				P73T-000JH	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	3				P73T-000JL	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	4				P73T-000JM	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	6				P73T-000JN	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	8				P73T-000JP	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	10				P73T-000JC	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	12				P73T-000JD	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	14				P73T-000JE	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	16				P73T-000JF	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	18				P73T-000JG	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	20				P73T-000JJ	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	24				P73T-000JK	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	30				P73T-000JT	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
789	3				P75T-000JN	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	0.5				P75T-000JT	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	0.75				P75T-000JU	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	1				P75T-000JV	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	1.5				P75T-000JW	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	2				P75T-0008A	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-10				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	12-30				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
781	0.5-6				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	

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BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
781	8-30				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
789	1-3				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
797	0.5-2				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81B-000RA	Gate valve ASTM A105 Class 800 API 602 SW Trim number 5 BB-BG-OS&Y Handwheel operated	
1	0.75				P81B-000P0	Gate valve ASTM A105 Class 800 API 602 SW Trim number 5 BB-BG-OS&Y Handwheel operated	
1	1				P81B-000P1	Gate valve ASTM A105 Class 800 API 602 SW Trim number 5 BB-BG-OS&Y Handwheel operated	
1	1.5				P81B-000P2	Gate valve ASTM A105 Class 800 API 602 SW Trim number 5 BB-BG-OS&Y Handwheel operated	
1	2				P81C-004HA	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated	
1	3				P81C-004HB	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated	
1	4				P81C-004HC	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated	
1	6				P81C-004HD	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated	
1	8				P81C-0086Y	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Gear operated	
1	10				P81C-004H3	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Gear operated	
1	12				P81C-004H4	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Gear operated	
1	14				P81C-004H5	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Gear operated	
1	16				P81C-004H6	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Gear operated	
1	18				P81C-004H7	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Gear operated	
1	20				P81C-004H8	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Gear operated	
1	24				P81C-004H9	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Gear operated	
1	30				P81C-004H2	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.47-B RF Trim number 5 BB-BG-OS&Y Gear operated	
714	0.5				P81B-0015N	Gate valve ASTM A105 Class 800 API 602 SW - NPT Trim number 5 BB-BG-OS&Y Handwheel operated	
714	0.75				P81B-002FC	Gate valve ASTM A105 Class 800 API 602 SW - NPT Trim number 5 BB-BG-OS&Y Handwheel operated	
714	1				P81B-002RZ	Gate valve ASTM A105 Class 800 API 602 SW - NPT Trim number 5 BB-BG-OS&Y Handwheel operated	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82B-000KW	Globe valve ASTM A105 Class 800 API 602 SW Trim number 5 BB-BG-OS&Y Handwheel operated	
1	0.75				P82B-000HE	Globe valve ASTM A105 Class 800 API 602 SW Trim number 5 BB-BG-OS&Y Handwheel operated	
1	1				P82B-000HF	Globe valve ASTM A105 Class 800 API 602 SW Trim number 5 BB-BG-OS&Y Handwheel operated	
1	1.5				P82B-000HG	Globe valve ASTM A105 Class 800 API 602 SW Trim number 5 BB-BG-OS&Y Handwheel operated	
1	2				P82C-0027S	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated	
1	3				P82C-0027T	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated	
1	4				P82C-0027U	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated	
1	6				P82C-0027V	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated	
1	8				P82C-004CP	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Gear operated	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83B-000GL	Check valve ASTM A105 Class 800 API 602 SW Trim number 5 Lift-type Bolted cover	
1	0.75				P83B-000EU	Check valve ASTM A105 Class 800 API 602 SW Trim number 5 Lift-type Bolted cover	
1	1				P83B-000EV	Check valve ASTM A105 Class 800 API 602 SW Trim number 5 Lift-type Bolted cover	
1	1.5				P83B-000EW	Check valve ASTM A105 Class 800 API 602 SW Trim number 5 Lift-type Bolted cover	
1	2				P83C-00243	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 5 Swing-type Bolted cover	
1	3				P83C-00244	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 5 Swing-type Bolted cover	
1	4				P83C-00245	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 5 Swing-type Bolted cover	
1	6				P83C-00246	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 5 Swing-type Bolted cover	
1	8				P83C-00247	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 5 Swing-type Bolted cover	

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CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	10				P83C-00240	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 5 Swing-type Bolted cover	
1	12				P83C-00241	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 5 Swing-type Bolted cover	
1	14				P83C-00242	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 5 Swing-type Bolted cover	
4602	0.75				P83B-001NK	Check valve ASTM A105 Class 800 API 602 SW Trim number 5 Swing-type Bolted cover	

DP CHECK VALVE (XDP)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
4602	8				P88C-00359	Dual plate check valve ASTM A216 Grade WCB Class 300 API 594 Wafer-type ASME B16.5 RF Trim number 5 Internal wetted parts 13Cr Spring Inconel Retainerless-type	

BUTTERFLY VALVE (H)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	10				P86C-0023E	Offset design butterfly valve ASTM A216 Grade WCB Class 300 API 609 Category B Lug-type ASME B16.5 RF Disc CS Seat Stellite-6 Trim 13Cr Triple eccentric design BG Gear operated	
1	30				P86C-0023T	Offset design butterfly valve ASTM A216 Grade WCB Class 300 API 609 Category B Double flanged ASME B16.47-B RF Disc CS Seat Stellite-6 Trim 13Cr Triple eccentric design BG Gear operated	

NEEDLE VALVE (NV)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82B-001K3	Needle valve ASTM A105 Class 800 API 602 SW Trim number 5 BB-BG-OS&Y Handwheel operated	
1	0.75				P82B-001K4	Needle valve ASTM A105 Class 800 API 602 SW Trim number 5 BB-BG-OS&Y Handwheel operated	
1	1				P82B-001K5	Needle valve ASTM A105 Class 800 API 602 SW Trim number 5 BB-BG-OS&Y Handwheel operated	
1	1.5				P82B-001K6	Needle valve ASTM A105 Class 800 API 602 SW Trim number 5 BB-BG-OS&Y Handwheel operated	

ORIFICE FLANGE (FO)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2		XS		P66B-0084B	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	3		STD		P66B-0084C	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	4		XS		P66B-008AK	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	6		XS		P66B-0088E	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	8		SCH20		P66B-0084F	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	10		SCH30		P66B-0086Z	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	12		SCH20		P66B-0084L	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	14		SCH20		P66B-0084A	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	16		SCH20		P66B-0083Y	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	18		SCH20		P66B-0084R	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	20		STD		P66B-0084S	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	24		XS		P66B-008AJ	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
200	2		XS		P66B-00843	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	3		STD		P66B-00844	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	4		XS		P66B-008AH	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	6		XS		P66B-0088V	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	8		SCH20		P66B-00847	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	10		SCH30		P66B-00874	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	12		SCH20		P66B-0084P	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	14		SCH20		P66B-00842	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	16		SCH20		P66B-0083Z	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	18		SCH20		P66B-0084T	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	20		STD		P66B-0084U	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	24		XS		P66B-008AG	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71B-000B1	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	0.75				P71B-000B2	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	1				P71B-000B3	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71B-000B4	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	2				P71B-000B6	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	3				P71B-000B7	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	

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SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	4				P71B-000B8	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	6				P71B-000B9	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	8				P71B-000BA	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	10				P71B-000B5	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	12				P71B-000BB	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	

PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000FA	Paddle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	16				P72B-000FB	Paddle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	18				P72B-000FC	Paddle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	20				P72B-000FD	Paddle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	24				P72B-000FE	Paddle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	30				P72B-000FF	Paddle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.47-B RF	

PADDLE SPACER (PS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000FG	Paddle spacer ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	16				P72B-000FH	Paddle spacer ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	18				P72B-000FJ	Paddle spacer ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	20				P72B-000FK	Paddle spacer ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	24				P72B-000FL	Paddle spacer ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	30				P72B-000FM	Paddle spacer ASTM A105 Class 300 Standard-drawing Flange ASME B16.47-B RF	

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BOLT TABLE (B_B1AS , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-003V4		
0.75	4	0.625	75	P80S-003XC		
1	4	0.625	80	P80S-003XD		
1.5	4	0.750	95	P80S-00414		
2	8	0.625	90	P80S-003XF		
3	8	0.750	110	P80S-003XK		
4	8	0.750	115	P80S-003XL		
6	12	0.750	125	P80S-003XN		
8	12	0.875	140	P80S-0041D		
10	16	1.000	160	P80S-0043K		
12	16	1.125	175	P80S-0046S		
14	20	1.125	180	P80S-0046T		
16	20	1.250	190	P80S-004AK		
18	24	1.250	200	P80S-004AM		
20	24	1.250	210	P80S-004AP		
24	24	1.500	235	P80S-003F8		
30	36	1.375	285	P80S-003EA		

BOLT TABLE (B_B1AS_781 , STUD ASME RF, OPTION CODE 781)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	80	P80S-003V6		
0.75	4	0.625	90	P80S-003XF		
1	4	0.625	95	P80S-003XG		
1.5	4	0.750	110	P80S-003XK		
2	8	0.625	110	P80S-003VC		
3	8	0.750	130	P80S-003XP		
4	8	0.875	150	P80S-0041F		
6	12	1.000	175	P80S-0043P		
8	12	1.125	195	P80S-0046W		
10	16	1.250	250	P80S-004AY		
12	20	1.250	255	P80S-004AZ		
14	20	1.375	270	P80S-003E7		
16	20	1.500	295	P80S-003FL		
18	20	1.625	320	P80S-005TT		
20	24	1.625	335	P80S-005TW		
24	24	1.875	380	P80S-008P4		
30	28	1.875	435	P80S-008PF		

BOLT TABLE (B_B1AS_789 , STUD ASME RJ, OPTION CODE 789)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	110		R12	
0.75	4	0.750	115		R14	
1	4	0.875	130	P80S-0041B	R16	
1.5	4	1.000	140		R20	
2	8	0.875	150	P80S-0041F	R24	
3	8	0.875	150	P80S-0041F	R31	P75T-000JN
4	8	1.125	175		R37	
6	12	1.125	200		R45	
8	12	1.375	260		R49	
10	16	1.375	275		R53	
12	20	1.375	295		R57	
14	20	1.500	325		R62	
16	20	1.625	340		R66	
18	20	1.875	390		R70	
20	20	2.000	415		R74	
24	20	2.500	525		R78	
30	20	3.000	600		R102	

BOLT TABLE (B_B1AS_797 , STUD ASME RJ, OPTION CODE 797)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	110	P80S-003XK	R12	P75T-000JT
0.75	4	0.750	115	P80S-003XL	R14	P75T-000JU
1	4	0.875	130	P80S-0041B	R16	P75T-000JV
1.5	4	1.000	140	P80S-0043F	R20	P75T-000JW
2	8	0.875	150	P80S-0041F	R24	P75T-0008A
3	8	1.125	180		R35	

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BOLT TABLE (B_B1AS_797 , STUD ASME RJ, OPTION CODE 797)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
4	8	1.250	230		R39	
6	12	1.375	300		R46	
8	12	1.625	345		R50	
10	12	1.875	395		R54	
12	16	2.000	445		R58	
14	16	2.250	490		R63	
16	16	2.500	540		R67	
18	16	2.750	590		R71	
20	16	3.000	650		R75	
24	16	3.500	745		R79	

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BRANCH TABLE (T_B1AS)

RUN PIPE SIZE (in) \ BRANCH SIZE (in)	0.5	0.75	1	1.5	2	3	4	6	8	10	12	14	16	18	20	24	30
0.5	TS																
0.75		TS															
1		TR	TS														
1.5		TR	TR	TS													
2		L	TR	TR	TS												
3		L	L	TR	TR	TS											
4	L	L	L	L	TR	TR	TS										
6	L	L	L	L	L	TR	TR	TS									
8		L	L	L	L	L	TR	TR	TS								
10		L	L	L	L	L	TR	TR	TR	TS							
12		L	L	L	L	L	L	TR	TR	TR	TS						
14		L	L	L	L	L	L	TR	TR	TR	TR	TS					
16		L	L	L	L	L	L	TR	TR	TR	TR	TR	TS				
18		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TS			
20		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TR	TS		
24		L	L	L	L	L	L	L	9PD	TR	TR	TR	TR	TR	TR	TS	
30		L	L	L	L	L	L	L	9PD	TR	TR	TR	TR	TR	TR	TR	TS

L : OUTLET
TS : STRAIGHT TEE
9PD : REINFORCING PAD 90 DEG
TR : REDUCING TEE

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PIPING CLASS

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Material	:	Killed CS
Rating	:	ASME CLASS 300
Flange Face	:	RF
C.A.(mm)	:	1.50
Gasket	:	Spiral Wound
Service	:	PROCESS - CHEMICAL DOSING
Design Code	:	ASME B31.3
Heat Treatment	:	

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
24	FULL PORT (Q)
541	NPT(F) (CA,L)
714	SW - NPT(F) (V)
781	CLASS 600 (B,F,G)
4204	SOCKOLET ON CAP (CAP=NPS4) (LC)

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PIPING CLASS
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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P01A-000XM	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	0.75		XS		P01A-000XN	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1		XS		P01A-000XP	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P02B-00014	90 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	0.75				P02B-00015	90 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	1				P02B-00016	90 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P03B-00017	45 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	0.75				P03B-00018	45 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	1				P03B-00019	45 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P21B-00017	Straight tee ASTM A105 Class 3000 ASME B16.11 SW	
1	0.75				P21B-00018	Straight tee ASTM A105 Class 3000 ASME B16.11 SW	
1	1				P21B-00019	Straight tee ASTM A105 Class 3000 ASME B16.11 SW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75			P24B-0002L	Reducing tee ASTM A105 Class 3000 ASME B16.11 SW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P29B-0001J	Cap ASTM A105 Class 3000 ASME B16.11 SW	
1	0.75				P29B-0001F	Cap ASTM A105 Class 3000 ASME B16.11 SW	
1	1				P29B-0001G	Cap ASTM A105 Class 3000 ASME B16.11 SW	
541	0.75				P29B-0000C	Cap ASTM A105 Class 3000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P41A-000B5	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		SCH160		P41A-000B6	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		SCH160		P41A-000B7	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

CON SWAGED NIPPLE (SNC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	XS	XS	P42A-00036	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	XS	XS	P42A-00038	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	XS	XS	P42A-0003B	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	

ECC SWAGED NIPPLE (SNE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	XS	XS	P43A-00036	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	XS	XS	P43A-00037	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	XS	XS	P43A-00038	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	

COUPLING (CPS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P47B-0001D	Coupling ASTM A105 Class 3000 ASME B16.11 SW - SW	
1	0.75				P47B-0001E	Coupling ASTM A105 Class 3000 ASME B16.11 SW - SW	
1	1				P47B-0001F	Coupling ASTM A105 Class 3000 ASME B16.11 SW - SW	

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OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
541	1	0.75			P31B-00551	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	

OLET ON CAP (LC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
4204	0.5				P36B-000AU	Outlet on cap ASTM A105 Class 3000 MSS SP-97 SW Cap=NPS4	
4204	0.75				P36B-0001M	Outlet on cap ASTM A105 Class 3000 MSS SP-97 SW Cap=NPS4	
4204	1				P36B-0008D	Outlet on cap ASTM A105 Class 3000 MSS SP-97 SW Cap=NPS4	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30B-0002D	Plug ASTM A105 ASME B16.11 NPT Round head	
1	0.75				P30B-0002E	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1				P30B-0002F	Plug ASTM A105 ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P61B-001HC	Flange SW ASTM A105 Class 300 ASME B16.5 RF	
1	0.75		XS		P61B-001HS	Flange SW ASTM A105 Class 300 ASME B16.5 RF	
1	1		XS		P61B-001EF	Flange SW ASTM A105 Class 300 ASME B16.5 RF	
781	0.5		XS		P61B-001FF	Flange SW ASTM A105 Class 600 ASME B16.5 RF	
781	0.75		XS		P61B-001FH	Flange SW ASTM A105 Class 600 ASME B16.5 RF	
781	1		XS		P61B-001DR	Flange SW ASTM A105 Class 600 ASME B16.5 RF	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67B-000GH	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	0.75				P67B-000GJ	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	1				P67B-000GK	Blind flange ASTM A105 Class 300 ASME B16.5 RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000FT	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000FU	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	0.5				P73T-000J8	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	0.75				P73T-000J9	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1				P73T-000JA	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-1				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
781	0.5-1				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81B-001ZN	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated Fluid-1	
1	0.75				P81B-001ZP	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated Fluid-1	
1	1				P81B-001ZR	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated Fluid-1	
714	0.5				P81B-002SA	Gate valve ASTM A105 Class 800 API 602 SW - NPT Trim number 8 BB-BG-OS&Y Handwheel operated Fluid-1	
714	0.75				P81B-002FD	Gate valve ASTM A105 Class 800 API 602 SW - NPT Trim number 8 BB-BG-OS&Y Handwheel operated Fluid-1	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82B-001H8	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated Fluid-1	

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GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75				P82B-001H9	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated Fluid-1	
1	1				P82B-001HA	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated Fluid-1	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83B-000FX	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover	
1	0.75				P83B-000ER	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover	
1	1				P83B-000ES	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover	

BALL VALVE (Q)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P84B-001HP	Ball valve Long-pattern ASTM A105 Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design Fluid-1	
1	0.75				P84B-001HR	Ball valve Long-pattern ASTM A105 Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design Fluid-1	
1	1				P84B-001HS	Ball valve Long-pattern ASTM A105 Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design Fluid-1	
24	0.5				P84B-001JN	Ball valve Long-pattern ASTM A105 Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design Fluid-1	
24	0.75				P84B-001JP	Ball valve Long-pattern ASTM A105 Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design Fluid-1	
24	1				P84B-001JR	Ball valve Long-pattern ASTM A105 Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design Fluid-1	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71B-000B1	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	0.75				P71B-000B2	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	1				P71B-000B3	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	

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BOLT TABLE (B_B1AY , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-003V4		
0.75	4	0.625	75	P80S-003XC		
1	4	0.625	80	P80S-003XD		

BOLT TABLE (B_B1AY_781 , STUD ASME RF, OPTION CODE 781)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	80	P80S-003V6		
0.75	4	0.625	90	P80S-003XF		
1	4	0.625	95	P80S-003XG		

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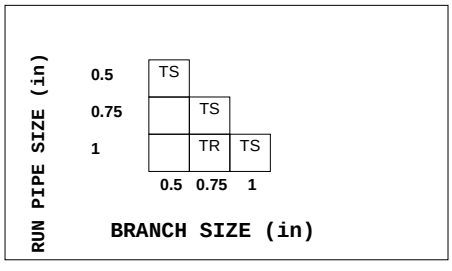
BRANCH TABLE (T_B1AY)



TR : REDUCING TEE
TS : STRAIGHT TEE

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PIPING CLASS

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Material : Killed CS
Rating : ASME CLASS 300
Flange Face : RF
C.A.(mm) : 1.50
Gasket : Spiral Wound
Service : CHEMICAL DOSING
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
2	USE OF SOFT SEATED BALL, PLUG AND BUTTERFLY VALVES SHALL BE LIMITED TO MAXIMUM OF 204DEGC (400DEGF)

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
24	FULL PORT (Q)
541	NPT(F) (CA,L)
714	SW - NPT(F) (V)
781	CLASS 600 (B,F,G)
4204	SOCKOLET ON CAP (CAP=NPS4) (LC)

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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P01A-000XM	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	0.75		XS		P01A-000XN	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1		XS		P01A-000XP	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1.5		XS		P01A-000XV	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	2		XS		P01A-000YX	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	3		STD		P01A-000YM	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	4		STD		P01A-000YU	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	6		STD		P01A-000Z3	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	8		SCH20		P01A-001AT	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P02B-00014	90 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	0.75				P02B-00015	90 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	1				P02B-00016	90 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5				P02B-00017	90 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	2		XS		P02A-000CP	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		STD		P02A-000CU	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		STD		P02A-000CZ	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		STD		P02A-000D6	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		SCH20		P02A-000GZ	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P03B-00017	45 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	0.75				P03B-00018	45 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	1				P03B-00019	45 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5				P03B-0001A	45 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	2		XS		P03A-000AS	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		STD		P03A-000AX	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		STD		P03A-000B1	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		STD		P03A-000B9	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		SCH20		P03A-000EX	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P21B-00017	Straight tee ASTM A105 Class 3000 ASME B16.11 SW	
1	0.75				P21B-00018	Straight tee ASTM A105 Class 3000 ASME B16.11 SW	
1	1				P21B-00019	Straight tee ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5				P21B-0001A	Straight tee ASTM A105 Class 3000 ASME B16.11 SW	
1	2		XS		P21A-001CJ	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		STD		P21A-001CU	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		STD		P21A-001CW	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6		STD		P21A-001D2	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8		SCH20		P21A-00215	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75			P24B-0002L	Reducing tee ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5	0.75			P24B-0002N	Reducing tee ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5	1			P24B-0002P	Reducing tee ASTM A105 Class 3000 ASME B16.11 SW	
1	2	1	XS	XS	P24A-00238	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	XS	XS	P24A-0023H	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	STD	XS	P24A-00214	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	STD	XS	P24A-002HW	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P24A-002HY	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P24A-0021K	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	STD	P24A-0021A	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	6	4	STD	STD	P24A-00229	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH20	STD	P24A-00J21	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH20	STD	P24A-005J4	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	STD	XS	P27A-001MZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P27A-001N0	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P27A-00189	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	STD	P27A-001AZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P27A-001GW	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH20	STD	P27A-003K2	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH20	STD	P27A-003K3	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	STD	XS	P28A-001N5	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P28A-001N6	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P28A-0018B	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	STD	P28A-001AS	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P28A-00182	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH20	STD	P28A-003JU	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH20	STD	P28A-003JV	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P29B-0001J	Cap ASTM A105 Class 3000 ASME B16.11 SW	
1	0.75				P29B-0001F	Cap ASTM A105 Class 3000 ASME B16.11 SW	
1	1				P29B-0001G	Cap ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5				P29B-0001H	Cap ASTM A105 Class 3000 ASME B16.11 SW	
1	2		XS		P29A-000A1	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		STD		P29A-000BK	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		STD		P29A-000A3	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6		STD		P29A-000A9	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8		SCH20		P29A-000EY	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
541	0.75				P29B-0000C	Cap ASTM A105 Class 3000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P41A-000B5	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		SCH160		P41A-000B6	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		SCH160		P41A-000B7	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		SCH160		P41A-000B8	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

CON SWAGED NIPPLE (SNC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	XS	XS	P42A-00036	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	XS	XS	P42A-00038	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	XS	XS	P42A-0003B	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	XS	XS	P42A-00035	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	XS	XS	P42A-00039	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	XS	XS	P42A-0003C	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	XS	XS	P42A-0008C	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	XS	XS	P42A-0008D	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	XS	XS	P42A-0008E	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	XS	XS	P42A-0008F	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	STD	XS	P42A-0007V	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	

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ECC SWAGED NIPPLE (SNE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	XS	XS	P43A-00036	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	XS	XS	P43A-00037	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	XS	XS	P43A-00038	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	XS	XS	P43A-00039	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	XS	XS	P43A-0003A	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	XS	XS	P43A-0003B	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	XS	XS	P43A-00042	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	XS	XS	P43A-00043	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	XS	XS	P43A-00044	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	XS	XS	P43A-00045	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	STD	XS	P43A-0003J	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	

COUPLING (CPS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P47B-0001D	Coupling ASTM A105 Class 3000 ASME B16.11 SW - SW	
1	0.75				P47B-0001E	Coupling ASTM A105 Class 3000 ASME B16.11 SW - SW	
1	1				P47B-0001F	Coupling ASTM A105 Class 3000 ASME B16.11 SW - SW	
1	1.5				P47B-0001G	Coupling ASTM A105 Class 3000 ASME B16.11 SW - SW	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2 - 2.5	0.75			P31B-0137J	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	3 - 5	0.75			P31B-0137K	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	6 - 12	0.75			P31B-007AB	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	3	1			P31B-007A7	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	4 - 5	1			P31B-0138Z	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	6 - 10	1			P31B-007A4	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	4	1.5			P31B-005SN	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	5 - 6	1.5			P31B-01390	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	8 - 12	1.5			P31B-0079U	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
541	1	0.75			P31B-00551	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
541	1.5	0.75			P31B-00555	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
541	2 - 2.5	0.75			P31B-0137H	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
541	3 - 5	0.75			P31B-01376	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
541	6 - 12	0.75			P31B-007GR	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
1	6	2	STD	XS	P31B-007SH	Outlet ASTM A105 MSS SP-97 BW	
1	8	2	SCH20	XS	P31B-00NY2	Outlet ASTM A105 MSS SP-97 BW	
1	8	3	SCH20	STD	P31B-00P11	Outlet ASTM A105 MSS SP-97 BW	

OLET ON CAP (LC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
4204	0.5				P36B-000AU	Outlet on cap ASTM A105 Class 3000 MSS SP-97 SW Cap=NPS4	
4204	0.75				P36B-0001M	Outlet on cap ASTM A105 Class 3000 MSS SP-97 SW Cap=NPS4	
4204	1				P36B-0008D	Outlet on cap ASTM A105 Class 3000 MSS SP-97 SW Cap=NPS4	
4204	1.5				P36B-000AV	Outlet on cap ASTM A105 Class 3000 MSS SP-97 SW Cap=NPS4	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30B-0002D	Plug ASTM A105 ASME B16.11 NPT Round head	
1	0.75				P30B-0002E	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1				P30B-0002F	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1.5				P30B-0002G	Plug ASTM A105 ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P61B-001HC	Flange SW ASTM A105 Class 300 ASME B16.5 RF	
1	0.75		XS		P61B-001HS	Flange SW ASTM A105 Class 300 ASME B16.5 RF	
1	1		XS		P61B-001EF	Flange SW ASTM A105 Class 300 ASME B16.5 RF	

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FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5		XS		P61B-001F2	Flange SW ASTM A105 Class 300 ASME B16.5 RF	
1	2		XS		P61B-001HW	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	3		STD		P61B-001LJ	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	4		STD		P61B-001MC	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	6		STD		P61B-001N2	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	8		SCH20		P61B-002LJ	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
781	0.5		XS		P61B-001FF	Flange SW ASTM A105 Class 600 ASME B16.5 RF	
781	0.75		XS		P61B-001FH	Flange SW ASTM A105 Class 600 ASME B16.5 RF	
781	1		XS		P61B-001DR	Flange SW ASTM A105 Class 600 ASME B16.5 RF	
781	1.5		XS		P61B-001DV	Flange SW ASTM A105 Class 600 ASME B16.5 RF	
781	2		XS		P61B-001DH	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	3		STD		P61B-001TW	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	4		STD		P61B-001VV	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	6		STD		P61B-001JW	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	8		SCH20		P61B-003F0	Flange WN ASTM A105 Class 600 ASME B16.5 RF	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67B-000GH	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	0.75				P67B-000GJ	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	1				P67B-000GK	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	1.5				P67B-000GL	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	2				P67B-000GM	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	3				P67B-000GN	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	4				P67B-000GP	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	6				P67B-000GY	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	8				P67B-000GZ	Blind flange ASTM A105 Class 300 ASME B16.5 RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000FT	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000FU	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000G5	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000G6	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	6				P73T-000G7	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	8				P73T-000G8	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	0.5				P73T-000J8	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	0.75				P73T-000J9	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1				P73T-000JA	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1.5				P73T-000JB	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	2				P73T-000JH	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	3				P73T-000JL	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	4				P73T-000JM	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	6				P73T-000JN	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	8				P73T-000JP	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-8				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	

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BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
781	0.5-6				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
781	8				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81B-001ZN	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated Fluid-1	
1	0.75				P81B-001ZP	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated Fluid-1	
1	1				P81B-001ZR	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated Fluid-1	
1	1.5				P81B-001ZS	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated Fluid-1	
1	2				P81C-006N8	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated Fluid-1	
1	3				P81C-006N9	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated Fluid-1	
1	4				P81C-006NA	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated Fluid-1	
1	6				P81C-006NB	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated Fluid-1	
1	8				P81C-0091G	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated Fluid-1	
714	0.5				P81B-002SA	Gate valve ASTM A105 Class 800 API 602 SW - NPT Trim number 8 BB-BG-OS&Y Handwheel operated Fluid-1	
714	0.75				P81B-002FD	Gate valve ASTM A105 Class 800 API 602 SW - NPT Trim number 8 BB-BG-OS&Y Handwheel operated Fluid-1	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82B-001H8	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated Fluid-1	
1	0.75				P82B-001H9	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated Fluid-1	
1	1				P82B-001HA	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated Fluid-1	
1	1.5				P82B-001HB	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated Fluid-1	
1	2				P82C-0037B	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated Fluid-1	
1	3				P82C-0037C	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated Fluid-1	
1	4				P82C-0037D	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated Fluid-1	
1	6				P82C-0037E	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated Fluid-1	
1	8				P82C-004CR	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated Fluid-1	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83B-000FX	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover	
1	0.75				P83B-000ER	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover	
1	1				P83B-000ES	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover	
1	1.5				P83B-000ET	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover	
1	2				P83C-0013H	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	3				P83C-0013L	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	4				P83C-0013M	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	6				P83C-0013N	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	8				P83C-0013P	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	

BALL VALVE (Q)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P84B-001HP	Ball valve Long-pattern ASTM A105 Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design Fluid-1	
1	0.75				P84B-001HR	Ball valve Long-pattern ASTM A105 Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design Fluid-1	
1	1				P84B-001HS	Ball valve Long-pattern ASTM A105 Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design Fluid-1	
1	1.5				P84B-001HT	Ball valve Long-pattern ASTM A105 Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design Fluid-1	
1	2				P84C-006T6	Ball valve Long-pattern ASTM A216 Grade WCB Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design Fluid-1	

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BALL VALVE (Q)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3				P84C-006T7	Ball valve Long-pattern ASTM A216 Grade WCB Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design Fluid-1	
1	4				P84C-006V1	Ball valve Long-pattern ASTM A216 Grade WCB Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Gear operated Reduced bore Fire tested design Fluid-1	
1	6				P84C-006V2	Ball valve Long-pattern ASTM A216 Grade WCB Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Reduced bore Fire tested design Fluid-1	
1	8				P84C-006V3	Ball valve Long-pattern ASTM A216 Grade WCB Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Reduced bore Fire tested design Fluid-1	
24	0.5				P84B-001JN	Ball valve Long-pattern ASTM A105 Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design Fluid-1	
24	0.75				P84B-001JP	Ball valve Long-pattern ASTM A105 Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design Fluid-1	
24	1				P84B-001JR	Ball valve Long-pattern ASTM A105 Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design Fluid-1	
24	1.5				P84B-001JS	Ball valve Long-pattern ASTM A105 Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design Fluid-1	
24	2				P84C-006UZ	Ball valve Long-pattern ASTM A216 Grade WCB Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design Fluid-1	
24	3				P84C-006V0	Ball valve Long-pattern ASTM A216 Grade WCB Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design Fluid-1	
24	4				P84C-006V4	Ball valve Long-pattern ASTM A216 Grade WCB Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Gear operated Full bore Fire tested design Fluid-1	
24	6				P84C-006V5	Ball valve Long-pattern ASTM A216 Grade WCB Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design Fluid-1	
24	8				P84C-006V6	Ball valve Long-pattern ASTM A216 Grade WCB Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design Fluid-1	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71B-000B1	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	0.75				P71B-000B2	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	1				P71B-000B3	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71B-000B4	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	2				P71B-000B6	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	3				P71B-000B7	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	4				P71B-000B8	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	6				P71B-000B9	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	8				P71B-000BA	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	

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BOLT TABLE (B_B1AY04 , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-003V4		
0.75	4	0.625	75	P80S-003XC		
1	4	0.625	80	P80S-003XD		
1.5	4	0.750	95	P80S-00414		
2	8	0.625	90	P80S-003XF		
3	8	0.750	110	P80S-003XK		
4	8	0.750	115	P80S-003XL		
6	12	0.750	125	P80S-003XN		
8	12	0.875	140	P80S-0041D		

BOLT TABLE (B_B1AY04_781 , STUD ASME RF, OPTION CODE 781)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	80	P80S-003V6		
0.75	4	0.625	90	P80S-003XF		
1	4	0.625	95	P80S-003XG		
1.5	4	0.750	110	P80S-003XK		
2	8	0.625	110	P80S-003VC		
3	8	0.750	130	P80S-003XP		
4	8	0.875	150	P80S-0041F		
6	12	1.000	175	P80S-0043P		
8	12	1.125	195	P80S-0046W		

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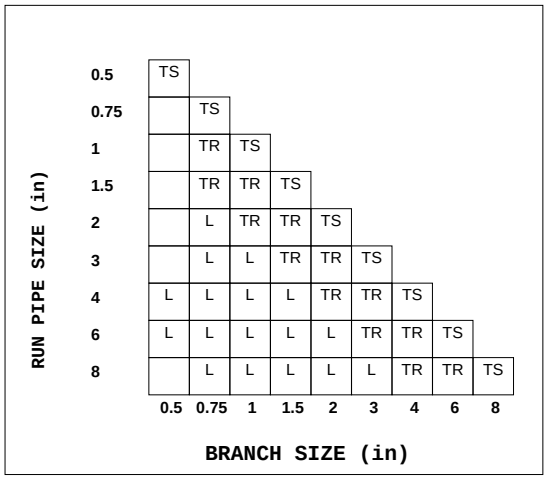
BRANCH TABLE (T_B1AY04)



L : OUTLET
TR : REDUCING TEE
TS : STRAIGHT TEE

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PIPING CLASS

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Material : 1-1/4Cr - 1/2Mo
Rating : ASME CLASS 300
Flange Face : RF
C.A.(mm) : 1.50
Gasket : Spiral Wound
Service : PROCESS - HYDROGEN OR HYDROGEN RICH HYDROCARBON MIXTURES
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
16	PIPE CLASS SHALL BE USED WITHIN THE NORMAL OPERATING PRESSURE/TEMPERATURE LIMITS SPECIFIED IN API RP 941. PRESSURE / TEMPERATURE SPECIFIED IN THE PIPE CLASS EXCEEDING API RP 941 LIMITS SHOULD BE REGARDED AS UPSET CONDITIONS RATHER THAN FOR CONTINUOUS SERVICE
24	FOR ALL RELEVANT PIPING CLASSES WITH LINE DESIGN TEMPERATURE ABOVE 427DEGC, IN SPIRAL WOUND GASKET, SUITABLE GASKET FILLER MATERIAL SUCH AS COMBINATION OF MICA LAYERS AND GRAPHITE FILLERS OR EQUIVALENT SHALL BE REVIEWED AND SELECTED OR AS DEFINED BY THE LICENSOR
36	ASTM A691 CR-MO WELDED PIPES SPECIFIED WITH CLASS 22 CAN BE USED IN LIEU OF CLASS 42 IN NON-LICENSED UNITS ONLY. GRADE SHALL BE AS SPECIFIED IN "PIPE / FLANGE MATERIAL" SECTION IN ATTACHMENT 9.0 OF THIS DOCUMENT

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
541	NPT(F) (CA,F,L)
781	CLASS 600 (B,F,G)
4608	VALVE WITH NIPPLES (V)

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PIPING CLASS
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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P01F-000BJ	Pipe ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M PE Licensor-4	
1	0.75		XS		P01F-000BK	Pipe ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M PE Licensor-4	
1	1		XS		P01F-000BL	Pipe ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M PE Licensor-4	
1	1.5		XS		P01F-000BM	Pipe ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M PE Licensor-4	
1	2		XS		P01F-000BT	Pipe ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M BE Licensor-4	
1	3		STD		P01F-000CS	Pipe ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M BE Licensor-4	
1	4		STD		P01F-000CT	Pipe ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M BE Licensor-4	
1	6		STD		P01F-000CU	Pipe ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M BE Licensor-4	
1	8		SCH30		P01F-000F2	Pipe ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M BE Licensor-4	
1	10		STD		P01F-000EZ	Pipe ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M BE Licensor-4	
1	12		STD		P01F-000F0	Pipe ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M BE Licensor-4	
1	14		SCH40		P01F-000F1	Pipe ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M BE Licensor-4	
1	16		STD		P01F-001NN	Pipe ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M BE Licensor-4	
1	18		STD		P01F-001RJ	Pipe ASTM A691 Grade 1-1/4CR Class 22 EFW ASME B36.10M/B36.19M BE Licensor-4	
1	20		XS		P01F-001NR	Pipe ASTM A691 Grade 1-1/4CR Class 22 EFW ASME B36.10M/B36.19M BE Licensor-4	
1	24		XS		P01F-001S4	Pipe ASTM A691 Grade 1-1/4CR Class 22 EFW ASME B36.10M/B36.19M BE Licensor-4	
1	28		SCH30		P01F-001S5	Pipe ASTM A691 Grade 1-1/4CR Class 22 EFW ASME B36.10M/B36.19M BE Licensor-4	
1	30		SCH30		P01F-001NT	Pipe ASTM A691 Grade 1-1/4CR Class 22 EFW ASME B36.10M/B36.19M BE Licensor-4	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P02G-00013	90 degree elbow ASTM A182 Grade F11 Class 1 Class 3000 ASME B16.11 SW Licensor-4	
1	0.75				P02G-00014	90 degree elbow ASTM A182 Grade F11 Class 1 Class 3000 ASME B16.11 SW Licensor-4	
1	1				P02G-00015	90 degree elbow ASTM A182 Grade F11 Class 1 Class 3000 ASME B16.11 SW Licensor-4	
1	1.5				P02G-00016	90 degree elbow ASTM A182 Grade F11 Class 1 Class 3000 ASME B16.11 SW Licensor-4	
1	2		XS		P02F-000AR	90 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius Licensor-4	
1	3		STD		P02F-000CK	90 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius Licensor-4	
1	4		STD		P02F-000CL	90 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius Licensor-4	
1	6		STD		P02F-000CM	90 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius Licensor-4	
1	8		SCH30		P02F-000GB	90 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius Licensor-4	
1	10		STD		P02F-000G5	90 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius Licensor-4	
1	12		STD		P02F-000G6	90 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius Licensor-4	
1	14		SCH40		P02F-000G7	90 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius Licensor-4	
1	16		STD		P02F-000H8	90 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius Licensor-4	
1	18		STD		P02F-000KH	90 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius Licensor-4	
1	20		XS		P02F-000HA	90 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius Licensor-4	
1	24		XS		P02F-000ME	90 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius Licensor-4	
1	28		SCH30		P02F-000MF	90 degree elbow ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW Long radius Licensor-4	
1	30		SCH30		P02F-000HC	90 degree elbow ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW Long radius Licensor-4	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P03G-00013	45 degree elbow ASTM A182 Grade F11 Class 1 Class 3000 ASME B16.11 SW Licensor-4	
1	0.75				P03G-00014	45 degree elbow ASTM A182 Grade F11 Class 1 Class 3000 ASME B16.11 SW Licensor-4	
1	1				P03G-00015	45 degree elbow ASTM A182 Grade F11 Class 1 Class 3000 ASME B16.11 SW Licensor-4	
1	1.5				P03G-00016	45 degree elbow ASTM A182 Grade F11 Class 1 Class 3000 ASME B16.11 SW Licensor-4	
1	2		XS		P03F-000AH	45 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius Licensor-4	
1	3		STD		P03F-000CC	45 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius Licensor-4	
1	4		STD		P03F-000CD	45 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius Licensor-4	
1	6		STD		P03F-000CE	45 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius Licensor-4	
1	8		SCH30		P03F-000G2	45 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius Licensor-4	
1	10		STD		P03F-000FW	45 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius Licensor-4	
1	12		STD		P03F-000FX	45 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius Licensor-4	
1	14		SCH40		P03F-000FY	45 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius Licensor-4	
1	16		STD		P03F-000GZ	45 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius Licensor-4	
1	18		STD		P03F-000K8	45 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius Licensor-4	
1	20		XS		P03F-000H1	45 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius Licensor-4	
1	24		XS		P03F-000M0	45 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius Licensor-4	
1	28		SCH30		P03F-000LZ	45 degree elbow ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW Long radius Licensor-4	

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45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	30		SCH30		P03F-000H3	45 degree elbow ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW Long radius Licensor-4	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P21G-00013	Straight tee ASTM A182 Grade F11 Class 1 Class 3000 ASME B16.11 SW Licensor-4	
1	0.75				P21G-00014	Straight tee ASTM A182 Grade F11 Class 1 Class 3000 ASME B16.11 SW Licensor-4	
1	1				P21G-00015	Straight tee ASTM A182 Grade F11 Class 1 Class 3000 ASME B16.11 SW Licensor-4	
1	1.5				P21G-00016	Straight tee ASTM A182 Grade F11 Class 1 Class 3000 ASME B16.11 SW Licensor-4	
1	2		XS		P21F-000AJ	Straight tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	3		STD		P21F-000CD	Straight tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	4		STD		P21F-000CE	Straight tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	6		STD		P21F-000CF	Straight tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	8		SCH30		P21F-000G0	Straight tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	10		STD		P21F-000FX	Straight tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	12		STD		P21F-000FY	Straight tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	14		SCH40		P21F-000FZ	Straight tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	16		STD		P21F-000H3	Straight tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	18		STD		P21F-000KB	Straight tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW Licensor-4	
1	20		XS		P21F-000H5	Straight tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW Licensor-4	
1	24		XS		P21F-000M6	Straight tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW Licensor-4	
1	28		SCH30		P21F-000M7	Straight tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW Licensor-4	
1	30		SCH30		P21F-000H7	Straight tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW Licensor-4	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75			P24G-0001A	Reducing tee ASTM A182 Grade F11 Class 1 Class 3000 ASME B16.11 SW Licensor-4	
1	1.5	0.75			P24G-0001B	Reducing tee ASTM A182 Grade F11 Class 1 Class 3000 ASME B16.11 SW Licensor-4	
1	1.5	1			P24G-0001C	Reducing tee ASTM A182 Grade F11 Class 1 Class 3000 ASME B16.11 SW Licensor-4	
1	2	1	XS	XS	P24F-000WW	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	2	1.5	XS	XS	P24F-000WX	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	3	1.5	STD	XS	P24F-0013X	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	3	2	STD	XS	P24F-0013Y	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	4	2	STD	XS	P24F-0013Z	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	4	3	STD	STD	P24F-00140	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	6	3	STD	STD	P24F-00141	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	6	4	STD	STD	P24F-00142	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	8	4	SCH30	STD	P24F-001M6	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	8	6	SCH30	STD	P24F-001M7	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	10	4	STD	STD	P24F-001M8	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	10	6	STD	STD	P24F-001M9	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	10	8	STD	SCH30	P24F-001MA	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	12	6	STD	STD	P24F-001MC	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	12	8	STD	SCH30	P24F-001MD	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	12	10	STD	STD	P24F-001MB	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	14	6	SCH40	STD	P24F-001MG	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	14	8	SCH40	SCH30	P24F-001NT	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	14	10	SCH40	STD	P24F-001ME	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	14	12	SCH40	STD	P24F-001MF	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	16	6	STD	STD	P24F-001VB	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	16	8	STD	SCH30	P24F-001W7	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	16	10	STD	STD	P24F-001V8	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	16	12	STD	STD	P24F-001V9	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	16	14	STD	SCH40	P24F-001VA	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	18	8	STD	SCH30	P24F-002DU	Reducing tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW Licensor-4	
1	18	10	STD	STD	P24F-002DP	Reducing tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW Licensor-4	
1	18	12	STD	STD	P24F-002DR	Reducing tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW Licensor-4	
1	18	14	STD	SCH40	P24F-002DS	Reducing tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW Licensor-4	
1	18	16	STD	STD	P24F-002DT	Reducing tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW Licensor-4	
1	20	8	XS	SCH30	P24F-001VM	Reducing tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW Licensor-4	

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REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	20	10	XS	STD	P24F-001VG	Reducing tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW Licensor-4	
1	20	12	XS	STD	P24F-001VH	Reducing tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW Licensor-4	
1	20	14	XS	SCH40	P24F-001VJ	Reducing tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW Licensor-4	
1	20	16	XS	STD	P24F-001VK	Reducing tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW Licensor-4	
1	20	18	XS	STD	P24F-0026N	Reducing tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW Licensor-4	
1	24	10	XS	STD	P24F-002DV	Reducing tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW Licensor-4	
1	24	12	XS	STD	P24F-002DW	Reducing tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW Licensor-4	
1	24	14	XS	SCH40	P24F-002DX	Reducing tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW Licensor-4	
1	24	16	XS	STD	P24F-002DY	Reducing tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW Licensor-4	
1	24	18	XS	STD	P24F-002DZ	Reducing tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW Licensor-4	
1	24	20	XS	XS	P24F-002E0	Reducing tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW Licensor-4	
1	28	12	SCH30	STD	P24F-002E1	Reducing tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW Licensor-4	
1	28	14	SCH30	SCH40	P24F-002FE	Reducing tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW Licensor-4	
1	28	16	SCH30	STD	P24F-002FF	Reducing tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW Licensor-4	
1	28	18	SCH30	STD	P24F-002FG	Reducing tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW Licensor-4	
1	28	20	SCH30	XS	P24F-002E2	Reducing tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW Licensor-4	
1	28	24	SCH30	XS	P24F-002E3	Reducing tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW Licensor-4	
1	30	10	SCH30	STD	P24F-001VT	Reducing tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW Licensor-4	
1	30	12	SCH30	STD	P24F-001VU	Reducing tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW Licensor-4	
1	30	14	SCH30	SCH40	P24F-001VV	Reducing tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW Licensor-4	
1	30	16	SCH30	STD	P24F-001VW	Reducing tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW Licensor-4	
1	30	18	SCH30	STD	P24F-002E4	Reducing tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW Licensor-4	
1	30	20	SCH30	XS	P24F-001VY	Reducing tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW Licensor-4	
1	30	24	SCH30	XS	P24F-002E5	Reducing tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW Licensor-4	
1	30	28	SCH30	SCH30	P24F-002E6	Reducing tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW Licensor-4	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	STD	XS	P27F-000Y0	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	4	2	STD	XS	P27F-000Y1	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	4	3	STD	STD	P27F-000Y2	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	6	3	STD	STD	P27F-000Y3	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	6	4	STD	STD	P27F-000Y4	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	8	4	SCH30	STD	P27F-001A8	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	8	6	SCH30	STD	P27F-001A9	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	10	4	STD	STD	P27F-001AA	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	10	6	STD	STD	P27F-001AB	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	10	8	STD	SCH30	P27F-001AC	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	12	6	STD	STD	P27F-001AE	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	12	8	STD	SCH30	P27F-001AF	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	12	10	STD	STD	P27F-001AD	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	14	6	SCH40	STD	P27F-001AJ	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	14	8	SCH40	SCH30	P27F-001AK	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	14	10	SCH40	STD	P27F-001AG	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	14	12	SCH40	STD	P27F-001AH	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	16	8	STD	SCH30	P27F-001E0	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	16	10	STD	STD	P27F-001DX	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	16	12	STD	STD	P27F-001DY	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	16	14	STD	SCH40	P27F-001DZ	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	18	10	STD	STD	P27F-001U3	Concentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW Licensor-4	
1	18	12	STD	STD	P27F-001U4	Concentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW Licensor-4	
1	18	14	STD	SCH40	P27F-001U5	Concentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW Licensor-4	
1	18	16	STD	STD	P27F-001U6	Concentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW Licensor-4	
1	20	12	XS	STD	P27F-001E5	Concentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW Licensor-4	
1	20	14	XS	SCH40	P27F-001E6	Concentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW Licensor-4	
1	20	16	XS	STD	P27F-001E7	Concentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW Licensor-4	
1	20	18	XS	STD	P27F-001MU	Concentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW Licensor-4	
1	24	16	XS	STD	P27F-001U7	Concentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW Licensor-4	
1	24	18	XS	STD	P27F-001U8	Concentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW Licensor-4	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	24	20	XS	XS	P27F-001U9	Concentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW Licensor-4	
1	28	20	SCH30	XS	P27F-001UA	Concentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW Licensor-4	
1	28	24	SCH30	XS	P27F-001UB	Concentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW Licensor-4	
1	30	20	SCH30	XS	P27F-001EB	Concentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW Licensor-4	
1	30	24	SCH30	XS	P27F-001UC	Concentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW Licensor-4	
1	30	28	SCH30	SCH30	P27F-001UD	Concentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW Licensor-4	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	STD	XS	P28F-000Y0	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	4	2	STD	XS	P28F-000Y1	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	4	3	STD	STD	P28F-000Y2	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	6	3	STD	STD	P28F-000Y3	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	6	4	STD	STD	P28F-000Y4	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	8	4	SCH30	STD	P28F-001AN	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	8	6	SCH30	STD	P28F-001AP	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	10	4	STD	STD	P28F-001AR	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	10	6	STD	STD	P28F-001AS	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	10	8	STD	SCH30	P28F-001AT	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	12	6	STD	STD	P28F-001AV	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	12	8	STD	SCH30	P28F-001AW	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	12	10	STD	STD	P28F-001AU	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	14	6	SCH40	STD	P28F-001AZ	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	14	8	SCH40	SCH30	P28F-001B0	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	14	10	SCH40	STD	P28F-001AX	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	14	12	SCH40	STD	P28F-001AY	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	16	8	STD	SCH30	P28F-001EF	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	16	10	STD	STD	P28F-001EC	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	16	12	STD	STD	P28F-001ED	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	16	14	STD	SCH40	P28F-001EE	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	18	10	STD	STD	P28F-001UL	Eccentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW Licensor-4	
1	18	12	STD	STD	P28F-001UM	Eccentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW Licensor-4	
1	18	14	STD	SCH40	P28F-001UN	Eccentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW Licensor-4	
1	18	16	STD	STD	P28F-001UP	Eccentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW Licensor-4	
1	20	12	XS	STD	P28F-001EL	Eccentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW Licensor-4	
1	20	14	XS	SCH40	P28F-001EM	Eccentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW Licensor-4	
1	20	16	XS	STD	P28F-001EN	Eccentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW Licensor-4	
1	20	18	XS	STD	P28F-001NB	Eccentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW Licensor-4	
1	24	16	XS	STD	P28F-001UR	Eccentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW Licensor-4	
1	24	18	XS	STD	P28F-001US	Eccentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW Licensor-4	
1	24	20	XS	XS	P28F-001UT	Eccentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW Licensor-4	
1	28	20	SCH30	XS	P28F-001UU	Eccentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW Licensor-4	
1	28	24	SCH30	XS	P28F-001UV	Eccentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW Licensor-4	
1	30	20	SCH30	XS	P28F-001ET	Eccentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW Licensor-4	
1	30	24	SCH30	XS	P28F-001UW	Eccentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW Licensor-4	
1	30	28	SCH30	SCH30	P28F-001UX	Eccentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW Licensor-4	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P29G-0000Y	Cap ASTM A182 Grade F11 Class 1 Class 3000 ASME B16.11 SW Licensor-4	
1	0.75				P29G-0000Z	Cap ASTM A182 Grade F11 Class 1 Class 3000 ASME B16.11 SW Licensor-4	
1	1				P29G-00010	Cap ASTM A182 Grade F11 Class 1 Class 3000 ASME B16.11 SW Licensor-4	
1	1.5				P29G-00011	Cap ASTM A182 Grade F11 Class 1 Class 3000 ASME B16.11 SW Licensor-4	
1	2		XS		P29F-000A8	Cap ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	3		STD		P29F-000C8	Cap ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	4		STD		P29F-000C9	Cap ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	6		STD		P29F-000CA	Cap ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	8		SCH30		P29F-000FK	Cap ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	10		STD		P29F-000F9	Cap ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	

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CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	12		STD		P29F-000FA	Cap ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	14		SCH40		P29F-000FB	Cap ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	16		STD		P29F-000GC	Cap ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	18		STD		P29F-000JL	Cap ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	20		XS		P29F-000GE	Cap ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	24		XS		P29F-000KJ	Cap ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	28		SCH30		P29F-000KK	Cap ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	30		SCH30		P29F-000GG	Cap ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
541	0.75				P29G-0001S	Cap ASTM A182 Grade F11 Class 1 Class 3000 ASME B16.11 NPT Licensor-4	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P41F-00034	Straight nipple ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Licensor-4	
1	0.75		SCH160		P41F-00035	Straight nipple ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Licensor-4	
1	1		SCH160		P41F-00036	Straight nipple ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Licensor-4	
1	1.5		SCH160		P41F-00037	Straight nipple ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Licensor-4	

CON SWAGED NIPPLE (SNC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	XS	XS	P42F-00034	Concentric swaged nipple ASTM A234 Grade WP11 Class 1 Seamless MSS SP-95 PE(L) - PE(S) Licensor-4	
1	1	0.5	XS	XS	P42F-00035	Concentric swaged nipple ASTM A234 Grade WP11 Class 1 Seamless MSS SP-95 PE(L) - PE(S) Licensor-4	
1	1	0.75	XS	XS	P42F-00036	Concentric swaged nipple ASTM A234 Grade WP11 Class 1 Seamless MSS SP-95 PE(L) - PE(S) Licensor-4	
1	1.5	0.5	XS	XS	P42F-00037	Concentric swaged nipple ASTM A234 Grade WP11 Class 1 Seamless MSS SP-95 PE(L) - PE(S) Licensor-4	
1	1.5	0.75	XS	XS	P42F-00038	Concentric swaged nipple ASTM A234 Grade WP11 Class 1 Seamless MSS SP-95 PE(L) - PE(S) Licensor-4	
1	1.5	1	XS	XS	P42F-00039	Concentric swaged nipple ASTM A234 Grade WP11 Class 1 Seamless MSS SP-95 PE(L) - PE(S) Licensor-4	
1	2	0.5	XS	XS	P42F-0003A	Concentric swaged nipple ASTM A234 Grade WP11 Class 1 Seamless MSS SP-95 BE(L) - PE(S) Licensor-4	
1	2	0.75	XS	XS	P42F-0003B	Concentric swaged nipple ASTM A234 Grade WP11 Class 1 Seamless MSS SP-95 BE(L) - PE(S) Licensor-4	
1	2	1	XS	XS	P42F-0003C	Concentric swaged nipple ASTM A234 Grade WP11 Class 1 Seamless MSS SP-95 BE(L) - PE(S) Licensor-4	
1	2	1.5	XS	XS	P42F-0003D	Concentric swaged nipple ASTM A234 Grade WP11 Class 1 Seamless MSS SP-95 BE(L) - PE(S) Licensor-4	
1	3	1.5	STD	XS	P42F-00043	Concentric swaged nipple ASTM A234 Grade WP11 Class 1 Seamless MSS SP-95 BE(L) - PE(S) Licensor-4	

ECC SWAGED NIPPLE (SNE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	XS	XS	P43F-0002F	Eccentric swaged nipple ASTM A234 Grade WP11 Class 1 Seamless MSS SP-95 PE(L) - PE(S) Licensor-4	
1	1	0.5	XS	XS	P43F-0002G	Eccentric swaged nipple ASTM A234 Grade WP11 Class 1 Seamless MSS SP-95 PE(L) - PE(S) Licensor-4	
1	1	0.75	XS	XS	P43F-0002H	Eccentric swaged nipple ASTM A234 Grade WP11 Class 1 Seamless MSS SP-95 PE(L) - PE(S) Licensor-4	
1	1.5	0.5	XS	XS	P43F-0002J	Eccentric swaged nipple ASTM A234 Grade WP11 Class 1 Seamless MSS SP-95 PE(L) - PE(S) Licensor-4	
1	1.5	0.75	XS	XS	P43F-0002K	Eccentric swaged nipple ASTM A234 Grade WP11 Class 1 Seamless MSS SP-95 PE(L) - PE(S) Licensor-4	
1	1.5	1	XS	XS	P43F-0002L	Eccentric swaged nipple ASTM A234 Grade WP11 Class 1 Seamless MSS SP-95 PE(L) - PE(S) Licensor-4	
1	2	0.5	XS	XS	P43F-0002M	Eccentric swaged nipple ASTM A234 Grade WP11 Class 1 Seamless MSS SP-95 BE(L) - PE(S) Licensor-4	
1	2	0.75	XS	XS	P43F-0002N	Eccentric swaged nipple ASTM A234 Grade WP11 Class 1 Seamless MSS SP-95 BE(L) - PE(S) Licensor-4	
1	2	1	XS	XS	P43F-0002P	Eccentric swaged nipple ASTM A234 Grade WP11 Class 1 Seamless MSS SP-95 BE(L) - PE(S) Licensor-4	
1	2	1.5	XS	XS	P43F-0002R	Eccentric swaged nipple ASTM A234 Grade WP11 Class 1 Seamless MSS SP-95 BE(L) - PE(S) Licensor-4	
1	3	1.5	STD	XS	P43F-0003D	Eccentric swaged nipple ASTM A234 Grade WP11 Class 1 Seamless MSS SP-95 BE(L) - PE(S) Licensor-4	

COUPLING (CPS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P47G-00016	Coupling ASTM A182 Grade F11 Class 1 Class 3000 ASME B16.11 SW - SW Licensor-4	
1	0.75				P47G-00017	Coupling ASTM A182 Grade F11 Class 1 Class 3000 ASME B16.11 SW - SW Licensor-4	
1	1				P47G-00018	Coupling ASTM A182 Grade F11 Class 1 Class 3000 ASME B16.11 SW - SW Licensor-4	
1	1.5				P47G-00019	Coupling ASTM A182 Grade F11 Class 1 Class 3000 ASME B16.11 SW - SW Licensor-4	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2 - 2.5	0.75			P31G-0036D	Outlet ASTM A182 Grade F11 Class 1 Class 3000 MSS SP-97 SW Licensor-4	
1	3 - 5	0.75			P31G-0036E	Outlet ASTM A182 Grade F11 Class 1 Class 3000 MSS SP-97 SW Licensor-4	
1	6 - 12	0.75			P31G-0036C	Outlet ASTM A182 Grade F11 Class 1 Class 3000 MSS SP-97 SW Licensor-4	
1	14 - 36	0.75			P31G-0036B	Outlet ASTM A182 Grade F11 Class 1 Class 3000 MSS SP-97 SW Licensor-4	

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OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	1			P31G-0036G	Outlet ASTM A182 Grade F11 Class 1 Class 3000 MSS SP-97 SW Licensor-4	
1	4 - 5	1			P31G-0036J	Outlet ASTM A182 Grade F11 Class 1 Class 3000 MSS SP-97 SW Licensor-4	
1	6 - 10	1			P31G-0036F	Outlet ASTM A182 Grade F11 Class 1 Class 3000 MSS SP-97 SW Licensor-4	
1	12 - 36	1			P31G-0036H	Outlet ASTM A182 Grade F11 Class 1 Class 3000 MSS SP-97 SW Licensor-4	
1	4	1.5			P31G-001NC	Outlet ASTM A182 Grade F11 Class 1 Class 3000 MSS SP-97 SW Licensor-4	
1	5 - 6	1.5			P31G-0036K	Outlet ASTM A182 Grade F11 Class 1 Class 3000 MSS SP-97 SW Licensor-4	
1	8 - 12	1.5			P31G-0036L	Outlet ASTM A182 Grade F11 Class 1 Class 3000 MSS SP-97 SW Licensor-4	
1	14 - 24	1.5			P31G-0036M	Outlet ASTM A182 Grade F11 Class 1 Class 3000 MSS SP-97 SW Licensor-4	
1	26 - 36	1.5			P31G-0036N	Outlet ASTM A182 Grade F11 Class 1 Class 3000 MSS SP-97 SW Licensor-4	
541	1	0.75			P31G-002ND	Outlet ASTM A182 Grade F11 Class 1 Class 3000 MSS SP-97 NPT Licensor-4	
541	1.5	0.75			P31G-002NC	Outlet ASTM A182 Grade F11 Class 1 Class 3000 MSS SP-97 NPT Licensor-4	
541	2 - 2.5	0.75			P31G-0036P	Outlet ASTM A182 Grade F11 Class 1 Class 3000 MSS SP-97 NPT Licensor-4	
541	3 - 5	0.75			P31G-0036R	Outlet ASTM A182 Grade F11 Class 1 Class 3000 MSS SP-97 NPT Licensor-4	
541	6 - 12	0.75			P31G-0036S	Outlet ASTM A182 Grade F11 Class 1 Class 3000 MSS SP-97 NPT Licensor-4	
541	14 - 36	0.75			P31G-0036T	Outlet ASTM A182 Grade F11 Class 1 Class 3000 MSS SP-97 NPT Licensor-4	
1	6	2	STD	XS	P31G-001H2	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW Licensor-4	
1	8	2	SCH30	XS	P31G-0021Z	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW Licensor-4	
1	10	2	STD	XS	P31G-00221	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW Licensor-4	
1	12	2	STD	XS	P31G-00223	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW Licensor-4	
1	14	2	SCH40	XS	P31G-00226	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW Licensor-4	
1	16	2	STD	XS	P31G-00283	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW Licensor-4	
1	18	2	STD	XS	P31G-002N5	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW Licensor-4	
1	20	2	XS	XS	P31G-0028A	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW Licensor-4	
1	24	2	XS	XS	P31G-002SS	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW Licensor-4	
1	28	2	SCH30	XS	P31G-002SW	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW Licensor-4	
1	30	2	SCH30	XS	P31G-0028J	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW Licensor-4	
1	8	3	SCH30	STD	P31G-00220	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW Licensor-4	
1	10	3	STD	STD	P31G-00222	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW Licensor-4	
1	12	3	STD	STD	P31G-00224	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW Licensor-4	
1	14	3	SCH40	STD	P31G-00227	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW Licensor-4	
1	16	3	STD	STD	P31G-00284	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW Licensor-4	
1	18	3	STD	STD	P31G-002SN	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW Licensor-4	
1	20	3	XS	STD	P31G-0028B	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW Licensor-4	
1	24	3	XS	STD	P31G-002ST	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW Licensor-4	
1	28	3	SCH30	STD	P31G-002SX	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW Licensor-4	
1	30	3	SCH30	STD	P31G-0028K	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW Licensor-4	
1	12	4	STD	STD	P31G-00225	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW Licensor-4	
1	14	4	SCH40	STD	P31G-00228	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW Licensor-4	
1	16	4	STD	STD	P31G-00285	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW Licensor-4	
1	18	4	STD	STD	P31G-002SP	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW Licensor-4	
1	20	4	XS	STD	P31G-0028C	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW Licensor-4	
1	24	4	XS	STD	P31G-002SU	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW Licensor-4	
1	28	4	SCH30	STD	P31G-002SY	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW Licensor-4	
1	30	4	SCH30	STD	P31G-0028L	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW Licensor-4	
1	18	6	STD	STD	P31G-002SR	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW Licensor-4	
1	20	6	XS	STD	P31G-0028D	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW Licensor-4	
1	24	6	XS	STD	P31G-002SV	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW Licensor-4	
1	28	6	SCH30	STD	P31G-002SZ	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW Licensor-4	
1	30	6	SCH30	STD	P31G-0028M	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW Licensor-4	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30G-0001C	Plug ASTM A182 Grade F11 Class 1 ASME B16.11 NPT Round head Licensor-4	
1	0.75				P30G-0001D	Plug ASTM A182 Grade F11 Class 1 ASME B16.11 NPT Round head Licensor-4	
1	1				P30G-0001E	Plug ASTM A182 Grade F11 Class 1 ASME B16.11 NPT Round head Licensor-4	
1	1.5				P30G-0001F	Plug ASTM A182 Grade F11 Class 1 ASME B16.11 NPT Round head Licensor-4	

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FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P61G-000NL	Flange SW ASTM A182 Grade F11 Class 2 Class 300 ASME B16.5 RF Licensor-4	
1	0.75		XS		P61G-000NM	Flange SW ASTM A182 Grade F11 Class 2 Class 300 ASME B16.5 RF Licensor-4	
1	1		XS		P61G-000NN	Flange SW ASTM A182 Grade F11 Class 2 Class 300 ASME B16.5 RF Licensor-4	
1	1.5		XS		P61G-000NP	Flange SW ASTM A182 Grade F11 Class 2 Class 300 ASME B16.5 RF Licensor-4	
1	2		XS		P61G-000NR	Flange WN ASTM A182 Grade F11 Class 2 Class 300 ASME B16.5 RF Licensor-4	
1	3		STD		P61G-000NS	Flange WN ASTM A182 Grade F11 Class 2 Class 300 ASME B16.5 RF Licensor-4	
1	4		STD		P61G-000NT	Flange WN ASTM A182 Grade F11 Class 2 Class 300 ASME B16.5 RF Licensor-4	
1	6		STD		P61G-000NU	Flange WN ASTM A182 Grade F11 Class 2 Class 300 ASME B16.5 RF Licensor-4	
1	8		SCH30		P61G-000YW	Flange WN ASTM A182 Grade F11 Class 2 Class 300 ASME B16.5 RF Licensor-4	
1	10		STD		P61G-000YN	Flange WN ASTM A182 Grade F11 Class 2 Class 300 ASME B16.5 RF Licensor-4	
1	12		STD		P61G-000YP	Flange WN ASTM A182 Grade F11 Class 2 Class 300 ASME B16.5 RF Licensor-4	
1	14		SCH40		P61G-000YR	Flange WN ASTM A182 Grade F11 Class 2 Class 300 ASME B16.5 RF Licensor-4	
1	16		STD		P61G-0011D	Flange WN ASTM A182 Grade F11 Class 2 Class 300 ASME B16.5 RF Licensor-4	
1	18		STD		P61G-0019G	Flange WN ASTM A182 Grade F11 Class 2 Class 300 ASME B16.5 RF Licensor-4	
1	20		XS		P61G-0011F	Flange WN ASTM A182 Grade F11 Class 2 Class 300 ASME B16.5 RF Licensor-4	
1	24		XS		P61G-0019H	Flange WN ASTM A182 Grade F11 Class 2 Class 300 ASME B16.5 RF Licensor-4	
1	28		SCH30		P61G-0019J	Flange WN ASTM A182 Grade F11 Class 2 Class 300 ASME B16.47 Series B RF Licensor-4	
1	30		SCH30		P61G-0011H	Flange WN ASTM A182 Grade F11 Class 2 Class 300 ASME B16.47 Series B RF Licensor-4	
541	0.5				P61G-001B1	Flange NPT ASTM A182 Grade F11 Class 2 Class 300 ASME B16.5 RF Licensor-4	
541	0.75				P61G-0015M	Flange NPT ASTM A182 Grade F11 Class 2 Class 300 ASME B16.5 RF Licensor-4	
781	0.5		XS		P61G-000HY	Flange SW ASTM A182 Grade F11 Class 2 Class 600 ASME B16.5 RF Licensor-4	
781	0.75		XS		P61G-000HZ	Flange SW ASTM A182 Grade F11 Class 2 Class 600 ASME B16.5 RF Licensor-4	
781	1		XS		P61G-000J0	Flange SW ASTM A182 Grade F11 Class 2 Class 600 ASME B16.5 RF Licensor-4	
781	1.5		XS		P61G-000J1	Flange SW ASTM A182 Grade F11 Class 2 Class 600 ASME B16.5 RF Licensor-4	
781	2		XS		P61G-000J6	Flange WN ASTM A182 Grade F11 Class 2 Class 600 ASME B16.5 RF Licensor-4	
781	3		STD		P61G-000NV	Flange WN ASTM A182 Grade F11 Class 2 Class 600 ASME B16.5 RF Licensor-4	
781	4		STD		P61G-000NW	Flange WN ASTM A182 Grade F11 Class 2 Class 600 ASME B16.5 RF Licensor-4	
781	6		STD		P61G-000NX	Flange WN ASTM A182 Grade F11 Class 2 Class 600 ASME B16.5 RF Licensor-4	
781	8		SCH30		P61G-000Z7	Flange WN ASTM A182 Grade F11 Class 2 Class 600 ASME B16.5 RF Licensor-4	
781	10		STD		P61G-000Z1	Flange WN ASTM A182 Grade F11 Class 2 Class 600 ASME B16.5 RF Licensor-4	
781	12		STD		P61G-000Z2	Flange WN ASTM A182 Grade F11 Class 2 Class 600 ASME B16.5 RF Licensor-4	
781	14		SCH40		P61G-000Z3	Flange WN ASTM A182 Grade F11 Class 2 Class 600 ASME B16.5 RF Licensor-4	
781	16		STD		P61G-0011M	Flange WN ASTM A182 Grade F11 Class 2 Class 600 ASME B16.5 RF Licensor-4	
781	18		STD		P61G-0015V	Flange WN ASTM A182 Grade F11 Class 2 Class 600 ASME B16.5 RF Licensor-4	
781	20		XS		P61G-0011P	Flange WN ASTM A182 Grade F11 Class 2 Class 600 ASME B16.5 RF Licensor-4	
781	24		XS		P61G-0019K	Flange WN ASTM A182 Grade F11 Class 2 Class 600 ASME B16.5 RF Licensor-4	
781	30		SCH30		P61G-0011S	Flange WN ASTM A182 Grade F11 Class 2 Class 600 ASME B16.47 Series B RF Licensor-4	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67G-000B0	Blind flange ASTM A182 Grade F11 Class 2 Class 300 ASME B16.5 RF Licensor-4	
1	0.75				P67G-000B1	Blind flange ASTM A182 Grade F11 Class 2 Class 300 ASME B16.5 RF Licensor-4	
1	1				P67G-000B2	Blind flange ASTM A182 Grade F11 Class 2 Class 300 ASME B16.5 RF Licensor-4	
1	1.5				P67G-000B3	Blind flange ASTM A182 Grade F11 Class 2 Class 300 ASME B16.5 RF Licensor-4	
1	2				P67G-000B4	Blind flange ASTM A182 Grade F11 Class 2 Class 300 ASME B16.5 RF Licensor-4	
1	3				P67G-000B5	Blind flange ASTM A182 Grade F11 Class 2 Class 300 ASME B16.5 RF Licensor-4	
1	4				P67G-000B6	Blind flange ASTM A182 Grade F11 Class 2 Class 300 ASME B16.5 RF Licensor-4	
1	6				P67G-000B7	Blind flange ASTM A182 Grade F11 Class 2 Class 300 ASME B16.5 RF Licensor-4	
1	8				P67G-000C9	Blind flange ASTM A182 Grade F11 Class 2 Class 300 ASME B16.5 RF Licensor-4	
1	10				P67G-000C2	Blind flange ASTM A182 Grade F11 Class 2 Class 300 ASME B16.5 RF Licensor-4	
1	12				P67G-000C3	Blind flange ASTM A182 Grade F11 Class 2 Class 300 ASME B16.5 RF Licensor-4	
1	14				P67G-000C4	Blind flange ASTM A182 Grade F11 Class 2 Class 300 ASME B16.5 RF Licensor-4	
1	16				P67G-000C5	Blind flange ASTM A182 Grade F11 Class 2 Class 300 ASME B16.5 RF Licensor-4	
1	18				P67G-000C6	Blind flange ASTM A182 Grade F11 Class 2 Class 300 ASME B16.5 RF Licensor-4	
1	20				P67G-000C7	Blind flange ASTM A182 Grade F11 Class 2 Class 300 ASME B16.5 RF Licensor-4	
1	24				P67G-000C8	Blind flange ASTM A182 Grade F11 Class 2 Class 300 ASME B16.5 RF Licensor-4	
1	30				P67G-000CA	Blind flange ASTM A182 Grade F11 Class 2 Class 300 ASME B16.47 Series B RF Licensor-4	

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GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-003AM	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	0.75				P73T-003AN	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	1				P73T-003AP	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	1.5				P73T-003AR	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	2				P73T-003AX	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	3				P73T-003B0	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	4				P73T-003B1	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	6				P73T-003B2	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	8				P73T-003B3	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	10				P73T-003AS	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	12				P73T-003AT	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	14				P73T-003AU	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	16				P73T-003AV	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	18				P73T-003AW	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	20				P73T-003AY	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	24				P73T-003AZ	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	28				P73T-003S8	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	30				P73T-003BL	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
781	0.5				P73T-003B4	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
781	0.75				P73T-003B5	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
781	1				P73T-003B6	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
781	1.5				P73T-003B7	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
781	2				P73T-003BD	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
781	3				P73T-003BG	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
781	4				P73T-003BH	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
781	6				P73T-003BJ	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
781	8				P73T-003BK	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
781	10				P73T-003B8	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
781	12				P73T-003B9	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
781	14				P73T-003BA	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
781	16				P73T-003BB	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
781	18				P73T-003BC	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
781	20				P73T-003BE	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
781	24				P73T-003BF	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
781	30				P73T-003BM	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-10				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B16 / A194 Grade 4 ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	12-30				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B16 / A194 Grade 4 ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
781	0.5-6				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B16 / A194 Grade 4 ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
781	8-30				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B16 / A194 Grade 4 ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	

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GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81G-0007T	Gate valve ASTM A182 Grade F11 Class 2 Class 300 API 602 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2 Licensor-4	
1	0.75				P81G-0007U	Gate valve ASTM A182 Grade F11 Class 2 Class 300 API 602 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2 Licensor-4	
1	1				P81G-0007V	Gate valve ASTM A182 Grade F11 Class 2 Class 300 API 602 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2 Licensor-4	
1	1.5				P81G-0007W	Gate valve ASTM A182 Grade F11 Class 2 Class 300 API 602 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2 Licensor-4	
4608	0.75				P81G-000EN	Gate valve ASTM A182 Grade F11 Class 2 Class 800 API 602 SW both sides w/ nipples PE - NPT ASTM A335-P11 Sch160-nipple Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2 Licensor-4	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82G-0003Z	Globe valve ASTM A182 Grade F11 Class 2 Class 300 API 602 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2 Licensor-4	
1	0.75				P82G-00040	Globe valve ASTM A182 Grade F11 Class 2 Class 300 API 602 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2 Licensor-4	
1	1				P82G-00041	Globe valve ASTM A182 Grade F11 Class 2 Class 300 API 602 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2 Licensor-4	
1	1.5				P82G-00042	Globe valve ASTM A182 Grade F11 Class 2 Class 300 API 602 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2 Licensor-4	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71G-0001H	Spectacle blank ASTM A182 Grade F11 Class 2 Class 300 Standard-drawing Flange ASME B16.5 RF Licensor-4	
1	0.75				P71G-0001J	Spectacle blank ASTM A182 Grade F11 Class 2 Class 300 Standard-drawing Flange ASME B16.5 RF Licensor-4	
1	1				P71G-0001K	Spectacle blank ASTM A182 Grade F11 Class 2 Class 300 Standard-drawing Flange ASME B16.5 RF Licensor-4	
1	1.5				P71G-0001L	Spectacle blank ASTM A182 Grade F11 Class 2 Class 300 Standard-drawing Flange ASME B16.5 RF Licensor-4	
1	2				P71G-0001M	Spectacle blank ASTM A182 Grade F11 Class 2 Class 300 Standard-drawing Flange ASME B16.5 RF Licensor-4	
1	3				P71G-0001N	Spectacle blank ASTM A182 Grade F11 Class 2 Class 300 Standard-drawing Flange ASME B16.5 RF Licensor-4	
1	4				P71G-0001P	Spectacle blank ASTM A182 Grade F11 Class 2 Class 300 Standard-drawing Flange ASME B16.5 RF Licensor-4	
1	6				P71G-0001R	Spectacle blank ASTM A182 Grade F11 Class 2 Class 300 Standard-drawing Flange ASME B16.5 RF Licensor-4	
1	8				P71G-0003E	Spectacle blank ASTM A182 Grade F11 Class 2 Class 300 Standard-drawing Flange ASME B16.5 RF Licensor-4	
1	10				P71G-0003C	Spectacle blank ASTM A182 Grade F11 Class 2 Class 300 Standard-drawing Flange ASME B16.5 RF Licensor-4	
1	12				P71G-0003D	Spectacle blank ASTM A182 Grade F11 Class 2 Class 300 Standard-drawing Flange ASME B16.5 RF Licensor-4	

PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72G-0005X	Paddle blank ASTM A182 Grade F11 Class 2 Class 300 Standard-drawing Flange ASME B16.5 RF Licensor-4	
1	16				P72G-0005Y	Paddle blank ASTM A182 Grade F11 Class 2 Class 300 Standard-drawing Flange ASME B16.5 RF Licensor-4	
1	18				P72G-0005Z	Paddle blank ASTM A182 Grade F11 Class 2 Class 300 Standard-drawing Flange ASME B16.5 RF Licensor-4	
1	20				P72G-00060	Paddle blank ASTM A182 Grade F11 Class 2 Class 300 Standard-drawing Flange ASME B16.5 RF Licensor-4	
1	24				P72G-00061	Paddle blank ASTM A182 Grade F11 Class 2 Class 300 Standard-drawing Flange ASME B16.5 RF Licensor-4	
1	28				P72G-0008W	Paddle blank ASTM A182 Grade F11 Class 2 Class 300 Standard-drawing Flange ASME B16.47-B RF Licensor-4	
1	30				P72G-00062	Paddle blank ASTM A182 Grade F11 Class 2 Class 300 Standard-drawing Flange ASME B16.47-B RF Licensor-4	

PADDLE SPACER (PS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72G-00066	Paddle spacer ASTM A182 Grade F11 Class 2 Class 300 Standard-drawing Flange ASME B16.5 RF Licensor-4	
1	16				P72G-00067	Paddle spacer ASTM A182 Grade F11 Class 2 Class 300 Standard-drawing Flange ASME B16.5 RF Licensor-4	
1	18				P72G-00068	Paddle spacer ASTM A182 Grade F11 Class 2 Class 300 Standard-drawing Flange ASME B16.5 RF Licensor-4	
1	20				P72G-00069	Paddle spacer ASTM A182 Grade F11 Class 2 Class 300 Standard-drawing Flange ASME B16.5 RF Licensor-4	
1	24				P72G-0006A	Paddle spacer ASTM A182 Grade F11 Class 2 Class 300 Standard-drawing Flange ASME B16.5 RF Licensor-4	
1	28				P72G-0008Y	Paddle spacer ASTM A182 Grade F11 Class 2 Class 300 Standard-drawing Flange ASME B16.47-B RF Licensor-4	
1	30				P72G-0006B	Paddle spacer ASTM A182 Grade F11 Class 2 Class 300 Standard-drawing Flange ASME B16.47-B RF Licensor-4	

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BOLT TABLE (B_B1DH04 , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-00GN8		
0.75	4	0.625	75	P80S-00GLL		
1	4	0.625	80	P80S-00GLK		
1.5	4	0.750	95	P80S-00FVE		
2	8	0.625	90	P80S-00GLH		
3	8	0.750	110	P80S-00GLD		
4	8	0.750	115	P80S-00GLC		
6	12	0.750	125	P80S-00GLA		
8	12	0.875	140	P80S-00FV5		
10	16	1.000	160	P80S-00FR9		
12	16	1.125	175	P80S-00FH8		
14	20	1.125	180	P80S-00FH7		
16	20	1.250	190	P80S-00F9Y		
18	24	1.250	200	P80S-00F9W		
20	24	1.250	210	P80S-00F9U		
24	24	1.500	235	P80S-00EYL		
28	36	1.250	270	P80S-00F9F		
30	36	1.375	285	P80S-00F2V		

BOLT TABLE (B_B1DH04_781 , STUD ASME RF, OPTION CODE 781)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	80	P80S-00GN6		
0.75	4	0.625	90	P80S-00GLH		
1	4	0.625	95	P80S-00GLG		
1.5	4	0.750	110	P80S-00GLD		
2	8	0.625	110	P80S-00GN0		
3	8	0.750	130	P80S-00GL9		
4	8	0.875	150	P80S-00FV3		
6	12	1.000	175	P80S-00FR6		
8	12	1.125	195	P80S-00FH4		
10	16	1.250	250	P80S-00F9K		
12	20	1.250	255	P80S-00F9J		
14	20	1.375	270	P80S-00F4T		
16	20	1.500	295	P80S-00EY8		
18	20	1.625	320	P80S-00G0T		
20	24	1.625	335	P80S-00G0P		
24	24	1.875	380	P80S-00FKC		
28			0			
30	28	1.875	435	P80S-00FK1		

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BRANCH TABLE (T_B1DH04)

RUN PIPE SIZE (in) \ BRANCH SIZE (in)	0.5	0.75	1	1.5	2	3	4	6	8	10	12	14	16	18	20	24	28	30
0.5	TS																	
0.75		TS																
1		TR	TS															
1.5		TR	TR	TS														
2		L	TR	TR	TS													
3		L	L	TR	TR	TS												
4	L	L	L	L	TR	TR	TS											
6	L	L	L	L	L	TR	TR	TS										
8		L	L	L	L	L	TR	TR	TS									
10		L	L	L	L	L	TR	TR	TR	TS								
12		L	L	L	L	L	L	TR	TR	TR	TS							
14		L	L	L	L	L	L	TR	TR	TR	TR	TS						
16		L	L	L	L	L	L	TR	TR	TR	TR	TR	TS					
18		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TS				
20		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TR	TS			
24		L	L	L	L	L	L	L	9PD	TR	TR	TR	TR	TR	TR	TS		
28		L	L	L	L	L	L	L	9PD	9PD	TR	TR	TR	TR	TR	TR	TS	
30		L	L	L	L	L	L	L	9PD	TR	TR	TR	TR	TR	TR	TR	TR	TS

9PD : REINFORCING PAD 90 DEG
TS : STRAIGHT TEE
TR : REDUCING TEE
L : OUTLET

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PIPING CLASS

B1DP04 REV NO. 2

Material : 1-1/4Cr - 1/2Mo
Rating : ASME CLASS 300
Flange Face : RF
C.A.(mm) : 1.50
Gasket : Spiral Wound
Service : PROCESS - NON SOUR, NON NACE SOUR: / PROCESS / PROCESS WITH H2S / HYDROCARBON
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
24	FOR ALL RELEVANT PIPING CLASSES WITH LINE DESIGN TEMPERATURE ABOVE 427DEGC, IN SPIRAL WOUND GASKET, SUITABLE GASKET FILLER MATERIAL SUCH AS COMBINATION OF MICA LAYERS AND GRAPHITE FILLERS OR EQUIVALENT SHALL BE REVIEWED AND SELECTED OR AS DEFINED BY THE LICENSOR
36	ASTM A691 CR-MO WELDED PIPES SPECIFIED WITH CLASS 22 CAN BE USED IN LIEU OF CLASS 42 IN NON-LICENSED UNITS ONLY. GRADE SHALL BE AS SPECIFIED IN "PIPE / FLANGE MATERIAL" SECTION IN ATTACHMENT 9.0 OF THIS DOCUMENT

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
541	NPT(F) (CA,F,L)
781	CLASS 600 (B,F,G,PB,PS)
4608	VALVE WITH NIPPLES (V)

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PIPING CLASS
B1DP04 REV NO. 2

PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P01F-000BJ	Pipe ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M PE Licensor-4	
1	0.75		XS		P01F-000BK	Pipe ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M PE Licensor-4	
1	1		XS		P01F-000BL	Pipe ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M PE Licensor-4	
1	1.5		XS		P01F-000BM	Pipe ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M PE Licensor-4	
1	2		XS		P01F-000BT	Pipe ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M BE Licensor-4	
1	3		STD		P01F-000CS	Pipe ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M BE Licensor-4	
1	4		STD		P01F-000CT	Pipe ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M BE Licensor-4	
1	6		STD		P01F-000CU	Pipe ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M BE Licensor-4	
1	8		SCH30		P01F-000F2	Pipe ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M BE Licensor-4	
1	10		STD		P01F-000EZ	Pipe ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M BE Licensor-4	
1	12		STD		P01F-000F0	Pipe ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M BE Licensor-4	
1	14		SCH40		P01F-000F1	Pipe ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M BE Licensor-4	
1	16		STD		P01F-001NN	Pipe ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M BE Licensor-4	
1	18		SCH30		P01F-001NP	Pipe ASTM A691 Grade 1-1/4CR Class 22 EFW ASME B36.10M/B36.19M BE Licensor-4	
1	20		XS		P01F-001NR	Pipe ASTM A691 Grade 1-1/4CR Class 22 EFW ASME B36.10M/B36.19M BE Licensor-4	
1	24		SCH30		P01F-001NS	Pipe ASTM A691 Grade 1-1/4CR Class 22 EFW ASME B36.10M/B36.19M BE Licensor-4	
1	30		SCH30		P01F-001NT	Pipe ASTM A691 Grade 1-1/4CR Class 22 EFW ASME B36.10M/B36.19M BE Licensor-4	
1	36		SCH40		P01F-001NU	Pipe ASTM A691 Grade 1-1/4CR Class 22 EFW ASME B36.10M/B36.19M BE Licensor-4	
1	42		22.23mm		P01F-001NV	Pipe ASTM A691 Grade 1-1/4CR Class 22 EFW ASME B36.10M/B36.19M BE Licensor-4	
1	48		23.83mm		P01F-001NW	Pipe ASTM A691 Grade 1-1/4CR Class 22 EFW ASME B36.10M/B36.19M BE Licensor-4	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P02G-00013	90 degree elbow ASTM A182 Grade F11 Class 1 Class 3000 ASME B16.11 SW Licensor-4	
1	0.75				P02G-00014	90 degree elbow ASTM A182 Grade F11 Class 1 Class 3000 ASME B16.11 SW Licensor-4	
1	1				P02G-00015	90 degree elbow ASTM A182 Grade F11 Class 1 Class 3000 ASME B16.11 SW Licensor-4	
1	1.5				P02G-00016	90 degree elbow ASTM A182 Grade F11 Class 1 Class 3000 ASME B16.11 SW Licensor-4	
1	2		XS		P02F-000AR	90 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius Licensor-4	
1	3		STD		P02F-000CK	90 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius Licensor-4	
1	4		STD		P02F-000CL	90 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius Licensor-4	
1	6		STD		P02F-000CM	90 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius Licensor-4	
1	8		SCH30		P02F-000GB	90 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius Licensor-4	
1	10		STD		P02F-000G5	90 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius Licensor-4	
1	12		STD		P02F-000G6	90 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius Licensor-4	
1	14		SCH40		P02F-000G7	90 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius Licensor-4	
1	16		STD		P02F-000H8	90 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius Licensor-4	
1	18		SCH30		P02F-000H9	90 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius Licensor-4	
1	20		XS		P02F-000HA	90 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius Licensor-4	
1	24		SCH30		P02F-000HB	90 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius Licensor-4	
1	30		SCH30		P02F-000HC	90 degree elbow ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW Long radius Licensor-4	
1	36		SCH40		P02F-000HD	90 degree elbow ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW Long radius Licensor-4	
1	42		22.23mm		P02F-000HE	90 degree elbow ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW Long radius Licensor-4	
1	48		23.83mm		P02F-000HF	90 degree elbow ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW Long radius Licensor-4	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P03G-00013	45 degree elbow ASTM A182 Grade F11 Class 1 Class 3000 ASME B16.11 SW Licensor-4	
1	0.75				P03G-00014	45 degree elbow ASTM A182 Grade F11 Class 1 Class 3000 ASME B16.11 SW Licensor-4	
1	1				P03G-00015	45 degree elbow ASTM A182 Grade F11 Class 1 Class 3000 ASME B16.11 SW Licensor-4	
1	1.5				P03G-00016	45 degree elbow ASTM A182 Grade F11 Class 1 Class 3000 ASME B16.11 SW Licensor-4	
1	2		XS		P03F-000AH	45 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius Licensor-4	
1	3		STD		P03F-000CC	45 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius Licensor-4	
1	4		STD		P03F-000CD	45 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius Licensor-4	
1	6		STD		P03F-000CE	45 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius Licensor-4	
1	8		SCH30		P03F-000G2	45 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius Licensor-4	
1	10		STD		P03F-000FW	45 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius Licensor-4	
1	12		STD		P03F-000FX	45 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius Licensor-4	
1	14		SCH40		P03F-000FY	45 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius Licensor-4	
1	16		STD		P03F-000GZ	45 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius Licensor-4	

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45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	18		SCH30		P03F-000H0	45 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius Licensor-4	
1	20		XS		P03F-000H1	45 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius Licensor-4	
1	24		SCH30		P03F-000H2	45 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius Licensor-4	
1	30		SCH30		P03F-000H3	45 degree elbow ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW Long radius Licensor-4	
1	36		SCH40		P03F-000H4	45 degree elbow ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW Long radius Licensor-4	
1	42		22.23mm		P03F-000H5	45 degree elbow ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW Long radius Licensor-4	
1	48		23.83mm		P03F-000H6	45 degree elbow ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW Long radius Licensor-4	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P21G-00013	Straight tee ASTM A182 Grade F11 Class 1 Class 3000 ASME B16.11 SW Licensor-4	
1	0.75				P21G-00014	Straight tee ASTM A182 Grade F11 Class 1 Class 3000 ASME B16.11 SW Licensor-4	
1	1				P21G-00015	Straight tee ASTM A182 Grade F11 Class 1 Class 3000 ASME B16.11 SW Licensor-4	
1	1.5				P21G-00016	Straight tee ASTM A182 Grade F11 Class 1 Class 3000 ASME B16.11 SW Licensor-4	
1	2		XS		P21F-000AJ	Straight tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	3		STD		P21F-000CD	Straight tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	4		STD		P21F-000CE	Straight tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	6		STD		P21F-000CF	Straight tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	8		SCH30		P21F-000G0	Straight tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	10		STD		P21F-000FX	Straight tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	12		STD		P21F-000FY	Straight tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	14		SCH40		P21F-000FZ	Straight tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	16		STD		P21F-000H3	Straight tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	18		SCH30		P21F-000H4	Straight tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW Licensor-4	
1	20		XS		P21F-000H5	Straight tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW Licensor-4	
1	24		SCH30		P21F-000H6	Straight tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW Licensor-4	
1	30		SCH30		P21F-000H7	Straight tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW Licensor-4	
1	36		SCH40		P21F-000H8	Straight tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW Licensor-4	
1	42		22.23mm		P21F-000H9	Straight tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW Licensor-4	
1	48		23.83mm		P21F-000HA	Straight tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW Licensor-4	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75			P24G-0001A	Reducing tee ASTM A182 Grade F11 Class 1 Class 3000 ASME B16.11 SW Licensor-4	
1	1.5	0.75			P24G-0001B	Reducing tee ASTM A182 Grade F11 Class 1 Class 3000 ASME B16.11 SW Licensor-4	
1	1.5	1			P24G-0001C	Reducing tee ASTM A182 Grade F11 Class 1 Class 3000 ASME B16.11 SW Licensor-4	
1	2	1	XS	XS	P24F-000WW	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	2	1.5	XS	XS	P24F-000WX	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	3	1.5	STD	XS	P24F-0013X	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	3	2	STD	XS	P24F-0013Y	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	4	2	STD	XS	P24F-0013Z	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	4	3	STD	STD	P24F-00140	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	6	3	STD	STD	P24F-00141	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	6	4	STD	STD	P24F-00142	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	8	4	SCH30	STD	P24F-001M6	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	8	6	SCH30	STD	P24F-001M7	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	10	4	STD	STD	P24F-001M8	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	10	6	STD	STD	P24F-001M9	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	10	8	STD	SCH30	P24F-001MA	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	12	6	STD	STD	P24F-001MC	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	12	8	STD	SCH30	P24F-001MD	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	12	10	STD	STD	P24F-001MB	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	14	6	SCH40	STD	P24F-001MG	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	14	8	SCH40	SCH30	P24F-001NT	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	14	10	SCH40	STD	P24F-001ME	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	14	12	SCH40	STD	P24F-001MF	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	16	6	STD	STD	P24F-001VB	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	16	8	STD	SCH30	P24F-001W7	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	16	10	STD	STD	P24F-001V8	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	

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REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	16	12	STD	STD	P24F-001V9	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	16	14	STD	SCH40	P24F-001VA	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	18	8	SCH30	SCH30	P24F-001W8	Reducing tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW Licensor-4	
1	18	10	SCH30	STD	P24F-001VC	Reducing tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW Licensor-4	
1	18	12	SCH30	STD	P24F-001VD	Reducing tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW Licensor-4	
1	18	14	SCH30	SCH40	P24F-001VE	Reducing tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW Licensor-4	
1	18	16	SCH30	STD	P24F-001VF	Reducing tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW Licensor-4	
1	20	8	XS	SCH30	P24F-001VM	Reducing tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW Licensor-4	
1	20	10	XS	STD	P24F-001VG	Reducing tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW Licensor-4	
1	20	12	XS	STD	P24F-001VH	Reducing tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW Licensor-4	
1	20	14	XS	SCH40	P24F-001VJ	Reducing tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW Licensor-4	
1	20	16	XS	STD	P24F-001VK	Reducing tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW Licensor-4	
1	20	18	XS	SCH30	P24F-001VL	Reducing tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW Licensor-4	
1	24	10	SCH30	STD	P24F-001W9	Reducing tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW Licensor-4	
1	24	12	SCH30	STD	P24F-001VN	Reducing tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW Licensor-4	
1	24	14	SCH30	SCH40	P24F-001VP	Reducing tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW Licensor-4	
1	24	16	SCH30	STD	P24F-001Z2	Reducing tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW Licensor-4	
1	24	18	SCH30	SCH30	P24F-001VR	Reducing tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW Licensor-4	
1	24	20	SCH30	XS	P24F-001VS	Reducing tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW Licensor-4	
1	30	10	SCH30	STD	P24F-001VT	Reducing tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW Licensor-4	
1	30	12	SCH30	STD	P24F-001VU	Reducing tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW Licensor-4	
1	30	14	SCH30	SCH40	P24F-001VV	Reducing tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW Licensor-4	
1	30	16	SCH30	STD	P24F-001VW	Reducing tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW Licensor-4	
1	30	18	SCH30	SCH30	P24F-001VX	Reducing tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW Licensor-4	
1	30	20	SCH30	XS	P24F-001VY	Reducing tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW Licensor-4	
1	30	24	SCH30	SCH30	P24F-001VZ	Reducing tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW Licensor-4	
1	36	16	SCH40	STD	P24F-001WA	Reducing tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW Licensor-4	
1	36	18	SCH40	SCH30	P24F-001W0	Reducing tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW Licensor-4	
1	36	20	SCH40	XS	P24F-001W1	Reducing tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW Licensor-4	
1	36	24	SCH40	SCH30	P24F-001W2	Reducing tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW Licensor-4	
1	36	30	SCH40	SCH30	P24F-001W3	Reducing tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW Licensor-4	
1	42	16	22.23mm	STD	P24F-001WB	Reducing tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW Licensor-4	
1	42	18	22.23mm	SCH30	P24F-001W4	Reducing tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW Licensor-4	
1	42	20	22.23mm	XS	P24F-001Z3	Reducing tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW Licensor-4	
1	42	24	22.23mm	SCH30	P24F-001W5	Reducing tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW Licensor-4	
1	42	30	22.23mm	SCH30	P24F-001WC	Reducing tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW Licensor-4	
1	42	36	22.23mm	SCH40	P24F-001W6	Reducing tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW Licensor-4	
1	48	24	23.83mm	SCH30	P24F-001WD	Reducing tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW Licensor-4	
1	48	30	23.83mm	SCH30	P24F-001WE	Reducing tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW Licensor-4	
1	48	36	23.83mm	SCH40	P24F-001WF	Reducing tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW Licensor-4	
1	48	42	23.83mm	22.23mm	P24F-001WG	Reducing tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW Licensor-4	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	STD	XS	P27F-000Y0	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	4	2	STD	XS	P27F-000Y1	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	4	3	STD	STD	P27F-000Y2	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	6	3	STD	STD	P27F-000Y3	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	6	4	STD	STD	P27F-000Y4	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	8	4	SCH30	STD	P27F-001A8	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	8	6	SCH30	STD	P27F-001A9	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	10	4	STD	STD	P27F-001AA	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	10	6	STD	STD	P27F-001AB	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	10	8	STD	SCH30	P27F-001AC	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	12	6	STD	STD	P27F-001AE	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	12	8	STD	SCH30	P27F-001AF	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	12	10	STD	STD	P27F-001AD	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	14	6	SCH40	STD	P27F-001AJ	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	14	8	SCH40	SCH30	P27F-001AK	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	

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CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14	10	SCH40	STD	P27F-001AG	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	14	12	SCH40	STD	P27F-001AH	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	16	8	STD	SCH30	P27F-001E0	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	16	10	STD	STD	P27F-001DX	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	16	12	STD	STD	P27F-001DY	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	16	14	STD	SCH40	P27F-001DZ	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	18	10	SCH30	STD	P27F-001E1	Concentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW Licensor-4	
1	18	12	SCH30	STD	P27F-001E2	Concentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW Licensor-4	
1	18	14	SCH30	SCH40	P27F-001E3	Concentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW Licensor-4	
1	18	16	SCH30	STD	P27F-001E4	Concentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW Licensor-4	
1	20	12	XS	STD	P27F-001E5	Concentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW Licensor-4	
1	20	14	XS	SCH40	P27F-001E6	Concentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW Licensor-4	
1	20	16	XS	STD	P27F-001E7	Concentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW Licensor-4	
1	20	18	XS	SCH30	P27F-001E8	Concentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW Licensor-4	
1	24	16	SCH30	STD	P27F-001EJ	Concentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW Licensor-4	
1	24	18	SCH30	SCH30	P27F-001E9	Concentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW Licensor-4	
1	24	20	SCH30	XS	P27F-001EA	Concentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW Licensor-4	
1	30	20	SCH30	XS	P27F-001EB	Concentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW Licensor-4	
1	30	24	SCH30	SCH30	P27F-001EC	Concentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW Licensor-4	
1	36	24	SCH40	SCH30	P27F-001ED	Concentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW Licensor-4	
1	36	30	SCH40	SCH30	P27F-001EE	Concentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW Licensor-4	
1	42	30	22.23mm	SCH30	P27F-001EF	Concentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW Licensor-4	
1	42	36	22.23mm	SCH40	P27F-001EG	Concentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW Licensor-4	
1	48	42	23.83mm	22.23mm	P27F-001EH	Concentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW Licensor-4	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	STD	XS	P28F-000Y0	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	4	2	STD	XS	P28F-000Y1	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	4	3	STD	STD	P28F-000Y2	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	6	3	STD	STD	P28F-000Y3	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	6	4	STD	STD	P28F-000Y4	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	8	4	SCH30	STD	P28F-001AN	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	8	6	SCH30	STD	P28F-001AP	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	10	4	STD	STD	P28F-001AR	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	10	6	STD	STD	P28F-001AS	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	10	8	STD	SCH30	P28F-001AT	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	12	6	STD	STD	P28F-001AV	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	12	8	STD	SCH30	P28F-001AW	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	12	10	STD	STD	P28F-001AU	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	14	6	SCH40	STD	P28F-001AZ	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	14	8	SCH40	SCH30	P28F-001B0	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	14	10	SCH40	STD	P28F-001AX	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	14	12	SCH40	STD	P28F-001AY	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	16	8	STD	SCH30	P28F-001EF	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	16	10	STD	STD	P28F-001EC	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	16	12	STD	STD	P28F-001ED	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	16	14	STD	SCH40	P28F-001EE	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	18	10	SCH30	STD	P28F-001EG	Eccentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW Licensor-4	
1	18	12	SCH30	STD	P28F-001EH	Eccentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW Licensor-4	
1	18	14	SCH30	SCH40	P28F-001EJ	Eccentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW Licensor-4	
1	18	16	SCH30	STD	P28F-001EK	Eccentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW Licensor-4	
1	20	12	XS	STD	P28F-001EL	Eccentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW Licensor-4	
1	20	14	XS	SCH40	P28F-001EM	Eccentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW Licensor-4	
1	20	16	XS	STD	P28F-001EN	Eccentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW Licensor-4	
1	20	18	XS	SCH30	P28F-001EP	Eccentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW Licensor-4	
1	24	16	SCH30	STD	P28F-001F0	Eccentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW Licensor-4	
1	24	18	SCH30	SCH30	P28F-001ER	Eccentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW Licensor-4	
1	24	20	SCH30	XS	P28F-001ES	Eccentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW Licensor-4	

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ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	30	20	SCH30	XS	P28F-001ET	Eccentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW Licensor-4	
1	30	24	SCH30	SCH30	P28F-001EU	Eccentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW Licensor-4	
1	36	24	SCH40	SCH30	P28F-001EV	Eccentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW Licensor-4	
1	36	30	SCH40	SCH30	P28F-001EW	Eccentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW Licensor-4	
1	42	30	22.23mm	SCH30	P28F-001EX	Eccentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW Licensor-4	
1	42	36	22.23mm	SCH40	P28F-001EY	Eccentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW Licensor-4	
1	48	42	23.83mm	22.23mm	P28F-001EZ	Eccentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW Licensor-4	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P29G-0000Y	Cap ASTM A182 Grade F11 Class 1 Class 3000 ASME B16.11 SW Licensor-4	
1	0.75				P29G-0000Z	Cap ASTM A182 Grade F11 Class 1 Class 3000 ASME B16.11 SW Licensor-4	
1	1				P29G-00010	Cap ASTM A182 Grade F11 Class 1 Class 3000 ASME B16.11 SW Licensor-4	
1	1.5				P29G-00011	Cap ASTM A182 Grade F11 Class 1 Class 3000 ASME B16.11 SW Licensor-4	
1	2		XS		P29F-000A8	Cap ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	3		STD		P29F-000C8	Cap ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	4		STD		P29F-000C9	Cap ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	6		STD		P29F-000CA	Cap ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	8		SCH30		P29F-000FK	Cap ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	10		STD		P29F-000F9	Cap ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	12		STD		P29F-000FA	Cap ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	14		SCH40		P29F-000FB	Cap ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	16		STD		P29F-000GC	Cap ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	18		SCH30		P29F-000GD	Cap ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	20		XS		P29F-000GE	Cap ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	24		SCH30		P29F-000GF	Cap ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	30		SCH30		P29F-000GG	Cap ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	36		SCH40		P29F-000GH	Cap ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	42		22.23mm		P29F-000GJ	Cap ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	48		23.83mm		P29F-000GK	Cap ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
541	0.75				P29G-0001S	Cap ASTM A182 Grade F11 Class 1 Class 3000 ASME B16.11 NPT Licensor-4	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P41F-00034	Straight nipple ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Licensor-4	
1	0.75		SCH160		P41F-00035	Straight nipple ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Licensor-4	
1	1		SCH160		P41F-00036	Straight nipple ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Licensor-4	
1	1.5		SCH160		P41F-00037	Straight nipple ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Licensor-4	

CON SWAGED NIPPLE (SNC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	XS	XS	P42F-00034	Concentric swaged nipple ASTM A234 Grade WP11 Class 1 Seamless MSS SP-95 PE(L) - PE(S) Licensor-4	
1	1	0.5	XS	XS	P42F-00035	Concentric swaged nipple ASTM A234 Grade WP11 Class 1 Seamless MSS SP-95 PE(L) - PE(S) Licensor-4	
1	1	0.75	XS	XS	P42F-00036	Concentric swaged nipple ASTM A234 Grade WP11 Class 1 Seamless MSS SP-95 PE(L) - PE(S) Licensor-4	
1	1.5	0.5	XS	XS	P42F-00037	Concentric swaged nipple ASTM A234 Grade WP11 Class 1 Seamless MSS SP-95 PE(L) - PE(S) Licensor-4	
1	1.5	0.75	XS	XS	P42F-00038	Concentric swaged nipple ASTM A234 Grade WP11 Class 1 Seamless MSS SP-95 PE(L) - PE(S) Licensor-4	
1	1.5	1	XS	XS	P42F-00039	Concentric swaged nipple ASTM A234 Grade WP11 Class 1 Seamless MSS SP-95 PE(L) - PE(S) Licensor-4	
1	2	0.5	XS	XS	P42F-0003A	Concentric swaged nipple ASTM A234 Grade WP11 Class 1 Seamless MSS SP-95 BE(L) - PE(S) Licensor-4	
1	2	0.75	XS	XS	P42F-0003B	Concentric swaged nipple ASTM A234 Grade WP11 Class 1 Seamless MSS SP-95 BE(L) - PE(S) Licensor-4	
1	2	1	XS	XS	P42F-0003C	Concentric swaged nipple ASTM A234 Grade WP11 Class 1 Seamless MSS SP-95 BE(L) - PE(S) Licensor-4	
1	2	1.5	XS	XS	P42F-0003D	Concentric swaged nipple ASTM A234 Grade WP11 Class 1 Seamless MSS SP-95 BE(L) - PE(S) Licensor-4	
1	3	1.5	STD	XS	P42F-00043	Concentric swaged nipple ASTM A234 Grade WP11 Class 1 Seamless MSS SP-95 BE(L) - PE(S) Licensor-4	

ECC SWAGED NIPPLE (SNE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	XS	XS	P43F-0002F	Eccentric swaged nipple ASTM A234 Grade WP11 Class 1 Seamless MSS SP-95 PE(L) - PE(S) Licensor-4	
1	1	0.5	XS	XS	P43F-0002G	Eccentric swaged nipple ASTM A234 Grade WP11 Class 1 Seamless MSS SP-95 PE(L) - PE(S) Licensor-4	
1	1	0.75	XS	XS	P43F-0002H	Eccentric swaged nipple ASTM A234 Grade WP11 Class 1 Seamless MSS SP-95 PE(L) - PE(S) Licensor-4	

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ECC SWAGED NIPPLE (SNE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5	0.5	XS	XS	P43F-0002J	Eccentric swaged nipple ASTM A234 Grade WP11 Class 1 Seamless MSS SP-95 PE(L) - PE(S) Licensor-4	
1	1.5	0.75	XS	XS	P43F-0002K	Eccentric swaged nipple ASTM A234 Grade WP11 Class 1 Seamless MSS SP-95 PE(L) - PE(S) Licensor-4	
1	1.5	1	XS	XS	P43F-0002L	Eccentric swaged nipple ASTM A234 Grade WP11 Class 1 Seamless MSS SP-95 PE(L) - PE(S) Licensor-4	
1	2	0.5	XS	XS	P43F-0002M	Eccentric swaged nipple ASTM A234 Grade WP11 Class 1 Seamless MSS SP-95 BE(L) - PE(S) Licensor-4	
1	2	0.75	XS	XS	P43F-0002N	Eccentric swaged nipple ASTM A234 Grade WP11 Class 1 Seamless MSS SP-95 BE(L) - PE(S) Licensor-4	
1	2	1	XS	XS	P43F-0002P	Eccentric swaged nipple ASTM A234 Grade WP11 Class 1 Seamless MSS SP-95 BE(L) - PE(S) Licensor-4	
1	2	1.5	XS	XS	P43F-0002R	Eccentric swaged nipple ASTM A234 Grade WP11 Class 1 Seamless MSS SP-95 BE(L) - PE(S) Licensor-4	
1	3	1.5	STD	XS	P43F-0003D	Eccentric swaged nipple ASTM A234 Grade WP11 Class 1 Seamless MSS SP-95 BE(L) - PE(S) Licensor-4	

COUPLING (CPS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P47G-00016	Coupling ASTM A182 Grade F11 Class 1 Class 3000 ASME B16.11 SW - SW Licensor-4	
1	0.75				P47G-00017	Coupling ASTM A182 Grade F11 Class 1 Class 3000 ASME B16.11 SW - SW Licensor-4	
1	1				P47G-00018	Coupling ASTM A182 Grade F11 Class 1 Class 3000 ASME B16.11 SW - SW Licensor-4	
1	1.5				P47G-00019	Coupling ASTM A182 Grade F11 Class 1 Class 3000 ASME B16.11 SW - SW Licensor-4	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2 - 2.5	0.75			P31G-0036D	Outlet ASTM A182 Grade F11 Class 1 Class 3000 MSS SP-97 SW Licensor-4	
1	3 - 5	0.75			P31G-0036E	Outlet ASTM A182 Grade F11 Class 1 Class 3000 MSS SP-97 SW Licensor-4	
1	6 - 12	0.75			P31G-0036C	Outlet ASTM A182 Grade F11 Class 1 Class 3000 MSS SP-97 SW Licensor-4	
1	14 - 36	0.75			P31G-0036B	Outlet ASTM A182 Grade F11 Class 1 Class 3000 MSS SP-97 SW Licensor-4	
1	38 and larger	0.75			P31G-00381	Outlet ASTM A182 Grade F11 Class 1 Class 3000 MSS SP-97 SW Licensor-4	
1	3	1			P31G-0036G	Outlet ASTM A182 Grade F11 Class 1 Class 3000 MSS SP-97 SW Licensor-4	
1	4 - 5	1			P31G-0036J	Outlet ASTM A182 Grade F11 Class 1 Class 3000 MSS SP-97 SW Licensor-4	
1	6 - 10	1			P31G-0036F	Outlet ASTM A182 Grade F11 Class 1 Class 3000 MSS SP-97 SW Licensor-4	
1	12 - 36	1			P31G-0036H	Outlet ASTM A182 Grade F11 Class 1 Class 3000 MSS SP-97 SW Licensor-4	
1	38 and larger	1			P31G-00382	Outlet ASTM A182 Grade F11 Class 1 Class 3000 MSS SP-97 SW Licensor-4	
1	4	1.5			P31G-001NC	Outlet ASTM A182 Grade F11 Class 1 Class 3000 MSS SP-97 SW Licensor-4	
1	5 - 6	1.5			P31G-0036K	Outlet ASTM A182 Grade F11 Class 1 Class 3000 MSS SP-97 SW Licensor-4	
1	8 - 12	1.5			P31G-0036L	Outlet ASTM A182 Grade F11 Class 1 Class 3000 MSS SP-97 SW Licensor-4	
1	14 - 24	1.5			P31G-0036M	Outlet ASTM A182 Grade F11 Class 1 Class 3000 MSS SP-97 SW Licensor-4	
1	26 - 36	1.5			P31G-0036N	Outlet ASTM A182 Grade F11 Class 1 Class 3000 MSS SP-97 SW Licensor-4	
1	38 and larger	1.5			P31G-00383	Outlet ASTM A182 Grade F11 Class 1 Class 3000 MSS SP-97 SW Licensor-4	
541	1	0.75			P31G-002ND	Outlet ASTM A182 Grade F11 Class 1 Class 3000 MSS SP-97 NPT Licensor-4	
541	1.5	0.75			P31G-002NC	Outlet ASTM A182 Grade F11 Class 1 Class 3000 MSS SP-97 NPT Licensor-4	
541	2 - 2.5	0.75			P31G-0036P	Outlet ASTM A182 Grade F11 Class 1 Class 3000 MSS SP-97 NPT Licensor-4	
541	3 - 5	0.75			P31G-0036R	Outlet ASTM A182 Grade F11 Class 1 Class 3000 MSS SP-97 NPT Licensor-4	
541	6 - 12	0.75			P31G-0036S	Outlet ASTM A182 Grade F11 Class 1 Class 3000 MSS SP-97 NPT Licensor-4	
541	14 - 36	0.75			P31G-0036T	Outlet ASTM A182 Grade F11 Class 1 Class 3000 MSS SP-97 NPT Licensor-4	
541	38 and larger	0.75			P31G-00384	Outlet ASTM A182 Grade F11 Class 1 Class 3000 MSS SP-97 NPT Licensor-4	
1	6	2	STD	XS	P31G-001H2	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW Licensor-4	
1	8	2	SCH30	XS	P31G-0021Z	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW Licensor-4	
1	10	2	STD	XS	P31G-00221	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW Licensor-4	
1	12	2	STD	XS	P31G-00223	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW Licensor-4	
1	14	2	SCH40	XS	P31G-00226	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW Licensor-4	
1	16	2	STD	XS	P31G-00283	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW Licensor-4	
1	18	2	SCH30	XS	P31G-00286	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW Licensor-4	
1	20	2	XS	XS	P31G-0028A	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW Licensor-4	
1	24	2	SCH30	XS	P31G-0028E	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW Licensor-4	
1	30	2	SCH30	XS	P31G-0028J	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW Licensor-4	
1	36	2	SCH40	XS	P31G-0028N	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW Licensor-4	
1	42	2	22.23mm	XS	P31G-0028T	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW Licensor-4	
1	48	2	23.83mm	XS	P31G-0028W	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW Licensor-4	
1	8	3	SCH30	STD	P31G-00220	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW Licensor-4	
1	10	3	STD	STD	P31G-00222	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW Licensor-4	
1	12	3	STD	STD	P31G-00224	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW Licensor-4	
1	14	3	SCH40	STD	P31G-00227	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW Licensor-4	
1	16	3	STD	STD	P31G-00284	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW Licensor-4	

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OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	18	3	SCH30	STD	P31G-00287	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW Licensor-4	
1	20	3	XS	STD	P31G-0028B	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW Licensor-4	
1	24	3	SCH30	STD	P31G-0028F	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW Licensor-4	
1	30	3	SCH30	STD	P31G-0028K	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW Licensor-4	
1	36	3	SCH40	STD	P31G-0028P	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW Licensor-4	
1	42	3	22.23mm	STD	P31G-0028U	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW Licensor-4	
1	48	3	23.83mm	STD	P31G-0028X	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW Licensor-4	
1	12	4	STD	STD	P31G-00225	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW Licensor-4	
1	14	4	SCH40	STD	P31G-00228	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW Licensor-4	
1	16	4	STD	STD	P31G-00285	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW Licensor-4	
1	18	4	SCH30	STD	P31G-00288	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW Licensor-4	
1	20	4	XS	STD	P31G-0028C	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW Licensor-4	
1	24	4	SCH30	STD	P31G-0028G	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW Licensor-4	
1	30	4	SCH30	STD	P31G-0028L	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW Licensor-4	
1	36	4	SCH40	STD	P31G-0028R	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW Licensor-4	
1	42	4	22.23mm	STD	P31G-0028V	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW Licensor-4	
1	48	4	23.83mm	STD	P31G-0028Y	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW Licensor-4	
1	18	6	SCH30	STD	P31G-00289	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW Licensor-4	
1	20	6	XS	STD	P31G-0028D	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW Licensor-4	
1	24	6	SCH30	STD	P31G-0028H	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW Licensor-4	
1	30	6	SCH30	STD	P31G-0028M	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW Licensor-4	
1	36	6	SCH40	STD	P31G-0028S	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW Licensor-4	
1	42	6	22.23mm	STD	P31G-00290	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW Licensor-4	
1	48	6	23.83mm	STD	P31G-0028Z	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW Licensor-4	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30G-0001C	Plug ASTM A182 Grade F11 Class 1 ASME B16.11 NPT Round head Licensor-4	
1	0.75				P30G-0001D	Plug ASTM A182 Grade F11 Class 1 ASME B16.11 NPT Round head Licensor-4	
1	1				P30G-0001E	Plug ASTM A182 Grade F11 Class 1 ASME B16.11 NPT Round head Licensor-4	
1	1.5				P30G-0001F	Plug ASTM A182 Grade F11 Class 1 ASME B16.11 NPT Round head Licensor-4	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P61G-000NL	Flange SW ASTM A182 Grade F11 Class 2 Class 300 ASME B16.5 RF Licensor-4	
1	0.75		XS		P61G-000NM	Flange SW ASTM A182 Grade F11 Class 2 Class 300 ASME B16.5 RF Licensor-4	
1	1		XS		P61G-000NN	Flange SW ASTM A182 Grade F11 Class 2 Class 300 ASME B16.5 RF Licensor-4	
1	1.5		XS		P61G-000NP	Flange SW ASTM A182 Grade F11 Class 2 Class 300 ASME B16.5 RF Licensor-4	
1	2		XS		P61G-000NR	Flange WN ASTM A182 Grade F11 Class 2 Class 300 ASME B16.5 RF Licensor-4	
1	3		STD		P61G-000NS	Flange WN ASTM A182 Grade F11 Class 2 Class 300 ASME B16.5 RF Licensor-4	
1	4		STD		P61G-000NT	Flange WN ASTM A182 Grade F11 Class 2 Class 300 ASME B16.5 RF Licensor-4	
1	6		STD		P61G-000NU	Flange WN ASTM A182 Grade F11 Class 2 Class 300 ASME B16.5 RF Licensor-4	
1	8		SCH30		P61G-000YW	Flange WN ASTM A182 Grade F11 Class 2 Class 300 ASME B16.5 RF Licensor-4	
1	10		STD		P61G-000YN	Flange WN ASTM A182 Grade F11 Class 2 Class 300 ASME B16.5 RF Licensor-4	
1	12		STD		P61G-000YP	Flange WN ASTM A182 Grade F11 Class 2 Class 300 ASME B16.5 RF Licensor-4	
1	14		SCH40		P61G-000YR	Flange WN ASTM A182 Grade F11 Class 2 Class 300 ASME B16.5 RF Licensor-4	
1	16		STD		P61G-0011D	Flange WN ASTM A182 Grade F11 Class 2 Class 300 ASME B16.5 RF Licensor-4	
1	18		SCH30		P61G-0011E	Flange WN ASTM A182 Grade F11 Class 2 Class 300 ASME B16.5 RF Licensor-4	
1	20		XS		P61G-0011F	Flange WN ASTM A182 Grade F11 Class 2 Class 300 ASME B16.5 RF Licensor-4	
1	24		SCH30		P61G-0011G	Flange WN ASTM A182 Grade F11 Class 2 Class 300 ASME B16.5 RF Licensor-4	
1	30		SCH30		P61G-0011H	Flange WN ASTM A182 Grade F11 Class 2 Class 300 ASME B16.47 Series B RF Licensor-4	
1	36		SCH40		P61G-0011J	Flange WN ASTM A182 Grade F11 Class 2 Class 300 ASME B16.47 Series B RF Licensor-4	
1	42		22.23mm		P61G-0011K	Flange WN ASTM A182 Grade F11 Class 2 Class 300 ASME B16.47 Series B RF Licensor-4	
1	48		23.83mm		P61G-0011L	Flange WN ASTM A182 Grade F11 Class 2 Class 300 ASME B16.47 Series B RF Licensor-4	
541	0.5				P61G-001B1	Flange NPT ASTM A182 Grade F11 Class 2 Class 300 ASME B16.5 RF Licensor-4	
541	0.75				P61G-0015M	Flange NPT ASTM A182 Grade F11 Class 2 Class 300 ASME B16.5 RF Licensor-4	
781	0.5		XS		P61G-000HY	Flange SW ASTM A182 Grade F11 Class 2 Class 600 ASME B16.5 RF Licensor-4	
781	0.75		XS		P61G-000HZ	Flange SW ASTM A182 Grade F11 Class 2 Class 600 ASME B16.5 RF Licensor-4	
781	1		XS		P61G-000J0	Flange SW ASTM A182 Grade F11 Class 2 Class 600 ASME B16.5 RF Licensor-4	

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FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
781	1.5		XS		P61G-000J1	Flange SW ASTM A182 Grade F11 Class 2 Class 600 ASME B16.5 RF Licensor-4	
781	2		XS		P61G-000J6	Flange WN ASTM A182 Grade F11 Class 2 Class 600 ASME B16.5 RF Licensor-4	
781	3		STD		P61G-000NV	Flange WN ASTM A182 Grade F11 Class 2 Class 600 ASME B16.5 RF Licensor-4	
781	4		STD		P61G-000NW	Flange WN ASTM A182 Grade F11 Class 2 Class 600 ASME B16.5 RF Licensor-4	
781	6		STD		P61G-000NX	Flange WN ASTM A182 Grade F11 Class 2 Class 600 ASME B16.5 RF Licensor-4	
781	8		SCH30		P61G-000Z7	Flange WN ASTM A182 Grade F11 Class 2 Class 600 ASME B16.5 RF Licensor-4	
781	10		STD		P61G-000Z1	Flange WN ASTM A182 Grade F11 Class 2 Class 600 ASME B16.5 RF Licensor-4	
781	12		STD		P61G-000Z2	Flange WN ASTM A182 Grade F11 Class 2 Class 600 ASME B16.5 RF Licensor-4	
781	14		SCH40		P61G-000Z3	Flange WN ASTM A182 Grade F11 Class 2 Class 600 ASME B16.5 RF Licensor-4	
781	16		STD		P61G-0011M	Flange WN ASTM A182 Grade F11 Class 2 Class 600 ASME B16.5 RF Licensor-4	
781	18		SCH30		P61G-0011N	Flange WN ASTM A182 Grade F11 Class 2 Class 600 ASME B16.5 RF Licensor-4	
781	20		XS		P61G-0011P	Flange WN ASTM A182 Grade F11 Class 2 Class 600 ASME B16.5 RF Licensor-4	
781	24		SCH30		P61G-0011R	Flange WN ASTM A182 Grade F11 Class 2 Class 600 ASME B16.5 RF Licensor-4	
781	30		SCH30		P61G-0011S	Flange WN ASTM A182 Grade F11 Class 2 Class 600 ASME B16.47 Series B RF Licensor-4	
781	36		SCH40		P61G-0011T	Flange WN ASTM A182 Grade F11 Class 2 Class 600 ASME B16.47 Series B RF Licensor-4	
781	42		22.23mm		P61G-001B2	Flange WN ASTM A182 Grade F11 Class 2 Class 600 ASME B16.47 Series A RF Licensor-4	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67G-000B0	Blind flange ASTM A182 Grade F11 Class 2 Class 300 ASME B16.5 RF Licensor-4	
1	0.75				P67G-000B1	Blind flange ASTM A182 Grade F11 Class 2 Class 300 ASME B16.5 RF Licensor-4	
1	1				P67G-000B2	Blind flange ASTM A182 Grade F11 Class 2 Class 300 ASME B16.5 RF Licensor-4	
1	1.5				P67G-000B3	Blind flange ASTM A182 Grade F11 Class 2 Class 300 ASME B16.5 RF Licensor-4	
1	2				P67G-000B4	Blind flange ASTM A182 Grade F11 Class 2 Class 300 ASME B16.5 RF Licensor-4	
1	3				P67G-000B5	Blind flange ASTM A182 Grade F11 Class 2 Class 300 ASME B16.5 RF Licensor-4	
1	4				P67G-000B6	Blind flange ASTM A182 Grade F11 Class 2 Class 300 ASME B16.5 RF Licensor-4	
1	6				P67G-000B7	Blind flange ASTM A182 Grade F11 Class 2 Class 300 ASME B16.5 RF Licensor-4	
1	8				P67G-000C9	Blind flange ASTM A182 Grade F11 Class 2 Class 300 ASME B16.5 RF Licensor-4	
1	10				P67G-000C2	Blind flange ASTM A182 Grade F11 Class 2 Class 300 ASME B16.5 RF Licensor-4	
1	12				P67G-000C3	Blind flange ASTM A182 Grade F11 Class 2 Class 300 ASME B16.5 RF Licensor-4	
1	14				P67G-000C4	Blind flange ASTM A182 Grade F11 Class 2 Class 300 ASME B16.5 RF Licensor-4	
1	16				P67G-000C5	Blind flange ASTM A182 Grade F11 Class 2 Class 300 ASME B16.5 RF Licensor-4	
1	18				P67G-000C6	Blind flange ASTM A182 Grade F11 Class 2 Class 300 ASME B16.5 RF Licensor-4	
1	20				P67G-000C7	Blind flange ASTM A182 Grade F11 Class 2 Class 300 ASME B16.5 RF Licensor-4	
1	24				P67G-000C8	Blind flange ASTM A182 Grade F11 Class 2 Class 300 ASME B16.5 RF Licensor-4	
1	30				P67G-000CA	Blind flange ASTM A182 Grade F11 Class 2 Class 300 ASME B16.47 Series B RF Licensor-4	
1	36				P67G-000CB	Blind flange ASTM A182 Grade F11 Class 2 Class 300 ASME B16.47 Series B RF Licensor-4	
1	42				P67G-000CC	Blind flange ASTM A182 Grade F11 Class 2 Class 300 ASME B16.47 Series B RF Licensor-4	
1	48				P67G-000CD	Blind flange ASTM A182 Grade F11 Class 2 Class 300 ASME B16.47 Series B RF Licensor-4	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-003AM	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	0.75				P73T-003AN	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	1				P73T-003AP	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	1.5				P73T-003AR	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	2				P73T-003AX	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	3				P73T-003B0	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	4				P73T-003B1	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	6				P73T-003B2	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	8				P73T-003B3	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	10				P73T-003AS	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	12				P73T-003AT	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	14				P73T-003AU	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	

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GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	16				P73T-003AV	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	18				P73T-003AW	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	20				P73T-003AY	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	24				P73T-003AZ	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	30				P73T-003BL	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	36				P73T-003DU	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	42				P73T-003DV	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	48				P73T-003DW	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
781	0.5				P73T-003B4	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
781	0.75				P73T-003B5	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
781	1				P73T-003B6	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
781	1.5				P73T-003B7	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
781	2				P73T-003BD	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
781	3				P73T-003BG	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
781	4				P73T-003BH	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
781	6				P73T-003BJ	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
781	8				P73T-003BK	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
781	10				P73T-003B8	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
781	12				P73T-003B9	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
781	14				P73T-003BA	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
781	16				P73T-003BB	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
781	18				P73T-003BC	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
781	20				P73T-003BE	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
781	24				P73T-003BF	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
781	30				P73T-003BM	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
781	36				P73T-003DX	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
781	42				P73T-003TN	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.47-A RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-10				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B16 / A194 Grade 4 ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	12-48				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B16 / A194 Grade 4 ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
781	0.5-6				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B16 / A194 Grade 4 ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
781	8-48				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B16 / A194 Grade 4 ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81G-0007T	Gate valve ASTM A182 Grade F11 Class 2 Class 300 API 602 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2 Licensor-4	
1	0.75				P81G-0007U	Gate valve ASTM A182 Grade F11 Class 2 Class 300 API 602 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2 Licensor-4	
1	1				P81G-0007V	Gate valve ASTM A182 Grade F11 Class 2 Class 300 API 602 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2 Licensor-4	
1	1.5				P81G-0007W	Gate valve ASTM A182 Grade F11 Class 2 Class 300 API 602 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2 Licensor-4	
1	2				P81H-000LU	Gate valve ASTM A217 Grade WC6 Class 300 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2 Licensor-4	
1	3				P81H-000LV	Gate valve ASTM A217 Grade WC6 Class 300 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2 Licensor-4	
1	4				P81H-000LW	Gate valve ASTM A217 Grade WC6 Class 300 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2 Licensor-4	
1	6				P81H-000LX	Gate valve ASTM A217 Grade WC6 Class 300 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2 Licensor-4	

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GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	8				P81H-000LY	Gate valve ASTM A217 Grade WC6 Class 300 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2 Licensor-4	
1	10				P81H-000LZ	Gate valve ASTM A217 Grade WC6 Class 300 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Gear operated Fluid-2 Licensor-4	
1	12				P81H-000M0	Gate valve ASTM A217 Grade WC6 Class 300 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Gear operated Fluid-2 Licensor-4	
1	14				P81H-000M1	Gate valve ASTM A217 Grade WC6 Class 300 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Gear operated Fluid-2 Licensor-4	
1	16				P81H-000M2	Gate valve ASTM A217 Grade WC6 Class 300 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Gear operated Fluid-2 Licensor-4	
1	18				P81H-000M3	Gate valve ASTM A217 Grade WC6 Class 300 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Gear operated Fluid-2 Licensor-4	
1	20				P81H-000M4	Gate valve ASTM A217 Grade WC6 Class 300 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Gear operated Fluid-2 Licensor-4	
1	24				P81H-000M5	Gate valve ASTM A217 Grade WC6 Class 300 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Gear operated Fluid-2 Licensor-4	
1	30				P81H-000M6	Gate valve ASTM A217 Grade WC6 Class 300 API 600 Flange ASME B16.47-B RF Trim number 5 BB-BG-OS&Y Gear operated Fluid-2 Licensor-4	
1	36				P81H-000M7	Gate valve ASTM A217 Grade WC6 Class 300 API 600 Flange ASME B16.47-B RF Trim number 5 BB-BG-OS&Y Gear operated Fluid-2 Licensor-4	
1	42				P81H-000M8	Gate valve ASTM A217 Grade WC6 Class 300 API 600 Flange ASME B16.47-B RF Trim number 5 BB-BG-OS&Y Gear operated Fluid-2 Licensor-4	
1	48				P81H-000M9	Gate valve ASTM A217 Grade WC6 Class 300 API 600 Flange ASME B16.47-B RF Trim number 5 BB-BG-OS&Y Gear operated Fluid-2 Licensor-4	
4608	0.75				P81G-000EN	Gate valve ASTM A182 Grade F11 Class 2 Class 800 API 602 SW both sides w/ nipples PE - NPT ASTM A335-P11 Sch160-nipple Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2 Licensor-4	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82G-0003Z	Globe valve ASTM A182 Grade F11 Class 2 Class 300 API 602 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2 Licensor-4	
1	0.75				P82G-00040	Globe valve ASTM A182 Grade F11 Class 2 Class 300 API 602 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2 Licensor-4	
1	1				P82G-00041	Globe valve ASTM A182 Grade F11 Class 2 Class 300 API 602 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2 Licensor-4	
1	1.5				P82G-00042	Globe valve ASTM A182 Grade F11 Class 2 Class 300 API 602 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2 Licensor-4	
1	2				P82H-00085	Globe valve ASTM A217 Grade WC6 Class 300 BS 1873 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2 Licensor-4	
1	3				P82H-00086	Globe valve ASTM A217 Grade WC6 Class 300 BS 1873 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2 Licensor-4	
1	4				P82H-00087	Globe valve ASTM A217 Grade WC6 Class 300 BS 1873 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2 Licensor-4	
1	6				P82H-000EM	Globe valve ASTM A217 Grade WC6 Class 300 BS 1873 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Gear operated Fluid-2 Licensor-4	
1	8				P82H-000EN	Globe valve ASTM A217 Grade WC6 Class 300 BS 1873 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Gear operated Fluid-2 Licensor-4	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83G-0002Z	Check valve ASTM A182 Grade F11 Class 2 Class 300 API 602 Flange ASME B16.5 RF Trim number 5 Lift-type Bolted cover Licensor-4	
1	0.75				P83G-00030	Check valve ASTM A182 Grade F11 Class 2 Class 300 API 602 Flange ASME B16.5 RF Trim number 5 Lift-type Bolted cover Licensor-4	
1	1				P83G-00031	Check valve ASTM A182 Grade F11 Class 2 Class 300 API 602 Flange ASME B16.5 RF Trim number 5 Lift-type Bolted cover Licensor-4	
1	1.5				P83G-00032	Check valve ASTM A182 Grade F11 Class 2 Class 300 API 602 Flange ASME B16.5 RF Trim number 5 Lift-type Bolted cover Licensor-4	
1	2				P83H-0006F	Check valve ASTM A217 Grade WC6 Class 300 BS 1868 Flange ASME B16.5 RF Trim number 5 Swing-type Bolted cover Licensor-4	
1	3				P83H-0006G	Check valve ASTM A217 Grade WC6 Class 300 BS 1868 Flange ASME B16.5 RF Trim number 5 Swing-type Bolted cover Licensor-4	
1	4				P83H-0006H	Check valve ASTM A217 Grade WC6 Class 300 BS 1868 Flange ASME B16.5 RF Trim number 5 Swing-type Bolted cover Licensor-4	
1	6				P83H-0006J	Check valve ASTM A217 Grade WC6 Class 300 BS 1868 Flange ASME B16.5 RF Trim number 5 Swing-type Bolted cover Licensor-4	
1	8				P83H-0006K	Check valve ASTM A217 Grade WC6 Class 300 BS 1868 Flange ASME B16.5 RF Trim number 5 Swing-type Bolted cover Licensor-4	
1	10				P83H-0006A	Check valve ASTM A217 Grade WC6 Class 300 BS 1868 Flange ASME B16.5 RF Trim number 5 Swing-type Bolted cover Licensor-4	
1	12				P83H-0006B	Check valve ASTM A217 Grade WC6 Class 300 BS 1868 Flange ASME B16.5 RF Trim number 5 Swing-type Bolted cover Licensor-4	
1	14				P83H-0006C	Check valve ASTM A217 Grade WC6 Class 300 BS 1868 Flange ASME B16.5 RF Trim number 5 Swing-type Bolted cover Licensor-4	
1	16				P83H-0006D	Check valve ASTM A217 Grade WC6 Class 300 BS 1868 Flange ASME B16.5 RF Trim number 5 Swing-type Bolted cover Licensor-4	
1	18				P83H-0006E	Check valve ASTM A217 Grade WC6 Class 300 BS 1868 Flange ASME B16.5 RF Trim number 5 Swing-type Bolted cover Licensor-4	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71G-0001H	Spectacle blank ASTM A182 Grade F11 Class 2 Class 300 Standard-drawing Flange ASME B16.5 RF Licensor-4	

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SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75				P71G-0001J	Spectacle blank ASTM A182 Grade F11 Class 2 Class 300 Standard-drawing Flange ASME B16.5 RF Licensor-4	
1	1				P71G-0001K	Spectacle blank ASTM A182 Grade F11 Class 2 Class 300 Standard-drawing Flange ASME B16.5 RF Licensor-4	
1	1.5				P71G-0001L	Spectacle blank ASTM A182 Grade F11 Class 2 Class 300 Standard-drawing Flange ASME B16.5 RF Licensor-4	
1	2				P71G-0001M	Spectacle blank ASTM A182 Grade F11 Class 2 Class 300 Standard-drawing Flange ASME B16.5 RF Licensor-4	
1	3				P71G-0001N	Spectacle blank ASTM A182 Grade F11 Class 2 Class 300 Standard-drawing Flange ASME B16.5 RF Licensor-4	
1	4				P71G-0001P	Spectacle blank ASTM A182 Grade F11 Class 2 Class 300 Standard-drawing Flange ASME B16.5 RF Licensor-4	
1	6				P71G-0001R	Spectacle blank ASTM A182 Grade F11 Class 2 Class 300 Standard-drawing Flange ASME B16.5 RF Licensor-4	
1	8				P71G-0003E	Spectacle blank ASTM A182 Grade F11 Class 2 Class 300 Standard-drawing Flange ASME B16.5 RF Licensor-4	
1	10				P71G-0003C	Spectacle blank ASTM A182 Grade F11 Class 2 Class 300 Standard-drawing Flange ASME B16.5 RF Licensor-4	
1	12				P71G-0003D	Spectacle blank ASTM A182 Grade F11 Class 2 Class 300 Standard-drawing Flange ASME B16.5 RF Licensor-4	

PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72G-0005X	Paddle blank ASTM A182 Grade F11 Class 2 Class 300 Standard-drawing Flange ASME B16.5 RF Licensor-4	
1	16				P72G-0005Y	Paddle blank ASTM A182 Grade F11 Class 2 Class 300 Standard-drawing Flange ASME B16.5 RF Licensor-4	
1	18				P72G-0005Z	Paddle blank ASTM A182 Grade F11 Class 2 Class 300 Standard-drawing Flange ASME B16.5 RF Licensor-4	
1	20				P72G-00060	Paddle blank ASTM A182 Grade F11 Class 2 Class 300 Standard-drawing Flange ASME B16.5 RF Licensor-4	
1	24				P72G-00061	Paddle blank ASTM A182 Grade F11 Class 2 Class 300 Standard-drawing Flange ASME B16.5 RF Licensor-4	
1	30				P72G-00062	Paddle blank ASTM A182 Grade F11 Class 2 Class 300 Standard-drawing Flange ASME B16.47-B RF Licensor-4	
1	36				P72G-00063	Paddle blank ASTM A182 Grade F11 Class 2 Class 300 Standard-drawing Flange ASME B16.47-B RF Licensor-4	
1	42				P72G-00064	Paddle blank ASTM A182 Grade F11 Class 2 Class 300 Standard-drawing Flange ASME B16.47-B RF Licensor-4	
1	48				P72G-00065	Paddle blank ASTM A182 Grade F11 Class 2 Class 300 Standard-drawing Flange ASME B16.47-B RF Licensor-4	
781	42				P72G-0008Z	Paddle blank ASTM A182 Grade F11 Class 2 Class 600 Standard-drawing Flange ASME B16.47-A RF Licensor-4	

PADDLE SPACER (PS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72G-00066	Paddle spacer ASTM A182 Grade F11 Class 2 Class 300 Standard-drawing Flange ASME B16.5 RF Licensor-4	
1	16				P72G-00067	Paddle spacer ASTM A182 Grade F11 Class 2 Class 300 Standard-drawing Flange ASME B16.5 RF Licensor-4	
1	18				P72G-00068	Paddle spacer ASTM A182 Grade F11 Class 2 Class 300 Standard-drawing Flange ASME B16.5 RF Licensor-4	
1	20				P72G-00069	Paddle spacer ASTM A182 Grade F11 Class 2 Class 300 Standard-drawing Flange ASME B16.5 RF Licensor-4	
1	24				P72G-0006A	Paddle spacer ASTM A182 Grade F11 Class 2 Class 300 Standard-drawing Flange ASME B16.5 RF Licensor-4	
1	30				P72G-0006B	Paddle spacer ASTM A182 Grade F11 Class 2 Class 300 Standard-drawing Flange ASME B16.47-B RF Licensor-4	
1	36				P72G-0006C	Paddle spacer ASTM A182 Grade F11 Class 2 Class 300 Standard-drawing Flange ASME B16.47-B RF Licensor-4	
1	42				P72G-0006D	Paddle spacer ASTM A182 Grade F11 Class 2 Class 300 Standard-drawing Flange ASME B16.47-B RF Licensor-4	
1	48				P72G-0006E	Paddle spacer ASTM A182 Grade F11 Class 2 Class 300 Standard-drawing Flange ASME B16.47-B RF Licensor-4	
781	42				P72G-00090	Paddle spacer ASTM A182 Grade F11 Class 2 Class 600 Standard-drawing Flange ASME B16.47-A RF Licensor-4	

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BOLT TABLE (B_B1DP04 , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-00GN8		
0.75	4	0.625	75	P80S-00GLL		
1	4	0.625	80	P80S-00GLK		
1.5	4	0.750	95	P80S-00FVE		
2	8	0.625	90	P80S-00GLH		
3	8	0.750	110	P80S-00GLD		
4	8	0.750	115	P80S-00GLC		
6	12	0.750	125	P80S-00GLA		
8	12	0.875	140	P80S-00FV5		
10	16	1.000	160	P80S-00FR9		
12	16	1.125	175	P80S-00FH8		
14	20	1.125	180	P80S-00FH7		
16	20	1.250	190	P80S-00F9Y		
18	24	1.250	200	P80S-00F9W		
20	24	1.250	210	P80S-00F9U		
24	24	1.500	235	P80S-00EYL		
30	36	1.375	285	P80S-00F2V		
36	32	1.625	320	P80S-00G0T		
42	36	1.750	355	P80S-00FTM		
48	40	1.875	380	P80S-00FKC		

BOLT TABLE (B_B1DP04_781 , STUD ASME RF, OPTION CODE 781)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	80	P80S-00GN6		
0.75	4	0.625	90	P80S-00GLH		
1	4	0.625	95	P80S-00GLG		
1.5	4	0.750	110	P80S-00GLD		
2	8	0.625	110	P80S-00GN0		
3	8	0.750	130	P80S-00GL9		
4	8	0.875	150	P80S-00FV3		
6	12	1.000	175	P80S-00FR6		
8	12	1.125	195	P80S-00FH4		
10	16	1.250	250	P80S-00F9K		
12	20	1.250	255	P80S-00F9J		
14	20	1.375	270	P80S-00F4T		
16	20	1.500	295	P80S-00EY8		
18	20	1.625	320	P80S-00G0T		
20	24	1.625	335	P80S-00G0P		
24	24	1.875	380	P80S-00FKC		
30	28	1.875	435	P80S-00FK1		
36	28	2.250	510	P80S-00F3B		
42	28	2.500	575	P80S-00EW8		
48	32	2.750	635	P80S-01RNC		

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BRANCH TABLE (T_B1DP04)

RUN PIPE SIZE (in) \ BRANCH SIZE (in)	0.5	0.75	1	1.5	2	3	4	6	8	10	12	14	16	18	20	24	30	36	42	48
0.5	TS																			
0.75		TS																		
1		TR	TS																	
1.5		TR	TR	TS																
2		L	TR	TR	TS															
3		L	L	TR	TR	TS														
4	L	L	L	L	TR	TR	TS													
6	L	L	L	L	L	TR	TR	TS												
8		L	L	L	L	L	TR	TR	TS											
10		L	L	L	L	L	TR	TR	TR	TS										
12		L	L	L	L	L	L	TR	TR	TR	TS									
14		L	L	L	L	L	L	TR	TR	TR	TR	TS								
16		L	L	L	L	L	L	TR	TR	TR	TR	TR	TS							
18		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TS						
20		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TR	TS					
24		L	L	L	L	L	L	L	9PD	TR	TR	TR	TR	TR	TR	TS				
30		L	L	L	L	L	L	L	9PD	TR	TR	TR	TR	TR	TR	TR	TS			
36		L	L	L	L	L	L	L	9PD	9PD	9PD	9PD	TR	TR	TR	TR	TR	TS		
42		L	L	L	L	L	L	L	9PD	9PD	9PD	9PD	TR	TR	TR	TR	TR	TR	TS	
48		L	L	L	L	L	L	L	9PD	9PD	9PD	9PD	9PD	9PD	9PD	TR	TR	TR	TR	TS

TS : STRAIGHT TEE
9PD : REINFORCING PAD 90 DEG
TR : REDUCING TEE
L : OUTLET

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PIPING CLASS

B1EH REV NO. 2

Material : 2-1/4Cr-1Mo
Rating : ASME CLASS 300
Flange Face : RF
C.A.(mm) : 1.50
Gasket : Spiral Wound
Service : PROCESS - HYDROGEN OR HYDROGEN RICH HYDROCARBON MIXTURE:PROCESS WITH HYDROGEN

Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
16	PIPE CLASS SHALL BE USED WITHIN THE NORMAL OPERATING PRESSURE/TEMPERATURE LIMITS SPECIFIED IN API RP 941. PRESSURE / TEMPERATURE SPECIFIED IN THE PIPE CLASS EXCEEDING API RP 941 LIMITS SHOULD BE REGARDED AS UPSET CONDITIONS RATHER THAN FOR CONTINUOUS SERVICE
24	FOR ALL RELEVANT PIPING CLASSES WITH LINE DESIGN TEMPERATURE ABOVE 427DEGC, IN SPIRAL WOUND GASKET, SUITABLE GASKET FILLER MATERIAL SUCH AS COMBINATION OF MICA LAYERS AND GRAPHITE FILLERS OR EQUIVALENT SHALL BE REVIEWED AND SELECTED OR AS DEFINED BY THE LICENSOR

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
541	NPT(F) (CA,F,L)
781	CLASS 600 (B,F,G)
789	CLASS 900 (B,F,G)
4608	VALVE WITH NIPPLES (V)

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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P01F-000C7	Pipe ASTM A335 Grade P22 Seamless ASME B36.10M/B36.19M PE	
1	0.75		XS		P01F-000C8	Pipe ASTM A335 Grade P22 Seamless ASME B36.10M/B36.19M PE	
1	1		XS		P01F-000C9	Pipe ASTM A335 Grade P22 Seamless ASME B36.10M/B36.19M PE	
1	1.5		XS		P01F-000CA	Pipe ASTM A335 Grade P22 Seamless ASME B36.10M/B36.19M PE	
1	2		XS		P01F-000CW	Pipe ASTM A335 Grade P22 Seamless ASME B36.10M/B36.19M BE	
1	3		STD		P01F-000CX	Pipe ASTM A335 Grade P22 Seamless ASME B36.10M/B36.19M BE	
1	4		STD		P01F-000CY	Pipe ASTM A335 Grade P22 Seamless ASME B36.10M/B36.19M BE	
1	6		STD		P01F-000CZ	Pipe ASTM A335 Grade P22 Seamless ASME B36.10M/B36.19M BE	
1	8		SCH30		P01F-000DS	Pipe ASTM A335 Grade P22 Seamless ASME B36.10M/B36.19M BE	
1	10		STD		P01F-0002K	Pipe ASTM A335 Grade P22 Seamless ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P02G-0001B	90 degree elbow ASTM A182 Grade F22 Class 1 Class 3000 ASME B16.11 SW	
1	0.75				P02G-0001C	90 degree elbow ASTM A182 Grade F22 Class 1 Class 3000 ASME B16.11 SW	
1	1				P02G-0001D	90 degree elbow ASTM A182 Grade F22 Class 1 Class 3000 ASME B16.11 SW	
1	1.5				P02G-0001E	90 degree elbow ASTM A182 Grade F22 Class 1 Class 3000 ASME B16.11 SW	
1	2		XS		P02F-000CP	90 degree elbow ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW Long radius	
1	3		STD		P02F-000CR	90 degree elbow ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW Long radius	
1	4		STD		P02F-000CS	90 degree elbow ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW Long radius	
1	6		STD		P02F-000CT	90 degree elbow ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW Long radius	
1	8		SCH30		P02F-000E0	90 degree elbow ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW Long radius	
1	10		STD		P02F-000DZ	90 degree elbow ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P03G-0001B	45 degree elbow ASTM A182 Grade F22 Class 1 Class 3000 ASME B16.11 SW	
1	0.75				P03G-0001C	45 degree elbow ASTM A182 Grade F22 Class 1 Class 3000 ASME B16.11 SW	
1	1				P03G-0001D	45 degree elbow ASTM A182 Grade F22 Class 1 Class 3000 ASME B16.11 SW	
1	1.5				P03G-0001E	45 degree elbow ASTM A182 Grade F22 Class 1 Class 3000 ASME B16.11 SW	
1	2		XS		P03F-000CG	45 degree elbow ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW Long radius	
1	3		STD		P03F-000CH	45 degree elbow ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW Long radius	
1	4		STD		P03F-000CJ	45 degree elbow ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW Long radius	
1	6		STD		P03F-000CK	45 degree elbow ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW Long radius	
1	8		SCH30		P03F-000DT	45 degree elbow ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW Long radius	
1	10		STD		P03F-000DS	45 degree elbow ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P21G-0001B	Straight tee ASTM A182 Grade F22 Class 1 Class 3000 ASME B16.11 SW	
1	0.75				P21G-0001C	Straight tee ASTM A182 Grade F22 Class 1 Class 3000 ASME B16.11 SW	
1	1				P21G-0001D	Straight tee ASTM A182 Grade F22 Class 1 Class 3000 ASME B16.11 SW	
1	1.5				P21G-0001E	Straight tee ASTM A182 Grade F22 Class 1 Class 3000 ASME B16.11 SW	
1	2		XS		P21F-000CJ	Straight tee ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	3		STD		P21F-000CK	Straight tee ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	4		STD		P21F-000CL	Straight tee ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	6		STD		P21F-000CM	Straight tee ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	8		SCH30		P21F-000DY	Straight tee ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	10		STD		P21F-000DX	Straight tee ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75			P24G-0001J	Reducing tee ASTM A182 Grade F22 Class 1 Class 3000 ASME B16.11 SW	
1	1.5	0.75			P24G-0001G	Reducing tee ASTM A182 Grade F22 Class 1 Class 3000 ASME B16.11 SW	
1	1.5	1			P24G-0001H	Reducing tee ASTM A182 Grade F22 Class 1 Class 3000 ASME B16.11 SW	
1	2	1	XS	XS	P24F-0014E	Reducing tee ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	2	1.5	XS	XS	P24F-0014F	Reducing tee ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	3	1.5	STD	XS	P24F-0014C	Reducing tee ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW	

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REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	STD	XS	P24F-0014D	Reducing tee ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	4	2	STD	XS	P24F-0014A	Reducing tee ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	4	3	STD	STD	P24F-0014B	Reducing tee ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	6	3	STD	STD	P24F-00148	Reducing tee ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	6	4	STD	STD	P24F-00149	Reducing tee ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	8	4	SCH30	STD	P24F-0018Z	Reducing tee ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	8	6	SCH30	STD	P24F-00190	Reducing tee ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	10	4	STD	STD	P24F-0018X	Reducing tee ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	10	6	STD	STD	P24F-0018Y	Reducing tee ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	10	8	STD	SCH30	P24F-00191	Reducing tee ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	STD	XS	P27F-000Y5	Concentric reducer ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	4	2	STD	XS	P27F-000Y6	Concentric reducer ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	4	3	STD	STD	P27F-000Y7	Concentric reducer ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	6	3	STD	STD	P27F-000Y8	Concentric reducer ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	6	4	STD	STD	P27F-000Y9	Concentric reducer ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	8	4	SCH30	STD	P27F-0010A	Concentric reducer ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	8	6	SCH30	STD	P27F-0010B	Concentric reducer ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	10	4	STD	STD	P27F-0010C	Concentric reducer ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	10	6	STD	STD	P27F-0010D	Concentric reducer ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	10	8	STD	SCH30	P27F-0011W	Concentric reducer ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	STD	XS	P28F-000Y5	Eccentric reducer ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	4	2	STD	XS	P28F-000Y6	Eccentric reducer ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	4	3	STD	STD	P28F-000Y7	Eccentric reducer ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	6	3	STD	STD	P28F-000Y8	Eccentric reducer ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	6	4	STD	STD	P28F-000Y9	Eccentric reducer ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	8	4	SCH30	STD	P28F-0010A	Eccentric reducer ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	8	6	SCH30	STD	P28F-0010B	Eccentric reducer ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	10	4	STD	STD	P28F-0010C	Eccentric reducer ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	10	6	STD	STD	P28F-0010D	Eccentric reducer ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	10	8	STD	SCH30	P28F-0011X	Eccentric reducer ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P29G-00016	Cap ASTM A182 Grade F22 Class 1 Class 3000 ASME B16.11 SW	
1	0.75				P29G-00017	Cap ASTM A182 Grade F22 Class 1 Class 3000 ASME B16.11 SW	
1	1				P29G-00018	Cap ASTM A182 Grade F22 Class 1 Class 3000 ASME B16.11 SW	
1	1.5				P29G-00019	Cap ASTM A182 Grade F22 Class 1 Class 3000 ASME B16.11 SW	
1	2		XS		P29F-000CC	Cap ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	3		STD		P29F-000CD	Cap ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	4		STD		P29F-000CE	Cap ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	6		STD		P29F-000CF	Cap ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	8		SCH30		P29F-000DN	Cap ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	10		STD		P29F-000DM	Cap ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
541	0.75				P29G-0001N	Cap ASTM A182 Grade F22 Class 1 Class 3000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P41F-00038	Straight nipple ASTM A335 Grade P22 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		SCH160		P41F-00039	Straight nipple ASTM A335 Grade P22 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		SCH160		P41F-0003A	Straight nipple ASTM A335 Grade P22 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		SCH160		P41F-0003B	Straight nipple ASTM A335 Grade P22 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

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CON SWAGED NIPPLE (SNC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	XS	XS	P42F-00051	Concentric swaged nipple ASTM A234 Grade WP22 Class 1 Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	XS	XS	P42F-0004Z	Concentric swaged nipple ASTM A234 Grade WP22 Class 1 Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	XS	XS	P42F-00050	Concentric swaged nipple ASTM A234 Grade WP22 Class 1 Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	XS	XS	P42F-0004Y	Concentric swaged nipple ASTM A234 Grade WP22 Class 1 Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	XS	XS	P42F-0004W	Concentric swaged nipple ASTM A234 Grade WP22 Class 1 Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	XS	XS	P42F-0004X	Concentric swaged nipple ASTM A234 Grade WP22 Class 1 Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	XS	XS	P42F-0004B	Concentric swaged nipple ASTM A234 Grade WP22 Class 1 Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	XS	XS	P42F-0004C	Concentric swaged nipple ASTM A234 Grade WP22 Class 1 Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	XS	XS	P42F-0004D	Concentric swaged nipple ASTM A234 Grade WP22 Class 1 Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	XS	XS	P42F-0004E	Concentric swaged nipple ASTM A234 Grade WP22 Class 1 Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	STD	XS	P42F-0004V	Concentric swaged nipple ASTM A234 Grade WP22 Class 1 Seamless MSS SP-95 BE(L) - PE(S)	

ECC SWAGED NIPPLE (SNE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	XS	XS	P43F-00046	Eccentric swaged nipple ASTM A234 Grade WP22 Class 1 Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	XS	XS	P43F-00044	Eccentric swaged nipple ASTM A234 Grade WP22 Class 1 Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	XS	XS	P43F-00045	Eccentric swaged nipple ASTM A234 Grade WP22 Class 1 Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	XS	XS	P43F-00041	Eccentric swaged nipple ASTM A234 Grade WP22 Class 1 Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	XS	XS	P43F-00042	Eccentric swaged nipple ASTM A234 Grade WP22 Class 1 Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	XS	XS	P43F-00043	Eccentric swaged nipple ASTM A234 Grade WP22 Class 1 Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	XS	XS	P43F-0003L	Eccentric swaged nipple ASTM A234 Grade WP22 Class 1 Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	XS	XS	P43F-0003M	Eccentric swaged nipple ASTM A234 Grade WP22 Class 1 Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	XS	XS	P43F-0003N	Eccentric swaged nipple ASTM A234 Grade WP22 Class 1 Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	XS	XS	P43F-0003P	Eccentric swaged nipple ASTM A234 Grade WP22 Class 1 Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	STD	XS	P43F-00040	Eccentric swaged nipple ASTM A234 Grade WP22 Class 1 Seamless MSS SP-95 BE(L) - PE(S)	

COUPLING (CPS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P47G-0001H	Coupling ASTM A182 Grade F22 Class 1 Class 3000 ASME B16.11 SW - SW	
1	0.75				P47G-0001J	Coupling ASTM A182 Grade F22 Class 1 Class 3000 ASME B16.11 SW - SW	
1	1				P47G-0001K	Coupling ASTM A182 Grade F22 Class 1 Class 3000 ASME B16.11 SW - SW	
1	1.5				P47G-0001L	Coupling ASTM A182 Grade F22 Class 1 Class 3000 ASME B16.11 SW - SW	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2 - 2.5	0.75			P31G-0036V	Outlet ASTM A182 Grade F22 Class 1 Class 3000 MSS SP-97 SW	
1	3 - 5	0.75			P31G-0036W	Outlet ASTM A182 Grade F22 Class 1 Class 3000 MSS SP-97 SW	
1	6 - 12	0.75			P31G-0036U	Outlet ASTM A182 Grade F22 Class 1 Class 3000 MSS SP-97 SW	
1	3	1			P31G-0036Y	Outlet ASTM A182 Grade F22 Class 1 Class 3000 MSS SP-97 SW	
1	4 - 5	1			P31G-0036Z	Outlet ASTM A182 Grade F22 Class 1 Class 3000 MSS SP-97 SW	
1	6 - 10	1			P31G-0036X	Outlet ASTM A182 Grade F22 Class 1 Class 3000 MSS SP-97 SW	
1	4	1.5			P31G-001HC	Outlet ASTM A182 Grade F22 Class 1 Class 3000 MSS SP-97 SW	
1	5 - 6	1.5			P31G-00370	Outlet ASTM A182 Grade F22 Class 1 Class 3000 MSS SP-97 SW	
1	8 - 12	1.5			P31G-00371	Outlet ASTM A182 Grade F22 Class 1 Class 3000 MSS SP-97 SW	
541	1	0.75			P31G-002MU	Outlet ASTM A182 Grade F22 Class 1 Class 3000 MSS SP-97 NPT	
541	1.5	0.75			P31G-002MT	Outlet ASTM A182 Grade F22 Class 1 Class 3000 MSS SP-97 NPT	
541	2 - 2.5	0.75			P31G-00372	Outlet ASTM A182 Grade F22 Class 1 Class 3000 MSS SP-97 NPT	
541	3 - 5	0.75			P31G-00373	Outlet ASTM A182 Grade F22 Class 1 Class 3000 MSS SP-97 NPT	
541	6 - 12	0.75			P31G-00374	Outlet ASTM A182 Grade F22 Class 1 Class 3000 MSS SP-97 NPT	
1	6	2	STD	XS	P31G-001HH	Outlet ASTM A182 Grade F22 Class 1 MSS SP-97 BW	
1	8	2	SCH30	XS	P31G-001NF	Outlet ASTM A182 Grade F22 Class 1 MSS SP-97 BW	
1	10	2	STD	XS	P31G-001ND	Outlet ASTM A182 Grade F22 Class 1 MSS SP-97 BW	
1	8	3	SCH30	STD	P31G-001NG	Outlet ASTM A182 Grade F22 Class 1 MSS SP-97 BW	
1	10	3	STD	STD	P31G-001NE	Outlet ASTM A182 Grade F22 Class 1 MSS SP-97 BW	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30G-0001L	Plug ASTM A182 Grade F22 Class 1 ASME B16.11 NPT Round head	

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PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75				P30G-0001M	Plug ASTM A182 Grade F22 Class 1 ASME B16.11 NPT Round head	
1	1				P30G-0001N	Plug ASTM A182 Grade F22 Class 1 ASME B16.11 NPT Round head	
1	1.5				P30G-0001P	Plug ASTM A182 Grade F22 Class 1 ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P61G-000PE	Flange SW ASTM A182 Grade F22 Class 3 Class 300 ASME B16.5 RF	
1	0.75		XS		P61G-000PF	Flange SW ASTM A182 Grade F22 Class 3 Class 300 ASME B16.5 RF	
1	1		XS		P61G-000PG	Flange SW ASTM A182 Grade F22 Class 3 Class 300 ASME B16.5 RF	
1	1.5		XS		P61G-000PH	Flange SW ASTM A182 Grade F22 Class 3 Class 300 ASME B16.5 RF	
1	2		XS		P61G-000P9	Flange WN ASTM A182 Grade F22 Class 3 Class 300 ASME B16.5 RF	
1	3		STD		P61G-000PA	Flange WN ASTM A182 Grade F22 Class 3 Class 300 ASME B16.5 RF	
1	4		STD		P61G-000PB	Flange WN ASTM A182 Grade F22 Class 3 Class 300 ASME B16.5 RF	
1	6		STD		P61G-000PC	Flange WN ASTM A182 Grade F22 Class 3 Class 300 ASME B16.5 RF	
1	8		SCH30		P61G-000TX	Flange WN ASTM A182 Grade F22 Class 3 Class 300 ASME B16.5 RF	
1	10		STD		P61G-0005U	Flange WN ASTM A182 Grade F22 Class 3 Class 300 ASME B16.5 RF	
541	0.5				P61G-001B3	Flange NPT ASTM A182 Grade F22 Class 3 Class 300 ASME B16.5 RF	
541	0.75				P61G-0015N	Flange NPT ASTM A182 Grade F22 Class 3 Class 300 ASME B16.5 RF	
781	0.5		XS		P61G-000S4	Flange SW ASTM A182 Grade F22 Class 3 Class 600 ASME B16.5 RF	
781	0.75		XS		P61G-000S5	Flange SW ASTM A182 Grade F22 Class 3 Class 600 ASME B16.5 RF	
781	1		XS		P61G-000S6	Flange SW ASTM A182 Grade F22 Class 3 Class 600 ASME B16.5 RF	
781	1.5		XS		P61G-000S7	Flange SW ASTM A182 Grade F22 Class 3 Class 600 ASME B16.5 RF	
781	2		XS		P61G-000TS	Flange WN ASTM A182 Grade F22 Class 3 Class 600 ASME B16.5 RF	
781	3		STD		P61G-000TT	Flange WN ASTM A182 Grade F22 Class 3 Class 600 ASME B16.5 RF	
781	4		STD		P61G-000TU	Flange WN ASTM A182 Grade F22 Class 3 Class 600 ASME B16.5 RF	
781	6		STD		P61G-000TV	Flange WN ASTM A182 Grade F22 Class 3 Class 600 ASME B16.5 RF	
781	8		SCH30		P61G-000TW	Flange WN ASTM A182 Grade F22 Class 3 Class 600 ASME B16.5 RF	
781	10		STD		P61G-00064	Flange WN ASTM A182 Grade F22 Class 3 Class 600 ASME B16.5 RF	
789	10		STD		P61G-001F0	Flange WN ASTM A182 Grade F22 Class 3 Class 900 ASME B16.5 RJ	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67G-0003N	Blind flange ASTM A182 Grade F22 Class 3 Class 300 ASME B16.5 RF	
1	0.75				P67G-0003P	Blind flange ASTM A182 Grade F22 Class 3 Class 300 ASME B16.5 RF	
1	1				P67G-0003R	Blind flange ASTM A182 Grade F22 Class 3 Class 300 ASME B16.5 RF	
1	1.5				P67G-0003S	Blind flange ASTM A182 Grade F22 Class 3 Class 300 ASME B16.5 RF	
1	2				P67G-000BN	Blind flange ASTM A182 Grade F22 Class 3 Class 300 ASME B16.5 RF	
1	3				P67G-000BP	Blind flange ASTM A182 Grade F22 Class 3 Class 300 ASME B16.5 RF	
1	4				P67G-000BR	Blind flange ASTM A182 Grade F22 Class 3 Class 300 ASME B16.5 RF	
1	6				P67G-000BS	Blind flange ASTM A182 Grade F22 Class 3 Class 300 ASME B16.5 RF	
1	8				P67G-000BT	Blind flange ASTM A182 Grade F22 Class 3 Class 300 ASME B16.5 RF	
1	10				P67G-0003T	Blind flange ASTM A182 Grade F22 Class 3 Class 300 ASME B16.5 RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-003AM	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	0.75				P73T-003AN	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	1				P73T-003AP	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	1.5				P73T-003AR	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	2				P73T-003AX	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	3				P73T-003B0	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	4				P73T-003B1	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	6				P73T-003B2	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	8				P73T-003B3	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	10				P73T-003AS	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
781	0.5				P73T-003B4	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
781	0.75				P73T-003B5	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
781	1				P73T-003B6	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
781	1.5				P73T-003B7	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
781	2				P73T-003BD	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
781	3				P73T-003BG	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
781	4				P73T-003BH	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
781	6				P73T-003BJ	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
781	8				P73T-003BK	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
781	10				P73T-003B8	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
789	10				P75T-000KN	Ring joint gasket 5Cr-1/2Mo Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-10				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B16 / A194 Grade 4 ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
781	0.5-6				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B16 / A194 Grade 4 ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
781	8-10				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B16 / A194 Grade 4 ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
789	8-10				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B16 / A194 Grade 4 ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81G-000AP	Gate valve ASTM A182 Grade F22 Class 3 Class 300 API 602 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2	
1	0.75				P81G-000AR	Gate valve ASTM A182 Grade F22 Class 3 Class 300 API 602 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2	
1	1				P81G-000AS	Gate valve ASTM A182 Grade F22 Class 3 Class 300 API 602 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2	
1	1.5				P81G-000AT	Gate valve ASTM A182 Grade F22 Class 3 Class 300 API 602 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2	
4608	0.75				P81G-000EL	Gate valve ASTM A182 Grade F22 Class 3 Class 800 API 602 SW both sides w/ nipples PE - NPT ASTM A335-P22 Sch160-nipple Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71G-0001S	Spectacle blank ASTM A182 Grade F22 Class 3 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	0.75				P71G-0001T	Spectacle blank ASTM A182 Grade F22 Class 3 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	1				P71G-0001U	Spectacle blank ASTM A182 Grade F22 Class 3 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71G-0001V	Spectacle blank ASTM A182 Grade F22 Class 3 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	2				P71G-0001X	Spectacle blank ASTM A182 Grade F22 Class 3 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	3				P71G-0001Y	Spectacle blank ASTM A182 Grade F22 Class 3 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	4				P71G-0001Z	Spectacle blank ASTM A182 Grade F22 Class 3 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	6				P71G-00020	Spectacle blank ASTM A182 Grade F22 Class 3 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	8				P71G-00021	Spectacle blank ASTM A182 Grade F22 Class 3 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	10				P71G-0001W	Spectacle blank ASTM A182 Grade F22 Class 3 Class 300 Standard-drawing Flange ASME B16.5 RF	

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BOLT TABLE (B_B1EH , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-00GN8		
0.75	4	0.625	75	P80S-00GLL		
1	4	0.625	80	P80S-00GLK		
1.5	4	0.750	95	P80S-00FVE		
2	8	0.625	90	P80S-00GLH		
3	8	0.750	110	P80S-00GLD		
4	8	0.750	115	P80S-00GLC		
6	12	0.750	125	P80S-00GLA		
8	12	0.875	140	P80S-00FV5		
10	16	1.000	160	P80S-00FR9		

BOLT TABLE (B_B1EH_781 , STUD ASME RF, OPTION CODE 781)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	80	P80S-00GN6		
0.75	4	0.625	90	P80S-00GLH		
1	4	0.625	95	P80S-00GLG		
1.5	4	0.750	110	P80S-00GLD		
2	8	0.625	110	P80S-00GN0		
3	8	0.750	130	P80S-00GL9		
4	8	0.875	150	P80S-00FV3		
6	12	1.000	175	P80S-00FR6		
8	12	1.125	195	P80S-00FH4		
10	16	1.250	250	P80S-00F9K		

BOLT TABLE (B_B1EH_789 , STUD ASME RJ, OPTION CODE 789)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	110		R12	
0.75	4	0.750	115		R14	
1	4	0.875	130		R16	
1.5	4	1.000	140		R20	
2	8	0.875	150		R24	
3	8	0.875	150		R31	
4	8	1.125	175		R37	
6	12	1.125	200		R45	
8	12	1.375	260	P80S-00F4V	R49	
10	16	1.375	275	P80S-00F4S	R53	P75T-000KN

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BRANCH TABLE (T_B1EH)

RUN PIPE SIZE (in) \ BRANCH SIZE (in)	0.5	0.75	1	1.5	2	3	4	6	8	10
0.5	TS									
0.75		TS								
1		TR	TS							
1.5		TR	TR	TS						
2		L	TR	TR	TS					
3		L	L	TR	TR	TS				
4	L	L	L	L	TR	TR	TS			
6	L	L	L	L	L	TR	TR	TS		
8		L	L	L	L	L	TR	TR	TS	
10		L	L	L	L	L	TR	TR	TR	TS

L : OUTLET
TS : STRAIGHT TEE
TR : REDUCING TEE

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PIPING CLASS

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Material : LTCS
Rating : ASME CLASS 300
Flange Face : RF
C.A.(mm) : 1.50
Gasket : Spiral Wound
Service : PROCESS - HYDROGEN OR HYDROGEN RICH HYDROCARBON MIXTURES
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
2	USE OF SOFT SEATED BALL, PLUG AND BUTTERFLY VALVES SHALL BE LIMITED TO MAXIMUM OF 204DEGC (400DEGF)

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
200	WITH JACK SCREW (FO)
541	NPT(F) (CA,L)
714	SW - NPT(F) (V)
781	CLASS 600 (B,F,G)

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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P01A-000XW	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE	
1	0.75		XS		P01A-000XX	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE	
1	1		XS		P01A-000XY	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE	
1	1.5		XS		P01A-000Y4	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE	
1	2		XS		P01A-000XB	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	3		STD		P01A-000YL	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	4		STD		P01A-000YT	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	6		STD		P01A-000Z2	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	8		SCH20		P01A-001BN	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	10		SCH30		P01A-002SV	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	12		STD		P01A-000XS	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	14		STD		P01A-000Y0	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	16		STD		P01A-000Y8	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	18		SCH20		P01A-007GS	Pipe ASTM A671 Grade CC60 Class 22 EFW ASME B36.10M/B36.19M BE	
1	20		STD		P01A-0042R	Pipe ASTM A671 Grade CC60 Class 22 EFW ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P02B-00019	90 degree elbow ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW	
1	0.75				P02B-0001A	90 degree elbow ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW	
1	1				P02B-0001B	90 degree elbow ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW	
1	1.5				P02B-0001C	90 degree elbow ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW	
1	2		XS		P02A-000B9	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	3		STD		P02A-000E7	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	4		STD		P02A-000E9	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	6		STD		P02A-000EC	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	8		SCH20		P02A-000GY	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	10		SCH30		P02A-001B0	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	12		STD		P02A-000DT	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	14		STD		P02A-000DY	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	16		STD		P02A-000E1	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	18		SCH20		P02A-001JY	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	20		STD		P02A-001JZ	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P03B-0001B	45 degree elbow ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW	
1	0.75				P03B-0001C	45 degree elbow ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW	
1	1				P03B-0001D	45 degree elbow ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW	
1	1.5				P03B-0001E	45 degree elbow ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW	
1	2		XS		P03A-0009Y	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	3		STD		P03A-000C4	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	4		STD		P03A-000C6	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	6		STD		P03A-000C9	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	8		SCH20		P03A-000EY	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	10		SCH30		P03A-0016Z	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	12		STD		P03A-000BP	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	14		STD		P03A-000BW	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	16		STD		P03A-000BY	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	18		SCH20		P03A-001E2	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	20		STD		P03A-001E3	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P21B-0001B	Straight tee ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW	
1	0.75				P21B-0001C	Straight tee ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW	
1	1				P21B-0001D	Straight tee ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW	
1	1.5				P21B-0001E	Straight tee ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW	
1	2		XS		P21A-001BR	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	

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STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3		STD		P21A-001FE	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	4		STD		P21A-001FF	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	6		STD		P21A-001FJ	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	8		SCH20		P21A-00216	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10		SCH30		P21A-002RK	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12		STD		P21A-001F3	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14		STD		P21A-001F6	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16		STD		P21A-001F7	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	18		SCH20		P21A-0020E	Straight tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	20		STD		P21A-001F4	Straight tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75			P24B-0002T	Reducing tee ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW	
1	1.5	0.75			P24B-0002V	Reducing tee ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW	
1	1.5	1			P24B-0002W	Reducing tee ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW	
1	2	1	XS	XS	P24A-00264	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	2	1.5	XS	XS	P24A-0026U	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	3	1.5	STD	XS	P24A-002AC	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	3	2	STD	XS	P24A-005M3	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	4	2	STD	XS	P24A-006CW	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	4	3	STD	STD	P24A-0028C	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	6	3	STD	STD	P24A-002AL	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	6	4	STD	STD	P24A-00289	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	8	4	SCH20	STD	P24A-006CX	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	8	6	SCH20	STD	P24A-005M4	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	4	SCH30	STD	P24A-00KT4	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	6	SCH30	STD	P24A-006CY	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	8	SCH30	SCH20	P24A-006CZ	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	6	STD	STD	P24A-0028X	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	8	STD	SCH20	P24A-00L3B	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	10	STD	SCH30	P24A-00L3A	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	6	STD	STD	P24A-002MG	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	8	STD	SCH20	P24A-00L3C	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	10	STD	SCH30	P24A-006D1	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	12	STD	STD	P24A-0028V	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	6	STD	STD	P24A-002PL	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	8	STD	SCH20	P24A-00L3D	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	10	STD	SCH30	P24A-00L65	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	12	STD	STD	P24A-0029G	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	14	STD	STD	P24A-0029M	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	18	8	SCH20	SCH20	P24A-002Y9	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	18	10	SCH20	SCH30	P24A-00L3E	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	18	12	SCH20	STD	P24A-00L3F	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	18	14	SCH20	STD	P24A-006D3	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	18	16	SCH20	STD	P24A-00L66	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	20	8	STD	SCH20	P24A-00KWT	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	20	10	STD	SCH30	P24A-00L3H	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	20	12	STD	STD	P24A-0028P	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	20	14	STD	STD	P24A-0029D	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	20	16	STD	STD	P24A-0029N	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	20	18	STD	SCH20	P24A-006D6	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	STD	XS	P27A-003PM	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	4	2	STD	XS	P27A-003PN	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	4	3	STD	STD	P27A-001BA	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	6	3	STD	STD	P27A-001H9	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	

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CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	6	4	STD	STD	P27A-00181	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	8	4	SCH20	STD	P27A-003PP	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	8	6	SCH20	STD	P27A-003PR	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	4	SCH30	STD	P27A-004D7	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	6	SCH30	STD	P27A-004D8	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	8	SCH30	SCH20	P27A-004D9	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	6	STD	STD	P27A-001CE	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	8	STD	SCH20	P27A-00FCJ	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	10	STD	SCH30	P27A-00FCH	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	6	STD	STD	P27A-001DC	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	8	STD	SCH20	P27A-004DD	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	10	STD	SCH30	P27A-004DB	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	12	STD	STD	P27A-001CD	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	8	STD	SCH20	P27A-00FCL	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	10	STD	SCH30	P27A-00FCK	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	12	STD	STD	P27A-001CS	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	14	STD	STD	P27A-001DX	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	18	10	SCH20	SCH30	P27A-004DF	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	18	12	SCH20	STD	P27A-00FCM	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	18	14	SCH20	STD	P27A-004DH	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	18	16	SCH20	STD	P27A-00FE2	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	20	12	STD	STD	P27A-001BJ	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	20	14	STD	STD	P27A-001D7	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	20	16	STD	STD	P27A-001DZ	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	20	18	STD	SCH20	P27A-004DM	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	STD	XS	P28A-003PL	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	4	2	STD	XS	P28A-003PM	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	4	3	STD	STD	P28A-001CF	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	6	3	STD	STD	P28A-001AL	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	6	4	STD	STD	P28A-001BL	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	8	4	SCH20	STD	P28A-003PN	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	8	6	SCH20	STD	P28A-003PP	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	4	SCH30	STD	P28A-004D1	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	6	SCH30	STD	P28A-004D2	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	8	SCH30	SCH20	P28A-004D3	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	6	STD	STD	P28A-001D6	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	8	STD	SCH20	P28A-00CHB	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	10	STD	SCH30	P28A-00CHA	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	6	STD	STD	P28A-001E8	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	8	STD	SCH20	P28A-004D7	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	10	STD	SCH30	P28A-004D5	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	12	STD	STD	P28A-001CR	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	8	STD	SCH20	P28A-00CHD	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	10	STD	SCH30	P28A-00CHC	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	12	STD	STD	P28A-001DM	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	14	STD	STD	P28A-001EW	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	18	10	SCH20	SCH30	P28A-004D9	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	18	12	SCH20	STD	P28A-00CHE	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	18	14	SCH20	STD	P28A-004DB	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	18	16	SCH20	STD	P28A-00CK0	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	20	12	STD	STD	P28A-001CB	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	20	14	STD	STD	P28A-001E3	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	20	16	STD	STD	P28A-001EZ	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	20	18	STD	SCH20	P28A-004DF	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	

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CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P29B-00028	Cap ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW	
1	0.75				P29B-00029	Cap ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW	
1	1				P29B-0002A	Cap ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW	
1	1.5				P29B-0002B	Cap ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW	
1	2		XS		P29A-000BG	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	3		STD		P29A-0009Y	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	4		STD		P29A-000AH	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	6		STD		P29A-000DE	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	8		SCH20		P29A-000E4	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10		SCH30		P29A-0016A	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12		STD		P29A-000B5	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14		STD		P29A-000B7	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16		STD		P29A-000BC	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	18		SCH20		P29A-000EU	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	20		STD		P29A-000BR	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
541	0.75				P29B-0000G	Cap ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P41A-000AD	Straight nipple ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		SCH160		P41A-000BB	Straight nipple ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		SCH160		P41A-000AN	Straight nipple ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		SCH160		P41A-000AP	Straight nipple ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

CON SWAGED NIPPLE (SNC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	XS	XS	P42A-00032	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	XS	XS	P42A-00031	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	XS	XS	P42A-00034	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	XS	XS	P42A-00037	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	XS	XS	P42A-0003A	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	XS	XS	P42A-00033	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	XS	XS	P42A-0008M	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	XS	XS	P42A-0008N	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	XS	XS	P42A-0008P	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	XS	XS	P42A-0008R	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	STD	XS	P42A-000VB	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 BE(L) - PE(S)	

ECC SWAGED NIPPLE (SNE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	XS	XS	P43A-0004B	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	XS	XS	P43A-0004C	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	XS	XS	P43A-0004D	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	XS	XS	P43A-0004E	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	XS	XS	P43A-0004F	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	XS	XS	P43A-0004G	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	XS	XS	P43A-0004H	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	XS	XS	P43A-0004J	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	XS	XS	P43A-0004K	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	XS	XS	P43A-0004L	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	STD	XS	P43A-000LE	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 BE(L) - PE(S)	

COUPLING (CPS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P47B-00019	Coupling ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW - SW	
1	0.75				P47B-0001A	Coupling ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW - SW	
1	1				P47B-0001B	Coupling ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW - SW	
1	1.5				P47B-0001C	Coupling ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW - SW	

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OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2 - 2.5	0.75			P31B-0139D	Outlet ASTM A350 Grade LF2 Class 1 Class 3000 MSS SP-97 SW	
1	3 - 5	0.75			P31B-0139E	Outlet ASTM A350 Grade LF2 Class 1 Class 3000 MSS SP-97 SW	
1	6 - 12	0.75			P31B-007EA	Outlet ASTM A350 Grade LF2 Class 1 Class 3000 MSS SP-97 SW	
1	14 - 36	0.75			P31B-007EH	Outlet ASTM A350 Grade LF2 Class 1 Class 3000 MSS SP-97 SW	
1	3	1			P31B-007E6	Outlet ASTM A350 Grade LF2 Class 1 Class 3000 MSS SP-97 SW	
1	4 - 5	1			P31B-0139F	Outlet ASTM A350 Grade LF2 Class 1 Class 3000 MSS SP-97 SW	
1	6 - 10	1			P31B-007E3	Outlet ASTM A350 Grade LF2 Class 1 Class 3000 MSS SP-97 SW	
1	12 - 36	1			P31B-007E9	Outlet ASTM A350 Grade LF2 Class 1 Class 3000 MSS SP-97 SW	
1	4	1.5			P31B-005TT	Outlet ASTM A350 Grade LF2 Class 1 Class 3000 MSS SP-97 SW	
1	5 - 6	1.5			P31B-0139G	Outlet ASTM A350 Grade LF2 Class 1 Class 3000 MSS SP-97 SW	
1	8 - 12	1.5			P31B-007DT	Outlet ASTM A350 Grade LF2 Class 1 Class 3000 MSS SP-97 SW	
1	14 - 24	1.5			P31B-007DZ	Outlet ASTM A350 Grade LF2 Class 1 Class 3000 MSS SP-97 SW	
541	1	0.75			P31B-004MV	Outlet ASTM A350 Grade LF2 Class 1 Class 3000 MSS SP-97 NPT	
541	1.5	0.75			P31B-004MZ	Outlet ASTM A350 Grade LF2 Class 1 Class 3000 MSS SP-97 NPT	
541	2 - 2.5	0.75			P31B-0139H	Outlet ASTM A350 Grade LF2 Class 1 Class 3000 MSS SP-97 NPT	
541	3 - 5	0.75			P31B-0139J	Outlet ASTM A350 Grade LF2 Class 1 Class 3000 MSS SP-97 NPT	
541	6 - 12	0.75			P31B-007J5	Outlet ASTM A350 Grade LF2 Class 1 Class 3000 MSS SP-97 NPT	
541	14 - 36	0.75			P31B-007JC	Outlet ASTM A350 Grade LF2 Class 1 Class 3000 MSS SP-97 NPT	
1	6	2	STD	XS	P31B-00MFB	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	8	2	SCH20	XS	P31B-00MFH	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	10	2	SCH30	XS	P31B-00MJG	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	12	2	STD	XS	P31B-00TPJ	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	14	2	STD	XS	P31B-00MG0	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	16	2	STD	XS	P31B-00TPK	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	18	2	SCH20	XS	P31B-00MJS	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	20	2	STD	XS	P31B-00MGK	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	8	3	SCH20	STD	P31B-00MJF	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	10	3	SCH30	STD	P31B-00MJH	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	12	3	STD	STD	P31B-00E6N	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	14	3	STD	STD	P31B-00E92	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	16	3	STD	STD	P31B-00E8R	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	18	3	SCH20	STD	P31B-00MJT	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	20	3	STD	STD	P31B-00E8N	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	12	4	STD	STD	P31B-00E8L	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	14	4	STD	STD	P31B-00E8H	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	16	4	STD	STD	P31B-00E8A	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	18	4	SCH20	STD	P31B-00MJU	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	20	4	STD	STD	P31B-00E88	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	18	6	SCH20	STD	P31B-00MJV	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	20	6	STD	STD	P31B-00E86	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30B-0002V	Plug ASTM A350 Grade LF2 Class 1 ASME B16.11 NPT Round head	
1	0.75				P30B-0002W	Plug ASTM A350 Grade LF2 Class 1 ASME B16.11 NPT Round head	
1	1				P30B-0002X	Plug ASTM A350 Grade LF2 Class 1 ASME B16.11 NPT Round head	
1	1.5				P30B-0002Y	Plug ASTM A350 Grade LF2 Class 1 ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P61B-001K3	Flange SW ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	0.75		XS		P61B-001K4	Flange SW ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	1		XS		P61B-001L7	Flange SW ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	1.5		XS		P61B-001LD	Flange SW ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	2		XS		P61B-003R8	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	3		STD		P61B-001MB	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	4		STD		P61B-001N0	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	6		STD		P61B-001NM	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	8		SCH20		P61B-002RS	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	

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FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	10		SCH30		P61B-003SE	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	12		STD		P61B-001M4	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	14		STD		P61B-001S7	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	16		STD		P61B-001LM	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	18		SCH20		P61B-002RN	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	20		STD		P61B-001NB	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
781	0.5		XS		P61B-001FX	Flange SW ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
781	0.75		XS		P61B-001G8	Flange SW ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
781	1		XS		P61B-001DL	Flange SW ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
781	1.5		XS		P61B-001DP	Flange SW ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
781	2		XS		P61B-001FN	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
781	3		STD		P61B-001TV	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
781	4		STD		P61B-001VT	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
781	6		STD		P61B-001JV	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
781	8		SCH20		P61B-003ZU	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
781	10		SCH30		P61B-003ZR	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
781	12		STD		P61B-001P7	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
781	14		STD		P61B-001PK	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
781	16		STD		P61B-003H9	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
781	18		SCH20		P61B-003ZT	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
781	20		STD		P61B-003H5	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67B-000NN	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	0.75				P67B-000MV	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	1				P67B-000MW	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	1.5				P67B-000MX	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	2				P67B-000N3	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	3				P67B-000N6	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	4				P67B-000N7	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	6				P67B-000N8	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	8				P67B-000N9	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	10				P67B-000MY	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	12				P67B-000MZ	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	14				P67B-000N0	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	16				P67B-000N1	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	18				P67B-000N2	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	20				P67B-000N4	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000FT	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000FU	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000G5	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000G6	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	6				P73T-000G7	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	8				P73T-000G8	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	10				P73T-000FX	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	12				P73T-000FY	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	14				P73T-000FZ	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

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GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	16				P73T-000G0	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	18				P73T-000G1	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	20				P73T-000G3	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	0.5				P73T-000J8	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	0.75				P73T-000J9	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1				P73T-000JA	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1.5				P73T-000JB	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	2				P73T-000JH	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	3				P73T-000JL	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	4				P73T-000JM	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	6				P73T-000JN	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	8				P73T-000JP	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	10				P73T-000JC	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	12				P73T-000JD	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	14				P73T-000JE	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	16				P73T-000JF	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	18				P73T-000JG	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	20				P73T-000JJ	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-10				See Attached Bolt Table	Bolt and Nut ASTM A320 Grade L7 / A194 Grade 4 ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	12-20				See Attached Bolt Table	Bolt and Nut ASTM A320 Grade L7 / A194 Grade 4 ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
781	0.5-6				See Attached Bolt Table	Bolt and Nut ASTM A320 Grade L7 / A194 Grade 4 ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
781	8-20				See Attached Bolt Table	Bolt and Nut ASTM A320 Grade L7 / A194 Grade 4 ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81B-001KB	Gate valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	0.75				P81B-001KC	Gate valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	1				P81B-001KD	Gate valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	1.5				P81B-001KE	Gate valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	2				P81C-005AG	Gate valve ASTM A352 Grade LCC Class 300 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	3				P81C-005AH	Gate valve ASTM A352 Grade LCC Class 300 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	4				P81C-005AJ	Gate valve ASTM A352 Grade LCC Class 300 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	6				P81C-005AK	Gate valve ASTM A352 Grade LCC Class 300 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	8				P81C-0091H	Gate valve ASTM A352 Grade LCC Class 300 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated	
1	10				P81C-008PX	Gate valve ASTM A352 Grade LCC Class 300 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated	
1	12				P81C-008PY	Gate valve ASTM A352 Grade LCC Class 300 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated	
1	14				P81C-008PZ	Gate valve ASTM A352 Grade LCC Class 300 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated	
1	16				P81C-008R0	Gate valve ASTM A352 Grade LCC Class 300 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated	
1	18				P81C-008R1	Gate valve ASTM A352 Grade LCC Class 300 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated	
1	20				P81C-008R2	Gate valve ASTM A352 Grade LCC Class 300 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated	
714	0.5				P81B-002SC	Gate valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW - NPT Trim number 8 BB-BG-OS&Y Handwheel operated	
714	0.75				P81B-002FE	Gate valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW - NPT Trim number 8 BB-BG-OS&Y Handwheel operated	

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GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82B-0019P	Globe valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	0.75				P82B-0019R	Globe valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	1				P82B-0019S	Globe valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	1.5				P82B-0019T	Globe valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	2				P82C-002KK	Globe valve ASTM A352 Grade LCC Class 300 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	3				P82C-002KL	Globe valve ASTM A352 Grade LCC Class 300 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	4				P82C-002KM	Globe valve ASTM A352 Grade LCC Class 300 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	6				P82C-002KN	Globe valve ASTM A352 Grade LCC Class 300 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	8				P82C-004CS	Globe valve ASTM A352 Grade LCC Class 300 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83B-0011G	Check valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover	
1	0.75				P83B-0011H	Check valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover	
1	1				P83B-0011J	Check valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover	
1	1.5				P83B-0011K	Check valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover	
1	2				P83C-002MV	Check valve ASTM A352 Grade LCC Class 300 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	3				P83C-002MW	Check valve ASTM A352 Grade LCC Class 300 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	4				P83C-002MX	Check valve ASTM A352 Grade LCC Class 300 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	6				P83C-002MY	Check valve ASTM A352 Grade LCC Class 300 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	8				P83C-003T6	Check valve ASTM A352 Grade LCC Class 300 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	10				P83C-003T5	Check valve ASTM A352 Grade LCC Class 300 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	

ORIFICE FLANGE (FO)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3		STD		P66B-00863	Orifice flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	4		STD		P66B-00864	Orifice flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
200	3		STD		P66B-0086A	Orifice flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	4		STD		P66B-0086B	Orifice flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71B-000BP	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	0.75				P71B-000BR	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	1				P71B-000BS	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71B-000BT	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	2				P71B-000BW	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	3				P71B-000BX	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	4				P71B-000BY	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	6				P71B-000BZ	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	8				P71B-000C0	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	10				P71B-000BU	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	12				P71B-000BV	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF	

PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000G1	Paddle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	16				P72B-000G2	Paddle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	18				P72B-000G3	Paddle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	20				P72B-000G4	Paddle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF	

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PADDLE SPACER (PS)							
OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000G6	Paddle spacer ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	16				P72B-000G7	Paddle spacer ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	18				P72B-000G8	Paddle spacer ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	20				P72B-000G9	Paddle spacer ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF	

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BOLT TABLE (B_B1GH04 , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-003VL		
0.75	4	0.625	75	P80S-003Z2		
1	4	0.625	80	P80S-003Z3		
1.5	4	0.750	95	P80S-0045X		
2	8	0.625	90	P80S-003Z5		
3	8	0.750	110	P80S-003Z9		
4	8	0.750	115	P80S-003ZA		
6	12	0.750	125	P80S-003ZC		
8	12	0.875	140	P80S-00466		
10	16	1.000	160	P80S-004BH		
12	16	1.125	175	P80S-004J7		
14	20	1.125	180	P80S-004J8		
16	20	1.250	190	P80S-004LJ		
18	24	1.250	200	P80S-004LL		
20	24	1.250	210	P80S-004LN		

BOLT TABLE (B_B1GH04_781 , STUD ASME RF, OPTION CODE 781)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	80	P80S-003VN		
0.75	4	0.625	90	P80S-003Z5		
1	4	0.625	95	P80S-003Z6		
1.5	4	0.750	110	P80S-003Z9		
2	8	0.625	110	P80S-003VV		
3	8	0.750	130	P80S-003ZD		
4	8	0.875	150	P80S-00468		
6	12	1.000	175	P80S-004BM		
8	12	1.125	195	P80S-004JB		
10	16	1.250	250	P80S-004LX		
12	20	1.250	255	P80S-004LY		
14	20	1.375	270	P80S-003M5		
16	20	1.500	295	P80S-003D1		
18	20	1.625	320	P80S-00CB3		
20	24	1.625	335	P80S-00CB6		

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PIPING CLASS

B1GH04 REV NO. 2

BRANCH TABLE (T_B1GH04)

RUN PIPE SIZE (in) \ BRANCH SIZE (in)	0.5	0.75	1	1.5	2	3	4	6	8	10	12	14	16	18	20
0.5	TS														
0.75		TS													
1		TR	TS												
1.5		TR	TR	TS											
2		L	TR	TR	TS										
3		L	L	TR	TR	TS									
4	L	L	L	L	TR	TR	TS								
6	L	L	L	L	L	TR	TR	TS							
8		L	L	L	L	L	TR	TR	TS						
10		L	L	L	L	L	TR	TR	TR	TS					
12		L	L	L	L	L	L	TR	TR	TR	TS				
14		L	L	L	L	L	L	TR	TR	TR	TR	TS			
16		L	L	L	L	L	L	TR	TR	TR	TR	TR	TS		
18		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TS	
20		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TR	TS

L : OUTLET
TS : STRAIGHT TEE
TR : REDUCING TEE

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PIPING CLASS

B1GP REV NO. 2

Material : LTCS
Rating : ASME CLASS 300
Flange Face : RF
C.A.(mm) : 1.50
Gasket : Spiral Wound
Service : PROCESS - LOW TEMPERATURE SERVICE: / HYDROCARBONS (LIGHT) / REFRIGERANT / DEPROPANISER REFLUX / C3 LPG (Note 21) / PROCESS

Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
2	USE OF SOFT SEATED BALL, PLUG AND BUTTERFLY VALVES SHALL BE LIMITED TO MAXIMUM OF 204DEGC (400DEGF)

DETAIL NOTES :

NO.	DESCRIPTION
38	TO BE USED FOR STAND PIPE

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
200	WITH JACK SCREW (FO)
221	RF (V)
541	NPT(F) (CA,L)
714	SW - NPT(F) (V)
781	CLASS 600 (B,F,G)
4212	WELDOLET FOR STAND PIPE (L)

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PIPING CLASS
B1GP REV NO. 2

PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P01A-000XW	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE	
1	0.75		XS		P01A-000XX	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE	
1	1		XS		P01A-000XY	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE	
1	1.5		XS		P01A-000Y4	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE	
1	2		XS		P01A-000XB	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	3		STD		P01A-000YL	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	4		STD		P01A-000YT	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	6		STD		P01A-000Z2	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	8		SCH20		P01A-001BN	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	10		SCH30		P01A-002SV	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	12		STD		P01A-000XS	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	14		STD		P01A-000Y0	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	16		STD		P01A-000Y8	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	18		SCH20		P01A-007GS	Pipe ASTM A671 Grade CC60 Class 22 EFW ASME B36.10M/B36.19M BE	
1	20		STD		P01A-0042R	Pipe ASTM A671 Grade CC60 Class 22 EFW ASME B36.10M/B36.19M BE	
1	24		STD		P01A-0042S	Pipe ASTM A671 Grade CC60 Class 22 EFW ASME B36.10M/B36.19M BE	
1	30		SCH10		P01A-007GT	Pipe ASTM A671 Grade CC60 Class 22 EFW ASME B36.10M/B36.19M BE	
1	36		STD		P01A-008PE	Pipe ASTM A671 Grade CC60 Class 22 EFW ASME B36.10M/B36.19M BE	
1	42		STD		P01A-007GV	Pipe ASTM A671 Grade CC60 Class 22 EFW ASME B36.10M/B36.19M BE	
1	48		XS		P01A-008MW	Pipe ASTM A671 Grade CC60 Class 22 EFW ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P02B-00019	90 degree elbow ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW	
1	0.75				P02B-0001A	90 degree elbow ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW	
1	1				P02B-0001B	90 degree elbow ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW	
1	1.5				P02B-0001C	90 degree elbow ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW	
1	2		XS		P02A-000B9	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	3		STD		P02A-000E7	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	4		STD		P02A-000E9	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	6		STD		P02A-000EC	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	8		SCH20		P02A-000GY	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	10		SCH30		P02A-001B0	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	12		STD		P02A-000DT	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	14		STD		P02A-000DY	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	16		STD		P02A-000E1	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	18		SCH20		P02A-001JY	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	20		STD		P02A-001JZ	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	24		STD		P02A-001K1	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	30		SCH10		P02A-003YU	90 degree elbow ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Long radius	
1	36		STD		P02A-000EE	90 degree elbow ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Long radius	
1	42		STD		P02A-003CB	90 degree elbow ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Long radius	
1	48		XS		P02A-000CV	90 degree elbow ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P03B-0001B	45 degree elbow ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW	
1	0.75				P03B-0001C	45 degree elbow ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW	
1	1				P03B-0001D	45 degree elbow ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW	
1	1.5				P03B-0001E	45 degree elbow ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW	
1	2		XS		P03A-0009Y	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	3		STD		P03A-000C4	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	4		STD		P03A-000C6	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	6		STD		P03A-000C9	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	8		SCH20		P03A-000EY	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	10		SCH30		P03A-0016Z	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	12		STD		P03A-000BP	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	14		STD		P03A-000BW	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	16		STD		P03A-000BY	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	

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45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	18		SCH20		P03A-001E2	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	20		STD		P03A-001E3	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	24		STD		P03A-001E5	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	30		SCH10		P03A-003WG	45 degree elbow ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Long radius	
1	36		STD		P03A-000CD	45 degree elbow ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Long radius	
1	42		STD		P03A-0039Z	45 degree elbow ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Long radius	
1	48		XS		P03A-000B2	45 degree elbow ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P21B-0001B	Straight tee ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW	
1	0.75				P21B-0001C	Straight tee ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW	
1	1				P21B-0001D	Straight tee ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW	
1	1.5				P21B-0001E	Straight tee ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW	
1	2		XS		P21A-001BR	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	3		STD		P21A-001FE	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	4		STD		P21A-001FF	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	6		STD		P21A-001FJ	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	8		SCH20		P21A-00216	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10		SCH30		P21A-002RK	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12		STD		P21A-001F3	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14		STD		P21A-001F6	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16		STD		P21A-001F7	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	18		SCH20		P21A-0020E	Straight tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	20		STD		P21A-001F4	Straight tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	24		STD		P21A-001F8	Straight tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	30		SCH10		P21A-004G8	Straight tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	36		STD		P21A-001FM	Straight tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	42		STD		P21A-003W4	Straight tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	48		XS		P21A-001CZ	Straight tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75			P24B-0002T	Reducing tee ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW	
1	1.5	0.75			P24B-0002V	Reducing tee ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW	
1	1.5	1			P24B-0002W	Reducing tee ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW	
1	2	1	XS	XS	P24A-00264	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	2	1.5	XS	XS	P24A-0026U	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	3	1.5	STD	XS	P24A-002AC	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	3	2	STD	XS	P24A-005M3	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	4	2	STD	XS	P24A-006CW	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	4	3	STD	STD	P24A-0028C	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	6	3	STD	STD	P24A-002AL	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	6	4	STD	STD	P24A-00289	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	8	4	SCH20	STD	P24A-006CX	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	8	6	SCH20	STD	P24A-005M4	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	4	SCH30	STD	P24A-00KT4	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	6	SCH30	STD	P24A-006CY	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	8	SCH30	SCH20	P24A-006CZ	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	6	STD	STD	P24A-0028X	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	8	STD	SCH20	P24A-00L3B	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	10	STD	SCH30	P24A-00L3A	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	6	STD	STD	P24A-002MG	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	8	STD	SCH20	P24A-00L3C	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	10	STD	SCH30	P24A-006D1	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	12	STD	STD	P24A-0028V	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	6	STD	STD	P24A-002PL	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	8	STD	SCH20	P24A-00L3D	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	10	STD	SCH30	P24A-00L65	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	

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REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	16	12	STD	STD	P24A-0029G	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	14	STD	STD	P24A-0029M	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	18	8	SCH20	SCH20	P24A-002Y9	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	18	10	SCH20	SCH30	P24A-00L3E	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	18	12	SCH20	STD	P24A-00L3F	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	18	14	SCH20	STD	P24A-006D3	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	18	16	SCH20	STD	P24A-00L66	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	20	8	STD	SCH20	P24A-00KWT	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	20	10	STD	SCH30	P24A-00L3H	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	20	12	STD	STD	P24A-0028P	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	20	14	STD	STD	P24A-0029D	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	20	16	STD	STD	P24A-0029N	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	20	18	STD	SCH20	P24A-006D6	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	24	10	STD	SCH30	P24A-00L3J	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	24	12	STD	STD	P24A-002LU	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	24	14	STD	STD	P24A-002MK	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	24	16	STD	STD	P24A-0028M	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	24	18	STD	SCH20	P24A-00799	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	24	20	STD	STD	P24A-0029L	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	30	10	SCH10	SCH30	P24A-00L4U	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	30	12	SCH10	STD	P24A-00L4V	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	30	14	SCH10	STD	P24A-00L3K	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	30	16	SCH10	STD	P24A-00L3L	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	30	18	SCH10	SCH20	P24A-00KX2	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	30	20	SCH10	STD	P24A-00KX3	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	30	24	SCH10	STD	P24A-00KX4	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	36	16	STD	STD	P24A-007YD	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	36	18	STD	SCH20	P24A-00NW1	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	36	20	STD	STD	P24A-005MH	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	36	24	STD	STD	P24A-0027E	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	36	30	STD	SCH10	P24A-00NW2	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	42	16	STD	STD	P24A-00NZF	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	42	18	STD	SCH20	P24A-00KX6	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	42	20	STD	STD	P24A-00KX7	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	42	24	STD	STD	P24A-00KX8	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	42	30	STD	SCH10	P24A-00KX9	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	42	36	STD	STD	P24A-00NZE	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	48	24	XS	STD	P24A-002L3	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	48	30	XS	SCH10	P24A-00MJY	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	48	36	XS	STD	P24A-00228	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	48	42	XS	STD	P24A-00MK0	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	STD	XS	P27A-003PM	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	4	2	STD	XS	P27A-003PN	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	4	3	STD	STD	P27A-001BA	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	6	3	STD	STD	P27A-001H9	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	6	4	STD	STD	P27A-00181	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	8	4	SCH20	STD	P27A-003PP	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	8	6	SCH20	STD	P27A-003PR	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	4	SCH30	STD	P27A-004D7	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	6	SCH30	STD	P27A-004D8	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	8	SCH30	SCH20	P27A-004D9	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	6	STD	STD	P27A-001CE	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	8	STD	SCH20	P27A-00FCJ	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	10	STD	SCH30	P27A-00FCH	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	6	STD	STD	P27A-001DC	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	8	STD	SCH20	P27A-004DD	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	

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CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14	10	STD	SCH30	P27A-004DB	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	12	STD	STD	P27A-001CD	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	8	STD	SCH20	P27A-00FCL	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	10	STD	SCH30	P27A-00FCK	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	12	STD	STD	P27A-001CS	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	14	STD	STD	P27A-001DX	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	18	10	SCH20	SCH30	P27A-004DF	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	18	12	SCH20	STD	P27A-00FCM	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	18	14	SCH20	STD	P27A-004DH	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	18	16	SCH20	STD	P27A-00FE2	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	20	12	STD	STD	P27A-001BJ	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	20	14	STD	STD	P27A-001D7	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	20	16	STD	STD	P27A-001DZ	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	20	18	STD	SCH20	P27A-004DM	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	24	16	STD	STD	P27A-001BC	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	24	18	STD	SCH20	P27A-008L9	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	24	20	STD	STD	P27A-001DF	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	30	20	SCH10	STD	P27A-00F92	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	30	24	SCH10	STD	P27A-00F93	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	36	24	STD	STD	P27A-00184	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	36	30	STD	SCH10	P27A-00H6D	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	42	30	STD	SCH10	P27A-00F94	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	42	36	STD	STD	P27A-00D18	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	48	42	XS	STD	P27A-00GGN	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	STD	XS	P28A-003PL	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	4	2	STD	XS	P28A-003PM	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	4	3	STD	STD	P28A-001CF	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	6	3	STD	STD	P28A-001AL	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	6	4	STD	STD	P28A-001BL	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	8	4	SCH20	STD	P28A-003PN	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	8	6	SCH20	STD	P28A-003PP	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	4	SCH30	STD	P28A-004D1	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	6	SCH30	STD	P28A-004D2	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	8	SCH30	SCH20	P28A-004D3	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	6	STD	STD	P28A-001D6	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	8	STD	SCH20	P28A-00CHB	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	10	STD	SCH30	P28A-00CHA	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	6	STD	STD	P28A-001E8	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	8	STD	SCH20	P28A-004D7	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	10	STD	SCH30	P28A-004D5	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	12	STD	STD	P28A-001CR	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	8	STD	SCH20	P28A-00CHD	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	10	STD	SCH30	P28A-00CHC	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	12	STD	STD	P28A-001DM	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	14	STD	STD	P28A-001EW	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	18	10	SCH20	SCH30	P28A-004D9	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	18	12	SCH20	STD	P28A-00CHE	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	18	14	SCH20	STD	P28A-004DB	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	18	16	SCH20	STD	P28A-00CK0	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	20	12	STD	STD	P28A-001CB	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	20	14	STD	STD	P28A-001E3	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	20	16	STD	STD	P28A-001EZ	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	20	18	STD	SCH20	P28A-004DF	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	24	16	STD	STD	P28A-001C8	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	24	18	STD	SCH20	P28A-005B4	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	24	20	STD	STD	P28A-001EB	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	

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ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	30	20	SCH10	STD	P28A-00CD8	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	30	24	SCH10	STD	P28A-00CD9	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	36	24	STD	STD	P28A-001CD	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	36	30	STD	SCH10	P28A-00EDS	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	42	30	STD	SCH10	P28A-00CD4	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	42	36	STD	STD	P28A-00A1D	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	48	42	XS	STD	P28A-00DP6	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P29B-00028	Cap ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW	
1	0.75				P29B-00029	Cap ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW	
1	1				P29B-0002A	Cap ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW	
1	1.5				P29B-0002B	Cap ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW	
1	2		XS		P29A-000BG	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	3		STD		P29A-0009Y	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	4		STD		P29A-000AH	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	6		STD		P29A-000DE	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	8		SCH20		P29A-000E4	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10		SCH30		P29A-0016A	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12		STD		P29A-000B5	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14		STD		P29A-000B7	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16		STD		P29A-000BC	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	18		SCH20		P29A-000EU	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	20		STD		P29A-000BR	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	24		STD		P29A-0009T	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	30		SCH10		P29A-003BE	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	36		STD		P29A-000AD	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	42		STD		P29A-002RU	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	48		XS		P29A-000DA	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
541	0.75				P29B-0000G	Cap ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 NPT	
541	1				P29B-0000H	Cap ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 NPT	
541	1.5				P29B-0000J	Cap ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P41A-000AD	Straight nipple ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		SCH160		P41A-000BB	Straight nipple ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		SCH160		P41A-000AN	Straight nipple ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		SCH160		P41A-000AP	Straight nipple ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

CON SWAGED NIPPLE (SNC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	XS	XS	P42A-00032	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	XS	XS	P42A-00031	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	XS	XS	P42A-00034	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	XS	XS	P42A-00037	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	XS	XS	P42A-0003A	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	XS	XS	P42A-00033	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	XS	XS	P42A-0008M	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	XS	XS	P42A-0008N	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	XS	XS	P42A-0008P	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	XS	XS	P42A-0008R	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	STD	XS	P42A-000VB	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 BE(L) - PE(S)	

ECC SWAGED NIPPLE (SNE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	XS	XS	P43A-0004B	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S)	

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ECC SWAGED NIPPLE (SNE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.5	XS	XS	P43A-0004C	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	XS	XS	P43A-0004D	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	XS	XS	P43A-0004E	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	XS	XS	P43A-0004F	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	XS	XS	P43A-0004G	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	XS	XS	P43A-0004H	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	XS	XS	P43A-0004J	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	XS	XS	P43A-0004K	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	XS	XS	P43A-0004L	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	STD	XS	P43A-000LE	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 BE(L) - PE(S)	

COUPLING (CPS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P47B-00019	Coupling ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW - SW	
1	0.75				P47B-0001A	Coupling ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW - SW	
1	1				P47B-0001B	Coupling ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW - SW	
1	1.5				P47B-0001C	Coupling ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW - SW	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2 - 2.5	0.75			P31B-0139D	Outlet ASTM A350 Grade LF2 Class 1 Class 3000 MSS SP-97 SW	
1	3 - 5	0.75			P31B-0139E	Outlet ASTM A350 Grade LF2 Class 1 Class 3000 MSS SP-97 SW	
1	6 - 12	0.75			P31B-007EA	Outlet ASTM A350 Grade LF2 Class 1 Class 3000 MSS SP-97 SW	
1	14 - 36	0.75			P31B-007EH	Outlet ASTM A350 Grade LF2 Class 1 Class 3000 MSS SP-97 SW	
1	38 and larger	0.75			P31B-00LVF	Outlet ASTM A350 Grade LF2 Class 1 Class 3000 MSS SP-97 SW	
1	3	1			P31B-007E6	Outlet ASTM A350 Grade LF2 Class 1 Class 3000 MSS SP-97 SW	
1	4 - 5	1			P31B-0139F	Outlet ASTM A350 Grade LF2 Class 1 Class 3000 MSS SP-97 SW	
1	6 - 10	1			P31B-007E3	Outlet ASTM A350 Grade LF2 Class 1 Class 3000 MSS SP-97 SW	
1	12 - 36	1			P31B-007E9	Outlet ASTM A350 Grade LF2 Class 1 Class 3000 MSS SP-97 SW	
1	38 and larger	1			P31B-00LVP	Outlet ASTM A350 Grade LF2 Class 1 Class 3000 MSS SP-97 SW	
1	4	1.5			P31B-005TT	Outlet ASTM A350 Grade LF2 Class 1 Class 3000 MSS SP-97 SW	
1	5 - 6	1.5			P31B-0139G	Outlet ASTM A350 Grade LF2 Class 1 Class 3000 MSS SP-97 SW	
1	8 - 12	1.5			P31B-007DT	Outlet ASTM A350 Grade LF2 Class 1 Class 3000 MSS SP-97 SW	
1	14 - 24	1.5			P31B-007DZ	Outlet ASTM A350 Grade LF2 Class 1 Class 3000 MSS SP-97 SW	
1	26 - 36	1.5			P31B-0139K	Outlet ASTM A350 Grade LF2 Class 1 Class 3000 MSS SP-97 SW	
1	38 and larger	1.5			P31B-00LVZ	Outlet ASTM A350 Grade LF2 Class 1 Class 3000 MSS SP-97 SW	
541	1	0.75			P31B-004MV	Outlet ASTM A350 Grade LF2 Class 1 Class 3000 MSS SP-97 NPT	
541	1.5	0.75			P31B-004MZ	Outlet ASTM A350 Grade LF2 Class 1 Class 3000 MSS SP-97 NPT	
541	2 - 2.5	0.75			P31B-0139H	Outlet ASTM A350 Grade LF2 Class 1 Class 3000 MSS SP-97 NPT	
541	3 - 5	0.75			P31B-0139J	Outlet ASTM A350 Grade LF2 Class 1 Class 3000 MSS SP-97 NPT	
541	6 - 12	0.75			P31B-007J5	Outlet ASTM A350 Grade LF2 Class 1 Class 3000 MSS SP-97 NPT	
541	14 - 36	0.75			P31B-007JC	Outlet ASTM A350 Grade LF2 Class 1 Class 3000 MSS SP-97 NPT	
541	38 and larger	0.75			P31B-00N3L	Outlet ASTM A350 Grade LF2 Class 1 Class 3000 MSS SP-97 NPT	
1	6	2	STD	XS	P31B-00MFB	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	8	2	SCH20	XS	P31B-00MFH	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	10	2	SCH30	XS	P31B-00MJG	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	12	2	STD	XS	P31B-00TPJ	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	14	2	STD	XS	P31B-00MG0	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	16	2	STD	XS	P31B-00TPK	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	18	2	SCH20	XS	P31B-00MJS	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	20	2	STD	XS	P31B-00MGK	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	24	2	STD	XS	P31B-00M4U	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	30	2	SCH10	XS	P31B-00YAP	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	36	2	STD	XS	P31B-00M5J	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	42	2	STD	XS	P31B-00VPM	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	48	2	XS	XS	P31B-00M65	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	8	3	SCH20	STD	P31B-00MJF	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	10	3	SCH30	STD	P31B-00MJH	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	12	3	STD	STD	P31B-00E6N	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	

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OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14	3	STD	STD	P31B-00E92	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	16	3	STD	STD	P31B-00E8R	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	18	3	SCH20	STD	P31B-00MJT	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	20	3	STD	STD	P31B-00E8N	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	24	3	STD	STD	P31B-00E8T	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	30	3	SCH10	STD	P31B-00YAR	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	36	3	STD	STD	P31B-00E8X	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	42	3	STD	STD	P31B-00VPN	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	48	3	XS	STD	P31B-00E8Y	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	12	4	STD	STD	P31B-00E8L	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	14	4	STD	STD	P31B-00E8H	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	16	4	STD	STD	P31B-00E8A	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	18	4	SCH20	STD	P31B-00MJU	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	20	4	STD	STD	P31B-00E88	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	24	4	STD	STD	P31B-00E8C	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	30	4	SCH10	STD	P31B-00YAS	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	36	4	STD	STD	P31B-00E8E	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	42	4	STD	STD	P31B-00VPP	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	48	4	XS	STD	P31B-00E8K	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	18	6	SCH20	STD	P31B-00MJV	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	20	6	STD	STD	P31B-00E86	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	24	6	STD	STD	P31B-00E84	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	30	6	SCH10	STD	P31B-00YAT	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	36	6	STD	STD	P31B-00E87	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	42	6	STD	STD	P31B-00VPR	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	48	6	XS	STD	P31B-00E8F	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
4212	3	2	STD	XS	P31B-00VA7	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	38

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30B-0002V	Plug ASTM A350 Grade LF2 Class 1 ASME B16.11 NPT Round head	
1	0.75				P30B-0002W	Plug ASTM A350 Grade LF2 Class 1 ASME B16.11 NPT Round head	
1	1				P30B-0002X	Plug ASTM A350 Grade LF2 Class 1 ASME B16.11 NPT Round head	
1	1.5				P30B-0002Y	Plug ASTM A350 Grade LF2 Class 1 ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P61B-001K3	Flange SW ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	0.75		XS		P61B-001K4	Flange SW ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	1		XS		P61B-001L7	Flange SW ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	1.5		XS		P61B-001LD	Flange SW ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	2		XS		P61B-003R8	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	3		STD		P61B-001MB	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	4		STD		P61B-001N0	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	6		STD		P61B-001NM	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	8		SCH20		P61B-002RS	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	10		SCH30		P61B-003SE	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	12		STD		P61B-001M4	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	14		STD		P61B-001S7	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	16		STD		P61B-001LM	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	18		SCH20		P61B-002RN	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	20		STD		P61B-001NB	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	24		STD		P61B-001P1	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	30		SCH10		P61B-00ABS	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.47 Series B RF	
1	36		STD		P61B-001ML	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.47 Series B RF	
1	42		STD		P61B-00ABU	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.47 Series B RF	
1	48		XS		P61B-001MD	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.47 Series B RF	
781	0.5		XS		P61B-001FX	Flange SW ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
781	0.75		XS		P61B-001G8	Flange SW ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
781	1		XS		P61B-001DL	Flange SW ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
781	1.5		XS		P61B-001DP	Flange SW ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
781	2		XS		P61B-001FN	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
781	3		STD		P61B-001TV	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
781	4		STD		P61B-001VT	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
781	6		STD		P61B-001JV	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
781	8		SCH20		P61B-003ZU	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
781	10		SCH30		P61B-003ZR	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
781	12		STD		P61B-001P7	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
781	14		STD		P61B-001PK	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
781	16		STD		P61B-003H9	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
781	18		SCH20		P61B-003ZT	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
781	20		STD		P61B-003H5	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
781	24		STD		P61B-003H4	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
781	30		SCH10		P61B-00AC6	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.47 Series B RF	
781	36		STD		P61B-003H6	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.47 Series B RF	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67B-000NN	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	0.75				P67B-000MV	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	1				P67B-000MW	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	1.5				P67B-000MX	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	2				P67B-000N3	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	3				P67B-000N6	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	4				P67B-000N7	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	6				P67B-000N8	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	8				P67B-000N9	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	10				P67B-000MY	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	12				P67B-000MZ	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	14				P67B-000N0	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	16				P67B-000N1	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	18				P67B-000N2	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	20				P67B-000N4	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	24				P67B-000N5	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	30				P67B-000NC	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.47 Series B RF	
1	36				P67B-000NF	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.47 Series B RF	
1	42				P67B-000NJ	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.47 Series B RF	
1	48				P67B-000NM	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.47 Series B RF	

REDUCING FLANGE (FR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5		XS	P62B-000N1	Reducing flange SW ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000FT	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000FU	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000G5	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000G6	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	6				P73T-000G7	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	8				P73T-000G8	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

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GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	10				P73T-000FX	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	12				P73T-000FY	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	14				P73T-000FZ	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	16				P73T-000G0	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	18				P73T-000G1	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	20				P73T-000G3	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	24				P73T-000G4	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	30				P73T-000H9	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	36				P73T-000HC	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	42				P73T-000KM	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	48				P73T-000KR	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	0.5				P73T-000J8	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	0.75				P73T-000J9	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1				P73T-000JA	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1.5				P73T-000JB	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	2				P73T-000JH	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	3				P73T-000JL	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	4				P73T-000JM	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	6				P73T-000JN	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	8				P73T-000JP	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	10				P73T-000JC	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	12				P73T-000JD	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	14				P73T-000JE	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	16				P73T-000JF	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	18				P73T-000JG	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	20				P73T-000JJ	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	24				P73T-000JK	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	30				P73T-000JT	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	36				P73T-000JW	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-10				See Attached Bolt Table	Bolt and Nut ASTM A320 Grade L7 / A194 Grade 4 ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	12-48				See Attached Bolt Table	Bolt and Nut ASTM A320 Grade L7 / A194 Grade 4 ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
781	0.5-6				See Attached Bolt Table	Bolt and Nut ASTM A320 Grade L7 / A194 Grade 4 ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
781	8-36				See Attached Bolt Table	Bolt and Nut ASTM A320 Grade L7 / A194 Grade 4 ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81B-0018C	Gate valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	0.75				P81B-0018D	Gate valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	1				P81B-0018E	Gate valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	1.5				P81B-0018F	Gate valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	2				P81C-004HG	Gate valve ASTM A352 Grade LCC Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	3				P81C-004HH	Gate valve ASTM A352 Grade LCC Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	

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GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	4				P81C-004HJ	Gate valve ASTM A352 Grade LCC Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	6				P81C-004HK	Gate valve ASTM A352 Grade LCC Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	8				P81C-0091J	Gate valve ASTM A352 Grade LCC Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated	
1	10				P81C-004HM	Gate valve ASTM A352 Grade LCC Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated	
1	12				P81C-004HN	Gate valve ASTM A352 Grade LCC Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated	
1	14				P81C-004HP	Gate valve ASTM A352 Grade LCC Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated	
1	16				P81C-004HR	Gate valve ASTM A352 Grade LCC Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated	
1	18				P81C-004HS	Gate valve ASTM A352 Grade LCC Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated	
1	20				P81C-004HT	Gate valve ASTM A352 Grade LCC Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated	
1	24				P81C-004HU	Gate valve ASTM A352 Grade LCC Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated	
1	30				P81C-004HF	Gate valve ASTM A352 Grade LCC Class 300 API 600 Flange ASME B16.47-B RF Trim number 12 BB-BG-OS&Y Gear operated	
221	1				P81B-00395	Gate valve ASTM A350 Grade LF2 Class 1 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
714	0.5				P81B-002S4	Gate valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW - NPT Trim number 12 BB-BG-OS&Y Handwheel operated	
714	0.75				P81B-002FB	Gate valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW - NPT Trim number 12 BB-BG-OS&Y Handwheel operated	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82B-0011H	Globe valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	0.75				P82B-0011J	Globe valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	1				P82B-0011K	Globe valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	1.5				P82B-0011L	Globe valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	2				P82C-0027X	Globe valve ASTM A352 Grade LCC Class 300 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	3				P82C-0027Y	Globe valve ASTM A352 Grade LCC Class 300 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	4				P82C-0027Z	Globe valve ASTM A352 Grade LCC Class 300 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	6				P82C-00280	Globe valve ASTM A352 Grade LCC Class 300 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	8				P82C-004CT	Globe valve ASTM A352 Grade LCC Class 300 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83B-000TS	Check valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 12 Lift-type Bolted cover	
1	0.75				P83B-000TT	Check valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 12 Lift-type Bolted cover	
1	1				P83B-000TU	Check valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 12 Lift-type Bolted cover	
1	1.5				P83B-000TV	Check valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 12 Lift-type Bolted cover	
1	2				P83C-0024D	Check valve ASTM A352 Grade LCC Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	3				P83C-0024G	Check valve ASTM A352 Grade LCC Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	4				P83C-0024H	Check valve ASTM A352 Grade LCC Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	6				P83C-0024J	Check valve ASTM A352 Grade LCC Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	8				P83C-0024K	Check valve ASTM A352 Grade LCC Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	10				P83C-00248	Check valve ASTM A352 Grade LCC Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	12				P83C-00249	Check valve ASTM A352 Grade LCC Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	14				P83C-0024A	Check valve ASTM A352 Grade LCC Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	16				P83C-0024B	Check valve ASTM A352 Grade LCC Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	18				P83C-0024C	Check valve ASTM A352 Grade LCC Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	20				P83C-0024E	Check valve ASTM A352 Grade LCC Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	24				P83C-0024F	Check valve ASTM A352 Grade LCC Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	

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PIPING CLASS
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DP CHECK VALVE (XDP)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	30				P88C-0023F	Dual plate check valve ASTM A352 Grade LCC Class 300 API 594 Wafer-type ASME B16.47-B RF Trim number 12 Internal wetted parts SS316 Spring Inconel Retainerless-type	

BUTTERFLY VALVE (H)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	10				P86C-002ER	Offset design butterfly valve ASTM A352 Grade LCC Class 300 API 609 Category B Lug-type ASME B16.5 RF Disc LTCS Seat Stellite-6 Trim SS316 Triple eccentric design BG Gear operated	

ORIFICE FLANGE (FO)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2		XS		P66B-00862	Orifice flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	3		STD		P66B-00863	Orifice flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	4		STD		P66B-00864	Orifice flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	6		STD		P66B-00865	Orifice flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	8		SCH20		P66B-00866	Orifice flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	10		SCH30		P66B-008AL	Orifice flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	12		STD		P66B-008AM	Orifice flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
200	2		XS		P66B-00869	Orifice flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	3		STD		P66B-0086A	Orifice flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	4		STD		P66B-0086B	Orifice flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	6		STD		P66B-0086C	Orifice flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	8		SCH20		P66B-0086D	Orifice flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	10		SCH30		P66B-008AN	Orifice flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	12		STD		P66B-008AP	Orifice flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71B-000BP	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	0.75				P71B-000BR	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	1				P71B-000BS	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71B-000BT	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	2				P71B-000BW	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	3				P71B-000BX	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	4				P71B-000BY	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	6				P71B-000BZ	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	8				P71B-000C0	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	10				P71B-000BU	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	12				P71B-000BV	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF	

PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000G1	Paddle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	16				P72B-000G2	Paddle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	18				P72B-000G3	Paddle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	20				P72B-000G4	Paddle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	24				P72B-000G5	Paddle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	30				P72B-0009J	Paddle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.47-B RF	

PADDLE SPACER (PS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000G6	Paddle spacer ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	16				P72B-000G7	Paddle spacer ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	18				P72B-000G8	Paddle spacer ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	20				P72B-000G9	Paddle spacer ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	24				P72B-000GA	Paddle spacer ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	30				P72B-0009T	Paddle spacer ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.47-B RF	

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BOLT TABLE (B_B1GP , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-003VL		
0.75	4	0.625	75	P80S-003Z2		
1	4	0.625	80	P80S-003Z3		
1.5	4	0.750	95	P80S-0045X		
2	8	0.625	90	P80S-003Z5		
3	8	0.750	110	P80S-003Z9		
4	8	0.750	115	P80S-003ZA		
6	12	0.750	125	P80S-003ZC		
8	12	0.875	140	P80S-00466		
10	16	1.000	160	P80S-004BH		
12	16	1.125	175	P80S-004J7		
14	20	1.125	180	P80S-004J8		
16	20	1.250	190	P80S-004LJ		
18	24	1.250	200	P80S-004LL		
20	24	1.250	210	P80S-004LN		
24	24	1.500	235	P80S-003A7		
30	36	1.375	285	P80S-00399		
36	32	1.625	320	P80S-00CB3		
42	36	1.750	355	P80S-0096R		
48	40	1.875	380	P80S-00ACJ		

BOLT TABLE (B_B1GP_781 , STUD ASME RF, OPTION CODE 781)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	80	P80S-003VN		
0.75	4	0.625	90	P80S-003Z5		
1	4	0.625	95	P80S-003Z6		
1.5	4	0.750	110	P80S-003Z9		
2	8	0.625	110	P80S-003VV		
3	8	0.750	130	P80S-003ZD		
4	8	0.875	150	P80S-00468		
6	12	1.000	175	P80S-004BM		
8	12	1.125	195	P80S-004JB		
10	16	1.250	250	P80S-004LX		
12	20	1.250	255	P80S-004LY		
14	20	1.375	270	P80S-003M5		
16	20	1.500	295	P80S-003D1		
18	20	1.625	320	P80S-00CB3		
20	24	1.625	335	P80S-00CB6		
24	24	1.875	380	P80S-00ACJ		
30	28	1.875	435	P80S-00ACW		
36	28	2.250	510	P80S-00E91		
42	28	2.500	575			
48	32	2.750	635			

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BRANCH TABLE (T_B1GP)

RUN PIPE SIZE (in) \ BRANCH SIZE (in)	0.5	0.75	1	1.5	2	3	4	6	8	10	12	14	16	18	20	24	30	36	42	48
0.5	TS																			
0.75		TS																		
1		TR	TS																	
1.5		TR	TR	TS																
2		L	TR	TR	TS															
3		L	L	TR	TR	TS														
4	L	L	L	L	TR	TR	TS													
6	L	L	L	L	L	TR	TR	TS												
8		L	L	L	L	L	TR	TR	TS											
10		L	L	L	L	L	TR	TR	TR	TS										
12		L	L	L	L	L	L	TR	TR	TR	TS									
14		L	L	L	L	L	L	TR	TR	TR	TR	TS								
16		L	L	L	L	L	L	TR	TR	TR	TR	TR	TS							
18		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TS						
20		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TR	TS					
24		L	L	L	L	L	L	L	9PD	TR	TR	TR	TR	TR	TR	TS				
30		L	L	L	L	L	L	L	9PD	TR	TR	TR	TR	TR	TR	TR	TS			
36		L	L	L	L	L	L	L	9PD	9PD	9PD	9PD	TR	TR	TR	TR	TR	TS		
42		L	L	L	L	L	L	L	9PD	9PD	9PD	9PD	TR	TR	TR	TR	TR	TR	TS	
48		L	L	L	L	L	L	L	9PD	9PD	9PD	9PD	9PD	9PD	9PD	TR	TR	TR	TR	TS

TS : STRAIGHT TEE
TR : REDUCING TEE
9PD : REINFORCING PAD 90 DEG
L : OUTLET

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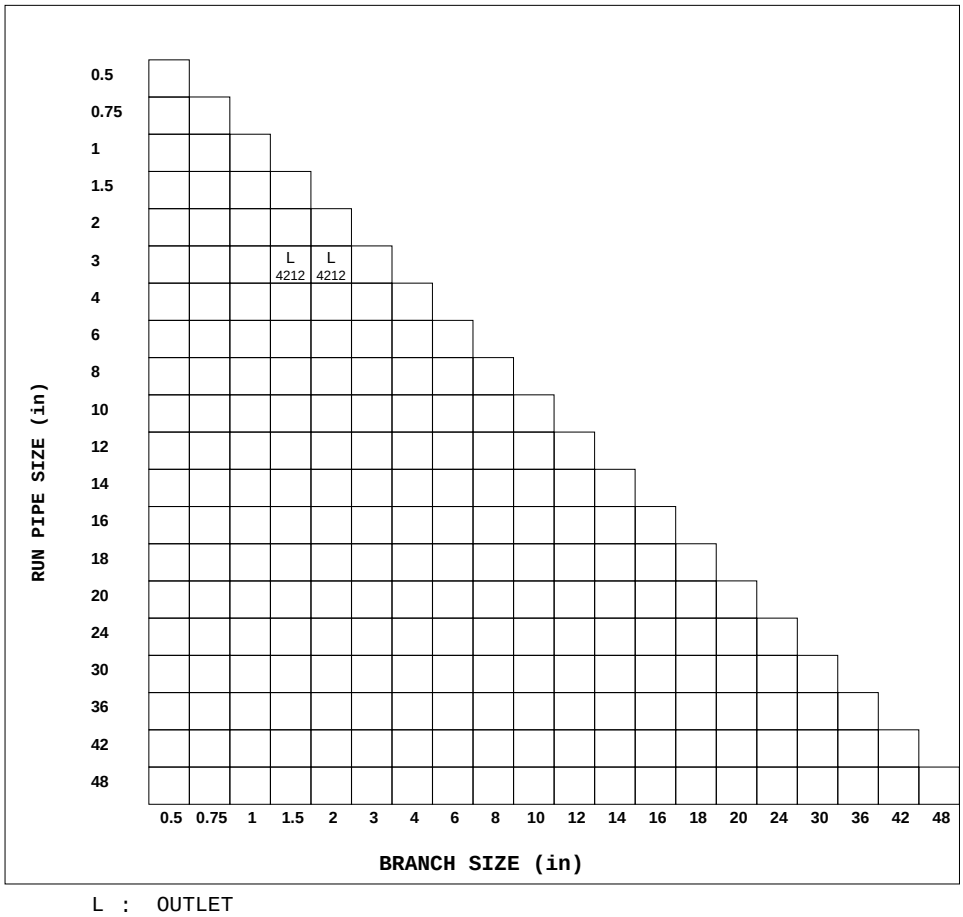
BRANCH TABLE (T_B1GP_4)



L : OUTLET

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PIPING CLASS

B1GP01 REV NO. 2

Material : LTCS
Rating : ASME CLASS 300
Flange Face : RF
C.A.(mm) : 1.50
Gasket : Spiral Wound
Service : PROCESS - GENERAL PROCESS NON SOUR, NON CORROSIVE
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
2	USE OF SOFT SEATED BALL, PLUG AND BUTTERFLY VALVES SHALL BE LIMITED TO MAXIMUM OF 204DEGC (400DEGF)

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
200	WITH JACK SCREW (FO)
541	NPT(F) (CA,L)
714	SW - NPT(F) (V)
781	CLASS 600 (B,F,G)

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PIPING CLASS
B1GP01 REV NO. 2

PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P01A-007C2	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE Licensor-1	
1	0.75		XS		P01A-007C3	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE Licensor-1	
1	1		XS		P01A-007C4	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE Licensor-1	
1	1.5		XS		P01A-007C5	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE Licensor-1	
1	2		XS		P01A-00799	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE Licensor-1	
1	3		STD		P01A-0079A	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE Licensor-1	
1	4		STD		P01A-007C6	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE Licensor-1	
1	6		STD		P01A-007C7	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE Licensor-1	
1	8		SCH20		P01A-0079D	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE Licensor-1	
1	10		SCH30		P01A-007HL	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE Licensor-1	
1	12		STD		P01A-007HM	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE Licensor-1	
1	14		STD		P01A-007HN	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE Licensor-1	
1	16		STD		P01A-007HP	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE Licensor-1	
1	18		STD		P01A-008NP	Pipe ASTM A671 Grade CC60 Class 22 EFW ASME B36.10M/B36.19M BE Licensor-1	
1	20		STD		P01A-0079F	Pipe ASTM A671 Grade CC60 Class 22 EFW ASME B36.10M/B36.19M BE Licensor-1	
1	24		STD		P01A-007C8	Pipe ASTM A671 Grade CC60 Class 22 EFW ASME B36.10M/B36.19M BE Licensor-1	
1	28		STD		P01A-0090F	Pipe ASTM A671 Grade CC60 Class 22 EFW ASME B36.10M/B36.19M BE Licensor-1	
1	30		STD		P01A-008NR	Pipe ASTM A671 Grade CC60 Class 22 EFW ASME B36.10M/B36.19M BE Licensor-1	
1	36		STD		P01A-008NS	Pipe ASTM A671 Grade CC60 Class 22 EFW ASME B36.10M/B36.19M BE Licensor-1	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P02B-0007L	90 degree elbow ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW Licensor-1	
1	0.75				P02B-0007M	90 degree elbow ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW Licensor-1	
1	1				P02B-0007N	90 degree elbow ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW Licensor-1	
1	1.5				P02B-0007P	90 degree elbow ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW Licensor-1	
1	2		XS		P02A-003RF	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Licensor-1	
1	3		STD		P02A-003RH	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Licensor-1	
1	4		STD		P02A-003U9	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Licensor-1	
1	6		STD		P02A-003UA	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Licensor-1	
1	8		SCH20		P02A-003RL	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Licensor-1	
1	10		SCH30		P02A-003ZE	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Licensor-1	
1	12		STD		P02A-003ZF	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Licensor-1	
1	14		STD		P02A-003ZG	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Licensor-1	
1	16		STD		P02A-003ZH	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Licensor-1	
1	18		STD		P02A-004GA	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Licensor-1	
1	20		STD		P02A-003RG	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Licensor-1	
1	24		STD		P02A-003U8	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Licensor-1	
1	30		STD		P02A-004G8	90 degree elbow ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Long radius Licensor-1	
1	36		STD		P02A-004G9	90 degree elbow ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Long radius Licensor-1	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P03B-00078	45 degree elbow ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW Licensor-1	
1	0.75				P03B-00079	45 degree elbow ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW Licensor-1	
1	1				P03B-0007A	45 degree elbow ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW Licensor-1	
1	1.5				P03B-0007B	45 degree elbow ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW Licensor-1	
1	2		XS		P03A-003N4	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Licensor-1	
1	3		STD		P03A-003N6	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Licensor-1	
1	4		STD		P03A-003RY	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Licensor-1	
1	6		STD		P03A-003RZ	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Licensor-1	
1	8		SCH20		P03A-003N9	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Licensor-1	
1	10		SCH30		P03A-003XS	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Licensor-1	
1	12		STD		P03A-003XT	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Licensor-1	
1	14		STD		P03A-003XU	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Licensor-1	
1	16		STD		P03A-003XV	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Licensor-1	
1	18		STD		P03A-004DG	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Licensor-1	
1	20		STD		P03A-003N5	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Licensor-1	
1	24		STD		P03A-003RX	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Licensor-1	

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45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	30		STD		P03A-004CZ	45 degree elbow ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Long radius Licensor-1	
1	36		STD		P03A-004D0	45 degree elbow ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Long radius Licensor-1	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P21B-00078	Straight tee ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW Licensor-1	
1	0.75				P21B-00079	Straight tee ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW Licensor-1	
1	1				P21B-0007A	Straight tee ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW Licensor-1	
1	1.5				P21B-0007B	Straight tee ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW Licensor-1	
1	2		XS		P21A-0048U	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	3		STD		P21A-0048V	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	4		STD		P21A-004BP	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	6		STD		P21A-004BR	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	8		SCH20		P21A-0048Y	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	10		SCH30		P21A-004GV	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	12		STD		P21A-004GW	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	14		STD		P21A-004GX	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	16		STD		P21A-004GY	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	18		STD		P21A-004YJ	Straight tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Licensor-1	
1	20		STD		P21A-00490	Straight tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Licensor-1	
1	24		STD		P21A-004BS	Straight tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Licensor-1	
1	28		STD		P21A-0054B	Straight tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Licensor-1	
1	30		STD		P21A-004YK	Straight tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Licensor-1	
1	36		STD		P21A-004YL	Straight tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Licensor-1	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75			P24B-000C2	Reducing tee ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW Licensor-1	
1	1.5	0.75			P24B-000C3	Reducing tee ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW Licensor-1	
1	1.5	1			P24B-000C4	Reducing tee ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW Licensor-1	
1	2	1	XS	XS	P24A-00K9R	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	2	1.5	XS	XS	P24A-00K9S	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	3	1.5	STD	XS	P24A-00K9T	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	3	2	STD	XS	P24A-00K18	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	4	2	STD	XS	P24A-00K9U	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	4	3	STD	STD	P24A-00K9V	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	6	3	STD	STD	P24A-00K9W	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	6	4	STD	STD	P24A-00K9X	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	8	4	SCH20	STD	P24A-00K9Y	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	8	6	SCH20	STD	P24A-00K9Z	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	10	4	SCH30	STD	P24A-00L4W	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	10	6	SCH30	STD	P24A-00L4X	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	10	8	SCH30	SCH20	P24A-00L4Y	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	12	6	STD	STD	P24A-00L50	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	12	8	STD	SCH20	P24A-00L51	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	12	10	STD	SCH30	P24A-00L4Z	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	14	6	STD	STD	P24A-00L54	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	14	8	STD	SCH20	P24A-00L55	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	14	10	STD	SCH30	P24A-00L52	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	14	12	STD	STD	P24A-00L53	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	16	6	STD	STD	P24A-00L58	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	16	8	STD	SCH20	P24A-00L59	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	16	10	STD	SCH30	P24A-00L67	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	16	12	STD	STD	P24A-00L56	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	16	14	STD	STD	P24A-00L57	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	18	8	STD	SCH20	P24A-00NPL	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Licensor-1	
1	18	10	STD	SCH30	P24A-00NPG	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Licensor-1	
1	18	12	STD	STD	P24A-00NPH	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Licensor-1	
1	18	14	STD	STD	P24A-00NPJ	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Licensor-1	

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REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	18	16	STD	STD	P24A-00NPK	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Licensor-1	
1	20	8	STD	SCH20	P24A-00K24	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Licensor-1	
1	20	10	STD	SCH30	P24A-00L5D	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Licensor-1	
1	20	12	STD	STD	P24A-00L5E	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Licensor-1	
1	20	14	STD	STD	P24A-00L5F	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Licensor-1	
1	20	16	STD	STD	P24A-00L5G	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Licensor-1	
1	20	18	STD	STD	P24A-00NPM	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Licensor-1	
1	24	10	STD	SCH30	P24A-00L5H	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Licensor-1	
1	24	12	STD	STD	P24A-00L5J	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Licensor-1	
1	24	14	STD	STD	P24A-00L5K	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Licensor-1	
1	24	16	STD	STD	P24A-00L5L	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Licensor-1	
1	24	18	STD	STD	P24A-00NPN	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Licensor-1	
1	24	20	STD	STD	P24A-00KA9	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Licensor-1	
1	28	12	STD	STD	P24A-00PTR	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Licensor-1	
1	28	14	STD	STD	P24A-00PTS	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Licensor-1	
1	28	16	STD	STD	P24A-00PTT	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Licensor-1	
1	28	18	STD	STD	P24A-00PTU	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Licensor-1	
1	28	20	STD	STD	P24A-00PTV	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Licensor-1	
1	28	24	STD	STD	P24A-00PTW	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Licensor-1	
1	30	10	STD	SCH30	P24A-00NPP	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Licensor-1	
1	30	12	STD	STD	P24A-00NPR	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Licensor-1	
1	30	14	STD	STD	P24A-00NPS	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Licensor-1	
1	30	16	STD	STD	P24A-00NPT	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Licensor-1	
1	30	18	STD	STD	P24A-00NPU	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Licensor-1	
1	30	20	STD	STD	P24A-00NPV	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Licensor-1	
1	30	24	STD	STD	P24A-00NPW	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Licensor-1	
1	30	28	STD	STD	P24A-00PTX	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Licensor-1	
1	36	16	STD	STD	P24A-00NPX	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Licensor-1	
1	36	18	STD	STD	P24A-00NPY	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Licensor-1	
1	36	20	STD	STD	P24A-00NPZ	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Licensor-1	
1	36	24	STD	STD	P24A-00NR0	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Licensor-1	
1	36	28	STD	STD	P24A-00PTY	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Licensor-1	
1	36	30	STD	STD	P24A-00NR1	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Licensor-1	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	STD	XS	P27A-00EL6	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	4	2	STD	XS	P27A-00EUZ	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	4	3	STD	STD	P27A-00EV0	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	6	3	STD	STD	P27A-00EV1	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	6	4	STD	STD	P27A-00EV2	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	8	4	SCH20	STD	P27A-00EV3	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	8	6	SCH20	STD	P27A-00EV4	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	10	4	SCH30	STD	P27A-00FD2	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	10	6	SCH30	STD	P27A-00FD3	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	10	8	SCH30	SCH20	P27A-00FD4	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	12	6	STD	STD	P27A-00FD6	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	12	8	STD	SCH20	P27A-00FD7	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	12	10	STD	SCH30	P27A-00FD5	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	14	6	STD	STD	P27A-00FDA	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	14	8	STD	SCH20	P27A-00FDB	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	14	10	STD	SCH30	P27A-00FD8	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	14	12	STD	STD	P27A-00FD9	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	16	8	STD	SCH20	P27A-00FDF	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	16	10	STD	SCH30	P27A-00FDC	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	16	12	STD	STD	P27A-00FDD	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	16	14	STD	STD	P27A-00FDE	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	18	10	STD	SCH30	P27A-00H8U	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Licensor-1	
1	18	12	STD	STD	P27A-00H8V	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Licensor-1	

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CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	18	14	STD	STD	P27A-00H8W	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Licensor-1	
1	18	16	STD	STD	P27A-00H8X	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Licensor-1	
1	20	12	STD	STD	P27A-00FDK	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Licensor-1	
1	20	14	STD	STD	P27A-00FDL	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Licensor-1	
1	20	16	STD	STD	P27A-00FDM	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Licensor-1	
1	20	18	STD	STD	P27A-00H8Y	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Licensor-1	
1	24	16	STD	STD	P27A-00FDN	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Licensor-1	
1	24	18	STD	STD	P27A-00H8Z	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Licensor-1	
1	24	20	STD	STD	P27A-00EVB	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Licensor-1	
1	28	20	STD	STD	P27A-00J2L	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Licensor-1	
1	28	24	STD	STD	P27A-00J2M	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Licensor-1	
1	30	20	STD	STD	P27A-00H90	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Licensor-1	
1	30	24	STD	STD	P27A-00H91	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Licensor-1	
1	30	28	STD	STD	P27A-00J2N	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Licensor-1	
1	36	24	STD	STD	P27A-00H92	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Licensor-1	
1	36	30	STD	STD	P27A-00H93	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Licensor-1	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	STD	XS	P28A-00BPY	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	4	2	STD	XS	P28A-00BYU	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	4	3	STD	STD	P28A-00BYV	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	6	3	STD	STD	P28A-00BYW	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	6	4	STD	STD	P28A-00BYX	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	8	4	SCH20	STD	P28A-00BYY	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	8	6	SCH20	STD	P28A-00BYZ	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	10	4	SCH30	STD	P28A-00CJ0	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	10	6	SCH30	STD	P28A-00CJ1	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	10	8	SCH30	SCH20	P28A-00CJ2	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	12	6	STD	STD	P28A-00CJ4	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	12	8	STD	SCH20	P28A-00CJ5	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	12	10	STD	SCH30	P28A-00CJ3	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	14	6	STD	STD	P28A-00CJ8	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	14	8	STD	SCH20	P28A-00CJ9	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	14	10	STD	SCH30	P28A-00CJ6	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	14	12	STD	STD	P28A-00CJ7	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	16	8	STD	SCH20	P28A-00CJD	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	16	10	STD	SCH30	P28A-00CJA	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	16	12	STD	STD	P28A-00CJB	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	16	14	STD	STD	P28A-00CJC	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	18	10	STD	SCH30	P28A-00EGH	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Licensor-1	
1	18	12	STD	STD	P28A-00EGJ	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Licensor-1	
1	18	14	STD	STD	P28A-00EGK	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Licensor-1	
1	18	16	STD	STD	P28A-00EGL	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Licensor-1	
1	20	12	STD	STD	P28A-00CJH	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Licensor-1	
1	20	14	STD	STD	P28A-00CJJ	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Licensor-1	
1	20	16	STD	STD	P28A-00CJK	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Licensor-1	
1	20	18	STD	STD	P28A-00EGM	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Licensor-1	
1	24	16	STD	STD	P28A-00CJL	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Licensor-1	
1	24	18	STD	STD	P28A-00EGN	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Licensor-1	
1	24	20	STD	STD	P28A-00BZ6	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Licensor-1	
1	28	20	STD	STD	P28A-00FC7	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Licensor-1	
1	28	24	STD	STD	P28A-00FC8	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Licensor-1	
1	30	20	STD	STD	P28A-00EGP	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Licensor-1	
1	30	24	STD	STD	P28A-00EGR	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Licensor-1	
1	30	28	STD	STD	P28A-00FC9	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Licensor-1	
1	36	24	STD	STD	P28A-00EGS	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Licensor-1	
1	36	30	STD	STD	P28A-00EGT	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Licensor-1	

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CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P29B-0005R	Cap ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW Licensor-1	
1	0.75				P29B-0005S	Cap ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW Licensor-1	
1	1				P29B-0005T	Cap ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW Licensor-1	
1	1.5				P29B-0005U	Cap ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW Licensor-1	
1	2		XS		P29A-0032L	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	3		STD		P29A-0032N	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	4		STD		P29A-00368	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	6		STD		P29A-0036A	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	8		SCH20		P29A-0032S	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	10		SCH30		P29A-003CA	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	12		STD		P29A-003CB	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	14		STD		P29A-003CC	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	16		STD		P29A-003CD	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	18		STD		P29A-003T6	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	20		STD		P29A-0032M	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	24		STD		P29A-00365	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	28		STD		P29A-005K5	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	30		STD		P29A-003T7	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	36		STD		P29A-003T8	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
541	0.75				P29B-00068	Cap ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 NPT Licensor-1	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P41A-00198	Straight nipple ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Licensor-1	
1	0.75		SCH160		P41A-00199	Straight nipple ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Licensor-1	
1	1		SCH160		P41A-0019A	Straight nipple ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Licensor-1	
1	1.5		SCH160		P41A-0019B	Straight nipple ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Licensor-1	

CON SWAGED NIPPLE (SNC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	XS	XS	P42A-000V0	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S) Licensor-1	
1	1	0.5	XS	XS	P42A-000V1	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S) Licensor-1	
1	1	0.75	XS	XS	P42A-000V2	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S) Licensor-1	
1	1.5	0.5	XS	XS	P42A-000V3	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S) Licensor-1	
1	1.5	0.75	XS	XS	P42A-000V4	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S) Licensor-1	
1	1.5	1	XS	XS	P42A-000V5	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S) Licensor-1	
1	2	0.5	XS	XS	P42A-000V6	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 BE(L) - PE(S) Licensor-1	
1	2	0.75	XS	XS	P42A-000V7	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 BE(L) - PE(S) Licensor-1	
1	2	1	XS	XS	P42A-000V8	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 BE(L) - PE(S) Licensor-1	
1	2	1.5	XS	XS	P42A-000V9	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 BE(L) - PE(S) Licensor-1	
1	3	1.5	STD	XS	P42A-000VA	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 BE(L) - PE(S) Licensor-1	

ECC SWAGED NIPPLE (SNE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	XS	XS	P43A-000L3	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S) Licensor-1	
1	1	0.5	XS	XS	P43A-000L4	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S) Licensor-1	
1	1	0.75	XS	XS	P43A-000L5	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S) Licensor-1	
1	1.5	0.5	XS	XS	P43A-000L6	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S) Licensor-1	
1	1.5	0.75	XS	XS	P43A-000L7	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S) Licensor-1	
1	1.5	1	XS	XS	P43A-000L8	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S) Licensor-1	
1	2	0.5	XS	XS	P43A-000L9	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 BE(L) - PE(S) Licensor-1	
1	2	0.75	XS	XS	P43A-000LA	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 BE(L) - PE(S) Licensor-1	
1	2	1	XS	XS	P43A-000LB	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 BE(L) - PE(S) Licensor-1	
1	2	1.5	XS	XS	P43A-000LC	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 BE(L) - PE(S) Licensor-1	
1	3	1.5	STD	XS	P43A-000LD	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 BE(L) - PE(S) Licensor-1	

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COUPLING (CPS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P47B-0007Z	Coupling ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW - SW Licensor-1	
1	0.75				P47B-00080	Coupling ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW - SW Licensor-1	
1	1				P47B-00081	Coupling ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW - SW Licensor-1	
1	1.5				P47B-00082	Coupling ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW - SW Licensor-1	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2 - 2.5	0.75			P31B-0139L	Outlet ASTM A350 Grade LF2 Class 1 Class 3000 MSS SP-97 SW Licensor-1	
1	3 - 5	0.75			P31B-0139M	Outlet ASTM A350 Grade LF2 Class 1 Class 3000 MSS SP-97 SW Licensor-1	
1	6 - 12	0.75			P31B-0139N	Outlet ASTM A350 Grade LF2 Class 1 Class 3000 MSS SP-97 SW Licensor-1	
1	14 - 36	0.75			P31B-0139P	Outlet ASTM A350 Grade LF2 Class 1 Class 3000 MSS SP-97 SW Licensor-1	
1	3	1			P31B-0139S	Outlet ASTM A350 Grade LF2 Class 1 Class 3000 MSS SP-97 SW Licensor-1	
1	4 - 5	1			P31B-013B7	Outlet ASTM A350 Grade LF2 Class 1 Class 3000 MSS SP-97 SW Licensor-1	
1	6 - 10	1			P31B-0139R	Outlet ASTM A350 Grade LF2 Class 1 Class 3000 MSS SP-97 SW Licensor-1	
1	12 - 36	1			P31B-0139T	Outlet ASTM A350 Grade LF2 Class 1 Class 3000 MSS SP-97 SW Licensor-1	
1	4	1.5			P31B-010KV	Outlet ASTM A350 Grade LF2 Class 1 Class 3000 MSS SP-97 SW Licensor-1	
1	5 - 6	1.5			P31B-0139V	Outlet ASTM A350 Grade LF2 Class 1 Class 3000 MSS SP-97 SW Licensor-1	
1	8 - 12	1.5			P31B-0139W	Outlet ASTM A350 Grade LF2 Class 1 Class 3000 MSS SP-97 SW Licensor-1	
1	14 - 24	1.5			P31B-0139X	Outlet ASTM A350 Grade LF2 Class 1 Class 3000 MSS SP-97 SW Licensor-1	
1	26 - 36	1.5			P31B-0139Y	Outlet ASTM A350 Grade LF2 Class 1 Class 3000 MSS SP-97 SW Licensor-1	
541	1	0.75			P31B-011AR	Outlet ASTM A350 Grade LF2 Class 1 Class 3000 MSS SP-97 NPT Licensor-1	
541	1.5	0.75			P31B-011AP	Outlet ASTM A350 Grade LF2 Class 1 Class 3000 MSS SP-97 NPT Licensor-1	
541	2 - 2.5	0.75			P31B-0139Z	Outlet ASTM A350 Grade LF2 Class 1 Class 3000 MSS SP-97 NPT Licensor-1	
541	3 - 5	0.75			P31B-013A0	Outlet ASTM A350 Grade LF2 Class 1 Class 3000 MSS SP-97 NPT Licensor-1	
541	6 - 12	0.75			P31B-013A1	Outlet ASTM A350 Grade LF2 Class 1 Class 3000 MSS SP-97 NPT Licensor-1	
541	14 - 36	0.75			P31B-013A3	Outlet ASTM A350 Grade LF2 Class 1 Class 3000 MSS SP-97 NPT Licensor-1	
1	6	2	STD	XS	P31B-00XS1	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Licensor-1	
1	8	2	SCH20	XS	P31B-00XH3	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Licensor-1	
1	10	2	SCH30	XS	P31B-00YF5	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Licensor-1	
1	12	2	STD	XS	P31B-00YF7	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Licensor-1	
1	14	2	STD	XS	P31B-00YFA	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Licensor-1	
1	16	2	STD	XS	P31B-00YFD	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Licensor-1	
1	18	2	STD	XS	P31B-010YL	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Licensor-1	
1	20	2	STD	XS	P31B-00XHR	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Licensor-1	
1	24	2	STD	XS	P31B-00XS9	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Licensor-1	
1	28	2	STD	XS	P31B-012MR	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Licensor-1	
1	30	2	STD	XS	P31B-010YR	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Licensor-1	
1	36	2	STD	XS	P31B-010YV	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Licensor-1	
1	8	3	SCH20	STD	P31B-00XH4	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Licensor-1	
1	10	3	SCH30	STD	P31B-00YF6	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Licensor-1	
1	12	3	STD	STD	P31B-00YF8	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Licensor-1	
1	14	3	STD	STD	P31B-00YFB	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Licensor-1	
1	16	3	STD	STD	P31B-00YFE	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Licensor-1	
1	18	3	STD	STD	P31B-010YM	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Licensor-1	
1	20	3	STD	STD	P31B-00XHS	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Licensor-1	
1	24	3	STD	STD	P31B-00XSA	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Licensor-1	
1	28	3	STD	STD	P31B-012MS	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Licensor-1	
1	30	3	STD	STD	P31B-010YS	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Licensor-1	
1	36	3	STD	STD	P31B-010YW	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Licensor-1	
1	12	4	STD	STD	P31B-00YF9	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Licensor-1	
1	14	4	STD	STD	P31B-00YFC	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Licensor-1	
1	16	4	STD	STD	P31B-00YFF	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Licensor-1	
1	18	4	STD	STD	P31B-010YN	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Licensor-1	
1	20	4	STD	STD	P31B-00XS7	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Licensor-1	
1	24	4	STD	STD	P31B-00XSB	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Licensor-1	
1	28	4	STD	STD	P31B-012MT	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Licensor-1	
1	30	4	STD	STD	P31B-010YT	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Licensor-1	
1	36	4	STD	STD	P31B-010YX	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Licensor-1	
1	18	6	STD	STD	P31B-010YP	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Licensor-1	

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OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	20	6	STD	STD	P31B-00XS8	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Licensor-1	
1	24	6	STD	STD	P31B-00XSC	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Licensor-1	
1	28	6	STD	STD	P31B-012MU	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Licensor-1	
1	30	6	STD	STD	P31B-010YU	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Licensor-1	
1	36	6	STD	STD	P31B-010YY	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Licensor-1	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30B-0006B	Plug ASTM A350 Grade LF2 Class 1 ASME B16.11 NPT Round head Licensor-1	
1	0.75				P30B-0006C	Plug ASTM A350 Grade LF2 Class 1 ASME B16.11 NPT Round head Licensor-1	
1	1				P30B-0006D	Plug ASTM A350 Grade LF2 Class 1 ASME B16.11 NPT Round head Licensor-1	
1	1.5				P30B-0006E	Plug ASTM A350 Grade LF2 Class 1 ASME B16.11 NPT Round head Licensor-1	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P61B-00A1N	Flange SW ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF Licensor-1	
1	0.75		XS		P61B-00A1P	Flange SW ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF Licensor-1	
1	1		XS		P61B-00A1R	Flange SW ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF Licensor-1	
1	1.5		XS		P61B-00A1S	Flange SW ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF Licensor-1	
1	2		XS		P61B-00A1Y	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF Licensor-1	
1	3		STD		P61B-00A21	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF Licensor-1	
1	4		STD		P61B-00A22	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF Licensor-1	
1	6		STD		P61B-00A23	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF Licensor-1	
1	8		SCH20		P61B-00A24	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF Licensor-1	
1	10		SCH30		P61B-00ACJ	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF Licensor-1	
1	12		STD		P61B-00ACK	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF Licensor-1	
1	14		STD		P61B-00ACL	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF Licensor-1	
1	16		STD		P61B-00ACM	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF Licensor-1	
1	18		STD		P61B-00BTF	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF Licensor-1	
1	20		STD		P61B-00A1Z	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF Licensor-1	
1	24		STD		P61B-00A20	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF Licensor-1	
1	28		STD		P61B-00DD4	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.47 Series B RF Licensor-1	
1	30		STD		P61B-00BTG	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.47 Series B RF Licensor-1	
1	36		STD		P61B-00BTH	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.47 Series B RF Licensor-1	
781	0.5		XS		P61B-00ACN	Flange SW ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF Licensor-1	
781	0.75		XS		P61B-00ACP	Flange SW ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF Licensor-1	
781	1		XS		P61B-00ACR	Flange SW ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF Licensor-1	
781	1.5		XS		P61B-00ACS	Flange SW ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF Licensor-1	
781	2		XS		P61B-009U7	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF Licensor-1	
781	3		STD		P61B-009U9	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF Licensor-1	
781	4		STD		P61B-00ACY	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF Licensor-1	
781	6		STD		P61B-00ACZ	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF Licensor-1	
781	8		SCH20		P61B-009UC	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF Licensor-1	
781	10		SCH30		P61B-00ACT	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF Licensor-1	
781	12		STD		P61B-00ACU	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF Licensor-1	
781	14		STD		P61B-00ACV	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF Licensor-1	
781	16		STD		P61B-00ACW	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF Licensor-1	
781	18		STD		P61B-00BTJ	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF Licensor-1	
781	20		STD		P61B-009U8	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF Licensor-1	
781	24		STD		P61B-00ACX	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF Licensor-1	
781	30		STD		P61B-00BTK	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.47 Series B RF Licensor-1	
781	36		STD		P61B-00BTL	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.47 Series B RF Licensor-1	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67B-002LB	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF Licensor-1	
1	0.75				P67B-002LC	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF Licensor-1	
1	1				P67B-002LD	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF Licensor-1	
1	1.5				P67B-002LE	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF Licensor-1	

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BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2				P67B-002LL	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF Licensor-1	
1	3				P67B-002LP	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF Licensor-1	
1	4				P67B-002LR	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF Licensor-1	
1	6				P67B-002LS	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF Licensor-1	
1	8				P67B-002LT	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF Licensor-1	
1	10				P67B-002LF	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF Licensor-1	
1	12				P67B-002LG	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF Licensor-1	
1	14				P67B-002LH	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF Licensor-1	
1	16				P67B-002LJ	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF Licensor-1	
1	18				P67B-002LK	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF Licensor-1	
1	20				P67B-002LM	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF Licensor-1	
1	24				P67B-002LN	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF Licensor-1	
1	30				P67B-002LU	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.47 Series B RF Licensor-1	
1	36				P67B-002V6	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.47 Series B RF Licensor-1	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000FT	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000FU	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000G5	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000G6	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	6				P73T-000G7	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	8				P73T-000G8	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	10				P73T-000FX	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	12				P73T-000FY	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	14				P73T-000FZ	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	16				P73T-000G0	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	18				P73T-000G1	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	20				P73T-000G3	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	24				P73T-000G4	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	28				P73T-000H8	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	30				P73T-000H9	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	36				P73T-000HC	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	0.5				P73T-000J8	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	0.75				P73T-000J9	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1				P73T-000JA	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1.5				P73T-000JB	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	2				P73T-000JH	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	3				P73T-000JL	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	4				P73T-000JM	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	6				P73T-000JN	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	8				P73T-000JP	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	10				P73T-000JC	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	12				P73T-000JD	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	14				P73T-000JE	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

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GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
781	16				P73T-000JF	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	18				P73T-000JG	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	20				P73T-000JJ	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	24				P73T-000JK	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	30				P73T-000JT	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	36				P73T-000JW	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-10				See Attached Bolt Table	Bolt and Nut ASTM A320 Grade L7 / A194 Grade 4 ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	12-36				See Attached Bolt Table	Bolt and Nut ASTM A320 Grade L7 / A194 Grade 4 ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
781	0.5-6				See Attached Bolt Table	Bolt and Nut ASTM A320 Grade L7 / A194 Grade 4 ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
781	8-36				See Attached Bolt Table	Bolt and Nut ASTM A320 Grade L7 / A194 Grade 4 ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81B-001D1	Gate valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated Licensor-1	
1	0.75				P81B-001D2	Gate valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated Licensor-1	
1	1				P81B-001D3	Gate valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated Licensor-1	
1	1.5				P81B-001D4	Gate valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated Licensor-1	
1	2				P81C-004HG	Gate valve ASTM A352 Grade LCC Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	3				P81C-004HH	Gate valve ASTM A352 Grade LCC Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	4				P81C-004HJ	Gate valve ASTM A352 Grade LCC Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	6				P81C-004HK	Gate valve ASTM A352 Grade LCC Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	8				P81C-0091J	Gate valve ASTM A352 Grade LCC Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated	
1	10				P81C-004HM	Gate valve ASTM A352 Grade LCC Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated	
1	12				P81C-004HN	Gate valve ASTM A352 Grade LCC Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated	
1	14				P81C-004HP	Gate valve ASTM A352 Grade LCC Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated	
1	16				P81C-004HR	Gate valve ASTM A352 Grade LCC Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated	
1	18				P81C-004HS	Gate valve ASTM A352 Grade LCC Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated	
1	20				P81C-004HT	Gate valve ASTM A352 Grade LCC Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated	
1	24				P81C-004HU	Gate valve ASTM A352 Grade LCC Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated	
1	30				P81C-004HF	Gate valve ASTM A352 Grade LCC Class 300 API 600 Flange ASME B16.47-B RF Trim number 12 BB-BG-OS&Y Gear operated	
1	36				P81C-006H6	Gate valve ASTM A352 Grade LCC Class 300 API 600 Flange ASME B16.47-B RF Trim number 12 BB-BG-OS&Y Gear operated	
714	0.5				P81B-002S5	Gate valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW - NPT Trim number 12 BB-BG-OS&Y Handwheel operated Licensor-1	
714	0.75				P81B-002FF	Gate valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW - NPT Trim number 12 BB-BG-OS&Y Handwheel operated Licensor-1	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82B-0014R	Globe valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated Licensor-1	
1	0.75				P82B-0014S	Globe valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated Licensor-1	
1	1				P82B-0014T	Globe valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated Licensor-1	
1	1.5				P82B-0014U	Globe valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated Licensor-1	
1	2				P82C-0027X	Globe valve ASTM A352 Grade LCC Class 300 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	3				P82C-0027Y	Globe valve ASTM A352 Grade LCC Class 300 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	4				P82C-0027Z	Globe valve ASTM A352 Grade LCC Class 300 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	

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GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	6				P82C-00280	Globe valve ASTM A352 Grade LCC Class 300 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	8				P82C-004CT	Globe valve ASTM A352 Grade LCC Class 300 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83B-000WJ	Check valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 12 Lift-type Bolted cover Licensor-1	
1	0.75				P83B-000WK	Check valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 12 Lift-type Bolted cover Licensor-1	
1	1				P83B-000WL	Check valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 12 Lift-type Bolted cover Licensor-1	
1	1.5				P83B-000WM	Check valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 12 Lift-type Bolted cover Licensor-1	
1	2				P83C-0024D	Check valve ASTM A352 Grade LCC Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	3				P83C-0024G	Check valve ASTM A352 Grade LCC Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	4				P83C-0024H	Check valve ASTM A352 Grade LCC Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	6				P83C-0024J	Check valve ASTM A352 Grade LCC Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	8				P83C-0024K	Check valve ASTM A352 Grade LCC Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	10				P83C-00248	Check valve ASTM A352 Grade LCC Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	12				P83C-00249	Check valve ASTM A352 Grade LCC Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	14				P83C-0024A	Check valve ASTM A352 Grade LCC Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	16				P83C-0024B	Check valve ASTM A352 Grade LCC Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	18				P83C-0024C	Check valve ASTM A352 Grade LCC Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	20				P83C-0024E	Check valve ASTM A352 Grade LCC Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	24				P83C-0024F	Check valve ASTM A352 Grade LCC Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	

DP CHECK VALVE (XDP)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	30				P88C-0023F	Dual plate check valve ASTM A352 Grade LCC Class 300 API 594 Wafer-type ASME B16.47-B RF Trim number 12 Internal wetted parts SS316 Spring Inconel Retainerless-type	
1	36				P88C-002HV	Dual plate check valve ASTM A352 Grade LCC Class 300 API 594 Wafer-type ASME B16.47-B RF Trim number 12 Internal wetted parts SS316 Spring Inconel Retainerless-type	

BUTTERFLY VALVE (H)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	10				P86C-002ER	Offset design butterfly valve ASTM A352 Grade LCC Class 300 API 609 Category B Lug-type ASME B16.5 RF Disc LTCS Seat Stellite-6 Trim SS316 Triple eccentric design BG Gear operated	

ORIFICE FLANGE (FO)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2		XS		P66B-008AY	Orifice flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Licensor-1	
1	3		STD		P66B-008B1	Orifice flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Licensor-1	
1	4		STD		P66B-008B2	Orifice flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Licensor-1	
1	6		STD		P66B-008B3	Orifice flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Licensor-1	
1	8		SCH20		P66B-008B4	Orifice flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Licensor-1	
1	10		SCH30		P66B-008AT	Orifice flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Licensor-1	
1	12		STD		P66B-008AU	Orifice flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Licensor-1	
1	14		STD		P66B-008AV	Orifice flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Licensor-1	
1	16		STD		P66B-008AW	Orifice flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Licensor-1	
1	18		STD		P66B-008AX	Orifice flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Licensor-1	
1	20		STD		P66B-008AZ	Orifice flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Licensor-1	
1	24		STD		P66B-008B0	Orifice flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Licensor-1	
200	2		XS		P66B-008BD	Orifice flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw Licensor-1	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
200	3		STD		P66B-008BG	Orifice flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw Licensor-1	
200	4		STD		P66B-008BH	Orifice flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw Licensor-1	
200	6		STD		P66B-008BJ	Orifice flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw Licensor-1	
200	8		SCH20		P66B-008BK	Orifice flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw Licensor-1	
200	10		SCH30		P66B-008B8	Orifice flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw Licensor-1	
200	12		STD		P66B-008B9	Orifice flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw Licensor-1	
200	14		STD		P66B-008BA	Orifice flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw Licensor-1	
200	16		STD		P66B-008BB	Orifice flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw Licensor-1	
200	18		STD		P66B-008BC	Orifice flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw Licensor-1	
200	20		STD		P66B-008BE	Orifice flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw Licensor-1	
200	24		STD		P66B-008BF	Orifice flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw Licensor-1	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71B-000C1	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	0.75				P71B-000C2	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	1				P71B-000C3	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	1.5				P71B-000C4	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	2				P71B-000C7	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	3				P71B-000C8	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	4				P71B-000C9	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	6				P71B-000CA	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	8				P71B-000CB	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	10				P71B-000C5	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	12				P71B-000C6	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF Licensor-1	

PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000GB	Paddle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	16				P72B-000GC	Paddle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	18				P72B-000GD	Paddle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	20				P72B-000GE	Paddle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	24				P72B-000GF	Paddle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	30				P72B-000GG	Paddle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.47-B RF Licensor-1	
1	36				P72B-000PZ	Paddle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.47-B RF Licensor-1	

PADDLE SPACER (PS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000GH	Paddle spacer ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	16				P72B-000GJ	Paddle spacer ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	18				P72B-000GK	Paddle spacer ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	20				P72B-000GL	Paddle spacer ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	24				P72B-000GM	Paddle spacer ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	30				P72B-000GN	Paddle spacer ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.47-B RF Licensor-1	
1	36				P72B-000R0	Paddle spacer ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.47-B RF Licensor-1	

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BOLT TABLE (B_B1GP01 , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-003VL		
0.75	4	0.625	75	P80S-003Z2		
1	4	0.625	80	P80S-003Z3		
1.5	4	0.750	95	P80S-0045X		
2	8	0.625	90	P80S-003Z5		
3	8	0.750	110	P80S-003Z9		
4	8	0.750	115	P80S-003ZA		
6	12	0.750	125	P80S-003ZC		
8	12	0.875	140	P80S-00466		
10	16	1.000	160	P80S-004BH		
12	16	1.125	175	P80S-004J7		
14	20	1.125	180	P80S-004J8		
16	20	1.250	190	P80S-004LJ		
18	24	1.250	200	P80S-004LL		
20	24	1.250	210	P80S-004LN		
24	24	1.500	235	P80S-003A7		
28	36	1.250	270	P80S-004M1		
30	36	1.375	285	P80S-00399		
36	32	1.625	320	P80S-00CB3		

BOLT TABLE (B_B1GP01_781 , STUD ASME RF, OPTION CODE 781)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	80	P80S-003VN		
0.75	4	0.625	90	P80S-003Z5		
1	4	0.625	95	P80S-003Z6		
1.5	4	0.750	110	P80S-003Z9		
2	8	0.625	110	P80S-003VV		
3	8	0.750	130	P80S-003ZD		
4	8	0.875	150	P80S-00468		
6	12	1.000	175	P80S-004BM		
8	12	1.125	195	P80S-004JB		
10	16	1.250	250	P80S-004LX		
12	20	1.250	255	P80S-004LY		
14	20	1.375	270	P80S-003M5		
16	20	1.500	295	P80S-003D1		
18	20	1.625	320	P80S-00CB3		
20	24	1.625	335	P80S-00CB6		
24	24	1.875	380	P80S-00ACJ		
28			0			
30	28	1.875	435	P80S-00ACW		
36	28	2.250	510	P80S-00E91		

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BRANCH TABLE (T_B1GP01)

RUN PIPE SIZE (in) \ BRANCH SIZE (in)	0.5	0.75	1	1.5	2	3	4	6	8	10	12	14	16	18	20	24	28	30	36
0.5	TS																		
0.75		TS																	
1		TR	TS																
1.5		TR	TR	TS															
2		L	TR	TR	TS														
3		L	L	TR	TR	TS													
4	L	L	L	L	TR	TR	TS												
6	L	L	L	L	L	TR	TR	TS											
8		L	L	L	L	L	TR	TR	TS										
10		L	L	L	L	L	TR	TR	TR	TS									
12		L	L	L	L	L	L	TR	TR	TR	TS								
14		L	L	L	L	L	L	TR	TR	TR	TR	TS							
16		L	L	L	L	L	L	TR	TR	TR	TR	TR	TS						
18		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TS					
20		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TR	TS				
24		L	L	L	L	L	L	L	9PD	TR	TR	TR	TR	TR	TR	TS			
28		L	L	L	L	L	L	L	9PD	9PD	TR	TR	TR	TR	TR	TR	TS		
30		L	L	L	L	L	L	L	9PD	TR	TR	TR	TR	TR	TR	TR	TR	TS	
36		L	L	L	L	L	L	L	9PD	9PD	9PD	9PD	TR	TR	TR	TR	TR	TR	TS

L : OUTLET
9PD : REINFORCING PAD 90 DEG
TS : STRAIGHT TEE
TR : REDUCING TEE

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PIPING CLASS

B1GP04 REV NO. 2

Material : LTCS
Rating : ASME CLASS 300
Flange Face : RF
C.A.(mm) : 1.50
Gasket : Spiral Wound
Service : PROCESS - GENERAL PROCESS NON SOUR, NON CORROSIVE
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
2	USE OF SOFT SEATED BALL, PLUG AND BUTTERFLY VALVES SHALL BE LIMITED TO MAXIMUM OF 204DEGC (400DEGF)

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
200	WITH JACK SCREW (FO)
541	NPT(F) (CA,L)
714	SW - NPT(F) (V)
781	CLASS 600 (B,F,G)
4602	DISSIMILAR TYPE CHECK VALVE (XDP)

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PIPING CLASS
B1GP04 REV NO. 2

PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P01A-000XW	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE	
1	0.75		XS		P01A-000XX	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE	
1	1		XS		P01A-000XY	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE	
1	1.5		XS		P01A-000Y4	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE	
1	2		XS		P01A-000XB	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	3		STD		P01A-000YL	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	4		STD		P01A-000YT	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	6		STD		P01A-000Z2	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	8		SCH20		P01A-001BN	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	10		SCH30		P01A-002SV	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	12		STD		P01A-000XS	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	14		STD		P01A-000Y0	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	16		STD		P01A-000Y8	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	18		SCH20		P01A-007GS	Pipe ASTM A671 Grade CC60 Class 22 EFW ASME B36.10M/B36.19M BE	
1	20		STD		P01A-0042R	Pipe ASTM A671 Grade CC60 Class 22 EFW ASME B36.10M/B36.19M BE	
1	24		STD		P01A-0042S	Pipe ASTM A671 Grade CC60 Class 22 EFW ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P02B-00019	90 degree elbow ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW	
1	0.75				P02B-0001A	90 degree elbow ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW	
1	1				P02B-0001B	90 degree elbow ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW	
1	1.5				P02B-0001C	90 degree elbow ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW	
1	2		XS		P02A-000B9	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	3		STD		P02A-000E7	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	4		STD		P02A-000E9	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	6		STD		P02A-000EC	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	8		SCH20		P02A-000GY	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	10		SCH30		P02A-001B0	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	12		STD		P02A-000DT	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	14		STD		P02A-000DY	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	16		STD		P02A-000E1	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	18		SCH20		P02A-001JY	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	20		STD		P02A-001JZ	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	24		STD		P02A-001K1	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P03B-0001B	45 degree elbow ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW	
1	0.75				P03B-0001C	45 degree elbow ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW	
1	1				P03B-0001D	45 degree elbow ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW	
1	1.5				P03B-0001E	45 degree elbow ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW	
1	2		XS		P03A-0009Y	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	3		STD		P03A-000C4	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	4		STD		P03A-000C6	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	6		STD		P03A-000C9	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	8		SCH20		P03A-000EY	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	10		SCH30		P03A-0016Z	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	12		STD		P03A-000BP	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	14		STD		P03A-000BW	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	16		STD		P03A-000BY	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	18		SCH20		P03A-001E2	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	20		STD		P03A-001E3	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	24		STD		P03A-001E5	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P21B-0001B	Straight tee ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW	
1	0.75				P21B-0001C	Straight tee ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW	

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STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P21B-0001D	Straight tee ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW	
1	1.5				P21B-0001E	Straight tee ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW	
1	2		XS		P21A-001BR	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	3		STD		P21A-001FE	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	4		STD		P21A-001FF	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	6		STD		P21A-001FJ	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	8		SCH20		P21A-00216	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10		SCH30		P21A-002RK	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12		STD		P21A-001F3	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14		STD		P21A-001F6	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16		STD		P21A-001F7	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	18		SCH20		P21A-0020E	Straight tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	20		STD		P21A-001F4	Straight tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	24		STD		P21A-001F8	Straight tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75			P24B-0002T	Reducing tee ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW	
1	1.5	0.75			P24B-0002V	Reducing tee ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW	
1	1.5	1			P24B-0002W	Reducing tee ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW	
1	2	1	XS	XS	P24A-00264	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	2	1.5	XS	XS	P24A-0026U	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	3	1.5	STD	XS	P24A-002AC	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	3	2	STD	XS	P24A-005M3	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	4	2	STD	XS	P24A-006CW	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	4	3	STD	STD	P24A-0028C	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	6	3	STD	STD	P24A-002AL	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	6	4	STD	STD	P24A-00289	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	8	4	SCH20	STD	P24A-006CX	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	8	6	SCH20	STD	P24A-005M4	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	4	SCH30	STD	P24A-00KT4	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	6	SCH30	STD	P24A-006CY	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	8	SCH30	SCH20	P24A-006CZ	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	6	STD	STD	P24A-0028X	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	8	STD	SCH20	P24A-00L3B	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	10	STD	SCH30	P24A-00L3A	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	6	STD	STD	P24A-002MG	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	8	STD	SCH20	P24A-00L3C	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	10	STD	SCH30	P24A-006D1	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	12	STD	STD	P24A-0028V	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	6	STD	STD	P24A-002PL	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	8	STD	SCH20	P24A-00L3D	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	10	STD	SCH30	P24A-00L65	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	12	STD	STD	P24A-0029G	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	14	STD	STD	P24A-0029M	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	18	8	SCH20	SCH20	P24A-002Y9	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	18	10	SCH20	SCH30	P24A-00L3E	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	18	12	SCH20	STD	P24A-00L3F	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	18	14	SCH20	STD	P24A-006D3	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	18	16	SCH20	STD	P24A-00L66	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	20	8	STD	SCH20	P24A-00KWT	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	20	10	STD	SCH30	P24A-00L3H	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	20	12	STD	STD	P24A-0028P	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	20	14	STD	STD	P24A-0029D	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	20	16	STD	STD	P24A-0029N	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	20	18	STD	SCH20	P24A-006D6	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	24	10	STD	SCH30	P24A-00L3J	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	24	12	STD	STD	P24A-002LU	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	24	14	STD	STD	P24A-002MK	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	

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REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	24	16	STD	STD	P24A-0028M	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	24	18	STD	SCH20	P24A-00799	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	24	20	STD	STD	P24A-0029L	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	STD	XS	P27A-003PM	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	4	2	STD	XS	P27A-003PN	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	4	3	STD	STD	P27A-001BA	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	6	3	STD	STD	P27A-001H9	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	6	4	STD	STD	P27A-00181	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	8	4	SCH20	STD	P27A-003PP	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	8	6	SCH20	STD	P27A-003PR	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	4	SCH30	STD	P27A-004D7	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	6	SCH30	STD	P27A-004D8	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	8	SCH30	SCH20	P27A-004D9	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	6	STD	STD	P27A-001CE	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	8	STD	SCH20	P27A-00FCJ	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	10	STD	SCH30	P27A-00FCH	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	6	STD	STD	P27A-001DC	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	8	STD	SCH20	P27A-004DD	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	10	STD	SCH30	P27A-004DB	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	12	STD	STD	P27A-001CD	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	8	STD	SCH20	P27A-00FCL	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	10	STD	SCH30	P27A-00FCK	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	12	STD	STD	P27A-001CS	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	14	STD	STD	P27A-001DX	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	18	10	SCH20	SCH30	P27A-004DF	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	18	12	SCH20	STD	P27A-00FCM	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	18	14	SCH20	STD	P27A-004DH	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	18	16	SCH20	STD	P27A-00FE2	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	20	12	STD	STD	P27A-001BJ	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	20	14	STD	STD	P27A-001D7	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	20	16	STD	STD	P27A-001DZ	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	20	18	STD	SCH20	P27A-004DM	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	24	16	STD	STD	P27A-001BC	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	24	18	STD	SCH20	P27A-008L9	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	24	20	STD	STD	P27A-001DF	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	STD	XS	P28A-003PL	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	4	2	STD	XS	P28A-003PM	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	4	3	STD	STD	P28A-001CF	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	6	3	STD	STD	P28A-001AL	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	6	4	STD	STD	P28A-001BL	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	8	4	SCH20	STD	P28A-003PN	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	8	6	SCH20	STD	P28A-003PP	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	4	SCH30	STD	P28A-004D1	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	6	SCH30	STD	P28A-004D2	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	8	SCH30	SCH20	P28A-004D3	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	6	STD	STD	P28A-001D6	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	8	STD	SCH20	P28A-00CHB	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	10	STD	SCH30	P28A-00CHA	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	6	STD	STD	P28A-001E8	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	8	STD	SCH20	P28A-004D7	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	10	STD	SCH30	P28A-004D5	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	12	STD	STD	P28A-001CR	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	8	STD	SCH20	P28A-00CHD	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	

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ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	16	10	STD	SCH30	P28A-00CHC	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	12	STD	STD	P28A-001DM	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	14	STD	STD	P28A-001EW	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	18	10	SCH20	SCH30	P28A-004D9	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	18	12	SCH20	STD	P28A-00CHE	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	18	14	SCH20	STD	P28A-004DB	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	18	16	SCH20	STD	P28A-00CK0	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	20	12	STD	STD	P28A-001CB	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	20	14	STD	STD	P28A-001E3	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	20	16	STD	STD	P28A-001EZ	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	20	18	STD	SCH20	P28A-004DF	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	24	16	STD	STD	P28A-001C8	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	24	18	STD	SCH20	P28A-005B4	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	24	20	STD	STD	P28A-001EB	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P29B-00028	Cap ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW	
1	0.75				P29B-00029	Cap ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW	
1	1				P29B-0002A	Cap ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW	
1	1.5				P29B-0002B	Cap ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW	
1	2		XS		P29A-000BG	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	3		STD		P29A-0009Y	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	4		STD		P29A-000AH	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	6		STD		P29A-000DE	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	8		SCH20		P29A-000E4	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10		SCH30		P29A-0016A	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12		STD		P29A-000B5	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14		STD		P29A-000B7	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16		STD		P29A-000BC	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	18		SCH20		P29A-000EU	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	20		STD		P29A-000BR	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	24		STD		P29A-0009T	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
541	0.75				P29B-0000G	Cap ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 NPT	
541	1				P29B-0000H	Cap ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 NPT	
541	1.5				P29B-0000J	Cap ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P41A-000AD	Straight nipple ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		SCH160		P41A-000BB	Straight nipple ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		SCH160		P41A-000AN	Straight nipple ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		SCH160		P41A-000AP	Straight nipple ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

CON SWAGED NIPPLE (SNC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	XS	XS	P42A-00032	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	XS	XS	P42A-00031	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	XS	XS	P42A-00034	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	XS	XS	P42A-00037	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	XS	XS	P42A-0003A	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	XS	XS	P42A-00033	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	XS	XS	P42A-0008M	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	XS	XS	P42A-0008N	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	XS	XS	P42A-0008P	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	XS	XS	P42A-0008R	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	STD	XS	P42A-000VB	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 BE(L) - PE(S)	

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ECC SWAGED NIPPLE (SNE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	XS	XS	P43A-0004B	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	XS	XS	P43A-0004C	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	XS	XS	P43A-0004D	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	XS	XS	P43A-0004E	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	XS	XS	P43A-0004F	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	XS	XS	P43A-0004G	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	XS	XS	P43A-0004H	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	XS	XS	P43A-0004J	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	XS	XS	P43A-0004K	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	XS	XS	P43A-0004L	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	STD	XS	P43A-000LE	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 BE(L) - PE(S)	

COUPLING (CPS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P47B-00019	Coupling ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW - SW	
1	0.75				P47B-0001A	Coupling ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW - SW	
1	1				P47B-0001B	Coupling ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW - SW	
1	1.5				P47B-0001C	Coupling ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW - SW	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2 - 2.5	0.75			P31B-0139D	Outlet ASTM A350 Grade LF2 Class 1 Class 3000 MSS SP-97 SW	
1	3 - 5	0.75			P31B-0139E	Outlet ASTM A350 Grade LF2 Class 1 Class 3000 MSS SP-97 SW	
1	6 - 12	0.75			P31B-007EA	Outlet ASTM A350 Grade LF2 Class 1 Class 3000 MSS SP-97 SW	
1	14 - 36	0.75			P31B-007EH	Outlet ASTM A350 Grade LF2 Class 1 Class 3000 MSS SP-97 SW	
1	3	1			P31B-007E6	Outlet ASTM A350 Grade LF2 Class 1 Class 3000 MSS SP-97 SW	
1	4 - 5	1			P31B-0139F	Outlet ASTM A350 Grade LF2 Class 1 Class 3000 MSS SP-97 SW	
1	6 - 10	1			P31B-007E3	Outlet ASTM A350 Grade LF2 Class 1 Class 3000 MSS SP-97 SW	
1	12 - 36	1			P31B-007E9	Outlet ASTM A350 Grade LF2 Class 1 Class 3000 MSS SP-97 SW	
1	4	1.5			P31B-005TT	Outlet ASTM A350 Grade LF2 Class 1 Class 3000 MSS SP-97 SW	
1	5 - 6	1.5			P31B-0139G	Outlet ASTM A350 Grade LF2 Class 1 Class 3000 MSS SP-97 SW	
1	8 - 12	1.5			P31B-007DT	Outlet ASTM A350 Grade LF2 Class 1 Class 3000 MSS SP-97 SW	
1	14 - 24	1.5			P31B-007DZ	Outlet ASTM A350 Grade LF2 Class 1 Class 3000 MSS SP-97 SW	
541	1	0.75			P31B-004MV	Outlet ASTM A350 Grade LF2 Class 1 Class 3000 MSS SP-97 NPT	
541	1.5	0.75			P31B-004MZ	Outlet ASTM A350 Grade LF2 Class 1 Class 3000 MSS SP-97 NPT	
541	2 - 2.5	0.75			P31B-0139H	Outlet ASTM A350 Grade LF2 Class 1 Class 3000 MSS SP-97 NPT	
541	3 - 5	0.75			P31B-0139J	Outlet ASTM A350 Grade LF2 Class 1 Class 3000 MSS SP-97 NPT	
541	6 - 12	0.75			P31B-007J5	Outlet ASTM A350 Grade LF2 Class 1 Class 3000 MSS SP-97 NPT	
541	14 - 36	0.75			P31B-007JC	Outlet ASTM A350 Grade LF2 Class 1 Class 3000 MSS SP-97 NPT	
1	6	2	STD	XS	P31B-00MFB	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	8	2	SCH20	XS	P31B-00MFH	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	10	2	SCH30	XS	P31B-00MJG	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	12	2	STD	XS	P31B-00TPJ	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	14	2	STD	XS	P31B-00MG0	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	16	2	STD	XS	P31B-00TPK	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	18	2	SCH20	XS	P31B-00MJS	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	20	2	STD	XS	P31B-00MGK	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	24	2	STD	XS	P31B-00M4U	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	8	3	SCH20	STD	P31B-00MJF	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	10	3	SCH30	STD	P31B-00MJH	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	12	3	STD	STD	P31B-00E6N	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	14	3	STD	STD	P31B-00E92	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	16	3	STD	STD	P31B-00E8R	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	18	3	SCH20	STD	P31B-00MJT	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	20	3	STD	STD	P31B-00E8N	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	24	3	STD	STD	P31B-00E8T	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	12	4	STD	STD	P31B-00E8L	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	14	4	STD	STD	P31B-00E8H	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	16	4	STD	STD	P31B-00E8A	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	

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OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	18	4	SCH20	STD	P31B-00MJU	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	20	4	STD	STD	P31B-00E88	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	24	4	STD	STD	P31B-00E8C	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	18	6	SCH20	STD	P31B-00MJV	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	20	6	STD	STD	P31B-00E86	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	24	6	STD	STD	P31B-00E84	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30B-0002V	Plug ASTM A350 Grade LF2 Class 1 ASME B16.11 NPT Round head	
1	0.75				P30B-0002W	Plug ASTM A350 Grade LF2 Class 1 ASME B16.11 NPT Round head	
1	1				P30B-0002X	Plug ASTM A350 Grade LF2 Class 1 ASME B16.11 NPT Round head	
1	1.5				P30B-0002Y	Plug ASTM A350 Grade LF2 Class 1 ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P61B-001K3	Flange SW ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	0.75		XS		P61B-001K4	Flange SW ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	1		XS		P61B-001L7	Flange SW ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	1.5		XS		P61B-001LD	Flange SW ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	2		XS		P61B-003R8	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	3		STD		P61B-001MB	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	4		STD		P61B-001N0	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	6		STD		P61B-001NM	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	8		SCH20		P61B-002RS	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	10		SCH30		P61B-003SE	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	12		STD		P61B-001M4	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	14		STD		P61B-001S7	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	16		STD		P61B-001LM	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	18		SCH20		P61B-002RN	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	20		STD		P61B-001NB	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	24		STD		P61B-001P1	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
781	0.5		XS		P61B-001FX	Flange SW ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
781	0.75		XS		P61B-001G8	Flange SW ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
781	1		XS		P61B-001DL	Flange SW ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
781	1.5		XS		P61B-001DP	Flange SW ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
781	2		XS		P61B-001FN	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
781	3		STD		P61B-001TV	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
781	4		STD		P61B-001VT	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
781	6		STD		P61B-001JV	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
781	8		SCH20		P61B-003ZU	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
781	10		SCH30		P61B-003ZR	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
781	12		STD		P61B-001P7	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
781	14		STD		P61B-001PK	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
781	16		STD		P61B-003H9	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
781	18		SCH20		P61B-003ZT	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
781	20		STD		P61B-003H5	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
781	24		STD		P61B-003H4	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67B-000NN	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	0.75				P67B-000MV	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	1				P67B-000MW	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	1.5				P67B-000MX	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	2				P67B-000N3	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	3				P67B-000N6	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	4				P67B-000N7	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	6				P67B-000N8	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	

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BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	8				P67B-000N9	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	10				P67B-000MY	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	12				P67B-000MZ	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	14				P67B-000N0	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	16				P67B-000N1	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	18				P67B-000N2	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	20				P67B-000N4	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	24				P67B-000N5	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000FT	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000FU	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000G5	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000G6	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	6				P73T-000G7	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	8				P73T-000G8	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	10				P73T-000FX	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	12				P73T-000FY	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	14				P73T-000FZ	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	16				P73T-000G0	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	18				P73T-000G1	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	20				P73T-000G3	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	24				P73T-000G4	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	0.5				P73T-000J8	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	0.75				P73T-000J9	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1				P73T-000JA	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1.5				P73T-000JB	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	2				P73T-000JH	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	3				P73T-000JL	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	4				P73T-000JM	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	6				P73T-000JN	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	8				P73T-000JP	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	10				P73T-000JC	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	12				P73T-000JD	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	14				P73T-000JE	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	16				P73T-000JF	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	18				P73T-000JG	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	20				P73T-000JJ	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	24				P73T-000JK	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-10				See Attached Bolt Table	Bolt and Nut ASTM A320 Grade L7 / A194 Grade 4 ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	

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BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	12-24				See Attached Bolt Table	Bolt and Nut ASTM A320 Grade L7 / A194 Grade 4 ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
781	0.5-6				See Attached Bolt Table	Bolt and Nut ASTM A320 Grade L7 / A194 Grade 4 ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
781	8-24				See Attached Bolt Table	Bolt and Nut ASTM A320 Grade L7 / A194 Grade 4 ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81B-0018C	Gate valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	0.75				P81B-0018D	Gate valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	1				P81B-0018E	Gate valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	1.5				P81B-0018F	Gate valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	2				P81C-004HG	Gate valve ASTM A352 Grade LCC Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	3				P81C-004HH	Gate valve ASTM A352 Grade LCC Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	4				P81C-004HJ	Gate valve ASTM A352 Grade LCC Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	6				P81C-004HK	Gate valve ASTM A352 Grade LCC Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	8				P81C-0091J	Gate valve ASTM A352 Grade LCC Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated	
1	10				P81C-004HM	Gate valve ASTM A352 Grade LCC Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated	
1	12				P81C-004HN	Gate valve ASTM A352 Grade LCC Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated	
1	14				P81C-004HP	Gate valve ASTM A352 Grade LCC Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated	
1	16				P81C-004HR	Gate valve ASTM A352 Grade LCC Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated	
1	18				P81C-004HS	Gate valve ASTM A352 Grade LCC Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated	
1	20				P81C-004HT	Gate valve ASTM A352 Grade LCC Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated	
1	24				P81C-004HU	Gate valve ASTM A352 Grade LCC Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated	
714	0.5				P81B-002S4	Gate valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW - NPT Trim number 12 BB-BG-OS&Y Handwheel operated	
714	0.75				P81B-002FB	Gate valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW - NPT Trim number 12 BB-BG-OS&Y Handwheel operated	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82B-0011H	Globe valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	0.75				P82B-0011J	Globe valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	1				P82B-0011K	Globe valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	1.5				P82B-0011L	Globe valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	2				P82C-0027X	Globe valve ASTM A352 Grade LCC Class 300 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	3				P82C-0027Y	Globe valve ASTM A352 Grade LCC Class 300 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	4				P82C-0027Z	Globe valve ASTM A352 Grade LCC Class 300 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	6				P82C-00280	Globe valve ASTM A352 Grade LCC Class 300 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	8				P82C-004CT	Globe valve ASTM A352 Grade LCC Class 300 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83B-000TS	Check valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 12 Lift-type Bolted cover	
1	0.75				P83B-000TT	Check valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 12 Lift-type Bolted cover	
1	1				P83B-000TU	Check valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 12 Lift-type Bolted cover	
1	1.5				P83B-000TV	Check valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 12 Lift-type Bolted cover	
1	2				P83C-0024D	Check valve ASTM A352 Grade LCC Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	3				P83C-0024G	Check valve ASTM A352 Grade LCC Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	4				P83C-0024H	Check valve ASTM A352 Grade LCC Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	6				P83C-0024J	Check valve ASTM A352 Grade LCC Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	

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CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	8				P83C-0024K	Check valve ASTM A352 Grade LCC Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	10				P83C-00248	Check valve ASTM A352 Grade LCC Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	

DP CHECK VALVE (XDP)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
4602	4				P88C-003C1	Dual plate check valve ASTM A352 Grade LCC Class 300 API 594 Wafer-type ASME B16.5 RF Trim number 12 Internal wetted parts SS316 Spring Inconel Retainerless-type	

BUTTERFLY VALVE (H)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	10				P86C-002ER	Offset design butterfly valve ASTM A352 Grade LCC Class 300 API 609 Category B Lug-type ASME B16.5 RF Disc LTCS Seat Stellite-6 Trim SS316 Triple eccentric design BG Gear operated	

ORIFICE FLANGE (FO)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2		XS		P66B-00862	Orifice flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	3		STD		P66B-00863	Orifice flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	4		STD		P66B-00864	Orifice flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	6		STD		P66B-00865	Orifice flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	8		SCH20		P66B-00866	Orifice flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	10		SCH30		P66B-008AL	Orifice flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	12		STD		P66B-008AM	Orifice flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	14		STD		P66B-008K4	Orifice flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	16		STD		P66B-008K5	Orifice flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	18		SCH20		P66B-0086L	Orifice flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	20		STD		P66B-0086M	Orifice flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	24		STD		P66B-0086N	Orifice flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
200	2		XS		P66B-00869	Orifice flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	3		STD		P66B-0086A	Orifice flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	4		STD		P66B-0086B	Orifice flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	6		STD		P66B-0086C	Orifice flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	8		SCH20		P66B-0086D	Orifice flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	10		SCH30		P66B-008AN	Orifice flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	12		STD		P66B-008AP	Orifice flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	14		STD		P66B-008K6	Orifice flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	16		STD		P66B-008K7	Orifice flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	18		SCH20		P66B-0086U	Orifice flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	20		STD		P66B-0086V	Orifice flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	24		STD		P66B-0086W	Orifice flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71B-000BP	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	0.75				P71B-000BR	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	1				P71B-000BS	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71B-000BT	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	2				P71B-000BW	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	3				P71B-000BX	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	4				P71B-000BY	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	6				P71B-000BZ	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	8				P71B-000C0	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	10				P71B-000BU	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	12				P71B-000BV	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF	

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PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000G1	Paddle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	16				P72B-000G2	Paddle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	18				P72B-000G3	Paddle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	20				P72B-000G4	Paddle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	24				P72B-000G5	Paddle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF	

PADDLE SPACER (PS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000G6	Paddle spacer ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	16				P72B-000G7	Paddle spacer ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	18				P72B-000G8	Paddle spacer ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	20				P72B-000G9	Paddle spacer ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	24				P72B-000GA	Paddle spacer ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF	

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BOLT TABLE (B_B1GP04 , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-003VL		
0.75	4	0.625	75	P80S-003Z2		
1	4	0.625	80	P80S-003Z3		
1.5	4	0.750	95	P80S-0045X		
2	8	0.625	90	P80S-003Z5		
3	8	0.750	110	P80S-003Z9		
4	8	0.750	115	P80S-003ZA		
6	12	0.750	125	P80S-003ZC		
8	12	0.875	140	P80S-00466		
10	16	1.000	160	P80S-004BH		
12	16	1.125	175	P80S-004J7		
14	20	1.125	180	P80S-004J8		
16	20	1.250	190	P80S-004LJ		
18	24	1.250	200	P80S-004LL		
20	24	1.250	210	P80S-004LN		
24	24	1.500	235	P80S-003A7		

BOLT TABLE (B_B1GP04_781 , STUD ASME RF, OPTION CODE 781)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	80	P80S-003VN		
0.75	4	0.625	90	P80S-003Z5		
1	4	0.625	95	P80S-003Z6		
1.5	4	0.750	110	P80S-003Z9		
2	8	0.625	110	P80S-003VV		
3	8	0.750	130	P80S-003ZD		
4	8	0.875	150	P80S-00468		
6	12	1.000	175	P80S-004BM		
8	12	1.125	195	P80S-004JB		
10	16	1.250	250	P80S-004LX		
12	20	1.250	255	P80S-004LY		
14	20	1.375	270	P80S-003M5		
16	20	1.500	295	P80S-003D1		
18	20	1.625	320	P80S-00CB3		
20	24	1.625	335	P80S-00CB6		
24	24	1.875	380	P80S-00ACJ		

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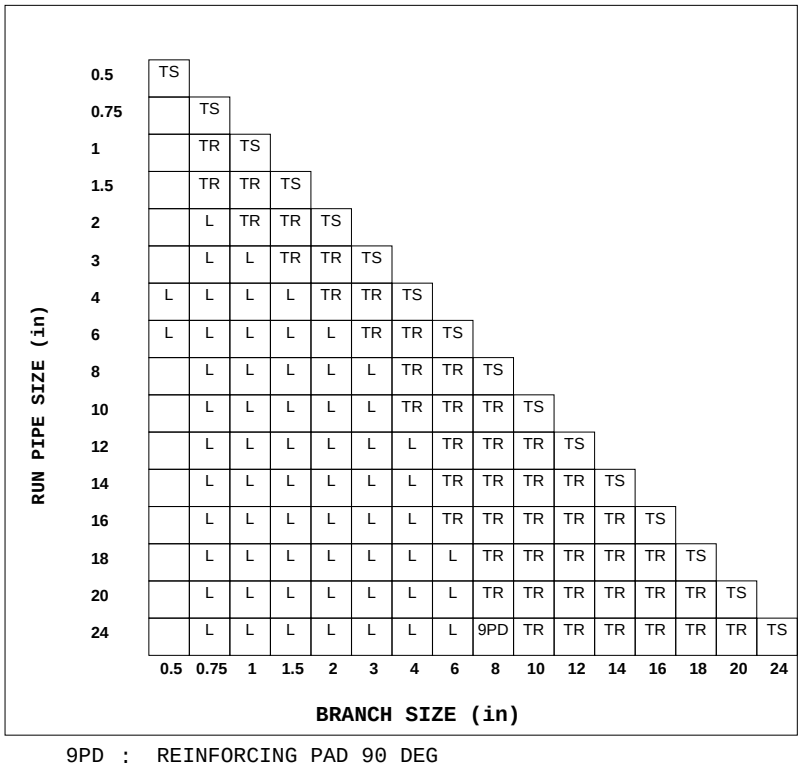
BRANCH TABLE (T_B1GP04)



9PD : REINFORCING PAD 90 DEG
TS : STRAIGHT TEE
L : OUTLET
TR : REDUCING TEE

INDRA
01-SEP-2014

PIPING CLASS

B1J502 REV NO. 2

Material : SS304L
Rating : ASME CLASS 300
Flange Face : RF
C.A.(mm) : 1.50
Gasket : Spiral Wound
Service : PROCESS - WET SEVERE SOUR SERVICE SUBJECT TO NACE + HIC STD + AMINES OR CAUSTIC - STRESS RELIEVED
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
5	BOLTING CONFIRMING TO B7M / 2HM SHALL BE USED UNDER CONDITIONS (A) DIRECT EXPOSURE TO SOUR ENVIRONMENTS (B) WHEN THE BOLTING WILL BE BURIED OR INSULATED

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
541	NPT(F) (CA,F,L)
781	CLASS 600 (B,F,G)
4601	Y-PATTERN (W)
4608	VALVE WITH NIPPLES (V)

INDRA
01-SEP-2014

PIPING CLASS
B1J502 REV NO. 2

PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P01J-002CF	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE Severe wet H2S service	
1	0.75		SCH80S		P01J-002CG	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE Severe wet H2S service	
1	1		SCH80S		P01J-002CH	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE Severe wet H2S service	
1	1.5		SCH80S		P01J-002CJ	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE Severe wet H2S service	
1	2		SCH40S		P01J-002FB	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M BE Severe wet H2S service	
1	3		SCH40S		P01J-002FC	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M BE Severe wet H2S service	
1	4		SCH40S		P01J-002FD	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M BE Severe wet H2S service	
1	6		SCH40S		P01J-002GY	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M BE Severe wet H2S service	
1	8		SCH40S		P01J-002NJ	Pipe ASTM A358 Grade 304/304L Class 1 dual grade EFW ASME B36.10M/B36.19M BE Severe wet H2S service	
1	10		SCH40S		P01J-002ND	Pipe ASTM A358 Grade 304/304L Class 1 dual grade EFW ASME B36.10M/B36.19M BE Severe wet H2S service	
1	12		SCH40S		P01J-002NE	Pipe ASTM A358 Grade 304/304L Class 1 dual grade EFW ASME B36.10M/B36.19M BE Severe wet H2S service	
1	14		SCH40S		P01J-002NF	Pipe ASTM A358 Grade 304/304L Class 1 dual grade EFW ASME B36.10M/B36.19M BE Severe wet H2S service	
1	16		SCH40S		P01J-002NG	Pipe ASTM A358 Grade 304/304L Class 1 dual grade EFW ASME B36.10M/B36.19M BE Severe wet H2S service	
1	18		SCH40S		P01J-002NH	Pipe ASTM A358 Grade 304/304L Class 1 dual grade EFW ASME B36.10M/B36.19M BE Severe wet H2S service	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P02J-001VV	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	0.75		SCH80S		P02J-001VW	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	1		SCH80S		P02J-001VX	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	1.5		SCH80S		P02J-001VY	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	2		SCH40S		P02J-001ZW	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	3		SCH40S		P02J-001ZX	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	4		SCH40S		P02J-001ZY	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	6		SCH40S		P02J-00209	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	8		SCH40S		P02J-0022M	90 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius Severe wet H2S service	
1	10		SCH40S		P02J-0022G	90 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius Severe wet H2S service	
1	12		SCH40S		P02J-0022H	90 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius Severe wet H2S service	
1	14		SCH40S		P02J-0022J	90 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius Severe wet H2S service	
1	16		SCH40S		P02J-0022K	90 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius Severe wet H2S service	
1	18		SCH40S		P02J-0022L	90 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius Severe wet H2S service	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P03J-001TA	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	0.75		SCH80S		P03J-001TB	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	1		SCH80S		P03J-001TC	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	1.5		SCH80S		P03J-001TD	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	2		SCH40S		P03J-001XB	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	3		SCH40S		P03J-001XC	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	4		SCH40S		P03J-001XD	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	6		SCH40S		P03J-001ZW	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	8		SCH40S		P03J-0022D	45 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius Severe wet H2S service	
1	10		SCH40S		P03J-00228	45 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius Severe wet H2S service	
1	12		SCH40S		P03J-00229	45 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius Severe wet H2S service	

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45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14		SCH40S		P03J-0022A	45 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius Severe wet H2S service	
1	16		SCH40S		P03J-0022B	45 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius Severe wet H2S service	
1	18		SCH40S		P03J-0022C	45 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius Severe wet H2S service	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P21J-001JN	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	0.75		SCH80S		P21J-001JP	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1		SCH80S		P21J-001JR	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5		SCH80S		P21J-001JS	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	2		SCH40S		P21J-001NW	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	3		SCH40S		P21J-001NX	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	4		SCH40S		P21J-001NY	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	6		SCH40S		P21J-001P9	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	8		SCH40S		P21J-001SM	Straight tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	10		SCH40S		P21J-001SG	Straight tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	12		SCH40S		P21J-001SH	Straight tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	14		SCH40S		P21J-001SJ	Straight tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	16		SCH40S		P21J-001SK	Straight tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	18		SCH40S		P21J-001SL	Straight tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75	SCH80S	SCH80S	P24J-006UM	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5	0.75	SCH80S	SCH80S	P24J-006UN	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5	1	SCH80S	SCH80S	P24J-006UP	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	2	1	SCH40S	SCH80S	P24J-0072D	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	2	1.5	SCH40S	SCH80S	P24J-0072E	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	3	1.5	SCH40S	SCH80S	P24J-0072F	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	3	2	SCH40S	SCH40S	P24J-0072G	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	4	2	SCH40S	SCH40S	P24J-0072H	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	4	3	SCH40S	SCH40S	P24J-0072J	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	6	3	SCH40S	SCH40S	P24J-0076P	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	6	4	SCH40S	SCH40S	P24J-0076R	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	8	4	SCH40S	SCH40S	P24J-007JA	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	8	6	SCH40S	SCH40S	P24J-007JB	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	10	4	SCH40S	SCH40S	P24J-007J7	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	10	6	SCH40S	SCH40S	P24J-007J8	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	10	8	SCH40S	SCH40S	P24J-007J9	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	12	6	SCH40S	SCH40S	P24J-007J5	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	12	8	SCH40S	SCH40S	P24J-007J6	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	12	10	SCH40S	SCH40S	P24J-007J4	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	14	6	SCH40S	SCH40S	P24J-007J2	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	14	8	SCH40S	SCH40S	P24J-007J3	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	14	10	SCH40S	SCH40S	P24J-007J0	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	

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PIPING CLASS
B1J502 REV NO. 2

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14	12	SCH40S	SCH40S	P24J-007J1	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	16	6	SCH40S	SCH40S	P24J-007HY	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	16	8	SCH40S	SCH40S	P24J-007HZ	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	16	10	SCH40S	SCH40S	P24J-007HW	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	16	12	SCH40S	SCH40S	P24J-007HX	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	16	14	SCH40S	SCH40S	P24J-007NA	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	18	8	SCH40S	SCH40S	P24J-007HV	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	18	10	SCH40S	SCH40S	P24J-007HR	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	18	12	SCH40S	SCH40S	P24J-007HS	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	18	14	SCH40S	SCH40S	P24J-007HT	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	18	16	SCH40S	SCH40S	P24J-007HU	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH80S	SCH80S	P27J-005NC	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1	0.5	SCH80S	SCH80S	P27J-005ND	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1	0.75	SCH80S	SCH80S	P27J-005NE	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5	0.5	SCH80S	SCH80S	P27J-005NF	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5	0.75	SCH80S	SCH80S	P27J-005NG	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5	1	SCH80S	SCH80S	P27J-005NH	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	2	0.75	SCH40S	SCH80S	P27J-005XD	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	2	1	SCH40S	SCH80S	P27J-005XE	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	2	1.5	SCH40S	SCH80S	P27J-005XF	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	3	1.5	SCH40S	SCH80S	P27J-005XG	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	3	2	SCH40S	SCH40S	P27J-005XH	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	4	1.5	SCH40S	SCH80S	P27J-005XJ	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	4	2	SCH40S	SCH40S	P27J-005XK	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	4	3	SCH40S	SCH40S	P27J-005XL	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	6	3	SCH40S	SCH40S	P27J-0061K	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	6	4	SCH40S	SCH40S	P27J-0061L	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	8	4	SCH40S	SCH40S	P27J-006B4	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	8	6	SCH40S	SCH40S	P27J-006B5	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	10	4	SCH40S	SCH40S	P27J-006BM	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	10	6	SCH40S	SCH40S	P27J-006BN	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	10	8	SCH40S	SCH40S	P27J-006BP	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	12	6	SCH40S	SCH40S	P27J-006BK	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	12	8	SCH40S	SCH40S	P27J-006BL	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	12	10	SCH40S	SCH40S	P27J-006BJ	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	14	6	SCH40S	SCH40S	P27J-006BG	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	14	8	SCH40S	SCH40S	P27J-006BH	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	14	10	SCH40S	SCH40S	P27J-006BE	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	14	12	SCH40S	SCH40S	P27J-006BF	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	16	8	SCH40S	SCH40S	P27J-006BD	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	16	10	SCH40S	SCH40S	P27J-006BA	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	16	12	SCH40S	SCH40S	P27J-006BB	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	

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CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	16	14	SCH40S	SCH40S	P27J-006BC	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	18	10	SCH40S	SCH40S	P27J-006B6	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	18	12	SCH40S	SCH40S	P27J-006B7	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	18	14	SCH40S	SCH40S	P27J-006B8	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	18	16	SCH40S	SCH40S	P27J-006B9	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH80S	SCH80S	P28J-005P7	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1	0.5	SCH80S	SCH80S	P28J-005P8	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1	0.75	SCH80S	SCH80S	P28J-005P9	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5	0.5	SCH80S	SCH80S	P28J-005PA	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5	0.75	SCH80S	SCH80S	P28J-005PB	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5	1	SCH80S	SCH80S	P28J-005PC	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	2	0.75	SCH40S	SCH80S	P28J-005YA	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	2	1	SCH40S	SCH80S	P28J-005YB	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	2	1.5	SCH40S	SCH80S	P28J-005YC	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	3	1.5	SCH40S	SCH80S	P28J-005YD	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	3	2	SCH40S	SCH40S	P28J-005YE	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	4	1.5	SCH40S	SCH80S	P28J-005YF	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	4	2	SCH40S	SCH40S	P28J-005YG	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	4	3	SCH40S	SCH40S	P28J-005YH	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	6	3	SCH40S	SCH40S	P28J-0062G	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	6	4	SCH40S	SCH40S	P28J-0062H	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	8	4	SCH40S	SCH40S	P28J-006CF	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	8	6	SCH40S	SCH40S	P28J-006CG	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	10	4	SCH40S	SCH40S	P28J-006CH	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	10	6	SCH40S	SCH40S	P28J-006CJ	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	10	8	SCH40S	SCH40S	P28J-006CK	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	12	6	SCH40S	SCH40S	P28J-006CM	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	12	8	SCH40S	SCH40S	P28J-006CN	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	12	10	SCH40S	SCH40S	P28J-006CL	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	14	6	SCH40S	SCH40S	P28J-006CS	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	14	8	SCH40S	SCH40S	P28J-006CT	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	14	10	SCH40S	SCH40S	P28J-006CP	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	14	12	SCH40S	SCH40S	P28J-006CR	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	16	8	SCH40S	SCH40S	P28J-006CX	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	16	10	SCH40S	SCH40S	P28J-006CU	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	16	12	SCH40S	SCH40S	P28J-006CV	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	16	14	SCH40S	SCH40S	P28J-006CW	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	18	10	SCH40S	SCH40S	P28J-006CY	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	18	12	SCH40S	SCH40S	P28J-006CZ	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	18	14	SCH40S	SCH40S	P28J-006D0	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	18	16	SCH40S	SCH40S	P28J-006D1	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	

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CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P29J-001CY	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	0.75		SCH80S		P29J-001CZ	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1		SCH80S		P29J-001D0	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5		SCH80S		P29J-001D1	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	2		SCH40S		P29J-001PT	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	3		SCH40S		P29J-001XX	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	4		SCH40S		P29J-0024L	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	6		SCH40S		P29J-002D1	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	8		SCH40S		P29J-002JH	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	10		SCH40S		P29J-001GZ	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	12		SCH40S		P29J-001JK	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	14		SCH40S		P29J-001L0	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	16		SCH40S		P29J-001ML	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	18		SCH40S		P29J-001NY	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
541	0.75				P29K-00046	Cap ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 NPT Severe wet H2S service	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P41J-001VA	Straight nipple ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Severe wet H2S service	
1	0.75		SCH160		P41J-001VB	Straight nipple ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Severe wet H2S service	
1	1		SCH160		P41J-001VC	Straight nipple ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Severe wet H2S service	
1	1.5		SCH160		P41J-001VD	Straight nipple ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Severe wet H2S service	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
541	1	0.75			P31K-00FLV	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 NPT Severe wet H2S service	
541	1.5	0.75			P31K-00FLU	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 NPT Severe wet H2S service	
541	2 - 2.5	0.75			P31K-00GFC	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 NPT Severe wet H2S service	
541	3 - 5	0.75			P31K-00GFD	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 NPT Severe wet H2S service	
541	6 - 12	0.75			P31K-00GFE	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 NPT Severe wet H2S service	
541	14 - 36	0.75			P31K-00GFF	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 NPT Severe wet H2S service	
1	2	0.75	SCH40S	SCH80S	P31K-00ESM	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	3	0.75	SCH40S	SCH80S	P31K-00ESN	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	4	0.75	SCH40S	SCH80S	P31K-00ESR	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	6	0.75	SCH40S	SCH80S	P31K-00EWX	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	8	0.75	SCH40S	SCH80S	P31K-00EX1	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	10	0.75	SCH40S	SCH80S	P31K-00EX6	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	12	0.75	SCH40S	SCH80S	P31K-00EXB	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	14	0.75	SCH40S	SCH80S	P31K-00EXH	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	16	0.75	SCH40S	SCH80S	P31K-00EXP	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	18	0.75	SCH40S	SCH80S	P31K-00EXW	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	3	1	SCH40S	SCH80S	P31K-00ESP	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	4	1	SCH40S	SCH80S	P31K-00ESS	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	6	1	SCH40S	SCH80S	P31K-00EWY	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	8	1	SCH40S	SCH80S	P31K-00EX2	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	10	1	SCH40S	SCH80S	P31K-00EX7	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	12	1	SCH40S	SCH80S	P31K-00EXC	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	14	1	SCH40S	SCH80S	P31K-00EXJ	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	16	1	SCH40S	SCH80S	P31K-00EXR	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	18	1	SCH40S	SCH80S	P31K-00EXX	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	4	1.5	SCH40S	SCH80S	P31K-00EST	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	6	1.5	SCH40S	SCH80S	P31K-00EWZ	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	8	1.5	SCH40S	SCH80S	P31K-00EX3	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	

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OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	10	1.5	SCH40S	SCH80S	P31K-00EX8	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	12	1.5	SCH40S	SCH80S	P31K-00EXD	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	14	1.5	SCH40S	SCH80S	P31K-00EXK	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	16	1.5	SCH40S	SCH80S	P31K-00EXS	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	18	1.5	SCH40S	SCH80S	P31K-00EXY	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	6	2	SCH40S	SCH40S	P31K-00EX0	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	8	2	SCH40S	SCH40S	P31K-00EX4	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	10	2	SCH40S	SCH40S	P31K-00EX9	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	12	2	SCH40S	SCH40S	P31K-00EXE	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	14	2	SCH40S	SCH40S	P31K-00EXL	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	16	2	SCH40S	SCH40S	P31K-00EXT	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	18	2	SCH40S	SCH40S	P31K-00EXZ	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	8	3	SCH40S	SCH40S	P31K-00EX5	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	10	3	SCH40S	SCH40S	P31K-00EXA	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	12	3	SCH40S	SCH40S	P31K-00EXF	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	14	3	SCH40S	SCH40S	P31K-00EXM	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	16	3	SCH40S	SCH40S	P31K-00EXU	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	18	3	SCH40S	SCH40S	P31K-00EY0	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	12	4	SCH40S	SCH40S	P31K-00EXG	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	14	4	SCH40S	SCH40S	P31K-00EXN	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	16	4	SCH40S	SCH40S	P31K-00EXV	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	18	4	SCH40S	SCH40S	P31K-00EY1	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	18	6	SCH40S	SCH40S	P31K-00EY2	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30K-00051	Plug ASTM A182 Grade F304/F304L dual grade ASME B16.11 NPT Round head Severe wet H2S service	
1	0.75				P30K-00052	Plug ASTM A182 Grade F304/F304L dual grade ASME B16.11 NPT Round head Severe wet H2S service	
1	1				P30K-00053	Plug ASTM A182 Grade F304/F304L dual grade ASME B16.11 NPT Round head Severe wet H2S service	
1	1.5				P30K-00054	Plug ASTM A182 Grade F304/F304L dual grade ASME B16.11 NPT Round head Severe wet H2S service	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P61K-005AH	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
1	0.75		SCH80S		P61K-005AJ	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
1	1		SCH80S		P61K-005AK	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
1	1.5		SCH80S		P61K-005AL	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
1	2		SCH40S		P61K-005LG	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
1	3		SCH40S		P61K-005LH	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
1	4		SCH40S		P61K-005LJ	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
1	6		SCH40S		P61K-005LK	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
1	8		SCH40S		P61K-005LL	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
1	10		SCH40S		P61K-005LB	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
1	12		SCH40S		P61K-005LC	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
1	14		SCH40S		P61K-005LD	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
1	16		SCH40S		P61K-005LE	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
1	18		SCH40S		P61K-005LF	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
541	0.5				P61K-0069K	Flange NPT ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
541	0.75				P61K-005YB	Flange NPT ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
781	0.5		SCH80S		P61K-005AR	Flange WN ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 RF Severe wet H2S service	
781	0.75		SCH80S		P61K-005AS	Flange WN ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 RF Severe wet H2S service	
781	1		SCH80S		P61K-005AT	Flange WN ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 RF Severe wet H2S service	
781	1.5		SCH80S		P61K-005AU	Flange WN ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 RF Severe wet H2S service	
781	2		SCH40S		P61K-005LT	Flange WN ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 RF Severe wet H2S service	
781	3		SCH40S		P61K-005LU	Flange WN ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 RF Severe wet H2S service	
781	4		SCH40S		P61K-005LV	Flange WN ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 RF Severe wet H2S service	
781	6		SCH40S		P61K-005LW	Flange WN ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 RF Severe wet H2S service	
781	8		SCH40S		P61K-005LX	Flange WN ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 RF Severe wet H2S service	
781	10		SCH40S		P61K-005LM	Flange WN ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 RF Severe wet H2S service	

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FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
781	12		SCH40S		P61K-005LN	Flange WN ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 RF Severe wet H2S service	
781	14		SCH40S		P61K-005LP	Flange WN ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 RF Severe wet H2S service	
781	16		SCH40S		P61K-005LR	Flange WN ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 RF Severe wet H2S service	
781	18		SCH40S		P61K-005LS	Flange WN ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 RF Severe wet H2S service	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67K-001HV	Blind flange ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
1	0.75				P67K-001HW	Blind flange ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
1	1				P67K-001HX	Blind flange ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
1	1.5				P67K-001HY	Blind flange ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
1	2				P67K-001HZ	Blind flange ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
1	3				P67K-001J0	Blind flange ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
1	4				P67K-001J1	Blind flange ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
1	6				P67K-001PJ	Blind flange ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
1	8				P67K-001PK	Blind flange ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
1	10				P67K-001PD	Blind flange ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
1	12				P67K-001PE	Blind flange ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
1	14				P67K-001PF	Blind flange ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
1	16				P67K-001PG	Blind flange ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	
1	18				P67K-001PH	Blind flange ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000FT	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000FU	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000G5	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000G6	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	6				P73T-000G7	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	8				P73T-000G8	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	10				P73T-000FX	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	12				P73T-000FY	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	14				P73T-000FZ	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	16				P73T-000G0	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	18				P73T-000G1	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	0.5				P73T-000J8	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	0.75				P73T-000J9	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1				P73T-000JA	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1.5				P73T-000JB	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	2				P73T-000JH	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	3				P73T-000JL	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	4				P73T-000JM	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	6				P73T-000JN	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	8				P73T-000JP	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	10				P73T-000JC	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	12				P73T-000JD	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	14				P73T-000JE	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

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GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
781	16				P73T-000JF	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	18				P73T-000JG	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-10				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	12-18				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
781	0.5-6				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
781	8-18				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81K-001FE	Gate valve ASTM A182 Grade F304/F304L dual grade Class 300 API 602 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service	
1	0.75				P81K-001FF	Gate valve ASTM A182 Grade F304/F304L dual grade Class 300 API 602 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service	
1	1				P81K-001FG	Gate valve ASTM A182 Grade F304/F304L dual grade Class 300 API 602 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service	
1	1.5				P81K-001FH	Gate valve ASTM A182 Grade F304/F304L dual grade Class 300 API 602 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service	
1	2				P81L-002XY	Gate valve ASTM A351 Grade CF8 Class 300 API 600 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service	
1	3				P81L-002XZ	Gate valve ASTM A351 Grade CF8 Class 300 API 600 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service	
1	4				P81L-003GS	Gate valve ASTM A351 Grade CF8 Class 300 API 600 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service	
1	6				P81L-003GT	Gate valve ASTM A351 Grade CF8 Class 300 API 600 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service	
1	8				P81L-003GU	Gate valve ASTM A351 Grade CF8 Class 300 API 600 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service	
1	10				P81L-003GV	Gate valve ASTM A351 Grade CF8 Class 300 API 600 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Gear operated Severe wet H2S service Amine service	
1	12				P81L-003GW	Gate valve ASTM A351 Grade CF8 Class 300 API 600 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Gear operated Severe wet H2S service Amine service	
1	14				P81L-003GX	Gate valve ASTM A351 Grade CF8 Class 300 API 600 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Gear operated Severe wet H2S service Amine service	
1	16				P81L-003GY	Gate valve ASTM A351 Grade CF8 Class 300 API 600 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Gear operated Severe wet H2S service Amine service	
1	18				P81L-003GZ	Gate valve ASTM A351 Grade CF8 Class 300 API 600 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Gear operated Severe wet H2S service Amine service	
4608	0.75				P81K-001NZ	Gate valve ASTM A182 Grade F304/F304L dual grade Class 300 API 602 BW both sides w/ nipples BE - NPT ASTM A312-TP304(L) dual grade Seamless Sch160-nipple Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82K-000ZH	Globe valve ASTM A182 Grade F304/F304L dual grade Class 300 API 602 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service	
1	0.75				P82K-000ZJ	Globe valve ASTM A182 Grade F304/F304L dual grade Class 300 API 602 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service	
1	1				P82K-000ZK	Globe valve ASTM A182 Grade F304/F304L dual grade Class 300 API 602 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service	
1	1.5				P82K-000ZL	Globe valve ASTM A182 Grade F304/F304L dual grade Class 300 API 602 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service	
1	2				P82L-001LG	Globe valve ASTM A351 Grade CF8 Class 300 BS 1873 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service	
1	3				P82L-001LH	Globe valve ASTM A351 Grade CF8 Class 300 BS 1873 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service	
1	4				P82L-00216	Globe valve ASTM A351 Grade CF8 Class 300 BS 1873 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service	
1	6				P82L-00217	Globe valve ASTM A351 Grade CF8 Class 300 BS 1873 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service	
1	8				P82L-00218	Globe valve ASTM A351 Grade CF8 Class 300 BS 1873 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Gear operated Severe wet H2S service Amine service	
4601	2				P82L-001TG	Y-pattern globe valve ASTM A351 Grade CF8 Class 300 ASME B16.34 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service	

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CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83K-000VS	Check valve ASTM A182 Grade F304/F304L dual grade Class 300 API 602 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 Lift-type Bolted cover Severe wet H2S service Amine service	
1	0.75				P83K-000VT	Check valve ASTM A182 Grade F304/F304L dual grade Class 300 API 602 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 Lift-type Bolted cover Severe wet H2S service Amine service	
1	1				P83K-000VU	Check valve ASTM A182 Grade F304/F304L dual grade Class 300 API 602 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 Lift-type Bolted cover Severe wet H2S service Amine service	
1	1.5				P83K-000VV	Check valve ASTM A182 Grade F304/F304L dual grade Class 300 API 602 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 Lift-type Bolted cover Severe wet H2S service Amine service	
1	2				P83L-001GN	Check valve ASTM A351 Grade CF8 Class 300 BS 1868 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 Swing-type Bolted cover Severe wet H2S service Amine service	
1	3				P83L-001GP	Check valve ASTM A351 Grade CF8 Class 300 BS 1868 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 Swing-type Bolted cover Severe wet H2S service Amine service	
1	4				P83L-0021V	Check valve ASTM A351 Grade CF8 Class 300 BS 1868 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 Swing-type Bolted cover Severe wet H2S service Amine service	
1	6				P83L-0021W	Check valve ASTM A351 Grade CF8 Class 300 BS 1868 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 Swing-type Bolted cover Severe wet H2S service Amine service	
1	8				P83L-0021X	Check valve ASTM A351 Grade CF8 Class 300 BS 1868 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 Swing-type Bolted cover Severe wet H2S service Amine service	
1	10				P83L-0021T	Check valve ASTM A351 Grade CF8 Class 300 BS 1868 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 Swing-type Bolted cover Severe wet H2S service Amine service	
1	12				P83L-0021U	Check valve ASTM A351 Grade CF8 Class 300 BS 1868 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 Swing-type Bolted cover Severe wet H2S service Amine service	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71K-000AU	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 300 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	
1	0.75				P71K-000AV	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 300 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	
1	1				P71K-000AW	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 300 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	
1	1.5				P71K-000AX	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 300 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	
1	2				P71K-000AY	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 300 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	
1	3				P71K-000AZ	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 300 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	
1	4				P71K-000B0	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 300 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	
1	6				P71K-000ES	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 300 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	
1	8				P71K-000ET	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 300 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	
1	10				P71K-000EP	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 300 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	
1	12				P71K-000ER	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 300 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	

PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72K-000F2	Paddle blank ASTM A182 Grade F304/F304L dual grade Class 300 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	
1	16				P72K-000F3	Paddle blank ASTM A182 Grade F304/F304L dual grade Class 300 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	
1	18				P72K-000F4	Paddle blank ASTM A182 Grade F304/F304L dual grade Class 300 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	

PADDLE SPACER (PS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72K-000F5	Paddle spacer ASTM A182 Grade F304/F304L dual grade Class 300 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	
1	16				P72K-000F6	Paddle spacer ASTM A182 Grade F304/F304L dual grade Class 300 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	
1	18				P72K-000F7	Paddle spacer ASTM A182 Grade F304/F304L dual grade Class 300 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	

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BOLT TABLE (B_B1J502 , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-008T0		
0.75	4	0.625	75	P80S-00908		
1	4	0.625	80	P80S-00909		
1.5	4	0.750	95	P80S-005Z4		
2	8	0.625	90	P80S-0090B		
3	8	0.750	110	P80S-0090F		
4	8	0.750	115	P80S-0090G		
6	12	0.750	125	P80S-0090J		
8	12	0.875	140	P80S-005ZD		
10	16	1.000	160	P80S-0061E		
12	16	1.125	175	P80S-0064S		
14	20	1.125	180	P80S-0064T		
16	20	1.250	190	P80S-00689		
18	24	1.250	200	P80S-0068B		

BOLT TABLE (B_B1J502_781 , STUD ASME RF, OPTION CODE 781)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	80	P80S-008T2		
0.75	4	0.625	90	P80S-0090B		
1	4	0.625	95	P80S-0090C		
1.5	4	0.750	110	P80S-0090F		
2	8	0.625	110	P80S-008T8		
3	8	0.750	130	P80S-0090K		
4	8	0.875	150	P80S-005ZF		
6	12	1.000	175	P80S-0061H		
8	12	1.125	195	P80S-0064W		
10	16	1.250	250	P80S-0068M		
12	20	1.250	255	P80S-0068N		
14	20	1.375	270	P80S-006HV		
16	20	1.500	295	P80S-006LP		
18	20	1.625	320	P80S-00A5E		

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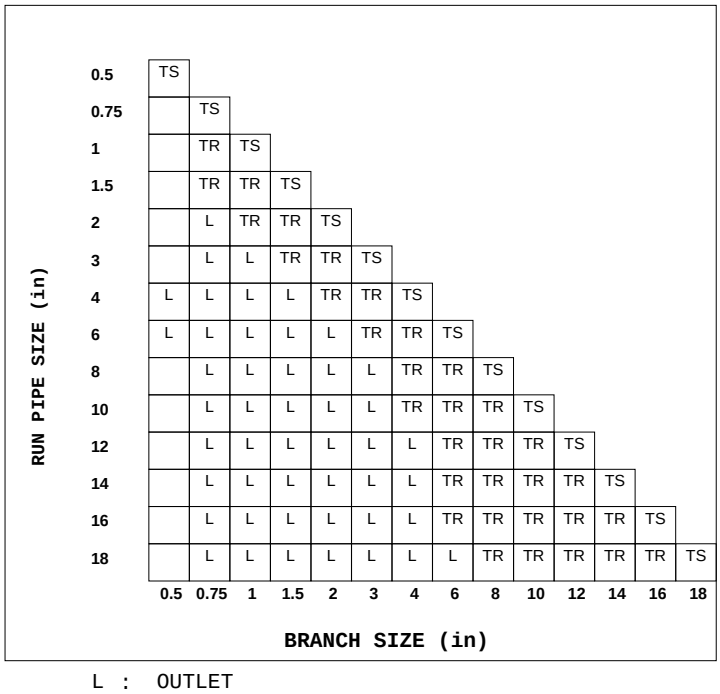
BRANCH TABLE (T_B1J502)



L : OUTLET
TR : REDUCING TEE
TS : STRAIGHT TEE

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Material : SS304H
Rating : ASME CLASS 300
Flange Face : RF
C.A.(mm) : 1.50
Gasket : Spiral Wound
Service : PROCESS - HYDROGEN OR HYDROGEN RICH HYDROCARBON MIXTURES
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
24	FOR ALL RELEVANT PIPING CLASSES WITH LINE DESIGN TEMPERATURE ABOVE 427DEGC, IN SPIRAL WOUND GASKET, SUITABLE GASKET FILLER MATERIAL SUCH AS COMBINATION OF MICA LAYERS AND GRAPHITE FILLERS OR EQUIVALENT SHALL BE REVIEWED AND SELECTED OR AS DEFINED BY THE LICENSOR

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
541	NPT(F) (F,L)
781	CLASS 600 (B,F,G)

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PIPING CLASS
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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P01J-0028H	Pipe ASTM A312 Grade TP304H Seamless ASME B36.10M/B36.19M PE	
1	0.75		SCH80S		P01J-0028J	Pipe ASTM A312 Grade TP304H Seamless ASME B36.10M/B36.19M PE	
1	1		SCH80S		P01J-0028K	Pipe ASTM A312 Grade TP304H Seamless ASME B36.10M/B36.19M PE	
1	1.5		SCH80S		P01J-0028L	Pipe ASTM A312 Grade TP304H Seamless ASME B36.10M/B36.19M PE	
1	2		SCH40S		P01J-0028M	Pipe ASTM A312 Grade TP304H Seamless ASME B36.10M/B36.19M BE	
1	3		SCH40S		P01J-0028N	Pipe ASTM A312 Grade TP304H Seamless ASME B36.10M/B36.19M BE	
1	4		SCH40S		P01J-0028P	Pipe ASTM A312 Grade TP304H Seamless ASME B36.10M/B36.19M BE	
1	6		SCH40S		P01J-0028R	Pipe ASTM A312 Grade TP304H Seamless ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P02J-001RV	90 degree elbow ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW Long radius	
1	0.75		SCH80S		P02J-001RW	90 degree elbow ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW Long radius	
1	1		SCH80S		P02J-001RX	90 degree elbow ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW Long radius	
1	1.5		SCH80S		P02J-001RY	90 degree elbow ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW Long radius	
1	2		SCH40S		P02J-001RZ	90 degree elbow ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW Long radius	
1	3		SCH40S		P02J-001S0	90 degree elbow ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW Long radius	
1	4		SCH40S		P02J-001S1	90 degree elbow ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW Long radius	
1	6		SCH40S		P02J-001S2	90 degree elbow ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P03J-001N8	45 degree elbow ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW Long radius	
1	0.75		SCH80S		P03J-001N9	45 degree elbow ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW Long radius	
1	1		SCH80S		P03J-001NA	45 degree elbow ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW Long radius	
1	1.5		SCH80S		P03J-001NB	45 degree elbow ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW Long radius	
1	2		SCH40S		P03J-001NC	45 degree elbow ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW Long radius	
1	3		SCH40S		P03J-001ND	45 degree elbow ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW Long radius	
1	4		SCH40S		P03J-001NE	45 degree elbow ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW Long radius	
1	6		SCH40S		P03J-001NF	45 degree elbow ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P21J-001ER	Straight tee ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	0.75		SCH80S		P21J-001ES	Straight tee ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	1		SCH80S		P21J-001ET	Straight tee ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	1.5		SCH80S		P21J-001EU	Straight tee ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	2		SCH40S		P21J-001EV	Straight tee ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	3		SCH40S		P21J-001EW	Straight tee ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	4		SCH40S		P21J-001EX	Straight tee ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	6		SCH40S		P21J-001EY	Straight tee ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	

STRAIGHT LATERAL TEE (TLS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75		SCH80S		P22J-0006E	Straight lateral-tee ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW 60 degree	
1	1		SCH80S		P22J-0006F	Straight lateral-tee ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW 60 degree	
1	1.5		SCH80S		P22J-0006G	Straight lateral-tee ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW 60 degree	
1	2		SCH40S		P22J-00070	Straight lateral-tee ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW 60 degree	
1	3		SCH40S		P22J-00071	Straight lateral-tee ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW 60 degree	
1	4		SCH40S		P22J-00072	Straight lateral-tee ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW 60 degree	
1	6		SCH40S		P22J-0006L	Straight lateral-tee ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW 60 degree	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75	SCH80S	SCH80S	P24J-0066G	Reducing tee ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	1.5	0.75	SCH80S	SCH80S	P24J-0066H	Reducing tee ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	1.5	1	SCH80S	SCH80S	P24J-0066J	Reducing tee ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	2	1	SCH40S	SCH80S	P24J-0066K	Reducing tee ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	

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REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2	1.5	SCH40S	SCH80S	P24J-0066L	Reducing tee ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	3	1.5	SCH40S	SCH80S	P24J-0066M	Reducing tee ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	3	2	SCH40S	SCH40S	P24J-0066N	Reducing tee ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	4	2	SCH40S	SCH40S	P24J-0066P	Reducing tee ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	4	3	SCH40S	SCH40S	P24J-0066R	Reducing tee ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	6	3	SCH40S	SCH40S	P24J-0066S	Reducing tee ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	6	4	SCH40S	SCH40S	P24J-0066T	Reducing tee ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH80S	SCH80S	P27J-00558	Concentric reducer ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	1	0.5	SCH80S	SCH80S	P27J-00559	Concentric reducer ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	1	0.75	SCH80S	SCH80S	P27J-0055A	Concentric reducer ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	1.5	0.5	SCH80S	SCH80S	P27J-0055B	Concentric reducer ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	1.5	0.75	SCH80S	SCH80S	P27J-0055C	Concentric reducer ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	1.5	1	SCH80S	SCH80S	P27J-0055D	Concentric reducer ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	2	0.75	SCH40S	SCH80S	P27J-0055E	Concentric reducer ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	2	1	SCH40S	SCH80S	P27J-0055F	Concentric reducer ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	2	1.5	SCH40S	SCH80S	P27J-0055G	Concentric reducer ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	3	1.5	SCH40S	SCH80S	P27J-0055H	Concentric reducer ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	3	2	SCH40S	SCH40S	P27J-0055J	Concentric reducer ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	4	1.5	SCH40S	SCH80S	P27J-0055K	Concentric reducer ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	4	2	SCH40S	SCH40S	P27J-0055L	Concentric reducer ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	4	3	SCH40S	SCH40S	P27J-0055M	Concentric reducer ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	6	3	SCH40S	SCH40S	P27J-0055N	Concentric reducer ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	6	4	SCH40S	SCH40S	P27J-0055P	Concentric reducer ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH80S	SCH80S	P28J-00563	Eccentric reducer ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	1	0.5	SCH80S	SCH80S	P28J-00564	Eccentric reducer ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	1	0.75	SCH80S	SCH80S	P28J-00565	Eccentric reducer ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	1.5	0.5	SCH80S	SCH80S	P28J-00566	Eccentric reducer ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	1.5	0.75	SCH80S	SCH80S	P28J-00567	Eccentric reducer ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	1.5	1	SCH80S	SCH80S	P28J-00568	Eccentric reducer ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	2	0.75	SCH40S	SCH80S	P28J-00569	Eccentric reducer ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	2	1	SCH40S	SCH80S	P28J-0056A	Eccentric reducer ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	2	1.5	SCH40S	SCH80S	P28J-0056B	Eccentric reducer ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	3	1.5	SCH40S	SCH80S	P28J-0056C	Eccentric reducer ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	3	2	SCH40S	SCH40S	P28J-0056D	Eccentric reducer ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	4	1.5	SCH40S	SCH80S	P28J-0056E	Eccentric reducer ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	4	2	SCH40S	SCH40S	P28J-0056F	Eccentric reducer ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	4	3	SCH40S	SCH40S	P28J-0056G	Eccentric reducer ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	6	3	SCH40S	SCH40S	P28J-0056H	Eccentric reducer ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	6	4	SCH40S	SCH40S	P28J-0056J	Eccentric reducer ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P29J-0019H	Cap ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	0.75		SCH80S		P29J-0019J	Cap ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	1		SCH80S		P29J-0019K	Cap ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	1.5		SCH80S		P29J-0019L	Cap ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	2		SCH40S		P29J-0019M	Cap ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	3		SCH40S		P29J-0019N	Cap ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	4		SCH40S		P29J-0019P	Cap ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	6		SCH40S		P29J-0019R	Cap ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	

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STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P41J-001U3	Straight nipple ASTM A312 Grade TP304H Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		SCH80S		P41J-001U4	Straight nipple ASTM A312 Grade TP304H Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		SCH80S		P41J-001U5	Straight nipple ASTM A312 Grade TP304H Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		SCH80S		P41J-001U6	Straight nipple ASTM A312 Grade TP304H Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
541	1	0.75			P31K-00FNB	Outlet ASTM A182 Grade F304H Class 3000 MSS SP-97 NPT	
541	1.5	0.75			P31K-00FNA	Outlet ASTM A182 Grade F304H Class 3000 MSS SP-97 NPT	
541	2 - 2.5	0.75			P31K-00GH9	Outlet ASTM A182 Grade F304H Class 3000 MSS SP-97 NPT	
541	3 - 5	0.75			P31K-00GHA	Outlet ASTM A182 Grade F304H Class 3000 MSS SP-97 NPT	
541	6 - 12	0.75			P31K-00GHB	Outlet ASTM A182 Grade F304H Class 3000 MSS SP-97 NPT	
1	2	0.75	SCH40S	SCH80S	P31K-00DN2	Outlet ASTM A182 Grade F304H MSS SP-97 BW	
1	3	0.75	SCH40S	SCH80S	P31K-00DN3	Outlet ASTM A182 Grade F304H MSS SP-97 BW	
1	4	0.75	SCH40S	SCH80S	P31K-00DN5	Outlet ASTM A182 Grade F304H MSS SP-97 BW	
1	6	0.75	SCH40S	SCH80S	P31K-00DN8	Outlet ASTM A182 Grade F304H MSS SP-97 BW	
1	3	1	SCH40S	SCH80S	P31K-00DN4	Outlet ASTM A182 Grade F304H MSS SP-97 BW	
1	4	1	SCH40S	SCH80S	P31K-00DN6	Outlet ASTM A182 Grade F304H MSS SP-97 BW	
1	6	1	SCH40S	SCH80S	P31K-00DN9	Outlet ASTM A182 Grade F304H MSS SP-97 BW	
1	4	1.5	SCH40S	SCH80S	P31K-00DN7	Outlet ASTM A182 Grade F304H MSS SP-97 BW	
1	6	1.5	SCH40S	SCH80S	P31K-00DNA	Outlet ASTM A182 Grade F304H MSS SP-97 BW	
1	6	2	SCH40S	SCH40S	P31K-00DNB	Outlet ASTM A182 Grade F304H MSS SP-97 BW	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30K-0004M	Plug ASTM A182 Grade F304H ASME B16.11 NPT Round head	
1	0.75				P30K-0004N	Plug ASTM A182 Grade F304H ASME B16.11 NPT Round head	
1	1				P30K-0004P	Plug ASTM A182 Grade F304H ASME B16.11 NPT Round head	
1	1.5				P30K-0004R	Plug ASTM A182 Grade F304H ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P61K-004YB	Flange WN ASTM A182 Grade F304H Class 300 ASME B16.5 RF	
1	0.75		SCH80S		P61K-004YC	Flange WN ASTM A182 Grade F304H Class 300 ASME B16.5 RF	
1	1		SCH80S		P61K-004YD	Flange WN ASTM A182 Grade F304H Class 300 ASME B16.5 RF	
1	1.5		SCH80S		P61K-004YE	Flange WN ASTM A182 Grade F304H Class 300 ASME B16.5 RF	
1	2		SCH40S		P61K-0050E	Flange WN ASTM A182 Grade F304H Class 300 ASME B16.5 RF	
1	3		SCH40S		P61K-0050F	Flange WN ASTM A182 Grade F304H Class 300 ASME B16.5 RF	
1	4		SCH40S		P61K-0050G	Flange WN ASTM A182 Grade F304H Class 300 ASME B16.5 RF	
1	6		SCH40S		P61K-004YR	Flange WN ASTM A182 Grade F304H Class 300 ASME B16.5 RF	
541	0.5				P61K-0069M	Flange NPT ASTM A182 Grade F304H Class 300 ASME B16.5 RF	
541	0.75				P61K-00604	Flange NPT ASTM A182 Grade F304H Class 300 ASME B16.5 RF	
781	0.5		SCH80S		P61K-004TC	Flange WN ASTM A182 Grade F304H Class 600 ASME B16.5 RF	
781	0.75		SCH80S		P61K-004TD	Flange WN ASTM A182 Grade F304H Class 600 ASME B16.5 RF	
781	1		SCH80S		P61K-004TE	Flange WN ASTM A182 Grade F304H Class 600 ASME B16.5 RF	
781	1.5		SCH80S		P61K-004TF	Flange WN ASTM A182 Grade F304H Class 600 ASME B16.5 RF	
781	2		SCH40S		P61K-004TG	Flange WN ASTM A182 Grade F304H Class 600 ASME B16.5 RF	
781	3		SCH40S		P61K-004TH	Flange WN ASTM A182 Grade F304H Class 600 ASME B16.5 RF	
781	4		SCH40S		P61K-004TJ	Flange WN ASTM A182 Grade F304H Class 600 ASME B16.5 RF	
781	6		SCH40S		P61K-004TK	Flange WN ASTM A182 Grade F304H Class 600 ASME B16.5 RF	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67K-001FZ	Blind flange ASTM A182 Grade F304H Class 300 ASME B16.5 RF	
1	0.75				P67K-001G0	Blind flange ASTM A182 Grade F304H Class 300 ASME B16.5 RF	
1	1				P67K-001G1	Blind flange ASTM A182 Grade F304H Class 300 ASME B16.5 RF	
1	1.5				P67K-001G2	Blind flange ASTM A182 Grade F304H Class 300 ASME B16.5 RF	
1	2				P67K-001G3	Blind flange ASTM A182 Grade F304H Class 300 ASME B16.5 RF	

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BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3				P67K-001G4	Blind flange ASTM A182 Grade F304H Class 300 ASME B16.5 RF	
1	4				P67K-001G5	Blind flange ASTM A182 Grade F304H Class 300 ASME B16.5 RF	
1	6				P67K-001GC	Blind flange ASTM A182 Grade F304H Class 300 ASME B16.5 RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-003AM	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	0.75				P73T-003AN	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	1				P73T-003AP	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	1.5				P73T-003AR	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	2				P73T-003AX	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	3				P73T-003B0	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	4				P73T-003B1	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	6				P73T-003B2	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
781	0.5				P73T-003B4	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
781	0.75				P73T-003B5	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
781	1				P73T-003B6	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
781	1.5				P73T-003B7	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
781	2				P73T-003BD	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
781	3				P73T-003BG	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
781	4				P73T-003BH	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
781	6				P73T-003BJ	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-6				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B8M Class 1 / A194 Grade 8MA ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
781	0.5-6				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B8M Class 1 / A194 Grade 8MA ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71K-0007P	Spectacle blank ASTM A182 Grade F304H Class 300 Standard-drawing Flange ASME B16.5 RF	
1	0.75				P71K-0007R	Spectacle blank ASTM A182 Grade F304H Class 300 Standard-drawing Flange ASME B16.5 RF	
1	1				P71K-0007S	Spectacle blank ASTM A182 Grade F304H Class 300 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71K-0007T	Spectacle blank ASTM A182 Grade F304H Class 300 Standard-drawing Flange ASME B16.5 RF	
1	2				P71K-0007U	Spectacle blank ASTM A182 Grade F304H Class 300 Standard-drawing Flange ASME B16.5 RF	
1	3				P71K-0007V	Spectacle blank ASTM A182 Grade F304H Class 300 Standard-drawing Flange ASME B16.5 RF	
1	4				P71K-0007W	Spectacle blank ASTM A182 Grade F304H Class 300 Standard-drawing Flange ASME B16.5 RF	
1	6				P71K-0007Z	Spectacle blank ASTM A182 Grade F304H Class 300 Standard-drawing Flange ASME B16.5 RF	

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BOLT TABLE (B_B1KH04 , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-01PNH		
0.75	4	0.625	75	P80S-01PR5		
1	4	0.625	80	P80S-01PR6		
1.5	4	0.750	95	P80S-01PU2		
2	8	0.625	90	P80S-01PR8		
3	8	0.750	110	P80S-01PRC		
4	8	0.750	115	P80S-01PRD		
6	12	0.750	125	P80S-01PRF		

BOLT TABLE (B_B1KH04_781 , STUD ASME RF, OPTION CODE 781)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	80	P80S-01PNK		
0.75	4	0.625	90	P80S-01PR8		
1	4	0.625	95	P80S-01PR9		
1.5	4	0.750	110	P80S-01PRC		
2	8	0.625	110	P80S-01PNS		
3	8	0.750	130	P80S-01PRG		
4	8	0.875	150	P80S-01PUD		
6	12	1.000	175	P80S-01PWJ		

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BRANCH TABLE (T_B1KH04)

RUN PIPE SIZE (in) \ BRANCH SIZE (in)	0.5	0.75	1	1.5	2	3	4	6
0.5	TS							
0.75		TS						
1		TR	TS					
1.5		TR	TR	TS				
2		L	TR	TR	TS			
3		L	L	TR	TR	TS		
4	L	L	L	L	TR	TR	TS	
6	L	L	L	L	L	TR	TR	TS

TS : STRAIGHT TEE
L : OUTLET
TR : REDUCING TEE

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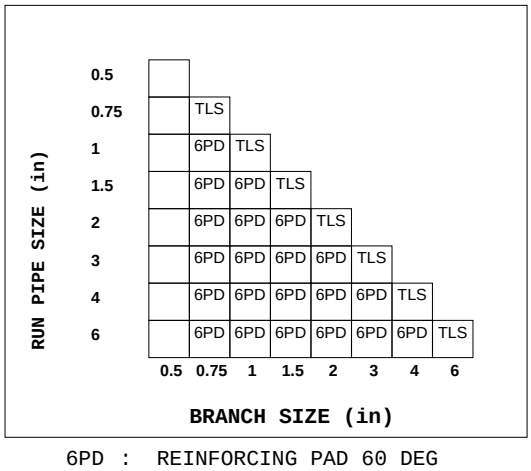
BRANCH TABLE (T_B1KH04_3)



6PD : REINFORCING PAD 60 DEG
TLS : STRAIGHT LATERAL TEE

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PIPING CLASS

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Material : SS316L
Rating : ASME CLASS 300
Flange Face : RF
C.A.(mm) : 1.50
Gasket : Spiral Wound
Service : PROCESS - GENERAL PROCESS NON SOUR, NON CORROSIVE
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
541	NPT(F) (CA,L)
714	SW - NPT(F) (V)
781	CLASS 600 (B,F,G)

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PIPING CLASS
B1LP04 REV NO. 2

PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P01J-0014A	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE	
1	0.75		SCH80S		P01J-0014B	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE	
1	1		SCH80S		P01J-0014C	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE	
1	1.5		SCH80S		P01J-0014D	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE	
1	2		SCH40S		P01J-000CK	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M BE	
1	3		SCH40S		P01J-000D8	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M BE	
1	4		SCH40S		P01J-000DF	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M BE	
1	6		SCH40S		P01J-000DT	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M BE	
1	8		SCH40S		P01J-001GN	Pipe ASTM A358 Grade 316/316L Class 1 dual grade EFW ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P02K-0000G	90 degree elbow ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	0.75				P02K-0000H	90 degree elbow ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	1				P02K-0000J	90 degree elbow ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	1.5				P02K-0000K	90 degree elbow ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	2		SCH40S		P02J-0007C	90 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	3		SCH40S		P02J-0007D	90 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	4		SCH40S		P02J-0007E	90 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	6		SCH40S		P02J-0006V	90 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	8		SCH40S		P02J-00190	90 degree elbow ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P03K-0000D	45 degree elbow ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	0.75				P03K-0000E	45 degree elbow ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	1				P03K-0000F	45 degree elbow ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	1.5				P03K-0000G	45 degree elbow ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	2		SCH40S		P03J-0007C	45 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	3		SCH40S		P03J-0007D	45 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	4		SCH40S		P03J-0007E	45 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	6		SCH40S		P03J-0006L	45 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	8		SCH40S		P03J-0017W	45 degree elbow ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P21K-0000G	Straight tee ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	0.75				P21K-0000H	Straight tee ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	1				P21K-0000J	Straight tee ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	1.5				P21K-0000K	Straight tee ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	2		SCH40S		P21J-0007W	Straight tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	3		SCH40S		P21J-0007X	Straight tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	4		SCH40S		P21J-0007Y	Straight tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	6		SCH40S		P21J-00074	Straight tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	8		SCH40S		P21J-0011C	Straight tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75			P24K-0000M	Reducing tee ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	1.5	0.75			P24K-0000P	Reducing tee ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	1.5	1			P24K-0000R	Reducing tee ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	2	1	SCH40S	SCH80S	P24J-003MZ	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	2	1.5	SCH40S	SCH80S	P24J-003N0	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	3	1.5	SCH40S	SCH80S	P24J-004TU	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	3	2	SCH40S	SCH40S	P24J-001JD	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	

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REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	4	2	SCH40S	SCH40S	P24J-001JE	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	4	3	SCH40S	SCH40S	P24J-001JF	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	6	3	SCH40S	SCH40S	P24J-001JG	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	6	4	SCH40S	SCH40S	P24J-001JH	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	8	4	SCH40S	SCH40S	P24J-004UP	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	8	6	SCH40S	SCH40S	P24J-004UR	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	SCH40S	SCH40S	P27J-000WG	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	4	2	SCH40S	SCH40S	P27J-000WJ	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	4	3	SCH40S	SCH40S	P27J-000WK	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	6	3	SCH40S	SCH40S	P27J-000WL	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	6	4	SCH40S	SCH40S	P27J-000WM	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	8	4	SCH40S	SCH40S	P27J-003MV	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	8	6	SCH40S	SCH40S	P27J-003MW	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	SCH40S	SCH40S	P28J-000WB	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	4	2	SCH40S	SCH40S	P28J-000WD	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	4	3	SCH40S	SCH40S	P28J-000WE	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	6	3	SCH40S	SCH40S	P28J-000WF	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	6	4	SCH40S	SCH40S	P28J-000WG	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	8	4	SCH40S	SCH40S	P28J-003NH	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	8	6	SCH40S	SCH40S	P28J-003NJ	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P29K-00021	Cap ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	0.75				P29K-00022	Cap ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	1				P29K-00023	Cap ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	1.5				P29K-00024	Cap ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	2		SCH40S		P29J-0007D	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	3		SCH40S		P29J-0007G	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	4		SCH40S		P29J-0007J	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	6		SCH40S		P29J-00074	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	8		SCH40S		P29J-000YG	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
541	0.75				P29K-00002	Cap ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 NPT	
541	1				P29K-00003	Cap ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P41J-001UY	Straight nipple ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		SCH160		P41J-001UZ	Straight nipple ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		SCH160		P41J-001V0	Straight nipple ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		SCH160		P41J-001V1	Straight nipple ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

CON SWAGED NIPPLE (SNC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH80S	SCH80S	P42J-0008N	Concentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	SCH80S	SCH80S	P42J-0008M	Concentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	SCH80S	SCH80S	P42J-0008P	Concentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	SCH80S	SCH80S	P42J-0008R	Concentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	SCH80S	SCH80S	P42J-0008S	Concentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	

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CON SWAGED NIPPLE (SNC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5	1	SCH80S	SCH80S	P42J-0008T	Concentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	SCH40S	SCH80S	P42J-000B0	Concentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	SCH40S	SCH80S	P42J-000B1	Concentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	SCH40S	SCH80S	P42J-000B2	Concentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	SCH40S	SCH80S	P42J-000B3	Concentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	SCH40S	SCH80S	P42J-000B4	Concentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	

ECC SWAGED NIPPLE (SNE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH80S	SCH80S	P43J-0008R	Eccentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	SCH80S	SCH80S	P43J-0008S	Eccentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	SCH80S	SCH80S	P43J-0008T	Eccentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	SCH80S	SCH80S	P43J-0008U	Eccentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	SCH80S	SCH80S	P43J-0008V	Eccentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	SCH80S	SCH80S	P43J-0008W	Eccentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	SCH40S	SCH80S	P43J-0009D	Eccentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	SCH40S	SCH80S	P43J-0009E	Eccentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	SCH40S	SCH80S	P43J-0009F	Eccentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	SCH40S	SCH80S	P43J-0009G	Eccentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	SCH40S	SCH80S	P43J-0009H	Eccentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	

COUPLING (CPS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P47K-0000G	Coupling ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW - SW	
1	0.75				P47K-0000H	Coupling ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW - SW	
1	1				P47K-0000J	Coupling ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW - SW	
1	1.5				P47K-0000K	Coupling ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW - SW	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2 - 2.5	0.75			P31K-00GGG	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 SW	
1	3 - 5	0.75			P31K-00GGH	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 SW	
1	6 - 12	0.75			P31K-003VD	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 SW	
1	3	1			P31K-003UY	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 SW	
1	4 - 5	1			P31K-00GGJ	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 SW	
1	6 - 10	1			P31K-003UU	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 SW	
1	4	1.5			P31K-003UH	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 SW	
1	5 - 6	1.5			P31K-00GGN	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 SW	
1	8 - 12	1.5			P31K-003UB	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 SW	
541	1	0.75			P31K-001XH	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 NPT	
541	1.5	0.75			P31K-001XM	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 NPT	
541	2 - 2.5	0.75			P31K-00GGK	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 NPT	
541	3 - 5	0.75			P31K-00GGL	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 NPT	
541	6 - 12	0.75			P31K-003U1	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 NPT	
1	6	2	SCH40S	SCH40S	P31K-0035H	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW	
1	8	2	SCH40S	SCH40S	P31K-00BWF	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW	
1	8	3	SCH40S	SCH40S	P31K-00C60	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30K-0001L	Plug ASTM A182 Grade F316/F316L dual grade ASME B16.11 NPT Round head	
1	0.75				P30K-0001M	Plug ASTM A182 Grade F316/F316L dual grade ASME B16.11 NPT Round head	

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PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P30K-0001N	Plug ASTM A182 Grade F316/F316L dual grade ASME B16.11 NPT Round head	
1	1.5				P30K-0001P	Plug ASTM A182 Grade F316/F316L dual grade ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P61K-003AK	Flange SW ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF	
1	0.75		SCH80S		P61K-003AL	Flange SW ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF	
1	1		SCH80S		P61K-003AM	Flange SW ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF	
1	1.5		SCH80S		P61K-003AN	Flange SW ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF	
1	2		SCH40S		P61K-002LG	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF	
1	3		SCH40S		P61K-003C5	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF	
1	4		SCH40S		P61K-003C6	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF	
1	6		SCH40S		P61K-00187	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF	
1	8		SCH40S		P61K-003E8	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF	
781	0.5		SCH80S		P61K-003HT	Flange SW ASTM A182 Grade F316/F316L dual grade Class 600 ASME B16.5 RF	
781	0.75		SCH80S		P61K-003HU	Flange SW ASTM A182 Grade F316/F316L dual grade Class 600 ASME B16.5 RF	
781	1		SCH80S		P61K-0042H	Flange SW ASTM A182 Grade F316/F316L dual grade Class 600 ASME B16.5 RF	
781	1.5		SCH80S		P61K-0042J	Flange SW ASTM A182 Grade F316/F316L dual grade Class 600 ASME B16.5 RF	
781	2		SCH40S		P61K-002M0	Flange WN ASTM A182 Grade F316/F316L dual grade Class 600 ASME B16.5 RF	
781	3		SCH40S		P61K-00346	Flange WN ASTM A182 Grade F316/F316L dual grade Class 600 ASME B16.5 RF	
781	4		SCH40S		P61K-00347	Flange WN ASTM A182 Grade F316/F316L dual grade Class 600 ASME B16.5 RF	
781	6		SCH40S		P61K-0029B	Flange WN ASTM A182 Grade F316/F316L dual grade Class 600 ASME B16.5 RF	
781	8		SCH40S		P61K-003EA	Flange WN ASTM A182 Grade F316/F316L dual grade Class 600 ASME B16.5 RF	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67K-0007H	Blind flange ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF	
1	0.75				P67K-0007G	Blind flange ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF	
1	1				P67K-0007F	Blind flange ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF	
1	1.5				P67K-0007E	Blind flange ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF	
1	2				P67K-0007D	Blind flange ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF	
1	3				P67K-0007C	Blind flange ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF	
1	4				P67K-0007B	Blind flange ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF	
1	6				P67K-0007K	Blind flange ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF	
1	8				P67K-0007J	Blind flange ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000FT	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000FU	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000G5	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000G6	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	6				P73T-000G7	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	8				P73T-000G8	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	0.5				P73T-000J8	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	0.75				P73T-000J9	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1				P73T-000JA	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1.5				P73T-000JB	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	2				P73T-000JH	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	3				P73T-000JL	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

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GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
781	4				P73T-000JM	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	6				P73T-000JN	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	8				P73T-000JP	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-8				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
781	0.5-6				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
781	8				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81K-0010V	Gate valve ASTM A182 Grade F316/F316L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	0.75				P81K-0010W	Gate valve ASTM A182 Grade F316/F316L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	1				P81K-0010X	Gate valve ASTM A182 Grade F316/F316L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	1.5				P81K-0010Y	Gate valve ASTM A182 Grade F316/F316L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	2				P81L-002CT	Gate valve ASTM A351 Grade CF8M Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	3				P81L-002CU	Gate valve ASTM A351 Grade CF8M Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	4				P81L-002CV	Gate valve ASTM A351 Grade CF8M Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	6				P81L-002CW	Gate valve ASTM A351 Grade CF8M Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	8				P81L-002CX	Gate valve ASTM A351 Grade CF8M Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
714	0.5				P81K-001LF	Gate valve ASTM A182 Grade F316/F316L dual grade Class 800 API 602 SW - NPT Trim number 12 BB-BG-OS&Y Handwheel operated	
714	0.75				P81K-001G3	Gate valve ASTM A182 Grade F316/F316L dual grade Class 800 API 602 SW - NPT Trim number 12 BB-BG-OS&Y Handwheel operated	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82K-000P3	Globe valve ASTM A182 Grade F316/F316L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	0.75				P82K-000P4	Globe valve ASTM A182 Grade F316/F316L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	1				P82K-000P5	Globe valve ASTM A182 Grade F316/F316L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	1.5				P82K-000P6	Globe valve ASTM A182 Grade F316/F316L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	2				P82L-001AS	Globe valve ASTM A351 Grade CF8M Class 300 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	3				P82L-001AT	Globe valve ASTM A351 Grade CF8M Class 300 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	4				P82L-001AU	Globe valve ASTM A351 Grade CF8M Class 300 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	6				P82L-001AV	Globe valve ASTM A351 Grade CF8M Class 300 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	8				P82L-001XZ	Globe valve ASTM A351 Grade CF8M Class 300 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83K-000P6	Check valve ASTM A182 Grade F316/F316L dual grade Class 800 API 602 SW Trim number 12 Lift-type Bolted cover	
1	0.75				P83K-000P7	Check valve ASTM A182 Grade F316/F316L dual grade Class 800 API 602 SW Trim number 12 Lift-type Bolted cover	
1	1				P83K-000P8	Check valve ASTM A182 Grade F316/F316L dual grade Class 800 API 602 SW Trim number 12 Lift-type Bolted cover	
1	1.5				P83K-000P9	Check valve ASTM A182 Grade F316/F316L dual grade Class 800 API 602 SW Trim number 12 Lift-type Bolted cover	
1	2				P83L-001AU	Check valve ASTM A351 Grade CF8M Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	3				P83L-001AV	Check valve ASTM A351 Grade CF8M Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	4				P83L-001AW	Check valve ASTM A351 Grade CF8M Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	6				P83L-001GF	Check valve ASTM A351 Grade CF8M Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	

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CHECK VALVE (X)							
OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	8				P83L-001GG	Check valve ASTM A351 Grade CF8M Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	

SPECT BLANK (SB)							
OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71K-00081	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 300 Standard-drawing Flange ASME B16.5 RF	
1	0.75				P71K-00082	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 300 Standard-drawing Flange ASME B16.5 RF	
1	1				P71K-00083	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 300 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71K-00084	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 300 Standard-drawing Flange ASME B16.5 RF	
1	2				P71K-00085	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 300 Standard-drawing Flange ASME B16.5 RF	
1	3				P71K-00086	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 300 Standard-drawing Flange ASME B16.5 RF	
1	4				P71K-00087	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 300 Standard-drawing Flange ASME B16.5 RF	
1	6				P71K-00088	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 300 Standard-drawing Flange ASME B16.5 RF	
1	8				P71K-00089	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 300 Standard-drawing Flange ASME B16.5 RF	

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BOLT TABLE (B_B1LP04 , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-003V4		
0.75	4	0.625	75	P80S-003XC		
1	4	0.625	80	P80S-003XD		
1.5	4	0.750	95	P80S-00414		
2	8	0.625	90	P80S-003XF		
3	8	0.750	110	P80S-003XK		
4	8	0.750	115	P80S-003XL		
6	12	0.750	125	P80S-003XN		
8	12	0.875	140	P80S-0041D		

BOLT TABLE (B_B1LP04_781 , STUD ASME RF, OPTION CODE 781)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	80	P80S-003V6		
0.75	4	0.625	90	P80S-003XF		
1	4	0.625	95	P80S-003XG		
1.5	4	0.750	110	P80S-003XK		
2	8	0.625	110	P80S-003VC		
3	8	0.750	130	P80S-003XP		
4	8	0.875	150	P80S-0041F		
6	12	1.000	175	P80S-0043P		
8	12	1.125	195	P80S-0046W		

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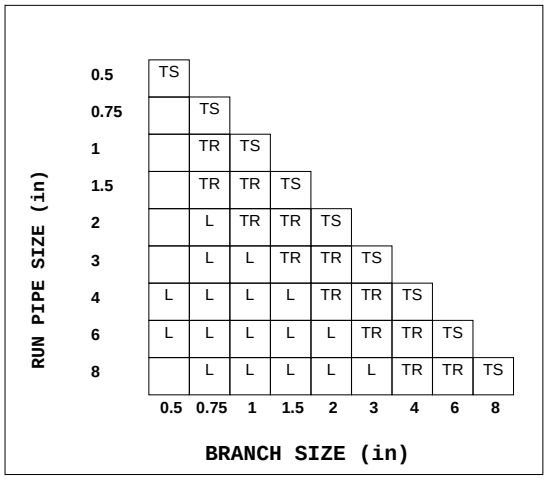
BRANCH TABLE (T_B1LP04)



TR : REDUCING TEE
L : OUTLET
TS : STRAIGHT TEE

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Material : SS316L
Rating : ASME CLASS 300
Flange Face : RF
C.A.(mm) : 1.50
Gasket : Spiral Wound
Service : PROCESS - CORROSIVE SERVICE:
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
24	FOR ALL RELEVANT PIPING CLASSES WITH LINE DESIGN TEMPERATURE ABOVE 427DEGC, IN SPIRAL WOUND GASKET, SUITABLE GASKET FILLER MATERIAL SUCH AS COMBINATION OF MICA LAYERS AND GRAPHITE FILLERS OR EQUIVALENT SHALL BE REVIEWED AND SELECTED OR AS DEFINED BY THE LICENSOR

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
541	NPT(F) (CA,L)
714	SW - NPT(F) (V)
781	CLASS 600 (B,F,G)

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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P01J-0014A	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE	
1	0.75		SCH80S		P01J-0014B	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE	
1	1		SCH80S		P01J-0014C	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE	
1	1.5		SCH80S		P01J-0014D	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE	
1	2		SCH40S		P01J-000CK	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M BE	
1	3		SCH40S		P01J-000D8	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M BE	
1	4		SCH40S		P01J-000DF	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M BE	
1	6		SCH40S		P01J-000DT	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M BE	
1	8		SCH40S		P01J-001GN	Pipe ASTM A358 Grade 316/316L Class 1 dual grade EFW ASME B36.10M/B36.19M BE	
1	10		SCH80S		P01J-0026H	Pipe ASTM A358 Grade 316/316L Class 1 dual grade EFW ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P02K-0000G	90 degree elbow ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	0.75				P02K-0000H	90 degree elbow ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	1				P02K-0000J	90 degree elbow ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	1.5				P02K-0000K	90 degree elbow ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	2		SCH40S		P02J-0007C	90 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	3		SCH40S		P02J-0007D	90 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	4		SCH40S		P02J-0007E	90 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	6		SCH40S		P02J-0006V	90 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	8		SCH40S		P02J-00190	90 degree elbow ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Long radius	
1	10		SCH80S		P02J-001MF	90 degree elbow ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P03K-0000D	45 degree elbow ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	0.75				P03K-0000E	45 degree elbow ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	1				P03K-0000F	45 degree elbow ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	1.5				P03K-0000G	45 degree elbow ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	2		SCH40S		P03J-0007C	45 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	3		SCH40S		P03J-0007D	45 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	4		SCH40S		P03J-0007E	45 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	6		SCH40S		P03J-0006L	45 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	8		SCH40S		P03J-0017W	45 degree elbow ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Long radius	
1	10		SCH80S		P03J-001KU	45 degree elbow ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P21K-0000G	Straight tee ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	0.75				P21K-0000H	Straight tee ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	1				P21K-0000J	Straight tee ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	1.5				P21K-0000K	Straight tee ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	2		SCH40S		P21J-0007W	Straight tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	3		SCH40S		P21J-0007X	Straight tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	4		SCH40S		P21J-0007Y	Straight tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	6		SCH40S		P21J-00074	Straight tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	8		SCH40S		P21J-0011C	Straight tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	10		SCH80S		P21J-001CD	Straight tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75			P24K-0000M	Reducing tee ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	1.5	0.75			P24K-0000P	Reducing tee ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	

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REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5	1			P24K-0000R	Reducing tee ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	2	1	SCH40S	SCH80S	P24J-003MZ	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	2	1.5	SCH40S	SCH80S	P24J-003N0	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	3	1.5	SCH40S	SCH80S	P24J-004TU	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	3	2	SCH40S	SCH40S	P24J-001JD	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	4	2	SCH40S	SCH40S	P24J-001JE	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	4	3	SCH40S	SCH40S	P24J-001JF	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	6	3	SCH40S	SCH40S	P24J-001JG	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	6	4	SCH40S	SCH40S	P24J-001JH	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	8	4	SCH40S	SCH40S	P24J-004UP	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	8	6	SCH40S	SCH40S	P24J-004UR	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	10	4	SCH80S	SCH40S	P24J-007BE	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	10	6	SCH80S	SCH40S	P24J-007U2	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	10	8	SCH80S	SCH40S	P24J-007U3	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	SCH40S	SCH40S	P27J-000WG	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	4	2	SCH40S	SCH40S	P27J-000WJ	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	4	3	SCH40S	SCH40S	P27J-000WK	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	6	3	SCH40S	SCH40S	P27J-000WL	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	6	4	SCH40S	SCH40S	P27J-000WM	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	8	4	SCH40S	SCH40S	P27J-003MV	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	8	6	SCH40S	SCH40S	P27J-003MW	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	10	4	SCH80S	SCH40S	P27J-004W7	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	10	6	SCH80S	SCH40S	P27J-004W8	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	10	8	SCH80S	SCH40S	P27J-004W9	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	SCH40S	SCH40S	P28J-000WB	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	4	2	SCH40S	SCH40S	P28J-000WD	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	4	3	SCH40S	SCH40S	P28J-000WE	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	6	3	SCH40S	SCH40S	P28J-000WF	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	6	4	SCH40S	SCH40S	P28J-000WG	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	8	4	SCH40S	SCH40S	P28J-003NH	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	8	6	SCH40S	SCH40S	P28J-003NJ	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	10	4	SCH80S	SCH40S	P28J-004WZ	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	10	6	SCH80S	SCH40S	P28J-004X0	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	10	8	SCH80S	SCH40S	P28J-004X1	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P29K-00021	Cap ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	0.75				P29K-00022	Cap ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	1				P29K-00023	Cap ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	1.5				P29K-00024	Cap ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	2		SCH40S		P29J-0007D	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	3		SCH40S		P29J-0007G	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	4		SCH40S		P29J-0007J	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	6		SCH40S		P29J-00074	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	8		SCH40S		P29J-000YG	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	10		SCH80S		P29J-0017B	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
541	0.75				P29K-00002	Cap ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P41J-001UY	Straight nipple ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

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STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75		SCH160		P41J-001UZ	Straight nipple ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		SCH160		P41J-001V0	Straight nipple ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		SCH160		P41J-001V1	Straight nipple ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

CON SWAGED NIPPLE (SNC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH80S	SCH80S	P42J-0008N	Concentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	SCH80S	SCH80S	P42J-0008M	Concentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	SCH80S	SCH80S	P42J-0008P	Concentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	SCH80S	SCH80S	P42J-0008R	Concentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	SCH80S	SCH80S	P42J-0008S	Concentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	SCH80S	SCH80S	P42J-0008T	Concentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	SCH40S	SCH80S	P42J-000B0	Concentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	SCH40S	SCH80S	P42J-000B1	Concentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	SCH40S	SCH80S	P42J-000B2	Concentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	SCH40S	SCH80S	P42J-000B3	Concentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	SCH40S	SCH80S	P42J-000B4	Concentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	

ECC SWAGED NIPPLE (SNE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH80S	SCH80S	P43J-0008R	Eccentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	SCH80S	SCH80S	P43J-0008S	Eccentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	SCH80S	SCH80S	P43J-0008T	Eccentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	SCH80S	SCH80S	P43J-0008U	Eccentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	SCH80S	SCH80S	P43J-0008V	Eccentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	SCH80S	SCH80S	P43J-0008W	Eccentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	SCH40S	SCH80S	P43J-0009D	Eccentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	SCH40S	SCH80S	P43J-0009E	Eccentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	SCH40S	SCH80S	P43J-0009F	Eccentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	SCH40S	SCH80S	P43J-0009G	Eccentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	SCH40S	SCH80S	P43J-0009H	Eccentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	

COUPLING (CPS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P47K-0000G	Coupling ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW - SW	
1	0.75				P47K-0000H	Coupling ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW - SW	
1	1				P47K-0000J	Coupling ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW - SW	
1	1.5				P47K-0000K	Coupling ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW - SW	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2 - 2.5	0.75			P31K-00GGG	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 SW	
1	3 - 5	0.75			P31K-00GGH	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 SW	
1	6 - 12	0.75			P31K-003VD	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 SW	
1	3	1			P31K-003UY	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 SW	
1	4 - 5	1			P31K-00GGJ	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 SW	
1	6 - 10	1			P31K-003UU	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 SW	
1	4	1.5			P31K-003UH	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 SW	
1	5 - 6	1.5			P31K-00GGN	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 SW	
1	8 - 12	1.5			P31K-003UB	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 SW	

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OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
541	1	0.75			P31K-001XH	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 NPT	
541	1.5	0.75			P31K-001XM	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 NPT	
541	2 - 2.5	0.75			P31K-00GGK	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 NPT	
541	3 - 5	0.75			P31K-00GGL	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 NPT	
541	6 - 12	0.75			P31K-003U1	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 NPT	
1	6	2	SCH40S	SCH40S	P31K-0035H	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW	
1	8	2	SCH40S	SCH40S	P31K-00BWF	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW	
1	10	2	SCH80S	SCH40S	P31K-00FTL	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW	
1	8	3	SCH40S	SCH40S	P31K-00C60	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW	
1	10	3	SCH80S	SCH40S	P31K-00D8T	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30K-0001L	Plug ASTM A182 Grade F316/F316L dual grade ASME B16.11 NPT Round head	
1	0.75				P30K-0001M	Plug ASTM A182 Grade F316/F316L dual grade ASME B16.11 NPT Round head	
1	1				P30K-0001N	Plug ASTM A182 Grade F316/F316L dual grade ASME B16.11 NPT Round head	
1	1.5				P30K-0001P	Plug ASTM A182 Grade F316/F316L dual grade ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P61K-003AK	Flange SW ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF	
1	0.75		SCH80S		P61K-003AL	Flange SW ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF	
1	1		SCH80S		P61K-003AM	Flange SW ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF	
1	1.5		SCH80S		P61K-003AN	Flange SW ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF	
1	2		SCH40S		P61K-002LG	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF	
1	3		SCH40S		P61K-003C5	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF	
1	4		SCH40S		P61K-003C6	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF	
1	6		SCH40S		P61K-00187	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF	
1	8		SCH40S		P61K-003E8	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF	
1	10		SCH80S		P61K-0061F	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF	
781	0.5		SCH80S		P61K-003HT	Flange SW ASTM A182 Grade F316/F316L dual grade Class 600 ASME B16.5 RF	
781	0.75		SCH80S		P61K-003HU	Flange SW ASTM A182 Grade F316/F316L dual grade Class 600 ASME B16.5 RF	
781	1		SCH80S		P61K-0042H	Flange SW ASTM A182 Grade F316/F316L dual grade Class 600 ASME B16.5 RF	
781	1.5		SCH80S		P61K-0042J	Flange SW ASTM A182 Grade F316/F316L dual grade Class 600 ASME B16.5 RF	
781	2		SCH40S		P61K-002M0	Flange WN ASTM A182 Grade F316/F316L dual grade Class 600 ASME B16.5 RF	
781	3		SCH40S		P61K-00346	Flange WN ASTM A182 Grade F316/F316L dual grade Class 600 ASME B16.5 RF	
781	4		SCH40S		P61K-00347	Flange WN ASTM A182 Grade F316/F316L dual grade Class 600 ASME B16.5 RF	
781	6		SCH40S		P61K-0029B	Flange WN ASTM A182 Grade F316/F316L dual grade Class 600 ASME B16.5 RF	
781	8		SCH40S		P61K-003EA	Flange WN ASTM A182 Grade F316/F316L dual grade Class 600 ASME B16.5 RF	
781	10		SCH80S		P61K-005PJ	Flange WN ASTM A182 Grade F316/F316L dual grade Class 600 ASME B16.5 RF	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67K-0007H	Blind flange ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF	
1	0.75				P67K-0007G	Blind flange ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF	
1	1				P67K-0007F	Blind flange ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF	
1	1.5				P67K-0007E	Blind flange ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF	
1	2				P67K-0007D	Blind flange ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF	
1	3				P67K-0007C	Blind flange ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF	
1	4				P67K-0007B	Blind flange ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF	
1	6				P67K-0007K	Blind flange ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF	
1	8				P67K-0007J	Blind flange ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF	
1	10				P67K-0007T	Blind flange ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000FT	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000FU	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

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GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000G5	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000G6	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	6				P73T-000G7	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	8				P73T-000G8	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	10				P73T-000FX	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	0.5				P73T-000J8	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	0.75				P73T-000J9	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1				P73T-000JA	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1.5				P73T-000JB	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	2				P73T-000JH	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	3				P73T-000JL	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	4				P73T-000JM	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	6				P73T-000JN	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	8				P73T-000JP	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	10				P73T-000JC	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-10				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
781	0.5-6				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
781	8-10				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81K-0010V	Gate valve ASTM A182 Grade F316/F316L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	0.75				P81K-0010W	Gate valve ASTM A182 Grade F316/F316L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	1				P81K-0010X	Gate valve ASTM A182 Grade F316/F316L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	1.5				P81K-0010Y	Gate valve ASTM A182 Grade F316/F316L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	2				P81L-002CT	Gate valve ASTM A351 Grade CF8M Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	3				P81L-002CU	Gate valve ASTM A351 Grade CF8M Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	4				P81L-002CV	Gate valve ASTM A351 Grade CF8M Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	6				P81L-002CW	Gate valve ASTM A351 Grade CF8M Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	8				P81L-002CX	Gate valve ASTM A351 Grade CF8M Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	10				P81L-002ZN	Gate valve ASTM A351 Grade CF8M Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated	
714	0.5				P81K-001LF	Gate valve ASTM A182 Grade F316/F316L dual grade Class 800 API 602 SW - NPT Trim number 12 BB-BG-OS&Y Handwheel operated	
714	0.75				P81K-001G3	Gate valve ASTM A182 Grade F316/F316L dual grade Class 800 API 602 SW - NPT Trim number 12 BB-BG-OS&Y Handwheel operated	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82K-000P3	Globe valve ASTM A182 Grade F316/F316L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	0.75				P82K-000P4	Globe valve ASTM A182 Grade F316/F316L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	1				P82K-000P5	Globe valve ASTM A182 Grade F316/F316L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	1.5				P82K-000P6	Globe valve ASTM A182 Grade F316/F316L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	

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GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2				P82L-001AS	Globe valve ASTM A351 Grade CF8M Class 300 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	3				P82L-001AT	Globe valve ASTM A351 Grade CF8M Class 300 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	4				P82L-001AU	Globe valve ASTM A351 Grade CF8M Class 300 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	6				P82L-001AV	Globe valve ASTM A351 Grade CF8M Class 300 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	8				P82L-001XZ	Globe valve ASTM A351 Grade CF8M Class 300 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71K-00081	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 300 Standard-drawing Flange ASME B16.5 RF	
1	0.75				P71K-00082	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 300 Standard-drawing Flange ASME B16.5 RF	
1	1				P71K-00083	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 300 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71K-00084	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 300 Standard-drawing Flange ASME B16.5 RF	
1	2				P71K-00085	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 300 Standard-drawing Flange ASME B16.5 RF	
1	3				P71K-00086	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 300 Standard-drawing Flange ASME B16.5 RF	
1	4				P71K-00087	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 300 Standard-drawing Flange ASME B16.5 RF	
1	6				P71K-00088	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 300 Standard-drawing Flange ASME B16.5 RF	
1	8				P71K-00089	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 300 Standard-drawing Flange ASME B16.5 RF	
1	10				P71K-0008A	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 300 Standard-drawing Flange ASME B16.5 RF	

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BOLT TABLE (B_B1LV04 , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-003V4		
0.75	4	0.625	75	P80S-003XC		
1	4	0.625	80	P80S-003XD		
1.5	4	0.750	95	P80S-00414		
2	8	0.625	90	P80S-003XF		
3	8	0.750	110	P80S-003XK		
4	8	0.750	115	P80S-003XL		
6	12	0.750	125	P80S-003XN		
8	12	0.875	140	P80S-0041D		
10	16	1.000	160	P80S-0043K		

BOLT TABLE (B_B1LV04_781 , STUD ASME RF, OPTION CODE 781)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	80	P80S-003V6		
0.75	4	0.625	90	P80S-003XF		
1	4	0.625	95	P80S-003XG		
1.5	4	0.750	110	P80S-003XK		
2	8	0.625	110	P80S-003VC		
3	8	0.750	130	P80S-003XP		
4	8	0.875	150	P80S-0041F		
6	12	1.000	175	P80S-0043P		
8	12	1.125	195	P80S-0046W		
10	16	1.250	250	P80S-004AY		

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BRANCH TABLE (T_B1LV04)

RUN PIPE SIZE (in) \ BRANCH SIZE (in)	0.5	0.75	1	1.5	2	3	4	6	8	10
0.5	TS									
0.75		TS								
1		TR	TS							
1.5		TR	TR	TS						
2		L	TR	TR	TS					
3		L	L	TR	TR	TS				
4	L	L	L	L	TR	TR	TS			
6	L	L	L	L	L	TR	TR	TS		
8		L	L	L	L	L	TR	TR	TS	
10		L	L	L	L	L	TR	TR	TR	TS

L : OUTLET
TR : REDUCING TEE
TS : STRAIGHT TEE

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PIPING CLASS

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Material : SS316L
Rating : ASME CLASS 300
Flange Face : RF
C.A.(mm) : 0.00
Gasket : Spiral Wound
Service : UTILITY - WATER SERVICES :/ COOLING, WASTE WATER WITH TRACE AROMATIC ETC
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
2	USE OF SOFT SEATED BALL, PLUG AND BUTTERFLY VALVES SHALL BE LIMITED TO MAXIMUM OF 204DEGC (400DEGF)

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
541	NPT(F) (CA,L)
714	SW - NPT(F) (V)
781	CLASS 600 (B,F,G)

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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P01J-0014A	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE	
1	0.75		SCH80S		P01J-0014B	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE	
1	1		SCH80S		P01J-0014C	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P02K-0000G	90 degree elbow ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	0.75				P02K-0000H	90 degree elbow ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	1				P02K-0000J	90 degree elbow ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P03K-0000D	45 degree elbow ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	0.75				P03K-0000E	45 degree elbow ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	1				P03K-0000F	45 degree elbow ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P21K-0000G	Straight tee ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	0.75				P21K-0000H	Straight tee ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	1				P21K-0000J	Straight tee ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75			P24K-0000M	Reducing tee ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P29K-00021	Cap ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	0.75				P29K-00022	Cap ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	1				P29K-00023	Cap ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
541	0.75				P29K-00002	Cap ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P41J-001UY	Straight nipple ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		SCH160		P41J-001UZ	Straight nipple ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		SCH160		P41J-001V0	Straight nipple ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

CON SWAGED NIPPLE (SNC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH80S	SCH80S	P42J-0008N	Concentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	SCH80S	SCH80S	P42J-0008M	Concentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	SCH80S	SCH80S	P42J-0008P	Concentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	

ECC SWAGED NIPPLE (SNE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH80S	SCH80S	P43J-0008R	Eccentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	SCH80S	SCH80S	P43J-0008S	Eccentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	SCH80S	SCH80S	P43J-0008T	Eccentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	

COUPLING (CPS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P47K-0000G	Coupling ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW - SW	

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COUPLING (CPS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75				P47K-0000H	Coupling ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW - SW	
1	1				P47K-0000J	Coupling ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW - SW	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
541	1	0.75			P31K-001XH	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 NPT	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30K-0001L	Plug ASTM A182 Grade F316/F316L dual grade ASME B16.11 NPT Round head	
1	0.75				P30K-0001M	Plug ASTM A182 Grade F316/F316L dual grade ASME B16.11 NPT Round head	
1	1				P30K-0001N	Plug ASTM A182 Grade F316/F316L dual grade ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P61K-003AK	Flange SW ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF	
1	0.75		SCH80S		P61K-003AL	Flange SW ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF	
1	1		SCH80S		P61K-003AM	Flange SW ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF	
781	0.5		SCH80S		P61K-003HT	Flange SW ASTM A182 Grade F316/F316L dual grade Class 600 ASME B16.5 RF	
781	0.75		SCH80S		P61K-003HU	Flange SW ASTM A182 Grade F316/F316L dual grade Class 600 ASME B16.5 RF	
781	1		SCH80S		P61K-0042H	Flange SW ASTM A182 Grade F316/F316L dual grade Class 600 ASME B16.5 RF	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67K-0007H	Blind flange ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF	
1	0.75				P67K-0007G	Blind flange ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF	
1	1				P67K-0007F	Blind flange ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000FT	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000FU	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	0.5				P73T-000J8	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	0.75				P73T-000J9	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1				P73T-000JA	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-1				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
781	0.5-1				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81K-0010V	Gate valve ASTM A182 Grade F316/F316L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	0.75				P81K-0010W	Gate valve ASTM A182 Grade F316/F316L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	1				P81K-0010X	Gate valve ASTM A182 Grade F316/F316L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
714	0.5				P81K-001LF	Gate valve ASTM A182 Grade F316/F316L dual grade Class 800 API 602 SW - NPT Trim number 12 BB-BG-OS&Y Handwheel operated	
714	0.75				P81K-001G3	Gate valve ASTM A182 Grade F316/F316L dual grade Class 800 API 602 SW - NPT Trim number 12 BB-BG-OS&Y Handwheel operated	

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GLOBE VALVE (W)							
OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82K-000P3	Globe valve ASTM A182 Grade F316/F316L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	0.75				P82K-000P4	Globe valve ASTM A182 Grade F316/F316L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	1				P82K-000P5	Globe valve ASTM A182 Grade F316/F316L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	

CHECK VALVE (X)							
OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83K-000P6	Check valve ASTM A182 Grade F316/F316L dual grade Class 800 API 602 SW Trim number 12 Lift-type Bolted cover	
1	0.75				P83K-000P7	Check valve ASTM A182 Grade F316/F316L dual grade Class 800 API 602 SW Trim number 12 Lift-type Bolted cover	
1	1				P83K-000P8	Check valve ASTM A182 Grade F316/F316L dual grade Class 800 API 602 SW Trim number 12 Lift-type Bolted cover	

SPECT BLANK (SB)							
OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71K-00081	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 300 Standard-drawing Flange ASME B16.5 RF	
1	0.75				P71K-00082	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 300 Standard-drawing Flange ASME B16.5 RF	
1	1				P71K-00083	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 300 Standard-drawing Flange ASME B16.5 RF	

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BOLT TABLE (B_B1LW , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-003V4		
0.75	4	0.625	75	P80S-003XC		
1	4	0.625	80	P80S-003XD		

BOLT TABLE (B_B1LW_781 , STUD ASME RF, OPTION CODE 781)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	80	P80S-003V6		
0.75	4	0.625	90	P80S-003XF		
1	4	0.625	95	P80S-003XG		

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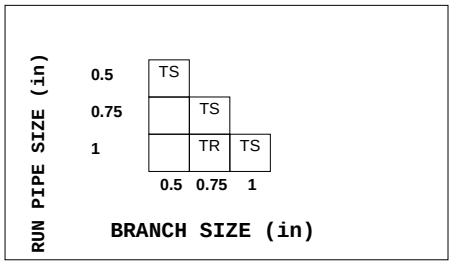
BRANCH TABLE (T_B1LW)



TR : REDUCING TEE
TS : STRAIGHT TEE

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PIPING CLASS

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Material : SS316L
Rating : ASME CLASS 300
Flange Face : RF
C.A.(mm) : 1.50
Gasket : Spiral Wound
Service : CHEMICAL DOSING
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
2	USE OF SOFT SEATED BALL, PLUG AND BUTTERFLY VALVES SHALL BE LIMITED TO MAXIMUM OF 204DEGC (400DEGF)

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
541	NPT(F) (CA,F,L)
781	CLASS 600 (B,F,G)
3001	INSULATION GASKET KIT AND BOLTS FOR FLANGE (G)
4608	VALVE WITH NIPPLES (V)

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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P01J-0014A	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE	
1	0.75		SCH80S		P01J-0014B	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE	
1	1		SCH80S		P01J-0014C	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE	
1	1.5		SCH80S		P01J-0014D	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE	
1	2		SCH40S		P01J-000CK	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M BE	
1	3		SCH40S		P01J-000D8	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M BE	
1	4		SCH40S		P01J-000DF	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P02J-00182	90 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	0.75		SCH80S		P02J-00183	90 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	1		SCH80S		P02J-00184	90 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	1.5		SCH80S		P02J-00185	90 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	2		SCH40S		P02J-0007C	90 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	3		SCH40S		P02J-0007D	90 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	4		SCH40S		P02J-0007E	90 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P03J-0016Y	45 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	0.75		SCH80S		P03J-0016Z	45 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	1		SCH80S		P03J-00170	45 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	1.5		SCH80S		P03J-00171	45 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	2		SCH40S		P03J-0007C	45 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	3		SCH40S		P03J-0007D	45 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	4		SCH40S		P03J-0007E	45 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P21J-0010E	Straight tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	0.75		SCH80S		P21J-0010F	Straight tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	1		SCH80S		P21J-0010G	Straight tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	1.5		SCH80S		P21J-0010H	Straight tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	2		SCH40S		P21J-0007W	Straight tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	3		SCH40S		P21J-0007X	Straight tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	4		SCH40S		P21J-0007Y	Straight tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75	SCH80S	SCH80S	P24J-004TD	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	1.5	0.75	SCH80S	SCH80S	P24J-004TE	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	1.5	1	SCH80S	SCH80S	P24J-004TF	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	2	1	SCH40S	SCH80S	P24J-003MZ	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	2	1.5	SCH40S	SCH80S	P24J-003N0	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	3	1.5	SCH40S	SCH80S	P24J-004TU	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	3	2	SCH40S	SCH40S	P24J-001JD	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	4	2	SCH40S	SCH40S	P24J-001JE	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	4	3	SCH40S	SCH40S	P24J-001JF	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH80S	SCH80S	P27J-002P5	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	

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CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.5	SCH80S	SCH80S	P27J-002P6	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	1	0.75	SCH80S	SCH80S	P27J-002P7	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	1.5	0.5	SCH80S	SCH80S	P27J-002P8	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	1.5	0.75	SCH80S	SCH80S	P27J-002P9	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	1.5	1	SCH80S	SCH80S	P27J-002PA	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	2	0.75	SCH40S	SCH80S	P27J-002P1	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	2	1	SCH40S	SCH80S	P27J-002P2	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	2	1.5	SCH40S	SCH80S	P27J-002P3	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	3	1.5	SCH40S	SCH80S	P27J-002NA	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	3	2	SCH40S	SCH40S	P27J-000WG	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	4	1.5	SCH40S	SCH80S	P27J-003MT	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	4	2	SCH40S	SCH40S	P27J-000WJ	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	4	3	SCH40S	SCH40S	P27J-000WK	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH80S	SCH80S	P28J-002MS	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	1	0.5	SCH80S	SCH80S	P28J-002MT	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	1	0.75	SCH80S	SCH80S	P28J-002MU	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	1.5	0.5	SCH80S	SCH80S	P28J-002MV	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	1.5	0.75	SCH80S	SCH80S	P28J-002MW	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	1.5	1	SCH80S	SCH80S	P28J-002MX	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	2	0.75	SCH40S	SCH80S	P28J-002MM	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	2	1	SCH40S	SCH80S	P28J-002MN	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	2	1.5	SCH40S	SCH80S	P28J-002MP	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	3	1.5	SCH40S	SCH80S	P28J-002LX	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	3	2	SCH40S	SCH40S	P28J-000WB	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	4	1.5	SCH40S	SCH80S	P28J-003NF	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	4	2	SCH40S	SCH40S	P28J-000WD	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	4	3	SCH40S	SCH40S	P28J-000WE	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P29J-000XK	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	0.75		SCH80S		P29J-000XL	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	1		SCH80S		P29J-000XM	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	1.5		SCH80S		P29J-000XN	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	2		SCH40S		P29J-0007D	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	3		SCH40S		P29J-0007G	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	4		SCH40S		P29J-0007J	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
541	0.75				P29K-00002	Cap ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P41J-001UY	Straight nipple ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		SCH160		P41J-001UZ	Straight nipple ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		SCH160		P41J-001V0	Straight nipple ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		SCH160		P41J-001V1	Straight nipple ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
541	1	0.75			P31K-001XH	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 NPT	
541	1.5	0.75			P31K-001XM	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 NPT	
541	2 - 2.5	0.75			P31K-00GGK	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 NPT	
541	3 - 5	0.75			P31K-00GGL	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 NPT	
1	2	0.75	SCH40S	SCH80S	P31K-00BUE	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW	
1	3	0.75	SCH40S	SCH80S	P31K-00BW1	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW	

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OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	4	0.75	SCH40S	SCH80S	P31K-00BW6	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW	
1	3	1	SCH40S	SCH80S	P31K-00BW2	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW	
1	4	1	SCH40S	SCH80S	P31K-00BW7	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW	
1	4	1.5	SCH40S	SCH80S	P31K-00BW8	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30K-0001L	Plug ASTM A182 Grade F316/F316L dual grade ASME B16.11 NPT Round head	
1	0.75				P30K-0001M	Plug ASTM A182 Grade F316/F316L dual grade ASME B16.11 NPT Round head	
1	1				P30K-0001N	Plug ASTM A182 Grade F316/F316L dual grade ASME B16.11 NPT Round head	
1	1.5				P30K-0001P	Plug ASTM A182 Grade F316/F316L dual grade ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P61K-002LC	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF	
1	0.75		SCH80S		P61K-002LD	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF	
1	1		SCH80S		P61K-002LE	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF	
1	1.5		SCH80S		P61K-002LF	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF	
1	2		SCH40S		P61K-002LG	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF	
1	3		SCH40S		P61K-003C5	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF	
1	4		SCH40S		P61K-003C6	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF	
541	0.5				P61K-0045U	Flange NPT ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF	
541	0.75				P61K-00606	Flange NPT ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF	
781	0.5		SCH80S		P61K-002LW	Flange WN ASTM A182 Grade F316/F316L dual grade Class 600 ASME B16.5 RF	
781	0.75		SCH80S		P61K-002LX	Flange WN ASTM A182 Grade F316/F316L dual grade Class 600 ASME B16.5 RF	
781	1		SCH80S		P61K-002LY	Flange WN ASTM A182 Grade F316/F316L dual grade Class 600 ASME B16.5 RF	
781	1.5		SCH80S		P61K-002LZ	Flange WN ASTM A182 Grade F316/F316L dual grade Class 600 ASME B16.5 RF	
781	2		SCH40S		P61K-002M0	Flange WN ASTM A182 Grade F316/F316L dual grade Class 600 ASME B16.5 RF	
781	3		SCH40S		P61K-00346	Flange WN ASTM A182 Grade F316/F316L dual grade Class 600 ASME B16.5 RF	
781	4		SCH40S		P61K-00347	Flange WN ASTM A182 Grade F316/F316L dual grade Class 600 ASME B16.5 RF	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67K-0007H	Blind flange ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF	
1	0.75				P67K-0007G	Blind flange ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF	
1	1				P67K-0007F	Blind flange ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF	
1	1.5				P67K-0007E	Blind flange ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF	
1	2				P67K-0007D	Blind flange ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF	
1	3				P67K-0007C	Blind flange ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF	
1	4				P67K-0007B	Blind flange ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000FT	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000FU	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000G5	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000G6	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
3001	1				P78U-00069	Insulation gasket kit Glass reinforced epoxy Class 300 Manufacturer-standard Flange ASME B16.5 RF	
781	0.5				P73T-000J8	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	0.75				P73T-000J9	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1				P73T-000JA	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

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GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
781	1.5				P73T-000JB	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	2				P73T-000JH	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	3				P73T-000JL	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	4				P73T-000JM	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-4				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
781	0.5-4				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81K-001C6	Gate valve ASTM A182 Grade F316/F316L dual grade Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Fluid-1	
1	0.75				P81K-001C7	Gate valve ASTM A182 Grade F316/F316L dual grade Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Fluid-1	
1	1				P81K-001C8	Gate valve ASTM A182 Grade F316/F316L dual grade Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Fluid-1	
1	1.5				P81K-001C9	Gate valve ASTM A182 Grade F316/F316L dual grade Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Fluid-1	
1	2				P81L-002SS	Gate valve ASTM A351 Grade CF8M Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Fluid-1	
1	3				P81L-002ST	Gate valve ASTM A351 Grade CF8M Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Fluid-1	
1	4				P81L-002SU	Gate valve ASTM A351 Grade CF8M Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Fluid-1	
4608	0.75				P81K-001P0	Gate valve ASTM A182 Grade F316/F316L dual grade Class 300 API 602 BW both sides w/ nipples BE - NPT ASTM A312-TP316(L) dual grade Seamless Sch160-nipple Trim number 12 BB-BG-OS&Y Handwheel operated Fluid-1	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83K-000RD	Check valve ASTM A182 Grade F316/F316L dual grade Class 300 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover	
1	0.75				P83K-000RE	Check valve ASTM A182 Grade F316/F316L dual grade Class 300 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover	
1	1				P83K-000RF	Check valve ASTM A182 Grade F316/F316L dual grade Class 300 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover	
1	1.5				P83K-000RG	Check valve ASTM A182 Grade F316/F316L dual grade Class 300 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover	
1	2				P83L-001AU	Check valve ASTM A351 Grade CF8M Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	3				P83L-001AV	Check valve ASTM A351 Grade CF8M Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	4				P83L-001AW	Check valve ASTM A351 Grade CF8M Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71K-00081	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 300 Standard-drawing Flange ASME B16.5 RF	
1	0.75				P71K-00082	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 300 Standard-drawing Flange ASME B16.5 RF	
1	1				P71K-00083	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 300 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71K-00084	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 300 Standard-drawing Flange ASME B16.5 RF	
1	2				P71K-00085	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 300 Standard-drawing Flange ASME B16.5 RF	
1	3				P71K-00086	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 300 Standard-drawing Flange ASME B16.5 RF	
1	4				P71K-00087	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 300 Standard-drawing Flange ASME B16.5 RF	

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BOLT TABLE (B_B1LY , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-003V4		
0.75	4	0.625	75	P80S-003XC		
1	4	0.625	80	P80S-003XD		
1.5	4	0.750	95	P80S-00414		
2	8	0.625	90	P80S-003XF		
3	8	0.750	110	P80S-003XK		
4	8	0.750	115	P80S-003XL		

BOLT TABLE (B_B1LY_781 , STUD ASME RF, OPTION CODE 781)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	80	P80S-003V6		
0.75	4	0.625	90	P80S-003XF		
1	4	0.625	95	P80S-003XG		
1.5	4	0.750	110	P80S-003XK		
2	8	0.625	110	P80S-003VC		
3	8	0.750	130	P80S-003XP		
4	8	0.875	150	P80S-0041F		

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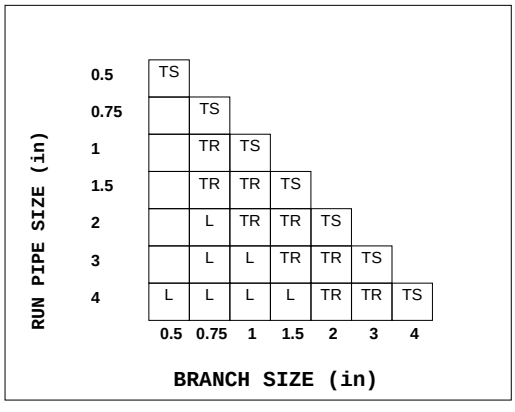
BRANCH TABLE (T_B1LY)



L : OUTLET
TS : STRAIGHT TEE
TR : REDUCING TEE

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PIPING CLASS

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Material : SS316L
Rating : ASME CLASS 300
Flange Face : RF
C.A.(mm) : 1.50
Gasket : Spiral Wound
Service : CHEMICAL DOSING :/ SULFOLANE
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
2	USE OF SOFT SEATED BALL, PLUG AND BUTTERFLY VALVES SHALL BE LIMITED TO MAXIMUM OF 204DEGC (400DEGF)

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
541	NPT(F) (CA,F,L)
781	CLASS 600 (B,F,G)
4608	VALVE WITH NIPPLES (V)

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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P01J-0014A	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE	
1	0.75		SCH80S		P01J-0014B	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE	
1	1		SCH80S		P01J-0014C	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE	
1	1.5		SCH80S		P01J-0014D	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE	
1	2		SCH40S		P01J-000CK	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M BE	
1	3		SCH40S		P01J-000D8	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M BE	
1	4		SCH40S		P01J-000DF	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P02J-00182	90 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	0.75		SCH80S		P02J-00183	90 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	1		SCH80S		P02J-00184	90 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	1.5		SCH80S		P02J-00185	90 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	2		SCH40S		P02J-0007C	90 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	3		SCH40S		P02J-0007D	90 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	4		SCH40S		P02J-0007E	90 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P03J-0016Y	45 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	0.75		SCH80S		P03J-0016Z	45 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	1		SCH80S		P03J-00170	45 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	1.5		SCH80S		P03J-00171	45 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	2		SCH40S		P03J-0007C	45 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	3		SCH40S		P03J-0007D	45 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	4		SCH40S		P03J-0007E	45 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P21J-0010E	Straight tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	0.75		SCH80S		P21J-0010F	Straight tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	1		SCH80S		P21J-0010G	Straight tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	1.5		SCH80S		P21J-0010H	Straight tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	2		SCH40S		P21J-0007W	Straight tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	3		SCH40S		P21J-0007X	Straight tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	4		SCH40S		P21J-0007Y	Straight tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75	SCH80S	SCH80S	P24J-004TD	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	1.5	0.75	SCH80S	SCH80S	P24J-004TE	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	1.5	1	SCH80S	SCH80S	P24J-004TF	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	2	1	SCH40S	SCH80S	P24J-003MZ	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	2	1.5	SCH40S	SCH80S	P24J-003N0	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	3	1.5	SCH40S	SCH80S	P24J-004TU	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	3	2	SCH40S	SCH40S	P24J-001JD	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	4	2	SCH40S	SCH40S	P24J-001JE	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	4	3	SCH40S	SCH40S	P24J-001JF	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH80S	SCH80S	P27J-002P5	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	

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CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.5	SCH80S	SCH80S	P27J-002P6	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	1	0.75	SCH80S	SCH80S	P27J-002P7	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	1.5	0.5	SCH80S	SCH80S	P27J-002P8	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	1.5	0.75	SCH80S	SCH80S	P27J-002P9	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	1.5	1	SCH80S	SCH80S	P27J-002PA	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	2	0.75	SCH40S	SCH80S	P27J-002P1	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	2	1	SCH40S	SCH80S	P27J-002P2	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	2	1.5	SCH40S	SCH80S	P27J-002P3	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	3	1.5	SCH40S	SCH80S	P27J-002NA	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	3	2	SCH40S	SCH40S	P27J-000WG	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	4	1.5	SCH40S	SCH80S	P27J-003MT	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	4	2	SCH40S	SCH40S	P27J-000WJ	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	4	3	SCH40S	SCH40S	P27J-000WK	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH80S	SCH80S	P28J-002MS	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	1	0.5	SCH80S	SCH80S	P28J-002MT	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	1	0.75	SCH80S	SCH80S	P28J-002MU	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	1.5	0.5	SCH80S	SCH80S	P28J-002MV	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	1.5	0.75	SCH80S	SCH80S	P28J-002MW	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	1.5	1	SCH80S	SCH80S	P28J-002MX	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	2	0.75	SCH40S	SCH80S	P28J-002MM	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	2	1	SCH40S	SCH80S	P28J-002MN	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	2	1.5	SCH40S	SCH80S	P28J-002MP	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	3	1.5	SCH40S	SCH80S	P28J-002LX	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	3	2	SCH40S	SCH40S	P28J-000WB	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	4	1.5	SCH40S	SCH80S	P28J-003NF	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	4	2	SCH40S	SCH40S	P28J-000WD	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	4	3	SCH40S	SCH40S	P28J-000WE	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P29J-000XK	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	0.75		SCH80S		P29J-000XL	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	1		SCH80S		P29J-000XM	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	1.5		SCH80S		P29J-000XN	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	2		SCH40S		P29J-0007D	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	3		SCH40S		P29J-0007G	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	4		SCH40S		P29J-0007J	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
541	0.75				P29K-00002	Cap ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P41J-001WE	Straight nipple ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		SCH160		P41J-001UZ	Straight nipple ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		SCH160		P41J-001V0	Straight nipple ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		SCH160		P41J-001V1	Straight nipple ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
541	1	0.75			P31K-001XH	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 NPT	
541	1.5	0.75			P31K-001XM	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 NPT	
541	2 - 2.5	0.75			P31K-00GGK	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 NPT	
541	3 - 5	0.75			P31K-00GGL	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 NPT	
1	2	0.75	SCH40S	SCH80S	P31K-00BUE	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW	
1	3	0.75	SCH40S	SCH80S	P31K-00BW1	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW	

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OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	4	0.75	SCH40S	SCH80S	P31K-00BW6	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW	
1	3	1	SCH40S	SCH80S	P31K-00BW2	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW	
1	4	1	SCH40S	SCH80S	P31K-00BW7	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW	
1	4	1.5	SCH40S	SCH80S	P31K-00BW8	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30K-0001L	Plug ASTM A182 Grade F316/F316L dual grade ASME B16.11 NPT Round head	
1	0.75				P30K-0001M	Plug ASTM A182 Grade F316/F316L dual grade ASME B16.11 NPT Round head	
1	1				P30K-0001N	Plug ASTM A182 Grade F316/F316L dual grade ASME B16.11 NPT Round head	
1	1.5				P30K-0001P	Plug ASTM A182 Grade F316/F316L dual grade ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P61K-002LC	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF	
1	0.75		SCH80S		P61K-002LD	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF	
1	1		SCH80S		P61K-002LE	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF	
1	1.5		SCH80S		P61K-002LF	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF	
1	2		SCH40S		P61K-002LG	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF	
1	3		SCH40S		P61K-003C5	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF	
1	4		SCH40S		P61K-003C6	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF	
541	0.5				P61K-0045U	Flange NPT ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF	
541	0.75				P61K-00606	Flange NPT ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF	
781	0.5		SCH80S		P61K-002LW	Flange WN ASTM A182 Grade F316/F316L dual grade Class 600 ASME B16.5 RF	
781	0.75		SCH80S		P61K-002LX	Flange WN ASTM A182 Grade F316/F316L dual grade Class 600 ASME B16.5 RF	
781	1		SCH80S		P61K-002LY	Flange WN ASTM A182 Grade F316/F316L dual grade Class 600 ASME B16.5 RF	
781	1.5		SCH80S		P61K-002LZ	Flange WN ASTM A182 Grade F316/F316L dual grade Class 600 ASME B16.5 RF	
781	2		SCH40S		P61K-002M0	Flange WN ASTM A182 Grade F316/F316L dual grade Class 600 ASME B16.5 RF	
781	3		SCH40S		P61K-00346	Flange WN ASTM A182 Grade F316/F316L dual grade Class 600 ASME B16.5 RF	
781	4		SCH40S		P61K-00347	Flange WN ASTM A182 Grade F316/F316L dual grade Class 600 ASME B16.5 RF	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67K-0007H	Blind flange ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF	
1	0.75				P67K-0007G	Blind flange ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF	
1	1				P67K-0007F	Blind flange ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF	
1	1.5				P67K-0007E	Blind flange ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF	
1	2				P67K-0007D	Blind flange ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF	
1	3				P67K-0007C	Blind flange ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF	
1	4				P67K-0007B	Blind flange ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000FT	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000FU	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000G5	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000G6	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	0.5				P73T-000J8	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	0.75				P73T-000J9	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1				P73T-000JA	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1.5				P73T-000JB	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

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GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
781	2				P73T-000JH	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	3				P73T-000JL	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	4				P73T-000JM	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-4				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
781	0.5-4				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81K-001C6	Gate valve ASTM A182 Grade F316/F316L dual grade Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Fluid-1	
1	0.75				P81K-001C7	Gate valve ASTM A182 Grade F316/F316L dual grade Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Fluid-1	
1	1				P81K-001C8	Gate valve ASTM A182 Grade F316/F316L dual grade Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Fluid-1	
1	1.5				P81K-001C9	Gate valve ASTM A182 Grade F316/F316L dual grade Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Fluid-1	
1	2				P81L-002SS	Gate valve ASTM A351 Grade CF8M Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Fluid-1	
1	3				P81L-002ST	Gate valve ASTM A351 Grade CF8M Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Fluid-1	
1	4				P81L-002SU	Gate valve ASTM A351 Grade CF8M Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Fluid-1	
4608	0.75				P81K-001P0	Gate valve ASTM A182 Grade F316/F316L dual grade Class 300 API 602 BW both sides w/ nipples BE - NPT ASTM A312-TP316(L) dual grade Seamless Sch160-nipple Trim number 12 BB-BG-OS&Y Handwheel operated Fluid-1	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83K-000RD	Check valve ASTM A182 Grade F316/F316L dual grade Class 300 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover	
1	0.75				P83K-000RE	Check valve ASTM A182 Grade F316/F316L dual grade Class 300 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover	
1	1				P83K-000RF	Check valve ASTM A182 Grade F316/F316L dual grade Class 300 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover	
1	1.5				P83K-000RG	Check valve ASTM A182 Grade F316/F316L dual grade Class 300 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover	
1	2				P83L-001AU	Check valve ASTM A351 Grade CF8M Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	3				P83L-001AV	Check valve ASTM A351 Grade CF8M Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	4				P83L-001AW	Check valve ASTM A351 Grade CF8M Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71K-00081	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 300 Standard-drawing Flange ASME B16.5 RF	
1	0.75				P71K-00082	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 300 Standard-drawing Flange ASME B16.5 RF	
1	1				P71K-00083	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 300 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71K-00084	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 300 Standard-drawing Flange ASME B16.5 RF	
1	2				P71K-00085	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 300 Standard-drawing Flange ASME B16.5 RF	
1	3				P71K-00086	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 300 Standard-drawing Flange ASME B16.5 RF	
1	4				P71K-00087	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 300 Standard-drawing Flange ASME B16.5 RF	

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BOLT TABLE (B_B1LY04 , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-003V4		
0.75	4	0.625	75	P80S-003XC		
1	4	0.625	80	P80S-003XD		
1.5	4	0.750	95	P80S-00414		
2	8	0.625	90	P80S-003XF		
3	8	0.750	110	P80S-003XK		
4	8	0.750	115	P80S-003XL		

BOLT TABLE (B_B1LY04_781 , STUD ASME RF, OPTION CODE 781)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	80	P80S-003V6		
0.75	4	0.625	90	P80S-003XF		
1	4	0.625	95	P80S-003XG		
1.5	4	0.750	110	P80S-003XK		
2	8	0.625	110	P80S-003VC		
3	8	0.750	130	P80S-003XP		
4	8	0.875	150	P80S-0041F		

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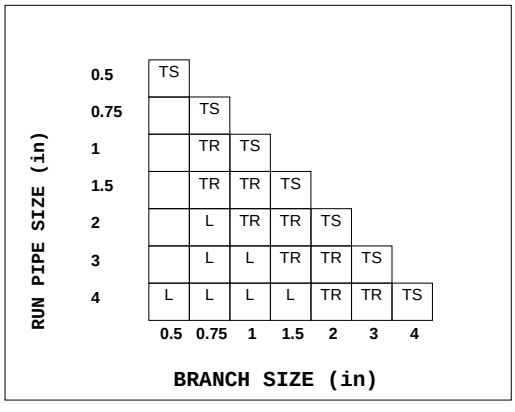
BRANCH TABLE (T_B1LY04)



TR : REDUCING TEE
TS : STRAIGHT TEE
L : OUTLET

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PIPING CLASS

B1MQ02 REV NO. 2

Material : SS321
Rating : ASME CLASS 300
Flange Face : RF
C.A.(mm) : 1.50
Gasket : Spiral Wound
Service : PROCESS - WET LOW SEVERITY SOUR SERVICE- NACE
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
5	BOLTING CONFIRMING TO B7M / 2HM SHALL BE USED UNDER CONDITIONS (A) DIRECT EXPOSURE TO SOUR ENVIRONMENTS (B) WHEN THE BOLTING WILL BE BURIED OR INSULATED

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
200	WITH JACK SCREW (FO)
541	NPT(F) (CA,F,L)
781	CLASS 600 (B,F,G)
851	ALTERNATIVE WALL THICKNESS 1 (4L,9L,F,L,P,TS)
2489	CLASS 600 RJ (B,F,G)
4601	Y-PATTERN (W)
4608	VALVE WITH NIPPLES (V)
4613	VALVE WITH AIV SERVICE (V)

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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P01J-002DK	Pipe ASTM A312 Grade TP321 Seamless ASME B36.10M/B36.19M PE Moderate wet H2S service	
1	0.75		SCH80S		P01J-002DL	Pipe ASTM A312 Grade TP321 Seamless ASME B36.10M/B36.19M PE Moderate wet H2S service	
1	1		SCH80S		P01J-002DM	Pipe ASTM A312 Grade TP321 Seamless ASME B36.10M/B36.19M PE Moderate wet H2S service	
1	1.5		SCH80S		P01J-002DN	Pipe ASTM A312 Grade TP321 Seamless ASME B36.10M/B36.19M PE Moderate wet H2S service	
1	2		SCH40S		P01J-002GL	Pipe ASTM A312 Grade TP321 Seamless ASME B36.10M/B36.19M BE Moderate wet H2S service	
1	3		SCH40S		P01J-002DR	Pipe ASTM A312 Grade TP321 Seamless ASME B36.10M/B36.19M BE Moderate wet H2S service	
1	4		SCH40S		P01J-002GM	Pipe ASTM A312 Grade TP321 Seamless ASME B36.10M/B36.19M BE Moderate wet H2S service	
1	6		SCH40S		P01J-002GN	Pipe ASTM A312 Grade TP321 Seamless ASME B36.10M/B36.19M BE Moderate wet H2S service	
1	8		SCH40S		P01J-002DX	Pipe ASTM A358 Grade 321 Class 1 EFW ASME B36.10M/B36.19M BE Moderate wet H2S service	
1	10		SCH40S		P01J-002DU	Pipe ASTM A358 Grade 321 Class 1 EFW ASME B36.10M/B36.19M BE Moderate wet H2S service	
1	12		SCH40S		P01J-002DV	Pipe ASTM A358 Grade 321 Class 1 EFW ASME B36.10M/B36.19M BE Moderate wet H2S service	
1	14		SCH40S		P01J-002PA	Pipe ASTM A358 Grade 321 Class 1 EFW ASME B36.10M/B36.19M BE Moderate wet H2S service	
851	10		SCH80S		P01J-00316	Pipe ASTM A358 Grade 321 Class 1 EFW ASME B36.10M/B36.19M BE Moderate wet H2S service	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P02J-001WZ	90 degree elbow ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Long radius Moderate wet H2S service	
1	0.75		SCH80S		P02J-001X0	90 degree elbow ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Long radius Moderate wet H2S service	
1	1		SCH80S		P02J-001X1	90 degree elbow ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Long radius Moderate wet H2S service	
1	1.5		SCH80S		P02J-001X2	90 degree elbow ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Long radius Moderate wet H2S service	
1	2		SCH40S		P02J-00202	90 degree elbow ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Long radius Moderate wet H2S service	
1	3		SCH40S		P02J-001X4	90 degree elbow ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Long radius Moderate wet H2S service	
1	4		SCH40S		P02J-00203	90 degree elbow ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Long radius Moderate wet H2S service	
1	6		SCH40S		P02J-00204	90 degree elbow ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Long radius Moderate wet H2S service	
1	8		SCH40S		P02J-0023F	90 degree elbow ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Long radius Moderate wet H2S service	
1	10		SCH40S		P02J-0023C	90 degree elbow ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Long radius Moderate wet H2S service	
1	12		SCH40S		P02J-0023D	90 degree elbow ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Long radius Moderate wet H2S service	
1	14		SCH40S		P02J-0023E	90 degree elbow ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Long radius Moderate wet H2S service	
851	10		SCH80S		P02J-002BY	90 degree elbow ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Long radius Moderate wet H2S service	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P03J-001UE	45 degree elbow ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Long radius Moderate wet H2S service	
1	0.75		SCH80S		P03J-001UF	45 degree elbow ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Long radius Moderate wet H2S service	
1	1		SCH80S		P03J-001UG	45 degree elbow ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Long radius Moderate wet H2S service	
1	1.5		SCH80S		P03J-001UH	45 degree elbow ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Long radius Moderate wet H2S service	
1	2		SCH40S		P03J-001ZN	45 degree elbow ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Long radius Moderate wet H2S service	
1	3		SCH40S		P03J-001UK	45 degree elbow ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Long radius Moderate wet H2S service	
1	4		SCH40S		P03J-001ZP	45 degree elbow ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Long radius Moderate wet H2S service	
1	6		SCH40S		P03J-001ZR	45 degree elbow ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Long radius Moderate wet H2S service	
1	8		SCH40S		P03J-00237	45 degree elbow ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Long radius Moderate wet H2S service	
1	10		SCH40S		P03J-00234	45 degree elbow ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Long radius Moderate wet H2S service	
1	12		SCH40S		P03J-00235	45 degree elbow ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Long radius Moderate wet H2S service	
1	14		SCH40S		P03J-00236	45 degree elbow ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Long radius Moderate wet H2S service	
851	10		SCH80S		P03J-002BL	45 degree elbow ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Long radius Moderate wet H2S service	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P21J-001KZ	Straight tee ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	0.75		SCH80S		P21J-001L0	Straight tee ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	

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STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		SCH80S		P21J-001L1	Straight tee ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	1.5		SCH80S		P21J-001L2	Straight tee ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	2		SCH40S		P21J-001P2	Straight tee ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	3		SCH40S		P21J-001L4	Straight tee ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	4		SCH40S		P21J-001P3	Straight tee ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	6		SCH40S		P21J-001P4	Straight tee ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	8		SCH40S		P21J-001SX	Straight tee ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	10		SCH40S		P21J-001SU	Straight tee ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	12		SCH40S		P21J-001SV	Straight tee ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	14		SCH40S		P21J-001TG	Straight tee ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
851	10		SCH80S		P21J-00299	Straight tee ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75	SCH80S	SCH80S	P24J-006YB	Reducing tee ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	1.5	0.75	SCH80S	SCH80S	P24J-006YC	Reducing tee ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	1.5	1	SCH80S	SCH80S	P24J-006YD	Reducing tee ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	2	1	SCH40S	SCH80S	P24J-0075Y	Reducing tee ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	2	1.5	SCH40S	SCH80S	P24J-0075Z	Reducing tee ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	3	1.5	SCH40S	SCH80S	P24J-006YG	Reducing tee ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	3	2	SCH40S	SCH40S	P24J-00760	Reducing tee ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	4	2	SCH40S	SCH40S	P24J-00761	Reducing tee ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	4	3	SCH40S	SCH40S	P24J-00762	Reducing tee ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	6	3	SCH40S	SCH40S	P24J-00763	Reducing tee ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	6	4	SCH40S	SCH40S	P24J-00764	Reducing tee ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	8	4	SCH40S	SCH40S	P24J-007KU	Reducing tee ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	8	6	SCH40S	SCH40S	P24J-007KV	Reducing tee ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	10	4	SCH40S	SCH40S	P24J-007KR	Reducing tee ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	10	6	SCH40S	SCH40S	P24J-007KS	Reducing tee ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	10	8	SCH40S	SCH40S	P24J-007KT	Reducing tee ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	12	6	SCH40S	SCH40S	P24J-007KN	Reducing tee ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	12	8	SCH40S	SCH40S	P24J-007KP	Reducing tee ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	12	10	SCH40S	SCH40S	P24J-007KM	Reducing tee ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	14	6	SCH40S	SCH40S	P24J-00888	Reducing tee ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	14	8	SCH40S	SCH40S	P24J-007N0	Reducing tee ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	14	10	SCH40S	SCH40S	P24J-007MX	Reducing tee ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	14	12	SCH40S	SCH40S	P24J-007MY	Reducing tee ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH80S	SCH80S	P27J-005SW	Concentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	1	0.5	SCH80S	SCH80S	P27J-005SX	Concentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	1	0.75	SCH80S	SCH80S	P27J-005SY	Concentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	1.5	0.5	SCH80S	SCH80S	P27J-005SZ	Concentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	1.5	0.75	SCH80S	SCH80S	P27J-005T0	Concentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	1.5	1	SCH80S	SCH80S	P27J-005T1	Concentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	2	0.75	SCH40S	SCH80S	P27J-0060Y	Concentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	2	1	SCH40S	SCH80S	P27J-0060Z	Concentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	2	1.5	SCH40S	SCH80S	P27J-00610	Concentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	3	1.5	SCH40S	SCH80S	P27J-005T5	Concentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	3	2	SCH40S	SCH40S	P27J-00611	Concentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	4	1.5	SCH40S	SCH80S	P27J-00612	Concentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	4	2	SCH40S	SCH40S	P27J-00613	Concentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	4	3	SCH40S	SCH40S	P27J-00614	Concentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	6	3	SCH40S	SCH40S	P27J-00615	Concentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	6	4	SCH40S	SCH40S	P27J-00616	Concentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	8	4	SCH40S	SCH40S	P27J-006CB	Concentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	8	6	SCH40S	SCH40S	P27J-006CC	Concentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	10	4	SCH40S	SCH40S	P27J-006CD	Concentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	10	6	SCH40S	SCH40S	P27J-006CE	Concentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	10	8	SCH40S	SCH40S	P27J-006CF	Concentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	12	6	SCH40S	SCH40S	P27J-006CH	Concentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	12	8	SCH40S	SCH40S	P27J-006CJ	Concentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	12	10	SCH40S	SCH40S	P27J-006CG	Concentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	14	6	SCH40S	SCH40S	P27J-006YV	Concentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	14	8	SCH40S	SCH40S	P27J-006EW	Concentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	14	10	SCH40S	SCH40S	P27J-006ET	Concentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	14	12	SCH40S	SCH40S	P27J-006EU	Concentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH80S	SCH80S	P28J-005TS	Eccentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	1	0.5	SCH80S	SCH80S	P28J-005TT	Eccentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	1	0.75	SCH80S	SCH80S	P28J-005TU	Eccentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	1.5	0.5	SCH80S	SCH80S	P28J-005TV	Eccentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	1.5	0.75	SCH80S	SCH80S	P28J-005TW	Eccentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	1.5	1	SCH80S	SCH80S	P28J-005TX	Eccentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	2	0.75	SCH40S	SCH80S	P28J-0061V	Eccentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	2	1	SCH40S	SCH80S	P28J-0061W	Eccentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	2	1.5	SCH40S	SCH80S	P28J-0061X	Eccentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	3	1.5	SCH40S	SCH80S	P28J-005U1	Eccentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	3	2	SCH40S	SCH40S	P28J-0061Y	Eccentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	4	1.5	SCH40S	SCH80S	P28J-0061Z	Eccentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	4	2	SCH40S	SCH40S	P28J-00620	Eccentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	4	3	SCH40S	SCH40S	P28J-00621	Eccentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	6	3	SCH40S	SCH40S	P28J-00622	Eccentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	6	4	SCH40S	SCH40S	P28J-00623	Eccentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	8	4	SCH40S	SCH40S	P28J-006DZ	Eccentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	8	6	SCH40S	SCH40S	P28J-006E0	Eccentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	10	4	SCH40S	SCH40S	P28J-006DW	Eccentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	10	6	SCH40S	SCH40S	P28J-006DX	Eccentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	10	8	SCH40S	SCH40S	P28J-006DY	Eccentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	12	6	SCH40S	SCH40S	P28J-006DU	Eccentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	12	8	SCH40S	SCH40S	P28J-006DV	Eccentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	12	10	SCH40S	SCH40S	P28J-006DT	Eccentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	14	6	SCH40S	SCH40S	P28J-0070B	Eccentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	14	8	SCH40S	SCH40S	P28J-006FW	Eccentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	14	10	SCH40S	SCH40S	P28J-006FT	Eccentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	14	12	SCH40S	SCH40S	P28J-006FU	Eccentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P29J-002L4	Cap ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	0.75		SCH80S		P29J-002L5	Cap ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	1		SCH80S		P29J-002L6	Cap ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	1.5		SCH80S		P29J-002L7	Cap ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	2		SCH40S		P29J-003VT	Cap ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	3		SCH40S		P29J-002LC	Cap ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	4		SCH40S		P29J-003VU	Cap ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	6		SCH40S		P29J-003VV	Cap ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	8		SCH40S		P29J-002LF	Cap ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	10		SCH40S		P29J-002L8	Cap ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	12		SCH40S		P29J-002L9	Cap ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	14		SCH40S		P29J-003WX	Cap ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
541	0.75				P29K-0004A	Cap ASTM A182 Grade F321 Class 3000 ASME B16.11 NPT Moderate wet H2S service	
541	1				P29K-0004J	Cap ASTM A182 Grade F321 Class 3000 ASME B16.11 NPT Moderate wet H2S service	
541	1.5				P29K-0004K	Cap ASTM A182 Grade F321 Class 3000 ASME B16.11 NPT Moderate wet H2S service	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P41J-001TR	Straight nipple ASTM A312 Grade TP321 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Moderate wet H2S service	
1	0.75		SCH160		P41J-001TS	Straight nipple ASTM A312 Grade TP321 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Moderate wet H2S service	
1	1		SCH160		P41J-001TT	Straight nipple ASTM A312 Grade TP321 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Moderate wet H2S service	
1	1.5		SCH160		P41J-001TU	Straight nipple ASTM A312 Grade TP321 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Moderate wet H2S service	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
541	1	0.75			P31K-00FNZ	Outlet ASTM A182 Grade F321 Class 3000 MSS SP-97 NPT Moderate wet H2S service	
541	1.5	0.75			P31K-00FNY	Outlet ASTM A182 Grade F321 Class 3000 MSS SP-97 NPT Moderate wet H2S service	
541	2 - 2.5	0.75			P31K-00GH6	Outlet ASTM A182 Grade F321 Class 3000 MSS SP-97 NPT Moderate wet H2S service	
541	3 - 5	0.75			P31K-00GH7	Outlet ASTM A182 Grade F321 Class 3000 MSS SP-97 NPT Moderate wet H2S service	
541	6 - 12	0.75			P31K-00GH8	Outlet ASTM A182 Grade F321 Class 3000 MSS SP-97 NPT Moderate wet H2S service	
541	14 - 36	0.75			P31K-00GHS	Outlet ASTM A182 Grade F321 Class 3000 MSS SP-97 NPT Moderate wet H2S service	
1	2	0.75	SCH40S	SCH80S	P31K-00EW4	Outlet ASTM A182 Grade F321 MSS SP-97 BW Moderate wet H2S service	
1	3	0.75	SCH40S	SCH80S	P31K-00EL1	Outlet ASTM A182 Grade F321 MSS SP-97 BW Moderate wet H2S service	
1	4	0.75	SCH40S	SCH80S	P31K-00EW5	Outlet ASTM A182 Grade F321 MSS SP-97 BW Moderate wet H2S service	
1	6	0.75	SCH40S	SCH80S	P31K-00EW8	Outlet ASTM A182 Grade F321 MSS SP-97 BW Moderate wet H2S service	
1	8	0.75	SCH40S	SCH80S	P31K-00ELA	Outlet ASTM A182 Grade F321 MSS SP-97 BW Moderate wet H2S service	
1	10	0.75	SCH40S	SCH80S	P31K-00ELF	Outlet ASTM A182 Grade F321 MSS SP-97 BW Moderate wet H2S service	
1	12	0.75	SCH40S	SCH80S	P31K-00ELL	Outlet ASTM A182 Grade F321 MSS SP-97 BW Moderate wet H2S service	
1	14	0.75	SCH40S	SCH80S	P31K-00F2J	Outlet ASTM A182 Grade F321 MSS SP-97 BW Moderate wet H2S service	
1	3	1	SCH40S	SCH80S	P31K-00EL2	Outlet ASTM A182 Grade F321 MSS SP-97 BW Moderate wet H2S service	
1	4	1	SCH40S	SCH80S	P31K-00EW6	Outlet ASTM A182 Grade F321 MSS SP-97 BW Moderate wet H2S service	
1	6	1	SCH40S	SCH80S	P31K-00EW9	Outlet ASTM A182 Grade F321 MSS SP-97 BW Moderate wet H2S service	
1	8	1	SCH40S	SCH80S	P31K-00ELB	Outlet ASTM A182 Grade F321 MSS SP-97 BW Moderate wet H2S service	
1	10	1	SCH40S	SCH80S	P31K-00ELG	Outlet ASTM A182 Grade F321 MSS SP-97 BW Moderate wet H2S service	
1	12	1	SCH40S	SCH80S	P31K-00ELM	Outlet ASTM A182 Grade F321 MSS SP-97 BW Moderate wet H2S service	
1	14	1	SCH40S	SCH80S	P31K-00F2K	Outlet ASTM A182 Grade F321 MSS SP-97 BW Moderate wet H2S service	
1	4	1.5	SCH40S	SCH80S	P31K-00EW7	Outlet ASTM A182 Grade F321 MSS SP-97 BW Moderate wet H2S service	
1	6	1.5	SCH40S	SCH80S	P31K-00EWA	Outlet ASTM A182 Grade F321 MSS SP-97 BW Moderate wet H2S service	
1	8	1.5	SCH40S	SCH80S	P31K-00ELC	Outlet ASTM A182 Grade F321 MSS SP-97 BW Moderate wet H2S service	
1	10	1.5	SCH40S	SCH80S	P31K-00ELH	Outlet ASTM A182 Grade F321 MSS SP-97 BW Moderate wet H2S service	
1	12	1.5	SCH40S	SCH80S	P31K-00ELN	Outlet ASTM A182 Grade F321 MSS SP-97 BW Moderate wet H2S service	
1	14	1.5	SCH40S	SCH80S	P31K-00F2L	Outlet ASTM A182 Grade F321 MSS SP-97 BW Moderate wet H2S service	
1	6	2	SCH40S	SCH40S	P31K-00EWB	Outlet ASTM A182 Grade F321 MSS SP-97 BW Moderate wet H2S service	
1	8	2	SCH40S	SCH40S	P31K-00EWC	Outlet ASTM A182 Grade F321 MSS SP-97 BW Moderate wet H2S service	
1	10	2	SCH40S	SCH40S	P31K-00EWD	Outlet ASTM A182 Grade F321 MSS SP-97 BW Moderate wet H2S service	
1	12	2	SCH40S	SCH40S	P31K-00EWE	Outlet ASTM A182 Grade F321 MSS SP-97 BW Moderate wet H2S service	
1	14	2	SCH40S	SCH40S	P31K-00G5V	Outlet ASTM A182 Grade F321 MSS SP-97 BW Moderate wet H2S service	
1	8	3	SCH40S	SCH40S	P31K-00ELE	Outlet ASTM A182 Grade F321 MSS SP-97 BW Moderate wet H2S service	
1	10	3	SCH40S	SCH40S	P31K-00ELK	Outlet ASTM A182 Grade F321 MSS SP-97 BW Moderate wet H2S service	
1	12	3	SCH40S	SCH40S	P31K-00ELR	Outlet ASTM A182 Grade F321 MSS SP-97 BW Moderate wet H2S service	
1	14	3	SCH40S	SCH40S	P31K-00F2N	Outlet ASTM A182 Grade F321 MSS SP-97 BW Moderate wet H2S service	
1	12	4	SCH40S	SCH40S	P31K-00EWF	Outlet ASTM A182 Grade F321 MSS SP-97 BW Moderate wet H2S service	
1	14	4	SCH40S	SCH40S	P31K-00G5W	Outlet ASTM A182 Grade F321 MSS SP-97 BW Moderate wet H2S service	
851	10	0.75	SCH80S	SCH80S	P31K-00H26	Outlet ASTM A182 Grade F321 MSS SP-97 BW Moderate wet H2S service	
851	10	2	SCH80S	SCH40S	P31K-00H27	Outlet ASTM A182 Grade F321 MSS SP-97 BW Moderate wet H2S service	

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PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30K-00059	Plug ASTM A182 Grade F321 ASME B16.11 NPT Round head Moderate wet H2S service	
1	0.75				P30K-0005A	Plug ASTM A182 Grade F321 ASME B16.11 NPT Round head Moderate wet H2S service	
1	1				P30K-0005B	Plug ASTM A182 Grade F321 ASME B16.11 NPT Round head Moderate wet H2S service	
1	1.5				P30K-0005C	Plug ASTM A182 Grade F321 ASME B16.11 NPT Round head Moderate wet H2S service	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P61K-005K6	Flange WN ASTM A182 Grade F321 Class 300 ASME B16.5 RF Moderate wet H2S service	
1	0.75		SCH80S		P61K-005K7	Flange WN ASTM A182 Grade F321 Class 300 ASME B16.5 RF Moderate wet H2S service	
1	1		SCH80S		P61K-005K8	Flange WN ASTM A182 Grade F321 Class 300 ASME B16.5 RF Moderate wet H2S service	
1	1.5		SCH80S		P61K-005K9	Flange WN ASTM A182 Grade F321 Class 300 ASME B16.5 RF Moderate wet H2S service	
1	2		SCH40S		P61K-005KD	Flange WN ASTM A182 Grade F321 Class 300 ASME B16.5 RF Moderate wet H2S service	
1	3		SCH40S		P61K-005KE	Flange WN ASTM A182 Grade F321 Class 300 ASME B16.5 RF Moderate wet H2S service	
1	4		SCH40S		P61K-005KF	Flange WN ASTM A182 Grade F321 Class 300 ASME B16.5 RF Moderate wet H2S service	
1	6		SCH40S		P61K-005KG	Flange WN ASTM A182 Grade F321 Class 300 ASME B16.5 RF Moderate wet H2S service	
1	8		SCH40S		P61K-005KH	Flange WN ASTM A182 Grade F321 Class 300 ASME B16.5 RF Moderate wet H2S service	
1	10		SCH40S		P61K-005KA	Flange WN ASTM A182 Grade F321 Class 300 ASME B16.5 RF Moderate wet H2S service	
1	12		SCH40S		P61K-005KB	Flange WN ASTM A182 Grade F321 Class 300 ASME B16.5 RF Moderate wet H2S service	
1	14		SCH40S		P61K-0068R	Flange WN ASTM A182 Grade F321 Class 300 ASME B16.5 RF Moderate wet H2S service	
2489	3		SCH40S		P61K-005YJ	Flange WN ASTM A182 Grade F321 Class 600 ASME B16.5 RJ Moderate wet H2S service	
541	0.5				P61K-006A6	Flange NPT ASTM A182 Grade F321 Class 300 ASME B16.5 RF Moderate wet H2S service	
541	0.75				P61K-00607	Flange NPT ASTM A182 Grade F321 Class 300 ASME B16.5 RF Moderate wet H2S service	
781	0.5		SCH80S		P61K-005DG	Flange WN ASTM A182 Grade F321 Class 600 ASME B16.5 RF Moderate wet H2S service	
781	0.75		SCH80S		P61K-005DH	Flange WN ASTM A182 Grade F321 Class 600 ASME B16.5 RF Moderate wet H2S service	
781	1		SCH80S		P61K-005DJ	Flange WN ASTM A182 Grade F321 Class 600 ASME B16.5 RF Moderate wet H2S service	
781	1.5		SCH80S		P61K-005DK	Flange WN ASTM A182 Grade F321 Class 600 ASME B16.5 RF Moderate wet H2S service	
781	2		SCH40S		P61K-005KJ	Flange WN ASTM A182 Grade F321 Class 600 ASME B16.5 RF Moderate wet H2S service	
781	3		SCH40S		P61K-005DR	Flange WN ASTM A182 Grade F321 Class 600 ASME B16.5 RF Moderate wet H2S service	
781	4		SCH40S		P61K-005KK	Flange WN ASTM A182 Grade F321 Class 600 ASME B16.5 RF Moderate wet H2S service	
781	6		SCH40S		P61K-005KL	Flange WN ASTM A182 Grade F321 Class 600 ASME B16.5 RF Moderate wet H2S service	
781	8		SCH40S		P61K-005DU	Flange WN ASTM A182 Grade F321 Class 600 ASME B16.5 RF Moderate wet H2S service	
781	10		SCH40S		P61K-005DL	Flange WN ASTM A182 Grade F321 Class 600 ASME B16.5 RF Moderate wet H2S service	
781	12		SCH40S		P61K-005DM	Flange WN ASTM A182 Grade F321 Class 600 ASME B16.5 RF Moderate wet H2S service	
781	14		SCH40S		P61K-005SY	Flange WN ASTM A182 Grade F321 Class 600 ASME B16.5 RF Moderate wet H2S service	
851	10		SCH80S		P61K-006SN	Flange WN ASTM A182 Grade F321 Class 300 ASME B16.5 RF Moderate wet H2S service	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67K-001NN	Blind flange ASTM A182 Grade F321 Class 300 ASME B16.5 RF Moderate wet H2S service	
1	0.75				P67K-001NP	Blind flange ASTM A182 Grade F321 Class 300 ASME B16.5 RF Moderate wet H2S service	
1	1				P67K-001NR	Blind flange ASTM A182 Grade F321 Class 300 ASME B16.5 RF Moderate wet H2S service	
1	1.5				P67K-001NT	Blind flange ASTM A182 Grade F321 Class 300 ASME B16.5 RF Moderate wet H2S service	
1	2				P67K-001NX	Blind flange ASTM A182 Grade F321 Class 300 ASME B16.5 RF Moderate wet H2S service	
1	3				P67K-001NZ	Blind flange ASTM A182 Grade F321 Class 300 ASME B16.5 RF Moderate wet H2S service	
1	4				P67K-001P1	Blind flange ASTM A182 Grade F321 Class 300 ASME B16.5 RF Moderate wet H2S service	
1	6				P67K-001P3	Blind flange ASTM A182 Grade F321 Class 300 ASME B16.5 RF Moderate wet H2S service	
1	8				P67K-001P4	Blind flange ASTM A182 Grade F321 Class 300 ASME B16.5 RF Moderate wet H2S service	
1	10				P67K-001NU	Blind flange ASTM A182 Grade F321 Class 300 ASME B16.5 RF Moderate wet H2S service	
1	12				P67K-001NV	Blind flange ASTM A182 Grade F321 Class 300 ASME B16.5 RF Moderate wet H2S service	
1	14				P67K-001NW	Blind flange ASTM A182 Grade F321 Class 300 ASME B16.5 RF Moderate wet H2S service	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-00407	Spiral wound gasket SS321 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS321	
1	0.75				P73T-00408	Spiral wound gasket SS321 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS321	
1	1				P73T-00409	Spiral wound gasket SS321 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS321	
1	1.5				P73T-0040A	Spiral wound gasket SS321 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS321	

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GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2				P73T-0040G	Spiral wound gasket SS321 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS321	
1	3				P73T-0040H	Spiral wound gasket SS321 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS321	
1	4				P73T-0040J	Spiral wound gasket SS321 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS321	
1	6				P73T-0040K	Spiral wound gasket SS321 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS321	
1	8				P73T-0040L	Spiral wound gasket SS321 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS321	
1	10				P73T-0040B	Spiral wound gasket SS321 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS321	
1	12				P73T-0040C	Spiral wound gasket SS321 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS321	
1	14				P73T-0040D	Spiral wound gasket SS321 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS321	
2489	3				P75T-000N1	Ring joint gasket SS TP347 Class 600 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
781	0.5				P73T-003HR	Spiral wound gasket SS321 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS321	
781	0.75				P73T-003HS	Spiral wound gasket SS321 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS321	
781	1				P73T-003HT	Spiral wound gasket SS321 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS321	
781	1.5				P73T-003HU	Spiral wound gasket SS321 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS321	
781	2				P73T-003HY	Spiral wound gasket SS321 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS321	
781	3				P73T-003HZ	Spiral wound gasket SS321 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS321	
781	4				P73T-003J0	Spiral wound gasket SS321 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS321	
781	6				P73T-003J1	Spiral wound gasket SS321 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS321	
781	8				P73T-003J2	Spiral wound gasket SS321 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS321	
781	10				P73T-003HV	Spiral wound gasket SS321 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS321	
781	12				P73T-003HW	Spiral wound gasket SS321 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS321	
781	14				P73T-003HX	Spiral wound gasket SS321 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS321	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-10				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	12-14				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
2489	1.5-3				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
781	0.5-6				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
781	8-14				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81K-001KR	Gate valve ASTM A182 Grade F321 Class 300 API 602 Flange ASME B16.5 RF Trim SS347 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Fluid-2	
1	0.75				P81K-001KS	Gate valve ASTM A182 Grade F321 Class 300 API 602 Flange ASME B16.5 RF Trim SS347 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Fluid-2	
1	1				P81K-001KT	Gate valve ASTM A182 Grade F321 Class 300 API 602 Flange ASME B16.5 RF Trim SS347 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Fluid-2	
1	1.5				P81K-001KU	Gate valve ASTM A182 Grade F321 Class 300 API 602 Flange ASME B16.5 RF Trim SS347 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Fluid-2	
1	2				P81L-0034A	Gate valve ASTM A351 Grade CF8C Class 300 API 600 Flange ASME B16.5 RF Trim SS347 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Fluid-2	
1	3				P81L-0034B	Gate valve ASTM A351 Grade CF8C Class 300 API 600 Flange ASME B16.5 RF Trim SS347 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Fluid-2	
1	4				P81L-0034C	Gate valve ASTM A351 Grade CF8C Class 300 API 600 Flange ASME B16.5 RF Trim SS347 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Fluid-2	
1	6				P81L-0034D	Gate valve ASTM A351 Grade CF8C Class 300 API 600 Flange ASME B16.5 RF Trim SS347 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Fluid-2	
1	8				P81L-0034E	Gate valve ASTM A351 Grade CF8C Class 300 API 600 Flange ASME B16.5 RF Trim SS347 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Fluid-2	
1	10				P81L-0034F	Gate valve ASTM A351 Grade CF8C Class 300 API 600 Flange ASME B16.5 RF Trim SS347 BB-BG-OS&Y Gear operated Moderate wet H2S service Fluid-2	
1	12				P81L-0034G	Gate valve ASTM A351 Grade CF8C Class 300 API 600 Flange ASME B16.5 RF Trim SS347 BB-BG-OS&Y Gear operated Moderate wet H2S service Fluid-2	
1	14				P81L-0034H	Gate valve ASTM A351 Grade CF8C Class 300 API 600 Flange ASME B16.5 RF Trim SS347 BB-BG-OS&Y Gear operated Moderate wet H2S service Fluid-2	
46 08	0.75				P81K-001P1	Gate valve ASTM A182 Grade F321 Class 300 API 602 BW both sides w/ nipples BE - NPT ASTM A312-TP321 Seamless Sch160-nipple Trim SS347 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Fluid-2	

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GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
4608	1				P81K-001UU	Gate valve ASTM A182 Grade F321 Class 300 API 602 BW both sides w/ nipples BE - NPT ASTM A312-TP321 Seamless Sch160-nipple Trim SS347 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Fluid-2	
4613	10				P81L-003H0	Gate valve ASTM A351 Grade CF8C Class 300 API 600 Flange ASME B16.5 RF Trim SS347 BB-BG-OS&Y Gear operated Moderate wet H2S service Fluid-2 AIV service	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82K-00138	Globe valve ASTM A182 Grade F321 Class 300 API 602 Flange ASME B16.5 RF Trim SS347 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Fluid-2	
1	0.75				P82K-00139	Globe valve ASTM A182 Grade F321 Class 300 API 602 Flange ASME B16.5 RF Trim SS347 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Fluid-2	
1	1				P82K-0013A	Globe valve ASTM A182 Grade F321 Class 300 API 602 Flange ASME B16.5 RF Trim SS347 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Fluid-2	
1	1.5				P82K-0013B	Globe valve ASTM A182 Grade F321 Class 300 API 602 Flange ASME B16.5 RF Trim SS347 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Fluid-2	
1	2				P82L-001RV	Globe valve ASTM A351 Grade CF8C Class 300 BS 1873 Flange ASME B16.5 RF Trim SS347 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Fluid-2	
1	3				P82L-001RW	Globe valve ASTM A351 Grade CF8C Class 300 BS 1873 Flange ASME B16.5 RF Trim SS347 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Fluid-2	
1	4				P82L-001RX	Globe valve ASTM A351 Grade CF8C Class 300 BS 1873 Flange ASME B16.5 RF Trim SS347 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Fluid-2	
1	6				P82L-001RY	Globe valve ASTM A351 Grade CF8C Class 300 BS 1873 Flange ASME B16.5 RF Trim SS347 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Fluid-2	
1	8				P82L-001Y0	Globe valve ASTM A351 Grade CF8C Class 300 BS 1873 Flange ASME B16.5 RF Trim SS347 BB-BG-OS&Y Gear operated Moderate wet H2S service Fluid-2	
4601	3				P82L-001TH	Y-pattern globe valve ASTM A351 Grade CF8C Class 300 ASME B16.34 Flange ASME B16.5 RF Trim SS347 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Fluid-2	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83K-000RH	Check valve ASTM A182 Grade F321 Class 300 API 602 Flange ASME B16.5 RF Trim SS347 Lift-type Bolted cover Moderate wet H2S service	
1	0.75				P83K-000RJ	Check valve ASTM A182 Grade F321 Class 300 API 602 Flange ASME B16.5 RF Trim SS347 Lift-type Bolted cover Moderate wet H2S service	
1	1				P83K-000RK	Check valve ASTM A182 Grade F321 Class 300 API 602 Flange ASME B16.5 RF Trim SS347 Lift-type Bolted cover Moderate wet H2S service	
1	1.5				P83K-000RL	Check valve ASTM A182 Grade F321 Class 300 API 602 Flange ASME B16.5 RF Trim SS347 Lift-type Bolted cover Moderate wet H2S service	
1	2				P83L-0014G	Check valve ASTM A351 Grade CF8C Class 300 BS 1868 Flange ASME B16.5 RF Trim SS347 Swing-type Bolted cover Moderate wet H2S service	
1	3				P83L-0014H	Check valve ASTM A351 Grade CF8C Class 300 BS 1868 Flange ASME B16.5 RF Trim SS347 Swing-type Bolted cover Moderate wet H2S service	
1	4				P83L-0014J	Check valve ASTM A351 Grade CF8C Class 300 BS 1868 Flange ASME B16.5 RF Trim SS347 Swing-type Bolted cover Moderate wet H2S service	
1	6				P83L-0014K	Check valve ASTM A351 Grade CF8C Class 300 BS 1868 Flange ASME B16.5 RF Trim SS347 Swing-type Bolted cover Moderate wet H2S service	
1	8				P83L-0014L	Check valve ASTM A351 Grade CF8C Class 300 BS 1868 Flange ASME B16.5 RF Trim SS347 Swing-type Bolted cover Moderate wet H2S service	
1	10				P83L-0014E	Check valve ASTM A351 Grade CF8C Class 300 BS 1868 Flange ASME B16.5 RF Trim SS347 Swing-type Bolted cover Moderate wet H2S service	
1	12				P83L-0014F	Check valve ASTM A351 Grade CF8C Class 300 BS 1868 Flange ASME B16.5 RF Trim SS347 Swing-type Bolted cover Moderate wet H2S service	

ORIFICE FLANGE (FO)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3		SCH40S		P66K-003W7	Orifice flange WN ASTM A182 Grade F321 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Moderate wet H2S service	
200	3		SCH40S		P66K-003W8	Orifice flange WN ASTM A182 Grade F321 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Moderate wet H2S service with Jack screw	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71K-000E5	Spectacle blank ASTM A182 Grade F321 Class 300 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service	
1	0.75				P71K-000E6	Spectacle blank ASTM A182 Grade F321 Class 300 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service	
1	1				P71K-000E7	Spectacle blank ASTM A182 Grade F321 Class 300 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service	
1	1.5				P71K-000E8	Spectacle blank ASTM A182 Grade F321 Class 300 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service	
1	2				P71K-000EB	Spectacle blank ASTM A182 Grade F321 Class 300 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service	
1	3				P71K-000EC	Spectacle blank ASTM A182 Grade F321 Class 300 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service	
1	4				P71K-000ED	Spectacle blank ASTM A182 Grade F321 Class 300 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service	
1	6				P71K-000EE	Spectacle blank ASTM A182 Grade F321 Class 300 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service	
1	8				P71K-000EF	Spectacle blank ASTM A182 Grade F321 Class 300 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service	

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SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	10				P71K-000E9	Spectacle blank ASTM A182 Grade F321 Class 300 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service	
1	12				P71K-000EA	Spectacle blank ASTM A182 Grade F321 Class 300 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service	

PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72K-000EY	Paddle blank ASTM A182 Grade F321 Class 300 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service	

PADDLE SPACER (PS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72K-000EZ	Paddle spacer ASTM A182 Grade F321 Class 300 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service	

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PIPING CLASS
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BOLT TABLE (B_B1MQ02 , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-008T0		
0.75	4	0.625	75	P80S-00908		
1	4	0.625	80	P80S-00909		
1.5	4	0.750	95	P80S-005Z4		
2	8	0.625	90	P80S-0090B		
3	8	0.750	110	P80S-0090F		
4	8	0.750	115	P80S-0090G		
6	12	0.750	125	P80S-0090J		
8	12	0.875	140	P80S-005ZD		
10	16	1.000	160	P80S-0061E		
12	16	1.125	175	P80S-0064S		
14	20	1.125	180	P80S-0064T		

BOLT TABLE (B_B1MQ02_2489 , STUD ASME RJ, OPTION CODE 2489)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	80		R11	
0.75	4	0.625	90		R13	
1	4	0.625	95		R16	
1.5	4	0.750	110	P80S-0090F	R20	
2	8	0.625	115		R23	
3	8	0.750	135	P80S-0090L	R31	P75T-000N1
4	8	0.875	150		R37	
6	12	1.000	175		R45	
8	12	1.125	200		R49	
10	16	1.250	255		R53	
12	20	1.250	260		R57	
14	20	1.375	275		R61	

BOLT TABLE (B_B1MQ02_781 , STUD ASME RF, OPTION CODE 781)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	80	P80S-008T2		
0.75	4	0.625	90	P80S-0090B		
1	4	0.625	95	P80S-0090C		
1.5	4	0.750	110	P80S-0090F		
2	8	0.625	110	P80S-008T8		
3	8	0.750	130	P80S-0090K		
4	8	0.875	150	P80S-005ZF		
6	12	1.000	175	P80S-0061H		
8	12	1.125	195	P80S-0064W		
10	16	1.250	250	P80S-0068M		
12	20	1.250	255	P80S-0068N		
14	20	1.375	270	P80S-006HV		

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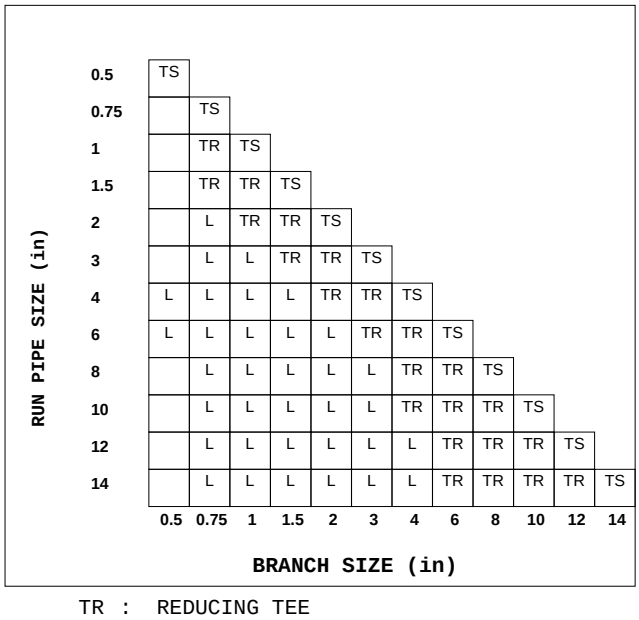
BRANCH TABLE (T_B1MQ02)



TR : REDUCING TEE
TS : STRAIGHT TEE
L : OUTLET

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BRANCH TABLE (T_B1MQ02_4)

RUN PIPE SIZE (in) \ BRANCH SIZE (in)	0.5	0.75	1	1.5	2	3	4	6	8	10	12	14
0.5	TS 851											
0.75		TS 851										
1		TR 851	TS 851									
1.5		TR 851	TR 851	TS 851								
2		L 851	TR 851	TR 851	TS 851							
3		L 851	L 851	TR 851	TR 851	TS 851						
4		L 851	L 851	L 851	TR 851	TR 851	TS 851					
6		L 851	L 851	L 851	L 851	TR 851	TR 851	TS 851				
8		L 851	L 851	L 851	L 851	L 851	TR 851	TR 851	TS 851			
10		L 851	L 851	L 851	L 851	L 851	TR 851	TR 851	TR 851	TS 851		
12		L 851	L 851	L 851	L 851	L 851	L 851	TR 851	TR 851	TR 851	TS 851	
14		L 851	L 851	L 851	L 851	L 851	L 851	TR 851	TR 851	TR 851	TR 851	TS 851

TR : REDUCING TEE
TS : STRAIGHT TEE
L : OUTLET

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PIPING CLASS

B21B05 REV NO. 2

Material : Killed CS
Rating : ASME CLASS 300
Flange Face : RF
C.A.(mm) : 3.00
Gasket : Spiral Wound
Service : HYDROGEN, STEAM CONDENSATE, LP STEAM, WASTE OIL
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
24	FULL PORT (Q)
200	WITH JACK SCREW (FO)
221	RF (V)
541	NPT(F) (CA,L)
714	SW - NPT(F) (V,W)
781	CLASS 600 (B,F,G)

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PIPING CLASS
B21B05 REV NO. 2

PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P01A-0010P	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	0.75		SCH160		P01A-0010R	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1		SCH160		P01A-0014M	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1.5		SCH160		P01A-0015J	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	2		XS		P01A-000YX	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	3		STD		P01A-000YM	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	4		STD		P01A-000YU	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	6		STD		P01A-000Z3	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	8		STD		P01A-000ZA	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	10		STD		P01A-000XJ	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	12		SCH40		P01A-0018V	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	14		SCH40		P01A-0018U	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	16		SCH20		P01A-0018E	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	18		SCH20		P01A-00438	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE	
1	20		STD		P01A-0042G	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P02B-0001J	90 degree elbow ASTM A105 Class 6000 ASME B16.11 SW	
1	0.75				P02B-0001K	90 degree elbow ASTM A105 Class 6000 ASME B16.11 SW	
1	1				P02B-0002E	90 degree elbow ASTM A105 Class 6000 ASME B16.11 SW	
1	1.5				P02B-0002F	90 degree elbow ASTM A105 Class 6000 ASME B16.11 SW	
1	2		XS		P02A-000CP	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		STD		P02A-000CU	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		STD		P02A-000CZ	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		STD		P02A-000D6	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		STD		P02A-000DC	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	10		STD		P02A-000BP	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	12		SCH40		P02A-000JE	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	14		SCH40		P02A-000JF	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	16		SCH20		P02A-000GM	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	18		SCH20		P02A-000LT	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	20		STD		P02A-0010J	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P03B-0001F	45 degree elbow ASTM A105 Class 6000 ASME B16.11 SW	
1	0.75				P03B-0001G	45 degree elbow ASTM A105 Class 6000 ASME B16.11 SW	
1	1				P03B-0002A	45 degree elbow ASTM A105 Class 6000 ASME B16.11 SW	
1	1.5				P03B-0002B	45 degree elbow ASTM A105 Class 6000 ASME B16.11 SW	
1	2		XS		P03A-000AS	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		STD		P03A-000AX	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		STD		P03A-000B1	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		STD		P03A-000B9	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		STD		P03A-000BB	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	10		STD		P03A-000A4	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	12		SCH40		P03A-000GC	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	14		SCH40		P03A-000GD	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	16		SCH20		P03A-000EM	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	18		SCH20		P03A-001DX	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	20		STD		P03A-000X1	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P21B-0001F	Straight tee ASTM A105 Class 6000 ASME B16.11 SW	
1	0.75				P21B-0001G	Straight tee ASTM A105 Class 6000 ASME B16.11 SW	
1	1				P21B-00026	Straight tee ASTM A105 Class 6000 ASME B16.11 SW	
1	1.5				P21B-00027	Straight tee ASTM A105 Class 6000 ASME B16.11 SW	
1	2		XS		P21A-001CJ	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3		STD		P21A-001CU	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		STD		P21A-001CW	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6		STD		P21A-001D2	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8		STD		P21A-001D8	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10		STD		P21A-001BV	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12		SCH40		P21A-0022P	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14		SCH40		P21A-0022R	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16		SCH20		P21A-0020X	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18		SCH20		P21A-001PJ	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20		STD		P21A-001C7	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5			P24B-00033	Reducing tee ASTM A105 Class 6000 ASME B16.11 SW	
1	1	0.5			P24B-00034	Reducing tee ASTM A105 Class 6000 ASME B16.11 SW	
1	1	0.75			P24B-00030	Reducing tee ASTM A105 Class 6000 ASME B16.11 SW	
1	1.5	0.5			P24B-00031	Reducing tee ASTM A105 Class 6000 ASME B16.11 SW	
1	1.5	0.75			P24B-00032	Reducing tee ASTM A105 Class 6000 ASME B16.11 SW	
1	1.5	1			P24B-0004J	Reducing tee ASTM A105 Class 6000 ASME B16.11 SW	
1	2	1	XS	SCH160	P24A-00GMB	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	XS	SCH160	P24A-005K9	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	STD	SCH160	P24A-00GMC	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	STD	XS	P24A-002HW	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P24A-002HY	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P24A-0021K	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	STD	P24A-0021A	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P24A-00229	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	STD	STD	P24A-0021E	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	STD	STD	P24A-0022M	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	STD	STD	P24A-0021B	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	STD	STD	P24A-0022B	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	STD	STD	P24A-0022W	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	SCH40	STD	P24A-00GSM	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH40	STD	P24A-00AF8	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH40	STD	P24A-00GSL	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	SCH40	STD	P24A-00GV4	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	SCH40	STD	P24A-00AFB	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	SCH40	STD	P24A-003GJ	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	SCH40	SCH40	P24A-0033E	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	6	SCH20	STD	P24A-00GU4	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	SCH20	STD	P24A-00GP8	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	SCH20	STD	P24A-00GU3	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	SCH20	SCH40	P24A-00L6A	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	SCH20	SCH40	P24A-00L4L	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	8	SCH20	STD	P24A-00BNM	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	10	SCH20	STD	P24A-00GU5	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	12	SCH20	SCH40	P24A-00BH1	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	14	SCH20	SCH40	P24A-00BJM	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	16	SCH20	SCH20	P24A-002X5	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	8	STD	STD	P24A-004V2	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	10	STD	STD	P24A-004W5	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	12	STD	SCH40	P24A-00GU8	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	14	STD	SCH40	P24A-00BWC	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	16	STD	SCH20	P24A-006W3	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	18	STD	SCH20	P24A-006WD	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	STD	XS	P27A-001MZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	4	2	STD	XS	P27A-001N0	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P27A-00189	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	STD	P27A-001AZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P27A-001GW	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	STD	STD	P27A-001C2	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	STD	STD	P27A-00188	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	STD	STD	P27A-001C3	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	STD	STD	P27A-0018M	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	STD	STD	P27A-0019J	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	SCH40	STD	P27A-004W1	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH40	STD	P27A-004XB	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH40	STD	P27A-004UG	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	SCH40	STD	P27A-0051B	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	SCH40	STD	P27A-003ZT	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	SCH40	STD	P27A-0029L	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	SCH40	SCH40	P27A-001ZZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	SCH20	STD	P27A-003ND	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	SCH20	STD	P27A-0054A	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	SCH20	SCH40	P27A-00CBP	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	SCH20	SCH40	P27A-00CBR	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	10	SCH20	STD	P27A-00BGM	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	12	SCH20	SCH40	P27A-00CPD	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	14	SCH20	SCH40	P27A-00CPE	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	16	SCH20	SCH20	P27A-001WN	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	12	STD	SCH40	P27A-00BJ4	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	14	STD	SCH40	P27A-00BJF	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	16	STD	SCH20	P27A-0082M	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	18	STD	SCH20	P27A-0084N	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	STD	XS	P28A-001N5	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P28A-001N6	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P28A-0018B	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	STD	P28A-001AS	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P28A-00182	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	STD	STD	P28A-0017V	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	STD	STD	P28A-0018V	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	STD	STD	P28A-0017W	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	STD	STD	P28A-00190	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	STD	STD	P28A-0019J	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	SCH40	STD	P28A-008HU	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH40	STD	P28A-005T9	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH40	STD	P28A-008HT	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	SCH40	STD	P28A-008F4	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	SCH40	STD	P28A-003ZL	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	SCH40	STD	P28A-0028T	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	SCH40	SCH40	P28A-001ZG	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	SCH20	STD	P28A-003N7	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	SCH20	STD	P28A-008FM	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	SCH20	SCH40	P28A-009AX	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	SCH20	SCH40	P28A-009AY	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	10	SCH20	STD	P28A-008FN	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	12	SCH20	SCH40	P28A-009PE	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	14	SCH20	SCH40	P28A-009PF	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	16	SCH20	SCH20	P28A-001T1	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	12	STD	SCH40	P28A-008HW	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	14	STD	SCH40	P28A-008JE	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	16	STD	SCH20	P28A-004SK	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	20	18	STD	SCH20	P28A-004UN	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P29B-0002F	Cap ASTM A105 Class 6000 ASME B16.11 SW	
1	0.75				P29B-0002G	Cap ASTM A105 Class 6000 ASME B16.11 SW	
1	1				P29B-0002D	Cap ASTM A105 Class 6000 ASME B16.11 SW	
1	1.5				P29B-0002E	Cap ASTM A105 Class 6000 ASME B16.11 SW	
1	2		XS		P29A-000A1	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		STD		P29A-000BK	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		STD		P29A-000A3	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6		STD		P29A-000A9	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8		STD		P29A-000AF	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10		STD		P29A-0009Z	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12		SCH40		P29A-000GB	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14		SCH40		P29A-000GC	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16		SCH20		P29A-000F3	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18		SCH20		P29A-000E0	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20		STD		P29A-000B2	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
541	0.75				P29B-0000Y	Cap ASTM A105 Class 6000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P41A-000B9	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		XXS		P41A-000BA	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		XXS		P41A-000D8	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		XXS		P41A-000D9	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

CON SWAGED NIPPLE (SNC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	SCH160	P42A-00029	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	SCH160	SCH160	P42A-0009T	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	SCH160	SCH160	P42A-0009U	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	SCH160	SCH160	P42A-0009V	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	SCH160	SCH160	P42A-0009W	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	SCH160	SCH160	P42A-0009X	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	XS	SCH160	P42A-000J6	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	XS	SCH160	P42A-000J7	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	XS	SCH160	P42A-000F8	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	XS	SCH160	P42A-000KZ	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	STD	SCH160	P42A-000L0	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	

ECC SWAGED NIPPLE (SNE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	SCH160	P43A-000AM	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	SCH160	SCH160	P43A-000B4	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	SCH160	SCH160	P43A-000B5	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	SCH160	SCH160	P43A-000B6	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	SCH160	SCH160	P43A-000B7	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	SCH160	SCH160	P43A-000B8	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	XS	SCH160	P43A-000B2	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	XS	SCH160	P43A-000B3	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	XS	SCH160	P43A-000CZ	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	XS	SCH160	P43A-000D0	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	STD	SCH160	P43A-000D1	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	

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COUPLING (CPS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P47B-00013	Coupling ASTM A105 Class 6000 ASME B16.11 SW - SW	
1	0.75				P47B-00012	Coupling ASTM A105 Class 6000 ASME B16.11 SW - SW	
1	1				P47B-0002A	Coupling ASTM A105 Class 6000 ASME B16.11 SW - SW	
1	1.5				P47B-0002B	Coupling ASTM A105 Class 6000 ASME B16.11 SW - SW	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5 - 2	0.5			P31B-005SW	Outlet ASTM A105 Class 6000 MSS SP-97 SW	
1	2.5 - 6	0.5			P31B-01388	Outlet ASTM A105 Class 6000 MSS SP-97 SW	
1	8 and larger	0.5			P31B-01389	Outlet ASTM A105 Class 6000 MSS SP-97 SW	
1	1.5 - 2.5	0.75			P31B-0137D	Outlet ASTM A105 Class 6000 MSS SP-97 SW	
1	3 - 10	0.75			P31B-007LV	Outlet ASTM A105 Class 6000 MSS SP-97 SW	
1	12 and larger	0.75			P31B-0136N	Outlet ASTM A105 Class 6000 MSS SP-97 SW	
1	3 - 10	1			P31B-007LN	Outlet ASTM A105 Class 6000 MSS SP-97 SW	
1	12 and larger	1			P31B-0136P	Outlet ASTM A105 Class 6000 MSS SP-97 SW	
1	4 - 5	1.5			P31B-004LE	Outlet ASTM A105 Class 6000 MSS SP-97 SW	
1	6 - 8	1.5			P31B-005T4	Outlet ASTM A105 Class 6000 MSS SP-97 SW	
1	10 - 18	1.5			P31B-007LF	Outlet ASTM A105 Class 6000 MSS SP-97 SW	
1	20 and larger	1.5			P31B-0137E	Outlet ASTM A105 Class 6000 MSS SP-97 SW	
541	1	0.75			P31B-005HL	Outlet ASTM A105 Class 6000 MSS SP-97 NPT	
541	1.5 - 2.5	0.75			P31B-0137F	Outlet ASTM A105 Class 6000 MSS SP-97 NPT	
541	3 - 10	0.75			P31B-007KP	Outlet ASTM A105 Class 6000 MSS SP-97 NPT	
541	12 and larger	0.75			P31B-0138A	Outlet ASTM A105 Class 6000 MSS SP-97 NPT	
1	6	2	STD	XS	P31B-007SH	Outlet ASTM A105 MSS SP-97 BW	
1	8	2	STD	XS	P31B-00AGX	Outlet ASTM A105 MSS SP-97 BW	
1	10	2	STD	XS	P31B-00ASA	Outlet ASTM A105 MSS SP-97 BW	
1	12	2	SCH40	XS	P31B-00CBS	Outlet ASTM A105 MSS SP-97 BW	
1	14	2	SCH40	XS	P31B-00CAH	Outlet ASTM A105 MSS SP-97 BW	
1	16	2	SCH20	XS	P31B-00TF8	Outlet ASTM A105 MSS SP-97 BW	
1	18	2	SCH20	XS	P31B-00NVX	Outlet ASTM A105 MSS SP-97 BW	
1	20	2	STD	XS	P31B-00994	Outlet ASTM A105 MSS SP-97 BW	
1	8	3	STD	STD	P31B-00A2T	Outlet ASTM A105 MSS SP-97 BW	
1	10	3	STD	STD	P31B-009CM	Outlet ASTM A105 MSS SP-97 BW	
1	12	3	SCH40	STD	P31B-0096S	Outlet ASTM A105 MSS SP-97 BW	
1	14	3	SCH40	STD	P31B-0090U	Outlet ASTM A105 MSS SP-97 BW	
1	16	3	SCH20	STD	P31B-00TU2	Outlet ASTM A105 MSS SP-97 BW	
1	18	3	SCH20	STD	P31B-00NZ4	Outlet ASTM A105 MSS SP-97 BW	
1	20	3	STD	STD	P31B-008FA	Outlet ASTM A105 MSS SP-97 BW	
1	12	4	SCH40	STD	P31B-008ZY	Outlet ASTM A105 MSS SP-97 BW	
1	14	4	SCH40	STD	P31B-008YN	Outlet ASTM A105 MSS SP-97 BW	
1	16	4	SCH20	STD	P31B-00TU3	Outlet ASTM A105 MSS SP-97 BW	
1	18	4	SCH20	STD	P31B-00P1V	Outlet ASTM A105 MSS SP-97 BW	
1	20	4	STD	STD	P31B-008D3	Outlet ASTM A105 MSS SP-97 BW	
1	18	6	SCH20	STD	P31B-00P48	Outlet ASTM A105 MSS SP-97 BW	
1	20	6	STD	STD	P31B-008PZ	Outlet ASTM A105 MSS SP-97 BW	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30B-0002D	Plug ASTM A105 ASME B16.11 NPT Round head	
1	0.75				P30B-0002E	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1				P30B-0002F	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1.5				P30B-0002G	Plug ASTM A105 ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P61B-001H5	Flange SW ASTM A105 Class 300 ASME B16.5 RF	
1	0.75		SCH160		P61B-001HH	Flange SW ASTM A105 Class 300 ASME B16.5 RF	
1	1		SCH160		P61B-001E8	Flange SW ASTM A105 Class 300 ASME B16.5 RF	
1	1.5		SCH160		P61B-001ET	Flange SW ASTM A105 Class 300 ASME B16.5 RF	

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FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2		XS		P61B-001HW	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	3		STD		P61B-001LJ	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	4		STD		P61B-001MC	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	6		STD		P61B-001N2	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	8		STD		P61B-001NL	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	10		STD		P61B-001L6	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	12		SCH40		P61B-002FJ	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	14		SCH40		P61B-002FL	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	16		SCH20		P61B-002MS	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	18		SCH20		P61B-002MT	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	20		STD		P61B-001NT	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
781	0.5		SCH160		P61B-001DZ	Flange SW ASTM A105 Class 600 ASME B16.5 RF	
781	0.75		SCH160		P61B-001DW	Flange SW ASTM A105 Class 600 ASME B16.5 RF	
781	1		SCH160		P61B-005X5	Flange SW ASTM A105 Class 600 ASME B16.5 RF	
781	1.5		SCH160		P61B-005X6	Flange SW ASTM A105 Class 600 ASME B16.5 RF	
781	2		XS		P61B-001DH	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	3		STD		P61B-001TW	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	4		STD		P61B-001VV	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	6		STD		P61B-001JW	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	8		STD		P61B-001KK	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	10		STD		P61B-001JJ	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	12		SCH40		P61B-003T5	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	14		SCH40		P61B-003T6	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	16		SCH20		P61B-00798	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	18		SCH20		P61B-003TP	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	20		STD		P61B-003GP	Flange WN ASTM A105 Class 600 ASME B16.5 RF	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67B-000GH	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	0.75				P67B-000GJ	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	1				P67B-000GK	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	1.5				P67B-000GL	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	2				P67B-000GM	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	3				P67B-000GN	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	4				P67B-000GP	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	6				P67B-000GY	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	8				P67B-000GZ	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	10				P67B-000GR	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	12				P67B-000GS	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	14				P67B-000GT	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	16				P67B-000GU	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	18				P67B-000GV	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	20				P67B-000GW	Blind flange ASTM A105 Class 300 ASME B16.5 RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-00356	Spiral wound gasket SS316 winding / Non-asbestos filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-6	
1	0.75				P73T-00357	Spiral wound gasket SS316 winding / Non-asbestos filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-6	
1	1				P73T-00358	Spiral wound gasket SS316 winding / Non-asbestos filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-6	
1	1.5				P73T-00359	Spiral wound gasket SS316 winding / Non-asbestos filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-6	
1	2				P73T-0035A	Spiral wound gasket SS316 winding / Non-asbestos filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-6	
1	3				P73T-0035B	Spiral wound gasket SS316 winding / Non-asbestos filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-6	
1	4				P73T-0035C	Spiral wound gasket SS316 winding / Non-asbestos filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-6	
1	6				P73T-0035D	Spiral wound gasket SS316 winding / Non-asbestos filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-6	
1	8				P73T-00392	Spiral wound gasket SS316 winding / Non-asbestos filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-6	

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GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	10				P73T-0038W	Spiral wound gasket SS316 winding / Non-asbestos filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-6	
1	12				P73T-0038X	Spiral wound gasket SS316 winding / Non-asbestos filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-6	
1	14				P73T-0038Y	Spiral wound gasket SS316 winding / Non-asbestos filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-6	
1	16				P73T-0038Z	Spiral wound gasket SS316 winding / Non-asbestos filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-6	
1	18				P73T-00390	Spiral wound gasket SS316 winding / Non-asbestos filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-6	
1	20				P73T-00391	Spiral wound gasket SS316 winding / Non-asbestos filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-6	
781	0.5				P73T-0035E	Spiral wound gasket SS316 winding / Non-asbestos filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-6	
781	0.75				P73T-0035F	Spiral wound gasket SS316 winding / Non-asbestos filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-6	
781	1				P73T-0035G	Spiral wound gasket SS316 winding / Non-asbestos filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-6	
781	1.5				P73T-0035H	Spiral wound gasket SS316 winding / Non-asbestos filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-6	
781	2				P73T-0035J	Spiral wound gasket SS316 winding / Non-asbestos filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-6	
781	3				P73T-0035K	Spiral wound gasket SS316 winding / Non-asbestos filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-6	
781	4				P73T-0035L	Spiral wound gasket SS316 winding / Non-asbestos filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-6	
781	6				P73T-0035M	Spiral wound gasket SS316 winding / Non-asbestos filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-6	
781	8				P73T-00371	Spiral wound gasket SS316 winding / Non-asbestos filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-6	
781	10				P73T-0036Z	Spiral wound gasket SS316 winding / Non-asbestos filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-6	
781	12				P73T-00370	Spiral wound gasket SS316 winding / Non-asbestos filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-6	
781	14				P73T-00393	Spiral wound gasket SS316 winding / Non-asbestos filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-6	
781	16				P73T-00394	Spiral wound gasket SS316 winding / Non-asbestos filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-6	
781	18				P73T-00395	Spiral wound gasket SS316 winding / Non-asbestos filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-6	
781	20				P73T-00396	Spiral wound gasket SS316 winding / Non-asbestos filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-6	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-10				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	12-20				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
781	0.5-6				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
781	8-20				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81B-000RA	Gate valve ASTM A105 Class 800 API 602 SW Trim number 5 BB-BG-OS&Y Handwheel operated	
1	0.75				P81B-000P0	Gate valve ASTM A105 Class 800 API 602 SW Trim number 5 BB-BG-OS&Y Handwheel operated	
1	1				P81B-000P1	Gate valve ASTM A105 Class 800 API 602 SW Trim number 5 BB-BG-OS&Y Handwheel operated	
1	1.5				P81B-000P2	Gate valve ASTM A105 Class 800 API 602 SW Trim number 5 BB-BG-OS&Y Handwheel operated	
1	2				P81C-004HA	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated	
1	3				P81C-004HB	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated	
1	4				P81C-004HC	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated	
1	6				P81C-004HD	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated	
1	8				P81C-0086Y	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Gear operated	
1	10				P81C-004H3	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Gear operated	
1	12				P81C-004H4	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Gear operated	
1	14				P81C-004H5	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Gear operated	
1	16				P81C-004H6	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Gear operated	
1	18				P81C-004H7	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Gear operated	
1	20				P81C-004H8	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Gear operated	

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GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
221	1				P81B-002SK	Gate valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated	
714	0.5				P81B-0015N	Gate valve ASTM A105 Class 800 API 602 SW - NPT Trim number 5 BB-BG-OS&Y Handwheel operated	
714	0.75				P81B-002FC	Gate valve ASTM A105 Class 800 API 602 SW - NPT Trim number 5 BB-BG-OS&Y Handwheel operated	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82B-000KW	Globe valve ASTM A105 Class 800 API 602 SW Trim number 5 BB-BG-OS&Y Handwheel operated	
1	0.75				P82B-000HE	Globe valve ASTM A105 Class 800 API 602 SW Trim number 5 BB-BG-OS&Y Handwheel operated	
1	1				P82B-000HF	Globe valve ASTM A105 Class 800 API 602 SW Trim number 5 BB-BG-OS&Y Handwheel operated	
1	1.5				P82B-000HG	Globe valve ASTM A105 Class 800 API 602 SW Trim number 5 BB-BG-OS&Y Handwheel operated	
1	2				P82C-0027S	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated	
1	3				P82C-0027T	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated	
1	4				P82C-0027U	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated	
1	6				P82C-0027V	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated	
714	0.5				P82B-0020E	Globe valve ASTM A105 Class 800 API 602 SW - NPT Trim number 5 BB-BG-OS&Y Handwheel operated	
714	0.75				P82B-0020F	Globe valve ASTM A105 Class 800 API 602 SW - NPT Trim number 5 BB-BG-OS&Y Handwheel operated	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83B-000GL	Check valve ASTM A105 Class 800 API 602 SW Trim number 5 Lift-type Bolted cover	
1	0.75				P83B-000EU	Check valve ASTM A105 Class 800 API 602 SW Trim number 5 Lift-type Bolted cover	
1	1				P83B-000EV	Check valve ASTM A105 Class 800 API 602 SW Trim number 5 Lift-type Bolted cover	
1	1.5				P83B-000EW	Check valve ASTM A105 Class 800 API 602 SW Trim number 5 Lift-type Bolted cover	
1	2				P83C-00243	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 5 Swing-type Bolted cover	
1	3				P83C-00244	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 5 Swing-type Bolted cover	
1	4				P83C-00245	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 5 Swing-type Bolted cover	
1	6				P83C-00246	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 5 Swing-type Bolted cover	
1	8				P83C-00247	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 5 Swing-type Bolted cover	
1	10				P83C-00240	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 5 Swing-type Bolted cover	
1	12				P83C-00241	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 5 Swing-type Bolted cover	
1	14				P83C-00242	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 5 Swing-type Bolted cover	
1	16				P83C-002S3	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 5 Swing-type Bolted cover	
1	18				P83C-002S4	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 5 Swing-type Bolted cover	
1	20				P83C-002S5	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 5 Swing-type Bolted cover	

BALL VALVE (Q)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P84B-0012S	Ball valve Long-pattern ASTM A105 Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design	
1	0.75				P84B-0012T	Ball valve Long-pattern ASTM A105 Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design	
1	1				P84B-0012U	Ball valve Long-pattern ASTM A105 Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design	
1	1.5				P84B-0012V	Ball valve Long-pattern ASTM A105 Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design	
1	2				P84C-005VG	Ball valve Long-pattern ASTM A216 Grade WCB Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design	
1	3				P84C-005VH	Ball valve Long-pattern ASTM A216 Grade WCB Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design	
1	4				P84C-005VU	Ball valve Long-pattern ASTM A216 Grade WCB Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Gear operated Reduced bore Fire tested design	
1	6				P84C-005VK	Ball valve Long-pattern ASTM A216 Grade WCB Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Reduced bore Fire tested design	
1	8				P84C-005VL	Ball valve Long-pattern ASTM A216 Grade WCB Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Reduced bore Fire tested design	
1	10				P84C-005VJ	Ball valve Long-pattern ASTM A216 Grade WCB Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Reduced bore Fire tested design	
1	12				P84C-006N6	Ball valve Long-pattern ASTM A216 Grade WCB Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Reduced bore Fire tested design	
1	14				P84C-006N7	Ball valve Long-pattern ASTM A216 Grade WCB Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Reduced bore Fire tested design	

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BALL VALVE (Q)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	16				P84C-006N8	Ball valve Long-pattern ASTM A216 Grade WCB Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Reduced bore Fire tested design	
1	18				P84C-006N9	Ball valve Long-pattern ASTM A216 Grade WCB Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Reduced bore Fire tested design	
1	20				P84C-006NA	Ball valve Long-pattern ASTM A216 Grade WCB Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Reduced bore Fire tested design	
24	0.5				P84B-0012W	Ball valve Long-pattern ASTM A105 Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	
24	0.75				P84B-0012X	Ball valve Long-pattern ASTM A105 Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	
24	1				P84B-0012Y	Ball valve Long-pattern ASTM A105 Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	
24	1.5				P84B-0012Z	Ball valve Long-pattern ASTM A105 Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	
24	2				P84C-005VM	Ball valve Long-pattern ASTM A216 Grade WCB Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	
24	3				P84C-005VN	Ball valve Long-pattern ASTM A216 Grade WCB Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	
24	4				P84C-005VT	Ball valve Long-pattern ASTM A216 Grade WCB Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Gear operated Full bore Fire tested design	
24	6				P84C-005VR	Ball valve Long-pattern ASTM A216 Grade WCB Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design	
24	8				P84C-005VS	Ball valve Long-pattern ASTM A216 Grade WCB Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design	
24	10				P84C-005VP	Ball valve Long-pattern ASTM A216 Grade WCB Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design	
24	12				P84C-006NB	Ball valve Long-pattern ASTM A216 Grade WCB Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design	
24	14				P84C-006NC	Ball valve Long-pattern ASTM A216 Grade WCB Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design	
24	16				P84C-006ND	Ball valve Long-pattern ASTM A216 Grade WCB Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design	
24	18				P84C-006NE	Ball valve Long-pattern ASTM A216 Grade WCB Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design	
24	20				P84C-006NF	Ball valve Long-pattern ASTM A216 Grade WCB Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design	

BUTTERFLY VALVE (H)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	16				P86C-0023J	Offset design butterfly valve ASTM A216 Grade WCB Class 300 API 609 Category B Lug-type ASME B16.5 RF Disc CS Seat Stellite-6 Trim 13Cr Triple eccentric design BG Gear operated	

ORIFICE FLANGE (FO)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2		XS		P66B-0084B	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	3		STD		P66B-0084C	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	4		STD		P66B-0084D	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	6		STD		P66B-0084E	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	8		STD		P66B-008BN	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	10		STD		P66B-008BM	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	12		SCH40		P66B-00885	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	14		SCH40		P66B-00886	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	16		SCH20		P66B-0083Y	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
200	2		XS		P66B-00843	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	3		STD		P66B-00844	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	4		STD		P66B-00845	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	6		STD		P66B-00846	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	8		STD		P66B-008BR	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	10		STD		P66B-008BP	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	12		SCH40		P66B-0088K	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	14		SCH40		P66B-0088L	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	16		SCH20		P66B-0083Z	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71B-000B1	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	0.75				P71B-000B2	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	1				P71B-000B3	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71B-000B4	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	2				P71B-000B6	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	3				P71B-000B7	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	

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SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	4				P71B-000B8	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	6				P71B-000B9	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	8				P71B-000BA	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	10				P71B-000B5	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	12				P71B-000BB	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	

PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000FA	Paddle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	16				P72B-000FB	Paddle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	18				P72B-000FC	Paddle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	20				P72B-000FD	Paddle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	

PADDLE SPACER (PS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000FG	Paddle spacer ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	16				P72B-000FH	Paddle spacer ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	18				P72B-000FJ	Paddle spacer ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	20				P72B-000FK	Paddle spacer ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	

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BOLT TABLE (B_B21B05 , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-003V4		
0.75	4	0.625	75	P80S-003XC		
1	4	0.625	80	P80S-003XD		
1.5	4	0.750	95	P80S-00414		
2	8	0.625	90	P80S-003XF		
3	8	0.750	110	P80S-003XK		
4	8	0.750	115	P80S-003XL		
6	12	0.750	125	P80S-003XN		
8	12	0.875	140	P80S-0041D		
10	16	1.000	160	P80S-0043K		
12	16	1.125	175	P80S-0046S		
14	20	1.125	180	P80S-0046T		
16	20	1.250	190	P80S-004AK		
18	24	1.250	200	P80S-004AM		
20	24	1.250	210	P80S-004AP		

BOLT TABLE (B_B21B05_781 , STUD ASME RF, OPTION CODE 781)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	80	P80S-003V6		
0.75	4	0.625	90	P80S-003XF		
1	4	0.625	95	P80S-003XG		
1.5	4	0.750	110	P80S-003XK		
2	8	0.625	110	P80S-003VC		
3	8	0.750	130	P80S-003XP		
4	8	0.875	150	P80S-0041F		
6	12	1.000	175	P80S-0043P		
8	12	1.125	195	P80S-0046W		
10	16	1.250	250	P80S-004AY		
12	20	1.250	255	P80S-004AZ		
14	20	1.375	270	P80S-003E7		
16	20	1.500	295	P80S-003FL		
18	20	1.625	320	P80S-005TT		
20	24	1.625	335	P80S-005TW		

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BRANCH TABLE (T_B21B05)

RUN PIPE SIZE (in) \ BRANCH SIZE (in)	0.5	0.75	1	1.5	2	3	4	6	8	10	12	14	16	18	20
0.5	TS														
0.75	TR	TS													
1	TR	TR	TS												
1.5	TR	TR	TR	TS											
2	L	L	TR	TR	TS										
3	L	L	L	TR	TR	TS									
4	L	L	L	L	TR	TR	TS								
6	L	L	L	L	L	TR	TR	TS							
8	L	L	L	L	L	L	TR	TR	TS						
10	L	L	L	L	L	L	TR	TR	TR	TS					
12	L	L	L	L	L	L	L	TR	TR	TR	TS				
14		L	L	L	L	L	L	TR	TR	TR	TR	TS			
16		L	L	L	L	L	L	TR	TR	TR	TR	TR	TS		
18		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TS	
20	L	L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TR	TS

TS : STRAIGHT TEE
L : OUTLET
TR : REDUCING TEE

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PIPING CLASS

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Material : LTCS
Rating : ASME CLASS 300
Flange Face : RF
C.A.(mm) : 3.00
Gasket : Spiral Wound
Service : PROCESS - LOW TEMPERATURE SERVICE: / HYDROCARBONS (LIGHT) / REFRIGERANT / DEPROPANISER REFLUX / C3 LPG (Note 21) / PROCESS
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
24	FULL PORT (Q)
200	WITH JACK SCREW (FO)
221	RF (V)
541	NPT(F) (CA,L)
714	SW - NPT(F) (V,W)
781	CLASS 600 (B,F,G)
4203	SOCKOLET ON CAP (CAP=NPS3) (LC)
4609	FULL BORE WITH SW-NPT(F) ENDS (V)

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PIPING CLASS
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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P01A-00167	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE	
1	0.75		SCH160		P01A-0016P	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE	
1	1		SCH160		P01A-0011Z	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE	
1	1.5		SCH160		P01A-00127	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE	
1	2		XS		P01A-000XB	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	3		STD		P01A-000YL	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	4		STD		P01A-000YT	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	6		STD		P01A-000Z2	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	8		STD		P01A-000Z8	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	10		STD		P01A-000XH	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	12		SCH40		P01A-0018G	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	14		SCH40		P01A-0019M	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	16		SCH20		P01A-0019K	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	18		SCH20		P01A-007GS	Pipe ASTM A671 Grade CC60 Class 22 EFW ASME B36.10M/B36.19M BE	
1	20		STD		P01A-0042R	Pipe ASTM A671 Grade CC60 Class 22 EFW ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P02B-0001V	90 degree elbow ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW	
1	0.75				P02B-0001W	90 degree elbow ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW	
1	1				P02B-0001X	90 degree elbow ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW	
1	1.5				P02B-0001Y	90 degree elbow ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW	
1	2		XS		P02A-000B9	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	3		STD		P02A-000E7	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	4		STD		P02A-000E9	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	6		STD		P02A-000EC	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	8		STD		P02A-000EF	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	10		STD		P02A-000EL	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	12		SCH40		P02A-000JZ	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	14		SCH40		P02A-000K0	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	16		SCH20		P02A-000GH	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	18		SCH20		P02A-001JY	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	20		STD		P02A-001JZ	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	

90FACTORY-MADE BEND (9FM)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		SCH160		P08A-0011W	90 degree factory-made bend ASTM A420 Grade WPL6 Seamless Standard-drawing BW 5DR Licensor-5	
1	1.5		SCH160		P08A-0011X	90 degree factory-made bend ASTM A420 Grade WPL6 Seamless Standard-drawing BW 5DR Licensor-5	
1	2		XS		P08A-00122	90 degree factory-made bend ASTM A420 Grade WPL6 Seamless Standard-drawing BW 5DR Licensor-5	
1	3		STD		P08A-00123	90 degree factory-made bend ASTM A420 Grade WPL6 Seamless Standard-drawing BW 5DR Licensor-5	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P03B-0001S	45 degree elbow ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW	
1	0.75				P03B-0001T	45 degree elbow ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW	
1	1				P03B-0001U	45 degree elbow ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW	
1	1.5				P03B-0001V	45 degree elbow ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW	
1	2		XS		P03A-0009Y	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	3		STD		P03A-000C4	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	4		STD		P03A-000C6	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	6		STD		P03A-000C9	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	8		STD		P03A-000CB	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	10		STD		P03A-000BL	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	12		SCH40		P03A-000GX	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	14		SCH40		P03A-000GY	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	16		SCH20		P03A-000EK	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	18		SCH20		P03A-001E2	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	20		STD		P03A-001E3	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	

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STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P21B-0001S	Straight tee ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW	
1	0.75				P21B-0001T	Straight tee ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW	
1	1				P21B-0001U	Straight tee ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW	
1	1.5				P21B-0001V	Straight tee ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW	
1	2		XS		P21A-001BR	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	3		STD		P21A-001FE	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	4		STD		P21A-001FF	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	6		STD		P21A-001FJ	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	8		STD		P21A-001FL	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10		STD		P21A-001F0	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12		SCH40		P21A-00239	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14		SCH40		P21A-0023A	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16		SCH20		P21A-0020U	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	18		SCH20		P21A-0020E	Straight tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	20		STD		P21A-001F4	Straight tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	

STRAIGHT LATERAL TEE (TLS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75				P22B-00007	Straight lateral-tee ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW 60 degree	
1	1				P22B-00008	Straight lateral-tee ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW 60 degree	
1	1.5				P22B-0000A	Straight lateral-tee ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW 60 degree	
1	2		XS		P22A-000DD	Straight lateral-tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW 60 degree	
1	3		STD		P22A-000DE	Straight lateral-tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW 60 degree	
1	4		STD		P22A-000DF	Straight lateral-tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW 60 degree	
1	6		STD		P22A-000DG	Straight lateral-tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW 60 degree	
1	8		STD		P22A-000E5	Straight lateral-tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW 60 degree	
1	10		STD		P22A-000E1	Straight lateral-tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW 60 degree	
1	12		SCH40		P22A-000E2	Straight lateral-tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW 60 degree	
1	14		SCH40		P22A-000E3	Straight lateral-tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW 60 degree	
1	16		SCH20		P22A-000E4	Straight lateral-tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW 60 degree	
1	18		SCH20		P22A-000G6	Straight lateral-tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW 60 degree	
1	20		STD		P22A-000G7	Straight lateral-tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW 60 degree	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5			P24B-0003K	Reducing tee ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW	
1	1	0.5			P24B-0003L	Reducing tee ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW	
1	1	0.75			P24B-0003M	Reducing tee ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW	
1	1.5	0.5			P24B-0003N	Reducing tee ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW	
1	1.5	0.75			P24B-0003P	Reducing tee ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW	
1	1.5	1			P24B-0003R	Reducing tee ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW	
1	2	1	XS	SCH160	P24A-00GMD	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	2	1.5	XS	SCH160	P24A-005NK	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	3	1.5	STD	SCH160	P24A-00GME	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	3	2	STD	XS	P24A-005M3	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	4	2	STD	XS	P24A-006CW	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	4	3	STD	STD	P24A-0028C	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	6	3	STD	STD	P24A-002AL	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	6	4	STD	STD	P24A-00289	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	8	4	STD	STD	P24A-0028B	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	8	6	STD	STD	P24A-0028T	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	4	STD	STD	P24A-002K7	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	6	STD	STD	P24A-002AN	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	8	STD	STD	P24A-0028W	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	6	SCH40	STD	P24A-00M0Y	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	8	SCH40	STD	P24A-00674	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	10	SCH40	STD	P24A-00673	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	6	SCH40	STD	P24A-00M0Z	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	8	SCH40	STD	P24A-00M10	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	

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REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14	10	SCH40	STD	P24A-00675	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	12	SCH40	SCH40	P24A-0036F	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	6	SCH20	STD	P24A-00KWN	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	8	SCH20	STD	P24A-00HLR	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	10	SCH20	STD	P24A-00M11	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	12	SCH20	SCH40	P24A-00M12	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	14	SCH20	SCH40	P24A-00M13	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	18	8	SCH20	STD	P24A-00M17	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	18	10	SCH20	STD	P24A-00M14	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	18	12	SCH20	SCH40	P24A-00M15	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	18	14	SCH20	SCH40	P24A-00M16	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	18	16	SCH20	SCH20	P24A-002XE	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	20	8	STD	STD	P24A-002RW	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	20	10	STD	STD	P24A-002L1	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	20	12	STD	SCH40	P24A-00M18	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	20	14	STD	SCH40	P24A-00M19	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	20	16	STD	SCH20	P24A-0071W	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	20	18	STD	SCH20	P24A-006D6	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	STD	XS	P27A-003PM	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	4	2	STD	XS	P27A-003PN	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	4	3	STD	STD	P27A-001BA	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	6	3	STD	STD	P27A-001H9	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	6	4	STD	STD	P27A-00181	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	8	4	STD	STD	P27A-0017P	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	8	6	STD	STD	P27A-001B9	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	4	STD	STD	P27A-0017X	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	6	STD	STD	P27A-001BV	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	8	STD	STD	P27A-001D6	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	6	SCH40	STD	P27A-00G2V	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	8	SCH40	STD	P27A-0047Z	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	10	SCH40	STD	P27A-0047X	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	6	SCH40	STD	P27A-00G2W	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	8	SCH40	STD	P27A-00482	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	10	SCH40	STD	P27A-00480	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	12	SCH40	SCH40	P27A-00224	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	8	SCH20	STD	P27A-008G4	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	10	SCH20	STD	P27A-00G2X	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	12	SCH20	SCH40	P27A-00G2Y	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	14	SCH20	SCH40	P27A-00G2Z	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	18	10	SCH20	STD	P27A-00G30	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	18	12	SCH20	SCH40	P27A-00G31	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	18	14	SCH20	SCH40	P27A-00G32	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	18	16	SCH20	SCH20	P27A-001WF	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	20	12	STD	SCH40	P27A-00G33	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	20	14	STD	SCH40	P27A-00G34	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	20	16	STD	SCH20	P27A-008G9	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	20	18	STD	SCH20	P27A-004DM	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	STD	XS	P28A-003PL	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	4	2	STD	XS	P28A-003PM	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	4	3	STD	STD	P28A-001CF	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	6	3	STD	STD	P28A-001AL	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	6	4	STD	STD	P28A-001BL	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	8	4	STD	STD	P28A-001B9	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	8	6	STD	STD	P28A-001CL	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	4	STD	STD	P28A-001BF	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	6	STD	STD	P28A-001CK	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	8	STD	STD	P28A-001E4	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	6	SCH40	STD	P28A-00D93	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	8	SCH40	STD	P28A-0047R	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	10	SCH40	STD	P28A-0047N	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	6	SCH40	STD	P28A-00D94	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	8	SCH40	STD	P28A-0047U	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	10	SCH40	STD	P28A-0047S	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	12	SCH40	SCH40	P28A-0021T	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	8	SCH20	STD	P28A-00569	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	10	SCH20	STD	P28A-00D95	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	12	SCH20	SCH40	P28A-00D96	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	14	SCH20	SCH40	P28A-00D97	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	18	10	SCH20	STD	P28A-00D98	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	18	12	SCH20	SCH40	P28A-00D99	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	18	14	SCH20	SCH40	P28A-00D9A	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	18	16	SCH20	SCH20	P28A-001WA	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	20	12	STD	SCH40	P28A-00D9B	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	20	14	STD	SCH40	P28A-00D9C	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	20	16	STD	SCH20	P28A-0056E	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	20	18	STD	SCH20	P28A-004DF	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P29B-0002J	Cap ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW	
1	0.75				P29B-0002K	Cap ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW	
1	1				P29B-0002L	Cap ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW	
1	1.5				P29B-0002H	Cap ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW	
1	2		XS		P29A-000BG	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	3		STD		P29A-0009Y	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	4		STD		P29A-000AH	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	6		STD		P29A-000DE	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	8		STD		P29A-000DH	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10		STD		P29A-000B0	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12		SCH40		P29A-000GW	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14		SCH40		P29A-000GX	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16		SCH20		P29A-000ER	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	18		SCH20		P29A-000EU	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	20		STD		P29A-000BR	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
541	0.75				P29B-00015	Cap ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P41A-000DJ	Straight nipple ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		XXS		P41A-000DK	Straight nipple ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		XXS		P41A-000DZ	Straight nipple ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		XXS		P41A-000E0	Straight nipple ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

CON SWAGED NIPPLE (SNC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	SCH160	P42A-000A8	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	SCH160	SCH160	P42A-000A9	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	SCH160	SCH160	P42A-000A1	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	SCH160	SCH160	P42A-000AA	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	SCH160	SCH160	P42A-000A3	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	SCH160	SCH160	P42A-000A4	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	XS	SCH160	P42A-000L1	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 BE(L) - PE(S)	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2	0.75	XS	SCH160	P42A-000L2	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	XS	SCH160	P42A-000L3	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	XS	SCH160	P42A-000L4	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	STD	SCH160	P42A-000L5	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 BE(L) - PE(S)	

ECC SWAGED NIPPLE (SNE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	SCH160	P43A-000D2	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	SCH160	SCH160	P43A-000D3	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	SCH160	SCH160	P43A-000D4	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	SCH160	SCH160	P43A-000D5	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	SCH160	SCH160	P43A-000D6	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	SCH160	SCH160	P43A-000D7	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	XS	SCH160	P43A-000D8	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	XS	SCH160	P43A-000D9	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	XS	SCH160	P43A-000DA	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	XS	SCH160	P43A-000DB	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	STD	SCH160	P43A-000DC	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 BE(L) - PE(S)	

COUPLING (CPS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P47B-0001S	Coupling ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW - SW	
1	0.75				P47B-0001T	Coupling ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW - SW	
1	1				P47B-0001U	Coupling ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW - SW	
1	1.5				P47B-0001V	Coupling ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW - SW	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5 - 2	0.5			P31B-007BZ	Outlet ASTM A350 Grade LF2 Class 1 Class 6000 MSS SP-97 SW	
1	2.5 - 6	0.5			P31B-013A4	Outlet ASTM A350 Grade LF2 Class 1 Class 6000 MSS SP-97 SW	
1	8 and larger	0.5			P31B-013A5	Outlet ASTM A350 Grade LF2 Class 1 Class 6000 MSS SP-97 SW	
1	1.5 - 2.5	0.75			P31B-0138C	Outlet ASTM A350 Grade LF2 Class 1 Class 6000 MSS SP-97 SW	
1	3 - 10	0.75			P31B-007DK	Outlet ASTM A350 Grade LF2 Class 1 Class 6000 MSS SP-97 SW	
1	12 and larger	0.75			P31B-0138B	Outlet ASTM A350 Grade LF2 Class 1 Class 6000 MSS SP-97 SW	
1	3 - 10	1			P31B-007BL	Outlet ASTM A350 Grade LF2 Class 1 Class 6000 MSS SP-97 SW	
1	12 and larger	1			P31B-0138D	Outlet ASTM A350 Grade LF2 Class 1 Class 6000 MSS SP-97 SW	
1	4 - 5	1.5			P31B-00514	Outlet ASTM A350 Grade LF2 Class 1 Class 6000 MSS SP-97 SW	
1	6 - 8	1.5			P31B-007B0	Outlet ASTM A350 Grade LF2 Class 1 Class 6000 MSS SP-97 SW	
1	10 - 18	1.5			P31B-007BC	Outlet ASTM A350 Grade LF2 Class 1 Class 6000 MSS SP-97 SW	
1	20 and larger	1.5			P31B-0138E	Outlet ASTM A350 Grade LF2 Class 1 Class 6000 MSS SP-97 SW	
541	1	0.75			P31B-004HD	Outlet ASTM A350 Grade LF2 Class 1 Class 6000 MSS SP-97 NPT	
541	1.5 - 2.5	0.75			P31B-0138F	Outlet ASTM A350 Grade LF2 Class 1 Class 6000 MSS SP-97 NPT	
541	3 - 10	0.75			P31B-007CY	Outlet ASTM A350 Grade LF2 Class 1 Class 6000 MSS SP-97 NPT	
541	12 and larger	0.75			P31B-0138G	Outlet ASTM A350 Grade LF2 Class 1 Class 6000 MSS SP-97 NPT	
1	6	2	STD	XS	P31B-00MFB	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	8	2	STD	XS	P31B-00PAW	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	10	2	STD	XS	P31B-00TPH	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	12	2	SCH40	XS	P31B-00ZG2	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	14	2	SCH40	XS	P31B-00ZG5	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	16	2	SCH20	XS	P31B-00TFZ	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	18	2	SCH20	XS	P31B-00MJS	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	20	2	STD	XS	P31B-00MGK	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	8	3	STD	STD	P31B-00E6Y	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	10	3	STD	STD	P31B-00E6V	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	12	3	SCH40	STD	P31B-00ZG3	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	14	3	SCH40	STD	P31B-00ZG6	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	16	3	SCH20	STD	P31B-00UP2	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	18	3	SCH20	STD	P31B-00MJT	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	20	3	STD	STD	P31B-00E8N	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	

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OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	12	4	SCH40	STD	P31B-00ZG4	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	14	4	SCH40	STD	P31B-00ZG7	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	16	4	SCH20	STD	P31B-00UP3	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	18	4	SCH20	STD	P31B-00MJU	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	20	4	STD	STD	P31B-00E88	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	18	6	SCH20	STD	P31B-00MJV	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	20	6	STD	STD	P31B-00E86	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	

LATROLET (LL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	20	6	STD	STD	P34B-001LP	Lateral-outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW 45 degree	

OLET ON CAP (LC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
4203	0.75				P36B-00063	Outlet on cap ASTM A350 Grade LF2 Class 1 Class 6000 MSS SP-97 SW Cap=NPS3	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30B-0002V	Plug ASTM A350 Grade LF2 Class 1 ASME B16.11 NPT Round head	
1	0.75				P30B-0002W	Plug ASTM A350 Grade LF2 Class 1 ASME B16.11 NPT Round head	
1	1				P30B-0002X	Plug ASTM A350 Grade LF2 Class 1 ASME B16.11 NPT Round head	
1	1.5				P30B-0002Y	Plug ASTM A350 Grade LF2 Class 1 ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P61B-001CU	Flange SW ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	0.75		SCH160		P61B-001D5	Flange SW ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	1		SCH160		P61B-001GC	Flange SW ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	1.5		SCH160		P61B-001GZ	Flange SW ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	2		XS		P61B-003R8	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	3		STD		P61B-001MB	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	4		STD		P61B-001N0	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	6		STD		P61B-001NM	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	8		STD		P61B-001NZ	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	10		STD		P61B-001L8	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	12		SCH40		P61B-001NV	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	14		SCH40		P61B-0021C	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	16		SCH20		P61B-002RM	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	18		SCH20		P61B-002RN	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	20		STD		P61B-001NB	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
781	0.5		SCH160		P61B-001Y2	Flange SW ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
781	0.75		SCH160		P61B-001YD	Flange SW ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
781	1		SCH160		P61B-001YU	Flange SW ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
781	1.5		SCH160		P61B-001XN	Flange SW ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
781	2		XS		P61B-001FN	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
781	3		STD		P61B-001TV	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
781	4		STD		P61B-001VT	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
781	6		STD		P61B-001JV	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
781	8		STD		P61B-001KE	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
781	10		STD		P61B-001JH	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
781	12		SCH40		P61B-003WP	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
781	14		SCH40		P61B-008YZ	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
781	16		SCH20		P61B-007H0	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
781	18		SCH20		P61B-003ZT	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
781	20		STD		P61B-003H5	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	

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BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67B-000NN	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	0.75				P67B-000MV	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	1				P67B-000MW	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	1.5				P67B-000MX	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	2				P67B-000N3	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	3				P67B-000N6	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	4				P67B-000N7	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	6				P67B-000N8	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	8				P67B-000N9	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	10				P67B-000MY	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	12				P67B-000MZ	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	14				P67B-000N0	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	16				P67B-000N1	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	18				P67B-000N2	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	20				P67B-000N4	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-00356	Spiral wound gasket SS316 winding / Non-asbestos filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-6	
1	0.75				P73T-00357	Spiral wound gasket SS316 winding / Non-asbestos filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-6	
1	1				P73T-00358	Spiral wound gasket SS316 winding / Non-asbestos filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-6	
1	1.5				P73T-00359	Spiral wound gasket SS316 winding / Non-asbestos filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-6	
1	2				P73T-0035A	Spiral wound gasket SS316 winding / Non-asbestos filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-6	
1	3				P73T-0035B	Spiral wound gasket SS316 winding / Non-asbestos filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-6	
1	4				P73T-0035C	Spiral wound gasket SS316 winding / Non-asbestos filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-6	
1	6				P73T-0035D	Spiral wound gasket SS316 winding / Non-asbestos filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-6	
1	8				P73T-00392	Spiral wound gasket SS316 winding / Non-asbestos filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-6	
1	10				P73T-0038W	Spiral wound gasket SS316 winding / Non-asbestos filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-6	
1	12				P73T-0038X	Spiral wound gasket SS316 winding / Non-asbestos filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-6	
1	14				P73T-0038Y	Spiral wound gasket SS316 winding / Non-asbestos filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-6	
1	16				P73T-0038Z	Spiral wound gasket SS316 winding / Non-asbestos filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-6	
1	18				P73T-00390	Spiral wound gasket SS316 winding / Non-asbestos filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-6	
1	20				P73T-00391	Spiral wound gasket SS316 winding / Non-asbestos filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-6	
781	0.5				P73T-0035E	Spiral wound gasket SS316 winding / Non-asbestos filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-6	
781	0.75				P73T-0035F	Spiral wound gasket SS316 winding / Non-asbestos filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-6	
781	1				P73T-0035G	Spiral wound gasket SS316 winding / Non-asbestos filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-6	
781	1.5				P73T-0035H	Spiral wound gasket SS316 winding / Non-asbestos filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-6	
781	2				P73T-0035J	Spiral wound gasket SS316 winding / Non-asbestos filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-6	
781	3				P73T-0035K	Spiral wound gasket SS316 winding / Non-asbestos filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-6	
781	4				P73T-0035L	Spiral wound gasket SS316 winding / Non-asbestos filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-6	
781	6				P73T-0035M	Spiral wound gasket SS316 winding / Non-asbestos filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-6	
781	8				P73T-00371	Spiral wound gasket SS316 winding / Non-asbestos filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-6	
781	10				P73T-0036Z	Spiral wound gasket SS316 winding / Non-asbestos filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-6	
781	12				P73T-00370	Spiral wound gasket SS316 winding / Non-asbestos filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-6	
781	14				P73T-00393	Spiral wound gasket SS316 winding / Non-asbestos filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-6	
781	16				P73T-00394	Spiral wound gasket SS316 winding / Non-asbestos filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-6	
781	18				P73T-00395	Spiral wound gasket SS316 winding / Non-asbestos filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-6	
781	20				P73T-00396	Spiral wound gasket SS316 winding / Non-asbestos filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-6	

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BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-10				See Attached Bolt Table	Bolt and Nut ASTM A320 Grade L7 / A194 Grade 4 ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	12-20				See Attached Bolt Table	Bolt and Nut ASTM A320 Grade L7 / A194 Grade 4 ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
781	0.5-6				See Attached Bolt Table	Bolt and Nut ASTM A320 Grade L7 / A194 Grade 4 ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
781	8-20				See Attached Bolt Table	Bolt and Nut ASTM A320 Grade L7 / A194 Grade 4 ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81B-0018C	Gate valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	0.75				P81B-0018D	Gate valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	1				P81B-0018E	Gate valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	1.5				P81B-0018F	Gate valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	2				P81C-004HG	Gate valve ASTM A352 Grade LCC Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	3				P81C-004HH	Gate valve ASTM A352 Grade LCC Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	4				P81C-004HJ	Gate valve ASTM A352 Grade LCC Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	6				P81C-004HK	Gate valve ASTM A352 Grade LCC Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	8				P81C-0091J	Gate valve ASTM A352 Grade LCC Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated	
1	10				P81C-004HM	Gate valve ASTM A352 Grade LCC Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated	
1	12				P81C-004HN	Gate valve ASTM A352 Grade LCC Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated	
1	14				P81C-004HP	Gate valve ASTM A352 Grade LCC Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated	
1	16				P81C-004HR	Gate valve ASTM A352 Grade LCC Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated	
1	18				P81C-004HS	Gate valve ASTM A352 Grade LCC Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated	
1	20				P81C-004HT	Gate valve ASTM A352 Grade LCC Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated	
221	0.75				P81B-002G0	Gate valve ASTM A350 Grade LF2 Class 1 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
4609	0.5				P81B-00376	Gate valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW - NPT Trim number 12 BB-BG-OS&Y Handwheel operated Full bore	
714	0.5				P81B-002S4	Gate valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW - NPT Trim number 12 BB-BG-OS&Y Handwheel operated	
714	0.75				P81B-002FB	Gate valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW - NPT Trim number 12 BB-BG-OS&Y Handwheel operated	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82B-0011H	Globe valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	0.75				P82B-0011J	Globe valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	1				P82B-0011K	Globe valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	1.5				P82B-0011L	Globe valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	2				P82C-0027X	Globe valve ASTM A352 Grade LCC Class 300 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	3				P82C-0027Y	Globe valve ASTM A352 Grade LCC Class 300 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	4				P82C-0027Z	Globe valve ASTM A352 Grade LCC Class 300 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	6				P82C-00280	Globe valve ASTM A352 Grade LCC Class 300 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	8				P82C-004CT	Globe valve ASTM A352 Grade LCC Class 300 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated	
714	0.5				P82B-0020G	Globe valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW - NPT Trim number 12 BB-BG-OS&Y Handwheel operated	
714	0.75				P82B-0020H	Globe valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW - NPT Trim number 12 BB-BG-OS&Y Handwheel operated	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83B-000TS	Check valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 12 Lift-type Bolted cover	
1	0.75				P83B-000TT	Check valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 12 Lift-type Bolted cover	
1	1				P83B-000TU	Check valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 12 Lift-type Bolted cover	
1	1.5				P83B-000TV	Check valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 12 Lift-type Bolted cover	

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CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2				P83C-0024D	Check valve ASTM A352 Grade LCC Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	3				P83C-0024G	Check valve ASTM A352 Grade LCC Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	4				P83C-0024H	Check valve ASTM A352 Grade LCC Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	6				P83C-0024J	Check valve ASTM A352 Grade LCC Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	8				P83C-0024K	Check valve ASTM A352 Grade LCC Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	10				P83C-00248	Check valve ASTM A352 Grade LCC Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	12				P83C-00249	Check valve ASTM A352 Grade LCC Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	14				P83C-0024A	Check valve ASTM A352 Grade LCC Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	16				P83C-0024B	Check valve ASTM A352 Grade LCC Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	18				P83C-0024C	Check valve ASTM A352 Grade LCC Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	20				P83C-0024E	Check valve ASTM A352 Grade LCC Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	

BALL VALVE (Q)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P84B-001DC	Ball valve Long-pattern ASTM A350 Grade LF2 Class 1 Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design	
1	0.75				P84B-001DD	Ball valve Long-pattern ASTM A350 Grade LF2 Class 1 Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design	
1	1				P84B-001DE	Ball valve Long-pattern ASTM A350 Grade LF2 Class 1 Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design	
1	1.5				P84B-001DF	Ball valve Long-pattern ASTM A350 Grade LF2 Class 1 Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design	
1	2				P84C-006KX	Ball valve Long-pattern ASTM A352 Grade LCC Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design	
1	3				P84C-006KY	Ball valve Long-pattern ASTM A352 Grade LCC Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design	
1	4				P84C-006KZ	Ball valve Long-pattern ASTM A352 Grade LCC Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Gear operated Reduced bore Fire tested design	
1	6				P84C-006L6	Ball valve Long-pattern ASTM A352 Grade LCC Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Reduced bore Fire tested design	
1	8				P84C-006L7	Ball valve Long-pattern ASTM A352 Grade LCC Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Reduced bore Fire tested design	
1	10				P84C-006L0	Ball valve Long-pattern ASTM A352 Grade LCC Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Reduced bore Fire tested design	
1	12				P84C-006L1	Ball valve Long-pattern ASTM A352 Grade LCC Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Reduced bore Fire tested design	
1	14				P84C-006L2	Ball valve Long-pattern ASTM A352 Grade LCC Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Reduced bore Fire tested design	
1	16				P84C-006L3	Ball valve Long-pattern ASTM A352 Grade LCC Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Reduced bore Fire tested design	
1	18				P84C-006L4	Ball valve Long-pattern ASTM A352 Grade LCC Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Reduced bore Fire tested design	
1	20				P84C-006L5	Ball valve Long-pattern ASTM A352 Grade LCC Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Reduced bore Fire tested design	
24	0.5				P84B-001DG	Ball valve Long-pattern ASTM A350 Grade LF2 Class 1 Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	
24	0.75				P84B-001DH	Ball valve Long-pattern ASTM A350 Grade LF2 Class 1 Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	
24	1				P84B-001DJ	Ball valve Long-pattern ASTM A350 Grade LF2 Class 1 Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	
24	1.5				P84B-001DK	Ball valve Long-pattern ASTM A350 Grade LF2 Class 1 Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	
24	2				P84C-006L8	Ball valve Long-pattern ASTM A352 Grade LCC Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	
24	3				P84C-006L9	Ball valve Long-pattern ASTM A352 Grade LCC Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	
24	4				P84C-006LA	Ball valve Long-pattern ASTM A352 Grade LCC Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Gear operated Full bore Fire tested design	
24	6				P84C-006LH	Ball valve Long-pattern ASTM A352 Grade LCC Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design	
24	8				P84C-006LJ	Ball valve Long-pattern ASTM A352 Grade LCC Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design	
24	10				P84C-006LB	Ball valve Long-pattern ASTM A352 Grade LCC Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design	
24	12				P84C-006LC	Ball valve Long-pattern ASTM A352 Grade LCC Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design	
24	14				P84C-006LD	Ball valve Long-pattern ASTM A352 Grade LCC Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design	

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BALL VALVE (Q)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
24	16				P84C-006LE	Ball valve Long-pattern ASTM A352 Grade LCC Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design	
24	18				P84C-006LF	Ball valve Long-pattern ASTM A352 Grade LCC Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design	
24	20				P84C-006LG	Ball valve Long-pattern ASTM A352 Grade LCC Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design	

BUTTERFLY VALVE (H)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	10				P86C-002ER	Offset design butterfly valve ASTM A352 Grade LCC Class 300 API 609 Category B Lug-type ASME B16.5 RF Disc LTCS Seat Stellite-6 Trim SS316 Triple eccentric design BG Gear operated	
1	12				P86C-002ES	Offset design butterfly valve ASTM A352 Grade LCC Class 300 API 609 Category B Lug-type ASME B16.5 RF Disc LTCS Seat Stellite-6 Trim SS316 Triple eccentric design BG Gear operated	
1	14				P86C-002ET	Offset design butterfly valve ASTM A352 Grade LCC Class 300 API 609 Category B Lug-type ASME B16.5 RF Disc LTCS Seat Stellite-6 Trim SS316 Triple eccentric design BG Gear operated	
1	16				P86C-002EU	Offset design butterfly valve ASTM A352 Grade LCC Class 300 API 609 Category B Lug-type ASME B16.5 RF Disc LTCS Seat Stellite-6 Trim SS316 Triple eccentric design BG Gear operated	
1	18				P86C-002EV	Offset design butterfly valve ASTM A352 Grade LCC Class 300 API 609 Category B Lug-type ASME B16.5 RF Disc LTCS Seat Stellite-6 Trim SS316 Triple eccentric design BG Gear operated	

ORIFICE FLANGE (FO)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2		XS		P66B-00862	Orifice flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	3		STD		P66B-00863	Orifice flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	4		STD		P66B-00864	Orifice flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	6		STD		P66B-00865	Orifice flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
200	2		XS		P66B-00869	Orifice flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	3		STD		P66B-0086A	Orifice flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	4		STD		P66B-0086B	Orifice flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	6		STD		P66B-0086C	Orifice flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71B-000BP	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	0.75				P71B-000BR	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	1				P71B-000BS	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71B-000BT	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	2				P71B-000BW	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	3				P71B-000BX	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	4				P71B-000BY	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	6				P71B-000BZ	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	8				P71B-000C0	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	10				P71B-000BU	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	12				P71B-000BV	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF	

PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000G1	Paddle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	16				P72B-000G2	Paddle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	18				P72B-000G3	Paddle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	20				P72B-000G4	Paddle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF	

PADDLE SPACER (PS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000G6	Paddle spacer ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	16				P72B-000G7	Paddle spacer ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	18				P72B-000G8	Paddle spacer ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	20				P72B-000G9	Paddle spacer ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF	

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PIPING CLASS
B21D05 REV NO. 2

BOLT TABLE (B_B21D05 , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-003VL		
0.75	4	0.625	75	P80S-003Z2		
1	4	0.625	80	P80S-003Z3		
1.5	4	0.750	95	P80S-0045X		
2	8	0.625	90	P80S-003Z5		
3	8	0.750	110	P80S-003Z9		
4	8	0.750	115	P80S-003ZA		
6	12	0.750	125	P80S-003ZC		
8	12	0.875	140	P80S-00466		
10	16	1.000	160	P80S-004BH		
12	16	1.125	175	P80S-004J7		
14	20	1.125	180	P80S-004J8		
16	20	1.250	190	P80S-004LJ		
18	24	1.250	200	P80S-004LL		
20	24	1.250	210	P80S-004LN		

BOLT TABLE (B_B21D05_781 , STUD ASME RF, OPTION CODE 781)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	80	P80S-003VN		
0.75	4	0.625	90	P80S-003Z5		
1	4	0.625	95	P80S-003Z6		
1.5	4	0.750	110	P80S-003Z9		
2	8	0.625	110	P80S-003VV		
3	8	0.750	130	P80S-003ZD		
4	8	0.875	150	P80S-00468		
6	12	1.000	175	P80S-004BM		
8	12	1.125	195	P80S-004JB		
10	16	1.250	250	P80S-004LX		
12	20	1.250	255	P80S-004LY		
14	20	1.375	270	P80S-003M5		
16	20	1.500	295	P80S-003D1		
18	20	1.625	320	P80S-00CB3		
20	24	1.625	335	P80S-00CB6		

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PIPING CLASS

B21D05 REV NO. 2

BRANCH TABLE (T_B21D05)

RUN PIPE SIZE (in) \ BRANCH SIZE (in)	0.5	0.75	1	1.5	2	3	4	6	8	10	12	14	16	18	20
0.5	TS														
0.75	TR	TS													
1	TR	TR	TS												
1.5	TR	TR	TR	TS											
2	L	L	TR	TR	TS										
3	L	L	L	TR	TR	TS									
4	L	L	L	L	TR	TR	TS								
6	L	L	L	L	L	TR	TR	TS							
8	L	L	L	L	L	L	TR	TR	TS						
10	L	L	L	L	L	L	TR	TR	TR	TS					
12	L	L	L	L	L	L	L	TR	TR	TR	TS				
14		L	L	L	L	L	L	TR	TR	TR	TR	TS			
16		L	L	L	L	L	L	TR	TR	TR	TR	TR	TS		
18		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TS	
20	L	L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TR	TS

TS : STRAIGHT TEE
TR : REDUCING TEE
L : OUTLET

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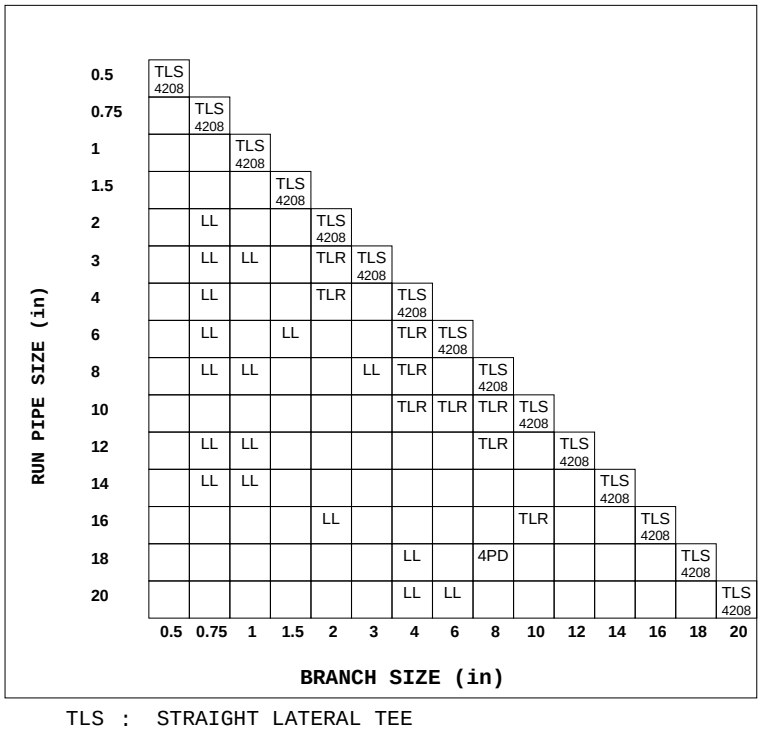
PIPING CLASS

B21D05 REV NO. 2

BRANCH TABLE (T_B21D05_2)



TLS : STRAIGHT LATERAL TEE
4PD : REINFORCING PAD 45 DEG
LL : LATROLET
TLR : REDUCING LATERAL TEE

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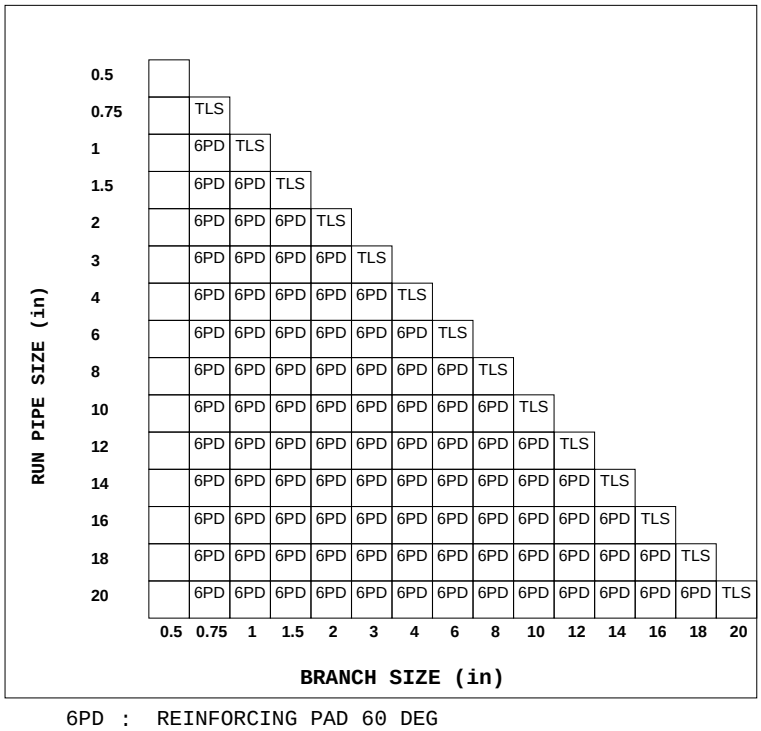
PIPING CLASS
B21D05 REV NO. 2

BRANCH TABLE (T_B21D05_3)



RUN PIPE SIZE (in) \ BRANCH SIZE (in)	0.5	0.75	1	1.5	2	3	4	6	8	10	12	14	16	18	20
0.5															
0.75		TLS													
1		6PD	TLS												
1.5		6PD	6PD	TLS											
2		6PD	6PD	6PD	TLS										
3		6PD	6PD	6PD	6PD	TLS									
4		6PD	6PD	6PD	6PD	6PD	TLS								
6		6PD	6PD	6PD	6PD	6PD	6PD	TLS							
8		6PD	6PD	6PD	6PD	6PD	6PD	6PD	TLS						
10		6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	TLS					
12		6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	TLS				
14		6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	TLS			
16		6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	TLS		
18		6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	TLS	
20		6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	TLS

6PD : REINFORCING PAD 60 DEG
TLS : STRAIGHT LATERAL TEE

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PIPING CLASS

B21F05 REV NO. 2

Material : SS304L
Rating : ASME CLASS 300
Flange Face : RF
C.A.(mm) : 0.00
Gasket : Spiral Wound
Service : POWDER, PROPYLENE, SLURRY, TK-CATALYST
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
6	PIPE THICKNESS CALCULATION TO INCLUDE CORROSION AND EROSION ALLOWANCES DUE TO THE PROCESS CATALYST FLOW, AS PER PROCESS LICENSOR SPECIFICATIONS

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
200	WITH JACK SCREW (FO)
541	NPT(F) (CA,F,L)
781	CLASS 600 (B,F,G)
4608	VALVE WITH NIPPLES (V)

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PIPING CLASS
B21F05 REV NO. 2

PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P01J-000UC	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE	
1	0.75		SCH80S		P01J-000UD	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE	
1	1		SCH80S		P01J-000UE	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE	
1	1.5		SCH80S		P01J-000UF	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE	
1	2		SCH10S		P01J-000RD	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M BE	
1	3		SCH10S		P01J-000RE	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M BE	
1	4		SCH10S		P01J-000RF	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M BE	
1	6		SCH40S		P01J-000RH	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M BE	
1	8		SCH40S		P01J-000WC	Pipe ASTM A358 Grade 304/304L Class 1 dual grade EFW ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P02J-000VD	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	0.75		SCH80S		P02J-000VE	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	1		SCH80S		P02J-000VF	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	1.5		SCH80S		P02J-000VG	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	2		SCH10S		P02J-000J0	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	3		SCH10S		P02J-000J1	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	4		SCH10S		P02J-000J2	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	6		SCH40S		P02J-000J4	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	8		SCH40S		P02J-000J7	90 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius	

90FACTORY-MADE BEND (9FM)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P08J-00060	90 degree factory-made bend ASTM A403 Grade WP304/WP304L Class S dual grade Seamless Standard-drawing BW 5DR Licensor-5	
1	0.75		SCH80S		P08J-00061	90 degree factory-made bend ASTM A403 Grade WP304/WP304L Class S dual grade Seamless Standard-drawing BW 5DR Licensor-5	
1	1		SCH80S		P08J-00062	90 degree factory-made bend ASTM A403 Grade WP304/WP304L Class S dual grade Seamless Standard-drawing BW 5DR Licensor-5	
1	1.5		SCH80S		P08J-00063	90 degree factory-made bend ASTM A403 Grade WP304/WP304L Class S dual grade Seamless Standard-drawing BW 5DR Licensor-5	
1	2		SCH10S		P08J-00064	90 degree factory-made bend ASTM A403 Grade WP304/WP304L Class S dual grade Seamless Standard-drawing BW 5DR Licensor-5	
1	3		SCH10S		P08J-00065	90 degree factory-made bend ASTM A403 Grade WP304/WP304L Class S dual grade Seamless Standard-drawing BW 5DR Licensor-5	
1	4		SCH10S		P08J-00066	90 degree factory-made bend ASTM A403 Grade WP304/WP304L Class S dual grade Seamless Standard-drawing BW 5DR Licensor-5	
1	6		SCH40S		P08J-00067	90 degree factory-made bend ASTM A403 Grade WP304/WP304L Class S dual grade Seamless Standard-drawing BW 5DR Licensor-5	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P03J-000UW	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	0.75		SCH80S		P03J-000UX	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	1		SCH80S		P03J-000UY	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	1.5		SCH80S		P03J-000UZ	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	2		SCH10S		P03J-000HS	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	3		SCH10S		P03J-000HT	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	4		SCH10S		P03J-000HU	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	6		SCH40S		P03J-000HW	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	8		SCH40S		P03J-000HZ	45 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius	

45FACTORY-MADE BEND (4FM)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P09J-0005Y	45 degree factory-made bend ASTM A403 Grade WP304/WP304L Class S dual grade Seamless Standard-drawing BW 5DR Licensor-5	
1	0.75		SCH80S		P09J-0005Z	45 degree factory-made bend ASTM A403 Grade WP304/WP304L Class S dual grade Seamless Standard-drawing BW 5DR Licensor-5	

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B21F05 REV NO. 2

45FACTORY-MADE BEND (4FM)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		SCH80S		P09J-00060	45 degree factory-made bend ASTM A403 Grade WP304/WP304L Class S dual grade Seamless Standard-drawing BW 5DR Licensor-5	
1	1.5		SCH80S		P09J-00061	45 degree factory-made bend ASTM A403 Grade WP304/WP304L Class S dual grade Seamless Standard-drawing BW 5DR Licensor-5	
1	2		SCH10S		P09J-00062	45 degree factory-made bend ASTM A403 Grade WP304/WP304L Class S dual grade Seamless Standard-drawing BW 5DR Licensor-5	
1	3		SCH10S		P09J-00063	45 degree factory-made bend ASTM A403 Grade WP304/WP304L Class S dual grade Seamless Standard-drawing BW 5DR Licensor-5	
1	4		SCH10S		P09J-00064	45 degree factory-made bend ASTM A403 Grade WP304/WP304L Class S dual grade Seamless Standard-drawing BW 5DR Licensor-5	
1	6		SCH40S		P09J-00065	45 degree factory-made bend ASTM A403 Grade WP304/WP304L Class S dual grade Seamless Standard-drawing BW 5DR Licensor-5	

SP-AGL FCTRY-M BEND (SFM)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	6		SCH40S		P10J-00059	Special angle factory-made bend ASTM A403 Grade WP304/WP304L Class S dual grade Seamless Standard-drawing BW 60 degree 10DR Licensor-5	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P21J-000V1	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	0.75		SCH80S		P21J-000V2	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	1		SCH80S		P21J-000V3	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	1.5		SCH80S		P21J-000V4	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	2		SCH10S		P21J-000HM	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	3		SCH10S		P21J-000HN	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	4		SCH10S		P21J-000HP	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	6		SCH40S		P21J-000HS	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	8		SCH40S		P21J-000HV	Straight tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	

STRAIGHT LATERAL TEE (TLS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75		SCH80S		P22J-00073	Straight lateral-tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW 60 degree	
1	1		SCH80S		P22J-00074	Straight lateral-tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW 60 degree	
1	1.5		SCH80S		P22J-00075	Straight lateral-tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW 60 degree	
1	2		SCH10S		P22J-00053	Straight lateral-tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW 60 degree	
1	3		SCH10S		P22J-00050	Straight lateral-tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW 60 degree	
1	4		SCH10S		P22J-0004Z	Straight lateral-tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW 60 degree	
1	6		SCH40S		P22J-00052	Straight lateral-tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW 60 degree	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH80S	SCH80S	P24J-003NV	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	1	0.5	SCH80S	SCH80S	P24J-003NW	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	1	0.75	SCH80S	SCH80S	P24J-003NX	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	1.5	0.5	SCH80S	SCH80S	P24J-003NY	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	1.5	0.75	SCH80S	SCH80S	P24J-003NZ	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	1.5	1	SCH80S	SCH80S	P24J-003P0	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	2	1	SCH10S	SCH80S	P24J-0065A	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	2	1.5	SCH10S	SCH80S	P24J-0065B	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	3	1.5	SCH10S	SCH80S	P24J-004SV	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	3	2	SCH10S	SCH10S	P24J-002H7	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	4	2	SCH10S	SCH10S	P24J-002H8	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	4	3	SCH10S	SCH10S	P24J-002H9	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	6	3	SCH40S	SCH10S	P24J-002HC	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	6	4	SCH40S	SCH10S	P24J-002HD	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	8	4	SCH40S	SCH10S	P24J-002HE	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	8	6	SCH40S	SCH40S	P24J-002HF	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	

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CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH80S	SCH80S	P27J-005L7	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless Standard-drawing BW Licensor-5	
1	1	0.5	SCH80S	SCH80S	P27J-005L8	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless Standard-drawing BW Licensor-5	
1	1	0.75	SCH80S	SCH80S	P27J-005L9	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless Standard-drawing BW Licensor-5	
1	1.5	0.5	SCH80S	SCH80S	P27J-005LA	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless Standard-drawing BW Licensor-5	
1	1.5	0.75	SCH80S	SCH80S	P27J-005LB	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless Standard-drawing BW Licensor-5	
1	1.5	1	SCH80S	SCH80S	P27J-005LC	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless Standard-drawing BW Licensor-5	
1	2	0.75	SCH10S	SCH80S	P27J-005LD	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless Standard-drawing BW Licensor-5	
1	2	1	SCH10S	SCH80S	P27J-005LE	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless Standard-drawing BW Licensor-5	
1	2	1.5	SCH10S	SCH80S	P27J-005LF	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless Standard-drawing BW Licensor-5	
1	3	1.5	SCH10S	SCH80S	P27J-005LG	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless Standard-drawing BW Licensor-5	
1	3	2	SCH10S	SCH10S	P27J-005LH	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless Standard-drawing BW Licensor-5	
1	4	1.5	SCH10S	SCH80S	P27J-005LJ	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless Standard-drawing BW Licensor-5	
1	4	2	SCH10S	SCH10S	P27J-005LK	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless Standard-drawing BW Licensor-5	
1	4	3	SCH10S	SCH10S	P27J-005LL	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless Standard-drawing BW Licensor-5	
1	6	3	SCH40S	SCH10S	P27J-005LM	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless Standard-drawing BW Licensor-5	
1	6	4	SCH40S	SCH10S	P27J-005LN	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless Standard-drawing BW Licensor-5	
1	8	4	SCH40S	SCH10S	P27J-0079Y	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld Standard-drawing BW Licensor-5	
1	8	6	SCH40S	SCH40S	P27J-0079Z	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld Standard-drawing BW Licensor-5	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH80S	SCH80S	P28J-005M2	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless Standard-drawing BW Licensor-5	
1	1	0.5	SCH80S	SCH80S	P28J-005M3	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless Standard-drawing BW Licensor-5	
1	1	0.75	SCH80S	SCH80S	P28J-005M4	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless Standard-drawing BW Licensor-5	
1	1.5	0.5	SCH80S	SCH80S	P28J-005M5	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless Standard-drawing BW Licensor-5	
1	1.5	0.75	SCH80S	SCH80S	P28J-005M6	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless Standard-drawing BW Licensor-5	
1	1.5	1	SCH80S	SCH80S	P28J-005M7	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless Standard-drawing BW Licensor-5	
1	2	0.75	SCH10S	SCH80S	P28J-005M8	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless Standard-drawing BW Licensor-5	
1	2	1	SCH10S	SCH80S	P28J-005M9	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless Standard-drawing BW Licensor-5	
1	2	1.5	SCH10S	SCH80S	P28J-005MA	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless Standard-drawing BW Licensor-5	
1	3	1.5	SCH10S	SCH80S	P28J-005MB	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless Standard-drawing BW Licensor-5	
1	3	2	SCH10S	SCH10S	P28J-005MC	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless Standard-drawing BW Licensor-5	
1	4	1.5	SCH10S	SCH80S	P28J-005MD	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless Standard-drawing BW Licensor-5	
1	4	2	SCH10S	SCH10S	P28J-005ME	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless Standard-drawing BW Licensor-5	
1	4	3	SCH10S	SCH10S	P28J-005MF	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless Standard-drawing BW Licensor-5	
1	6	3	SCH40S	SCH10S	P28J-005MG	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless Standard-drawing BW Licensor-5	
1	6	4	SCH40S	SCH10S	P28J-005MH	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless Standard-drawing BW Licensor-5	
1	8	4	SCH40S	SCH10S	P28J-007BE	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld Standard-drawing BW Licensor-5	
1	8	6	SCH40S	SCH40S	P28J-007BF	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld Standard-drawing BW Licensor-5	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P29J-000T0	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	0.75		SCH80S		P29J-000T1	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	1		SCH80S		P29J-000T2	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	1.5		SCH80S		P29J-000T3	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	

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CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2		SCH10S		P29J-000G1	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	3		SCH10S		P29J-000G2	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	4		SCH10S		P29J-000G3	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	6		SCH40S		P29J-000G5	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	8		SCH40S		P29J-000LU	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
541	0.75				P29K-00020	Cap ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P41J-001FS	Straight nipple ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		SCH80S		P41J-001FT	Straight nipple ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		SCH80S		P41J-001FU	Straight nipple ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		SCH80S		P41J-001FV	Straight nipple ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
541	1	0.75			P31K-00911	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 NPT	
541	1.5	0.75			P31K-00916	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 NPT	
541	2 - 2.5	0.75			P31K-00GFJ	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 NPT	
541	3 - 5	0.75			P31K-00GFK	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 NPT	
541	6 - 12	0.75			P31K-0091X	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 NPT	
1	2	0.75	SCH10S	SCH80S	P31K-00DM8	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	3	0.75	SCH10S	SCH80S	P31K-00BWW	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	4	0.75	SCH10S	SCH80S	P31K-00BX1	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	6	0.75	SCH40S	SCH80S	P31K-00684	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	8	0.75	SCH40S	SCH80S	P31K-0068S	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	3	1	SCH10S	SCH80S	P31K-00BWX	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	4	1	SCH10S	SCH80S	P31K-00BX2	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	6	1	SCH40S	SCH80S	P31K-006E8	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	8	1	SCH40S	SCH80S	P31K-006F4	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	4	1.5	SCH10S	SCH80S	P31K-00BX3	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	6	1.5	SCH40S	SCH80S	P31K-006M3	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	8	1.5	SCH40S	SCH80S	P31K-006N1	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	6	2	SCH40S	SCH10S	P31K-005AW	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	8	2	SCH40S	SCH10S	P31K-005AX	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	8	3	SCH40S	SCH10S	P31K-005AY	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	

ELBOLET (LE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5		SCH80S		P35K-00002	Outlet on elbow ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW 5DR Elbow=NPS3 (SCH10S)	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30K-0001G	Plug ASTM A182 Grade F304/F304L dual grade ASME B16.11 NPT Round head	
1	0.75				P30K-0001H	Plug ASTM A182 Grade F304/F304L dual grade ASME B16.11 NPT Round head	
1	1				P30K-0001J	Plug ASTM A182 Grade F304/F304L dual grade ASME B16.11 NPT Round head	
1	1.5				P30K-0001K	Plug ASTM A182 Grade F304/F304L dual grade ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P61K-0027N	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
1	0.75		SCH80S		P61K-0027P	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
1	1		SCH80S		P61K-0027R	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
1	1.5		SCH80S		P61K-0027S	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
1	2		SCH10S		P61K-0023W	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
1	3		SCH10S		P61K-0023X	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
1	4		SCH10S		P61K-0023Y	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	

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FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	6		SCH40S		P61K-0023Z	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
1	8		SCH40S		P61K-00240	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
541	0.5				P61K-0069L	Flange NPT ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
541	0.75				P61K-00605	Flange NPT ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
781	0.5		SCH80S		P61K-002KH	Flange WN ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 RF	
781	0.75		SCH80S		P61K-002KJ	Flange WN ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 RF	
781	1		SCH80S		P61K-002KK	Flange WN ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 RF	
781	1.5		SCH80S		P61K-002KL	Flange WN ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 RF	
781	2		SCH10S		P61K-00290	Flange WN ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 RF	
781	3		SCH10S		P61K-003D3	Flange WN ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 RF	
781	4		SCH10S		P61K-0046H	Flange WN ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 RF	
781	6		SCH40S		P61K-00293	Flange WN ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 RF	
781	8		SCH40S		P61K-0046J	Flange WN ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 RF	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67K-000KH	Blind flange ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
1	0.75				P67K-000KJ	Blind flange ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
1	1				P67K-000KK	Blind flange ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
1	1.5				P67K-000KL	Blind flange ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
1	2				P67K-000KP	Blind flange ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
1	3				P67K-000KR	Blind flange ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
1	4				P67K-000KS	Blind flange ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
1	6				P67K-000KT	Blind flange ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
1	8				P67K-000KU	Blind flange ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-003U9	Spiral wound gasket SS316 winding / Non-asbestos filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-9 Special ID	
1	0.75				P73T-003UA	Spiral wound gasket SS316 winding / Non-asbestos filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-9 Special ID	
1	1				P73T-003UB	Spiral wound gasket SS316 winding / Non-asbestos filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-9 Special ID	
1	1.5				P73T-003UC	Spiral wound gasket SS316 winding / Non-asbestos filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-9 Special ID	
1	2				P73T-003UD	Spiral wound gasket SS316 winding / Non-asbestos filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-9 Special ID	
1	3				P73T-003UE	Spiral wound gasket SS316 winding / Non-asbestos filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-9 Special ID	
1	4				P73T-003UF	Spiral wound gasket SS316 winding / Non-asbestos filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-9 Special ID	
1	6				P73T-003UG	Spiral wound gasket SS316 winding / Non-asbestos filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-9 Special ID	
1	8				P73T-003VD	Spiral wound gasket SS316 winding / Non-asbestos filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-9 Special ID	
781	0.5				P73T-003UH	Spiral wound gasket SS316 winding / Non-asbestos filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-9 Special ID	
781	0.75				P73T-003UJ	Spiral wound gasket SS316 winding / Non-asbestos filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-9 Special ID	
781	1				P73T-003UK	Spiral wound gasket SS316 winding / Non-asbestos filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-9 Special ID	
781	1.5				P73T-003UL	Spiral wound gasket SS316 winding / Non-asbestos filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-9 Special ID	
781	2				P73T-003UM	Spiral wound gasket SS316 winding / Non-asbestos filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-9 Special ID	
781	3				P73T-003UN	Spiral wound gasket SS316 winding / Non-asbestos filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-9 Special ID	
781	4				P73T-003UP	Spiral wound gasket SS316 winding / Non-asbestos filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-9 Special ID	
781	6				P73T-003UR	Spiral wound gasket SS316 winding / Non-asbestos filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-9 Special ID	
781	8				P73T-0041U	Spiral wound gasket SS316 winding / Non-asbestos filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-9 Special ID	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-8				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
781	0.5-8				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	

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BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
781	8				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81K-00158	Gate valve ASTM A182 Grade F304/F304L dual grade Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	0.75				P81K-00159	Gate valve ASTM A182 Grade F304/F304L dual grade Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	1				P81K-0015A	Gate valve ASTM A182 Grade F304/F304L dual grade Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	1.5				P81K-0015B	Gate valve ASTM A182 Grade F304/F304L dual grade Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	2				P81L-0022J	Gate valve ASTM A351 Grade CF8 Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	3				P81L-0022K	Gate valve ASTM A351 Grade CF8 Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	4				P81L-0022L	Gate valve ASTM A351 Grade CF8 Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	6				P81L-0022M	Gate valve ASTM A351 Grade CF8 Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
4608	0.75				P81K-001P2	Gate valve ASTM A182 Grade F304/F304L dual grade Class 300 API 602 BW both sides w/ nipples BE - NPT ASTM A312-TP304(L) dual grade Seamless Sch80S-nipple Trim number 12 BB-BG-OS&Y Handwheel operated	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82K-000SJ	Globe valve ASTM A182 Grade F304/F304L dual grade Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	0.75				P82K-000SK	Globe valve ASTM A182 Grade F304/F304L dual grade Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	1				P82K-000SL	Globe valve ASTM A182 Grade F304/F304L dual grade Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	1.5				P82K-000SM	Globe valve ASTM A182 Grade F304/F304L dual grade Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	2				P82L-0013X	Globe valve ASTM A351 Grade CF8 Class 300 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	3				P82L-0013Y	Globe valve ASTM A351 Grade CF8 Class 300 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	4				P82L-0013Z	Globe valve ASTM A351 Grade CF8 Class 300 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	6				P82L-00140	Globe valve ASTM A351 Grade CF8 Class 300 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83K-000R1	Check valve ASTM A182 Grade F304/F304L dual grade Class 300 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover	
1	0.75				P83K-000R2	Check valve ASTM A182 Grade F304/F304L dual grade Class 300 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover	
1	1				P83K-000R3	Check valve ASTM A182 Grade F304/F304L dual grade Class 300 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover	
1	1.5				P83K-000R4	Check valve ASTM A182 Grade F304/F304L dual grade Class 300 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover	
1	2				P83L-0013U	Check valve ASTM A351 Grade CF8 Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	3				P83L-0013V	Check valve ASTM A351 Grade CF8 Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	4				P83L-0013W	Check valve ASTM A351 Grade CF8 Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	6				P83L-001AX	Check valve ASTM A351 Grade CF8 Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	

BALL VALVE (Q)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P84K-000RJ	Ball valve Long-pattern ASTM A182 Grade F304/F304L dual grade Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design Licensor-5	
1	0.75				P84K-000RK	Ball valve Long-pattern ASTM A182 Grade F304/F304L dual grade Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design Licensor-5	
1	1				P84K-000RL	Ball valve Long-pattern ASTM A182 Grade F304/F304L dual grade Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design Licensor-5	
1	1.5				P84K-000RM	Ball valve Long-pattern ASTM A182 Grade F304/F304L dual grade Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design Licensor-5	
1	2				P84L-0035X	Ball valve Long-pattern ASTM A351 Grade CF8 Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design Licensor-5	
1	3				P84L-0035Y	Ball valve Long-pattern ASTM A351 Grade CF8 Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design Licensor-5	

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BALL VALVE (Q)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	4				P84L-0035Z	Ball valve Long-pattern ASTM A351 Grade CF8 Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Gear operated Full bore Fire tested design Licensor-5	
1	6				P84L-00360	Ball valve Long-pattern ASTM A351 Grade CF8 Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design Licensor-5	

ORIFICE FLANGE (FO)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2		SCH10S		P66K-00312	Orifice flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
200	2		SCH10S		P66K-0031E	Orifice flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71K-0007C	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 300 Standard-drawing Flange ASME B16.5 RF	
1	0.75				P71K-0007D	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 300 Standard-drawing Flange ASME B16.5 RF	
1	1				P71K-0007E	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 300 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71K-0007F	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 300 Standard-drawing Flange ASME B16.5 RF	
1	2				P71K-0007G	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 300 Standard-drawing Flange ASME B16.5 RF	
1	3				P71K-0007H	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 300 Standard-drawing Flange ASME B16.5 RF	
1	4				P71K-0007J	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 300 Standard-drawing Flange ASME B16.5 RF	
1	6				P71K-0007K	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 300 Standard-drawing Flange ASME B16.5 RF	
1	8				P71K-0007N	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 300 Standard-drawing Flange ASME B16.5 RF	

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BOLT TABLE (B_B21F05 , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-003V4		
0.75	4	0.625	75	P80S-003XC		
1	4	0.625	80	P80S-003XD		
1.5	4	0.750	95	P80S-00414		
2	8	0.625	90	P80S-003XF		
3	8	0.750	110	P80S-003XK		
4	8	0.750	115	P80S-003XL		
6	12	0.750	125	P80S-003XN		
8	12	0.875	140	P80S-0041D		

BOLT TABLE (B_B21F05_781 , STUD ASME RF, OPTION CODE 781)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	80	P80S-003V6		
0.75	4	0.625	90	P80S-003XF		
1	4	0.625	95	P80S-003XG		
1.5	4	0.750	110	P80S-003XK		
2	8	0.625	110	P80S-003VC		
3	8	0.750	130	P80S-003XP		
4	8	0.875	150	P80S-0041F		
6	12	1.000	175	P80S-0043P		
8	12	1.125	195	P80S-0046W		

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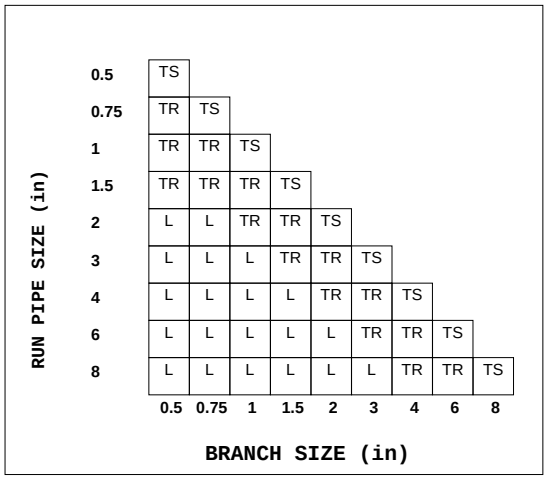
BRANCH TABLE (T_B21F05)



TS : STRAIGHT TEE
L : OUTLET
TR : REDUCING TEE

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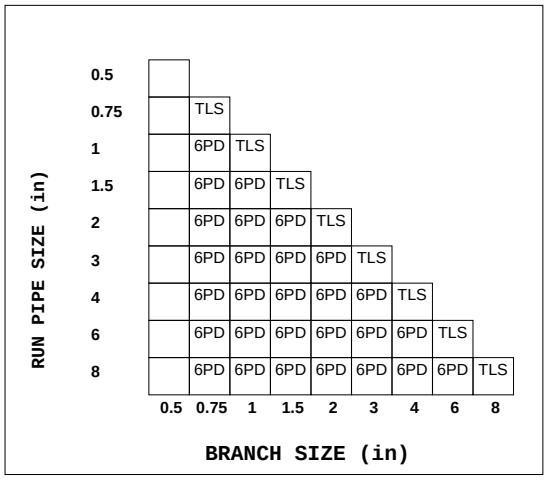
BRANCH TABLE (T_B21F05_3)



TLS : STRAIGHT LATERAL TEE
6PD : REINFORCING PAD 60 DEG

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PIPING CLASS

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Material : LTCS
Rating : ASME CLASS 300
Flange Face : RF
C.A.(mm) : 3.00
Gasket : Spiral Wound
Service : HP BLOWDOWN, LP BLOWDOWN
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
24	FULL PORT (Q)
541	NPT(F) (CA,L)
714	SW - NPT(F) (V)
781	CLASS 600 (B,F,G)
4404	CLASS 600 LARGE MALE FACE (B,F,G)

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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P01A-00167	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE	
1	0.75		SCH160		P01A-0016P	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE	
1	1		SCH160		P01A-0011Z	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE	
1	1.5		SCH160		P01A-00127	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE	
1	2		XS		P01A-000XB	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	3		STD		P01A-000YL	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	4		STD		P01A-000YT	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	6		STD		P01A-000Z2	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	8		STD		P01A-000Z8	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	10		STD		P01A-000XH	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	12		SCH40		P01A-0018G	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	14		SCH40		P01A-0019M	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	16		SCH20		P01A-0019K	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	18		SCH20		P01A-007GS	Pipe ASTM A671 Grade CC60 Class 22 EFW ASME B36.10M/B36.19M BE	
1	20		STD		P01A-0042R	Pipe ASTM A671 Grade CC60 Class 22 EFW ASME B36.10M/B36.19M BE	
1	24		STD		P01A-0042S	Pipe ASTM A671 Grade CC60 Class 22 EFW ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P02B-0001V	90 degree elbow ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW	
1	0.75				P02B-0001W	90 degree elbow ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW	
1	1				P02B-0001X	90 degree elbow ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW	
1	1.5				P02B-0001Y	90 degree elbow ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW	
1	2		XS		P02A-000B9	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	3		STD		P02A-000E7	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	4		STD		P02A-000E9	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	6		STD		P02A-000EC	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	8		STD		P02A-000EF	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	10		STD		P02A-000EL	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	12		SCH40		P02A-000JZ	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	14		SCH40		P02A-000K0	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	16		SCH20		P02A-000GH	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	18		SCH20		P02A-001JY	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	20		STD		P02A-001JZ	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	24		STD		P02A-001K1	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	

90FACTORY-MADE BEND (9FM)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P08A-0011U	90 degree factory-made bend ASTM A420 Grade WPL6 Seamless Standard-drawing BW 5DR Licensor-5	
1	0.75		SCH160		P08A-0011V	90 degree factory-made bend ASTM A420 Grade WPL6 Seamless Standard-drawing BW 5DR Licensor-5	
1	1		SCH160		P08A-0011W	90 degree factory-made bend ASTM A420 Grade WPL6 Seamless Standard-drawing BW 5DR Licensor-5	
1	1.5		SCH160		P08A-0011X	90 degree factory-made bend ASTM A420 Grade WPL6 Seamless Standard-drawing BW 5DR Licensor-5	
1	2		XS		P08A-00122	90 degree factory-made bend ASTM A420 Grade WPL6 Seamless Standard-drawing BW 5DR Licensor-5	
1	3		STD		P08A-00123	90 degree factory-made bend ASTM A420 Grade WPL6 Seamless Standard-drawing BW 5DR Licensor-5	
1	4		STD		P08A-00124	90 degree factory-made bend ASTM A420 Grade WPL6 Seamless Standard-drawing BW 5DR Licensor-5	
1	6		STD		P08A-00125	90 degree factory-made bend ASTM A420 Grade WPL6 Seamless Standard-drawing BW 5DR Licensor-5	
1	8		STD		P08A-00126	90 degree factory-made bend ASTM A420 Grade WPL6 Seamless Standard-drawing BW 5DR Licensor-5	
1	10		STD		P08A-0011Y	90 degree factory-made bend ASTM A420 Grade WPL6 Seamless Standard-drawing BW 5DR Licensor-5	
1	12		SCH40		P08A-0011Z	90 degree factory-made bend ASTM A420 Grade WPL6 Seamless Standard-drawing BW 5DR Licensor-5	
1	14		SCH40		P08A-00120	90 degree factory-made bend ASTM A420 Grade WPL6 Seamless Standard-drawing BW 5DR Licensor-5	
1	16		SCH20		P08A-00121	90 degree factory-made bend ASTM A420 Grade WPL6 Seamless Standard-drawing BW 5DR Licensor-5	
1	18		SCH20		P08A-0012N	90 degree factory-made bend ASTM A420 Grade WPL6 Seamless Standard-drawing BW 5DR Licensor-5	
1	20		STD		P08A-0012P	90 degree factory-made bend ASTM A420 Grade WPL6 Seamless Standard-drawing BW 5DR Licensor-5	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P03B-0001S	45 degree elbow ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW	
1	0.75				P03B-0001T	45 degree elbow ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW	
1	1				P03B-0001U	45 degree elbow ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW	

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45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5				P03B-0001V	45 degree elbow ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW	
1	2		XS		P03A-0009Y	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	3		STD		P03A-000C4	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	4		STD		P03A-000C6	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	6		STD		P03A-000C9	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	8		STD		P03A-000CB	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	10		STD		P03A-000BL	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	12		SCH40		P03A-000GX	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	14		SCH40		P03A-000GY	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	16		SCH20		P03A-000EK	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	18		SCH20		P03A-001E2	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	20		STD		P03A-001E3	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	24		STD		P03A-001E5	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	

45FACTORY-MADE BEND (4FM)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P09A-00027	45 degree factory-made bend ASTM A420 Grade WPL6 Seamless Standard-drawing BW 5DR Licensor-5	
1	0.75		SCH160		P09A-00028	45 degree factory-made bend ASTM A420 Grade WPL6 Seamless Standard-drawing BW 5DR Licensor-5	
1	1		SCH160		P09A-00029	45 degree factory-made bend ASTM A420 Grade WPL6 Seamless Standard-drawing BW 5DR Licensor-5	
1	1.5		SCH160		P09A-0002A	45 degree factory-made bend ASTM A420 Grade WPL6 Seamless Standard-drawing BW 5DR Licensor-5	
1	2		XS		P09A-0002F	45 degree factory-made bend ASTM A420 Grade WPL6 Seamless Standard-drawing BW 5DR Licensor-5	
1	3		STD		P09A-0002G	45 degree factory-made bend ASTM A420 Grade WPL6 Seamless Standard-drawing BW 5DR Licensor-5	
1	4		STD		P09A-0002H	45 degree factory-made bend ASTM A420 Grade WPL6 Seamless Standard-drawing BW 5DR Licensor-5	
1	6		STD		P09A-0002J	45 degree factory-made bend ASTM A420 Grade WPL6 Seamless Standard-drawing BW 5DR Licensor-5	
1	8		STD		P09A-0002K	45 degree factory-made bend ASTM A420 Grade WPL6 Seamless Standard-drawing BW 5DR Licensor-5	
1	10		STD		P09A-0002B	45 degree factory-made bend ASTM A420 Grade WPL6 Seamless Standard-drawing BW 5DR Licensor-5	
1	12		SCH40		P09A-0002C	45 degree factory-made bend ASTM A420 Grade WPL6 Seamless Standard-drawing BW 5DR Licensor-5	
1	14		SCH40		P09A-0002D	45 degree factory-made bend ASTM A420 Grade WPL6 Seamless Standard-drawing BW 5DR Licensor-5	
1	16		SCH20		P09A-0002E	45 degree factory-made bend ASTM A420 Grade WPL6 Seamless Standard-drawing BW 5DR Licensor-5	
1	18		SCH20		P09A-00032	45 degree factory-made bend ASTM A420 Grade WPL6 Seamless Standard-drawing BW 5DR Licensor-5	
1	20		STD		P09A-00033	45 degree factory-made bend ASTM A420 Grade WPL6 Seamless Standard-drawing BW 5DR Licensor-5	

SP-AGL FCTRY-M BEND (SFM)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	6		STD		P10A-0001M	Special angle factory-made bend ASTM A420 Grade WPL6 Seamless Standard-drawing BW 60 degree 5DR Licensor-5	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P21B-0001S	Straight tee ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW	
1	0.75				P21B-0001T	Straight tee ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW	
1	1				P21B-0001U	Straight tee ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW	
1	1.5				P21B-0001V	Straight tee ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW	
1	2		XS		P21A-001BR	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	3		STD		P21A-001FE	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	4		STD		P21A-001FF	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	6		STD		P21A-001FJ	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	8		STD		P21A-001FL	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10		STD		P21A-001F0	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12		SCH40		P21A-00239	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14		SCH40		P21A-0023A	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16		SCH20		P21A-0020U	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	18		SCH20		P21A-0020E	Straight tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	20		STD		P21A-001F4	Straight tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	24		STD		P21A-001F8	Straight tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	

STRAIGHT LATERAL TEE (TLS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75				P22B-00007	Straight lateral-tee ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW 60 degree	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P22B-00008	Straight lateral-tee ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW 60 degree	
1	1.5				P22B-0000A	Straight lateral-tee ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW 60 degree	
1	2		XS		P22A-000DD	Straight lateral-tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW 60 degree	
1	3		STD		P22A-000DE	Straight lateral-tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW 60 degree	
1	4		STD		P22A-000DF	Straight lateral-tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW 60 degree	
1	6		STD		P22A-000DG	Straight lateral-tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW 60 degree	
1	8		STD		P22A-000E5	Straight lateral-tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW 60 degree	
1	10		STD		P22A-000E1	Straight lateral-tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW 60 degree	
1	12		SCH40		P22A-000E2	Straight lateral-tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW 60 degree	
1	14		SCH40		P22A-000E3	Straight lateral-tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW 60 degree	
1	16		SCH20		P22A-000E4	Straight lateral-tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW 60 degree	
1	18		SCH20		P22A-000G6	Straight lateral-tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW 60 degree	
1	20		STD		P22A-000G7	Straight lateral-tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW 60 degree	
1	24		STD		P22A-000G8	Straight lateral-tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW 60 degree	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75			P24B-0003M	Reducing tee ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW	
1	1.5	0.75			P24B-0003P	Reducing tee ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW	
1	1.5	1			P24B-0003R	Reducing tee ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW	
1	2	1	XS	SCH160	P24A-00GMD	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	2	1.5	XS	SCH160	P24A-005NK	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	3	1.5	STD	SCH160	P24A-00GME	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	3	2	STD	XS	P24A-005M3	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	4	2	STD	XS	P24A-006CW	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	4	3	STD	STD	P24A-0028C	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	6	3	STD	STD	P24A-002AL	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	6	4	STD	STD	P24A-00289	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	8	4	STD	STD	P24A-0028B	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	8	6	STD	STD	P24A-0028T	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	4	STD	STD	P24A-002K7	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	6	STD	STD	P24A-002AN	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	8	STD	STD	P24A-0028W	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	6	SCH40	STD	P24A-00M0Y	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	8	SCH40	STD	P24A-00674	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	10	SCH40	STD	P24A-00673	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	6	SCH40	STD	P24A-00M0Z	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	8	SCH40	STD	P24A-00M10	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	10	SCH40	STD	P24A-00675	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	12	SCH40	SCH40	P24A-0036F	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	6	SCH20	STD	P24A-00KWN	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	8	SCH20	STD	P24A-00HLR	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	10	SCH20	STD	P24A-00M11	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	12	SCH20	SCH40	P24A-00M12	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	14	SCH20	SCH40	P24A-00M13	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	18	8	SCH20	STD	P24A-00M17	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	18	10	SCH20	STD	P24A-00M14	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	18	12	SCH20	SCH40	P24A-00M15	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	18	14	SCH20	SCH40	P24A-00M16	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	18	16	SCH20	SCH20	P24A-002XE	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	20	8	STD	STD	P24A-002RW	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	20	10	STD	STD	P24A-002L1	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	20	12	STD	SCH40	P24A-00M18	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	20	14	STD	SCH40	P24A-00M19	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	20	16	STD	SCH20	P24A-0071W	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	20	18	STD	SCH20	P24A-006D6	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	24	10	STD	STD	P24A-002KU	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	24	12	STD	SCH40	P24A-00M1A	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	24	14	STD	SCH40	P24A-00M1B	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	

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REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	24	16	STD	SCH20	P24A-00KWX	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	24	18	STD	SCH20	P24A-00799	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	24	20	STD	STD	P24A-0029L	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	STD	XS	P27A-003PM	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	4	2	STD	XS	P27A-003PN	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	4	3	STD	STD	P27A-001BA	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	6	3	STD	STD	P27A-001H9	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	6	4	STD	STD	P27A-00181	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	8	4	STD	STD	P27A-0017P	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	8	6	STD	STD	P27A-001B9	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	4	STD	STD	P27A-0017X	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	6	STD	STD	P27A-001BV	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	8	STD	STD	P27A-001D6	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	6	SCH40	STD	P27A-00G2V	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	8	SCH40	STD	P27A-0047Z	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	10	SCH40	STD	P27A-0047X	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	6	SCH40	STD	P27A-00G2W	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	8	SCH40	STD	P27A-00482	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	10	SCH40	STD	P27A-00480	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	12	SCH40	SCH40	P27A-00224	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	8	SCH20	STD	P27A-008G4	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	10	SCH20	STD	P27A-00G2X	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	12	SCH20	SCH40	P27A-00G2Y	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	14	SCH20	SCH40	P27A-00G2Z	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	18	10	SCH20	STD	P27A-00G30	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	18	12	SCH20	SCH40	P27A-00G31	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	18	14	SCH20	SCH40	P27A-00G32	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	18	16	SCH20	SCH20	P27A-001WF	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	20	12	STD	SCH40	P27A-00G33	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	20	14	STD	SCH40	P27A-00G34	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	20	16	STD	SCH20	P27A-008G9	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	20	18	STD	SCH20	P27A-004DM	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	24	16	STD	SCH20	P27A-008GB	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	24	18	STD	SCH20	P27A-008L9	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	24	20	STD	STD	P27A-001DF	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	STD	XS	P28A-003PL	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	4	2	STD	XS	P28A-003PM	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	4	3	STD	STD	P28A-001CF	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	6	3	STD	STD	P28A-001AL	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	6	4	STD	STD	P28A-001BL	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	8	4	STD	STD	P28A-001B9	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	8	6	STD	STD	P28A-001CL	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	4	STD	STD	P28A-001BF	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	6	STD	STD	P28A-001CK	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	8	STD	STD	P28A-001E4	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	6	SCH40	STD	P28A-00D93	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	8	SCH40	STD	P28A-0047R	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	10	SCH40	STD	P28A-0047N	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	6	SCH40	STD	P28A-00D94	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	8	SCH40	STD	P28A-0047U	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	10	SCH40	STD	P28A-0047S	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	12	SCH40	SCH40	P28A-0021T	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	8	SCH20	STD	P28A-00569	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	16	10	SCH20	STD	P28A-00D95	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	12	SCH20	SCH40	P28A-00D96	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	14	SCH20	SCH40	P28A-00D97	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	18	10	SCH20	STD	P28A-00D98	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	18	12	SCH20	SCH40	P28A-00D99	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	18	14	SCH20	SCH40	P28A-00D9A	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	18	16	SCH20	SCH20	P28A-001WA	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	20	12	STD	SCH40	P28A-00D9B	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	20	14	STD	SCH40	P28A-00D9C	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	20	16	STD	SCH20	P28A-0056E	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	20	18	STD	SCH20	P28A-004DF	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	24	16	STD	SCH20	P28A-0056G	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	24	18	STD	SCH20	P28A-005B4	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	24	20	STD	STD	P28A-001EB	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P29B-0002J	Cap ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW	
1	0.75				P29B-0002K	Cap ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW	
1	1				P29B-0002L	Cap ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW	
1	1.5				P29B-0002H	Cap ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW	
1	2		XS		P29A-000BG	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	3		STD		P29A-0009Y	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	4		STD		P29A-000AH	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	6		STD		P29A-000DE	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	8		STD		P29A-000DH	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10		STD		P29A-000B0	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12		SCH40		P29A-000GW	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14		SCH40		P29A-000GX	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16		SCH20		P29A-000ER	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	18		SCH20		P29A-000EU	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	20		STD		P29A-000BR	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	24		STD		P29A-0009T	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
541	0.75				P29B-00015	Cap ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P41A-000DJ	Straight nipple ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		XXS		P41A-000DK	Straight nipple ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		XXS		P41A-000DZ	Straight nipple ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		XXS		P41A-000E0	Straight nipple ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

CON SWAGED NIPPLE (SNC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	SCH160	P42A-000A8	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	SCH160	SCH160	P42A-000A9	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	SCH160	SCH160	P42A-000A1	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	SCH160	SCH160	P42A-000AA	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	SCH160	SCH160	P42A-000A3	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	SCH160	SCH160	P42A-000A4	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	XS	SCH160	P42A-000L1	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	XS	SCH160	P42A-000L2	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	XS	SCH160	P42A-000L3	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	XS	SCH160	P42A-000L4	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	STD	SCH160	P42A-000L5	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 BE(L) - PE(S)	

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ECC SWAGED NIPPLE (SNE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	SCH160	P43A-000D2	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	SCH160	SCH160	P43A-000D3	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	SCH160	SCH160	P43A-000D4	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	SCH160	SCH160	P43A-000D5	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	SCH160	SCH160	P43A-000D6	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	SCH160	SCH160	P43A-000D7	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	XS	SCH160	P43A-000D8	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	XS	SCH160	P43A-000D9	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	XS	SCH160	P43A-000DA	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	XS	SCH160	P43A-000DB	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	STD	SCH160	P43A-000DC	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 BE(L) - PE(S)	

COUPLING (CPS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P47B-0001S	Coupling ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW - SW	
1	0.75				P47B-0001T	Coupling ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW - SW	
1	1				P47B-0001U	Coupling ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW - SW	
1	1.5				P47B-0001V	Coupling ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW - SW	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5 - 2.5	0.75			P31B-0138C	Outlet ASTM A350 Grade LF2 Class 1 Class 6000 MSS SP-97 SW	
1	3 - 10	0.75			P31B-007DK	Outlet ASTM A350 Grade LF2 Class 1 Class 6000 MSS SP-97 SW	
1	12 and larger	0.75			P31B-0138B	Outlet ASTM A350 Grade LF2 Class 1 Class 6000 MSS SP-97 SW	
1	3 - 10	1			P31B-007BL	Outlet ASTM A350 Grade LF2 Class 1 Class 6000 MSS SP-97 SW	
1	12 and larger	1			P31B-0138D	Outlet ASTM A350 Grade LF2 Class 1 Class 6000 MSS SP-97 SW	
1	4 - 5	1.5			P31B-00514	Outlet ASTM A350 Grade LF2 Class 1 Class 6000 MSS SP-97 SW	
1	6 - 8	1.5			P31B-007B0	Outlet ASTM A350 Grade LF2 Class 1 Class 6000 MSS SP-97 SW	
1	10 - 18	1.5			P31B-007BC	Outlet ASTM A350 Grade LF2 Class 1 Class 6000 MSS SP-97 SW	
1	20 and larger	1.5			P31B-0138E	Outlet ASTM A350 Grade LF2 Class 1 Class 6000 MSS SP-97 SW	
541	1	0.75			P31B-004HD	Outlet ASTM A350 Grade LF2 Class 1 Class 6000 MSS SP-97 NPT	
541	1.5 - 2.5	0.75			P31B-0138F	Outlet ASTM A350 Grade LF2 Class 1 Class 6000 MSS SP-97 NPT	
541	3 - 10	0.75			P31B-007CY	Outlet ASTM A350 Grade LF2 Class 1 Class 6000 MSS SP-97 NPT	
541	12 and larger	0.75			P31B-0138G	Outlet ASTM A350 Grade LF2 Class 1 Class 6000 MSS SP-97 NPT	
1	6	2	STD	XS	P31B-00MFB	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	8	2	STD	XS	P31B-00PAW	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	10	2	STD	XS	P31B-00TPH	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	12	2	SCH40	XS	P31B-00ZG2	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	14	2	SCH40	XS	P31B-00ZG5	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	16	2	SCH20	XS	P31B-00TFZ	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	18	2	SCH20	XS	P31B-00MJS	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	20	2	STD	XS	P31B-00MGK	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	24	2	STD	XS	P31B-00M4U	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	8	3	STD	STD	P31B-00E6Y	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	10	3	STD	STD	P31B-00E6V	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	12	3	SCH40	STD	P31B-00ZG3	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	14	3	SCH40	STD	P31B-00ZG6	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	16	3	SCH20	STD	P31B-00UP2	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	18	3	SCH20	STD	P31B-00MJT	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	20	3	STD	STD	P31B-00E8N	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	24	3	STD	STD	P31B-00E8T	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	12	4	SCH40	STD	P31B-00ZG4	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	14	4	SCH40	STD	P31B-00ZG7	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	16	4	SCH20	STD	P31B-00UP3	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	18	4	SCH20	STD	P31B-00MJU	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	20	4	STD	STD	P31B-00E88	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	24	4	STD	STD	P31B-00E8C	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	18	6	SCH20	STD	P31B-00MJV	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	20	6	STD	STD	P31B-00E86	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	

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OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	24	6	STD	STD	P31B-00E84	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	

LATROLET (LL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	18	4	SCH20	STD	P34B-001LH	Lateral-outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW 45 degree	
1	20	4	STD	STD	P34B-001LN	Lateral-outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW 45 degree	
1	20	6	STD	STD	P34B-001LP	Lateral-outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW 45 degree	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30B-0002V	Plug ASTM A350 Grade LF2 Class 1 ASME B16.11 NPT Round head	
1	0.75				P30B-0002W	Plug ASTM A350 Grade LF2 Class 1 ASME B16.11 NPT Round head	
1	1				P30B-0002X	Plug ASTM A350 Grade LF2 Class 1 ASME B16.11 NPT Round head	
1	1.5				P30B-0002Y	Plug ASTM A350 Grade LF2 Class 1 ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P61B-001CU	Flange SW ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	0.75		SCH160		P61B-001D5	Flange SW ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	1		SCH160		P61B-001GC	Flange SW ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	1.5		SCH160		P61B-001GZ	Flange SW ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	2		XS		P61B-003R8	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	3		STD		P61B-001MB	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	4		STD		P61B-001N0	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	6		STD		P61B-001NM	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	8		STD		P61B-001NZ	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	10		STD		P61B-001L8	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	12		SCH40		P61B-001NV	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	14		SCH40		P61B-0021C	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	16		SCH20		P61B-002RM	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	18		SCH20		P61B-002RN	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	20		STD		P61B-001NB	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	24		STD		P61B-001P1	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
4404	1		SCH160		P61B-00DND	Flange SW ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 Large male face	
4404	1.5		SCH160		P61B-00DNE	Flange SW ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 Large male face	
4404	2		XS		P61B-00ETB	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 Large male face	
781	0.5		SCH160		P61B-001Y2	Flange SW ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
781	0.75		SCH160		P61B-001YD	Flange SW ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
781	1		SCH160		P61B-001YU	Flange SW ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
781	1.5		SCH160		P61B-001XN	Flange SW ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
781	2		XS		P61B-001FN	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
781	3		STD		P61B-001TV	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
781	4		STD		P61B-001VT	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
781	6		STD		P61B-001JV	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
781	8		STD		P61B-001KE	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
781	10		STD		P61B-001JH	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
781	12		SCH40		P61B-003WP	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
781	14		SCH40		P61B-008YZ	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
781	16		SCH20		P61B-007H0	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
781	18		SCH20		P61B-003ZT	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
781	20		STD		P61B-003H5	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
781	24		STD		P61B-003H4	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67B-000NN	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	0.75				P67B-000MV	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	1				P67B-000MW	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	

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BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5				P67B-000MX	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	2				P67B-000N3	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	3				P67B-000N6	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	4				P67B-000N7	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	6				P67B-000N8	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	8				P67B-000N9	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	10				P67B-000MY	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	12				P67B-000MZ	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	14				P67B-000N0	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	16				P67B-000N1	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	18				P67B-000N2	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	20				P67B-000N4	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	24				P67B-000N5	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-00356	Spiral wound gasket SS316 winding / Non-asbestos filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-6	
1	0.75				P73T-00357	Spiral wound gasket SS316 winding / Non-asbestos filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-6	
1	1				P73T-00358	Spiral wound gasket SS316 winding / Non-asbestos filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-6	
1	1.5				P73T-00359	Spiral wound gasket SS316 winding / Non-asbestos filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-6	
1	2				P73T-0035A	Spiral wound gasket SS316 winding / Non-asbestos filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-6	
1	3				P73T-0035B	Spiral wound gasket SS316 winding / Non-asbestos filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-6	
1	4				P73T-0035C	Spiral wound gasket SS316 winding / Non-asbestos filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-6	
1	6				P73T-0035D	Spiral wound gasket SS316 winding / Non-asbestos filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-6	
1	8				P73T-00392	Spiral wound gasket SS316 winding / Non-asbestos filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-6	
1	10				P73T-0038W	Spiral wound gasket SS316 winding / Non-asbestos filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-6	
1	12				P73T-0038X	Spiral wound gasket SS316 winding / Non-asbestos filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-6	
1	14				P73T-0038Y	Spiral wound gasket SS316 winding / Non-asbestos filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-6	
1	16				P73T-0038Z	Spiral wound gasket SS316 winding / Non-asbestos filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-6	
1	18				P73T-00390	Spiral wound gasket SS316 winding / Non-asbestos filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-6	
1	20				P73T-00391	Spiral wound gasket SS316 winding / Non-asbestos filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-6	
1	24				P73T-00397	Spiral wound gasket SS316 winding / Non-asbestos filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-6	
4404	1				P73T-003AE	Spiral wound gasket SS316 winding / Non-asbestos filler Class 600 Standard-drawing Flange ASME B16.5 Large male and female face 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-8	
4404	1.5				P73T-003AF	Spiral wound gasket SS316 winding / Non-asbestos filler Class 600 Standard-drawing Flange ASME B16.5 Large male and female face 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-8	
4404	2				P73T-003AG	Spiral wound gasket SS316 winding / Non-asbestos filler Class 600 Standard-drawing Flange ASME B16.5 Large male and female face 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-8	
781	0.5				P73T-0035E	Spiral wound gasket SS316 winding / Non-asbestos filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-6	
781	0.75				P73T-0035F	Spiral wound gasket SS316 winding / Non-asbestos filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-6	
781	1				P73T-0035G	Spiral wound gasket SS316 winding / Non-asbestos filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-6	
781	1.5				P73T-0035H	Spiral wound gasket SS316 winding / Non-asbestos filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-6	
781	2				P73T-0035J	Spiral wound gasket SS316 winding / Non-asbestos filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-6	
781	3				P73T-0035K	Spiral wound gasket SS316 winding / Non-asbestos filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-6	
781	4				P73T-0035L	Spiral wound gasket SS316 winding / Non-asbestos filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-6	
781	6				P73T-0035M	Spiral wound gasket SS316 winding / Non-asbestos filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-6	
781	8				P73T-00371	Spiral wound gasket SS316 winding / Non-asbestos filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-6	
781	10				P73T-0036Z	Spiral wound gasket SS316 winding / Non-asbestos filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-6	
781	12				P73T-00370	Spiral wound gasket SS316 winding / Non-asbestos filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-6	
781	14				P73T-00393	Spiral wound gasket SS316 winding / Non-asbestos filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-6	
781	16				P73T-00394	Spiral wound gasket SS316 winding / Non-asbestos filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-6	

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GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
781	18				P73T-00395	Spiral wound gasket SS316 winding / Non-asbestos filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-6	
781	20				P73T-00396	Spiral wound gasket SS316 winding / Non-asbestos filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-6	
781	24				P73T-00398	Spiral wound gasket SS316 winding / Non-asbestos filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-6	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-10				See Attached Bolt Table	Bolt and Nut ASTM A320 Grade L7 / A194 Grade 4 ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	12-24				See Attached Bolt Table	Bolt and Nut ASTM A320 Grade L7 / A194 Grade 4 ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
781	0.5-6				See Attached Bolt Table	Bolt and Nut ASTM A320 Grade L7 / A194 Grade 4 ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
781	8-24				See Attached Bolt Table	Bolt and Nut ASTM A320 Grade L7 / A194 Grade 4 ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81B-0018C	Gate valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	0.75				P81B-0018D	Gate valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	1				P81B-0018E	Gate valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	1.5				P81B-0018F	Gate valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	2				P81C-004HG	Gate valve ASTM A352 Grade LCC Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	3				P81C-004HH	Gate valve ASTM A352 Grade LCC Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	4				P81C-004HJ	Gate valve ASTM A352 Grade LCC Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	6				P81C-004HK	Gate valve ASTM A352 Grade LCC Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	8				P81C-0091J	Gate valve ASTM A352 Grade LCC Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated	
1	10				P81C-004HM	Gate valve ASTM A352 Grade LCC Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated	
1	12				P81C-004HN	Gate valve ASTM A352 Grade LCC Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated	
1	14				P81C-004HP	Gate valve ASTM A352 Grade LCC Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated	
1	16				P81C-004HR	Gate valve ASTM A352 Grade LCC Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated	
1	18				P81C-004HS	Gate valve ASTM A352 Grade LCC Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated	
1	20				P81C-004HT	Gate valve ASTM A352 Grade LCC Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated	
1	24				P81C-004HU	Gate valve ASTM A352 Grade LCC Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated	
714	0.5				P81B-002S4	Gate valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW - NPT Trim number 12 BB-BG-OS&Y Handwheel operated	
714	0.75				P81B-002FB	Gate valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW - NPT Trim number 12 BB-BG-OS&Y Handwheel operated	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82B-0011H	Globe valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	0.75				P82B-0011J	Globe valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	1				P82B-0011K	Globe valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	1.5				P82B-0011L	Globe valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	2				P82C-0027X	Globe valve ASTM A352 Grade LCC Class 300 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	3				P82C-0027Y	Globe valve ASTM A352 Grade LCC Class 300 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	4				P82C-0027Z	Globe valve ASTM A352 Grade LCC Class 300 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	6				P82C-00280	Globe valve ASTM A352 Grade LCC Class 300 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	8				P82C-004CT	Globe valve ASTM A352 Grade LCC Class 300 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated	

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CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83B-000TS	Check valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 12 Lift-type Bolted cover	
1	0.75				P83B-000TT	Check valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 12 Lift-type Bolted cover	
1	1				P83B-000TU	Check valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 12 Lift-type Bolted cover	
1	1.5				P83B-000TV	Check valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 12 Lift-type Bolted cover	
1	2				P83C-0024D	Check valve ASTM A352 Grade LCC Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	3				P83C-0024G	Check valve ASTM A352 Grade LCC Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	4				P83C-0024H	Check valve ASTM A352 Grade LCC Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	6				P83C-0024J	Check valve ASTM A352 Grade LCC Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	8				P83C-0024K	Check valve ASTM A352 Grade LCC Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	10				P83C-00248	Check valve ASTM A352 Grade LCC Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	12				P83C-00249	Check valve ASTM A352 Grade LCC Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	14				P83C-0024A	Check valve ASTM A352 Grade LCC Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	16				P83C-0024B	Check valve ASTM A352 Grade LCC Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	18				P83C-0024C	Check valve ASTM A352 Grade LCC Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	20				P83C-0024E	Check valve ASTM A352 Grade LCC Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	24				P83C-0024F	Check valve ASTM A352 Grade LCC Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	

BALL VALVE (Q)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P84B-001DC	Ball valve Long-pattern ASTM A350 Grade LF2 Class 1 Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design	
1	0.75				P84B-001DD	Ball valve Long-pattern ASTM A350 Grade LF2 Class 1 Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design	
1	1				P84B-001DE	Ball valve Long-pattern ASTM A350 Grade LF2 Class 1 Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design	
1	1.5				P84B-001DF	Ball valve Long-pattern ASTM A350 Grade LF2 Class 1 Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design	
1	2				P84C-006KX	Ball valve Long-pattern ASTM A352 Grade LCC Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design	
1	3				P84C-006KY	Ball valve Long-pattern ASTM A352 Grade LCC Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design	
1	4				P84C-006KZ	Ball valve Long-pattern ASTM A352 Grade LCC Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Gear operated Reduced bore Fire tested design	
1	6				P84C-006L6	Ball valve Long-pattern ASTM A352 Grade LCC Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Reduced bore Fire tested design	
1	8				P84C-006L7	Ball valve Long-pattern ASTM A352 Grade LCC Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Reduced bore Fire tested design	
1	10				P84C-006L0	Ball valve Long-pattern ASTM A352 Grade LCC Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Reduced bore Fire tested design	
1	12				P84C-006L1	Ball valve Long-pattern ASTM A352 Grade LCC Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Reduced bore Fire tested design	
1	14				P84C-006L2	Ball valve Long-pattern ASTM A352 Grade LCC Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Reduced bore Fire tested design	
1	16				P84C-006L3	Ball valve Long-pattern ASTM A352 Grade LCC Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Reduced bore Fire tested design	
1	18				P84C-006L4	Ball valve Long-pattern ASTM A352 Grade LCC Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Reduced bore Fire tested design	
1	20				P84C-006L5	Ball valve Long-pattern ASTM A352 Grade LCC Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Reduced bore Fire tested design	
1	24				P84C-006LK	Ball valve Long-pattern ASTM A352 Grade LCC Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Reduced bore Fire tested design	
24	0.5				P84B-001DG	Ball valve Long-pattern ASTM A350 Grade LF2 Class 1 Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	
24	0.75				P84B-001DH	Ball valve Long-pattern ASTM A350 Grade LF2 Class 1 Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	
24	1				P84B-001DJ	Ball valve Long-pattern ASTM A350 Grade LF2 Class 1 Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	
24	1.5				P84B-001DK	Ball valve Long-pattern ASTM A350 Grade LF2 Class 1 Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	
24	2				P84C-006L8	Ball valve Long-pattern ASTM A352 Grade LCC Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	
24	3				P84C-006L9	Ball valve Long-pattern ASTM A352 Grade LCC Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	
24	4				P84C-006LA	Ball valve Long-pattern ASTM A352 Grade LCC Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Gear operated Full bore Fire tested design	

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BALL VALVE (Q)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
24	6				P84C-006LH	Ball valve Long-pattern ASTM A352 Grade LCC Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design	
24	8				P84C-006LJ	Ball valve Long-pattern ASTM A352 Grade LCC Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design	
24	10				P84C-006LB	Ball valve Long-pattern ASTM A352 Grade LCC Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design	
24	12				P84C-006LC	Ball valve Long-pattern ASTM A352 Grade LCC Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design	
24	14				P84C-006LD	Ball valve Long-pattern ASTM A352 Grade LCC Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design	
24	16				P84C-006LE	Ball valve Long-pattern ASTM A352 Grade LCC Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design	
24	18				P84C-006LF	Ball valve Long-pattern ASTM A352 Grade LCC Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design	
24	20				P84C-006LG	Ball valve Long-pattern ASTM A352 Grade LCC Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design	
24	24				P84C-006LL	Ball valve Long-pattern ASTM A352 Grade LCC Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design	

BUTTERFLY VALVE (H)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	10				P86C-002ER	Offset design butterfly valve ASTM A352 Grade LCC Class 300 API 609 Category B Lug-type ASME B16.5 RF Disc LTCS Seat Stellite-6 Trim SS316 Triple eccentric design BG Gear operated	
1	12				P86C-002ES	Offset design butterfly valve ASTM A352 Grade LCC Class 300 API 609 Category B Lug-type ASME B16.5 RF Disc LTCS Seat Stellite-6 Trim SS316 Triple eccentric design BG Gear operated	
1	14				P86C-002ET	Offset design butterfly valve ASTM A352 Grade LCC Class 300 API 609 Category B Lug-type ASME B16.5 RF Disc LTCS Seat Stellite-6 Trim SS316 Triple eccentric design BG Gear operated	
1	16				P86C-002EU	Offset design butterfly valve ASTM A352 Grade LCC Class 300 API 609 Category B Lug-type ASME B16.5 RF Disc LTCS Seat Stellite-6 Trim SS316 Triple eccentric design BG Gear operated	
1	18				P86C-002EV	Offset design butterfly valve ASTM A352 Grade LCC Class 300 API 609 Category B Lug-type ASME B16.5 RF Disc LTCS Seat Stellite-6 Trim SS316 Triple eccentric design BG Gear operated	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71B-000BP	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	0.75				P71B-000BR	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	1				P71B-000BS	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71B-000BT	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	2				P71B-000BW	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	3				P71B-000BX	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	4				P71B-000BY	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	6				P71B-000BZ	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	8				P71B-000C0	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	10				P71B-000BU	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	12				P71B-000BV	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF	

PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000G1	Paddle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	16				P72B-000G2	Paddle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	18				P72B-000G3	Paddle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	20				P72B-000G4	Paddle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	24				P72B-000G5	Paddle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF	

PADDLE SPACER (PS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000G6	Paddle spacer ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	16				P72B-000G7	Paddle spacer ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	18				P72B-000G8	Paddle spacer ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	20				P72B-000G9	Paddle spacer ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	24				P72B-000GA	Paddle spacer ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF	

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BOLT TABLE (B_B22D05 , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-003VL		
0.75	4	0.625	75	P80S-003Z2		
1	4	0.625	80	P80S-003Z3		
1.5	4	0.750	95	P80S-0045X		
2	8	0.625	90	P80S-003Z5		
3	8	0.750	110	P80S-003Z9		
4	8	0.750	115	P80S-003ZA		
6	12	0.750	125	P80S-003ZC		
8	12	0.875	140	P80S-00466		
10	16	1.000	160	P80S-004BH		
12	16	1.125	175	P80S-004J7		
14	20	1.125	180	P80S-004J8		
16	20	1.250	190	P80S-004LJ		
18	24	1.250	200	P80S-004LL		
20	24	1.250	210	P80S-004LN		
24	24	1.500	235	P80S-003A7		

BOLT TABLE (B_B22D05_781 , STUD ASME RF, OPTION CODE 781)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	80	P80S-003VN		
0.75	4	0.625	90	P80S-003Z5		
1	4	0.625	95	P80S-003Z6		
1.5	4	0.750	110	P80S-003Z9		
2	8	0.625	110	P80S-003VV		
3	8	0.750	130	P80S-003ZD		
4	8	0.875	150	P80S-00468		
6	12	1.000	175	P80S-004BM		
8	12	1.125	195	P80S-004JB		
10	16	1.250	250	P80S-004LX		
12	20	1.250	255	P80S-004LY		
14	20	1.375	270	P80S-003M5		
16	20	1.500	295	P80S-003D1		
18	20	1.625	320	P80S-00CB3		
20	24	1.625	335	P80S-00CB6		
24	24	1.875	380	P80S-00ACJ		

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BRANCH TABLE (T_B22D05)

RUN PIPE SIZE (in) \ BRANCH SIZE (in)	0.5	0.75	1	1.5	2	3	4	6	8	10	12	14	16	18	20	24
0.5	TS															
0.75		TS														
1		TR	TS													
1.5		TR	TR	TS												
2		L	TR	TR	TS											
3		L	L	TR	TR	TS										
4	L	L	L	L	TR	TR	TS									
6	L	L	L	L	L	TR	TR	TS								
8		L	L	L	L	L	TR	TR	TS							
10		L	L	L	L	L	TR	TR	TR	TS						
12		L	L	L	L	L	L	TR	TR	TR	TS					
14		L	L	L	L	L	L	TR	TR	TR	TR	TS				
16		L	L	L	L	L	L	TR	TR	TR	TR	TR	TS			
18		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TS		
20		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TR	TS	
24		L	L	L	L	L	L	L	9PD	TR	TR	TR	TR	TR	TR	TS

9PD : REINFORCING PAD 90 DEG
TS : STRAIGHT TEE
TR : REDUCING TEE
L : OUTLET

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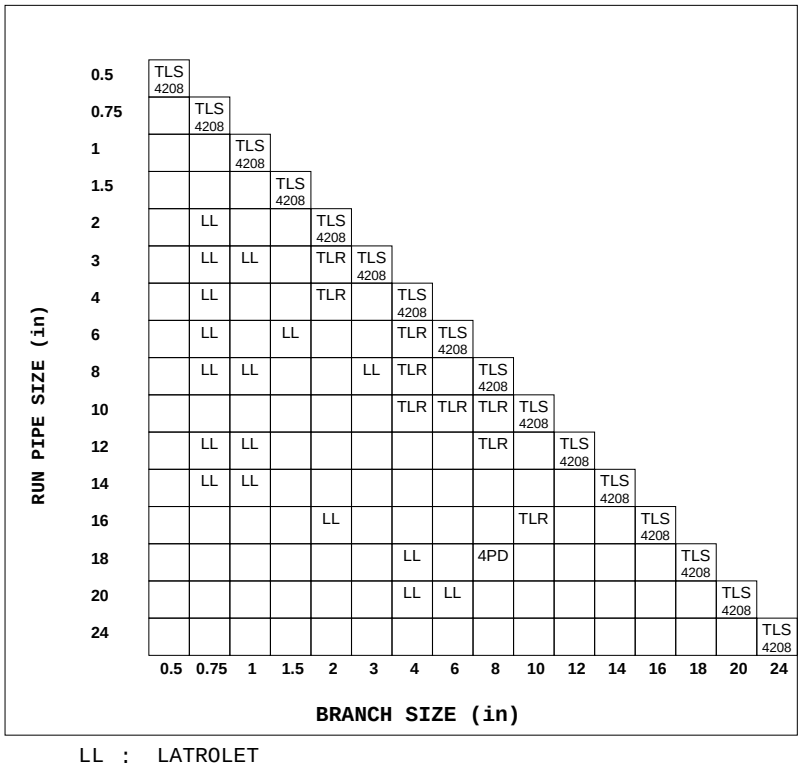
BRANCH TABLE (T_B22D05_2)



LL : LATROLET
TLR : REDUCING LATERAL TEE
TLS : STRAIGHT LATERAL TEE
4PD : REINFORCING PAD 45 DEG

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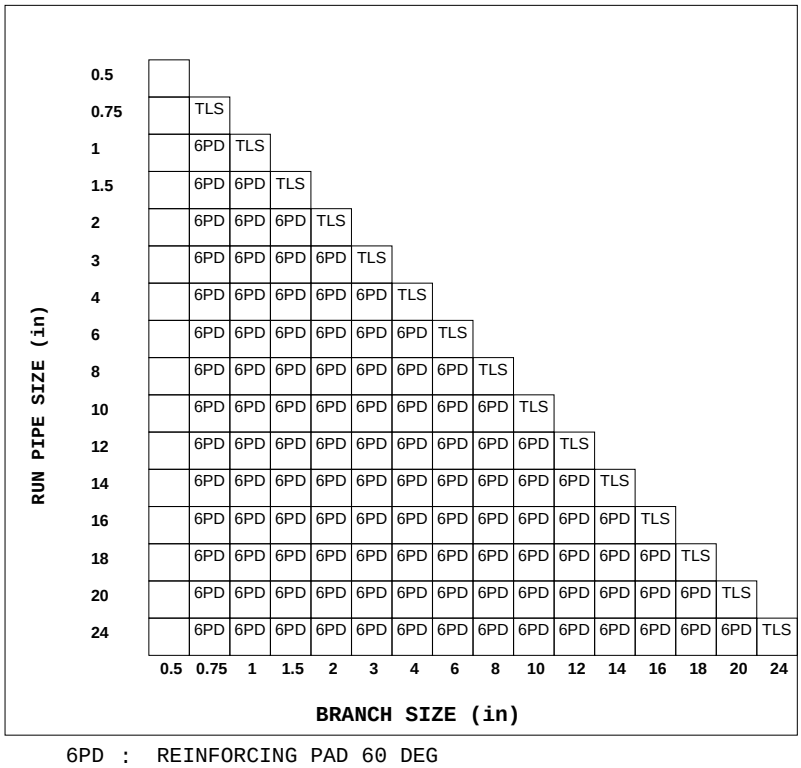
BRANCH TABLE (T_B22D05_3)



RUN PIPE SIZE (in)	0.5	0.75	1	1.5	2	3	4	6	8	10	12	14	16	18	20	24
0.5																
0.75		TLS														
1		6PD	TLS													
1.5		6PD	6PD	TLS												
2		6PD	6PD	6PD	TLS											
3		6PD	6PD	6PD	6PD	TLS										
4		6PD	6PD	6PD	6PD	6PD	TLS									
6		6PD	6PD	6PD	6PD	6PD	6PD	TLS								
8		6PD	6PD	6PD	6PD	6PD	6PD	6PD	TLS							
10		6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	TLS						
12		6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	TLS					
14		6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	TLS				
16		6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	TLS			
18		6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	TLS		
20		6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	TLS	
24		6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	TLS

6PD : REINFORCING PAD 60 DEG
TLS : STRAIGHT LATERAL TEE

INDRA
01-SEP-2014

PIPING CLASS

B28P REV NO. 2

Material : 9Cr - 1MO
Rating : ASME CLASS 300
Flange Face : RF
C.A.(mm) : 3.00
Gasket : Spiral Wound
Service : PROPYLENE, OFF GAS
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
2	USE OF SOFT SEATED BALL, PLUG AND BUTTERFLY VALVES SHALL BE LIMITED TO MAXIMUM OF 204DEGC (400DEGF)

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
200	WITH JACK SCREW (FO)
541	NPT(F) (CA,F,L)
781	CLASS 600 (B,F,G)
4608	VALVE WITH NIPPLES (V)

INDRA
01-SEP-2014

PIPING CLASS
B28P REV NO. 2

PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P01F-00014	Pipe ASTM A335 Grade P9 Seamless ASME B36.10M/B36.19M PE	
1	0.75		SCH160		P01F-00015	Pipe ASTM A335 Grade P9 Seamless ASME B36.10M/B36.19M PE	
1	1		SCH160		P01F-000D1	Pipe ASTM A335 Grade P9 Seamless ASME B36.10M/B36.19M PE	
1	1.5		SCH160		P01F-000D2	Pipe ASTM A335 Grade P9 Seamless ASME B36.10M/B36.19M PE	
1	2		XS		P01F-0001A	Pipe ASTM A335 Grade P9 Seamless ASME B36.10M/B36.19M BE	
1	3		XS		P01F-00052	Pipe ASTM A335 Grade P9 Seamless ASME B36.10M/B36.19M BE	
1	4		XS		P01F-0004L	Pipe ASTM A335 Grade P9 Seamless ASME B36.10M/B36.19M BE	
1	6		XS		P01F-0004M	Pipe ASTM A335 Grade P9 Seamless ASME B36.10M/B36.19M BE	
1	8		SCH60		P01F-0004T	Pipe ASTM A335 Grade P9 Seamless ASME B36.10M/B36.19M BE	
1	10		XS		P01F-0004N	Pipe ASTM A335 Grade P9 Seamless ASME B36.10M/B36.19M BE	
1	12		XS		P01F-0004P	Pipe ASTM A335 Grade P9 Seamless ASME B36.10M/B36.19M BE	
1	14		XS		P01F-00050	Pipe ASTM A335 Grade P9 Seamless ASME B36.10M/B36.19M BE	
1	16		STD		P01F-0006E	Pipe ASTM A335 Grade P9 Seamless ASME B36.10M/B36.19M BE	
1	18		STD		P01F-001N4	Pipe ASTM A691 Grade 9CR Class 22 EFW ASME B36.10M/B36.19M BE	
1	20		XS		P01F-001N5	Pipe ASTM A691 Grade 9CR Class 22 EFW ASME B36.10M/B36.19M BE	
1	24		XS		P01F-001N6	Pipe ASTM A691 Grade 9CR Class 22 EFW ASME B36.10M/B36.19M BE	
1	30		XS		P01F-001P3	Pipe ASTM A691 Grade 9CR Class 22 EFW ASME B36.10M/B36.19M BE	
1	36		XS		P01F-001P4	Pipe ASTM A691 Grade 9CR Class 22 EFW ASME B36.10M/B36.19M BE	
1	42		14.27mm		P01F-001P5	Pipe ASTM A691 Grade 9CR Class 22 EFW ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P02G-00005	90 degree elbow ASTM A182 Grade F9 Class 6000 ASME B16.11 SW	
1	0.75				P02G-00006	90 degree elbow ASTM A182 Grade F9 Class 6000 ASME B16.11 SW	
1	1				P02G-0001F	90 degree elbow ASTM A182 Grade F9 Class 6000 ASME B16.11 SW	
1	1.5				P02G-0001G	90 degree elbow ASTM A182 Grade F9 Class 6000 ASME B16.11 SW	
1	2		XS		P02F-0002C	90 degree elbow ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW Long radius	
1	3		XS		P02F-000DL	90 degree elbow ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW Long radius	
1	4		XS		P02F-000DM	90 degree elbow ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW Long radius	
1	6		XS		P02F-000DN	90 degree elbow ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW Long radius	
1	8		SCH60		P02F-000DP	90 degree elbow ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW Long radius	
1	10		XS		P02F-000DG	90 degree elbow ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW Long radius	
1	12		XS		P02F-000DH	90 degree elbow ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW Long radius	
1	14		XS		P02F-000DJ	90 degree elbow ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW Long radius	
1	16		STD		P02F-000DK	90 degree elbow ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW Long radius	
1	18		STD		P02F-000GM	90 degree elbow ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW Long radius	
1	20		XS		P02F-000GN	90 degree elbow ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW Long radius	
1	24		XS		P02F-000GP	90 degree elbow ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW Long radius	
1	30		XS		P02F-000HN	90 degree elbow ASTM A234 Grade WP9-W Class 1 Weld ASME B16.9 BW Long radius	
1	36		XS		P02F-000HP	90 degree elbow ASTM A234 Grade WP9-W Class 1 Weld ASME B16.9 BW Long radius	
1	42		14.27mm		P02F-000HR	90 degree elbow ASTM A234 Grade WP9-W Class 1 Weld ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P03G-00005	45 degree elbow ASTM A182 Grade F9 Class 6000 ASME B16.11 SW	
1	0.75				P03G-00006	45 degree elbow ASTM A182 Grade F9 Class 6000 ASME B16.11 SW	
1	1				P03G-0001F	45 degree elbow ASTM A182 Grade F9 Class 6000 ASME B16.11 SW	
1	1.5				P03G-0001G	45 degree elbow ASTM A182 Grade F9 Class 6000 ASME B16.11 SW	
1	2		XS		P03F-00029	45 degree elbow ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW Long radius	
1	3		XS		P03F-000DD	45 degree elbow ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW Long radius	
1	4		XS		P03F-000DE	45 degree elbow ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW Long radius	
1	6		XS		P03F-000DF	45 degree elbow ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW Long radius	
1	8		SCH60		P03F-000DG	45 degree elbow ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW Long radius	
1	10		XS		P03F-000D9	45 degree elbow ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW Long radius	
1	12		XS		P03F-000DA	45 degree elbow ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW Long radius	
1	14		XS		P03F-000DB	45 degree elbow ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW Long radius	
1	16		STD		P03F-000DC	45 degree elbow ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW Long radius	
1	18		STD		P03F-000GC	45 degree elbow ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW Long radius	
1	20		XS		P03F-000GD	45 degree elbow ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW Long radius	

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PIPING CLASS
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45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	24		XS		P03F-000GE	45 degree elbow ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW Long radius	
1	30		XS		P03F-000HD	45 degree elbow ASTM A234 Grade WP9-W Class 1 Weld ASME B16.9 BW Long radius	
1	36		XS		P03F-000HE	45 degree elbow ASTM A234 Grade WP9-W Class 1 Weld ASME B16.9 BW Long radius	
1	42		14.27mm		P03F-000HF	45 degree elbow ASTM A234 Grade WP9-W Class 1 Weld ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P21G-00005	Straight tee ASTM A182 Grade F9 Class 6000 ASME B16.11 SW	
1	0.75				P21G-00006	Straight tee ASTM A182 Grade F9 Class 6000 ASME B16.11 SW	
1	1				P21G-0001F	Straight tee ASTM A182 Grade F9 Class 6000 ASME B16.11 SW	
1	1.5				P21G-0001G	Straight tee ASTM A182 Grade F9 Class 6000 ASME B16.11 SW	
1	2		XS		P21F-0002A	Straight tee ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	3		XS		P21F-000D9	Straight tee ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	4		XS		P21F-000DA	Straight tee ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	6		XS		P21F-000DB	Straight tee ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	8		SCH60		P21F-000DC	Straight tee ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	10		XS		P21F-000D5	Straight tee ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	12		XS		P21F-000D6	Straight tee ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	14		XS		P21F-000D7	Straight tee ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	16		STD		P21F-000D8	Straight tee ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	18		STD		P21F-000GG	Straight tee ASTM A234 Grade WP9-W Class 1 Weld ASME B16.9 BW	
1	20		XS		P21F-000GH	Straight tee ASTM A234 Grade WP9-W Class 1 Weld ASME B16.9 BW	
1	24		XS		P21F-000GJ	Straight tee ASTM A234 Grade WP9-W Class 1 Weld ASME B16.9 BW	
1	30		XS		P21F-000HH	Straight tee ASTM A234 Grade WP9-W Class 1 Weld ASME B16.9 BW	
1	36		XS		P21F-000HJ	Straight tee ASTM A234 Grade WP9-W Class 1 Weld ASME B16.9 BW	
1	42		14.27mm		P21F-000HK	Straight tee ASTM A234 Grade WP9-W Class 1 Weld ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75			P24G-0001M	Reducing tee ASTM A182 Grade F9 Class 6000 ASME B16.11 SW	
1	1.5	0.75			P24G-0001K	Reducing tee ASTM A182 Grade F9 Class 6000 ASME B16.11 SW	
1	1.5	1			P24G-0001L	Reducing tee ASTM A182 Grade F9 Class 6000 ASME B16.11 SW	
1	2	1	XS	SCH160	P24F-0014G	Reducing tee ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	2	1.5	XS	SCH160	P24F-0014H	Reducing tee ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	3	1.5	XS	SCH160	P24F-00192	Reducing tee ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	3	2	XS	XS	P24F-00193	Reducing tee ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	4	2	XS	XS	P24F-00194	Reducing tee ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	4	3	XS	XS	P24F-00195	Reducing tee ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	6	3	XS	XS	P24F-00196	Reducing tee ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	6	4	XS	XS	P24F-00197	Reducing tee ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	8	4	SCH60	XS	P24F-00198	Reducing tee ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	8	6	SCH60	XS	P24F-00199	Reducing tee ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	10	4	XS	XS	P24F-0019A	Reducing tee ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	10	6	XS	XS	P24F-0019B	Reducing tee ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	10	8	XS	SCH60	P24F-0016Y	Reducing tee ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	12	6	XS	XS	P24F-0019D	Reducing tee ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	12	8	XS	SCH60	P24F-0019E	Reducing tee ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	12	10	XS	XS	P24F-0019C	Reducing tee ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	14	6	XS	XS	P24F-0019H	Reducing tee ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	14	8	XS	SCH60	P24F-0019J	Reducing tee ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	14	10	XS	XS	P24F-0019F	Reducing tee ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	14	12	XS	XS	P24F-0019G	Reducing tee ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	16	6	STD	XS	P24F-0019M	Reducing tee ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	16	8	STD	SCH60	P24F-00170	Reducing tee ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	16	10	STD	XS	P24F-0016Z	Reducing tee ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	16	12	STD	XS	P24F-0019K	Reducing tee ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	16	14	STD	XS	P24F-0019L	Reducing tee ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	18	8	STD	SCH60	P24F-001T2	Reducing tee ASTM A234 Grade WP9-W Class 1 Weld ASME B16.9 BW	
1	18	10	STD	XS	P24F-001SY	Reducing tee ASTM A234 Grade WP9-W Class 1 Weld ASME B16.9 BW	

INDRA
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PIPING CLASS
B28P **REV NO. 2**

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	18	12	STD	XS	P24F-001SZ	Reducing tee ASTM A234 Grade WP9-W Class 1 Weld ASME B16.9 BW	
1	18	14	STD	XS	P24F-001T0	Reducing tee ASTM A234 Grade WP9-W Class 1 Weld ASME B16.9 BW	
1	18	16	STD	STD	P24F-001T1	Reducing tee ASTM A234 Grade WP9-W Class 1 Weld ASME B16.9 BW	
1	20	8	XS	SCH60	P24F-001T8	Reducing tee ASTM A234 Grade WP9-W Class 1 Weld ASME B16.9 BW	
1	20	10	XS	XS	P24F-001T3	Reducing tee ASTM A234 Grade WP9-W Class 1 Weld ASME B16.9 BW	
1	20	12	XS	XS	P24F-001T4	Reducing tee ASTM A234 Grade WP9-W Class 1 Weld ASME B16.9 BW	
1	20	14	XS	XS	P24F-001T5	Reducing tee ASTM A234 Grade WP9-W Class 1 Weld ASME B16.9 BW	
1	20	16	XS	STD	P24F-001T6	Reducing tee ASTM A234 Grade WP9-W Class 1 Weld ASME B16.9 BW	
1	20	18	XS	STD	P24F-001T7	Reducing tee ASTM A234 Grade WP9-W Class 1 Weld ASME B16.9 BW	
1	24	10	XS	XS	P24F-001T9	Reducing tee ASTM A234 Grade WP9-W Class 1 Weld ASME B16.9 BW	
1	24	12	XS	XS	P24F-001TA	Reducing tee ASTM A234 Grade WP9-W Class 1 Weld ASME B16.9 BW	
1	24	14	XS	XS	P24F-001TB	Reducing tee ASTM A234 Grade WP9-W Class 1 Weld ASME B16.9 BW	
1	24	16	XS	STD	P24F-001TC	Reducing tee ASTM A234 Grade WP9-W Class 1 Weld ASME B16.9 BW	
1	24	18	XS	STD	P24F-001TD	Reducing tee ASTM A234 Grade WP9-W Class 1 Weld ASME B16.9 BW	
1	24	20	XS	XS	P24F-001TE	Reducing tee ASTM A234 Grade WP9-W Class 1 Weld ASME B16.9 BW	
1	30	10	XS	XS	P24F-001YH	Reducing tee ASTM A234 Grade WP9-W Class 1 Weld ASME B16.9 BW	
1	30	12	XS	XS	P24F-001YJ	Reducing tee ASTM A234 Grade WP9-W Class 1 Weld ASME B16.9 BW	
1	30	14	XS	XS	P24F-001YK	Reducing tee ASTM A234 Grade WP9-W Class 1 Weld ASME B16.9 BW	
1	30	16	XS	STD	P24F-001YL	Reducing tee ASTM A234 Grade WP9-W Class 1 Weld ASME B16.9 BW	
1	30	18	XS	STD	P24F-001YM	Reducing tee ASTM A234 Grade WP9-W Class 1 Weld ASME B16.9 BW	
1	30	20	XS	XS	P24F-001YN	Reducing tee ASTM A234 Grade WP9-W Class 1 Weld ASME B16.9 BW	
1	30	24	XS	XS	P24F-001YP	Reducing tee ASTM A234 Grade WP9-W Class 1 Weld ASME B16.9 BW	
1	36	16	XS	STD	P24F-001YR	Reducing tee ASTM A234 Grade WP9-W Class 1 Weld ASME B16.9 BW	
1	36	18	XS	STD	P24F-001YS	Reducing tee ASTM A234 Grade WP9-W Class 1 Weld ASME B16.9 BW	
1	36	20	XS	XS	P24F-001YT	Reducing tee ASTM A234 Grade WP9-W Class 1 Weld ASME B16.9 BW	
1	36	24	XS	XS	P24F-001YU	Reducing tee ASTM A234 Grade WP9-W Class 1 Weld ASME B16.9 BW	
1	36	30	XS	XS	P24F-001YV	Reducing tee ASTM A234 Grade WP9-W Class 1 Weld ASME B16.9 BW	
1	42	16	14.27mm	STD	P24F-001Z1	Reducing tee ASTM A234 Grade WP9-W Class 1 Weld ASME B16.9 BW	
1	42	18	14.27mm	STD	P24F-001YW	Reducing tee ASTM A234 Grade WP9-W Class 1 Weld ASME B16.9 BW	
1	42	20	14.27mm	XS	P24F-001YX	Reducing tee ASTM A234 Grade WP9-W Class 1 Weld ASME B16.9 BW	
1	42	24	14.27mm	XS	P24F-001YY	Reducing tee ASTM A234 Grade WP9-W Class 1 Weld ASME B16.9 BW	
1	42	30	14.27mm	XS	P24F-001YZ	Reducing tee ASTM A234 Grade WP9-W Class 1 Weld ASME B16.9 BW	
1	42	36	14.27mm	XS	P24F-001Z0	Reducing tee ASTM A234 Grade WP9-W Class 1 Weld ASME B16.9 BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	XS	XS	P27F-0011X	Concentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	4	2	XS	XS	P27F-0011Y	Concentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	4	3	XS	XS	P27F-0011Z	Concentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	6	3	XS	XS	P27F-00120	Concentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	6	4	XS	XS	P27F-00121	Concentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	8	4	SCH60	XS	P27F-00122	Concentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	8	6	SCH60	XS	P27F-00123	Concentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	10	4	XS	XS	P27F-00124	Concentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	10	6	XS	XS	P27F-00125	Concentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	10	8	XS	SCH60	P27F-0010E	Concentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	12	6	XS	XS	P27F-00127	Concentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	12	8	XS	SCH60	P27F-00128	Concentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	12	10	XS	XS	P27F-00126	Concentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	14	6	XS	XS	P27F-0012B	Concentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	14	8	XS	SCH60	P27F-0012C	Concentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	14	10	XS	XS	P27F-00129	Concentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	14	12	XS	XS	P27F-0012A	Concentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	16	8	STD	SCH60	P27F-0010G	Concentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	16	10	STD	XS	P27F-0010F	Concentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	16	12	STD	XS	P27F-0012D	Concentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	16	14	STD	XS	P27F-0012E	Concentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	18	10	STD	XS	P27F-001C2	Concentric reducer ASTM A234 Grade WP9-W Class 1 Weld ASME B16.9 BW	
1	18	12	STD	XS	P27F-001C3	Concentric reducer ASTM A234 Grade WP9-W Class 1 Weld ASME B16.9 BW	

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CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	18	14	STD	XS	P27F-001C4	Concentric reducer ASTM A234 Grade WP9-W Class 1 Weld ASME B16.9 BW	
1	18	16	STD	STD	P27F-001C5	Concentric reducer ASTM A234 Grade WP9-W Class 1 Weld ASME B16.9 BW	
1	20	12	XS	XS	P27F-001C6	Concentric reducer ASTM A234 Grade WP9-W Class 1 Weld ASME B16.9 BW	
1	20	14	XS	XS	P27F-001C7	Concentric reducer ASTM A234 Grade WP9-W Class 1 Weld ASME B16.9 BW	
1	20	16	XS	STD	P27F-001C8	Concentric reducer ASTM A234 Grade WP9-W Class 1 Weld ASME B16.9 BW	
1	20	18	XS	STD	P27F-001C9	Concentric reducer ASTM A234 Grade WP9-W Class 1 Weld ASME B16.9 BW	
1	24	16	XS	STD	P27F-001CA	Concentric reducer ASTM A234 Grade WP9-W Class 1 Weld ASME B16.9 BW	
1	24	18	XS	STD	P27F-001CB	Concentric reducer ASTM A234 Grade WP9-W Class 1 Weld ASME B16.9 BW	
1	24	20	XS	XS	P27F-001CC	Concentric reducer ASTM A234 Grade WP9-W Class 1 Weld ASME B16.9 BW	
1	30	20	XS	XS	P27F-001FR	Concentric reducer ASTM A234 Grade WP9-W Class 1 Weld ASME B16.9 BW	
1	30	24	XS	XS	P27F-001FS	Concentric reducer ASTM A234 Grade WP9-W Class 1 Weld ASME B16.9 BW	
1	36	24	XS	XS	P27F-001FT	Concentric reducer ASTM A234 Grade WP9-W Class 1 Weld ASME B16.9 BW	
1	36	30	XS	XS	P27F-001FU	Concentric reducer ASTM A234 Grade WP9-W Class 1 Weld ASME B16.9 BW	
1	42	30	14.27mm	XS	P27F-001FV	Concentric reducer ASTM A234 Grade WP9-W Class 1 Weld ASME B16.9 BW	
1	42	36	14.27mm	XS	P27F-001FW	Concentric reducer ASTM A234 Grade WP9-W Class 1 Weld ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	XS	XS	P28F-0011Y	Eccentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	4	2	XS	XS	P28F-0011Z	Eccentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	4	3	XS	XS	P28F-00120	Eccentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	6	3	XS	XS	P28F-00121	Eccentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	6	4	XS	XS	P28F-00122	Eccentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	8	4	SCH60	XS	P28F-00123	Eccentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	8	6	SCH60	XS	P28F-00124	Eccentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	10	4	XS	XS	P28F-00125	Eccentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	10	6	XS	XS	P28F-00126	Eccentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	10	8	XS	SCH60	P28F-0010E	Eccentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	12	6	XS	XS	P28F-00128	Eccentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	12	8	XS	SCH60	P28F-00129	Eccentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	12	10	XS	XS	P28F-00127	Eccentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	14	6	XS	XS	P28F-0012C	Eccentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	14	8	XS	SCH60	P28F-0012D	Eccentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	14	10	XS	XS	P28F-0012A	Eccentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	14	12	XS	XS	P28F-0012B	Eccentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	16	8	STD	SCH60	P28F-0010G	Eccentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	16	10	STD	XS	P28F-0010F	Eccentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	16	12	STD	XS	P28F-0012E	Eccentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	16	14	STD	XS	P28F-0012F	Eccentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	18	10	STD	XS	P28F-001CH	Eccentric reducer ASTM A234 Grade WP9-W Class 1 Weld ASME B16.9 BW	
1	18	12	STD	XS	P28F-001CJ	Eccentric reducer ASTM A234 Grade WP9-W Class 1 Weld ASME B16.9 BW	
1	18	14	STD	XS	P28F-001CK	Eccentric reducer ASTM A234 Grade WP9-W Class 1 Weld ASME B16.9 BW	
1	18	16	STD	STD	P28F-001CL	Eccentric reducer ASTM A234 Grade WP9-W Class 1 Weld ASME B16.9 BW	
1	20	12	XS	XS	P28F-001CM	Eccentric reducer ASTM A234 Grade WP9-W Class 1 Weld ASME B16.9 BW	
1	20	14	XS	XS	P28F-001CN	Eccentric reducer ASTM A234 Grade WP9-W Class 1 Weld ASME B16.9 BW	
1	20	16	XS	STD	P28F-001CP	Eccentric reducer ASTM A234 Grade WP9-W Class 1 Weld ASME B16.9 BW	
1	20	18	XS	STD	P28F-001CR	Eccentric reducer ASTM A234 Grade WP9-W Class 1 Weld ASME B16.9 BW	
1	24	16	XS	STD	P28F-001CS	Eccentric reducer ASTM A234 Grade WP9-W Class 1 Weld ASME B16.9 BW	
1	24	18	XS	STD	P28F-001CT	Eccentric reducer ASTM A234 Grade WP9-W Class 1 Weld ASME B16.9 BW	
1	24	20	XS	XS	P28F-001CU	Eccentric reducer ASTM A234 Grade WP9-W Class 1 Weld ASME B16.9 BW	
1	30	20	XS	XS	P28F-001G6	Eccentric reducer ASTM A234 Grade WP9-W Class 1 Weld ASME B16.9 BW	
1	30	24	XS	XS	P28F-001G7	Eccentric reducer ASTM A234 Grade WP9-W Class 1 Weld ASME B16.9 BW	
1	36	24	XS	XS	P28F-001G8	Eccentric reducer ASTM A234 Grade WP9-W Class 1 Weld ASME B16.9 BW	
1	36	30	XS	XS	P28F-001G9	Eccentric reducer ASTM A234 Grade WP9-W Class 1 Weld ASME B16.9 BW	
1	42	30	14.27mm	XS	P28F-001GA	Eccentric reducer ASTM A234 Grade WP9-W Class 1 Weld ASME B16.9 BW	
1	42	36	14.27mm	XS	P28F-001GB	Eccentric reducer ASTM A234 Grade WP9-W Class 1 Weld ASME B16.9 BW	

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CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P29G-00009	Cap ASTM A182 Grade F9 Class 6000 ASME B16.11 SW	
1	0.75				P29G-0000A	Cap ASTM A182 Grade F9 Class 6000 ASME B16.11 SW	
1	1				P29G-0001A	Cap ASTM A182 Grade F9 Class 6000 ASME B16.11 SW	
1	1.5				P29G-0001B	Cap ASTM A182 Grade F9 Class 6000 ASME B16.11 SW	
1	2		XS		P29F-00027	Cap ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	3		XS		P29F-000D9	Cap ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	4		XS		P29F-000DA	Cap ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	6		XS		P29F-000DB	Cap ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	8		SCH60		P29F-000DC	Cap ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	10		XS		P29F-000D5	Cap ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	12		XS		P29F-000D6	Cap ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	14		XS		P29F-000D7	Cap ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	16		STD		P29F-000D8	Cap ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	18		STD		P29F-000FS	Cap ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	20		XS		P29F-000FT	Cap ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	24		XS		P29F-000FU	Cap ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	30		XS		P29F-000GT	Cap ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	36		XS		P29F-000GU	Cap ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	42		14.27mm		P29F-000GV	Cap ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
541	0.75				P29G-0001P	Cap ASTM A182 Grade F9 Class 6000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P41F-0003C	Straight nipple ASTM A335 Grade P9 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		XXS		P41F-0003D	Straight nipple ASTM A335 Grade P9 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		XXS		P41F-0003E	Straight nipple ASTM A335 Grade P9 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		XXS		P41F-0003F	Straight nipple ASTM A335 Grade P9 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

CON SWAGED NIPPLE (SNC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	SCH160	P42F-0000D	Concentric swaged nipple ASTM A234 Grade WP9 Class 1 Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	SCH160	SCH160	P42F-0004F	Concentric swaged nipple ASTM A234 Grade WP9 Class 1 Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	SCH160	SCH160	P42F-0004G	Concentric swaged nipple ASTM A234 Grade WP9 Class 1 Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	SCH160	SCH160	P42F-0004H	Concentric swaged nipple ASTM A234 Grade WP9 Class 1 Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	SCH160	SCH160	P42F-0004J	Concentric swaged nipple ASTM A234 Grade WP9 Class 1 Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	SCH160	SCH160	P42F-0004K	Concentric swaged nipple ASTM A234 Grade WP9 Class 1 Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	XS	SCH160	P42F-0000K	Concentric swaged nipple ASTM A234 Grade WP9 Class 1 Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	XS	SCH160	P42F-0000L	Concentric swaged nipple ASTM A234 Grade WP9 Class 1 Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	XS	SCH160	P42F-00053	Concentric swaged nipple ASTM A234 Grade WP9 Class 1 Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	XS	SCH160	P42F-00054	Concentric swaged nipple ASTM A234 Grade WP9 Class 1 Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	XS	SCH160	P42F-0005T	Concentric swaged nipple ASTM A234 Grade WP9 Class 1 Seamless MSS SP-95 BE(L) - PE(S)	

ECC SWAGED NIPPLE (SNE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	SCH160	P43F-00007	Eccentric swaged nipple ASTM A234 Grade WP9 Class 1 Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	SCH160	SCH160	P43F-0003R	Eccentric swaged nipple ASTM A234 Grade WP9 Class 1 Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	SCH160	SCH160	P43F-0003S	Eccentric swaged nipple ASTM A234 Grade WP9 Class 1 Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	SCH160	SCH160	P43F-0003T	Eccentric swaged nipple ASTM A234 Grade WP9 Class 1 Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	SCH160	SCH160	P43F-0003U	Eccentric swaged nipple ASTM A234 Grade WP9 Class 1 Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	SCH160	SCH160	P43F-0003V	Eccentric swaged nipple ASTM A234 Grade WP9 Class 1 Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	XS	SCH160	P43F-0000D	Eccentric swaged nipple ASTM A234 Grade WP9 Class 1 Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	XS	SCH160	P43F-0000E	Eccentric swaged nipple ASTM A234 Grade WP9 Class 1 Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	XS	SCH160	P43F-00048	Eccentric swaged nipple ASTM A234 Grade WP9 Class 1 Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	XS	SCH160	P43F-00049	Eccentric swaged nipple ASTM A234 Grade WP9 Class 1 Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	XS	SCH160	P43F-00052	Eccentric swaged nipple ASTM A234 Grade WP9 Class 1 Seamless MSS SP-95 BE(L) - PE(S)	

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COUPLING (CPS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P47G-00006	Coupling ASTM A182 Grade F9 Class 6000 ASME B16.11 SW - SW	
1	0.75				P47G-00007	Coupling ASTM A182 Grade F9 Class 6000 ASME B16.11 SW - SW	
1	1				P47G-0001M	Coupling ASTM A182 Grade F9 Class 6000 ASME B16.11 SW - SW	
1	1.5				P47G-0001N	Coupling ASTM A182 Grade F9 Class 6000 ASME B16.11 SW - SW	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5 - 2.5	0.75			P31G-00385	Outlet ASTM A182 Grade F9 Class 6000 MSS SP-97 SW	
1	3 - 10	0.75			P31G-00376	Outlet ASTM A182 Grade F9 Class 6000 MSS SP-97 SW	
1	12 and larger	0.75			P31G-00377	Outlet ASTM A182 Grade F9 Class 6000 MSS SP-97 SW	
1	3 - 10	1			P31G-00378	Outlet ASTM A182 Grade F9 Class 6000 MSS SP-97 SW	
1	12 and larger	1			P31G-00379	Outlet ASTM A182 Grade F9 Class 6000 MSS SP-97 SW	
1	4 - 5	1.5			P31G-0037A	Outlet ASTM A182 Grade F9 Class 6000 MSS SP-97 SW	
1	6 - 8	1.5			P31G-0037B	Outlet ASTM A182 Grade F9 Class 6000 MSS SP-97 SW	
1	10 - 18	1.5			P31G-0037C	Outlet ASTM A182 Grade F9 Class 6000 MSS SP-97 SW	
1	20 and larger	1.5			P31G-0037D	Outlet ASTM A182 Grade F9 Class 6000 MSS SP-97 SW	
541	1	0.75			P31G-0037G	Outlet ASTM A182 Grade F9 Class 6000 MSS SP-97 NPT	
541	1.5 - 2.5	0.75			P31G-0037E	Outlet ASTM A182 Grade F9 Class 6000 MSS SP-97 NPT	
541	3 - 10	0.75			P31G-0037F	Outlet ASTM A182 Grade F9 Class 6000 MSS SP-97 NPT	
541	12 and larger	0.75			P31G-0037H	Outlet ASTM A182 Grade F9 Class 6000 MSS SP-97 NPT	
1	6	2	XS	XS	P31G-001NH	Outlet ASTM A182 Grade F9 MSS SP-97 BW	
1	8	2	SCH60	XS	P31G-001L5	Outlet ASTM A182 Grade F9 MSS SP-97 BW	
1	10	2	XS	XS	P31G-001L6	Outlet ASTM A182 Grade F9 MSS SP-97 BW	
1	12	2	XS	XS	P31G-001NL	Outlet ASTM A182 Grade F9 MSS SP-97 BW	
1	14	2	XS	XS	P31G-001NP	Outlet ASTM A182 Grade F9 MSS SP-97 BW	
1	16	2	STD	XS	P31G-001L7	Outlet ASTM A182 Grade F9 MSS SP-97 BW	
1	18	2	STD	XS	P31G-0025B	Outlet ASTM A182 Grade F9 MSS SP-97 BW	
1	20	2	XS	XS	P31G-00257	Outlet ASTM A182 Grade F9 MSS SP-97 BW	
1	24	2	XS	XS	P31G-00253	Outlet ASTM A182 Grade F9 MSS SP-97 BW	
1	30	2	XS	XS	P31G-002A9	Outlet ASTM A182 Grade F9 MSS SP-97 BW	
1	36	2	XS	XS	P31G-002AD	Outlet ASTM A182 Grade F9 MSS SP-97 BW	
1	42	2	14.27mm	XS	P31G-002AH	Outlet ASTM A182 Grade F9 MSS SP-97 BW	
1	8	3	SCH60	XS	P31G-001NJ	Outlet ASTM A182 Grade F9 MSS SP-97 BW	
1	10	3	XS	XS	P31G-001NK	Outlet ASTM A182 Grade F9 MSS SP-97 BW	
1	12	3	XS	XS	P31G-001NM	Outlet ASTM A182 Grade F9 MSS SP-97 BW	
1	14	3	XS	XS	P31G-001NR	Outlet ASTM A182 Grade F9 MSS SP-97 BW	
1	16	3	STD	XS	P31G-001NT	Outlet ASTM A182 Grade F9 MSS SP-97 BW	
1	18	3	STD	XS	P31G-0025C	Outlet ASTM A182 Grade F9 MSS SP-97 BW	
1	20	3	XS	XS	P31G-00258	Outlet ASTM A182 Grade F9 MSS SP-97 BW	
1	24	3	XS	XS	P31G-00254	Outlet ASTM A182 Grade F9 MSS SP-97 BW	
1	30	3	XS	XS	P31G-002AA	Outlet ASTM A182 Grade F9 MSS SP-97 BW	
1	36	3	XS	XS	P31G-002AE	Outlet ASTM A182 Grade F9 MSS SP-97 BW	
1	42	3	14.27mm	XS	P31G-002AJ	Outlet ASTM A182 Grade F9 MSS SP-97 BW	
1	12	4	XS	XS	P31G-001NN	Outlet ASTM A182 Grade F9 MSS SP-97 BW	
1	14	4	XS	XS	P31G-001NS	Outlet ASTM A182 Grade F9 MSS SP-97 BW	
1	16	4	STD	XS	P31G-001NU	Outlet ASTM A182 Grade F9 MSS SP-97 BW	
1	18	4	STD	XS	P31G-0025D	Outlet ASTM A182 Grade F9 MSS SP-97 BW	
1	20	4	XS	XS	P31G-00259	Outlet ASTM A182 Grade F9 MSS SP-97 BW	
1	24	4	XS	XS	P31G-00255	Outlet ASTM A182 Grade F9 MSS SP-97 BW	
1	30	4	XS	XS	P31G-002AB	Outlet ASTM A182 Grade F9 MSS SP-97 BW	
1	36	4	XS	XS	P31G-002AF	Outlet ASTM A182 Grade F9 MSS SP-97 BW	
1	42	4	14.27mm	XS	P31G-002AK	Outlet ASTM A182 Grade F9 MSS SP-97 BW	
1	18	6	STD	XS	P31G-0025E	Outlet ASTM A182 Grade F9 MSS SP-97 BW	
1	20	6	XS	XS	P31G-0025A	Outlet ASTM A182 Grade F9 MSS SP-97 BW	
1	24	6	XS	XS	P31G-00256	Outlet ASTM A182 Grade F9 MSS SP-97 BW	
1	30	6	XS	XS	P31G-002AC	Outlet ASTM A182 Grade F9 MSS SP-97 BW	
1	36	6	XS	XS	P31G-002AG	Outlet ASTM A182 Grade F9 MSS SP-97 BW	
1	42	6	14.27mm	XS	P31G-002AL	Outlet ASTM A182 Grade F9 MSS SP-97 BW	

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PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30G-00009	Plug ASTM A182 Grade F9 ASME B16.11 NPT Round head	
1	0.75				P30G-0000A	Plug ASTM A182 Grade F9 ASME B16.11 NPT Round head	
1	1				P30G-0000B	Plug ASTM A182 Grade F9 ASME B16.11 NPT Round head	
1	1.5				P30G-0000C	Plug ASTM A182 Grade F9 ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P61G-0002H	Flange SW ASTM A182 Grade F9 Class 300 ASME B16.5 RF	
1	0.75		SCH160		P61G-0002J	Flange SW ASTM A182 Grade F9 Class 300 ASME B16.5 RF	
1	1		SCH160		P61G-000PV	Flange SW ASTM A182 Grade F9 Class 300 ASME B16.5 RF	
1	1.5		SCH160		P61G-000PW	Flange SW ASTM A182 Grade F9 Class 300 ASME B16.5 RF	
1	2		XS		P61G-0002P	Flange WN ASTM A182 Grade F9 Class 300 ASME B16.5 RF	
1	3		XS		P61G-000SC	Flange WN ASTM A182 Grade F9 Class 300 ASME B16.5 RF	
1	4		XS		P61G-000SD	Flange WN ASTM A182 Grade F9 Class 300 ASME B16.5 RF	
1	6		XS		P61G-000SE	Flange WN ASTM A182 Grade F9 Class 300 ASME B16.5 RF	
1	8		SCH60		P61G-000SF	Flange WN ASTM A182 Grade F9 Class 300 ASME B16.5 RF	
1	10		XS		P61G-000S8	Flange WN ASTM A182 Grade F9 Class 300 ASME B16.5 RF	
1	12		XS		P61G-000S9	Flange WN ASTM A182 Grade F9 Class 300 ASME B16.5 RF	
1	14		XS		P61G-000SA	Flange WN ASTM A182 Grade F9 Class 300 ASME B16.5 RF	
1	16		STD		P61G-000SB	Flange WN ASTM A182 Grade F9 Class 300 ASME B16.5 RF	
1	18		STD		P61G-000ZV	Flange WN ASTM A182 Grade F9 Class 300 ASME B16.5 RF	
1	20		XS		P61G-000ZW	Flange WN ASTM A182 Grade F9 Class 300 ASME B16.5 RF	
1	24		XS		P61G-000ZX	Flange WN ASTM A182 Grade F9 Class 300 ASME B16.5 RF	
1	30		XS		P61G-00129	Flange WN ASTM A182 Grade F9 Class 300 ASME B16.47 Series B RF	
1	36		XS		P61G-0012A	Flange WN ASTM A182 Grade F9 Class 300 ASME B16.47 Series B RF	
1	42		14.27mm		P61G-0012B	Flange WN ASTM A182 Grade F9 Class 300 ASME B16.47 Series B RF	
541	0.5				P61G-001BD	Flange NPT ASTM A182 Grade F9 Class 300 ASME B16.5 RF	
541	0.75				P61G-00146	Flange NPT ASTM A182 Grade F9 Class 300 ASME B16.5 RF	
781	0.5		SCH160		P61G-0002S	Flange SW ASTM A182 Grade F9 Class 600 ASME B16.5 RF	
781	0.75		SCH160		P61G-0002T	Flange SW ASTM A182 Grade F9 Class 600 ASME B16.5 RF	
781	1		SCH160		P61G-000SG	Flange SW ASTM A182 Grade F9 Class 600 ASME B16.5 RF	
781	1.5		SCH160		P61G-000SH	Flange SW ASTM A182 Grade F9 Class 600 ASME B16.5 RF	
781	2		XS		P61G-0002Y	Flange WN ASTM A182 Grade F9 Class 600 ASME B16.5 RF	
781	3		XS		P61G-000SN	Flange WN ASTM A182 Grade F9 Class 600 ASME B16.5 RF	
781	4		XS		P61G-000SP	Flange WN ASTM A182 Grade F9 Class 600 ASME B16.5 RF	
781	6		XS		P61G-000SR	Flange WN ASTM A182 Grade F9 Class 600 ASME B16.5 RF	
781	8		SCH60		P61G-000SS	Flange WN ASTM A182 Grade F9 Class 600 ASME B16.5 RF	
781	10		XS		P61G-000SJ	Flange WN ASTM A182 Grade F9 Class 600 ASME B16.5 RF	
781	12		XS		P61G-000SK	Flange WN ASTM A182 Grade F9 Class 600 ASME B16.5 RF	
781	14		XS		P61G-000SL	Flange WN ASTM A182 Grade F9 Class 600 ASME B16.5 RF	
781	16		STD		P61G-000SM	Flange WN ASTM A182 Grade F9 Class 600 ASME B16.5 RF	
781	18		STD		P61G-00100	Flange WN ASTM A182 Grade F9 Class 600 ASME B16.5 RF	
781	20		XS		P61G-00101	Flange WN ASTM A182 Grade F9 Class 600 ASME B16.5 RF	
781	24		XS		P61G-00102	Flange WN ASTM A182 Grade F9 Class 600 ASME B16.5 RF	
781	30		XS		P61G-0012C	Flange WN ASTM A182 Grade F9 Class 600 ASME B16.47 Series B RF	
781	36		XS		P61G-0012D	Flange WN ASTM A182 Grade F9 Class 600 ASME B16.47 Series B RF	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67G-0001J	Blind flange ASTM A182 Grade F9 Class 300 ASME B16.5 RF	
1	0.75				P67G-0001K	Blind flange ASTM A182 Grade F9 Class 300 ASME B16.5 RF	
1	1				P67G-0001L	Blind flange ASTM A182 Grade F9 Class 300 ASME B16.5 RF	
1	1.5				P67G-0001M	Blind flange ASTM A182 Grade F9 Class 300 ASME B16.5 RF	
1	2				P67G-0001R	Blind flange ASTM A182 Grade F9 Class 300 ASME B16.5 RF	
1	3				P67G-000BW	Blind flange ASTM A182 Grade F9 Class 300 ASME B16.5 RF	
1	4				P67G-000BX	Blind flange ASTM A182 Grade F9 Class 300 ASME B16.5 RF	
1	6				P67G-000BY	Blind flange ASTM A182 Grade F9 Class 300 ASME B16.5 RF	
1	8				P67G-0001S	Blind flange ASTM A182 Grade F9 Class 300 ASME B16.5 RF	
1	10				P67G-0001N	Blind flange ASTM A182 Grade F9 Class 300 ASME B16.5 RF	

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BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	12				P67G-000BU	Blind flange ASTM A182 Grade F9 Class 300 ASME B16.5 RF	
1	14				P67G-000BV	Blind flange ASTM A182 Grade F9 Class 300 ASME B16.5 RF	
1	16				P67G-0001P	Blind flange ASTM A182 Grade F9 Class 300 ASME B16.5 RF	
1	18				P67G-000CL	Blind flange ASTM A182 Grade F9 Class 300 ASME B16.5 RF	
1	20				P67G-000CM	Blind flange ASTM A182 Grade F9 Class 300 ASME B16.5 RF	
1	24				P67G-000CN	Blind flange ASTM A182 Grade F9 Class 300 ASME B16.5 RF	
1	30				P67G-000CP	Blind flange ASTM A182 Grade F9 Class 300 ASME B16.47 Series B RF	
1	36				P67G-000CR	Blind flange ASTM A182 Grade F9 Class 300 ASME B16.47 Series B RF	
1	42				P67G-000CS	Blind flange ASTM A182 Grade F9 Class 300 ASME B16.47 Series B RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-003AM	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	0.75				P73T-003AN	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	1				P73T-003AP	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	1.5				P73T-003AR	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	2				P73T-003AX	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	3				P73T-003B0	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	4				P73T-003B1	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	6				P73T-003B2	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	8				P73T-003B3	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	10				P73T-003AS	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	12				P73T-003AT	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	14				P73T-003AU	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	16				P73T-003AV	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	18				P73T-003AW	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	20				P73T-003AY	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	24				P73T-003AZ	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	30				P73T-003BL	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	36				P73T-003DU	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	42				P73T-003DV	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
781	0.5				P73T-003B4	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
781	0.75				P73T-003B5	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
781	1				P73T-003B6	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
781	1.5				P73T-003B7	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
781	2				P73T-003BD	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
781	3				P73T-003BG	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
781	4				P73T-003BH	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
781	6				P73T-003BJ	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
781	8				P73T-003BK	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
781	10				P73T-003B8	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
781	12				P73T-003B9	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
781	14				P73T-003BA	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
781	16				P73T-003BB	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
781	18				P73T-003BC	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
781	20				P73T-003BE	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
781	24				P73T-003BF	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	

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GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
781	30				P73T-003BM	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
781	36				P73T-003DX	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-10				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B16 / A194 Grade 4 ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	12-42				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B16 / A194 Grade 4 ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
781	0.5-6				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B16 / A194 Grade 4 ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
781	8-36				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B16 / A194 Grade 4 ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81G-0002P	Gate valve ASTM A182 Grade F9 Class 300 API 602 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2	
1	0.75				P81G-0002R	Gate valve ASTM A182 Grade F9 Class 300 API 602 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2	
1	1				P81G-0002S	Gate valve ASTM A182 Grade F9 Class 300 API 602 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2	
1	1.5				P81G-0002T	Gate valve ASTM A182 Grade F9 Class 300 API 602 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2	
1	2				P81H-000A8	Gate valve ASTM A217 Grade C12 Class 300 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2	
1	3				P81H-000CM	Gate valve ASTM A217 Grade C12 Class 300 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2	
1	4				P81H-000CN	Gate valve ASTM A217 Grade C12 Class 300 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2	
1	6				P81H-000CP	Gate valve ASTM A217 Grade C12 Class 300 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2	
1	8				P81H-000A9	Gate valve ASTM A217 Grade C12 Class 300 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2	
1	10				P81H-000AA	Gate valve ASTM A217 Grade C12 Class 300 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Gear operated Fluid-2	
1	12				P81H-000CR	Gate valve ASTM A217 Grade C12 Class 300 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Gear operated Fluid-2	
1	14				P81H-000CS	Gate valve ASTM A217 Grade C12 Class 300 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Gear operated Fluid-2	
1	16				P81H-000AB	Gate valve ASTM A217 Grade C12 Class 300 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Gear operated Fluid-2	
1	18				P81H-000DP	Gate valve ASTM A217 Grade C12 Class 300 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Gear operated Fluid-2	
1	20				P81H-000DR	Gate valve ASTM A217 Grade C12 Class 300 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Gear operated Fluid-2	
1	24				P81H-000DS	Gate valve ASTM A217 Grade C12 Class 300 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Gear operated Fluid-2	
4608	0.75				P81G-000EM	Gate valve ASTM A182 Grade F9 Class 800 API 602 SW both sides w/ nipples PE - NPT ASTM A335-P9 XXS-nipple Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83G-0001L	Check valve ASTM A182 Grade F9 Class 300 API 602 Flange ASME B16.5 RF Trim number 5 Lift-type Bolted cover	
1	0.75				P83G-0001M	Check valve ASTM A182 Grade F9 Class 300 API 602 Flange ASME B16.5 RF Trim number 5 Lift-type Bolted cover	
1	1				P83G-0001N	Check valve ASTM A182 Grade F9 Class 300 API 602 Flange ASME B16.5 RF Trim number 5 Lift-type Bolted cover	
1	1.5				P83G-0001P	Check valve ASTM A182 Grade F9 Class 300 API 602 Flange ASME B16.5 RF Trim number 5 Lift-type Bolted cover	
1	2				P83H-0004U	Check valve ASTM A217 Grade C12 Class 300 BS 1868 Flange ASME B16.5 RF Trim number 5 Swing-type Bolted cover	
1	3				P83H-00063	Check valve ASTM A217 Grade C12 Class 300 BS 1868 Flange ASME B16.5 RF Trim number 5 Swing-type Bolted cover	
1	4				P83H-00064	Check valve ASTM A217 Grade C12 Class 300 BS 1868 Flange ASME B16.5 RF Trim number 5 Swing-type Bolted cover	
1	6				P83H-00065	Check valve ASTM A217 Grade C12 Class 300 BS 1868 Flange ASME B16.5 RF Trim number 5 Swing-type Bolted cover	
1	8				P83H-0004V	Check valve ASTM A217 Grade C12 Class 300 BS 1868 Flange ASME B16.5 RF Trim number 5 Swing-type Bolted cover	
1	10				P83H-0004S	Check valve ASTM A217 Grade C12 Class 300 BS 1868 Flange ASME B16.5 RF Trim number 5 Swing-type Bolted cover	
1	12				P83H-00061	Check valve ASTM A217 Grade C12 Class 300 BS 1868 Flange ASME B16.5 RF Trim number 5 Swing-type Bolted cover	
1	14				P83H-00062	Check valve ASTM A217 Grade C12 Class 300 BS 1868 Flange ASME B16.5 RF Trim number 5 Swing-type Bolted cover	
1	16				P83H-0004T	Check valve ASTM A217 Grade C12 Class 300 BS 1868 Flange ASME B16.5 RF Trim number 5 Swing-type Bolted cover	

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ORIFICE FLANGE (FO)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2		XS		P66G-0006B	Orifice flange WN ASTM A182 Grade F9 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	3		XS		P66G-0006C	Orifice flange WN ASTM A182 Grade F9 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	4		XS		P66G-0006D	Orifice flange WN ASTM A182 Grade F9 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	6		XS		P66G-0006E	Orifice flange WN ASTM A182 Grade F9 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	8		SCH60		P66G-0006F	Orifice flange WN ASTM A182 Grade F9 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	10		XS		P66G-00067	Orifice flange WN ASTM A182 Grade F9 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	12		XS		P66G-00068	Orifice flange WN ASTM A182 Grade F9 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	14		XS		P66G-00069	Orifice flange WN ASTM A182 Grade F9 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	16		STD		P66G-0006A	Orifice flange WN ASTM A182 Grade F9 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
200	2		XS		P66G-0006N	Orifice flange WN ASTM A182 Grade F9 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	3		XS		P66G-0006P	Orifice flange WN ASTM A182 Grade F9 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	4		XS		P66G-0006R	Orifice flange WN ASTM A182 Grade F9 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	6		XS		P66G-0006S	Orifice flange WN ASTM A182 Grade F9 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	8		SCH60		P66G-0006T	Orifice flange WN ASTM A182 Grade F9 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	10		XS		P66G-0006J	Orifice flange WN ASTM A182 Grade F9 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	12		XS		P66G-0006K	Orifice flange WN ASTM A182 Grade F9 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	14		XS		P66G-0006L	Orifice flange WN ASTM A182 Grade F9 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	16		STD		P66G-0006M	Orifice flange WN ASTM A182 Grade F9 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71G-00022	Spectacle blank ASTM A182 Grade F9 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	0.75				P71G-00023	Spectacle blank ASTM A182 Grade F9 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	1				P71G-00024	Spectacle blank ASTM A182 Grade F9 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71G-00025	Spectacle blank ASTM A182 Grade F9 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	2				P71G-00028	Spectacle blank ASTM A182 Grade F9 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	3				P71G-00029	Spectacle blank ASTM A182 Grade F9 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	4				P71G-0002A	Spectacle blank ASTM A182 Grade F9 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	6				P71G-0002B	Spectacle blank ASTM A182 Grade F9 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	8				P71G-0002C	Spectacle blank ASTM A182 Grade F9 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	10				P71G-00026	Spectacle blank ASTM A182 Grade F9 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	12				P71G-00027	Spectacle blank ASTM A182 Grade F9 Class 300 Standard-drawing Flange ASME B16.5 RF	

PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72G-00018	Paddle blank ASTM A182 Grade F9 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	16				P72G-00019	Paddle blank ASTM A182 Grade F9 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	18				P72G-0006U	Paddle blank ASTM A182 Grade F9 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	20				P72G-0006V	Paddle blank ASTM A182 Grade F9 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	24				P72G-0006W	Paddle blank ASTM A182 Grade F9 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	30				P72G-00070	Paddle blank ASTM A182 Grade F9 Class 300 Standard-drawing Flange ASME B16.47-B RF	
1	36				P72G-00071	Paddle blank ASTM A182 Grade F9 Class 300 Standard-drawing Flange ASME B16.47-B RF	
1	42				P72G-00072	Paddle blank ASTM A182 Grade F9 Class 300 Standard-drawing Flange ASME B16.47-B RF	

PADDLE SPACER (PS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72G-0001A	Paddle spacer ASTM A182 Grade F9 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	16				P72G-0001B	Paddle spacer ASTM A182 Grade F9 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	18				P72G-0006X	Paddle spacer ASTM A182 Grade F9 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	20				P72G-0006Y	Paddle spacer ASTM A182 Grade F9 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	24				P72G-0006Z	Paddle spacer ASTM A182 Grade F9 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	30				P72G-00073	Paddle spacer ASTM A182 Grade F9 Class 300 Standard-drawing Flange ASME B16.47-B RF	
1	36				P72G-00074	Paddle spacer ASTM A182 Grade F9 Class 300 Standard-drawing Flange ASME B16.47-B RF	
1	42				P72G-00075	Paddle spacer ASTM A182 Grade F9 Class 300 Standard-drawing Flange ASME B16.47-B RF	

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BOLT TABLE (B_B28P , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-00GN8		
0.75	4	0.625	75	P80S-00GLL		
1	4	0.625	80	P80S-00GLK		
1.5	4	0.750	95	P80S-00FVE		
2	8	0.625	90	P80S-00GLH		
3	8	0.750	110	P80S-00GLD		
4	8	0.750	115	P80S-00GLC		
6	12	0.750	125	P80S-00GLA		
8	12	0.875	140	P80S-00FV5		
10	16	1.000	160	P80S-00FR9		
12	16	1.125	175	P80S-00FH8		
14	20	1.125	180	P80S-00FH7		
16	20	1.250	190	P80S-00F9Y		
18	24	1.250	200	P80S-00F9W		
20	24	1.250	210	P80S-00F9U		
24	24	1.500	235	P80S-00EYL		
30	36	1.375	285	P80S-00F2V		
36	32	1.625	320	P80S-00G0T		
42	36	1.750	355	P80S-00FTM		

BOLT TABLE (B_B28P_781 , STUD ASME RF, OPTION CODE 781)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	80	P80S-00GN6		
0.75	4	0.625	90	P80S-00GLH		
1	4	0.625	95	P80S-00GLG		
1.5	4	0.750	110	P80S-00GLD		
2	8	0.625	110	P80S-00GN0		
3	8	0.750	130	P80S-00GL9		
4	8	0.875	150	P80S-00FV3		
6	12	1.000	175	P80S-00FR6		
8	12	1.125	195	P80S-00FH4		
10	16	1.250	250	P80S-00F9K		
12	20	1.250	255	P80S-00F9J		
14	20	1.375	270	P80S-00F4T		
16	20	1.500	295	P80S-00EY8		
18	20	1.625	320	P80S-00G0T		
20	24	1.625	335	P80S-00G0P		
24	24	1.875	380	P80S-00FKC		
30	28	1.875	435	P80S-00FK1		
36	28	2.250	510	P80S-00F3B		
42	28	2.500	575			

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BRANCH TABLE (T_B28P)

RUN PIPE SIZE (in) \ BRANCH SIZE (in)	0.5	0.75	1	1.5	2	3	4	6	8	10	12	14	16	18	20	24	30	36	42
0.5	TS																		
0.75		TS																	
1		TR	TS																
1.5		TR	TR	TS															
2		L	TR	TR	TS														
3		L	L	TR	TR	TS													
4	L	L	L	L	TR	TR	TS												
6	L	L	L	L	L	TR	TR	TS											
8		L	L	L	L	L	TR	TR	TS										
10		L	L	L	L	L	TR	TR	TR	TS									
12		L	L	L	L	L	L	TR	TR	TR	TS								
14		L	L	L	L	L	L	TR	TR	TR	TR	TS							
16		L	L	L	L	L	L	TR	TR	TR	TR	TR	TS						
18		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TS					
20		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TR	TS				
24		L	L	L	L	L	L	L	9PD	TR	TR	TR	TR	TR	TR	TS			
30		L	L	L	L	L	L	L	9PD	TR	TR	TR	TR	TR	TR	TR	TS		
36		L	L	L	L	L	L	L	9PD	9PD	9PD	9PD	TR	TR	TR	TR	TR	TS	
42		L	L	L	L	L	L	L	9PD	9PD	9PD	9PD	TR	TR	TR	TR	TR	TR	TS

TS : STRAIGHT TEE
9PD : REINFORCING PAD 90 DEG
L : OUTLET
TR : REDUCING TEE

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PIPING CLASS

B28Q02 REV NO. 2

Material : 9Cr - 1MO
Rating : ASME CLASS 300
Flange Face : RF
C.A.(mm) : 3.00
Gasket : Spiral Wound
Service : PROCESS - WET LOW SEVERITY SOUR SERVICE SUBJECT TO NACE STD
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
5	BOLTING CONFIRMING TO B7M / 2HM SHALL BE USED UNDER CONDITIONS (A) DIRECT EXPOSURE TO SOUR ENVIRONMENTS (B) WHEN THE BOLTING WILL BE BURIED OR INSULATED

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
541	NPT(F) (CA,F)
781	CLASS 600 (B,F,G)
4608	VALVE WITH NIPPLES (V)

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PIPING CLASS
B28Q02 REV NO. 2

PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P01F-00014	Pipe ASTM A335 Grade P9 Seamless ASME B36.10M/B36.19M PE	
1	0.75		SCH160		P01F-00015	Pipe ASTM A335 Grade P9 Seamless ASME B36.10M/B36.19M PE	
1	1		SCH160		P01F-000D1	Pipe ASTM A335 Grade P9 Seamless ASME B36.10M/B36.19M PE	
1	1.5		SCH160		P01F-000D2	Pipe ASTM A335 Grade P9 Seamless ASME B36.10M/B36.19M PE	
1	2		XS		P01F-0001A	Pipe ASTM A335 Grade P9 Seamless ASME B36.10M/B36.19M BE	
1	3		XS		P01F-00052	Pipe ASTM A335 Grade P9 Seamless ASME B36.10M/B36.19M BE	
1	4		XS		P01F-0004L	Pipe ASTM A335 Grade P9 Seamless ASME B36.10M/B36.19M BE	
1	6		XS		P01F-0004M	Pipe ASTM A335 Grade P9 Seamless ASME B36.10M/B36.19M BE	
1	8		SCH60		P01F-0004T	Pipe ASTM A335 Grade P9 Seamless ASME B36.10M/B36.19M BE	
1	10		XS		P01F-0004N	Pipe ASTM A335 Grade P9 Seamless ASME B36.10M/B36.19M BE	
1	12		SCH60		P01F-001R8	Pipe ASTM A335 Grade P9 Seamless ASME B36.10M/B36.19M BE	
1	14		SCH60		P01F-001R9	Pipe ASTM A335 Grade P9 Seamless ASME B36.10M/B36.19M BE	
1	16		SCH20		P01F-0006V	Pipe ASTM A335 Grade P9 Seamless ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P02F-000JV	90 degree elbow ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW Long radius	
1	0.75		SCH160		P02F-000JW	90 degree elbow ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW Long radius	
1	1		SCH160		P02F-000JX	90 degree elbow ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW Long radius	
1	1.5		SCH160		P02F-000JY	90 degree elbow ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW Long radius	
1	2		XS		P02F-0002C	90 degree elbow ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW Long radius	
1	3		XS		P02F-000DL	90 degree elbow ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW Long radius	
1	4		XS		P02F-000DM	90 degree elbow ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW Long radius	
1	6		XS		P02F-000DN	90 degree elbow ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW Long radius	
1	8		SCH60		P02F-000DP	90 degree elbow ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW Long radius	
1	10		XS		P02F-000DG	90 degree elbow ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW Long radius	
1	12		SCH60		P02F-000JZ	90 degree elbow ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW Long radius	
1	14		SCH60		P02F-000K0	90 degree elbow ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW Long radius	
1	16		SCH20		P02F-000CY	90 degree elbow ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P03F-000JK	45 degree elbow ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW Long radius	
1	0.75		SCH160		P03F-000JL	45 degree elbow ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW Long radius	
1	1		SCH160		P03F-000JM	45 degree elbow ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW Long radius	
1	1.5		SCH160		P03F-000JN	45 degree elbow ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW Long radius	
1	2		XS		P03F-00029	45 degree elbow ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW Long radius	
1	3		XS		P03F-000DD	45 degree elbow ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW Long radius	
1	4		XS		P03F-000DE	45 degree elbow ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW Long radius	
1	6		XS		P03F-000DF	45 degree elbow ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW Long radius	
1	8		SCH60		P03F-000DG	45 degree elbow ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW Long radius	
1	10		XS		P03F-000D9	45 degree elbow ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW Long radius	
1	12		SCH60		P03F-000JP	45 degree elbow ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW Long radius	
1	14		SCH60		P03F-000JR	45 degree elbow ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW Long radius	
1	16		SCH20		P03F-000CR	45 degree elbow ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P21F-000JN	Straight tee ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	0.75		SCH160		P21F-000JP	Straight tee ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	1		SCH160		P21F-000JR	Straight tee ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	1.5		SCH160		P21F-000JS	Straight tee ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	2		XS		P21F-0002A	Straight tee ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	3		XS		P21F-000D9	Straight tee ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	4		XS		P21F-000DA	Straight tee ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	6		XS		P21F-000DB	Straight tee ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	8		SCH60		P21F-000DC	Straight tee ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	10		XS		P21F-000D5	Straight tee ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	12		SCH60		P21F-000JT	Straight tee ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	

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STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14		SCH60		P21F-000JU	Straight tee ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	16		SCH20		P21F-000CT	Straight tee ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75	SCH160	SCH160	P24F-00245	Reducing tee ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	1.5	0.75	SCH160	SCH160	P24F-00246	Reducing tee ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	1.5	1	SCH160	SCH160	P24F-00247	Reducing tee ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	2	1	XS	SCH160	P24F-0014G	Reducing tee ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	2	1.5	XS	SCH160	P24F-0014H	Reducing tee ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	3	1.5	XS	SCH160	P24F-00192	Reducing tee ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	3	2	XS	XS	P24F-00193	Reducing tee ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	4	2	XS	XS	P24F-00194	Reducing tee ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	4	3	XS	XS	P24F-00195	Reducing tee ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	6	3	XS	XS	P24F-00196	Reducing tee ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	6	4	XS	XS	P24F-00197	Reducing tee ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	8	4	SCH60	XS	P24F-00198	Reducing tee ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	8	6	SCH60	XS	P24F-00199	Reducing tee ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	10	4	XS	XS	P24F-0019A	Reducing tee ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	10	6	XS	XS	P24F-0019B	Reducing tee ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	10	8	XS	SCH60	P24F-0016Y	Reducing tee ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	12	6	SCH60	XS	P24F-00249	Reducing tee ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	12	8	SCH60	SCH60	P24F-0024A	Reducing tee ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	12	10	SCH60	XS	P24F-00248	Reducing tee ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	14	6	SCH60	XS	P24F-0024D	Reducing tee ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	14	8	SCH60	SCH60	P24F-0024E	Reducing tee ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	14	10	SCH60	XS	P24F-0024B	Reducing tee ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	14	12	SCH60	SCH60	P24F-0024C	Reducing tee ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	16	6	SCH20	XS	P24F-0024J	Reducing tee ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	16	8	SCH20	SCH60	P24F-0024K	Reducing tee ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	16	10	SCH20	XS	P24F-0024F	Reducing tee ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	16	12	SCH20	SCH60	P24F-0024G	Reducing tee ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	16	14	SCH20	SCH60	P24F-0024H	Reducing tee ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	SCH160	P27F-001KF	Concentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	1	0.5	SCH160	SCH160	P27F-001KG	Concentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	1	0.75	SCH160	SCH160	P27F-001KH	Concentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	1.5	0.5	SCH160	SCH160	P27F-001KJ	Concentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	1.5	0.75	SCH160	SCH160	P27F-001KK	Concentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	1.5	1	SCH160	SCH160	P27F-001KL	Concentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	2	0.75	XS	SCH160	P27F-001KM	Concentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	2	1	XS	SCH160	P27F-001KN	Concentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	2	1.5	XS	SCH160	P27F-001KP	Concentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	3	1.5	XS	SCH160	P27F-001KR	Concentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	3	2	XS	XS	P27F-0011X	Concentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	4	1.5	XS	SCH160	P27F-001KS	Concentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	4	2	XS	XS	P27F-0011Y	Concentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	4	3	XS	XS	P27F-0011Z	Concentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	6	3	XS	XS	P27F-00120	Concentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	6	4	XS	XS	P27F-00121	Concentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	8	4	SCH60	XS	P27F-00122	Concentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	8	6	SCH60	XS	P27F-00123	Concentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	10	4	XS	XS	P27F-00124	Concentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	10	6	XS	XS	P27F-00125	Concentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	10	8	XS	SCH60	P27F-0010E	Concentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	12	6	SCH60	XS	P27F-001KU	Concentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	12	8	SCH60	SCH60	P27F-001KV	Concentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	

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CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	12	10	SCH60	XS	P27F-001KT	Concentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	14	6	SCH60	XS	P27F-001KY	Concentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	14	8	SCH60	SCH60	P27F-001KZ	Concentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	14	10	SCH60	XS	P27F-001KW	Concentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	14	12	SCH60	SCH60	P27F-001KX	Concentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	16	8	SCH20	SCH60	P27F-001L3	Concentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	16	10	SCH20	XS	P27F-001L0	Concentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	16	12	SCH20	SCH60	P27F-001L1	Concentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	16	14	SCH20	SCH60	P27F-001L2	Concentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	SCH160	P28F-001KZ	Eccentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	1	0.5	SCH160	SCH160	P28F-001L0	Eccentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	1	0.75	SCH160	SCH160	P28F-001L1	Eccentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	1.5	0.5	SCH160	SCH160	P28F-001L2	Eccentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	1.5	0.75	SCH160	SCH160	P28F-001L3	Eccentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	1.5	1	SCH160	SCH160	P28F-001L4	Eccentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	2	0.75	XS	SCH160	P28F-001L5	Eccentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	2	1	XS	SCH160	P28F-001L6	Eccentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	2	1.5	XS	SCH160	P28F-001L7	Eccentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	3	1.5	XS	SCH160	P28F-001L8	Eccentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	3	2	XS	XS	P28F-0011Y	Eccentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	4	1.5	XS	SCH160	P28F-001L9	Eccentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	4	2	XS	XS	P28F-0011Z	Eccentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	4	3	XS	XS	P28F-00120	Eccentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	6	3	XS	XS	P28F-00121	Eccentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	6	4	XS	XS	P28F-00122	Eccentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	8	4	SCH60	XS	P28F-00123	Eccentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	8	6	SCH60	XS	P28F-00124	Eccentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	10	4	XS	XS	P28F-00125	Eccentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	10	6	XS	XS	P28F-00126	Eccentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	10	8	XS	SCH60	P28F-0010E	Eccentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	12	6	SCH60	XS	P28F-001LB	Eccentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	12	8	SCH60	SCH60	P28F-001LC	Eccentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	12	10	SCH60	XS	P28F-001LA	Eccentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	14	6	SCH60	XS	P28F-001LF	Eccentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	14	8	SCH60	SCH60	P28F-001LG	Eccentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	14	10	SCH60	XS	P28F-001LD	Eccentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	14	12	SCH60	SCH60	P28F-001LE	Eccentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	16	8	SCH20	SCH60	P28F-001LL	Eccentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	16	10	SCH20	XS	P28F-001LH	Eccentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	16	12	SCH20	SCH60	P28F-001LJ	Eccentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	16	14	SCH20	SCH60	P28F-001LK	Eccentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P29F-000HY	Cap ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	0.75		SCH160		P29F-000HZ	Cap ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	1		SCH160		P29F-000J0	Cap ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	1.5		SCH160		P29F-000J1	Cap ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	2		XS		P29F-00027	Cap ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	3		XS		P29F-000D9	Cap ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	4		XS		P29F-000DA	Cap ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	6		XS		P29F-000DB	Cap ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	8		SCH60		P29F-000DC	Cap ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	10		XS		P29F-000D5	Cap ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	12		SCH60		P29F-000J2	Cap ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	14		SCH60		P29F-000J3	Cap ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	

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CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	16		SCH20		P29F-000CL	Cap ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
541	0.75				P29G-0001P	Cap ASTM A182 Grade F9 Class 6000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P41F-0003C	Straight nipple ASTM A335 Grade P9 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		XXS		P41F-0003D	Straight nipple ASTM A335 Grade P9 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		XXS		P41F-0003E	Straight nipple ASTM A335 Grade P9 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		XXS		P41F-0003F	Straight nipple ASTM A335 Grade P9 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2	0.75	XS	SCH160	P31G-002J8	Outlet ASTM A182 Grade F9 MSS SP-97 BW	
1	3	0.75	XS	SCH160	P31G-002J9	Outlet ASTM A182 Grade F9 MSS SP-97 BW	
1	4	0.75	XS	SCH160	P31G-002JB	Outlet ASTM A182 Grade F9 MSS SP-97 BW	
1	6	0.75	XS	SCH160	P31G-002JE	Outlet ASTM A182 Grade F9 MSS SP-97 BW	
1	8	0.75	SCH60	SCH160	P31G-002JH	Outlet ASTM A182 Grade F9 MSS SP-97 BW	
1	10	0.75	XS	SCH160	P31G-002JL	Outlet ASTM A182 Grade F9 MSS SP-97 BW	
1	12	0.75	SCH60	SCH160	P31G-002JP	Outlet ASTM A182 Grade F9 MSS SP-97 BW	
1	14	0.75	SCH60	SCH160	P31G-002JW	Outlet ASTM A182 Grade F9 MSS SP-97 BW	
1	16	0.75	SCH20	SCH160	P31G-002K2	Outlet ASTM A182 Grade F9 MSS SP-97 BW	
1	3	1	XS	SCH160	P31G-002JA	Outlet ASTM A182 Grade F9 MSS SP-97 BW	
1	4	1	XS	SCH160	P31G-002JC	Outlet ASTM A182 Grade F9 MSS SP-97 BW	
1	6	1	XS	SCH160	P31G-002JF	Outlet ASTM A182 Grade F9 MSS SP-97 BW	
1	8	1	SCH60	SCH160	P31G-002JJ	Outlet ASTM A182 Grade F9 MSS SP-97 BW	
1	10	1	XS	SCH160	P31G-002JM	Outlet ASTM A182 Grade F9 MSS SP-97 BW	
1	12	1	SCH60	SCH160	P31G-002JR	Outlet ASTM A182 Grade F9 MSS SP-97 BW	
1	14	1	SCH60	SCH160	P31G-002JX	Outlet ASTM A182 Grade F9 MSS SP-97 BW	
1	16	1	SCH20	SCH160	P31G-002K3	Outlet ASTM A182 Grade F9 MSS SP-97 BW	
1	4	1.5	XS	SCH160	P31G-002JD	Outlet ASTM A182 Grade F9 MSS SP-97 BW	
1	6	1.5	XS	SCH160	P31G-002JG	Outlet ASTM A182 Grade F9 MSS SP-97 BW	
1	8	1.5	SCH60	SCH160	P31G-002JK	Outlet ASTM A182 Grade F9 MSS SP-97 BW	
1	10	1.5	XS	SCH160	P31G-002JN	Outlet ASTM A182 Grade F9 MSS SP-97 BW	
1	12	1.5	SCH60	SCH160	P31G-002JS	Outlet ASTM A182 Grade F9 MSS SP-97 BW	
1	14	1.5	SCH60	SCH160	P31G-002JY	Outlet ASTM A182 Grade F9 MSS SP-97 BW	
1	16	1.5	SCH20	SCH160	P31G-002K4	Outlet ASTM A182 Grade F9 MSS SP-97 BW	
1	6	2	XS	XS	P31G-001NH	Outlet ASTM A182 Grade F9 MSS SP-97 BW	
1	8	2	SCH60	XS	P31G-001L5	Outlet ASTM A182 Grade F9 MSS SP-97 BW	
1	10	2	XS	XS	P31G-001L6	Outlet ASTM A182 Grade F9 MSS SP-97 BW	
1	12	2	SCH60	XS	P31G-002JT	Outlet ASTM A182 Grade F9 MSS SP-97 BW	
1	14	2	SCH60	XS	P31G-002JZ	Outlet ASTM A182 Grade F9 MSS SP-97 BW	
1	16	2	SCH20	XS	P31G-001J0	Outlet ASTM A182 Grade F9 MSS SP-97 BW	
1	8	3	SCH60	XS	P31G-001NJ	Outlet ASTM A182 Grade F9 MSS SP-97 BW	
1	10	3	XS	XS	P31G-001NK	Outlet ASTM A182 Grade F9 MSS SP-97 BW	
1	12	3	SCH60	XS	P31G-002JU	Outlet ASTM A182 Grade F9 MSS SP-97 BW	
1	14	3	SCH60	XS	P31G-002K0	Outlet ASTM A182 Grade F9 MSS SP-97 BW	
1	16	3	SCH20	XS	P31G-002K5	Outlet ASTM A182 Grade F9 MSS SP-97 BW	
1	12	4	SCH60	XS	P31G-002JV	Outlet ASTM A182 Grade F9 MSS SP-97 BW	
1	14	4	SCH60	XS	P31G-002K1	Outlet ASTM A182 Grade F9 MSS SP-97 BW	
1	16	4	SCH20	XS	P31G-002K6	Outlet ASTM A182 Grade F9 MSS SP-97 BW	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30G-00009	Plug ASTM A182 Grade F9 ASME B16.11 NPT Round head	
1	0.75				P30G-0000A	Plug ASTM A182 Grade F9 ASME B16.11 NPT Round head	
1	1				P30G-0000B	Plug ASTM A182 Grade F9 ASME B16.11 NPT Round head	
1	1.5				P30G-0000C	Plug ASTM A182 Grade F9 ASME B16.11 NPT Round head	

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FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P61G-00140	Flange WN ASTM A182 Grade F9 Class 300 ASME B16.5 RF	
1	0.75		SCH160		P61G-00141	Flange WN ASTM A182 Grade F9 Class 300 ASME B16.5 RF	
1	1		SCH160		P61G-00142	Flange WN ASTM A182 Grade F9 Class 300 ASME B16.5 RF	
1	1.5		SCH160		P61G-00143	Flange WN ASTM A182 Grade F9 Class 300 ASME B16.5 RF	
1	2		XS		P61G-0002P	Flange WN ASTM A182 Grade F9 Class 300 ASME B16.5 RF	
1	3		XS		P61G-000SC	Flange WN ASTM A182 Grade F9 Class 300 ASME B16.5 RF	
1	4		XS		P61G-000SD	Flange WN ASTM A182 Grade F9 Class 300 ASME B16.5 RF	
1	6		XS		P61G-000SE	Flange WN ASTM A182 Grade F9 Class 300 ASME B16.5 RF	
1	8		SCH60		P61G-000SF	Flange WN ASTM A182 Grade F9 Class 300 ASME B16.5 RF	
1	10		XS		P61G-000S8	Flange WN ASTM A182 Grade F9 Class 300 ASME B16.5 RF	
1	12		SCH60		P61G-00144	Flange WN ASTM A182 Grade F9 Class 300 ASME B16.5 RF	
1	14		SCH60		P61G-00145	Flange WN ASTM A182 Grade F9 Class 300 ASME B16.5 RF	
1	16		SCH20		P61G-000R0	Flange WN ASTM A182 Grade F9 Class 300 ASME B16.5 RF	
541	0.5				P61G-001BD	Flange NPT ASTM A182 Grade F9 Class 300 ASME B16.5 RF	
541	0.75				P61G-00146	Flange NPT ASTM A182 Grade F9 Class 300 ASME B16.5 RF	
781	0.5		SCH160		P61G-00147	Flange WN ASTM A182 Grade F9 Class 600 ASME B16.5 RF	
781	0.75		SCH160		P61G-00148	Flange WN ASTM A182 Grade F9 Class 600 ASME B16.5 RF	
781	1		SCH160		P61G-00149	Flange WN ASTM A182 Grade F9 Class 600 ASME B16.5 RF	
781	1.5		SCH160		P61G-0014A	Flange WN ASTM A182 Grade F9 Class 600 ASME B16.5 RF	
781	2		XS		P61G-0002Y	Flange WN ASTM A182 Grade F9 Class 600 ASME B16.5 RF	
781	3		XS		P61G-000SN	Flange WN ASTM A182 Grade F9 Class 600 ASME B16.5 RF	
781	4		XS		P61G-000SP	Flange WN ASTM A182 Grade F9 Class 600 ASME B16.5 RF	
781	6		XS		P61G-000SR	Flange WN ASTM A182 Grade F9 Class 600 ASME B16.5 RF	
781	8		SCH60		P61G-000SS	Flange WN ASTM A182 Grade F9 Class 600 ASME B16.5 RF	
781	10		XS		P61G-000SJ	Flange WN ASTM A182 Grade F9 Class 600 ASME B16.5 RF	
781	12		SCH60		P61G-0014B	Flange WN ASTM A182 Grade F9 Class 600 ASME B16.5 RF	
781	14		SCH60		P61G-0014C	Flange WN ASTM A182 Grade F9 Class 600 ASME B16.5 RF	
781	16		SCH20		P61G-0014D	Flange WN ASTM A182 Grade F9 Class 600 ASME B16.5 RF	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67G-0001J	Blind flange ASTM A182 Grade F9 Class 300 ASME B16.5 RF	
1	0.75				P67G-0001K	Blind flange ASTM A182 Grade F9 Class 300 ASME B16.5 RF	
1	1				P67G-0001L	Blind flange ASTM A182 Grade F9 Class 300 ASME B16.5 RF	
1	1.5				P67G-0001M	Blind flange ASTM A182 Grade F9 Class 300 ASME B16.5 RF	
1	2				P67G-0001R	Blind flange ASTM A182 Grade F9 Class 300 ASME B16.5 RF	
1	3				P67G-000BW	Blind flange ASTM A182 Grade F9 Class 300 ASME B16.5 RF	
1	4				P67G-000BX	Blind flange ASTM A182 Grade F9 Class 300 ASME B16.5 RF	
1	6				P67G-000BY	Blind flange ASTM A182 Grade F9 Class 300 ASME B16.5 RF	
1	8				P67G-0001S	Blind flange ASTM A182 Grade F9 Class 300 ASME B16.5 RF	
1	10				P67G-0001N	Blind flange ASTM A182 Grade F9 Class 300 ASME B16.5 RF	
1	12				P67G-000BU	Blind flange ASTM A182 Grade F9 Class 300 ASME B16.5 RF	
1	14				P67G-000BV	Blind flange ASTM A182 Grade F9 Class 300 ASME B16.5 RF	
1	16				P67G-0001P	Blind flange ASTM A182 Grade F9 Class 300 ASME B16.5 RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-003AM	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	0.75				P73T-003AN	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	1				P73T-003AP	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	1.5				P73T-003AR	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	2				P73T-003AX	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	3				P73T-003B0	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	4				P73T-003B1	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	6				P73T-003B2	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	8				P73T-003B3	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	

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GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	10				P73T-003AS	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	12				P73T-003AT	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	14				P73T-003AU	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	16				P73T-003AV	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
781	0.5				P73T-003B4	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
781	0.75				P73T-003B5	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
781	1				P73T-003B6	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
781	1.5				P73T-003B7	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
781	2				P73T-003BD	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
781	3				P73T-003BG	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
781	4				P73T-003BH	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
781	6				P73T-003BJ	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
781	8				P73T-003BK	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
781	10				P73T-003B8	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
781	12				P73T-003B9	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
781	14				P73T-003BA	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
781	16				P73T-003BB	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-10				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	12-16				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
781	0.5-6				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
781	8-16				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P81G-000EB	Gate valve ASTM A182 Grade F9 Class 300 API 602 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Fluid-2	
1	1.5				P81G-000EC	Gate valve ASTM A182 Grade F9 Class 300 API 602 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Fluid-2	
1	2				P81H-0013A	Gate valve ASTM A217 Grade C12 Class 300 API 600 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Fluid-2	
1	3				P81H-0013B	Gate valve ASTM A217 Grade C12 Class 300 API 600 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Fluid-2	
1	4				P81H-0013C	Gate valve ASTM A217 Grade C12 Class 300 API 600 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Fluid-2	
1	6				P81H-0013D	Gate valve ASTM A217 Grade C12 Class 300 API 600 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Fluid-2	
1	8				P81H-0013E	Gate valve ASTM A217 Grade C12 Class 300 API 600 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Fluid-2	
1	10				P81H-0013F	Gate valve ASTM A217 Grade C12 Class 300 API 600 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Gear operated Moderate wet H2S service Fluid-2	
1	12				P81H-0013G	Gate valve ASTM A217 Grade C12 Class 300 API 600 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Gear operated Moderate wet H2S service Fluid-2	
1	14				P81H-0013H	Gate valve ASTM A217 Grade C12 Class 300 API 600 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Gear operated Moderate wet H2S service Fluid-2	
1	16				P81H-0013J	Gate valve ASTM A217 Grade C12 Class 300 API 600 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Gear operated Moderate wet H2S service Fluid-2	
4608	0.75				P81G-000ED	Gate valve ASTM A182 Grade F9 Class 300 API 602 BW both sides w/ nipples BE - NPT ASTM A335-P9 XXS-nipple Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Fluid-2 Moderate wet H2S service	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P71G-00024	Spectacle blank ASTM A182 Grade F9 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71G-00025	Spectacle blank ASTM A182 Grade F9 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	2				P71G-00028	Spectacle blank ASTM A182 Grade F9 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	3				P71G-00029	Spectacle blank ASTM A182 Grade F9 Class 300 Standard-drawing Flange ASME B16.5 RF	

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SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	4				P71G-0002A	Spectacle blank ASTM A182 Grade F9 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	6				P71G-0002B	Spectacle blank ASTM A182 Grade F9 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	8				P71G-0002C	Spectacle blank ASTM A182 Grade F9 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	10				P71G-00026	Spectacle blank ASTM A182 Grade F9 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	12				P71G-00027	Spectacle blank ASTM A182 Grade F9 Class 300 Standard-drawing Flange ASME B16.5 RF	

PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72G-00018	Paddle blank ASTM A182 Grade F9 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	16				P72G-00019	Paddle blank ASTM A182 Grade F9 Class 300 Standard-drawing Flange ASME B16.5 RF	

PADDLE SPACER (PS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72G-0001A	Paddle spacer ASTM A182 Grade F9 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	16				P72G-0001B	Paddle spacer ASTM A182 Grade F9 Class 300 Standard-drawing Flange ASME B16.5 RF	

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BOLT TABLE (B_B28Q02 , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-008T0		
0.75	4	0.625	75	P80S-00908		
1	4	0.625	80	P80S-00909		
1.5	4	0.750	95	P80S-005Z4		
2	8	0.625	90	P80S-0090B		
3	8	0.750	110	P80S-0090F		
4	8	0.750	115	P80S-0090G		
6	12	0.750	125	P80S-0090J		
8	12	0.875	140	P80S-005ZD		
10	16	1.000	160	P80S-0061E		
12	16	1.125	175	P80S-0064S		
14	20	1.125	180	P80S-0064T		
16	20	1.250	190	P80S-00689		

BOLT TABLE (B_B28Q02_2489 , STUD ASME RJ, OPTION CODE 2489)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	80		R11	
0.75	4	0.625	90		R13	
1	4	0.625	95		R16	
1.5	4	0.750	110		R20	
2	8	0.625	115		R23	
3	8	0.750	135		R31	
4	8	0.875	150		R37	
6	12	1.000	175		R45	
8	12	1.125	200		R49	
10	16	1.250	255		R53	
12	20	1.250	260		R57	
14	20	1.375	275		R61	
16	20	1.500	300		R65	

BOLT TABLE (B_B28Q02_781 , STUD ASME RF, OPTION CODE 781)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	80	P80S-008T2		
0.75	4	0.625	90	P80S-0090B		
1	4	0.625	95	P80S-0090C		
1.5	4	0.750	110	P80S-0090F		
2	8	0.625	110	P80S-008T8		
3	8	0.750	130	P80S-0090K		
4	8	0.875	150	P80S-005ZF		
6	12	1.000	175	P80S-0061H		
8	12	1.125	195	P80S-0064W		
10	16	1.250	250	P80S-0068M		
12	20	1.250	255	P80S-0068N		
14	20	1.375	270	P80S-006HV		
16	20	1.500	295	P80S-006LP		

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BRANCH TABLE (T_B28Q02)

RUN PIPE SIZE (in) \ BRANCH SIZE (in)	0.5	0.75	1	1.5	2	3	4	6	8	10	12	14	16
0.5	TS												
0.75		TS											
1		TR	TS										
1.5		TR	TR	TS									
2		L	TR	TR	TS								
3		L	L	TR	TR	TS							
4	L	L	L	L	TR	TR	TS						
6	L	L	L	L	L	TR	TR	TS					
8		L	L	L	L	L	TR	TR	TS				
10		L	L	L	L	L	TR	TR	TR	TS			
12		L	L	L	L	L	L	TR	TR	TR	TS		
14		L	L	L	L	L	L	TR	TR	TR	TR	TS	
16		L	L	L	L	L	L	TR	TR	TR	TR	TR	TS

TS : STRAIGHT TEE
L : OUTLET
TR : REDUCING TEE

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PIPING CLASS

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Material : 9Cr - 1MO
Rating : ASME CLASS 300
Flange Face : RF
C.A.(mm) : 3.00
Gasket : Spiral Wound
Service : PROCESS - CORROSIVE SERVICE.
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
24	FOR ALL RELEVANT PIPING CLASSES WITH LINE DESIGN TEMPERATURE ABOVE 427DEGC, IN SPIRAL WOUND GASKET, SUITABLE GASKET FILLER MATERIAL SUCH AS COMBINATION OF MICA LAYERS AND GRAPHITE FILLERS OR EQUIVALENT SHALL BE REVIEWED AND SELECTED OR AS DEFINED BY THE LICENSOR
36	ASTM A691 CR-MO WELDED PIPES SPECIFIED WITH CLASS 22 CAN BE USED IN LIEU OF CLASS 42 IN NON-LICENSED UNITS ONLY. GRADE SHALL BE AS SPECIFIED IN "PIPE / FLANGE MATERIAL" SECTION IN ATTACHMENT 9.0 OF THIS DOCUMENT

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
541	NPT(F) (CA,F)
781	CLASS 600 (B,F,G)
789	CLASS 900 (B,F,G)
2489	CLASS 600 RJ (B,F,G)
4608	VALVE WITH NIPPLES (V)

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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P01F-00014	Pipe ASTM A335 Grade P9 Seamless ASME B36.10M/B36.19M PE	
1	0.75		SCH160		P01F-00015	Pipe ASTM A335 Grade P9 Seamless ASME B36.10M/B36.19M PE	
1	1		SCH160		P01F-000D1	Pipe ASTM A335 Grade P9 Seamless ASME B36.10M/B36.19M PE	
1	1.5		SCH160		P01F-000D2	Pipe ASTM A335 Grade P9 Seamless ASME B36.10M/B36.19M PE	
1	2		XS		P01F-0001A	Pipe ASTM A335 Grade P9 Seamless ASME B36.10M/B36.19M BE	
1	3		XS		P01F-00052	Pipe ASTM A335 Grade P9 Seamless ASME B36.10M/B36.19M BE	
1	4		XS		P01F-0004L	Pipe ASTM A335 Grade P9 Seamless ASME B36.10M/B36.19M BE	
1	6		XS		P01F-0004M	Pipe ASTM A335 Grade P9 Seamless ASME B36.10M/B36.19M BE	
1	8		SCH60		P01F-0004T	Pipe ASTM A335 Grade P9 Seamless ASME B36.10M/B36.19M BE	
1	10		XS		P01F-0004N	Pipe ASTM A335 Grade P9 Seamless ASME B36.10M/B36.19M BE	
1	12		SCH60		P01F-001R8	Pipe ASTM A335 Grade P9 Seamless ASME B36.10M/B36.19M BE	
1	14		SCH60		P01F-001R9	Pipe ASTM A335 Grade P9 Seamless ASME B36.10M/B36.19M BE	
1	16		SCH20		P01F-0006V	Pipe ASTM A335 Grade P9 Seamless ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P02F-000JV	90 degree elbow ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW Long radius	
1	0.75		SCH160		P02F-000JW	90 degree elbow ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW Long radius	
1	1		SCH160		P02F-000JX	90 degree elbow ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW Long radius	
1	1.5		SCH160		P02F-000JY	90 degree elbow ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW Long radius	
1	2		XS		P02F-0002C	90 degree elbow ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW Long radius	
1	3		XS		P02F-000DL	90 degree elbow ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW Long radius	
1	4		XS		P02F-000DM	90 degree elbow ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW Long radius	
1	6		XS		P02F-000DN	90 degree elbow ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW Long radius	
1	8		SCH60		P02F-000DP	90 degree elbow ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW Long radius	
1	10		XS		P02F-000DG	90 degree elbow ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW Long radius	
1	12		SCH60		P02F-000JZ	90 degree elbow ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW Long radius	
1	14		SCH60		P02F-000K0	90 degree elbow ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW Long radius	
1	16		SCH20		P02F-000CY	90 degree elbow ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P03F-000JK	45 degree elbow ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW Long radius	
1	0.75		SCH160		P03F-000JL	45 degree elbow ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW Long radius	
1	1		SCH160		P03F-000JM	45 degree elbow ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW Long radius	
1	1.5		SCH160		P03F-000JN	45 degree elbow ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW Long radius	
1	2		XS		P03F-00029	45 degree elbow ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW Long radius	
1	3		XS		P03F-000DD	45 degree elbow ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW Long radius	
1	4		XS		P03F-000DE	45 degree elbow ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW Long radius	
1	6		XS		P03F-000DF	45 degree elbow ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW Long radius	
1	8		SCH60		P03F-000DG	45 degree elbow ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW Long radius	
1	10		XS		P03F-000D9	45 degree elbow ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW Long radius	
1	12		SCH60		P03F-000JP	45 degree elbow ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW Long radius	
1	14		SCH60		P03F-000JR	45 degree elbow ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW Long radius	
1	16		SCH20		P03F-000CR	45 degree elbow ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P21F-000JN	Straight tee ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	0.75		SCH160		P21F-000JP	Straight tee ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	1		SCH160		P21F-000JR	Straight tee ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	1.5		SCH160		P21F-000JS	Straight tee ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	2		XS		P21F-0002A	Straight tee ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	3		XS		P21F-000D9	Straight tee ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	4		XS		P21F-000DA	Straight tee ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	6		XS		P21F-000DB	Straight tee ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	8		SCH60		P21F-000DC	Straight tee ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	10		XS		P21F-000D5	Straight tee ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	12		SCH60		P21F-000JT	Straight tee ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	

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STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14		SCH60		P21F-000JU	Straight tee ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	16		SCH20		P21F-000CT	Straight tee ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75	SCH160	SCH160	P24F-00245	Reducing tee ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	1.5	0.75	SCH160	SCH160	P24F-00246	Reducing tee ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	1.5	1	SCH160	SCH160	P24F-00247	Reducing tee ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	2	1	XS	SCH160	P24F-0014G	Reducing tee ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	2	1.5	XS	SCH160	P24F-0014H	Reducing tee ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	3	1.5	XS	SCH160	P24F-00192	Reducing tee ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	3	2	XS	XS	P24F-00193	Reducing tee ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	4	2	XS	XS	P24F-00194	Reducing tee ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	4	3	XS	XS	P24F-00195	Reducing tee ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	6	3	XS	XS	P24F-00196	Reducing tee ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	6	4	XS	XS	P24F-00197	Reducing tee ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	8	4	SCH60	XS	P24F-00198	Reducing tee ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	8	6	SCH60	XS	P24F-00199	Reducing tee ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	10	4	XS	XS	P24F-0019A	Reducing tee ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	10	6	XS	XS	P24F-0019B	Reducing tee ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	10	8	XS	SCH60	P24F-0016Y	Reducing tee ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	12	6	SCH60	XS	P24F-00249	Reducing tee ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	12	8	SCH60	SCH60	P24F-0024A	Reducing tee ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	12	10	SCH60	XS	P24F-00248	Reducing tee ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	14	6	SCH60	XS	P24F-0024D	Reducing tee ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	14	8	SCH60	SCH60	P24F-0024E	Reducing tee ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	14	10	SCH60	XS	P24F-0024B	Reducing tee ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	14	12	SCH60	SCH60	P24F-0024C	Reducing tee ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	16	6	SCH20	XS	P24F-0024J	Reducing tee ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	16	8	SCH20	SCH60	P24F-0024K	Reducing tee ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	16	10	SCH20	XS	P24F-0024F	Reducing tee ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	16	12	SCH20	SCH60	P24F-0024G	Reducing tee ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	16	14	SCH20	SCH60	P24F-0024H	Reducing tee ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	SCH160	P27F-001KF	Concentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	1	0.5	SCH160	SCH160	P27F-001KG	Concentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	1	0.75	SCH160	SCH160	P27F-001KH	Concentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	1.5	0.5	SCH160	SCH160	P27F-001KJ	Concentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	1.5	0.75	SCH160	SCH160	P27F-001KK	Concentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	1.5	1	SCH160	SCH160	P27F-001KL	Concentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	2	0.75	XS	SCH160	P27F-001KM	Concentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	2	1	XS	SCH160	P27F-001KN	Concentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	2	1.5	XS	SCH160	P27F-001KP	Concentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	3	1.5	XS	SCH160	P27F-001KR	Concentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	3	2	XS	XS	P27F-0011X	Concentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	4	1.5	XS	SCH160	P27F-001KS	Concentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	4	2	XS	XS	P27F-0011Y	Concentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	4	3	XS	XS	P27F-0011Z	Concentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	6	3	XS	XS	P27F-00120	Concentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	6	4	XS	XS	P27F-00121	Concentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	8	4	SCH60	XS	P27F-00122	Concentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	8	6	SCH60	XS	P27F-00123	Concentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	10	4	XS	XS	P27F-00124	Concentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	10	6	XS	XS	P27F-00125	Concentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	10	8	XS	SCH60	P27F-0010E	Concentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	12	6	SCH60	XS	P27F-001KU	Concentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	12	8	SCH60	SCH60	P27F-001KV	Concentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	

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CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	12	10	SCH60	XS	P27F-001KT	Concentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	14	6	SCH60	XS	P27F-001KY	Concentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	14	8	SCH60	SCH60	P27F-001KZ	Concentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	14	10	SCH60	XS	P27F-001KW	Concentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	14	12	SCH60	SCH60	P27F-001KX	Concentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	16	8	SCH20	SCH60	P27F-001L3	Concentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	16	10	SCH20	XS	P27F-001L0	Concentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	16	12	SCH20	SCH60	P27F-001L1	Concentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	16	14	SCH20	SCH60	P27F-001L2	Concentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	SCH160	P28F-001KZ	Eccentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	1	0.5	SCH160	SCH160	P28F-001L0	Eccentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	1	0.75	SCH160	SCH160	P28F-001L1	Eccentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	1.5	0.5	SCH160	SCH160	P28F-001L2	Eccentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	1.5	0.75	SCH160	SCH160	P28F-001L3	Eccentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	1.5	1	SCH160	SCH160	P28F-001L4	Eccentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	2	0.75	XS	SCH160	P28F-001L5	Eccentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	2	1	XS	SCH160	P28F-001L6	Eccentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	2	1.5	XS	SCH160	P28F-001L7	Eccentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	3	1.5	XS	SCH160	P28F-001L8	Eccentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	3	2	XS	XS	P28F-0011Y	Eccentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	4	1.5	XS	SCH160	P28F-001L9	Eccentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	4	2	XS	XS	P28F-0011Z	Eccentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	4	3	XS	XS	P28F-00120	Eccentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	6	3	XS	XS	P28F-00121	Eccentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	6	4	XS	XS	P28F-00122	Eccentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	8	4	SCH60	XS	P28F-00123	Eccentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	8	6	SCH60	XS	P28F-00124	Eccentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	10	4	XS	XS	P28F-00125	Eccentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	10	6	XS	XS	P28F-00126	Eccentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	10	8	XS	SCH60	P28F-0010E	Eccentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	12	6	SCH60	XS	P28F-001LB	Eccentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	12	8	SCH60	SCH60	P28F-001LC	Eccentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	12	10	SCH60	XS	P28F-001LA	Eccentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	14	6	SCH60	XS	P28F-001LF	Eccentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	14	8	SCH60	SCH60	P28F-001LG	Eccentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	14	10	SCH60	XS	P28F-001LD	Eccentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	14	12	SCH60	SCH60	P28F-001LE	Eccentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	16	8	SCH20	SCH60	P28F-001LL	Eccentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	16	10	SCH20	XS	P28F-001LH	Eccentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	16	12	SCH20	SCH60	P28F-001LJ	Eccentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	16	14	SCH20	SCH60	P28F-001LK	Eccentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P29F-000HY	Cap ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	0.75		SCH160		P29F-000HZ	Cap ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	1		SCH160		P29F-000J0	Cap ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	1.5		SCH160		P29F-000J1	Cap ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	2		XS		P29F-00027	Cap ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	3		XS		P29F-000D9	Cap ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	4		XS		P29F-000DA	Cap ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	6		XS		P29F-000DB	Cap ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	8		SCH60		P29F-000DC	Cap ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	10		XS		P29F-000D5	Cap ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	12		SCH60		P29F-000J2	Cap ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	14		SCH60		P29F-000J3	Cap ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	

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CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	16		SCH20		P29F-000CL	Cap ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
541	0.75				P29G-0001P	Cap ASTM A182 Grade F9 Class 6000 ASME B16.11 NPT	
541	1				P29G-00025	Cap ASTM A182 Grade F9 Class 6000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P41F-0003C	Straight nipple ASTM A335 Grade P9 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		XXS		P41F-0003D	Straight nipple ASTM A335 Grade P9 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		XXS		P41F-0003E	Straight nipple ASTM A335 Grade P9 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		XXS		P41F-0003F	Straight nipple ASTM A335 Grade P9 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2	0.75	XS	SCH160	P31G-002J8	Outlet ASTM A182 Grade F9 MSS SP-97 BW	
1	3	0.75	XS	SCH160	P31G-002J9	Outlet ASTM A182 Grade F9 MSS SP-97 BW	
1	4	0.75	XS	SCH160	P31G-002JB	Outlet ASTM A182 Grade F9 MSS SP-97 BW	
1	6	0.75	XS	SCH160	P31G-002JE	Outlet ASTM A182 Grade F9 MSS SP-97 BW	
1	8	0.75	SCH60	SCH160	P31G-002JH	Outlet ASTM A182 Grade F9 MSS SP-97 BW	
1	10	0.75	XS	SCH160	P31G-002JL	Outlet ASTM A182 Grade F9 MSS SP-97 BW	
1	12	0.75	SCH60	SCH160	P31G-002JP	Outlet ASTM A182 Grade F9 MSS SP-97 BW	
1	14	0.75	SCH60	SCH160	P31G-002JW	Outlet ASTM A182 Grade F9 MSS SP-97 BW	
1	16	0.75	SCH20	SCH160	P31G-002K2	Outlet ASTM A182 Grade F9 MSS SP-97 BW	
1	3	1	XS	SCH160	P31G-002JA	Outlet ASTM A182 Grade F9 MSS SP-97 BW	
1	4	1	XS	SCH160	P31G-002JC	Outlet ASTM A182 Grade F9 MSS SP-97 BW	
1	6	1	XS	SCH160	P31G-002JF	Outlet ASTM A182 Grade F9 MSS SP-97 BW	
1	8	1	SCH60	SCH160	P31G-002JJ	Outlet ASTM A182 Grade F9 MSS SP-97 BW	
1	10	1	XS	SCH160	P31G-002JM	Outlet ASTM A182 Grade F9 MSS SP-97 BW	
1	12	1	SCH60	SCH160	P31G-002JR	Outlet ASTM A182 Grade F9 MSS SP-97 BW	
1	14	1	SCH60	SCH160	P31G-002JX	Outlet ASTM A182 Grade F9 MSS SP-97 BW	
1	16	1	SCH20	SCH160	P31G-002K3	Outlet ASTM A182 Grade F9 MSS SP-97 BW	
1	4	1.5	XS	SCH160	P31G-002JD	Outlet ASTM A182 Grade F9 MSS SP-97 BW	
1	6	1.5	XS	SCH160	P31G-002JG	Outlet ASTM A182 Grade F9 MSS SP-97 BW	
1	8	1.5	SCH60	SCH160	P31G-002JK	Outlet ASTM A182 Grade F9 MSS SP-97 BW	
1	10	1.5	XS	SCH160	P31G-002JN	Outlet ASTM A182 Grade F9 MSS SP-97 BW	
1	12	1.5	SCH60	SCH160	P31G-002JS	Outlet ASTM A182 Grade F9 MSS SP-97 BW	
1	14	1.5	SCH60	SCH160	P31G-002JY	Outlet ASTM A182 Grade F9 MSS SP-97 BW	
1	16	1.5	SCH20	SCH160	P31G-002K4	Outlet ASTM A182 Grade F9 MSS SP-97 BW	
1	6	2	XS	XS	P31G-001NH	Outlet ASTM A182 Grade F9 MSS SP-97 BW	
1	8	2	SCH60	XS	P31G-001L5	Outlet ASTM A182 Grade F9 MSS SP-97 BW	
1	10	2	XS	XS	P31G-001L6	Outlet ASTM A182 Grade F9 MSS SP-97 BW	
1	12	2	SCH60	XS	P31G-002JT	Outlet ASTM A182 Grade F9 MSS SP-97 BW	
1	14	2	SCH60	XS	P31G-002JZ	Outlet ASTM A182 Grade F9 MSS SP-97 BW	
1	16	2	SCH20	XS	P31G-001J0	Outlet ASTM A182 Grade F9 MSS SP-97 BW	
1	8	3	SCH60	XS	P31G-001NJ	Outlet ASTM A182 Grade F9 MSS SP-97 BW	
1	10	3	XS	XS	P31G-001NK	Outlet ASTM A182 Grade F9 MSS SP-97 BW	
1	12	3	SCH60	XS	P31G-002JU	Outlet ASTM A182 Grade F9 MSS SP-97 BW	
1	14	3	SCH60	XS	P31G-002K0	Outlet ASTM A182 Grade F9 MSS SP-97 BW	
1	16	3	SCH20	XS	P31G-002K5	Outlet ASTM A182 Grade F9 MSS SP-97 BW	
1	12	4	SCH60	XS	P31G-002JV	Outlet ASTM A182 Grade F9 MSS SP-97 BW	
1	14	4	SCH60	XS	P31G-002K1	Outlet ASTM A182 Grade F9 MSS SP-97 BW	
1	16	4	SCH20	XS	P31G-002K6	Outlet ASTM A182 Grade F9 MSS SP-97 BW	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30G-00009	Plug ASTM A182 Grade F9 ASME B16.11 NPT Round head	
1	0.75				P30G-0000A	Plug ASTM A182 Grade F9 ASME B16.11 NPT Round head	
1	1				P30G-0000B	Plug ASTM A182 Grade F9 ASME B16.11 NPT Round head	
1	1.5				P30G-0000C	Plug ASTM A182 Grade F9 ASME B16.11 NPT Round head	

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FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P61G-00140	Flange WN ASTM A182 Grade F9 Class 300 ASME B16.5 RF	
1	0.75		SCH160		P61G-00141	Flange WN ASTM A182 Grade F9 Class 300 ASME B16.5 RF	
1	1		SCH160		P61G-00142	Flange WN ASTM A182 Grade F9 Class 300 ASME B16.5 RF	
1	1.5		SCH160		P61G-00143	Flange WN ASTM A182 Grade F9 Class 300 ASME B16.5 RF	
1	2		XS		P61G-0002P	Flange WN ASTM A182 Grade F9 Class 300 ASME B16.5 RF	
1	3		XS		P61G-000SC	Flange WN ASTM A182 Grade F9 Class 300 ASME B16.5 RF	
1	4		XS		P61G-000SD	Flange WN ASTM A182 Grade F9 Class 300 ASME B16.5 RF	
1	6		XS		P61G-000SE	Flange WN ASTM A182 Grade F9 Class 300 ASME B16.5 RF	
1	8		SCH60		P61G-000SF	Flange WN ASTM A182 Grade F9 Class 300 ASME B16.5 RF	
1	10		XS		P61G-000S8	Flange WN ASTM A182 Grade F9 Class 300 ASME B16.5 RF	
1	12		SCH60		P61G-00144	Flange WN ASTM A182 Grade F9 Class 300 ASME B16.5 RF	
1	14		SCH60		P61G-00145	Flange WN ASTM A182 Grade F9 Class 300 ASME B16.5 RF	
1	16		SCH20		P61G-000R0	Flange WN ASTM A182 Grade F9 Class 300 ASME B16.5 RF	
2489	6		XS		P61G-00177	Flange WN ASTM A182 Grade F9 Class 600 ASME B16.5 RJ	
541	0.5				P61G-001BD	Flange NPT ASTM A182 Grade F9 Class 300 ASME B16.5 RF	
541	0.75				P61G-00146	Flange NPT ASTM A182 Grade F9 Class 300 ASME B16.5 RF	
781	0.5		SCH160		P61G-00147	Flange WN ASTM A182 Grade F9 Class 600 ASME B16.5 RF	
781	0.75		SCH160		P61G-00148	Flange WN ASTM A182 Grade F9 Class 600 ASME B16.5 RF	
781	1		SCH160		P61G-00149	Flange WN ASTM A182 Grade F9 Class 600 ASME B16.5 RF	
781	1.5		SCH160		P61G-0014A	Flange WN ASTM A182 Grade F9 Class 600 ASME B16.5 RF	
781	2		XS		P61G-0002Y	Flange WN ASTM A182 Grade F9 Class 600 ASME B16.5 RF	
781	3		XS		P61G-000SN	Flange WN ASTM A182 Grade F9 Class 600 ASME B16.5 RF	
781	4		XS		P61G-000SP	Flange WN ASTM A182 Grade F9 Class 600 ASME B16.5 RF	
781	6		XS		P61G-000SR	Flange WN ASTM A182 Grade F9 Class 600 ASME B16.5 RF	
781	8		SCH60		P61G-000SS	Flange WN ASTM A182 Grade F9 Class 600 ASME B16.5 RF	
781	10		XS		P61G-000SJ	Flange WN ASTM A182 Grade F9 Class 600 ASME B16.5 RF	
781	12		SCH60		P61G-0014B	Flange WN ASTM A182 Grade F9 Class 600 ASME B16.5 RF	
781	14		SCH60		P61G-0014C	Flange WN ASTM A182 Grade F9 Class 600 ASME B16.5 RF	
781	16		SCH20		P61G-0014D	Flange WN ASTM A182 Grade F9 Class 600 ASME B16.5 RF	
789	14		SCH60		P61G-001EV	Flange WN ASTM A182 Grade F9 Class 900 ASME B16.5 RJ	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67G-0001J	Blind flange ASTM A182 Grade F9 Class 300 ASME B16.5 RF	
1	0.75				P67G-0001K	Blind flange ASTM A182 Grade F9 Class 300 ASME B16.5 RF	
1	1				P67G-0001L	Blind flange ASTM A182 Grade F9 Class 300 ASME B16.5 RF	
1	1.5				P67G-0001M	Blind flange ASTM A182 Grade F9 Class 300 ASME B16.5 RF	
1	2				P67G-0001R	Blind flange ASTM A182 Grade F9 Class 300 ASME B16.5 RF	
1	3				P67G-000BW	Blind flange ASTM A182 Grade F9 Class 300 ASME B16.5 RF	
1	4				P67G-000BX	Blind flange ASTM A182 Grade F9 Class 300 ASME B16.5 RF	
1	6				P67G-000BY	Blind flange ASTM A182 Grade F9 Class 300 ASME B16.5 RF	
1	8				P67G-0001S	Blind flange ASTM A182 Grade F9 Class 300 ASME B16.5 RF	
1	10				P67G-0001N	Blind flange ASTM A182 Grade F9 Class 300 ASME B16.5 RF	
1	12				P67G-000BU	Blind flange ASTM A182 Grade F9 Class 300 ASME B16.5 RF	
1	14				P67G-000BV	Blind flange ASTM A182 Grade F9 Class 300 ASME B16.5 RF	
1	16				P67G-0001P	Blind flange ASTM A182 Grade F9 Class 300 ASME B16.5 RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-003AM	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	0.75				P73T-003AN	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	1				P73T-003AP	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	1.5				P73T-003AR	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	2				P73T-003AX	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	3				P73T-003B0	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	4				P73T-003B1	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	

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GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	6				P73T-003B2	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	8				P73T-003B3	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	10				P73T-003AS	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	12				P73T-003AT	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	14				P73T-003AU	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	16				P73T-003AV	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
2489	6				P75T-000YB	Ring joint gasket 5Cr-1/2Mo Class 600 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
781	0.5				P73T-003B4	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
781	0.75				P73T-003B5	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
781	1				P73T-003B6	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
781	1.5				P73T-003B7	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
781	2				P73T-003BD	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
781	3				P73T-003BG	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
781	4				P73T-003BH	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
781	6				P73T-003BJ	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
781	8				P73T-003BK	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
781	10				P73T-003B8	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
781	12				P73T-003B9	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
781	14				P73T-003BA	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
781	16				P73T-003BB	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
789	14				P75T-000KY	Ring joint gasket 5Cr-1/2Mo Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-10				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B16 / A194 Grade 4 ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	12-16				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B16 / A194 Grade 4 ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
2489	6				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B16 / A194 Grade 4 ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
781	0.5-6				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B16 / A194 Grade 4 ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
781	8-16				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B16 / A194 Grade 4 ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
789	14				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B16 / A194 Grade 4 ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P81G-0002S	Gate valve ASTM A182 Grade F9 Class 300 API 602 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2	
1	1.5				P81G-0002T	Gate valve ASTM A182 Grade F9 Class 300 API 602 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2	
1	2				P81H-000A8	Gate valve ASTM A217 Grade C12 Class 300 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2	
1	3				P81H-000CM	Gate valve ASTM A217 Grade C12 Class 300 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2	
1	4				P81H-000CN	Gate valve ASTM A217 Grade C12 Class 300 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2	
1	6				P81H-000CP	Gate valve ASTM A217 Grade C12 Class 300 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2	
1	8				P81H-000A9	Gate valve ASTM A217 Grade C12 Class 300 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2	
1	10				P81H-000AA	Gate valve ASTM A217 Grade C12 Class 300 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Gear operated Fluid-2	
1	12				P81H-000CR	Gate valve ASTM A217 Grade C12 Class 300 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Gear operated Fluid-2	
1	14				P81H-000CS	Gate valve ASTM A217 Grade C12 Class 300 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Gear operated Fluid-2	
1	16				P81H-000AB	Gate valve ASTM A217 Grade C12 Class 300 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Gear operated Fluid-2	
4608	0.75				P81G-000DM	Gate valve ASTM A182 Grade F9 Class 300 API 602 BW both sides w/ nipples BE - NPT ASTM A335-P9 XXS-nipple Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2	
4608	1				P81G-000F8	Gate valve ASTM A182 Grade F9 Class 300 API 602 BW both sides w/ nipples BE - NPT ASTM A335-P9 XXS-nipple Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2	

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GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82G-0006Z	Globe valve ASTM A182 Grade F9 Class 300 API 602 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2	
1	0.75				P82G-00070	Globe valve ASTM A182 Grade F9 Class 300 API 602 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2	
1	1				P82G-00071	Globe valve ASTM A182 Grade F9 Class 300 API 602 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2	
1	1.5				P82G-00072	Globe valve ASTM A182 Grade F9 Class 300 API 602 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2	
1	2				P82H-000C6	Globe valve ASTM A217 Grade C12 Class 300 BS 1873 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2	
1	3				P82H-000C7	Globe valve ASTM A217 Grade C12 Class 300 BS 1873 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2	
1	4				P82H-000C8	Globe valve ASTM A217 Grade C12 Class 300 BS 1873 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2	
1	6				P82H-000EP	Globe valve ASTM A217 Grade C12 Class 300 BS 1873 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Gear operated Fluid-2	
1	8				P82H-000ER	Globe valve ASTM A217 Grade C12 Class 300 BS 1873 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Gear operated Fluid-2	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75				P83G-0001M	Check valve ASTM A182 Grade F9 Class 300 API 602 Flange ASME B16.5 RF Trim number 5 Lift-type Bolted cover	
1	1				P83G-0001N	Check valve ASTM A182 Grade F9 Class 300 API 602 Flange ASME B16.5 RF Trim number 5 Lift-type Bolted cover	
1	1.5				P83G-0001P	Check valve ASTM A182 Grade F9 Class 300 API 602 Flange ASME B16.5 RF Trim number 5 Lift-type Bolted cover	
1	2				P83H-0004U	Check valve ASTM A217 Grade C12 Class 300 BS 1868 Flange ASME B16.5 RF Trim number 5 Swing-type Bolted cover	
1	3				P83H-00063	Check valve ASTM A217 Grade C12 Class 300 BS 1868 Flange ASME B16.5 RF Trim number 5 Swing-type Bolted cover	
1	4				P83H-00064	Check valve ASTM A217 Grade C12 Class 300 BS 1868 Flange ASME B16.5 RF Trim number 5 Swing-type Bolted cover	
1	6				P83H-00065	Check valve ASTM A217 Grade C12 Class 300 BS 1868 Flange ASME B16.5 RF Trim number 5 Swing-type Bolted cover	
1	8				P83H-0004V	Check valve ASTM A217 Grade C12 Class 300 BS 1868 Flange ASME B16.5 RF Trim number 5 Swing-type Bolted cover	
1	10				P83H-0004S	Check valve ASTM A217 Grade C12 Class 300 BS 1868 Flange ASME B16.5 RF Trim number 5 Swing-type Bolted cover	
1	12				P83H-00061	Check valve ASTM A217 Grade C12 Class 300 BS 1868 Flange ASME B16.5 RF Trim number 5 Swing-type Bolted cover	
1	14				P83H-00062	Check valve ASTM A217 Grade C12 Class 300 BS 1868 Flange ASME B16.5 RF Trim number 5 Swing-type Bolted cover	
1	16				P83H-0004T	Check valve ASTM A217 Grade C12 Class 300 BS 1868 Flange ASME B16.5 RF Trim number 5 Swing-type Bolted cover	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71G-00022	Spectacle blank ASTM A182 Grade F9 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	0.75				P71G-00023	Spectacle blank ASTM A182 Grade F9 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	1				P71G-00024	Spectacle blank ASTM A182 Grade F9 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71G-00025	Spectacle blank ASTM A182 Grade F9 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	2				P71G-00028	Spectacle blank ASTM A182 Grade F9 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	3				P71G-00029	Spectacle blank ASTM A182 Grade F9 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	4				P71G-0002A	Spectacle blank ASTM A182 Grade F9 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	6				P71G-0002B	Spectacle blank ASTM A182 Grade F9 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	8				P71G-0002C	Spectacle blank ASTM A182 Grade F9 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	10				P71G-00026	Spectacle blank ASTM A182 Grade F9 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	12				P71G-00027	Spectacle blank ASTM A182 Grade F9 Class 300 Standard-drawing Flange ASME B16.5 RF	

PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72G-00018	Paddle blank ASTM A182 Grade F9 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	16				P72G-00019	Paddle blank ASTM A182 Grade F9 Class 300 Standard-drawing Flange ASME B16.5 RF	

PADDLE SPACER (PS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72G-0001A	Paddle spacer ASTM A182 Grade F9 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	16				P72G-0001B	Paddle spacer ASTM A182 Grade F9 Class 300 Standard-drawing Flange ASME B16.5 RF	

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BOLT TABLE (B_B28V02 , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-00GN8		
0.75	4	0.625	75	P80S-00GLL		
1	4	0.625	80	P80S-00GLK		
1.5	4	0.750	95	P80S-00FVE		
2	8	0.625	90	P80S-00GLH		
3	8	0.750	110	P80S-00GLD		
4	8	0.750	115	P80S-00GLC		
6	12	0.750	125	P80S-00GLA		
8	12	0.875	140	P80S-00FV5		
10	16	1.000	160	P80S-00FR9		
12	16	1.125	175	P80S-00FH8		
14	20	1.125	180	P80S-00FH7		
16	20	1.250	190	P80S-00F9Y		

BOLT TABLE (B_B28V02_2489 , STUD ASME RJ, OPTION CODE 2489)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	80		R11	
0.75	4	0.625	90		R13	
1	4	0.625	95		R16	
1.5	4	0.750	110		R20	
2	8	0.625	115		R23	
3	8	0.750	135		R31	
4	8	0.875	150		R37	
6	12	1.000	175	P80S-00FR6	R45	P75T-000YB
8	12	1.125	200		R49	
10	16	1.250	255		R53	
12	20	1.250	260		R57	
14	20	1.375	275		R61	
16	20	1.500	300		R65	

BOLT TABLE (B_B28V02_781 , STUD ASME RF, OPTION CODE 781)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	80	P80S-00GN6		
0.75	4	0.625	90	P80S-00GLH		
1	4	0.625	95	P80S-00GLG		
1.5	4	0.750	110	P80S-00GLD		
2	8	0.625	110	P80S-00GN0		
3	8	0.750	130	P80S-00GL9		
4	8	0.875	150	P80S-00FV3		
6	12	1.000	175	P80S-00FR6		
8	12	1.125	195	P80S-00FH4		
10	16	1.250	250	P80S-00F9K		
12	20	1.250	255	P80S-00F9J		
14	20	1.375	270	P80S-00F4T		
16	20	1.500	295	P80S-00EY8		

BOLT TABLE (B_B28V02_789 , STUD ASME RJ, OPTION CODE 789)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	110		R12	
0.75	4	0.750	115		R14	
1	4	0.875	130		R16	
1.5	4	1.000	140		R20	
2	8	0.875	150		R24	
3	8	0.875	150		R31	
4	8	1.125	175		R37	
6	12	1.125	200		R45	
8	12	1.375	260		R49	
10	16	1.375	275		R53	
12	20	1.375	295		R57	
14	20	1.500	325	P80S-00EY2	R62	P75T-000KY
16	20	1.625	340		R66	

BOLT TABLE (B_B28V02_797 , STUD ASME RJ, OPTION CODE)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE

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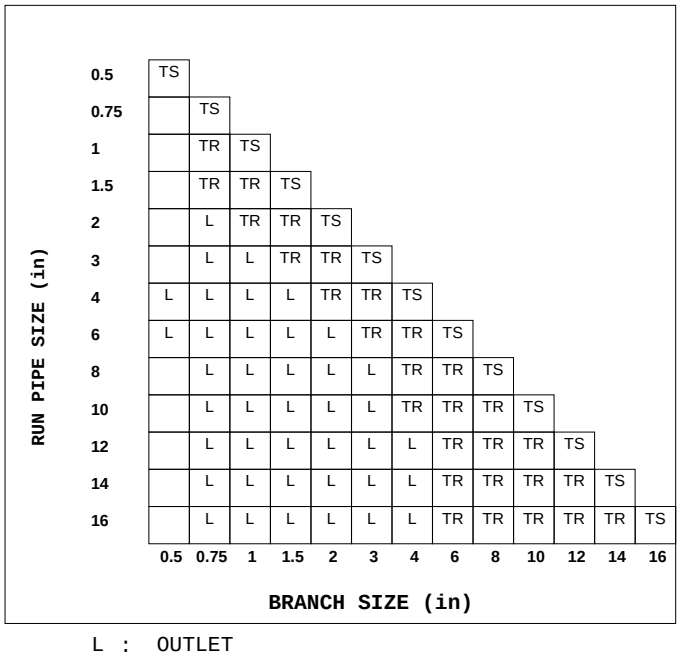
BRANCH TABLE (T_B28V02)



L : OUTLET
TS : STRAIGHT TEE
TR : REDUCING TEE

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B2A4 REV NO. 2

Material	:	Killed CS
Rating	:	ASME CLASS 300
Flange Face	:	RF
C.A.(mm)	:	3.00
Gasket	:	Spiral Wound
Service	:	PROCESS -WET LOW SEVERITY SOUR SERVICE SUBJECT TO NACE + AMINES OR CAUSTIC - STRESS RELIEVED
Design Code	:	ASME B31.3
Heat Treatment	:	

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
5	BOLTING CONFIRMING TO B7M / 2HM SHALL BE USED UNDER CONDITIONS (A) DIRECT EXPOSURE TO SOUR ENVIRONMENTS (B) WHEN THE BOLTING WILL BE BURIED OR INSULATED
27	PWHT OF CARBON STEEL PIPING IN WET H2S, CAUSTIC AND AMINE SERVICES SHALL BE IN ACCORDANCE WITH SECTION 10.2, 10.3, AND 10.4 OF PROJECT SPECIFICATION 3550-8440-SP-0002 MATERIALS REQUIREMENTS FOR PRESSURISED EQUIPMENT AND PIPING. FOR CAUSTIC AND AMINE SERVICE THE FOLLOWING SHALL APPLY: - PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF ALL SITE PIPING FABRICATION WELDS IS REQUIRED FOR ALL WALL THICKNESSES. FOR MODERATE AND SEVERE WET H2S SERVICE THE FOLLOWING SHALL APPLY: PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF SITE FABRICATION CIRCUMFERENTIAL OR BRANCH WELDS IS NOT REQUIRED IF WELDS ARE MULTIPASS AND IN ACCORDANCE WITH PARA 10.2.12 OF PROJECT SPECIFICATION 3550-8440-SP-0002. FOR SERVICES MEETING THE WET H2S CRITERIA AND CAUSTIC OR AMINE CRITERIA THE MORE STRINGENT PWHT REQUIREMENT SHALL GOVERN.

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
541	NPT(F) (CA,F)
781	CLASS 600 (B,F,G)
4608	VALVE WITH NIPPLES (V)

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B2A4 REV NO. 2

PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P01A-0010P	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	0.75		SCH160		P01A-0010R	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1		SCH160		P01A-0014M	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1.5		SCH160		P01A-0015J	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	2		XS		P01A-000YX	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	3		STD		P01A-000YM	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	4		STD		P01A-000YU	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	6		STD		P01A-000Z3	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	8		STD		P01A-000ZA	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	10		STD		P01A-000XJ	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	12		SCH40		P01A-0018V	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	14		SCH40		P01A-0018U	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	16		SCH20		P01A-0018E	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	18		STD		P01A-002CB	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	20		STD		P01A-002CC	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	24		XS		P01A-002MP	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P02A-001Y8	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	0.75		SCH160		P02A-000V8	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1		SCH160		P02A-000V7	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1.5		SCH160		P02A-000V9	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	2		XS		P02A-000CP	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		STD		P02A-000CU	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		STD		P02A-000CZ	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		STD		P02A-000D6	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		STD		P02A-000DC	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	10		STD		P02A-000BP	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	12		SCH40		P02A-000JE	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	14		SCH40		P02A-000JF	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	16		SCH20		P02A-000GM	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	18		STD		P02A-0010H	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	20		STD		P02A-0010J	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	24		XS		P02A-000MB	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P03A-001TC	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	0.75		SCH160		P03A-000RS	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1		SCH160		P03A-000RR	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1.5		SCH160		P03A-000RP	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	2		XS		P03A-000AS	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		STD		P03A-000AX	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		STD		P03A-000B1	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		STD		P03A-000B9	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		STD		P03A-000BB	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	10		STD		P03A-000A4	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	12		SCH40		P03A-000GC	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	14		SCH40		P03A-000GD	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	16		SCH20		P03A-000EM	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	18		STD		P03A-000X0	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	20		STD		P03A-000X1	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	24		XS		P03A-001E1	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P21A-003AW	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	0.75		SCH160		P21A-002B8	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		SCH160		P21A-002B6	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5		SCH160		P21A-002B9	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2		XS		P21A-001CJ	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		STD		P21A-001CU	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		STD		P21A-001CW	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6		STD		P21A-001D2	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8		STD		P21A-001D8	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10		STD		P21A-001BV	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12		SCH40		P21A-0022P	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14		SCH40		P21A-0022R	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16		SCH20		P21A-0020X	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18		STD		P21A-002FT	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20		STD		P21A-002FU	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24		XS		P21A-002Y5	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75	SCH160	SCH160	P24A-004B6	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.75	SCH160	SCH160	P24A-004B2	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	1	SCH160	SCH160	P24A-004BA	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	XS	SCH160	P24A-00GMB	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	XS	SCH160	P24A-005K9	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	STD	SCH160	P24A-00GMC	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	STD	XS	P24A-002HW	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P24A-002HY	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P24A-0021K	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	STD	P24A-0021A	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P24A-00229	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	STD	STD	P24A-0021E	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	STD	STD	P24A-0022M	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	STD	STD	P24A-0021B	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	STD	STD	P24A-0022B	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	STD	STD	P24A-0022W	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	SCH40	STD	P24A-00GSM	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH40	STD	P24A-00AF8	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH40	STD	P24A-00GSL	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	SCH40	STD	P24A-00GV4	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	SCH40	STD	P24A-00AFB	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	SCH40	STD	P24A-003GJ	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	SCH40	SCH40	P24A-0033E	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	6	SCH20	STD	P24A-00GU4	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	SCH20	STD	P24A-00GP8	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	SCH20	STD	P24A-00GU3	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	SCH20	SCH40	P24A-00L6A	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	SCH20	SCH40	P24A-00L4L	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	8	STD	STD	P24A-00201	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	10	STD	STD	P24A-0022C	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	12	STD	SCH40	P24A-00KCF	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	14	STD	SCH40	P24A-00KCG	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	16	STD	SCH20	P24A-00HL3	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	8	STD	STD	P24A-0020T	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	10	STD	STD	P24A-0022D	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	12	STD	SCH40	P24A-00KCH	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	14	STD	SCH40	P24A-00KCJ	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	16	STD	SCH20	P24A-00HKX	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	18	STD	STD	P24A-0020K	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24	10	XS	STD	P24A-00GR8	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24	12	XS	SCH40	P24A-00GB4	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24	14	XS	SCH40	P24A-00GB5	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	24	16	XS	SCH20	P24A-00KCK	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24	18	XS	STD	P24A-00884	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24	20	XS	STD	P24A-00885	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	SCH160	P27A-004LZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.5	SCH160	SCH160	P27A-004M8	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.75	SCH160	SCH160	P27A-002T5	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.5	SCH160	SCH160	P27A-004MV	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.75	SCH160	SCH160	P27A-002T7	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	1	SCH160	SCH160	P27A-002T4	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	0.75	XS	SCH160	P27A-001LG	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	XS	SCH160	P27A-0033P	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	XS	SCH160	P27A-0033B	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	STD	SCH160	P27A-003M9	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	STD	XS	P27A-001MZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	1.5	STD	SCH160	P27A-003MA	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P27A-001N0	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P27A-00189	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	STD	P27A-001AZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P27A-001GW	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	STD	STD	P27A-001C2	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	STD	STD	P27A-00188	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	STD	STD	P27A-001C3	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	STD	STD	P27A-0018M	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	STD	STD	P27A-0019J	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	SCH40	STD	P27A-004W1	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH40	STD	P27A-004XB	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH40	STD	P27A-004UG	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	SCH40	STD	P27A-0051B	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	SCH40	STD	P27A-003ZT	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	SCH40	STD	P27A-0029L	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	SCH40	SCH40	P27A-001ZZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	SCH20	STD	P27A-003ND	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	SCH20	STD	P27A-0054A	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	SCH20	SCH40	P27A-00CBP	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	SCH20	SCH40	P27A-00CBR	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	10	STD	STD	P27A-0037H	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	12	STD	SCH40	P27A-005DS	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	14	STD	SCH40	P27A-005FS	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	16	STD	SCH20	P27A-005HV	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	12	STD	SCH40	P27A-005LX	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	14	STD	SCH40	P27A-005P0	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	16	STD	SCH20	P27A-005S7	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	18	STD	STD	P27A-0037R	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24	16	XS	SCH20	P27A-005Y9	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24	18	XS	STD	P27A-005ZZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24	20	XS	STD	P27A-0061M	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	SCH160	P28A-007KG	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.5	SCH160	SCH160	P28A-007KH	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.75	SCH160	SCH160	P28A-002TU	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.5	SCH160	SCH160	P28A-007KJ	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.75	SCH160	SCH160	P28A-002TW	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	1	SCH160	SCH160	P28A-002TR	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	0.75	XS	SCH160	P28A-001LE	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2	1	XS	SCH160	P28A-003M1	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	XS	SCH160	P28A-003M2	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	STD	SCH160	P28A-003M3	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	STD	XS	P28A-001N5	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	1.5	STD	SCH160	P28A-003M4	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P28A-001N6	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P28A-0018B	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	STD	P28A-001AS	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P28A-00182	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	STD	STD	P28A-0017V	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	STD	STD	P28A-0018V	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	STD	STD	P28A-0017W	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	STD	STD	P28A-00190	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	STD	STD	P28A-0019J	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	SCH40	STD	P28A-008HU	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH40	STD	P28A-005T9	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH40	STD	P28A-008HT	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	SCH40	STD	P28A-008F4	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	SCH40	STD	P28A-003ZL	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	SCH40	STD	P28A-0028T	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	SCH40	SCH40	P28A-001ZG	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	SCH20	STD	P28A-003N7	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	SCH20	STD	P28A-008FM	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	SCH20	SCH40	P28A-009AX	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	SCH20	SCH40	P28A-009AY	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	10	STD	STD	P28A-00370	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	12	STD	SCH40	P28A-00C0V	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	14	STD	SCH40	P28A-00C0W	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	16	STD	SCH20	P28A-0096Y	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	12	STD	SCH40	P28A-00C0X	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	14	STD	SCH40	P28A-00C0Y	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	16	STD	SCH20	P28A-0096T	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	18	STD	STD	P28A-00377	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24	16	XS	SCH20	P28A-00C0Z	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24	18	XS	STD	P28A-0063W	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24	20	XS	STD	P28A-0063X	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P29A-00329	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	0.75		SCH160		P29A-001UF	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	1		SCH160		P29A-001TC	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	1.5		SCH160		P29A-001TD	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	2		XS		P29A-001VG	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	3		STD		P29A-001VK	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	4		STD		P29A-001VN	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	6		STD		P29A-001VS	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	8		STD		P29A-001VT	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	10		STD		P29A-001VB	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	12		SCH40		P29A-001TF	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	14		SCH40		P29A-0036R	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	16		SCH20		P29A-00361	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	18		STD		P29A-001VF	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	20		STD		P29A-001VH	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	24		XS		P29A-001VJ	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
541	0.75				P29B-0000Y	Cap ASTM A105 Class 6000 ASME B16.11 NPT	
541	1				P29B-0000Z	Cap ASTM A105 Class 6000 ASME B16.11 NPT	
541	1.5				P29B-00010	Cap ASTM A105 Class 6000 ASME B16.11 NPT	

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STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P41A-000B9	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		XXS		P41A-000BA	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		XXS		P41A-000D8	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		XXS		P41A-000D9	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2	0.75	XS	SCH160	P31B-00CP7	Outlet ASTM A105 MSS SP-97 BW	
1	3	0.75	STD	SCH160	P31B-00CMT	Outlet ASTM A105 MSS SP-97 BW	
1	4	0.75	STD	SCH160	P31B-00CLT	Outlet ASTM A105 MSS SP-97 BW	
1	6	0.75	STD	SCH160	P31B-00CKK	Outlet ASTM A105 MSS SP-97 BW	
1	8	0.75	STD	SCH160	P31B-00C5E	Outlet ASTM A105 MSS SP-97 BW	
1	10	0.75	STD	SCH160	P31B-00CFB	Outlet ASTM A105 MSS SP-97 BW	
1	12	0.75	SCH40	SCH160	P31B-00CS8	Outlet ASTM A105 MSS SP-97 BW	
1	14	0.75	SCH40	SCH160	P31B-00CRP	Outlet ASTM A105 MSS SP-97 BW	
1	16	0.75	SCH20	SCH160	P31B-00XS0	Outlet ASTM A105 MSS SP-97 BW	
1	18	0.75	STD	SCH160	P31B-00CPL	Outlet ASTM A105 MSS SP-97 BW	
1	20	0.75	STD	SCH160	P31B-00CNW	Outlet ASTM A105 MSS SP-97 BW	
1	24	0.75	XS	SCH160	P31B-007N3	Outlet ASTM A105 MSS SP-97 BW	
1	3	1	STD	SCH160	P31B-00B4J	Outlet ASTM A105 MSS SP-97 BW	
1	4	1	STD	SCH160	P31B-00B3M	Outlet ASTM A105 MSS SP-97 BW	
1	6	1	STD	SCH160	P31B-00AZC	Outlet ASTM A105 MSS SP-97 BW	
1	8	1	STD	SCH160	P31B-00AVF	Outlet ASTM A105 MSS SP-97 BW	
1	10	1	STD	SCH160	P31B-00C06	Outlet ASTM A105 MSS SP-97 BW	
1	12	1	SCH40	SCH160	P31B-00BWL	Outlet ASTM A105 MSS SP-97 BW	
1	14	1	SCH40	SCH160	P31B-00BRP	Outlet ASTM A105 MSS SP-97 BW	
1	16	1	SCH20	SCH160	P31B-00X8Z	Outlet ASTM A105 MSS SP-97 BW	
1	18	1	STD	SCH160	P31B-00BC9	Outlet ASTM A105 MSS SP-97 BW	
1	20	1	STD	SCH160	P31B-00B8M	Outlet ASTM A105 MSS SP-97 BW	
1	24	1	XS	SCH160	P31B-007MU	Outlet ASTM A105 MSS SP-97 BW	
1	4	1.5	STD	SCH160	P31B-00BP4	Outlet ASTM A105 MSS SP-97 BW	
1	6	1.5	STD	SCH160	P31B-00BJH	Outlet ASTM A105 MSS SP-97 BW	
1	8	1.5	STD	SCH160	P31B-00BHJ	Outlet ASTM A105 MSS SP-97 BW	
1	10	1.5	STD	SCH160	P31B-00AUM	Outlet ASTM A105 MSS SP-97 BW	
1	12	1.5	SCH40	SCH160	P31B-00CEH	Outlet ASTM A105 MSS SP-97 BW	
1	14	1.5	SCH40	SCH160	P31B-00CDR	Outlet ASTM A105 MSS SP-97 BW	
1	16	1.5	SCH20	SCH160	P31B-00C9B	Outlet ASTM A105 MSS SP-97 BW	
1	18	1.5	STD	SCH160	P31B-00C4R	Outlet ASTM A105 MSS SP-97 BW	
1	20	1.5	STD	SCH160	P31B-00C3Y	Outlet ASTM A105 MSS SP-97 BW	
1	24	1.5	XS	SCH160	P31B-007MM	Outlet ASTM A105 MSS SP-97 BW	
1	6	2	STD	XS	P31B-007SH	Outlet ASTM A105 MSS SP-97 BW	
1	8	2	STD	XS	P31B-00AGX	Outlet ASTM A105 MSS SP-97 BW	
1	10	2	STD	XS	P31B-00ASA	Outlet ASTM A105 MSS SP-97 BW	
1	12	2	SCH40	XS	P31B-00CBS	Outlet ASTM A105 MSS SP-97 BW	
1	14	2	SCH40	XS	P31B-00CAH	Outlet ASTM A105 MSS SP-97 BW	
1	16	2	SCH20	XS	P31B-00TF8	Outlet ASTM A105 MSS SP-97 BW	
1	18	2	STD	XS	P31B-009FJ	Outlet ASTM A105 MSS SP-97 BW	
1	20	2	STD	XS	P31B-00994	Outlet ASTM A105 MSS SP-97 BW	
1	24	2	XS	XS	P31B-0092Y	Outlet ASTM A105 MSS SP-97 BW	
1	8	3	STD	STD	P31B-00A2T	Outlet ASTM A105 MSS SP-97 BW	
1	10	3	STD	STD	P31B-009CM	Outlet ASTM A105 MSS SP-97 BW	
1	12	3	SCH40	STD	P31B-0096S	Outlet ASTM A105 MSS SP-97 BW	
1	14	3	SCH40	STD	P31B-0090U	Outlet ASTM A105 MSS SP-97 BW	
1	16	3	SCH20	STD	P31B-00TU2	Outlet ASTM A105 MSS SP-97 BW	
1	18	3	STD	STD	P31B-008MK	Outlet ASTM A105 MSS SP-97 BW	
1	20	3	STD	STD	P31B-008FA	Outlet ASTM A105 MSS SP-97 BW	
1	24	3	XS	STD	P31B-00894	Outlet ASTM A105 MSS SP-97 BW	
1	12	4	SCH40	STD	P31B-008ZY	Outlet ASTM A105 MSS SP-97 BW	
1	14	4	SCH40	STD	P31B-008YN	Outlet ASTM A105 MSS SP-97 BW	

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OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	16	4	SCH20	STD	P31B-00TU3	Outlet ASTM A105 MSS SP-97 BW	
1	18	4	STD	STD	P31B-008KB	Outlet ASTM A105 MSS SP-97 BW	
1	20	4	STD	STD	P31B-008D3	Outlet ASTM A105 MSS SP-97 BW	
1	24	4	XS	STD	P31B-0086W	Outlet ASTM A105 MSS SP-97 BW	
1	18	6	STD	STD	P31B-008RX	Outlet ASTM A105 MSS SP-97 BW	
1	20	6	STD	STD	P31B-008PZ	Outlet ASTM A105 MSS SP-97 BW	
1	24	6	XS	STD	P31B-008JC	Outlet ASTM A105 MSS SP-97 BW	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30B-0002D	Plug ASTM A105 ASME B16.11 NPT Round head	
1	0.75				P30B-0002E	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1				P30B-0002F	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1.5				P30B-0002G	Plug ASTM A105 ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P61B-003P9	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	0.75		SCH160		P61B-0037M	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	1		SCH160		P61B-0037L	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	1.5		SCH160		P61B-0037J	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	2		XS		P61B-001HW	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	3		STD		P61B-001LJ	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	4		STD		P61B-001MC	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	6		STD		P61B-001N2	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	8		STD		P61B-001NL	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	10		STD		P61B-001L6	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	12		SCH40		P61B-002FJ	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	14		SCH40		P61B-002FL	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	16		SCH20		P61B-002MS	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	18		STD		P61B-001N9	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	20		STD		P61B-001NT	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	24		XS		P61B-002RA	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
541	0.5				P61B-003U3	Flange NPT ASTM A105 Class 300 ASME B16.5 RF	
541	0.75				P61B-003U4	Flange NPT ASTM A105 Class 300 ASME B16.5 RF	
781	0.5		SCH160		P61B-004UV	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	0.75		SCH160		P61B-003T2	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	1		SCH160		P61B-003T3	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	1.5		SCH160		P61B-003T4	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	2		XS		P61B-001DH	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	3		STD		P61B-001TW	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	4		STD		P61B-001VV	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	6		STD		P61B-001JW	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	8		STD		P61B-001KK	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	10		STD		P61B-001JJ	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	12		SCH40		P61B-003T5	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	14		SCH40		P61B-003T6	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	16		SCH20		P61B-00798	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	18		STD		P61B-003FA	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	20		STD		P61B-003GP	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	24		XS		P61B-003T9	Flange WN ASTM A105 Class 600 ASME B16.5 RF	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67B-000GH	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	0.75				P67B-000GJ	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	1				P67B-000GK	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	1.5				P67B-000GL	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	2				P67B-000GM	Blind flange ASTM A105 Class 300 ASME B16.5 RF	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3				P67B-000GN	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	4				P67B-000GP	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	6				P67B-000GY	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	8				P67B-000GZ	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	10				P67B-000GR	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	12				P67B-000GS	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	14				P67B-000GT	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	16				P67B-000GU	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	18				P67B-000GV	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	20				P67B-000GW	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	24				P67B-000GX	Blind flange ASTM A105 Class 300 ASME B16.5 RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000FT	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000FU	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000G5	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000G6	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	6				P73T-000G7	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	8				P73T-000G8	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	10				P73T-000FX	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	12				P73T-000FY	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	14				P73T-000FZ	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	16				P73T-000G0	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	18				P73T-000G1	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	20				P73T-000G3	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	24				P73T-000G4	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	0.5				P73T-000J8	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	0.75				P73T-000J9	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1				P73T-000JA	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1.5				P73T-000JB	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	2				P73T-000JH	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	3				P73T-000JL	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	4				P73T-000JM	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	6				P73T-000JN	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	8				P73T-000JP	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	10				P73T-000JC	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	12				P73T-000JD	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	14				P73T-000JE	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	16				P73T-000JF	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	18				P73T-000JG	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	20				P73T-000JJ	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	24				P73T-000JK	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

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BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-10				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	12-24				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
781	0.5-6				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
781	8-24				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81B-0020H	Gate valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Amine service Moderate wet H2S service	
1	0.75				P81B-0020J	Gate valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Amine service Moderate wet H2S service	
1	1				P81B-0020K	Gate valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Amine service Moderate wet H2S service	
1	1.5				P81B-0020L	Gate valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Amine service Moderate wet H2S service	
1	2				P81C-006KT	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Amine service Moderate wet H2S service	
1	3				P81C-006KU	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Amine service Moderate wet H2S service	
1	4				P81C-006KV	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Amine service Moderate wet H2S service	
1	6				P81C-006KW	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Amine service Moderate wet H2S service	
1	8				P81C-0091K	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Amine service Moderate wet H2S service	
1	10				P81C-006SN	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Amine service Moderate wet H2S service	
1	12				P81C-006SP	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Amine service Moderate wet H2S service	
1	14				P81C-006KY	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Amine service Moderate wet H2S service	
1	16				P81C-006KZ	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Amine service Moderate wet H2S service	
1	18				P81C-006L0	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Amine service Moderate wet H2S service	
1	20				P81C-006L1	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Amine service Moderate wet H2S service	
4608	0.75				P81B-002WJ	Gate valve ASTM A105 Class 300 API 602 BW both sides w/ nipples BE - NPT ASTM A106-B XXS-nipple Trim number 12 BB-BG-OS&Y Handwheel operated Amine service Moderate wet H2S service	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82B-001J3	Globe valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Amine service Moderate wet H2S service	
1	0.75				P82B-001J4	Globe valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Amine service Moderate wet H2S service	
1	1				P82B-001J5	Globe valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Amine service Moderate wet H2S service	
1	1.5				P82B-001J6	Globe valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Amine service Moderate wet H2S service	
1	2				P82C-0035V	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Amine service Moderate wet H2S service	
1	3				P82C-0035W	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Amine service Moderate wet H2S service	
1	4				P82C-0035X	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Amine service Moderate wet H2S service	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83B-0017N	Check valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Amine service Moderate wet H2S service	
1	0.75				P83B-0017P	Check valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Amine service Moderate wet H2S service	
1	1				P83B-0017R	Check valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Amine service Moderate wet H2S service	
1	1.5				P83B-0017S	Check valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Amine service Moderate wet H2S service	
1	2				P83C-00322	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Amine service Moderate wet H2S service	
1	3				P83C-00323	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Amine service Moderate wet H2S service	
1	4				P83C-00324	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Amine service Moderate wet H2S service	
1	6				P83C-00325	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Amine service Moderate wet H2S service	

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SPECT BLANK (SB)							
OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71B-000B1	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	0.75				P71B-000B2	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	1				P71B-000B3	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71B-000B4	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	2				P71B-000B6	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	3				P71B-000B7	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	4				P71B-000B8	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	6				P71B-000B9	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	8				P71B-000BA	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	10				P71B-000B5	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	12				P71B-000BB	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	

PADDLE BLANK (PB)							
OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000FA	Paddle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	16				P72B-000FB	Paddle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	18				P72B-000FC	Paddle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	20				P72B-000FD	Paddle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	24				P72B-000FE	Paddle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	

PADDLE SPACER (PS)							
OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000FG	Paddle spacer ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	16				P72B-000FH	Paddle spacer ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	18				P72B-000FJ	Paddle spacer ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	20				P72B-000FK	Paddle spacer ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	24				P72B-000FL	Paddle spacer ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	

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BOLT TABLE (B_B2A4 , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-008T0		
0.75	4	0.625	75	P80S-00908		
1	4	0.625	80	P80S-00909		
1.5	4	0.750	95	P80S-005Z4		
2	8	0.625	90	P80S-0090B		
3	8	0.750	110	P80S-0090F		
4	8	0.750	115	P80S-0090G		
6	12	0.750	125	P80S-0090J		
8	12	0.875	140	P80S-005ZD		
10	16	1.000	160	P80S-0061E		
12	16	1.125	175	P80S-0064S		
14	20	1.125	180	P80S-0064T		
16	20	1.250	190	P80S-00689		
18	24	1.250	200	P80S-0068B		
20	24	1.250	210	P80S-0068D		
24	24	1.500	235	P80S-006LB		

BOLT TABLE (B_B2A4_781 , STUD ASME RF, OPTION CODE 781)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	80	P80S-008T2		
0.75	4	0.625	90	P80S-0090B		
1	4	0.625	95	P80S-0090C		
1.5	4	0.750	110	P80S-0090F		
2	8	0.625	110	P80S-008T8		
3	8	0.750	130	P80S-0090K		
4	8	0.875	150	P80S-005ZF		
6	12	1.000	175	P80S-0061H		
8	12	1.125	195	P80S-0064W		
10	16	1.250	250	P80S-0068M		
12	20	1.250	255	P80S-0068N		
14	20	1.375	270	P80S-006HV		
16	20	1.500	295	P80S-006LP		
18	20	1.625	320	P80S-00A5E		
20	24	1.625	335	P80S-00A5H		
24	24	1.875	380	P80S-00AW5		

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BRANCH TABLE (T_B2A4)

RUN PIPE SIZE (in) \ BRANCH SIZE (in)	0.5	0.75	1	1.5	2	3	4	6	8	10	12	14	16	18	20	24
0.5	TS															
0.75		TS														
1		TR	TS													
1.5		TR	TR	TS												
2		L	TR	TR	TS											
3		L	L	TR	TR	TS										
4	L	L	L	L	TR	TR	TS									
6	L	L	L	L	L	TR	TR	TS								
8		L	L	L	L	L	TR	TR	TS							
10		L	L	L	L	L	TR	TR	TR	TS						
12		L	L	L	L	L	L	TR	TR	TR	TS					
14		L	L	L	L	L	L	TR	TR	TR	TR	TS				
16		L	L	L	L	L	L	TR	TR	TR	TR	TR	TS			
18		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TS		
20		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TR	TS	
24		L	L	L	L	L	L	L	9PD	TR	TR	TR	TR	TR	TR	TS

L : OUTLET
TS : STRAIGHT TEE
TR : REDUCING TEE
9PD : REINFORCING PAD 90 DEG

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PIPING CLASS

B2A5 REV NO. 2

Material : Killed CS
Rating : ASME CLASS 300
Flange Face : RF
C.A.(mm) : 3.00
Gasket : Spiral Wound
Service : PROCESS - WET SEVERE SOUR SERVICE SUBJECT TO NACE + HIC STD + AMINES OR CAUSTIC - STRESS RELIEVED
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
5	BOLTING CONFIRMING TO B7M / 2HM SHALL BE USED UNDER CONDITIONS (A) DIRECT EXPOSURE TO SOUR ENVIRONMENTS (B) WHEN THE BOLTING WILL BE BURIED OR INSULATED
27	PWHT OF CARBON STEEL PIPING IN WET H2S, CAUSTIC AND AMINE SERVICES SHALL BE IN ACCORDANCE WITH SECTION 10.2, 10.3, AND 10.4 OF PROJECT SPECIFICATION 3550-8440-SP-0002 MATERIALS REQUIREMENTS FOR PRESSURISED EQUIPMENT AND PIPING. FOR CAUSTIC AND AMINE SERVICE THE FOLLOWING SHALL APPLY: - PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF ALL SITE PIPING FABRICATION WELDS IS REQUIRED FOR ALL WALL THICKNESSES. FOR MODERATE AND SEVERE WET H2S SERVICE THE FOLLOWING SHALL APPLY: PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF SITE FABRICATION CIRCUMFERENTIAL OR BRANCH WELDS IS NOT REQUIRED IF WELDS ARE MULTIPASS AND IN ACCORDANCE WITH PARA 10.2.12 OF PROJECT SPECIFICATION 3550-8440-SP-0002. FOR SERVICES MEETING THE WET H2S CRITERIA AND CAUSTIC OR AMINE CRITERIA THE MORE STRINGENT PWHT REQUIREMENT SHALL GOVERN.

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
541	NPT(F) (CA,F)
781	CLASS 600 (B,F,G)
4608	VALVE WITH NIPPLES (V)

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PIPING CLASS
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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P01A-0010P	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	0.75		SCH160		P01A-0010R	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1		SCH160		P01A-0014M	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1.5		SCH160		P01A-0015J	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	2		XS		P01A-000YX	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	3		STD		P01A-000YM	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	4		STD		P01A-000YU	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	6		STD		P01A-000Z3	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P02A-001Y8	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	0.75		SCH160		P02A-000V8	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1		SCH160		P02A-000V7	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1.5		SCH160		P02A-000V9	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	2		XS		P02A-000CP	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		STD		P02A-000CU	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		STD		P02A-000CZ	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		STD		P02A-000D6	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P03A-001TC	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	0.75		SCH160		P03A-000RS	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1		SCH160		P03A-000RR	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1.5		SCH160		P03A-000RP	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	2		XS		P03A-000AS	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		STD		P03A-000AX	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		STD		P03A-000B1	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		STD		P03A-000B9	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P21A-003AW	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	0.75		SCH160		P21A-002B8	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1		SCH160		P21A-002B6	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5		SCH160		P21A-002B9	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2		XS		P21A-001CJ	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		STD		P21A-001CU	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		STD		P21A-001CW	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6		STD		P21A-001D2	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75	SCH160	SCH160	P24A-004B6	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.75	SCH160	SCH160	P24A-004B2	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	1	SCH160	SCH160	P24A-004BA	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	XS	SCH160	P24A-00GMB	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	XS	SCH160	P24A-005K9	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	STD	SCH160	P24A-00GMC	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	STD	XS	P24A-002HW	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P24A-002HY	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P24A-0021K	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	STD	P24A-0021A	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P24A-00229	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	SCH160	P27A-004LZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.5	SCH160	SCH160	P27A-004M8	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.75	SCH160	SCH160	P27A-002T5	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.5	SCH160	SCH160	P27A-004MV	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.75	SCH160	SCH160	P27A-002T7	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	1	SCH160	SCH160	P27A-002T4	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	0.75	XS	SCH160	P27A-001LG	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	XS	SCH160	P27A-0033P	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	XS	SCH160	P27A-0033B	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	STD	SCH160	P27A-003M9	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	STD	XS	P27A-001MZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	1.5	STD	SCH160	P27A-003MA	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P27A-001N0	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P27A-00189	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	STD	P27A-001AZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P27A-001GW	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	SCH160	P28A-007KG	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.5	SCH160	SCH160	P28A-007KH	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.75	SCH160	SCH160	P28A-002TU	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.5	SCH160	SCH160	P28A-007KJ	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.75	SCH160	SCH160	P28A-002TW	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	1	SCH160	SCH160	P28A-002TR	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	0.75	XS	SCH160	P28A-001LE	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	XS	SCH160	P28A-003M1	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	XS	SCH160	P28A-003M2	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	STD	SCH160	P28A-003M3	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	STD	XS	P28A-001N5	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	1.5	STD	SCH160	P28A-003M4	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P28A-001N6	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P28A-0018B	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	STD	P28A-001AS	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P28A-00182	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P29A-0037W	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	0.75		SCH160		P29A-0037X	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	1		SCH160		P29A-001VW	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5		SCH160		P29A-001VX	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	2		XS		P29A-00381	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	3		STD		P29A-00383	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	4		STD		P29A-00384	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	6		STD		P29A-00385	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
541	0.75				P29B-0000Y	Cap ASTM A105 Class 6000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P41A-000B9	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		XXS		P41A-000BA	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		XXS		P41A-000D8	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		XXS		P41A-000D9	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2	0.75	XS	SCH160	P31B-00CP7	Outlet ASTM A105 MSS SP-97 BW	

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OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	0.75	STD	SCH160	P31B-00CMT	Outlet ASTM A105 MSS SP-97 BW	
1	4	0.75	STD	SCH160	P31B-00CLT	Outlet ASTM A105 MSS SP-97 BW	
1	6	0.75	STD	SCH160	P31B-00CKK	Outlet ASTM A105 MSS SP-97 BW	
1	3	1	STD	SCH160	P31B-00B4J	Outlet ASTM A105 MSS SP-97 BW	
1	4	1	STD	SCH160	P31B-00B3M	Outlet ASTM A105 MSS SP-97 BW	
1	6	1	STD	SCH160	P31B-00AZC	Outlet ASTM A105 MSS SP-97 BW	
1	4	1.5	STD	SCH160	P31B-00BP4	Outlet ASTM A105 MSS SP-97 BW	
1	6	1.5	STD	SCH160	P31B-00BJH	Outlet ASTM A105 MSS SP-97 BW	
1	6	2	STD	XS	P31B-007SH	Outlet ASTM A105 MSS SP-97 BW	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30B-0002D	Plug ASTM A105 ASME B16.11 NPT Round head	
1	0.75				P30B-0002E	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1				P30B-0002F	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1.5				P30B-0002G	Plug ASTM A105 ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P61B-003P9	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	0.75		SCH160		P61B-0037M	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	1		SCH160		P61B-0037L	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	1.5		SCH160		P61B-0037J	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	2		XS		P61B-001HW	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	3		STD		P61B-001LJ	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	4		STD		P61B-001MC	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	6		STD		P61B-001N2	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
541	0.5				P61B-003U3	Flange NPT ASTM A105 Class 300 ASME B16.5 RF	
541	0.75				P61B-003U4	Flange NPT ASTM A105 Class 300 ASME B16.5 RF	
781	0.5		SCH160		P61B-004UV	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	0.75		SCH160		P61B-003T2	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	1		SCH160		P61B-003T3	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	1.5		SCH160		P61B-003T4	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	2		XS		P61B-001DH	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	3		STD		P61B-001TW	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	4		STD		P61B-001VV	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	6		STD		P61B-001JW	Flange WN ASTM A105 Class 600 ASME B16.5 RF	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67B-000GH	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	0.75				P67B-000GJ	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	1				P67B-000GK	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	1.5				P67B-000GL	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	2				P67B-000GM	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	3				P67B-000GN	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	4				P67B-000GP	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	6				P67B-000GY	Blind flange ASTM A105 Class 300 ASME B16.5 RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000FT	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000FU	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

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GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3				P73T-000G5	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000G6	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	6				P73T-000G7	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	0.5				P73T-000J8	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	0.75				P73T-000J9	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1				P73T-000JA	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1.5				P73T-000JB	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	2				P73T-000JH	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	3				P73T-000JL	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	4				P73T-000JM	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	6				P73T-000JN	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-6				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
781	0.5-6				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81B-0020M	Gate valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service	
1	0.75				P81B-0020N	Gate valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service	
1	1				P81B-0020P	Gate valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service	
1	1.5				P81B-0020R	Gate valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service	
1	2				P81C-006L2	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service	
1	3				P81C-006L3	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service	
1	4				P81C-006L4	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service	
1	6				P81C-006L5	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service	
4608	0.75				P81B-002WK	Gate valve ASTM A105 Class 300 API 602 BW both sides w/ nipples BE - NPT ASTM A106-B XXS-nipple Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82B-001J7	Globe valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service	
1	0.75				P82B-001J8	Globe valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service	
1	1				P82B-001J9	Globe valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service	
1	1.5				P82B-001JA	Globe valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service	
1	2				P82C-0035Y	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service	
1	3				P82C-0035Z	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service	
1	4				P82C-00360	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service	
1	6				P82C-00361	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83B-0017T	Check valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Severe wet H2S service Amine service	
1	0.75				P83B-0017U	Check valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Severe wet H2S service Amine service	
1	1				P83B-0017V	Check valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Severe wet H2S service Amine service	
1	1.5				P83B-0017W	Check valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Severe wet H2S service Amine service	

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CHECK VALVE (X)							
OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2				P83C-00326	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service Amine service	
1	3				P83C-00327	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service Amine service	
1	4				P83C-00328	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service Amine service	
1	6				P83C-00329	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service Amine service	

SPECT BLANK (SB)							
OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71B-000B1	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	0.75				P71B-000B2	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	1				P71B-000B3	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71B-000B4	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	2				P71B-000B6	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	3				P71B-000B7	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	4				P71B-000B8	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	6				P71B-000B9	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	

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BOLT TABLE (B_B2A5 , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-008T0		
0.75	4	0.625	75	P80S-00908		
1	4	0.625	80	P80S-00909		
1.5	4	0.750	95	P80S-005Z4		
2	8	0.625	90	P80S-0090B		
3	8	0.750	110	P80S-0090F		
4	8	0.750	115	P80S-0090G		
6	12	0.750	125	P80S-0090J		

BOLT TABLE (B_B2A5_781 , STUD ASME RF, OPTION CODE 781)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	80	P80S-008T2		
0.75	4	0.625	90	P80S-0090B		
1	4	0.625	95	P80S-0090C		
1.5	4	0.750	110	P80S-0090F		
2	8	0.625	110	P80S-008T8		
3	8	0.750	130	P80S-0090K		
4	8	0.875	150	P80S-005ZF		
6	12	1.000	175	P80S-0061H		

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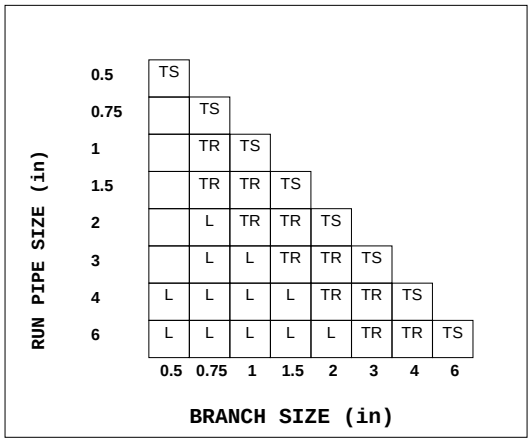
BRANCH TABLE (T_B2A5)



TS : STRAIGHT TEE
L : OUTLET
TR : REDUCING TEE

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PIPING CLASS

B2A501 REV NO. 2

Material : Killed CS
Rating : ASME CLASS 300
Flange Face : RF
C.A.(mm) : 3.00
Gasket : Spiral Wound
Service : PROCESS - WET SEVERE SOUR SERVICE SUBJECT TO NACE + HIC STD + AMINES OR CAUSTIC - STRESS RELIEVED
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
5	BOLTING CONFIRMING TO B7M / 2HM SHALL BE USED UNDER CONDITIONS (A) DIRECT EXPOSURE TO SOUR ENVIRONMENTS (B) WHEN THE BOLTING WILL BE BURIED OR INSULATED
27	PWHT OF CARBON STEEL PIPING IN WET H2S, CAUSTIC AND AMINE SERVICES SHALL BE IN ACCORDANCE WITH SECTION 10.2, 10.3, AND 10.4 OF PROJECT SPECIFICATION 3550-8440-SP-0002 MATERIALS REQUIREMENTS FOR PRESSURISED EQUIPMENT AND PIPING. FOR CAUSTIC AND AMINE SERVICE THE FOLLOWING SHALL APPLY: - PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF ALL SITE PIPING FABRICATION WELDS IS REQUIRED FOR ALL WALL THICKNESSES. FOR MODERATE AND SEVERE WET H2S SERVICE THE FOLLOWING SHALL APPLY: PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF SITE FABRICATION CIRCUMFERENTIAL OR BRANCH WELDS IS NOT REQUIRED IF WELDS ARE MULTIPASS AND IN ACCORDANCE WITH PARA 10.2.12 OF PROJECT SPECIFICATION 3550-8440-SP-0002. FOR SERVICES MEETING THE WET H2S CRITERIA AND CAUSTIC OR AMINE CRITERIA THE MORE STRINGENT PWHT REQUIREMENT SHALL GOVERN.

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
200	WITH JACK SCREW (FO)
541	NPT(F) (CA,F)
781	CLASS 600 (B,F,G)
4608	VALVE WITH NIPPLES (V)

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PIPING CLASS
B2A501 REV NO. 2

PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P01A-007D3	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE Severe wet H2S service Licensor-1	
1	0.75		SCH160		P01A-007D4	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE Severe wet H2S service Licensor-1	
1	1		SCH160		P01A-007D5	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE Severe wet H2S service Licensor-1	
1	1.5		SCH160		P01A-007D6	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE Severe wet H2S service Licensor-1	
1	2		XS		P01A-007DC	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Severe wet H2S service Licensor-1	
1	3		STD		P01A-007DF	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Severe wet H2S service Licensor-1	
1	4		STD		P01A-007DG	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Severe wet H2S service Licensor-1	
1	6		STD		P01A-007DH	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Severe wet H2S service Licensor-1	
1	8		STD		P01A-007DJ	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Severe wet H2S service Licensor-1	
1	10		STD		P01A-007D7	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Severe wet H2S service Licensor-1	
1	12		SCH40		P01A-007D8	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Severe wet H2S service Licensor-1	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P02A-003V5	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	0.75		SCH160		P02A-003V6	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	1		SCH160		P02A-003V7	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	1.5		SCH160		P02A-003V8	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	2		XS		P02A-003VE	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	3		STD		P02A-003VH	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	4		STD		P02A-003VJ	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	6		STD		P02A-003VK	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	8		STD		P02A-003VL	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	10		STD		P02A-003V9	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	12		SCH40		P02A-003VA	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P03A-003SU	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	0.75		SCH160		P03A-003SV	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	1		SCH160		P03A-003SW	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	1.5		SCH160		P03A-003SX	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	2		XS		P03A-003T3	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	3		STD		P03A-003T6	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	4		STD		P03A-003T7	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	6		STD		P03A-003T8	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	8		STD		P03A-003T9	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	10		STD		P03A-003SY	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	12		SCH40		P03A-003SZ	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P21A-004CL	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	0.75		SCH160		P21A-004CM	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	1		SCH160		P21A-004CN	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	1.5		SCH160		P21A-004CP	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	2		XS		P21A-004CW	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	3		STD		P21A-004CZ	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	4		STD		P21A-004D0	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	6		STD		P21A-004D1	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	8		STD		P21A-004D2	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	

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STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	10		STD		P21A-004CR	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	12		SCH40		P21A-004CS	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75	SCH160	SCH160	P24A-00KEA	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	1.5	0.75	SCH160	SCH160	P24A-00KEB	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	1.5	1	SCH160	SCH160	P24A-00KEC	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	2	1	XS	SCH160	P24A-00KED	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	2	1.5	XS	SCH160	P24A-00KEE	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	3	1.5	STD	SCH160	P24A-00KEF	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	3	2	STD	XS	P24A-00KEG	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	4	2	STD	XS	P24A-00KEH	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	4	3	STD	STD	P24A-00KEJ	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	6	3	STD	STD	P24A-00KEK	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	6	4	STD	STD	P24A-00KEL	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	8	4	STD	STD	P24A-00KEM	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	8	6	STD	STD	P24A-00KEN	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	10	4	STD	STD	P24A-00KEP	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	10	6	STD	STD	P24A-00KER	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	10	8	STD	STD	P24A-00KES	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	12	6	SCH40	STD	P24A-00KEU	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	12	8	SCH40	STD	P24A-00KEV	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	12	10	SCH40	STD	P24A-00KET	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	SCH160	P27A-00EY1	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	1	0.5	SCH160	SCH160	P27A-00EY2	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	1	0.75	SCH160	SCH160	P27A-00EY3	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	1.5	0.5	SCH160	SCH160	P27A-00EY4	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	1.5	0.75	SCH160	SCH160	P27A-00EY5	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	1.5	1	SCH160	SCH160	P27A-00EY6	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	2	0.75	XS	SCH160	P27A-00EY7	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	2	1	XS	SCH160	P27A-00EY8	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	2	1.5	XS	SCH160	P27A-00EY9	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	3	1.5	STD	SCH160	P27A-00EYA	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	3	2	STD	XS	P27A-00EYB	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	4	1.5	STD	SCH160	P27A-00EYC	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	4	2	STD	XS	P27A-00EYD	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	4	3	STD	STD	P27A-00EYE	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	6	3	STD	STD	P27A-00EYF	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	6	4	STD	STD	P27A-00EYG	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	8	4	STD	STD	P27A-00EYH	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	8	6	STD	STD	P27A-00EYJ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	10	4	STD	STD	P27A-00EYK	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	10	6	STD	STD	P27A-00EYL	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	10	8	STD	STD	P27A-00EYM	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	12	6	SCH40	STD	P27A-00EYP	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	12	8	SCH40	STD	P27A-00EYR	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	12	10	SCH40	STD	P27A-00EYN	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	SCH160	P28A-00C21	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	1	0.5	SCH160	SCH160	P28A-00C22	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	1	0.75	SCH160	SCH160	P28A-00C23	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	1.5	0.5	SCH160	SCH160	P28A-00C24	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	1.5	0.75	SCH160	SCH160	P28A-00C25	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5	1	SCH160	SCH160	P28A-00C26	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	2	0.75	XS	SCH160	P28A-00C27	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	2	1	XS	SCH160	P28A-00C28	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	2	1.5	XS	SCH160	P28A-00C29	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	3	1.5	STD	SCH160	P28A-00C2A	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	3	2	STD	XS	P28A-00C2B	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	4	1.5	STD	SCH160	P28A-00C2C	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	4	2	STD	XS	P28A-00C2D	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	4	3	STD	STD	P28A-00C2E	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	6	3	STD	STD	P28A-00C2F	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	6	4	STD	STD	P28A-00C2G	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	8	4	STD	STD	P28A-00C2H	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	8	6	STD	STD	P28A-00C2J	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	10	4	STD	STD	P28A-00C2K	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	10	6	STD	STD	P28A-00C2L	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	10	8	STD	STD	P28A-00C2M	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	12	6	SCH40	STD	P28A-00C2P	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	12	8	SCH40	STD	P28A-00C2R	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	12	10	SCH40	STD	P28A-00C2N	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P29A-00374	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	0.75		SCH160		P29A-00375	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	1		SCH160		P29A-00376	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	1.5		SCH160		P29A-00377	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	2		XS		P29A-0037D	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	3		STD		P29A-0037G	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	4		STD		P29A-0037H	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	6		STD		P29A-0037J	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	8		STD		P29A-0037K	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	10		STD		P29A-00378	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	12		SCH40		P29A-00379	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
541	0.75				P29B-0006U	Cap ASTM A105 Class 6000 ASME B16.11 NPT Severe wet H2S service Licensor-1	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P41A-0019H	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Severe wet H2S service Licensor-1	
1	0.75		XXS		P41A-0019J	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Severe wet H2S service Licensor-1	
1	1		XXS		P41A-0018F	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Severe wet H2S service Licensor-1	
1	1.5		XXS		P41A-0018G	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Severe wet H2S service Licensor-1	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2	0.75	XS	SCH160	P31B-00XX6	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	3	0.75	STD	SCH160	P31B-00XX7	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	4	0.75	STD	SCH160	P31B-00XX9	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	6	0.75	STD	SCH160	P31B-00XXC	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	8	0.75	STD	SCH160	P31B-00XXG	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	10	0.75	STD	SCH160	P31B-00XXM	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	12	0.75	SCH40	SCH160	P31B-00XXT	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	3	1	STD	SCH160	P31B-00XX8	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	4	1	STD	SCH160	P31B-00XXA	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	6	1	STD	SCH160	P31B-00XXD	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	8	1	STD	SCH160	P31B-00XXH	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	10	1	STD	SCH160	P31B-00XXN	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	12	1	SCH40	SCH160	P31B-00XXU	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	

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OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	4	1.5	STD	SCH160	P31B-00XXB	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	6	1.5	STD	SCH160	P31B-00XXE	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	8	1.5	STD	SCH160	P31B-00XXJ	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	10	1.5	STD	SCH160	P31B-00XXP	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	12	1.5	SCH40	SCH160	P31B-00XXV	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	6	2	STD	XS	P31B-00XXF	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	8	2	STD	XS	P31B-00XXK	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	10	2	STD	XS	P31B-00XXR	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	12	2	SCH40	XS	P31B-00XXW	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	8	3	STD	STD	P31B-00XXL	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	10	3	STD	STD	P31B-00XXS	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	12	3	SCH40	STD	P31B-00XXX	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	12	4	SCH40	STD	P31B-00XXY	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30B-0006M	Plug ASTM A105 ASME B16.11 NPT Round head Severe wet H2S service Licensor-1	
1	0.75				P30B-0006N	Plug ASTM A105 ASME B16.11 NPT Round head Severe wet H2S service Licensor-1	
1	1				P30B-0006K	Plug ASTM A105 ASME B16.11 NPT Round head Severe wet H2S service Licensor-1	
1	1.5				P30B-0006L	Plug ASTM A105 ASME B16.11 NPT Round head Severe wet H2S service Licensor-1	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P61B-00A4F	Flange WN ASTM A105 Class 300 ASME B16.5 RF Severe wet H2S service Licensor-1	
1	0.75		SCH160		P61B-00A4G	Flange WN ASTM A105 Class 300 ASME B16.5 RF Severe wet H2S service Licensor-1	
1	1		SCH160		P61B-00A4H	Flange WN ASTM A105 Class 300 ASME B16.5 RF Severe wet H2S service Licensor-1	
1	1.5		SCH160		P61B-00A4J	Flange WN ASTM A105 Class 300 ASME B16.5 RF Severe wet H2S service Licensor-1	
1	2		XS		P61B-00A4R	Flange WN ASTM A105 Class 300 ASME B16.5 RF Severe wet H2S service Licensor-1	
1	3		STD		P61B-00A4U	Flange WN ASTM A105 Class 300 ASME B16.5 RF Severe wet H2S service Licensor-1	
1	4		STD		P61B-00A4V	Flange WN ASTM A105 Class 300 ASME B16.5 RF Severe wet H2S service Licensor-1	
1	6		STD		P61B-00A4W	Flange WN ASTM A105 Class 300 ASME B16.5 RF Severe wet H2S service Licensor-1	
1	8		STD		P61B-00A4X	Flange WN ASTM A105 Class 300 ASME B16.5 RF Severe wet H2S service Licensor-1	
1	10		STD		P61B-00A4K	Flange WN ASTM A105 Class 300 ASME B16.5 RF Severe wet H2S service Licensor-1	
1	12		SCH40		P61B-00A4L	Flange WN ASTM A105 Class 300 ASME B16.5 RF Severe wet H2S service Licensor-1	
541	0.5				P61B-00DM8	Flange NPT ASTM A105 Class 300 ASME B16.5 RF Severe wet H2S service Licensor-1	
541	0.75				P61B-00CX9	Flange NPT ASTM A105 Class 300 ASME B16.5 RF Severe wet H2S service Licensor-1	
781	0.5		SCH160		P61B-00A4Y	Flange WN ASTM A105 Class 600 ASME B16.5 RF Severe wet H2S service Licensor-1	
781	0.75		SCH160		P61B-00A4Z	Flange WN ASTM A105 Class 600 ASME B16.5 RF Severe wet H2S service Licensor-1	
781	1		SCH160		P61B-00A50	Flange WN ASTM A105 Class 600 ASME B16.5 RF Severe wet H2S service Licensor-1	
781	1.5		SCH160		P61B-00A51	Flange WN ASTM A105 Class 600 ASME B16.5 RF Severe wet H2S service Licensor-1	
781	2		XS		P61B-00A57	Flange WN ASTM A105 Class 600 ASME B16.5 RF Severe wet H2S service Licensor-1	
781	3		STD		P61B-00A5A	Flange WN ASTM A105 Class 600 ASME B16.5 RF Severe wet H2S service Licensor-1	
781	4		STD		P61B-00A5B	Flange WN ASTM A105 Class 600 ASME B16.5 RF Severe wet H2S service Licensor-1	
781	6		STD		P61B-00A5C	Flange WN ASTM A105 Class 600 ASME B16.5 RF Severe wet H2S service Licensor-1	
781	8		STD		P61B-00A5D	Flange WN ASTM A105 Class 600 ASME B16.5 RF Severe wet H2S service Licensor-1	
781	10		STD		P61B-00A52	Flange WN ASTM A105 Class 600 ASME B16.5 RF Severe wet H2S service Licensor-1	
781	12		SCH40		P61B-00A53	Flange WN ASTM A105 Class 600 ASME B16.5 RF Severe wet H2S service Licensor-1	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67B-002HJ	Blind flange ASTM A105 Class 300 ASME B16.5 RF Severe wet H2S service Licensor-1	
1	0.75				P67B-002HK	Blind flange ASTM A105 Class 300 ASME B16.5 RF Severe wet H2S service Licensor-1	
1	1				P67B-002F7	Blind flange ASTM A105 Class 300 ASME B16.5 RF Severe wet H2S service Licensor-1	
1	1.5				P67B-002F8	Blind flange ASTM A105 Class 300 ASME B16.5 RF Severe wet H2S service Licensor-1	
1	2				P67B-002FE	Blind flange ASTM A105 Class 300 ASME B16.5 RF Severe wet H2S service Licensor-1	
1	3				P67B-002FF	Blind flange ASTM A105 Class 300 ASME B16.5 RF Severe wet H2S service Licensor-1	
1	4				P67B-002FG	Blind flange ASTM A105 Class 300 ASME B16.5 RF Severe wet H2S service Licensor-1	
1	6				P67B-002FH	Blind flange ASTM A105 Class 300 ASME B16.5 RF Severe wet H2S service Licensor-1	
1	8				P67B-002FJ	Blind flange ASTM A105 Class 300 ASME B16.5 RF Severe wet H2S service Licensor-1	

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BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	10				P67B-002F9	Blind flange ASTM A105 Class 300 ASME B16.5 RF Severe wet H2S service Licensor-1	
1	12				P67B-002FA	Blind flange ASTM A105 Class 300 ASME B16.5 RF Severe wet H2S service Licensor-1	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000FT	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000FU	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000G5	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000G6	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	6				P73T-000G7	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	8				P73T-000G8	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	10				P73T-000FX	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	12				P73T-000FY	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	0.5				P73T-000J8	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	0.75				P73T-000J9	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1				P73T-000JA	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1.5				P73T-000JB	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	2				P73T-000JH	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	3				P73T-000JL	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	4				P73T-000JM	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	6				P73T-000JN	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	8				P73T-000JP	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	10				P73T-000JC	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	12				P73T-000JD	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-10				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	12				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
781	0.5-6				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
781	8-12				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81B-0020S	Gate valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service Licensor-1	
1	0.75				P81B-0020T	Gate valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service Licensor-1	
1	1				P81B-0020U	Gate valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service Licensor-1	
1	1.5				P81B-0020V	Gate valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service Licensor-1	
1	2				P81C-006L9	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service Licensor-1	
1	3				P81C-006LA	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service Licensor-1	
1	4				P81C-006LB	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service Licensor-1	
1	6				P81C-006LC	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service Licensor-1	
1	8				P81C-0091L	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Severe wet H2S service Amine service Licensor-1	

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GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	10				P81C-006SR	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Severe wet H2S service Amine service Licensor-1	
1	12				P81C-006SS	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Severe wet H2S service Amine service Licensor-1	
4608	0.75				P81B-002WL	Gate valve ASTM A105 Class 300 API 602 BW both sides w/ nipples BE - NPT ASTM A106-B XXS-nipple Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service Licensor-1	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82B-001JB	Globe valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service Licensor-1	
1	0.75				P82B-001JC	Globe valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service Licensor-1	
1	1				P82B-001JD	Globe valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service Licensor-1	
1	1.5				P82B-001JE	Globe valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service Licensor-1	
1	2				P82C-00363	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service Licensor-1	
1	3				P82C-00364	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service Licensor-1	
1	4				P82C-00365	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service Licensor-1	
1	6				P82C-00366	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service Licensor-1	
1	8				P82C-004CU	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Severe wet H2S service Amine service Licensor-1	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83B-0017X	Check valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Severe wet H2S service Amine service Licensor-1	
1	0.75				P83B-0017Y	Check valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Severe wet H2S service Amine service Licensor-1	
1	1				P83B-0017Z	Check valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Severe wet H2S service Amine service Licensor-1	
1	1.5				P83B-00180	Check valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Severe wet H2S service Amine service Licensor-1	
1	2				P83C-0032C	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service Amine service Licensor-1	
1	3				P83C-0032D	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service Amine service Licensor-1	
1	4				P83C-0032E	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service Amine service Licensor-1	
1	6				P83C-0032F	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service Amine service Licensor-1	
1	8				P83C-0032G	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service Amine service Licensor-1	
1	10				P83C-0032A	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service Amine service Licensor-1	
1	12				P83C-0032B	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service Amine service Licensor-1	

ORIFICE FLANGE (FO)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2		XS		P66B-0087M	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Severe wet H2S service Licensor-1	
1	3		STD		P66B-0087N	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Severe wet H2S service Licensor-1	
1	4		STD		P66B-0087P	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Severe wet H2S service Licensor-1	
1	6		STD		P66B-0087R	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Severe wet H2S service Licensor-1	
1	8		STD		P66B-008CU	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Severe wet H2S service Licensor-1	
1	10		STD		P66B-008CT	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Severe wet H2S service Licensor-1	
1	12		SCH40		P66B-0089C	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Severe wet H2S service Licensor-1	
200	2		XS		P66B-0087U	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Severe wet H2S service with Jack screw Licensor-1	
200	3		STD		P66B-0087V	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Severe wet H2S service with Jack screw Licensor-1	
200	4		STD		P66B-0087W	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Severe wet H2S service with Jack screw Licensor-1	
200	6		STD		P66B-0087X	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Severe wet H2S service with Jack screw Licensor-1	
200	8		STD		P66B-008CW	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Severe wet H2S service with Jack screw Licensor-1	
200	10		STD		P66B-008CV	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Severe wet H2S service with Jack screw Licensor-1	
200	12		SCH40		P66B-0089S	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Severe wet H2S service with Jack screw Licensor-1	

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SPECT BLANK (SB)							
OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71B-000CP	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service Licensor-1	
1	0.75				P71B-000CR	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service Licensor-1	
1	1				P71B-000CS	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service Licensor-1	
1	1.5				P71B-000CT	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service Licensor-1	
1	2				P71B-000CW	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service Licensor-1	
1	3				P71B-000CX	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service Licensor-1	
1	4				P71B-000CY	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service Licensor-1	
1	6				P71B-000CZ	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service Licensor-1	
1	8				P71B-000D0	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service Licensor-1	
1	10				P71B-000CU	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service Licensor-1	
1	12				P71B-000CV	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service Licensor-1	

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BOLT TABLE (B_B2A501 , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-008T0		
0.75	4	0.625	75	P80S-00908		
1	4	0.625	80	P80S-00909		
1.5	4	0.750	95	P80S-005Z4		
2	8	0.625	90	P80S-0090B		
3	8	0.750	110	P80S-0090F		
4	8	0.750	115	P80S-0090G		
6	12	0.750	125	P80S-0090J		
8	12	0.875	140	P80S-005ZD		
10	16	1.000	160	P80S-0061E		
12	16	1.125	175	P80S-0064S		

BOLT TABLE (B_B2A501_781 , STUD ASME RF, OPTION CODE 781)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	80	P80S-008T2		
0.75	4	0.625	90	P80S-0090B		
1	4	0.625	95	P80S-0090C		
1.5	4	0.750	110	P80S-0090F		
2	8	0.625	110	P80S-008T8		
3	8	0.750	130	P80S-0090K		
4	8	0.875	150	P80S-005ZF		
6	12	1.000	175	P80S-0061H		
8	12	1.125	195	P80S-0064W		
10	16	1.250	250	P80S-0068M		
12	20	1.250	255	P80S-0068N		

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BRANCH TABLE (T_B2A501)

RUN PIPE SIZE (in) \ BRANCH SIZE (in)	0.5	0.75	1	1.5	2	3	4	6	8	10	12
0.5	TS										
0.75		TS									
1		TR	TS								
1.5		TR	TR	TS							
2		L	TR	TR	TS						
3		L	L	TR	TR	TS					
4	L	L	L	L	TR	TR	TS				
6	L	L	L	L	L	TR	TR	TS			
8		L	L	L	L	L	TR	TR	TS		
10		L	L	L	L	L	TR	TR	TR	TS	
12		L	L	L	L	L	L	TR	TR	TR	TS

L : OUTLET
TR : REDUCING TEE
TS : STRAIGHT TEE

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Material : Killed CS
Rating : ASME CLASS 300
Flange Face : RF
C.A.(mm) : 3.00
Gasket : Spiral Wound
Service : PROCESS - WET SEVERE SOUR SERVICE SUBJECT TO NACE + HIC STD + AMINES OR CAUSTIC - STRESS RELIEVED
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
2	USE OF SOFT SEATED BALL, PLUG AND BUTTERFLY VALVES SHALL BE LIMITED TO MAXIMUM OF 204DEGC (400DEGF)
5	BOLTING CONFIRMING TO B7M / 2HM SHALL BE USED UNDER CONDITIONS (A) DIRECT EXPOSURE TO SOUR ENVIRONMENTS (B) WHEN THE BOLTING WILL BE BURIED OR INSULATED
27	PWHT OF CARBON STEEL PIPING IN WET H2S, CAUSTIC AND AMINE SERVICES SHALL BE IN ACCORDANCE WITH SECTION 10.2, 10.3, AND 10.4 OF PROJECT SPECIFICATION 3550-8440-SP-0002 MATERIALS REQUIREMENTS FOR PRESSURISED EQUIPMENT AND PIPING. FOR CAUSTIC AND AMINE SERVICE THE FOLLOWING SHALL APPLY: - PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF ALL SITE PIPING FABRICATION WELDS IS REQUIRED FOR ALL WALL THICKNESSES. FOR MODERATE AND SEVERE WET H2S SERVICE THE FOLLOWING SHALL APPLY: PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF SITE FABRICATION CIRCUMFERENTIAL OR BRANCH WELDS IS NOT REQUIRED IF WELDS ARE MULTIPASS AND IN ACCORDANCE WITH PARA 10.2.12 OF PROJECT SPECIFICATION 3550-8440-SP-0002. FOR SERVICES MEETING THE WET H2S CRITERIA AND CAUSTIC OR AMINE CRITERIA THE MORE STRINGENT PWHT REQUIREMENT SHALL GOVERN.

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
24	FULL PORT (Q)
200	WITH JACK SCREW (FO)
541	NPT(F) (CA,F)
781	CLASS 600 (B,F,G)
797	CLASS 1500 (B,F,G)
4601	Y-PATTERN (W)
4608	VALVE WITH NIPPLES (V)

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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P01A-0010P	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	0.75		SCH160		P01A-0010R	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1		SCH160		P01A-0014M	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1.5		SCH160		P01A-0015J	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	2		XS		P01A-000YX	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	3		XS		P01A-000Z4	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	4		XS		P01A-000Z9	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	6		XS		P01A-000ZF	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	8		STD		P01A-000ZA	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	10		STD		P01A-000XJ	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	12		SCH40		P01A-0018V	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	14		SCH40		P01A-0018U	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	16		STD		P01A-000Y9	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	18		SCH30		P01A-003WP	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	20		XS		P01A-00373	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	24		XS		P01A-002MP	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P02A-001Y8	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	0.75		SCH160		P02A-000V8	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1		SCH160		P02A-000V7	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1.5		SCH160		P02A-000V9	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	2		XS		P02A-000CP	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		XS		P02A-000CX	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		XS		P02A-000D3	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		XS		P02A-000DA	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		STD		P02A-000DC	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	10		STD		P02A-000BP	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	12		SCH40		P02A-000JE	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	14		SCH40		P02A-000JF	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	16		STD		P02A-000CH	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	18		SCH30		P02A-002G3	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	20		XS		P02A-001JX	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	24		XS		P02A-000MB	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P03A-001TC	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	0.75		SCH160		P03A-000RS	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1		SCH160		P03A-000RR	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1.5		SCH160		P03A-000RP	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	2		XS		P03A-000AS	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		XS		P03A-000AZ	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		XS		P03A-000B3	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		XS		P03A-000B8	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		STD		P03A-000BB	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	10		STD		P03A-000A4	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	12		SCH40		P03A-000GC	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	14		SCH40		P03A-000GD	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	16		STD		P03A-000AM	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	18		SCH30		P03A-002DJ	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	20		XS		P03A-001E0	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	24		XS		P03A-001E1	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P21A-003AW	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	0.75		SCH160		P21A-002B8	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		SCH160		P21A-002B6	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5		SCH160		P21A-002B9	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2		XS		P21A-001CJ	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		XS		P21A-001CR	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		XS		P21A-001CV	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6		XS		P21A-001D4	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8		STD		P21A-001D8	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10		STD		P21A-001BV	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12		SCH40		P21A-0022P	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14		SCH40		P21A-0022R	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16		STD		P21A-001CD	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18		SCH30		P21A-003EA	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20		XS		P21A-002Y4	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24		XS		P21A-002Y5	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75	SCH160	SCH160	P24A-004B6	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.75	SCH160	SCH160	P24A-004B2	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	1	SCH160	SCH160	P24A-004BA	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	XS	SCH160	P24A-00GMB	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	XS	SCH160	P24A-005K9	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	XS	SCH160	P24A-00GNV	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	XS	XS	P24A-0023S	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	XS	XS	P24A-0023E	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	XS	XS	P24A-0024A	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	XS	XS	P24A-0023F	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	XS	XS	P24A-00243	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	STD	XS	P24A-00AEV	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	STD	XS	P24A-005KM	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	STD	XS	P24A-00HL4	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	STD	XS	P24A-00562	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	STD	STD	P24A-0022W	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	SCH40	XS	P24A-00AF9	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH40	STD	P24A-00AF8	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH40	STD	P24A-00GSL	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	SCH40	XS	P24A-00AFC	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	SCH40	STD	P24A-00AFB	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	SCH40	STD	P24A-003GJ	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	SCH40	SCH40	P24A-0033E	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	6	STD	XS	P24A-00N28	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	STD	STD	P24A-00202	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	STD	STD	P24A-0022G	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	STD	SCH40	P24A-00GVU	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	STD	SCH40	P24A-00GVV	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	8	SCH30	STD	P24A-00M50	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	10	SCH30	STD	P24A-00HL5	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	12	SCH30	SCH40	P24A-00GAX	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	14	SCH30	SCH40	P24A-00GAY	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	16	SCH30	STD	P24A-00M4Z	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	8	XS	STD	P24A-00M52	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	10	XS	STD	P24A-00HL7	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	12	XS	SCH40	P24A-00GMM	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	14	XS	SCH40	P24A-00GS7	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	16	XS	STD	P24A-00M51	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	18	XS	SCH30	P24A-00HL8	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24	10	XS	STD	P24A-00GR8	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24	12	XS	SCH40	P24A-00GB4	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24	14	XS	SCH40	P24A-00GB5	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	24	16	XS	STD	P24A-00GRA	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24	18	XS	SCH30	P24A-00GB7	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24	20	XS	XS	P24A-00882	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	SCH160	P27A-004LZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.5	SCH160	SCH160	P27A-004M8	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.75	SCH160	SCH160	P27A-002T5	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.5	SCH160	SCH160	P27A-004MV	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.75	SCH160	SCH160	P27A-002T7	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	1	SCH160	SCH160	P27A-002T4	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	0.75	XS	SCH160	P27A-001LG	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	XS	SCH160	P27A-0033P	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	XS	SCH160	P27A-0033B	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	XS	SCH160	P27A-003N1	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	XS	XS	P27A-001E5	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	1.5	XS	SCH160	P27A-003N2	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	XS	XS	P27A-001E4	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	XS	XS	P27A-001EP	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	XS	XS	P27A-001DM	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	XS	XS	P27A-001EB	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	STD	XS	P27A-003N3	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	STD	XS	P27A-003N4	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	STD	XS	P27A-0037X	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	STD	XS	P27A-0037Y	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	STD	STD	P27A-0019J	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	SCH40	XS	P27A-004W2	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH40	STD	P27A-004XB	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH40	STD	P27A-004UG	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	SCH40	XS	P27A-003ZY	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	SCH40	STD	P27A-003ZT	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	SCH40	STD	P27A-0029L	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	SCH40	SCH40	P27A-001ZZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	STD	STD	P27A-001C8	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	STD	STD	P27A-0018D	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	STD	SCH40	P27A-00BL0	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	STD	SCH40	P27A-00BL1	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	10	SCH30	STD	P27A-005B4	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	12	SCH30	SCH40	P27A-005D7	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	14	SCH30	SCH40	P27A-00B92	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	16	SCH30	STD	P27A-005HB	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	12	XS	SCH40	P27A-005LZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	14	XS	SCH40	P27A-005P2	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	16	XS	STD	P27A-005SA	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	18	XS	SCH30	P27A-005TX	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24	16	XS	STD	P27A-005YC	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24	18	XS	SCH30	P27A-005ZY	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24	20	XS	XS	P27A-0061N	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	SCH160	P28A-007KG	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.5	SCH160	SCH160	P28A-007KH	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.75	SCH160	SCH160	P28A-002TU	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.5	SCH160	SCH160	P28A-007KJ	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.75	SCH160	SCH160	P28A-002TW	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	1	SCH160	SCH160	P28A-002TR	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	0.75	XS	SCH160	P28A-001LE	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2	1	XS	SCH160	P28A-003M1	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	XS	SCH160	P28A-003M2	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	XS	SCH160	P28A-003MV	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	XS	XS	P28A-001EH	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	1.5	XS	SCH160	P28A-003MW	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	XS	XS	P28A-001EJ	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	XS	XS	P28A-001F8	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	XS	XS	P28A-001DU	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	XS	XS	P28A-001ER	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	STD	XS	P28A-003MX	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	STD	XS	P28A-003MY	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	STD	XS	P28A-0037D	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	STD	XS	P28A-0037E	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	STD	STD	P28A-0019J	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	SCH40	XS	P28A-005T8	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH40	STD	P28A-005T9	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH40	STD	P28A-008HT	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	SCH40	XS	P28A-003ZS	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	SCH40	STD	P28A-003ZL	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	SCH40	STD	P28A-0028T	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	SCH40	SCH40	P28A-001ZG	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	STD	STD	P28A-001BX	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	STD	STD	P28A-0018F	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	STD	SCH40	P28A-008LC	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	STD	SCH40	P28A-008LD	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	10	SCH30	STD	P28A-0096Z	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	12	SCH30	SCH40	P28A-0082X	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	14	SCH30	SCH40	P28A-0082Y	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	16	SCH30	STD	P28A-009KN	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	12	XS	SCH40	P28A-008EH	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	14	XS	SCH40	P28A-008HJ	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	16	XS	STD	P28A-00DBF	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	18	XS	SCH30	P28A-00971	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24	16	XS	STD	P28A-008HA	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24	18	XS	SCH30	P28A-00832	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24	20	XS	XS	P28A-0063S	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P29A-0037W	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	0.75		SCH160		P29A-0037X	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	1		SCH160		P29A-001VW	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5		SCH160		P29A-001VX	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	2		XS		P29A-00381	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	3		XS		P29A-0035D	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	4		XS		P29A-0035E	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	6		XS		P29A-001WA	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	8		STD		P29A-00386	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	10		STD		P29A-0037Y	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	12		SCH40		P29A-001VZ	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	14		SCH40		P29A-001W0	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	16		STD		P29A-003Y7	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	18		SCH30		P29A-003BY	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	20		XS		P29A-001W4	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	24		XS		P29A-003BZ	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
541	0.75				P29B-0000Y	Cap ASTM A105 Class 6000 ASME B16.11 NPT	
541	1				P29B-0000Z	Cap ASTM A105 Class 6000 ASME B16.11 NPT	

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STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P41A-000B9	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		XXS		P41A-000BA	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		XXS		P41A-000D8	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		XXS		P41A-000D9	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2	0.75	XS	SCH160	P31B-00CP7	Outlet ASTM A105 MSS SP-97 BW	
1	3	0.75	XS	SCH160	P31B-00CMS	Outlet ASTM A105 MSS SP-97 BW	
1	4	0.75	XS	SCH160	P31B-00CLS	Outlet ASTM A105 MSS SP-97 BW	
1	6	0.75	XS	SCH160	P31B-00CKJ	Outlet ASTM A105 MSS SP-97 BW	
1	8	0.75	STD	SCH160	P31B-00C5E	Outlet ASTM A105 MSS SP-97 BW	
1	10	0.75	STD	SCH160	P31B-00CFB	Outlet ASTM A105 MSS SP-97 BW	
1	12	0.75	SCH40	SCH160	P31B-00CS8	Outlet ASTM A105 MSS SP-97 BW	
1	14	0.75	SCH40	SCH160	P31B-00CRP	Outlet ASTM A105 MSS SP-97 BW	
1	16	0.75	STD	SCH160	P31B-00CR7	Outlet ASTM A105 MSS SP-97 BW	
1	18	0.75	SCH30	SCH160	P31B-00X0K	Outlet ASTM A105 MSS SP-97 BW	
1	20	0.75	XS	SCH160	P31B-01181	Outlet ASTM A105 MSS SP-97 BW	
1	24	0.75	XS	SCH160	P31B-007N3	Outlet ASTM A105 MSS SP-97 BW	
1	3	1	XS	SCH160	P31B-00B4H	Outlet ASTM A105 MSS SP-97 BW	
1	4	1	XS	SCH160	P31B-00B3L	Outlet ASTM A105 MSS SP-97 BW	
1	6	1	XS	SCH160	P31B-00AZB	Outlet ASTM A105 MSS SP-97 BW	
1	8	1	STD	SCH160	P31B-00AVF	Outlet ASTM A105 MSS SP-97 BW	
1	10	1	STD	SCH160	P31B-00C06	Outlet ASTM A105 MSS SP-97 BW	
1	12	1	SCH40	SCH160	P31B-00BWL	Outlet ASTM A105 MSS SP-97 BW	
1	14	1	SCH40	SCH160	P31B-00BRP	Outlet ASTM A105 MSS SP-97 BW	
1	16	1	STD	SCH160	P31B-00BR6	Outlet ASTM A105 MSS SP-97 BW	
1	18	1	SCH30	SCH160	P31B-00TVY	Outlet ASTM A105 MSS SP-97 BW	
1	20	1	XS	SCH160	P31B-00TR3	Outlet ASTM A105 MSS SP-97 BW	
1	24	1	XS	SCH160	P31B-007MU	Outlet ASTM A105 MSS SP-97 BW	
1	4	1.5	XS	SCH160	P31B-00BP3	Outlet ASTM A105 MSS SP-97 BW	
1	6	1.5	XS	SCH160	P31B-00BJG	Outlet ASTM A105 MSS SP-97 BW	
1	8	1.5	STD	SCH160	P31B-00BHJ	Outlet ASTM A105 MSS SP-97 BW	
1	10	1.5	STD	SCH160	P31B-00AUM	Outlet ASTM A105 MSS SP-97 BW	
1	12	1.5	SCH40	SCH160	P31B-00CEH	Outlet ASTM A105 MSS SP-97 BW	
1	14	1.5	SCH40	SCH160	P31B-00CDR	Outlet ASTM A105 MSS SP-97 BW	
1	16	1.5	STD	SCH160	P31B-00C99	Outlet ASTM A105 MSS SP-97 BW	
1	18	1.5	SCH30	SCH160	P31B-00TVZ	Outlet ASTM A105 MSS SP-97 BW	
1	20	1.5	XS	SCH160	P31B-00TR4	Outlet ASTM A105 MSS SP-97 BW	
1	24	1.5	XS	SCH160	P31B-007MM	Outlet ASTM A105 MSS SP-97 BW	
1	6	2	XS	XS	P31B-007SG	Outlet ASTM A105 MSS SP-97 BW	
1	8	2	STD	XS	P31B-00AGX	Outlet ASTM A105 MSS SP-97 BW	
1	10	2	STD	XS	P31B-00ASA	Outlet ASTM A105 MSS SP-97 BW	
1	12	2	SCH40	XS	P31B-00CBS	Outlet ASTM A105 MSS SP-97 BW	
1	14	2	SCH40	XS	P31B-00CAH	Outlet ASTM A105 MSS SP-97 BW	
1	16	2	STD	XS	P31B-00C1T	Outlet ASTM A105 MSS SP-97 BW	
1	18	2	SCH30	XS	P31B-00TUN	Outlet ASTM A105 MSS SP-97 BW	
1	20	2	XS	XS	P31B-00993	Outlet ASTM A105 MSS SP-97 BW	
1	24	2	XS	XS	P31B-0092Y	Outlet ASTM A105 MSS SP-97 BW	
1	8	3	STD	XS	P31B-009Y0	Outlet ASTM A105 MSS SP-97 BW	
1	10	3	STD	XS	P31B-009CG	Outlet ASTM A105 MSS SP-97 BW	
1	12	3	SCH40	XS	P31B-0096J	Outlet ASTM A105 MSS SP-97 BW	
1	14	3	SCH40	XS	P31B-0090P	Outlet ASTM A105 MSS SP-97 BW	
1	16	3	STD	XS	P31B-008UE	Outlet ASTM A105 MSS SP-97 BW	
1	18	3	SCH30	XS	P31B-008MG	Outlet ASTM A105 MSS SP-97 BW	
1	20	3	XS	XS	P31B-008F3	Outlet ASTM A105 MSS SP-97 BW	
1	24	3	XS	XS	P31B-0088Y	Outlet ASTM A105 MSS SP-97 BW	
1	12	4	SCH40	XS	P31B-00P1J	Outlet ASTM A105 MSS SP-97 BW	
1	14	4	SCH40	XS	P31B-00P1N	Outlet ASTM A105 MSS SP-97 BW	

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OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	16	4	STD	XS	P31B-00UX1	Outlet ASTM A105 MSS SP-97 BW	
1	18	4	SCH30	XS	P31B-008K9	Outlet ASTM A105 MSS SP-97 BW	
1	20	4	XS	XS	P31B-0088A	Outlet ASTM A105 MSS SP-97 BW	
1	24	4	XS	XS	P31B-00823	Outlet ASTM A105 MSS SP-97 BW	
1	18	6	SCH30	XS	P31B-008RV	Outlet ASTM A105 MSS SP-97 BW	
1	20	6	XS	XS	P31B-008K4	Outlet ASTM A105 MSS SP-97 BW	
1	24	6	XS	XS	P31B-008J7	Outlet ASTM A105 MSS SP-97 BW	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30B-0002D	Plug ASTM A105 ASME B16.11 NPT Round head	
1	0.75				P30B-0002E	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1				P30B-0002F	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1.5				P30B-0002G	Plug ASTM A105 ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P61B-003P9	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	0.75		SCH160		P61B-0037M	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	1		SCH160		P61B-0037L	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	1.5		SCH160		P61B-0037J	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	2		XS		P61B-001HW	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	3		XS		P61B-001DK	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	4		XS		P61B-001F5	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	6		XS		P61B-001FE	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	8		STD		P61B-001NL	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	10		STD		P61B-001L6	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	12		SCH40		P61B-002FJ	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	14		SCH40		P61B-002FL	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	16		STD		P61B-001MH	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	18		SCH30		P61B-004GU	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	20		XS		P61B-003A5	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	24		XS		P61B-002RA	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
541	0.5				P61B-003U3	Flange NPT ASTM A105 Class 300 ASME B16.5 RF	
541	0.75				P61B-003U4	Flange NPT ASTM A105 Class 300 ASME B16.5 RF	
781	0.5		SCH160		P61B-004UV	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	0.75		SCH160		P61B-003T2	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	1		SCH160		P61B-003T3	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	1.5		SCH160		P61B-003T4	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	2		XS		P61B-001DH	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	3		XS		P61B-001M8	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	4		XS		P61B-001SH	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	6		XS		P61B-001T1	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	8		STD		P61B-001KK	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	10		STD		P61B-001JJ	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	12		SCH40		P61B-003T5	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	14		SCH40		P61B-003T6	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	16		STD		P61B-003FB	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	18		SCH30		P61B-005TU	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	20		XS		P61B-004UW	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	24		XS		P61B-003T9	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
797	16		STD		P61B-00E1G	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67B-000GH	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	0.75				P67B-000GJ	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	1				P67B-000GK	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	1.5				P67B-000GL	Blind flange ASTM A105 Class 300 ASME B16.5 RF	

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BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2				P67B-000GM	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	3				P67B-000GN	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	4				P67B-000GP	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	6				P67B-000GY	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	8				P67B-000GZ	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	10				P67B-000GR	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	12				P67B-000GS	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	14				P67B-000GT	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	16				P67B-000GU	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	18				P67B-000GV	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	20				P67B-000GW	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	24				P67B-000GX	Blind flange ASTM A105 Class 300 ASME B16.5 RF	

REDUCING FLANGE (FR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2	0.75		SCH160	P62B-000NG	Reducing flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	2	1		SCH160	P62B-0007D	Reducing flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	2	1.5		SCH160	P62B-000MG	Reducing flange WN ASTM A105 Class 300 ASME B16.5 RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000FT	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000FU	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000G5	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000G6	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	6				P73T-000G7	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	8				P73T-000G8	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	10				P73T-000FX	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	12				P73T-000FY	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	14				P73T-000FZ	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	16				P73T-000G0	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	18				P73T-000G1	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	20				P73T-000G3	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	24				P73T-000G4	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	0.5				P73T-000J8	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	0.75				P73T-000J9	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1				P73T-000JA	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1.5				P73T-000JB	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	2				P73T-000JH	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	3				P73T-000JL	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	4				P73T-000JM	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	6				P73T-000JN	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	8				P73T-000JP	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	10				P73T-000JC	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	12				P73T-000JD	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	14				P73T-000JE	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

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GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
781	16				P73T-000JF	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	18				P73T-000JG	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	20				P73T-000JJ	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	24				P73T-000JK	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
797	16				P75T-0008H	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-10				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	12-24				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
781	0.5-6				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
781	8-24				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
797	16				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81B-002EF	Gate valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service	
1	0.75				P81B-002EG	Gate valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service	
1	1				P81B-002EH	Gate valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service	
1	1.5				P81B-002EJ	Gate valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service	
1	2				P81C-007G2	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service	
1	3				P81C-007G3	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service	
1	4				P81C-007G4	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service	
1	6				P81C-007G5	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service	
1	8				P81C-0091M	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Gear operated Severe wet H2S service Amine service	
1	10				P81C-007G7	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Gear operated Severe wet H2S service Amine service	
1	12				P81C-007G8	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Gear operated Severe wet H2S service Amine service	
1	14				P81C-007G9	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Gear operated Severe wet H2S service Amine service	
1	16				P81C-007GA	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Gear operated Severe wet H2S service Amine service	
1	18				P81C-007GB	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Gear operated Severe wet H2S service Amine service	
1	20				P81C-007GC	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Gear operated Severe wet H2S service Amine service	
1	24				P81C-007GD	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Gear operated Severe wet H2S service Amine service	
4608	0.75				P81B-002WM	Gate valve ASTM A105 Class 300 API 602 BW both sides w/ nipples BE - NPT ASTM A106-B XXS-nipple Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82B-001TX	Globe valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service	
1	0.75				P82B-001TY	Globe valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service	
1	1				P82B-001TZ	Globe valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service	
1	1.5				P82B-001U0	Globe valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service	
1	2				P82C-003SA	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service	
1	3				P82C-003SB	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service	
1	4				P82C-003SC	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service	
1	6				P82C-003SD	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service	
1	8				P82C-004CV	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Gear operated Severe wet H2S service Amine service	

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GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
4601	0.75				P82B-00230	Y-pattern globe valve ASTM A105 Class 300 ASME B16.34 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service	
4601	1				P82B-00231	Y-pattern globe valve ASTM A105 Class 300 ASME B16.34 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service	
4601	1.5				P82B-0022E	Y-pattern globe valve ASTM A105 Class 300 ASME B16.34 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service	
4601	2				P82C-00472	Y-pattern globe valve ASTM A216 Grade WCB Class 300 ASME B16.34 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service	
4601	3				P82C-00473	Y-pattern globe valve ASTM A216 Grade WCB Class 300 ASME B16.34 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service	
4601	10				P82C-00474	Y-pattern globe valve ASTM A216 Grade WCB Class 300 ASME B16.34 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Gear operated Severe wet H2S service Amine service	
4601	12				P82C-00475	Y-pattern globe valve ASTM A216 Grade WCB Class 300 ASME B16.34 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Gear operated Severe wet H2S service Amine service	
4601	14				P82C-00476	Y-pattern globe valve ASTM A216 Grade WCB Class 300 ASME B16.34 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Gear operated Severe wet H2S service Amine service	
4601	16				P82C-00477	Y-pattern globe valve ASTM A216 Grade WCB Class 300 ASME B16.34 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Gear operated Severe wet H2S service Amine service	
4601	18				P82C-00478	Y-pattern globe valve ASTM A216 Grade WCB Class 300 ASME B16.34 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Gear operated Severe wet H2S service Amine service	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83B-001CG	Check valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 Lift-type Bolted cover Severe wet H2S service Amine service	
1	0.75				P83B-001CH	Check valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 Lift-type Bolted cover Severe wet H2S service Amine service	
1	1				P83B-001CJ	Check valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 Lift-type Bolted cover Severe wet H2S service Amine service	
1	1.5				P83B-001CK	Check valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 Lift-type Bolted cover Severe wet H2S service Amine service	
1	2				P83C-00385	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 Swing-type Bolted cover Severe wet H2S service Amine service	
1	3				P83C-00388	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 Swing-type Bolted cover Severe wet H2S service Amine service	
1	4				P83C-00389	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 Swing-type Bolted cover Severe wet H2S service Amine service	
1	6				P83C-0038A	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 Swing-type Bolted cover Severe wet H2S service Amine service	
1	8				P83C-0038B	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 Swing-type Bolted cover Severe wet H2S service Amine service	
1	10				P83C-00380	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 Swing-type Bolted cover Severe wet H2S service Amine service	
1	12				P83C-00381	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 Swing-type Bolted cover Severe wet H2S service Amine service	
1	14				P83C-00382	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 Swing-type Bolted cover Severe wet H2S service Amine service	
1	16				P83C-00383	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 Swing-type Bolted cover Severe wet H2S service Amine service	
1	18				P83C-00384	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 Swing-type Bolted cover Severe wet H2S service Amine service	
1	20				P83C-00386	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 Swing-type Bolted cover Severe wet H2S service Amine service	
1	24				P83C-00387	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 Swing-type Bolted cover Severe wet H2S service Amine service	

BALL VALVE (Q)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P84B-001K3	Ball valve Long-pattern ASTM A105 Class 300 API 608 Flange ASME B16.5 RF Ball SS316L Seat R-PTFE Trim SS316L Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design Severe wet H2S service Amine service	
1	0.75				P84B-001K4	Ball valve Long-pattern ASTM A105 Class 300 API 608 Flange ASME B16.5 RF Ball SS316L Seat R-PTFE Trim SS316L Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design Severe wet H2S service Amine service	
1	1				P84B-001K5	Ball valve Long-pattern ASTM A105 Class 300 API 608 Flange ASME B16.5 RF Ball SS316L Seat R-PTFE Trim SS316L Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design Severe wet H2S service Amine service	
1	1.5				P84B-001K6	Ball valve Long-pattern ASTM A105 Class 300 API 608 Flange ASME B16.5 RF Ball SS316L Seat R-PTFE Trim SS316L Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design Severe wet H2S service Amine service	
1	2				P84C-006YG	Ball valve Long-pattern ASTM A216 Grade WCB Class 300 API 608 Flange ASME B16.5 RF Ball SS316L Seat R-PTFE Trim SS316L Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design Severe wet H2S service Amine service	
1	3				P84C-006YH	Ball valve Long-pattern ASTM A216 Grade WCB Class 300 API 608 Flange ASME B16.5 RF Ball SS316L Seat R-PTFE Trim SS316L Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design Severe wet H2S service Amine service	
1	4				P84C-006YJ	Ball valve Long-pattern ASTM A216 Grade WCB Class 300 API 608 Flange ASME B16.5 RF Ball SS316L Seat R-PTFE Trim SS316L Floating-type Side-entry Gear operated Reduced bore Fire tested design Severe wet H2S service Amine service	
1	6				P84C-006YP	Ball valve Long-pattern ASTM A216 Grade WCB Class 300 API 608 Flange ASME B16.5 RF Ball SS316L Seat R-PTFE Trim SS316L Trunnion-type Side-entry Gear operated Reduced bore Fire tested design Severe wet H2S service Amine service	

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BALL VALVE (Q)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	8				P84C-006YR	Ball valve Long-pattern ASTM A216 Grade WCB Class 300 API 608 Flange ASME B16.5 RF Ball SS316L Seat R-PTFE Trim SS316L Trunnion-type Side-entry Gear operated Reduced bore Fire tested design Severe wet H2S service Amine service	
1	10				P84C-006YK	Ball valve Long-pattern ASTM A216 Grade WCB Class 300 API 608 Flange ASME B16.5 RF Ball SS316L Seat R-PTFE Trim SS316L Trunnion-type Side-entry Gear operated Reduced bore Fire tested design Severe wet H2S service Amine service	
1	12				P84C-006YL	Ball valve Long-pattern ASTM A216 Grade WCB Class 300 API 608 Flange ASME B16.5 RF Ball SS316L Seat R-PTFE Trim SS316L Trunnion-type Side-entry Gear operated Reduced bore Fire tested design Severe wet H2S service Amine service	
1	14				P84C-006YM	Ball valve Long-pattern ASTM A216 Grade WCB Class 300 API 608 Flange ASME B16.5 RF Ball SS316L Seat R-PTFE Trim SS316L Trunnion-type Side-entry Gear operated Reduced bore Fire tested design Severe wet H2S service Amine service	
1	16				P84C-006YN	Ball valve Long-pattern ASTM A216 Grade WCB Class 300 API 608 Flange ASME B16.5 RF Ball SS316L Seat R-PTFE Trim SS316L Trunnion-type Side-entry Gear operated Reduced bore Fire tested design Severe wet H2S service Amine service	
24	2				P84C-006YS	Ball valve Long-pattern ASTM A216 Grade WCB Class 300 API 608 Flange ASME B16.5 RF Ball SS316L Seat R-PTFE Trim SS316L Floating-type Side-entry Wrench lever operated Full bore Fire tested design Severe wet H2S service Amine service	
24	3				P84C-006YT	Ball valve Long-pattern ASTM A216 Grade WCB Class 300 API 608 Flange ASME B16.5 RF Ball SS316L Seat R-PTFE Trim SS316L Floating-type Side-entry Wrench lever operated Full bore Fire tested design Severe wet H2S service Amine service	
24	4				P84C-006YU	Ball valve Long-pattern ASTM A216 Grade WCB Class 300 API 608 Flange ASME B16.5 RF Ball SS316L Seat R-PTFE Trim SS316L Floating-type Side-entry Gear operated Full bore Fire tested design Severe wet H2S service Amine service	
24	6				P84C-006YZ	Ball valve Long-pattern ASTM A216 Grade WCB Class 300 API 608 Flange ASME B16.5 RF Ball SS316L Seat R-PTFE Trim SS316L Trunnion-type Side-entry Gear operated Full bore Fire tested design Severe wet H2S service Amine service	
24	8				P84C-006Z0	Ball valve Long-pattern ASTM A216 Grade WCB Class 300 API 608 Flange ASME B16.5 RF Ball SS316L Seat R-PTFE Trim SS316L Trunnion-type Side-entry Gear operated Full bore Fire tested design Severe wet H2S service Amine service	
24	10				P84C-006YV	Ball valve Long-pattern ASTM A216 Grade WCB Class 300 API 608 Flange ASME B16.5 RF Ball SS316L Seat R-PTFE Trim SS316L Trunnion-type Side-entry Gear operated Full bore Fire tested design Severe wet H2S service Amine service	
24	12				P84C-006YW	Ball valve Long-pattern ASTM A216 Grade WCB Class 300 API 608 Flange ASME B16.5 RF Ball SS316L Seat R-PTFE Trim SS316L Trunnion-type Side-entry Gear operated Full bore Fire tested design Severe wet H2S service Amine service	
24	14				P84C-006YX	Ball valve Long-pattern ASTM A216 Grade WCB Class 300 API 608 Flange ASME B16.5 RF Ball SS316L Seat R-PTFE Trim SS316L Trunnion-type Side-entry Gear operated Full bore Fire tested design Severe wet H2S service Amine service	
24	16				P84C-006YY	Ball valve Long-pattern ASTM A216 Grade WCB Class 300 API 608 Flange ASME B16.5 RF Ball SS316L Seat R-PTFE Trim SS316L Trunnion-type Side-entry Gear operated Full bore Fire tested design Severe wet H2S service Amine service	

BUTTERFLY VALVE (H)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	10				P86C-00254	Offset design butterfly valve ASTM A216 Grade WCB Class 300 API 609 Category B Lug-type ASME B16.5 RF Disc CS Seat Stellite-6 Trim SS316L Triple eccentric design BG Gear operated Amine service Severe wet H2S service	

ORIFICE FLANGE (FO)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2		XS		P66B-0084B	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	3		XS		P66B-008C1	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	4		XS		P66B-008AK	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	6		XS		P66B-0088E	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	8		STD		P66B-008BN	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	10		STD		P66B-008BM	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	12		SCH40		P66B-00885	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	14		SCH40		P66B-00886	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
200	2		XS		P66B-00843	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	3		XS		P66B-008C3	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	4		XS		P66B-008AH	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	6		XS		P66B-0088V	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	8		STD		P66B-008BR	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	10		STD		P66B-008BP	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	12		SCH40		P66B-0088K	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	14		SCH40		P66B-0088L	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71B-000B1	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	0.75				P71B-000B2	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	1				P71B-000B3	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71B-000B4	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	

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SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2				P71B-000B6	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	3				P71B-000B7	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	4				P71B-000B8	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	6				P71B-000B9	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	8				P71B-000BA	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	10				P71B-000B5	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	12				P71B-000BB	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	

PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000FA	Paddle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	16				P72B-000FB	Paddle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	18				P72B-000FC	Paddle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	20				P72B-000FD	Paddle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	24				P72B-000FE	Paddle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	

PADDLE SPACER (PS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000FG	Paddle spacer ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	16				P72B-000FH	Paddle spacer ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	18				P72B-000FJ	Paddle spacer ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	20				P72B-000FK	Paddle spacer ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	24				P72B-000FL	Paddle spacer ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	

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BOLT TABLE (B_B2A502 , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-008T0		
0.75	4	0.625	75	P80S-00908		
1	4	0.625	80	P80S-00909		
1.5	4	0.750	95	P80S-005Z4		
2	8	0.625	90	P80S-0090B		
3	8	0.750	110	P80S-0090F		
4	8	0.750	115	P80S-0090G		
6	12	0.750	125	P80S-0090J		
8	12	0.875	140	P80S-005ZD		
10	16	1.000	160	P80S-0061E		
12	16	1.125	175	P80S-0064S		
14	20	1.125	180	P80S-0064T		
16	20	1.250	190	P80S-00689		
18	24	1.250	200	P80S-0068B		
20	24	1.250	210	P80S-0068D		
24	24	1.500	235	P80S-006LB		

BOLT TABLE (B_B2A502_781 , STUD ASME RF, OPTION CODE 781)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	80	P80S-008T2		
0.75	4	0.625	90	P80S-0090B		
1	4	0.625	95	P80S-0090C		
1.5	4	0.750	110	P80S-0090F		
2	8	0.625	110	P80S-008T8		
3	8	0.750	130	P80S-0090K		
4	8	0.875	150	P80S-005ZF		
6	12	1.000	175	P80S-0061H		
8	12	1.125	195	P80S-0064W		
10	16	1.250	250	P80S-0068M		
12	20	1.250	255	P80S-0068N		
14	20	1.375	270	P80S-006HV		
16	20	1.500	295	P80S-006LP		
18	20	1.625	320	P80S-00A5E		
20	24	1.625	335	P80S-00A5H		
24	24	1.875	380	P80S-00AW5		

BOLT TABLE (B_B2A502_797 , STUD ASME RJ, OPTION CODE 797)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	110		R12	
0.75	4	0.750	115		R14	
1	4	0.875	130		R16	
1.5	4	1.000	140		R20	
2	8	0.875	150		R24	
3	8	1.125	180		R35	
4	8	1.250	230		R39	
6	12	1.375	300		R46	
8	12	1.625	345		R50	
10	12	1.875	395		R54	
12	16	2.000	445		R58	
14	16	2.250	490		R63	
16	16	2.500	540	P80S-00DZM	R67	P75T-0008H
18	16	2.750	590		R71	
20	16	3.000	650		R75	
24	16	3.500	745		R79	

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BRANCH TABLE (T_B2A502)

RUN PIPE SIZE (in) \ BRANCH SIZE (in)	0.5	0.75	1	1.5	2	3	4	6	8	10	12	14	16	18	20	24
0.5	TS															
0.75		TS														
1		TR	TS													
1.5		TR	TR	TS												
2		L	TR	TR	TS											
3		L	L	TR	TR	TS										
4	L	L	L	L	TR	TR	TS									
6	L	L	L	L	L	TR	TR	TS								
8		L	L	L	L	L	TR	TR	TS							
10		L	L	L	L	L	TR	TR	TR	TS						
12		L	L	L	L	L	L	TR	TR	TR	TS					
14		L	L	L	L	L	L	TR	TR	TR	TR	TS				
16		L	L	L	L	L	L	TR	TR	TR	TR	TR	TS			
18		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TS		
20		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TR	TS	
24		L	L	L	L	L	L	L	9PD	TR	TR	TR	TR	TR	TR	TS

TR : REDUCING TEE
9PD : REINFORCING PAD 90 DEG
TS : STRAIGHT TEE
L : OUTLET

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PIPING CLASS

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Material : Killed CS
Rating : ASME CLASS 300
Flange Face : RF
C.A.(mm) : 3.00
Gasket : Spiral Wound
Service : PROCESS - WET SEVERE SOUR SERVICE SUBJECT TO NACE + HIC STD + AMINES OR CAUSTIC - STRESS RELIEVED
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
5	BOLTING CONFIRMING TO B7M / 2HM SHALL BE USED UNDER CONDITIONS (A) DIRECT EXPOSURE TO SOUR ENVIRONMENTS (B) WHEN THE BOLTING WILL BE BURIED OR INSULATED
27	PWHT OF CARBON STEEL PIPING IN WET H2S, CAUSTIC AND AMINE SERVICES SHALL BE IN ACCORDANCE WITH SECTION 10.2, 10.3, AND 10.4 OF PROJECT SPECIFICATION 3550-8440-SP-0002 MATERIALS REQUIREMENTS FOR PRESSURISED EQUIPMENT AND PIPING. FOR CAUSTIC AND AMINE SERVICE THE FOLLOWING SHALL APPLY: - PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF ALL SITE PIPING FABRICATION WELDS IS REQUIRED FOR ALL WALL THICKNESSES. FOR MODERATE AND SEVERE WET H2S SERVICE THE FOLLOWING SHALL APPLY: PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF SITE FABRICATION CIRCUMFERENTIAL OR BRANCH WELDS IS NOT REQUIRED IF WELDS ARE MULTIPASS AND IN ACCORDANCE WITH PARA 10.2.12 OF PROJECT SPECIFICATION 3550-8440-SP-0002. FOR SERVICES MEETING THE WET H2S CRITERIA AND CAUSTIC OR AMINE CRITERIA THE MORE STRINGENT PWHT REQUIREMENT SHALL GOVERN.

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
541	NPT(F) (CA,F)
781	CLASS 600 (B,F,G)
4608	VALVE WITH NIPPLES (V)

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PIPING CLASS
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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P01A-007DV	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE Severe wet H2S service Licensor-3	
1	0.75		SCH160		P01A-007DW	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE Severe wet H2S service Licensor-3	
1	1		SCH160		P01A-007DX	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE Severe wet H2S service Licensor-3	
1	1.5		SCH160		P01A-007DY	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE Severe wet H2S service Licensor-3	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P02A-003VX	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-3	
1	0.75		SCH160		P02A-003VY	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-3	
1	1		SCH160		P02A-003VZ	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-3	
1	1.5		SCH160		P02A-003W0	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-3	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P03A-003TK	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-3	
1	0.75		SCH160		P03A-003TL	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-3	
1	1		SCH160		P03A-003TM	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-3	
1	1.5		SCH160		P03A-003TN	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-3	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P21A-004DC	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	0.75		SCH160		P21A-004DD	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	1		SCH160		P21A-004DE	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	1.5		SCH160		P21A-004DF	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75	SCH160	SCH160	P24A-00KH2	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	1.5	0.75	SCH160	SCH160	P24A-00KH3	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	1.5	1	SCH160	SCH160	P24A-00KH4	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	SCH160	P27A-00F07	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	1	0.5	SCH160	SCH160	P27A-00F08	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	1	0.75	SCH160	SCH160	P27A-00F09	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	1.5	0.5	SCH160	SCH160	P27A-00F0A	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	1.5	0.75	SCH160	SCH160	P27A-00F0B	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	1.5	1	SCH160	SCH160	P27A-00F0C	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	SCH160	P28A-00C48	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	1	0.5	SCH160	SCH160	P28A-00C49	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	1	0.75	SCH160	SCH160	P28A-00C4A	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	1.5	0.5	SCH160	SCH160	P28A-00C4B	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	1.5	0.75	SCH160	SCH160	P28A-00C4C	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	1.5	1	SCH160	SCH160	P28A-00C4D	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5		SCH160		P29A-00387	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	0.75		SCH160		P29A-00388	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	1		SCH160		P29A-00389	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	

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CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5		SCH160		P29A-0038A	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
541	0.75				P29B-0000Y	Cap ASTM A105 Class 6000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P41A-0019D	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Severe wet H2S service Licensor-3	
1	0.75		XXS		P41A-0019E	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Severe wet H2S service Licensor-3	
1	1		XXS		P41A-00194	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Severe wet H2S service Licensor-3	
1	1.5		XXS		P41A-00195	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Severe wet H2S service Licensor-3	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30B-0002D	Plug ASTM A105 ASME B16.11 NPT Round head	
1	0.75				P30B-0002E	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1				P30B-0002F	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1.5				P30B-0002G	Plug ASTM A105 ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P61B-003P9	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	0.75		SCH160		P61B-0037M	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	1		SCH160		P61B-0037L	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	1.5		SCH160		P61B-0037J	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
541	0.5				P61B-003U3	Flange NPT ASTM A105 Class 300 ASME B16.5 RF	
541	0.75				P61B-003U4	Flange NPT ASTM A105 Class 300 ASME B16.5 RF	
781	0.5		SCH160		P61B-004UV	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	0.75		SCH160		P61B-003T2	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	1		SCH160		P61B-003T3	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	1.5		SCH160		P61B-003T4	Flange WN ASTM A105 Class 600 ASME B16.5 RF	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67B-000GH	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	0.75				P67B-000GJ	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	1				P67B-000GK	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	1.5				P67B-000GL	Blind flange ASTM A105 Class 300 ASME B16.5 RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000FT	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000FU	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	0.5				P73T-000J8	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	0.75				P73T-000J9	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1				P73T-000JA	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1.5				P73T-000JB	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-1.5				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
781	0.5-1.5				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	

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GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81B-0020M	Gate valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service	
1	0.75				P81B-0020N	Gate valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service	
1	1				P81B-0020P	Gate valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service	
1	1.5				P81B-0020R	Gate valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service	
4608	0.75				P81B-002WN	Gate valve ASTM A105 Class 300 API 602 BW both sides w/ nipples BE - NPT ASTM A106-B XXS-nipple Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service Licensor-3	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82B-001J7	Globe valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service	
1	0.75				P82B-001J8	Globe valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service	
1	1				P82B-001J9	Globe valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service	
1	1.5				P82B-001JA	Globe valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83B-0017T	Check valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Severe wet H2S service Amine service	
1	0.75				P83B-0017U	Check valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Severe wet H2S service Amine service	
1	1				P83B-0017V	Check valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Severe wet H2S service Amine service	
1	1.5				P83B-0017W	Check valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Severe wet H2S service Amine service	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71B-000B1	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	0.75				P71B-000B2	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	1				P71B-000B3	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71B-000B4	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	

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BOLT TABLE (B_B2A503 , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-008T0		
0.75	4	0.625	75	P80S-00908		
1	4	0.625	80	P80S-00909		
1.5	4	0.750	95	P80S-005Z4		

BOLT TABLE (B_B2A503_781 , STUD ASME RF, OPTION CODE 781)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	80	P80S-008T2		
0.75	4	0.625	90	P80S-0090B		
1	4	0.625	95	P80S-0090C		
1.5	4	0.750	110	P80S-0090F		

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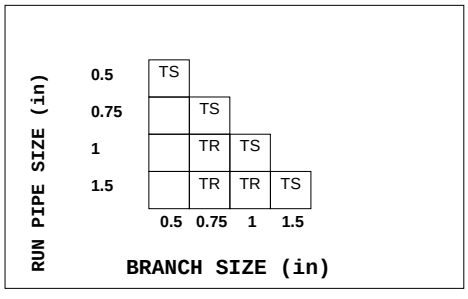
BRANCH TABLE (T_B2A503)



TS : STRAIGHT TEE
TR : REDUCING TEE

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PIPING CLASS

B2A602 REV NO. 2

Material : Killed CS
Rating : ASME CLASS 300
Flange Face : RF
C.A.(mm) : 3.00
Gasket : Spiral Wound
Service : PROCESS -WET LOW SEVERITY SOUR SERVICE SUBJECT TO NACE + HYDROGEN SERVICE
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
2	USE OF SOFT SEATED BALL, PLUG AND BUTTERFLY VALVES SHALL BE LIMITED TO MAXIMUM OF 204DEGC (400DEGF)
5	BOLTING CONFIRMING TO B7M / 2HM SHALL BE USED UNDER CONDITIONS (A) DIRECT EXPOSURE TO SOUR ENVIRONMENTS (B) WHEN THE BOLTING WILL BE BURIED OR INSULATED
27	PWHT OF CARBON STEEL PIPING IN WET H2S, CAUSTIC AND AMINE SERVICES SHALL BE IN ACCORDANCE WITH SECTION 10.2, 10.3, AND 10.4 OF PROJECT SPECIFICATION 3550-8440-SP-0002 MATERIALS REQUIREMENTS FOR PRESSURISED EQUIPMENT AND PIPING. FOR CAUSTIC AND AMINE SERVICE THE FOLLOWING SHALL APPLY: - PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF ALL SITE PIPING FABRICATION WELDS IS REQUIRED FOR ALL WALL THICKNESSES. FOR MODERATE AND SEVERE WET H2S SERVICE THE FOLLOWING SHALL APPLY: PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF SITE FABRICATION CIRCUMFERENTIAL OR BRANCH WELDS IS NOT REQUIRED IF WELDS ARE MULTIPASS AND IN ACCORDANCE WITH PARA 10.2.12 OF PROJECT SPECIFICATION 3550-8440-SP-0002. FOR SERVICES MEETING THE WET H2S CRITERIA AND CAUSTIC OR AMINE CRITERIA THE MORE STRINGENT PWHT REQUIREMENT SHALL GOVERN.

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
24	FULL PORT (Q)
200	WITH JACK SCREW (FO)
541	NPT(F) (CA,F)
781	CLASS 600 (B,F,G)
789	CLASS 900 (B,F,G)
4601	Y-PATTERN (W)
4608	VALVE WITH NIPPLES (V)

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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P01A-0010P	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	0.75		SCH160		P01A-0010R	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1		SCH160		P01A-0014M	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1.5		SCH160		P01A-0015J	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	2		XS		P01A-000YX	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	3		STD		P01A-000YM	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	4		STD		P01A-000YU	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	6		STD		P01A-000Z3	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P02A-001Y8	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	0.75		SCH160		P02A-000V8	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1		SCH160		P02A-000V7	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1.5		SCH160		P02A-000V9	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	2		XS		P02A-000CP	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		STD		P02A-000CU	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		STD		P02A-000CZ	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		STD		P02A-000D6	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P03A-001TC	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	0.75		SCH160		P03A-000RS	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1		SCH160		P03A-000RR	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1.5		SCH160		P03A-000RP	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	2		XS		P03A-000AS	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		STD		P03A-000AX	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		STD		P03A-000B1	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		STD		P03A-000B9	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P21A-003AW	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	0.75		SCH160		P21A-002B8	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1		SCH160		P21A-002B6	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5		SCH160		P21A-002B9	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2		XS		P21A-001CJ	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		STD		P21A-001CU	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		STD		P21A-001CW	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6		STD		P21A-001D2	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75	SCH160	SCH160	P24A-004B6	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.75	SCH160	SCH160	P24A-004B2	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	1	SCH160	SCH160	P24A-004BA	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	XS	SCH160	P24A-00GMB	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	XS	SCH160	P24A-005K9	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	STD	SCH160	P24A-00GMC	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	STD	XS	P24A-002HW	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P24A-002HY	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P24A-0021K	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	STD	P24A-0021A	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P24A-00229	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	SCH160	P27A-004LZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.5	SCH160	SCH160	P27A-004M8	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.75	SCH160	SCH160	P27A-002T5	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.5	SCH160	SCH160	P27A-004MV	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.75	SCH160	SCH160	P27A-002T7	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	1	SCH160	SCH160	P27A-002T4	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	0.75	XS	SCH160	P27A-001LG	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	XS	SCH160	P27A-0033P	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	XS	SCH160	P27A-0033B	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	STD	SCH160	P27A-003M9	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	STD	XS	P27A-001MZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	1.5	STD	SCH160	P27A-003MA	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P27A-001N0	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P27A-00189	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	STD	P27A-001AZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P27A-001GW	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	SCH160	P28A-007KG	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.5	SCH160	SCH160	P28A-007KH	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.75	SCH160	SCH160	P28A-002TU	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.5	SCH160	SCH160	P28A-007KJ	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.75	SCH160	SCH160	P28A-002TW	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	1	SCH160	SCH160	P28A-002TR	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	0.75	XS	SCH160	P28A-001LE	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	XS	SCH160	P28A-003M1	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	XS	SCH160	P28A-003M2	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	STD	SCH160	P28A-003M3	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	STD	XS	P28A-001N5	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	1.5	STD	SCH160	P28A-003M4	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P28A-001N6	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P28A-0018B	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	STD	P28A-001AS	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P28A-00182	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P29A-00329	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	0.75		SCH160		P29A-001UF	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	1		SCH160		P29A-001TC	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	1.5		SCH160		P29A-001TD	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	2		XS		P29A-001VG	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	3		STD		P29A-001VK	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	4		STD		P29A-001VN	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	6		STD		P29A-001VS	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
541	0.75				P29B-0000Y	Cap ASTM A105 Class 6000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P41A-000B9	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		XXS		P41A-000BA	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		XXS		P41A-000D8	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		XXS		P41A-000D9	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2	0.75	XS	SCH160	P31B-00CP7	Outlet ASTM A105 MSS SP-97 BW	

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OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	0.75	STD	SCH160	P31B-00CMT	Outlet ASTM A105 MSS SP-97 BW	
1	4	0.75	STD	SCH160	P31B-00CLT	Outlet ASTM A105 MSS SP-97 BW	
1	6	0.75	STD	SCH160	P31B-00CKK	Outlet ASTM A105 MSS SP-97 BW	
1	3	1	STD	SCH160	P31B-00B4J	Outlet ASTM A105 MSS SP-97 BW	
1	4	1	STD	SCH160	P31B-00B3M	Outlet ASTM A105 MSS SP-97 BW	
1	6	1	STD	SCH160	P31B-00AZC	Outlet ASTM A105 MSS SP-97 BW	
1	4	1.5	STD	SCH160	P31B-00BP4	Outlet ASTM A105 MSS SP-97 BW	
1	6	1.5	STD	SCH160	P31B-00BJH	Outlet ASTM A105 MSS SP-97 BW	
1	6	2	STD	XS	P31B-007SH	Outlet ASTM A105 MSS SP-97 BW	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30B-0002D	Plug ASTM A105 ASME B16.11 NPT Round head	
1	0.75				P30B-0002E	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1				P30B-0002F	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1.5				P30B-0002G	Plug ASTM A105 ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P61B-003P9	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	0.75		SCH160		P61B-0037M	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	1		SCH160		P61B-0037L	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	1.5		SCH160		P61B-0037J	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	2		XS		P61B-001HW	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	3		STD		P61B-001LJ	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	4		STD		P61B-001MC	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	6		STD		P61B-001N2	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
541	0.5				P61B-003U3	Flange NPT ASTM A105 Class 300 ASME B16.5 RF	
541	0.75				P61B-003U4	Flange NPT ASTM A105 Class 300 ASME B16.5 RF	
781	0.5		SCH160		P61B-004UV	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	0.75		SCH160		P61B-003T2	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	1		SCH160		P61B-003T3	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	1.5		SCH160		P61B-003T4	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	2		XS		P61B-001DH	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	3		STD		P61B-001TW	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	4		STD		P61B-001VV	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	6		STD		P61B-001JW	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
789	4		STD		P61B-007A0	Flange WN ASTM A105 Class 900 ASME B16.5 RJ	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67B-000GH	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	0.75				P67B-000GJ	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	1				P67B-000GK	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	1.5				P67B-000GL	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	2				P67B-000GM	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	3				P67B-000GN	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	4				P67B-000GP	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	6				P67B-000GY	Blind flange ASTM A105 Class 300 ASME B16.5 RF	

REDUCING FLANGE (FR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2	0.75		SCH160	P62B-000NG	Reducing flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	2	1		SCH160	P62B-0007D	Reducing flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	2	1.5		SCH160	P62B-000MG	Reducing flange WN ASTM A105 Class 300 ASME B16.5 RF	

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GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000FT	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000FU	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000G5	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000G6	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	6				P73T-000G7	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	0.5				P73T-000J8	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	0.75				P73T-000J9	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1				P73T-000JA	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1.5				P73T-000JB	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	2				P73T-000JH	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	3				P73T-000JL	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	4				P73T-000JM	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	6				P73T-000JN	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
789	4				P75T-000JP	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-6				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
781	0.5-6				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
789	4-6				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81B-001TK	Gate valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	0.75				P81B-001TL	Gate valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	1				P81B-001TM	Gate valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	1.5				P81B-001TN	Gate valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	2				P81C-005ZL	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	3				P81C-005ZM	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	4				P81C-005ZN	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	6				P81C-005ZP	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
4608	0.75				P81B-002WP	Gate valve ASTM A105 Class 300 API 602 BW both sides w/ nipples BE - NPT ASTM A106-B XXS-nipple Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82B-001F1	Globe valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	0.75				P82B-001F2	Globe valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	1				P82B-001F3	Globe valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	1.5				P82B-001F4	Globe valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	2				P82C-002YJ	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	3				P82C-002YK	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	4				P82C-002YL	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	6				P82C-002YM	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	

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GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
4601	0.75				P82B-001AV	Y-pattern globe valve ASTM A105 Class 300 ASME B16.34 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
4601	1				P82B-001AW	Y-pattern globe valve ASTM A105 Class 300 ASME B16.34 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
4601	1.5				P82B-001AX	Y-pattern globe valve ASTM A105 Class 300 ASME B16.34 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
4601	2				P82C-002MD	Y-pattern globe valve ASTM A216 Grade WCB Class 300 ASME B16.34 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
4601	3				P82C-002ME	Y-pattern globe valve ASTM A216 Grade WCB Class 300 ASME B16.34 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
4601	4				P82C-002MG	Y-pattern globe valve ASTM A216 Grade WCB Class 300 ASME B16.34 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
4601	6				P82C-002MH	Y-pattern globe valve ASTM A216 Grade WCB Class 300 ASME B16.34 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83B-0014L	Check valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 Lift-type Bolted cover Moderate wet H2S service	
1	0.75				P83B-0014M	Check valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 Lift-type Bolted cover Moderate wet H2S service	
1	1				P83B-0014N	Check valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 Lift-type Bolted cover Moderate wet H2S service	
1	1.5				P83B-0014P	Check valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 Lift-type Bolted cover Moderate wet H2S service	
1	2				P83C-002X9	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 Swing-type Bolted cover Moderate wet H2S service	
1	3				P83C-002XA	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 Swing-type Bolted cover Moderate wet H2S service	
1	4				P83C-002XB	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 Swing-type Bolted cover Moderate wet H2S service	
1	6				P83C-002XC	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 Swing-type Bolted cover Moderate wet H2S service	

BALL VALVE (Q)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P84B-001K7	Ball valve Long-pattern ASTM A105 Class 300 API 608 Flange ASME B16.5 RF Ball SS316L Seat R-PTFE Trim SS316L Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design Moderate wet H2S service	
1	0.75				P84B-001K8	Ball valve Long-pattern ASTM A105 Class 300 API 608 Flange ASME B16.5 RF Ball SS316L Seat R-PTFE Trim SS316L Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design Moderate wet H2S service	
1	1				P84B-001K9	Ball valve Long-pattern ASTM A105 Class 300 API 608 Flange ASME B16.5 RF Ball SS316L Seat R-PTFE Trim SS316L Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design Moderate wet H2S service	
1	1.5				P84B-001KA	Ball valve Long-pattern ASTM A105 Class 300 API 608 Flange ASME B16.5 RF Ball SS316L Seat R-PTFE Trim SS316L Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design Moderate wet H2S service	
1	2				P84C-006V9	Ball valve Long-pattern ASTM A216 Grade WCB Class 300 API 608 Flange ASME B16.5 RF Ball SS316L Seat R-PTFE Trim SS316L Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design Moderate wet H2S service	
1	3				P84C-006VA	Ball valve Long-pattern ASTM A216 Grade WCB Class 300 API 608 Flange ASME B16.5 RF Ball SS316L Seat R-PTFE Trim SS316L Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design Moderate wet H2S service	
1	4				P84C-006UX	Ball valve Long-pattern ASTM A216 Grade WCB Class 300 API 608 Flange ASME B16.5 RF Ball SS316L Seat R-PTFE Trim SS316L Floating-type Side-entry Gear operated Reduced bore Fire tested design Moderate wet H2S service	
24	0.5				P84B-001KB	Ball valve Long-pattern ASTM A105 Class 300 API 608 Flange ASME B16.5 RF Ball SS316L Seat R-PTFE Trim SS316L Floating-type Side-entry Wrench lever operated Full bore Fire tested design Moderate wet H2S service	
24	0.75				P84B-001KC	Ball valve Long-pattern ASTM A105 Class 300 API 608 Flange ASME B16.5 RF Ball SS316L Seat R-PTFE Trim SS316L Floating-type Side-entry Wrench lever operated Full bore Fire tested design Moderate wet H2S service	
24	1				P84B-001KD	Ball valve Long-pattern ASTM A105 Class 300 API 608 Flange ASME B16.5 RF Ball SS316L Seat R-PTFE Trim SS316L Floating-type Side-entry Wrench lever operated Full bore Fire tested design Moderate wet H2S service	
24	1.5				P84B-001KE	Ball valve Long-pattern ASTM A105 Class 300 API 608 Flange ASME B16.5 RF Ball SS316L Seat R-PTFE Trim SS316L Floating-type Side-entry Wrench lever operated Full bore Fire tested design Moderate wet H2S service	
24	2				P84C-006V7	Ball valve Long-pattern ASTM A216 Grade WCB Class 300 API 608 Flange ASME B16.5 RF Ball SS316L Seat R-PTFE Trim SS316L Floating-type Side-entry Wrench lever operated Full bore Fire tested design Moderate wet H2S service	
24	3				P84C-006V8	Ball valve Long-pattern ASTM A216 Grade WCB Class 300 API 608 Flange ASME B16.5 RF Ball SS316L Seat R-PTFE Trim SS316L Floating-type Side-entry Wrench lever operated Full bore Fire tested design Moderate wet H2S service	
24	4				P84C-006UY	Ball valve Long-pattern ASTM A216 Grade WCB Class 300 API 608 Flange ASME B16.5 RF Ball SS316L Seat R-PTFE Trim SS316L Floating-type Side-entry Gear operated Full bore Fire tested design Moderate wet H2S service	

ORIFICE FLANGE (FO)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2		XS		P66B-0084B	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	3		STD		P66B-0084C	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	

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ORIFICE FLANGE (FO)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	4		STD		P66B-0084D	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	6		STD		P66B-0084E	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
200	2		XS		P66B-00843	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	3		STD		P66B-00844	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	4		STD		P66B-00845	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	6		STD		P66B-00846	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71B-000B1	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	0.75				P71B-000B2	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	1				P71B-000B3	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71B-000B4	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	2				P71B-000B6	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	3				P71B-000B7	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	4				P71B-000B8	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	6				P71B-000B9	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	

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BOLT TABLE (B_B2A602 , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-008T0		
0.75	4	0.625	75	P80S-00908		
1	4	0.625	80	P80S-00909		
1.5	4	0.750	95	P80S-005Z4		
2	8	0.625	90	P80S-0090B		
3	8	0.750	110	P80S-0090F		
4	8	0.750	115	P80S-0090G		
6	12	0.750	125	P80S-0090J		

BOLT TABLE (B_B2A602_781 , STUD ASME RF, OPTION CODE 781)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	80	P80S-008T2		
0.75	4	0.625	90	P80S-0090B		
1	4	0.625	95	P80S-0090C		
1.5	4	0.750	110	P80S-0090F		
2	8	0.625	110	P80S-008T8		
3	8	0.750	130	P80S-0090K		
4	8	0.875	150	P80S-005ZF		
6	12	1.000	175	P80S-0061H		

BOLT TABLE (B_B2A602_789 , STUD ASME RJ, OPTION CODE 789)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	110		R12	
0.75	4	0.750	115		R14	
1	4	0.875	130		R16	
1.5	4	1.000	140		R20	
2	8	0.875	150		R24	
3	8	0.875	150		R31	
4	8	1.125	175	P80S-0064S	R37	P75T-000JP
6	12	1.125	200	P80S-0064X	R45	

BOLT TABLE (B_B2A602_797 , STUD ASME RJ, OPTION CODE 797)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	110		R12	
0.75	4	0.750	115		R14	
1	4	0.875	130		R16	
1.5	4	1.000	140		R20	
2	8	0.875	150		R24	
3	8	1.125	180		R35	
4	8	1.250	230		R39	
6	12	1.375	300		R46	

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BRANCH TABLE (T_B2A602)

RUN PIPE SIZE (in) \ BRANCH SIZE (in)	0.5	0.75	1	1.5	2	3	4	6
0.5	TS							
0.75		TS						
1		TR	TS					
1.5		TR	TR	TS				
2		L	TR	TR	TS			
3		L	L	TR	TR	TS		
4	L	L	L	L	TR	TR	TS	
6	L	L	L	L	L	TR	TR	TS

TS : STRAIGHT TEE
L : OUTLET
TR : REDUCING TEE

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Material : Killed CS
Rating : ASME CLASS 300
Flange Face : RF
C.A.(mm) : 3.00
Gasket : Spiral Wound
Service : PROCESS -WET LOW SEVERITY SOUR SERVICE SUBJECT TO NACE + H2 SERVICE
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
2	USE OF SOFT SEATED BALL, PLUG AND BUTTERFLY VALVES SHALL BE LIMITED TO MAXIMUM OF 204DEGC (400DEGF)
5	BOLTING CONFIRMING TO B7M / 2HM SHALL BE USED UNDER CONDITIONS (A) DIRECT EXPOSURE TO SOUR ENVIRONMENTS (B) WHEN THE BOLTING WILL BE BURIED OR INSULATED
27	PWHT OF CARBON STEEL PIPING IN WET H2S, CAUSTIC AND AMINE SERVICES SHALL BE IN ACCORDANCE WITH SECTION 10.2, 10.3, AND 10.4 OF PROJECT SPECIFICATION 3550-8440-SP-0002 MATERIALS REQUIREMENTS FOR PRESSURISED EQUIPMENT AND PIPING. FOR CAUSTIC AND AMINE SERVICE THE FOLLOWING SHALL APPLY: - PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF ALL SITE PIPING FABRICATION WELDS IS REQUIRED FOR ALL WALL THICKNESSES. FOR MODERATE AND SEVERE WET H2S SERVICE THE FOLLOWING SHALL APPLY: PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF SITE FABRICATION CIRCUMFERENTIAL OR BRANCH WELDS IS NOT REQUIRED IF WELDS ARE MULTIPASS AND IN ACCORDANCE WITH PARA 10.2.12 OF PROJECT SPECIFICATION 3550-8440-SP-0002. FOR SERVICES MEETING THE WET H2S CRITERIA AND CAUSTIC OR AMINE CRITERIA THE MORE STRINGENT PWHT REQUIREMENT SHALL GOVERN.

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
200	WITH JACK SCREW (FO)
541	NPT(F) (CA,F)
781	CLASS 600 (B,F,G)
4602	DISSIMILAR TYPE CHECK VALVE (XDP)
4608	VALVE WITH NIPPLES (V)

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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P01A-00143	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	0.75		SCH160		P01A-0010R	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1		SCH160		P01A-0014M	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1.5		SCH160		P01A-0015J	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	2		XS		P01A-000YX	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	3		XS		P01A-000Z4	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	4		STD		P01A-000YU	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	6		STD		P01A-000Z3	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	8		STD		P01A-000ZA	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	10		STD		P01A-000XJ	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	12		SCH40		P01A-0018V	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	14		SCH40		P01A-0018U	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	16		XS		P01A-000YS	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	18		XS		P01A-00372	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	20		XS		P01A-00373	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P02A-00172	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	0.75		SCH160		P02A-000V8	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1		SCH160		P02A-000V7	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1.5		SCH160		P02A-000V9	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	2		XS		P02A-000CP	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		XS		P02A-000CX	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		STD		P02A-000CZ	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		STD		P02A-000D6	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		STD		P02A-000DC	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	10		STD		P02A-000BP	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	12		SCH40		P02A-000JE	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	14		SCH40		P02A-000JF	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	16		XS		P02A-000CE	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	18		XS		P02A-000M9	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	20		XS		P02A-001JX	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P03A-0012Y	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	0.75		SCH160		P03A-000RS	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1		SCH160		P03A-000RR	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1.5		SCH160		P03A-000RP	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	2		XS		P03A-000AS	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		XS		P03A-000AZ	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		STD		P03A-000B1	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		STD		P03A-000B9	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		STD		P03A-000BB	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	10		STD		P03A-000A4	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	12		SCH40		P03A-000GC	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	14		SCH40		P03A-000GD	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	16		XS		P03A-000AP	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	18		XS		P03A-001DZ	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	20		XS		P03A-001E0	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P21A-002M0	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	0.75		SCH160		P21A-002B8	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1		SCH160		P21A-002B6	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5		SCH160		P21A-002B9	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2		XS		P21A-001CJ	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3		XS		P21A-001CR	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		STD		P21A-001CW	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6		STD		P21A-001D2	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8		STD		P21A-001D8	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10		STD		P21A-001BV	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12		SCH40		P21A-0022P	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14		SCH40		P21A-0022R	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16		XS		P21A-001CG	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18		XS		P21A-002Y3	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20		XS		P21A-002Y4	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75	SCH160	SCH160	P24A-004B6	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.75	SCH160	SCH160	P24A-004B2	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	1	SCH160	SCH160	P24A-004BA	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	XS	SCH160	P24A-00GMB	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	XS	SCH160	P24A-005K9	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	XS	SCH160	P24A-00GNV	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	XS	XS	P24A-0023S	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P24A-002HY	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	XS	P24A-00GNW	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	XS	P24A-00GTR	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P24A-00229	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	STD	STD	P24A-0021E	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	STD	STD	P24A-0022M	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	STD	STD	P24A-0021B	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	STD	STD	P24A-0022B	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	STD	STD	P24A-0022W	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	SCH40	STD	P24A-00GSM	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH40	STD	P24A-00AF8	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH40	STD	P24A-00GSL	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	SCH40	STD	P24A-00GV4	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	SCH40	STD	P24A-00AFB	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	SCH40	STD	P24A-003GJ	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	SCH40	SCH40	P24A-0033E	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	6	XS	STD	P24A-002NZ	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	XS	STD	P24A-002PY	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	XS	STD	P24A-002T3	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	XS	SCH40	P24A-00445	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	XS	SCH40	P24A-0044A	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	8	XS	STD	P24A-00P1N	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	10	XS	STD	P24A-00P1L	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	12	XS	SCH40	P24A-00GMH	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	14	XS	SCH40	P24A-00GS6	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	16	XS	XS	P24A-0087Y	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	8	XS	STD	P24A-00M52	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	10	XS	STD	P24A-00HL7	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	12	XS	SCH40	P24A-00GMM	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	14	XS	SCH40	P24A-00GS7	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	16	XS	XS	P24A-0087Z	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	18	XS	XS	P24A-00880	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	XXS	P27A-003ZL	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.5	SCH160	XXS	P27A-003ZM	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.75	SCH160	SCH160	P27A-002T5	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.5	SCH160	XXS	P27A-003ZN	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5	0.75	SCH160	SCH160	P27A-002T7	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	1	SCH160	SCH160	P27A-002T4	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	0.75	XS	SCH160	P27A-001LG	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	XS	SCH160	P27A-0033P	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	XS	SCH160	P27A-0033B	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	XS	SCH160	P27A-003N1	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	XS	XS	P27A-001E5	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	1.5	STD	SCH160	P27A-003MA	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P27A-001N0	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	XS	P27A-0074W	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	XS	P27A-007P6	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P27A-001GW	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	STD	STD	P27A-001C2	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	STD	STD	P27A-00188	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	STD	STD	P27A-001C3	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	STD	STD	P27A-0018M	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	STD	STD	P27A-0019J	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	SCH40	STD	P27A-004W1	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH40	STD	P27A-004XB	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH40	STD	P27A-004UG	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	SCH40	STD	P27A-0051B	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	SCH40	STD	P27A-003ZT	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	SCH40	STD	P27A-0029L	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	SCH40	SCH40	P27A-001ZZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	XS	STD	P27A-001SN	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	XS	STD	P27A-001PA	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	XS	SCH40	P27A-002KU	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	XS	SCH40	P27A-002KZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	10	XS	STD	P27A-005BU	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	12	XS	SCH40	P27A-005DV	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	14	XS	SCH40	P27A-005FW	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	16	XS	XS	P27A-005J1	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	12	XS	SCH40	P27A-005LZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	14	XS	SCH40	P27A-005P2	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	16	XS	XS	P27A-005SB	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	18	XS	XS	P27A-005TZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	XXS	P28A-003ZE	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.5	SCH160	XXS	P28A-003ZF	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.75	SCH160	SCH160	P28A-002TU	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.5	SCH160	XXS	P28A-003ZG	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.75	SCH160	SCH160	P28A-002TW	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	1	SCH160	SCH160	P28A-002TR	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	0.75	XS	SCH160	P28A-001LE	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	XS	SCH160	P28A-003M1	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	XS	SCH160	P28A-003M2	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	XS	SCH160	P28A-003MV	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	XS	XS	P28A-001EH	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	1.5	STD	SCH160	P28A-003M4	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P28A-001N6	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	XS	P28A-008F7	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	XS	P28A-008K1	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P28A-00182	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	STD	STD	P28A-0017V	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	STD	STD	P28A-0018V	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	STD	STD	P28A-0017W	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	STD	STD	P28A-00190	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	10	8	STD	STD	P28A-0019J	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	SCH40	STD	P28A-008HU	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH40	STD	P28A-005T9	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH40	STD	P28A-008HT	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	SCH40	STD	P28A-008F4	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	SCH40	STD	P28A-003ZL	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	SCH40	STD	P28A-0028T	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	SCH40	SCH40	P28A-001ZG	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	XS	STD	P28A-001NK	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	XS	STD	P28A-001P7	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	XS	SCH40	P28A-002L9	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	XS	SCH40	P28A-002LD	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	10	XS	STD	P28A-0028K	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	12	XS	SCH40	P28A-008EF	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	14	XS	SCH40	P28A-0028M	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	16	XS	XS	P28A-0063K	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	12	XS	SCH40	P28A-008EH	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	14	XS	SCH40	P28A-008HJ	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	16	XS	XS	P28A-0063N	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	18	XS	XS	P28A-0063P	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P29A-001UE	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	0.75		SCH160		P29A-001UF	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	1		SCH160		P29A-001TC	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	1.5		SCH160		P29A-001TD	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	2		XS		P29A-001VG	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	3		XS		P29A-001X4	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	4		STD		P29A-001VN	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	6		STD		P29A-001VS	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	8		STD		P29A-001VT	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	10		STD		P29A-001VB	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	12		SCH40		P29A-001TF	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	14		SCH40		P29A-0036R	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	16		XS		P29A-001TH	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	18		XS		P29A-001TJ	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	20		XS		P29A-001TL	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
541	0.75				P29B-0000Y	Cap ASTM A105 Class 6000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P41A-000B9	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		XXS		P41A-000BA	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		XXS		P41A-000D8	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		XXS		P41A-000D9	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2	0.75	XS	SCH160	P31B-00CP7	Outlet ASTM A105 MSS SP-97 BW	
1	3	0.75	XS	SCH160	P31B-00CMS	Outlet ASTM A105 MSS SP-97 BW	
1	4	0.75	STD	SCH160	P31B-00CLT	Outlet ASTM A105 MSS SP-97 BW	
1	6	0.75	STD	SCH160	P31B-00CKK	Outlet ASTM A105 MSS SP-97 BW	
1	8	0.75	STD	SCH160	P31B-00C5E	Outlet ASTM A105 MSS SP-97 BW	
1	10	0.75	STD	SCH160	P31B-00CFB	Outlet ASTM A105 MSS SP-97 BW	
1	12	0.75	SCH40	SCH160	P31B-00CS8	Outlet ASTM A105 MSS SP-97 BW	
1	14	0.75	SCH40	SCH160	P31B-00CRP	Outlet ASTM A105 MSS SP-97 BW	
1	16	0.75	XS	SCH160	P31B-00CR6	Outlet ASTM A105 MSS SP-97 BW	
1	18	0.75	XS	SCH160	P31B-007NE	Outlet ASTM A105 MSS SP-97 BW	

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OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	20	0.75	XS	SCH160	P31B-01181	Outlet ASTM A105 MSS SP-97 BW	
1	3	1	XS	SCH160	P31B-00B4H	Outlet ASTM A105 MSS SP-97 BW	
1	4	1	STD	SCH160	P31B-00B3M	Outlet ASTM A105 MSS SP-97 BW	
1	6	1	STD	SCH160	P31B-00AZC	Outlet ASTM A105 MSS SP-97 BW	
1	8	1	STD	SCH160	P31B-00AVF	Outlet ASTM A105 MSS SP-97 BW	
1	10	1	STD	SCH160	P31B-00C06	Outlet ASTM A105 MSS SP-97 BW	
1	12	1	SCH40	SCH160	P31B-00BWL	Outlet ASTM A105 MSS SP-97 BW	
1	14	1	SCH40	SCH160	P31B-00BRP	Outlet ASTM A105 MSS SP-97 BW	
1	16	1	XS	SCH160	P31B-00BR5	Outlet ASTM A105 MSS SP-97 BW	
1	18	1	XS	SCH160	P31B-007N4	Outlet ASTM A105 MSS SP-97 BW	
1	20	1	XS	SCH160	P31B-00TR3	Outlet ASTM A105 MSS SP-97 BW	
1	4	1.5	STD	SCH160	P31B-00BP4	Outlet ASTM A105 MSS SP-97 BW	
1	6	1.5	STD	SCH160	P31B-00BJH	Outlet ASTM A105 MSS SP-97 BW	
1	8	1.5	STD	SCH160	P31B-00BHJ	Outlet ASTM A105 MSS SP-97 BW	
1	10	1.5	STD	SCH160	P31B-00AUM	Outlet ASTM A105 MSS SP-97 BW	
1	12	1.5	SCH40	SCH160	P31B-00CEH	Outlet ASTM A105 MSS SP-97 BW	
1	14	1.5	SCH40	SCH160	P31B-00CDR	Outlet ASTM A105 MSS SP-97 BW	
1	16	1.5	XS	SCH160	P31B-00C98	Outlet ASTM A105 MSS SP-97 BW	
1	18	1.5	XS	SCH160	P31B-007N2	Outlet ASTM A105 MSS SP-97 BW	
1	20	1.5	XS	SCH160	P31B-00TR4	Outlet ASTM A105 MSS SP-97 BW	
1	6	2	STD	XS	P31B-007SH	Outlet ASTM A105 MSS SP-97 BW	
1	8	2	STD	XS	P31B-00AGX	Outlet ASTM A105 MSS SP-97 BW	
1	10	2	STD	XS	P31B-00ASA	Outlet ASTM A105 MSS SP-97 BW	
1	12	2	SCH40	XS	P31B-00CBS	Outlet ASTM A105 MSS SP-97 BW	
1	14	2	SCH40	XS	P31B-00CAH	Outlet ASTM A105 MSS SP-97 BW	
1	16	2	XS	XS	P31B-00C1S	Outlet ASTM A105 MSS SP-97 BW	
1	18	2	XS	XS	P31B-009FH	Outlet ASTM A105 MSS SP-97 BW	
1	20	2	XS	XS	P31B-00993	Outlet ASTM A105 MSS SP-97 BW	
1	8	3	STD	XS	P31B-009Y0	Outlet ASTM A105 MSS SP-97 BW	
1	10	3	STD	XS	P31B-009CG	Outlet ASTM A105 MSS SP-97 BW	
1	12	3	SCH40	XS	P31B-0096J	Outlet ASTM A105 MSS SP-97 BW	
1	14	3	SCH40	XS	P31B-0090P	Outlet ASTM A105 MSS SP-97 BW	
1	16	3	XS	XS	P31B-008UD	Outlet ASTM A105 MSS SP-97 BW	
1	18	3	XS	XS	P31B-008MB	Outlet ASTM A105 MSS SP-97 BW	
1	20	3	XS	XS	P31B-008F3	Outlet ASTM A105 MSS SP-97 BW	
1	12	4	SCH40	STD	P31B-008ZY	Outlet ASTM A105 MSS SP-97 BW	
1	14	4	SCH40	STD	P31B-008YN	Outlet ASTM A105 MSS SP-97 BW	
1	16	4	XS	STD	P31B-008SG	Outlet ASTM A105 MSS SP-97 BW	
1	18	4	XS	STD	P31B-008KA	Outlet ASTM A105 MSS SP-97 BW	
1	20	4	XS	STD	P31B-008D2	Outlet ASTM A105 MSS SP-97 BW	
1	18	6	XS	STD	P31B-008RW	Outlet ASTM A105 MSS SP-97 BW	
1	20	6	XS	STD	P31B-008PY	Outlet ASTM A105 MSS SP-97 BW	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30B-0002D	Plug ASTM A105 ASME B16.11 NPT Round head	
1	0.75				P30B-0002E	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1				P30B-0002F	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1.5				P30B-0002G	Plug ASTM A105 ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P61B-003LW	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	0.75		SCH160		P61B-0037M	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	1		SCH160		P61B-0037L	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	1.5		SCH160		P61B-0037J	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	2		XS		P61B-001HW	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	3		XS		P61B-001DK	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	4		STD		P61B-001MC	Flange WN ASTM A105 Class 300 ASME B16.5 RF	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	6		STD		P61B-001N2	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	8		STD		P61B-001NL	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	10		STD		P61B-001L6	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	12		SCH40		P61B-002FJ	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	14		SCH40		P61B-002FL	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	16		XS		P61B-001HU	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	18		XS		P61B-001T0	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	20		XS		P61B-003A5	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
541	0.5				P61B-003U3	Flange NPT ASTM A105 Class 300 ASME B16.5 RF	
541	0.75				P61B-003U4	Flange NPT ASTM A105 Class 300 ASME B16.5 RF	
781	0.5		XXS		P61B-003T1	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	0.75		SCH160		P61B-003T2	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	1		SCH160		P61B-003T3	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	1.5		SCH160		P61B-003T4	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	2		XS		P61B-001DH	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	3		XS		P61B-001M8	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	4		STD		P61B-001VV	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	6		STD		P61B-001JW	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	8		STD		P61B-001KK	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	10		STD		P61B-001JJ	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	12		SCH40		P61B-003T5	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	14		SCH40		P61B-003T6	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	16		XS		P61B-001R3	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	18		XS		P61B-001RG	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	20		XS		P61B-004UW	Flange WN ASTM A105 Class 600 ASME B16.5 RF	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67B-000GH	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	0.75				P67B-000GJ	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	1				P67B-000GK	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	1.5				P67B-000GL	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	2				P67B-000GM	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	3				P67B-000GN	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	4				P67B-000GP	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	6				P67B-000GY	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	8				P67B-000GZ	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	10				P67B-000GR	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	12				P67B-000GS	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	14				P67B-000GT	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	16				P67B-000GU	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	18				P67B-000GV	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	20				P67B-000GW	Blind flange ASTM A105 Class 300 ASME B16.5 RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000FT	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000FU	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000G5	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000G6	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	6				P73T-000G7	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	8				P73T-000G8	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

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GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	10				P73T-000FX	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	12				P73T-000FY	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	14				P73T-000FZ	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	16				P73T-000G0	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	18				P73T-000G1	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	20				P73T-000G3	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	0.5				P73T-000J8	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	0.75				P73T-000J9	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1				P73T-000JA	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1.5				P73T-000JB	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	2				P73T-000JH	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	3				P73T-000JL	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	4				P73T-000JM	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	6				P73T-000JN	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	8				P73T-000JP	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	10				P73T-000JC	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	12				P73T-000JD	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	14				P73T-000JE	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	16				P73T-000JF	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	18				P73T-000JG	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	20				P73T-000JJ	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-10				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	12-20				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
781	0.5-6				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
781	8-20				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81B-00195	Gate valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	0.75				P81B-00196	Gate valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	1				P81B-00197	Gate valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	1.5				P81B-00198	Gate valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	2				P81C-006S0	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Licensor-4	
1	3				P81C-006S1	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Licensor-4	
1	4				P81C-006S2	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Licensor-4	
1	6				P81C-006S3	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Licensor-4	
1	8				P81C-0091N	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Moderate wet H2S service Licensor-4	
1	10				P81C-006S5	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Moderate wet H2S service Licensor-4	
1	12				P81C-006S6	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Moderate wet H2S service Licensor-4	
1	14				P81C-008R3	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Moderate wet H2S service Licensor-4	
1	16				P81C-008R4	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Moderate wet H2S service Licensor-4	
1	18				P81C-008R5	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Moderate wet H2S service Licensor-4	

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GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	20				P81C-008R6	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Moderate wet H2S service Licensor-4	
4608	0.75				P81B-002WR	Gate valve ASTM A105 Class 300 API 602 BW both sides w/ nipples BE - NPT ASTM A106-B XXS-nipple Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82B-00124	Globe valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	0.75				P82B-00125	Globe valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	1				P82B-00126	Globe valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	1.5				P82B-00127	Globe valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	2				P82C-0039K	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Licensor-4	
1	3				P82C-0039L	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Licensor-4	
1	4				P82C-0039M	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Licensor-4	
1	6				P82C-0039N	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Licensor-4	
1	8				P82C-004CW	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Moderate wet H2S service Licensor-4	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83B-000UJ	Check valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Moderate wet H2S service	
1	0.75				P83B-000UK	Check valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Moderate wet H2S service	
1	1				P83B-000UL	Check valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Moderate wet H2S service	
1	1.5				P83B-000UM	Check valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Moderate wet H2S service	
1	2				P83C-0035J	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Moderate wet H2S service Licensor-4	
1	3				P83C-0035K	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Moderate wet H2S service Licensor-4	
1	4				P83C-0035L	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Moderate wet H2S service Licensor-4	
1	6				P83C-0035M	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Moderate wet H2S service Licensor-4	
1	8				P83C-0035N	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Moderate wet H2S service Licensor-4	
1	10				P83C-0035H	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Moderate wet H2S service Licensor-4	
1	12				P83C-003T7	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Moderate wet H2S service Licensor-4	

DP CHECK VALVE (XDP)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
4602	6				P88C-002JF	Dual plate check valve ASTM A216 Grade WCB Class 300 API 594 Wafer-type ASME B16.5 RF Trim number 12 Internal wetted parts SS316 Spring Inconel Retainerless-type Moderate wet H2S service Licensor-4	

ORIFICE FLANGE (FO)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3		XS		P66B-008C1	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
200	3		XS		P66B-008C3	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71B-000B1	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	0.75				P71B-000B2	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	1				P71B-000B3	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71B-000B4	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	2				P71B-000B6	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	3				P71B-000B7	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	4				P71B-000B8	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	6				P71B-000B9	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	8				P71B-000BA	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	

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SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	10				P71B-000B5	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	12				P71B-000BB	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	

PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000FA	Paddle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	16				P72B-000FB	Paddle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	18				P72B-000FC	Paddle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	20				P72B-000FD	Paddle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	

PADDLE SPACER (PS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000FG	Paddle spacer ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	16				P72B-000FH	Paddle spacer ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	18				P72B-000FJ	Paddle spacer ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	20				P72B-000FK	Paddle spacer ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	

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BOLT TABLE (B_B2A604 , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-008T0		
0.75	4	0.625	75	P80S-00908		
1	4	0.625	80	P80S-00909		
1.5	4	0.750	95	P80S-005Z4		
2	8	0.625	90	P80S-0090B		
3	8	0.750	110	P80S-0090F		
4	8	0.750	115	P80S-0090G		
6	12	0.750	125	P80S-0090J		
8	12	0.875	140	P80S-005ZD		
10	16	1.000	160	P80S-0061E		
12	16	1.125	175	P80S-0064S		
14	20	1.125	180	P80S-0064T		
16	20	1.250	190	P80S-00689		
18	24	1.250	200	P80S-0068B		
20	24	1.250	210	P80S-0068D		

BOLT TABLE (B_B2A604_781 , STUD ASME RF, OPTION CODE 781)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	80	P80S-008T2		
0.75	4	0.625	90	P80S-0090B		
1	4	0.625	95	P80S-0090C		
1.5	4	0.750	110	P80S-0090F		
2	8	0.625	110	P80S-008T8		
3	8	0.750	130	P80S-0090K		
4	8	0.875	150	P80S-005ZF		
6	12	1.000	175	P80S-0061H		
8	12	1.125	195	P80S-0064W		
10	16	1.250	250	P80S-0068M		
12	20	1.250	255	P80S-0068N		
14	20	1.375	270	P80S-006HV		
16	20	1.500	295	P80S-006LP		
18	20	1.625	320	P80S-00A5E		
20	24	1.625	335	P80S-00A5H		

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BRANCH TABLE (T_B2A604)

RUN PIPE SIZE (in) \ BRANCH SIZE (in)	0.5	0.75	1	1.5	2	3	4	6	8	10	12	14	16	18	20
0.5	TS														
0.75		TS													
1		TR	TS												
1.5		TR	TR	TS											
2		L	TR	TR	TS										
3		L	L	TR	TR	TS									
4	L	L	L	L	TR	TR	TS								
6	L	L	L	L	L	TR	TR	TS							
8		L	L	L	L	L	TR	TR	TS						
10		L	L	L	L	L	TR	TR	TR	TS					
12		L	L	L	L	L	L	TR	TR	TR	TS				
14		L	L	L	L	L	L	TR	TR	TR	TR	TS			
16		L	L	L	L	L	L	TR	TR	TR	TR	TR	TS		
18		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TS	
20		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TR	TS

TR : REDUCING TEE
TS : STRAIGHT TEE
L : OUTLET

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PIPING CLASS

B2A704 REV NO. 2

Material : Killed CS
Rating : ASME CLASS 300
Flange Face : RF
C.A.(mm) : 3.00
Gasket : Spiral Wound
Service : PROCESS - WET SEVERE SOUR SERVICE SUBJECT TO NACE + HIC STD + HYDROGEN SERVICE
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
5	BOLTING CONFIRMING TO B7M / 2HM SHALL BE USED UNDER CONDITIONS (A) DIRECT EXPOSURE TO SOUR ENVIRONMENTS (B) WHEN THE BOLTING WILL BE BURIED OR INSULATED

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
541	NPT(F) (CA,F)
781	CLASS 600 (B,F,G)
4608	VALVE WITH NIPPLES (V)

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PIPING CLASS
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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P01A-00143	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	0.75		SCH160		P01A-0010R	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1		SCH160		P01A-0014M	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1.5		SCH160		P01A-0015J	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	2		XS		P01A-000YX	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	3		XS		P01A-000Z4	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	4		STD		P01A-000YU	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	6		STD		P01A-000Z3	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	8		STD		P01A-000ZA	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	10		STD		P01A-000XJ	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	12		SCH40		P01A-0018V	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	14		SCH40		P01A-0018U	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P02A-00172	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	0.75		SCH160		P02A-000V8	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1		SCH160		P02A-000V7	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1.5		SCH160		P02A-000V9	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	2		XS		P02A-000CP	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		XS		P02A-000CX	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		STD		P02A-000CZ	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		STD		P02A-000D6	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		STD		P02A-000DC	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	10		STD		P02A-000BP	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	12		SCH40		P02A-000JE	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	14		SCH40		P02A-000JF	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P03A-0012Y	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	0.75		SCH160		P03A-000RS	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1		SCH160		P03A-000RR	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1.5		SCH160		P03A-000RP	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	2		XS		P03A-000AS	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		XS		P03A-000AZ	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		STD		P03A-000B1	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		STD		P03A-000B9	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		STD		P03A-000BB	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	10		STD		P03A-000A4	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	12		SCH40		P03A-000GC	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	14		SCH40		P03A-000GD	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P21A-002M0	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	0.75		SCH160		P21A-002B8	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1		SCH160		P21A-002B6	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5		SCH160		P21A-002B9	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2		XS		P21A-001CJ	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		XS		P21A-001CR	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		STD		P21A-001CW	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6		STD		P21A-001D2	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8		STD		P21A-001D8	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10		STD		P21A-001BV	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12		SCH40		P21A-0022P	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14		SCH40		P21A-0022R	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75	SCH160	SCH160	P24A-004B6	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.75	SCH160	SCH160	P24A-004B2	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	1	SCH160	SCH160	P24A-004BA	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	XS	SCH160	P24A-00GMB	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	XS	SCH160	P24A-005K9	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	XS	SCH160	P24A-00GNV	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	XS	XS	P24A-0023S	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P24A-002HY	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	XS	P24A-00GNW	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	XS	P24A-00GTR	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P24A-00229	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	STD	STD	P24A-0021E	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	STD	STD	P24A-0022M	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	STD	STD	P24A-0021B	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	STD	STD	P24A-0022B	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	STD	STD	P24A-0022W	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	SCH40	STD	P24A-00GSM	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH40	STD	P24A-00AF8	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH40	STD	P24A-00GSL	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	SCH40	STD	P24A-00GV4	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	SCH40	STD	P24A-00AFB	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	SCH40	STD	P24A-003GJ	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	SCH40	SCH40	P24A-0033E	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	XXS	P27A-003ZL	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.5	SCH160	XXS	P27A-003ZM	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.75	SCH160	SCH160	P27A-002T5	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.5	SCH160	XXS	P27A-003ZN	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.75	SCH160	SCH160	P27A-002T7	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	1	SCH160	SCH160	P27A-002T4	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	0.75	XS	SCH160	P27A-001LG	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	XS	SCH160	P27A-0033P	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	XS	SCH160	P27A-0033B	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	XS	SCH160	P27A-003N1	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	XS	XS	P27A-001E5	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	1.5	STD	SCH160	P27A-003MA	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P27A-001N0	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	XS	P27A-0074W	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	XS	P27A-007P6	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P27A-001GW	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	STD	STD	P27A-001C2	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	STD	STD	P27A-00188	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	STD	STD	P27A-001C3	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	STD	STD	P27A-0018M	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	STD	STD	P27A-0019J	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	SCH40	STD	P27A-004W1	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH40	STD	P27A-004XB	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH40	STD	P27A-004UG	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	SCH40	STD	P27A-0051B	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	SCH40	STD	P27A-003ZT	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	SCH40	STD	P27A-0029L	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	SCH40	SCH40	P27A-001ZZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	XXS	P28A-003ZE	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.5	SCH160	XXS	P28A-003ZF	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75	SCH160	SCH160	P28A-002TU	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.5	SCH160	XXS	P28A-003ZG	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.75	SCH160	SCH160	P28A-002TW	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	1	SCH160	SCH160	P28A-002TR	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	0.75	XS	SCH160	P28A-001LE	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	XS	SCH160	P28A-003M1	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	XS	SCH160	P28A-003M2	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	XS	SCH160	P28A-003MV	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	XS	XS	P28A-001EH	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	1.5	STD	SCH160	P28A-003M4	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P28A-001N6	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	XS	P28A-008F7	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	XS	P28A-008K1	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P28A-00182	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	STD	STD	P28A-0017V	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	STD	STD	P28A-0018V	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	STD	STD	P28A-0017W	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	STD	STD	P28A-00190	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	STD	STD	P28A-0019J	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	SCH40	STD	P28A-008HU	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH40	STD	P28A-005T9	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH40	STD	P28A-008HT	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	SCH40	STD	P28A-008F4	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	SCH40	STD	P28A-003ZL	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	SCH40	STD	P28A-0028T	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	SCH40	SCH40	P28A-001ZG	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P29A-00336	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	0.75		SCH160		P29A-0037X	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	1		SCH160		P29A-001VW	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5		SCH160		P29A-001VX	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	2		XS		P29A-00381	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	3		XS		P29A-0035D	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	4		STD		P29A-00384	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	6		STD		P29A-00385	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	8		STD		P29A-00386	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	10		STD		P29A-0037Y	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	12		SCH40		P29A-001VZ	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	14		SCH40		P29A-001W0	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
541	0.75				P29B-0000Y	Cap ASTM A105 Class 6000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P41A-000B9	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		XXS		P41A-000BA	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		XXS		P41A-000D8	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		XXS		P41A-000D9	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2	0.75	XS	SCH160	P31B-00CP7	Outlet ASTM A105 MSS SP-97 BW	
1	3	0.75	XS	SCH160	P31B-00CMS	Outlet ASTM A105 MSS SP-97 BW	
1	4	0.75	STD	SCH160	P31B-00CLT	Outlet ASTM A105 MSS SP-97 BW	
1	6	0.75	STD	SCH160	P31B-00CKK	Outlet ASTM A105 MSS SP-97 BW	
1	8	0.75	STD	SCH160	P31B-00C5E	Outlet ASTM A105 MSS SP-97 BW	
1	10	0.75	STD	SCH160	P31B-00CFB	Outlet ASTM A105 MSS SP-97 BW	
1	12	0.75	SCH40	SCH160	P31B-00CS8	Outlet ASTM A105 MSS SP-97 BW	

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OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14	0.75	SCH40	SCH160	P31B-00CRP	Outlet ASTM A105 MSS SP-97 BW	
1	3	1	XS	SCH160	P31B-00B4H	Outlet ASTM A105 MSS SP-97 BW	
1	4	1	STD	SCH160	P31B-00B3M	Outlet ASTM A105 MSS SP-97 BW	
1	6	1	STD	SCH160	P31B-00AZC	Outlet ASTM A105 MSS SP-97 BW	
1	8	1	STD	SCH160	P31B-00AVF	Outlet ASTM A105 MSS SP-97 BW	
1	10	1	STD	SCH160	P31B-00C06	Outlet ASTM A105 MSS SP-97 BW	
1	12	1	SCH40	SCH160	P31B-00BWL	Outlet ASTM A105 MSS SP-97 BW	
1	14	1	SCH40	SCH160	P31B-00BRP	Outlet ASTM A105 MSS SP-97 BW	
1	4	1.5	STD	SCH160	P31B-00BP4	Outlet ASTM A105 MSS SP-97 BW	
1	6	1.5	STD	SCH160	P31B-00BJH	Outlet ASTM A105 MSS SP-97 BW	
1	8	1.5	STD	SCH160	P31B-00BHJ	Outlet ASTM A105 MSS SP-97 BW	
1	10	1.5	STD	SCH160	P31B-00AUM	Outlet ASTM A105 MSS SP-97 BW	
1	12	1.5	SCH40	SCH160	P31B-00CEH	Outlet ASTM A105 MSS SP-97 BW	
1	14	1.5	SCH40	SCH160	P31B-00CDR	Outlet ASTM A105 MSS SP-97 BW	
1	6	2	STD	XS	P31B-007SH	Outlet ASTM A105 MSS SP-97 BW	
1	8	2	STD	XS	P31B-00AGX	Outlet ASTM A105 MSS SP-97 BW	
1	10	2	STD	XS	P31B-00ASA	Outlet ASTM A105 MSS SP-97 BW	
1	12	2	SCH40	XS	P31B-00CBS	Outlet ASTM A105 MSS SP-97 BW	
1	14	2	SCH40	XS	P31B-00CAH	Outlet ASTM A105 MSS SP-97 BW	
1	8	3	STD	XS	P31B-009Y0	Outlet ASTM A105 MSS SP-97 BW	
1	10	3	STD	XS	P31B-009CG	Outlet ASTM A105 MSS SP-97 BW	
1	12	3	SCH40	XS	P31B-0096J	Outlet ASTM A105 MSS SP-97 BW	
1	14	3	SCH40	XS	P31B-0090P	Outlet ASTM A105 MSS SP-97 BW	
1	12	4	SCH40	STD	P31B-008ZY	Outlet ASTM A105 MSS SP-97 BW	
1	14	4	SCH40	STD	P31B-008YN	Outlet ASTM A105 MSS SP-97 BW	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30B-0002D	Plug ASTM A105 ASME B16.11 NPT Round head	
1	0.75				P30B-0002E	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1				P30B-0002F	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1.5				P30B-0002G	Plug ASTM A105 ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P61B-003LW	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	0.75		SCH160		P61B-0037M	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	1		SCH160		P61B-0037L	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	1.5		SCH160		P61B-0037J	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	2		XS		P61B-001HW	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	3		XS		P61B-001DK	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	4		STD		P61B-001MC	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	6		STD		P61B-001N2	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	8		STD		P61B-001NL	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	10		STD		P61B-001L6	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	12		SCH40		P61B-002FJ	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	14		SCH40		P61B-002FL	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
541	0.5				P61B-003U3	Flange NPT ASTM A105 Class 300 ASME B16.5 RF	
541	0.75				P61B-003U4	Flange NPT ASTM A105 Class 300 ASME B16.5 RF	
781	0.5		XXS		P61B-003T1	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	0.75		SCH160		P61B-003T2	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	1		SCH160		P61B-003T3	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	1.5		SCH160		P61B-003T4	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	2		XS		P61B-001DH	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	3		XS		P61B-001M8	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	4		STD		P61B-001VV	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	6		STD		P61B-001JW	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	8		STD		P61B-001KK	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	10		STD		P61B-001JJ	Flange WN ASTM A105 Class 600 ASME B16.5 RF	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
781	12		SCH40		P61B-003T5	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	14		SCH40		P61B-003T6	Flange WN ASTM A105 Class 600 ASME B16.5 RF	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67B-000GH	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	0.75				P67B-000GJ	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	1				P67B-000GK	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	1.5				P67B-000GL	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	2				P67B-000GM	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	3				P67B-000GN	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	4				P67B-000GP	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	6				P67B-000GY	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	8				P67B-000GZ	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	10				P67B-000GR	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	12				P67B-000GS	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	14				P67B-000GT	Blind flange ASTM A105 Class 300 ASME B16.5 RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000FT	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000FU	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000G5	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000G6	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	6				P73T-000G7	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	8				P73T-000G8	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	10				P73T-000FX	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	12				P73T-000FY	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	14				P73T-000FZ	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	0.5				P73T-000J8	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	0.75				P73T-000J9	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1				P73T-000JA	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1.5				P73T-000JB	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	2				P73T-000JH	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	3				P73T-000JL	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	4				P73T-000JM	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	6				P73T-000JN	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	8				P73T-000JP	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	10				P73T-000JC	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	12				P73T-000JD	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	14				P73T-000JE	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-10				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	12-24				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	

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BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
781	0.5-6				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
781	8-14				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81B-001F6	Gate valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	0.75				P81B-001F7	Gate valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	1				P81B-001F8	Gate valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	1.5				P81B-001F9	Gate valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	2				P81C-006RS	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Licensor-4	
1	3				P81C-006RT	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Licensor-4	
1	4				P81C-006RU	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Licensor-4	
1	6				P81C-006RV	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Licensor-4	
1	8				P81C-0091P	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Severe wet H2S service Licensor-4	
1	10				P81C-006RX	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Severe wet H2S service Licensor-4	
1	12				P81C-006RY	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Severe wet H2S service Licensor-4	
1	14				P81C-006RZ	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Severe wet H2S service Licensor-4	
4608	0.75				P81B-002WS	Gate valve ASTM A105 Class 300 API 602 BW both sides w/ nipples BE - NPT ASTM A106-B XXS-nipple Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82B-0016Y	Globe valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	0.75				P82B-0016Z	Globe valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	1				P82B-00170	Globe valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	1.5				P82B-00171	Globe valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	2				P82C-0039G	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Licensor-4	
1	3				P82C-0039H	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Licensor-4	
1	4				P82C-0039J	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Licensor-4	
1	6				P82C-00479	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Licensor-4	
1	8				P82C-004CX	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Severe wet H2S service Licensor-4	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83B-000YN	Check valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Severe wet H2S service	
1	0.75				P83B-000YP	Check valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Severe wet H2S service	
1	1				P83B-000YR	Check valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Severe wet H2S service	
1	1.5				P83B-000YS	Check valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Severe wet H2S service	
1	2				P83C-0035C	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service Licensor-4	
1	3				P83C-0035D	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service Licensor-4	
1	4				P83C-0035E	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service Licensor-4	
1	6				P83C-0035F	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service Licensor-4	
1	8				P83C-0035G	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service Licensor-4	
1	10				P83C-00359	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service Licensor-4	
1	12				P83C-0035A	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service Licensor-4	
1	14				P83C-0035B	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service Licensor-4	

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SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71B-000B1	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	0.75				P71B-000B2	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	1				P71B-000B3	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71B-000B4	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	2				P71B-000B6	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	3				P71B-000B7	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	4				P71B-000B8	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	6				P71B-000B9	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	8				P71B-000BA	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	10				P71B-000B5	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	12				P71B-000BB	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	

PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000FA	Paddle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	

PADDLE SPACER (PS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000FG	Paddle spacer ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	

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PIPING CLASS
B2A704 REV NO. 2

BOLT TABLE (B_B2A704 , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-008T0		
0.75	4	0.625	75	P80S-00908		
1	4	0.625	80	P80S-00909		
1.5	4	0.750	95	P80S-005Z4		
2	8	0.625	90	P80S-0090B		
3	8	0.750	110	P80S-0090F		
4	8	0.750	115	P80S-0090G		
6	12	0.750	125	P80S-0090J		
8	12	0.875	140	P80S-005ZD		
10	16	1.000	160	P80S-0061E		
12	16	1.125	175	P80S-0064S		
14	20	1.125	180	P80S-0064T		

BOLT TABLE (B_B2A704_781 , STUD ASME RF, OPTION CODE 781)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	80	P80S-008T2		
0.75	4	0.625	90	P80S-0090B		
1	4	0.625	95	P80S-0090C		
1.5	4	0.750	110	P80S-0090F		
2	8	0.625	110	P80S-008T8		
3	8	0.750	130	P80S-0090K		
4	8	0.875	150	P80S-005ZF		
6	12	1.000	175	P80S-0061H		
8	12	1.125	195	P80S-0064W		
10	16	1.250	250	P80S-0068M		
12	20	1.250	255	P80S-0068N		
14	20	1.375	270	P80S-006HV		

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B2A704 REV NO. 2

BRANCH TABLE (T_B2A704)

RUN PIPE SIZE (in) \ BRANCH SIZE (in)	0.5	0.75	1	1.5	2	3	4	6	8	10	12	14
0.5	TS											
0.75		TS										
1		TR	TS									
1.5		TR	TR	TS								
2		L	TR	TR	TS							
3		L	L	TR	TR	TS						
4	L	L	L	L	TR	TR	TS					
6	L	L	L	L	L	TR	TR	TS				
8		L	L	L	L	L	TR	TR	TS			
10		L	L	L	L	L	TR	TR	TR	TS		
12		L	L	L	L	L	L	TR	TR	TR	TS	
14		L	L	L	L	L	L	TR	TR	TR	TR	TS

TR : REDUCING TEE
TS : STRAIGHT TEE
L : OUTLET

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PIPING CLASS

B2A804 REV NO. 2

Material : Killed CS
Rating : ASME CLASS 300
Flange Face : RF
C.A.(mm) : 3.00
Gasket : Spiral Wound
Service : PROCESS - BENZENE SERVICE (5% WT)
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
2	USE OF SOFT SEATED BALL, PLUG AND BUTTERFLY VALVES SHALL BE LIMITED TO MAXIMUM OF 204DEGC (400DEGF)

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
24	FULL PORT (Q)
200	WITH JACK SCREW (FO)
541	NPT(F) (CA,L)
714	SW - NPT(F) (V)
781	CLASS 600 (B,F,G)

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PIPING CLASS
B2A804 REV NO. 2

PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P01A-00143	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	0.75		SCH160		P01A-0010R	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1		SCH160		P01A-0014M	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1.5		SCH160		P01A-0015J	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	2		XS		P01A-000YX	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	3		XS		P01A-000Z4	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	4		STD		P01A-000YU	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	6		STD		P01A-000Z3	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	8		STD		P01A-000ZA	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	10		STD		P01A-000XJ	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	12		SCH40		P01A-0018V	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	14		SCH40		P01A-0018U	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	16		STD		P01A-000Y9	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	18		SCH20		P01A-00438	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE	
1	20		STD		P01A-0042G	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE	
1	24		STD		P01A-0042H	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE	
1	30		XS		P01A-008MM	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE	
1	36		XS		P01A-0042K	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE	
1	42		XS		P01A-0043G	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P02B-0002A	90 degree elbow ASTM A105 Class 9000 ASME B16.11 SW	
1	0.75				P02B-0001K	90 degree elbow ASTM A105 Class 6000 ASME B16.11 SW	
1	1				P02B-0002E	90 degree elbow ASTM A105 Class 6000 ASME B16.11 SW	
1	1.5				P02B-0002F	90 degree elbow ASTM A105 Class 6000 ASME B16.11 SW	
1	2		XS		P02A-000CP	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		XS		P02A-000CX	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		STD		P02A-000CZ	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		STD		P02A-000D6	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		STD		P02A-000DC	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	10		STD		P02A-000BP	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	12		SCH40		P02A-000JE	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	14		SCH40		P02A-000JF	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	16		STD		P02A-000CH	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	18		SCH20		P02A-000LT	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	20		STD		P02A-0010J	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	24		STD		P02A-0010K	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	30		XS		P02A-000D0	90 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius	
1	36		XS		P02A-000DH	90 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius	
1	42		XS		P02A-000FB	90 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P03B-00026	45 degree elbow ASTM A105 Class 9000 ASME B16.11 SW	
1	0.75				P03B-0001G	45 degree elbow ASTM A105 Class 6000 ASME B16.11 SW	
1	1				P03B-0002A	45 degree elbow ASTM A105 Class 6000 ASME B16.11 SW	
1	1.5				P03B-0002B	45 degree elbow ASTM A105 Class 6000 ASME B16.11 SW	
1	2		XS		P03A-000AS	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		XS		P03A-000AZ	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		STD		P03A-000B1	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		STD		P03A-000B9	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		STD		P03A-000BB	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	10		STD		P03A-000A4	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	12		SCH40		P03A-000GC	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	14		SCH40		P03A-000GD	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	16		STD		P03A-000AM	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	18		SCH20		P03A-001DX	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	20		STD		P03A-000X1	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

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45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	24		STD		P03A-000X2	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	30		XS		P03A-000B5	45 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius	
1	36		XS		P03A-000BG	45 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius	
1	42		XS		P03A-000DB	45 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P21B-00022	Straight tee ASTM A105 Class 9000 ASME B16.11 SW	
1	0.75				P21B-0001G	Straight tee ASTM A105 Class 6000 ASME B16.11 SW	
1	1				P21B-00026	Straight tee ASTM A105 Class 6000 ASME B16.11 SW	
1	1.5				P21B-00027	Straight tee ASTM A105 Class 6000 ASME B16.11 SW	
1	2		XS		P21A-001CJ	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		XS		P21A-001CR	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		STD		P21A-001CW	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6		STD		P21A-001D2	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8		STD		P21A-001D8	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10		STD		P21A-001BV	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12		SCH40		P21A-0022P	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14		SCH40		P21A-0022R	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16		STD		P21A-001CD	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18		SCH20		P21A-001PJ	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20		STD		P21A-001C7	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24		STD		P21A-001CC	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30		XS		P21A-001CX	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	36		XS		P21A-001D7	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	42		XS		P21A-001KS	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75			P24B-00030	Reducing tee ASTM A105 Class 6000 ASME B16.11 SW	
1	1.5	0.75			P24B-00032	Reducing tee ASTM A105 Class 6000 ASME B16.11 SW	
1	1.5	1			P24B-0004J	Reducing tee ASTM A105 Class 6000 ASME B16.11 SW	
1	2	1	XS	SCH160	P24A-00GMB	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	XS	SCH160	P24A-005K9	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	XS	SCH160	P24A-00GNV	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	XS	XS	P24A-0023S	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P24A-002HY	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	XS	P24A-00GNW	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	XS	P24A-00GTR	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P24A-00229	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	STD	STD	P24A-0021E	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	STD	STD	P24A-0022M	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	STD	STD	P24A-0021B	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	STD	STD	P24A-0022B	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	STD	STD	P24A-0022W	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	SCH40	STD	P24A-00GSM	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH40	STD	P24A-00AF8	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH40	STD	P24A-00GSL	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	SCH40	STD	P24A-00GV4	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	SCH40	STD	P24A-00AFB	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	SCH40	STD	P24A-003GJ	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	SCH40	SCH40	P24A-0033E	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	6	STD	STD	P24A-001ZC	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	STD	STD	P24A-00202	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	STD	STD	P24A-0022G	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	STD	SCH40	P24A-00GVU	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	STD	SCH40	P24A-00GVV	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	8	SCH20	STD	P24A-00BNM	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	10	SCH20	STD	P24A-00GU5	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	

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REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	18	12	SCH20	SCH40	P24A-00BH1	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	14	SCH20	SCH40	P24A-00BJM	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	16	SCH20	STD	P24A-00L69	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	8	STD	STD	P24A-004V2	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	10	STD	STD	P24A-004W5	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	12	STD	SCH40	P24A-00GU8	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	14	STD	SCH40	P24A-00BWC	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	16	STD	STD	P24A-004SF	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	18	STD	SCH20	P24A-006WD	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	10	STD	STD	P24A-004WB	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	12	STD	SCH40	P24A-00GVW	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	14	STD	SCH40	P24A-00C8S	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	16	STD	STD	P24A-004VY	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	18	STD	SCH20	P24A-006WF	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	20	STD	STD	P24A-004SV	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	10	XS	STD	P24A-00NZ8	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	12	XS	SCH40	P24A-00NZ9	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	14	XS	SCH40	P24A-00NZA	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	16	XS	STD	P24A-004VH	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	18	XS	SCH20	P24A-0043K	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	20	XS	STD	P24A-004ST	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	24	XS	STD	P24A-004V6	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	36	16	XS	STD	P24A-004VV	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	36	18	XS	SCH20	P24A-003VJ	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	36	20	XS	STD	P24A-004SS	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	36	24	XS	STD	P24A-004VX	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	36	30	XS	XS	P24A-0043N	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	42	16	XS	STD	P24A-00GU2	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	42	18	XS	SCH20	P24A-003VC	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	42	20	XS	STD	P24A-00EGT	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	42	24	XS	STD	P24A-00EHZ	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	42	30	XS	XS	P24A-0043R	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	42	36	XS	XS	P24A-003VG	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	XS	XS	P27A-001E5	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P27A-001N0	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	XS	P27A-0074W	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	XS	P27A-007P6	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P27A-001GW	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	STD	STD	P27A-001C2	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	STD	STD	P27A-00188	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	STD	STD	P27A-001C3	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	STD	STD	P27A-0018M	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	STD	STD	P27A-0019J	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	SCH40	STD	P27A-004W1	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH40	STD	P27A-004XB	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH40	STD	P27A-004UG	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	SCH40	STD	P27A-0051B	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	SCH40	STD	P27A-003ZT	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	SCH40	STD	P27A-0029L	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	SCH40	SCH40	P27A-001ZZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	STD	STD	P27A-001C8	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	STD	STD	P27A-0018D	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	STD	SCH40	P27A-00BL0	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	STD	SCH40	P27A-00BL1	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	10	SCH20	STD	P27A-00BGM	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	12	SCH20	SCH40	P27A-00CPD	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	18	14	SCH20	SCH40	P27A-00CPE	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	16	SCH20	STD	P27A-00FE4	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	12	STD	SCH40	P27A-00BJ4	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	14	STD	SCH40	P27A-00BJF	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	16	STD	STD	P27A-001AD	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	18	STD	SCH20	P27A-0084N	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	16	STD	STD	P27A-0018C	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	18	STD	SCH20	P27A-0084U	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	20	STD	STD	P27A-001A8	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	20	XS	STD	P27A-0018E	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	24	XS	STD	P27A-0019H	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	36	24	XS	STD	P27A-001GY	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	36	30	XS	XS	P27A-0019M	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	42	30	XS	XS	P27A-001MC	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	42	36	XS	XS	P27A-001M6	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	XS	XS	P28A-001EH	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P28A-001N6	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	XS	P28A-008F7	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	XS	P28A-008K1	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P28A-00182	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	STD	STD	P28A-0017V	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	STD	STD	P28A-0018V	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	STD	STD	P28A-0017W	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	STD	STD	P28A-00190	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	STD	STD	P28A-0019J	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	SCH40	STD	P28A-008HU	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH40	STD	P28A-005T9	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH40	STD	P28A-008HT	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	SCH40	STD	P28A-008F4	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	SCH40	STD	P28A-003ZL	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	SCH40	STD	P28A-0028T	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	SCH40	SCH40	P28A-001ZG	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	STD	STD	P28A-001BX	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	STD	STD	P28A-0018F	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	STD	SCH40	P28A-008LC	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	STD	SCH40	P28A-008LD	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	10	SCH20	STD	P28A-008FN	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	12	SCH20	SCH40	P28A-009PE	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	14	SCH20	SCH40	P28A-009PF	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	16	SCH20	STD	P28A-00CK2	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	12	STD	SCH40	P28A-008HW	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	14	STD	SCH40	P28A-008JE	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	16	STD	STD	P28A-001AY	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	18	STD	SCH20	P28A-004UN	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	16	STD	STD	P28A-0018K	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	18	STD	SCH20	P28A-004US	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	20	STD	STD	P28A-001AW	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	20	XS	STD	P28A-0018H	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	24	XS	STD	P28A-0019P	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	36	24	XS	STD	P28A-0017X	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	36	30	XS	XS	P28A-0019M	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	42	30	XS	XS	P28A-001ME	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	42	36	XS	XS	P28A-001N0	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	

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CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P29B-0001K	Cap ASTM A105 Class 9000 ASME B16.11 SW	
1	0.75				P29B-0002G	Cap ASTM A105 Class 6000 ASME B16.11 SW	
1	1				P29B-0002D	Cap ASTM A105 Class 6000 ASME B16.11 SW	
1	1.5				P29B-0002E	Cap ASTM A105 Class 6000 ASME B16.11 SW	
1	2		XS		P29A-000A1	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		XS		P29A-000AT	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		STD		P29A-000A3	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6		STD		P29A-000A9	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8		STD		P29A-000AF	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10		STD		P29A-0009Z	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12		SCH40		P29A-000GB	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14		SCH40		P29A-000GC	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16		STD		P29A-000AR	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18		SCH20		P29A-000E0	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20		STD		P29A-000B2	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24		STD		P29A-000B8	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	30		XS		P29A-000BP	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	36		XS		P29A-000A2	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	42		XS		P29A-000CW	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
541	0.75				P29B-0000Y	Cap ASTM A105 Class 6000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P41A-000B9	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		XXS		P41A-000BA	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		XXS		P41A-000D8	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		XXS		P41A-000D9	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

CON SWAGED NIPPLE (SNC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	XXS	P42A-000A5	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	SCH160	XXS	P42A-000A6	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	SCH160	SCH160	P42A-0009U	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	SCH160	XXS	P42A-000A7	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	SCH160	SCH160	P42A-0009W	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	SCH160	SCH160	P42A-0009X	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	XS	XXS	P42A-000LL	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	XS	SCH160	P42A-000J7	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	XS	SCH160	P42A-000F8	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	XS	SCH160	P42A-000KZ	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	XS	SCH160	P42A-000L9	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	

ECC SWAGED NIPPLE (SNE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	XXS	P43A-000DD	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	SCH160	XXS	P43A-000DE	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	SCH160	SCH160	P43A-000B5	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	SCH160	XXS	P43A-000DF	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	SCH160	SCH160	P43A-000B7	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	SCH160	SCH160	P43A-000B8	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	XS	XXS	P43A-000E8	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	XS	SCH160	P43A-000B3	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	XS	SCH160	P43A-000CZ	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	XS	SCH160	P43A-000D0	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	XS	SCH160	P43A-000DM	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	

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COUPLING (CPS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P47B-00026	Coupling ASTM A105 Class 9000 ASME B16.11 SW - SW	
1	0.75				P47B-00012	Coupling ASTM A105 Class 6000 ASME B16.11 SW - SW	
1	1				P47B-0002A	Coupling ASTM A105 Class 6000 ASME B16.11 SW - SW	
1	1.5				P47B-0002B	Coupling ASTM A105 Class 6000 ASME B16.11 SW - SW	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5 - 2.5	0.75			P31B-0137D	Outlet ASTM A105 Class 6000 MSS SP-97 SW	
1	3 - 10	0.75			P31B-007LV	Outlet ASTM A105 Class 6000 MSS SP-97 SW	
1	12 and larger	0.75			P31B-0136N	Outlet ASTM A105 Class 6000 MSS SP-97 SW	
1	3 - 10	1			P31B-007LN	Outlet ASTM A105 Class 6000 MSS SP-97 SW	
1	12 and larger	1			P31B-0136P	Outlet ASTM A105 Class 6000 MSS SP-97 SW	
1	4 - 5	1.5			P31B-004LE	Outlet ASTM A105 Class 6000 MSS SP-97 SW	
1	6 - 8	1.5			P31B-005T4	Outlet ASTM A105 Class 6000 MSS SP-97 SW	
1	10 - 18	1.5			P31B-007LF	Outlet ASTM A105 Class 6000 MSS SP-97 SW	
1	20 and larger	1.5			P31B-0137E	Outlet ASTM A105 Class 6000 MSS SP-97 SW	
541	1	0.75			P31B-005HL	Outlet ASTM A105 Class 6000 MSS SP-97 NPT	
541	1.5 - 2.5	0.75			P31B-0137F	Outlet ASTM A105 Class 6000 MSS SP-97 NPT	
541	3 - 10	0.75			P31B-007KP	Outlet ASTM A105 Class 6000 MSS SP-97 NPT	
541	12 and larger	0.75			P31B-0138A	Outlet ASTM A105 Class 6000 MSS SP-97 NPT	
1	6	2	STD	XS	P31B-007SH	Outlet ASTM A105 MSS SP-97 BW	
1	8	2	STD	XS	P31B-00AGX	Outlet ASTM A105 MSS SP-97 BW	
1	10	2	STD	XS	P31B-00ASA	Outlet ASTM A105 MSS SP-97 BW	
1	12	2	SCH40	XS	P31B-00CBS	Outlet ASTM A105 MSS SP-97 BW	
1	14	2	SCH40	XS	P31B-00CAH	Outlet ASTM A105 MSS SP-97 BW	
1	16	2	STD	XS	P31B-00C1T	Outlet ASTM A105 MSS SP-97 BW	
1	18	2	SCH20	XS	P31B-00NVX	Outlet ASTM A105 MSS SP-97 BW	
1	20	2	STD	XS	P31B-00994	Outlet ASTM A105 MSS SP-97 BW	
1	24	2	STD	XS	P31B-0092Z	Outlet ASTM A105 MSS SP-97 BW	
1	30	2	XS	XS	P31B-008P4	Outlet ASTM A105 MSS SP-97 BW	
1	36	2	XS	XS	P31B-008BB	Outlet ASTM A105 MSS SP-97 BW	
1	42	2	XS	XS	P31B-0084J	Outlet ASTM A105 MSS SP-97 BW	
1	8	3	STD	XS	P31B-009Y0	Outlet ASTM A105 MSS SP-97 BW	
1	10	3	STD	XS	P31B-009CG	Outlet ASTM A105 MSS SP-97 BW	
1	12	3	SCH40	XS	P31B-0096J	Outlet ASTM A105 MSS SP-97 BW	
1	14	3	SCH40	XS	P31B-0090P	Outlet ASTM A105 MSS SP-97 BW	
1	16	3	STD	XS	P31B-008UE	Outlet ASTM A105 MSS SP-97 BW	
1	18	3	SCH20	XS	P31B-00NZ6	Outlet ASTM A105 MSS SP-97 BW	
1	20	3	STD	XS	P31B-008F4	Outlet ASTM A105 MSS SP-97 BW	
1	24	3	STD	XS	P31B-0088Z	Outlet ASTM A105 MSS SP-97 BW	
1	30	3	XS	XS	P31B-00ENG	Outlet ASTM A105 MSS SP-97 BW	
1	36	3	XS	XS	P31B-00ENU	Outlet ASTM A105 MSS SP-97 BW	
1	42	3	XS	XS	P31B-00P0K	Outlet ASTM A105 MSS SP-97 BW	
1	12	4	SCH40	STD	P31B-008ZY	Outlet ASTM A105 MSS SP-97 BW	
1	14	4	SCH40	STD	P31B-008YN	Outlet ASTM A105 MSS SP-97 BW	
1	16	4	STD	STD	P31B-008SH	Outlet ASTM A105 MSS SP-97 BW	
1	18	4	SCH20	STD	P31B-00P1V	Outlet ASTM A105 MSS SP-97 BW	
1	20	4	STD	STD	P31B-008D3	Outlet ASTM A105 MSS SP-97 BW	
1	24	4	STD	STD	P31B-0086X	Outlet ASTM A105 MSS SP-97 BW	
1	30	4	XS	STD	P31B-007UR	Outlet ASTM A105 MSS SP-97 BW	
1	36	4	XS	STD	P31B-00AEP	Outlet ASTM A105 MSS SP-97 BW	
1	42	4	XS	STD	P31B-00A8G	Outlet ASTM A105 MSS SP-97 BW	
1	18	6	SCH20	STD	P31B-00P48	Outlet ASTM A105 MSS SP-97 BW	
1	20	6	STD	STD	P31B-008PZ	Outlet ASTM A105 MSS SP-97 BW	
1	24	6	STD	STD	P31B-008JD	Outlet ASTM A105 MSS SP-97 BW	
1	30	6	XS	STD	P31B-008BR	Outlet ASTM A105 MSS SP-97 BW	
1	36	6	XS	STD	P31B-0085G	Outlet ASTM A105 MSS SP-97 BW	
1	42	6	XS	STD	P31B-007ZN	Outlet ASTM A105 MSS SP-97 BW	

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PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30B-0002D	Plug ASTM A105 ASME B16.11 NPT Round head	
1	0.75				P30B-0002E	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1				P30B-0002F	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1.5				P30B-0002G	Plug ASTM A105 ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P61B-001HD	Flange SW ASTM A105 Class 300 ASME B16.5 RF	
1	0.75		SCH160		P61B-001HH	Flange SW ASTM A105 Class 300 ASME B16.5 RF	
1	1		SCH160		P61B-001E8	Flange SW ASTM A105 Class 300 ASME B16.5 RF	
1	1.5		SCH160		P61B-001ET	Flange SW ASTM A105 Class 300 ASME B16.5 RF	
1	2		XS		P61B-001HW	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	3		XS		P61B-001DK	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	4		STD		P61B-001MC	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	6		STD		P61B-001N2	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	8		STD		P61B-001NL	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	10		STD		P61B-001L6	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	12		SCH40		P61B-002FJ	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	14		SCH40		P61B-002FL	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	16		STD		P61B-001MH	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	18		SCH20		P61B-002MT	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	20		STD		P61B-001NT	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	24		STD		P61B-001PA	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	30		XS		P61B-001KT	Flange WN ASTM A105 Class 300 ASME B16.47 Series B RF	
1	36		XS		P61B-001N6	Flange WN ASTM A105 Class 300 ASME B16.47 Series B RF	
1	42		XS		P61B-00673	Flange WN ASTM A105 Class 300 ASME B16.47 Series B RF	
781	0.5		XXS		P61B-002ZE	Flange SW ASTM A105 Class 600 ASME B16.5 RF	
781	0.75		SCH160		P61B-001DW	Flange SW ASTM A105 Class 600 ASME B16.5 RF	
781	1		SCH160		P61B-005X5	Flange SW ASTM A105 Class 600 ASME B16.5 RF	
781	1.5		SCH160		P61B-005X6	Flange SW ASTM A105 Class 600 ASME B16.5 RF	
781	2		XS		P61B-001DH	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	3		XS		P61B-001M8	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	4		STD		P61B-001VV	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	6		STD		P61B-001JW	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	8		STD		P61B-001KK	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	10		STD		P61B-001JJ	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	12		SCH40		P61B-003T5	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	14		SCH40		P61B-003T6	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	16		STD		P61B-003FB	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	18		SCH20		P61B-003TP	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	20		STD		P61B-003GP	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	24		STD		P61B-003GM	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	30		XS		P61B-003GZ	Flange WN ASTM A105 Class 600 ASME B16.47 Series B RF	
781	36		XS		P61B-003GS	Flange WN ASTM A105 Class 600 ASME B16.47 Series B RF	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67B-000GH	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	0.75				P67B-000GJ	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	1				P67B-000GK	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	1.5				P67B-000GL	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	2				P67B-000GM	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	3				P67B-000GN	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	4				P67B-000GP	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	6				P67B-000GY	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	8				P67B-000GZ	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	10				P67B-000GR	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	12				P67B-000GS	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	14				P67B-000GT	Blind flange ASTM A105 Class 300 ASME B16.5 RF	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	16				P67B-000GU	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	18				P67B-000GV	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	20				P67B-000GW	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	24				P67B-000GX	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	30				P67B-000H2	Blind flange ASTM A105 Class 300 ASME B16.47 Series B RF	
1	36				P67B-000H5	Blind flange ASTM A105 Class 300 ASME B16.47 Series B RF	
1	42				P67B-000L5	Blind flange ASTM A105 Class 300 ASME B16.47 Series B RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000FT	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000FU	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000G5	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000G6	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	6				P73T-000G7	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	8				P73T-000G8	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	10				P73T-000FX	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	12				P73T-000FY	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	14				P73T-000FZ	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	16				P73T-000G0	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	18				P73T-000G1	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	20				P73T-000G3	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	24				P73T-000G4	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	30				P73T-000H9	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	36				P73T-000HC	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	42				P73T-000KM	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	0.5				P73T-000J8	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	0.75				P73T-000J9	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1				P73T-000JA	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1.5				P73T-000JB	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	2				P73T-000JH	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	3				P73T-000JL	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	4				P73T-000JM	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	6				P73T-000JN	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	8				P73T-000JP	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	10				P73T-000JC	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	12				P73T-000JD	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	14				P73T-000JE	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	16				P73T-000JF	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	18				P73T-000JG	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	20				P73T-000JJ	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	24				P73T-000JK	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	30				P73T-000JT	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	

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GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
781	36				P73T-000JW	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-10				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	12-42				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
781	0.5-6				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
781	8-36				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81B-002G5	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated Benzene service	
1	0.75				P81B-002G6	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated Benzene service	
1	1				P81B-002G7	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated Benzene service	
1	1.5				P81B-002G8	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated Benzene service	
1	2				P81C-007NC	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated Benzene service	
1	3				P81C-007ND	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated Benzene service	
1	4				P81C-007NE	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated Benzene service	
1	6				P81C-007NF	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated Benzene service	
1	8				P81C-0091A	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated Benzene service	
1	10				P81C-007NH	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated Benzene service	
1	12				P81C-007NJ	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated Benzene service	
1	14				P81C-007NK	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated Benzene service	
1	16				P81C-007NL	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated Benzene service	
1	18				P81C-007NM	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated Benzene service	
1	20				P81C-007NN	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated Benzene service	
1	24				P81C-0084P	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated Benzene service	
714	0.5				P81B-002S8	Gate valve ASTM A105 Class 800 API 602 SW - NPT Trim number 8 BB-BG-OS&Y Handwheel operated Benzene service	
714	0.75				P81B-002G9	Gate valve ASTM A105 Class 800 API 602 SW - NPT Trim number 8 BB-BG-OS&Y Handwheel operated Benzene service	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82B-001UP	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated Benzene service	
1	0.75				P82B-001UR	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated Benzene service	
1	1				P82B-001US	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated Benzene service	
1	1.5				P82B-001UT	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated Benzene service	
1	2				P82C-003VS	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated Benzene service	
1	3				P82C-003VT	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated Benzene service	
1	4				P82C-003VU	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated Benzene service	
1	6				P82C-003VV	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated Benzene service	
1	8				P82C-004CH	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated Benzene service	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83B-000FX	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover	
1	0.75				P83B-000ER	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover	
1	1				P83B-000ES	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover	

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CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5				P83B-000ET	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover	
1	2				P83C-0013H	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	3				P83C-0013L	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	4				P83C-0013M	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	6				P83C-0013N	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	8				P83C-0013P	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	10				P83C-0013D	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	12				P83C-0013E	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	14				P83C-0023R	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	16				P83C-0013F	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	18				P83C-0013G	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	20				P83C-0013J	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	24				P83C-0013K	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	

BALL VALVE (Q)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P84B-001LU	Ball valve Long-pattern ASTM A105 Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design Benzene service	
1	0.75				P84B-001LV	Ball valve Long-pattern ASTM A105 Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design Benzene service	
1	1				P84B-001LW	Ball valve Long-pattern ASTM A105 Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design Benzene service	
1	1.5				P84B-001LX	Ball valve Long-pattern ASTM A105 Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design Benzene service	
24	0.5				P84B-001LY	Ball valve Long-pattern ASTM A105 Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design Benzene service	
24	0.75				P84B-001LZ	Ball valve Long-pattern ASTM A105 Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design Benzene service	
24	1				P84B-001M0	Ball valve Long-pattern ASTM A105 Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design Benzene service	
24	1.5				P84B-001M1	Ball valve Long-pattern ASTM A105 Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design Benzene service	

ORIFICE FLANGE (FO)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2		XS		P66B-0084B	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	3		XS		P66B-008C1	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	4		STD		P66B-0084D	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	6		STD		P66B-0084E	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	8		STD		P66B-008BN	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	10		STD		P66B-008BM	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	12		SCH40		P66B-00885	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	14		SCH40		P66B-00886	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	16		STD		P66B-008C0	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	18		SCH20		P66B-0084R	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
200	2		XS		P66B-00843	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	3		XS		P66B-008C3	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	4		STD		P66B-00845	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	6		STD		P66B-00846	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	8		STD		P66B-008BR	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	10		STD		P66B-008BP	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	12		SCH40		P66B-0088K	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	14		SCH40		P66B-0088L	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	16		STD		P66B-008C2	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	18		SCH20		P66B-0084T	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	

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SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71B-000B1	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	0.75				P71B-000B2	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	1				P71B-000B3	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71B-000B4	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	2				P71B-000B6	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	3				P71B-000B7	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	4				P71B-000B8	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	6				P71B-000B9	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	8				P71B-000BA	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	10				P71B-000B5	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	12				P71B-000BB	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	

PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000FA	Paddle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	16				P72B-000FB	Paddle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	18				P72B-000FC	Paddle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	20				P72B-000FD	Paddle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	24				P72B-000FE	Paddle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	30				P72B-000FF	Paddle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.47-B RF	
1	36				P72B-000M0	Paddle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.47-B RF	
1	42				P72B-000M1	Paddle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.47-B RF	

PADDLE SPACER (PS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000FG	Paddle spacer ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	16				P72B-000FH	Paddle spacer ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	18				P72B-000FJ	Paddle spacer ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	20				P72B-000FK	Paddle spacer ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	24				P72B-000FL	Paddle spacer ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	30				P72B-000FM	Paddle spacer ASTM A105 Class 300 Standard-drawing Flange ASME B16.47-B RF	
1	36				P72B-000M3	Paddle spacer ASTM A105 Class 300 Standard-drawing Flange ASME B16.47-B RF	
1	42				P72B-000M4	Paddle spacer ASTM A105 Class 300 Standard-drawing Flange ASME B16.47-B RF	

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BOLT TABLE (B_B2A804 , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-003V4		
0.75	4	0.625	75	P80S-003XC		
1	4	0.625	80	P80S-003XD		
1.5	4	0.750	95	P80S-00414		
2	8	0.625	90	P80S-003XF		
3	8	0.750	110	P80S-003XK		
4	8	0.750	115	P80S-003XL		
6	12	0.750	125	P80S-003XN		
8	12	0.875	140	P80S-0041D		
10	16	1.000	160	P80S-0043K		
12	16	1.125	175	P80S-0046S		
14	20	1.125	180	P80S-0046T		
16	20	1.250	190	P80S-004AK		
18	24	1.250	200	P80S-004AM		
20	24	1.250	210	P80S-004AP		
24	24	1.500	235	P80S-003F8		
30	36	1.375	285	P80S-003EA		
36	32	1.625	320	P80S-005TT		
42	36	1.750	355	P80S-007B5		

BOLT TABLE (B_B2A804_781 , STUD ASME RF, OPTION CODE 781)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	80	P80S-003V6		
0.75	4	0.625	90	P80S-003XF		
1	4	0.625	95	P80S-003XG		
1.5	4	0.750	110	P80S-003XK		
2	8	0.625	110	P80S-003VC		
3	8	0.750	130	P80S-003XP		
4	8	0.875	150	P80S-0041F		
6	12	1.000	175	P80S-0043P		
8	12	1.125	195	P80S-0046W		
10	16	1.250	250	P80S-004AY		
12	20	1.250	255	P80S-004AZ		
14	20	1.375	270	P80S-003E7		
16	20	1.500	295	P80S-003FL		
18	20	1.625	320	P80S-005TT		
20	24	1.625	335	P80S-005TW		
24	24	1.875	380	P80S-008P4		
30	28	1.875	435	P80S-008PF		
36	28	2.250	510	P80S-00P4E		
42	28	2.500	575			

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BRANCH TABLE (T_B2A804)

RUN PIPE SIZE (in) \ BRANCH SIZE (in)	0.5	0.75	1	1.5	2	3	4	6	8	10	12	14	16	18	20	24	30	36	42
0.5	TS																		
0.75		TS																	
1		TR	TS																
1.5		TR	TR	TS															
2		L	TR	TR	TS														
3		L	L	TR	TR	TS													
4	L	L	L	L	TR	TR	TS												
6	L	L	L	L	L	TR	TR	TS											
8		L	L	L	L	L	TR	TR	TS										
10		L	L	L	L	L	TR	TR	TR	TS									
12		L	L	L	L	L	L	TR	TR	TR	TS								
14		L	L	L	L	L	L	TR	TR	TR	TR	TS							
16		L	L	L	L	L	L	TR	TR	TR	TR	TR	TS						
18		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TS					
20		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TR	TS				
24		L	L	L	L	L	L	L	9PD	TR	TR	TR	TR	TR	TR	TS			
30		L	L	L	L	L	L	L	9PD	TR	TR	TR	TR	TR	TR	TR	TS		
36		L	L	L	L	L	L	L	9PD	9PD	9PD	9PD	TR	TR	TR	TR	TR	TS	
42		L	L	L	L	L	L	L	9PD	9PD	9PD	9PD	TR	TR	TR	TR	TR	TR	TS

TR : REDUCING TEE
L : OUTLET
9PD : REINFORCING PAD 90 DEG
TS : STRAIGHT TEE

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PIPING CLASS

B2AC01 REV NO. 2

Material : Killed CS
Rating : ASME CLASS 300
Flange Face : RF
C.A.(mm) : 3.00
Gasket : Spiral Wound
Service : PROCESS - CATALYST : / CATALYST
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
2	USE OF SOFT SEATED BALL, PLUG AND BUTTERFLY VALVES SHALL BE LIMITED TO MAXIMUM OF 204DEGC (400DEGF)
6	PIPE THICKNESS CALCULATION TO INCLUDE CORROSION AND EROSION ALLOWANCES DUE TO THE PROCESS CATALYST FLOW, AS PER PROCESS LICENSOR SPECIFICATIONS

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
200	WITH JACK SCREW (FO)
541	NPT(F) (CA,F,L)
781	CLASS 600 (B,F,G)
4608	VALVE WITH NIPPLES (V)

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PIPING CLASS
B2AC01 REV NO. 2

PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P01A-0078U	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE Licensor-1	
1	0.75		SCH160		P01A-0078V	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE Licensor-1	
1	1		SCH160		P01A-0078W	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE Licensor-1	
1	1.5		SCH160		P01A-0078X	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE Licensor-1	
1	2		XS		P01A-0078Y	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Licensor-1	
1	3		STD		P01A-0078Z	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Licensor-1	
1	4		STD		P01A-007B3	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Licensor-1	
1	6		STD		P01A-007B8	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Licensor-1	
1	8		STD		P01A-007BU	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Licensor-1	
1	10		STD		P01A-007BR	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Licensor-1	
1	12		SCH40		P01A-007BS	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Licensor-1	
1	14		SCH40		P01A-007BT	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Licensor-1	
1	16		SCH20		P01A-007B7	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Licensor-1	
1	18		SCH20		P01A-007BA	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE Licensor-1	
1	20		STD		P01A-007BB	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE Licensor-1	
1	24		STD		P01A-007BC	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE Licensor-1	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P02A-003TW	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	0.75		SCH160		P02A-003TX	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	1		SCH160		P02A-003TY	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	1.5		SCH160		P02A-003TZ	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	2		XS		P02A-003R7	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	3		STD		P02A-003R8	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	4		STD		P02A-003T8	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	6		STD		P02A-003TG	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	8		STD		P02A-003U6	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	10		STD		P02A-003U0	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	12		SCH40		P02A-003U1	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	14		SCH40		P02A-003U2	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	16		SCH20		P02A-003TC	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	18		SCH20		P02A-003TD	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	20		STD		P02A-003TE	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	24		STD		P02A-003TF	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P03A-003RJ	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	0.75		SCH160		P03A-003RK	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	1		SCH160		P03A-003RL	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	1.5		SCH160		P03A-003RM	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	2		XS		P03A-003MW	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	3		STD		P03A-003MX	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	4		STD		P03A-003PX	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	6		STD		P03A-003R5	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	8		STD		P03A-003RV	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	10		STD		P03A-003RN	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	12		SCH40		P03A-003RP	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	14		SCH40		P03A-003RR	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	16		SCH20		P03A-003R1	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	18		SCH20		P03A-003R2	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	20		STD		P03A-003R3	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	24		STD		P03A-003R4	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P21A-004B8	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	0.75		SCH160		P21A-004B9	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	

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STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		SCH160		P21A-004BA	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	1.5		SCH160		P21A-004BB	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	2		XS		P21A-0048L	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	3		STD		P21A-0048M	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	4		STD		P21A-004AL	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	6		STD		P21A-004AS	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	8		STD		P21A-004BF	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	10		STD		P21A-004BC	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	12		SCH40		P21A-004BD	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	14		SCH40		P21A-004BE	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	16		SCH20		P21A-004AR	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	18		SCH20		P21A-004AU	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	20		STD		P21A-004AV	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	24		STD		P21A-004AW	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75	SCH160	SCH160	P24A-00K7S	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	1.5	0.75	SCH160	SCH160	P24A-00K7T	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	1.5	1	SCH160	SCH160	P24A-00K7U	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	2	1	XS	SCH160	P24A-00K0V	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	2	1.5	XS	SCH160	P24A-00K0W	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	3	1.5	STD	SCH160	P24A-00K0X	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	3	2	STD	XS	P24A-00K0Y	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	4	2	STD	XS	P24A-00K5X	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	4	3	STD	STD	P24A-00K5Y	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	6	3	STD	STD	P24A-00K64	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	6	4	STD	STD	P24A-00K65	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	8	4	STD	STD	P24A-00K7V	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	8	6	STD	STD	P24A-00K7W	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	10	4	STD	STD	P24A-00K7X	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	10	6	STD	STD	P24A-00K7Y	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	10	8	STD	STD	P24A-00K7Z	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	12	6	SCH40	STD	P24A-00K81	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	12	8	SCH40	STD	P24A-00K82	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	12	10	SCH40	STD	P24A-00K80	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	14	6	SCH40	STD	P24A-00K85	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	14	8	SCH40	STD	P24A-00K86	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	14	10	SCH40	STD	P24A-00K83	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	14	12	SCH40	SCH40	P24A-00K84	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	16	6	SCH20	STD	P24A-00K6M	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	16	8	SCH20	STD	P24A-00MV0	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	16	10	SCH20	STD	P24A-00MUX	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	16	12	SCH20	SCH40	P24A-00MUY	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	16	14	SCH20	SCH40	P24A-00L4M	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	18	8	SCH20	STD	P24A-00MV3	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	18	10	SCH20	STD	P24A-00MV1	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	18	12	SCH20	SCH40	P24A-00MV2	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	18	14	SCH20	SCH40	P24A-00KSX	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	18	16	SCH20	SCH20	P24A-00K6T	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	20	8	STD	STD	P24A-00MV6	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	20	10	STD	STD	P24A-00MV4	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	20	12	STD	SCH40	P24A-00MV5	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	20	14	STD	SCH40	P24A-00KT0	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	20	16	STD	SCH20	P24A-00K6Y	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	20	18	STD	SCH20	P24A-00K6Z	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	24	10	STD	STD	P24A-00NVN	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	24	12	STD	SCH40	P24A-00NVP	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	24	14	STD	SCH40	P24A-00KT3	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	

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REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	24	16	STD	SCH20	P24A-00K73	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	24	18	STD	SCH20	P24A-00K74	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	24	20	STD	STD	P24A-00K75	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	SCH160	P27A-00ETE	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	1	0.5	SCH160	SCH160	P27A-00ETF	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	1	0.75	SCH160	SCH160	P27A-00ETG	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	1.5	0.5	SCH160	SCH160	P27A-00ETH	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	1.5	0.75	SCH160	SCH160	P27A-00ETJ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	1.5	1	SCH160	SCH160	P27A-00ETK	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	2	0.75	XS	SCH160	P27A-00ETL	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	2	1	XS	SCH160	P27A-00ETM	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	2	1.5	XS	SCH160	P27A-00ETN	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	3	1.5	STD	SCH160	P27A-00ETP	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	3	2	STD	XS	P27A-00EL1	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	4	1.5	STD	SCH160	P27A-00ETR	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	4	2	STD	XS	P27A-00ES5	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	4	3	STD	STD	P27A-00ES6	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	6	3	STD	STD	P27A-00ES9	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	6	4	STD	STD	P27A-00ESA	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	8	4	STD	STD	P27A-00ETS	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	8	6	STD	STD	P27A-00ETT	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	10	4	STD	STD	P27A-00ETU	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	10	6	STD	STD	P27A-00ETV	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	10	8	STD	STD	P27A-00ETW	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	12	6	SCH40	STD	P27A-00ETY	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	12	8	SCH40	STD	P27A-00ETZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	12	10	SCH40	STD	P27A-00ETX	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	14	6	SCH40	STD	P27A-00EU2	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	14	8	SCH40	STD	P27A-00EU3	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	14	10	SCH40	STD	P27A-00EU0	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	14	12	SCH40	SCH40	P27A-00EU1	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	16	8	SCH20	STD	P27A-00GNC	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	16	10	SCH20	STD	P27A-00GNA	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	16	12	SCH20	SCH40	P27A-00GNB	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	16	14	SCH20	SCH40	P27A-00F7N	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	18	10	SCH20	STD	P27A-00GND	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	18	12	SCH20	SCH40	P27A-00GNE	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	18	14	SCH20	SCH40	P27A-00F7S	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	18	16	SCH20	SCH20	P27A-00ESX	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	20	12	STD	SCH40	P27A-00GNF	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	20	14	STD	SCH40	P27A-00F7U	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	20	16	STD	SCH20	P27A-00ET0	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	20	18	STD	SCH20	P27A-00ET1	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	24	16	STD	SCH20	P27A-00ET2	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	24	18	STD	SCH20	P27A-00ET3	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	24	20	STD	STD	P27A-00ET4	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	SCH160	P28A-00BX8	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	1	0.5	SCH160	SCH160	P28A-00BX9	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	1	0.75	SCH160	SCH160	P28A-00BXA	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	1.5	0.5	SCH160	SCH160	P28A-00BXB	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	1.5	0.75	SCH160	SCH160	P28A-00BXC	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	1.5	1	SCH160	SCH160	P28A-00BXD	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	2	0.75	XS	SCH160	P28A-00BXE	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2	1	XS	SCH160	P28A-00BXF	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	2	1.5	XS	SCH160	P28A-00BXG	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	3	1.5	STD	SCH160	P28A-00BXH	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	3	2	STD	XS	P28A-00BPS	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	4	1.5	STD	SCH160	P28A-00BXJ	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	4	2	STD	XS	P28A-00BVZ	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	4	3	STD	STD	P28A-00BW0	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	6	3	STD	STD	P28A-00BW3	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	6	4	STD	STD	P28A-00BW4	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	8	4	STD	STD	P28A-00BXK	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	8	6	STD	STD	P28A-00BXL	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	10	4	STD	STD	P28A-00BXM	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	10	6	STD	STD	P28A-00BXN	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	10	8	STD	STD	P28A-00BXP	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	12	6	SCH40	STD	P28A-00BXS	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	12	8	SCH40	STD	P28A-00BXT	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	12	10	SCH40	STD	P28A-00BXR	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	14	6	SCH40	STD	P28A-00BXW	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	14	8	SCH40	STD	P28A-00BXX	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	14	10	SCH40	STD	P28A-00BXU	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	14	12	SCH40	SCH40	P28A-00BXV	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	16	8	SCH20	STD	P28A-00DWM	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	16	10	SCH20	STD	P28A-00DWK	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	16	12	SCH20	SCH40	P28A-00DWL	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	16	14	SCH20	SCH40	P28A-00CBP	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	18	10	SCH20	STD	P28A-00DWN	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	18	12	SCH20	SCH40	P28A-00DWP	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	18	14	SCH20	SCH40	P28A-00CBT	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	18	16	SCH20	SCH20	P28A-00BWR	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	20	12	STD	SCH40	P28A-00DWR	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	20	14	STD	SCH40	P28A-00CBV	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	20	16	STD	SCH20	P28A-00BWU	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	20	18	STD	SCH20	P28A-00BWV	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	24	16	STD	SCH20	P28A-00BWW	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	24	18	STD	SCH20	P28A-00BWX	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	24	20	STD	STD	P28A-00BWY	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P29A-0035G	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	0.75		SCH160		P29A-0035H	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	1		SCH160		P29A-0035J	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	1.5		SCH160		P29A-0035K	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	2		XS		P29A-00326	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	3		STD		P29A-00327	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	4		STD		P29A-0034R	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	6		STD		P29A-00353	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	8		STD		P29A-0035T	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	10		STD		P29A-0035L	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	12		SCH40		P29A-0035M	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	14		SCH40		P29A-0035N	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	16		SCH20		P29A-0034V	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	18		SCH20		P29A-0034W	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	20		STD		P29A-0034X	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	24		STD		P29A-0034Y	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
541	0.75				P29B-00069	Cap ASTM A105 Class 6000 ASME B16.11 NPT Licensor-1	
541	1				P29B-0006N	Cap ASTM A105 Class 6000 ASME B16.11 NPT Licensor-1	

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STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P41A-0017X	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Licensor-1	
1	0.75		XXS		P41A-0017Y	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Licensor-1	
1	1		XXS		P41A-0017Z	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Licensor-1	
1	1.5		XXS		P41A-00180	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Licensor-1	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
541	1	0.75			P31B-01367	Outlet ASTM A105 Class 6000 MSS SP-97 NPT Licensor-1	
541	1.5 - 2.5	0.75			P31B-013A7	Outlet ASTM A105 Class 6000 MSS SP-97 NPT Licensor-1	
541	3 - 10	0.75			P31B-013A8	Outlet ASTM A105 Class 6000 MSS SP-97 NPT Licensor-1	
541	12 and larger	0.75			P31B-013A6	Outlet ASTM A105 Class 6000 MSS SP-97 NPT Licensor-1	
1	2	0.75	XS	SCH160	P31B-00XP8	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	3	0.75	STD	SCH160	P31B-00XP9	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	4	0.75	STD	SCH160	P31B-00XPB	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	6	0.75	STD	SCH160	P31B-00XPE	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	8	0.75	STD	SCH160	P31B-00XPH	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	10	0.75	STD	SCH160	P31B-00XPN	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	12	0.75	SCH40	SCH160	P31B-00XPU	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	14	0.75	SCH40	SCH160	P31B-00XR0	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	16	0.75	SCH20	SCH160	P31B-00XTL	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	18	0.75	SCH20	SCH160	P31B-00XTP	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	20	0.75	STD	SCH160	P31B-00XTT	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	24	0.75	STD	SCH160	P31B-00XTW	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	3	1	STD	SCH160	P31B-00XPA	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	4	1	STD	SCH160	P31B-00XPC	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	6	1	STD	SCH160	P31B-00XPF	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	8	1	STD	SCH160	P31B-00XPJ	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	10	1	STD	SCH160	P31B-00XPP	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	12	1	SCH40	SCH160	P31B-00XPV	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	14	1	SCH40	SCH160	P31B-00XR1	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	16	1	SCH20	SCH160	P31B-00XTM	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	18	1	SCH20	SCH160	P31B-00XTR	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	20	1	STD	SCH160	P31B-00XTU	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	24	1	STD	SCH160	P31B-00XTX	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	4	1.5	STD	SCH160	P31B-00XPD	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	6	1.5	STD	SCH160	P31B-00XPG	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	8	1.5	STD	SCH160	P31B-00XPK	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	10	1.5	STD	SCH160	P31B-00XPR	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	12	1.5	SCH40	SCH160	P31B-00XPW	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	14	1.5	SCH40	SCH160	P31B-00XR2	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	16	1.5	SCH20	SCH160	P31B-00XTN	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	18	1.5	SCH20	SCH160	P31B-00XTS	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	20	1.5	STD	SCH160	P31B-00XTV	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	24	1.5	STD	SCH160	P31B-00XTY	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	6	2	STD	XS	P31B-00XMV	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	8	2	STD	XS	P31B-00XPL	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	10	2	STD	XS	P31B-00XPS	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	12	2	SCH40	XS	P31B-00XPX	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	14	2	SCH40	XS	P31B-00XR3	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	16	2	SCH20	XS	P31B-00XN6	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	18	2	SCH20	XS	P31B-00XN9	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	20	2	STD	XS	P31B-00XND	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	24	2	STD	XS	P31B-00XNH	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	8	3	STD	STD	P31B-00XPM	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	10	3	STD	STD	P31B-00XPT	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	12	3	SCH40	STD	P31B-00XPY	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	14	3	SCH40	STD	P31B-00XR4	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	16	3	SCH20	STD	P31B-00XN7	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	18	3	SCH20	STD	P31B-00XNA	Outlet ASTM A105 MSS SP-97 BW Licensor-1	

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OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	20	3	STD	STD	P31B-00XNE	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	24	3	STD	STD	P31B-00XNJ	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	12	4	SCH40	STD	P31B-00XPZ	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	14	4	SCH40	STD	P31B-00XR5	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	16	4	SCH20	STD	P31B-00XN8	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	18	4	SCH20	STD	P31B-00XNB	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	20	4	STD	STD	P31B-00XNF	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	24	4	STD	STD	P31B-00XNK	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	18	6	SCH20	STD	P31B-00XNC	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	20	6	STD	STD	P31B-00XNG	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	24	6	STD	STD	P31B-00XNL	Outlet ASTM A105 MSS SP-97 BW Licensor-1	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30B-00067	Plug ASTM A105 ASME B16.11 NPT Round head Licensor-1	
1	0.75				P30B-00068	Plug ASTM A105 ASME B16.11 NPT Round head Licensor-1	
1	1				P30B-00069	Plug ASTM A105 ASME B16.11 NPT Round head Licensor-1	
1	1.5				P30B-0006A	Plug ASTM A105 ASME B16.11 NPT Round head Licensor-1	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P61B-00A0G	Flange WN ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
1	0.75		SCH160		P61B-00A0H	Flange WN ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
1	1		SCH160		P61B-00A0J	Flange WN ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
1	1.5		SCH160		P61B-00A0K	Flange WN ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
1	2		XS		P61B-009YW	Flange WN ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
1	3		STD		P61B-009YX	Flange WN ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
1	4		STD		P61B-009YY	Flange WN ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
1	6		STD		P61B-00A07	Flange WN ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
1	8		STD		P61B-00A0T	Flange WN ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
1	10		STD		P61B-00A0L	Flange WN ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
1	12		SCH40		P61B-00A0M	Flange WN ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
1	14		SCH40		P61B-00A0N	Flange WN ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
1	16		SCH20		P61B-00A03	Flange WN ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
1	18		SCH20		P61B-00A04	Flange WN ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
1	20		STD		P61B-00A05	Flange WN ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
1	24		STD		P61B-00A06	Flange WN ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
541	0.5				P61B-00DM9	Flange NPT ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
541	0.75				P61B-00CXM	Flange NPT ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
781	0.5		SCH160		P61B-00BJW	Flange WN ASTM A105 Class 600 ASME B16.5 RF Licensor-1	
781	0.75		SCH160		P61B-00BJX	Flange WN ASTM A105 Class 600 ASME B16.5 RF Licensor-1	
781	1		SCH160		P61B-00BJY	Flange WN ASTM A105 Class 600 ASME B16.5 RF Licensor-1	
781	1.5		SCH160		P61B-00BJZ	Flange WN ASTM A105 Class 600 ASME B16.5 RF Licensor-1	
781	2		XS		P61B-009TD	Flange WN ASTM A105 Class 600 ASME B16.5 RF Licensor-1	
781	3		STD		P61B-009TE	Flange WN ASTM A105 Class 600 ASME B16.5 RF Licensor-1	
781	4		STD		P61B-00A10	Flange WN ASTM A105 Class 600 ASME B16.5 RF Licensor-1	
781	6		STD		P61B-00A11	Flange WN ASTM A105 Class 600 ASME B16.5 RF Licensor-1	
781	8		STD		P61B-00A12	Flange WN ASTM A105 Class 600 ASME B16.5 RF Licensor-1	
781	10		STD		P61B-00A0U	Flange WN ASTM A105 Class 600 ASME B16.5 RF Licensor-1	
781	12		SCH40		P61B-00A0V	Flange WN ASTM A105 Class 600 ASME B16.5 RF Licensor-1	
781	14		SCH40		P61B-00A0W	Flange WN ASTM A105 Class 600 ASME B16.5 RF Licensor-1	
781	16		SCH20		P61B-00ABL	Flange WN ASTM A105 Class 600 ASME B16.5 RF Licensor-1	
781	18		SCH20		P61B-00ABM	Flange WN ASTM A105 Class 600 ASME B16.5 RF Licensor-1	
781	20		STD		P61B-00ABN	Flange WN ASTM A105 Class 600 ASME B16.5 RF Licensor-1	
781	24		STD		P61B-00ABP	Flange WN ASTM A105 Class 600 ASME B16.5 RF Licensor-1	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67B-002G3	Blind flange ASTM A105 Class 300 ASME B16.5 RF Licensor-1	

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BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75				P67B-002G4	Blind flange ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
1	1				P67B-002EK	Blind flange ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
1	1.5				P67B-002EL	Blind flange ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
1	2				P67B-002ET	Blind flange ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
1	3				P67B-002EU	Blind flange ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
1	4				P67B-002EV	Blind flange ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
1	6				P67B-002EW	Blind flange ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
1	8				P67B-002EX	Blind flange ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
1	10				P67B-002EM	Blind flange ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
1	12				P67B-002EN	Blind flange ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
1	14				P67B-002EP	Blind flange ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
1	16				P67B-002ER	Blind flange ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
1	18				P67B-002ES	Blind flange ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
1	20				P67B-002G5	Blind flange ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
1	24				P67B-002G6	Blind flange ASTM A105 Class 300 ASME B16.5 RF Licensor-1	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000FT	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000FU	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000G5	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000G6	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	6				P73T-000G7	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	8				P73T-000G8	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	10				P73T-000FX	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	12				P73T-000FY	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	14				P73T-000FZ	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	16				P73T-000G0	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	18				P73T-000G1	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	20				P73T-000G3	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	24				P73T-000G4	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	0.5				P73T-000J8	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	0.75				P73T-000J9	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1				P73T-000JA	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1.5				P73T-000JB	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	2				P73T-000JH	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	3				P73T-000JL	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	4				P73T-000JM	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	6				P73T-000JN	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	8				P73T-000JP	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	10				P73T-000JC	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	12				P73T-000JD	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	14				P73T-000JE	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	16				P73T-000JF	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	18				P73T-000JG	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

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GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
781	20				P73T-000JJ	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	24				P73T-000JK	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-10				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	12-24				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
781	0.5-6				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
781	8-24				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81B-001UG	Gate valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Licensor-1	
1	0.75				P81B-001UH	Gate valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Licensor-1	
1	1				P81B-001UJ	Gate valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Licensor-1	
1	1.5				P81B-001UK	Gate valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Licensor-1	
1	2				P81C-0061W	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Licensor-1	
1	3				P81C-0061X	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Licensor-1	
1	4				P81C-0061Y	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Licensor-1	
1	6				P81C-0061Z	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Licensor-1	
1	8				P81C-0091R	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Gear operated Licensor-1	
1	10				P81C-00621	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Gear operated Licensor-1	
1	12				P81C-00622	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Gear operated Licensor-1	
1	14				P81C-00623	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Gear operated Licensor-1	
1	16				P81C-00624	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Gear operated Licensor-1	
1	18				P81C-00625	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Gear operated Licensor-1	
1	20				P81C-00626	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Gear operated Licensor-1	
4608	0.75				P81B-002WT	Gate valve ASTM A105 Class 300 API 602 BW both sides w/ nipples BE - NPT ASTM A106-B XXS-nipple Trim number 5 BB-BG-OS&Y Handwheel operated Licensor-1	
4608	1				P81B-0036N	Gate valve ASTM A105 Class 300 API 602 BW both sides w/ nipples BE - NPT ASTM A106-B XXS-nipple Trim number 5 BB-BG-OS&Y Handwheel operated Licensor-1	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82B-001F9	Globe valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Licensor-1	
1	0.75				P82B-001FA	Globe valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Licensor-1	
1	1				P82B-001FB	Globe valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Licensor-1	
1	1.5				P82B-001FC	Globe valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Licensor-1	
1	2				P82C-002Z1	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Licensor-1	
1	3				P82C-0039R	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Licensor-1	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83B-0014Z	Check valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 5 Lift-type Bolted cover Licensor-1	
1	0.75				P83B-00150	Check valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 5 Lift-type Bolted cover Licensor-1	
1	1				P83B-00151	Check valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 5 Lift-type Bolted cover Licensor-1	
1	1.5				P83B-00152	Check valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 5 Lift-type Bolted cover Licensor-1	
1	2				P83C-002XV	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 5 Swing-type Bolted cover Licensor-1	

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CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3				P83C-002XW	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 5 Swing-type Bolted cover Licensor-1	
1	4				P83C-002XX	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 5 Swing-type Bolted cover Licensor-1	
1	6				P83C-002XY	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 5 Swing-type Bolted cover Licensor-1	
1	8				P83C-002XZ	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 5 Swing-type Bolted cover Licensor-1	

BALL VALVE (Q)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P84B-00150	Ball valve Long-pattern ASTM A105 Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design Licensor-1	
1	0.75				P84B-00151	Ball valve Long-pattern ASTM A105 Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design Licensor-1	
1	1				P84B-00152	Ball valve Long-pattern ASTM A105 Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design Licensor-1	
1	1.5				P84B-00153	Ball valve Long-pattern ASTM A105 Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design Licensor-1	
1	2				P84C-005ZV	Ball valve Long-pattern ASTM A216 Grade WCB Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design Licensor-1	
1	3				P84C-005ZW	Ball valve Long-pattern ASTM A216 Grade WCB Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design Licensor-1	
1	4				P84C-005ZX	Ball valve Long-pattern ASTM A216 Grade WCB Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Gear operated Full bore Fire tested design Licensor-1	
1	6				P84C-00604	Ball valve Long-pattern ASTM A216 Grade WCB Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design Licensor-1	
1	8				P84C-00605	Ball valve Long-pattern ASTM A216 Grade WCB Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design Licensor-1	
1	10				P84C-005ZY	Ball valve Long-pattern ASTM A216 Grade WCB Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design Licensor-1	
1	12				P84C-005ZZ	Ball valve Long-pattern ASTM A216 Grade WCB Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design Licensor-1	
1	14				P84C-00600	Ball valve Long-pattern ASTM A216 Grade WCB Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design Licensor-1	
1	16				P84C-00601	Ball valve Long-pattern ASTM A216 Grade WCB Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design Licensor-1	
1	18				P84C-00602	Ball valve Long-pattern ASTM A216 Grade WCB Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design Licensor-1	
1	20				P84C-00603	Ball valve Long-pattern ASTM A216 Grade WCB Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design Licensor-1	
1	24				P84C-006LM	Ball valve Long-pattern ASTM A216 Grade WCB Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design Licensor-1	

ORIFICE FLANGE (FO)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2		XS		P66B-0085G	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Licensor-1	
1	3		STD		P66B-0085H	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Licensor-1	
1	4		STD		P66B-0085J	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Licensor-1	
1	6		STD		P66B-0085K	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Licensor-1	
1	8		STD		P66B-008BV	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Licensor-1	
1	10		STD		P66B-008BS	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Licensor-1	
1	12		SCH40		P66B-008BT	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Licensor-1	
1	14		SCH40		P66B-008BU	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Licensor-1	
1	16		SCH20		P66B-008A8	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Licensor-1	
1	18		SCH20		P66B-008A9	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Licensor-1	
1	20		STD		P66B-008AA	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Licensor-1	
200	2		XS		P66B-0085R	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw Licensor-1	
200	3		STD		P66B-0085S	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw Licensor-1	
200	4		STD		P66B-0085T	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw Licensor-1	
200	6		STD		P66B-0085U	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw Licensor-1	
200	8		STD		P66B-008BZ	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw Licensor-1	
200	10		STD		P66B-008BW	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw Licensor-1	
200	12		SCH40		P66B-008BX	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw Licensor-1	
200	14		SCH40		P66B-008BY	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw Licensor-1	
200	16		SCH20		P66B-008AD	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw Licensor-1	
200	18		SCH20		P66B-008AE	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw Licensor-1	
200	20		STD		P66B-008AF	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw Licensor-1	

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SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71B-000AR	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	0.75				P71B-000AS	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	1				P71B-000AT	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	1.5				P71B-000AU	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	2				P71B-000AW	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	3				P71B-000AX	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	4				P71B-000AY	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	6				P71B-000AZ	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	8				P71B-000B0	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	10				P71B-000AV	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	12				P71B-000BN	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF Licensor-1	

PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000FN	Paddle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	16				P72B-000FP	Paddle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	18				P72B-000FR	Paddle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	20				P72B-000FS	Paddle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	24				P72B-000FT	Paddle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF Licensor-1	

PADDLE SPACER (PS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000FV	Paddle spacer ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	16				P72B-000FW	Paddle spacer ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	18				P72B-000FX	Paddle spacer ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	20				P72B-000FY	Paddle spacer ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	24				P72B-000FZ	Paddle spacer ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF Licensor-1	

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BOLT TABLE (B_B2AC01 , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-003V4		
0.75	4	0.625	75	P80S-003XC		
1	4	0.625	80	P80S-003XD		
1.5	4	0.750	95	P80S-00414		
2	8	0.625	90	P80S-003XF		
3	8	0.750	110	P80S-003XK		
4	8	0.750	115	P80S-003XL		
6	12	0.750	125	P80S-003XN		
8	12	0.875	140	P80S-0041D		
10	16	1.000	160	P80S-0043K		
12	16	1.125	175	P80S-0046S		
14	20	1.125	180	P80S-0046T		
16	20	1.250	190	P80S-004AK		
18	24	1.250	200	P80S-004AM		
20	24	1.250	210	P80S-004AP		
24	24	1.500	235	P80S-003F8		

BOLT TABLE (B_B2AC01_781 , STUD ASME RF, OPTION CODE 781)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	80	P80S-003V6		
0.75	4	0.625	90	P80S-003XF		
1	4	0.625	95	P80S-003XG		
1.5	4	0.750	110	P80S-003XK		
2	8	0.625	110	P80S-003VC		
3	8	0.750	130	P80S-003XP		
4	8	0.875	150	P80S-0041F		
6	12	1.000	175	P80S-0043P		
8	12	1.125	195	P80S-0046W		
10	16	1.250	250	P80S-004AY		
12	20	1.250	255	P80S-004AZ		
14	20	1.375	270	P80S-003E7		
16	20	1.500	295	P80S-003FL		
18	20	1.625	320	P80S-005TT		
20	24	1.625	335	P80S-005TW		
24	24	1.875	380	P80S-008P4		

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BRANCH TABLE (T_B2AC01)

RUN PIPE SIZE (in) \ BRANCH SIZE (in)	0.5	0.75	1	1.5	2	3	4	6	8	10	12	14	16	18	20	24
0.5	TS															
0.75		TS														
1		TR	TS													
1.5		TR	TR	TS												
2		L	TR	TR	TS											
3		L	L	TR	TR	TS										
4	L	L	L	L	TR	TR	TS									
6	L	L	L	L	L	TR	TR	TS								
8		L	L	L	L	L	TR	TR	TS							
10		L	L	L	L	L	TR	TR	TR	TS						
12		L	L	L	L	L	L	TR	TR	TR	TS					
14		L	L	L	L	L	L	TR	TR	TR	TR	TS				
16		L	L	L	L	L	L	TR	TR	TR	TR	TR	TS			
18		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TS		
20		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TR	TS	
24		L	L	L	L	L	L	L	9PD	TR	TR	TR	TR	TR	TR	TS

9PD : REINFORCING PAD 90 DEG
L : OUTLET
TS : STRAIGHT TEE
TR : REDUCING TEE

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PIPING CLASS

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Material : CS (ASME)
Rating : ASME CLASS 300
Flange Face : RF
C.A.(mm) : 3.00
Gasket : Spiral Wound
Service : UTILITY - POWER PIPING : / LP BOILER FEED WATER

Design Code : ASME B31.1
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
541	NPT(F) (CA,L)
714	SW - NPT(F) (V)
781	CLASS 600 (B,F,G)

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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P01A-003L3	Pipe ASME SA106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	0.75		SCH160		P01A-003L4	Pipe ASME SA106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1		SCH160		P01A-003L5	Pipe ASME SA106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1.5		SCH160		P01A-003L6	Pipe ASME SA106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	2		XS		P01A-002S2	Pipe ASME SA106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	3		STD		P01A-0042B	Pipe ASME SA106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	4		STD		P01A-0042C	Pipe ASME SA106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	6		STD		P01A-0042D	Pipe ASME SA106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	8		SCH30		P01A-0084P	Pipe ASME SA106 Grade B Seamless ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P02B-00032	90 degree elbow ASME SA105 Class 6000 ASME B16.11 SW	
1	0.75				P02B-00033	90 degree elbow ASME SA105 Class 6000 ASME B16.11 SW	
1	1				P02B-00034	90 degree elbow ASME SA105 Class 6000 ASME B16.11 SW	
1	1.5				P02B-00035	90 degree elbow ASME SA105 Class 6000 ASME B16.11 SW	
1	2		XS		P02A-002HF	90 degree elbow ASME SA234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		STD		P02A-002HG	90 degree elbow ASME SA234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		STD		P02A-002HH	90 degree elbow ASME SA234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		STD		P02A-002HJ	90 degree elbow ASME SA234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		SCH30		P02A-004BM	90 degree elbow ASME SA234 Grade WPB Seamless ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P03B-0002Y	45 degree elbow ASME SA105 Class 6000 ASME B16.11 SW	
1	0.75				P03B-0002Z	45 degree elbow ASME SA105 Class 6000 ASME B16.11 SW	
1	1				P03B-00030	45 degree elbow ASME SA105 Class 6000 ASME B16.11 SW	
1	1.5				P03B-00031	45 degree elbow ASME SA105 Class 6000 ASME B16.11 SW	
1	2		XS		P03A-002EZ	45 degree elbow ASME SA234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		STD		P03A-002F0	45 degree elbow ASME SA234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		STD		P03A-002F1	45 degree elbow ASME SA234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		STD		P03A-002F2	45 degree elbow ASME SA234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		SCH30		P03A-00499	45 degree elbow ASME SA234 Grade WPB Seamless ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P21B-00030	Straight tee ASME SA105 Class 6000 ASME B16.11 SW	
1	0.75				P21B-00031	Straight tee ASME SA105 Class 6000 ASME B16.11 SW	
1	1				P21B-00032	Straight tee ASME SA105 Class 6000 ASME B16.11 SW	
1	1.5				P21B-00033	Straight tee ASME SA105 Class 6000 ASME B16.11 SW	
1	2		XS		P21A-002PV	Straight tee ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	3		STD		P21A-003G4	Straight tee ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	4		STD		P21A-003G5	Straight tee ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	6		STD		P21A-003G6	Straight tee ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	8		SCH30		P21A-004UU	Straight tee ASME SA234 Grade WPB Seamless ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75			P24B-0005N	Reducing tee ASME SA105 Class 6000 ASME B16.11 SW	
1	1.5	0.75			P24B-0005R	Reducing tee ASME SA105 Class 6000 ASME B16.11 SW	
1	1.5	1			P24B-0005S	Reducing tee ASME SA105 Class 6000 ASME B16.11 SW	
1	2	1	XS	SCH160	P24A-00GLW	Reducing tee ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	XS	SCH160	P24A-009AF	Reducing tee ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	STD	SCH160	P24A-00GLX	Reducing tee ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	STD	XS	P24A-00GLY	Reducing tee ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P24A-00GLZ	Reducing tee ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P24A-00GM0	Reducing tee ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	STD	P24A-00GM1	Reducing tee ASME SA234 Grade WPB Seamless ASME B16.9 BW	

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REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	6	4	STD	STD	P24A-00GM2	Reducing tee ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH30	STD	P24A-00N1T	Reducing tee ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH30	STD	P24A-00N1U	Reducing tee ASME SA234 Grade WPB Seamless ASME B16.9 BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	STD	XS	P27A-00BFE	Concentric reducer ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P27A-00BFF	Concentric reducer ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P27A-00BFG	Concentric reducer ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	STD	P27A-00BFH	Concentric reducer ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P27A-00BFJ	Concentric reducer ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH30	STD	P27A-00GWE	Concentric reducer ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH30	STD	P27A-00GWF	Concentric reducer ASME SA234 Grade WPB Seamless ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	STD	XS	P28A-008DX	Eccentric reducer ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P28A-008DY	Eccentric reducer ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P28A-008DZ	Eccentric reducer ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	STD	P28A-008E0	Eccentric reducer ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P28A-008E1	Eccentric reducer ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH30	STD	P28A-00E34	Eccentric reducer ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH30	STD	P28A-00E35	Eccentric reducer ASME SA234 Grade WPB Seamless ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P29B-00045	Cap ASME SA105 Class 6000 ASME B16.11 SW	
1	0.75				P29B-00046	Cap ASME SA105 Class 6000 ASME B16.11 SW	
1	1				P29B-00047	Cap ASME SA105 Class 6000 ASME B16.11 SW	
1	1.5				P29B-00048	Cap ASME SA105 Class 6000 ASME B16.11 SW	
1	2		XS		P29A-0015L	Cap ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	3		STD		P29A-001T5	Cap ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	4		STD		P29A-001T6	Cap ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	6		STD		P29A-001T7	Cap ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	8		SCH30		P29A-003NB	Cap ASME SA234 Grade WPB Seamless ASME B16.9 BW	
541	0.75				P29B-0006A	Cap ASME SA105 Class 6000 ASME B16.11 NPT	
541	1				P29B-0006D	Cap ASME SA105 Class 6000 ASME B16.11 NPT	
541	1.5				P29B-0006E	Cap ASME SA105 Class 6000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P41A-0017T	Straight nipple ASME SA106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		XXS		P41A-0017U	Straight nipple ASME SA106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		XXS		P41A-0017V	Straight nipple ASME SA106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		XXS		P41A-0017W	Straight nipple ASME SA106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

CON SWAGED NIPPLE (SNC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	SCH160	P42A-000FF	Concentric swaged nipple ASME SA234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	SCH160	SCH160	P42A-000FG	Concentric swaged nipple ASME SA234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	SCH160	SCH160	P42A-000FH	Concentric swaged nipple ASME SA234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	SCH160	SCH160	P42A-000FJ	Concentric swaged nipple ASME SA234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	SCH160	SCH160	P42A-000FK	Concentric swaged nipple ASME SA234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	SCH160	SCH160	P42A-000FL	Concentric swaged nipple ASME SA234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	XS	SCH160	P42A-000KU	Concentric swaged nipple ASME SA234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	XS	SCH160	P42A-000KV	Concentric swaged nipple ASME SA234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	XS	SCH160	P42A-000KW	Concentric swaged nipple ASME SA234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	XS	SCH160	P42A-000KX	Concentric swaged nipple ASME SA234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	

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CON SWAGED NIPPLE (SNC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	1.5	STD	SCH160	P42A-000KY	Concentric swaged nipple ASME SA234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	

ECC SWAGED NIPPLE (SNE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	SCH160	P43A-000CM	Eccentric swaged nipple ASME SA234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	SCH160	SCH160	P43A-000CN	Eccentric swaged nipple ASME SA234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	SCH160	SCH160	P43A-000CP	Eccentric swaged nipple ASME SA234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	SCH160	SCH160	P43A-000CR	Eccentric swaged nipple ASME SA234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	SCH160	SCH160	P43A-000CS	Eccentric swaged nipple ASME SA234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	SCH160	SCH160	P43A-000CT	Eccentric swaged nipple ASME SA234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	XS	SCH160	P43A-000CU	Eccentric swaged nipple ASME SA234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	XS	SCH160	P43A-000CV	Eccentric swaged nipple ASME SA234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	XS	SCH160	P43A-000CW	Eccentric swaged nipple ASME SA234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	XS	SCH160	P43A-000CX	Eccentric swaged nipple ASME SA234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	STD	SCH160	P43A-000CY	Eccentric swaged nipple ASME SA234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	

COUPLING (CPS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P47B-0003B	Coupling ASME SA105 Class 6000 ASME B16.11 SW - SW	
1	0.75				P47B-0003C	Coupling ASME SA105 Class 6000 ASME B16.11 SW - SW	
1	1				P47B-0003D	Coupling ASME SA105 Class 6000 ASME B16.11 SW - SW	
1	1.5				P47B-0003E	Coupling ASME SA105 Class 6000 ASME B16.11 SW - SW	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5 - 2.5	0.75			P31B-013A9	Outlet ASME SA105 Class 6000 MSS SP-97 SW	
1	3 - 10	0.75			P31B-013AA	Outlet ASME SA105 Class 6000 MSS SP-97 SW	
1	3 - 10	1			P31B-013AB	Outlet ASME SA105 Class 6000 MSS SP-97 SW	
1	4 - 5	1.5			P31B-013AC	Outlet ASME SA105 Class 6000 MSS SP-97 SW	
1	6 - 8	1.5			P31B-013AD	Outlet ASME SA105 Class 6000 MSS SP-97 SW	
541	1	0.75			P31B-01366	Outlet ASME SA105 Class 6000 MSS SP-97 NPT	
541	1.5 - 2.5	0.75			P31B-013AE	Outlet ASME SA105 Class 6000 MSS SP-97 NPT	
541	3 - 10	0.75			P31B-013AF	Outlet ASME SA105 Class 6000 MSS SP-97 NPT	
1	6	2	STD	XS	P31B-00TP9	Outlet ASME SA105 MSS SP-97 BW	
1	8	2	SCH30	XS	P31B-010JT	Outlet ASME SA105 MSS SP-97 BW	
1	8	3	SCH30	STD	P31B-010JV	Outlet ASME SA105 MSS SP-97 BW	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30B-00034	Plug ASME SA105 ASME B16.11 NPT Round head	
1	0.75				P30B-00035	Plug ASME SA105 ASME B16.11 NPT Round head	
1	1				P30B-00036	Plug ASME SA105 ASME B16.11 NPT Round head	
1	1.5				P30B-00037	Plug ASME SA105 ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P61B-00647	Flange SW ASME SA105 Class 300 ASME B16.5 RF	
1	0.75		SCH160		P61B-00648	Flange SW ASME SA105 Class 300 ASME B16.5 RF	
1	1		SCH160		P61B-00649	Flange SW ASME SA105 Class 300 ASME B16.5 RF	
1	1.5		SCH160		P61B-0064A	Flange SW ASME SA105 Class 300 ASME B16.5 RF	
1	2		XS		P61B-0064D	Flange WN ASME SA105 Class 300 ASME B16.5 RF	
1	3		STD		P61B-0064E	Flange WN ASME SA105 Class 300 ASME B16.5 RF	
1	4		STD		P61B-0064F	Flange WN ASME SA105 Class 300 ASME B16.5 RF	
1	6		STD		P61B-0064G	Flange WN ASME SA105 Class 300 ASME B16.5 RF	
1	8		SCH30		P61B-00BK0	Flange WN ASME SA105 Class 300 ASME B16.5 RF	
781	0.5		SCH160		P61B-0067Z	Flange SW ASME SA105 Class 600 ASME B16.5 RF	
781	0.75		SCH160		P61B-0065E	Flange SW ASME SA105 Class 600 ASME B16.5 RF	
781	1		SCH160		P61B-0065F	Flange SW ASME SA105 Class 600 ASME B16.5 RF	

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FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
781	1.5		SCH160		P61B-0065G	Flange SW ASME SA105 Class 600 ASME B16.5 RF	
781	2		XS		P61B-003Y5	Flange WN ASME SA105 Class 600 ASME B16.5 RF	
781	3		STD		P61B-00681	Flange WN ASME SA105 Class 600 ASME B16.5 RF	
781	4		STD		P61B-00682	Flange WN ASME SA105 Class 600 ASME B16.5 RF	
781	6		STD		P61B-00683	Flange WN ASME SA105 Class 600 ASME B16.5 RF	
781	8		SCH30		P61B-00BK1	Flange WN ASME SA105 Class 600 ASME B16.5 RF	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67B-001WC	Blind flange ASME SA105 Class 300 ASME B16.5 RF	
1	0.75				P67B-001WD	Blind flange ASME SA105 Class 300 ASME B16.5 RF	
1	1				P67B-001WE	Blind flange ASME SA105 Class 300 ASME B16.5 RF	
1	1.5				P67B-001WF	Blind flange ASME SA105 Class 300 ASME B16.5 RF	
1	2				P67B-0012L	Blind flange ASME SA105 Class 300 ASME B16.5 RF	
1	3				P67B-001WH	Blind flange ASME SA105 Class 300 ASME B16.5 RF	
1	4				P67B-001WJ	Blind flange ASME SA105 Class 300 ASME B16.5 RF	
1	6				P67B-001WK	Blind flange ASME SA105 Class 300 ASME B16.5 RF	
1	8				P67B-001WL	Blind flange ASME SA105 Class 300 ASME B16.5 RF	

REDUCING FLANGE (FR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2	0.75		SCH160	P62B-000NM	Reducing flange WN ASME SA105 Class 300 ASME B16.5 RF	
1	2	1		SCH160	P62B-000NN	Reducing flange WN ASME SA105 Class 300 ASME B16.5 RF	
1	2	1.5		SCH160	P62B-000NP	Reducing flange WN ASME SA105 Class 300 ASME B16.5 RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000FT	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000FU	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000G5	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000G6	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	6				P73T-000G7	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	8				P73T-000G8	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	0.5				P73T-000J8	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	0.75				P73T-000J9	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1				P73T-000JA	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1.5				P73T-000JB	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	2				P73T-000JH	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	3				P73T-000JL	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	4				P73T-000JM	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	6				P73T-000JN	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	8				P73T-000JP	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-8				See Attached Bolt Table	Bolt and Nut ASME SA193 Grade B7 / SA194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
781	0.5-6				See Attached Bolt Table	Bolt and Nut ASME SA193 Grade B7 / SA194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
781	8				See Attached Bolt Table	Bolt and Nut ASME SA193 Grade B7 / SA194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	

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GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81B-000RB	Gate valve ASME SA105 Class 800 API 602 SW Trim number 5 BB-BG-OS&Y Handwheel operated	
1	0.75				P81B-000RC	Gate valve ASME SA105 Class 800 API 602 SW Trim number 5 BB-BG-OS&Y Handwheel operated	
1	1				P81B-000RD	Gate valve ASME SA105 Class 800 API 602 SW Trim number 5 BB-BG-OS&Y Handwheel operated	
1	1.5				P81B-000RE	Gate valve ASME SA105 Class 800 API 602 SW Trim number 5 BB-BG-OS&Y Handwheel operated	
1	2				P81C-004GC	Gate valve ASME SA216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated	
1	3				P81C-004GD	Gate valve ASME SA216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated	
1	4				P81C-004GE	Gate valve ASME SA216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated	
1	6				P81C-004GF	Gate valve ASME SA216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated	
1	8				P81C-0091B	Gate valve ASME SA216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Gear operated	
714	0.5				P81B-0015P	Gate valve ASME SA105 Class 800 API 602 SW - NPT Trim number 5 BB-BG-OS&Y Handwheel operated	
714	0.75				P81B-002F6	Gate valve ASME SA105 Class 800 API 602 SW - NPT Trim number 5 BB-BG-OS&Y Handwheel operated	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82B-000KX	Globe valve ASME SA105 Class 800 API 602 SW Trim number 5 BB-BG-OS&Y Handwheel operated	
1	0.75				P82B-000KY	Globe valve ASME SA105 Class 800 API 602 SW Trim number 5 BB-BG-OS&Y Handwheel operated	
1	1				P82B-000KZ	Globe valve ASME SA105 Class 800 API 602 SW Trim number 5 BB-BG-OS&Y Handwheel operated	
1	1.5				P82B-000L0	Globe valve ASME SA105 Class 800 API 602 SW Trim number 5 BB-BG-OS&Y Handwheel operated	
1	2				P82C-0027G	Globe valve ASME SA216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated	
1	3				P82C-0027H	Globe valve ASME SA216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated	
1	4				P82C-002PY	Globe valve ASME SA216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated	
1	6				P82C-002PZ	Globe valve ASME SA216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated	
1	8				P82C-004CJ	Globe valve ASME SA216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Gear operated	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83B-000GM	Check valve ASME SA105 Class 800 API 602 SW Trim number 5 Lift-type Bolted cover	
1	0.75				P83B-000GN	Check valve ASME SA105 Class 800 API 602 SW Trim number 5 Lift-type Bolted cover	
1	1				P83B-000GP	Check valve ASME SA105 Class 800 API 602 SW Trim number 5 Lift-type Bolted cover	
1	1.5				P83B-000GR	Check valve ASME SA105 Class 800 API 602 SW Trim number 5 Lift-type Bolted cover	
1	2				P83C-0023L	Check valve ASME SA216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 5 Swing-type Bolted cover	
1	3				P83C-0023M	Check valve ASME SA216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 5 Swing-type Bolted cover	
1	4				P83C-0023N	Check valve ASME SA216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 5 Swing-type Bolted cover	
1	6				P83C-0023P	Check valve ASME SA216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 5 Swing-type Bolted cover	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71B-000BC	Spectacle blank ASME SA105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	0.75				P71B-000BD	Spectacle blank ASME SA105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	1				P71B-000BE	Spectacle blank ASME SA105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71B-000BF	Spectacle blank ASME SA105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	2				P71B-000BH	Spectacle blank ASME SA105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	3				P71B-000BJ	Spectacle blank ASME SA105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	4				P71B-000BK	Spectacle blank ASME SA105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	6				P71B-000BL	Spectacle blank ASME SA105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	8				P71B-000BM	Spectacle blank ASME SA105 Class 300 Standard-drawing Flange ASME B16.5 RF	

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BOLT TABLE (B_B2AG , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-00MEG		
0.75	4	0.625	75	P80S-00MAR		
1	4	0.625	80	P80S-00MAP		
1.5	4	0.750	95	P80S-00M37		
2	8	0.625	90	P80S-00MAM		
3	8	0.750	110	P80S-00MAH		
4	8	0.750	115	P80S-00M8C		
6	12	0.750	125	P80S-00M8A		
8	12	0.875	140	P80S-00M2Y		

BOLT TABLE (B_B2AG_781 , STUD ASME RF, OPTION CODE 781)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	80	P80S-00MEE		
0.75	4	0.625	90	P80S-00MAM		
1	4	0.625	95	P80S-00MAL		
1.5	4	0.750	110	P80S-00MAH		
2	8	0.625	110	P80S-00MC4		
3	8	0.750	130	P80S-00M89		
4	8	0.875	150	P80S-00M2W		
6	12	1.000	175	P80S-00LY7		
8	12	1.125	195	P80S-00LND		

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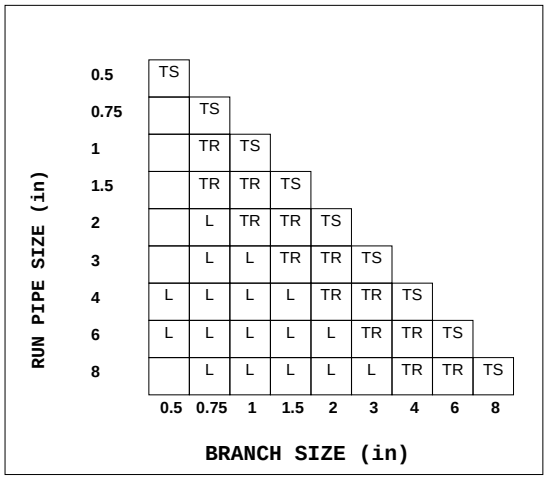
BRANCH TABLE (T_B2AG)



TR : REDUCING TEE
L : OUTLET
TS : STRAIGHT TEE

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Material : Killed CS
Rating : ASME CLASS 300
Flange Face : RF
C.A.(mm) : 3.00
Gasket : Spiral Wound
Service : PROCESS - HYDROGEN OR HYDROGEN RICH HYDROCARBON MIXTURES
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
2	USE OF SOFT SEATED BALL, PLUG AND BUTTERFLY VALVES SHALL BE LIMITED TO MAXIMUM OF 204DEGC (400DEGF)
16	PIPE CLASS SHALL BE USED WITHIN THE NORMAL OPERATING PRESSURE/TEMPERATURE LIMITS SPECIFIED IN API RP 941. PRESSURE / TEMPERATURE SPECIFIED IN THE PIPE CLASS EXCEEDING API RP 941 LIMITS SHOULD BE REGARDED AS UPSET CONDITIONS RATHER THAN FOR CONTINUOUS SERVICE

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
24	FULL PORT (Q)
200	WITH JACK SCREW (FO)
541	NPT(F) (CA,L)
714	SW - NPT(F) (V)
781	CLASS 600 (B,F,G)
4601	Y-PATTERN (W)

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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P01A-0010P	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	0.75		SCH160		P01A-0010R	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1		SCH160		P01A-0014M	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1.5		SCH160		P01A-0015J	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	2		XS		P01A-000YX	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	3		STD		P01A-000YM	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	4		STD		P01A-000YU	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	6		STD		P01A-000Z3	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P02B-0001J	90 degree elbow ASTM A105 Class 6000 ASME B16.11 SW	
1	0.75				P02B-0001K	90 degree elbow ASTM A105 Class 6000 ASME B16.11 SW	
1	1				P02B-0002E	90 degree elbow ASTM A105 Class 6000 ASME B16.11 SW	
1	1.5				P02B-0002F	90 degree elbow ASTM A105 Class 6000 ASME B16.11 SW	
1	2		XS		P02A-000CP	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		STD		P02A-000CU	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		STD		P02A-000CZ	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		STD		P02A-000D6	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P03B-0001F	45 degree elbow ASTM A105 Class 6000 ASME B16.11 SW	
1	0.75				P03B-0001G	45 degree elbow ASTM A105 Class 6000 ASME B16.11 SW	
1	1				P03B-0002A	45 degree elbow ASTM A105 Class 6000 ASME B16.11 SW	
1	1.5				P03B-0002B	45 degree elbow ASTM A105 Class 6000 ASME B16.11 SW	
1	2		XS		P03A-000AS	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		STD		P03A-000AX	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		STD		P03A-000B1	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		STD		P03A-000B9	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P21B-0001F	Straight tee ASTM A105 Class 6000 ASME B16.11 SW	
1	0.75				P21B-0001G	Straight tee ASTM A105 Class 6000 ASME B16.11 SW	
1	1				P21B-00026	Straight tee ASTM A105 Class 6000 ASME B16.11 SW	
1	1.5				P21B-00027	Straight tee ASTM A105 Class 6000 ASME B16.11 SW	
1	2		XS		P21A-001CJ	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		STD		P21A-001CU	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		STD		P21A-001CW	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6		STD		P21A-001D2	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75			P24B-00030	Reducing tee ASTM A105 Class 6000 ASME B16.11 SW	
1	1.5	0.75			P24B-00032	Reducing tee ASTM A105 Class 6000 ASME B16.11 SW	
1	1.5	1			P24B-0004J	Reducing tee ASTM A105 Class 6000 ASME B16.11 SW	
1	2	1	XS	SCH160	P24A-00GMB	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	XS	SCH160	P24A-005K9	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	STD	SCH160	P24A-00GMC	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	STD	XS	P24A-002HW	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P24A-002HY	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P24A-0021K	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	STD	P24A-0021A	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P24A-00229	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	STD	XS	P27A-001MZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P27A-001N0	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P27A-00189	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	STD	P27A-001AZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P27A-001GW	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	STD	XS	P28A-001N5	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P28A-001N6	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P28A-0018B	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	STD	P28A-001AS	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P28A-00182	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P29B-0002F	Cap ASTM A105 Class 6000 ASME B16.11 SW	
1	0.75				P29B-0002G	Cap ASTM A105 Class 6000 ASME B16.11 SW	
1	1				P29B-0002D	Cap ASTM A105 Class 6000 ASME B16.11 SW	
1	1.5				P29B-0002E	Cap ASTM A105 Class 6000 ASME B16.11 SW	
1	2		XS		P29A-000A1	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		STD		P29A-000BK	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		STD		P29A-000A3	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6		STD		P29A-000A9	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
541	0.75				P29B-0000Y	Cap ASTM A105 Class 6000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P41A-000B9	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		XXS		P41A-000BA	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		XXS		P41A-000D8	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		XXS		P41A-000D9	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

CON SWAGED NIPPLE (SNC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	SCH160	P42A-00029	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	SCH160	SCH160	P42A-0009T	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	SCH160	SCH160	P42A-0009U	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	SCH160	SCH160	P42A-0009V	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	SCH160	SCH160	P42A-0009W	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	SCH160	SCH160	P42A-0009X	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	XS	SCH160	P42A-000J6	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	XS	SCH160	P42A-000J7	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	XS	SCH160	P42A-000F8	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	XS	SCH160	P42A-000KZ	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	STD	SCH160	P42A-000L0	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	

ECC SWAGED NIPPLE (SNE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	SCH160	P43A-000AM	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	SCH160	SCH160	P43A-000B4	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	SCH160	SCH160	P43A-000B5	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	SCH160	SCH160	P43A-000B6	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	SCH160	SCH160	P43A-000B7	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	SCH160	SCH160	P43A-000B8	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	XS	SCH160	P43A-000B2	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	XS	SCH160	P43A-000B3	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	XS	SCH160	P43A-000CZ	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2	1.5	XS	SCH160	P43A-000D0	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	STD	SCH160	P43A-000D1	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	

COUPLING (CPS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P47B-00013	Coupling ASTM A105 Class 6000 ASME B16.11 SW - SW	
1	0.75				P47B-00012	Coupling ASTM A105 Class 6000 ASME B16.11 SW - SW	
1	1				P47B-0002A	Coupling ASTM A105 Class 6000 ASME B16.11 SW - SW	
1	1.5				P47B-0002B	Coupling ASTM A105 Class 6000 ASME B16.11 SW - SW	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5 - 2.5	0.75			P31B-0137D	Outlet ASTM A105 Class 6000 MSS SP-97 SW	
1	3 - 10	0.75			P31B-007LV	Outlet ASTM A105 Class 6000 MSS SP-97 SW	
1	3 - 10	1			P31B-007LN	Outlet ASTM A105 Class 6000 MSS SP-97 SW	
1	4 - 5	1.5			P31B-004LE	Outlet ASTM A105 Class 6000 MSS SP-97 SW	
1	6 - 8	1.5			P31B-005T4	Outlet ASTM A105 Class 6000 MSS SP-97 SW	
541	1	0.75			P31B-005HL	Outlet ASTM A105 Class 6000 MSS SP-97 NPT	
541	1.5 - 2.5	0.75			P31B-0137F	Outlet ASTM A105 Class 6000 MSS SP-97 NPT	
541	3 - 10	0.75			P31B-007KP	Outlet ASTM A105 Class 6000 MSS SP-97 NPT	
1	6	2	STD	XS	P31B-007SH	Outlet ASTM A105 MSS SP-97 BW	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30B-0002D	Plug ASTM A105 ASME B16.11 NPT Round head	
1	0.75				P30B-0002E	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1				P30B-0002F	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1.5				P30B-0002G	Plug ASTM A105 ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P61B-001H5	Flange SW ASTM A105 Class 300 ASME B16.5 RF	
1	0.75		SCH160		P61B-001HH	Flange SW ASTM A105 Class 300 ASME B16.5 RF	
1	1		SCH160		P61B-001E8	Flange SW ASTM A105 Class 300 ASME B16.5 RF	
1	1.5		SCH160		P61B-001ET	Flange SW ASTM A105 Class 300 ASME B16.5 RF	
1	2		XS		P61B-001HW	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	3		STD		P61B-001LJ	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	4		STD		P61B-001MC	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	6		STD		P61B-001N2	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
781	0.5		SCH160		P61B-001DZ	Flange SW ASTM A105 Class 600 ASME B16.5 RF	
781	0.75		SCH160		P61B-001DW	Flange SW ASTM A105 Class 600 ASME B16.5 RF	
781	1		SCH160		P61B-005X5	Flange SW ASTM A105 Class 600 ASME B16.5 RF	
781	1.5		SCH160		P61B-005X6	Flange SW ASTM A105 Class 600 ASME B16.5 RF	
781	2		XS		P61B-001DH	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	3		STD		P61B-001TW	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	4		STD		P61B-001VV	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	6		STD		P61B-001JW	Flange WN ASTM A105 Class 600 ASME B16.5 RF	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67B-000GH	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	0.75				P67B-000GJ	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	1				P67B-000GK	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	1.5				P67B-000GL	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	2				P67B-000GM	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	3				P67B-000GN	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	4				P67B-000GP	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	6				P67B-000GY	Blind flange ASTM A105 Class 300 ASME B16.5 RF	

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GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000FT	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000FU	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000G5	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000G6	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	6				P73T-000G7	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	0.5				P73T-000J8	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	0.75				P73T-000J9	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1				P73T-000JA	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1.5				P73T-000JB	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	2				P73T-000JH	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	3				P73T-000JL	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	4				P73T-000JM	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	6				P73T-000JN	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-6				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
781	0.5-6				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81B-002WA	Gate valve ASTM A105 Class 800 API 602 SW Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated	
1	0.75				P81B-002WB	Gate valve ASTM A105 Class 800 API 602 SW Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated	
1	1				P81B-002WC	Gate valve ASTM A105 Class 800 API 602 SW Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated	
1	1.5				P81B-002WD	Gate valve ASTM A105 Class 800 API 602 SW Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated	
1	2				P81C-008PL	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated	
1	3				P81C-008PM	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated	
1	4				P81C-008PN	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated	
1	6				P81C-008PP	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated	
714	0.5				P81B-002WE	Gate valve ASTM A105 Class 800 API 602 SW - NPT Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated	
714	0.75				P81B-002WF	Gate valve ASTM A105 Class 800 API 602 SW - NPT Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82B-0022A	Globe valve ASTM A105 Class 800 API 602 SW Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated	
1	0.75				P82B-0022B	Globe valve ASTM A105 Class 800 API 602 SW Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated	
1	1				P82B-0022C	Globe valve ASTM A105 Class 800 API 602 SW Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated	
1	1.5				P82B-0022D	Globe valve ASTM A105 Class 800 API 602 SW Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated	
1	2				P82C-0046W	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated	
1	3				P82C-0046X	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated	
1	4				P82C-0046Y	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated	
4601	0.75				P82B-001AB	Y-pattern globe valve ASTM A105 Class 300 ASME B16.34 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated	
4601	1				P82B-001AC	Y-pattern globe valve ASTM A105 Class 300 ASME B16.34 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated	

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GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
4601	1.5				P82B-001AD	Y-pattern globe valve ASTM A105 Class 300 ASME B16.34 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated	
4601	2				P82C-002M3	Y-pattern globe valve ASTM A216 Grade WCB Class 300 ASME B16.34 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated	
4601	3				P82C-0039S	Y-pattern globe valve ASTM A216 Grade WCB Class 300 ASME B16.34 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated	
4601	4				P82C-0039T	Y-pattern globe valve ASTM A216 Grade WCB Class 300 ASME B16.34 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated	
4601	6				P82C-0039U	Y-pattern globe valve ASTM A216 Grade WCB Class 300 ASME B16.34 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83B-001JH	Check valve ASTM A105 Class 800 API 602 SW Trim SS316L Body and disc seats Stellite-6 Lift-type Bolted cover	
1	0.75				P83B-001JJ	Check valve ASTM A105 Class 800 API 602 SW Trim SS316L Body and disc seats Stellite-6 Lift-type Bolted cover	
1	1				P83B-001JK	Check valve ASTM A105 Class 800 API 602 SW Trim SS316L Body and disc seats Stellite-6 Lift-type Bolted cover	
1	1.5				P83B-001JL	Check valve ASTM A105 Class 800 API 602 SW Trim SS316L Body and disc seats Stellite-6 Lift-type Bolted cover	
1	2				P83C-003T0	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 Swing-type Bolted cover	
1	3				P83C-003T1	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 Swing-type Bolted cover	
1	4				P83C-003T2	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 Swing-type Bolted cover	
1	6				P83C-003T3	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 Swing-type Bolted cover	

BALL VALVE (Q)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P84B-001L3	Ball valve Long-pattern ASTM A105 Class 300 API 608 Flange ASME B16.5 RF Ball SS316L Seat R-PTFE Trim SS316L Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design	
1	0.75				P84B-001L4	Ball valve Long-pattern ASTM A105 Class 300 API 608 Flange ASME B16.5 RF Ball SS316L Seat R-PTFE Trim SS316L Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design	
1	1				P84B-001L5	Ball valve Long-pattern ASTM A105 Class 300 API 608 Flange ASME B16.5 RF Ball SS316L Seat R-PTFE Trim SS316L Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design	
1	1.5				P84B-001L6	Ball valve Long-pattern ASTM A105 Class 300 API 608 Flange ASME B16.5 RF Ball SS316L Seat R-PTFE Trim SS316L Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design	
1	2				P84C-006UC	Ball valve Long-pattern ASTM A216 Grade WCB Class 300 API 608 Flange ASME B16.5 RF Ball SS316L Seat R-PTFE Trim SS316L Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design	
1	3				P84C-006UD	Ball valve Long-pattern ASTM A216 Grade WCB Class 300 API 608 Flange ASME B16.5 RF Ball SS316L Seat R-PTFE Trim SS316L Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design	
1	4				P84C-006UE	Ball valve Long-pattern ASTM A216 Grade WCB Class 300 API 608 Flange ASME B16.5 RF Ball SS316L Seat R-PTFE Trim SS316L Floating-type Side-entry Gear operated Reduced bore Fire tested design	
24	0.5				P84B-001L7	Ball valve Long-pattern ASTM A105 Class 300 API 608 Flange ASME B16.5 RF Ball SS316L Seat R-PTFE Trim SS316L Floating-type Side-entry Wrench lever operated Full bore Fire tested design	
24	0.75				P84B-001L8	Ball valve Long-pattern ASTM A105 Class 300 API 608 Flange ASME B16.5 RF Ball SS316L Seat R-PTFE Trim SS316L Floating-type Side-entry Wrench lever operated Full bore Fire tested design	
24	1				P84B-001L9	Ball valve Long-pattern ASTM A105 Class 300 API 608 Flange ASME B16.5 RF Ball SS316L Seat R-PTFE Trim SS316L Floating-type Side-entry Wrench lever operated Full bore Fire tested design	
24	1.5				P84B-001LA	Ball valve Long-pattern ASTM A105 Class 300 API 608 Flange ASME B16.5 RF Ball SS316L Seat R-PTFE Trim SS316L Floating-type Side-entry Wrench lever operated Full bore Fire tested design	
24	2				P84C-006UA	Ball valve Long-pattern ASTM A216 Grade WCB Class 300 API 608 Flange ASME B16.5 RF Ball SS316L Seat R-PTFE Trim SS316L Floating-type Side-entry Wrench lever operated Full bore Fire tested design	
24	3				P84C-006UB	Ball valve Long-pattern ASTM A216 Grade WCB Class 300 API 608 Flange ASME B16.5 RF Ball SS316L Seat R-PTFE Trim SS316L Floating-type Side-entry Wrench lever operated Full bore Fire tested design	
24	4				P84C-006UM	Ball valve Long-pattern ASTM A216 Grade WCB Class 300 API 608 Flange ASME B16.5 RF Ball SS316L Seat R-PTFE Trim SS316L Floating-type Side-entry Gear operated Full bore Fire tested design	

ORIFICE FLANGE (FO)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2		XS		P66B-0084B	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	3		STD		P66B-0084C	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	4		STD		P66B-0084D	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
200	2		XS		P66B-00843	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	3		STD		P66B-00844	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	4		STD		P66B-00845	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71B-000B1	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	0.75				P71B-000B2	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	1				P71B-000B3	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71B-000B4	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	

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SPECT BLANK (SB)							
OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2				P71B-000B6	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	3				P71B-000B7	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	4				P71B-000B8	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	6				P71B-000B9	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	

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BOLT TABLE (B_B2AH02 , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-003V4		
0.75	4	0.625	75	P80S-003XC		
1	4	0.625	80	P80S-003XD		
1.5	4	0.750	95	P80S-00414		
2	8	0.625	90	P80S-003XF		
3	8	0.750	110	P80S-003XK		
4	8	0.750	115	P80S-003XL		
6	12	0.750	125	P80S-003XN		

BOLT TABLE (B_B2AH02_781 , STUD ASME RF, OPTION CODE 781)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	80	P80S-003V6		
0.75	4	0.625	90	P80S-003XF		
1	4	0.625	95	P80S-003XG		
1.5	4	0.750	110	P80S-003XK		
2	8	0.625	110	P80S-003VC		
3	8	0.750	130	P80S-003XP		
4	8	0.875	150	P80S-0041F		
6	12	1.000	175	P80S-0043P		

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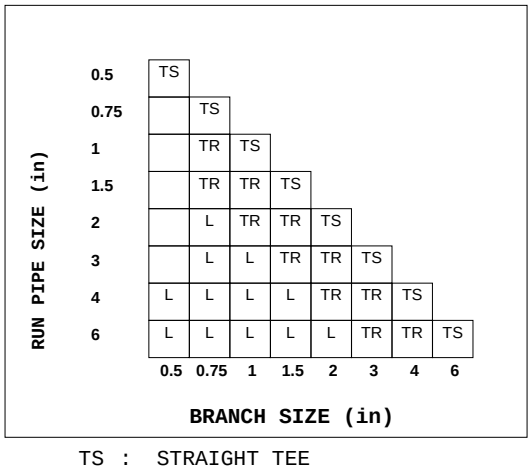
BRANCH TABLE (T_B2AH02)



TS : STRAIGHT TEE
TR : REDUCING TEE
L : OUTLET

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Material : Killed CS
Rating : ASME CLASS 300
Flange Face : RF
C.A.(mm) : 3.00
Gasket : Spiral Wound
Service : PROCESS - HYDROGEN OR HYDROGEN RICH HYDROCARBON MIXTURES
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
2	USE OF SOFT SEATED BALL, PLUG AND BUTTERFLY VALVES SHALL BE LIMITED TO MAXIMUM OF 204DEGC (400DEGF)
16	PIPE CLASS SHALL BE USED WITHIN THE NORMAL OPERATING PRESSURE/TEMPERATURE LIMITS SPECIFIED IN API RP 941. PRESSURE / TEMPERATURE SPECIFIED IN THE PIPE CLASS EXCEEDING API RP 941 LIMITS SHOULD BE REGARDED AS UPSET CONDITIONS RATHER THAN FOR CONTINUOUS SERVICE

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
24	FULL PORT (Q)
200	WITH JACK SCREW (FO)
541	NPT(F) (CA,L)
714	SW - NPT(F) (V)
781	CLASS 600 (B,F,G)
4604	WITH SPRING LOADED STUFFING BOX (V)

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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P01A-00143	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	0.75		SCH160		P01A-0010R	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1		SCH160		P01A-0014M	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1.5		SCH160		P01A-0015J	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	2		XS		P01A-000YX	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	3		XS		P01A-000Z4	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	4		STD		P01A-000YU	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	6		STD		P01A-000Z3	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	8		STD		P01A-000ZA	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	10		STD		P01A-000XJ	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	12		SCH40		P01A-0018V	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	14		SCH40		P01A-0018U	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	16		STD		P01A-000Y9	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	18		SCH20		P01A-00438	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE	
1	20		STD		P01A-0042G	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE	
1	24		STD		P01A-0042H	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P02B-0002A	90 degree elbow ASTM A105 Class 9000 ASME B16.11 SW	
1	0.75				P02B-0001K	90 degree elbow ASTM A105 Class 6000 ASME B16.11 SW	
1	1				P02B-0002E	90 degree elbow ASTM A105 Class 6000 ASME B16.11 SW	
1	1.5				P02B-0002F	90 degree elbow ASTM A105 Class 6000 ASME B16.11 SW	
1	2		XS		P02A-000CP	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		XS		P02A-000CX	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		STD		P02A-000CZ	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		STD		P02A-000D6	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		STD		P02A-000DC	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	10		STD		P02A-000BP	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	12		SCH40		P02A-000JE	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	14		SCH40		P02A-000JF	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	16		STD		P02A-000CH	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	18		SCH20		P02A-000LT	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	20		STD		P02A-0010J	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	24		STD		P02A-0010K	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P03B-00026	45 degree elbow ASTM A105 Class 9000 ASME B16.11 SW	
1	0.75				P03B-0001G	45 degree elbow ASTM A105 Class 6000 ASME B16.11 SW	
1	1				P03B-0002A	45 degree elbow ASTM A105 Class 6000 ASME B16.11 SW	
1	1.5				P03B-0002B	45 degree elbow ASTM A105 Class 6000 ASME B16.11 SW	
1	2		XS		P03A-000AS	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		XS		P03A-000AZ	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		STD		P03A-000B1	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		STD		P03A-000B9	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		STD		P03A-000BB	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	10		STD		P03A-000A4	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	12		SCH40		P03A-000GC	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	14		SCH40		P03A-000GD	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	16		STD		P03A-000AM	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	18		SCH20		P03A-001DX	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	20		STD		P03A-000X1	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	24		STD		P03A-000X2	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P21B-00022	Straight tee ASTM A105 Class 9000 ASME B16.11 SW	
1	0.75				P21B-0001G	Straight tee ASTM A105 Class 6000 ASME B16.11 SW	

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STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P21B-00026	Straight tee ASTM A105 Class 6000 ASME B16.11 SW	
1	1.5				P21B-00027	Straight tee ASTM A105 Class 6000 ASME B16.11 SW	
1	2		XS		P21A-001CJ	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		XS		P21A-001CR	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		STD		P21A-001CW	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6		STD		P21A-001D2	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8		STD		P21A-001D8	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10		STD		P21A-001BV	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12		SCH40		P21A-0022P	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14		SCH40		P21A-0022R	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16		STD		P21A-001CD	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18		SCH20		P21A-001PJ	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20		STD		P21A-001C7	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24		STD		P21A-001CC	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75			P24B-00030	Reducing tee ASTM A105 Class 6000 ASME B16.11 SW	
1	1.5	0.75			P24B-00032	Reducing tee ASTM A105 Class 6000 ASME B16.11 SW	
1	1.5	1			P24B-0004J	Reducing tee ASTM A105 Class 6000 ASME B16.11 SW	
1	2	1	XS	SCH160	P24A-00GMB	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	XS	SCH160	P24A-005K9	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	XS	SCH160	P24A-00GNV	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	XS	XS	P24A-0023S	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P24A-002HY	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	XS	P24A-00GNW	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	XS	P24A-00GTR	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P24A-00229	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	STD	STD	P24A-0021E	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	STD	STD	P24A-0022M	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	STD	STD	P24A-0021B	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	STD	STD	P24A-0022B	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	STD	STD	P24A-0022W	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	SCH40	STD	P24A-00GSM	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH40	STD	P24A-00AF8	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH40	STD	P24A-00GSL	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	SCH40	STD	P24A-00GV4	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	SCH40	STD	P24A-00AFB	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	SCH40	STD	P24A-003GJ	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	SCH40	SCH40	P24A-0033E	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	6	STD	STD	P24A-001ZC	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	STD	STD	P24A-00202	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	STD	STD	P24A-0022G	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	STD	SCH40	P24A-00GVU	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	STD	SCH40	P24A-00GVV	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	8	SCH20	STD	P24A-00BNM	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	10	SCH20	STD	P24A-00GU5	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	12	SCH20	SCH40	P24A-00BH1	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	14	SCH20	SCH40	P24A-00BJM	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	16	SCH20	STD	P24A-00L69	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	8	STD	STD	P24A-004V2	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	10	STD	STD	P24A-004W5	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	12	STD	SCH40	P24A-00GU8	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	14	STD	SCH40	P24A-00BWC	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	16	STD	STD	P24A-004SF	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	18	STD	SCH20	P24A-006WD	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	10	STD	STD	P24A-004WB	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	12	STD	SCH40	P24A-00GVW	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	14	STD	SCH40	P24A-00C8S	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	24	16	STD	STD	P24A-004VY	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	18	STD	SCH20	P24A-006WF	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	20	STD	STD	P24A-004SV	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	XS	XS	P27A-001E5	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P27A-001N0	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	XS	P27A-0074W	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	XS	P27A-007P6	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P27A-001GW	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	STD	STD	P27A-001C2	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	STD	STD	P27A-00188	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	STD	STD	P27A-001C3	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	STD	STD	P27A-0018M	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	STD	STD	P27A-0019J	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	SCH40	STD	P27A-004W1	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH40	STD	P27A-004XB	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH40	STD	P27A-004UG	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	SCH40	STD	P27A-0051B	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	SCH40	STD	P27A-003ZT	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	SCH40	STD	P27A-0029L	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	SCH40	SCH40	P27A-001ZZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	STD	STD	P27A-001C8	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	STD	STD	P27A-0018D	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	STD	SCH40	P27A-00BL0	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	STD	SCH40	P27A-00BL1	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	10	SCH20	STD	P27A-00BGM	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	12	SCH20	SCH40	P27A-00CPD	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	14	SCH20	SCH40	P27A-00CPE	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	16	SCH20	STD	P27A-00FE4	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	12	STD	SCH40	P27A-00BJ4	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	14	STD	SCH40	P27A-00BJF	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	16	STD	STD	P27A-001AD	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	18	STD	SCH20	P27A-0084N	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	16	STD	STD	P27A-0018C	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	18	STD	SCH20	P27A-0084U	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	20	STD	STD	P27A-001A8	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	XS	XS	P28A-001EH	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P28A-001N6	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	XS	P28A-008F7	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	XS	P28A-008K1	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P28A-00182	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	STD	STD	P28A-0017V	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	STD	STD	P28A-0018V	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	STD	STD	P28A-0017W	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	STD	STD	P28A-00190	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	STD	STD	P28A-0019J	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	SCH40	STD	P28A-008HU	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH40	STD	P28A-005T9	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH40	STD	P28A-008HT	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	SCH40	STD	P28A-008F4	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	SCH40	STD	P28A-003ZL	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	SCH40	STD	P28A-0028T	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	SCH40	SCH40	P28A-001ZG	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	STD	STD	P28A-001BX	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	16	10	STD	STD	P28A-0018F	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	STD	SCH40	P28A-008LC	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	STD	SCH40	P28A-008LD	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	10	SCH20	STD	P28A-008FN	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	12	SCH20	SCH40	P28A-009PE	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	14	SCH20	SCH40	P28A-009PF	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	16	SCH20	STD	P28A-00CK2	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	12	STD	SCH40	P28A-008HW	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	14	STD	SCH40	P28A-008JE	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	16	STD	STD	P28A-001AY	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	18	STD	SCH20	P28A-004UN	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	16	STD	STD	P28A-0018K	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	18	STD	SCH20	P28A-004US	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	20	STD	STD	P28A-001AW	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P29B-0001K	Cap ASTM A105 Class 9000 ASME B16.11 SW	
1	0.75				P29B-0002G	Cap ASTM A105 Class 6000 ASME B16.11 SW	
1	1				P29B-0002D	Cap ASTM A105 Class 6000 ASME B16.11 SW	
1	1.5				P29B-0002E	Cap ASTM A105 Class 6000 ASME B16.11 SW	
1	2		XS		P29A-000A1	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		XS		P29A-000AT	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		STD		P29A-000A3	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6		STD		P29A-000A9	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8		STD		P29A-000AF	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10		STD		P29A-0009Z	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12		SCH40		P29A-000GB	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14		SCH40		P29A-000GC	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16		STD		P29A-000AR	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18		SCH20		P29A-000E0	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20		STD		P29A-000B2	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24		STD		P29A-000B8	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
541	0.75				P29B-0000Y	Cap ASTM A105 Class 6000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P41A-000B9	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		XXS		P41A-000BA	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		XXS		P41A-000D8	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		XXS		P41A-000D9	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

CON SWAGED NIPPLE (SNC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	XXS	P42A-000A5	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	SCH160	XXS	P42A-000A6	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	SCH160	SCH160	P42A-0009U	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	SCH160	XXS	P42A-000A7	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	SCH160	SCH160	P42A-0009W	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	SCH160	SCH160	P42A-0009X	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	XS	XXS	P42A-000LL	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	XS	SCH160	P42A-000J7	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	XS	SCH160	P42A-000F8	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	XS	SCH160	P42A-000KZ	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	XS	SCH160	P42A-000L9	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	

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ECC SWAGED NIPPLE (SNE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	XXS	P43A-000DD	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	SCH160	XXS	P43A-000DE	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	SCH160	SCH160	P43A-000B5	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	SCH160	XXS	P43A-000DF	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	SCH160	SCH160	P43A-000B7	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	SCH160	SCH160	P43A-000B8	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	XS	XXS	P43A-000E8	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	XS	SCH160	P43A-000B3	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	XS	SCH160	P43A-000CZ	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	XS	SCH160	P43A-000D0	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	XS	SCH160	P43A-000DM	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	

COUPLING (CPS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P47B-00026	Coupling ASTM A105 Class 9000 ASME B16.11 SW - SW	
1	0.75				P47B-00012	Coupling ASTM A105 Class 6000 ASME B16.11 SW - SW	
1	1				P47B-0002A	Coupling ASTM A105 Class 6000 ASME B16.11 SW - SW	
1	1.5				P47B-0002B	Coupling ASTM A105 Class 6000 ASME B16.11 SW - SW	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5 - 2.5	0.75			P31B-0137D	Outlet ASTM A105 Class 6000 MSS SP-97 SW	
1	3 - 10	0.75			P31B-007LV	Outlet ASTM A105 Class 6000 MSS SP-97 SW	
1	12 and larger	0.75			P31B-0136N	Outlet ASTM A105 Class 6000 MSS SP-97 SW	
1	3 - 10	1			P31B-007LN	Outlet ASTM A105 Class 6000 MSS SP-97 SW	
1	12 and larger	1			P31B-0136P	Outlet ASTM A105 Class 6000 MSS SP-97 SW	
1	4 - 5	1.5			P31B-004LE	Outlet ASTM A105 Class 6000 MSS SP-97 SW	
1	6 - 8	1.5			P31B-005T4	Outlet ASTM A105 Class 6000 MSS SP-97 SW	
1	10 - 18	1.5			P31B-007LF	Outlet ASTM A105 Class 6000 MSS SP-97 SW	
1	20 and larger	1.5			P31B-0137E	Outlet ASTM A105 Class 6000 MSS SP-97 SW	
541	1	0.75			P31B-005HL	Outlet ASTM A105 Class 6000 MSS SP-97 NPT	
541	1.5 - 2.5	0.75			P31B-0137F	Outlet ASTM A105 Class 6000 MSS SP-97 NPT	
541	3 - 10	0.75			P31B-007KP	Outlet ASTM A105 Class 6000 MSS SP-97 NPT	
541	12 and larger	0.75			P31B-0138A	Outlet ASTM A105 Class 6000 MSS SP-97 NPT	
1	6	2	STD	XS	P31B-007SH	Outlet ASTM A105 MSS SP-97 BW	
1	8	2	STD	XS	P31B-00AGX	Outlet ASTM A105 MSS SP-97 BW	
1	10	2	STD	XS	P31B-00ASA	Outlet ASTM A105 MSS SP-97 BW	
1	12	2	SCH40	XS	P31B-00CBS	Outlet ASTM A105 MSS SP-97 BW	
1	14	2	SCH40	XS	P31B-00CAH	Outlet ASTM A105 MSS SP-97 BW	
1	16	2	STD	XS	P31B-00C1T	Outlet ASTM A105 MSS SP-97 BW	
1	18	2	SCH20	XS	P31B-00NVX	Outlet ASTM A105 MSS SP-97 BW	
1	20	2	STD	XS	P31B-00994	Outlet ASTM A105 MSS SP-97 BW	
1	24	2	STD	XS	P31B-0092Z	Outlet ASTM A105 MSS SP-97 BW	
1	8	3	STD	XS	P31B-009Y0	Outlet ASTM A105 MSS SP-97 BW	
1	10	3	STD	XS	P31B-009CG	Outlet ASTM A105 MSS SP-97 BW	
1	12	3	SCH40	XS	P31B-0096J	Outlet ASTM A105 MSS SP-97 BW	
1	14	3	SCH40	XS	P31B-0090P	Outlet ASTM A105 MSS SP-97 BW	
1	16	3	STD	XS	P31B-008UE	Outlet ASTM A105 MSS SP-97 BW	
1	18	3	SCH20	XS	P31B-00NZ6	Outlet ASTM A105 MSS SP-97 BW	
1	20	3	STD	XS	P31B-008F4	Outlet ASTM A105 MSS SP-97 BW	
1	24	3	STD	XS	P31B-0088Z	Outlet ASTM A105 MSS SP-97 BW	
1	12	4	SCH40	STD	P31B-008ZY	Outlet ASTM A105 MSS SP-97 BW	
1	14	4	SCH40	STD	P31B-008YN	Outlet ASTM A105 MSS SP-97 BW	
1	16	4	STD	STD	P31B-008SH	Outlet ASTM A105 MSS SP-97 BW	
1	18	4	SCH20	STD	P31B-00P1V	Outlet ASTM A105 MSS SP-97 BW	
1	20	4	STD	STD	P31B-008D3	Outlet ASTM A105 MSS SP-97 BW	
1	24	4	STD	STD	P31B-0086X	Outlet ASTM A105 MSS SP-97 BW	
1	18	6	SCH20	STD	P31B-00P48	Outlet ASTM A105 MSS SP-97 BW	
1	20	6	STD	STD	P31B-008PZ	Outlet ASTM A105 MSS SP-97 BW	

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OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	24	6	STD	STD	P31B-008JD	Outlet ASTM A105 MSS SP-97 BW	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30B-0002D	Plug ASTM A105 ASME B16.11 NPT Round head	
1	0.75				P30B-0002E	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1				P30B-0002F	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1.5				P30B-0002G	Plug ASTM A105 ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P61B-001HD	Flange SW ASTM A105 Class 300 ASME B16.5 RF	
1	0.75		SCH160		P61B-001HH	Flange SW ASTM A105 Class 300 ASME B16.5 RF	
1	1		SCH160		P61B-001E8	Flange SW ASTM A105 Class 300 ASME B16.5 RF	
1	1.5		SCH160		P61B-001ET	Flange SW ASTM A105 Class 300 ASME B16.5 RF	
1	2		XS		P61B-001HW	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	3		XS		P61B-001DK	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	4		STD		P61B-001MC	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	6		STD		P61B-001N2	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	8		STD		P61B-001NL	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	10		STD		P61B-001L6	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	12		SCH40		P61B-002FJ	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	14		SCH40		P61B-002FL	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	16		STD		P61B-001MH	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	18		SCH20		P61B-002MT	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	20		STD		P61B-001NT	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	24		STD		P61B-001PA	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
781	0.5		XXS		P61B-002ZE	Flange SW ASTM A105 Class 600 ASME B16.5 RF	
781	0.75		SCH160		P61B-001DW	Flange SW ASTM A105 Class 600 ASME B16.5 RF	
781	1		SCH160		P61B-005X5	Flange SW ASTM A105 Class 600 ASME B16.5 RF	
781	1.5		SCH160		P61B-005X6	Flange SW ASTM A105 Class 600 ASME B16.5 RF	
781	2		XS		P61B-001DH	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	3		XS		P61B-001M8	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	4		STD		P61B-001VV	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	6		STD		P61B-001JW	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	8		STD		P61B-001KK	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	10		STD		P61B-001JJ	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	12		SCH40		P61B-003T5	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	14		SCH40		P61B-003T6	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	16		STD		P61B-003FB	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	18		SCH20		P61B-003TP	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	20		STD		P61B-003GP	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	24		STD		P61B-003GM	Flange WN ASTM A105 Class 600 ASME B16.5 RF	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67B-000GH	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	0.75				P67B-000GJ	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	1				P67B-000GK	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	1.5				P67B-000GL	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	2				P67B-000GM	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	3				P67B-000GN	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	4				P67B-000GP	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	6				P67B-000GY	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	8				P67B-000GZ	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	10				P67B-000GR	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	12				P67B-000GS	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	14				P67B-000GT	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	16				P67B-000GU	Blind flange ASTM A105 Class 300 ASME B16.5 RF	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	18				P67B-000GV	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	20				P67B-000GW	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	24				P67B-000GX	Blind flange ASTM A105 Class 300 ASME B16.5 RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000FT	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000FU	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000G5	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000G6	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	6				P73T-000G7	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	8				P73T-000G8	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	10				P73T-000FX	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	12				P73T-000FY	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	14				P73T-000FZ	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	16				P73T-000G0	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	18				P73T-000G1	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	20				P73T-000G3	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	24				P73T-000G4	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	0.5				P73T-000J8	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	0.75				P73T-000J9	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1				P73T-000JA	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1.5				P73T-000JB	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	2				P73T-000JH	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	3				P73T-000JL	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	4				P73T-000JM	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	6				P73T-000JN	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	8				P73T-000JP	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	10				P73T-000JC	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	12				P73T-000JD	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	14				P73T-000JE	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	16				P73T-000JF	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	18				P73T-000JG	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	20				P73T-000JJ	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	24				P73T-000JK	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-10				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	12-24				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
781	0.5-6				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
781	8-24				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	

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GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81B-000P4	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	0.75				P81B-000NX	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	1				P81B-000NY	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	1.5				P81B-000NZ	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	2				P81C-002D6	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	3				P81C-002D7	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	4				P81C-002D8	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	6				P81C-002D9	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	8				P81C-0086V	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated	
1	10				P81C-002DB	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated	
1	12				P81C-002DC	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated	
1	14				P81C-0034H	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated	
1	16				P81C-002DD	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated	
4604	3				P81C-0095N	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated Fluid-4	
714	0.5				P81B-0015L	Gate valve ASTM A105 Class 800 API 602 SW - NPT Trim number 8 BB-BG-OS&Y Handwheel operated	
714	0.75				P81B-002F4	Gate valve ASTM A105 Class 800 API 602 SW - NPT Trim number 8 BB-BG-OS&Y Handwheel operated	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82B-000K0	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	0.75				P82B-000HB	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	1				P82B-000HC	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	1.5				P82B-000HD	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	2				P82C-00114	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	3				P82C-00115	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	4				P82C-00116	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83B-000FX	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover	
1	0.75				P83B-000ER	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover	
1	1				P83B-000ES	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover	
1	1.5				P83B-000ET	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover	
1	2				P83C-0013H	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	3				P83C-0013L	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	4				P83C-0013M	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	6				P83C-0013N	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	

BALL VALVE (Q)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P84B-0012S	Ball valve Long-pattern ASTM A105 Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design	
1	0.75				P84B-0012T	Ball valve Long-pattern ASTM A105 Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design	
1	1				P84B-0012U	Ball valve Long-pattern ASTM A105 Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design	
1	1.5				P84B-0012V	Ball valve Long-pattern ASTM A105 Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design	
1	2				P84C-005VG	Ball valve Long-pattern ASTM A216 Grade WCB Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design	
1	3				P84C-005VH	Ball valve Long-pattern ASTM A216 Grade WCB Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design	
1	4				P84C-005VU	Ball valve Long-pattern ASTM A216 Grade WCB Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Gear operated Reduced bore Fire tested design	
24	0.5				P84B-0012W	Ball valve Long-pattern ASTM A105 Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	
24	0.75				P84B-0012X	Ball valve Long-pattern ASTM A105 Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	

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BALL VALVE (Q)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
24	1				P84B-0012Y	Ball valve Long-pattern ASTM A105 Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	
24	1.5				P84B-0012Z	Ball valve Long-pattern ASTM A105 Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	
24	2				P84C-005VM	Ball valve Long-pattern ASTM A216 Grade WCB Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	
24	3				P84C-005VN	Ball valve Long-pattern ASTM A216 Grade WCB Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	
24	4				P84C-005VT	Ball valve Long-pattern ASTM A216 Grade WCB Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Gear operated Full bore Fire tested design	

ORIFICE FLANGE (FO)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2		XS		P66B-0084B	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
200	2		XS		P66B-00843	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71B-000B1	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	0.75				P71B-000B2	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	1				P71B-000B3	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71B-000B4	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	2				P71B-000B6	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	3				P71B-000B7	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	4				P71B-000B8	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	6				P71B-000B9	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	8				P71B-000BA	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	10				P71B-000B5	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	12				P71B-000BB	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	

PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000FA	Paddle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	16				P72B-000FB	Paddle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	18				P72B-000FC	Paddle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	20				P72B-000FD	Paddle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	24				P72B-000FE	Paddle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	

PADDLE SPACER (PS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000FG	Paddle spacer ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	16				P72B-000FH	Paddle spacer ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	18				P72B-000FJ	Paddle spacer ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	20				P72B-000FK	Paddle spacer ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	24				P72B-000FL	Paddle spacer ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	

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BOLT TABLE (B_B2AH04 , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-003V4		
0.75	4	0.625	75	P80S-003XC		
1	4	0.625	80	P80S-003XD		
1.5	4	0.750	95	P80S-00414		
2	8	0.625	90	P80S-003XF		
3	8	0.750	110	P80S-003XK		
4	8	0.750	115	P80S-003XL		
6	12	0.750	125	P80S-003XN		
8	12	0.875	140	P80S-0041D		
10	16	1.000	160	P80S-0043K		
12	16	1.125	175	P80S-0046S		
14	20	1.125	180	P80S-0046T		
16	20	1.250	190	P80S-004AK		
18	24	1.250	200	P80S-004AM		
20	24	1.250	210	P80S-004AP		
24	24	1.500	235	P80S-003F8		

BOLT TABLE (B_B2AH04_781 , STUD ASME RF, OPTION CODE 781)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	80	P80S-003V6		
0.75	4	0.625	90	P80S-003XF		
1	4	0.625	95	P80S-003XG		
1.5	4	0.750	110	P80S-003XK		
2	8	0.625	110	P80S-003VC		
3	8	0.750	130	P80S-003XP		
4	8	0.875	150	P80S-0041F		
6	12	1.000	175	P80S-0043P		
8	12	1.125	195	P80S-0046W		
10	16	1.250	250	P80S-004AY		
12	20	1.250	255	P80S-004AZ		
14	20	1.375	270	P80S-003E7		
16	20	1.500	295	P80S-003FL		
18	20	1.625	320	P80S-005TT		
20	24	1.625	335	P80S-005TW		
24	24	1.875	380	P80S-008P4		

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PIPING CLASS

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BRANCH TABLE (T_B2AH04)

RUN PIPE SIZE (in) \ BRANCH SIZE (in)	0.5	0.75	1	1.5	2	3	4	6	8	10	12	14	16	18	20	24
0.5	TS															
0.75		TS														
1		TR	TS													
1.5		TR	TR	TS												
2		L	TR	TR	TS											
3		L	L	TR	TR	TS										
4	L	L	L	L	TR	TR	TS									
6	L	L	L	L	L	TR	TR	TS								
8		L	L	L	L	L	TR	TR	TS							
10		L	L	L	L	L	TR	TR	TR	TS						
12		L	L	L	L	L	L	TR	TR	TR	TS					
14		L	L	L	L	L	L	TR	TR	TR	TR	TS				
16		L	L	L	L	L	L	TR	TR	TR	TR	TR	TS			
18		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TS		
20		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TR	TS	
24		L	L	L	L	L	L	L	9PD	TR	TR	TR	TR	TR	TR	TS

TS : STRAIGHT TEE
9PD : REINFORCING PAD 90 DEG
TR : REDUCING TEE
L : OUTLET

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PIPING CLASS

B2AL REV NO. 2

Material : Killed CS
Rating : ASME CLASS 300
Flange Face : RF
C.A.(mm) : 3.00
Gasket : Spiral Wound
Service : PROCESS - AMINES AND NON NACE SOUR (STRESS RELIEVED): / LEAN AMINE / PROCESS WITH H2S / DHT DRIER SOUR WATER / PROCESS

Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
2	USE OF SOFT SEATED BALL, PLUG AND BUTTERFLY VALVES SHALL BE LIMITED TO MAXIMUM OF 204DEGC (400DEGF)
27	PWHT OF CARBON STEEL PIPING IN WET H2S, CAUSTIC AND AMINE SERVICES SHALL BE IN ACCORDANCE WITH SECTION 10.2, 10.3, AND 10.4 OF PROJECT SPECIFICATION 3550-8440-SP-0002 MATERIALS REQUIREMENTS FOR PRESSURISED EQUIPMENT AND PIPING. FOR CAUSTIC AND AMINE SERVICE THE FOLLOWING SHALL APPLY: - PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF ALL SITE PIPING FABRICATION WELDS IS REQUIRED FOR ALL WALL THICKNESSES. FOR MODERATE AND SEVERE WET H2S SERVICE THE FOLLOWING SHALL APPLY: PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF SITE FABRICATION CIRCUMFERENTIAL OR BRANCH WELDS IS NOT REQUIRED IF WELDS ARE MULTIPASS AND IN ACCORDANCE WITH PARA 10.2.12 OF PROJECT SPECIFICATION 3550-8440-SP-0002. FOR SERVICES MEETING THE WET H2S CRITERIA AND CAUSTIC OR AMINE CRITERIA THE MORE STRINGENT PWHT REQUIREMENT SHALL GOVERN.

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
24	FULL PORT (Q)
200	WITH JACK SCREW (FO)
541	NPT(F) (CA,F)
781	CLASS 600 (B,F,G)
4608	VALVE WITH NIPPLES (V)

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PIPING CLASS
B2AL REV NO. 2

PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P01A-0010P	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	0.75		SCH160		P01A-0010R	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1		SCH160		P01A-0014M	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1.5		SCH160		P01A-0015J	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	2		XS		P01A-000YX	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	3		STD		P01A-000YM	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	4		STD		P01A-000YU	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	6		STD		P01A-000Z3	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	8		STD		P01A-000ZA	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	10		STD		P01A-000XJ	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	12		SCH40		P01A-0018V	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	14		SCH40		P01A-0018U	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	16		SCH20		P01A-0018E	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	18		SCH20		P01A-007BZ	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE Amine service	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P02A-001Y8	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	0.75		SCH160		P02A-000V8	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1		SCH160		P02A-000V7	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1.5		SCH160		P02A-000V9	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	2		XS		P02A-000CP	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		STD		P02A-000CU	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		STD		P02A-000CZ	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		STD		P02A-000D6	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		STD		P02A-000DC	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	10		STD		P02A-000BP	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	12		SCH40		P02A-000JE	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	14		SCH40		P02A-000JF	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	16		SCH20		P02A-000GM	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	18		SCH20		P02A-000LT	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P03A-001TC	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	0.75		SCH160		P03A-000RS	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1		SCH160		P03A-000RR	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1.5		SCH160		P03A-000RP	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	2		XS		P03A-000AS	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		STD		P03A-000AX	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		STD		P03A-000B1	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		STD		P03A-000B9	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		STD		P03A-000BB	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	10		STD		P03A-000A4	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	12		SCH40		P03A-000GC	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	14		SCH40		P03A-000GD	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	16		SCH20		P03A-000EM	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	18		SCH20		P03A-001DX	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P21A-003AW	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	0.75		SCH160		P21A-002B8	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1		SCH160		P21A-002B6	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5		SCH160		P21A-002B9	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2		XS		P21A-001CJ	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		STD		P21A-001CU	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		STD		P21A-001CW	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6		STD		P21A-001D2	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	8		STD		P21A-001D8	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10		STD		P21A-001BV	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12		SCH40		P21A-0022P	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14		SCH40		P21A-0022R	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16		SCH20		P21A-0020X	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18		SCH20		P21A-004BL	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Amine service	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75	SCH160	SCH160	P24A-004B6	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.75	SCH160	SCH160	P24A-004B2	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	1	SCH160	SCH160	P24A-004BA	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	XS	SCH160	P24A-00GMB	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	XS	SCH160	P24A-005K9	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	STD	SCH160	P24A-00GMC	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	STD	XS	P24A-002HW	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P24A-002HY	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P24A-0021K	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	STD	P24A-0021A	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P24A-00229	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	STD	STD	P24A-0021E	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	STD	STD	P24A-0022M	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	STD	STD	P24A-0021B	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	STD	STD	P24A-0022B	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	STD	STD	P24A-0022W	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	SCH40	STD	P24A-00GSM	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH40	STD	P24A-00AF8	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH40	STD	P24A-00GSL	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	SCH40	STD	P24A-00GV4	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	SCH40	STD	P24A-00AFB	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	SCH40	STD	P24A-003GJ	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	SCH40	SCH40	P24A-0033E	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	6	SCH20	STD	P24A-00GU4	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	SCH20	STD	P24A-00GP8	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	SCH20	STD	P24A-00GU3	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	SCH20	SCH40	P24A-00L6A	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	SCH20	SCH40	P24A-00L4L	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	8	SCH20	STD	P24A-00K98	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Amine service	
1	18	10	SCH20	STD	P24A-00K94	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Amine service	
1	18	12	SCH20	SCH40	P24A-00K95	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Amine service	
1	18	14	SCH20	SCH40	P24A-00K96	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Amine service	
1	18	16	SCH20	SCH20	P24A-00K97	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Amine service	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	SCH160	P27A-004LZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.5	SCH160	SCH160	P27A-004M8	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.75	SCH160	SCH160	P27A-002T5	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.5	SCH160	SCH160	P27A-004MV	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.75	SCH160	SCH160	P27A-002T7	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	1	SCH160	SCH160	P27A-002T4	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	0.75	XS	SCH160	P27A-001LG	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	XS	SCH160	P27A-0033P	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	XS	SCH160	P27A-0033B	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	STD	SCH160	P27A-003M9	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	STD	XS	P27A-001MZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	1.5	STD	SCH160	P27A-003MA	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P27A-001N0	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P27A-00189	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	6	3	STD	STD	P27A-001AZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P27A-001GW	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	STD	STD	P27A-001C2	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	STD	STD	P27A-00188	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	STD	STD	P27A-001C3	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	STD	STD	P27A-0018M	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	STD	STD	P27A-0019J	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	SCH40	STD	P27A-004W1	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH40	STD	P27A-004XB	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH40	STD	P27A-004UG	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	SCH40	STD	P27A-0051B	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	SCH40	STD	P27A-003ZT	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	SCH40	STD	P27A-0029L	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	SCH40	SCH40	P27A-001ZZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	SCH20	STD	P27A-003ND	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	SCH20	STD	P27A-0054A	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	SCH20	SCH40	P27A-00CBP	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	SCH20	SCH40	P27A-00CBR	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	10	SCH20	STD	P27A-00EUM	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Amine service	
1	18	12	SCH20	SCH40	P27A-00EUN	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Amine service	
1	18	14	SCH20	SCH40	P27A-00EUP	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Amine service	
1	18	16	SCH20	SCH20	P27A-00EUR	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Amine service	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	SCH160	P28A-007KG	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.5	SCH160	SCH160	P28A-007KH	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.75	SCH160	SCH160	P28A-002TU	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.5	SCH160	SCH160	P28A-007KJ	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.75	SCH160	SCH160	P28A-002TW	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	1	SCH160	SCH160	P28A-002TR	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	0.75	XS	SCH160	P28A-001LE	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	XS	SCH160	P28A-003M1	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	XS	SCH160	P28A-003M2	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	STD	SCH160	P28A-003M3	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	STD	XS	P28A-001N5	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	1.5	STD	SCH160	P28A-003M4	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P28A-001N6	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P28A-0018B	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	STD	P28A-001AS	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P28A-00182	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	STD	STD	P28A-0017V	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	STD	STD	P28A-0018V	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	STD	STD	P28A-0017W	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	STD	STD	P28A-00190	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	STD	STD	P28A-0019J	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	SCH40	STD	P28A-008HU	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH40	STD	P28A-005T9	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH40	STD	P28A-008HT	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	SCH40	STD	P28A-008F4	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	SCH40	STD	P28A-003ZL	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	SCH40	STD	P28A-0028T	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	SCH40	SCH40	P28A-001ZG	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	SCH20	STD	P28A-003N7	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	SCH20	STD	P28A-008FM	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	SCH20	SCH40	P28A-009AX	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	SCH20	SCH40	P28A-009AY	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	10	SCH20	STD	P28A-00BYG	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Amine service	
1	18	12	SCH20	SCH40	P28A-00BYH	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Amine service	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	18	14	SCH20	SCH40	P28A-00BYJ	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Amine service	
1	18	16	SCH20	SCH20	P28A-00BYK	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Amine service	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P29A-001UD	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	0.75		SCH160		P29A-000TX	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1		SCH160		P29A-000TY	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5		SCH160		P29A-000TZ	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2		XS		P29A-000A1	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		STD		P29A-000BK	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		STD		P29A-000A3	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6		STD		P29A-000A9	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8		STD		P29A-000AF	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10		STD		P29A-0009Z	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12		SCH40		P29A-000GB	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14		SCH40		P29A-000GC	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16		SCH20		P29A-000F3	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18		SCH20		P29A-000E0	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
541	0.75				P29B-0000Y	Cap ASTM A105 Class 6000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P41A-000B9	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		XXS		P41A-000BA	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		XXS		P41A-000D8	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		XXS		P41A-000D9	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2	0.75	XS	SCH160	P31B-00CP7	Outlet ASTM A105 MSS SP-97 BW	
1	3	0.75	STD	SCH160	P31B-00CMT	Outlet ASTM A105 MSS SP-97 BW	
1	4	0.75	STD	SCH160	P31B-00CLT	Outlet ASTM A105 MSS SP-97 BW	
1	6	0.75	STD	SCH160	P31B-00CKK	Outlet ASTM A105 MSS SP-97 BW	
1	8	0.75	STD	SCH160	P31B-00C5E	Outlet ASTM A105 MSS SP-97 BW	
1	10	0.75	STD	SCH160	P31B-00CFB	Outlet ASTM A105 MSS SP-97 BW	
1	12	0.75	SCH40	SCH160	P31B-00CS8	Outlet ASTM A105 MSS SP-97 BW	
1	14	0.75	SCH40	SCH160	P31B-00CRP	Outlet ASTM A105 MSS SP-97 BW	
1	16	0.75	SCH20	SCH160	P31B-00XS0	Outlet ASTM A105 MSS SP-97 BW	
1	18	0.75	SCH20	SCH160	P31B-00SWM	Outlet ASTM A105 MSS SP-97 BW	
1	3	1	STD	SCH160	P31B-00B4J	Outlet ASTM A105 MSS SP-97 BW	
1	4	1	STD	SCH160	P31B-00B3M	Outlet ASTM A105 MSS SP-97 BW	
1	6	1	STD	SCH160	P31B-00AZC	Outlet ASTM A105 MSS SP-97 BW	
1	8	1	STD	SCH160	P31B-00AVF	Outlet ASTM A105 MSS SP-97 BW	
1	10	1	STD	SCH160	P31B-00C06	Outlet ASTM A105 MSS SP-97 BW	
1	12	1	SCH40	SCH160	P31B-00BWL	Outlet ASTM A105 MSS SP-97 BW	
1	14	1	SCH40	SCH160	P31B-00BRP	Outlet ASTM A105 MSS SP-97 BW	
1	16	1	SCH20	SCH160	P31B-00X8Z	Outlet ASTM A105 MSS SP-97 BW	
1	18	1	SCH20	SCH160	P31B-00SWN	Outlet ASTM A105 MSS SP-97 BW	
1	4	1.5	STD	SCH160	P31B-00BP4	Outlet ASTM A105 MSS SP-97 BW	
1	6	1.5	STD	SCH160	P31B-00BJH	Outlet ASTM A105 MSS SP-97 BW	
1	8	1.5	STD	SCH160	P31B-00BHJ	Outlet ASTM A105 MSS SP-97 BW	
1	10	1.5	STD	SCH160	P31B-00AUM	Outlet ASTM A105 MSS SP-97 BW	
1	12	1.5	SCH40	SCH160	P31B-00CEH	Outlet ASTM A105 MSS SP-97 BW	
1	14	1.5	SCH40	SCH160	P31B-00CDR	Outlet ASTM A105 MSS SP-97 BW	
1	16	1.5	SCH20	SCH160	P31B-00C9B	Outlet ASTM A105 MSS SP-97 BW	
1	18	1.5	SCH20	SCH160	P31B-00C3C	Outlet ASTM A105 MSS SP-97 BW	
1	6	2	STD	XS	P31B-007SH	Outlet ASTM A105 MSS SP-97 BW	
1	8	2	STD	XS	P31B-00AGX	Outlet ASTM A105 MSS SP-97 BW	

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OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	10	2	STD	XS	P31B-00ASA	Outlet ASTM A105 MSS SP-97 BW	
1	12	2	SCH40	XS	P31B-00CBS	Outlet ASTM A105 MSS SP-97 BW	
1	14	2	SCH40	XS	P31B-00CAH	Outlet ASTM A105 MSS SP-97 BW	
1	16	2	SCH20	XS	P31B-00TF8	Outlet ASTM A105 MSS SP-97 BW	
1	18	2	SCH20	XS	P31B-00NVX	Outlet ASTM A105 MSS SP-97 BW	
1	8	3	STD	STD	P31B-00A2T	Outlet ASTM A105 MSS SP-97 BW	
1	10	3	STD	STD	P31B-009CM	Outlet ASTM A105 MSS SP-97 BW	
1	12	3	SCH40	STD	P31B-0096S	Outlet ASTM A105 MSS SP-97 BW	
1	14	3	SCH40	STD	P31B-0090U	Outlet ASTM A105 MSS SP-97 BW	
1	16	3	SCH20	STD	P31B-00TU2	Outlet ASTM A105 MSS SP-97 BW	
1	18	3	SCH20	STD	P31B-00NZ4	Outlet ASTM A105 MSS SP-97 BW	
1	12	4	SCH40	STD	P31B-008ZY	Outlet ASTM A105 MSS SP-97 BW	
1	14	4	SCH40	STD	P31B-008YN	Outlet ASTM A105 MSS SP-97 BW	
1	16	4	SCH20	STD	P31B-00TU3	Outlet ASTM A105 MSS SP-97 BW	
1	18	4	SCH20	STD	P31B-00P1V	Outlet ASTM A105 MSS SP-97 BW	
1	18	6	SCH20	STD	P31B-00P48	Outlet ASTM A105 MSS SP-97 BW	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30B-0002D	Plug ASTM A105 ASME B16.11 NPT Round head	
1	0.75				P30B-0002E	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1				P30B-0002F	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1.5				P30B-0002G	Plug ASTM A105 ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P61B-003P9	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	0.75		SCH160		P61B-0037M	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	1		SCH160		P61B-0037L	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	1.5		SCH160		P61B-0037J	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	2		XS		P61B-001HW	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	3		STD		P61B-001LJ	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	4		STD		P61B-001MC	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	6		STD		P61B-001N2	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	8		STD		P61B-001NL	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	10		STD		P61B-001L6	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	12		SCH40		P61B-002FJ	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	14		SCH40		P61B-002FL	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	16		SCH20		P61B-002MS	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	18		SCH20		P61B-002MT	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
541	0.5				P61B-003U3	Flange NPT ASTM A105 Class 300 ASME B16.5 RF	
541	0.75				P61B-003U4	Flange NPT ASTM A105 Class 300 ASME B16.5 RF	
781	0.5		SCH160		P61B-004UV	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	0.75		SCH160		P61B-003T2	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	1		SCH160		P61B-003T3	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	1.5		SCH160		P61B-003T4	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	2		XS		P61B-001DH	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	3		STD		P61B-001TW	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	4		STD		P61B-001VV	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	6		STD		P61B-001JW	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	8		STD		P61B-001KK	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	10		STD		P61B-001JJ	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	12		SCH40		P61B-003T5	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	14		SCH40		P61B-003T6	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	16		SCH20		P61B-00798	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	18		SCH20		P61B-003TP	Flange WN ASTM A105 Class 600 ASME B16.5 RF	

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BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67B-000GH	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	0.75				P67B-000GJ	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	1				P67B-000GK	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	1.5				P67B-000GL	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	2				P67B-000GM	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	3				P67B-000GN	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	4				P67B-000GP	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	6				P67B-000GY	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	8				P67B-000GZ	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	10				P67B-000GR	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	12				P67B-000GS	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	14				P67B-000GT	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	16				P67B-000GU	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	18				P67B-000GV	Blind flange ASTM A105 Class 300 ASME B16.5 RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000FT	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000FU	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000G5	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000G6	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	6				P73T-000G7	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	8				P73T-000G8	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	10				P73T-000FX	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	12				P73T-000FY	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	14				P73T-000FZ	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	16				P73T-000G0	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	18				P73T-000G1	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	0.5				P73T-000J8	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	0.75				P73T-000J9	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1				P73T-000JA	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1.5				P73T-000JB	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	2				P73T-000JH	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	3				P73T-000JL	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	4				P73T-000JM	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	6				P73T-000JN	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	8				P73T-000JP	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	10				P73T-000JC	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	12				P73T-000JD	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	14				P73T-000JE	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	16				P73T-000JF	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	18				P73T-000JG	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-10				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	

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BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	12-18				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
781	0.5-6				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
781	8-18				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81B-001ND	Gate valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Amine service	
1	0.75				P81B-001NA	Gate valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Amine service	
1	1				P81B-001NB	Gate valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Amine service	
1	1.5				P81B-001NC	Gate valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Amine service	
1	2				P81C-00310	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Amine service	
1	3				P81C-00311	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Amine service	
1	4				P81C-005E6	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Amine service	
1	6				P81C-005E7	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Amine service	
1	8				P81C-0091S	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Amine service	
1	10				P81C-005E9	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Amine service	
1	12				P81C-005EA	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Amine service	
1	14				P81C-005EB	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Amine service	
1	16				P81C-005EN	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Amine service	
1	18				P81C-005EP	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Amine service	
4608	0.75				P81B-002WU	Gate valve ASTM A105 Class 300 API 602 BW both sides w/ nipples BE - NPT ASTM A106-B XXS-nipple Trim number 12 BB-BG-OS&Y Handwheel operated Amine service	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82B-001CT	Globe valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Amine service	
1	0.75				P82B-001CP	Globe valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Amine service	
1	1				P82B-001CR	Globe valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Amine service	
1	1.5				P82B-001CS	Globe valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Amine service	
1	2				P82C-002P2	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Amine service	
1	3				P82C-002P3	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Amine service	
1	4				P82C-002P7	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Amine service	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83B-00137	Check valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Amine service	
1	0.75				P83B-00134	Check valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Amine service	
1	1				P83B-00135	Check valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Amine service	
1	1.5				P83B-00136	Check valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Amine service	
1	2				P83C-002RY	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Amine service	
1	3				P83C-002RZ	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Amine service	
1	4				P83C-002S0	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Amine service	
1	6				P83C-002S1	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Amine service	
1	8				P83C-002S2	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Amine service	
1	10				P83C-002RV	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Amine service	
1	12				P83C-002RW	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Amine service	
1	14				P83C-002RX	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Amine service	

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CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	16				P83C-002S6	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Amine service	
1	18				P83C-002S7	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Amine service	

BALL VALVE (Q)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P84B-001DL	Ball valve Long-pattern ASTM A105 Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design Amine service	
1	0.75				P84B-001DM	Ball valve Long-pattern ASTM A105 Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design Amine service	
1	1				P84B-001DN	Ball valve Long-pattern ASTM A105 Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design Amine service	
1	1.5				P84B-001DP	Ball valve Long-pattern ASTM A105 Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design Amine service	
1	2				P84C-006LN	Ball valve Long-pattern ASTM A216 Grade WCB Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design Amine service	
24	0.5				P84B-001DR	Ball valve Long-pattern ASTM A105 Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design Amine service	
24	0.75				P84B-001DS	Ball valve Long-pattern ASTM A105 Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design Amine service	
24	1				P84B-001DT	Ball valve Long-pattern ASTM A105 Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design Amine service	
24	1.5				P84B-001DU	Ball valve Long-pattern ASTM A105 Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design Amine service	
24	2				P84C-006LP	Ball valve Long-pattern ASTM A216 Grade WCB Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design Amine service	

ORIFICE FLANGE (FO)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2		XS		P66B-0084B	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	3		STD		P66B-0084C	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
200	2		XS		P66B-00843	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	3		STD		P66B-00844	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71B-000B1	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	0.75				P71B-000B2	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	1				P71B-000B3	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71B-000B4	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	2				P71B-000B6	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	3				P71B-000B7	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	4				P71B-000B8	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	6				P71B-000B9	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	8				P71B-000BA	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	10				P71B-000B5	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	12				P71B-000BB	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	

PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000FA	Paddle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	16				P72B-000FB	Paddle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	18				P72B-000FC	Paddle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	

PADDLE SPACER (PS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000FG	Paddle spacer ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	16				P72B-000FH	Paddle spacer ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	18				P72B-000FJ	Paddle spacer ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	

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BOLT TABLE (B_B2AL , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-003V4		
0.75	4	0.625	75	P80S-003XC		
1	4	0.625	80	P80S-003XD		
1.5	4	0.750	95	P80S-00414		
2	8	0.625	90	P80S-003XF		
3	8	0.750	110	P80S-003XK		
4	8	0.750	115	P80S-003XL		
6	12	0.750	125	P80S-003XN		
8	12	0.875	140	P80S-0041D		
10	16	1.000	160	P80S-0043K		
12	16	1.125	175	P80S-0046S		
14	20	1.125	180	P80S-0046T		
16	20	1.250	190	P80S-004AK		
18	24	1.250	200	P80S-004AM		

BOLT TABLE (B_B2AL_781 , STUD ASME RF, OPTION CODE 781)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	80	P80S-003V6		
0.75	4	0.625	90	P80S-003XF		
1	4	0.625	95	P80S-003XG		
1.5	4	0.750	110	P80S-003XK		
2	8	0.625	110	P80S-003VC		
3	8	0.750	130	P80S-003XP		
4	8	0.875	150	P80S-0041F		
6	12	1.000	175	P80S-0043P		
8	12	1.125	195	P80S-0046W		
10	16	1.250	250	P80S-004AY		
12	20	1.250	255	P80S-004AZ		
14	20	1.375	270	P80S-003E7		
16	20	1.500	295	P80S-003FL		
18	20	1.625	320	P80S-005TT		

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BRANCH TABLE (T_B2AL)

RUN PIPE SIZE (in) \ BRANCH SIZE (in)	0.5	0.75	1	1.5	2	3	4	6	8	10	12	14	16	18
0.5	TS													
0.75		TS												
1		TR	TS											
1.5		TR	TR	TS										
2		L	TR	TR	TS									
3		L	L	TR	TR	TS								
4	L	L	L	L	TR	TR	TS							
6	L	L	L	L	L	TR	TR	TS						
8		L	L	L	L	L	TR	TR	TS					
10		L	L	L	L	L	TR	TR	TR	TS				
12		L	L	L	L	L	L	TR	TR	TR	TS			
14		L	L	L	L	L	L	TR	TR	TR	TR	TS		
16		L	L	L	L	L	L	TR	TR	TR	TR	TR	TS	
18		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TS

TS : STRAIGHT TEE
TR : REDUCING TEE
L : OUTLET

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PIPING CLASS

B2AL04 REV NO. 2

Material : Killed CS
Rating : ASME CLASS 300
Flange Face : RF
C.A.(mm) : 3.00
Gasket : Spiral Wound
Service : PROCESS - RICH AMINE SERVICE (STRESS RELIEVED)
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
2	USE OF SOFT SEATED BALL, PLUG AND BUTTERFLY VALVES SHALL BE LIMITED TO MAXIMUM OF 204DEGC (400DEGF)
27	PWHT OF CARBON STEEL PIPING IN WET H2S, CAUSTIC AND AMINE SERVICES SHALL BE IN ACCORDANCE WITH SECTION 10.2, 10.3, AND 10.4 OF PROJECT SPECIFICATION 3550-8440-SP-0002 MATERIALS REQUIREMENTS FOR PRESSURISED EQUIPMENT AND PIPING. FOR CAUSTIC AND AMINE SERVICE THE FOLLOWING SHALL APPLY: - PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF ALL SITE PIPING FABRICATION WELDS IS REQUIRED FOR ALL WALL THICKNESSES. FOR MODERATE AND SEVERE WET H2S SERVICE THE FOLLOWING SHALL APPLY: PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF SITE FABRICATION CIRCUMFERENTIAL OR BRANCH WELDS IS NOT REQUIRED IF WELDS ARE MULTIPASS AND IN ACCORDANCE WITH PARA 10.2.12 OF PROJECT SPECIFICATION 3550-8440-SP-0002. FOR SERVICES MEETING THE WET H2S CRITERIA AND CAUSTIC OR AMINE CRITERIA THE MORE STRINGENT PWHT REQUIREMENT SHALL GOVERN.

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
24	FULL PORT (Q)
541	NPT(F) (CA,F)
781	CLASS 600 (B,F,G)
4608	VALVE WITH NIPPLES (V)

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PIPING CLASS
B2AL04 REV NO. 2

PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P01A-00143	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	0.75		SCH160		P01A-0010R	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1		SCH160		P01A-0014M	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1.5		SCH160		P01A-0015J	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	2		XS		P01A-000YX	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P02A-00172	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	0.75		SCH160		P02A-000V8	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1		SCH160		P02A-000V7	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1.5		SCH160		P02A-000V9	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	2		XS		P02A-000CP	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P03A-0012Y	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	0.75		SCH160		P03A-000RS	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1		SCH160		P03A-000RR	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1.5		SCH160		P03A-000RP	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	2		XS		P03A-000AS	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P21A-002M0	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	0.75		SCH160		P21A-002B8	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1		SCH160		P21A-002B6	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5		SCH160		P21A-002B9	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2		XS		P21A-001CJ	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75	SCH160	SCH160	P24A-004B6	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.75	SCH160	SCH160	P24A-004B2	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	1	SCH160	SCH160	P24A-004BA	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	XS	SCH160	P24A-00GMB	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	XS	SCH160	P24A-005K9	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	XXS	P27A-003ZL	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.5	SCH160	XXS	P27A-003ZM	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.75	SCH160	SCH160	P27A-002T5	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.5	SCH160	XXS	P27A-003ZN	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.75	SCH160	SCH160	P27A-002T7	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	1	SCH160	SCH160	P27A-002T4	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	0.75	XS	SCH160	P27A-001LG	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	XS	SCH160	P27A-0033P	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	XS	SCH160	P27A-0033B	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	XXS	P28A-003ZE	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.5	SCH160	XXS	P28A-003ZF	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.75	SCH160	SCH160	P28A-002TU	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.5	SCH160	XXS	P28A-003ZG	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.75	SCH160	SCH160	P28A-002TW	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	1	SCH160	SCH160	P28A-002TR	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2	0.75	XS	SCH160	P28A-001LE	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	XS	SCH160	P28A-003M1	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	XS	SCH160	P28A-003M2	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P29A-0013Z	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	0.75		SCH160		P29A-000TX	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1		SCH160		P29A-000TY	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5		SCH160		P29A-000TZ	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2		XS		P29A-000A1	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
541	0.75				P29B-0000Y	Cap ASTM A105 Class 6000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P41A-000B9	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		XXS		P41A-000BA	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		XXS		P41A-000D8	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		XXS		P41A-000D9	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2	0.75	XS	SCH160	P31B-00CP7	Outlet ASTM A105 MSS SP-97 BW	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30B-0002D	Plug ASTM A105 ASME B16.11 NPT Round head	
1	0.75				P30B-0002E	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1				P30B-0002F	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1.5				P30B-0002G	Plug ASTM A105 ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P61B-003LW	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	0.75		SCH160		P61B-0037M	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	1		SCH160		P61B-0037L	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	1.5		SCH160		P61B-0037J	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	2		XS		P61B-001HW	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
541	0.5				P61B-003U3	Flange NPT ASTM A105 Class 300 ASME B16.5 RF	
541	0.75				P61B-003U4	Flange NPT ASTM A105 Class 300 ASME B16.5 RF	
781	0.5		XXS		P61B-003T1	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	0.75		SCH160		P61B-003T2	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	1		SCH160		P61B-003T3	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	1.5		SCH160		P61B-003T4	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	2		XS		P61B-001DH	Flange WN ASTM A105 Class 600 ASME B16.5 RF	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67B-000GH	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	0.75				P67B-000GJ	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	1				P67B-000GK	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	1.5				P67B-000GL	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	2				P67B-000GM	Blind flange ASTM A105 Class 300 ASME B16.5 RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000FT	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

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GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75				P73T-000FU	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	0.5				P73T-000J8	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	0.75				P73T-000J9	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1				P73T-000JA	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1.5				P73T-000JB	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	2				P73T-000JH	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-2				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
781	0.5-2				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81B-001ND	Gate valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Amine service	
1	0.75				P81B-001NA	Gate valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Amine service	
1	1				P81B-001NB	Gate valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Amine service	
1	1.5				P81B-001NC	Gate valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Amine service	
1	2				P81C-00310	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Amine service	
4608	0.75				P81B-002WU	Gate valve ASTM A105 Class 300 API 602 BW both sides w/ nipples BE - NPT ASTM A106-B XXS-nipple Trim number 12 BB-BG-OS&Y Handwheel operated Amine service	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82B-001CT	Globe valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Amine service	
1	0.75				P82B-001CP	Globe valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Amine service	
1	1				P82B-001CR	Globe valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Amine service	
1	1.5				P82B-001CS	Globe valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Amine service	
1	2				P82C-002P2	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Amine service	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83B-00137	Check valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Amine service	
1	0.75				P83B-00134	Check valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Amine service	
1	1				P83B-00135	Check valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Amine service	
1	1.5				P83B-00136	Check valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Amine service	
1	2				P83C-002RY	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Amine service	

BALL VALVE (Q)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P84B-001DL	Ball valve Long-pattern ASTM A105 Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design Amine service	
1	0.75				P84B-001DM	Ball valve Long-pattern ASTM A105 Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design Amine service	
1	1				P84B-001DN	Ball valve Long-pattern ASTM A105 Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design Amine service	
1	1.5				P84B-001DP	Ball valve Long-pattern ASTM A105 Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design Amine service	

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BALL VALVE (Q)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2				P84C-006LN	Ball valve Long-pattern ASTM A216 Grade WCB Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design Amine service	
24	0.5				P84B-001DR	Ball valve Long-pattern ASTM A105 Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design Amine service	
24	0.75				P84B-001DS	Ball valve Long-pattern ASTM A105 Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design Amine service	
24	1				P84B-001DT	Ball valve Long-pattern ASTM A105 Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design Amine service	
24	1.5				P84B-001DU	Ball valve Long-pattern ASTM A105 Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design Amine service	
24	2				P84C-006LP	Ball valve Long-pattern ASTM A216 Grade WCB Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design Amine service	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71B-000B1	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	0.75				P71B-000B2	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	1				P71B-000B3	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71B-000B4	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	2				P71B-000B6	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	

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BOLT TABLE (B_B2AL04 , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-003V4		
0.75	4	0.625	75	P80S-003XC		
1	4	0.625	80	P80S-003XD		
1.5	4	0.750	95	P80S-00414		
2	8	0.625	90	P80S-003XF		

BOLT TABLE (B_B2AL04_781 , STUD ASME RF, OPTION CODE 781)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	80	P80S-003V6		
0.75	4	0.625	90	P80S-003XF		
1	4	0.625	95	P80S-003XG		
1.5	4	0.750	110	P80S-003XK		
2	8	0.625	110	P80S-003VC		

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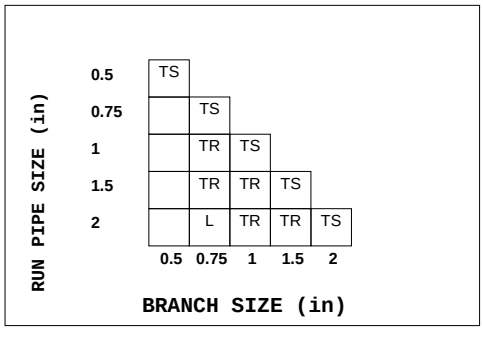
BRANCH TABLE (T_B2AL04)



TR : REDUCING TEE
TS : STRAIGHT TEE
L : OUTLET

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Material	:	Killed CS
Rating	:	ASME CLASS 300
Flange Face	:	RF
C.A.(mm)	:	3.00
Gasket	:	Spiral Wound
Service	:	PROCESS - CAUSTIC, CAUSTIC RICH MIXTURE, STRESS RELIEVED : / CAUSTIC / ALKY REFRIGERANT PURGE / PROCESS WITH CAUSTIC
Design Code	:	ASME B31.3
Heat Treatment	:	

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
2	USE OF SOFT SEATED BALL, PLUG AND BUTTERFLY VALVES SHALL BE LIMITED TO MAXIMUM OF 204DEGC (400DEGF)
9	ALL ACID AND CAUSTIC SERVICE LINE FLANGED JOINTS SHALL BE COVERED WITH SAFETY SPLASH GUARDS
27	PWHT OF CARBON STEEL PIPING IN WET H2S, CAUSTIC AND AMINE SERVICES SHALL BE IN ACCORDANCE WITH SECTION 10.2, 10.3, AND 10.4 OF PROJECT SPECIFICATION 3550-8440-SP-0002 MATERIALS REQUIREMENTS FOR PRESSURISED EQUIPMENT AND PIPING. FOR CAUSTIC AND AMINE SERVICE THE FOLLOWING SHALL APPLY: - PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF ALL SITE PIPING FABRICATION WELDS IS REQUIRED FOR ALL WALL THICKNESSES. FOR MODERATE AND SEVERE WET H2S SERVICE THE FOLLOWING SHALL APPLY: PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF SITE FABRICATION CIRCUMFERENTIAL OR BRANCH WELDS IS NOT REQUIRED IF WELDS ARE MULTIPASS AND IN ACCORDANCE WITH PARA 10.2.12 OF PROJECT SPECIFICATION 3550-8440-SP-0002. FOR SERVICES MEETING THE WET H2S CRITERIA AND CAUSTIC OR AMINE CRITERIA THE MORE STRINGENT PWHT REQUIREMENT SHALL GOVERN.

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
541	NPT(F) (CA,F)
781	CLASS 600 (B,F,G)
4608	VALVE WITH NIPPLES (V)

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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P01A-0010P	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	0.75		SCH160		P01A-0010R	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1		SCH160		P01A-0014M	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1.5		SCH160		P01A-0015J	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	2		XS		P01A-000YX	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	3		STD		P01A-000YM	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	4		STD		P01A-000YU	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	6		STD		P01A-000Z3	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P02A-001Y8	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	0.75		SCH160		P02A-000V8	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1		SCH160		P02A-000V7	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1.5		SCH160		P02A-000V9	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	2		XS		P02A-000CP	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		STD		P02A-000CU	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		STD		P02A-000CZ	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		STD		P02A-000D6	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P03A-001TC	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	0.75		SCH160		P03A-000RS	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1		SCH160		P03A-000RR	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1.5		SCH160		P03A-000RP	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	2		XS		P03A-000AS	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		STD		P03A-000AX	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		STD		P03A-000B1	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		STD		P03A-000B9	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P21A-003AW	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	0.75		SCH160		P21A-002B8	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1		SCH160		P21A-002B6	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5		SCH160		P21A-002B9	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2		XS		P21A-001CJ	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		STD		P21A-001CU	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		STD		P21A-001CW	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6		STD		P21A-001D2	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75	SCH160	SCH160	P24A-004B6	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.75	SCH160	SCH160	P24A-004B2	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	1	SCH160	SCH160	P24A-004BA	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	XS	SCH160	P24A-00GMB	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	XS	SCH160	P24A-005K9	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	STD	SCH160	P24A-00GMC	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	STD	XS	P24A-002HW	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P24A-002HY	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P24A-0021K	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	STD	P24A-0021A	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P24A-00229	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	SCH160	P27A-004LZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.5	SCH160	SCH160	P27A-004M8	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.75	SCH160	SCH160	P27A-002T5	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.5	SCH160	SCH160	P27A-004MV	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.75	SCH160	SCH160	P27A-002T7	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	1	SCH160	SCH160	P27A-002T4	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	0.75	XS	SCH160	P27A-001LG	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	XS	SCH160	P27A-0033P	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	XS	SCH160	P27A-0033B	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	STD	SCH160	P27A-003M9	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	STD	XS	P27A-001MZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	1.5	STD	SCH160	P27A-003MA	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P27A-001N0	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P27A-00189	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	STD	P27A-001AZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P27A-001GW	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	SCH160	P28A-007KG	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.5	SCH160	SCH160	P28A-007KH	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.75	SCH160	SCH160	P28A-002TU	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.5	SCH160	SCH160	P28A-007KJ	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.75	SCH160	SCH160	P28A-002TW	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	1	SCH160	SCH160	P28A-002TR	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	0.75	XS	SCH160	P28A-001LE	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	XS	SCH160	P28A-003M1	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	XS	SCH160	P28A-003M2	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	STD	SCH160	P28A-003M3	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	STD	XS	P28A-001N5	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	1.5	STD	SCH160	P28A-003M4	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P28A-001N6	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P28A-0018B	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	STD	P28A-001AS	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P28A-00182	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P29A-001UD	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	0.75		SCH160		P29A-000TX	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1		SCH160		P29A-000TY	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5		SCH160		P29A-000TZ	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2		XS		P29A-000A1	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		STD		P29A-000BK	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		STD		P29A-000A3	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6		STD		P29A-000A9	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
541	0.75				P29B-0000Y	Cap ASTM A105 Class 6000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P41A-000B9	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		XXS		P41A-000BA	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		XXS		P41A-000D8	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		XXS		P41A-000D9	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2	0.75	XS	SCH160	P31B-00CP7	Outlet ASTM A105 MSS SP-97 BW	

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OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	0.75	STD	SCH160	P31B-00CMT	Outlet ASTM A105 MSS SP-97 BW	
1	4	0.75	STD	SCH160	P31B-00CLT	Outlet ASTM A105 MSS SP-97 BW	
1	6	0.75	STD	SCH160	P31B-00CKK	Outlet ASTM A105 MSS SP-97 BW	
1	3	1	STD	SCH160	P31B-00B4J	Outlet ASTM A105 MSS SP-97 BW	
1	4	1	STD	SCH160	P31B-00B3M	Outlet ASTM A105 MSS SP-97 BW	
1	6	1	STD	SCH160	P31B-00AZC	Outlet ASTM A105 MSS SP-97 BW	
1	4	1.5	STD	SCH160	P31B-00BP4	Outlet ASTM A105 MSS SP-97 BW	
1	6	1.5	STD	SCH160	P31B-00BJH	Outlet ASTM A105 MSS SP-97 BW	
1	6	2	STD	XS	P31B-007SH	Outlet ASTM A105 MSS SP-97 BW	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30B-0002D	Plug ASTM A105 ASME B16.11 NPT Round head	
1	0.75				P30B-0002E	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1				P30B-0002F	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1.5				P30B-0002G	Plug ASTM A105 ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P61B-003P9	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	0.75		SCH160		P61B-0037M	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	1		SCH160		P61B-0037L	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	1.5		SCH160		P61B-0037J	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	2		XS		P61B-001HW	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	3		STD		P61B-001LJ	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	4		STD		P61B-001MC	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	6		STD		P61B-001N2	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
541	0.5				P61B-003U3	Flange NPT ASTM A105 Class 300 ASME B16.5 RF	
541	0.75				P61B-003U4	Flange NPT ASTM A105 Class 300 ASME B16.5 RF	
781	0.5		SCH160		P61B-004UV	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	0.75		SCH160		P61B-003T2	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	1		SCH160		P61B-003T3	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	1.5		SCH160		P61B-003T4	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	2		XS		P61B-001DH	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	3		STD		P61B-001TW	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	4		STD		P61B-001VV	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	6		STD		P61B-001JW	Flange WN ASTM A105 Class 600 ASME B16.5 RF	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67B-000GH	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	0.75				P67B-000GJ	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	1				P67B-000GK	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	1.5				P67B-000GL	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	2				P67B-000GM	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	3				P67B-000GN	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	4				P67B-000GP	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	6				P67B-000GY	Blind flange ASTM A105 Class 300 ASME B16.5 RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000FT	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000FU	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

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GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3				P73T-000G5	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000G6	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	6				P73T-000G7	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	0.5				P73T-000J8	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	0.75				P73T-000J9	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1				P73T-000JA	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1.5				P73T-000JB	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	2				P73T-000JH	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	3				P73T-000JL	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	4				P73T-000JM	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	6				P73T-000JN	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-6				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
781	0.5-6				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81B-001NE	Gate valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 9 BB-BG-OS&Y Handwheel operated Caustic service	
1	0.75				P81B-001NF	Gate valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 9 BB-BG-OS&Y Handwheel operated Caustic service	
1	1				P81B-001NG	Gate valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 9 BB-BG-OS&Y Handwheel operated Caustic service	
1	1.5				P81B-001NH	Gate valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 9 BB-BG-OS&Y Handwheel operated Caustic service	
1	2				P81C-005ER	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 9 BB-BG-OS&Y Handwheel operated Caustic service	
1	3				P81C-005ES	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 9 BB-BG-OS&Y Handwheel operated Caustic service	
1	4				P81C-005ET	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 9 BB-BG-OS&Y Handwheel operated Caustic service	
1	6				P81C-005EU	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 9 BB-BG-OS&Y Handwheel operated Caustic service	
4608	0.75				P81B-002WV	Gate valve ASTM A105 Class 300 API 602 BW both sides w/ nipples BE - NPT ASTM A106-B XXS-nipple Trim number 9 BB-BG-OS&Y Handwheel operated Caustic service	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82B-001CU	Globe valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 9 BB-BG-OS&Y Handwheel operated Caustic service	
1	0.75				P82B-001CV	Globe valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 9 BB-BG-OS&Y Handwheel operated Caustic service	
1	1				P82B-001CW	Globe valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 9 BB-BG-OS&Y Handwheel operated Caustic service	
1	1.5				P82B-001CX	Globe valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 9 BB-BG-OS&Y Handwheel operated Caustic service	
1	2				P82C-002P8	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim number 9 BB-BG-OS&Y Handwheel operated Caustic service	
1	3				P82C-002R6	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim number 9 BB-BG-OS&Y Handwheel operated Caustic service	
1	4				P82C-002R7	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim number 9 BB-BG-OS&Y Handwheel operated Caustic service	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83B-00138	Check valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 9 Lift-type Bolted cover Caustic service	
1	0.75				P83B-00139	Check valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 9 Lift-type Bolted cover Caustic service	
1	1				P83B-0013A	Check valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 9 Lift-type Bolted cover Caustic service	
1	1.5				P83B-0013B	Check valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 9 Lift-type Bolted cover Caustic service	
1	2				P83C-002S8	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 9 Swing-type Bolted cover Caustic service	

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CHECK VALVE (X)							
OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3				P83C-002S9	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 9 Swing-type Bolted cover Caustic service	
1	4				P83C-002SA	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 9 Swing-type Bolted cover Caustic service	
1	6				P83C-002SB	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 9 Swing-type Bolted cover Caustic service	

SPECT BLANK (SB)							
OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71B-000B1	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	0.75				P71B-000B2	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	1				P71B-000B3	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71B-000B4	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	2				P71B-000B6	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	3				P71B-000B7	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	4				P71B-000B8	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	6				P71B-000B9	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	

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BOLT TABLE (B_B2AN , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-003V4		
0.75	4	0.625	75	P80S-003XC		
1	4	0.625	80	P80S-003XD		
1.5	4	0.750	95	P80S-00414		
2	8	0.625	90	P80S-003XF		
3	8	0.750	110	P80S-003XK		
4	8	0.750	115	P80S-003XL		
6	12	0.750	125	P80S-003XN		

BOLT TABLE (B_B2AN_781 , STUD ASME RF, OPTION CODE 781)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	80	P80S-003V6		
0.75	4	0.625	90	P80S-003XF		
1	4	0.625	95	P80S-003XG		
1.5	4	0.750	110	P80S-003XK		
2	8	0.625	110	P80S-003VC		
3	8	0.750	130	P80S-003XP		
4	8	0.875	150	P80S-0041F		
6	12	1.000	175	P80S-0043P		

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PIPING CLASS

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REV NO. 2

BRANCH TABLE (T_B2AN)

RUN PIPE SIZE (in) \ BRANCH SIZE (in)	0.5	0.75	1	1.5	2	3	4	6
0.5	TS							
0.75		TS						
1		TR	TS					
1.5		TR	TR	TS				
2		L	TR	TR	TS			
3		L	L	TR	TR	TS		
4	L	L	L	L	TR	TR	TS	
6	L	L	L	L	L	TR	TR	TS

TS : STRAIGHT TEE
L : OUTLET
TR : REDUCING TEE

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Material : Killed CS
Rating : ASME CLASS 300
Flange Face : RF
C.A.(mm) : 3.00
Gasket : Spiral Wound
Service : CAUSTIC SERVICE
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
2	USE OF SOFT SEATED BALL, PLUG AND BUTTERFLY VALVES SHALL BE LIMITED TO MAXIMUM OF 204DEGC (400DEGF)
9	ALL ACID AND CAUSTIC SERVICE LINE FLANGED JOINTS SHALL BE COVERED WITH SAFETY SPLASH GUARDS
27	PWHT OF CARBON STEEL PIPING IN WET H2S, CAUSTIC AND AMINE SERVICES SHALL BE IN ACCORDANCE WITH SECTION 10.2, 10.3, AND 10.4 OF PROJECT SPECIFICATION 3550-8440-SP-0002 MATERIALS REQUIREMENTS FOR PRESSURISED EQUIPMENT AND PIPING. FOR CAUSTIC AND AMINE SERVICE THE FOLLOWING SHALL APPLY: - PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF ALL SITE PIPING FABRICATION WELDS IS REQUIRED FOR ALL WALL THICKNESSES. FOR MODERATE AND SEVERE WET H2S SERVICE THE FOLLOWING SHALL APPLY: PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF SITE FABRICATION CIRCUMFERENTIAL OR BRANCH WELDS IS NOT REQUIRED IF WELDS ARE MULTIPASS AND IN ACCORDANCE WITH PARA 10.2.12 OF PROJECT SPECIFICATION 3550-8440-SP-0002. FOR SERVICES MEETING THE WET H2S CRITERIA AND CAUSTIC OR AMINE CRITERIA THE MORE STRINGENT PWHT REQUIREMENT SHALL GOVERN.

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
200	WITH JACK SCREW (FO)
541	NPT(F) (CA,F)
781	CLASS 600 (B,F,G)
4608	VALVE WITH NIPPLES (V)

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PIPING CLASS
B2AN04 REV NO. 2

PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P01A-00143	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	0.75		SCH160		P01A-0010R	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1		SCH160		P01A-0014M	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1.5		SCH160		P01A-0015J	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	2		XS		P01A-000YX	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	3		XS		P01A-000Z4	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	4		STD		P01A-000YU	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	6		STD		P01A-000Z3	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	8		STD		P01A-000ZA	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	10		STD		P01A-000XJ	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	12		SCH40		P01A-0018V	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P02A-00172	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	0.75		SCH160		P02A-000V8	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1		SCH160		P02A-000V7	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1.5		SCH160		P02A-000V9	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	2		XS		P02A-000CP	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		XS		P02A-000CX	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		STD		P02A-000CZ	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		STD		P02A-000D6	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		STD		P02A-000DC	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	10		STD		P02A-000BP	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	12		SCH40		P02A-000JE	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P03A-0012Y	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	0.75		SCH160		P03A-000RS	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1		SCH160		P03A-000RR	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1.5		SCH160		P03A-000RP	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	2		XS		P03A-000AS	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		XS		P03A-000AZ	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		STD		P03A-000B1	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		STD		P03A-000B9	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		STD		P03A-000BB	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	10		STD		P03A-000A4	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	12		SCH40		P03A-000GC	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P21A-002M0	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	0.75		SCH160		P21A-002B8	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1		SCH160		P21A-002B6	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5		SCH160		P21A-002B9	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2		XS		P21A-001CJ	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		XS		P21A-001CR	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		STD		P21A-001CW	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6		STD		P21A-001D2	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8		STD		P21A-001D8	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10		STD		P21A-001BV	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12		SCH40		P21A-0022P	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75	SCH160	SCH160	P24A-004B6	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.75	SCH160	SCH160	P24A-004B2	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5	1	SCH160	SCH160	P24A-004BA	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	XS	SCH160	P24A-00GMB	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	XS	SCH160	P24A-005K9	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	XS	SCH160	P24A-00GNV	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	XS	XS	P24A-0023S	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P24A-002HY	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	XS	P24A-00GNW	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	XS	P24A-00GTR	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P24A-00229	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	STD	STD	P24A-0021E	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	STD	STD	P24A-0022M	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	STD	STD	P24A-0021B	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	STD	STD	P24A-0022B	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	STD	STD	P24A-0022W	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	SCH40	STD	P24A-00GSM	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH40	STD	P24A-00AF8	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH40	STD	P24A-00GSL	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	XXS	P27A-003ZL	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.5	SCH160	XXS	P27A-003ZM	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.75	SCH160	SCH160	P27A-002T5	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.5	SCH160	XXS	P27A-003ZN	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.75	SCH160	SCH160	P27A-002T7	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	1	SCH160	SCH160	P27A-002T4	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	0.75	XS	SCH160	P27A-001LG	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	XS	SCH160	P27A-0033P	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	XS	SCH160	P27A-0033B	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	XS	SCH160	P27A-003N1	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	XS	XS	P27A-001E5	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	1.5	STD	SCH160	P27A-003MA	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P27A-001N0	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	XS	P27A-0074W	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	XS	P27A-007P6	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P27A-001GW	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	STD	STD	P27A-001C2	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	STD	STD	P27A-00188	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	STD	STD	P27A-001C3	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	STD	STD	P27A-0018M	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	STD	STD	P27A-0019J	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	SCH40	STD	P27A-004W1	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH40	STD	P27A-004XB	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH40	STD	P27A-004UG	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	XXS	P28A-003ZE	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.5	SCH160	XXS	P28A-003ZF	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.75	SCH160	SCH160	P28A-002TU	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.5	SCH160	XXS	P28A-003ZG	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.75	SCH160	SCH160	P28A-002TW	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	1	SCH160	SCH160	P28A-002TR	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	0.75	XS	SCH160	P28A-001LE	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	XS	SCH160	P28A-003M1	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	XS	SCH160	P28A-003M2	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	XS	SCH160	P28A-003MV	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	XS	XS	P28A-001EH	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	1.5	STD	SCH160	P28A-003M4	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	4	2	STD	XS	P28A-001N6	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	XS	P28A-008F7	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	XS	P28A-008K1	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P28A-00182	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	STD	STD	P28A-0017V	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	STD	STD	P28A-0018V	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	STD	STD	P28A-0017W	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	STD	STD	P28A-00190	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	STD	STD	P28A-0019J	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	SCH40	STD	P28A-008HU	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH40	STD	P28A-005T9	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH40	STD	P28A-008HT	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P29A-0013Z	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	0.75		SCH160		P29A-000TX	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1		SCH160		P29A-000TY	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5		SCH160		P29A-000TZ	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2		XS		P29A-000A1	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		XS		P29A-000AT	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		STD		P29A-000A3	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6		STD		P29A-000A9	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8		STD		P29A-000AF	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10		STD		P29A-0009Z	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12		SCH40		P29A-000GB	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
541	0.75				P29B-0000Y	Cap ASTM A105 Class 6000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P41A-000B9	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		XXS		P41A-000BA	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		XXS		P41A-000D8	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		XXS		P41A-000D9	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2	0.75	XS	SCH160	P31B-00CP7	Outlet ASTM A105 MSS SP-97 BW	
1	3	0.75	XS	SCH160	P31B-00CMS	Outlet ASTM A105 MSS SP-97 BW	
1	4	0.75	STD	SCH160	P31B-00CLT	Outlet ASTM A105 MSS SP-97 BW	
1	6	0.75	STD	SCH160	P31B-00CKK	Outlet ASTM A105 MSS SP-97 BW	
1	8	0.75	STD	SCH160	P31B-00C5E	Outlet ASTM A105 MSS SP-97 BW	
1	10	0.75	STD	SCH160	P31B-00CFB	Outlet ASTM A105 MSS SP-97 BW	
1	12	0.75	SCH40	SCH160	P31B-00CS8	Outlet ASTM A105 MSS SP-97 BW	
1	3	1	XS	SCH160	P31B-00B4H	Outlet ASTM A105 MSS SP-97 BW	
1	4	1	STD	SCH160	P31B-00B3M	Outlet ASTM A105 MSS SP-97 BW	
1	6	1	STD	SCH160	P31B-00AZC	Outlet ASTM A105 MSS SP-97 BW	
1	8	1	STD	SCH160	P31B-00AVF	Outlet ASTM A105 MSS SP-97 BW	
1	10	1	STD	SCH160	P31B-00C06	Outlet ASTM A105 MSS SP-97 BW	
1	12	1	SCH40	SCH160	P31B-00BWL	Outlet ASTM A105 MSS SP-97 BW	
1	4	1.5	STD	SCH160	P31B-00BP4	Outlet ASTM A105 MSS SP-97 BW	
1	6	1.5	STD	SCH160	P31B-00BJH	Outlet ASTM A105 MSS SP-97 BW	
1	8	1.5	STD	SCH160	P31B-00BHJ	Outlet ASTM A105 MSS SP-97 BW	
1	10	1.5	STD	SCH160	P31B-00AUM	Outlet ASTM A105 MSS SP-97 BW	
1	12	1.5	SCH40	SCH160	P31B-00CEH	Outlet ASTM A105 MSS SP-97 BW	
1	6	2	STD	XS	P31B-007SH	Outlet ASTM A105 MSS SP-97 BW	
1	8	2	STD	XS	P31B-00AGX	Outlet ASTM A105 MSS SP-97 BW	
1	10	2	STD	XS	P31B-00ASA	Outlet ASTM A105 MSS SP-97 BW	
1	12	2	SCH40	XS	P31B-00CBS	Outlet ASTM A105 MSS SP-97 BW	

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OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	8	3	STD	XS	P31B-009Y0	Outlet ASTM A105 MSS SP-97 BW	
1	10	3	STD	XS	P31B-009CG	Outlet ASTM A105 MSS SP-97 BW	
1	12	3	SCH40	XS	P31B-0096J	Outlet ASTM A105 MSS SP-97 BW	
1	12	4	SCH40	STD	P31B-008ZY	Outlet ASTM A105 MSS SP-97 BW	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30B-0002D	Plug ASTM A105 ASME B16.11 NPT Round head	
1	0.75				P30B-0002E	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1				P30B-0002F	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1.5				P30B-0002G	Plug ASTM A105 ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P61B-003LW	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	0.75		SCH160		P61B-0037M	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	1		SCH160		P61B-0037L	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	1.5		SCH160		P61B-0037J	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	2		XS		P61B-001HW	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	3		XS		P61B-001DK	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	4		STD		P61B-001MC	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	6		STD		P61B-001N2	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	8		STD		P61B-001NL	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	10		STD		P61B-001L6	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	12		SCH40		P61B-002FJ	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
541	0.5				P61B-003U3	Flange NPT ASTM A105 Class 300 ASME B16.5 RF	
541	0.75				P61B-003U4	Flange NPT ASTM A105 Class 300 ASME B16.5 RF	
781	0.5		XXS		P61B-003T1	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	0.75		SCH160		P61B-003T2	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	1		SCH160		P61B-003T3	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	1.5		SCH160		P61B-003T4	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	2		XS		P61B-001DH	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	3		XS		P61B-001M8	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	4		STD		P61B-001VV	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	6		STD		P61B-001JW	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	8		STD		P61B-001KK	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	10		STD		P61B-001JJ	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	12		SCH40		P61B-003T5	Flange WN ASTM A105 Class 600 ASME B16.5 RF	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67B-000GH	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	0.75				P67B-000GJ	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	1				P67B-000GK	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	1.5				P67B-000GL	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	2				P67B-000GM	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	3				P67B-000GN	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	4				P67B-000GP	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	6				P67B-000GY	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	8				P67B-000GZ	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	10				P67B-000GR	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	12				P67B-000GS	Blind flange ASTM A105 Class 300 ASME B16.5 RF	

REDUCING FLANGE (FR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5		XXS	P62B-000DC	Reducing flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	1	0.5		XXS	P62B-000NR	Reducing flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	1.5	0.75		SCH160	P62B-0007C	Reducing flange WN ASTM A105 Class 300 ASME B16.5 RF	

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REDUCING FLANGE (FR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2	0.75		SCH160	P62B-000NG	Reducing flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	2	1		SCH160	P62B-0007D	Reducing flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	2	1.5		SCH160	P62B-000MG	Reducing flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	3	1.5		SCH160	P62B-000MH	Reducing flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	3	2		XS	P62B-000MD	Reducing flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	4	2		XS	P62B-000AZ	Reducing flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	4	3		XS	P62B-00076	Reducing flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	6	3		XS	P62B-000N3	Reducing flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	6	4		STD	P62B-000MF	Reducing flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	8	6		STD	P62B-000K9	Reducing flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	10	4		STD	P62B-000KA	Reducing flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	10	8		STD	P62B-00079	Reducing flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	12	6		STD	P62B-000KB	Reducing flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	12	10		STD	P62B-000KN	Reducing flange WN ASTM A105 Class 300 ASME B16.5 RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000FT	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000FU	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000G5	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000G6	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	6				P73T-000G7	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	8				P73T-000G8	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	10				P73T-000FX	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	12				P73T-000FY	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	0.5				P73T-000J8	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	0.75				P73T-000J9	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1				P73T-000JA	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1.5				P73T-000JB	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	2				P73T-000JH	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	3				P73T-000JL	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	4				P73T-000JM	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	6				P73T-000JN	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	8				P73T-000JP	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	10				P73T-000JC	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	12				P73T-000JD	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-10				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	12				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
781	0.5-6				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
781	8-12				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	

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GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81B-001NE	Gate valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 9 BB-BG-OS&Y Handwheel operated Caustic service	
1	0.75				P81B-001NF	Gate valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 9 BB-BG-OS&Y Handwheel operated Caustic service	
1	1				P81B-001NG	Gate valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 9 BB-BG-OS&Y Handwheel operated Caustic service	
1	1.5				P81B-001NH	Gate valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 9 BB-BG-OS&Y Handwheel operated Caustic service	
1	2				P81C-005ER	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 9 BB-BG-OS&Y Handwheel operated Caustic service	
1	3				P81C-005ES	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 9 BB-BG-OS&Y Handwheel operated Caustic service	
1	4				P81C-005ET	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 9 BB-BG-OS&Y Handwheel operated Caustic service	
1	6				P81C-005EU	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 9 BB-BG-OS&Y Handwheel operated Caustic service	
1	8				P81C-0091T	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 9 BB-BG-OS&Y Gear operated Caustic service	
1	10				P81C-005H1	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 9 BB-BG-OS&Y Gear operated Caustic service	
1	12				P81C-005H2	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 9 BB-BG-OS&Y Gear operated Caustic service	
4608	0.75				P81B-002WV	Gate valve ASTM A105 Class 300 API 602 BW both sides w/ nipples BE - NPT ASTM A106-B XXS-nipple Trim number 9 BB-BG-OS&Y Handwheel operated Caustic service	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82B-001CU	Globe valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 9 BB-BG-OS&Y Handwheel operated Caustic service	
1	0.75				P82B-001CV	Globe valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 9 BB-BG-OS&Y Handwheel operated Caustic service	
1	1				P82B-001CW	Globe valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 9 BB-BG-OS&Y Handwheel operated Caustic service	
1	1.5				P82B-001CX	Globe valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 9 BB-BG-OS&Y Handwheel operated Caustic service	
1	2				P82C-002P8	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim number 9 BB-BG-OS&Y Handwheel operated Caustic service	
1	3				P82C-002R6	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim number 9 BB-BG-OS&Y Handwheel operated Caustic service	
1	4				P82C-002R7	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim number 9 BB-BG-OS&Y Handwheel operated Caustic service	
1	6				P82C-002R8	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim number 9 BB-BG-OS&Y Handwheel operated Caustic service	
1	8				P82C-004CY	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim number 9 BB-BG-OS&Y Gear operated Caustic service	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83B-00138	Check valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 9 Lift-type Bolted cover Caustic service	
1	0.75				P83B-00139	Check valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 9 Lift-type Bolted cover Caustic service	
1	1				P83B-0013A	Check valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 9 Lift-type Bolted cover Caustic service	
1	1.5				P83B-0013B	Check valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 9 Lift-type Bolted cover Caustic service	
1	2				P83C-002S8	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 9 Swing-type Bolted cover Caustic service	
1	3				P83C-002S9	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 9 Swing-type Bolted cover Caustic service	
1	4				P83C-002SA	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 9 Swing-type Bolted cover Caustic service	
1	6				P83C-002SB	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 9 Swing-type Bolted cover Caustic service	

NEEDLE VALVE (NV)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82B-001XN	Needle valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 9 BB-BG-OS&Y Handwheel operated Caustic service	
1	0.75				P82B-001XP	Needle valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 9 BB-BG-OS&Y Handwheel operated Caustic service	
1	1				P82B-001XR	Needle valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 9 BB-BG-OS&Y Handwheel operated Caustic service	
1	1.5				P82B-001XS	Needle valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 9 BB-BG-OS&Y Handwheel operated Caustic service	

ORIFICE FLANGE (FO)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2		XS		P66B-0084B	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	3		XS		P66B-008C1	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	

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ORIFICE FLANGE (FO)							
OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	4		STD		P66B-0084D	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
200	2		XS		P66B-00843	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	3		XS		P66B-008C3	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	4		STD		P66B-00845	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	

SPECT BLANK (SB)							
OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71B-000B1	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	0.75				P71B-000B2	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	1				P71B-000B3	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71B-000B4	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	2				P71B-000B6	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	3				P71B-000B7	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	4				P71B-000B8	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	6				P71B-000B9	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	8				P71B-000BA	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	10				P71B-000B5	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	12				P71B-000BB	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	

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BOLT TABLE (B_B2AN04 , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-003V4		
0.75	4	0.625	75	P80S-003XC		
1	4	0.625	80	P80S-003XD		
1.5	4	0.750	95	P80S-00414		
2	8	0.625	90	P80S-003XF		
3	8	0.750	110	P80S-003XK		
4	8	0.750	115	P80S-003XL		
6	12	0.750	125	P80S-003XN		
8	12	0.875	140	P80S-0041D		
10	16	1.000	160	P80S-0043K		
12	16	1.125	175	P80S-0046S		

BOLT TABLE (B_B2AN04_781 , STUD ASME RF, OPTION CODE 781)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	80	P80S-003V6		
0.75	4	0.625	90	P80S-003XF		
1	4	0.625	95	P80S-003XG		
1.5	4	0.750	110	P80S-003XK		
2	8	0.625	110	P80S-003VC		
3	8	0.750	130	P80S-003XP		
4	8	0.875	150	P80S-0041F		
6	12	1.000	175	P80S-0043P		
8	12	1.125	195	P80S-0046W		
10	16	1.250	250	P80S-004AY		
12	20	1.250	255	P80S-004AZ		

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BRANCH TABLE (T_B2AN04)

RUN PIPE SIZE (in) \ BRANCH SIZE (in)	0.5	0.75	1	1.5	2	3	4	6	8	10	12
0.5	TS										
0.75		TS									
1		TR	TS								
1.5		TR	TR	TS							
2		L	TR	TR	TS						
3		L	L	TR	TR	TS					
4	L	L	L	L	TR	TR	TS				
6	L	L	L	L	L	TR	TR	TS			
8		L	L	L	L	L	TR	TR	TS		
10		L	L	L	L	L	TR	TR	TR	TS	
12		L	L	L	L	L	L	TR	TR	TR	TS

L : OUTLET
TS : STRAIGHT TEE
TR : REDUCING TEE

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PIPING CLASS

B2AP

REV NO. 2

Material	:	Killed CS
Rating	:	ASME CLASS 300
Flange Face	:	RF
C.A.(mm)	:	3.00
Gasket	:	Spiral Wound
Service	:	PROCESS - NON SOUR : / DESALTER WATER / FLASHED CRUDE / CRUDE OIL / LAGO / HAGO / KEROSENE PRODUCT / KEROSENE PUMP AROUND / DIESEL / STRIPPED WATER / HYDROTREATED RESIDUE / DIESEL PRODUCT / DEETHANISER / DEBUTANISER / NAPHTHA / and other various services
Design Code	:	ASME B31.3
Heat Treatment	:	

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
2	USE OF SOFT SEATED BALL, PLUG AND BUTTERFLY VALVES SHALL BE LIMITED TO MAXIMUM OF 204DEGC (400DEGF)

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
200	WITH JACK SCREW (FO)
541	NPT(F) (CA,L)
714	SW - NPT(F) (V)
781	CLASS 600 (B,F,G)
4203	SOCKOLET ON CAP (CAP=NPS3) (LC)
4602	DISSIMILAR TYPE CHECK VALVE (XDP)

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PIPING CLASS
B2AP REV NO. 2

PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P01A-0010P	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	0.75		SCH160		P01A-0010R	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1		SCH160		P01A-0014M	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1.5		SCH160		P01A-0015J	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	2		XS		P01A-000YX	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	3		STD		P01A-000YM	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	4		STD		P01A-000YU	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	6		STD		P01A-000Z3	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	8		STD		P01A-000ZA	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	10		STD		P01A-000XJ	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	12		SCH40		P01A-0018V	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	14		SCH40		P01A-0018U	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	16		XS		P01A-000YS	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	18		SCH30		P01A-00433	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE	
1	20		XS		P01A-00445	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE	
1	24		XS		P01A-0043X	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE	
1	30		SCH30		P01A-00446	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE	
1	36		SCH30		P01A-007HE	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE	
1	42		14.27mm		P01A-008MY	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE	
1	48		14.27mm		P01A-007HF	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P02B-0001J	90 degree elbow ASTM A105 Class 6000 ASME B16.11 SW	
1	0.75				P02B-0001K	90 degree elbow ASTM A105 Class 6000 ASME B16.11 SW	
1	1				P02B-0002E	90 degree elbow ASTM A105 Class 6000 ASME B16.11 SW	
1	1.5				P02B-0002F	90 degree elbow ASTM A105 Class 6000 ASME B16.11 SW	
1	2		XS		P02A-000CP	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		STD		P02A-000CU	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		STD		P02A-000CZ	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		STD		P02A-000D6	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		STD		P02A-000DC	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	10		STD		P02A-000BP	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	12		SCH40		P02A-000JE	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	14		SCH40		P02A-000JF	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	16		XS		P02A-000CE	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	18		SCH30		P02A-002G3	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	20		XS		P02A-001JX	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	24		XS		P02A-000MB	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	30		SCH30		P02A-000FM	90 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius	
1	36		SCH30		P02A-002LE	90 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius	
1	42		14.27mm		P02A-0014P	90 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius	
1	48		14.27mm		P02A-000GS	90 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P03B-0001F	45 degree elbow ASTM A105 Class 6000 ASME B16.11 SW	
1	0.75				P03B-0001G	45 degree elbow ASTM A105 Class 6000 ASME B16.11 SW	
1	1				P03B-0002A	45 degree elbow ASTM A105 Class 6000 ASME B16.11 SW	
1	1.5				P03B-0002B	45 degree elbow ASTM A105 Class 6000 ASME B16.11 SW	
1	2		XS		P03A-000AS	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		STD		P03A-000AX	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		STD		P03A-000B1	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		STD		P03A-000B9	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		STD		P03A-000BB	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	10		STD		P03A-000A4	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	12		SCH40		P03A-000GC	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	14		SCH40		P03A-000GD	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	16		XS		P03A-000AP	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

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45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	18		SCH30		P03A-002DJ	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	20		XS		P03A-001E0	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	24		XS		P03A-001E1	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	30		SCH30		P03A-000DM	45 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius	
1	36		SCH30		P03A-002J1	45 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius	
1	42		14.27mm		P03A-0010W	45 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius	
1	48		14.27mm		P03A-000LV	45 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P21B-0001F	Straight tee ASTM A105 Class 6000 ASME B16.11 SW	
1	0.75				P21B-0001G	Straight tee ASTM A105 Class 6000 ASME B16.11 SW	
1	1				P21B-00026	Straight tee ASTM A105 Class 6000 ASME B16.11 SW	
1	1.5				P21B-00027	Straight tee ASTM A105 Class 6000 ASME B16.11 SW	
1	2		XS		P21A-001CJ	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		STD		P21A-001CU	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		STD		P21A-001CW	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6		STD		P21A-001D2	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8		STD		P21A-001D8	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10		STD		P21A-001BV	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12		SCH40		P21A-0022P	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14		SCH40		P21A-0022R	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16		XS		P21A-001CG	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18		SCH30		P21A-001PK	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20		XS		P21A-001T4	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24		XS		P21A-001UM	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30		SCH30		P21A-001Y9	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	36		SCH30		P21A-001G2	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	42		14.27mm		P21A-001JD	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	48		14.27mm		P21A-001MU	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75			P24B-00030	Reducing tee ASTM A105 Class 6000 ASME B16.11 SW	
1	1.5	0.75			P24B-00032	Reducing tee ASTM A105 Class 6000 ASME B16.11 SW	
1	1.5	1			P24B-0004J	Reducing tee ASTM A105 Class 6000 ASME B16.11 SW	
1	2	1	XS	SCH160	P24A-00GMB	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	XS	SCH160	P24A-005K9	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	STD	SCH160	P24A-00GMC	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	STD	XS	P24A-002HW	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P24A-002HY	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P24A-0021K	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	STD	P24A-0021A	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P24A-00229	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	STD	STD	P24A-0021E	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	STD	STD	P24A-0022M	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	STD	STD	P24A-0021B	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	STD	STD	P24A-0022B	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	STD	STD	P24A-0022W	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	SCH40	STD	P24A-00GSM	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH40	STD	P24A-00AF8	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH40	STD	P24A-00GSL	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	SCH40	STD	P24A-00GV4	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	SCH40	STD	P24A-00AFB	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	SCH40	STD	P24A-003GJ	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	SCH40	SCH40	P24A-0033E	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	6	XS	STD	P24A-002NZ	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	XS	STD	P24A-002PY	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	XS	STD	P24A-002T3	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	16	12	XS	SCH40	P24A-00445	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	XS	SCH40	P24A-0044A	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	8	SCH30	STD	P24A-00L6B	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	10	SCH30	STD	P24A-00BFB	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	12	SCH30	SCH40	P24A-00AK1	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	14	SCH30	SCH40	P24A-00G9V	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	16	SCH30	XS	P24A-00BLK	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	8	XS	STD	P24A-00C1T	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	10	XS	STD	P24A-00BTC	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	12	XS	SCH40	P24A-00BUV	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	14	XS	SCH40	P24A-00BWF	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	16	XS	XS	P24A-00BY8	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	18	XS	SCH30	P24A-00BZA	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	10	XS	STD	P24A-003H3	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	12	XS	SCH40	P24A-0047W	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	14	XS	SCH40	P24A-003XK	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	16	XS	XS	P24A-0047P	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	18	XS	SCH30	P24A-00CBS	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	20	XS	XS	P24A-00CD6	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	10	SCH30	STD	P24A-00GVX	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	12	SCH30	SCH40	P24A-00L5S	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	14	SCH30	SCH40	P24A-00L5T	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	16	SCH30	XS	P24A-004ZP	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	18	SCH30	SCH30	P24A-00D4C	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	20	SCH30	XS	P24A-00D6E	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	24	SCH30	XS	P24A-00D8H	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	36	16	SCH30	XS	P24A-00PY6	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	36	18	SCH30	SCH30	P24A-00DSJ	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	36	20	SCH30	XS	P24A-00L3V	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	36	24	SCH30	XS	P24A-00DVR	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	36	30	SCH30	SCH30	P24A-00DYT	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	42	16	14.27mm	XS	P24A-00PY7	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	42	18	14.27mm	SCH30	P24A-00NVX	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	42	20	14.27mm	XS	P24A-00NVY	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	42	24	14.27mm	XS	P24A-00EHB	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	42	30	14.27mm	SCH30	P24A-00NVZ	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	42	36	14.27mm	SCH30	P24A-00NW0	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	48	24	14.27mm	XS	P24A-00F0J	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	48	30	14.27mm	SCH30	P24A-00L6D	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	48	36	14.27mm	SCH30	P24A-00L6E	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	48	42	14.27mm	14.27mm	P24A-00F59	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	STD	XS	P27A-001MZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P27A-001N0	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P27A-00189	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	STD	P27A-001AZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P27A-001GW	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	STD	STD	P27A-001C2	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	STD	STD	P27A-00188	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	STD	STD	P27A-001C3	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	STD	STD	P27A-0018M	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	STD	STD	P27A-0019J	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	SCH40	STD	P27A-004W1	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH40	STD	P27A-004XB	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH40	STD	P27A-004UG	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	SCH40	STD	P27A-0051B	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	SCH40	STD	P27A-003ZT	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14	10	SCH40	STD	P27A-0029L	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	SCH40	SCH40	P27A-001ZZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	XS	STD	P27A-001SN	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	XS	STD	P27A-001PA	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	XS	SCH40	P27A-002KU	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	XS	SCH40	P27A-002KZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	10	SCH30	STD	P27A-00FCP	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	12	SCH30	SCH40	P27A-00B6V	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	14	SCH30	SCH40	P27A-00B80	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	16	SCH30	XS	P27A-00BGK	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	12	XS	SCH40	P27A-00FCR	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	14	XS	SCH40	P27A-00FCS	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	16	XS	XS	P27A-00BJS	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	18	XS	SCH30	P27A-00FCU	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	16	XS	XS	P27A-002KP	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	18	XS	SCH30	P27A-00C9D	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	20	XS	XS	P27A-00CKX	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	20	SCH30	XS	P27A-00BJV	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	24	SCH30	XS	P27A-00CNK	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	36	24	SCH30	XS	P27A-00BSE	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	36	30	SCH30	SCH30	P27A-00FDP	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	42	30	14.27mm	SCH30	P27A-00HBX	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	42	36	14.27mm	SCH30	P27A-00HBY	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	48	42	14.27mm	14.27mm	P27A-00D64	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	STD	XS	P28A-001N5	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P28A-001N6	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P28A-0018B	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	STD	P28A-001AS	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P28A-00182	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	STD	STD	P28A-0017V	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	STD	STD	P28A-0018V	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	STD	STD	P28A-0017W	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	STD	STD	P28A-00190	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	STD	STD	P28A-0019J	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	SCH40	STD	P28A-008HU	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH40	STD	P28A-005T9	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH40	STD	P28A-008HT	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	SCH40	STD	P28A-008F4	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	SCH40	STD	P28A-003ZL	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	SCH40	STD	P28A-0028T	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	SCH40	SCH40	P28A-001ZG	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	XS	STD	P28A-001NK	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	XS	STD	P28A-001P7	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	XS	SCH40	P28A-002L9	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	XS	SCH40	P28A-002LD	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	10	SCH30	STD	P28A-00CHG	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	12	SCH30	SCH40	P28A-0080A	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	14	SCH30	SCH40	P28A-0081J	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	16	SCH30	XS	P28A-008FK	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	12	XS	SCH40	P28A-00CHH	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	14	XS	SCH40	P28A-00CHJ	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	16	XS	XS	P28A-008JR	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	18	XS	SCH30	P28A-00CHL	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	16	XS	XS	P28A-002L4	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	18	XS	SCH30	P28A-0098G	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	20	XS	XS	P28A-009KC	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	

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ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	30	20	SCH30	XS	P28A-008JU	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	24	SCH30	XS	P28A-009ND	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	36	24	SCH30	XS	P28A-008SS	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	36	30	SCH30	SCH30	P28A-00CJN	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	42	30	14.27mm	SCH30	P28A-00EKL	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	42	36	14.27mm	SCH30	P28A-00EKM	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	48	42	14.27mm	14.27mm	P28A-00A6H	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P29B-0002F	Cap ASTM A105 Class 6000 ASME B16.11 SW	
1	0.75				P29B-0002G	Cap ASTM A105 Class 6000 ASME B16.11 SW	
1	1				P29B-0002D	Cap ASTM A105 Class 6000 ASME B16.11 SW	
1	1.5				P29B-0002E	Cap ASTM A105 Class 6000 ASME B16.11 SW	
1	2		XS		P29A-000A1	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		STD		P29A-000BK	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		STD		P29A-000A3	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6		STD		P29A-000A9	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8		STD		P29A-000AF	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10		STD		P29A-0009Z	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12		SCH40		P29A-000GB	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14		SCH40		P29A-000GC	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16		XS		P29A-0009R	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18		SCH30		P29A-001SG	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20		XS		P29A-000VA	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24		XS		P29A-000R5	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	30		SCH30		P29A-000DR	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	36		SCH30		P29A-001YE	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	42		14.27mm		P29A-00114	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	48		14.27mm		P29A-000RX	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
541	0.75				P29B-0000Y	Cap ASTM A105 Class 6000 ASME B16.11 NPT	
541	1				P29B-0000Z	Cap ASTM A105 Class 6000 ASME B16.11 NPT	
541	1.5				P29B-00010	Cap ASTM A105 Class 6000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P41A-000B9	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		XXS		P41A-000BA	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		XXS		P41A-000D8	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		XXS		P41A-000D9	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

CON SWAGED NIPPLE (SNC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	SCH160	P42A-00029	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	SCH160	SCH160	P42A-0009T	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	SCH160	SCH160	P42A-0009U	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	SCH160	SCH160	P42A-0009V	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	SCH160	SCH160	P42A-0009W	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	SCH160	SCH160	P42A-0009X	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	XS	SCH160	P42A-000J6	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	XS	SCH160	P42A-000J7	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	XS	SCH160	P42A-000F8	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	XS	SCH160	P42A-000KZ	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	STD	SCH160	P42A-000L0	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	

ECC SWAGED NIPPLE (SNE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	SCH160	P43A-000AM	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.5	SCH160	SCH160	P43A-000B4	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	SCH160	SCH160	P43A-000B5	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	SCH160	SCH160	P43A-000B6	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	SCH160	SCH160	P43A-000B7	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	SCH160	SCH160	P43A-000B8	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	XS	SCH160	P43A-000B2	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	XS	SCH160	P43A-000B3	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	XS	SCH160	P43A-000CZ	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	XS	SCH160	P43A-000D0	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	STD	SCH160	P43A-000D1	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	

COUPLING (CPS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P47B-00013	Coupling ASTM A105 Class 6000 ASME B16.11 SW - SW	
1	0.75				P47B-00012	Coupling ASTM A105 Class 6000 ASME B16.11 SW - SW	
1	1				P47B-0002A	Coupling ASTM A105 Class 6000 ASME B16.11 SW - SW	
1	1.5				P47B-0002B	Coupling ASTM A105 Class 6000 ASME B16.11 SW - SW	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5 - 2.5	0.75			P31B-0137D	Outlet ASTM A105 Class 6000 MSS SP-97 SW	
1	3 - 10	0.75			P31B-007LV	Outlet ASTM A105 Class 6000 MSS SP-97 SW	
1	12 and larger	0.75			P31B-0136N	Outlet ASTM A105 Class 6000 MSS SP-97 SW	
1	3 - 10	1			P31B-007LN	Outlet ASTM A105 Class 6000 MSS SP-97 SW	
1	12 and larger	1			P31B-0136P	Outlet ASTM A105 Class 6000 MSS SP-97 SW	
1	4 - 5	1.5			P31B-004LE	Outlet ASTM A105 Class 6000 MSS SP-97 SW	
1	6 - 8	1.5			P31B-005T4	Outlet ASTM A105 Class 6000 MSS SP-97 SW	
1	10 - 18	1.5			P31B-007LF	Outlet ASTM A105 Class 6000 MSS SP-97 SW	
1	20 and larger	1.5			P31B-0137E	Outlet ASTM A105 Class 6000 MSS SP-97 SW	
541	1	0.75			P31B-005HL	Outlet ASTM A105 Class 6000 MSS SP-97 NPT	
541	1.5 - 2.5	0.75			P31B-0137F	Outlet ASTM A105 Class 6000 MSS SP-97 NPT	
541	3 - 10	0.75			P31B-007KP	Outlet ASTM A105 Class 6000 MSS SP-97 NPT	
541	12 and larger	0.75			P31B-0138A	Outlet ASTM A105 Class 6000 MSS SP-97 NPT	
1	6	2	STD	XS	P31B-007SH	Outlet ASTM A105 MSS SP-97 BW	
1	8	2	STD	XS	P31B-00AGX	Outlet ASTM A105 MSS SP-97 BW	
1	10	2	STD	XS	P31B-00ASA	Outlet ASTM A105 MSS SP-97 BW	
1	12	2	SCH40	XS	P31B-00CBS	Outlet ASTM A105 MSS SP-97 BW	
1	14	2	SCH40	XS	P31B-00CAH	Outlet ASTM A105 MSS SP-97 BW	
1	16	2	XS	XS	P31B-00C1S	Outlet ASTM A105 MSS SP-97 BW	
1	18	2	SCH30	XS	P31B-00TUN	Outlet ASTM A105 MSS SP-97 BW	
1	20	2	XS	XS	P31B-00993	Outlet ASTM A105 MSS SP-97 BW	
1	24	2	XS	XS	P31B-0092Y	Outlet ASTM A105 MSS SP-97 BW	
1	30	2	SCH30	XS	P31B-00TVV	Outlet ASTM A105 MSS SP-97 BW	
1	36	2	SCH30	XS	P31B-008BC	Outlet ASTM A105 MSS SP-97 BW	
1	42	2	14.27mm	XS	P31B-00VUV	Outlet ASTM A105 MSS SP-97 BW	
1	48	2	14.27mm	XS	P31B-007YL	Outlet ASTM A105 MSS SP-97 BW	
1	8	3	STD	STD	P31B-00A2T	Outlet ASTM A105 MSS SP-97 BW	
1	10	3	STD	STD	P31B-009CM	Outlet ASTM A105 MSS SP-97 BW	
1	12	3	SCH40	STD	P31B-0096S	Outlet ASTM A105 MSS SP-97 BW	
1	14	3	SCH40	STD	P31B-0090U	Outlet ASTM A105 MSS SP-97 BW	
1	16	3	XS	STD	P31B-008UM	Outlet ASTM A105 MSS SP-97 BW	
1	18	3	SCH30	STD	P31B-008MM	Outlet ASTM A105 MSS SP-97 BW	
1	20	3	XS	STD	P31B-008F9	Outlet ASTM A105 MSS SP-97 BW	
1	24	3	XS	STD	P31B-00894	Outlet ASTM A105 MSS SP-97 BW	
1	30	3	SCH30	STD	P31B-007WZ	Outlet ASTM A105 MSS SP-97 BW	
1	36	3	SCH30	STD	P31B-007P4	Outlet ASTM A105 MSS SP-97 BW	
1	42	3	14.27mm	STD	P31B-00SWX	Outlet ASTM A105 MSS SP-97 BW	
1	48	3	14.27mm	STD	P31B-00AFG	Outlet ASTM A105 MSS SP-97 BW	
1	12	4	SCH40	STD	P31B-008ZY	Outlet ASTM A105 MSS SP-97 BW	

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OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14	4	SCH40	STD	P31B-008YN	Outlet ASTM A105 MSS SP-97 BW	
1	16	4	XS	STD	P31B-008SG	Outlet ASTM A105 MSS SP-97 BW	
1	18	4	SCH30	STD	P31B-008KD	Outlet ASTM A105 MSS SP-97 BW	
1	20	4	XS	STD	P31B-008D2	Outlet ASTM A105 MSS SP-97 BW	
1	24	4	XS	STD	P31B-0086W	Outlet ASTM A105 MSS SP-97 BW	
1	30	4	SCH30	STD	P31B-007UT	Outlet ASTM A105 MSS SP-97 BW	
1	36	4	SCH30	STD	P31B-00AET	Outlet ASTM A105 MSS SP-97 BW	
1	42	4	14.27mm	STD	P31B-00SWY	Outlet ASTM A105 MSS SP-97 BW	
1	48	4	14.27mm	STD	P31B-00A7E	Outlet ASTM A105 MSS SP-97 BW	
1	18	6	SCH30	STD	P31B-00TVW	Outlet ASTM A105 MSS SP-97 BW	
1	20	6	XS	STD	P31B-008PY	Outlet ASTM A105 MSS SP-97 BW	
1	24	6	XS	STD	P31B-008JC	Outlet ASTM A105 MSS SP-97 BW	
1	30	6	SCH30	STD	P31B-008BT	Outlet ASTM A105 MSS SP-97 BW	
1	36	6	SCH30	STD	P31B-00P5E	Outlet ASTM A105 MSS SP-97 BW	
1	42	6	14.27mm	STD	P31B-00SWZ	Outlet ASTM A105 MSS SP-97 BW	
1	48	6	14.27mm	STD	P31B-00TXJ	Outlet ASTM A105 MSS SP-97 BW	

OLET ON CAP (LC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
4203	0.75				P36B-000B9	Outlet on cap ASTM A105 Class 6000 MSS SP-97 SW Cap=NPS3	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30B-0002D	Plug ASTM A105 ASME B16.11 NPT Round head	
1	0.75				P30B-0002E	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1				P30B-0002F	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1.5				P30B-0002G	Plug ASTM A105 ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P61B-001H5	Flange SW ASTM A105 Class 300 ASME B16.5 RF	
1	0.75		SCH160		P61B-001HH	Flange SW ASTM A105 Class 300 ASME B16.5 RF	
1	1		SCH160		P61B-001E8	Flange SW ASTM A105 Class 300 ASME B16.5 RF	
1	1.5		SCH160		P61B-001ET	Flange SW ASTM A105 Class 300 ASME B16.5 RF	
1	2		XS		P61B-001HW	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	3		STD		P61B-001LJ	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	4		STD		P61B-001MC	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	6		STD		P61B-001N2	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	8		STD		P61B-001NL	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	10		STD		P61B-001L6	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	12		SCH40		P61B-002FJ	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	14		SCH40		P61B-002FL	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	16		XS		P61B-001HU	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	18		SCH30		P61B-004GU	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	20		XS		P61B-003A5	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	24		XS		P61B-002RA	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	30		SCH30		P61B-001M7	Flange WN ASTM A105 Class 300 ASME B16.47 Series B RF	
1	36		SCH30		P61B-0067X	Flange WN ASTM A105 Class 300 ASME B16.47 Series B RF	
1	42		14.27mm		P61B-003ZZ	Flange WN ASTM A105 Class 300 ASME B16.47 Series B RF	
1	48		14.27mm		P61B-0067W	Flange WN ASTM A105 Class 300 ASME B16.47 Series B RF	
781	0.5		SCH160		P61B-001DZ	Flange SW ASTM A105 Class 600 ASME B16.5 RF	
781	0.75		SCH160		P61B-001DW	Flange SW ASTM A105 Class 600 ASME B16.5 RF	
781	1		SCH160		P61B-005X5	Flange SW ASTM A105 Class 600 ASME B16.5 RF	
781	1.5		SCH160		P61B-005X6	Flange SW ASTM A105 Class 600 ASME B16.5 RF	
781	2		XS		P61B-001DH	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	3		STD		P61B-001TW	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	4		STD		P61B-001VV	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	6		STD		P61B-001JW	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	8		STD		P61B-001KK	Flange WN ASTM A105 Class 600 ASME B16.5 RF	

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FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
781	10		STD		P61B-001JJ	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	12		SCH40		P61B-003T5	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	14		SCH40		P61B-003T6	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	16		XS		P61B-001R3	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	18		SCH30		P61B-005TU	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	20		XS		P61B-004UW	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	24		XS		P61B-003T9	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	30		SCH30		P61B-001PH	Flange WN ASTM A105 Class 600 ASME B16.47 Series B RF	
781	36		SCH30		P61B-00AC7	Flange WN ASTM A105 Class 600 ASME B16.47 Series B RF	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67B-000GH	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	0.75				P67B-000GJ	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	1				P67B-000GK	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	1.5				P67B-000GL	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	2				P67B-000GM	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	3				P67B-000GN	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	4				P67B-000GP	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	6				P67B-000GY	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	8				P67B-000GZ	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	10				P67B-000GR	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	12				P67B-000GS	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	14				P67B-000GT	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	16				P67B-000GU	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	18				P67B-000GV	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	20				P67B-000GW	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	24				P67B-000GX	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	30				P67B-000H2	Blind flange ASTM A105 Class 300 ASME B16.47 Series B RF	
1	36				P67B-000H5	Blind flange ASTM A105 Class 300 ASME B16.47 Series B RF	
1	42				P67B-000L5	Blind flange ASTM A105 Class 300 ASME B16.47 Series B RF	
1	48				P67B-000L8	Blind flange ASTM A105 Class 300 ASME B16.47 Series B RF	

REDUCING FLANGE (FR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5		SCH160	P62B-000N4	Reducing flange SW ASTM A105 Class 300 ASME B16.5 RF	
1	2	1		SCH160	P62B-000BW	Reducing flange SW ASTM A105 Class 300 ASME B16.5 RF	
1	6	3		STD	P62B-000ME	Reducing flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	6	4		STD	P62B-000MF	Reducing flange WN ASTM A105 Class 300 ASME B16.5 RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000FT	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000FU	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000G5	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000G6	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	6				P73T-000G7	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	8				P73T-000G8	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	10				P73T-000FX	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	12				P73T-000FY	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	14				P73T-000FZ	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

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GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	16				P73T-000G0	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	18				P73T-000G1	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	20				P73T-000G3	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	24				P73T-000G4	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	30				P73T-000H9	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	36				P73T-000HC	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	42				P73T-000KM	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	48				P73T-000KR	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	0.5				P73T-000J8	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	0.75				P73T-000J9	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1				P73T-000JA	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1.5				P73T-000JB	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	2				P73T-000JH	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	3				P73T-000JL	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	4				P73T-000JM	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	6				P73T-000JN	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	8				P73T-000JP	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	10				P73T-000JC	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	12				P73T-000JD	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	14				P73T-000JE	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	16				P73T-000JF	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	18				P73T-000JG	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	20				P73T-000JJ	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	24				P73T-000JK	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	30				P73T-000JT	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	36				P73T-000JW	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-10				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	12-48				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
781	0.5-6				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
781	8-36				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81B-000P4	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	0.75				P81B-000NX	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	1				P81B-000NY	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	1.5				P81B-000NZ	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	2				P81C-002D6	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	3				P81C-002D7	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	4				P81C-002D8	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	6				P81C-002D9	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	8				P81C-0086V	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated	
1	10				P81C-002DB	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated	

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GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	12				P81C-002DC	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated	
1	14				P81C-0034H	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated	
1	16				P81C-002DD	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated	
1	18				P81C-002DE	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated	
1	20				P81C-002DF	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated	
1	24				P81C-002DG	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated	
1	30				P81C-004H1	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.47-B RF Trim number 8 BB-BG-OS&Y Gear operated	
1	36				P81C-004HX	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.47-B RF Trim number 8 BB-BG-OS&Y Gear operated	
1	42				P81C-00528	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.47-B RF Trim number 8 BB-BG-OS&Y Gear operated	
1	48				P81C-004HY	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.47-B RF Trim number 8 BB-BG-OS&Y Gear operated	
714	0.5				P81B-0015L	Gate valve ASTM A105 Class 800 API 602 SW - NPT Trim number 8 BB-BG-OS&Y Handwheel operated	
714	0.75				P81B-002F4	Gate valve ASTM A105 Class 800 API 602 SW - NPT Trim number 8 BB-BG-OS&Y Handwheel operated	
714	1				P81B-002NH	Gate valve ASTM A105 Class 800 API 602 SW - NPT Trim number 8 BB-BG-OS&Y Handwheel operated	
714	1.5				P81B-002NJ	Gate valve ASTM A105 Class 800 API 602 SW - NPT Trim number 8 BB-BG-OS&Y Handwheel operated	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82B-000K0	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	0.75				P82B-000HB	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	1				P82B-000HC	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	1.5				P82B-000HD	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	2				P82C-00114	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	3				P82C-00115	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	4				P82C-00116	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	6				P82C-00117	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	8				P82C-0011A	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83B-000FX	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover	
1	0.75				P83B-000ER	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover	
1	1				P83B-000ES	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover	
1	1.5				P83B-000ET	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover	
1	2				P83C-0013H	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	3				P83C-0013L	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	4				P83C-0013M	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	6				P83C-0013N	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	8				P83C-0013P	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	10				P83C-0013D	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	12				P83C-0013E	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	14				P83C-0023R	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	16				P83C-0013F	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	18				P83C-0013G	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	20				P83C-0013J	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	24				P83C-0013K	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	

DP CHECK VALVE (XDP)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	30				P88C-00400	Dual plate check valve ASTM A216 Grade WCB Class 300 API 594 Wafer-type ASME B16.47-B RF Trim number 8 Internal wetted parts 13Cr Spring Inconel Retainerless-type	

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DP CHECK VALVE (XDP)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
4602	4				P88C-0035P	Dual plate check valve ASTM A216 Grade WCB Class 300 API 594 Wafer-type ASME B16.5 RF Trim number 8 Internal wetted parts 13Cr Spring Inconel Retainerless-type	
4602	6				P88C-0035R	Dual plate check valve ASTM A216 Grade WCB Class 300 API 594 Wafer-type ASME B16.5 RF Trim number 8 Internal wetted parts 13Cr Spring Inconel Retainerless-type	

BUTTERFLY VALVE (H)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	10				P86C-0023E	Offset design butterfly valve ASTM A216 Grade WCB Class 300 API 609 Category B Lug-type ASME B16.5 RF Disc CS Seat Stellite-6 Trim 13Cr Triple eccentric design BG Gear operated	
1	12				P86C-0023G	Offset design butterfly valve ASTM A216 Grade WCB Class 300 API 609 Category B Lug-type ASME B16.5 RF Disc CS Seat Stellite-6 Trim 13Cr Triple eccentric design BG Gear operated	
1	14				P86C-0023H	Offset design butterfly valve ASTM A216 Grade WCB Class 300 API 609 Category B Lug-type ASME B16.5 RF Disc CS Seat Stellite-6 Trim 13Cr Triple eccentric design BG Gear operated	
1	16				P86C-0023J	Offset design butterfly valve ASTM A216 Grade WCB Class 300 API 609 Category B Lug-type ASME B16.5 RF Disc CS Seat Stellite-6 Trim 13Cr Triple eccentric design BG Gear operated	
1	18				P86C-0023K	Offset design butterfly valve ASTM A216 Grade WCB Class 300 API 609 Category B Lug-type ASME B16.5 RF Disc CS Seat Stellite-6 Trim 13Cr Triple eccentric design BG Gear operated	
1	20				P86C-0018M	Offset design butterfly valve ASTM A216 Grade WCB Class 300 API 609 Category B Double flanged ASME B16.5 RF Disc CS Seat Stellite-6 Trim 13Cr Triple eccentric design BG Gear operated	

NEEDLE VALVE (NV)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82B-001JU	Needle valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	0.75				P82B-000YB	Needle valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	1				P82B-000YC	Needle valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	1.5				P82B-000YD	Needle valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	

ORIFICE FLANGE (FO)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2		XS		P66B-0084B	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	3		STD		P66B-0084C	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	4		STD		P66B-0084D	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	6		STD		P66B-0084E	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	8		STD		P66B-008BN	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	10		STD		P66B-008BM	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	12		SCH40		P66B-00885	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	14		SCH40		P66B-00886	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	16		XS		P66B-00887	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	18		SCH30		P66B-008K8	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	20		XS		P66B-0088A	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
200	2		XS		P66B-00843	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	3		STD		P66B-00844	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	4		STD		P66B-00845	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	6		STD		P66B-00846	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	8		STD		P66B-008BR	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	10		STD		P66B-008BP	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	12		SCH40		P66B-0088K	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	14		SCH40		P66B-0088L	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	16		XS		P66B-0088M	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	18		SCH30		P66B-008K9	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	20		XS		P66B-0088R	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71B-000B1	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	0.75				P71B-000B2	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	1				P71B-000B3	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71B-000B4	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	2				P71B-000B6	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	3				P71B-000B7	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	4				P71B-000B8	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	6				P71B-000B9	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	8				P71B-000BA	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	

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SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	10				P71B-000B5	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	12				P71B-000BB	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	

PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000FA	Paddle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	16				P72B-000FB	Paddle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	18				P72B-000FC	Paddle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	20				P72B-000FD	Paddle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	24				P72B-000FE	Paddle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	30				P72B-000FF	Paddle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.47-B RF	
1	36				P72B-000M0	Paddle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.47-B RF	
1	42				P72B-000M1	Paddle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.47-B RF	
1	48				P72B-000M2	Paddle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.47-B RF	

PADDLE SPACER (PS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000FG	Paddle spacer ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	16				P72B-000FH	Paddle spacer ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	18				P72B-000FJ	Paddle spacer ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	20				P72B-000FK	Paddle spacer ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	24				P72B-000FL	Paddle spacer ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	30				P72B-000FM	Paddle spacer ASTM A105 Class 300 Standard-drawing Flange ASME B16.47-B RF	
1	36				P72B-000M3	Paddle spacer ASTM A105 Class 300 Standard-drawing Flange ASME B16.47-B RF	
1	42				P72B-000M4	Paddle spacer ASTM A105 Class 300 Standard-drawing Flange ASME B16.47-B RF	
1	48				P72B-000M5	Paddle spacer ASTM A105 Class 300 Standard-drawing Flange ASME B16.47-B RF	

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BOLT TABLE (B_B2AP , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-003V4		
0.75	4	0.625	75	P80S-003XC		
1	4	0.625	80	P80S-003XD		
1.5	4	0.750	95	P80S-00414		
2	8	0.625	90	P80S-003XF		
3	8	0.750	110	P80S-003XK		
4	8	0.750	115	P80S-003XL		
6	12	0.750	125	P80S-003XN		
8	12	0.875	140	P80S-0041D		
10	16	1.000	160	P80S-0043K		
12	16	1.125	175	P80S-0046S		
14	20	1.125	180	P80S-0046T		
16	20	1.250	190	P80S-004AK		
18	24	1.250	200	P80S-004AM		
20	24	1.250	210	P80S-004AP		
24	24	1.500	235	P80S-003F8		
30	36	1.375	285	P80S-003EA		
36	32	1.625	320	P80S-005TT		
42	36	1.750	355	P80S-007B5		
48	40	1.875	380	P80S-008P4		

BOLT TABLE (B_B2AP_781 , STUD ASME RF, OPTION CODE 781)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	80	P80S-003V6		
0.75	4	0.625	90	P80S-003XF		
1	4	0.625	95	P80S-003XG		
1.5	4	0.750	110	P80S-003XK		
2	8	0.625	110	P80S-003VC		
3	8	0.750	130	P80S-003XP		
4	8	0.875	150	P80S-0041F		
6	12	1.000	175	P80S-0043P		
8	12	1.125	195	P80S-0046W		
10	16	1.250	250	P80S-004AY		
12	20	1.250	255	P80S-004AZ		
14	20	1.375	270	P80S-003E7		
16	20	1.500	295	P80S-003FL		
18	20	1.625	320	P80S-005TT		
20	24	1.625	335	P80S-005TW		
24	24	1.875	380	P80S-008P4		
30	28	1.875	435	P80S-008PF		
36	28	2.250	510	P80S-00P4E		
42	28	2.500	575			
48	32	2.750	635			

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BRANCH TABLE (T_B2AP)

RUN PIPE SIZE (in) \ BRANCH SIZE (in)	0.5	0.75	1	1.5	2	3	4	6	8	10	12	14	16	18	20	24	30	36	42	48
0.5	TS																			
0.75		TS																		
1		TR	TS																	
1.5		TR	TR	TS																
2		L	TR	TR	TS															
3		L	L	TR	TR	TS														
4	L	L	L	L	TR	TR	TS													
6	L	L	L	L	L	TR	TR	TS												
8		L	L	L	L	L	TR	TR	TS											
10		L	L	L	L	L	TR	TR	TR	TS										
12		L	L	L	L	L	L	TR	TR	TR	TS									
14		L	L	L	L	L	L	TR	TR	TR	TR	TS								
16		L	L	L	L	L	L	TR	TR	TR	TR	TR	TS							
18		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TS						
20		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TR	TS					
24		L	L	L	L	L	L	L	9PD	TR	TR	TR	TR	TR	TR	TS				
30		L	L	L	L	L	L	L	9PD	TR	TR	TR	TR	TR	TR	TR	TS			
36		L	L	L	L	L	L	L	9PD	9PD	9PD	9PD	TR	TR	TR	TR	TR	TS		
42		L	L	L	L	L	L	L	9PD	9PD	9PD	9PD	TR	TR	TR	TR	TR	TR	TS	
48		L	L	L	L	L	L	L	9PD	9PD	9PD	9PD	9PD	9PD	9PD	TR	TR	TR	TR	TS

TS : STRAIGHT TEE
9PD : REINFORCING PAD 90 DEG
TR : REDUCING TEE
L : OUTLET

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Material : Killed CS
Rating : ASME CLASS 300
Flange Face : RF
C.A.(mm) : 3.00
Gasket : Spiral Wound
Service : PROCESS - GENERAL PROCESS NON SOUR, NON CORROSIVE
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
2	USE OF SOFT SEATED BALL, PLUG AND BUTTERFLY VALVES SHALL BE LIMITED TO MAXIMUM OF 204DEGC (400DEGF)

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
24	FULL PORT (Q,V)
200	WITH JACK SCREW (FO)
541	NPT(F) (CA,L)
714	SW - NPT(F) (V)
781	CLASS 600 (B,F,G)
4208	45 DEGREE LATERAL STRAIGHT TEE (TLS)
4602	DISSIMILAR TYPE CHECK VALVE (XDP)

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PIPING CLASS
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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P01A-0078U	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE Licensor-1	
1	0.75		SCH160		P01A-0078V	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE Licensor-1	
1	1		SCH160		P01A-0078W	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE Licensor-1	
1	1.5		SCH160		P01A-0078X	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE Licensor-1	
1	2		XS		P01A-0078Y	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Licensor-1	
1	3		STD		P01A-0078Z	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Licensor-1	
1	4		STD		P01A-007B3	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Licensor-1	
1	6		STD		P01A-007B8	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Licensor-1	
1	8		STD		P01A-007BU	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Licensor-1	
1	10		STD		P01A-007BR	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Licensor-1	
1	12		SCH40		P01A-007BS	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Licensor-1	
1	14		SCH40		P01A-007BT	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Licensor-1	
1	16		SCH20		P01A-007B7	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Licensor-1	
1	18		SCH20		P01A-007BA	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE Licensor-1	
1	20		STD		P01A-007BB	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE Licensor-1	
1	24		STD		P01A-007BC	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE Licensor-1	
1	30		STD		P01A-007TY	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE Licensor-1	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P02B-00078	90 degree elbow ASTM A105 Class 6000 ASME B16.11 SW Licensor-1	
1	0.75				P02B-00079	90 degree elbow ASTM A105 Class 6000 ASME B16.11 SW Licensor-1	
1	1				P02B-0007A	90 degree elbow ASTM A105 Class 6000 ASME B16.11 SW Licensor-1	
1	1.5				P02B-0007B	90 degree elbow ASTM A105 Class 6000 ASME B16.11 SW Licensor-1	
1	2		XS		P02A-003R7	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	3		STD		P02A-003R8	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	4		STD		P02A-003T8	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	6		STD		P02A-003TG	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	8		STD		P02A-003U6	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	10		STD		P02A-003U0	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	12		SCH40		P02A-003U1	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	14		SCH40		P02A-003U2	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	16		SCH20		P02A-003TC	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	18		SCH20		P02A-003TD	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	20		STD		P02A-003TE	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	24		STD		P02A-003TF	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	30		STD		P02A-0045P	90 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius Licensor-1	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P03B-0006W	45 degree elbow ASTM A105 Class 6000 ASME B16.11 SW Licensor-1	
1	0.75				P03B-0006X	45 degree elbow ASTM A105 Class 6000 ASME B16.11 SW Licensor-1	
1	1				P03B-0006Y	45 degree elbow ASTM A105 Class 6000 ASME B16.11 SW Licensor-1	
1	1.5				P03B-0006Z	45 degree elbow ASTM A105 Class 6000 ASME B16.11 SW Licensor-1	
1	2		XS		P03A-003MW	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	3		STD		P03A-003MX	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	4		STD		P03A-003PX	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	6		STD		P03A-003R5	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	8		STD		P03A-003RV	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	10		STD		P03A-003RN	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	12		SCH40		P03A-003RP	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	14		SCH40		P03A-003RR	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	16		SCH20		P03A-003R1	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	18		SCH20		P03A-003R2	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	20		STD		P03A-003R3	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	24		STD		P03A-003R4	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	30		STD		P03A-0043A	45 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius Licensor-1	

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STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P21B-0006T	Straight tee ASTM A105 Class 6000 ASME B16.11 SW Licensor-1	
1	0.75				P21B-0006U	Straight tee ASTM A105 Class 6000 ASME B16.11 SW Licensor-1	
1	1				P21B-0006V	Straight tee ASTM A105 Class 6000 ASME B16.11 SW Licensor-1	
1	1.5				P21B-0006W	Straight tee ASTM A105 Class 6000 ASME B16.11 SW Licensor-1	
1	2		XS		P21A-0048L	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	3		STD		P21A-0048M	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	4		STD		P21A-004AL	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	6		STD		P21A-004AS	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	8		STD		P21A-004BF	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	10		STD		P21A-004BC	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	12		SCH40		P21A-004BD	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	14		SCH40		P21A-004BE	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	16		SCH20		P21A-004AR	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	18		SCH20		P21A-004AU	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	20		STD		P21A-004AV	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	24		STD		P21A-004AW	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	30		STD		P21A-004NG	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	

STRAIGHT LATERAL TEE (TLS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75				P22B-00002	Straight lateral-tee ASTM A105 Class 6000 ASME B16.11 SW 60 degree Licensor-1	
1	1				P22B-0000G	Straight lateral-tee ASTM A105 Class 6000 ASME B16.11 SW 60 degree Licensor-1	
1	1.5				P22B-0000H	Straight lateral-tee ASTM A105 Class 6000 ASME B16.11 SW 60 degree Licensor-1	
1	2		XS		P22A-000HV	Straight lateral-tee ASTM A234 Grade WPB Seamless ASME B16.9 BW 60 degree Licensor-1	
1	3		STD		P22A-000DK	Straight lateral-tee ASTM A234 Grade WPB Seamless ASME B16.9 BW 60 degree Licensor-1	
1	4		STD		P22A-000HW	Straight lateral-tee ASTM A234 Grade WPB Seamless ASME B16.9 BW 60 degree Licensor-1	
1	6		STD		P22A-000HX	Straight lateral-tee ASTM A234 Grade WPB Seamless ASME B16.9 BW 60 degree Licensor-1	
1	8		STD		P22A-000HY	Straight lateral-tee ASTM A234 Grade WPB Seamless ASME B16.9 BW 60 degree Licensor-1	
1	10		STD		P22A-000HR	Straight lateral-tee ASTM A234 Grade WPB Seamless ASME B16.9 BW 60 degree Licensor-1	
1	12		SCH40		P22A-000HS	Straight lateral-tee ASTM A234 Grade WPB Seamless ASME B16.9 BW 60 degree Licensor-1	
1	14		SCH40		P22A-000HT	Straight lateral-tee ASTM A234 Grade WPB Seamless ASME B16.9 BW 60 degree Licensor-1	
1	16		SCH20		P22A-000HU	Straight lateral-tee ASTM A234 Grade WPB Seamless ASME B16.9 BW 60 degree Licensor-1	
1	18		SCH20		P22A-000GZ	Straight lateral-tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW 60 degree Licensor-1	
1	20		STD		P22A-000H0	Straight lateral-tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW 60 degree Licensor-1	
1	24		STD		P22A-000H1	Straight lateral-tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW 60 degree Licensor-1	
1	30		STD		P22A-000H2	Straight lateral-tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW 60 degree Licensor-1	
4208	0.75				P22B-00001	Straight lateral-tee ASTM A105 Class 6000 ASME B16.11 SW 45 degree Licensor-1	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75			P24B-000BP	Reducing tee ASTM A105 Class 6000 ASME B16.11 SW Licensor-1	
1	1.5	0.75			P24B-000BR	Reducing tee ASTM A105 Class 6000 ASME B16.11 SW Licensor-1	
1	1.5	1			P24B-000BS	Reducing tee ASTM A105 Class 6000 ASME B16.11 SW Licensor-1	
1	2	1	XS	SCH160	P24A-00K0V	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	2	1.5	XS	SCH160	P24A-00K0W	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	3	1.5	STD	SCH160	P24A-00K0X	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	3	2	STD	XS	P24A-00K0Y	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	4	2	STD	XS	P24A-00K5X	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	4	3	STD	STD	P24A-00K5Y	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	6	3	STD	STD	P24A-00K64	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	6	4	STD	STD	P24A-00K65	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	8	4	STD	STD	P24A-00K7V	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	8	6	STD	STD	P24A-00K7W	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	10	4	STD	STD	P24A-00K7X	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	10	6	STD	STD	P24A-00K7Y	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	10	8	STD	STD	P24A-00K7Z	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	12	6	SCH40	STD	P24A-00K81	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	12	8	SCH40	STD	P24A-00K82	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	12	10	SCH40	STD	P24A-00K80	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	

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REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14	6	SCH40	STD	P24A-00K85	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	14	8	SCH40	STD	P24A-00K86	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	14	10	SCH40	STD	P24A-00K83	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	14	12	SCH40	SCH40	P24A-00K84	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	16	6	SCH20	STD	P24A-00K6M	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	16	8	SCH20	STD	P24A-00MV0	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	16	10	SCH20	STD	P24A-00MUX	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	16	12	SCH20	SCH40	P24A-00MUY	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	16	14	SCH20	SCH40	P24A-00L4M	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	18	8	SCH20	STD	P24A-00MV3	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	18	10	SCH20	STD	P24A-00MV1	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	18	12	SCH20	SCH40	P24A-00MV2	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	18	14	SCH20	SCH40	P24A-00KSX	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	18	16	SCH20	SCH20	P24A-00K6T	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	20	8	STD	STD	P24A-00MV6	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	20	10	STD	STD	P24A-00MV4	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	20	12	STD	SCH40	P24A-00MV5	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	20	14	STD	SCH40	P24A-00KT0	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	20	16	STD	SCH20	P24A-00K6Y	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	20	18	STD	SCH20	P24A-00K6Z	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	24	10	STD	STD	P24A-00NVN	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	24	12	STD	SCH40	P24A-00NVP	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	24	14	STD	SCH40	P24A-00KT3	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	24	16	STD	SCH20	P24A-00K73	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	24	18	STD	SCH20	P24A-00K74	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	24	20	STD	STD	P24A-00K75	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	30	10	STD	STD	P24A-00NZB	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	30	12	STD	SCH40	P24A-00NZC	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	30	14	STD	SCH40	P24A-00NZD	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	30	16	STD	SCH20	P24A-00M4L	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	30	18	STD	SCH20	P24A-00M4M	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	30	20	STD	STD	P24A-00M4N	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	30	24	STD	STD	P24A-00M4P	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	STD	XS	P27A-00EL1	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	4	2	STD	XS	P27A-00ES5	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	4	3	STD	STD	P27A-00ES6	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	6	3	STD	STD	P27A-00ES9	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	6	4	STD	STD	P27A-00ESA	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	8	4	STD	STD	P27A-00ETS	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	8	6	STD	STD	P27A-00ETT	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	10	4	STD	STD	P27A-00ETU	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	10	6	STD	STD	P27A-00ETV	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	10	8	STD	STD	P27A-00ETW	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	12	6	SCH40	STD	P27A-00ETY	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	12	8	SCH40	STD	P27A-00ETZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	12	10	SCH40	STD	P27A-00ETX	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	14	6	SCH40	STD	P27A-00EU2	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	14	8	SCH40	STD	P27A-00EU3	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	14	10	SCH40	STD	P27A-00EU0	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	14	12	SCH40	SCH40	P27A-00EU1	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	16	8	SCH20	STD	P27A-00GNC	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	16	10	SCH20	STD	P27A-00GNA	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	16	12	SCH20	SCH40	P27A-00GNB	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	16	14	SCH20	SCH40	P27A-00F7N	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	18	10	SCH20	STD	P27A-00GND	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	18	12	SCH20	SCH40	P27A-00GNE	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	18	14	SCH20	SCH40	P27A-00F7S	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	18	16	SCH20	SCH20	P27A-00ESX	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	20	12	STD	SCH40	P27A-00GNF	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	20	14	STD	SCH40	P27A-00F7U	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	20	16	STD	SCH20	P27A-00ET0	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	20	18	STD	SCH20	P27A-00ET1	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	24	16	STD	SCH20	P27A-00ET2	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	24	18	STD	SCH20	P27A-00ET3	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	24	20	STD	STD	P27A-00ET4	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	30	20	STD	STD	P27A-00GKG	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	30	24	STD	STD	P27A-00GKH	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	STD	XS	P28A-00BPS	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	4	2	STD	XS	P28A-00BVZ	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	4	3	STD	STD	P28A-00BW0	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	6	3	STD	STD	P28A-00BW3	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	6	4	STD	STD	P28A-00BW4	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	8	4	STD	STD	P28A-00BXK	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	8	6	STD	STD	P28A-00BXL	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	10	4	STD	STD	P28A-00BXM	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	10	6	STD	STD	P28A-00BXN	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	10	8	STD	STD	P28A-00BXP	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	12	6	SCH40	STD	P28A-00BXS	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	12	8	SCH40	STD	P28A-00BXT	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	12	10	SCH40	STD	P28A-00BXR	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	14	6	SCH40	STD	P28A-00BXW	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	14	8	SCH40	STD	P28A-00BXX	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	14	10	SCH40	STD	P28A-00BXU	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	14	12	SCH40	SCH40	P28A-00BXV	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	16	8	SCH20	STD	P28A-00DWM	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	16	10	SCH20	STD	P28A-00DWK	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	16	12	SCH20	SCH40	P28A-00DWL	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	16	14	SCH20	SCH40	P28A-00CBP	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	18	10	SCH20	STD	P28A-00DWN	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	18	12	SCH20	SCH40	P28A-00DWP	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	18	14	SCH20	SCH40	P28A-00CBT	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	18	16	SCH20	SCH20	P28A-00BWR	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	20	12	STD	SCH40	P28A-00DWR	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	20	14	STD	SCH40	P28A-00CBV	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	20	16	STD	SCH20	P28A-00BWU	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	20	18	STD	SCH20	P28A-00BWV	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	24	16	STD	SCH20	P28A-00BWW	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	24	18	STD	SCH20	P28A-00BWX	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	24	20	STD	STD	P28A-00BWY	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	30	20	STD	STD	P28A-00DBD	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	30	24	STD	STD	P28A-00DBE	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P29B-0005C	Cap ASTM A105 Class 6000 ASME B16.11 SW Licensor-1	
1	0.75				P29B-0005D	Cap ASTM A105 Class 6000 ASME B16.11 SW Licensor-1	
1	1				P29B-0005E	Cap ASTM A105 Class 6000 ASME B16.11 SW Licensor-1	
1	1.5				P29B-0005F	Cap ASTM A105 Class 6000 ASME B16.11 SW Licensor-1	
1	2		XS		P29A-00326	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	3		STD		P29A-00327	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	4		STD		P29A-0034R	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	6		STD		P29A-00353	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	

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CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	8		STD		P29A-0035T	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	10		STD		P29A-0035L	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	12		SCH40		P29A-0035M	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	14		SCH40		P29A-0035N	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	16		SCH20		P29A-0034V	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	18		SCH20		P29A-0034W	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	20		STD		P29A-0034X	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	24		STD		P29A-0034Y	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	30		STD		P29A-003GG	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
541	0.75				P29B-00069	Cap ASTM A105 Class 6000 ASME B16.11 NPT Licensor-1	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P41A-0017X	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Licensor-1	
1	0.75		XXS		P41A-0017Y	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Licensor-1	
1	1		XXS		P41A-0017Z	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Licensor-1	
1	1.5		XXS		P41A-00180	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Licensor-1	

CON SWAGED NIPPLE (SNC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	SCH160	P42A-000U0	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S) Licensor-1	
1	1	0.5	SCH160	SCH160	P42A-000U1	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S) Licensor-1	
1	1	0.75	SCH160	SCH160	P42A-000U2	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S) Licensor-1	
1	1.5	0.5	SCH160	SCH160	P42A-000U3	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S) Licensor-1	
1	1.5	0.75	SCH160	SCH160	P42A-000U4	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S) Licensor-1	
1	1.5	1	SCH160	SCH160	P42A-000U5	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S) Licensor-1	
1	2	0.5	XS	SCH160	P42A-000U6	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S) Licensor-1	
1	2	0.75	XS	SCH160	P42A-000U7	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S) Licensor-1	
1	2	1	XS	SCH160	P42A-000U8	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S) Licensor-1	
1	2	1.5	XS	SCH160	P42A-000U9	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S) Licensor-1	
1	3	1.5	STD	SCH160	P42A-000UA	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S) Licensor-1	

ECC SWAGED NIPPLE (SNE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	SCH160	P43A-000K3	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S) Licensor-1	
1	1	0.5	SCH160	SCH160	P43A-000K4	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S) Licensor-1	
1	1	0.75	SCH160	SCH160	P43A-000K5	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S) Licensor-1	
1	1.5	0.5	SCH160	SCH160	P43A-000K6	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S) Licensor-1	
1	1.5	0.75	SCH160	SCH160	P43A-000K7	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S) Licensor-1	
1	1.5	1	SCH160	SCH160	P43A-000K8	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S) Licensor-1	
1	2	0.5	XS	SCH160	P43A-000K9	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S) Licensor-1	
1	2	0.75	XS	SCH160	P43A-000KA	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S) Licensor-1	
1	2	1	XS	SCH160	P43A-000KB	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S) Licensor-1	
1	2	1.5	XS	SCH160	P43A-000KC	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S) Licensor-1	
1	3	1.5	STD	SCH160	P43A-000KD	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S) Licensor-1	

COUPLING (CPS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P47B-0007L	Coupling ASTM A105 Class 6000 ASME B16.11 SW - SW Licensor-1	
1	0.75				P47B-0007M	Coupling ASTM A105 Class 6000 ASME B16.11 SW - SW Licensor-1	
1	1				P47B-0007N	Coupling ASTM A105 Class 6000 ASME B16.11 SW - SW Licensor-1	
1	1.5				P47B-0007P	Coupling ASTM A105 Class 6000 ASME B16.11 SW - SW Licensor-1	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5 - 2.5	0.75			P31B-013AG	Outlet ASTM A105 Class 6000 MSS SP-97 SW Licensor-1	
1	3 - 10	0.75			P31B-013AH	Outlet ASTM A105 Class 6000 MSS SP-97 SW Licensor-1	
1	12 and larger	0.75			P31B-013AJ	Outlet ASTM A105 Class 6000 MSS SP-97 SW Licensor-1	

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OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3 - 10	1			P31B-013AK	Outlet ASTM A105 Class 6000 MSS SP-97 SW Licensor-1	
1	12 and larger	1			P31B-013AL	Outlet ASTM A105 Class 6000 MSS SP-97 SW Licensor-1	
1	4 - 5	1.5			P31B-013AM	Outlet ASTM A105 Class 6000 MSS SP-97 SW Licensor-1	
1	6 - 8	1.5			P31B-013AN	Outlet ASTM A105 Class 6000 MSS SP-97 SW Licensor-1	
1	10 - 18	1.5			P31B-013AP	Outlet ASTM A105 Class 6000 MSS SP-97 SW Licensor-1	
1	20 and larger	1.5			P31B-013AR	Outlet ASTM A105 Class 6000 MSS SP-97 SW Licensor-1	
541	1	0.75			P31B-01367	Outlet ASTM A105 Class 6000 MSS SP-97 NPT Licensor-1	
541	1.5 - 2.5	0.75			P31B-013A7	Outlet ASTM A105 Class 6000 MSS SP-97 NPT Licensor-1	
541	3 - 10	0.75			P31B-013A8	Outlet ASTM A105 Class 6000 MSS SP-97 NPT Licensor-1	
541	12 and larger	0.75			P31B-013A6	Outlet ASTM A105 Class 6000 MSS SP-97 NPT Licensor-1	
1	6	2	STD	XS	P31B-00XMV	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	8	2	STD	XS	P31B-00XPL	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	10	2	STD	XS	P31B-00XPS	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	12	2	SCH40	XS	P31B-00XPX	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	14	2	SCH40	XS	P31B-00XR3	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	16	2	SCH20	XS	P31B-00XN6	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	18	2	SCH20	XS	P31B-00XN9	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	20	2	STD	XS	P31B-00XND	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	24	2	STD	XS	P31B-00XNH	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	30	2	STD	XS	P31B-00ZHA	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	8	3	STD	STD	P31B-00XPM	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	10	3	STD	STD	P31B-00XPT	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	12	3	SCH40	STD	P31B-00XPY	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	14	3	SCH40	STD	P31B-00XR4	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	16	3	SCH20	STD	P31B-00XN7	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	18	3	SCH20	STD	P31B-00XNA	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	20	3	STD	STD	P31B-00XNE	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	24	3	STD	STD	P31B-00XNJ	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	30	3	STD	STD	P31B-00ZHB	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	12	4	SCH40	STD	P31B-00XPZ	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	14	4	SCH40	STD	P31B-00XR5	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	16	4	SCH20	STD	P31B-00XN8	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	18	4	SCH20	STD	P31B-00XNB	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	20	4	STD	STD	P31B-00XNF	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	24	4	STD	STD	P31B-00XNK	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	30	4	STD	STD	P31B-00ZHC	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	18	6	SCH20	STD	P31B-00XNC	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	20	6	STD	STD	P31B-00XNG	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	24	6	STD	STD	P31B-00XNL	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	30	6	STD	STD	P31B-00ZHD	Outlet ASTM A105 MSS SP-97 BW Licensor-1	

LATROLET (LL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	8	3	STD	STD	P34B-001TD	Lateral-outlet ASTM A105 MSS SP-97 BW 45 degree Licensor-1	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30B-00067	Plug ASTM A105 ASME B16.11 NPT Round head Licensor-1	
1	0.75				P30B-00068	Plug ASTM A105 ASME B16.11 NPT Round head Licensor-1	
1	1				P30B-00069	Plug ASTM A105 ASME B16.11 NPT Round head Licensor-1	
1	1.5				P30B-0006A	Plug ASTM A105 ASME B16.11 NPT Round head Licensor-1	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P61B-00A28	Flange SW ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
1	0.75		SCH160		P61B-00A29	Flange SW ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
1	1		SCH160		P61B-00A2A	Flange SW ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
1	1.5		SCH160		P61B-00A2B	Flange SW ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
1	2		XS		P61B-009YW	Flange WN ASTM A105 Class 300 ASME B16.5 RF Licensor-1	

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FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3		STD		P61B-009YX	Flange WN ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
1	4		STD		P61B-009YY	Flange WN ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
1	6		STD		P61B-00A07	Flange WN ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
1	8		STD		P61B-00A0T	Flange WN ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
1	10		STD		P61B-00A0L	Flange WN ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
1	12		SCH40		P61B-00A0M	Flange WN ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
1	14		SCH40		P61B-00A0N	Flange WN ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
1	16		SCH20		P61B-00A03	Flange WN ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
1	18		SCH20		P61B-00A04	Flange WN ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
1	20		STD		P61B-00A05	Flange WN ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
1	24		STD		P61B-00A06	Flange WN ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
1	30		STD		P61B-00B1P	Flange WN ASTM A105 Class 300 ASME B16.47 Series B RF Licensor-1	
781	0.5		SCH160		P61B-009T9	Flange SW ASTM A105 Class 600 ASME B16.5 RF Licensor-1	
781	0.75		SCH160		P61B-009TA	Flange SW ASTM A105 Class 600 ASME B16.5 RF Licensor-1	
781	1		SCH160		P61B-009TB	Flange SW ASTM A105 Class 600 ASME B16.5 RF Licensor-1	
781	1.5		SCH160		P61B-009TC	Flange SW ASTM A105 Class 600 ASME B16.5 RF Licensor-1	
781	2		XS		P61B-009TD	Flange WN ASTM A105 Class 600 ASME B16.5 RF Licensor-1	
781	3		STD		P61B-009TE	Flange WN ASTM A105 Class 600 ASME B16.5 RF Licensor-1	
781	4		STD		P61B-00A10	Flange WN ASTM A105 Class 600 ASME B16.5 RF Licensor-1	
781	6		STD		P61B-00A11	Flange WN ASTM A105 Class 600 ASME B16.5 RF Licensor-1	
781	8		STD		P61B-00A12	Flange WN ASTM A105 Class 600 ASME B16.5 RF Licensor-1	
781	10		STD		P61B-00A0U	Flange WN ASTM A105 Class 600 ASME B16.5 RF Licensor-1	
781	12		SCH40		P61B-00A0V	Flange WN ASTM A105 Class 600 ASME B16.5 RF Licensor-1	
781	14		SCH40		P61B-00A0W	Flange WN ASTM A105 Class 600 ASME B16.5 RF Licensor-1	
781	16		SCH20		P61B-00ABL	Flange WN ASTM A105 Class 600 ASME B16.5 RF Licensor-1	
781	18		SCH20		P61B-00ABM	Flange WN ASTM A105 Class 600 ASME B16.5 RF Licensor-1	
781	20		STD		P61B-00ABN	Flange WN ASTM A105 Class 600 ASME B16.5 RF Licensor-1	
781	24		STD		P61B-00ABP	Flange WN ASTM A105 Class 600 ASME B16.5 RF Licensor-1	
781	30		STD		P61B-00BRW	Flange WN ASTM A105 Class 600 ASME B16.47 Series B RF Licensor-1	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67B-002G3	Blind flange ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
1	0.75				P67B-002G4	Blind flange ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
1	1				P67B-002EK	Blind flange ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
1	1.5				P67B-002EL	Blind flange ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
1	2				P67B-002ET	Blind flange ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
1	3				P67B-002EU	Blind flange ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
1	4				P67B-002EV	Blind flange ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
1	6				P67B-002EW	Blind flange ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
1	8				P67B-002EX	Blind flange ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
1	10				P67B-002EM	Blind flange ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
1	12				P67B-002EN	Blind flange ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
1	14				P67B-002EP	Blind flange ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
1	16				P67B-002ER	Blind flange ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
1	18				P67B-002ES	Blind flange ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
1	20				P67B-002G5	Blind flange ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
1	24				P67B-002G6	Blind flange ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
1	30				P67B-002GT	Blind flange ASTM A105 Class 300 ASME B16.47 Series B RF Licensor-1	

REDUCING FLANGE (FR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5		SCH160	P62B-000N5	Reducing flange SW ASTM A105 Class 300 ASME B16.5 RF Licensor-1	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5				P73T-000FT	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000FU	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

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GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000G5	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000G6	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	6				P73T-000G7	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	8				P73T-000G8	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	10				P73T-000FX	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	12				P73T-000FY	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	14				P73T-000FZ	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	16				P73T-000G0	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	18				P73T-000G1	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	20				P73T-000G3	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	24				P73T-000G4	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	30				P73T-000H9	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	0.5				P73T-000J8	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	0.75				P73T-000J9	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1				P73T-000JA	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1.5				P73T-000JB	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	2				P73T-000JH	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	3				P73T-000JL	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	4				P73T-000JM	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	6				P73T-000JN	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	8				P73T-000JP	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	10				P73T-000JC	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	12				P73T-000JD	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	14				P73T-000JE	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	16				P73T-000JF	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	18				P73T-000JG	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	20				P73T-000JJ	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	24				P73T-000JK	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	30				P73T-000JT	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-10				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	12-30				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
781	0.5-6				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
781	8-30				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81B-001CX	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated Licensor-1	
1	0.75				P81B-001CY	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated Licensor-1	
1	1				P81B-001CZ	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated Licensor-1	

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GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5				P81B-001D0	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated Licensor-1	
1	2				P81C-004VG	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated Licensor-1	
1	3				P81C-004VH	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated Licensor-1	
1	4				P81C-004VJ	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated Licensor-1	
1	6				P81C-004VK	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated Licensor-1	
1	8				P81C-0091C	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated Licensor-1	
1	10				P81C-004VM	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated Licensor-1	
1	12				P81C-004VN	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated Licensor-1	
1	14				P81C-004VP	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated Licensor-1	
1	16				P81C-004VR	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated Licensor-1	
1	18				P81C-004VS	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated Licensor-1	
1	20				P81C-004VT	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated Licensor-1	
1	24				P81C-004VU	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated Licensor-1	
1	30				P81C-004VV	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.47-B RF Trim number 8 BB-BG-OS&Y Gear operated Licensor-1	
24	0.75				P81B-002NK	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated Full bore Licensor-1	
714	0.5				P81B-002S7	Gate valve ASTM A105 Class 800 API 602 SW - NPT Trim number 8 BB-BG-OS&Y Handwheel operated Licensor-1	
714	0.75				P81B-002F5	Gate valve ASTM A105 Class 800 API 602 SW - NPT Trim number 8 BB-BG-OS&Y Handwheel operated Licensor-1	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82B-0014L	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated Licensor-1	
1	0.75				P82B-0014M	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated Licensor-1	
1	1				P82B-0014N	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated Licensor-1	
1	1.5				P82B-0014P	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated Licensor-1	
1	2				P82C-002C8	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated Licensor-1	
1	3				P82C-002C9	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated Licensor-1	
1	4				P82C-002CA	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated Licensor-1	
1	6				P82C-002CB	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated Licensor-1	
1	8				P82C-004CK	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated Licensor-1	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83B-000WE	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover Licensor-1	
1	0.75				P83B-000WF	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover Licensor-1	
1	1				P83B-000WG	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover Licensor-1	
1	1.5				P83B-000WH	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover Licensor-1	
1	2				P83C-002AT	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover Licensor-1	
1	3				P83C-002AV	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover Licensor-1	
1	4				P83C-002AW	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover Licensor-1	
1	6				P83C-002AX	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover Licensor-1	
1	8				P83C-002AY	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover Licensor-1	
1	10				P83C-002AM	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover Licensor-1	
1	12				P83C-002AN	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover Licensor-1	
1	14				P83C-002AP	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover Licensor-1	
1	16				P83C-002AR	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover Licensor-1	
1	18				P83C-002AS	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover Licensor-1	

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CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	20				P83C-002AU	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover Licensor-1	

DP CHECK VALVE (XDP)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
4602	8				P88C-0035N	Dual plate check valve ASTM A216 Grade WCB Class 300 API 594 Wafer-type ASME B16.5 RF Trim number 8 Internal wetted parts 13Cr Spring Inconel Retainerless-type Licensor-1	

BALL VALVE (Q)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	8				P84C-008R2	Ball valve Long-pattern ASTM A216 Grade WCB Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Reduced bore Fire tested design Fluid-1 Licensor-1	
24	8				P84C-008R3	Ball valve Long-pattern ASTM A216 Grade WCB Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design Fluid-1 Licensor-1	

BUTTERFLY VALVE (H)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	10				P86C-0023X	Offset design butterfly valve ASTM A216 Grade WCB Class 300 API 609 Category B Lug-type ASME B16.5 RF Disc CS Seat Stellite-6 Trim 13Cr Triple eccentric design BG Gear operated Licensor-1	
1	12				P86C-0023L	Offset design butterfly valve ASTM A216 Grade WCB Class 300 API 609 Category B Lug-type ASME B16.5 RF Disc CS Seat Stellite-6 Trim 13Cr Triple eccentric design BG Gear operated Licensor-1	
1	14				P86C-0023M	Offset design butterfly valve ASTM A216 Grade WCB Class 300 API 609 Category B Lug-type ASME B16.5 RF Disc CS Seat Stellite-6 Trim 13Cr Triple eccentric design BG Gear operated Licensor-1	
1	16				P86C-0023N	Offset design butterfly valve ASTM A216 Grade WCB Class 300 API 609 Category B Lug-type ASME B16.5 RF Disc CS Seat Stellite-6 Trim 13Cr Triple eccentric design BG Gear operated Licensor-1	
1	18				P86C-0023P	Offset design butterfly valve ASTM A216 Grade WCB Class 300 API 609 Category B Lug-type ASME B16.5 RF Disc CS Seat Stellite-6 Trim 13Cr Triple eccentric design BG Gear operated Licensor-1	
1	20				P86C-0023R	Offset design butterfly valve ASTM A216 Grade WCB Class 300 API 609 Category B Double flanged ASME B16.5 RF Disc CS Seat Stellite-6 Trim 13Cr Triple eccentric design BG Gear operated Licensor-1	

ORIFICE FLANGE (FO)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2		XS		P66B-0085G	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Licensor-1	
1	3		STD		P66B-0085H	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Licensor-1	
1	4		STD		P66B-0085J	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Licensor-1	
1	6		STD		P66B-0085K	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Licensor-1	
1	8		STD		P66B-008BV	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Licensor-1	
200	2		XS		P66B-0085R	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw Licensor-1	
200	3		STD		P66B-0085S	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw Licensor-1	
200	4		STD		P66B-0085T	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw Licensor-1	
200	6		STD		P66B-0085U	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw Licensor-1	
200	8		STD		P66B-008BZ	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw Licensor-1	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71B-000AR	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	0.75				P71B-000AS	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	1				P71B-000AT	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	1.5				P71B-000AU	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	2				P71B-000AW	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	3				P71B-000AX	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	4				P71B-000AY	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	6				P71B-000AZ	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	8				P71B-000B0	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	10				P71B-000AV	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	12				P71B-000BN	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF Licensor-1	

PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000FN	Paddle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	16				P72B-000FP	Paddle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	18				P72B-000FR	Paddle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	20				P72B-000FS	Paddle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF Licensor-1	

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PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	24				P72B-000FT	Paddle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	30				P72B-000FU	Paddle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.47-B RF Licensor-1	

PADDLE SPACER (PS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000FV	Paddle spacer ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	16				P72B-000FW	Paddle spacer ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	18				P72B-000FX	Paddle spacer ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	20				P72B-000FY	Paddle spacer ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	24				P72B-000FZ	Paddle spacer ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	30				P72B-000G0	Paddle spacer ASTM A105 Class 300 Standard-drawing Flange ASME B16.47-B RF Licensor-1	

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BOLT TABLE (B_B2AP01 , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-003V4		
0.75	4	0.625	75	P80S-003XC		
1	4	0.625	80	P80S-003XD		
1.5	4	0.750	95	P80S-00414		
2	8	0.625	90	P80S-003XF		
3	8	0.750	110	P80S-003XK		
4	8	0.750	115	P80S-003XL		
6	12	0.750	125	P80S-003XN		
8	12	0.875	140	P80S-0041D		
10	16	1.000	160	P80S-0043K		
12	16	1.125	175	P80S-0046S		
14	20	1.125	180	P80S-0046T		
16	20	1.250	190	P80S-004AK		
18	24	1.250	200	P80S-004AM		
20	24	1.250	210	P80S-004AP		
24	24	1.500	235	P80S-003F8		
30	36	1.375	285	P80S-003EA		

BOLT TABLE (B_B2AP01_781 , STUD ASME RF, OPTION CODE 781)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	80	P80S-003V6		
0.75	4	0.625	90	P80S-003XF		
1	4	0.625	95	P80S-003XG		
1.5	4	0.750	110	P80S-003XK		
2	8	0.625	110	P80S-003VC		
3	8	0.750	130	P80S-003XP		
4	8	0.875	150	P80S-0041F		
6	12	1.000	175	P80S-0043P		
8	12	1.125	195	P80S-0046W		
10	16	1.250	250	P80S-004AY		
12	20	1.250	255	P80S-004AZ		
14	20	1.375	270	P80S-003E7		
16	20	1.500	295	P80S-003FL		
18	20	1.625	320	P80S-005TT		
20	24	1.625	335	P80S-005TW		
24	24	1.875	380	P80S-008P4		
30	28	1.875	435	P80S-008PF		

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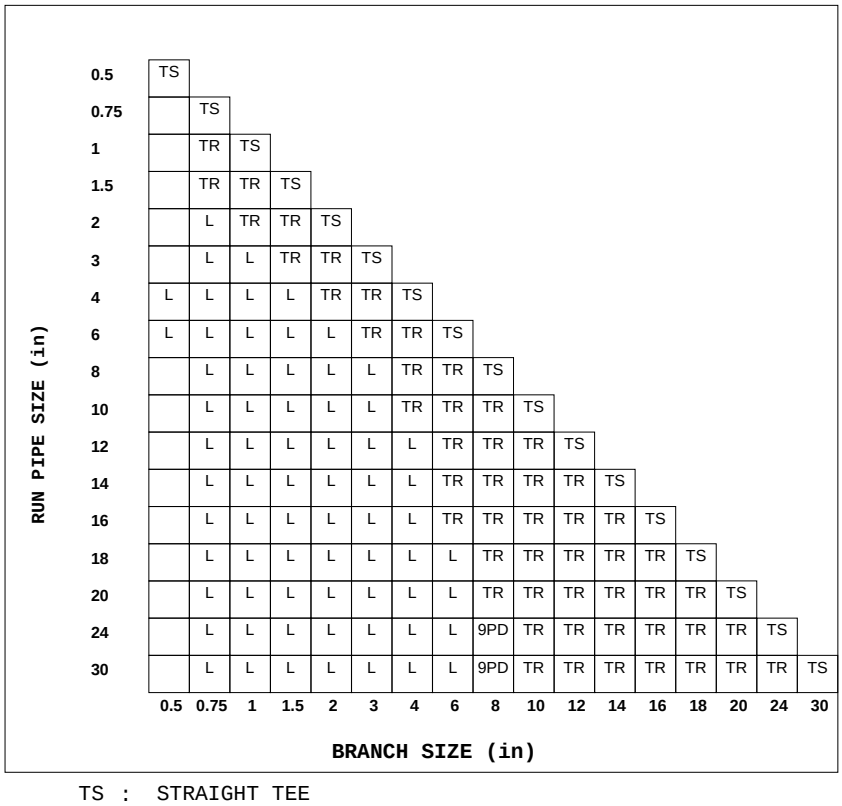
BRANCH TABLE (T_B2AP01)



TS : STRAIGHT TEE
TR : REDUCING TEE
9PD : REINFORCING PAD 90 DEG
L : OUTLET

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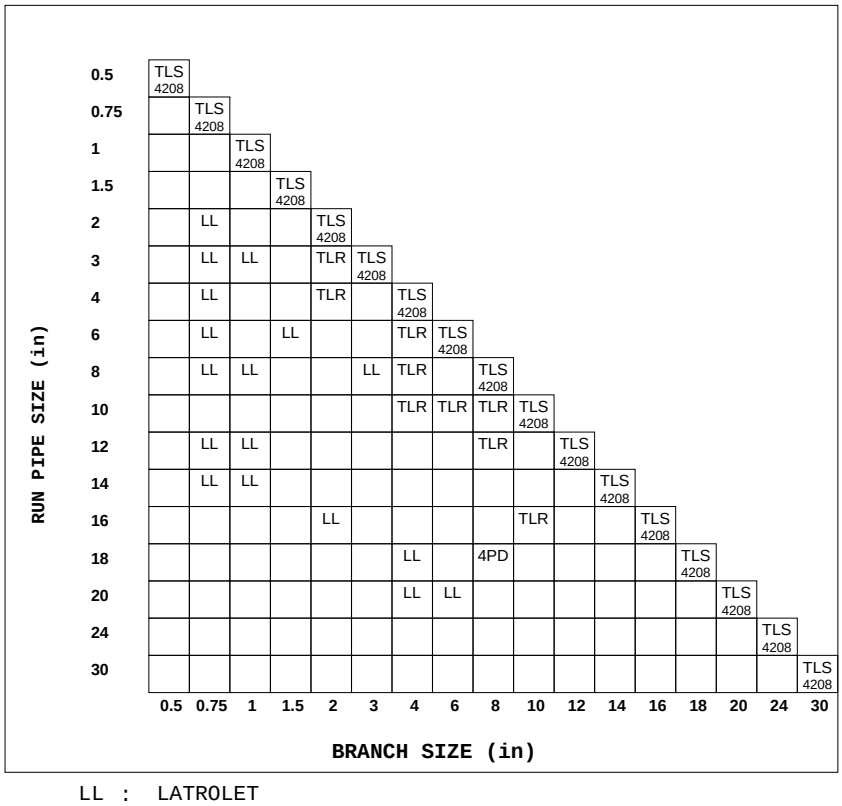
BRANCH TABLE (T_B2AP01_2)



LL : LATROLET
4PD : REINFORCING PAD 45 DEG
TLR : REDUCING LATERAL TEE
TLS : STRAIGHT LATERAL TEE

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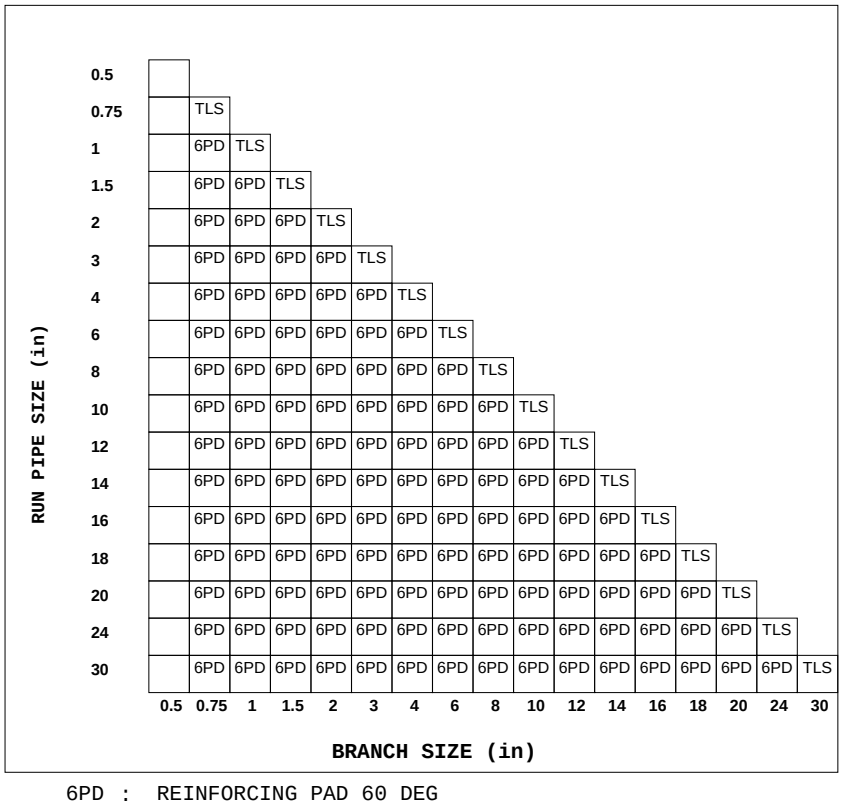
BRANCH TABLE (T_B2AP01_3)



	0.5	0.75	1	1.5	2	3	4	6	8	10	12	14	16	18	20	24	30
0.5																	
0.75		TLS															
1		6PD	TLS														
1.5		6PD	6PD	TLS													
2		6PD	6PD	6PD	TLS												
3		6PD	6PD	6PD	6PD	TLS											
4		6PD	6PD	6PD	6PD	6PD	TLS										
6		6PD	6PD	6PD	6PD	6PD	6PD	TLS									
8		6PD	6PD	6PD	6PD	6PD	6PD	6PD	TLS								
10		6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	TLS							
12		6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	TLS						
14		6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	TLS					
16		6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	TLS				
18		6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	TLS			
20		6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	TLS		
24		6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	TLS	
30		6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	TLS

RUN PIPE SIZE (in)

6PD : REINFORCING PAD 60 DEG
TLS : STRAIGHT LATERAL TEE

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PIPING CLASS

B2AP02 REV NO. 2

Material : Killed CS
Rating : ASME CLASS 300
Flange Face : RF
C.A.(mm) : 3.00
Gasket : Spiral Wound
Service : PROCESS - GENERAL PROCESS NON SOUR, NON CORROSIVE
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
2	USE OF SOFT SEATED BALL, PLUG AND BUTTERFLY VALVES SHALL BE LIMITED TO MAXIMUM OF 204DEGC (400DEGF)

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
200	WITH JACK SCREW (FO)
541	NPT(F) (CA,L)
714	SW - NPT(F) (V)
781	CLASS 600 (B,F,G)
797	CLASS 1500 (B,F,G)
805	CLASS 2500 (B,F,G)
2489	CLASS 600 RJ (B,F,G)

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PIPING CLASS
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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P01A-0010P	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	0.75		SCH160		P01A-0010R	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1		SCH160		P01A-0014M	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1.5		SCH160		P01A-0015J	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	2		XS		P01A-000YX	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	3		STD		P01A-000YM	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	4		STD		P01A-000YU	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	6		STD		P01A-000Z3	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	8		STD		P01A-000ZA	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	10		STD		P01A-000XJ	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	12		SCH40		P01A-0018V	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	14		SCH40		P01A-0018U	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	16		SCH20		P01A-0018E	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P02B-0001J	90 degree elbow ASTM A105 Class 6000 ASME B16.11 SW	
1	0.75				P02B-0001K	90 degree elbow ASTM A105 Class 6000 ASME B16.11 SW	
1	1				P02B-0002E	90 degree elbow ASTM A105 Class 6000 ASME B16.11 SW	
1	1.5				P02B-0002F	90 degree elbow ASTM A105 Class 6000 ASME B16.11 SW	
1	2		XS		P02A-000CP	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		STD		P02A-000CU	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		STD		P02A-000CZ	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		STD		P02A-000D6	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		STD		P02A-000DC	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	10		STD		P02A-000BP	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	12		SCH40		P02A-000JE	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	14		SCH40		P02A-000JF	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	16		SCH20		P02A-000GM	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P03B-0001F	45 degree elbow ASTM A105 Class 6000 ASME B16.11 SW	
1	0.75				P03B-0001G	45 degree elbow ASTM A105 Class 6000 ASME B16.11 SW	
1	1				P03B-0002A	45 degree elbow ASTM A105 Class 6000 ASME B16.11 SW	
1	1.5				P03B-0002B	45 degree elbow ASTM A105 Class 6000 ASME B16.11 SW	
1	2		XS		P03A-000AS	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		STD		P03A-000AX	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		STD		P03A-000B1	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		STD		P03A-000B9	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		STD		P03A-000BB	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	10		STD		P03A-000A4	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	12		SCH40		P03A-000GC	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	14		SCH40		P03A-000GD	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	16		SCH20		P03A-000EM	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P21B-0001F	Straight tee ASTM A105 Class 6000 ASME B16.11 SW	
1	0.75				P21B-0001G	Straight tee ASTM A105 Class 6000 ASME B16.11 SW	
1	1				P21B-00026	Straight tee ASTM A105 Class 6000 ASME B16.11 SW	
1	1.5				P21B-00027	Straight tee ASTM A105 Class 6000 ASME B16.11 SW	
1	2		XS		P21A-001CJ	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		STD		P21A-001CU	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		STD		P21A-001CW	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6		STD		P21A-001D2	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8		STD		P21A-001D8	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10		STD		P21A-001BV	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12		SCH40		P21A-0022P	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14		SCH40		P21A-0022R	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16		SCH20		P21A-0020X	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75			P24B-00030	Reducing tee ASTM A105 Class 6000 ASME B16.11 SW	
1	1.5	0.75			P24B-00032	Reducing tee ASTM A105 Class 6000 ASME B16.11 SW	
1	1.5	1			P24B-0004J	Reducing tee ASTM A105 Class 6000 ASME B16.11 SW	
1	2	1	XS	SCH160	P24A-00GMB	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	XS	SCH160	P24A-005K9	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	STD	SCH160	P24A-00GMC	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	STD	XS	P24A-002HW	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P24A-002HY	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P24A-0021K	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	STD	P24A-0021A	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P24A-00229	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	STD	STD	P24A-0021E	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	STD	STD	P24A-0022M	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	STD	STD	P24A-0021B	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	STD	STD	P24A-0022B	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	STD	STD	P24A-0022W	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	SCH40	STD	P24A-00GSM	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH40	STD	P24A-00AF8	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH40	STD	P24A-00GSL	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	SCH40	STD	P24A-00GV4	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	SCH40	STD	P24A-00AFB	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	SCH40	STD	P24A-003GJ	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	SCH40	SCH40	P24A-0033E	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	6	SCH20	STD	P24A-00GU4	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	SCH20	STD	P24A-00GP8	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	SCH20	STD	P24A-00GU3	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	SCH20	SCH40	P24A-00L6A	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	SCH20	SCH40	P24A-00L4L	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	STD	XS	P27A-001MZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P27A-001N0	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P27A-00189	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	STD	P27A-001AZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P27A-001GW	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	STD	STD	P27A-001C2	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	STD	STD	P27A-00188	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	STD	STD	P27A-001C3	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	STD	STD	P27A-0018M	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	STD	STD	P27A-0019J	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	SCH40	STD	P27A-004W1	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH40	STD	P27A-004XB	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH40	STD	P27A-004UG	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	SCH40	STD	P27A-0051B	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	SCH40	STD	P27A-003ZT	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	SCH40	STD	P27A-0029L	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	SCH40	SCH40	P27A-001ZZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	SCH20	STD	P27A-003ND	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	SCH20	STD	P27A-0054A	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	SCH20	SCH40	P27A-00CBP	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	SCH20	SCH40	P27A-00CBR	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	STD	XS	P28A-001N5	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P28A-001N6	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P28A-0018B	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	STD	P28A-001AS	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P28A-00182	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	STD	STD	P28A-0017V	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	STD	STD	P28A-0018V	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	STD	STD	P28A-0017W	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	STD	STD	P28A-00190	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	STD	STD	P28A-0019J	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	SCH40	STD	P28A-008HU	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH40	STD	P28A-005T9	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH40	STD	P28A-008HT	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	SCH40	STD	P28A-008F4	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	SCH40	STD	P28A-003ZL	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	SCH40	STD	P28A-0028T	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	SCH40	SCH40	P28A-001ZG	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	SCH20	STD	P28A-003N7	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	SCH20	STD	P28A-008FM	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	SCH20	SCH40	P28A-009AX	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	SCH20	SCH40	P28A-009AY	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P29B-0002F	Cap ASTM A105 Class 6000 ASME B16.11 SW	
1	0.75				P29B-0002G	Cap ASTM A105 Class 6000 ASME B16.11 SW	
1	1				P29B-0002D	Cap ASTM A105 Class 6000 ASME B16.11 SW	
1	1.5				P29B-0002E	Cap ASTM A105 Class 6000 ASME B16.11 SW	
1	2		XS		P29A-000A1	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		STD		P29A-000BK	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		STD		P29A-000A3	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6		STD		P29A-000A9	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8		STD		P29A-000AF	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10		STD		P29A-0009Z	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12		SCH40		P29A-000GB	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14		SCH40		P29A-000GC	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16		SCH20		P29A-000F3	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
541	0.75				P29B-0000Y	Cap ASTM A105 Class 6000 ASME B16.11 NPT	
541	1				P29B-0000Z	Cap ASTM A105 Class 6000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P41A-000B9	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		XXS		P41A-000BA	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		XXS		P41A-000D8	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		XXS		P41A-000D9	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

CON SWAGED NIPPLE (SNC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	SCH160	P42A-00029	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	SCH160	SCH160	P42A-0009T	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	SCH160	SCH160	P42A-0009U	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	SCH160	SCH160	P42A-0009V	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	SCH160	SCH160	P42A-0009W	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	SCH160	SCH160	P42A-0009X	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	XS	SCH160	P42A-000J6	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	XS	SCH160	P42A-000J7	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	XS	SCH160	P42A-000F8	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	XS	SCH160	P42A-000KZ	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	

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CON SWAGED NIPPLE (SNC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	1.5	STD	SCH160	P42A-000L0	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	

ECC SWAGED NIPPLE (SNE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	SCH160	P43A-000AM	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	SCH160	SCH160	P43A-000B4	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	SCH160	SCH160	P43A-000B5	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	SCH160	SCH160	P43A-000B6	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	SCH160	SCH160	P43A-000B7	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	SCH160	SCH160	P43A-000B8	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	XS	SCH160	P43A-000B2	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	XS	SCH160	P43A-000B3	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	XS	SCH160	P43A-000CZ	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	XS	SCH160	P43A-000D0	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	STD	SCH160	P43A-000D1	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	

COUPLING (CPS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P47B-00013	Coupling ASTM A105 Class 6000 ASME B16.11 SW - SW	
1	0.75				P47B-00012	Coupling ASTM A105 Class 6000 ASME B16.11 SW - SW	
1	1				P47B-0002A	Coupling ASTM A105 Class 6000 ASME B16.11 SW - SW	
1	1.5				P47B-0002B	Coupling ASTM A105 Class 6000 ASME B16.11 SW - SW	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5 - 2.5	0.75			P31B-0137D	Outlet ASTM A105 Class 6000 MSS SP-97 SW	
1	3 - 10	0.75			P31B-007LV	Outlet ASTM A105 Class 6000 MSS SP-97 SW	
1	12 and larger	0.75			P31B-0136N	Outlet ASTM A105 Class 6000 MSS SP-97 SW	
1	3 - 10	1			P31B-007LN	Outlet ASTM A105 Class 6000 MSS SP-97 SW	
1	12 and larger	1			P31B-0136P	Outlet ASTM A105 Class 6000 MSS SP-97 SW	
1	4 - 5	1.5			P31B-004LE	Outlet ASTM A105 Class 6000 MSS SP-97 SW	
1	6 - 8	1.5			P31B-005T4	Outlet ASTM A105 Class 6000 MSS SP-97 SW	
1	10 - 18	1.5			P31B-007LF	Outlet ASTM A105 Class 6000 MSS SP-97 SW	
541	1	0.75			P31B-005HL	Outlet ASTM A105 Class 6000 MSS SP-97 NPT	
541	1.5 - 2.5	0.75			P31B-0137F	Outlet ASTM A105 Class 6000 MSS SP-97 NPT	
541	3 - 10	0.75			P31B-007KP	Outlet ASTM A105 Class 6000 MSS SP-97 NPT	
541	12 and larger	0.75			P31B-0138A	Outlet ASTM A105 Class 6000 MSS SP-97 NPT	
1	6	2	STD	XS	P31B-007SH	Outlet ASTM A105 MSS SP-97 BW	
1	8	2	STD	XS	P31B-00AGX	Outlet ASTM A105 MSS SP-97 BW	
1	10	2	STD	XS	P31B-00ASA	Outlet ASTM A105 MSS SP-97 BW	
1	12	2	SCH40	XS	P31B-00CBS	Outlet ASTM A105 MSS SP-97 BW	
1	14	2	SCH40	XS	P31B-00CAH	Outlet ASTM A105 MSS SP-97 BW	
1	16	2	SCH20	XS	P31B-00TF8	Outlet ASTM A105 MSS SP-97 BW	
1	8	3	STD	STD	P31B-00A2T	Outlet ASTM A105 MSS SP-97 BW	
1	10	3	STD	STD	P31B-009CM	Outlet ASTM A105 MSS SP-97 BW	
1	12	3	SCH40	STD	P31B-0096S	Outlet ASTM A105 MSS SP-97 BW	
1	14	3	SCH40	STD	P31B-0090U	Outlet ASTM A105 MSS SP-97 BW	
1	16	3	SCH20	STD	P31B-00TU2	Outlet ASTM A105 MSS SP-97 BW	
1	12	4	SCH40	STD	P31B-008ZY	Outlet ASTM A105 MSS SP-97 BW	
1	14	4	SCH40	STD	P31B-008YN	Outlet ASTM A105 MSS SP-97 BW	
1	16	4	SCH20	STD	P31B-00TU3	Outlet ASTM A105 MSS SP-97 BW	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30B-0002D	Plug ASTM A105 ASME B16.11 NPT Round head	
1	0.75				P30B-0002E	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1				P30B-0002F	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1.5				P30B-0002G	Plug ASTM A105 ASME B16.11 NPT Round head	

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FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P61B-001H5	Flange SW ASTM A105 Class 300 ASME B16.5 RF	
1	0.75		SCH160		P61B-001HH	Flange SW ASTM A105 Class 300 ASME B16.5 RF	
1	1		SCH160		P61B-001E8	Flange SW ASTM A105 Class 300 ASME B16.5 RF	
1	1.5		SCH160		P61B-001ET	Flange SW ASTM A105 Class 300 ASME B16.5 RF	
1	2		XS		P61B-001HW	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	3		STD		P61B-001LJ	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	4		STD		P61B-001MC	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	6		STD		P61B-001N2	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	8		STD		P61B-001NL	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	10		STD		P61B-001L6	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	12		SCH40		P61B-002FJ	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	14		SCH40		P61B-002FL	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	16		SCH20		P61B-002MS	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
2489	10		STD		P61B-00D28	Flange WN ASTM A105 Class 600 ASME B16.5 RJ	
781	0.5		SCH160		P61B-001DZ	Flange SW ASTM A105 Class 600 ASME B16.5 RF	
781	0.75		SCH160		P61B-001DW	Flange SW ASTM A105 Class 600 ASME B16.5 RF	
781	1		SCH160		P61B-005X5	Flange SW ASTM A105 Class 600 ASME B16.5 RF	
781	1.5		SCH160		P61B-005X6	Flange SW ASTM A105 Class 600 ASME B16.5 RF	
781	2		XS		P61B-001DH	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	3		STD		P61B-001TW	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	4		STD		P61B-001VV	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	6		STD		P61B-001JW	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	8		STD		P61B-001KK	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	10		STD		P61B-001JJ	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	12		SCH40		P61B-003T5	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	14		SCH40		P61B-003T6	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	16		SCH20		P61B-00798	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
797	1		SCH160		P61B-0065V	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
805	10		STD		P61B-00DP6	Flange WN ASTM A105 Class 2500 ASME B16.5 RJ	
805	12		SCH40		P61B-00BVW	Flange WN ASTM A105 Class 2500 ASME B16.5 RJ	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67B-000GH	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	0.75				P67B-000GJ	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	1				P67B-000GK	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	1.5				P67B-000GL	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	2				P67B-000GM	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	3				P67B-000GN	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	4				P67B-000GP	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	6				P67B-000GY	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	8				P67B-000GZ	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	10				P67B-000GR	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	12				P67B-000GS	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	14				P67B-000GT	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	16				P67B-000GU	Blind flange ASTM A105 Class 300 ASME B16.5 RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000FT	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000FU	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000G5	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000G6	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

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GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	6				P73T-000G7	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	8				P73T-000G8	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	10				P73T-000FX	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	12				P73T-000FY	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	14				P73T-000FZ	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	16				P73T-000G0	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
2489	0.5				P75T-000NA	Ring joint gasket Soft iron Class 600 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
2489	0.75				P75T-000NB	Ring joint gasket Soft iron Class 600 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
2489	1				P75T-000NC	Ring joint gasket Soft iron Class 600 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
2489	1.5				P75T-000ND	Ring joint gasket Soft iron Class 600 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
2489	2				P75T-000NE	Ring joint gasket Soft iron Class 600 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
2489	3				P75T-000NF	Ring joint gasket Soft iron Class 600 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
2489	4				P75T-000NG	Ring joint gasket Soft iron Class 600 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
2489	6				P75T-000NH	Ring joint gasket Soft iron Class 600 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
2489	8				P75T-000NJ	Ring joint gasket Soft iron Class 600 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
2489	10				P75T-000YD	Ring joint gasket Soft iron Class 600 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
2489	12				P75T-000YE	Ring joint gasket Soft iron Class 600 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
2489	14				P75T-000YF	Ring joint gasket Soft iron Class 600 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
2489	16				P75T-000YG	Ring joint gasket Soft iron Class 600 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
781	0.5				P73T-000J8	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	0.75				P73T-000J9	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1				P73T-000JA	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1.5				P73T-000JB	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	2				P73T-000JH	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	3				P73T-000JL	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	4				P73T-000JM	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	6				P73T-000JN	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	8				P73T-000JP	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	10				P73T-000JC	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	12				P73T-000JD	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	14				P73T-000JE	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	16				P73T-000JF	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
797	1				P75T-000JV	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	10				P75T-000KX	Ring joint gasket Soft iron Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	12				P75T-000MB	Ring joint gasket Soft iron Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-10				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	12-16				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
2489	8-14				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
781	0.5-6				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
781	8-16				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
797	1-2				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
805	10-12				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81B-000P4	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	0.75				P81B-000NX	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	

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GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P81B-000NY	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	1.5				P81B-000NZ	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	2				P81C-002D6	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	3				P81C-002D7	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	4				P81C-002D8	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	6				P81C-002D9	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	8				P81C-0086V	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated	
1	10				P81C-002DB	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated	
1	12				P81C-002DC	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated	
1	14				P81C-0034H	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated	
1	16				P81C-002DD	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated	
714	0.5				P81B-0015L	Gate valve ASTM A105 Class 800 API 602 SW - NPT Trim number 8 BB-BG-OS&Y Handwheel operated	
714	0.75				P81B-002F4	Gate valve ASTM A105 Class 800 API 602 SW - NPT Trim number 8 BB-BG-OS&Y Handwheel operated	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82B-000K0	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	0.75				P82B-000HB	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	1				P82B-000HC	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	1.5				P82B-000HD	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	2				P82C-00114	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	3				P82C-00115	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	4				P82C-00116	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	6				P82C-00117	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	8				P82C-0011A	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83B-000FX	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover	
1	0.75				P83B-000ER	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover	
1	1				P83B-000ES	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover	
1	1.5				P83B-000ET	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover	
1	2				P83C-0013H	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	3				P83C-0013L	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	4				P83C-0013M	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	6				P83C-0013N	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	8				P83C-0013P	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	10				P83C-0013D	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	12				P83C-0013E	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	14				P83C-0023R	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	16				P83C-0013F	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	

BUTTERFLY VALVE (H)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	10				P86C-0023E	Offset design butterfly valve ASTM A216 Grade WCB Class 300 API 609 Category B Lug-type ASME B16.5 RF Disc CS Seat Stellite-6 Trim 13Cr Triple eccentric design BG Gear operated	
1	12				P86C-0023G	Offset design butterfly valve ASTM A216 Grade WCB Class 300 API 609 Category B Lug-type ASME B16.5 RF Disc CS Seat Stellite-6 Trim 13Cr Triple eccentric design BG Gear operated	
1	14				P86C-0023H	Offset design butterfly valve ASTM A216 Grade WCB Class 300 API 609 Category B Lug-type ASME B16.5 RF Disc CS Seat Stellite-6 Trim 13Cr Triple eccentric design BG Gear operated	
1	16				P86C-0023J	Offset design butterfly valve ASTM A216 Grade WCB Class 300 API 609 Category B Lug-type ASME B16.5 RF Disc CS Seat Stellite-6 Trim 13Cr Triple eccentric design BG Gear operated	

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NEEDLE VALVE (NV)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82B-001JU	Needle valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	0.75				P82B-000YB	Needle valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	1				P82B-000YC	Needle valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	1.5				P82B-000YD	Needle valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	

ORIFICE FLANGE (FO)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2		XS		P66B-0084B	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	3		STD		P66B-0084C	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	4		STD		P66B-0084D	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	6		STD		P66B-0084E	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	8		STD		P66B-008BN	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	10		STD		P66B-008BM	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	12		SCH40		P66B-00885	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
200	2		XS		P66B-00843	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	3		STD		P66B-00844	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	4		STD		P66B-00845	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	6		STD		P66B-00846	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	8		STD		P66B-008BR	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	10		STD		P66B-008BP	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	12		SCH40		P66B-0088K	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71B-000B1	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	0.75				P71B-000B2	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	1				P71B-000B3	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71B-000B4	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	2				P71B-000B6	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	3				P71B-000B7	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	4				P71B-000B8	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	6				P71B-000B9	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	8				P71B-000BA	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	10				P71B-000B5	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	12				P71B-000BB	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	

PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000FA	Paddle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	16				P72B-000FB	Paddle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	

PADDLE SPACER (PS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000FG	Paddle spacer ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	16				P72B-000FH	Paddle spacer ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	

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BOLT TABLE (B_B2AP02 , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-003V4		
0.75	4	0.625	75	P80S-003XC		
1	4	0.625	80	P80S-003XD		
1.5	4	0.750	95	P80S-00414		
2	8	0.625	90	P80S-003XF		
3	8	0.750	110	P80S-003XK		
4	8	0.750	115	P80S-003XL		
6	12	0.750	125	P80S-003XN		
8	12	0.875	140	P80S-0041D		
10	16	1.000	160	P80S-0043K		
12	16	1.125	175	P80S-0046S		
14	20	1.125	180	P80S-0046T		
16	20	1.250	190	P80S-004AK		

BOLT TABLE (B_B2AP02_2489 , STUD ASME RJ, OPTION CODE 2489)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	80		R11	P75T-000NA
0.75	4	0.625	90		R13	P75T-000NB
1	4	0.625	95		R16	P75T-000NC
1.5	4	0.750	110		R20	P75T-000ND
2	8	0.625	115		R23	P75T-000NE
3	8	0.750	135		R31	P75T-000NF
4	8	0.875	150		R37	P75T-000NG
6	12	1.000	175		R45	P75T-000NH
8	12	1.125	200	P80S-0046X	R49	P75T-000NJ
10	16	1.250	255	P80S-004AZ	R53	P75T-000YD
12	20	1.250	260	P80S-004B0	R57	P75T-000YE
14	20	1.375	275	P80S-003E8	R61	P75T-000YF
16	20	1.500	300		R65	P75T-000YG

BOLT TABLE (B_B2AP02_781 , STUD ASME RF, OPTION CODE 781)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	80	P80S-003V6		
0.75	4	0.625	90	P80S-003XF		
1	4	0.625	95	P80S-003XG		
1.5	4	0.750	110	P80S-003XK		
2	8	0.625	110	P80S-003VC		
3	8	0.750	130	P80S-003XP		
4	8	0.875	150	P80S-0041F		
6	12	1.000	175	P80S-0043P		
8	12	1.125	195	P80S-0046W		
10	16	1.250	250	P80S-004AY		
12	20	1.250	255	P80S-004AZ		
14	20	1.375	270	P80S-003E7		
16	20	1.500	295	P80S-003FL		

BOLT TABLE (B_B2AP02_797 , STUD ASME RJ, OPTION CODE 797)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	110		R12	
0.75	4	0.750	115		R14	
1	4	0.875	130	P80S-0041B	R16	P75T-000JV
1.5	4	1.000	140		R20	
2	8	0.875	150	P80S-0041F	R24	
3	8	1.125	180		R35	
4	8	1.250	230		R39	
6	12	1.375	300		R46	
8	12	1.625	345		R50	
10	12	1.875	395		R54	
12	16	2.000	445		R58	
14	16	2.250	490		R63	
16	16	2.500	540		R67	

BOLT TABLE (B_B2AP02_805 , STUD ASME RJ, OPTION CODE 805)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE

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BOLT TABLE (B_B2AP02_805 , STUD ASME RJ, OPTION CODE 805)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	125		R13	
0.75	4	0.750	130		R16	
1	4	0.875	140		R18	
1.5	4	1.125	175		R23	
2	8	1.000	180		R26	
3	8	1.250	260		R32	
4	8	1.500	305		R38	
6	8	2.000	410		R47	
8	12	2.000	450		R51	
10	12	2.500	575	P80S-00P1K	R55	P75T-000KX
12	12	2.750	635	P80S-00PWW	R60	P75T-000MB
14	14	3.000	695		R64	
16	14	3.000	755		R68	

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BRANCH TABLE (T_B2AP02)

RUN PIPE SIZE (in) \ BRANCH SIZE (in)	0.5	0.75	1	1.5	2	3	4	6	8	10	12	14	16
0.5	TS												
0.75		TS											
1		TR	TS										
1.5		TR	TR	TS									
2		L	TR	TR	TS								
3		L	L	TR	TR	TS							
4	L	L	L	L	TR	TR	TS						
6	L	L	L	L	L	TR	TR	TS					
8		L	L	L	L	L	TR	TR	TS				
10		L	L	L	L	L	TR	TR	TR	TS			
12		L	L	L	L	L	L	TR	TR	TR	TS		
14		L	L	L	L	L	L	TR	TR	TR	TR	TS	
16		L	L	L	L	L	L	TR	TR	TR	TR	TR	TS

TS : STRAIGHT TEE
TR : REDUCING TEE
L : OUTLET

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Material : Killed CS
Rating : ASME CLASS 300
Flange Face : RF
C.A.(mm) : 3.00
Gasket : Spiral Wound
Service : PROCESS - GENERAL PROCESS NON SOUR, NON CORROSIVE
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
2	USE OF SOFT SEATED BALL, PLUG AND BUTTERFLY VALVES SHALL BE LIMITED TO MAXIMUM OF 204DEGC (400DEGF)

DETAIL NOTES :

NO.	DESCRIPTION
38	TO BE USED FOR STAND PIPE

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
24	FULL PORT (Q)
200	WITH JACK SCREW (FO)
221	RF (V)
541	NPT(F) (CA,L)
714	SW - NPT(F) (V)
781	CLASS 600 (B,F,G)
4212	WELDOLET FOR STAND PIPE (L)

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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P01A-00143	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	0.75		SCH160		P01A-0010R	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1		SCH160		P01A-0014M	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1.5		SCH160		P01A-0015J	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	2		XS		P01A-000YX	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	3		XS		P01A-000Z4	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	4		STD		P01A-000YU	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	6		STD		P01A-000Z3	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	8		STD		P01A-000ZA	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	10		STD		P01A-000XJ	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	12		SCH40		P01A-0018V	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	14		SCH40		P01A-0018U	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	16		XS		P01A-000YS	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	18		XS		P01A-0043W	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE	
1	20		XS		P01A-00445	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE	
1	24		XS		P01A-0043X	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE	
1	26		14.27mm		P01A-0091Y	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE	
1	30		SCH30		P01A-00446	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE	
1	32		XS		P01A-0090G	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE	
1	36		XS		P01A-0042K	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE	
1	42		XS		P01A-0043G	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE	
1	48		XS		P01A-0042L	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P02B-0002A	90 degree elbow ASTM A105 Class 9000 ASME B16.11 SW	
1	0.75				P02B-0001K	90 degree elbow ASTM A105 Class 6000 ASME B16.11 SW	
1	1				P02B-0002E	90 degree elbow ASTM A105 Class 6000 ASME B16.11 SW	
1	1.5				P02B-0002F	90 degree elbow ASTM A105 Class 6000 ASME B16.11 SW	
1	2		XS		P02A-000CP	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		XS		P02A-000CX	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		STD		P02A-000CZ	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		STD		P02A-000D6	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		STD		P02A-000DC	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	10		STD		P02A-000BP	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	12		SCH40		P02A-000JE	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	14		SCH40		P02A-000JF	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	16		XS		P02A-000CE	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	18		XS		P02A-000M9	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	20		XS		P02A-001JX	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	24		XS		P02A-000MB	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	26		14.27mm		P02A-00529	90 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius	
1	30		SCH30		P02A-000FM	90 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius	
1	32		XS		P02A-000D5	90 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius	
1	36		XS		P02A-000DH	90 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius	
1	42		XS		P02A-000FB	90 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius	
1	48		XS		P02A-0017R	90 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P03B-00026	45 degree elbow ASTM A105 Class 9000 ASME B16.11 SW	
1	0.75				P03B-0001G	45 degree elbow ASTM A105 Class 6000 ASME B16.11 SW	
1	1				P03B-0002A	45 degree elbow ASTM A105 Class 6000 ASME B16.11 SW	
1	1.5				P03B-0002B	45 degree elbow ASTM A105 Class 6000 ASME B16.11 SW	
1	2		XS		P03A-000AS	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		XS		P03A-000AZ	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		STD		P03A-000B1	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		STD		P03A-000B9	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		STD		P03A-000BB	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

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45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	10		STD		P03A-000A4	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	12		SCH40		P03A-000GC	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	14		SCH40		P03A-000GD	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	16		XS		P03A-000AP	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	18		XS		P03A-001DZ	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	20		XS		P03A-001E0	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	24		XS		P03A-001E1	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	26		14.27mm		P03A-004N8	45 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius	
1	30		SCH30		P03A-000DM	45 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius	
1	32		XS		P03A-000B6	45 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius	
1	36		XS		P03A-000BG	45 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius	
1	42		XS		P03A-000DB	45 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius	
1	48		XS		P03A-0013P	45 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P21B-00022	Straight tee ASTM A105 Class 9000 ASME B16.11 SW	
1	0.75				P21B-0001G	Straight tee ASTM A105 Class 6000 ASME B16.11 SW	
1	1				P21B-00026	Straight tee ASTM A105 Class 6000 ASME B16.11 SW	
1	1.5				P21B-00027	Straight tee ASTM A105 Class 6000 ASME B16.11 SW	
1	2		XS		P21A-001CJ	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		XS		P21A-001CR	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		STD		P21A-001CW	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6		STD		P21A-001D2	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8		STD		P21A-001D8	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10		STD		P21A-001BV	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12		SCH40		P21A-0022P	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14		SCH40		P21A-0022R	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16		XS		P21A-001CG	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18		XS		P21A-001PS	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20		XS		P21A-001T4	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24		XS		P21A-001UM	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	26		14.27mm		P21A-001UV	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30		SCH30		P21A-001Y9	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	32		XS		P21A-001CY	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	36		XS		P21A-001D7	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	42		XS		P21A-001KS	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	48		XS		P21A-001RL	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75			P24B-00030	Reducing tee ASTM A105 Class 6000 ASME B16.11 SW	
1	1.5	0.75			P24B-00032	Reducing tee ASTM A105 Class 6000 ASME B16.11 SW	
1	1.5	1			P24B-0004J	Reducing tee ASTM A105 Class 6000 ASME B16.11 SW	
1	2	1	XS	SCH160	P24A-00GMB	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	XS	SCH160	P24A-005K9	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	XS	SCH160	P24A-00GNV	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	XS	XS	P24A-0023S	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P24A-002HY	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	XS	P24A-00GNW	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	XS	P24A-00GTR	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P24A-00229	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	STD	STD	P24A-0021E	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	STD	STD	P24A-0022M	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	STD	STD	P24A-0021B	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	STD	STD	P24A-0022B	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	STD	STD	P24A-0022W	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	SCH40	STD	P24A-00GSM	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH40	STD	P24A-00AF8	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	12	10	SCH40	STD	P24A-00GSL	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	SCH40	STD	P24A-00GV4	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	SCH40	STD	P24A-00AFB	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	SCH40	STD	P24A-003GJ	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	SCH40	SCH40	P24A-0033E	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	6	XS	STD	P24A-002NZ	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	XS	STD	P24A-002PY	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	XS	STD	P24A-002T3	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	XS	SCH40	P24A-00445	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	XS	SCH40	P24A-0044A	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	8	XS	STD	P24A-0051F	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	10	XS	STD	P24A-003GZ	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	12	XS	SCH40	P24A-00BHL	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	14	XS	SCH40	P24A-003H1	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	16	XS	XS	P24A-004UY	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	8	XS	STD	P24A-00C1T	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	10	XS	STD	P24A-00BTC	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	12	XS	SCH40	P24A-00BUV	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	14	XS	SCH40	P24A-00BWF	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	16	XS	XS	P24A-00BY8	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	18	XS	XS	P24A-00BZC	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	10	XS	STD	P24A-003H3	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	12	XS	SCH40	P24A-0047W	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	14	XS	SCH40	P24A-003XK	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	16	XS	XS	P24A-0047P	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	18	XS	XS	P24A-003H6	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	20	XS	XS	P24A-00CD6	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	26	12	14.27mm	SCH40	P24A-00PZ0	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	26	14	14.27mm	SCH40	P24A-00PZ1	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	26	16	14.27mm	XS	P24A-00PZ2	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	26	18	14.27mm	XS	P24A-00PZ3	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	26	20	14.27mm	XS	P24A-00PZ4	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	26	24	14.27mm	XS	P24A-00CKC	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	10	SCH30	STD	P24A-00GVX	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	12	SCH30	SCH40	P24A-00L5S	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	14	SCH30	SCH40	P24A-00L5T	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	16	SCH30	XS	P24A-004ZP	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	18	SCH30	XS	P24A-004SM	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	20	SCH30	XS	P24A-00D6E	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	24	SCH30	XS	P24A-00D8H	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	26	SCH30	14.27mm	P24A-00D9B	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	32	14	XS	SCH40	P24A-00PU1	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	32	16	XS	XS	P24A-00DCV	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	32	18	XS	XS	P24A-00DDH	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	32	20	XS	XS	P24A-00DE6	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	32	24	XS	XS	P24A-00DF7	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	32	26	XS	14.27mm	P24A-00PZ5	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	32	30	XS	SCH30	P24A-00PZ6	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	36	16	XS	XS	P24A-00DRF	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	36	18	XS	XS	P24A-00DSM	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	36	20	XS	XS	P24A-00DU2	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	36	24	XS	XS	P24A-00DVV	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	36	26	XS	14.27mm	P24A-00PZ7	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	36	30	XS	SCH30	P24A-00PY8	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	36	32	XS	XS	P24A-004VR	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	42	16	XS	XS	P24A-00EFG	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	42	18	XS	XS	P24A-00EG2	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	42	20	XS	XS	P24A-00EGU	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	42	24	XS	XS	P24A-00EJ0	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	

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REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	42	26	XS	14.27mm	P24A-00PZ8	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	42	30	XS	SCH30	P24A-00L6C	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	42	32	XS	XS	P24A-0054S	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	42	36	XS	XS	P24A-003VG	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	48	24	XS	XS	P24A-00A88	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	48	26	XS	14.27mm	P24A-00PZ9	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	48	30	XS	SCH30	P24A-00PZA	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	48	32	XS	XS	P24A-00F33	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	48	36	XS	XS	P24A-00F4B	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	48	42	XS	XS	P24A-00F5N	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	XS	XS	P27A-001E5	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P27A-001N0	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	XS	P27A-0074W	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	XS	P27A-007P6	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P27A-001GW	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	STD	STD	P27A-001C2	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	STD	STD	P27A-00188	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	STD	STD	P27A-001C3	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	STD	STD	P27A-0018M	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	STD	STD	P27A-0019J	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	SCH40	STD	P27A-004W1	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH40	STD	P27A-004XB	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH40	STD	P27A-004UG	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	SCH40	STD	P27A-0051B	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	SCH40	STD	P27A-003ZT	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	SCH40	STD	P27A-0029L	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	SCH40	SCH40	P27A-001ZZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	XS	STD	P27A-001SN	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	XS	STD	P27A-001PA	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	XS	SCH40	P27A-002KU	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	XS	SCH40	P27A-002KZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	10	XS	STD	P27A-001NW	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	12	XS	SCH40	P27A-00BJ3	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	14	XS	SCH40	P27A-002A1	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	16	XS	XS	P27A-001SK	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	12	XS	SCH40	P27A-00FCR	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	14	XS	SCH40	P27A-00FCS	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	16	XS	XS	P27A-00BJS	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	18	XS	XS	P27A-00BJT	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	16	XS	XS	P27A-002KP	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	18	XS	XS	P27A-002A4	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	20	XS	XS	P27A-00CKX	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	26	18	14.27mm	XS	P27A-00J7Z	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	26	20	14.27mm	XS	P27A-00J80	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	26	24	14.27mm	XS	P27A-00J81	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	20	SCH30	XS	P27A-00BJV	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	24	SCH30	XS	P27A-00CNK	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	26	SCH30	14.27mm	P27A-00J82	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	32	24	XS	XS	P27A-003NU	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	32	26	XS	14.27mm	P27A-00J8T	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	32	30	XS	SCH30	P27A-00J8U	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	36	24	XS	XS	P27A-003NW	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	36	26	XS	14.27mm	P27A-00J8V	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	36	30	XS	SCH30	P27A-00CUT	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	36	32	XS	XS	P27A-001A6	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	42	30	XS	SCH30	P27A-00FDR	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	

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CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	42	32	XS	XS	P27A-001RW	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	42	36	XS	XS	P27A-001M6	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	48	42	XS	XS	P27A-00BHA	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	XS	XS	P28A-001EH	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P28A-001N6	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	XS	P28A-008F7	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	XS	P28A-008K1	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P28A-00182	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	STD	STD	P28A-0017V	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	STD	STD	P28A-0018V	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	STD	STD	P28A-0017W	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	STD	STD	P28A-00190	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	STD	STD	P28A-0019J	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	SCH40	STD	P28A-008HU	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH40	STD	P28A-005T9	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH40	STD	P28A-008HT	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	SCH40	STD	P28A-008F4	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	SCH40	STD	P28A-003ZL	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	SCH40	STD	P28A-0028T	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	SCH40	SCH40	P28A-001ZG	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	XS	STD	P28A-001NK	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	XS	STD	P28A-001P7	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	XS	SCH40	P28A-002L9	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	XS	SCH40	P28A-002LD	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	10	XS	STD	P28A-001PD	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	12	XS	SCH40	P28A-008HV	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	14	XS	SCH40	P28A-002EX	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	16	XS	XS	P28A-001NJ	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	12	XS	SCH40	P28A-00CHH	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	14	XS	SCH40	P28A-00CHJ	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	16	XS	XS	P28A-008JR	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	18	XS	XS	P28A-008JS	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	16	XS	XS	P28A-002L4	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	18	XS	XS	P28A-002F4	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	20	XS	XS	P28A-009KC	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	26	18	14.27mm	XS	P28A-00FJ0	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	26	20	14.27mm	XS	P28A-00FJ1	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	26	24	14.27mm	XS	P28A-00FJ2	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	20	SCH30	XS	P28A-008JU	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	24	SCH30	XS	P28A-009ND	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	30	26	SCH30	14.27mm	P28A-00FJ3	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	32	24	XS	XS	P28A-003NM	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	32	26	XS	14.27mm	P28A-00FJV	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	32	30	XS	SCH30	P28A-00FJW	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	36	24	XS	XS	P28A-003NP	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	36	26	XS	14.27mm	P28A-00FJX	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	36	30	XS	SCH30	P28A-009UJ	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	36	32	XS	XS	P28A-0019S	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	42	30	XS	SCH30	P28A-00CJM	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	42	32	XS	XS	P28A-001M2	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	42	36	XS	XS	P28A-001N0	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	48	42	XS	XS	P28A-008GJ	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P29B-0001K	Cap ASTM A105 Class 9000 ASME B16.11 SW	

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CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75				P29B-0002G	Cap ASTM A105 Class 6000 ASME B16.11 SW	
1	1				P29B-0002D	Cap ASTM A105 Class 6000 ASME B16.11 SW	
1	1.5				P29B-0002E	Cap ASTM A105 Class 6000 ASME B16.11 SW	
1	2		XS		P29A-000A1	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		XS		P29A-000AT	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		STD		P29A-000A3	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6		STD		P29A-000A9	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8		STD		P29A-000AF	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10		STD		P29A-0009Z	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12		SCH40		P29A-000GB	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14		SCH40		P29A-000GC	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16		XS		P29A-0009R	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18		XS		P29A-000DB	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20		XS		P29A-000VA	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24		XS		P29A-000R5	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	26		14.27mm		P29A-005L8	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	30		SCH30		P29A-000DR	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	32		XS		P29A-000BT	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	36		XS		P29A-000A2	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	42		XS		P29A-000CW	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	48		XS		P29A-00136	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
541	0.75				P29B-0000Y	Cap ASTM A105 Class 6000 ASME B16.11 NPT	
541	1				P29B-0000Z	Cap ASTM A105 Class 6000 ASME B16.11 NPT	
541	1.5				P29B-00010	Cap ASTM A105 Class 6000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P41A-000B9	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		XXS		P41A-000BA	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		XXS		P41A-000D8	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		XXS		P41A-000D9	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

CON SWAGED NIPPLE (SNC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	XXS	P42A-000A5	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	SCH160	XXS	P42A-000A6	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	SCH160	SCH160	P42A-0009U	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	SCH160	XXS	P42A-000A7	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	SCH160	SCH160	P42A-0009W	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	SCH160	SCH160	P42A-0009X	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	XS	XXS	P42A-000LL	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	XS	SCH160	P42A-000J7	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	XS	SCH160	P42A-000F8	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	XS	SCH160	P42A-000KZ	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	XS	SCH160	P42A-000L9	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	

ECC SWAGED NIPPLE (SNE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	XXS	P43A-000DD	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	SCH160	XXS	P43A-000DE	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	SCH160	SCH160	P43A-000B5	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	SCH160	XXS	P43A-000DF	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	SCH160	SCH160	P43A-000B7	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	SCH160	SCH160	P43A-000B8	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	XS	XXS	P43A-000E8	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	XS	SCH160	P43A-000B3	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	XS	SCH160	P43A-000CZ	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	XS	SCH160	P43A-000D0	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	XS	SCH160	P43A-000DM	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	

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COUPLING (CPS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P47B-00026	Coupling ASTM A105 Class 9000 ASME B16.11 SW - SW	
1	0.75				P47B-00012	Coupling ASTM A105 Class 6000 ASME B16.11 SW - SW	
1	1				P47B-0002A	Coupling ASTM A105 Class 6000 ASME B16.11 SW - SW	
1	1.5				P47B-0002B	Coupling ASTM A105 Class 6000 ASME B16.11 SW - SW	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5 - 2.5	0.75			P31B-0137D	Outlet ASTM A105 Class 6000 MSS SP-97 SW	
1	3 - 10	0.75			P31B-007LV	Outlet ASTM A105 Class 6000 MSS SP-97 SW	
1	12 and larger	0.75			P31B-0136N	Outlet ASTM A105 Class 6000 MSS SP-97 SW	
1	3 - 10	1			P31B-007LN	Outlet ASTM A105 Class 6000 MSS SP-97 SW	
1	12 and larger	1			P31B-0136P	Outlet ASTM A105 Class 6000 MSS SP-97 SW	
1	4 - 5	1.5			P31B-004LE	Outlet ASTM A105 Class 6000 MSS SP-97 SW	
1	6 - 8	1.5			P31B-005T4	Outlet ASTM A105 Class 6000 MSS SP-97 SW	
1	10 - 18	1.5			P31B-007LF	Outlet ASTM A105 Class 6000 MSS SP-97 SW	
1	20 and larger	1.5			P31B-0137E	Outlet ASTM A105 Class 6000 MSS SP-97 SW	
541	1	0.75			P31B-005HL	Outlet ASTM A105 Class 6000 MSS SP-97 NPT	
541	1.5 - 2.5	0.75			P31B-0137F	Outlet ASTM A105 Class 6000 MSS SP-97 NPT	
541	3 - 10	0.75			P31B-007KP	Outlet ASTM A105 Class 6000 MSS SP-97 NPT	
541	12 and larger	0.75			P31B-0138A	Outlet ASTM A105 Class 6000 MSS SP-97 NPT	
1	6	2	STD	XS	P31B-007SH	Outlet ASTM A105 MSS SP-97 BW	
1	8	2	STD	XS	P31B-00AGX	Outlet ASTM A105 MSS SP-97 BW	
1	10	2	STD	XS	P31B-00ASA	Outlet ASTM A105 MSS SP-97 BW	
1	12	2	SCH40	XS	P31B-00CBS	Outlet ASTM A105 MSS SP-97 BW	
1	14	2	SCH40	XS	P31B-00CAH	Outlet ASTM A105 MSS SP-97 BW	
1	16	2	XS	XS	P31B-00C1S	Outlet ASTM A105 MSS SP-97 BW	
1	18	2	XS	XS	P31B-009FH	Outlet ASTM A105 MSS SP-97 BW	
1	20	2	XS	XS	P31B-00993	Outlet ASTM A105 MSS SP-97 BW	
1	24	2	XS	XS	P31B-0092Y	Outlet ASTM A105 MSS SP-97 BW	
1	26	2	14.27mm	XS	P31B-012RN	Outlet ASTM A105 MSS SP-97 BW	
1	30	2	SCH30	XS	P31B-00TVV	Outlet ASTM A105 MSS SP-97 BW	
1	32	2	XS	XS	P31B-00F9M	Outlet ASTM A105 MSS SP-97 BW	
1	36	2	XS	XS	P31B-008BB	Outlet ASTM A105 MSS SP-97 BW	
1	42	2	XS	XS	P31B-0084J	Outlet ASTM A105 MSS SP-97 BW	
1	48	2	XS	XS	P31B-007YJ	Outlet ASTM A105 MSS SP-97 BW	
1	8	3	STD	XS	P31B-009Y0	Outlet ASTM A105 MSS SP-97 BW	
1	10	3	STD	XS	P31B-009CG	Outlet ASTM A105 MSS SP-97 BW	
1	12	3	SCH40	XS	P31B-0096J	Outlet ASTM A105 MSS SP-97 BW	
1	14	3	SCH40	XS	P31B-0090P	Outlet ASTM A105 MSS SP-97 BW	
1	16	3	XS	XS	P31B-008UD	Outlet ASTM A105 MSS SP-97 BW	
1	18	3	XS	XS	P31B-008MB	Outlet ASTM A105 MSS SP-97 BW	
1	20	3	XS	XS	P31B-008F3	Outlet ASTM A105 MSS SP-97 BW	
1	24	3	XS	XS	P31B-0088Y	Outlet ASTM A105 MSS SP-97 BW	
1	26	3	14.27mm	XS	P31B-012RP	Outlet ASTM A105 MSS SP-97 BW	
1	30	3	SCH30	XS	P31B-00ZHF	Outlet ASTM A105 MSS SP-97 BW	
1	32	3	XS	XS	P31B-00ENL	Outlet ASTM A105 MSS SP-97 BW	
1	36	3	XS	XS	P31B-00ENU	Outlet ASTM A105 MSS SP-97 BW	
1	42	3	XS	XS	P31B-00P0K	Outlet ASTM A105 MSS SP-97 BW	
1	48	3	XS	XS	P31B-00NJW	Outlet ASTM A105 MSS SP-97 BW	
1	12	4	SCH40	STD	P31B-008ZY	Outlet ASTM A105 MSS SP-97 BW	
1	14	4	SCH40	STD	P31B-008YN	Outlet ASTM A105 MSS SP-97 BW	
1	16	4	XS	STD	P31B-008SG	Outlet ASTM A105 MSS SP-97 BW	
1	18	4	XS	STD	P31B-008KA	Outlet ASTM A105 MSS SP-97 BW	
1	20	4	XS	STD	P31B-008D2	Outlet ASTM A105 MSS SP-97 BW	
1	24	4	XS	STD	P31B-0086W	Outlet ASTM A105 MSS SP-97 BW	
1	26	4	14.27mm	STD	P31B-0081H	Outlet ASTM A105 MSS SP-97 BW	
1	30	4	SCH30	STD	P31B-007UT	Outlet ASTM A105 MSS SP-97 BW	
1	32	4	XS	STD	P31B-00ALX	Outlet ASTM A105 MSS SP-97 BW	
1	36	4	XS	STD	P31B-00AEP	Outlet ASTM A105 MSS SP-97 BW	

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OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	42	4	XS	STD	P31B-00A8G	Outlet ASTM A105 MSS SP-97 BW	
1	48	4	XS	STD	P31B-00A2P	Outlet ASTM A105 MSS SP-97 BW	
1	18	6	XS	STD	P31B-008RW	Outlet ASTM A105 MSS SP-97 BW	
1	20	6	XS	STD	P31B-008PY	Outlet ASTM A105 MSS SP-97 BW	
1	24	6	XS	STD	P31B-008JC	Outlet ASTM A105 MSS SP-97 BW	
1	26	6	14.27mm	STD	P31B-008HX	Outlet ASTM A105 MSS SP-97 BW	
1	30	6	SCH30	STD	P31B-008BT	Outlet ASTM A105 MSS SP-97 BW	
1	32	6	XS	STD	P31B-0086L	Outlet ASTM A105 MSS SP-97 BW	
1	36	6	XS	STD	P31B-0085G	Outlet ASTM A105 MSS SP-97 BW	
1	42	6	XS	STD	P31B-007ZN	Outlet ASTM A105 MSS SP-97 BW	
1	48	6	XS	STD	P31B-007U6	Outlet ASTM A105 MSS SP-97 BW	
4212	3	2	XS	XS	P31B-008WA	Outlet ASTM A105 MSS SP-97 BW	38

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30B-0002D	Plug ASTM A105 ASME B16.11 NPT Round head	
1	0.75				P30B-0002E	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1				P30B-0002F	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1.5				P30B-0002G	Plug ASTM A105 ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P61B-001HD	Flange SW ASTM A105 Class 300 ASME B16.5 RF	
1	0.75		SCH160		P61B-001HH	Flange SW ASTM A105 Class 300 ASME B16.5 RF	
1	1		SCH160		P61B-001E8	Flange SW ASTM A105 Class 300 ASME B16.5 RF	
1	1.5		SCH160		P61B-001ET	Flange SW ASTM A105 Class 300 ASME B16.5 RF	
1	2		XS		P61B-001HW	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	3		XS		P61B-001DK	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	4		STD		P61B-001MC	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	6		STD		P61B-001N2	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	8		STD		P61B-001NL	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	10		STD		P61B-001L6	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	12		SCH40		P61B-002FJ	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	14		SCH40		P61B-002FL	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	16		XS		P61B-001HU	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	18		XS		P61B-001T0	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	20		XS		P61B-003A5	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	24		XS		P61B-002RA	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	26		14.27mm		P61B-00DHR	Flange WN ASTM A105 Class 300 ASME B16.47 Series B RF	
1	30		SCH30		P61B-001M7	Flange WN ASTM A105 Class 300 ASME B16.47 Series B RF	
1	32		XS		P61B-001LN	Flange WN ASTM A105 Class 300 ASME B16.47 Series B RF	
1	36		XS		P61B-001N6	Flange WN ASTM A105 Class 300 ASME B16.47 Series B RF	
1	42		XS		P61B-00673	Flange WN ASTM A105 Class 300 ASME B16.47 Series B RF	
1	48		XS		P61B-003TH	Flange WN ASTM A105 Class 300 ASME B16.47 Series B RF	
781	0.5		XXS		P61B-002ZE	Flange SW ASTM A105 Class 600 ASME B16.5 RF	
781	0.75		SCH160		P61B-001DW	Flange SW ASTM A105 Class 600 ASME B16.5 RF	
781	1		SCH160		P61B-005X5	Flange SW ASTM A105 Class 600 ASME B16.5 RF	
781	1.5		SCH160		P61B-005X6	Flange SW ASTM A105 Class 600 ASME B16.5 RF	
781	2		XS		P61B-001DH	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	3		XS		P61B-001M8	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	4		STD		P61B-001VV	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	6		STD		P61B-001JW	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	8		STD		P61B-001KK	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	10		STD		P61B-001JJ	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	12		SCH40		P61B-003T5	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	14		SCH40		P61B-003T6	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	16		XS		P61B-001R3	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	18		XS		P61B-001RG	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	20		XS		P61B-004UW	Flange WN ASTM A105 Class 600 ASME B16.5 RF	

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FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
781	24		XS		P61B-003T9	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	30		SCH30		P61B-001PH	Flange WN ASTM A105 Class 600 ASME B16.47 Series B RF	
781	32		XS		P61B-003GX	Flange WN ASTM A105 Class 600 ASME B16.47 Series B RF	
781	36		XS		P61B-003GS	Flange WN ASTM A105 Class 600 ASME B16.47 Series B RF	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67B-000GH	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	0.75				P67B-000GJ	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	1				P67B-000GK	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	1.5				P67B-000GL	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	2				P67B-000GM	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	3				P67B-000GN	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	4				P67B-000GP	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	6				P67B-000GY	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	8				P67B-000GZ	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	10				P67B-000GR	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	12				P67B-000GS	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	14				P67B-000GT	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	16				P67B-000GU	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	18				P67B-000GV	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	20				P67B-000GW	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	24				P67B-000GX	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	30				P67B-000H2	Blind flange ASTM A105 Class 300 ASME B16.47 Series B RF	
1	32				P67B-000H3	Blind flange ASTM A105 Class 300 ASME B16.47 Series B RF	
1	36				P67B-000H5	Blind flange ASTM A105 Class 300 ASME B16.47 Series B RF	
1	42				P67B-000L5	Blind flange ASTM A105 Class 300 ASME B16.47 Series B RF	
1	48				P67B-000L8	Blind flange ASTM A105 Class 300 ASME B16.47 Series B RF	

REDUCING FLANGE (FR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5		XXS	P62B-000CB	Reducing flange SW ASTM A105 Class 300 ASME B16.5 RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000FT	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000FU	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000G5	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000G6	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	6				P73T-000G7	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	8				P73T-000G8	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	10				P73T-000FX	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	12				P73T-000FY	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	14				P73T-000FZ	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	16				P73T-000G0	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	18				P73T-000G1	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	20				P73T-000G3	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	24				P73T-000G4	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	26				P73T-000G9	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	

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GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	30				P73T-000H9	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	32				P73T-000HA	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	36				P73T-000HC	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	42				P73T-000KM	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	48				P73T-000KR	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	0.5				P73T-000J8	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	0.75				P73T-000J9	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1				P73T-000JA	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1.5				P73T-000JB	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	2				P73T-000JH	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	3				P73T-000JL	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	4				P73T-000JM	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	6				P73T-000JN	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	8				P73T-000JP	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	10				P73T-000JC	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	12				P73T-000JD	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	14				P73T-000JE	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	16				P73T-000JF	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	18				P73T-000JG	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	20				P73T-000JJ	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	24				P73T-000JK	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	30				P73T-000JT	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	32				P73T-000JU	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	36				P73T-000JW	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-10				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	12-48				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
781	0.5-6				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
781	8-36				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81B-000P4	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	0.75				P81B-000NX	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	1				P81B-000NY	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	1.5				P81B-000NZ	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	2				P81C-002D6	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	3				P81C-002D7	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	4				P81C-002D8	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	6				P81C-002D9	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	8				P81C-0086V	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated	
1	10				P81C-002DB	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated	
1	12				P81C-002DC	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated	
1	14				P81C-0034H	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated	

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GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	16				P81C-002DD	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated	
1	18				P81C-002DE	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated	
1	20				P81C-002DF	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated	
1	24				P81C-002DG	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated	
221	1				P81B-0037X	Gate valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
714	0.5				P81B-0015L	Gate valve ASTM A105 Class 800 API 602 SW - NPT Trim number 8 BB-BG-OS&Y Handwheel operated	
714	0.75				P81B-002F4	Gate valve ASTM A105 Class 800 API 602 SW - NPT Trim number 8 BB-BG-OS&Y Handwheel operated	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82B-000K0	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	0.75				P82B-000HB	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	1				P82B-000HC	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	1.5				P82B-000HD	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	2				P82C-00114	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	3				P82C-00115	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	4				P82C-00116	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	6				P82C-00117	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	8				P82C-0011A	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83B-000FX	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover	
1	0.75				P83B-000ER	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover	
1	1				P83B-000ES	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover	
1	1.5				P83B-000ET	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover	
1	2				P83C-0013H	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	3				P83C-0013L	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	4				P83C-0013M	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	6				P83C-0013N	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	8				P83C-0013P	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	10				P83C-0013D	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	12				P83C-0013E	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	14				P83C-0023R	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	16				P83C-0013F	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	18				P83C-0013G	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	20				P83C-0013J	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	24				P83C-0013K	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	

BALL VALVE (Q)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P84B-0012S	Ball valve Long-pattern ASTM A105 Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design	
1	0.75				P84B-0012T	Ball valve Long-pattern ASTM A105 Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design	
1	1				P84B-0012U	Ball valve Long-pattern ASTM A105 Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design	
1	1.5				P84B-0012V	Ball valve Long-pattern ASTM A105 Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design	
24	0.5				P84B-0012W	Ball valve Long-pattern ASTM A105 Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	
24	0.75				P84B-0012X	Ball valve Long-pattern ASTM A105 Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	
24	1				P84B-0012Y	Ball valve Long-pattern ASTM A105 Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	

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BALL VALVE (Q)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
24	1.5				P84B-0012Z	Ball valve Long-pattern ASTM A105 Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	

NEEDLE VALVE (NV)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82B-001JU	Needle valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	0.75				P82B-000YB	Needle valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	1				P82B-000YC	Needle valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	1.5				P82B-000YD	Needle valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	

ORIFICE FLANGE (FO)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2		XS		P66B-0084B	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	3		XS		P66B-008C1	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	4		STD		P66B-0084D	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	6		STD		P66B-0084E	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	8		STD		P66B-008BN	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	10		STD		P66B-008BM	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	12		SCH40		P66B-00885	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	14		SCH40		P66B-00886	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	16		XS		P66B-00887	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	18		XS		P66B-00888	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
200	2		XS		P66B-00843	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	3		XS		P66B-008C3	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	4		STD		P66B-00845	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	6		STD		P66B-00846	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	8		STD		P66B-008BR	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	10		STD		P66B-008BP	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	12		SCH40		P66B-0088K	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	14		SCH40		P66B-0088L	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	16		XS		P66B-0088M	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	18		XS		P66B-0088N	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71B-000B1	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	0.75				P71B-000B2	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	1				P71B-000B3	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71B-000B4	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	2				P71B-000B6	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	3				P71B-000B7	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	4				P71B-000B8	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	6				P71B-000B9	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	8				P71B-000BA	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	10				P71B-000B5	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	12				P71B-000BB	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	

PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000FA	Paddle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	16				P72B-000FB	Paddle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	18				P72B-000FC	Paddle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	20				P72B-000FD	Paddle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	24				P72B-000FE	Paddle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	30				P72B-000FF	Paddle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.47-B RF	
1	32				P72B-000XY	Paddle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.47-B RF	
1	36				P72B-000M0	Paddle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.47-B RF	
1	42				P72B-000M1	Paddle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.47-B RF	
1	48				P72B-000M2	Paddle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.47-B RF	

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PADDLE SPACER (PS)							
OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000FG	Paddle spacer ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	16				P72B-000FH	Paddle spacer ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	18				P72B-000FJ	Paddle spacer ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	20				P72B-000FK	Paddle spacer ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	24				P72B-000FL	Paddle spacer ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	30				P72B-000FM	Paddle spacer ASTM A105 Class 300 Standard-drawing Flange ASME B16.47-B RF	
1	32				P72B-000XZ	Paddle spacer ASTM A105 Class 300 Standard-drawing Flange ASME B16.47-B RF	
1	36				P72B-000M3	Paddle spacer ASTM A105 Class 300 Standard-drawing Flange ASME B16.47-B RF	
1	42				P72B-000M4	Paddle spacer ASTM A105 Class 300 Standard-drawing Flange ASME B16.47-B RF	
1	48				P72B-000M5	Paddle spacer ASTM A105 Class 300 Standard-drawing Flange ASME B16.47-B RF	

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BOLT TABLE (B_B2AP04 , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-003V4		
0.75	4	0.625	75	P80S-003XC		
1	4	0.625	80	P80S-003XD		
1.5	4	0.750	95	P80S-00414		
2	8	0.625	90	P80S-003XF		
3	8	0.750	110	P80S-003XK		
4	8	0.750	115	P80S-003XL		
6	12	0.750	125	P80S-003XN		
8	12	0.875	140	P80S-0041D		
10	16	1.000	160	P80S-0043K		
12	16	1.125	175	P80S-0046S		
14	20	1.125	180	P80S-0046T		
16	20	1.250	190	P80S-004AK		
18	24	1.250	200	P80S-004AM		
20	24	1.250	210	P80S-004AP		
24	24	1.500	235	P80S-003F8		
26	32	1.250	270	P80S-004B2		
30	36	1.375	285	P80S-003EA		
32	32	1.500	310	P80S-008N0		
36	32	1.625	320	P80S-005TT		
42	36	1.750	355	P80S-007B5		
48	40	1.875	380	P80S-008P4		

BOLT TABLE (B_B2AP04_781 , STUD ASME RF, OPTION CODE 781)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	80	P80S-003V6		
0.75	4	0.625	90	P80S-003XF		
1	4	0.625	95	P80S-003XG		
1.5	4	0.750	110	P80S-003XK		
2	8	0.625	110	P80S-003VC		
3	8	0.750	130	P80S-003XP		
4	8	0.875	150	P80S-0041F		
6	12	1.000	175	P80S-0043P		
8	12	1.125	195	P80S-0046W		
10	16	1.250	250	P80S-004AY		
12	20	1.250	255	P80S-004AZ		
14	20	1.375	270	P80S-003E7		
16	20	1.500	295	P80S-003FL		
18	20	1.625	320	P80S-005TT		
20	24	1.625	335	P80S-005TW		
24	24	1.875	380	P80S-008P4		
26			0			
30	28	1.875	435	P80S-008PF		
32			0			
36	28	2.250	510	P80S-00P4E		
42	28	2.500	575			
48	32	2.750	635			

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BRANCH TABLE (T_B2AP04)

RUN PIPE SIZE (in) \ BRANCH SIZE (in)	0.5	0.75	1	1.5	2	3	4	6	8	10	12	14	16	18	20	24	26	30	32	36	42	48
0.5	TS																					
0.75		TS																				
1		TR	TS																			
1.5		TR	TR	TS																		
2		L	TR	TR	TS																	
3		L	L	TR	TR	TS																
4	L	L	L	L	TR	TR	TS															
6	L	L	L	L	L	TR	TR	TS														
8		L	L	L	L	L	TR	TR	TS													
10		L	L	L	L	L	TR	TR	TR	TS												
12		L	L	L	L	L	L	TR	TR	TR	TS											
14		L	L	L	L	L	L	TR	TR	TR	TR	TS										
16		L	L	L	L	L	L	TR	TR	TR	TR	TR	TS									
18		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TS								
20		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TR	TS							
24		L	L	L	L	L	L	L	9PD	TR	TR	TR	TR	TR	TR	TS						
26		L	L	L	L	L	L	L	9PD	9PD	TR	TR	TR	TR	TR	TR	TS					
30		L	L	L	L	L	L	L	9PD	TR	TR	TR	TR	TR	TR	TR	TR	TS				
32		L	L	L	L	L	L	L	9PD	9PD	9PD	TR	TR	TR	TR	TR	TR	TR	TS			
36		L	L	L	L	L	L	L	9PD	9PD	9PD	9PD	TR	TR	TR	TR	TR	TR	TR	TS		
42		L	L	L	L	L	L	L	9PD	9PD	9PD	9PD	TR	TR	TR	TR	TR	TR	TR	TR	TS	
48		L	L	L	L	L	L	L	9PD	9PD	9PD	9PD	9PD	9PD	9PD	TR	TR	TR	TR	TR	TR	TS

TS : STRAIGHT TEE
TR : REDUCING TEE
L : OUTLET
9PD : REINFORCING PAD 90 DEG

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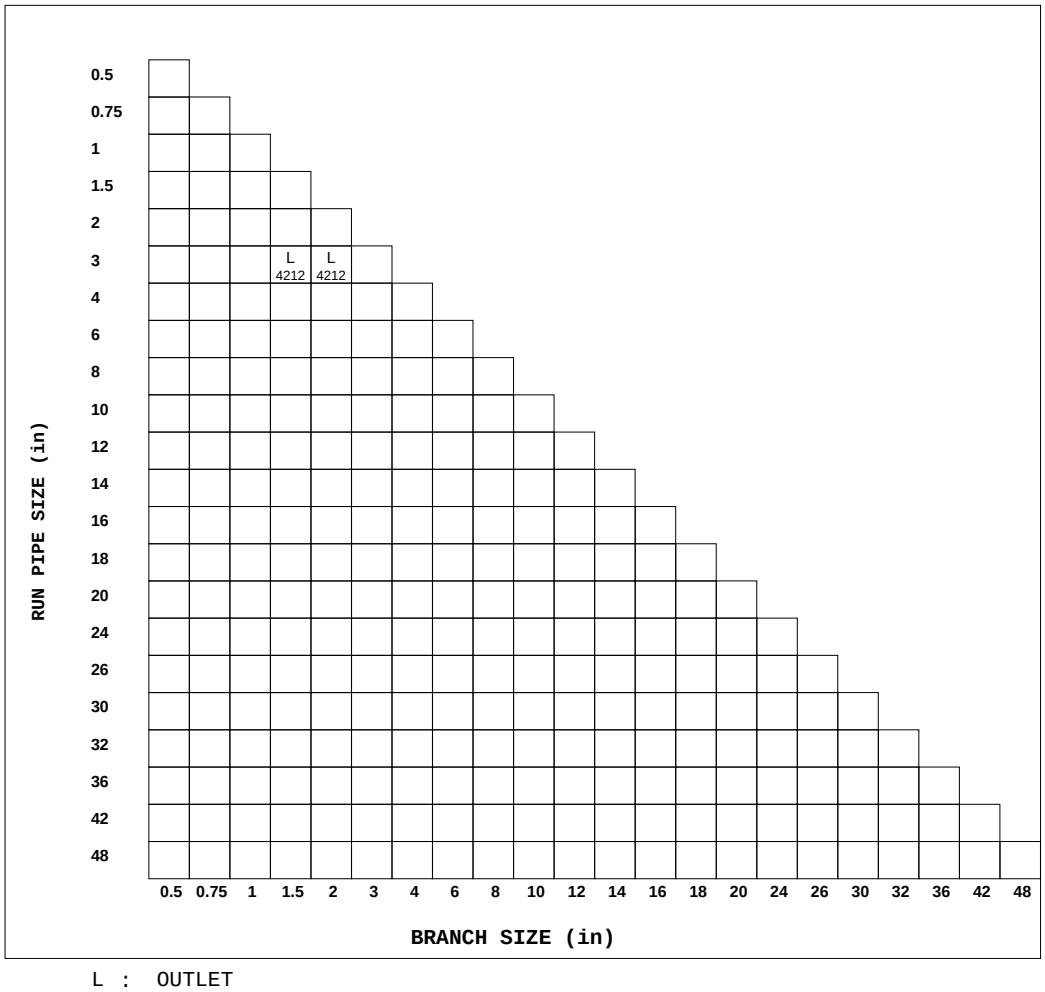
BRANCH TABLE (T_B2AP04_4)



L : OUTLET

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PIPING CLASS

B2APCL

REV NO. 2

Material : Killed CS
Rating : ASME CLASS 300
Flange Face : RF
C.A.(mm) : 1.50
Gasket : Spiral Wound
Service : PROCESS - GENERAL PROCESS NON SOUR, NON CORROSIVE (CONTRO TRACE)
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
200	WITH JACK SCREW (FO)
541	NPT(F) (CA,L)
781	CLASS 600 (B,F,G)
4610	JACKETED VALVE (1.5" X 0.75") (PV)
4611	JACKETED VALVE (3" X 2") (PV)

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PIPING CLASS
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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P01A-0010P	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	0.75		SCH160		P01A-0010R	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1		SCH160		P01A-0014M	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1.5		SCH160		P01A-0015J	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	2		XS		P01A-000YX	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	3		STD		P01A-000YM	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	4		STD		P01A-000YU	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	6		STD		P01A-000Z3	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P02B-0001J	90 degree elbow ASTM A105 Class 6000 ASME B16.11 SW	
1	0.75				P02B-0001K	90 degree elbow ASTM A105 Class 6000 ASME B16.11 SW	
1	1				P02B-0002E	90 degree elbow ASTM A105 Class 6000 ASME B16.11 SW	
1	1.5				P02B-0002F	90 degree elbow ASTM A105 Class 6000 ASME B16.11 SW	
1	2		XS		P02A-000CP	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		STD		P02A-000CU	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		STD		P02A-000CZ	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		STD		P02A-000D6	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P03B-0001F	45 degree elbow ASTM A105 Class 6000 ASME B16.11 SW	
1	0.75				P03B-0001G	45 degree elbow ASTM A105 Class 6000 ASME B16.11 SW	
1	1				P03B-0002A	45 degree elbow ASTM A105 Class 6000 ASME B16.11 SW	
1	1.5				P03B-0002B	45 degree elbow ASTM A105 Class 6000 ASME B16.11 SW	
1	2		XS		P03A-000AS	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		STD		P03A-000AX	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		STD		P03A-000B1	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		STD		P03A-000B9	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P21B-0001F	Straight tee ASTM A105 Class 6000 ASME B16.11 SW	
1	0.75				P21B-0001G	Straight tee ASTM A105 Class 6000 ASME B16.11 SW	
1	1				P21B-00026	Straight tee ASTM A105 Class 6000 ASME B16.11 SW	
1	1.5				P21B-00027	Straight tee ASTM A105 Class 6000 ASME B16.11 SW	
1	2		XS		P21A-001CJ	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		STD		P21A-001CU	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		STD		P21A-001CW	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6		STD		P21A-001D2	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75			P24B-00030	Reducing tee ASTM A105 Class 6000 ASME B16.11 SW	
1	1.5	0.75			P24B-00032	Reducing tee ASTM A105 Class 6000 ASME B16.11 SW	
1	1.5	1			P24B-0004J	Reducing tee ASTM A105 Class 6000 ASME B16.11 SW	
1	2	1	XS	SCH160	P24A-00GMB	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	XS	SCH160	P24A-005K9	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	STD	SCH160	P24A-00GMC	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	STD	XS	P24A-002HW	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P24A-002HY	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P24A-0021K	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	STD	P24A-0021A	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P24A-00229	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	STD	XS	P27A-001MZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P27A-001N0	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P27A-00189	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	STD	P27A-001AZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P27A-001GW	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	STD	XS	P28A-001N5	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P28A-001N6	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P28A-0018B	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	STD	P28A-001AS	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P28A-00182	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P29B-0002F	Cap ASTM A105 Class 6000 ASME B16.11 SW	
1	0.75				P29B-0002G	Cap ASTM A105 Class 6000 ASME B16.11 SW	
1	1				P29B-0002D	Cap ASTM A105 Class 6000 ASME B16.11 SW	
1	1.5				P29B-0002E	Cap ASTM A105 Class 6000 ASME B16.11 SW	
1	2		XS		P29A-000A1	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		STD		P29A-000BK	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		STD		P29A-000A3	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6		STD		P29A-000A9	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
541	0.75				P29B-0000Y	Cap ASTM A105 Class 6000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P41A-000B9	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		XXS		P41A-000BA	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		XXS		P41A-000D8	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		XXS		P41A-000D9	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

CON SWAGED NIPPLE (SNC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	SCH160	P42A-00029	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	SCH160	SCH160	P42A-0009T	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	SCH160	SCH160	P42A-0009U	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	SCH160	SCH160	P42A-0009V	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	SCH160	SCH160	P42A-0009W	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	SCH160	SCH160	P42A-0009X	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	XS	SCH160	P42A-000J6	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	XS	SCH160	P42A-000J7	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	XS	SCH160	P42A-000F8	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	XS	SCH160	P42A-000KZ	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	STD	SCH160	P42A-000L0	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	

ECC SWAGED NIPPLE (SNE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	SCH160	P43A-000AM	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	SCH160	SCH160	P43A-000B4	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	SCH160	SCH160	P43A-000B5	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	SCH160	SCH160	P43A-000B6	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	SCH160	SCH160	P43A-000B7	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	SCH160	SCH160	P43A-000B8	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	XS	SCH160	P43A-000B2	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	XS	SCH160	P43A-000B3	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	XS	SCH160	P43A-000CZ	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	

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ECC SWAGED NIPPLE (SNE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2	1.5	XS	SCH160	P43A-000D0	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	STD	SCH160	P43A-000D1	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	

COUPLING (CPS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P47B-00013	Coupling ASTM A105 Class 6000 ASME B16.11 SW - SW	
1	0.75				P47B-00012	Coupling ASTM A105 Class 6000 ASME B16.11 SW - SW	
1	1				P47B-0002A	Coupling ASTM A105 Class 6000 ASME B16.11 SW - SW	
1	1.5				P47B-0002B	Coupling ASTM A105 Class 6000 ASME B16.11 SW - SW	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5 - 2.5	0.75			P31B-0137D	Outlet ASTM A105 Class 6000 MSS SP-97 SW	
1	3 - 10	0.75			P31B-007LV	Outlet ASTM A105 Class 6000 MSS SP-97 SW	
1	3 - 10	1			P31B-007LN	Outlet ASTM A105 Class 6000 MSS SP-97 SW	
1	4 - 5	1.5			P31B-004LE	Outlet ASTM A105 Class 6000 MSS SP-97 SW	
1	6 - 8	1.5			P31B-005T4	Outlet ASTM A105 Class 6000 MSS SP-97 SW	
541	1	0.75			P31B-005HL	Outlet ASTM A105 Class 6000 MSS SP-97 NPT	
541	1.5 - 2.5	0.75			P31B-0137F	Outlet ASTM A105 Class 6000 MSS SP-97 NPT	
541	3 - 10	0.75			P31B-007KP	Outlet ASTM A105 Class 6000 MSS SP-97 NPT	
1	6	2	STD	XS	P31B-007SH	Outlet ASTM A105 MSS SP-97 BW	
1	8	2	STD	XS	P31B-00AGX	Outlet ASTM A105 MSS SP-97 BW	
1	8	3	STD	STD	P31B-00A2T	Outlet ASTM A105 MSS SP-97 BW	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30B-0002D	Plug ASTM A105 ASME B16.11 NPT Round head	
1	0.75				P30B-0002E	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1				P30B-0002F	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1.5				P30B-0002G	Plug ASTM A105 ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P61B-001H5	Flange SW ASTM A105 Class 300 ASME B16.5 RF	
1	0.75		SCH160		P61B-001HH	Flange SW ASTM A105 Class 300 ASME B16.5 RF	
1	1		SCH160		P61B-001E8	Flange SW ASTM A105 Class 300 ASME B16.5 RF	
1	1.5		SCH160		P61B-001ET	Flange SW ASTM A105 Class 300 ASME B16.5 RF	
1	2		XS		P61B-001HW	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	3		STD		P61B-001LJ	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	4		STD		P61B-001MC	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	6		STD		P61B-001N2	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
781	0.5		SCH160		P61B-001DZ	Flange SW ASTM A105 Class 600 ASME B16.5 RF	
781	0.75		SCH160		P61B-001DW	Flange SW ASTM A105 Class 600 ASME B16.5 RF	
781	1		SCH160		P61B-005X5	Flange SW ASTM A105 Class 600 ASME B16.5 RF	
781	1.5		SCH160		P61B-005X6	Flange SW ASTM A105 Class 600 ASME B16.5 RF	
781	2		XS		P61B-001DH	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	3		STD		P61B-001TW	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	4		STD		P61B-001VV	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	6		STD		P61B-001JW	Flange WN ASTM A105 Class 600 ASME B16.5 RF	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67B-000GH	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	0.75				P67B-000GJ	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	1				P67B-000GK	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	1.5				P67B-000GL	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	2				P67B-000GM	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	3				P67B-000GN	Blind flange ASTM A105 Class 300 ASME B16.5 RF	

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BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	4				P67B-000GP	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	6				P67B-000GY	Blind flange ASTM A105 Class 300 ASME B16.5 RF	

REDUCING FLANGE (FR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5		SCH160	P62B-000N4	Reducing flange SW ASTM A105 Class 300 ASME B16.5 RF	
1	1.5	0.5		SCH160	P62B-000AJ	Reducing flange SW ASTM A105 Class 300 ASME B16.5 RF	
1	1.5	0.75		SCH160	P62B-000AK	Reducing flange SW ASTM A105 Class 300 ASME B16.5 RF	
1	2	0.75		SCH160	P62B-000NG	Reducing flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	2	1		SCH160	P62B-0007D	Reducing flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	2	1.5		SCH160	P62B-000MG	Reducing flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	3	1.5		SCH160	P62B-000MH	Reducing flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	3	2		XS	P62B-000MD	Reducing flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	4	2		XS	P62B-000AZ	Reducing flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	4	3		STD	P62B-000AX	Reducing flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	6	3		STD	P62B-000ME	Reducing flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	6	4		STD	P62B-000MF	Reducing flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	8	6		STD	P62B-000K9	Reducing flange WN ASTM A105 Class 300 ASME B16.5 RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000FT	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000FU	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000G5	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000G6	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	6				P73T-000G7	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	8				P73T-000G8	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	0.5				P73T-000J8	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	0.75				P73T-000J9	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1				P73T-000JA	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1.5				P73T-000JB	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	2				P73T-000JH	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	3				P73T-000JL	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	4				P73T-000JM	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	6				P73T-000JN	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-8				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
781	0.5-6				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
781	8				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5	0.5			P83B-001H5	Jacketed check valve ASTM A105 Class 300 API 600-modified Flange ASME B16.5 RF Trim number 8 Lift-type Bolted cover Full jacketed	
1	2	1			P83C-003PJ	Jacketed check valve ASTM A216 Grade WCB Class 300 API 600-modified Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover Full jacketed	
1	3	1.5			P83C-003PK	Jacketed check valve ASTM A216 Grade WCB Class 300 API 600-modified Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover Full jacketed	

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CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	4	3			P83C-003PL	Jacketed check valve ASTM A216 Grade WCB Class 300 API 600-modified Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover Full jacketed	
1	6	4			P83C-003RN	Jacketed check valve ASTM A216 Grade WCB Class 300 API 600-modified Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover Full jacketed	

PLUG VALVE (PV)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5	0.5			P85B-0000L	Jacketed plug valve Short-pattern ASTM A105 Class 300 API 599 Flange ASME B16.5 RF Plug SS316 Seat PTFE Trim SS316 Nonlubricated taper plug BC-BG Wrench lever operated Regular port Full jacketed	
1	2	1			P85C-0007W	Jacketed plug valve Short-pattern ASTM A216 Grade WCB Class 300 API 599 Flange ASME B16.5 RF Plug SS316 Seat PTFE Trim SS316 Nonlubricated taper plug BC-BG Wrench lever operated Regular port Full jacketed	
1	3	1.5			P85C-0007X	Jacketed plug valve Short-pattern ASTM A216 Grade WCB Class 300 API 599 Flange ASME B16.5 RF Plug SS316 Seat PTFE Trim SS316 Nonlubricated taper plug BC-BG Wrench lever operated Regular port Full jacketed	
1	4	3			P85C-000AW	Jacketed plug valve Short-pattern ASTM A216 Grade WCB Class 300 API 599 Flange ASME B16.5 RF Plug SS316 Seat PTFE Trim SS316 Nonlubricated taper plug BC-BG Wrench lever operated Regular port Full jacketed	
1	6	4			P85C-0008C	Jacketed plug valve Short-pattern ASTM A216 Grade WCB Class 300 API 599 Flange ASME B16.5 RF Plug SS316 Seat PTFE Trim SS316 Nonlubricated taper plug BC-BG Gear operated Regular port Full jacketed	
1	8	6			P85C-0008M	Jacketed plug valve Short-pattern ASTM A216 Grade WCB Class 300 API 599 Flange ASME B16.5 RF Plug SS316 Seat PTFE Trim SS316 Nonlubricated taper plug BC-BG Gear operated Regular port Full jacketed	
4610	1.5	0.75			P85B-00010	Jacketed plug valve Short-pattern ASTM A105 Class 300 API 599 Flange ASME B16.5 RF Plug SS316 Seat PTFE Trim SS316 Nonlubricated taper plug BC-BG Wrench lever operated Regular port Full jacketed Type-10	
4611	3	2			P85C-000AT	Jacketed plug valve Short-pattern ASTM A216 Grade WCB Class 300 API 599 Flange ASME B16.5 RF Plug SS316 Seat PTFE Trim SS316 Nonlubricated taper plug BC-BG Wrench lever operated Regular port Full jacketed Type-10	

ORIFICE FLANGE (FO)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2		XS		P66B-0084B	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	3		STD		P66B-0084C	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	4		STD		P66B-0084D	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	6		STD		P66B-0084E	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
200	2		XS		P66B-00843	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	3		STD		P66B-00844	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	4		STD		P66B-00845	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	6		STD		P66B-00846	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71B-000B1	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	0.75				P71B-000B2	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	1				P71B-000B3	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71B-000B4	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	2				P71B-000B6	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	3				P71B-000B7	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	4				P71B-000B8	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	6				P71B-000B9	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	

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BOLT TABLE (B_B2APCL , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-003V4		
0.75	4	0.625	75	P80S-003XC		
1	4	0.625	80	P80S-003XD		
1.5	4	0.750	95	P80S-00414		
2	8	0.625	90	P80S-003XF		
3	8	0.750	110	P80S-003XK		
4	8	0.750	115	P80S-003XL		
6	12	0.750	125	P80S-003XN		
8	12	0.875	140	P80S-0041D		

BOLT TABLE (B_B2APCL_781 , STUD ASME RF, OPTION CODE 781)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	80	P80S-003V6		
0.75	4	0.625	90	P80S-003XF		
1	4	0.625	95	P80S-003XG		
1.5	4	0.750	110	P80S-003XK		
2	8	0.625	110	P80S-003VC		
3	8	0.750	130	P80S-003XP		
4	8	0.875	150	P80S-0041F		
6	12	1.000	175	P80S-0043P		
8	12	1.125	195	P80S-0046W		

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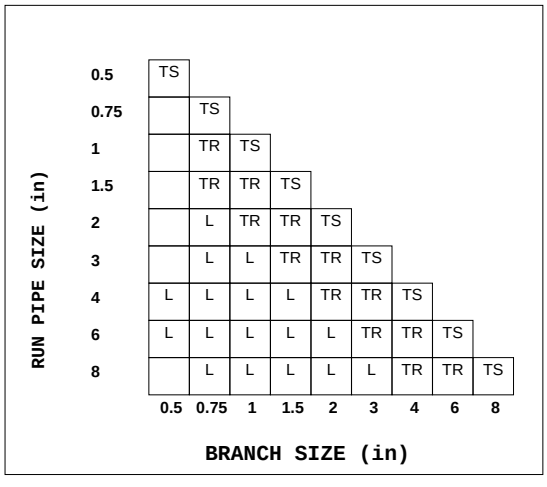
BRANCH TABLE (T_B2APCL)



TS : STRAIGHT TEE
TR : REDUCING TEE
L : OUTLET

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PIPING CLASS

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Material : Killed CS
Rating : ASME CLASS 300
Flange Face : RF
C.A.(mm) : 3.00
Gasket : Spiral Wound
Service : PROCESS - WET SOUR SERVICE SUBJECT TO NACE STD. : / CRUDE DISTILLATION TOP PA / SOUR WATER / CDU OVHD LIQUID / UNSTABILISED NAPHTHA / SOUR NAPHTHA / NAPHTHA STAB. OVHD LIQUID / HOT WELL OIL / WASH WATER / SOUR GAS / HC WASH / and other various services

Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
2	USE OF SOFT SEATED BALL, PLUG AND BUTTERFLY VALVES SHALL BE LIMITED TO MAXIMUM OF 204DEGC (400DEGF)
5	BOLTING CONFIRMING TO B7M / 2HM SHALL BE USED UNDER CONDITIONS (A) DIRECT EXPOSURE TO SOUR ENVIRONMENTS (B) WHEN THE BOLTING WILL BE BURIED OR INSULATED
27	PWHT OF CARBON STEEL PIPING IN WET H2S, CAUSTIC AND AMINE SERVICES SHALL BE IN ACCORDANCE WITH SECTION 10.2, 10.3, AND 10.4 OF PROJECT SPECIFICATION 3550-8440-SP-0002 MATERIALS REQUIREMENTS FOR PRESSURISED EQUIPMENT AND PIPING. FOR CAUSTIC AND AMINE SERVICE THE FOLLOWING SHALL APPLY: - PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF ALL SITE PIPING FABRICATION WELDS IS REQUIRED FOR ALL WALL THICKNESSES. FOR MODERATE AND SEVERE WET H2S SERVICE THE FOLLOWING SHALL APPLY: PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF SITE FABRICATION CIRCUMFERENTIAL OR BRANCH WELDS IS NOT REQUIRED IF WELDS ARE MULTIPASS AND IN ACCORDANCE WITH PARA 10.2.12 OF PROJECT SPECIFICATION 3550-8440-SP-0002. FOR SERVICES MEETING THE WET H2S CRITERIA AND CAUSTIC OR AMINE CRITERIA THE MORE STRINGENT PWHT REQUIREMENT SHALL GOVERN.

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
200	WITH JACK SCREW (FO)
541	NPT(F) (CA,F,L)
781	CLASS 600 (B,F,G)
805	CLASS 2500 (B,F,G)
4602	DISSIMILAR TYPE CHECK VALVE (XDP)
4608	VALVE WITH NIPPLES (V)

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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P01A-0010P	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	0.75		SCH160		P01A-0010R	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1		SCH160		P01A-0014M	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1.5		SCH160		P01A-0015J	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	2		XS		P01A-000YX	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	3		STD		P01A-000YM	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	4		STD		P01A-000YU	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	6		STD		P01A-000Z3	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	8		STD		P01A-000ZA	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	10		STD		P01A-000XJ	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	12		SCH40		P01A-0018V	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	14		SCH40		P01A-0018U	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	16		SCH20		P01A-0018E	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	18		STD		P01A-002CB	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	20		STD		P01A-002CC	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	24		XS		P01A-002MP	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	30		XS		P01A-007YX	Pipe ASTM A671 Grade CC60 Class 22 EFW ASME B36.10M/B36.19M BE Moderate wet H2S service	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P02A-001Y8	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	0.75		SCH160		P02A-000V8	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1		SCH160		P02A-000V7	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1.5		SCH160		P02A-000V9	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	2		XS		P02A-000CP	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		STD		P02A-000CU	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		STD		P02A-000CZ	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		STD		P02A-000D6	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		STD		P02A-000DC	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	10		STD		P02A-000BP	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	12		SCH40		P02A-000JE	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	14		SCH40		P02A-000JF	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	16		SCH20		P02A-000GM	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	18		STD		P02A-0010H	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	20		STD		P02A-0010J	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	24		XS		P02A-000MB	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	30		XS		P02A-003Z7	90 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius Moderate wet H2S service	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P03A-001TC	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	0.75		SCH160		P03A-000RS	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1		SCH160		P03A-000RR	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1.5		SCH160		P03A-000RP	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	2		XS		P03A-000AS	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		STD		P03A-000AX	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		STD		P03A-000B1	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		STD		P03A-000B9	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		STD		P03A-000BB	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	10		STD		P03A-000A4	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	12		SCH40		P03A-000GC	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	14		SCH40		P03A-000GD	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	16		SCH20		P03A-000EM	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	18		STD		P03A-000X0	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	20		STD		P03A-000X1	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	24		XS		P03A-001E1	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	30		XS		P03A-003X6	45 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius Moderate wet H2S service	

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STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P21A-003AW	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	0.75		SCH160		P21A-002B8	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1		SCH160		P21A-002B6	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5		SCH160		P21A-002B9	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2		XS		P21A-001CJ	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		STD		P21A-001CU	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		STD		P21A-001CW	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6		STD		P21A-001D2	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8		STD		P21A-001D8	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10		STD		P21A-001BV	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12		SCH40		P21A-0022P	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14		SCH40		P21A-0022R	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16		SCH20		P21A-0020X	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18		STD		P21A-002FT	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20		STD		P21A-002FU	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24		XS		P21A-002Y5	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	30		XS		P21A-004GM	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Moderate wet H2S service	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75	SCH160	SCH160	P24A-004B6	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.75	SCH160	SCH160	P24A-004B2	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	1	SCH160	SCH160	P24A-004BA	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	XS	SCH160	P24A-00GMB	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	XS	SCH160	P24A-005K9	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	STD	SCH160	P24A-00GMC	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	STD	XS	P24A-002HW	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P24A-002HY	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P24A-0021K	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	STD	P24A-0021A	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P24A-00229	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	STD	STD	P24A-0021E	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	STD	STD	P24A-0022M	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	STD	STD	P24A-0021B	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	STD	STD	P24A-0022B	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	STD	STD	P24A-0022W	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	SCH40	STD	P24A-00GSM	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH40	STD	P24A-00AF8	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH40	STD	P24A-00GSL	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	SCH40	STD	P24A-00GV4	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	SCH40	STD	P24A-00AFB	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	SCH40	STD	P24A-003GJ	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	SCH40	SCH40	P24A-0033E	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	6	SCH20	STD	P24A-00GU4	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	SCH20	STD	P24A-00GP8	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	SCH20	STD	P24A-00GU3	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	SCH20	SCH40	P24A-00L6A	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	SCH20	SCH40	P24A-00L4L	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	8	STD	STD	P24A-00201	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	10	STD	STD	P24A-0022C	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	12	STD	SCH40	P24A-00KCF	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	14	STD	SCH40	P24A-00KCG	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	16	STD	SCH20	P24A-00HL3	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	8	STD	STD	P24A-0020T	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	10	STD	STD	P24A-0022D	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	12	STD	SCH40	P24A-00KCH	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	14	STD	SCH40	P24A-00KCJ	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	16	STD	SCH20	P24A-00HKX	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	18	STD	STD	P24A-0020K	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	24	10	XS	STD	P24A-00GR8	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24	12	XS	SCH40	P24A-00GB4	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24	14	XS	SCH40	P24A-00GB5	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24	16	XS	SCH20	P24A-00KCK	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24	18	XS	STD	P24A-00884	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24	20	XS	STD	P24A-00885	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	30	10	XS	STD	P24A-00NZ7	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Moderate wet H2S service	
1	30	12	XS	SCH40	P24A-00L2M	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Moderate wet H2S service	
1	30	14	XS	SCH40	P24A-00L2N	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Moderate wet H2S service	
1	30	16	XS	SCH20	P24A-00NJ9	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Moderate wet H2S service	
1	30	18	XS	STD	P24A-00NJA	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Moderate wet H2S service	
1	30	20	XS	STD	P24A-00NJB	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Moderate wet H2S service	
1	30	24	XS	XS	P24A-00L22	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Moderate wet H2S service	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	SCH160	P27A-004LZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.5	SCH160	SCH160	P27A-004M8	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.75	SCH160	SCH160	P27A-002T5	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.5	SCH160	SCH160	P27A-004MV	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.75	SCH160	SCH160	P27A-002T7	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	1	SCH160	SCH160	P27A-002T4	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	0.75	XS	SCH160	P27A-001LG	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	XS	SCH160	P27A-0033P	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	XS	SCH160	P27A-0033B	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	STD	SCH160	P27A-003M9	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	STD	XS	P27A-001MZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	1.5	STD	SCH160	P27A-003MA	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P27A-001N0	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P27A-00189	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	STD	P27A-001AZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P27A-001GW	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	STD	STD	P27A-001C2	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	STD	STD	P27A-00188	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	STD	STD	P27A-001C3	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	STD	STD	P27A-0018M	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	STD	STD	P27A-0019J	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	SCH40	STD	P27A-004W1	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH40	STD	P27A-004XB	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH40	STD	P27A-004UG	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	SCH40	STD	P27A-0051B	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	SCH40	STD	P27A-003ZT	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	SCH40	STD	P27A-0029L	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	SCH40	SCH40	P27A-001ZZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	SCH20	STD	P27A-003ND	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	SCH20	STD	P27A-0054A	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	SCH20	SCH40	P27A-00CBP	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	SCH20	SCH40	P27A-00CBR	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	10	STD	STD	P27A-0037H	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	12	STD	SCH40	P27A-005DS	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	14	STD	SCH40	P27A-005FS	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	16	STD	SCH20	P27A-005HV	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	12	STD	SCH40	P27A-005LX	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	14	STD	SCH40	P27A-005P0	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	16	STD	SCH20	P27A-005S7	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	18	STD	STD	P27A-0037R	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24	16	XS	SCH20	P27A-005Y9	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24	18	XS	STD	P27A-005ZZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24	20	XS	STD	P27A-0061M	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	30	20	XS	STD	P27A-00H62	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Moderate wet H2S service	
1	30	24	XS	XS	P27A-00FBZ	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Moderate wet H2S service	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	SCH160	P28A-007KG	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.5	SCH160	SCH160	P28A-007KH	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.75	SCH160	SCH160	P28A-002TU	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.5	SCH160	SCH160	P28A-007KJ	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.75	SCH160	SCH160	P28A-002TW	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	1	SCH160	SCH160	P28A-002TR	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	0.75	XS	SCH160	P28A-001LE	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	XS	SCH160	P28A-003M1	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	XS	SCH160	P28A-003M2	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	STD	SCH160	P28A-003M3	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	STD	XS	P28A-001N5	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	1.5	STD	SCH160	P28A-003M4	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P28A-001N6	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P28A-0018B	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	STD	P28A-001AS	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P28A-00182	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	STD	STD	P28A-0017V	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	STD	STD	P28A-0018V	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	STD	STD	P28A-0017W	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	STD	STD	P28A-00190	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	STD	STD	P28A-0019J	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	SCH40	STD	P28A-008HU	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH40	STD	P28A-005T9	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH40	STD	P28A-008HT	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	SCH40	STD	P28A-008F4	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	SCH40	STD	P28A-003ZL	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	SCH40	STD	P28A-0028T	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	SCH40	SCH40	P28A-001ZG	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	SCH20	STD	P28A-003N7	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	SCH20	STD	P28A-008FM	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	SCH20	SCH40	P28A-009AX	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	SCH20	SCH40	P28A-009AY	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	10	STD	STD	P28A-00370	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	12	STD	SCH40	P28A-00C0V	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	14	STD	SCH40	P28A-00C0W	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	16	STD	SCH20	P28A-0096Y	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	12	STD	SCH40	P28A-00C0X	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	14	STD	SCH40	P28A-00C0Y	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	16	STD	SCH20	P28A-0096T	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	18	STD	STD	P28A-00377	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24	16	XS	SCH20	P28A-00C0Z	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24	18	XS	STD	P28A-0063W	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24	20	XS	STD	P28A-0063X	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	30	20	XS	STD	P28A-00EDT	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Moderate wet H2S service	
1	30	24	XS	XS	P28A-00CGS	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Moderate wet H2S service	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P29A-00329	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	0.75		SCH160		P29A-001UF	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	1		SCH160		P29A-001TC	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	1.5		SCH160		P29A-001TD	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	2		XS		P29A-001VG	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	3		STD		P29A-001VK	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	

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CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	4		STD		P29A-001VN	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	6		STD		P29A-001VS	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	8		STD		P29A-001VT	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	10		STD		P29A-001VB	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	12		SCH40		P29A-001TF	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	14		SCH40		P29A-0036R	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	16		SCH20		P29A-00361	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	18		STD		P29A-001VF	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	20		STD		P29A-001VH	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	24		XS		P29A-001VJ	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	30		XS		P29A-003BX	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
541	0.75				P29B-0000Y	Cap ASTM A105 Class 6000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P41A-000B9	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		XXS		P41A-000BA	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		XXS		P41A-000D8	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		XXS		P41A-000D9	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
541	1	0.75			P31B-005HL	Outlet ASTM A105 Class 6000 MSS SP-97 NPT	
541	1.5 - 2.5	0.75			P31B-0137F	Outlet ASTM A105 Class 6000 MSS SP-97 NPT	
541	3 - 10	0.75			P31B-007KP	Outlet ASTM A105 Class 6000 MSS SP-97 NPT	
541	12 and larger	0.75			P31B-0138A	Outlet ASTM A105 Class 6000 MSS SP-97 NPT	
1	2	0.75	XS	SCH160	P31B-00CP7	Outlet ASTM A105 MSS SP-97 BW	
1	3	0.75	STD	SCH160	P31B-00CMT	Outlet ASTM A105 MSS SP-97 BW	
1	4	0.75	STD	SCH160	P31B-00CLT	Outlet ASTM A105 MSS SP-97 BW	
1	6	0.75	STD	SCH160	P31B-00CKK	Outlet ASTM A105 MSS SP-97 BW	
1	8	0.75	STD	SCH160	P31B-00C5E	Outlet ASTM A105 MSS SP-97 BW	
1	10	0.75	STD	SCH160	P31B-00CFB	Outlet ASTM A105 MSS SP-97 BW	
1	12	0.75	SCH40	SCH160	P31B-00CS8	Outlet ASTM A105 MSS SP-97 BW	
1	14	0.75	SCH40	SCH160	P31B-00CRP	Outlet ASTM A105 MSS SP-97 BW	
1	16	0.75	SCH20	SCH160	P31B-00XS0	Outlet ASTM A105 MSS SP-97 BW	
1	18	0.75	STD	SCH160	P31B-00CPL	Outlet ASTM A105 MSS SP-97 BW	
1	20	0.75	STD	SCH160	P31B-00CNW	Outlet ASTM A105 MSS SP-97 BW	
1	24	0.75	XS	SCH160	P31B-007N3	Outlet ASTM A105 MSS SP-97 BW	
1	30	0.75	XS	SCH160	P31B-00CMF	Outlet ASTM A105 MSS SP-97 BW	
1	3	1	STD	SCH160	P31B-00B4J	Outlet ASTM A105 MSS SP-97 BW	
1	4	1	STD	SCH160	P31B-00B3M	Outlet ASTM A105 MSS SP-97 BW	
1	6	1	STD	SCH160	P31B-00AZC	Outlet ASTM A105 MSS SP-97 BW	
1	8	1	STD	SCH160	P31B-00AVF	Outlet ASTM A105 MSS SP-97 BW	
1	10	1	STD	SCH160	P31B-00C06	Outlet ASTM A105 MSS SP-97 BW	
1	12	1	SCH40	SCH160	P31B-00BWL	Outlet ASTM A105 MSS SP-97 BW	
1	14	1	SCH40	SCH160	P31B-00BRP	Outlet ASTM A105 MSS SP-97 BW	
1	16	1	SCH20	SCH160	P31B-00X8Z	Outlet ASTM A105 MSS SP-97 BW	
1	18	1	STD	SCH160	P31B-00BC9	Outlet ASTM A105 MSS SP-97 BW	
1	20	1	STD	SCH160	P31B-00B8M	Outlet ASTM A105 MSS SP-97 BW	
1	24	1	XS	SCH160	P31B-007MU	Outlet ASTM A105 MSS SP-97 BW	
1	30	1	XS	SCH160	P31B-00B45	Outlet ASTM A105 MSS SP-97 BW	
1	4	1.5	STD	SCH160	P31B-00BP4	Outlet ASTM A105 MSS SP-97 BW	
1	6	1.5	STD	SCH160	P31B-00BJH	Outlet ASTM A105 MSS SP-97 BW	
1	8	1.5	STD	SCH160	P31B-00BHJ	Outlet ASTM A105 MSS SP-97 BW	
1	10	1.5	STD	SCH160	P31B-00AUM	Outlet ASTM A105 MSS SP-97 BW	
1	12	1.5	SCH40	SCH160	P31B-00CEH	Outlet ASTM A105 MSS SP-97 BW	
1	14	1.5	SCH40	SCH160	P31B-00CDR	Outlet ASTM A105 MSS SP-97 BW	
1	16	1.5	SCH20	SCH160	P31B-00C9B	Outlet ASTM A105 MSS SP-97 BW	
1	18	1.5	STD	SCH160	P31B-00C4R	Outlet ASTM A105 MSS SP-97 BW	

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OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	20	1.5	STD	SCH160	P31B-00C3Y	Outlet ASTM A105 MSS SP-97 BW	
1	24	1.5	XS	SCH160	P31B-007MM	Outlet ASTM A105 MSS SP-97 BW	
1	30	1.5	XS	SCH160	P31B-00BYJ	Outlet ASTM A105 MSS SP-97 BW	
1	6	2	STD	XS	P31B-007SH	Outlet ASTM A105 MSS SP-97 BW	
1	8	2	STD	XS	P31B-00AGX	Outlet ASTM A105 MSS SP-97 BW	
1	10	2	STD	XS	P31B-00ASA	Outlet ASTM A105 MSS SP-97 BW	
1	12	2	SCH40	XS	P31B-00CBS	Outlet ASTM A105 MSS SP-97 BW	
1	14	2	SCH40	XS	P31B-00CAH	Outlet ASTM A105 MSS SP-97 BW	
1	16	2	SCH20	XS	P31B-00TF8	Outlet ASTM A105 MSS SP-97 BW	
1	18	2	STD	XS	P31B-009FJ	Outlet ASTM A105 MSS SP-97 BW	
1	20	2	STD	XS	P31B-00994	Outlet ASTM A105 MSS SP-97 BW	
1	24	2	XS	XS	P31B-0092Y	Outlet ASTM A105 MSS SP-97 BW	
1	30	2	XS	XS	P31B-008P4	Outlet ASTM A105 MSS SP-97 BW	
1	8	3	STD	STD	P31B-00A2T	Outlet ASTM A105 MSS SP-97 BW	
1	10	3	STD	STD	P31B-009CM	Outlet ASTM A105 MSS SP-97 BW	
1	12	3	SCH40	STD	P31B-0096S	Outlet ASTM A105 MSS SP-97 BW	
1	14	3	SCH40	STD	P31B-0090U	Outlet ASTM A105 MSS SP-97 BW	
1	16	3	SCH20	STD	P31B-00TU2	Outlet ASTM A105 MSS SP-97 BW	
1	18	3	STD	STD	P31B-008MK	Outlet ASTM A105 MSS SP-97 BW	
1	20	3	STD	STD	P31B-008FA	Outlet ASTM A105 MSS SP-97 BW	
1	24	3	XS	STD	P31B-00894	Outlet ASTM A105 MSS SP-97 BW	
1	30	3	XS	STD	P31B-007WX	Outlet ASTM A105 MSS SP-97 BW	
1	12	4	SCH40	STD	P31B-008ZY	Outlet ASTM A105 MSS SP-97 BW	
1	14	4	SCH40	STD	P31B-008YN	Outlet ASTM A105 MSS SP-97 BW	
1	16	4	SCH20	STD	P31B-00TU3	Outlet ASTM A105 MSS SP-97 BW	
1	18	4	STD	STD	P31B-008KB	Outlet ASTM A105 MSS SP-97 BW	
1	20	4	STD	STD	P31B-008D3	Outlet ASTM A105 MSS SP-97 BW	
1	24	4	XS	STD	P31B-0086W	Outlet ASTM A105 MSS SP-97 BW	
1	30	4	XS	STD	P31B-007UR	Outlet ASTM A105 MSS SP-97 BW	
1	18	6	STD	STD	P31B-008RX	Outlet ASTM A105 MSS SP-97 BW	
1	20	6	STD	STD	P31B-008PZ	Outlet ASTM A105 MSS SP-97 BW	
1	24	6	XS	STD	P31B-008JC	Outlet ASTM A105 MSS SP-97 BW	
1	30	6	XS	STD	P31B-008BR	Outlet ASTM A105 MSS SP-97 BW	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30B-0002D	Plug ASTM A105 ASME B16.11 NPT Round head	
1	0.75				P30B-0002E	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1				P30B-0002F	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1.5				P30B-0002G	Plug ASTM A105 ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P61B-003P9	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	0.75		SCH160		P61B-0037M	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	1		SCH160		P61B-0037L	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	1.5		SCH160		P61B-0037J	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	2		XS		P61B-001HW	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	3		STD		P61B-001LJ	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	4		STD		P61B-001MC	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	6		STD		P61B-001N2	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	8		STD		P61B-001NL	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	10		STD		P61B-001L6	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	12		SCH40		P61B-002FJ	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	14		SCH40		P61B-002FL	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	16		SCH20		P61B-002MS	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	18		STD		P61B-001N9	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	20		STD		P61B-001NT	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	24		XS		P61B-002RA	Flange WN ASTM A105 Class 300 ASME B16.5 RF	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	30		XS		P61B-001KT	Flange WN ASTM A105 Class 300 ASME B16.47 Series B RF	
541	0.5				P61B-003U3	Flange NPT ASTM A105 Class 300 ASME B16.5 RF	
541	0.75				P61B-003U4	Flange NPT ASTM A105 Class 300 ASME B16.5 RF	
781	0.5		SCH160		P61B-004UV	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	0.75		SCH160		P61B-003T2	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	1		SCH160		P61B-003T3	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	1.5		SCH160		P61B-003T4	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	2		XS		P61B-001DH	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	3		STD		P61B-001TW	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	4		STD		P61B-001VV	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	6		STD		P61B-001JW	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	8		STD		P61B-001KK	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	10		STD		P61B-001JJ	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	12		SCH40		P61B-003T5	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	14		SCH40		P61B-003T6	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	16		SCH20		P61B-00798	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	18		STD		P61B-003FA	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	20		STD		P61B-003GP	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	24		XS		P61B-003T9	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	30		XS		P61B-003GZ	Flange WN ASTM A105 Class 600 ASME B16.47 Series B RF	
805	2		XS		P61B-0073U	Flange WN ASTM A105 Class 2500 ASME B16.5 RJ	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67B-000GH	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	0.75				P67B-000GJ	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	1				P67B-000GK	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	1.5				P67B-000GL	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	2				P67B-000GM	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	3				P67B-000GN	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	4				P67B-000GP	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	6				P67B-000GY	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	8				P67B-000GZ	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	10				P67B-000GR	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	12				P67B-000GS	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	14				P67B-000GT	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	16				P67B-000GU	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	18				P67B-000GV	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	20				P67B-000GW	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	24				P67B-000GX	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	30				P67B-000H2	Blind flange ASTM A105 Class 300 ASME B16.47 Series B RF	

REDUCING FLANGE (FR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5		SCH160	P62B-000N6	Reducing flange WN ASTM A105 Class 300 ASME B16.5 RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000FT	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000FU	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000G5	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000G6	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	6				P73T-000G7	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

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GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	8				P73T-000G8	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	10				P73T-000FX	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	12				P73T-000FY	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	14				P73T-000FZ	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	16				P73T-000G0	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	18				P73T-000G1	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	20				P73T-000G3	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	24				P73T-000G4	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	30				P73T-000H9	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	0.5				P73T-000J8	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	0.75				P73T-000J9	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1				P73T-000JA	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1.5				P73T-000JB	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	2				P73T-000JH	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	3				P73T-000JL	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	4				P73T-000JM	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	6				P73T-000JN	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	8				P73T-000JP	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	10				P73T-000JC	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	12				P73T-000JD	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	14				P73T-000JE	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	16				P73T-000JF	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	18				P73T-000JG	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	20				P73T-000JJ	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	24				P73T-000JK	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	30				P73T-000JT	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
805	2				P75T-000L6	Ring joint gasket Soft iron Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-10				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	12-30				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
781	0.5-6				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
781	8-30				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
805	2				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81B-00195	Gate valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	0.75				P81B-00196	Gate valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	1				P81B-00197	Gate valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	1.5				P81B-00198	Gate valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	2				P81C-004HZ	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	3				P81C-004J0	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	4				P81C-004J1	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	

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GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	6				P81C-004J2	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	8				P81C-0091U	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Moderate wet H2S service	
1	10				P81C-004J4	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Moderate wet H2S service	
1	12				P81C-004J5	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Moderate wet H2S service	
1	14				P81C-004J6	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Moderate wet H2S service	
1	16				P81C-004J7	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Moderate wet H2S service	
1	18				P81C-004WF	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Moderate wet H2S service	
1	20				P81C-004WG	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Moderate wet H2S service	
1	24				P81C-004J8	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Moderate wet H2S service	
4608	0.75				P81B-002WR	Gate valve ASTM A105 Class 300 API 602 BW both sides w/ nipples BE - NPT ASTM A106-B XXS-nipple Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82B-00124	Globe valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	0.75				P82B-00125	Globe valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	1				P82B-00126	Globe valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	1.5				P82B-00127	Globe valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	2				P82C-00283	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	3				P82C-00284	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	4				P82C-00285	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	6				P82C-00286	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	8				P82C-004CZ	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Moderate wet H2S service	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83B-000UJ	Check valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Moderate wet H2S service	
1	0.75				P83B-000UK	Check valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Moderate wet H2S service	
1	1				P83B-000UL	Check valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Moderate wet H2S service	
1	1.5				P83B-000UM	Check valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Moderate wet H2S service	
1	2				P83C-0024P	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Moderate wet H2S service	
1	3				P83C-0024R	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Moderate wet H2S service	
1	4				P83C-0024S	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Moderate wet H2S service	
1	6				P83C-0024T	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Moderate wet H2S service	
1	8				P83C-0024U	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Moderate wet H2S service	
1	10				P83C-0024N	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Moderate wet H2S service	
1	12				P83C-002FD	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Moderate wet H2S service	

DP CHECK VALVE (XDP)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
4602	12				P88C-003B0	Dual plate check valve ASTM A216 Grade WCB Class 300 API 594 Wafer-type ASME B16.5 RF Trim number 12 Internal wetted parts SS316 Spring Inconel Retainerless-type Moderate wet H2S service	

BUTTERFLY VALVE (H)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	10				P86C-00255	Offset design butterfly valve ASTM A216 Grade WCB Class 300 API 609 Category B Lug-type ASME B16.5 RF Disc CS Seat Stellite-6 Trim SS316 Triple eccentric design BG Gear operated Moderate wet H2S service	

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NEEDLE VALVE (NV)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82B-001M8	Needle valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	0.75				P82B-001M9	Needle valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	1				P82B-001MA	Needle valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	1.5				P82B-001MB	Needle valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	

ORIFICE FLANGE (FO)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2		XS		P66B-0084B	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	3		STD		P66B-0084C	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	4		STD		P66B-0084D	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	6		STD		P66B-0084E	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	8		STD		P66B-008BN	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	10		STD		P66B-008BM	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	12		SCH40		P66B-00885	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
200	2		XS		P66B-00843	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	3		STD		P66B-00844	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	4		STD		P66B-00845	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	6		STD		P66B-00846	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	8		STD		P66B-008BR	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	10		STD		P66B-008BP	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	12		SCH40		P66B-0088K	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71B-000B1	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	0.75				P71B-000B2	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	1				P71B-000B3	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71B-000B4	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	2				P71B-000B6	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	3				P71B-000B7	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	4				P71B-000B8	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	6				P71B-000B9	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	8				P71B-000BA	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	10				P71B-000B5	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	12				P71B-000BB	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	

PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000FA	Paddle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	16				P72B-000FB	Paddle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	18				P72B-000FC	Paddle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	20				P72B-000FD	Paddle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	24				P72B-000FE	Paddle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	30				P72B-000FF	Paddle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.47-B RF	

PADDLE SPACER (PS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000FG	Paddle spacer ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	16				P72B-000FH	Paddle spacer ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	18				P72B-000FJ	Paddle spacer ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	20				P72B-000FK	Paddle spacer ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	24				P72B-000FL	Paddle spacer ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	30				P72B-000FM	Paddle spacer ASTM A105 Class 300 Standard-drawing Flange ASME B16.47-B RF	

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BOLT TABLE (B_B2AQ , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-008T0		
0.75	4	0.625	75	P80S-00908		
1	4	0.625	80	P80S-00909		
1.5	4	0.750	95	P80S-005Z4		
2	8	0.625	90	P80S-0090B		
3	8	0.750	110	P80S-0090F		
4	8	0.750	115	P80S-0090G		
6	12	0.750	125	P80S-0090J		
8	12	0.875	140	P80S-005ZD		
10	16	1.000	160	P80S-0061E		
12	16	1.125	175	P80S-0064S		
14	20	1.125	180	P80S-0064T		
16	20	1.250	190	P80S-00689		
18	24	1.250	200	P80S-0068B		
20	24	1.250	210	P80S-0068D		
24	24	1.500	235	P80S-006LB		
30	36	1.375	285	P80S-006HY		

BOLT TABLE (B_B2AQ_781 , STUD ASME RF, OPTION CODE 781)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	80	P80S-008T2		
0.75	4	0.625	90	P80S-0090B		
1	4	0.625	95	P80S-0090C		
1.5	4	0.750	110	P80S-0090F		
2	8	0.625	110	P80S-008T8		
3	8	0.750	130	P80S-0090K		
4	8	0.875	150	P80S-005ZF		
6	12	1.000	175	P80S-0061H		
8	12	1.125	195	P80S-0064W		
10	16	1.250	250	P80S-0068M		
12	20	1.250	255	P80S-0068N		
14	20	1.375	270	P80S-006HV		
16	20	1.500	295	P80S-006LP		
18	20	1.625	320	P80S-00A5E		
20	24	1.625	335	P80S-00A5H		
24	24	1.875	380	P80S-00AW5		
30	28	1.875	435	P80S-00AWG		

BOLT TABLE (B_B2AQ_805 , STUD ASME RJ, OPTION CODE 805)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	125		R13	
0.75	4	0.750	130		R16	
1	4	0.875	140		R18	
1.5	4	1.125	175		R23	
2	8	1.000	180	P80S-0061J	R26	P75T-000L6
3	8	1.250	260		R32	
4	8	1.500	305		R38	
6	8	2.000	410		R47	
8	12	2.000	450		R51	
10	12	2.500	575		R55	
12	12	2.750	635		R60	
14	14	3.000	695		R64	
16	14	3.000	755		R68	
18	16	3.000	815		R72	
20	16	3.000	875		R76	
24	18	3.000	950		R81	

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BRANCH TABLE (T_B2AQ)

RUN PIPE SIZE (in) \ BRANCH SIZE (in)	0.5	0.75	1	1.5	2	3	4	6	8	10	12	14	16	18	20	24	30
0.5	TS																
0.75		TS															
1		TR	TS														
1.5		TR	TR	TS													
2		L	TR	TR	TS												
3		L	L	TR	TR	TS											
4	L	L	L	L	TR	TR	TS										
6	L	L	L	L	L	TR	TR	TS									
8		L	L	L	L	L	TR	TR	TS								
10		L	L	L	L	L	TR	TR	TR	TS							
12		L	L	L	L	L	L	TR	TR	TR	TS						
14		L	L	L	L	L	L	TR	TR	TR	TR	TS					
16		L	L	L	L	L	L	TR	TR	TR	TR	TR	TS				
18		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TS			
20		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TR	TS		
24		L	L	L	L	L	L	L	9PD	TR	TR	TR	TR	TR	TR	TS	
30		L	L	L	L	L	L	L	9PD	TR	TR	TR	TR	TR	TR	TR	TS

L : OUTLET
9PD : REINFORCING PAD 90 DEG
TS : STRAIGHT TEE
TR : REDUCING TEE

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PIPING CLASS

B2AQ01 REV NO. 2

Material : Killed CS
Rating : ASME CLASS 300
Flange Face : RF
C.A.(mm) : 3.00
Gasket : Spiral Wound
Service : PROCESS -WET LOW SEVERITY SOUR SERVICE SUBJECT TO NACE
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
2	USE OF SOFT SEATED BALL, PLUG AND BUTTERFLY VALVES SHALL BE LIMITED TO MAXIMUM OF 204DEGC (400DEGF)
5	BOLTING CONFIRMING TO B7M / 2HM SHALL BE USED UNDER CONDITIONS (A) DIRECT EXPOSURE TO SOUR ENVIRONMENTS (B) WHEN THE BOLTING WILL BE BURIED OR INSULATED
27	PWHT OF CARBON STEEL PIPING IN WET H2S, CAUSTIC AND AMINE SERVICES SHALL BE IN ACCORDANCE WITH SECTION 10.2, 10.3, AND 10.4 OF PROJECT SPECIFICATION 3550-8440-SP-0002 MATERIALS REQUIREMENTS FOR PRESSURISED EQUIPMENT AND PIPING. FOR CAUSTIC AND AMINE SERVICE THE FOLLOWING SHALL APPLY: - PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF ALL SITE PIPING FABRICATION WELDS IS REQUIRED FOR ALL WALL THICKNESSES. FOR MODERATE AND SEVERE WET H2S SERVICE THE FOLLOWING SHALL APPLY: PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF SITE FABRICATION CIRCUMFERENTIAL OR BRANCH WELDS IS NOT REQUIRED IF WELDS ARE MULTIPASS AND IN ACCORDANCE WITH PARA 10.2.12 OF PROJECT SPECIFICATION 3550-8440-SP-0002. FOR SERVICES MEETING THE WET H2S CRITERIA AND CAUSTIC OR AMINE CRITERIA THE MORE STRINGENT PWHT REQUIREMENT SHALL GOVERN.

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
200	WITH JACK SCREW (FO)
541	NPT(F) (CA,F)
781	CLASS 600 (B,F,G)
4608	VALVE WITH NIPPLES (V)

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PIPING CLASS
B2AQ01 REV NO. 2

PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P01A-0079G	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE Moderate wet H2S service Licensor-1	
1	0.75		SCH160		P01A-0079H	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE Moderate wet H2S service Licensor-1	
1	1		SCH160		P01A-0079J	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE Moderate wet H2S service Licensor-1	
1	1.5		SCH160		P01A-0079K	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE Moderate wet H2S service Licensor-1	
1	2		XS		P01A-007CL	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Moderate wet H2S service Licensor-1	
1	3		STD		P01A-007CM	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Moderate wet H2S service Licensor-1	
1	4		STD		P01A-007CN	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Moderate wet H2S service Licensor-1	
1	6		STD		P01A-007CP	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Moderate wet H2S service Licensor-1	
1	8		STD		P01A-007CR	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Moderate wet H2S service Licensor-1	
1	10		STD		P01A-007CG	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Moderate wet H2S service Licensor-1	
1	12		SCH40		P01A-007CH	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Moderate wet H2S service Licensor-1	
1	14		SCH40		P01A-007CJ	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Moderate wet H2S service Licensor-1	
1	16		SCH20		P01A-007CK	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Moderate wet H2S service Licensor-1	
1	18		SCH20		P01A-007CV	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Moderate wet H2S service Licensor-1	
1	20		STD		P01A-007CW	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Moderate wet H2S service Licensor-1	
1	24		STD		P01A-007CX	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Moderate wet H2S service Licensor-1	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P02A-003RM	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Moderate wet H2S service Licensor-1	
1	0.75		SCH160		P02A-003RN	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Moderate wet H2S service Licensor-1	
1	1		SCH160		P02A-003RP	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Moderate wet H2S service Licensor-1	
1	1.5		SCH160		P02A-003RR	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Moderate wet H2S service Licensor-1	
1	2		XS		P02A-003UN	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Moderate wet H2S service Licensor-1	
1	3		STD		P02A-003UP	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Moderate wet H2S service Licensor-1	
1	4		STD		P02A-003UR	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Moderate wet H2S service Licensor-1	
1	6		STD		P02A-003US	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Moderate wet H2S service Licensor-1	
1	8		STD		P02A-003UT	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Moderate wet H2S service Licensor-1	
1	10		STD		P02A-003UJ	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Moderate wet H2S service Licensor-1	
1	12		SCH40		P02A-003UK	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Moderate wet H2S service Licensor-1	
1	14		SCH40		P02A-003UL	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Moderate wet H2S service Licensor-1	
1	16		SCH20		P02A-003UM	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Moderate wet H2S service Licensor-1	
1	18		SCH20		P02A-003UX	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Moderate wet H2S service Licensor-1	
1	20		STD		P02A-003UY	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Moderate wet H2S service Licensor-1	
1	24		STD		P02A-003UZ	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Moderate wet H2S service Licensor-1	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P03A-003NA	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Moderate wet H2S service Licensor-1	
1	0.75		SCH160		P03A-003NB	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Moderate wet H2S service Licensor-1	
1	1		SCH160		P03A-003NC	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Moderate wet H2S service Licensor-1	
1	1.5		SCH160		P03A-003ND	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Moderate wet H2S service Licensor-1	
1	2		XS		P03A-003SB	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Moderate wet H2S service Licensor-1	
1	3		STD		P03A-003SC	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Moderate wet H2S service Licensor-1	
1	4		STD		P03A-003SD	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Moderate wet H2S service Licensor-1	
1	6		STD		P03A-003SE	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Moderate wet H2S service Licensor-1	
1	8		STD		P03A-003SF	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Moderate wet H2S service Licensor-1	
1	10		STD		P03A-003S7	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Moderate wet H2S service Licensor-1	
1	12		SCH40		P03A-003S8	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Moderate wet H2S service Licensor-1	

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45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14		SCH40		P03A-003S9	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Moderate wet H2S service Licensor-1	
1	16		SCH20		P03A-003SA	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Moderate wet H2S service Licensor-1	
1	18		SCH20		P03A-003SK	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Moderate wet H2S service Licensor-1	
1	20		STD		P03A-003SL	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Moderate wet H2S service Licensor-1	
1	24		STD		P03A-003SM	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Moderate wet H2S service Licensor-1	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P21A-00491	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	0.75		SCH160		P21A-00492	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	1		SCH160		P21A-00493	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	1.5		SCH160		P21A-00494	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	2		XS		P21A-004C4	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	3		STD		P21A-004C5	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	4		STD		P21A-004C6	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	6		STD		P21A-004C7	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	8		STD		P21A-004C8	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	10		STD		P21A-004C0	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	12		SCH40		P21A-004C1	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	14		SCH40		P21A-004C2	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	16		SCH20		P21A-004C3	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	18		SCH20		P21A-004CC	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	20		STD		P21A-004CD	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	24		STD		P21A-004CE	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75	SCH160	SCH160	P24A-00K26	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	1.5	0.75	SCH160	SCH160	P24A-00K27	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	1.5	1	SCH160	SCH160	P24A-00K28	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	2	1	XS	SCH160	P24A-00KBS	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	2	1.5	XS	SCH160	P24A-00KBT	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	3	1.5	STD	SCH160	P24A-00KBU	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	3	2	STD	XS	P24A-00KBV	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	4	2	STD	XS	P24A-00KBW	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	4	3	STD	STD	P24A-00KBX	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	6	3	STD	STD	P24A-00KBY	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	6	4	STD	STD	P24A-00KBZ	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	8	4	STD	STD	P24A-00KC0	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	8	6	STD	STD	P24A-00KC1	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	10	4	STD	STD	P24A-00KC2	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	10	6	STD	STD	P24A-00KC3	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	10	8	STD	STD	P24A-00KC4	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	12	6	SCH40	STD	P24A-00KC6	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	12	8	SCH40	STD	P24A-00KC7	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	12	10	SCH40	STD	P24A-00KC5	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	14	6	SCH40	STD	P24A-00KCA	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	14	8	SCH40	STD	P24A-00KCB	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	14	10	SCH40	STD	P24A-00KC8	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	14	12	SCH40	SCH40	P24A-00KC9	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	16	6	SCH20	STD	P24A-00KCD	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	16	8	SCH20	STD	P24A-00KCE	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	16	10	SCH20	STD	P24A-00KCC	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	16	12	SCH20	SCH40	P24A-00L6J	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	16	14	SCH20	SCH40	P24A-00L5U	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	18	8	SCH20	STD	P24A-00NZ3	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	18	10	SCH20	STD	P24A-00NZ0	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	

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REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	18	12	SCH20	SCH40	P24A-00NZ1	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	18	14	SCH20	SCH40	P24A-00NZ2	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	18	16	SCH20	SCH20	P24A-00KD8	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	20	8	STD	STD	P24A-00M6G	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	20	10	STD	STD	P24A-00M6C	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	20	12	STD	SCH40	P24A-00M6D	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	20	14	STD	SCH40	P24A-00M6E	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	20	16	STD	SCH20	P24A-00KDD	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	20	18	STD	SCH20	P24A-00KDE	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	24	10	STD	STD	P24A-00NZ4	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	24	12	STD	SCH40	P24A-00NZ5	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	24	14	STD	SCH40	P24A-00NZ6	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	24	16	STD	SCH20	P24A-00KDJ	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	24	18	STD	SCH20	P24A-00KDK	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	24	20	STD	STD	P24A-00KDL	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	SCH160	P27A-00EM0	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	1	0.5	SCH160	SCH160	P27A-00EM1	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	1	0.75	SCH160	SCH160	P27A-00EM2	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	1.5	0.5	SCH160	SCH160	P27A-00EM3	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	1.5	0.75	SCH160	SCH160	P27A-00EM4	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	1.5	1	SCH160	SCH160	P27A-00EM5	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	2	0.75	XS	SCH160	P27A-00EW7	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	2	1	XS	SCH160	P27A-00EW8	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	2	1.5	XS	SCH160	P27A-00EW9	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	3	1.5	STD	SCH160	P27A-00EWA	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	3	2	STD	XS	P27A-00EWB	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	4	1.5	STD	SCH160	P27A-00EWC	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	4	2	STD	XS	P27A-00EWD	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	4	3	STD	STD	P27A-00EWE	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	6	3	STD	STD	P27A-00EWF	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	6	4	STD	STD	P27A-00EWG	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	8	4	STD	STD	P27A-00EWH	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	8	6	STD	STD	P27A-00EWJ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	10	4	STD	STD	P27A-00EWK	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	10	6	STD	STD	P27A-00EWL	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	10	8	STD	STD	P27A-00EWM	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	12	6	SCH40	STD	P27A-00EWP	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	12	8	SCH40	STD	P27A-00EWR	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	12	10	SCH40	STD	P27A-00EWN	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	14	6	SCH40	STD	P27A-00EWU	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	14	8	SCH40	STD	P27A-00EWV	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	14	10	SCH40	STD	P27A-00EWS	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	14	12	SCH40	SCH40	P27A-00EWT	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	16	8	SCH20	STD	P27A-00EWZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	16	10	SCH20	STD	P27A-00EWW	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	

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CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	16	12	SCH20	SCH40	P27A-00EWX	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	16	14	SCH20	SCH40	P27A-00EWY	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	18	10	SCH20	STD	P27A-00HDZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	18	12	SCH20	SCH40	P27A-00HE0	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	18	14	SCH20	SCH40	P27A-00HE1	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	18	16	SCH20	SCH20	P27A-00EXK	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	20	12	STD	SCH40	P27A-00G55	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	20	14	STD	SCH40	P27A-00G56	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	20	16	STD	SCH20	P27A-00EXN	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	20	18	STD	SCH20	P27A-00EXP	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	24	16	STD	SCH20	P27A-00EXR	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	24	18	STD	SCH20	P27A-00EXS	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	24	20	STD	STD	P27A-00EXT	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	SCH160	P28A-00BRS	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	1	0.5	SCH160	SCH160	P28A-00BRT	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	1	0.75	SCH160	SCH160	P28A-00BRU	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	1.5	0.5	SCH160	SCH160	P28A-00BRV	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	1.5	0.75	SCH160	SCH160	P28A-00BRW	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	1.5	1	SCH160	SCH160	P28A-00BRX	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	2	0.75	XS	SCH160	P28A-00C02	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	2	1	XS	SCH160	P28A-00C03	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	2	1.5	XS	SCH160	P28A-00C04	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	3	1.5	STD	SCH160	P28A-00C05	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	3	2	STD	XS	P28A-00C06	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	4	1.5	STD	SCH160	P28A-00C07	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	4	2	STD	XS	P28A-00C08	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	4	3	STD	STD	P28A-00C09	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	6	3	STD	STD	P28A-00C0A	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	6	4	STD	STD	P28A-00C0B	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	8	4	STD	STD	P28A-00C0C	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	8	6	STD	STD	P28A-00C0D	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	10	4	STD	STD	P28A-00C0E	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	10	6	STD	STD	P28A-00C0F	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	10	8	STD	STD	P28A-00C0G	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	12	6	SCH40	STD	P28A-00C0J	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	12	8	SCH40	STD	P28A-00C0K	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	12	10	SCH40	STD	P28A-00C0H	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	14	6	SCH40	STD	P28A-00C0N	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	14	8	SCH40	STD	P28A-00C0P	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	14	10	SCH40	STD	P28A-00C0L	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	14	12	SCH40	SCH40	P28A-00C0M	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	16	8	SCH20	STD	P28A-00C0U	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	16	10	SCH20	STD	P28A-00C0R	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	16	12	SCH20	SCH40	P28A-00C0S	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	16	14	SCH20	SCH40	P28A-00C0T	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	18	10	SCH20	STD	P28A-00EMN	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	18	12	SCH20	SCH40	P28A-00EMP	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	18	14	SCH20	SCH40	P28A-00EMR	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	18	16	SCH20	SCH20	P28A-00C1K	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	20	12	STD	SCH40	P28A-00DC4	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	20	14	STD	SCH40	P28A-00DC5	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	20	16	STD	SCH20	P28A-00C1N	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	

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ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	20	18	STD	SCH20	P28A-00C1P	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	24	16	STD	SCH20	P28A-00C1R	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	24	18	STD	SCH20	P28A-00C1S	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	24	20	STD	STD	P28A-00C1T	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P29A-0032T	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	0.75		SCH160		P29A-0032U	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	1		SCH160		P29A-0032V	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	1.5		SCH160		P29A-0032W	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	2		XS		P29A-0036K	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	3		STD		P29A-0036L	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	4		STD		P29A-0036M	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	6		STD		P29A-0036N	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	8		STD		P29A-0036P	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	10		STD		P29A-0036F	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	12		SCH40		P29A-0036G	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	14		SCH40		P29A-0036H	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	16		SCH20		P29A-0036J	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	18		SCH20		P29A-0036V	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	20		STD		P29A-0036W	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	24		STD		P29A-0036X	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
541	0.75				P29B-0006V	Cap ASTM A105 Class 6000 ASME B16.11 NPT Moderate wet H2S service Licensor-1	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P41A-0019F	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Moderate wet H2S service Licensor-1	
1	0.75		XXS		P41A-0019G	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Moderate wet H2S service Licensor-1	
1	1		XXS		P41A-0018D	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Moderate wet H2S service Licensor-1	
1	1.5		XXS		P41A-0018E	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Moderate wet H2S service Licensor-1	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2	0.75	XS	SCH160	P31B-00XTZ	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	3	0.75	STD	SCH160	P31B-00XU0	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	4	0.75	STD	SCH160	P31B-00XU2	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	6	0.75	STD	SCH160	P31B-00XU5	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	8	0.75	STD	SCH160	P31B-00XU9	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	10	0.75	STD	SCH160	P31B-00XUE	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	12	0.75	SCH40	SCH160	P31B-00XUK	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	14	0.75	SCH40	SCH160	P31B-00XUS	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	16	0.75	SCH20	SCH160	P31B-00XUY	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	18	0.75	SCH20	SCH160	P31B-00XVR	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	20	0.75	STD	SCH160	P31B-00XVY	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	24	0.75	STD	SCH160	P31B-00XW5	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	3	1	STD	SCH160	P31B-00XU1	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	4	1	STD	SCH160	P31B-00XU3	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	6	1	STD	SCH160	P31B-00XU6	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	8	1	STD	SCH160	P31B-00XUA	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	10	1	STD	SCH160	P31B-00XUF	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	12	1	SCH40	SCH160	P31B-00XUL	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	14	1	SCH40	SCH160	P31B-00XUT	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	16	1	SCH20	SCH160	P31B-00XUZ	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	18	1	SCH20	SCH160	P31B-00XVS	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	20	1	STD	SCH160	P31B-00XVZ	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	24	1	STD	SCH160	P31B-00XW6	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	

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OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	4	1.5	STD	SCH160	P31B-00XU4	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	6	1.5	STD	SCH160	P31B-00XU7	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	8	1.5	STD	SCH160	P31B-00XUB	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	10	1.5	STD	SCH160	P31B-00XUG	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	12	1.5	SCH40	SCH160	P31B-00XUM	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	14	1.5	SCH40	SCH160	P31B-00XUU	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	16	1.5	SCH20	SCH160	P31B-00XV0	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	18	1.5	SCH20	SCH160	P31B-00XVT	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	20	1.5	STD	SCH160	P31B-00XW0	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	24	1.5	STD	SCH160	P31B-00XW7	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	6	2	STD	XS	P31B-00XU8	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	8	2	STD	XS	P31B-00XUC	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	10	2	STD	XS	P31B-00XUH	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	12	2	SCH40	XS	P31B-00XUN	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	14	2	SCH40	XS	P31B-00XUV	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	16	2	SCH20	XS	P31B-00XV1	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	18	2	SCH20	XS	P31B-00XVU	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	20	2	STD	XS	P31B-00XW1	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	24	2	STD	XS	P31B-00XW8	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	8	3	STD	STD	P31B-00XUD	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	10	3	STD	STD	P31B-00XUJ	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	12	3	SCH40	STD	P31B-00XUP	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	14	3	SCH40	STD	P31B-00XUW	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	16	3	SCH20	STD	P31B-00XV2	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	18	3	SCH20	STD	P31B-00XVV	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	20	3	STD	STD	P31B-00XW2	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	24	3	STD	STD	P31B-00XW9	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	12	4	SCH40	STD	P31B-00XUR	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	14	4	SCH40	STD	P31B-00XUX	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	16	4	SCH20	STD	P31B-00XV3	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	18	4	SCH20	STD	P31B-00XVW	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	20	4	STD	STD	P31B-00XW3	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	24	4	STD	STD	P31B-00XWA	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	18	6	SCH20	STD	P31B-00XVX	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	20	6	STD	STD	P31B-00XW4	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	24	6	STD	STD	P31B-00XWB	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30B-0006F	Plug ASTM A105 ASME B16.11 NPT Round head Moderate wet H2S service Licensor-1	
1	0.75				P30B-0006G	Plug ASTM A105 ASME B16.11 NPT Round head Moderate wet H2S service Licensor-1	
1	1				P30B-0006H	Plug ASTM A105 ASME B16.11 NPT Round head Moderate wet H2S service Licensor-1	
1	1.5				P30B-0006J	Plug ASTM A105 ASME B16.11 NPT Round head Moderate wet H2S service Licensor-1	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P61B-00A2V	Flange WN ASTM A105 Class 300 ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	0.75		SCH160		P61B-00A2W	Flange WN ASTM A105 Class 300 ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	1		SCH160		P61B-00A2X	Flange WN ASTM A105 Class 300 ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	1.5		SCH160		P61B-00A2Y	Flange WN ASTM A105 Class 300 ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	2		XS		P61B-00A33	Flange WN ASTM A105 Class 300 ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	3		STD		P61B-00A34	Flange WN ASTM A105 Class 300 ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	4		STD		P61B-00A35	Flange WN ASTM A105 Class 300 ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	6		STD		P61B-00A36	Flange WN ASTM A105 Class 300 ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	8		STD		P61B-00A37	Flange WN ASTM A105 Class 300 ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	10		STD		P61B-00A2Z	Flange WN ASTM A105 Class 300 ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	12		SCH40		P61B-00A30	Flange WN ASTM A105 Class 300 ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	14		SCH40		P61B-00A31	Flange WN ASTM A105 Class 300 ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	16		SCH20		P61B-00A32	Flange WN ASTM A105 Class 300 ASME B16.5 RF Moderate wet H2S service Licensor-1	

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FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	18		SCH20		P61B-00A47	Flange WN ASTM A105 Class 300 ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	20		STD		P61B-00A48	Flange WN ASTM A105 Class 300 ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	24		STD		P61B-00A49	Flange WN ASTM A105 Class 300 ASME B16.5 RF Moderate wet H2S service Licensor-1	
541	0.5				P61B-00DMA	Flange NPT ASTM A105 Class 300 ASME B16.5 RF Moderate wet H2S service Licensor-1	
541	0.75				P61B-00CXN	Flange NPT ASTM A105 Class 300 ASME B16.5 RF Moderate wet H2S service Licensor-1	
781	0.5		SCH160		P61B-009UZ	Flange WN ASTM A105 Class 600 ASME B16.5 RF Moderate wet H2S service Licensor-1	
781	0.75		SCH160		P61B-009V0	Flange WN ASTM A105 Class 600 ASME B16.5 RF Moderate wet H2S service Licensor-1	
781	1		SCH160		P61B-009V1	Flange WN ASTM A105 Class 600 ASME B16.5 RF Moderate wet H2S service Licensor-1	
781	1.5		SCH160		P61B-009V2	Flange WN ASTM A105 Class 600 ASME B16.5 RF Moderate wet H2S service Licensor-1	
781	2		XS		P61B-00A3C	Flange WN ASTM A105 Class 600 ASME B16.5 RF Moderate wet H2S service Licensor-1	
781	3		STD		P61B-00A3D	Flange WN ASTM A105 Class 600 ASME B16.5 RF Moderate wet H2S service Licensor-1	
781	4		STD		P61B-00A3E	Flange WN ASTM A105 Class 600 ASME B16.5 RF Moderate wet H2S service Licensor-1	
781	6		STD		P61B-00A3F	Flange WN ASTM A105 Class 600 ASME B16.5 RF Moderate wet H2S service Licensor-1	
781	8		STD		P61B-00A3G	Flange WN ASTM A105 Class 600 ASME B16.5 RF Moderate wet H2S service Licensor-1	
781	10		STD		P61B-00A38	Flange WN ASTM A105 Class 600 ASME B16.5 RF Moderate wet H2S service Licensor-1	
781	12		SCH40		P61B-00A39	Flange WN ASTM A105 Class 600 ASME B16.5 RF Moderate wet H2S service Licensor-1	
781	14		SCH40		P61B-00A3A	Flange WN ASTM A105 Class 600 ASME B16.5 RF Moderate wet H2S service Licensor-1	
781	16		SCH20		P61B-00A3B	Flange WN ASTM A105 Class 600 ASME B16.5 RF Moderate wet H2S service Licensor-1	
781	18		SCH20		P61B-00BVU	Flange WN ASTM A105 Class 600 ASME B16.5 RF Moderate wet H2S service Licensor-1	
781	20		STD		P61B-00B1Z	Flange WN ASTM A105 Class 600 ASME B16.5 RF Moderate wet H2S service Licensor-1	
781	24		STD		P61B-00BVV	Flange WN ASTM A105 Class 600 ASME B16.5 RF Moderate wet H2S service Licensor-1	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67B-002GU	Blind flange ASTM A105 Class 300 ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	0.75				P67B-002GV	Blind flange ASTM A105 Class 300 ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	1				P67B-002EY	Blind flange ASTM A105 Class 300 ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	1.5				P67B-002EZ	Blind flange ASTM A105 Class 300 ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	2				P67B-002F2	Blind flange ASTM A105 Class 300 ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	3				P67B-002F3	Blind flange ASTM A105 Class 300 ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	4				P67B-002F4	Blind flange ASTM A105 Class 300 ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	6				P67B-002F5	Blind flange ASTM A105 Class 300 ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	8				P67B-002F6	Blind flange ASTM A105 Class 300 ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	10				P67B-002F0	Blind flange ASTM A105 Class 300 ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	12				P67B-002F1	Blind flange ASTM A105 Class 300 ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	14				P67B-002GW	Blind flange ASTM A105 Class 300 ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	16				P67B-002GX	Blind flange ASTM A105 Class 300 ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	18				P67B-002NM	Blind flange ASTM A105 Class 300 ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	20				P67B-002NN	Blind flange ASTM A105 Class 300 ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	24				P67B-002NP	Blind flange ASTM A105 Class 300 ASME B16.5 RF Moderate wet H2S service Licensor-1	

REDUCING FLANGE (FR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5		SCH160	P62B-000N7	Reducing flange WN ASTM A105 Class 300 ASME B16.5 RF Moderate wet H2S service Licensor-1	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000FT	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000FU	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000G5	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000G6	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	6				P73T-000G7	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

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GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	8				P73T-000G8	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	10				P73T-000FX	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	12				P73T-000FY	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	14				P73T-000FZ	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	16				P73T-000G0	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	18				P73T-000G1	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	20				P73T-000G3	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	24				P73T-000G4	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	0.5				P73T-000J8	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	0.75				P73T-000J9	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1				P73T-000JA	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1.5				P73T-000JB	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	2				P73T-000JH	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	3				P73T-000JL	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	4				P73T-000JM	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	6				P73T-000JN	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	8				P73T-000JP	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	10				P73T-000JC	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	12				P73T-000JD	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	14				P73T-000JE	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	16				P73T-000JF	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	18				P73T-000JG	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	20				P73T-000JJ	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	24				P73T-000JK	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-10				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	12-24				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
781	0.5-6				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
781	8-24				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81B-001EP	Gate valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Licensor-1	
1	0.75				P81B-001ER	Gate valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Licensor-1	
1	1				P81B-001ES	Gate valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Licensor-1	
1	1.5				P81B-001ET	Gate valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Licensor-1	
1	2				P81C-004W6	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Licensor-1	
1	3				P81C-004W7	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Licensor-1	
1	4				P81C-004W8	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Licensor-1	
1	6				P81C-004W9	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Licensor-1	
1	8				P81C-0091V	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Moderate wet H2S service Licensor-1	
1	10				P81C-004WB	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Moderate wet H2S service Licensor-1	
1	12				P81C-004WC	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Moderate wet H2S service Licensor-1	

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GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P81C-004WD	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Moderate wet H2S service Licensor-1	
1	16				P81C-004WE	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Moderate wet H2S service Licensor-1	
1	18				P81C-005HA	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Moderate wet H2S service Licensor-1	
1	20				P81C-005HB	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Moderate wet H2S service Licensor-1	
1	24				P81C-005HC	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Moderate wet H2S service Licensor-1	
4608	0.75				P81B-002WW	Gate valve ASTM A105 Class 300 API 602 BW both sides w/ nipples BE - NPT ASTM A106-B XXS-nipple Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Licensor-1	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82B-0016F	Globe valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Licensor-1	
1	0.75				P82B-0016G	Globe valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Licensor-1	
1	1				P82B-0016H	Globe valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Licensor-1	
1	1.5				P82B-0016J	Globe valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Licensor-1	
1	2				P82C-002CM	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Licensor-1	
1	3				P82C-002CN	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Licensor-1	
1	4				P82C-002CP	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Licensor-1	
1	6				P82C-002CR	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Licensor-1	
1	8				P82C-004D0	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Moderate wet H2S service Licensor-1	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83B-000Y6	Check valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Moderate wet H2S service Licensor-1	
1	0.75				P83B-000Y7	Check valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Moderate wet H2S service Licensor-1	
1	1				P83B-000Y8	Check valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Moderate wet H2S service Licensor-1	
1	1.5				P83B-000Y9	Check valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Moderate wet H2S service Licensor-1	
1	2				P83C-002B8	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Moderate wet H2S service Licensor-1	
1	3				P83C-002B9	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Moderate wet H2S service Licensor-1	
1	4				P83C-002BA	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Moderate wet H2S service Licensor-1	
1	6				P83C-002BB	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Moderate wet H2S service Licensor-1	
1	8				P83C-002BC	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Moderate wet H2S service Licensor-1	
1	10				P83C-002B7	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Moderate wet H2S service Licensor-1	

BUTTERFLY VALVE (H)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	10				P86C-00256	Offset design butterfly valve ASTM A216 Grade WCB Class 300 API 609 Category B Lug-type ASME B16.5 RF Disc CS Seat Stellite-6 Trim SS316 Triple eccentric design BG Gear operated Moderate wet H2S service Licensor-1	

NEEDLE VALVE (NV)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82B-001XJ	Needle valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Licensor-1	
1	0.75				P82B-001XK	Needle valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Licensor-1	
1	1				P82B-001XL	Needle valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Licensor-1	
1	1.5				P82B-001XM	Needle valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Licensor-1	

ORIFICE FLANGE (FO)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2		XS		P66B-008CA	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Moderate wet H2S service Licensor-1	

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ORIFICE FLANGE (FO)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3		STD		P66B-008CB	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Moderate wet H2S service Licensor-1	
1	4		STD		P66B-008CC	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Moderate wet H2S service Licensor-1	
1	6		STD		P66B-008CD	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Moderate wet H2S service Licensor-1	
1	8		STD		P66B-008CE	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Moderate wet H2S service Licensor-1	
1	10		STD		P66B-008C6	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Moderate wet H2S service Licensor-1	
1	12		SCH40		P66B-008C7	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Moderate wet H2S service Licensor-1	
1	14		SCH40		P66B-008C8	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Moderate wet H2S service Licensor-1	
1	16		SCH20		P66B-008C9	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Moderate wet H2S service Licensor-1	
200	2		XS		P66B-008CM	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Moderate wet H2S service with Jack screw Licensor-1	
200	3		STD		P66B-008CN	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Moderate wet H2S service with Jack screw Licensor-1	
200	4		STD		P66B-008CP	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Moderate wet H2S service with Jack screw Licensor-1	
200	6		STD		P66B-008CR	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Moderate wet H2S service with Jack screw Licensor-1	
200	8		STD		P66B-008CS	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Moderate wet H2S service with Jack screw Licensor-1	
200	10		STD		P66B-008CH	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Moderate wet H2S service with Jack screw Licensor-1	
200	12		SCH40		P66B-008CJ	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Moderate wet H2S service with Jack screw Licensor-1	
200	14		SCH40		P66B-008CK	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Moderate wet H2S service with Jack screw Licensor-1	
200	16		SCH20		P66B-008CL	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Moderate wet H2S service with Jack screw Licensor-1	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71B-000CC	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	0.75				P71B-000CD	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	1				P71B-000CE	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	1.5				P71B-000CF	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	2				P71B-000CJ	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	3				P71B-000CK	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	4				P71B-000CL	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	6				P71B-000CM	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	8				P71B-000CN	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	10				P71B-000CG	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	12				P71B-000CH	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service Licensor-1	

PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000GP	Paddle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	16				P72B-000GR	Paddle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	18				P72B-000NN	Paddle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	20				P72B-000NP	Paddle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	24				P72B-000NR	Paddle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service Licensor-1	

PADDLE SPACER (PS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000GS	Paddle spacer ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	16				P72B-000GT	Paddle spacer ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	18				P72B-000NS	Paddle spacer ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	20				P72B-000NT	Paddle spacer ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service Licensor-1	

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PADDLE SPACER (PS)							
OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	24				P72B-000NU	Paddle spacer ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service Licensor-1	

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BOLT TABLE (B_B2AQ01 , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-008T0		
0.75	4	0.625	75	P80S-00908		
1	4	0.625	80	P80S-00909		
1.5	4	0.750	95	P80S-005Z4		
2	8	0.625	90	P80S-0090B		
3	8	0.750	110	P80S-0090F		
4	8	0.750	115	P80S-0090G		
6	12	0.750	125	P80S-0090J		
8	12	0.875	140	P80S-005ZD		
10	16	1.000	160	P80S-0061E		
12	16	1.125	175	P80S-0064S		
14	20	1.125	180	P80S-0064T		
16	20	1.250	190	P80S-00689		
18	24	1.250	200	P80S-0068B		
20	24	1.250	210	P80S-0068D		
24	24	1.500	235	P80S-006LB		

BOLT TABLE (B_B2AQ01_781 , STUD ASME RF, OPTION CODE 781)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	80	P80S-008T2		
0.75	4	0.625	90	P80S-0090B		
1	4	0.625	95	P80S-0090C		
1.5	4	0.750	110	P80S-0090F		
2	8	0.625	110	P80S-008T8		
3	8	0.750	130	P80S-0090K		
4	8	0.875	150	P80S-005ZF		
6	12	1.000	175	P80S-0061H		
8	12	1.125	195	P80S-0064W		
10	16	1.250	250	P80S-0068M		
12	20	1.250	255	P80S-0068N		
14	20	1.375	270	P80S-006HV		
16	20	1.500	295	P80S-006LP		
18	20	1.625	320	P80S-00A5E		
20	24	1.625	335	P80S-00A5H		
24	24	1.875	380	P80S-00AW5		

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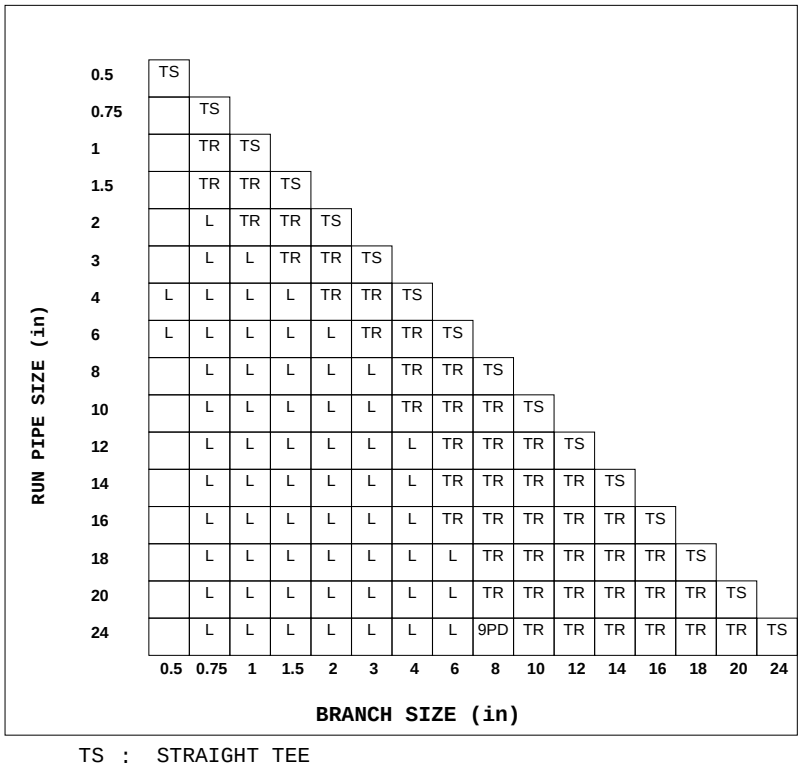
BRANCH TABLE (T_B2AQ01)



TS : STRAIGHT TEE
TR : REDUCING TEE
L : OUTLET
9PD : REINFORCING PAD 90 DEG

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Material : Killed CS
Rating : ASME CLASS 300
Flange Face : RF
C.A.(mm) : 3.00
Gasket : Spiral Wound
Service : PROCESS -WET LOW SEVERITY SOUR SERVICE SUBJECT TO NACE
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
2	USE OF SOFT SEATED BALL, PLUG AND BUTTERFLY VALVES SHALL BE LIMITED TO MAXIMUM OF 204DEGC (400DEGF)
5	BOLTING CONFIRMING TO B7M / 2HM SHALL BE USED UNDER CONDITIONS (A) DIRECT EXPOSURE TO SOUR ENVIRONMENTS (B) WHEN THE BOLTING WILL BE BURIED OR INSULATED
27	PWHT OF CARBON STEEL PIPING IN WET H2S, CAUSTIC AND AMINE SERVICES SHALL BE IN ACCORDANCE WITH SECTION 10.2, 10.3, AND 10.4 OF PROJECT SPECIFICATION 3550-8440-SP-0002 MATERIALS REQUIREMENTS FOR PRESSURISED EQUIPMENT AND PIPING. FOR CAUSTIC AND AMINE SERVICE THE FOLLOWING SHALL APPLY: - PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF ALL SITE PIPING FABRICATION WELDS IS REQUIRED FOR ALL WALL THICKNESSES. FOR MODERATE AND SEVERE WET H2S SERVICE THE FOLLOWING SHALL APPLY: PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF SITE FABRICATION CIRCUMFERENTIAL OR BRANCH WELDS IS NOT REQUIRED IF WELDS ARE MULTIPASS AND IN ACCORDANCE WITH PARA 10.2.12 OF PROJECT SPECIFICATION 3550-8440-SP-0002. FOR SERVICES MEETING THE WET H2S CRITERIA AND CAUSTIC OR AMINE CRITERIA THE MORE STRINGENT PWHT REQUIREMENT SHALL GOVERN.

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
24	FULL PORT (Q)
200	WITH JACK SCREW (FO)
541	NPT(F) (CA,F)
781	CLASS 600 (B,F,G)
4601	Y-PATTERN (W)
4602	DISSIMILAR TYPE CHECK VALVE (XDP)
4608	VALVE WITH NIPPLES (V)

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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P01A-0010P	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	0.75		SCH160		P01A-0010R	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1		SCH160		P01A-0014M	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1.5		SCH160		P01A-0015J	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	2		XS		P01A-000YX	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	3		STD		P01A-000YM	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	4		STD		P01A-000YU	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	6		STD		P01A-000Z3	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	8		STD		P01A-000ZA	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	10		STD		P01A-000XJ	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	12		SCH40		P01A-0018V	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	14		SCH40		P01A-0018U	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	16		SCH20		P01A-0018E	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	18		STD		P01A-002CB	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	20		STD		P01A-002CC	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	24		XS		P01A-002MP	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	30		XS		P01A-009KG	Pipe ASTM A672 Grade B60 Class 32 EFW ASME B36.10M/B36.19M BE Moderate wet H2S service	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P02A-001Y8	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	0.75		SCH160		P02A-000V8	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1		SCH160		P02A-000V7	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1.5		SCH160		P02A-000V9	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	2		XS		P02A-000CP	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		STD		P02A-000CU	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		STD		P02A-000CZ	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		STD		P02A-000D6	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		STD		P02A-000DC	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	10		STD		P02A-000BP	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	12		SCH40		P02A-000JE	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	14		SCH40		P02A-000JF	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	16		SCH20		P02A-000GM	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	18		STD		P02A-0010H	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	20		STD		P02A-0010J	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	24		XS		P02A-000MB	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	30		XS		P02A-003Z7	90 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius Moderate wet H2S service	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P03A-001TC	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	0.75		SCH160		P03A-000RS	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1		SCH160		P03A-000RR	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1.5		SCH160		P03A-000RP	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	2		XS		P03A-000AS	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		STD		P03A-000AX	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		STD		P03A-000B1	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		STD		P03A-000B9	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		STD		P03A-000BB	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	10		STD		P03A-000A4	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	12		SCH40		P03A-000GC	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	14		SCH40		P03A-000GD	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	16		SCH20		P03A-000EM	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	18		STD		P03A-000X0	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	20		STD		P03A-000X1	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	24		XS		P03A-001E1	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	30		XS		P03A-003X6	45 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius Moderate wet H2S service	

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STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P21A-003AW	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	0.75		SCH160		P21A-002B8	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1		SCH160		P21A-002B6	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5		SCH160		P21A-002B9	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2		XS		P21A-001CJ	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		STD		P21A-001CU	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		STD		P21A-001CW	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6		STD		P21A-001D2	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8		STD		P21A-001D8	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10		STD		P21A-001BV	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12		SCH40		P21A-0022P	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14		SCH40		P21A-0022R	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16		SCH20		P21A-0020X	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18		STD		P21A-002FT	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20		STD		P21A-002FU	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24		XS		P21A-002Y5	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	30		XS		P21A-004GM	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Moderate wet H2S service	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75	SCH160	SCH160	P24A-004B6	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.75	SCH160	SCH160	P24A-004B2	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	1	SCH160	SCH160	P24A-004BA	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	XS	SCH160	P24A-00GMB	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	XS	SCH160	P24A-005K9	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	STD	SCH160	P24A-00GMC	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	STD	XS	P24A-002HW	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P24A-002HY	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P24A-0021K	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	STD	P24A-0021A	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P24A-00229	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	STD	STD	P24A-0021E	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	STD	STD	P24A-0022M	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	STD	STD	P24A-0021B	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	STD	STD	P24A-0022B	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	STD	STD	P24A-0022W	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	SCH40	STD	P24A-00GSM	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH40	STD	P24A-00AF8	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH40	STD	P24A-00GSL	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	SCH40	STD	P24A-00GV4	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	SCH40	STD	P24A-00AFB	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	SCH40	STD	P24A-003GJ	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	SCH40	SCH40	P24A-0033E	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	6	SCH20	STD	P24A-00GU4	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	SCH20	STD	P24A-00GP8	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	SCH20	STD	P24A-00GU3	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	SCH20	SCH40	P24A-00L6A	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	SCH20	SCH40	P24A-00L4L	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	8	STD	STD	P24A-00201	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	10	STD	STD	P24A-0022C	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	12	STD	SCH40	P24A-00KCF	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	14	STD	SCH40	P24A-00KCG	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	16	STD	SCH20	P24A-00HL3	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	8	STD	STD	P24A-0020T	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	10	STD	STD	P24A-0022D	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	12	STD	SCH40	P24A-00KCH	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	14	STD	SCH40	P24A-00KCJ	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	16	STD	SCH20	P24A-00HKX	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	18	STD	STD	P24A-0020K	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	24	10	XS	STD	P24A-00GR8	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24	12	XS	SCH40	P24A-00GB4	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24	14	XS	SCH40	P24A-00GB5	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24	16	XS	SCH20	P24A-00KCK	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24	18	XS	STD	P24A-00884	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24	20	XS	STD	P24A-00885	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	30	10	XS	STD	P24A-00NZ7	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Moderate wet H2S service	
1	30	12	XS	SCH40	P24A-00L2M	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Moderate wet H2S service	
1	30	14	XS	SCH40	P24A-00L2N	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Moderate wet H2S service	
1	30	16	XS	SCH20	P24A-00NJ9	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Moderate wet H2S service	
1	30	18	XS	STD	P24A-00NJA	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Moderate wet H2S service	
1	30	20	XS	STD	P24A-00NJB	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Moderate wet H2S service	
1	30	24	XS	XS	P24A-00L22	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Moderate wet H2S service	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	SCH160	P27A-004LZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.5	SCH160	SCH160	P27A-004M8	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.75	SCH160	SCH160	P27A-002T5	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.5	SCH160	SCH160	P27A-004MV	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.75	SCH160	SCH160	P27A-002T7	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	1	SCH160	SCH160	P27A-002T4	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	0.75	XS	SCH160	P27A-001LG	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	XS	SCH160	P27A-0033P	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	XS	SCH160	P27A-0033B	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	STD	SCH160	P27A-003M9	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	STD	XS	P27A-001MZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	1.5	STD	SCH160	P27A-003MA	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P27A-001N0	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P27A-00189	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	STD	P27A-001AZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P27A-001GW	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	STD	STD	P27A-001C2	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	STD	STD	P27A-00188	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	STD	STD	P27A-001C3	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	STD	STD	P27A-0018M	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	STD	STD	P27A-0019J	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	SCH40	STD	P27A-004W1	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH40	STD	P27A-004XB	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH40	STD	P27A-004UG	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	SCH40	STD	P27A-0051B	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	SCH40	STD	P27A-003ZT	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	SCH40	STD	P27A-0029L	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	SCH40	SCH40	P27A-001ZZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	SCH20	STD	P27A-003ND	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	SCH20	STD	P27A-0054A	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	SCH20	SCH40	P27A-00CBP	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	SCH20	SCH40	P27A-00CBR	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	10	STD	STD	P27A-0037H	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	12	STD	SCH40	P27A-005DS	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	14	STD	SCH40	P27A-005FS	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	16	STD	SCH20	P27A-005HV	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	12	STD	SCH40	P27A-005LX	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	14	STD	SCH40	P27A-005P0	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	16	STD	SCH20	P27A-005S7	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	18	STD	STD	P27A-0037R	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24	16	XS	SCH20	P27A-005Y9	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24	18	XS	STD	P27A-005ZZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24	20	XS	STD	P27A-0061M	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	30	20	XS	STD	P27A-00H62	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Moderate wet H2S service	
1	30	24	XS	XS	P27A-00FBZ	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Moderate wet H2S service	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	SCH160	P28A-007KG	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.5	SCH160	SCH160	P28A-007KH	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.75	SCH160	SCH160	P28A-002TU	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.5	SCH160	SCH160	P28A-007KJ	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.75	SCH160	SCH160	P28A-002TW	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	1	SCH160	SCH160	P28A-002TR	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	0.75	XS	SCH160	P28A-001LE	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	XS	SCH160	P28A-003M1	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	XS	SCH160	P28A-003M2	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	STD	SCH160	P28A-003M3	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	STD	XS	P28A-001N5	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	1.5	STD	SCH160	P28A-003M4	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P28A-001N6	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P28A-0018B	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	STD	P28A-001AS	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P28A-00182	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	STD	STD	P28A-0017V	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	STD	STD	P28A-0018V	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	STD	STD	P28A-0017W	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	STD	STD	P28A-00190	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	STD	STD	P28A-0019J	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	SCH40	STD	P28A-008HU	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH40	STD	P28A-005T9	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH40	STD	P28A-008HT	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	SCH40	STD	P28A-008F4	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	SCH40	STD	P28A-003ZL	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	SCH40	STD	P28A-0028T	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	SCH40	SCH40	P28A-001ZG	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	SCH20	STD	P28A-003N7	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	SCH20	STD	P28A-008FM	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	SCH20	SCH40	P28A-009AX	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	SCH20	SCH40	P28A-009AY	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	10	STD	STD	P28A-00370	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	12	STD	SCH40	P28A-00C0V	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	14	STD	SCH40	P28A-00C0W	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	16	STD	SCH20	P28A-0096Y	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	12	STD	SCH40	P28A-00C0X	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	14	STD	SCH40	P28A-00C0Y	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	16	STD	SCH20	P28A-0096T	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	18	STD	STD	P28A-00377	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24	16	XS	SCH20	P28A-00C0Z	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24	18	XS	STD	P28A-0063W	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24	20	XS	STD	P28A-0063X	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	30	20	XS	STD	P28A-00EDT	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Moderate wet H2S service	
1	30	24	XS	XS	P28A-00CGS	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Moderate wet H2S service	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P29A-00329	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	0.75		SCH160		P29A-001UF	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	1		SCH160		P29A-001TC	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	1.5		SCH160		P29A-001TD	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	2		XS		P29A-001VG	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	3		STD		P29A-001VK	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	

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CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	4		STD		P29A-001VN	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	6		STD		P29A-001VS	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	8		STD		P29A-001VT	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	10		STD		P29A-001VB	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	12		SCH40		P29A-001TF	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	14		SCH40		P29A-0036R	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	16		SCH20		P29A-00361	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	18		STD		P29A-001VF	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	20		STD		P29A-001VH	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	24		XS		P29A-001VJ	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	30		XS		P29A-003BX	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
541	0.75				P29B-0000Y	Cap ASTM A105 Class 6000 ASME B16.11 NPT	
541	1				P29B-0000Z	Cap ASTM A105 Class 6000 ASME B16.11 NPT	
541	1.5				P29B-00010	Cap ASTM A105 Class 6000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P41A-000B9	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		XXS		P41A-000BA	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		XXS		P41A-000D8	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		XXS		P41A-000D9	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2	0.75	XS	SCH160	P31B-00CP7	Outlet ASTM A105 MSS SP-97 BW	
1	3	0.75	STD	SCH160	P31B-00CMT	Outlet ASTM A105 MSS SP-97 BW	
1	4	0.75	STD	SCH160	P31B-00CLT	Outlet ASTM A105 MSS SP-97 BW	
1	6	0.75	STD	SCH160	P31B-00CKK	Outlet ASTM A105 MSS SP-97 BW	
1	8	0.75	STD	SCH160	P31B-00C5E	Outlet ASTM A105 MSS SP-97 BW	
1	10	0.75	STD	SCH160	P31B-00CFB	Outlet ASTM A105 MSS SP-97 BW	
1	12	0.75	SCH40	SCH160	P31B-00CS8	Outlet ASTM A105 MSS SP-97 BW	
1	14	0.75	SCH40	SCH160	P31B-00CRP	Outlet ASTM A105 MSS SP-97 BW	
1	16	0.75	SCH20	SCH160	P31B-00XS0	Outlet ASTM A105 MSS SP-97 BW	
1	18	0.75	STD	SCH160	P31B-00CPL	Outlet ASTM A105 MSS SP-97 BW	
1	20	0.75	STD	SCH160	P31B-00CNW	Outlet ASTM A105 MSS SP-97 BW	
1	24	0.75	XS	SCH160	P31B-007N3	Outlet ASTM A105 MSS SP-97 BW	
1	30	0.75	XS	SCH160	P31B-00CMF	Outlet ASTM A105 MSS SP-97 BW	
1	3	1	STD	SCH160	P31B-00B4J	Outlet ASTM A105 MSS SP-97 BW	
1	4	1	STD	SCH160	P31B-00B3M	Outlet ASTM A105 MSS SP-97 BW	
1	6	1	STD	SCH160	P31B-00AZC	Outlet ASTM A105 MSS SP-97 BW	
1	8	1	STD	SCH160	P31B-00AVF	Outlet ASTM A105 MSS SP-97 BW	
1	10	1	STD	SCH160	P31B-00C06	Outlet ASTM A105 MSS SP-97 BW	
1	12	1	SCH40	SCH160	P31B-00BWL	Outlet ASTM A105 MSS SP-97 BW	
1	14	1	SCH40	SCH160	P31B-00BRP	Outlet ASTM A105 MSS SP-97 BW	
1	16	1	SCH20	SCH160	P31B-00X8Z	Outlet ASTM A105 MSS SP-97 BW	
1	18	1	STD	SCH160	P31B-00BC9	Outlet ASTM A105 MSS SP-97 BW	
1	20	1	STD	SCH160	P31B-00B8M	Outlet ASTM A105 MSS SP-97 BW	
1	24	1	XS	SCH160	P31B-007MU	Outlet ASTM A105 MSS SP-97 BW	
1	30	1	XS	SCH160	P31B-00B45	Outlet ASTM A105 MSS SP-97 BW	
1	4	1.5	STD	SCH160	P31B-00BP4	Outlet ASTM A105 MSS SP-97 BW	
1	6	1.5	STD	SCH160	P31B-00BJH	Outlet ASTM A105 MSS SP-97 BW	
1	8	1.5	STD	SCH160	P31B-00BHJ	Outlet ASTM A105 MSS SP-97 BW	
1	10	1.5	STD	SCH160	P31B-00AUM	Outlet ASTM A105 MSS SP-97 BW	
1	12	1.5	SCH40	SCH160	P31B-00CEH	Outlet ASTM A105 MSS SP-97 BW	
1	14	1.5	SCH40	SCH160	P31B-00CDR	Outlet ASTM A105 MSS SP-97 BW	
1	16	1.5	SCH20	SCH160	P31B-00C9B	Outlet ASTM A105 MSS SP-97 BW	
1	18	1.5	STD	SCH160	P31B-00C4R	Outlet ASTM A105 MSS SP-97 BW	
1	20	1.5	STD	SCH160	P31B-00C3Y	Outlet ASTM A105 MSS SP-97 BW	
1	24	1.5	XS	SCH160	P31B-007MM	Outlet ASTM A105 MSS SP-97 BW	

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OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	30	1.5	XS	SCH160	P31B-00BYJ	Outlet ASTM A105 MSS SP-97 BW	
1	6	2	STD	XS	P31B-007SH	Outlet ASTM A105 MSS SP-97 BW	
1	8	2	STD	XS	P31B-00AGX	Outlet ASTM A105 MSS SP-97 BW	
1	10	2	STD	XS	P31B-00ASA	Outlet ASTM A105 MSS SP-97 BW	
1	12	2	SCH40	XS	P31B-00CBS	Outlet ASTM A105 MSS SP-97 BW	
1	14	2	SCH40	XS	P31B-00CAH	Outlet ASTM A105 MSS SP-97 BW	
1	16	2	SCH20	XS	P31B-00TF8	Outlet ASTM A105 MSS SP-97 BW	
1	18	2	STD	XS	P31B-009FJ	Outlet ASTM A105 MSS SP-97 BW	
1	20	2	STD	XS	P31B-00994	Outlet ASTM A105 MSS SP-97 BW	
1	24	2	XS	XS	P31B-0092Y	Outlet ASTM A105 MSS SP-97 BW	
1	30	2	XS	XS	P31B-008P4	Outlet ASTM A105 MSS SP-97 BW	
1	8	3	STD	STD	P31B-00A2T	Outlet ASTM A105 MSS SP-97 BW	
1	10	3	STD	STD	P31B-009CM	Outlet ASTM A105 MSS SP-97 BW	
1	12	3	SCH40	STD	P31B-0096S	Outlet ASTM A105 MSS SP-97 BW	
1	14	3	SCH40	STD	P31B-0090U	Outlet ASTM A105 MSS SP-97 BW	
1	16	3	SCH20	STD	P31B-00TU2	Outlet ASTM A105 MSS SP-97 BW	
1	18	3	STD	STD	P31B-008MK	Outlet ASTM A105 MSS SP-97 BW	
1	20	3	STD	STD	P31B-008FA	Outlet ASTM A105 MSS SP-97 BW	
1	24	3	XS	STD	P31B-00894	Outlet ASTM A105 MSS SP-97 BW	
1	30	3	XS	STD	P31B-007WX	Outlet ASTM A105 MSS SP-97 BW	
1	12	4	SCH40	STD	P31B-008ZY	Outlet ASTM A105 MSS SP-97 BW	
1	14	4	SCH40	STD	P31B-008YN	Outlet ASTM A105 MSS SP-97 BW	
1	16	4	SCH20	STD	P31B-00TU3	Outlet ASTM A105 MSS SP-97 BW	
1	18	4	STD	STD	P31B-008KB	Outlet ASTM A105 MSS SP-97 BW	
1	20	4	STD	STD	P31B-008D3	Outlet ASTM A105 MSS SP-97 BW	
1	24	4	XS	STD	P31B-0086W	Outlet ASTM A105 MSS SP-97 BW	
1	30	4	XS	STD	P31B-007UR	Outlet ASTM A105 MSS SP-97 BW	
1	18	6	STD	STD	P31B-008RX	Outlet ASTM A105 MSS SP-97 BW	
1	20	6	STD	STD	P31B-008PZ	Outlet ASTM A105 MSS SP-97 BW	
1	24	6	XS	STD	P31B-008JC	Outlet ASTM A105 MSS SP-97 BW	
1	30	6	XS	STD	P31B-008BR	Outlet ASTM A105 MSS SP-97 BW	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30B-0002D	Plug ASTM A105 ASME B16.11 NPT Round head	
1	0.75				P30B-0002E	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1				P30B-0002F	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1.5				P30B-0002G	Plug ASTM A105 ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P61B-003P9	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	0.75		SCH160		P61B-0037M	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	1		SCH160		P61B-0037L	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	1.5		SCH160		P61B-0037J	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	2		XS		P61B-001HW	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	3		STD		P61B-001LJ	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	4		STD		P61B-001MC	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	6		STD		P61B-001N2	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	8		STD		P61B-001NL	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	10		STD		P61B-001L6	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	12		SCH40		P61B-002FJ	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	14		SCH40		P61B-002FL	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	16		SCH20		P61B-002MS	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	18		STD		P61B-001N9	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	20		STD		P61B-001NT	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	24		XS		P61B-002RA	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	30		XS		P61B-001KT	Flange WN ASTM A105 Class 300 ASME B16.47 Series B RF	
1	0.5				P61B-003U3	Flange NPT ASTM A105 Class 300 ASME B16.5 RF	

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FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
541	0.75				P61B-003U4	Flange NPT ASTM A105 Class 300 ASME B16.5 RF	
781	0.5		SCH160		P61B-004UV	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	0.75		SCH160		P61B-003T2	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	1		SCH160		P61B-003T3	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	1.5		SCH160		P61B-003T4	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	2		XS		P61B-001DH	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	3		STD		P61B-001TW	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	4		STD		P61B-001VV	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	6		STD		P61B-001JW	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	8		STD		P61B-001KK	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	10		STD		P61B-001JJ	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	12		SCH40		P61B-003T5	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	14		SCH40		P61B-003T6	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	16		SCH20		P61B-00798	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	18		STD		P61B-003FA	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	20		STD		P61B-003GP	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	24		XS		P61B-003T9	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	30		XS		P61B-003GZ	Flange WN ASTM A105 Class 600 ASME B16.47 Series B RF	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67B-000GH	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	0.75				P67B-000GJ	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	1				P67B-000GK	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	1.5				P67B-000GL	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	2				P67B-000GM	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	3				P67B-000GN	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	4				P67B-000GP	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	6				P67B-000GY	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	8				P67B-000GZ	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	10				P67B-000GR	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	12				P67B-000GS	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	14				P67B-000GT	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	16				P67B-000GU	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	18				P67B-000GV	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	20				P67B-000GW	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	24				P67B-000GX	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	30				P67B-000H2	Blind flange ASTM A105 Class 300 ASME B16.47 Series B RF	

REDUCING FLANGE (FR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2	0.75		SCH160	P62B-000NG	Reducing flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	2	1		SCH160	P62B-0007D	Reducing flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	2	1.5		SCH160	P62B-000MG	Reducing flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	24	16		SCH20	P62B-000PX	Reducing flange WN ASTM A105 Class 300 ASME B16.5 RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000FT	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000FU	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000G5	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000G6	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	6				P73T-000G7	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

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GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	8				P73T-000G8	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	10				P73T-000FX	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	12				P73T-000FY	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	14				P73T-000FZ	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	16				P73T-000G0	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	18				P73T-000G1	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	20				P73T-000G3	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	24				P73T-000G4	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	30				P73T-000H9	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	0.5				P73T-000J8	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	0.75				P73T-000J9	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1				P73T-000JA	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1.5				P73T-000JB	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	2				P73T-000JH	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	3				P73T-000JL	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	4				P73T-000JM	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	6				P73T-000JN	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	8				P73T-000JP	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	10				P73T-000JC	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	12				P73T-000JD	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	14				P73T-000JE	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	16				P73T-000JF	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	18				P73T-000JG	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	20				P73T-000JJ	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	24				P73T-000JK	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	30				P73T-000JT	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-10				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	12-30				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
781	0.5-6				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
781	8-30				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81B-001TK	Gate valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	0.75				P81B-001TL	Gate valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	1				P81B-001TM	Gate valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	1.5				P81B-001TN	Gate valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	2				P81C-005ZL	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	3				P81C-005ZM	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	4				P81C-005ZN	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	6				P81C-005ZP	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	8				P81C-0091E	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Gear operated Moderate wet H2S service	

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GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	10				P81C-005ZS	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Gear operated Moderate wet H2S service	
1	12				P81C-005ZT	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Gear operated Moderate wet H2S service	
1	14				P81C-005ZU	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Gear operated Moderate wet H2S service	
1	16				P81C-005ZV	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Gear operated Moderate wet H2S service	
1	18				P81C-005ZW	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Gear operated Moderate wet H2S service	
1	20				P81C-005ZX	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Gear operated Moderate wet H2S service	
1	24				P81C-005ZY	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Gear operated Moderate wet H2S service	
4608	0.75				P81B-002WP	Gate valve ASTM A105 Class 300 API 602 BW both sides w/ nipples BE - NPT ASTM A106-B XXS-nipple Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82B-001F1	Globe valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	0.75				P82B-001F2	Globe valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	1				P82B-001F3	Globe valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	1.5				P82B-001F4	Globe valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	2				P82C-002YJ	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	3				P82C-002YK	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	4				P82C-002YL	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	6				P82C-002YM	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	8				P82C-004CM	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Gear operated Moderate wet H2S service	
4601	0.75				P82B-001AV	Y-pattern globe valve ASTM A105 Class 300 ASME B16.34 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
4601	1				P82B-001AW	Y-pattern globe valve ASTM A105 Class 300 ASME B16.34 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
4601	1.5				P82B-001AX	Y-pattern globe valve ASTM A105 Class 300 ASME B16.34 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
4601	2				P82C-002MD	Y-pattern globe valve ASTM A216 Grade WCB Class 300 ASME B16.34 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
4601	3				P82C-002ME	Y-pattern globe valve ASTM A216 Grade WCB Class 300 ASME B16.34 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
4601	4				P82C-002MG	Y-pattern globe valve ASTM A216 Grade WCB Class 300 ASME B16.34 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
4601	6				P82C-002MH	Y-pattern globe valve ASTM A216 Grade WCB Class 300 ASME B16.34 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
4601	8				P82C-002MJ	Y-pattern globe valve ASTM A216 Grade WCB Class 300 ASME B16.34 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
4601	10				P82C-002MK	Y-pattern globe valve ASTM A216 Grade WCB Class 300 ASME B16.34 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Gear operated Moderate wet H2S service	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83B-0014L	Check valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 Lift-type Bolted cover Moderate wet H2S service	
1	0.75				P83B-0014M	Check valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 Lift-type Bolted cover Moderate wet H2S service	
1	1				P83B-0014N	Check valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 Lift-type Bolted cover Moderate wet H2S service	
1	1.5				P83B-0014P	Check valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 Lift-type Bolted cover Moderate wet H2S service	
1	2				P83C-002X9	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 Swing-type Bolted cover Moderate wet H2S service	
1	3				P83C-002XA	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 Swing-type Bolted cover Moderate wet H2S service	
1	4				P83C-002XB	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 Swing-type Bolted cover Moderate wet H2S service	
1	6				P83C-002XC	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 Swing-type Bolted cover Moderate wet H2S service	
1	8				P83C-002XD	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 Swing-type Bolted cover Moderate wet H2S service	
1	10				P83C-002X8	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 Swing-type Bolted cover Moderate wet H2S service	

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DP CHECK VALVE (XDP)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
4602	10				P88C-003CD	Dual plate check valve ASTM A216 Grade WCB Class 300 API 594 Wafer-type ASME B16.5 RF Trim SS316L and Stellite-6 Internal wetted parts SS316L Spring Inconel Retainerless-type Moderate wet H2S service	

BALL VALVE (Q)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2				P84C-006V9	Ball valve Long-pattern ASTM A216 Grade WCB Class 300 API 608 Flange ASME B16.5 RF Ball SS316L Seat R-PTFE Trim SS316L Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design Moderate wet H2S service	
1	3				P84C-006VA	Ball valve Long-pattern ASTM A216 Grade WCB Class 300 API 608 Flange ASME B16.5 RF Ball SS316L Seat R-PTFE Trim SS316L Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design Moderate wet H2S service	
1	4				P84C-006UX	Ball valve Long-pattern ASTM A216 Grade WCB Class 300 API 608 Flange ASME B16.5 RF Ball SS316L Seat R-PTFE Trim SS316L Floating-type Side-entry Gear operated Reduced bore Fire tested design Moderate wet H2S service	
1	6				P84C-006VM	Ball valve Long-pattern ASTM A216 Grade WCB Class 300 API 608 Flange ASME B16.5 RF Ball SS316L Seat R-PTFE Trim SS316L Trunnion-type Side-entry Gear operated Reduced bore Fire tested design Moderate wet H2S service	
1	8				P84C-006VN	Ball valve Long-pattern ASTM A216 Grade WCB Class 300 API 608 Flange ASME B16.5 RF Ball SS316L Seat R-PTFE Trim SS316L Trunnion-type Side-entry Gear operated Reduced bore Fire tested design Moderate wet H2S service	
1	10				P84C-006VH	Ball valve Long-pattern ASTM A216 Grade WCB Class 300 API 608 Flange ASME B16.5 RF Ball SS316L Seat R-PTFE Trim SS316L Trunnion-type Side-entry Gear operated Reduced bore Fire tested design Moderate wet H2S service	
1	12				P84C-006VJ	Ball valve Long-pattern ASTM A216 Grade WCB Class 300 API 608 Flange ASME B16.5 RF Ball SS316L Seat R-PTFE Trim SS316L Trunnion-type Side-entry Gear operated Reduced bore Fire tested design Moderate wet H2S service	
1	14				P84C-006VK	Ball valve Long-pattern ASTM A216 Grade WCB Class 300 API 608 Flange ASME B16.5 RF Ball SS316L Seat R-PTFE Trim SS316L Trunnion-type Side-entry Gear operated Reduced bore Fire tested design Moderate wet H2S service	
1	16				P84C-006VL	Ball valve Long-pattern ASTM A216 Grade WCB Class 300 API 608 Flange ASME B16.5 RF Ball SS316L Seat R-PTFE Trim SS316L Trunnion-type Side-entry Gear operated Reduced bore Fire tested design Moderate wet H2S service	
24	2				P84C-006V7	Ball valve Long-pattern ASTM A216 Grade WCB Class 300 API 608 Flange ASME B16.5 RF Ball SS316L Seat R-PTFE Trim SS316L Floating-type Side-entry Wrench lever operated Full bore Fire tested design Moderate wet H2S service	
24	3				P84C-006V8	Ball valve Long-pattern ASTM A216 Grade WCB Class 300 API 608 Flange ASME B16.5 RF Ball SS316L Seat R-PTFE Trim SS316L Floating-type Side-entry Wrench lever operated Full bore Fire tested design Moderate wet H2S service	
24	4				P84C-006UY	Ball valve Long-pattern ASTM A216 Grade WCB Class 300 API 608 Flange ASME B16.5 RF Ball SS316L Seat R-PTFE Trim SS316L Floating-type Side-entry Gear operated Full bore Fire tested design Moderate wet H2S service	
24	6				P84C-006VF	Ball valve Long-pattern ASTM A216 Grade WCB Class 300 API 608 Flange ASME B16.5 RF Ball SS316L Seat R-PTFE Trim SS316L Trunnion-type Side-entry Gear operated Full bore Fire tested design Moderate wet H2S service	
24	8				P84C-006VG	Ball valve Long-pattern ASTM A216 Grade WCB Class 300 API 608 Flange ASME B16.5 RF Ball SS316L Seat R-PTFE Trim SS316L Trunnion-type Side-entry Gear operated Full bore Fire tested design Moderate wet H2S service	
24	10				P84C-006VB	Ball valve Long-pattern ASTM A216 Grade WCB Class 300 API 608 Flange ASME B16.5 RF Ball SS316L Seat R-PTFE Trim SS316L Trunnion-type Side-entry Gear operated Full bore Fire tested design Moderate wet H2S service	
24	12				P84C-006VC	Ball valve Long-pattern ASTM A216 Grade WCB Class 300 API 608 Flange ASME B16.5 RF Ball SS316L Seat R-PTFE Trim SS316L Trunnion-type Side-entry Gear operated Full bore Fire tested design Moderate wet H2S service	
24	14				P84C-006VD	Ball valve Long-pattern ASTM A216 Grade WCB Class 300 API 608 Flange ASME B16.5 RF Ball SS316L Seat R-PTFE Trim SS316L Trunnion-type Side-entry Gear operated Full bore Fire tested design Moderate wet H2S service	
24	16				P84C-006VE	Ball valve Long-pattern ASTM A216 Grade WCB Class 300 API 608 Flange ASME B16.5 RF Ball SS316L Seat R-PTFE Trim SS316L Trunnion-type Side-entry Gear operated Full bore Fire tested design Moderate wet H2S service	

BUTTERFLY VALVE (H)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	10				P86C-00250	Offset design butterfly valve ASTM A216 Grade WCB Class 300 API 609 Category B Lug-type ASME B16.5 RF Disc CS Seat Stellite-6 Trim SS316L Triple eccentric design BG Gear operated Moderate wet H2S service	

ORIFICE FLANGE (FO)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2		XS		P66B-0084B	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	3		STD		P66B-0084C	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	4		STD		P66B-0084D	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	6		STD		P66B-0084E	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	8		STD		P66B-008BN	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	10		STD		P66B-008BM	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	12		SCH40		P66B-00885	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	14		SCH40		P66B-00886	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
200	2		XS		P66B-00843	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	3		STD		P66B-00844	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	

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ORIFICE FLANGE (FO)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
200	4		STD		P66B-00845	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	6		STD		P66B-00846	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	8		STD		P66B-008BR	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	10		STD		P66B-008BP	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	12		SCH40		P66B-0088K	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	14		SCH40		P66B-0088L	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71B-000B1	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	0.75				P71B-000B2	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	1				P71B-000B3	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71B-000B4	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	2				P71B-000B6	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	3				P71B-000B7	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	4				P71B-000B8	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	6				P71B-000B9	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	8				P71B-000BA	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	10				P71B-000B5	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	12				P71B-000BB	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	

PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000FA	Paddle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	16				P72B-000FB	Paddle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	18				P72B-000FC	Paddle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	20				P72B-000FD	Paddle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	24				P72B-000FE	Paddle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	30				P72B-000FF	Paddle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.47-B RF	

PADDLE SPACER (PS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000FG	Paddle spacer ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	16				P72B-000FH	Paddle spacer ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	18				P72B-000FJ	Paddle spacer ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	20				P72B-000FK	Paddle spacer ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	24				P72B-000FL	Paddle spacer ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	30				P72B-000FM	Paddle spacer ASTM A105 Class 300 Standard-drawing Flange ASME B16.47-B RF	

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BOLT TABLE (B_B2AQ02 , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-008T0		
0.75	4	0.625	75	P80S-00908		
1	4	0.625	80	P80S-00909		
1.5	4	0.750	95	P80S-005Z4		
2	8	0.625	90	P80S-0090B		
3	8	0.750	110	P80S-0090F		
4	8	0.750	115	P80S-0090G		
6	12	0.750	125	P80S-0090J		
8	12	0.875	140	P80S-005ZD		
10	16	1.000	160	P80S-0061E		
12	16	1.125	175	P80S-0064S		
14	20	1.125	180	P80S-0064T		
16	20	1.250	190	P80S-00689		
18	24	1.250	200	P80S-0068B		
20	24	1.250	210	P80S-0068D		
24	24	1.500	235	P80S-006LB		
30	36	1.375	285	P80S-006HY		

BOLT TABLE (B_B2AQ02_781 , STUD ASME RF, OPTION CODE 781)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	80	P80S-008T2		
0.75	4	0.625	90	P80S-0090B		
1	4	0.625	95	P80S-0090C		
1.5	4	0.750	110	P80S-0090F		
2	8	0.625	110	P80S-008T8		
3	8	0.750	130	P80S-0090K		
4	8	0.875	150	P80S-005ZF		
6	12	1.000	175	P80S-0061H		
8	12	1.125	195	P80S-0064W		
10	16	1.250	250	P80S-0068M		
12	20	1.250	255	P80S-0068N		
14	20	1.375	270	P80S-006HV		
16	20	1.500	295	P80S-006LP		
18	20	1.625	320	P80S-00A5E		
20	24	1.625	335	P80S-00A5H		
24	24	1.875	380	P80S-00AW5		
30	28	1.875	435	P80S-00AWG		

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BRANCH TABLE (T_B2AQ02)

RUN PIPE SIZE (in) \ BRANCH SIZE (in)	0.5	0.75	1	1.5	2	3	4	6	8	10	12	14	16	18	20	24	30
0.5	TS																
0.75		TS															
1		TR	TS														
1.5		TR	TR	TS													
2		L	TR	TR	TS												
3		L	L	TR	TR	TS											
4	L	L	L	L	TR	TR	TS										
6	L	L	L	L	L	TR	TR	TS									
8		L	L	L	L	L	TR	TR	TS								
10		L	L	L	L	L	TR	TR	TR	TS							
12		L	L	L	L	L	L	TR	TR	TR	TS						
14		L	L	L	L	L	L	TR	TR	TR	TR	TS					
16		L	L	L	L	L	L	TR	TR	TR	TR	TR	TS				
18		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TS			
20		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TR	TS		
24		L	L	L	L	L	L	L	9PD	TR	TR	TR	TR	TR	TR	TS	
30		L	L	L	L	L	L	L	9PD	TR	TR	TR	TR	TR	TR	TR	TS

9PD : REINFORCING PAD 90 DEG
TS : STRAIGHT TEE
TR : REDUCING TEE
L : OUTLET

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PIPING CLASS

B2AQ04 REV NO. 2

Material : Killed CS
Rating : ASME CLASS 300
Flange Face : RF
C.A.(mm) : 3.00
Gasket : Spiral Wound
Service : PROCESS -WET LOW SEVERITY SOUR SERVICE SUBJECT TO NACE
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
2	USE OF SOFT SEATED BALL, PLUG AND BUTTERFLY VALVES SHALL BE LIMITED TO MAXIMUM OF 204DEGC (400DEGF)
5	BOLTING CONFIRMING TO B7M / 2HM SHALL BE USED UNDER CONDITIONS (A) DIRECT EXPOSURE TO SOUR ENVIRONMENTS (B) WHEN THE BOLTING WILL BE BURIED OR INSULATED
27	PWHT OF CARBON STEEL PIPING IN WET H2S, CAUSTIC AND AMINE SERVICES SHALL BE IN ACCORDANCE WITH SECTION 10.2, 10.3, AND 10.4 OF PROJECT SPECIFICATION 3550-8440-SP-0002 MATERIALS REQUIREMENTS FOR PRESSURISED EQUIPMENT AND PIPING. FOR CAUSTIC AND AMINE SERVICE THE FOLLOWING SHALL APPLY: - PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF ALL SITE PIPING FABRICATION WELDS IS REQUIRED FOR ALL WALL THICKNESSES. FOR MODERATE AND SEVERE WET H2S SERVICE THE FOLLOWING SHALL APPLY: PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF SITE FABRICATION CIRCUMFERENTIAL OR BRANCH WELDS IS NOT REQUIRED IF WELDS ARE MULTIPASS AND IN ACCORDANCE WITH PARA 10.2.12 OF PROJECT SPECIFICATION 3550-8440-SP-0002. FOR SERVICES MEETING THE WET H2S CRITERIA AND CAUSTIC OR AMINE CRITERIA THE MORE STRINGENT PWHT REQUIREMENT SHALL GOVERN.

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
24	FULL PORT (Q)
200	WITH JACK SCREW (FO)
541	NPT(F) (CA,F)
781	CLASS 600 (B,F,G)
4602	DISSIMILAR TYPE CHECK VALVE (XDP)
4603	WITH ALTERNATIVE GLAND PACKING MATERIAL (V)
4608	VALVE WITH NIPPLES (V)

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PIPING CLASS
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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P01A-00143	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	0.75		SCH160		P01A-0010R	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1		SCH160		P01A-0014M	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1.5		SCH160		P01A-0015J	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	2		XS		P01A-000YX	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	3		XS		P01A-000Z4	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	4		STD		P01A-000YU	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	6		STD		P01A-000Z3	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	8		STD		P01A-000ZA	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	10		STD		P01A-000XJ	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	12		SCH40		P01A-0018V	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P02A-00172	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	0.75		SCH160		P02A-000V8	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1		SCH160		P02A-000V7	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1.5		SCH160		P02A-000V9	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	2		XS		P02A-000CP	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		XS		P02A-000CX	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		STD		P02A-000CZ	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		STD		P02A-000D6	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		STD		P02A-000DC	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	10		STD		P02A-000BP	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	12		SCH40		P02A-000JE	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P03A-0012Y	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	0.75		SCH160		P03A-000RS	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1		SCH160		P03A-000RR	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1.5		SCH160		P03A-000RP	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	2		XS		P03A-000AS	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		XS		P03A-000AZ	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		STD		P03A-000B1	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		STD		P03A-000B9	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		STD		P03A-000BB	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	10		STD		P03A-000A4	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	12		SCH40		P03A-000GC	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P21A-002M0	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	0.75		SCH160		P21A-002B8	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1		SCH160		P21A-002B6	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5		SCH160		P21A-002B9	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2		XS		P21A-001CJ	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		XS		P21A-001CR	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		STD		P21A-001CW	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6		STD		P21A-001D2	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8		STD		P21A-001D8	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10		STD		P21A-001BV	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12		SCH40		P21A-0022P	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75	SCH160	SCH160	P24A-004B6	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.75	SCH160	SCH160	P24A-004B2	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5	1	SCH160	SCH160	P24A-004BA	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	XS	SCH160	P24A-00GMB	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	XS	SCH160	P24A-005K9	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	XS	SCH160	P24A-00GNV	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	XS	XS	P24A-0023S	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P24A-002HY	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	XS	P24A-00GNW	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	XS	P24A-00GTR	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P24A-00229	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	STD	STD	P24A-0021E	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	STD	STD	P24A-0022M	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	STD	STD	P24A-0021B	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	STD	STD	P24A-0022B	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	STD	STD	P24A-0022W	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	SCH40	STD	P24A-00GSM	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH40	STD	P24A-00AF8	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH40	STD	P24A-00GSL	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	XXS	P27A-003ZL	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.5	SCH160	XXS	P27A-003ZM	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.75	SCH160	SCH160	P27A-002T5	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.5	SCH160	XXS	P27A-003ZN	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.75	SCH160	SCH160	P27A-002T7	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	1	SCH160	SCH160	P27A-002T4	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	0.75	XS	SCH160	P27A-001LG	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	XS	SCH160	P27A-0033P	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	XS	SCH160	P27A-0033B	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	XS	SCH160	P27A-003N1	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	XS	XS	P27A-001E5	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	1.5	STD	SCH160	P27A-003MA	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P27A-001N0	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	XS	P27A-0074W	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	XS	P27A-007P6	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P27A-001GW	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	STD	STD	P27A-001C2	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	STD	STD	P27A-00188	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	STD	STD	P27A-001C3	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	STD	STD	P27A-0018M	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	STD	STD	P27A-0019J	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	SCH40	STD	P27A-004W1	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH40	STD	P27A-004XB	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH40	STD	P27A-004UG	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	XXS	P28A-003ZE	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.5	SCH160	XXS	P28A-003ZF	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.75	SCH160	SCH160	P28A-002TU	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.5	SCH160	XXS	P28A-003ZG	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.75	SCH160	SCH160	P28A-002TW	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	1	SCH160	SCH160	P28A-002TR	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	0.75	XS	SCH160	P28A-001LE	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	XS	SCH160	P28A-003M1	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	XS	SCH160	P28A-003M2	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	XS	SCH160	P28A-003MV	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	XS	XS	P28A-001EH	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	1.5	STD	SCH160	P28A-003M4	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	4	2	STD	XS	P28A-001N6	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	XS	P28A-008F7	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	XS	P28A-008K1	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P28A-00182	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	STD	STD	P28A-0017V	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	STD	STD	P28A-0018V	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	STD	STD	P28A-0017W	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	STD	STD	P28A-00190	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	STD	STD	P28A-0019J	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	SCH40	STD	P28A-008HU	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH40	STD	P28A-005T9	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH40	STD	P28A-008HT	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P29A-001UE	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	0.75		SCH160		P29A-001UF	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	1		SCH160		P29A-001TC	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	1.5		SCH160		P29A-001TD	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	2		XS		P29A-001VG	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	3		XS		P29A-001X4	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	4		STD		P29A-001VN	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	6		STD		P29A-001VS	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	8		STD		P29A-001VT	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	10		STD		P29A-001VB	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	12		SCH40		P29A-001TF	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
541	0.75				P29B-0000Y	Cap ASTM A105 Class 6000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P41A-000B9	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		XXS		P41A-000BA	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		XXS		P41A-000D8	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		XXS		P41A-000D9	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2	0.75	XS	SCH160	P31B-00CP7	Outlet ASTM A105 MSS SP-97 BW	
1	3	0.75	XS	SCH160	P31B-00CMS	Outlet ASTM A105 MSS SP-97 BW	
1	4	0.75	STD	SCH160	P31B-00CLT	Outlet ASTM A105 MSS SP-97 BW	
1	6	0.75	STD	SCH160	P31B-00CKK	Outlet ASTM A105 MSS SP-97 BW	
1	8	0.75	STD	SCH160	P31B-00C5E	Outlet ASTM A105 MSS SP-97 BW	
1	10	0.75	STD	SCH160	P31B-00CFB	Outlet ASTM A105 MSS SP-97 BW	
1	12	0.75	SCH40	SCH160	P31B-00CS8	Outlet ASTM A105 MSS SP-97 BW	
1	3	1	XS	SCH160	P31B-00B4H	Outlet ASTM A105 MSS SP-97 BW	
1	4	1	STD	SCH160	P31B-00B3M	Outlet ASTM A105 MSS SP-97 BW	
1	6	1	STD	SCH160	P31B-00AZC	Outlet ASTM A105 MSS SP-97 BW	
1	8	1	STD	SCH160	P31B-00AVF	Outlet ASTM A105 MSS SP-97 BW	
1	10	1	STD	SCH160	P31B-00C06	Outlet ASTM A105 MSS SP-97 BW	
1	12	1	SCH40	SCH160	P31B-00BWL	Outlet ASTM A105 MSS SP-97 BW	
1	4	1.5	STD	SCH160	P31B-00BP4	Outlet ASTM A105 MSS SP-97 BW	
1	6	1.5	STD	SCH160	P31B-00BJH	Outlet ASTM A105 MSS SP-97 BW	
1	8	1.5	STD	SCH160	P31B-00BHJ	Outlet ASTM A105 MSS SP-97 BW	
1	10	1.5	STD	SCH160	P31B-00AUM	Outlet ASTM A105 MSS SP-97 BW	
1	12	1.5	SCH40	SCH160	P31B-00CEH	Outlet ASTM A105 MSS SP-97 BW	
1	6	2	STD	XS	P31B-007SH	Outlet ASTM A105 MSS SP-97 BW	
1	8	2	STD	XS	P31B-00AGX	Outlet ASTM A105 MSS SP-97 BW	
1	10	2	STD	XS	P31B-00ASA	Outlet ASTM A105 MSS SP-97 BW	
1	12	2	SCH40	XS	P31B-00CBS	Outlet ASTM A105 MSS SP-97 BW	

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OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	8	3	STD	XS	P31B-009Y0	Outlet ASTM A105 MSS SP-97 BW	
1	10	3	STD	XS	P31B-009CG	Outlet ASTM A105 MSS SP-97 BW	
1	12	3	SCH40	XS	P31B-0096J	Outlet ASTM A105 MSS SP-97 BW	
1	12	4	SCH40	STD	P31B-008ZY	Outlet ASTM A105 MSS SP-97 BW	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30B-0002D	Plug ASTM A105 ASME B16.11 NPT Round head	
1	0.75				P30B-0002E	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1				P30B-0002F	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1.5				P30B-0002G	Plug ASTM A105 ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P61B-003LW	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	0.75		SCH160		P61B-0037M	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	1		SCH160		P61B-0037L	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	1.5		SCH160		P61B-0037J	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	2		XS		P61B-001HW	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	3		XS		P61B-001DK	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	4		STD		P61B-001MC	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	6		STD		P61B-001N2	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	8		STD		P61B-001NL	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	10		STD		P61B-001L6	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	12		SCH40		P61B-002FJ	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
541	0.5				P61B-003U3	Flange NPT ASTM A105 Class 300 ASME B16.5 RF	
541	0.75				P61B-003U4	Flange NPT ASTM A105 Class 300 ASME B16.5 RF	
781	0.5		XXS		P61B-003T1	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	0.75		SCH160		P61B-003T2	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	1		SCH160		P61B-003T3	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	1.5		SCH160		P61B-003T4	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	2		XS		P61B-001DH	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	3		XS		P61B-001M8	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	4		STD		P61B-001VV	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	6		STD		P61B-001JW	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	8		STD		P61B-001KK	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	10		STD		P61B-001JJ	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	12		SCH40		P61B-003T5	Flange WN ASTM A105 Class 600 ASME B16.5 RF	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67B-000GH	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	0.75				P67B-000GJ	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	1				P67B-000GK	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	1.5				P67B-000GL	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	2				P67B-000GM	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	3				P67B-000GN	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	4				P67B-000GP	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	6				P67B-000GY	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	8				P67B-000GZ	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	10				P67B-000GR	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	12				P67B-000GS	Blind flange ASTM A105 Class 300 ASME B16.5 RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000FT	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000FU	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

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GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000G5	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000G6	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	6				P73T-000G7	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	8				P73T-000G8	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	10				P73T-000FX	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	12				P73T-000FY	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	0.5				P73T-000J8	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	0.75				P73T-000J9	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1				P73T-000JA	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1.5				P73T-000JB	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	2				P73T-000JH	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	3				P73T-000JL	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	4				P73T-000JM	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	6				P73T-000JN	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	8				P73T-000JP	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	10				P73T-000JC	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	12				P73T-000JD	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-10				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	12				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
781	0.5-6				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
781	8-12				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81B-00195	Gate valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	0.75				P81B-00196	Gate valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	1				P81B-00197	Gate valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	1.5				P81B-00198	Gate valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	2				P81C-006S0	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Licensor-4	
1	3				P81C-006S1	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Licensor-4	
1	4				P81C-006S2	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Licensor-4	
1	6				P81C-006S3	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Licensor-4	
1	8				P81C-0091N	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Moderate wet H2S service Licensor-4	
1	10				P81C-006S5	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Moderate wet H2S service Licensor-4	
1	12				P81C-006S6	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Moderate wet H2S service Licensor-4	
4603	0.5				P81B-00225	Gate valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Fluid-1	
4603	0.75				P81B-00226	Gate valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Fluid-1	
4603	1				P81B-00227	Gate valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Fluid-1	
4603	1.5				P81B-00228	Gate valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Fluid-1	

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GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
4608	0.75				P81B-002WR	Gate valve ASTM A105 Class 300 API 602 BW both sides w/ nipples BE - NPT ASTM A106-B XXS-nipple Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82B-00124	Globe valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	0.75				P82B-00125	Globe valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	1				P82B-00126	Globe valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	1.5				P82B-00127	Globe valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	2				P82C-0039K	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Licensor-4	
1	3				P82C-0039L	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Licensor-4	
1	4				P82C-0039M	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Licensor-4	
1	6				P82C-0039N	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Licensor-4	
1	8				P82C-004CW	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Moderate wet H2S service Licensor-4	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83B-000UJ	Check valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Moderate wet H2S service	
1	0.75				P83B-000UK	Check valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Moderate wet H2S service	
1	1				P83B-000UL	Check valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Moderate wet H2S service	
1	1.5				P83B-000UM	Check valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Moderate wet H2S service	
1	2				P83C-0035J	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Moderate wet H2S service Licensor-4	
1	3				P83C-0035K	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Moderate wet H2S service Licensor-4	
1	4				P83C-0035L	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Moderate wet H2S service Licensor-4	
1	6				P83C-0035M	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Moderate wet H2S service Licensor-4	
1	8				P83C-0035N	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Moderate wet H2S service Licensor-4	
1	10				P83C-0035H	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Moderate wet H2S service Licensor-4	

DP CHECK VALVE (XDP)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
4602	6				P88C-002JF	Dual plate check valve ASTM A216 Grade WCB Class 300 API 594 Wafer-type ASME B16.5 RF Trim number 12 Internal wetted parts SS316 Spring Inconel Retainerless-type Moderate wet H2S service Licensor-4	

BALL VALVE (Q)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P84B-001JA	Ball valve Long-pattern ASTM A105 Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design Moderate wet H2S service	
1	0.75				P84B-001JB	Ball valve Long-pattern ASTM A105 Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design Moderate wet H2S service	
1	1				P84B-001JC	Ball valve Long-pattern ASTM A105 Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design Moderate wet H2S service	
1	1.5				P84B-001JD	Ball valve Long-pattern ASTM A105 Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design Moderate wet H2S service	
1	2				P84C-006U8	Ball valve Long-pattern ASTM A216 Grade WCB Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design Moderate wet H2S service Licensor-4	
24	0.5				P84B-001JE	Ball valve Long-pattern ASTM A105 Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design Moderate wet H2S service	
24	0.75				P84B-001JF	Ball valve Long-pattern ASTM A105 Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design Moderate wet H2S service	
24	1				P84B-001JG	Ball valve Long-pattern ASTM A105 Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design Moderate wet H2S service	
24	1.5				P84B-001JH	Ball valve Long-pattern ASTM A105 Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design Moderate wet H2S service	

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BALL VALVE (Q)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
24	2				P84C-006U9	Ball valve Long-pattern ASTM A216 Grade WCB Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design Moderate wet H2S service Licensor-4	

BUTTERFLY VALVE (H)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	10				P86C-00257	Offset design butterfly valve ASTM A216 Grade WCB Class 300 API 609 Category B Lug-type ASME B16.5 RF Disc CS Seat Stellite-6 Trim SS316 Triple eccentric design BG Gear operated Moderate wet H2S service Licensor-4	

ORIFICE FLANGE (FO)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2		XS		P66B-0084B	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	3		XS		P66B-008C1	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	4		STD		P66B-0084D	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	6		STD		P66B-0084E	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
200	2		XS		P66B-00843	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	3		XS		P66B-008C3	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	4		STD		P66B-00845	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	6		STD		P66B-00846	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71B-000B1	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	0.75				P71B-000B2	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	1				P71B-000B3	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71B-000B4	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	2				P71B-000B6	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	3				P71B-000B7	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	4				P71B-000B8	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	6				P71B-000B9	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	8				P71B-000BA	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	10				P71B-000B5	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	12				P71B-000BB	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	

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BOLT TABLE (B_B2AQ04 , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-008T0		
0.75	4	0.625	75	P80S-00908		
1	4	0.625	80	P80S-00909		
1.5	4	0.750	95	P80S-005Z4		
2	8	0.625	90	P80S-0090B		
3	8	0.750	110	P80S-0090F		
4	8	0.750	115	P80S-0090G		
6	12	0.750	125	P80S-0090J		
8	12	0.875	140	P80S-005ZD		
10	16	1.000	160	P80S-0061E		
12	16	1.125	175	P80S-0064S		

BOLT TABLE (B_B2AQ04_781 , STUD ASME RF, OPTION CODE 781)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	80	P80S-008T2		
0.75	4	0.625	90	P80S-0090B		
1	4	0.625	95	P80S-0090C		
1.5	4	0.750	110	P80S-0090F		
2	8	0.625	110	P80S-008T8		
3	8	0.750	130	P80S-0090K		
4	8	0.875	150	P80S-005ZF		
6	12	1.000	175	P80S-0061H		
8	12	1.125	195	P80S-0064W		
10	16	1.250	250	P80S-0068M		
12	20	1.250	255	P80S-0068N		

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BRANCH TABLE (T_B2AQ04)

RUN PIPE SIZE (in) \ BRANCH SIZE (in)	0.5	0.75	1	1.5	2	3	4	6	8	10	12
0.5	TS										
0.75		TS									
1		TR	TS								
1.5		TR	TR	TS							
2		L	TR	TR	TS						
3		L	L	TR	TR	TS					
4	L	L	L	L	TR	TR	TS				
6	L	L	L	L	L	TR	TR	TS			
8		L	L	L	L	L	TR	TR	TS		
10		L	L	L	L	L	TR	TR	TR	TS	
12		L	L	L	L	L	L	TR	TR	TR	TS

L : OUTLET
TR : REDUCING TEE
TS : STRAIGHT TEE

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Material : Killed CS
Rating : ASME CLASS 300
Flange Face : RF
C.A.(mm) : 3.00
Gasket : Spiral Wound
Service : PROCESS - WET SEVERE SOUR SERVICE SUBJECT TO NACE + HIC STD, COLD LOW PRESSURE BOILER FEED WATER, LOW PRESSURE STEAM
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
2	USE OF SOFT SEATED BALL, PLUG AND BUTTERFLY VALVES SHALL BE LIMITED TO MAXIMUM OF 204DEGC (400DEGF)
5	BOLTING CONFIRMING TO B7M / 2HM SHALL BE USED UNDER CONDITIONS (A) DIRECT EXPOSURE TO SOUR ENVIRONMENTS (B) WHEN THE BOLTING WILL BE BURIED OR INSULATED
27	PWHT OF CARBON STEEL PIPING IN WET H2S, CAUSTIC AND AMINE SERVICES SHALL BE IN ACCORDANCE WITH SECTION 10.2, 10.3, AND 10.4 OF PROJECT SPECIFICATION 3550-8440-SP-0002 MATERIALS REQUIREMENTS FOR PRESSURISED EQUIPMENT AND PIPING. FOR CAUSTIC AND AMINE SERVICE THE FOLLOWING SHALL APPLY: - PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF ALL SITE PIPING FABRICATION WELDS IS REQUIRED FOR ALL WALL THICKNESSES. FOR MODERATE AND SEVERE WET H2S SERVICE THE FOLLOWING SHALL APPLY: PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF SITE FABRICATION CIRCUMFERENTIAL OR BRANCH WELDS IS NOT REQUIRED IF WELDS ARE MULTIPASS AND IN ACCORDANCE WITH PARA 10.2.12 OF PROJECT SPECIFICATION 3550-8440-SP-0002. FOR SERVICES MEETING THE WET H2S CRITERIA AND CAUSTIC OR AMINE CRITERIA THE MORE STRINGENT PWHT REQUIREMENT SHALL GOVERN.

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
200	WITH JACK SCREW (FO)
541	NPT(F) (CA,F)
781	CLASS 600 (B,F,G)
797	CLASS 1500 (B,F,G)
4608	VALVE WITH NIPPLES (V)

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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P01A-0010P	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	0.75		SCH160		P01A-0010R	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1		SCH160		P01A-0014M	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1.5		SCH160		P01A-0015J	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	2		XS		P01A-000YX	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	3		STD		P01A-000YM	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	4		STD		P01A-000YU	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P02A-001Y8	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	0.75		SCH160		P02A-000V8	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1		SCH160		P02A-000V7	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1.5		SCH160		P02A-000V9	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	2		XS		P02A-000CP	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		STD		P02A-000CU	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		STD		P02A-000CZ	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P03A-001TC	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	0.75		SCH160		P03A-000RS	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1		SCH160		P03A-000RR	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1.5		SCH160		P03A-000RP	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	2		XS		P03A-000AS	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		STD		P03A-000AX	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		STD		P03A-000B1	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P21A-003AW	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	0.75		SCH160		P21A-002B8	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1		SCH160		P21A-002B6	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5		SCH160		P21A-002B9	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2		XS		P21A-001CJ	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		STD		P21A-001CU	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		STD		P21A-001CW	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75	SCH160	SCH160	P24A-004B6	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.75	SCH160	SCH160	P24A-004B2	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	1	SCH160	SCH160	P24A-004BA	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	XS	SCH160	P24A-00GMB	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	XS	SCH160	P24A-005K9	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	STD	SCH160	P24A-00GMC	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	STD	XS	P24A-002HW	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P24A-002HY	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P24A-0021K	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	SCH160	P27A-004LZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.5	SCH160	SCH160	P27A-004M8	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.75	SCH160	SCH160	P27A-002T5	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.5	SCH160	SCH160	P27A-004MV	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.75	SCH160	SCH160	P27A-002T7	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	1	SCH160	SCH160	P27A-002T4	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2	0.75	XS	SCH160	P27A-001LG	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	XS	SCH160	P27A-0033P	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	XS	SCH160	P27A-0033B	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	STD	SCH160	P27A-003M9	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	STD	XS	P27A-001MZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	1.5	STD	SCH160	P27A-003MA	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P27A-001N0	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P27A-00189	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	SCH160	P28A-007KG	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.5	SCH160	SCH160	P28A-007KH	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.75	SCH160	SCH160	P28A-002TU	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.5	SCH160	SCH160	P28A-007KJ	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.75	SCH160	SCH160	P28A-002TW	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	1	SCH160	SCH160	P28A-002TR	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	0.75	XS	SCH160	P28A-001LE	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	XS	SCH160	P28A-003M1	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	XS	SCH160	P28A-003M2	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	STD	SCH160	P28A-003M3	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	STD	XS	P28A-001N5	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	1.5	STD	SCH160	P28A-003M4	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P28A-001N6	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P28A-0018B	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P29A-0037W	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	0.75		SCH160		P29A-0037X	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	1		SCH160		P29A-001VW	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5		SCH160		P29A-001VX	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	2		XS		P29A-00381	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	3		STD		P29A-00383	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	4		STD		P29A-00384	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
541	0.75				P29B-0000Y	Cap ASTM A105 Class 6000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P41A-000B9	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		XXS		P41A-000BA	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		XXS		P41A-000D8	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		XXS		P41A-000D9	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2	0.75	XS	SCH160	P31B-00CP7	Outlet ASTM A105 MSS SP-97 BW	
1	3	0.75	STD	SCH160	P31B-00CMT	Outlet ASTM A105 MSS SP-97 BW	
1	4	0.75	STD	SCH160	P31B-00CLT	Outlet ASTM A105 MSS SP-97 BW	
1	3	1	STD	SCH160	P31B-00B4J	Outlet ASTM A105 MSS SP-97 BW	
1	4	1	STD	SCH160	P31B-00B3M	Outlet ASTM A105 MSS SP-97 BW	
1	4	1.5	STD	SCH160	P31B-00BP4	Outlet ASTM A105 MSS SP-97 BW	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30B-0002D	Plug ASTM A105 ASME B16.11 NPT Round head	
1	0.75				P30B-0002E	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1				P30B-0002F	Plug ASTM A105 ASME B16.11 NPT Round head	

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PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5				P30B-0002G	Plug ASTM A105 ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P61B-003P9	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	0.75		SCH160		P61B-0037M	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	1		SCH160		P61B-0037L	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	1.5		SCH160		P61B-0037J	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	2		XS		P61B-001HW	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	3		STD		P61B-001LJ	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	4		STD		P61B-001MC	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
541	0.5				P61B-003U3	Flange NPT ASTM A105 Class 300 ASME B16.5 RF	
541	0.75				P61B-003U4	Flange NPT ASTM A105 Class 300 ASME B16.5 RF	
781	0.5		SCH160		P61B-004UV	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	0.75		SCH160		P61B-003T2	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	1		SCH160		P61B-003T3	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	1.5		SCH160		P61B-003T4	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	2		XS		P61B-001DH	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	3		STD		P61B-001TW	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	4		STD		P61B-001VV	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
797	1.5		SCH160		P61B-0065W	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
797	2		XS		P61B-0065C	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
797	3		STD		P61B-009W7	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
797	4		STD		P61B-009W8	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67B-000GH	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	0.75				P67B-000GJ	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	1				P67B-000GK	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	1.5				P67B-000GL	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	2				P67B-000GM	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	3				P67B-000GN	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	4				P67B-000GP	Blind flange ASTM A105 Class 300 ASME B16.5 RF	

REDUCING FLANGE (FR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2	0.75		SCH160	P62B-000NG	Reducing flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	2	1		SCH160	P62B-0007D	Reducing flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	2	1.5		SCH160	P62B-000MG	Reducing flange WN ASTM A105 Class 300 ASME B16.5 RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000FT	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000FU	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000G5	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000G6	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	0.5				P73T-000J8	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	0.75				P73T-000J9	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1				P73T-000JA	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1.5				P73T-000JB	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

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GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
781	2				P73T-000JH	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	3				P73T-000JL	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	4				P73T-000JM	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
797	1.5				P75T-000JW	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	2				P75T-0008A	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	3				P75T-0008E	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	4				P75T-0008D	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-4				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
781	0.5-4				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
797	0.5-2				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
797	3-4				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81B-001F6	Gate valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	0.75				P81B-001F7	Gate valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	1				P81B-001F8	Gate valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	1.5				P81B-001F9	Gate valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	2				P81C-004XV	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	3				P81C-004XW	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	4				P81C-004XX	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
4608	0.75				P81B-002WS	Gate valve ASTM A105 Class 300 API 602 BW both sides w/ nipples BE - NPT ASTM A106-B XXS-nipple Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82B-0016Y	Globe valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	0.75				P82B-0016Z	Globe valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	1				P82B-00170	Globe valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	1.5				P82B-00171	Globe valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	2				P82C-002D8	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	3				P82C-002D9	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	4				P82C-002DA	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83B-000YN	Check valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Severe wet H2S service	
1	0.75				P83B-000YP	Check valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Severe wet H2S service	
1	1				P83B-000YR	Check valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Severe wet H2S service	
1	1.5				P83B-000YS	Check valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Severe wet H2S service	
1	2				P83C-002CH	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service	
1	3				P83C-002CK	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service	
1	4				P83C-002CL	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service	

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ORIFICE FLANGE (FO)							
OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2		XS		P66B-0084B	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
200	2		XS		P66B-00843	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	

SPECT BLANK (SB)							
OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71B-000B1	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	0.75				P71B-000B2	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	1				P71B-000B3	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71B-000B4	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	2				P71B-000B6	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	3				P71B-000B7	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	4				P71B-000B8	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	

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BOLT TABLE (B_B2AR , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-008T0		
0.75	4	0.625	75	P80S-00908		
1	4	0.625	80	P80S-00909		
1.5	4	0.750	95	P80S-005Z4		
2	8	0.625	90	P80S-0090B		
3	8	0.750	110	P80S-0090F		
4	8	0.750	115	P80S-0090G		

BOLT TABLE (B_B2AR_781 , STUD ASME RF, OPTION CODE 781)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	80	P80S-008T2		
0.75	4	0.625	90	P80S-0090B		
1	4	0.625	95	P80S-0090C		
1.5	4	0.750	110	P80S-0090F		
2	8	0.625	110	P80S-008T8		
3	8	0.750	130	P80S-0090K		
4	8	0.875	150	P80S-005ZF		

BOLT TABLE (B_B2AR_797 , STUD ASME RJ, OPTION CODE 797)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	110	P80S-0090F	R12	
0.75	4	0.750	115	P80S-0090G	R14	
1	4	0.875	130	P80S-005ZB	R16	
1.5	4	1.000	140	P80S-0061A	R20	P75T-000JW
2	8	0.875	150	P80S-005ZF	R24	P75T-0008A
3	8	1.125	180	P80S-0064T	R35	P75T-0008E
4	8	1.250	230	P80S-0068H	R39	P75T-0008D

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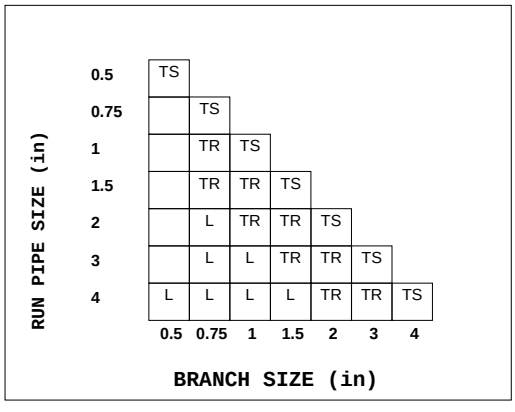
BRANCH TABLE (T_B2AR)



L : OUTLET
TS : STRAIGHT TEE
TR : REDUCING TEE

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PIPING CLASS

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Material : Killed CS
Rating : ASME CLASS 300
Flange Face : RF
C.A.(mm) : 3.00
Gasket : Spiral Wound
Service : PROCESS - WET SEVERE SOUR SERVICE SUBJECT TO NACE + HIC STD.
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
2	USE OF SOFT SEATED BALL, PLUG AND BUTTERFLY VALVES SHALL BE LIMITED TO MAXIMUM OF 204DEGC (400DEGF)
5	BOLTING CONFIRMING TO B7M / 2HM SHALL BE USED UNDER CONDITIONS (A) DIRECT EXPOSURE TO SOUR ENVIRONMENTS (B) WHEN THE BOLTING WILL BE BURIED OR INSULATED
27	PWHT OF CARBON STEEL PIPING IN WET H2S, CAUSTIC AND AMINE SERVICES SHALL BE IN ACCORDANCE WITH SECTION 10.2, 10.3, AND 10.4 OF PROJECT SPECIFICATION 3550-8440-SP-0002 MATERIALS REQUIREMENTS FOR PRESSURISED EQUIPMENT AND PIPING. FOR CAUSTIC AND AMINE SERVICE THE FOLLOWING SHALL APPLY: - PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF ALL SITE PIPING FABRICATION WELDS IS REQUIRED FOR ALL WALL THICKNESSES. FOR MODERATE AND SEVERE WET H2S SERVICE THE FOLLOWING SHALL APPLY: PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF SITE FABRICATION CIRCUMFERENTIAL OR BRANCH WELDS IS NOT REQUIRED IF WELDS ARE MULTIPASS AND IN ACCORDANCE WITH PARA 10.2.12 OF PROJECT SPECIFICATION 3550-8440-SP-0002. FOR SERVICES MEETING THE WET H2S CRITERIA AND CAUSTIC OR AMINE CRITERIA THE MORE STRINGENT PWHT REQUIREMENT SHALL GOVERN.

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
24	FULL PORT (Q)
200	WITH JACK SCREW (FO)
541	NPT(F) (CA,F)
781	CLASS 600 (B,F,G)
789	CLASS 900 (B,F,G)
797	CLASS 1500 (B,F,G)
4602	DISSIMILAR TYPE CHECK VALVE (XDP)
4608	VALVE WITH NIPPLES (V)

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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P01A-007D3	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE Severe wet H2S service Licensor-1	
1	0.75		SCH160		P01A-007D4	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE Severe wet H2S service Licensor-1	
1	1		SCH160		P01A-007D5	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE Severe wet H2S service Licensor-1	
1	1.5		SCH160		P01A-007D6	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE Severe wet H2S service Licensor-1	
1	2		XS		P01A-007DC	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Severe wet H2S service Licensor-1	
1	3		STD		P01A-007DF	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Severe wet H2S service Licensor-1	
1	4		STD		P01A-007DG	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Severe wet H2S service Licensor-1	
1	6		STD		P01A-007DH	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Severe wet H2S service Licensor-1	
1	8		STD		P01A-007DJ	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Severe wet H2S service Licensor-1	
1	10		STD		P01A-007D7	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Severe wet H2S service Licensor-1	
1	12		SCH40		P01A-007D8	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Severe wet H2S service Licensor-1	
1	14		SCH40		P01A-007D9	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Severe wet H2S service Licensor-1	
1	16		SCH20		P01A-007DA	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Severe wet H2S service Licensor-1	
1	18		STD		P01A-008NH	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Severe wet H2S service Licensor-1	
1	20		STD		P01A-007DD	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Severe wet H2S service Licensor-1	
1	24		XS		P01A-007F2	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Severe wet H2S service Licensor-1	
1	30		STD		P01A-007DP	Pipe ASTM A671 Grade CC60 Class 22 EFW ASME B36.10M/B36.19M BE Severe wet H2S service Licensor-1	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P02A-003V5	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	0.75		SCH160		P02A-003V6	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	1		SCH160		P02A-003V7	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	1.5		SCH160		P02A-003V8	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	2		XS		P02A-003VE	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	3		STD		P02A-003VH	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	4		STD		P02A-003VJ	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	6		STD		P02A-003VK	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	8		STD		P02A-003VL	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	10		STD		P02A-003V9	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	12		SCH40		P02A-003VA	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	14		SCH40		P02A-003VB	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	16		SCH20		P02A-003VC	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	18		STD		P02A-004FY	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	20		STD		P02A-003VF	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	24		XS		P02A-003X4	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	30		STD		P02A-003VS	90 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P03A-003SU	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	0.75		SCH160		P03A-003SV	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	1		SCH160		P03A-003SW	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	1.5		SCH160		P03A-003SX	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	2		XS		P03A-003T3	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	3		STD		P03A-003T6	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	4		STD		P03A-003T7	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	6		STD		P03A-003T8	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	8		STD		P03A-003T9	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	

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45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	10		STD		P03A-003SY	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	12		SCH40		P03A-003SZ	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	14		SCH40		P03A-003T0	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	16		SCH20		P03A-003T1	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	18		STD		P03A-004D6	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	20		STD		P03A-003T4	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	24		XS		P03A-003UT	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	30		STD		P03A-003TE	45 degree elbow ASTM A234 Grade WPB-W Weld ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P21A-004CL	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	0.75		SCH160		P21A-004CM	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	1		SCH160		P21A-004CN	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	1.5		SCH160		P21A-004CP	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	2		XS		P21A-004CW	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	3		STD		P21A-004CZ	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	4		STD		P21A-004D0	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	6		STD		P21A-004D1	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	8		STD		P21A-004D2	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	10		STD		P21A-004CR	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	12		SCH40		P21A-004CS	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	14		SCH40		P21A-004CT	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	16		SCH20		P21A-004CU	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	18		STD		P21A-004YC	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	20		STD		P21A-004CX	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	24		XS		P21A-004EK	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	30		STD		P21A-004D7	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Severe wet H2S service Licensor-1	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75	SCH160	SCH160	P24A-00KEA	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	1.5	0.75	SCH160	SCH160	P24A-00KEB	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	1.5	1	SCH160	SCH160	P24A-00KEC	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	2	1	XS	SCH160	P24A-00KED	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	2	1.5	XS	SCH160	P24A-00KEE	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	3	1.5	STD	SCH160	P24A-00KEF	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	3	2	STD	XS	P24A-00KEG	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	4	2	STD	XS	P24A-00KEH	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	4	3	STD	STD	P24A-00KEJ	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	6	3	STD	STD	P24A-00KEK	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	6	4	STD	STD	P24A-00KEL	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	8	4	STD	STD	P24A-00KEM	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	8	6	STD	STD	P24A-00KEN	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	10	4	STD	STD	P24A-00KEP	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	10	6	STD	STD	P24A-00KER	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	10	8	STD	STD	P24A-00KES	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	12	6	SCH40	STD	P24A-00KEU	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	12	8	SCH40	STD	P24A-00KEV	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	12	10	SCH40	STD	P24A-00KET	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	14	6	SCH40	STD	P24A-00KEY	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	14	8	SCH40	STD	P24A-00KEZ	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	14	10	SCH40	STD	P24A-00KEW	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	14	12	SCH40	SCH40	P24A-00KEX	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	16	6	SCH20	STD	P24A-00KF1	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	16	8	SCH20	STD	P24A-00KF2	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	

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REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	16	10	SCH20	STD	P24A-00KF0	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	16	12	SCH20	SCH40	P24A-00L6K	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	16	14	SCH20	SCH40	P24A-00L5V	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	18	8	STD	STD	P24A-00NYW	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	18	10	STD	STD	P24A-00NYT	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	18	12	STD	SCH40	P24A-00NYU	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	18	14	STD	SCH40	P24A-00NYV	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	18	16	STD	SCH20	P24A-00NMZ	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	20	8	STD	STD	P24A-00KFD	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	20	10	STD	STD	P24A-00KF8	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	20	12	STD	SCH40	P24A-00KF9	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	20	14	STD	SCH40	P24A-00KFA	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	20	16	STD	SCH20	P24A-00KFB	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	20	18	STD	STD	P24A-00NN2	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	24	10	XS	STD	P24A-00NYX	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	24	12	XS	SCH40	P24A-00KML	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	24	14	XS	SCH40	P24A-00KMM	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	24	16	XS	SCH20	P24A-00NN7	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	24	18	XS	STD	P24A-00NN8	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	24	20	XS	STD	P24A-00NN9	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	30	10	STD	STD	P24A-00M5M	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Severe wet H2S service Licensor-1	
1	30	12	STD	SCH40	P24A-00M5N	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Severe wet H2S service Licensor-1	
1	30	14	STD	SCH40	P24A-00M5P	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Severe wet H2S service Licensor-1	
1	30	16	STD	SCH20	P24A-00KGG	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Severe wet H2S service Licensor-1	
1	30	18	STD	STD	P24A-00NYY	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Severe wet H2S service Licensor-1	
1	30	20	STD	STD	P24A-00KGJ	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Severe wet H2S service Licensor-1	
1	30	24	STD	XS	P24A-00NYZ	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Severe wet H2S service Licensor-1	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	SCH160	P27A-00EY1	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	1	0.5	SCH160	SCH160	P27A-00EY2	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	1	0.75	SCH160	SCH160	P27A-00EY3	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	1.5	0.5	SCH160	SCH160	P27A-00EY4	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	1.5	0.75	SCH160	SCH160	P27A-00EY5	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	1.5	1	SCH160	SCH160	P27A-00EY6	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	2	0.75	XS	SCH160	P27A-00EY7	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	2	1	XS	SCH160	P27A-00EY8	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	2	1.5	XS	SCH160	P27A-00EY9	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	3	1.5	STD	SCH160	P27A-00EYA	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	3	2	STD	XS	P27A-00EYB	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	4	1.5	STD	SCH160	P27A-00EYC	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	4	2	STD	XS	P27A-00EYD	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	4	3	STD	STD	P27A-00EYE	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	6	3	STD	STD	P27A-00EYF	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	6	4	STD	STD	P27A-00EYG	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	8	4	STD	STD	P27A-00EYH	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	8	6	STD	STD	P27A-00EYJ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	10	4	STD	STD	P27A-00EYK	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	10	6	STD	STD	P27A-00EYL	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	10	8	STD	STD	P27A-00EYM	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	12	6	SCH40	STD	P27A-00EYP	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	12	8	SCH40	STD	P27A-00EYR	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	12	10	SCH40	STD	P27A-00EYN	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	14	6	SCH40	STD	P27A-00EYU	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	14	8	SCH40	STD	P27A-00EYV	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	14	10	SCH40	STD	P27A-00EYS	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	14	12	SCH40	SCH40	P27A-00EYT	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	16	8	SCH20	STD	P27A-00EYZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	16	10	SCH20	STD	P27A-00EYW	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	16	12	SCH20	SCH40	P27A-00EYX	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	16	14	SCH20	SCH40	P27A-00EYY	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	18	10	STD	STD	P27A-00HDV	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	18	12	STD	SCH40	P27A-00HDW	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	18	14	STD	SCH40	P27A-00HDX	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	18	16	STD	SCH20	P27A-00H8C	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	20	12	STD	SCH40	P27A-00EZ4	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	20	14	STD	SCH40	P27A-00EZ5	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	20	16	STD	SCH20	P27A-00EZ6	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	20	18	STD	STD	P27A-00H8D	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	24	16	XS	SCH20	P27A-00H8E	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	24	18	XS	STD	P27A-00H8F	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	24	20	XS	STD	P27A-00H8G	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	30	20	STD	STD	P27A-00EZZ	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Severe wet H2S service Licensor-1	
1	30	24	STD	XS	P27A-00HDY	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Severe wet H2S service Licensor-1	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	SCH160	P28A-00C21	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	1	0.5	SCH160	SCH160	P28A-00C22	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	1	0.75	SCH160	SCH160	P28A-00C23	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	1.5	0.5	SCH160	SCH160	P28A-00C24	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	1.5	0.75	SCH160	SCH160	P28A-00C25	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	1.5	1	SCH160	SCH160	P28A-00C26	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	2	0.75	XS	SCH160	P28A-00C27	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	2	1	XS	SCH160	P28A-00C28	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	2	1.5	XS	SCH160	P28A-00C29	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	3	1.5	STD	SCH160	P28A-00C2A	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	3	2	STD	XS	P28A-00C2B	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	4	1.5	STD	SCH160	P28A-00C2C	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	4	2	STD	XS	P28A-00C2D	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	4	3	STD	STD	P28A-00C2E	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	6	3	STD	STD	P28A-00C2F	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	6	4	STD	STD	P28A-00C2G	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	8	4	STD	STD	P28A-00C2H	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	8	6	STD	STD	P28A-00C2J	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	10	4	STD	STD	P28A-00C2K	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	10	6	STD	STD	P28A-00C2L	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	10	8	STD	STD	P28A-00C2M	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	12	6	SCH40	STD	P28A-00C2P	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	12	8	SCH40	STD	P28A-00C2R	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	12	10	SCH40	STD	P28A-00C2N	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	14	6	SCH40	STD	P28A-00C2U	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	14	8	SCH40	STD	P28A-00C2V	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	14	10	SCH40	STD	P28A-00C2S	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	14	12	SCH40	SCH40	P28A-00C2T	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	16	8	SCH20	STD	P28A-00C2Z	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	16	10	SCH20	STD	P28A-00C2W	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	16	12	SCH20	SCH40	P28A-00C2X	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	16	14	SCH20	SCH40	P28A-00C2Y	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	18	10	STD	STD	P28A-00EMJ	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	18	12	STD	SCH40	P28A-00EMK	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	18	14	STD	SCH40	P28A-00EML	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	18	16	STD	SCH20	P28A-00EG2	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	20	12	STD	SCH40	P28A-00C34	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	20	14	STD	SCH40	P28A-00C35	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	20	16	STD	SCH20	P28A-00C36	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	20	18	STD	STD	P28A-00EG3	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	

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ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	24	16	XS	SCH20	P28A-00EG4	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	24	18	XS	STD	P28A-00EG5	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	24	20	XS	STD	P28A-00EG6	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	30	20	STD	STD	P28A-00C3Z	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Severe wet H2S service Licensor-1	
1	30	24	STD	XS	P28A-00EMM	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Severe wet H2S service Licensor-1	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P29A-00374	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	0.75		SCH160		P29A-00375	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	1		SCH160		P29A-00376	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	1.5		SCH160		P29A-00377	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	2		XS		P29A-0037D	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	3		STD		P29A-0037G	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	4		STD		P29A-0037H	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	6		STD		P29A-0037J	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	8		STD		P29A-0037K	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	10		STD		P29A-00378	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	12		SCH40		P29A-00379	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	14		SCH40		P29A-0037A	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	16		SCH20		P29A-0037B	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	18		STD		P29A-003SU	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	20		STD		P29A-0037E	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	24		XS		P29A-0039H	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	30		STD		P29A-0037P	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
541	0.75				P29B-0006U	Cap ASTM A105 Class 6000 ASME B16.11 NPT Severe wet H2S service Licensor-1	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P41A-0019H	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Severe wet H2S service Licensor-1	
1	0.75		XXS		P41A-0019J	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Severe wet H2S service Licensor-1	
1	1		XXS		P41A-0018F	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Severe wet H2S service Licensor-1	
1	1.5		XXS		P41A-0018G	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Severe wet H2S service Licensor-1	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2	0.75	XS	SCH160	P31B-00XX6	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	3	0.75	STD	SCH160	P31B-00XX7	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	4	0.75	STD	SCH160	P31B-00XX9	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	6	0.75	STD	SCH160	P31B-00XXC	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	8	0.75	STD	SCH160	P31B-00XXG	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	10	0.75	STD	SCH160	P31B-00XXM	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	12	0.75	SCH40	SCH160	P31B-00XXT	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	14	0.75	SCH40	SCH160	P31B-00XXZ	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	16	0.75	SCH20	SCH160	P31B-00XY5	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	18	0.75	STD	SCH160	P31B-010X4	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	20	0.75	STD	SCH160	P31B-00XYJ	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	24	0.75	XS	SCH160	P31B-010XB	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	30	0.75	STD	SCH160	P31B-00XZK	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	3	1	STD	SCH160	P31B-00XX8	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	4	1	STD	SCH160	P31B-00XXA	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	6	1	STD	SCH160	P31B-00XXD	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	8	1	STD	SCH160	P31B-00XXH	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	10	1	STD	SCH160	P31B-00XXN	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	12	1	SCH40	SCH160	P31B-00XXU	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	14	1	SCH40	SCH160	P31B-00XY0	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	16	1	SCH20	SCH160	P31B-00XY6	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	

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OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	18	1	STD	SCH160	P31B-010X5	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	20	1	STD	SCH160	P31B-00XYK	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	24	1	XS	SCH160	P31B-010XC	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	30	1	STD	SCH160	P31B-00XZL	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	4	1.5	STD	SCH160	P31B-00XXB	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	6	1.5	STD	SCH160	P31B-00XXE	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	8	1.5	STD	SCH160	P31B-00XXJ	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	10	1.5	STD	SCH160	P31B-00XXP	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	12	1.5	SCH40	SCH160	P31B-00XXV	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	14	1.5	SCH40	SCH160	P31B-00XY1	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	16	1.5	SCH20	SCH160	P31B-00XY7	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	18	1.5	STD	SCH160	P31B-010X6	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	20	1.5	STD	SCH160	P31B-00XYL	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	24	1.5	XS	SCH160	P31B-010XD	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	30	1.5	STD	SCH160	P31B-00XZM	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	6	2	STD	XS	P31B-00XXF	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	8	2	STD	XS	P31B-00XXK	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	10	2	STD	XS	P31B-00XXR	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	12	2	SCH40	XS	P31B-00XXW	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	14	2	SCH40	XS	P31B-00XY2	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	16	2	SCH20	XS	P31B-00XY8	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	18	2	STD	XS	P31B-010X7	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	20	2	STD	XS	P31B-00XYM	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	24	2	XS	XS	P31B-010XE	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	30	2	STD	XS	P31B-00XZN	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	8	3	STD	STD	P31B-00XXL	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	10	3	STD	STD	P31B-00XXS	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	12	3	SCH40	STD	P31B-00XXX	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	14	3	SCH40	STD	P31B-00XY3	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	16	3	SCH20	STD	P31B-00XY9	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	18	3	STD	STD	P31B-010X8	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	20	3	STD	STD	P31B-00XYN	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	24	3	XS	STD	P31B-010XF	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	30	3	STD	STD	P31B-00XZP	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	12	4	SCH40	STD	P31B-00XXY	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	14	4	SCH40	STD	P31B-00XY4	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	16	4	SCH20	STD	P31B-00XYA	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	18	4	STD	STD	P31B-010X9	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	20	4	STD	STD	P31B-00XYP	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	24	4	XS	STD	P31B-010XG	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	30	4	STD	STD	P31B-00XZR	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	18	6	STD	STD	P31B-010XA	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	20	6	STD	STD	P31B-00XYR	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	24	6	XS	STD	P31B-010XH	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	30	6	STD	STD	P31B-00XZS	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30B-0006M	Plug ASTM A105 ASME B16.11 NPT Round head Severe wet H2S service Licensor-1	
1	0.75				P30B-0006N	Plug ASTM A105 ASME B16.11 NPT Round head Severe wet H2S service Licensor-1	
1	1				P30B-0006K	Plug ASTM A105 ASME B16.11 NPT Round head Severe wet H2S service Licensor-1	
1	1.5				P30B-0006L	Plug ASTM A105 ASME B16.11 NPT Round head Severe wet H2S service Licensor-1	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P61B-00A4F	Flange WN ASTM A105 Class 300 ASME B16.5 RF Severe wet H2S service Licensor-1	
1	0.75		SCH160		P61B-00A4G	Flange WN ASTM A105 Class 300 ASME B16.5 RF Severe wet H2S service Licensor-1	
1	1		SCH160		P61B-00A4H	Flange WN ASTM A105 Class 300 ASME B16.5 RF Severe wet H2S service Licensor-1	
1	1.5		SCH160		P61B-00A4J	Flange WN ASTM A105 Class 300 ASME B16.5 RF Severe wet H2S service Licensor-1	

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FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2		XS		P61B-00A4R	Flange WN ASTM A105 Class 300 ASME B16.5 RF Severe wet H2S service Licensor-1	
1	3		STD		P61B-00A4U	Flange WN ASTM A105 Class 300 ASME B16.5 RF Severe wet H2S service Licensor-1	
1	4		STD		P61B-00A4V	Flange WN ASTM A105 Class 300 ASME B16.5 RF Severe wet H2S service Licensor-1	
1	6		STD		P61B-00A4W	Flange WN ASTM A105 Class 300 ASME B16.5 RF Severe wet H2S service Licensor-1	
1	8		STD		P61B-00A4X	Flange WN ASTM A105 Class 300 ASME B16.5 RF Severe wet H2S service Licensor-1	
1	10		STD		P61B-00A4K	Flange WN ASTM A105 Class 300 ASME B16.5 RF Severe wet H2S service Licensor-1	
1	12		SCH40		P61B-00A4L	Flange WN ASTM A105 Class 300 ASME B16.5 RF Severe wet H2S service Licensor-1	
1	14		SCH40		P61B-00A4M	Flange WN ASTM A105 Class 300 ASME B16.5 RF Severe wet H2S service Licensor-1	
1	16		SCH20		P61B-00A4N	Flange WN ASTM A105 Class 300 ASME B16.5 RF Severe wet H2S service Licensor-1	
1	18		STD		P61B-00BT9	Flange WN ASTM A105 Class 300 ASME B16.5 RF Severe wet H2S service Licensor-1	
1	20		STD		P61B-00A4S	Flange WN ASTM A105 Class 300 ASME B16.5 RF Severe wet H2S service Licensor-1	
1	24		XS		P61B-00A8C	Flange WN ASTM A105 Class 300 ASME B16.5 RF Severe wet H2S service Licensor-1	
1	30		STD		P61B-00A66	Flange WN ASTM A105 Class 300 ASME B16.47 Series B RF Severe wet H2S service Licensor-1	
541	0.5				P61B-00DM8	Flange NPT ASTM A105 Class 300 ASME B16.5 RF Severe wet H2S service Licensor-1	
541	0.75				P61B-00CX9	Flange NPT ASTM A105 Class 300 ASME B16.5 RF Severe wet H2S service Licensor-1	
781	0.5		SCH160		P61B-00A4Y	Flange WN ASTM A105 Class 600 ASME B16.5 RF Severe wet H2S service Licensor-1	
781	0.75		SCH160		P61B-00A4Z	Flange WN ASTM A105 Class 600 ASME B16.5 RF Severe wet H2S service Licensor-1	
781	1		SCH160		P61B-00A50	Flange WN ASTM A105 Class 600 ASME B16.5 RF Severe wet H2S service Licensor-1	
781	1.5		SCH160		P61B-00A51	Flange WN ASTM A105 Class 600 ASME B16.5 RF Severe wet H2S service Licensor-1	
781	2		XS		P61B-00A57	Flange WN ASTM A105 Class 600 ASME B16.5 RF Severe wet H2S service Licensor-1	
781	3		STD		P61B-00A5A	Flange WN ASTM A105 Class 600 ASME B16.5 RF Severe wet H2S service Licensor-1	
781	4		STD		P61B-00A5B	Flange WN ASTM A105 Class 600 ASME B16.5 RF Severe wet H2S service Licensor-1	
781	6		STD		P61B-00A5C	Flange WN ASTM A105 Class 600 ASME B16.5 RF Severe wet H2S service Licensor-1	
781	8		STD		P61B-00A5D	Flange WN ASTM A105 Class 600 ASME B16.5 RF Severe wet H2S service Licensor-1	
781	10		STD		P61B-00A52	Flange WN ASTM A105 Class 600 ASME B16.5 RF Severe wet H2S service Licensor-1	
781	12		SCH40		P61B-00A53	Flange WN ASTM A105 Class 600 ASME B16.5 RF Severe wet H2S service Licensor-1	
781	14		SCH40		P61B-00A54	Flange WN ASTM A105 Class 600 ASME B16.5 RF Severe wet H2S service Licensor-1	
781	16		SCH20		P61B-00A55	Flange WN ASTM A105 Class 600 ASME B16.5 RF Severe wet H2S service Licensor-1	
781	18		STD		P61B-00BVL	Flange WN ASTM A105 Class 600 ASME B16.5 RF Severe wet H2S service Licensor-1	
781	20		STD		P61B-00A58	Flange WN ASTM A105 Class 600 ASME B16.5 RF Severe wet H2S service Licensor-1	
781	24		XS		P61B-00BVM	Flange WN ASTM A105 Class 600 ASME B16.5 RF Severe wet H2S service Licensor-1	
781	30		STD		P61B-00BE2	Flange WN ASTM A105 Class 600 ASME B16.47 Series B RF Severe wet H2S service Licensor-1	
789	3		STD		P61B-00DHT	Flange WN ASTM A105 Class 900 ASME B16.5 RJ Severe wet H2S service Licensor-1	
789	4		STD		P61B-00BVP	Flange WN ASTM A105 Class 900 ASME B16.5 RJ Severe wet H2S service Licensor-1	
789	6		STD		P61B-00BVR	Flange WN ASTM A105 Class 900 ASME B16.5 RJ Severe wet H2S service Licensor-1	
789	8		STD		P61B-00BVS	Flange WN ASTM A105 Class 900 ASME B16.5 RJ Severe wet H2S service Licensor-1	
789	10		STD		P61B-00BVN	Flange WN ASTM A105 Class 900 ASME B16.5 RJ Severe wet H2S service Licensor-1	
797	0.5		SCH160		P61B-00BNG	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ Severe wet H2S service Licensor-1	
797	0.75		SCH160		P61B-00BNH	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ Severe wet H2S service Licensor-1	
797	1		SCH160		P61B-00BNJ	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ Severe wet H2S service Licensor-1	
797	1.5		SCH160		P61B-00BNK	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ Severe wet H2S service Licensor-1	
797	2		XS		P61B-00DH0	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ Severe wet H2S service Licensor-1	
797	3		STD		P61B-00DHU	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ Severe wet H2S service Licensor-1	
797	4		STD		P61B-00DHV	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ Severe wet H2S service Licensor-1	
797	6		STD		P61B-00DHW	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ Severe wet H2S service Licensor-1	
797	8		STD		P61B-00DHX	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ Severe wet H2S service Licensor-1	
797	10		STD		P61B-00BVT	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ Severe wet H2S service Licensor-1	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67B-002HJ	Blind flange ASTM A105 Class 300 ASME B16.5 RF Severe wet H2S service Licensor-1	
1	0.75				P67B-002HK	Blind flange ASTM A105 Class 300 ASME B16.5 RF Severe wet H2S service Licensor-1	
1	1				P67B-002F7	Blind flange ASTM A105 Class 300 ASME B16.5 RF Severe wet H2S service Licensor-1	
1	1.5				P67B-002F8	Blind flange ASTM A105 Class 300 ASME B16.5 RF Severe wet H2S service Licensor-1	
1	2				P67B-002FE	Blind flange ASTM A105 Class 300 ASME B16.5 RF Severe wet H2S service Licensor-1	
1	3				P67B-002FF	Blind flange ASTM A105 Class 300 ASME B16.5 RF Severe wet H2S service Licensor-1	
1	4				P67B-002FG	Blind flange ASTM A105 Class 300 ASME B16.5 RF Severe wet H2S service Licensor-1	
1	6				P67B-002FH	Blind flange ASTM A105 Class 300 ASME B16.5 RF Severe wet H2S service Licensor-1	
1	8				P67B-002FJ	Blind flange ASTM A105 Class 300 ASME B16.5 RF Severe wet H2S service Licensor-1	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	10				P67B-002F9	Blind flange ASTM A105 Class 300 ASME B16.5 RF Severe wet H2S service Licensor-1	
1	12				P67B-002FA	Blind flange ASTM A105 Class 300 ASME B16.5 RF Severe wet H2S service Licensor-1	
1	14				P67B-002FB	Blind flange ASTM A105 Class 300 ASME B16.5 RF Severe wet H2S service Licensor-1	
1	16				P67B-002FC	Blind flange ASTM A105 Class 300 ASME B16.5 RF Severe wet H2S service Licensor-1	
1	18				P67B-002FD	Blind flange ASTM A105 Class 300 ASME B16.5 RF Severe wet H2S service Licensor-1	
1	20				P67B-002HL	Blind flange ASTM A105 Class 300 ASME B16.5 RF Severe wet H2S service Licensor-1	
1	24				P67B-002HM	Blind flange ASTM A105 Class 300 ASME B16.5 RF Severe wet H2S service Licensor-1	
1	30				P67B-002NL	Blind flange ASTM A105 Class 300 ASME B16.47 Series B RF Severe wet H2S service Licensor-1	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000FT	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000FU	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000G5	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000G6	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	6				P73T-000G7	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	8				P73T-000G8	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	10				P73T-000FX	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	12				P73T-000FY	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	14				P73T-000FZ	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	16				P73T-000G0	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	18				P73T-000G1	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	20				P73T-000G3	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	24				P73T-000G4	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	30				P73T-000H9	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	0.5				P73T-000J8	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	0.75				P73T-000J9	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1				P73T-000JA	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1.5				P73T-000JB	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	2				P73T-000JH	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	3				P73T-000JL	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	4				P73T-000JM	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	6				P73T-000JN	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	8				P73T-000JP	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	10				P73T-000JC	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	12				P73T-000JD	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	14				P73T-000JE	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	16				P73T-000JF	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	18				P73T-000JG	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	20				P73T-000JJ	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	24				P73T-000JK	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	30				P73T-000JT	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
789					P75T-000JN	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	4				P75T-000JP	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	

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GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
789	6				P75T-000JR	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	8				P75T-000JS	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	10				P75T-000JL	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	0.5				P75T-000JT	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	0.75				P75T-000JU	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	1				P75T-000JV	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	1.5				P75T-000JW	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	2				P75T-0008A	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	3				P75T-0008E	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	4				P75T-0008D	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	6				P75T-0008C	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	8				P75T-0008B	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	10				P75T-0008L	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-10				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	12-30				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
781	0.5-6				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
781	8-30				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
789	0.5-3				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
789	4-12				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
797	0.5-2				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
797	3-10				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81B-001EY	Gate valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Licensor-1	
1	0.75				P81B-001EZ	Gate valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Licensor-1	
1	1				P81B-001F0	Gate valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Licensor-1	
1	1.5				P81B-001F1	Gate valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Licensor-1	
1	2				P81C-004X0	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Licensor-1	
1	3				P81C-004X1	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Licensor-1	
1	4				P81C-004X2	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Licensor-1	
1	6				P81C-004X3	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Licensor-1	
1	8				P81C-0091W	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Severe wet H2S service Licensor-1	
1	10				P81C-004X5	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Severe wet H2S service Licensor-1	
1	12				P81C-004X6	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Severe wet H2S service Licensor-1	
1	14				P81C-004X7	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Severe wet H2S service Licensor-1	
1	16				P81C-004X8	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Severe wet H2S service Licensor-1	
1	18				P81C-004X9	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Severe wet H2S service Licensor-1	
1	20				P81C-004XA	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Severe wet H2S service Licensor-1	
1	24				P81C-004XB	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Severe wet H2S service Licensor-1	
4608	0.75				P81B-002WX	Gate valve ASTM A105 Class 300 API 602 BW both sides w/ nipples BE - NPT ASTM A106-B XXS-nipple Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Licensor-1	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82B-0016P	Globe valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Licensor-1	
1	0.75				P82B-0016R	Globe valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Licensor-1	

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GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P82B-0016S	Globe valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Licensor-1	
1	1.5				P82B-0016T	Globe valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Licensor-1	
1	2				P82C-002CY	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Licensor-1	
1	3				P82C-002CZ	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Licensor-1	
1	4				P82C-002D0	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Licensor-1	
1	6				P82C-002D1	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Licensor-1	
1	8				P82C-004D1	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Severe wet H2S service Licensor-1	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83B-000YE	Check valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Severe wet H2S service Licensor-1	
1	0.75				P83B-000YF	Check valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Severe wet H2S service Licensor-1	
1	1				P83B-000YG	Check valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Severe wet H2S service Licensor-1	
1	1.5				P83B-000YH	Check valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Severe wet H2S service Licensor-1	
1	2				P83C-002BU	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service Licensor-1	
1	3				P83C-002BW	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service Licensor-1	
1	4				P83C-002BX	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service Licensor-1	
1	6				P83C-002BY	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service Licensor-1	
1	8				P83C-002BZ	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service Licensor-1	
1	10				P83C-002BN	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service Licensor-1	
1	12				P83C-002BP	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service Licensor-1	
1	14				P83C-002BR	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service Licensor-1	
1	16				P83C-002BS	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service Licensor-1	
1	18				P83C-002BT	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service Licensor-1	
1	20				P83C-002BV	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service Licensor-1	

DP CHECK VALVE (XDP)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
4602	2				P88C-0035L	Dual plate check valve ASTM A216 Grade WCB Class 300 API 594 Wafer-type ASME B16.5 RF Trim number 12 Internal wetted parts SS316 Spring Inconel Retainerless-type Severe wet H2S service Licensor-1	

BALL VALVE (Q)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P84B-001J2	Ball valve Long-pattern ASTM A105 Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design Severe wet H2S service Licensor-1	
1	0.75				P84B-001J3	Ball valve Long-pattern ASTM A105 Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design Severe wet H2S service Licensor-1	
1	1				P84B-001J4	Ball valve Long-pattern ASTM A105 Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design Severe wet H2S service Licensor-1	
1	1.5				P84B-001J5	Ball valve Long-pattern ASTM A105 Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design Severe wet H2S service Licensor-1	
24	0.5				P84B-001J6	Ball valve Long-pattern ASTM A105 Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design Severe wet H2S service Licensor-1	
24	0.75				P84B-001J7	Ball valve Long-pattern ASTM A105 Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design Severe wet H2S service Licensor-1	
24	1				P84B-001J8	Ball valve Long-pattern ASTM A105 Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design Severe wet H2S service Licensor-1	
24	1.5				P84B-001J9	Ball valve Long-pattern ASTM A105 Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design Severe wet H2S service Licensor-1	

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BUTTERFLY VALVE (H)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	10				P86C-00258	Offset design butterfly valve ASTM A216 Grade WCB Class 300 API 609 Category B Lug-type ASME B16.5 RF Disc CS Seat Stellite-6 Trim SS316 Triple eccentric design BG Gear operated Severe wet H2S service Licensor-1	

NEEDLE VALVE (NV)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82B-001XH	Needle valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Licensor-1	

ORIFICE FLANGE (FO)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2		XS		P66B-0087M	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Severe wet H2S service Licensor-1	
1	3		STD		P66B-0087N	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Severe wet H2S service Licensor-1	
1	4		STD		P66B-0087P	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Severe wet H2S service Licensor-1	
1	6		STD		P66B-0087R	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Severe wet H2S service Licensor-1	
1	8		STD		P66B-008CU	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Severe wet H2S service Licensor-1	
1	10		STD		P66B-008CT	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Severe wet H2S service Licensor-1	
1	12		SCH40		P66B-0089C	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Severe wet H2S service Licensor-1	
1	14		SCH40		P66B-0089D	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Severe wet H2S service Licensor-1	
200	2		XS		P66B-0087U	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Severe wet H2S service with Jack screw Licensor-1	
200	3		STD		P66B-0087V	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Severe wet H2S service with Jack screw Licensor-1	
200	4		STD		P66B-0087W	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Severe wet H2S service with Jack screw Licensor-1	
200	6		STD		P66B-0087X	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Severe wet H2S service with Jack screw Licensor-1	
200	8		STD		P66B-008CW	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Severe wet H2S service with Jack screw Licensor-1	
200	10		STD		P66B-008CV	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Severe wet H2S service with Jack screw Licensor-1	
200	12		SCH40		P66B-0089S	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Severe wet H2S service with Jack screw Licensor-1	
200	14		SCH40		P66B-0089T	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Severe wet H2S service with Jack screw Licensor-1	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71B-000CP	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service Licensor-1	
1	0.75				P71B-000CR	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service Licensor-1	
1	1				P71B-000CS	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service Licensor-1	
1	1.5				P71B-000CT	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service Licensor-1	
1	2				P71B-000CW	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service Licensor-1	
1	3				P71B-000CX	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service Licensor-1	
1	4				P71B-000CY	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service Licensor-1	
1	6				P71B-000CZ	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service Licensor-1	
1	8				P71B-000D0	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service Licensor-1	
1	10				P71B-000CU	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service Licensor-1	
1	12				P71B-000CV	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service Licensor-1	

PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000GU	Paddle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service Licensor-1	
1	16				P72B-000GV	Paddle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service Licensor-1	
1	18				P72B-000GW	Paddle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service Licensor-1	
1	20				P72B-000GX	Paddle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service Licensor-1	
1	24				P72B-000GY	Paddle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service Licensor-1	

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PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	30				P72B-000NL	Paddle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.47-B RF Severe wet H2S service Licensor-1	

PADDLE SPACER (PS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000GZ	Paddle spacer ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service Licensor-1	
1	16				P72B-000H0	Paddle spacer ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service Licensor-1	
1	18				P72B-000H1	Paddle spacer ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service Licensor-1	
1	20				P72B-000H2	Paddle spacer ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service Licensor-1	
1	24				P72B-000H3	Paddle spacer ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service Licensor-1	
1	30				P72B-000NM	Paddle spacer ASTM A105 Class 300 Standard-drawing Flange ASME B16.47-B RF Severe wet H2S service Licensor-1	

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BOLT TABLE (B_B2AR01 , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-008T0		
0.75	4	0.625	75	P80S-00908		
1	4	0.625	80	P80S-00909		
1.5	4	0.750	95	P80S-005Z4		
2	8	0.625	90	P80S-0090B		
3	8	0.750	110	P80S-0090F		
4	8	0.750	115	P80S-0090G		
6	12	0.750	125	P80S-0090J		
8	12	0.875	140	P80S-005ZD		
10	16	1.000	160	P80S-0061E		
12	16	1.125	175	P80S-0064S		
14	20	1.125	180	P80S-0064T		
16	20	1.250	190	P80S-00689		
18	24	1.250	200	P80S-0068B		
20	24	1.250	210	P80S-0068D		
24	24	1.500	235	P80S-006LB		
30	36	1.375	285	P80S-006HY		

BOLT TABLE (B_B2AR01_781 , STUD ASME RF, OPTION CODE 781)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	80	P80S-008T2		
0.75	4	0.625	90	P80S-0090B		
1	4	0.625	95	P80S-0090C		
1.5	4	0.750	110	P80S-0090F		
2	8	0.625	110	P80S-008T8		
3	8	0.750	130	P80S-0090K		
4	8	0.875	150	P80S-005ZF		
6	12	1.000	175	P80S-0061H		
8	12	1.125	195	P80S-0064W		
10	16	1.250	250	P80S-0068M		
12	20	1.250	255	P80S-0068N		
14	20	1.375	270	P80S-006HV		
16	20	1.500	295	P80S-006LP		
18	20	1.625	320	P80S-00A5E		
20	24	1.625	335	P80S-00A5H		
24	24	1.875	380	P80S-00AW5		
30	28	1.875	435	P80S-00AWG		

BOLT TABLE (B_B2AR01_789 , STUD ASME RJ, OPTION CODE 789)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	110	P80S-0090F	R12	
0.75	4	0.750	115	P80S-0090G	R14	
1	4	0.875	130	P80S-005ZB	R16	
1.5	4	1.000	140	P80S-0061A	R20	
2	8	0.875	150	P80S-005ZF	R24	
3	8	0.875	150	P80S-005ZF	R31	P75T-000JN
4	8	1.125	175	P80S-0064S	R37	P75T-000JP
6	12	1.125	200	P80S-0064X	R45	P75T-000JR
8	12	1.375	260	P80S-006HT	R49	P75T-000JS
10	16	1.375	275	P80S-006HW	R53	P75T-000JL
12	20	1.375	295	P80S-006J0	R57	
14	20	1.500	325		R62	
16	20	1.625	340		R66	
18	20	1.875	390		R70	
20	20	2.000	415		R74	
24	20	2.500	525		R78	
30	20	3.000	600		R102	

BOLT TABLE (B_B2AR01_797 , STUD ASME RJ, OPTION CODE 797)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	110	P80S-0090F	R12	P75T-000JT
0.75	4	0.750	115	P80S-0090G	R14	P75T-000JU
1	4	0.875	130	P80S-005ZB	R16	P75T-000JV
1.5	4	1.000	140	P80S-0061A	R20	P75T-000JW
2	8	0.875	150	P80S-005ZF	R24	P75T-0008A
3	8	1.125	180	P80S-0064T	R35	P75T-0008E

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BOLT TABLE (B_B2AR01_797 , STUD ASME RJ, OPTION CODE 797)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
4	8	1.250	230	P80S-0068H	R39	P75T-0008D
6	12	1.375	300	P80S-006J1	R46	P75T-0008C
8	12	1.625	345	P80S-00A5K	R50	P75T-0008B
10	12	1.875	395	P80S-00AW8	R54	P75T-0008L
12	16	2.000	445		R58	
14	16	2.250	490		R63	
16	16	2.500	540		R67	
18	16	2.750	590		R71	
20	16	3.000	650		R75	
24	16	3.500	745		R79	

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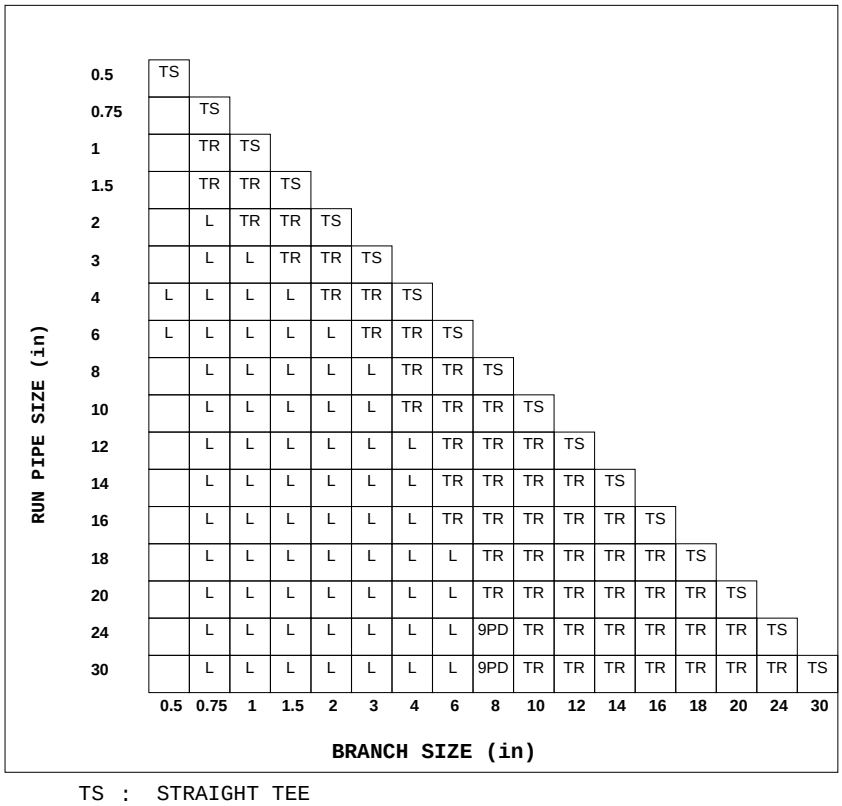
BRANCH TABLE (T_B2AR01)



TS : STRAIGHT TEE
L : OUTLET
9PD : REINFORCING PAD 90 DEG
TR : REDUCING TEE

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B2AR02 REV NO. 2

Material : Killed CS
Rating : ASME CLASS 300
Flange Face : RF
C.A.(mm) : 3.00
Gasket : Spiral Wound
Service : PROCESS - WET SEVERE SOUR SERVICE SUBJECT TO NACE + HIC STD.
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
2	USE OF SOFT SEATED BALL, PLUG AND BUTTERFLY VALVES SHALL BE LIMITED TO MAXIMUM OF 204DEGC (400DEGF)
5	BOLTING CONFIRMING TO B7M / 2HM SHALL BE USED UNDER CONDITIONS (A) DIRECT EXPOSURE TO SOUR ENVIRONMENTS (B) WHEN THE BOLTING WILL BE BURIED OR INSULATED
27	PWHT OF CARBON STEEL PIPING IN WET H2S, CAUSTIC AND AMINE SERVICES SHALL BE IN ACCORDANCE WITH SECTION 10.2, 10.3, AND 10.4 OF PROJECT SPECIFICATION 3550-8440-SP-0002 MATERIALS REQUIREMENTS FOR PRESSURISED EQUIPMENT AND PIPING. FOR CAUSTIC AND AMINE SERVICE THE FOLLOWING SHALL APPLY: - PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF ALL SITE PIPING FABRICATION WELDS IS REQUIRED FOR ALL WALL THICKNESSES. FOR MODERATE AND SEVERE WET H2S SERVICE THE FOLLOWING SHALL APPLY: PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF SITE FABRICATION CIRCUMFERENTIAL OR BRANCH WELDS IS NOT REQUIRED IF WELDS ARE MULTIPASS AND IN ACCORDANCE WITH PARA 10.2.12 OF PROJECT SPECIFICATION 3550-8440-SP-0002. FOR SERVICES MEETING THE WET H2S CRITERIA AND CAUSTIC OR AMINE CRITERIA THE MORE STRINGENT PWHT REQUIREMENT SHALL GOVERN.

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
24	FULL PORT (Q)
200	WITH JACK SCREW (FO)
541	NPT(F) (CA,F)
781	CLASS 600 (B,F,G)
797	CLASS 1500 (B,F,G)
805	CLASS 2500 (B,F,G)
4601	Y-PATTERN (W)
4608	VALVE WITH NIPPLES (V)

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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P01A-0010P	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	0.75		SCH160		P01A-0010R	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1		SCH160		P01A-0014M	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1.5		SCH160		P01A-0015J	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	2		XS		P01A-000YX	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	3		STD		P01A-000YM	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	4		STD		P01A-000YU	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	6		STD		P01A-000Z3	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	8		STD		P01A-000ZA	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	10		STD		P01A-000XJ	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	12		SCH40		P01A-0018V	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	14		SCH40		P01A-0018U	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	16		SCH20		P01A-0018E	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	18		STD		P01A-002CB	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	20		STD		P01A-002CC	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	24		XS		P01A-002MP	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P02A-001Y8	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	0.75		SCH160		P02A-000V8	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1		SCH160		P02A-000V7	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1.5		SCH160		P02A-000V9	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	2		XS		P02A-000CP	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		STD		P02A-000CU	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		STD		P02A-000CZ	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		STD		P02A-000D6	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		STD		P02A-000DC	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	10		STD		P02A-000BP	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	12		SCH40		P02A-000JE	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	14		SCH40		P02A-000JF	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	16		SCH20		P02A-000GM	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	18		STD		P02A-0010H	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	20		STD		P02A-0010J	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	24		XS		P02A-000MB	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P03A-001TC	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	0.75		SCH160		P03A-000RS	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1		SCH160		P03A-000RR	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1.5		SCH160		P03A-000RP	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	2		XS		P03A-000AS	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		STD		P03A-000AX	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		STD		P03A-000B1	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		STD		P03A-000B9	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		STD		P03A-000BB	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	10		STD		P03A-000A4	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	12		SCH40		P03A-000GC	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	14		SCH40		P03A-000GD	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	16		SCH20		P03A-000EM	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	18		STD		P03A-000X0	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	20		STD		P03A-000X1	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	24		XS		P03A-001E1	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P21A-003AW	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	0.75		SCH160		P21A-002B8	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		SCH160		P21A-002B6	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5		SCH160		P21A-002B9	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2		XS		P21A-001CJ	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		STD		P21A-001CU	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		STD		P21A-001CW	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6		STD		P21A-001D2	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8		STD		P21A-001D8	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10		STD		P21A-001BV	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12		SCH40		P21A-0022P	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14		SCH40		P21A-0022R	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16		SCH20		P21A-0020X	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18		STD		P21A-002FT	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20		STD		P21A-002FU	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24		XS		P21A-002Y5	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75	SCH160	SCH160	P24A-004B6	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.75	SCH160	SCH160	P24A-004B2	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	1	SCH160	SCH160	P24A-004BA	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	XS	SCH160	P24A-00GMB	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	XS	SCH160	P24A-005K9	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	STD	SCH160	P24A-00GMC	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	STD	XS	P24A-002HW	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P24A-002HY	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P24A-0021K	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	STD	P24A-0021A	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P24A-00229	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	STD	STD	P24A-0021E	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	STD	STD	P24A-0022M	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	STD	STD	P24A-0021B	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	STD	STD	P24A-0022B	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	STD	STD	P24A-0022W	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	SCH40	STD	P24A-00GSM	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH40	STD	P24A-00AF8	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH40	STD	P24A-00GSL	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	SCH40	STD	P24A-00GV4	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	SCH40	STD	P24A-00AFB	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	SCH40	STD	P24A-003GJ	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	SCH40	SCH40	P24A-0033E	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	6	SCH20	STD	P24A-00GU4	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	SCH20	STD	P24A-00GP8	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	SCH20	STD	P24A-00GU3	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	SCH20	SCH40	P24A-00L6A	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	SCH20	SCH40	P24A-00L4L	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	8	STD	STD	P24A-00201	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	10	STD	STD	P24A-0022C	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	12	STD	SCH40	P24A-00KCF	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	14	STD	SCH40	P24A-00KCG	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	16	STD	SCH20	P24A-00HL3	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	8	STD	STD	P24A-0020T	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	10	STD	STD	P24A-0022D	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	12	STD	SCH40	P24A-00KCH	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	14	STD	SCH40	P24A-00KCJ	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	16	STD	SCH20	P24A-00HKX	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	18	STD	STD	P24A-0020K	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24	10	XS	STD	P24A-00GR8	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24	12	XS	SCH40	P24A-00GB4	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24	14	XS	SCH40	P24A-00GB5	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	24	16	XS	SCH20	P24A-00KCK	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24	18	XS	STD	P24A-00884	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24	20	XS	STD	P24A-00885	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	SCH160	P27A-004LZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.5	SCH160	SCH160	P27A-004M8	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.75	SCH160	SCH160	P27A-002T5	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.5	SCH160	SCH160	P27A-004MV	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.75	SCH160	SCH160	P27A-002T7	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	1	SCH160	SCH160	P27A-002T4	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	0.75	XS	SCH160	P27A-001LG	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	XS	SCH160	P27A-0033P	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	XS	SCH160	P27A-0033B	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	STD	SCH160	P27A-003M9	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	STD	XS	P27A-001MZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	1.5	STD	SCH160	P27A-003MA	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P27A-001N0	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P27A-00189	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	STD	P27A-001AZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P27A-001GW	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	STD	STD	P27A-001C2	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	STD	STD	P27A-00188	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	STD	STD	P27A-001C3	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	STD	STD	P27A-0018M	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	STD	STD	P27A-0019J	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	SCH40	STD	P27A-004W1	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH40	STD	P27A-004XB	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH40	STD	P27A-004UG	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	SCH40	STD	P27A-0051B	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	SCH40	STD	P27A-003ZT	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	SCH40	STD	P27A-0029L	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	SCH40	SCH40	P27A-001ZZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	SCH20	STD	P27A-003ND	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	SCH20	STD	P27A-0054A	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	SCH20	SCH40	P27A-00CBP	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	SCH20	SCH40	P27A-00CBR	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	10	STD	STD	P27A-0037H	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	12	STD	SCH40	P27A-005DS	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	14	STD	SCH40	P27A-005FS	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	16	STD	SCH20	P27A-005HV	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	12	STD	SCH40	P27A-005LX	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	14	STD	SCH40	P27A-005P0	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	16	STD	SCH20	P27A-005S7	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	18	STD	STD	P27A-0037R	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24	16	XS	SCH20	P27A-005Y9	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24	18	XS	STD	P27A-005ZZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24	20	XS	STD	P27A-0061M	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	SCH160	P28A-007KG	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.5	SCH160	SCH160	P28A-007KH	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.75	SCH160	SCH160	P28A-002TU	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.5	SCH160	SCH160	P28A-007KJ	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.75	SCH160	SCH160	P28A-002TW	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	1	SCH160	SCH160	P28A-002TR	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	0.75	XS	SCH160	P28A-001LE	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2	1	XS	SCH160	P28A-003M1	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	XS	SCH160	P28A-003M2	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	STD	SCH160	P28A-003M3	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	STD	XS	P28A-001N5	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	1.5	STD	SCH160	P28A-003M4	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P28A-001N6	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P28A-0018B	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	STD	P28A-001AS	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P28A-00182	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	STD	STD	P28A-0017V	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	STD	STD	P28A-0018V	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	STD	STD	P28A-0017W	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	STD	STD	P28A-00190	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	STD	STD	P28A-0019J	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	SCH40	STD	P28A-008HU	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH40	STD	P28A-005T9	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH40	STD	P28A-008HT	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	SCH40	STD	P28A-008F4	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	SCH40	STD	P28A-003ZL	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	SCH40	STD	P28A-0028T	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	SCH40	SCH40	P28A-001ZG	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	SCH20	STD	P28A-003N7	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	SCH20	STD	P28A-008FM	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	SCH20	SCH40	P28A-009AX	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	SCH20	SCH40	P28A-009AY	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	10	STD	STD	P28A-00370	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	12	STD	SCH40	P28A-00C0V	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	14	STD	SCH40	P28A-00C0W	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	16	STD	SCH20	P28A-0096Y	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	12	STD	SCH40	P28A-00C0X	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	14	STD	SCH40	P28A-00C0Y	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	16	STD	SCH20	P28A-0096T	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	18	STD	STD	P28A-00377	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24	16	XS	SCH20	P28A-00C0Z	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24	18	XS	STD	P28A-0063W	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24	20	XS	STD	P28A-0063X	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P29A-0037W	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	0.75		SCH160		P29A-0037X	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	1		SCH160		P29A-001VW	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5		SCH160		P29A-001VX	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	2		XS		P29A-00381	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	3		STD		P29A-00383	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	4		STD		P29A-00384	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	6		STD		P29A-00385	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	8		STD		P29A-00386	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	10		STD		P29A-0037Y	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	12		SCH40		P29A-001VZ	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	14		SCH40		P29A-001W0	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	16		SCH20		P29A-0037Z	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	18		STD		P29A-003TU	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	20		STD		P29A-00382	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	24		XS		P29A-003BZ	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
541	0.75				P29B-0000Y	Cap ASTM A105 Class 6000 ASME B16.11 NPT	
541	1				P29B-0000Z	Cap ASTM A105 Class 6000 ASME B16.11 NPT	

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STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P41A-000B9	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		XXS		P41A-000BA	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		XXS		P41A-000D8	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		XXS		P41A-000D9	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2	0.75	XS	SCH160	P31B-00CP7	Outlet ASTM A105 MSS SP-97 BW	
1	3	0.75	STD	SCH160	P31B-00CMT	Outlet ASTM A105 MSS SP-97 BW	
1	4	0.75	STD	SCH160	P31B-00CLT	Outlet ASTM A105 MSS SP-97 BW	
1	6	0.75	STD	SCH160	P31B-00CKK	Outlet ASTM A105 MSS SP-97 BW	
1	8	0.75	STD	SCH160	P31B-00C5E	Outlet ASTM A105 MSS SP-97 BW	
1	10	0.75	STD	SCH160	P31B-00CFB	Outlet ASTM A105 MSS SP-97 BW	
1	12	0.75	SCH40	SCH160	P31B-00CS8	Outlet ASTM A105 MSS SP-97 BW	
1	14	0.75	SCH40	SCH160	P31B-00CRP	Outlet ASTM A105 MSS SP-97 BW	
1	16	0.75	SCH20	SCH160	P31B-00XS0	Outlet ASTM A105 MSS SP-97 BW	
1	18	0.75	STD	SCH160	P31B-00CPL	Outlet ASTM A105 MSS SP-97 BW	
1	20	0.75	STD	SCH160	P31B-00CNW	Outlet ASTM A105 MSS SP-97 BW	
1	24	0.75	XS	SCH160	P31B-007N3	Outlet ASTM A105 MSS SP-97 BW	
1	3	1	STD	SCH160	P31B-00B4J	Outlet ASTM A105 MSS SP-97 BW	
1	4	1	STD	SCH160	P31B-00B3M	Outlet ASTM A105 MSS SP-97 BW	
1	6	1	STD	SCH160	P31B-00AZC	Outlet ASTM A105 MSS SP-97 BW	
1	8	1	STD	SCH160	P31B-00AVF	Outlet ASTM A105 MSS SP-97 BW	
1	10	1	STD	SCH160	P31B-00C06	Outlet ASTM A105 MSS SP-97 BW	
1	12	1	SCH40	SCH160	P31B-00BWL	Outlet ASTM A105 MSS SP-97 BW	
1	14	1	SCH40	SCH160	P31B-00BRP	Outlet ASTM A105 MSS SP-97 BW	
1	16	1	SCH20	SCH160	P31B-00X8Z	Outlet ASTM A105 MSS SP-97 BW	
1	18	1	STD	SCH160	P31B-00BC9	Outlet ASTM A105 MSS SP-97 BW	
1	20	1	STD	SCH160	P31B-00B8M	Outlet ASTM A105 MSS SP-97 BW	
1	24	1	XS	SCH160	P31B-007MU	Outlet ASTM A105 MSS SP-97 BW	
1	4	1.5	STD	SCH160	P31B-00BP4	Outlet ASTM A105 MSS SP-97 BW	
1	6	1.5	STD	SCH160	P31B-00BJH	Outlet ASTM A105 MSS SP-97 BW	
1	8	1.5	STD	SCH160	P31B-00BHJ	Outlet ASTM A105 MSS SP-97 BW	
1	10	1.5	STD	SCH160	P31B-00AUM	Outlet ASTM A105 MSS SP-97 BW	
1	12	1.5	SCH40	SCH160	P31B-00CEH	Outlet ASTM A105 MSS SP-97 BW	
1	14	1.5	SCH40	SCH160	P31B-00CDR	Outlet ASTM A105 MSS SP-97 BW	
1	16	1.5	SCH20	SCH160	P31B-00C9B	Outlet ASTM A105 MSS SP-97 BW	
1	18	1.5	STD	SCH160	P31B-00C4R	Outlet ASTM A105 MSS SP-97 BW	
1	20	1.5	STD	SCH160	P31B-00C3Y	Outlet ASTM A105 MSS SP-97 BW	
1	24	1.5	XS	SCH160	P31B-007MM	Outlet ASTM A105 MSS SP-97 BW	
1	6	2	STD	XS	P31B-007SH	Outlet ASTM A105 MSS SP-97 BW	
1	8	2	STD	XS	P31B-00AGX	Outlet ASTM A105 MSS SP-97 BW	
1	10	2	STD	XS	P31B-00ASA	Outlet ASTM A105 MSS SP-97 BW	
1	12	2	SCH40	XS	P31B-00CBS	Outlet ASTM A105 MSS SP-97 BW	
1	14	2	SCH40	XS	P31B-00CAH	Outlet ASTM A105 MSS SP-97 BW	
1	16	2	SCH20	XS	P31B-00TF8	Outlet ASTM A105 MSS SP-97 BW	
1	18	2	STD	XS	P31B-009FJ	Outlet ASTM A105 MSS SP-97 BW	
1	20	2	STD	XS	P31B-00994	Outlet ASTM A105 MSS SP-97 BW	
1	24	2	XS	XS	P31B-0092Y	Outlet ASTM A105 MSS SP-97 BW	
1	8	3	STD	STD	P31B-00A2T	Outlet ASTM A105 MSS SP-97 BW	
1	10	3	STD	STD	P31B-009CM	Outlet ASTM A105 MSS SP-97 BW	
1	12	3	SCH40	STD	P31B-0096S	Outlet ASTM A105 MSS SP-97 BW	
1	14	3	SCH40	STD	P31B-0090U	Outlet ASTM A105 MSS SP-97 BW	
1	16	3	SCH20	STD	P31B-00TU2	Outlet ASTM A105 MSS SP-97 BW	
1	18	3	STD	STD	P31B-008MK	Outlet ASTM A105 MSS SP-97 BW	
1	20	3	STD	STD	P31B-008FA	Outlet ASTM A105 MSS SP-97 BW	
1	24	3	XS	STD	P31B-00894	Outlet ASTM A105 MSS SP-97 BW	
1	12	4	SCH40	STD	P31B-008ZY	Outlet ASTM A105 MSS SP-97 BW	
1	14	4	SCH40	STD	P31B-008YN	Outlet ASTM A105 MSS SP-97 BW	

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OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	16	4	SCH20	STD	P31B-00TU3	Outlet ASTM A105 MSS SP-97 BW	
1	18	4	STD	STD	P31B-008KB	Outlet ASTM A105 MSS SP-97 BW	
1	20	4	STD	STD	P31B-008D3	Outlet ASTM A105 MSS SP-97 BW	
1	24	4	XS	STD	P31B-0086W	Outlet ASTM A105 MSS SP-97 BW	
1	18	6	STD	STD	P31B-008RX	Outlet ASTM A105 MSS SP-97 BW	
1	20	6	STD	STD	P31B-008PZ	Outlet ASTM A105 MSS SP-97 BW	
1	24	6	XS	STD	P31B-008JC	Outlet ASTM A105 MSS SP-97 BW	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30B-0002D	Plug ASTM A105 ASME B16.11 NPT Round head	
1	0.75				P30B-0002E	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1				P30B-0002F	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1.5				P30B-0002G	Plug ASTM A105 ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P61B-003P9	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	0.75		SCH160		P61B-0037M	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	1		SCH160		P61B-0037L	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	1.5		SCH160		P61B-0037J	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	2		XS		P61B-001HW	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	3		STD		P61B-001LJ	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	4		STD		P61B-001MC	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	6		STD		P61B-001N2	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	8		STD		P61B-001NL	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	10		STD		P61B-001L6	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	12		SCH40		P61B-002FJ	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	14		SCH40		P61B-002FL	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	16		SCH20		P61B-002MS	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	18		STD		P61B-001N9	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	20		STD		P61B-001NT	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	24		XS		P61B-002RA	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
541	0.5				P61B-003U3	Flange NPT ASTM A105 Class 300 ASME B16.5 RF	
541	0.75				P61B-003U4	Flange NPT ASTM A105 Class 300 ASME B16.5 RF	
781	0.5		SCH160		P61B-004UV	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	0.75		SCH160		P61B-003T2	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	1		SCH160		P61B-003T3	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	1.5		SCH160		P61B-003T4	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	2		XS		P61B-001DH	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	3		STD		P61B-001TW	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	4		STD		P61B-001VV	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	6		STD		P61B-001JW	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	8		STD		P61B-001KK	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	10		STD		P61B-001JJ	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	12		SCH40		P61B-003T5	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	14		SCH40		P61B-003T6	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	16		SCH20		P61B-00798	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	18		STD		P61B-003FA	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	20		STD		P61B-003GP	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	24		XS		P61B-003T9	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
797	1.5		SCH160		P61B-0065W	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
797	2		XS		P61B-0065C	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
805	4		STD		P61B-0073P	Flange WN ASTM A105 Class 2500 ASME B16.5 RJ	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67B-000GH	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	0.75				P67B-000GJ	Blind flange ASTM A105 Class 300 ASME B16.5 RF	

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BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P67B-000GK	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	1.5				P67B-000GL	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	2				P67B-000GM	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	3				P67B-000GN	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	4				P67B-000GP	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	6				P67B-000GY	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	8				P67B-000GZ	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	10				P67B-000GR	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	12				P67B-000GS	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	14				P67B-000GT	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	16				P67B-000GU	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	18				P67B-000GV	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	20				P67B-000GW	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	24				P67B-000GX	Blind flange ASTM A105 Class 300 ASME B16.5 RF	

REDUCING FLANGE (FR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2	0.75		SCH160	P62B-000NG	Reducing flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	2	1		SCH160	P62B-0007D	Reducing flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	2	1.5		SCH160	P62B-000MG	Reducing flange WN ASTM A105 Class 300 ASME B16.5 RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000FT	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000FU	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000G5	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000G6	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	6				P73T-000G7	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	8				P73T-000G8	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	10				P73T-000FX	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	12				P73T-000FY	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	14				P73T-000FZ	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	16				P73T-000G0	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	18				P73T-000G1	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	20				P73T-000G3	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	24				P73T-000G4	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	0.5				P73T-000J8	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	0.75				P73T-000J9	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1				P73T-000JA	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1.5				P73T-000JB	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	2				P73T-000JH	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	3				P73T-000JL	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	4				P73T-000JM	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	6				P73T-000JN	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	8				P73T-000JP	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	10				P73T-000JC	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	12				P73T-000JD	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

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GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
781	14				P73T-000JE	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	16				P73T-000JF	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	18				P73T-000JG	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	20				P73T-000JJ	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	24				P73T-000JK	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
797	1.5				P75T-000JW	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	2				P75T-0008A	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	4				P75T-000ME	Ring joint gasket Soft iron Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-10				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	12-24				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
781	0.5-6				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
781	8-24				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
797	0.5-2				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
805	4				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81B-001TP	Gate valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	0.75				P81B-001TR	Gate valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	1				P81B-001TS	Gate valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	1.5				P81B-001TT	Gate valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	2				P81C-005ZZ	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	3				P81C-00600	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	4				P81C-00601	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	6				P81C-00602	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	8				P81C-0091F	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Gear operated Severe wet H2S service	
1	10				P81C-00604	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Gear operated Severe wet H2S service	
1	12				P81C-00605	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Gear operated Severe wet H2S service	
1	14				P81C-00606	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Gear operated Severe wet H2S service	
1	16				P81C-00607	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Gear operated Severe wet H2S service	
1	18				P81C-00608	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Gear operated Severe wet H2S service	
1	20				P81C-00609	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Gear operated Severe wet H2S service	
1	24				P81C-0060A	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Gear operated Severe wet H2S service	
4608	0.75				P81B-002WY	Gate valve ASTM A105 Class 300 API 602 BW both sides w/ nipples BE - NPT ASTM A106-B XXS-nipple Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
4608	1				P81B-00396	Gate valve ASTM A105 Class 300 API 602 BW both sides w/ nipples BE - NPT ASTM A106-B XXS-nipple Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Severe wet H2S service	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82B-001F5	Globe valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	0.75				P82B-001F6	Globe valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	1				P82B-001F7	Globe valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	1.5				P82B-001F8	Globe valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	2				P82C-002YP	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Severe wet H2S service	

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GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3				P82C-002YR	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	4				P82C-002YS	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	6				P82C-002YT	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	8				P82C-004CN	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Gear operated Severe wet H2S service	
4601	0.75				P82B-001A8	Y-pattern globe valve ASTM A105 Class 300 ASME B16.34 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
4601	1				P82B-001A9	Y-pattern globe valve ASTM A105 Class 300 ASME B16.34 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
4601	1.5				P82B-001AA	Y-pattern globe valve ASTM A105 Class 300 ASME B16.34 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
4601	2				P82C-002LY	Y-pattern globe valve ASTM A216 Grade WCB Class 300 ASME B16.34 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
4601	3				P82C-002LZ	Y-pattern globe valve ASTM A216 Grade WCB Class 300 ASME B16.34 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
4601	4				P82C-002M0	Y-pattern globe valve ASTM A216 Grade WCB Class 300 ASME B16.34 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
4601	6				P82C-002M1	Y-pattern globe valve ASTM A216 Grade WCB Class 300 ASME B16.34 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
4601	16				P82C-002ML	Y-pattern globe valve ASTM A216 Grade WCB Class 300 ASME B16.34 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Gear operated Severe wet H2S service	
4601	18				P82C-002MM	Y-pattern globe valve ASTM A216 Grade WCB Class 300 ASME B16.34 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Gear operated Severe wet H2S service	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83B-0014R	Check valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 Lift-type Bolted cover Severe wet H2S service	
1	0.75				P83B-0014S	Check valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 Lift-type Bolted cover Severe wet H2S service	
1	1				P83B-0014T	Check valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 Lift-type Bolted cover Severe wet H2S service	
1	1.5				P83B-0014U	Check valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 Lift-type Bolted cover Severe wet H2S service	
1	2				P83C-002XK	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 Swing-type Bolted cover Severe wet H2S service	
1	3				P83C-002XN	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 Swing-type Bolted cover Severe wet H2S service	
1	4				P83C-002XP	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 Swing-type Bolted cover Severe wet H2S service	
1	6				P83C-002XR	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 Swing-type Bolted cover Severe wet H2S service	
1	8				P83C-002XS	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 Swing-type Bolted cover Severe wet H2S service	
1	10				P83C-002XE	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 Swing-type Bolted cover Severe wet H2S service	
1	12				P83C-002XF	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 Swing-type Bolted cover Severe wet H2S service	
1	14				P83C-002XG	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 Swing-type Bolted cover Severe wet H2S service	
1	16				P83C-002XH	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 Swing-type Bolted cover Severe wet H2S service	
1	18				P83C-002XJ	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 Swing-type Bolted cover Severe wet H2S service	
1	20				P83C-002XL	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 Swing-type Bolted cover Severe wet H2S service	
1	24				P83C-002XM	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 Swing-type Bolted cover Severe wet H2S service	

BALL VALVE (Q)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2				P84C-006VP	Ball valve Long-pattern ASTM A216 Grade WCB Class 300 API 608 Flange ASME B16.5 RF Ball SS316L Seat R-PTFE Trim SS316L Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design Severe wet H2S service	
1	3				P84C-006VR	Ball valve Long-pattern ASTM A216 Grade WCB Class 300 API 608 Flange ASME B16.5 RF Ball SS316L Seat R-PTFE Trim SS316L Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design Severe wet H2S service	
1	4				P84C-006VS	Ball valve Long-pattern ASTM A216 Grade WCB Class 300 API 608 Flange ASME B16.5 RF Ball SS316L Seat R-PTFE Trim SS316L Floating-type Side-entry Gear operated Reduced bore Fire tested design Severe wet H2S service	
24	2				P84C-006VT	Ball valve Long-pattern ASTM A216 Grade WCB Class 300 API 608 Flange ASME B16.5 RF Ball SS316L Seat R-PTFE Trim SS316L Floating-type Side-entry Wrench lever operated Full bore Fire tested design Severe wet H2S service	
24	3				P84C-006VU	Ball valve Long-pattern ASTM A216 Grade WCB Class 300 API 608 Flange ASME B16.5 RF Ball SS316L Seat R-PTFE Trim SS316L Floating-type Side-entry Wrench lever operated Full bore Fire tested design Severe wet H2S service	
24	4				P84C-006VV	Ball valve Long-pattern ASTM A216 Grade WCB Class 300 API 608 Flange ASME B16.5 RF Ball SS316L Seat R-PTFE Trim SS316L Floating-type Side-entry Gear operated Full bore Fire tested design Severe wet H2S service	

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BUTTERFLY VALVE (H)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	10				P86C-00253	Offset design butterfly valve ASTM A216 Grade WCB Class 300 API 609 Category B Lug-type ASME B16.5 RF Disc CS Seat Stellite-6 Trim SS316L Triple eccentric design BG Gear operated Severe wet H2S service	
1	12				P86C-00259	Offset design butterfly valve ASTM A216 Grade WCB Class 300 API 609 Category B Lug-type ASME B16.5 RF Disc CS Seat Stellite-6 Trim SS316L Triple eccentric design BG Gear operated Severe wet H2S service	
1	14				P86C-0025A	Offset design butterfly valve ASTM A216 Grade WCB Class 300 API 609 Category B Lug-type ASME B16.5 RF Disc CS Seat Stellite-6 Trim SS316L Triple eccentric design BG Gear operated Severe wet H2S service	
1	16				P86C-0025B	Offset design butterfly valve ASTM A216 Grade WCB Class 300 API 609 Category B Lug-type ASME B16.5 RF Disc CS Seat Stellite-6 Trim SS316L Triple eccentric design BG Gear operated Severe wet H2S service	
1	18				P86C-0025C	Offset design butterfly valve ASTM A216 Grade WCB Class 300 API 609 Category B Lug-type ASME B16.5 RF Disc CS Seat Stellite-6 Trim SS316L Triple eccentric design BG Gear operated Severe wet H2S service	

NEEDLE VALVE (NV)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82B-001JZ	Needle valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	0.75				P82B-001K0	Needle valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	1				P82B-001K1	Needle valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	1.5				P82B-001K2	Needle valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Severe wet H2S service	

ORIFICE FLANGE (FO)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2		XS		P66B-0084B	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	3		STD		P66B-0084C	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	4		STD		P66B-0084D	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	6		STD		P66B-0084E	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
200	2		XS		P66B-00843	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	3		STD		P66B-00844	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	4		STD		P66B-00845	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	6		STD		P66B-00846	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71B-000B1	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	0.75				P71B-000B2	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	1				P71B-000B3	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71B-000B4	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	2				P71B-000B6	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	3				P71B-000B7	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	4				P71B-000B8	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	6				P71B-000B9	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	8				P71B-000BA	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	10				P71B-000B5	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	12				P71B-000BB	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	

PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000FA	Paddle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	16				P72B-000FB	Paddle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	18				P72B-000FC	Paddle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	20				P72B-000FD	Paddle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	24				P72B-000FE	Paddle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	

PADDLE SPACER (PS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000FG	Paddle spacer ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	16				P72B-000FH	Paddle spacer ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	18				P72B-000FJ	Paddle spacer ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	20				P72B-000FK	Paddle spacer ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	24				P72B-000FL	Paddle spacer ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	

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BOLT TABLE (B_B2AR02 , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-008T0		
0.75	4	0.625	75	P80S-00908		
1	4	0.625	80	P80S-00909		
1.5	4	0.750	95	P80S-005Z4		
2	8	0.625	90	P80S-0090B		
3	8	0.750	110	P80S-0090F		
4	8	0.750	115	P80S-0090G		
6	12	0.750	125	P80S-0090J		
8	12	0.875	140	P80S-005ZD		
10	16	1.000	160	P80S-0061E		
12	16	1.125	175	P80S-0064S		
14	20	1.125	180	P80S-0064T		
16	20	1.250	190	P80S-00689		
18	24	1.250	200	P80S-0068B		
20	24	1.250	210	P80S-0068D		
24	24	1.500	235	P80S-006LB		

BOLT TABLE (B_B2AR02_781 , STUD ASME RF, OPTION CODE 781)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	80	P80S-008T2		
0.75	4	0.625	90	P80S-0090B		
1	4	0.625	95	P80S-0090C		
1.5	4	0.750	110	P80S-0090F		
2	8	0.625	110	P80S-008T8		
3	8	0.750	130	P80S-0090K		
4	8	0.875	150	P80S-005ZF		
6	12	1.000	175	P80S-0061H		
8	12	1.125	195	P80S-0064W		
10	16	1.250	250	P80S-0068M		
12	20	1.250	255	P80S-0068N		
14	20	1.375	270	P80S-006HV		
16	20	1.500	295	P80S-006LP		
18	20	1.625	320	P80S-00A5E		
20	24	1.625	335	P80S-00A5H		
24	24	1.875	380	P80S-00AW5		

BOLT TABLE (B_B2AR02_797 , STUD ASME RJ, OPTION CODE 797)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	110	P80S-0090F	R12	
0.75	4	0.750	115	P80S-0090G	R14	
1	4	0.875	130	P80S-005ZB	R16	
1.5	4	1.000	140	P80S-0061A	R20	P75T-000JW
2	8	0.875	150	P80S-005ZF	R24	P75T-0008A
3	8	1.125	180		R35	
4	8	1.250	230		R39	
6	12	1.375	300		R46	
8	12	1.625	345		R50	
10	12	1.875	395		R54	
12	16	2.000	445		R58	
14	16	2.250	490		R63	
16	16	2.500	540		R67	
18	16	2.750	590		R71	
20	16	3.000	650		R75	
24	16	3.500	745		R79	

BOLT TABLE (B_B2AR02_805 , STUD ASME RJ, OPTION CODE 805)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	125		R13	
0.75	4	0.750	130		R16	
1	4	0.875	140		R18	
1.5	4	1.125	175		R23	
2	8	1.000	180		R26	
3	8	1.250	260		R32	
4	8	1.500	305	P80S-006LS	R38	P75T-000ME
6	8	2.000	410		R47	
8	12	2.000	450		R51	

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PIPING CLASS
B2AR02 **REV NO. 2**

BOLT TABLE (B_B2AR02_805 , STUD ASME RJ, OPTION CODE 805)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
10	12	2.500	575		R55	
12	12	2.750	635		R60	
14	14	3.000	695		R64	
16	14	3.000	755		R68	
18	16	3.000	815		R72	
20	16	3.000	875		R76	
24	18	3.000	950		R81	

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PIPING CLASS

B2AR02 REV NO. 2

BRANCH TABLE (T_B2AR02)

RUN PIPE SIZE (in) \ BRANCH SIZE (in)	0.5	0.75	1	1.5	2	3	4	6	8	10	12	14	16	18	20	24
0.5	TS															
0.75		TS														
1		TR	TS													
1.5		TR	TR	TS												
2		L	TR	TR	TS											
3		L	L	TR	TR	TS										
4	L	L	L	L	TR	TR	TS									
6	L	L	L	L	L	TR	TR	TS								
8		L	L	L	L	L	TR	TR	TS							
10		L	L	L	L	L	TR	TR	TR	TS						
12		L	L	L	L	L	L	TR	TR	TR	TS					
14		L	L	L	L	L	L	TR	TR	TR	TR	TS				
16		L	L	L	L	L	L	TR	TR	TR	TR	TR	TS			
18		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TS		
20		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TR	TS	
24		L	L	L	L	L	L	L	9PD	TR	TR	TR	TR	TR	TR	TS

L : OUTLET
TS : STRAIGHT TEE
TR : REDUCING TEE
9PD : REINFORCING PAD 90 DEG

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PIPING CLASS

B2AR03 REV NO. 2

Material : Killed CS
Rating : ASME CLASS 300
Flange Face : RF
C.A.(mm) : 3.00
Gasket : Spiral Wound
Service : PROCESS - WET SEVERE SOUR SERVICE SUBJECT TO NACE + HIC STD.
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
2	USE OF SOFT SEATED BALL, PLUG AND BUTTERFLY VALVES SHALL BE LIMITED TO MAXIMUM OF 204DEGC (400DEGF)
5	BOLTING CONFIRMING TO B7M / 2HM SHALL BE USED UNDER CONDITIONS (A) DIRECT EXPOSURE TO SOUR ENVIRONMENTS (B) WHEN THE BOLTING WILL BE BURIED OR INSULATED
27	PWHT OF CARBON STEEL PIPING IN WET H2S, CAUSTIC AND AMINE SERVICES SHALL BE IN ACCORDANCE WITH SECTION 10.2, 10.3, AND 10.4 OF PROJECT SPECIFICATION 3550-8440-SP-0002 MATERIALS REQUIREMENTS FOR PRESSURISED EQUIPMENT AND PIPING. FOR CAUSTIC AND AMINE SERVICE THE FOLLOWING SHALL APPLY: - PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF ALL SITE PIPING FABRICATION WELDS IS REQUIRED FOR ALL WALL THICKNESSES. FOR MODERATE AND SEVERE WET H2S SERVICE THE FOLLOWING SHALL APPLY: PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF SITE FABRICATION CIRCUMFERENTIAL OR BRANCH WELDS IS NOT REQUIRED IF WELDS ARE MULTIPASS AND IN ACCORDANCE WITH PARA 10.2.12 OF PROJECT SPECIFICATION 3550-8440-SP-0002. FOR SERVICES MEETING THE WET H2S CRITERIA AND CAUSTIC OR AMINE CRITERIA THE MORE STRINGENT PWHT REQUIREMENT SHALL GOVERN.

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
541	NPT(F) (CA,F)
781	CLASS 600 (B,F,G)
4608	VALVE WITH NIPPLES (V)

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PIPING CLASS
B2AR03 REV NO. 2

PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P01A-007DV	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE Severe wet H2S service Licensor-3	
1	0.75		SCH160		P01A-007DW	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE Severe wet H2S service Licensor-3	
1	1		SCH160		P01A-007DX	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE Severe wet H2S service Licensor-3	
1	1.5		SCH160		P01A-007DY	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE Severe wet H2S service Licensor-3	
1	2		XS		P01A-007E4	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Severe wet H2S service Licensor-3	
1	3		STD		P01A-007E7	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Severe wet H2S service Licensor-3	
1	4		STD		P01A-007E8	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Severe wet H2S service Licensor-3	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P02A-003VX	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-3	
1	0.75		SCH160		P02A-003VY	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-3	
1	1		SCH160		P02A-003VZ	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-3	
1	1.5		SCH160		P02A-003W0	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-3	
1	2		XS		P02A-003W6	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-3	
1	3		STD		P02A-003W9	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-3	
1	4		STD		P02A-003WA	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-3	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P03A-003TK	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-3	
1	0.75		SCH160		P03A-003TL	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-3	
1	1		SCH160		P03A-003TM	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-3	
1	1.5		SCH160		P03A-003TN	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-3	
1	2		XS		P03A-003TV	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-3	
1	3		STD		P03A-003TY	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-3	
1	4		STD		P03A-003TZ	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-3	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P21A-004DC	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	0.75		SCH160		P21A-004DD	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	1		SCH160		P21A-004DE	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	1.5		SCH160		P21A-004DF	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	2		XS		P21A-004DM	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	3		STD		P21A-004DR	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	4		STD		P21A-004DS	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75	SCH160	SCH160	P24A-00KH2	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	1.5	0.75	SCH160	SCH160	P24A-00KH3	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	1.5	1	SCH160	SCH160	P24A-00KH4	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	2	1	XS	SCH160	P24A-00KH5	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	2	1.5	XS	SCH160	P24A-00KH6	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	3	1.5	STD	SCH160	P24A-00KH7	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	3	2	STD	XS	P24A-00KH8	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	4	2	STD	XS	P24A-00KH9	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	4	3	STD	STD	P24A-00KHA	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	SCH160	P27A-00F07	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	

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CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.5	SCH160	SCH160	P27A-00F08	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	1	0.75	SCH160	SCH160	P27A-00F09	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	1.5	0.5	SCH160	SCH160	P27A-00F0A	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	1.5	0.75	SCH160	SCH160	P27A-00F0B	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	1.5	1	SCH160	SCH160	P27A-00F0C	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	2	0.75	XS	SCH160	P27A-00F0D	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	2	1	XS	SCH160	P27A-00F0E	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	2	1.5	XS	SCH160	P27A-00F0F	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	3	1.5	STD	SCH160	P27A-00F0G	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	3	2	STD	XS	P27A-00F0H	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	4	1.5	STD	SCH160	P27A-00F0J	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	4	2	STD	XS	P27A-00F0K	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	4	3	STD	STD	P27A-00F0L	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	SCH160	P28A-00C48	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	1	0.5	SCH160	SCH160	P28A-00C49	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	1	0.75	SCH160	SCH160	P28A-00C4A	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	1.5	0.5	SCH160	SCH160	P28A-00C4B	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	1.5	0.75	SCH160	SCH160	P28A-00C4C	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	1.5	1	SCH160	SCH160	P28A-00C4D	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	2	0.75	XS	SCH160	P28A-00C4E	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	2	1	XS	SCH160	P28A-00C4F	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	2	1.5	XS	SCH160	P28A-00C4G	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	3	1.5	STD	SCH160	P28A-00C4H	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	3	2	STD	XS	P28A-00C4J	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	4	1.5	STD	SCH160	P28A-00C4K	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	4	2	STD	XS	P28A-00C4L	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	4	3	STD	STD	P28A-00C4M	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P29A-00387	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	0.75		SCH160		P29A-00388	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	1		SCH160		P29A-00389	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	1.5		SCH160		P29A-0038A	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	2		XS		P29A-0038G	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	3		STD		P29A-0038K	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
1	4		STD		P29A-0038N	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-3	
541	0.75				P29B-0000Y	Cap ASTM A105 Class 6000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P41A-0019D	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Severe wet H2S service Licensor-3	
1	0.75		XXS		P41A-0019E	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Severe wet H2S service Licensor-3	
1	1		XXS		P41A-00194	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Severe wet H2S service Licensor-3	
1	1.5		XXS		P41A-00195	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Severe wet H2S service Licensor-3	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2	0.75	XS	SCH160	P31B-00CP7	Outlet ASTM A105 MSS SP-97 BW	
1	3	0.75	STD	SCH160	P31B-00CMT	Outlet ASTM A105 MSS SP-97 BW	
1	4	0.75	STD	SCH160	P31B-00CLT	Outlet ASTM A105 MSS SP-97 BW	
1	3	1	STD	SCH160	P31B-00B4J	Outlet ASTM A105 MSS SP-97 BW	
1	4	1	STD	SCH160	P31B-00B3M	Outlet ASTM A105 MSS SP-97 BW	
1	4	1.5	STD	SCH160	P31B-00BP4	Outlet ASTM A105 MSS SP-97 BW	

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PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30B-0002D	Plug ASTM A105 ASME B16.11 NPT Round head	
1	0.75				P30B-0002E	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1				P30B-0002F	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1.5				P30B-0002G	Plug ASTM A105 ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P61B-003P9	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	0.75		SCH160		P61B-0037M	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	1		SCH160		P61B-0037L	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	1.5		SCH160		P61B-0037J	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	2		XS		P61B-001HW	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	3		STD		P61B-001LJ	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	4		STD		P61B-001MC	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
541	0.5				P61B-003U3	Flange NPT ASTM A105 Class 300 ASME B16.5 RF	
541	0.75				P61B-003U4	Flange NPT ASTM A105 Class 300 ASME B16.5 RF	
781	0.5		SCH160		P61B-004UV	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	0.75		SCH160		P61B-003T2	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	1		SCH160		P61B-003T3	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	1.5		SCH160		P61B-003T4	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	2		XS		P61B-001DH	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	3		STD		P61B-001TW	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	4		STD		P61B-001VV	Flange WN ASTM A105 Class 600 ASME B16.5 RF	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67B-000GH	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	0.75				P67B-000GJ	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	1				P67B-000GK	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	1.5				P67B-000GL	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	2				P67B-000GM	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	3				P67B-000GN	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	4				P67B-000GP	Blind flange ASTM A105 Class 300 ASME B16.5 RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000FT	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000FU	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000G5	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000G6	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	0.5				P73T-000J8	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	0.75				P73T-000J9	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1				P73T-000JA	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1.5				P73T-000JB	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	2				P73T-000JH	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	3				P73T-000JL	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	4				P73T-000JM	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

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BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-4				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
781	0.5-4				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81B-001F6	Gate valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	0.75				P81B-001F7	Gate valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	1				P81B-001F8	Gate valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	1.5				P81B-001F9	Gate valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	2				P81C-004XV	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	3				P81C-004XW	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	4				P81C-004XX	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
4608	0.75				P81B-002WZ	Gate valve ASTM A105 Class 300 API 602 BW both sides w/ nipples BE - NPT ASTM A106-B XXS-nipple Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Licensor-3	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82B-0016Y	Globe valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	0.75				P82B-0016Z	Globe valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	1				P82B-00170	Globe valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	1.5				P82B-00171	Globe valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	2				P82C-002D8	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	3				P82C-002D9	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	4				P82C-002DA	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83B-000YN	Check valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Severe wet H2S service	
1	0.75				P83B-000YP	Check valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Severe wet H2S service	
1	1				P83B-000YR	Check valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Severe wet H2S service	
1	1.5				P83B-000YS	Check valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Severe wet H2S service	
1	2				P83C-002CH	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service	
1	3				P83C-002CK	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service	
1	4				P83C-002CL	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71B-000B1	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	0.75				P71B-000B2	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	1				P71B-000B3	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71B-000B4	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	2				P71B-000B6	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	3				P71B-000B7	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	4				P71B-000B8	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	

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BOLT TABLE (B_B2AR03 , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-008T0		
0.75	4	0.625	75	P80S-00908		
1	4	0.625	80	P80S-00909		
1.5	4	0.750	95	P80S-005Z4		
2	8	0.625	90	P80S-0090B		
3	8	0.750	110	P80S-0090F		
4	8	0.750	115	P80S-0090G		

BOLT TABLE (B_B2AR03_781 , STUD ASME RF, OPTION CODE 781)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	80	P80S-008T2		
0.75	4	0.625	90	P80S-0090B		
1	4	0.625	95	P80S-0090C		
1.5	4	0.750	110	P80S-0090F		
2	8	0.625	110	P80S-008T8		
3	8	0.750	130	P80S-0090K		
4	8	0.875	150	P80S-005ZF		

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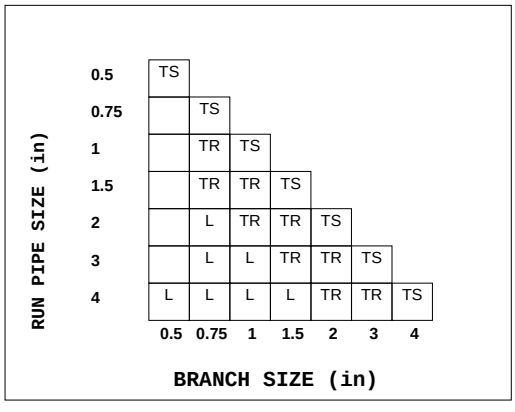
BRANCH TABLE (T_B2AR03)



TS : STRAIGHT TEE
TR : REDUCING TEE
L : OUTLET

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Material : Killed CS
Rating : ASME CLASS 300
Flange Face : RF
C.A.(mm) : 3.00
Gasket : Spiral Wound
Service : PROCESS - WET SEVERE SOUR SERVICE SUBJECT TO NACE + HIC STD.
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
2	USE OF SOFT SEATED BALL, PLUG AND BUTTERFLY VALVES SHALL BE LIMITED TO MAXIMUM OF 204DEGC (400DEGF)
5	BOLTING CONFIRMING TO B7M / 2HM SHALL BE USED UNDER CONDITIONS (A) DIRECT EXPOSURE TO SOUR ENVIRONMENTS (B) WHEN THE BOLTING WILL BE BURIED OR INSULATED
27	PWHT OF CARBON STEEL PIPING IN WET H2S, CAUSTIC AND AMINE SERVICES SHALL BE IN ACCORDANCE WITH SECTION 10.2, 10.3, AND 10.4 OF PROJECT SPECIFICATION 3550-8440-SP-0002 MATERIALS REQUIREMENTS FOR PRESSURISED EQUIPMENT AND PIPING. FOR CAUSTIC AND AMINE SERVICE THE FOLLOWING SHALL APPLY: - PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF ALL SITE PIPING FABRICATION WELDS IS REQUIRED FOR ALL WALL THICKNESSES. FOR MODERATE AND SEVERE WET H2S SERVICE THE FOLLOWING SHALL APPLY: PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF SITE FABRICATION CIRCUMFERENTIAL OR BRANCH WELDS IS NOT REQUIRED IF WELDS ARE MULTIPASS AND IN ACCORDANCE WITH PARA 10.2.12 OF PROJECT SPECIFICATION 3550-8440-SP-0002. FOR SERVICES MEETING THE WET H2S CRITERIA AND CAUSTIC OR AMINE CRITERIA THE MORE STRINGENT PWHT REQUIREMENT SHALL GOVERN.

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
541	NPT(F) (CA,F)
781	CLASS 600 (B,F,G)
4608	VALVE WITH NIPPLES (V)

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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P01A-00143	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	0.75		SCH160		P01A-0010R	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1		SCH160		P01A-0014M	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1.5		SCH160		P01A-0015J	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	2		XS		P01A-000YX	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	3		XS		P01A-000Z4	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	4		STD		P01A-000YU	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	6		STD		P01A-000Z3	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	8		STD		P01A-000ZA	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	10		STD		P01A-000XJ	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	12		SCH40		P01A-0018V	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	14		SCH40		P01A-0018U	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P02A-00172	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	0.75		SCH160		P02A-000V8	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1		SCH160		P02A-000V7	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1.5		SCH160		P02A-000V9	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	2		XS		P02A-000CP	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		XS		P02A-000CX	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		STD		P02A-000CZ	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		STD		P02A-000D6	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		STD		P02A-000DC	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	10		STD		P02A-000BP	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	12		SCH40		P02A-000JE	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	14		SCH40		P02A-000JF	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P03A-0012Y	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	0.75		SCH160		P03A-000RS	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1		SCH160		P03A-000RR	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1.5		SCH160		P03A-000RP	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	2		XS		P03A-000AS	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		XS		P03A-000AZ	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		STD		P03A-000B1	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		STD		P03A-000B9	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		STD		P03A-000BB	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	10		STD		P03A-000A4	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	12		SCH40		P03A-000GC	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	14		SCH40		P03A-000GD	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P21A-002M0	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	0.75		SCH160		P21A-002B8	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1		SCH160		P21A-002B6	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5		SCH160		P21A-002B9	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2		XS		P21A-001CJ	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		XS		P21A-001CR	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		STD		P21A-001CW	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6		STD		P21A-001D2	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8		STD		P21A-001D8	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10		STD		P21A-001BV	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12		SCH40		P21A-0022P	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14		SCH40		P21A-0022R	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75	SCH160	SCH160	P24A-004B6	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.75	SCH160	SCH160	P24A-004B2	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	1	SCH160	SCH160	P24A-004BA	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	XS	SCH160	P24A-00GMB	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	XS	SCH160	P24A-005K9	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	XS	SCH160	P24A-00GNV	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	XS	XS	P24A-0023S	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P24A-002HY	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	XS	P24A-00GNW	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	XS	P24A-00GTR	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P24A-00229	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	STD	STD	P24A-0021E	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	STD	STD	P24A-0022M	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	STD	STD	P24A-0021B	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	STD	STD	P24A-0022B	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	STD	STD	P24A-0022W	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	SCH40	STD	P24A-00GSM	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH40	STD	P24A-00AF8	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH40	STD	P24A-00GSL	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	SCH40	STD	P24A-00GV4	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	SCH40	STD	P24A-00AFB	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	SCH40	STD	P24A-003GJ	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	SCH40	SCH40	P24A-0033E	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	XXS	P27A-003ZL	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.5	SCH160	XXS	P27A-003ZM	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.75	SCH160	SCH160	P27A-002T5	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.5	SCH160	XXS	P27A-003ZN	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.75	SCH160	SCH160	P27A-002T7	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	1	SCH160	SCH160	P27A-002T4	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	0.75	XS	SCH160	P27A-001LG	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	XS	SCH160	P27A-0033P	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	XS	SCH160	P27A-0033B	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	XS	SCH160	P27A-003N1	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	XS	XS	P27A-001E5	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	1.5	STD	SCH160	P27A-003MA	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P27A-001N0	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	XS	P27A-0074W	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	XS	P27A-007P6	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P27A-001GW	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	STD	STD	P27A-001C2	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	STD	STD	P27A-00188	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	STD	STD	P27A-001C3	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	STD	STD	P27A-0018M	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	STD	STD	P27A-0019J	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	SCH40	STD	P27A-004W1	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH40	STD	P27A-004XB	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH40	STD	P27A-004UG	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	SCH40	STD	P27A-0051B	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	SCH40	STD	P27A-003ZT	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	SCH40	STD	P27A-0029L	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	SCH40	SCH40	P27A-001ZZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	XXS	P28A-003ZE	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.5	SCH160	XXS	P28A-003ZF	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75	SCH160	SCH160	P28A-002TU	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.5	SCH160	XXS	P28A-003ZG	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.75	SCH160	SCH160	P28A-002TW	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	1	SCH160	SCH160	P28A-002TR	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	0.75	XS	SCH160	P28A-001LE	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	XS	SCH160	P28A-003M1	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	XS	SCH160	P28A-003M2	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	XS	SCH160	P28A-003MV	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	XS	XS	P28A-001EH	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	1.5	STD	SCH160	P28A-003M4	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P28A-001N6	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	XS	P28A-008F7	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	XS	P28A-008K1	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P28A-00182	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	STD	STD	P28A-0017V	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	STD	STD	P28A-0018V	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	STD	STD	P28A-0017W	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	STD	STD	P28A-00190	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	STD	STD	P28A-0019J	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	SCH40	STD	P28A-008HU	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH40	STD	P28A-005T9	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH40	STD	P28A-008HT	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	SCH40	STD	P28A-008F4	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	SCH40	STD	P28A-003ZL	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	SCH40	STD	P28A-0028T	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	SCH40	SCH40	P28A-001ZG	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P29A-00336	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	0.75		SCH160		P29A-0037X	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	1		SCH160		P29A-001VW	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5		SCH160		P29A-001VX	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	2		XS		P29A-00381	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	3		XS		P29A-0035D	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	4		STD		P29A-00384	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	6		STD		P29A-00385	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	8		STD		P29A-00386	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	10		STD		P29A-0037Y	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	12		SCH40		P29A-001VZ	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	14		SCH40		P29A-001W0	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
541	0.75				P29B-0000Y	Cap ASTM A105 Class 6000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P41A-000B9	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		XXS		P41A-000BA	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		XXS		P41A-000D8	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		XXS		P41A-000D9	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2	0.75	XS	SCH160	P31B-00CP7	Outlet ASTM A105 MSS SP-97 BW	
1	3	0.75	XS	SCH160	P31B-00CMS	Outlet ASTM A105 MSS SP-97 BW	
1	4	0.75	STD	SCH160	P31B-00CLT	Outlet ASTM A105 MSS SP-97 BW	
1	6	0.75	STD	SCH160	P31B-00CKK	Outlet ASTM A105 MSS SP-97 BW	
1	8	0.75	STD	SCH160	P31B-00C5E	Outlet ASTM A105 MSS SP-97 BW	
1	10	0.75	STD	SCH160	P31B-00CFB	Outlet ASTM A105 MSS SP-97 BW	
1	12	0.75	SCH40	SCH160	P31B-00CS8	Outlet ASTM A105 MSS SP-97 BW	

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OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14	0.75	SCH40	SCH160	P31B-00CRP	Outlet ASTM A105 MSS SP-97 BW	
1	3	1	XS	SCH160	P31B-00B4H	Outlet ASTM A105 MSS SP-97 BW	
1	4	1	STD	SCH160	P31B-00B3M	Outlet ASTM A105 MSS SP-97 BW	
1	6	1	STD	SCH160	P31B-00AZC	Outlet ASTM A105 MSS SP-97 BW	
1	8	1	STD	SCH160	P31B-00AVF	Outlet ASTM A105 MSS SP-97 BW	
1	10	1	STD	SCH160	P31B-00C06	Outlet ASTM A105 MSS SP-97 BW	
1	12	1	SCH40	SCH160	P31B-00BWL	Outlet ASTM A105 MSS SP-97 BW	
1	14	1	SCH40	SCH160	P31B-00BRP	Outlet ASTM A105 MSS SP-97 BW	
1	4	1.5	STD	SCH160	P31B-00BP4	Outlet ASTM A105 MSS SP-97 BW	
1	6	1.5	STD	SCH160	P31B-00BJH	Outlet ASTM A105 MSS SP-97 BW	
1	8	1.5	STD	SCH160	P31B-00BHJ	Outlet ASTM A105 MSS SP-97 BW	
1	10	1.5	STD	SCH160	P31B-00AUM	Outlet ASTM A105 MSS SP-97 BW	
1	12	1.5	SCH40	SCH160	P31B-00CEH	Outlet ASTM A105 MSS SP-97 BW	
1	14	1.5	SCH40	SCH160	P31B-00CDR	Outlet ASTM A105 MSS SP-97 BW	
1	6	2	STD	XS	P31B-007SH	Outlet ASTM A105 MSS SP-97 BW	
1	8	2	STD	XS	P31B-00AGX	Outlet ASTM A105 MSS SP-97 BW	
1	10	2	STD	XS	P31B-00ASA	Outlet ASTM A105 MSS SP-97 BW	
1	12	2	SCH40	XS	P31B-00CBS	Outlet ASTM A105 MSS SP-97 BW	
1	14	2	SCH40	XS	P31B-00CAH	Outlet ASTM A105 MSS SP-97 BW	
1	8	3	STD	XS	P31B-009Y0	Outlet ASTM A105 MSS SP-97 BW	
1	10	3	STD	XS	P31B-009CG	Outlet ASTM A105 MSS SP-97 BW	
1	12	3	SCH40	XS	P31B-0096J	Outlet ASTM A105 MSS SP-97 BW	
1	14	3	SCH40	XS	P31B-0090P	Outlet ASTM A105 MSS SP-97 BW	
1	12	4	SCH40	STD	P31B-008ZY	Outlet ASTM A105 MSS SP-97 BW	
1	14	4	SCH40	STD	P31B-008YN	Outlet ASTM A105 MSS SP-97 BW	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30B-0002D	Plug ASTM A105 ASME B16.11 NPT Round head	
1	0.75				P30B-0002E	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1				P30B-0002F	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1.5				P30B-0002G	Plug ASTM A105 ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P61B-003LW	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	0.75		SCH160		P61B-0037M	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	1		SCH160		P61B-0037L	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	1.5		SCH160		P61B-0037J	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	2		XS		P61B-001HW	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	3		XS		P61B-001DK	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	4		STD		P61B-001MC	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	6		STD		P61B-001N2	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	8		STD		P61B-001NL	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	10		STD		P61B-001L6	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	12		SCH40		P61B-002FJ	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	14		SCH40		P61B-002FL	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
541	0.5				P61B-003U3	Flange NPT ASTM A105 Class 300 ASME B16.5 RF	
541	0.75				P61B-003U4	Flange NPT ASTM A105 Class 300 ASME B16.5 RF	
781	0.5		XXS		P61B-003T1	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	0.75		SCH160		P61B-003T2	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	1		SCH160		P61B-003T3	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	1.5		SCH160		P61B-003T4	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	2		XS		P61B-001DH	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	3		XS		P61B-001M8	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	4		STD		P61B-001VV	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	6		STD		P61B-001JW	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	8		STD		P61B-001KK	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	10		STD		P61B-001JJ	Flange WN ASTM A105 Class 600 ASME B16.5 RF	

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FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
781	12		SCH40		P61B-003T5	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	14		SCH40		P61B-003T6	Flange WN ASTM A105 Class 600 ASME B16.5 RF	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67B-000GH	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	0.75				P67B-000GJ	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	1				P67B-000GK	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	1.5				P67B-000GL	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	2				P67B-000GM	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	3				P67B-000GN	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	4				P67B-000GP	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	6				P67B-000GY	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	8				P67B-000GZ	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	10				P67B-000GR	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	12				P67B-000GS	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	14				P67B-000GT	Blind flange ASTM A105 Class 300 ASME B16.5 RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000FT	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000FU	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000G5	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000G6	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	6				P73T-000G7	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	8				P73T-000G8	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	10				P73T-000FX	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	12				P73T-000FY	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	14				P73T-000FZ	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	0.5				P73T-000J8	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	0.75				P73T-000J9	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1				P73T-000JA	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1.5				P73T-000JB	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	2				P73T-000JH	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	3				P73T-000JL	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	4				P73T-000JM	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	6				P73T-000JN	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	8				P73T-000JP	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	10				P73T-000JC	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	12				P73T-000JD	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	14				P73T-000JE	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-10				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	12-24				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	

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BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
781	0.5-6				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
781	8-14				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81B-001F6	Gate valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	0.75				P81B-001F7	Gate valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	1				P81B-001F8	Gate valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	1.5				P81B-001F9	Gate valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	2				P81C-006RS	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Licensor-4	
1	3				P81C-006RT	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Licensor-4	
1	4				P81C-006RU	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Licensor-4	
1	6				P81C-006RV	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Licensor-4	
1	8				P81C-0091P	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Severe wet H2S service Licensor-4	
1	10				P81C-006RX	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Severe wet H2S service Licensor-4	
1	12				P81C-006RY	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Severe wet H2S service Licensor-4	
1	14				P81C-006RZ	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Severe wet H2S service Licensor-4	
4608	0.75				P81B-002WS	Gate valve ASTM A105 Class 300 API 602 BW both sides w/ nipples BE - NPT ASTM A106-B XXS-nipple Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82B-0016Y	Globe valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	0.75				P82B-0016Z	Globe valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	1				P82B-00170	Globe valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	1.5				P82B-00171	Globe valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	2				P82C-0039G	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Licensor-4	
1	3				P82C-0039H	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Licensor-4	
1	4				P82C-0039J	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Licensor-4	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83B-000YN	Check valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Severe wet H2S service	
1	0.75				P83B-000YP	Check valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Severe wet H2S service	
1	1				P83B-000YR	Check valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Severe wet H2S service	
1	1.5				P83B-000YS	Check valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Severe wet H2S service	
1	2				P83C-0035C	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service Licensor-4	
1	3				P83C-0035D	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service Licensor-4	
1	4				P83C-0035E	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service Licensor-4	
1	6				P83C-0035F	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service Licensor-4	
1	8				P83C-0035G	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service Licensor-4	
1	10				P83C-00359	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service Licensor-4	
1	12				P83C-0035A	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service Licensor-4	
1	14				P83C-0035B	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service Licensor-4	

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SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71B-000B1	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	0.75				P71B-000B2	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	1				P71B-000B3	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71B-000B4	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	2				P71B-000B6	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	3				P71B-000B7	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	4				P71B-000B8	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	6				P71B-000B9	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	8				P71B-000BA	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	10				P71B-000B5	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	12				P71B-000BB	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	

PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000FA	Paddle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	

PADDLE SPACER (PS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000FG	Paddle spacer ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	

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PIPING CLASS
B2AR04 REV NO. 2

BOLT TABLE (B_B2AR04 , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-008T0		
0.75	4	0.625	75	P80S-00908		
1	4	0.625	80	P80S-00909		
1.5	4	0.750	95	P80S-005Z4		
2	8	0.625	90	P80S-0090B		
3	8	0.750	110	P80S-0090F		
4	8	0.750	115	P80S-0090G		
6	12	0.750	125	P80S-0090J		
8	12	0.875	140	P80S-005ZD		
10	16	1.000	160	P80S-0061E		
12	16	1.125	175	P80S-0064S		
14	20	1.125	180	P80S-0064T		

BOLT TABLE (B_B2AR04_781 , STUD ASME RF, OPTION CODE 781)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	80	P80S-008T2		
0.75	4	0.625	90	P80S-0090B		
1	4	0.625	95	P80S-0090C		
1.5	4	0.750	110	P80S-0090F		
2	8	0.625	110	P80S-008T8		
3	8	0.750	130	P80S-0090K		
4	8	0.875	150	P80S-005ZF		
6	12	1.000	175	P80S-0061H		
8	12	1.125	195	P80S-0064W		
10	16	1.250	250	P80S-0068M		
12	20	1.250	255	P80S-0068N		
14	20	1.375	270	P80S-006HV		

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PIPING CLASS

B2AR04 REV NO. 2

BRANCH TABLE (T_B2AR04)

RUN PIPE SIZE (in) \ BRANCH SIZE (in)	0.5	0.75	1	1.5	2	3	4	6	8	10	12	14
0.5	TS											
0.75		TS										
1		TR	TS									
1.5		TR	TR	TS								
2		L	TR	TR	TS							
3		L	L	TR	TR	TS						
4	L	L	L	L	TR	TR	TS					
6	L	L	L	L	L	TR	TR	TS				
8		L	L	L	L	L	TR	TR	TS			
10		L	L	L	L	L	TR	TR	TR	TS		
12		L	L	L	L	L	L	TR	TR	TR	TS	
14		L	L	L	L	L	L	TR	TR	TR	TR	TS

TS : STRAIGHT TEE
L : OUTLET
TR : REDUCING TEE

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PIPING CLASS

B2AS REV NO. 2

Material : Killed CS
Rating : ASME CLASS 300
Flange Face : RF
C.A.(mm) : 3.00
Gasket : Spiral Wound
Service : UTILITY : / MP BOILER FEED WATER / MEDIUM PRESSURE CONDENSATE

Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
24	FULL PORT (Q)
200	WITH JACK SCREW (FO)
221	RF (V)
541	NPT(F) (CA,L)
714	SW - NPT(F) (V)
781	CLASS 600 (B,F,G)
797	CLASS 1500 (B,F,G)

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PIPING CLASS
B2AS REV NO. 2

PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P01A-0010P	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	0.75		SCH160		P01A-0010R	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1		SCH160		P01A-0014M	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1.5		SCH160		P01A-0015J	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	2		XS		P01A-000YX	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	3		XS		P01A-000Z4	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	4		XS		P01A-000Z9	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	6		XS		P01A-000ZF	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	8		SCH30		P01A-001WL	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	10		SCH30		P01A-0016U	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	12		SCH30		P01A-0017K	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	14		STD		P01A-000Y1	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	16		STD		P01A-000Y9	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	18		STD		P01A-0042F	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE	
1	20		XS		P01A-00445	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE	
1	24		XS		P01A-0043X	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P02B-0001J	90 degree elbow ASTM A105 Class 6000 ASME B16.11 SW	
1	0.75				P02B-0001K	90 degree elbow ASTM A105 Class 6000 ASME B16.11 SW	
1	1				P02B-0002E	90 degree elbow ASTM A105 Class 6000 ASME B16.11 SW	
1	1.5				P02B-0002F	90 degree elbow ASTM A105 Class 6000 ASME B16.11 SW	
1	2		XS		P02A-000CP	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		XS		P02A-000CX	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		XS		P02A-000D3	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		XS		P02A-000DA	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		SCH30		P02A-003DK	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	10		SCH30		P02A-000M3	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	12		SCH30		P02A-000M4	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	14		STD		P02A-000C8	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	16		STD		P02A-000CH	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	18		STD		P02A-0010H	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	20		XS		P02A-001JX	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	24		XS		P02A-000MB	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P03B-0001F	45 degree elbow ASTM A105 Class 6000 ASME B16.11 SW	
1	0.75				P03B-0001G	45 degree elbow ASTM A105 Class 6000 ASME B16.11 SW	
1	1				P03B-0002A	45 degree elbow ASTM A105 Class 6000 ASME B16.11 SW	
1	1.5				P03B-0002B	45 degree elbow ASTM A105 Class 6000 ASME B16.11 SW	
1	2		XS		P03A-000AS	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		XS		P03A-000AZ	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		XS		P03A-000B3	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		XS		P03A-000B8	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		SCH30		P03A-003BE	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	10		SCH30		P03A-000JT	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	12		SCH30		P03A-000JU	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	14		STD		P03A-000AG	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	16		STD		P03A-000AM	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	18		STD		P03A-000X0	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	20		XS		P03A-001E0	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	24		XS		P03A-001E1	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P21B-0001F	Straight tee ASTM A105 Class 6000 ASME B16.11 SW	
1	0.75				P21B-0001G	Straight tee ASTM A105 Class 6000 ASME B16.11 SW	

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STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P21B-00026	Straight tee ASTM A105 Class 6000 ASME B16.11 SW	
1	1.5				P21B-00027	Straight tee ASTM A105 Class 6000 ASME B16.11 SW	
1	2		XS		P21A-001CJ	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		XS		P21A-001CR	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		XS		P21A-001CV	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6		XS		P21A-001D4	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8		SCH30		P21A-003WV	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10		SCH30		P21A-00259	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12		SCH30		P21A-0025A	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14		STD		P21A-001C8	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16		STD		P21A-001CD	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18		STD		P21A-001BW	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20		XS		P21A-001T4	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24		XS		P21A-001UM	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75			P24B-00030	Reducing tee ASTM A105 Class 6000 ASME B16.11 SW	
1	1.5	0.75			P24B-00032	Reducing tee ASTM A105 Class 6000 ASME B16.11 SW	
1	1.5	1			P24B-0004J	Reducing tee ASTM A105 Class 6000 ASME B16.11 SW	
1	2	1	XS	SCH160	P24A-00GMB	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	XS	SCH160	P24A-005K9	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	XS	SCH160	P24A-00GNV	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	XS	XS	P24A-0023S	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	XS	XS	P24A-0023E	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	XS	XS	P24A-0024A	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	XS	XS	P24A-0023F	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	XS	XS	P24A-00243	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH30	XS	P24A-00L83	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH30	XS	P24A-00L84	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	SCH30	XS	P24A-00N23	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	SCH30	XS	P24A-00N24	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	SCH30	SCH30	P24A-00J15	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	SCH30	XS	P24A-00AEW	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH30	SCH30	P24A-00M36	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH30	SCH30	P24A-003ET	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	STD	XS	P24A-00N25	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	STD	SCH30	P24A-00NJ4	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	STD	SCH30	P24A-0060L	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	STD	SCH30	P24A-005KF	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	6	STD	XS	P24A-00N28	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	STD	SCH30	P24A-00NJ5	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	STD	SCH30	P24A-00N27	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	STD	SCH30	P24A-00N3R	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	STD	STD	P24A-001Z4	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	8	STD	SCH30	P24A-00NYS	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	10	STD	SCH30	P24A-00BFR	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	12	STD	SCH30	P24A-003XR	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	14	STD	STD	P24A-004SP	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	16	STD	STD	P24A-004VA	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	8	XS	SCH30	P24A-00JVP	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	10	XS	SCH30	P24A-00BTA	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	12	XS	SCH30	P24A-00BUU	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	14	XS	STD	P24A-00BWG	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	16	XS	STD	P24A-00BY7	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	18	XS	STD	P24A-00BZB	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	10	XS	SCH30	P24A-00C5Z	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	12	XS	SCH30	P24A-003XY	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	14	XS	STD	P24A-00C8V	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	

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REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	24	16	XS	STD	P24A-00CAJ	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	18	XS	STD	P24A-003Y1	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	20	XS	XS	P24A-00CD6	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	XS	XS	P27A-001E5	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	XS	XS	P27A-001E4	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	XS	XS	P27A-001EP	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	XS	XS	P27A-001DM	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	XS	XS	P27A-001EB	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH30	XS	P27A-00FFC	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH30	XS	P27A-00FFE	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	SCH30	XS	P27A-003N5	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	SCH30	XS	P27A-003N6	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	SCH30	SCH30	P27A-004T9	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	SCH30	XS	P27A-003N8	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH30	SCH30	P27A-004XA	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH30	SCH30	P27A-0028K	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	STD	XS	P27A-0051L	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	STD	SCH30	P27A-0052U	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	STD	SCH30	P27A-003MB	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	STD	SCH30	P27A-003MP	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	STD	SCH30	P27A-0059W	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	STD	SCH30	P27A-0054N	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	STD	SCH30	P27A-00CBA	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	STD	STD	P27A-001A7	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	10	STD	SCH30	P27A-0082J	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	12	STD	SCH30	P27A-002GK	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	14	STD	STD	P27A-001AB	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	16	STD	STD	P27A-001B2	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	12	XS	SCH30	P27A-00FCF	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	14	XS	STD	P27A-00BJR	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	16	XS	STD	P27A-00FCT	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	18	XS	STD	P27A-00FCV	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	16	XS	STD	P27A-00BSD	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	18	XS	STD	P27A-002GS	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	20	XS	XS	P27A-00CKX	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	XS	XS	P28A-001EH	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	XS	XS	P28A-001EJ	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	XS	XS	P28A-001F8	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	XS	XS	P28A-001DU	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	XS	XS	P28A-001ER	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH30	XS	P28A-00CLA	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH30	XS	P28A-00CLC	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	SCH30	XS	P28A-003MZ	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	SCH30	XS	P28A-003N0	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	SCH30	SCH30	P28A-00A4S	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	SCH30	XS	P28A-003N2	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH30	SCH30	P28A-00BGV	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH30	SCH30	P28A-0027C	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	STD	XS	P28A-0053M	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	STD	SCH30	P28A-00BGW	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	STD	SCH30	P28A-003M5	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	STD	SCH30	P28A-003MH	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	STD	SCH30	P28A-00EDR	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	16	10	STD	SCH30	P28A-00E3U	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	STD	SCH30	P28A-009AH	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	STD	STD	P28A-001AC	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	10	STD	SCH30	P28A-004SG	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	12	STD	SCH30	P28A-002GD	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	14	STD	STD	P28A-001AX	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	16	STD	STD	P28A-001BY	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	12	XS	SCH30	P28A-00CH3	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	14	XS	STD	P28A-008JP	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	16	XS	STD	P28A-00CHK	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	18	XS	STD	P28A-00CHN	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	16	XS	STD	P28A-008SR	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	18	XS	STD	P28A-002GK	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	20	XS	XS	P28A-009KC	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P29B-0002F	Cap ASTM A105 Class 6000 ASME B16.11 SW	
1	0.75				P29B-0002G	Cap ASTM A105 Class 6000 ASME B16.11 SW	
1	1				P29B-0002D	Cap ASTM A105 Class 6000 ASME B16.11 SW	
1	1.5				P29B-0002E	Cap ASTM A105 Class 6000 ASME B16.11 SW	
1	2		XS		P29A-000A1	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		XS		P29A-000AT	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		XS		P29A-000B9	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6		XS		P29A-000BF	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8		SCH30		P29A-000PC	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10		SCH30		P29A-000K7	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12		SCH30		P29A-000PZ	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14		STD		P29A-000AJ	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16		STD		P29A-000AR	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18		STD		P29A-000AU	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20		XS		P29A-000VA	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24		XS		P29A-000R5	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
541	0.75				P29B-0000Y	Cap ASTM A105 Class 6000 ASME B16.11 NPT	
541	1				P29B-0000Z	Cap ASTM A105 Class 6000 ASME B16.11 NPT	
541	1.5				P29B-00010	Cap ASTM A105 Class 6000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P41A-000B9	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		XXS		P41A-000BA	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		XXS		P41A-000D8	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		XXS		P41A-000D9	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

CON SWAGED NIPPLE (SNC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	SCH160	P42A-00029	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	SCH160	SCH160	P42A-0009T	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	SCH160	SCH160	P42A-0009U	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	SCH160	SCH160	P42A-0009V	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	SCH160	SCH160	P42A-0009W	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	SCH160	SCH160	P42A-0009X	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	XS	SCH160	P42A-000J6	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	XS	SCH160	P42A-000J7	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	XS	SCH160	P42A-000F8	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	XS	SCH160	P42A-000KZ	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	XS	SCH160	P42A-000L9	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	

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ECC SWAGED NIPPLE (SNE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	SCH160	P43A-000AM	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	SCH160	SCH160	P43A-000B4	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	SCH160	SCH160	P43A-000B5	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	SCH160	SCH160	P43A-000B6	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	SCH160	SCH160	P43A-000B7	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	SCH160	SCH160	P43A-000B8	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	XS	SCH160	P43A-000B2	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	XS	SCH160	P43A-000B3	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	XS	SCH160	P43A-000CZ	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	XS	SCH160	P43A-000D0	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	XS	SCH160	P43A-000DM	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	

COUPLING (CPS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P47B-00013	Coupling ASTM A105 Class 6000 ASME B16.11 SW - SW	
1	0.75				P47B-00012	Coupling ASTM A105 Class 6000 ASME B16.11 SW - SW	
1	1				P47B-0002A	Coupling ASTM A105 Class 6000 ASME B16.11 SW - SW	
1	1.5				P47B-0002B	Coupling ASTM A105 Class 6000 ASME B16.11 SW - SW	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5 - 2.5	0.75			P31B-0137D	Outlet ASTM A105 Class 6000 MSS SP-97 SW	
1	3 - 10	0.75			P31B-007LV	Outlet ASTM A105 Class 6000 MSS SP-97 SW	
1	12 and larger	0.75			P31B-0136N	Outlet ASTM A105 Class 6000 MSS SP-97 SW	
1	3 - 10	1			P31B-007LN	Outlet ASTM A105 Class 6000 MSS SP-97 SW	
1	12 and larger	1			P31B-0136P	Outlet ASTM A105 Class 6000 MSS SP-97 SW	
1	4 - 5	1.5			P31B-004LE	Outlet ASTM A105 Class 6000 MSS SP-97 SW	
1	6 - 8	1.5			P31B-005T4	Outlet ASTM A105 Class 6000 MSS SP-97 SW	
1	10 - 18	1.5			P31B-007LF	Outlet ASTM A105 Class 6000 MSS SP-97 SW	
1	20 and larger	1.5			P31B-0137E	Outlet ASTM A105 Class 6000 MSS SP-97 SW	
541	1	0.75			P31B-005HL	Outlet ASTM A105 Class 6000 MSS SP-97 NPT	
541	1.5 - 2.5	0.75			P31B-0137F	Outlet ASTM A105 Class 6000 MSS SP-97 NPT	
541	3 - 10	0.75			P31B-007KP	Outlet ASTM A105 Class 6000 MSS SP-97 NPT	
541	12 and larger	0.75			P31B-0138A	Outlet ASTM A105 Class 6000 MSS SP-97 NPT	
1	6	2	XS	XS	P31B-007SG	Outlet ASTM A105 MSS SP-97 BW	
1	8	2	SCH30	XS	P31B-00X36	Outlet ASTM A105 MSS SP-97 BW	
1	10	2	SCH30	XS	P31B-00NVF	Outlet ASTM A105 MSS SP-97 BW	
1	12	2	SCH30	XS	P31B-00NVL	Outlet ASTM A105 MSS SP-97 BW	
1	14	2	STD	XS	P31B-00CAE	Outlet ASTM A105 MSS SP-97 BW	
1	16	2	STD	XS	P31B-00C1T	Outlet ASTM A105 MSS SP-97 BW	
1	18	2	STD	XS	P31B-009FJ	Outlet ASTM A105 MSS SP-97 BW	
1	20	2	XS	XS	P31B-00993	Outlet ASTM A105 MSS SP-97 BW	
1	24	2	XS	XS	P31B-0092Y	Outlet ASTM A105 MSS SP-97 BW	
1	8	3	SCH30	XS	P31B-00ZH7	Outlet ASTM A105 MSS SP-97 BW	
1	10	3	SCH30	XS	P31B-00NYL	Outlet ASTM A105 MSS SP-97 BW	
1	12	3	SCH30	XS	P31B-00NYT	Outlet ASTM A105 MSS SP-97 BW	
1	14	3	STD	XS	P31B-0090L	Outlet ASTM A105 MSS SP-97 BW	
1	16	3	STD	XS	P31B-008UE	Outlet ASTM A105 MSS SP-97 BW	
1	18	3	STD	XS	P31B-008MC	Outlet ASTM A105 MSS SP-97 BW	
1	20	3	XS	XS	P31B-008F3	Outlet ASTM A105 MSS SP-97 BW	
1	24	3	XS	XS	P31B-0088Y	Outlet ASTM A105 MSS SP-97 BW	
1	12	4	SCH30	XS	P31B-00P1H	Outlet ASTM A105 MSS SP-97 BW	
1	14	4	STD	XS	P31B-008YH	Outlet ASTM A105 MSS SP-97 BW	
1	16	4	STD	XS	P31B-00UX1	Outlet ASTM A105 MSS SP-97 BW	
1	18	4	STD	XS	P31B-00P1X	Outlet ASTM A105 MSS SP-97 BW	
1	20	4	XS	XS	P31B-0088A	Outlet ASTM A105 MSS SP-97 BW	
1	24	4	XS	XS	P31B-00823	Outlet ASTM A105 MSS SP-97 BW	
1	18	6	STD	XS	P31B-00P4A	Outlet ASTM A105 MSS SP-97 BW	
1	20	6	XS	XS	P31B-008K4	Outlet ASTM A105 MSS SP-97 BW	

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OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	24	6	XS	XS	P31B-008J7	Outlet ASTM A105 MSS SP-97 BW	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30B-0002D	Plug ASTM A105 ASME B16.11 NPT Round head	
1	0.75				P30B-0002E	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1				P30B-0002F	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1.5				P30B-0002G	Plug ASTM A105 ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P61B-001H5	Flange SW ASTM A105 Class 300 ASME B16.5 RF	
1	0.75		SCH160		P61B-001HH	Flange SW ASTM A105 Class 300 ASME B16.5 RF	
1	1		SCH160		P61B-001E8	Flange SW ASTM A105 Class 300 ASME B16.5 RF	
1	1.5		SCH160		P61B-001ET	Flange SW ASTM A105 Class 300 ASME B16.5 RF	
1	2		XS		P61B-001HW	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	3		XS		P61B-001DK	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	4		XS		P61B-001F5	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	6		XS		P61B-001FE	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	8		SCH30		P61B-008S0	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	10		SCH30		P61B-003LX	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	12		SCH30		P61B-002TV	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	14		STD		P61B-001M9	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	16		STD		P61B-001MH	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	18		STD		P61B-001N9	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	20		XS		P61B-003A5	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	24		XS		P61B-002RA	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
781	0.5		SCH160		P61B-001DZ	Flange SW ASTM A105 Class 600 ASME B16.5 RF	
781	0.75		SCH160		P61B-001DW	Flange SW ASTM A105 Class 600 ASME B16.5 RF	
781	1		SCH160		P61B-005X5	Flange SW ASTM A105 Class 600 ASME B16.5 RF	
781	1.5		SCH160		P61B-005X6	Flange SW ASTM A105 Class 600 ASME B16.5 RF	
781	2		XS		P61B-001DH	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	3		XS		P61B-001M8	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	4		XS		P61B-001SH	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	6		XS		P61B-001T1	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	8		SCH30		P61B-009GW	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	10		SCH30		P61B-003TN	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	12		SCH30		P61B-0070M	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	14		STD		P61B-001PL	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	16		STD		P61B-003FB	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	18		STD		P61B-003FA	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	20		XS		P61B-004UW	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	24		XS		P61B-003T9	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
797	0.5		SCH160		P61B-00658	Flange SW ASTM A105 Class 1500 ASME B16.5 RJ	
797	0.75		SCH160		P61B-00659	Flange SW ASTM A105 Class 1500 ASME B16.5 RJ	
797	1		SCH160		P61B-0065A	Flange SW ASTM A105 Class 1500 ASME B16.5 RJ	
797	1.5		SCH160		P61B-0065B	Flange SW ASTM A105 Class 1500 ASME B16.5 RJ	
797	2		XS		P61B-0065C	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67B-000GH	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	0.75				P67B-000GJ	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	1				P67B-000GK	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	1.5				P67B-000GL	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	2				P67B-000GM	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	3				P67B-000GN	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	4				P67B-000GP	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	6				P67B-000GY	Blind flange ASTM A105 Class 300 ASME B16.5 RF	

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BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	8				P67B-000GZ	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	10				P67B-000GR	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	12				P67B-000GS	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	14				P67B-000GT	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	16				P67B-000GU	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	18				P67B-000GV	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	20				P67B-000GW	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	24				P67B-000GX	Blind flange ASTM A105 Class 300 ASME B16.5 RF	

REDUCING FLANGE (FR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5		SCH160	P62B-000N4	Reducing flange SW ASTM A105 Class 300 ASME B16.5 RF	
1	1.5	0.5		SCH160	P62B-000AJ	Reducing flange SW ASTM A105 Class 300 ASME B16.5 RF	
1	1.5	0.75		SCH160	P62B-000AK	Reducing flange SW ASTM A105 Class 300 ASME B16.5 RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000FT	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000FU	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000G5	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000G6	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	6				P73T-000G7	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	8				P73T-000G8	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	10				P73T-000FX	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	12				P73T-000FY	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	14				P73T-000FZ	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	16				P73T-000G0	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	18				P73T-000G1	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	20				P73T-000G3	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	24				P73T-000G4	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	0.5				P73T-000J8	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	0.75				P73T-000J9	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1				P73T-000JA	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1.5				P73T-000JB	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	2				P73T-000JH	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	3				P73T-000JL	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	4				P73T-000JM	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	6				P73T-000JN	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	8				P73T-000JP	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	10				P73T-000JC	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	12				P73T-000JD	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	14				P73T-000JE	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	16				P73T-000JF	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	18				P73T-000JG	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	20				P73T-000JJ	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

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GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
781	24				P73T-000JK	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
797	0.5				P75T-000JT	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	0.75				P75T-000JU	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	1				P75T-000JV	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	1.5				P75T-000JW	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	2				P75T-0008A	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-10				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	12-24				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
781	0.5-6				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
781	8-24				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
797	0.5-2				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81B-000RA	Gate valve ASTM A105 Class 800 API 602 SW Trim number 5 BB-BG-OS&Y Handwheel operated	
1	0.75				P81B-000P0	Gate valve ASTM A105 Class 800 API 602 SW Trim number 5 BB-BG-OS&Y Handwheel operated	
1	1				P81B-000P1	Gate valve ASTM A105 Class 800 API 602 SW Trim number 5 BB-BG-OS&Y Handwheel operated	
1	1.5				P81B-000P2	Gate valve ASTM A105 Class 800 API 602 SW Trim number 5 BB-BG-OS&Y Handwheel operated	
1	2				P81C-004HA	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated	
1	3				P81C-004HB	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated	
1	4				P81C-004HC	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated	
1	6				P81C-004HD	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated	
1	8				P81C-0086Y	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Gear operated	
1	10				P81C-004H3	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Gear operated	
1	12				P81C-004H4	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Gear operated	
1	14				P81C-004H5	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Gear operated	
1	16				P81C-004H6	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Gear operated	
1	18				P81C-004H7	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Gear operated	
1	20				P81C-004H8	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Gear operated	
221	1				P81B-002SK	Gate valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated	
714	0.5				P81B-0015N	Gate valve ASTM A105 Class 800 API 602 SW - NPT Trim number 5 BB-BG-OS&Y Handwheel operated	
714	0.75				P81B-002FC	Gate valve ASTM A105 Class 800 API 602 SW - NPT Trim number 5 BB-BG-OS&Y Handwheel operated	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82B-000KW	Globe valve ASTM A105 Class 800 API 602 SW Trim number 5 BB-BG-OS&Y Handwheel operated	
1	0.75				P82B-000HE	Globe valve ASTM A105 Class 800 API 602 SW Trim number 5 BB-BG-OS&Y Handwheel operated	
1	1				P82B-000HF	Globe valve ASTM A105 Class 800 API 602 SW Trim number 5 BB-BG-OS&Y Handwheel operated	
1	1.5				P82B-000HG	Globe valve ASTM A105 Class 800 API 602 SW Trim number 5 BB-BG-OS&Y Handwheel operated	
1	2				P82C-0027S	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated	
1	3				P82C-0027T	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated	
1	4				P82C-0027U	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated	
1	6				P82C-0027V	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83B-000GL	Check valve ASTM A105 Class 800 API 602 SW Trim number 5 Lift-type Bolted cover	
1	0.75				P83B-000EU	Check valve ASTM A105 Class 800 API 602 SW Trim number 5 Lift-type Bolted cover	

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CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P83B-000EV	Check valve ASTM A105 Class 800 API 602 SW Trim number 5 Lift-type Bolted cover	
1	1.5				P83B-000EW	Check valve ASTM A105 Class 800 API 602 SW Trim number 5 Lift-type Bolted cover	
1	2				P83C-00243	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 5 Swing-type Bolted cover	
1	3				P83C-00244	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 5 Swing-type Bolted cover	
1	4				P83C-00245	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 5 Swing-type Bolted cover	
1	6				P83C-00246	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 5 Swing-type Bolted cover	
1	8				P83C-00247	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 5 Swing-type Bolted cover	

BALL VALVE (Q)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P84B-0012U	Ball valve Long-pattern ASTM A105 Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design	
24	1				P84B-0012Y	Ball valve Long-pattern ASTM A105 Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	

NEEDLE VALVE (NV)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82B-001K3	Needle valve ASTM A105 Class 800 API 602 SW Trim number 5 BB-BG-OS&Y Handwheel operated	
1	0.75				P82B-001K4	Needle valve ASTM A105 Class 800 API 602 SW Trim number 5 BB-BG-OS&Y Handwheel operated	
1	1				P82B-001K5	Needle valve ASTM A105 Class 800 API 602 SW Trim number 5 BB-BG-OS&Y Handwheel operated	
1	1.5				P82B-001K6	Needle valve ASTM A105 Class 800 API 602 SW Trim number 5 BB-BG-OS&Y Handwheel operated	

ORIFICE FLANGE (FO)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2		XS		P66B-0084B	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	3		XS		P66B-008C1	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	4		XS		P66B-008AK	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	6		XS		P66B-0088E	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	8		SCH30		P66B-00871	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
200	2		XS		P66B-00843	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	3		XS		P66B-008C3	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	4		XS		P66B-008AH	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	6		XS		P66B-0088V	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	8		SCH30		P66B-00876	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71B-000B1	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	0.75				P71B-000B2	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	1				P71B-000B3	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71B-000B4	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	2				P71B-000B6	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	3				P71B-000B7	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	4				P71B-000B8	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	6				P71B-000B9	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	8				P71B-000BA	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	10				P71B-000B5	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	12				P71B-000BB	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	

PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000FA	Paddle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	16				P72B-000FB	Paddle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	18				P72B-000FC	Paddle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	20				P72B-000FD	Paddle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	24				P72B-000FE	Paddle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	

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PADDLE SPACER (PS)							
OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000FG	Paddle spacer ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	16				P72B-000FH	Paddle spacer ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	18				P72B-000FJ	Paddle spacer ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	20				P72B-000FK	Paddle spacer ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	24				P72B-000FL	Paddle spacer ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	

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BOLT TABLE (B_B2AS , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-003V4		
0.75	4	0.625	75	P80S-003XC		
1	4	0.625	80	P80S-003XD		
1.5	4	0.750	95	P80S-00414		
2	8	0.625	90	P80S-003XF		
3	8	0.750	110	P80S-003XK		
4	8	0.750	115	P80S-003XL		
6	12	0.750	125	P80S-003XN		
8	12	0.875	140	P80S-0041D		
10	16	1.000	160	P80S-0043K		
12	16	1.125	175	P80S-0046S		
14	20	1.125	180	P80S-0046T		
16	20	1.250	190	P80S-004AK		
18	24	1.250	200	P80S-004AM		
20	24	1.250	210	P80S-004AP		
24	24	1.500	235	P80S-003F8		

BOLT TABLE (B_B2AS_781 , STUD ASME RF, OPTION CODE 781)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	80	P80S-003V6		
0.75	4	0.625	90	P80S-003XF		
1	4	0.625	95	P80S-003XG		
1.5	4	0.750	110	P80S-003XK		
2	8	0.625	110	P80S-003VC		
3	8	0.750	130	P80S-003XP		
4	8	0.875	150	P80S-0041F		
6	12	1.000	175	P80S-0043P		
8	12	1.125	195	P80S-0046W		
10	16	1.250	250	P80S-004AY		
12	20	1.250	255	P80S-004AZ		
14	20	1.375	270	P80S-003E7		
16	20	1.500	295	P80S-003FL		
18	20	1.625	320	P80S-005TT		
20	24	1.625	335	P80S-005TW		
24	24	1.875	380	P80S-008P4		

BOLT TABLE (B_B2AS_797 , STUD ASME RJ, OPTION CODE 797)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	110	P80S-003XK	R12	P75T-000JT
0.75	4	0.750	115	P80S-003XL	R14	P75T-000JU
1	4	0.875	130	P80S-0041B	R16	P75T-000JV
1.5	4	1.000	140	P80S-0043F	R20	P75T-000JW
2	8	0.875	150	P80S-0041F	R24	P75T-0008A
3	8	1.125	180		R35	
4	8	1.250	230		R39	
6	12	1.375	300		R46	
8	12	1.625	345		R50	
10	12	1.875	395		R54	
12	16	2.000	445		R58	
14	16	2.250	490		R63	
16	16	2.500	540		R67	
18	16	2.750	590		R71	
20	16	3.000	650		R75	
24	16	3.500	745		R79	

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PIPING CLASS

B2AS

REV NO. 2

BRANCH TABLE (T_B2AS)

RUN PIPE SIZE (in) \ BRANCH SIZE (in)	0.5	0.75	1	1.5	2	3	4	6	8	10	12	14	16	18	20	24
0.5	TS															
0.75		TS														
1		TR	TS													
1.5		TR	TR	TS												
2		L	TR	TR	TS											
3		L	L	TR	TR	TS										
4	L	L	L	L	TR	TR	TS									
6	L	L	L	L	L	TR	TR	TS								
8		L	L	L	L	L	TR	TR	TS							
10		L	L	L	L	L	TR	TR	TR	TS						
12		L	L	L	L	L	L	TR	TR	TR	TS					
14		L	L	L	L	L	L	TR	TR	TR	TR	TS				
16		L	L	L	L	L	L	TR	TR	TR	TR	TR	TS			
18		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TS		
20		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TR	TS	
24		L	L	L	L	L	L	L	9PD	TR	TR	TR	TR	TR	TR	TS

L : OUTLET
TS : STRAIGHT TEE
9PD : REINFORCING PAD 90 DEG
TR : REDUCING TEE

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PIPING CLASS

B2AW

REV NO. 2

Material	:	Killed CS
Rating	:	ASME CLASS 300
Flange Face	:	RF
C.A.(mm)	:	3.00
Gasket	:	Spiral Wound
Service	:	UTILITY - WATER SERVICE, CATEGORY D" FLUID : " / COOLING WATER SUPPLY / COOLING WATER RETURN / SERVICE WATER / RAW WATER (A/G)
Design Code	:	ASME B31.3
Heat Treatment	:	

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
25	THE WELDED PIPES SHALL BE GROOVING CORROSION RESISTANT
30	RAW WATER DESIGN CONDITIONS SHALL BE SUPPLIED BY 3RD PARTY RAW WATER SUPPLIER

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
24	FULL PORT (Q)
200	WITH JACK SCREW (FO)
541	NPT(F) (CA,L)
714	SW - NPT(F) (V)
781	CLASS 600 (B,F,G)
3001	INSULATION GASKET KIT AND BOLTS FOR FLANGE (G)
4203	SOCKOLET ON CAP (CAP=NPS3) (LC)

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PIPING CLASS
B2AW REV NO. 2

PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P01A-0010P	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	0.75		SCH160		P01A-0010R	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1		SCH160		P01A-0014M	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1.5		SCH160		P01A-0015J	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	2		XS		P01A-000YX	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	3		STD		P01A-000YM	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	4		STD		P01A-000YU	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	6		STD		P01A-000Z3	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	8		STD		P01A-000ZA	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	10		STD		P01A-000XJ	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	12		SCH40		P01A-0018V	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	14		SCH40		P01A-0018U	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	16		SCH20		P01A-0018E	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P02B-0001J	90 degree elbow ASTM A105 Class 6000 ASME B16.11 SW	
1	0.75				P02B-0001K	90 degree elbow ASTM A105 Class 6000 ASME B16.11 SW	
1	1				P02B-0002E	90 degree elbow ASTM A105 Class 6000 ASME B16.11 SW	
1	1.5				P02B-0002F	90 degree elbow ASTM A105 Class 6000 ASME B16.11 SW	
1	2		XS		P02A-000CP	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		STD		P02A-000CU	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		STD		P02A-000CZ	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		STD		P02A-000D6	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		STD		P02A-000DC	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	10		STD		P02A-000BP	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	12		SCH40		P02A-000JE	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	14		SCH40		P02A-000JF	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	16		SCH20		P02A-000GM	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P03B-0001F	45 degree elbow ASTM A105 Class 6000 ASME B16.11 SW	
1	0.75				P03B-0001G	45 degree elbow ASTM A105 Class 6000 ASME B16.11 SW	
1	1				P03B-0002A	45 degree elbow ASTM A105 Class 6000 ASME B16.11 SW	
1	1.5				P03B-0002B	45 degree elbow ASTM A105 Class 6000 ASME B16.11 SW	
1	2		XS		P03A-000AS	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		STD		P03A-000AX	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		STD		P03A-000B1	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		STD		P03A-000B9	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		STD		P03A-000BB	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	10		STD		P03A-000A4	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	12		SCH40		P03A-000GC	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	14		SCH40		P03A-000GD	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	16		SCH20		P03A-000EM	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P21B-0001F	Straight tee ASTM A105 Class 6000 ASME B16.11 SW	
1	0.75				P21B-0001G	Straight tee ASTM A105 Class 6000 ASME B16.11 SW	
1	1				P21B-00026	Straight tee ASTM A105 Class 6000 ASME B16.11 SW	
1	1.5				P21B-00027	Straight tee ASTM A105 Class 6000 ASME B16.11 SW	
1	2		XS		P21A-001CJ	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		STD		P21A-001CU	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		STD		P21A-001CW	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6		STD		P21A-001D2	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8		STD		P21A-001D8	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10		STD		P21A-001BV	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12		SCH40		P21A-0022P	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14		SCH40		P21A-0022R	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16		SCH20		P21A-0020X	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75			P24B-00030	Reducing tee ASTM A105 Class 6000 ASME B16.11 SW	
1	1.5	0.75			P24B-00032	Reducing tee ASTM A105 Class 6000 ASME B16.11 SW	
1	1.5	1			P24B-0004J	Reducing tee ASTM A105 Class 6000 ASME B16.11 SW	
1	2	1	XS	SCH160	P24A-00GMB	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	XS	SCH160	P24A-005K9	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	STD	SCH160	P24A-00GMC	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	STD	XS	P24A-002HW	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P24A-002HY	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P24A-0021K	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	STD	P24A-0021A	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P24A-00229	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	STD	STD	P24A-0021E	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	STD	STD	P24A-0022M	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	STD	STD	P24A-0021B	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	STD	STD	P24A-0022B	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	STD	STD	P24A-0022W	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	SCH40	STD	P24A-00GSM	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH40	STD	P24A-00AF8	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH40	STD	P24A-00GSL	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	SCH40	STD	P24A-00GV4	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	SCH40	STD	P24A-00AFB	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	SCH40	STD	P24A-003GJ	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	SCH40	SCH40	P24A-0033E	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	6	SCH20	STD	P24A-00GU4	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	SCH20	STD	P24A-00GP8	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	SCH20	STD	P24A-00GU3	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	SCH20	SCH40	P24A-00L6A	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	SCH20	SCH40	P24A-00L4L	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	STD	XS	P27A-001MZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P27A-001N0	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P27A-00189	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	STD	P27A-001AZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P27A-001GW	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	STD	STD	P27A-001C2	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	STD	STD	P27A-00188	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	STD	STD	P27A-001C3	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	STD	STD	P27A-0018M	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	STD	STD	P27A-0019J	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	SCH40	STD	P27A-004W1	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH40	STD	P27A-004XB	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH40	STD	P27A-004UG	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	SCH40	STD	P27A-0051B	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	SCH40	STD	P27A-003ZT	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	SCH40	STD	P27A-0029L	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	SCH40	SCH40	P27A-001ZZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	SCH20	STD	P27A-003ND	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	SCH20	STD	P27A-0054A	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	SCH20	SCH40	P27A-00CBP	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	SCH20	SCH40	P27A-00CBR	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	STD	XS	P28A-001N5	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P28A-001N6	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P28A-0018B	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	STD	P28A-001AS	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P28A-00182	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	STD	STD	P28A-0017V	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	STD	STD	P28A-0018V	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	STD	STD	P28A-0017W	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	STD	STD	P28A-00190	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	STD	STD	P28A-0019J	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	SCH40	STD	P28A-008HU	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH40	STD	P28A-005T9	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH40	STD	P28A-008HT	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	SCH40	STD	P28A-008F4	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	SCH40	STD	P28A-003ZL	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	SCH40	STD	P28A-0028T	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	SCH40	SCH40	P28A-001ZG	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	SCH20	STD	P28A-003N7	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	SCH20	STD	P28A-008FM	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	SCH20	SCH40	P28A-009AX	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	SCH20	SCH40	P28A-009AY	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P29B-0002F	Cap ASTM A105 Class 6000 ASME B16.11 SW	
1	0.75				P29B-0002G	Cap ASTM A105 Class 6000 ASME B16.11 SW	
1	1				P29B-0002D	Cap ASTM A105 Class 6000 ASME B16.11 SW	
1	1.5				P29B-0002E	Cap ASTM A105 Class 6000 ASME B16.11 SW	
1	2		XS		P29A-000A1	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		STD		P29A-000BK	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		STD		P29A-000A3	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6		STD		P29A-000A9	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8		STD		P29A-000AF	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10		STD		P29A-0009Z	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12		SCH40		P29A-000GB	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14		SCH40		P29A-000GC	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16		SCH20		P29A-000F3	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
541	0.75				P29B-0000Y	Cap ASTM A105 Class 6000 ASME B16.11 NPT	
541	1				P29B-0000Z	Cap ASTM A105 Class 6000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P41A-000B9	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		XXS		P41A-000BA	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		XXS		P41A-000D8	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		XXS		P41A-000D9	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

CON SWAGED NIPPLE (SNC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	SCH160	P42A-00029	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	SCH160	SCH160	P42A-0009T	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	SCH160	SCH160	P42A-0009U	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	SCH160	SCH160	P42A-0009V	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	SCH160	SCH160	P42A-0009W	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	SCH160	SCH160	P42A-0009X	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	XS	SCH160	P42A-000J6	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	XS	SCH160	P42A-000J7	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	XS	SCH160	P42A-000F8	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	XS	SCH160	P42A-000KZ	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	

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CON SWAGED NIPPLE (SNC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	1.5	STD	SCH160	P42A-000L0	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	

ECC SWAGED NIPPLE (SNE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	SCH160	P43A-000AM	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	SCH160	SCH160	P43A-000B4	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	SCH160	SCH160	P43A-000B5	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	SCH160	SCH160	P43A-000B6	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	SCH160	SCH160	P43A-000B7	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	SCH160	SCH160	P43A-000B8	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	XS	SCH160	P43A-000B2	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	XS	SCH160	P43A-000B3	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	XS	SCH160	P43A-000CZ	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	XS	SCH160	P43A-000D0	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	STD	SCH160	P43A-000D1	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	

COUPLING (CPS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P47B-00013	Coupling ASTM A105 Class 6000 ASME B16.11 SW - SW	
1	0.75				P47B-00012	Coupling ASTM A105 Class 6000 ASME B16.11 SW - SW	
1	1				P47B-0002A	Coupling ASTM A105 Class 6000 ASME B16.11 SW - SW	
1	1.5				P47B-0002B	Coupling ASTM A105 Class 6000 ASME B16.11 SW - SW	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5 - 2.5	0.75			P31B-0137D	Outlet ASTM A105 Class 6000 MSS SP-97 SW	
1	3 - 10	0.75			P31B-007LV	Outlet ASTM A105 Class 6000 MSS SP-97 SW	
1	12 and larger	0.75			P31B-0136N	Outlet ASTM A105 Class 6000 MSS SP-97 SW	
1	3 - 10	1			P31B-007LN	Outlet ASTM A105 Class 6000 MSS SP-97 SW	
1	12 and larger	1			P31B-0136P	Outlet ASTM A105 Class 6000 MSS SP-97 SW	
1	4 - 5	1.5			P31B-004LE	Outlet ASTM A105 Class 6000 MSS SP-97 SW	
1	6 - 8	1.5			P31B-005T4	Outlet ASTM A105 Class 6000 MSS SP-97 SW	
1	10 - 18	1.5			P31B-007LF	Outlet ASTM A105 Class 6000 MSS SP-97 SW	
541	1	0.75			P31B-005HL	Outlet ASTM A105 Class 6000 MSS SP-97 NPT	
541	1.5 - 2.5	0.75			P31B-0137F	Outlet ASTM A105 Class 6000 MSS SP-97 NPT	
541	3 - 10	0.75			P31B-007KP	Outlet ASTM A105 Class 6000 MSS SP-97 NPT	
541	12 and larger	0.75			P31B-0138A	Outlet ASTM A105 Class 6000 MSS SP-97 NPT	
1	6	2	STD	XS	P31B-007SH	Outlet ASTM A105 MSS SP-97 BW	
1	8	2	STD	XS	P31B-00AGX	Outlet ASTM A105 MSS SP-97 BW	
1	10	2	STD	XS	P31B-00ASA	Outlet ASTM A105 MSS SP-97 BW	
1	12	2	SCH40	XS	P31B-00CBS	Outlet ASTM A105 MSS SP-97 BW	
1	14	2	SCH40	XS	P31B-00CAH	Outlet ASTM A105 MSS SP-97 BW	
1	16	2	SCH20	XS	P31B-00TF8	Outlet ASTM A105 MSS SP-97 BW	
1	8	3	STD	STD	P31B-00A2T	Outlet ASTM A105 MSS SP-97 BW	
1	10	3	STD	STD	P31B-009CM	Outlet ASTM A105 MSS SP-97 BW	
1	12	3	SCH40	STD	P31B-0096S	Outlet ASTM A105 MSS SP-97 BW	
1	14	3	SCH40	STD	P31B-0090U	Outlet ASTM A105 MSS SP-97 BW	
1	16	3	SCH20	STD	P31B-00TU2	Outlet ASTM A105 MSS SP-97 BW	
1	12	4	SCH40	STD	P31B-008ZY	Outlet ASTM A105 MSS SP-97 BW	
1	14	4	SCH40	STD	P31B-008YN	Outlet ASTM A105 MSS SP-97 BW	
1	16	4	SCH20	STD	P31B-00TU3	Outlet ASTM A105 MSS SP-97 BW	

OLET ON CAP (LC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
4203	0.75				P36B-000B9	Outlet on cap ASTM A105 Class 6000 MSS SP-97 SW Cap=NPS3	

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PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30B-0002D	Plug ASTM A105 ASME B16.11 NPT Round head	
1	0.75				P30B-0002E	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1				P30B-0002F	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1.5				P30B-0002G	Plug ASTM A105 ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P61B-001H5	Flange SW ASTM A105 Class 300 ASME B16.5 RF	
1	0.75		SCH160		P61B-001HH	Flange SW ASTM A105 Class 300 ASME B16.5 RF	
1	1		SCH160		P61B-001E8	Flange SW ASTM A105 Class 300 ASME B16.5 RF	
1	1.5		SCH160		P61B-001ET	Flange SW ASTM A105 Class 300 ASME B16.5 RF	
1	2		XS		P61B-001HW	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	3		STD		P61B-001LJ	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	4		STD		P61B-001MC	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	6		STD		P61B-001N2	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	8		STD		P61B-001NL	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	10		STD		P61B-001L6	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	12		SCH40		P61B-002FJ	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	14		SCH40		P61B-002FL	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	16		SCH20		P61B-002MS	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
781	0.5		SCH160		P61B-001DZ	Flange SW ASTM A105 Class 600 ASME B16.5 RF	
781	0.75		SCH160		P61B-001DW	Flange SW ASTM A105 Class 600 ASME B16.5 RF	
781	1		SCH160		P61B-005X5	Flange SW ASTM A105 Class 600 ASME B16.5 RF	
781	1.5		SCH160		P61B-005X6	Flange SW ASTM A105 Class 600 ASME B16.5 RF	
781	2		XS		P61B-001DH	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	3		STD		P61B-001TW	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	4		STD		P61B-001VV	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	6		STD		P61B-001JW	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	8		STD		P61B-001KK	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	10		STD		P61B-001JJ	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	12		SCH40		P61B-003T5	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	14		SCH40		P61B-003T6	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	16		SCH20		P61B-00798	Flange WN ASTM A105 Class 600 ASME B16.5 RF	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67B-000GH	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	0.75				P67B-000GJ	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	1				P67B-000GK	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	1.5				P67B-000GL	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	2				P67B-000GM	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	3				P67B-000GN	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	4				P67B-000GP	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	6				P67B-000GY	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	8				P67B-000GZ	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	10				P67B-000GR	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	12				P67B-000GS	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	14				P67B-000GT	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	16				P67B-000GU	Blind flange ASTM A105 Class 300 ASME B16.5 RF	

REDUCING FLANGE (FR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5		SCH160	P62B-000N4	Reducing flange SW ASTM A105 Class 300 ASME B16.5 RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000FT	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000FU	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

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GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000G5	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000G6	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	6				P73T-000G7	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	8				P73T-000G8	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	10				P73T-000FX	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	12				P73T-000FY	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	14				P73T-000FZ	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	16				P73T-000G0	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
3001	1				P78U-00069	Insulation gasket kit Glass reinforced epoxy Class 300 Manufacturer-standard Flange ASME B16.5 RF	
781	0.5				P73T-000J8	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	0.75				P73T-000J9	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1				P73T-000JA	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1.5				P73T-000JB	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	2				P73T-000JH	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	3				P73T-000JL	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	4				P73T-000JM	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	6				P73T-000JN	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	8				P73T-000JP	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	10				P73T-000JC	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	12				P73T-000JD	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	14				P73T-000JE	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	16				P73T-000JF	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-10				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	12-16				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
781	0.5-6				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
781	8-16				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81B-000P4	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	0.75				P81B-000NX	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	1				P81B-000NY	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	1.5				P81B-000NZ	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	2				P81C-002D6	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	3				P81C-002D7	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	4				P81C-002D8	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	6				P81C-002D9	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	8				P81C-0086V	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated	
1	10				P81C-002DB	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated	
744	0.5				P81B-0015L	Gate valve ASTM A105 Class 800 API 602 SW - NPT Trim number 8 BB-BG-OS&Y Handwheel operated	
744	0.75				P81B-002F4	Gate valve ASTM A105 Class 800 API 602 SW - NPT Trim number 8 BB-BG-OS&Y Handwheel operated	

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GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82B-000K0	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	0.75				P82B-000HB	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	1				P82B-000HC	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	1.5				P82B-000HD	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	2				P82C-00114	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	3				P82C-00115	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	4				P82C-00116	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	6				P82C-00117	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	8				P82C-0011A	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83B-000FX	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover	
1	0.75				P83B-000ER	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover	
1	1				P83B-000ES	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover	
1	1.5				P83B-000ET	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover	
1	2				P83C-0013H	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	3				P83C-0013L	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	4				P83C-0013M	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	6				P83C-0013N	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	8				P83C-0013P	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	10				P83C-0013D	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	

BALL VALVE (Q)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P84B-0012U	Ball valve Long-pattern ASTM A105 Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design	
24	1				P84B-0012Y	Ball valve Long-pattern ASTM A105 Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	

BUTTERFLY VALVE (H)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3				P86C-002AE	Offset design butterfly valve ASTM A216 Grade WCB Class 300 API 609 Category B Lug-type ASME B16.5 RF Disc CS Seat Stellite-6 Trim 13Cr Triple eccentric design BG Gear operated	
1	4				P86C-002B3	Offset design butterfly valve ASTM A216 Grade WCB Class 300 API 609 Category B Lug-type ASME B16.5 RF Disc CS Seat Stellite-6 Trim 13Cr Triple eccentric design BG Gear operated	
1	6				P86C-002B4	Offset design butterfly valve ASTM A216 Grade WCB Class 300 API 609 Category B Lug-type ASME B16.5 RF Disc CS Seat Stellite-6 Trim 13Cr Triple eccentric design BG Gear operated	
1	8				P86C-002B5	Offset design butterfly valve ASTM A216 Grade WCB Class 300 API 609 Category B Lug-type ASME B16.5 RF Disc CS Seat Stellite-6 Trim 13Cr Triple eccentric design BG Gear operated	
1	10				P86C-0023E	Offset design butterfly valve ASTM A216 Grade WCB Class 300 API 609 Category B Lug-type ASME B16.5 RF Disc CS Seat Stellite-6 Trim 13Cr Triple eccentric design BG Gear operated	
1	12				P86C-0023G	Offset design butterfly valve ASTM A216 Grade WCB Class 300 API 609 Category B Lug-type ASME B16.5 RF Disc CS Seat Stellite-6 Trim 13Cr Triple eccentric design BG Gear operated	
1	14				P86C-0023H	Offset design butterfly valve ASTM A216 Grade WCB Class 300 API 609 Category B Lug-type ASME B16.5 RF Disc CS Seat Stellite-6 Trim 13Cr Triple eccentric design BG Gear operated	
1	16				P86C-0023J	Offset design butterfly valve ASTM A216 Grade WCB Class 300 API 609 Category B Lug-type ASME B16.5 RF Disc CS Seat Stellite-6 Trim 13Cr Triple eccentric design BG Gear operated	

ORIFICE FLANGE (FO)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2		XS		P66B-0084B	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
200	2		XS		P66B-00843	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71B-000B1	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	0.75				P71B-000B2	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	1				P71B-000B3	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71B-000B4	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	2				P71B-000B6	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	

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SPECT BLANK (SB)							
OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3				P71B-000B7	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	4				P71B-000B8	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	6				P71B-000B9	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	8				P71B-000BA	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	10				P71B-000B5	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	12				P71B-000BB	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	

PADDLE BLANK (PB)							
OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000FA	Paddle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	16				P72B-000FB	Paddle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	

PADDLE SPACER (PS)							
OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000FG	Paddle spacer ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	16				P72B-000FH	Paddle spacer ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	

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BOLT TABLE (B_B2AW , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-003V4		
0.75	4	0.625	75	P80S-003XC		
1	4	0.625	80	P80S-003XD		
1.5	4	0.750	95	P80S-00414		
2	8	0.625	90	P80S-003XF		
3	8	0.750	110	P80S-003XK		
4	8	0.750	115	P80S-003XL		
6	12	0.750	125	P80S-003XN		
8	12	0.875	140	P80S-0041D		
10	16	1.000	160	P80S-0043K		
12	16	1.125	175	P80S-0046S		
14	20	1.125	180	P80S-0046T		
16	20	1.250	190	P80S-004AK		

BOLT TABLE (B_B2AW_211 , MACHINE ASME FF, OPTION CODE 211)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	65			
0.75	4	0.625	75			
1	4	0.625	75			
1.5	4	0.750	90			
2	8	0.625	85			
3	8	0.750	105			
4	8	0.750	110			
6	12	0.750	120			
8	12	0.875	135			
10	16	1.000	155			
12	16	1.125	170			

BOLT TABLE (B_B2AW_781 , STUD ASME RF, OPTION CODE 781)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	80	P80S-003V6		
0.75	4	0.625	90	P80S-003XF		
1	4	0.625	95	P80S-003XG		
1.5	4	0.750	110	P80S-003XK		
2	8	0.625	110	P80S-003VC		
3	8	0.750	130	P80S-003XP		
4	8	0.875	150	P80S-0041F		
6	12	1.000	175	P80S-0043P		
8	12	1.125	195	P80S-0046W		
10	16	1.250	250	P80S-004AY		
12	20	1.250	255	P80S-004AZ		
14	20	1.375	270	P80S-003E7		
16	20	1.500	295	P80S-003FL		

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BRANCH TABLE (T_B2AW)

RUN PIPE SIZE (in) \ BRANCH SIZE (in)	0.5	0.75	1	1.5	2	3	4	6	8	10	12	14	16
0.5	TS												
0.75		TS											
1		TR	TS										
1.5		TR	TR	TS									
2		L	TR	TR	TS								
3		L	L	TR	TR	TS							
4	L	L	L	L	TR	TR	TS						
6	L	L	L	L	L	TR	TR	TS					
8		L	L	L	L	L	TR	TR	TS				
10		L	L	L	L	L	TR	TR	TR	TS			
12		L	L	L	L	L	L	TR	TR	TR	TS		
14		L	L	L	L	L	L	TR	TR	TR	TR	TS	
16		L	L	L	L	L	L	TR	TR	TR	TR	TR	TS

TR : REDUCING TEE
L : OUTLET
TS : STRAIGHT TEE

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B2AW04 REV NO. 2

Material : Killed CS
Rating : ASME CLASS 300
Flange Face : RF
C.A.(mm) : 3.00
Gasket : Spiral Wound
Service : UTILITY - WATER SERVICE, CATEGORY D" FLUID : " / COOLING WATER SUPPLY / COOLING WATER RETURN / SERVICE WATER / RAW WATER (A/G)
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
25	THE WELDED PIPES SHALL BE GROOVING CORROSION RESISTANT
30	RAW WATER DESIGN CONDITIONS SHALL BE SUPPLIED BY 3RD PARTY RAW WATER SUPPLIER

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
541	NPT(F) (CA,L)
714	SW - NPT(F) (V)
781	CLASS 600 (B,F,G)

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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P01A-00143	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	0.75		SCH160		P01A-0010R	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1		SCH160		P01A-0014M	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1.5		SCH160		P01A-0015J	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	2		XS		P01A-000YX	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	3		XS		P01A-000Z4	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P02B-0002A	90 degree elbow ASTM A105 Class 9000 ASME B16.11 SW	
1	0.75				P02B-0001K	90 degree elbow ASTM A105 Class 6000 ASME B16.11 SW	
1	1				P02B-0002E	90 degree elbow ASTM A105 Class 6000 ASME B16.11 SW	
1	1.5				P02B-0002F	90 degree elbow ASTM A105 Class 6000 ASME B16.11 SW	
1	2		XS		P02A-000CP	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		XS		P02A-000CX	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P03B-00026	45 degree elbow ASTM A105 Class 9000 ASME B16.11 SW	
1	0.75				P03B-0001G	45 degree elbow ASTM A105 Class 6000 ASME B16.11 SW	
1	1				P03B-0002A	45 degree elbow ASTM A105 Class 6000 ASME B16.11 SW	
1	1.5				P03B-0002B	45 degree elbow ASTM A105 Class 6000 ASME B16.11 SW	
1	2		XS		P03A-000AS	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		XS		P03A-000AZ	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P21B-00022	Straight tee ASTM A105 Class 9000 ASME B16.11 SW	
1	0.75				P21B-0001G	Straight tee ASTM A105 Class 6000 ASME B16.11 SW	
1	1				P21B-00026	Straight tee ASTM A105 Class 6000 ASME B16.11 SW	
1	1.5				P21B-00027	Straight tee ASTM A105 Class 6000 ASME B16.11 SW	
1	2		XS		P21A-001CJ	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		XS		P21A-001CR	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75			P24B-00030	Reducing tee ASTM A105 Class 6000 ASME B16.11 SW	
1	1.5	0.75			P24B-00032	Reducing tee ASTM A105 Class 6000 ASME B16.11 SW	
1	1.5	1			P24B-0004J	Reducing tee ASTM A105 Class 6000 ASME B16.11 SW	
1	2	1	XS	SCH160	P24A-00GMB	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	XS	SCH160	P24A-005K9	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	XS	SCH160	P24A-00GNV	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	XS	XS	P24A-0023S	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	XS	XS	P27A-001E5	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	XS	XS	P28A-001EH	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P29B-0001K	Cap ASTM A105 Class 9000 ASME B16.11 SW	
1	0.75				P29B-0002G	Cap ASTM A105 Class 6000 ASME B16.11 SW	
1	1				P29B-0002D	Cap ASTM A105 Class 6000 ASME B16.11 SW	

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CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5				P29B-0002E	Cap ASTM A105 Class 6000 ASME B16.11 SW	
1	2		XS		P29A-000A1	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		XS		P29A-000AT	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
541	0.75				P29B-0000Y	Cap ASTM A105 Class 6000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P41A-000B9	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		XXS		P41A-000BA	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		XXS		P41A-000D8	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		XXS		P41A-000D9	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

CON SWAGED NIPPLE (SNC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	XXS	P42A-000A5	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	SCH160	XXS	P42A-000A6	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	SCH160	SCH160	P42A-0009U	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	SCH160	XXS	P42A-000A7	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	SCH160	SCH160	P42A-0009W	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	SCH160	SCH160	P42A-0009X	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	XS	XXS	P42A-000LL	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	XS	SCH160	P42A-000J7	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	XS	SCH160	P42A-000F8	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	XS	SCH160	P42A-000KZ	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	XS	SCH160	P42A-000L9	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	

ECC SWAGED NIPPLE (SNE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	XXS	P43A-000DD	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	SCH160	XXS	P43A-000DE	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	SCH160	SCH160	P43A-000B5	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	SCH160	XXS	P43A-000DF	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	SCH160	SCH160	P43A-000B7	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	SCH160	SCH160	P43A-000B8	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	XS	XXS	P43A-000E8	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	XS	SCH160	P43A-000B3	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	XS	SCH160	P43A-000CZ	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	XS	SCH160	P43A-000D0	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	XS	SCH160	P43A-000DM	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	

COUPLING (CPS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P47B-00026	Coupling ASTM A105 Class 9000 ASME B16.11 SW - SW	
1	0.75				P47B-00012	Coupling ASTM A105 Class 6000 ASME B16.11 SW - SW	
1	1				P47B-0002A	Coupling ASTM A105 Class 6000 ASME B16.11 SW - SW	
1	1.5				P47B-0002B	Coupling ASTM A105 Class 6000 ASME B16.11 SW - SW	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5 - 2.5	0.75			P31B-0137D	Outlet ASTM A105 Class 6000 MSS SP-97 SW	
1	3 - 10	0.75			P31B-007LV	Outlet ASTM A105 Class 6000 MSS SP-97 SW	
1	3 - 10	1			P31B-007LN	Outlet ASTM A105 Class 6000 MSS SP-97 SW	
541	1	0.75			P31B-005HL	Outlet ASTM A105 Class 6000 MSS SP-97 NPT	
541	1.5 - 2.5	0.75			P31B-0137F	Outlet ASTM A105 Class 6000 MSS SP-97 NPT	
541	3 - 10	0.75			P31B-007KP	Outlet ASTM A105 Class 6000 MSS SP-97 NPT	

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PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30B-0002D	Plug ASTM A105 ASME B16.11 NPT Round head	
1	0.75				P30B-0002E	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1				P30B-0002F	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1.5				P30B-0002G	Plug ASTM A105 ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P61B-001HD	Flange SW ASTM A105 Class 300 ASME B16.5 RF	
1	0.75		SCH160		P61B-001HH	Flange SW ASTM A105 Class 300 ASME B16.5 RF	
1	1		SCH160		P61B-001E8	Flange SW ASTM A105 Class 300 ASME B16.5 RF	
1	1.5		SCH160		P61B-001ET	Flange SW ASTM A105 Class 300 ASME B16.5 RF	
1	2		XS		P61B-001HW	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	3		XS		P61B-001DK	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
781	0.5		XXS		P61B-002ZE	Flange SW ASTM A105 Class 600 ASME B16.5 RF	
781	0.75		SCH160		P61B-001DW	Flange SW ASTM A105 Class 600 ASME B16.5 RF	
781	1		SCH160		P61B-005X5	Flange SW ASTM A105 Class 600 ASME B16.5 RF	
781	1.5		SCH160		P61B-005X6	Flange SW ASTM A105 Class 600 ASME B16.5 RF	
781	2		XS		P61B-001DH	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	3		XS		P61B-001M8	Flange WN ASTM A105 Class 600 ASME B16.5 RF	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67B-000GH	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	0.75				P67B-000GJ	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	1				P67B-000GK	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	1.5				P67B-000GL	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	2				P67B-000GM	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	3				P67B-000GN	Blind flange ASTM A105 Class 300 ASME B16.5 RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000FT	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000FU	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000G5	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	0.5				P73T-000J8	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	0.75				P73T-000J9	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1				P73T-000JA	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1.5				P73T-000JB	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	2				P73T-000JH	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	3				P73T-000JL	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-3				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
781	0.5-3				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81B-000P4	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	0.75				P81B-000NX	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	

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GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P81B-000NY	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	1.5				P81B-000NZ	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	2				P81C-002D6	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	3				P81C-002D7	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
714	0.5				P81B-0015L	Gate valve ASTM A105 Class 800 API 602 SW - NPT Trim number 8 BB-BG-OS&Y Handwheel operated	
714	0.75				P81B-002F4	Gate valve ASTM A105 Class 800 API 602 SW - NPT Trim number 8 BB-BG-OS&Y Handwheel operated	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82B-000K0	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	0.75				P82B-000HB	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	1				P82B-000HC	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	1.5				P82B-000HD	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	2				P82C-00114	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	3				P82C-00115	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83B-000FX	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover	
1	0.75				P83B-000ER	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover	
1	1				P83B-000ES	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover	
1	1.5				P83B-000ET	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover	
1	2				P83C-0013H	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	3				P83C-0013L	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	

BUTTERFLY VALVE (H)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3				P86C-002AE	Offset design butterfly valve ASTM A216 Grade WCB Class 300 API 609 Category B Lug-type ASME B16.5 RF Disc CS Seat Stellite-6 Trim 13Cr Triple eccentric design BG Gear operated	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71B-000B1	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	0.75				P71B-000B2	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	1				P71B-000B3	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71B-000B4	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	2				P71B-000B6	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	3				P71B-000B7	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	

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BOLT TABLE (B_B2AW04 , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-003V4		
0.75	4	0.625	75	P80S-003XC		
1	4	0.625	80	P80S-003XD		
1.5	4	0.750	95	P80S-00414		
2	8	0.625	90	P80S-003XF		
3	8	0.750	110	P80S-003XK		

BOLT TABLE (B_B2AW04_211 , MACHINE ASME FF, OPTION CODE 211)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	65			
0.75	4	0.625	75			
1	4	0.625	75			
1.5	4	0.750	90			
2	8	0.625	85			
3	8	0.750	105			

BOLT TABLE (B_B2AW04_781 , STUD ASME RF, OPTION CODE 781)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	80	P80S-003V6		
0.75	4	0.625	90	P80S-003XF		
1	4	0.625	95	P80S-003XG		
1.5	4	0.750	110	P80S-003XK		
2	8	0.625	110	P80S-003VC		
3	8	0.750	130	P80S-003XP		

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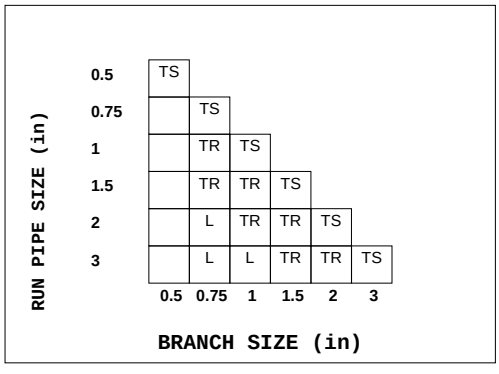
BRANCH TABLE (T_B2AW04)



TR : REDUCING TEE
L : OUTLET
TS : STRAIGHT TEE

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Material : Killed CS
Rating : ASME CLASS 300
Flange Face : RF
C.A.(mm) : 1.50
Gasket : Spiral Wound
Service : CHEMICAL DOSING : / AMINE
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
2	USE OF SOFT SEATED BALL, PLUG AND BUTTERFLY VALVES SHALL BE LIMITED TO MAXIMUM OF 204DEGC (400DEGF)

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
24	FULL PORT (Q)
541	NPT(F) (CA,L)
714	SW - NPT(F) (V)
781	CLASS 600 (B,F,G)

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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P01A-00143	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	0.75		SCH160		P01A-0010R	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1		SCH160		P01A-0014M	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1.5		SCH160		P01A-0015J	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	2		XS		P01A-000YX	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P02B-0002A	90 degree elbow ASTM A105 Class 9000 ASME B16.11 SW	
1	0.75				P02B-0001K	90 degree elbow ASTM A105 Class 6000 ASME B16.11 SW	
1	1				P02B-0002E	90 degree elbow ASTM A105 Class 6000 ASME B16.11 SW	
1	1.5				P02B-0002F	90 degree elbow ASTM A105 Class 6000 ASME B16.11 SW	
1	2		XS		P02A-000CP	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P03B-00026	45 degree elbow ASTM A105 Class 9000 ASME B16.11 SW	
1	0.75				P03B-0001G	45 degree elbow ASTM A105 Class 6000 ASME B16.11 SW	
1	1				P03B-0002A	45 degree elbow ASTM A105 Class 6000 ASME B16.11 SW	
1	1.5				P03B-0002B	45 degree elbow ASTM A105 Class 6000 ASME B16.11 SW	
1	2		XS		P03A-000AS	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P21B-00022	Straight tee ASTM A105 Class 9000 ASME B16.11 SW	
1	0.75				P21B-0001G	Straight tee ASTM A105 Class 6000 ASME B16.11 SW	
1	1				P21B-00026	Straight tee ASTM A105 Class 6000 ASME B16.11 SW	
1	1.5				P21B-00027	Straight tee ASTM A105 Class 6000 ASME B16.11 SW	
1	2		XS		P21A-001CJ	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75			P24B-00030	Reducing tee ASTM A105 Class 6000 ASME B16.11 SW	
1	1.5	0.75			P24B-00032	Reducing tee ASTM A105 Class 6000 ASME B16.11 SW	
1	1.5	1			P24B-0004J	Reducing tee ASTM A105 Class 6000 ASME B16.11 SW	
1	2	1	XS	SCH160	P24A-00GMB	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	XS	SCH160	P24A-005K9	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P29B-0001K	Cap ASTM A105 Class 9000 ASME B16.11 SW	
1	0.75				P29B-0002G	Cap ASTM A105 Class 6000 ASME B16.11 SW	
1	1				P29B-0002D	Cap ASTM A105 Class 6000 ASME B16.11 SW	
1	1.5				P29B-0002E	Cap ASTM A105 Class 6000 ASME B16.11 SW	
1	2		XS		P29A-000A1	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
541	0.75				P29B-0000Y	Cap ASTM A105 Class 6000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P41A-000B9	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		XXS		P41A-000BA	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		XXS		P41A-000D8	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		XXS		P41A-000D9	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

CON SWAGED NIPPLE (SNC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	XXS	P42A-000A5	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	

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CON SWAGED NIPPLE (SNC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.5	SCH160	XXS	P42A-000A6	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	SCH160	SCH160	P42A-0009U	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	SCH160	XXS	P42A-000A7	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	SCH160	SCH160	P42A-0009W	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	SCH160	SCH160	P42A-0009X	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	XS	XXS	P42A-000LL	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	XS	SCH160	P42A-000J7	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	XS	SCH160	P42A-000F8	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	XS	SCH160	P42A-000KZ	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	

ECC SWAGED NIPPLE (SNE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	XXS	P43A-000DD	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	SCH160	XXS	P43A-000DE	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	SCH160	SCH160	P43A-000B5	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	SCH160	XXS	P43A-000DF	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	SCH160	SCH160	P43A-000B7	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	SCH160	SCH160	P43A-000B8	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	XS	XXS	P43A-000E8	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	XS	SCH160	P43A-000B3	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	XS	SCH160	P43A-000CZ	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	XS	SCH160	P43A-000D0	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	

COUPLING (CPS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P47B-00026	Coupling ASTM A105 Class 9000 ASME B16.11 SW - SW	
1	0.75				P47B-00012	Coupling ASTM A105 Class 6000 ASME B16.11 SW - SW	
1	1				P47B-0002A	Coupling ASTM A105 Class 6000 ASME B16.11 SW - SW	
1	1.5				P47B-0002B	Coupling ASTM A105 Class 6000 ASME B16.11 SW - SW	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5 - 2.5	0.75			P31B-0137D	Outlet ASTM A105 Class 6000 MSS SP-97 SW	
541	1	0.75			P31B-005HL	Outlet ASTM A105 Class 6000 MSS SP-97 NPT	
541	1.5 - 2.5	0.75			P31B-0137F	Outlet ASTM A105 Class 6000 MSS SP-97 NPT	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30B-0002D	Plug ASTM A105 ASME B16.11 NPT Round head	
1	0.75				P30B-0002E	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1				P30B-0002F	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1.5				P30B-0002G	Plug ASTM A105 ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P61B-001HD	Flange SW ASTM A105 Class 300 ASME B16.5 RF	
1	0.75		SCH160		P61B-001HH	Flange SW ASTM A105 Class 300 ASME B16.5 RF	
1	1		SCH160		P61B-001E8	Flange SW ASTM A105 Class 300 ASME B16.5 RF	
1	1.5		SCH160		P61B-001ET	Flange SW ASTM A105 Class 300 ASME B16.5 RF	
1	2		XS		P61B-001HW	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
781	0.5		XXS		P61B-002ZE	Flange SW ASTM A105 Class 600 ASME B16.5 RF	
781	0.75		SCH160		P61B-001DW	Flange SW ASTM A105 Class 600 ASME B16.5 RF	
781	1		SCH160		P61B-005X5	Flange SW ASTM A105 Class 600 ASME B16.5 RF	
781	1.5		SCH160		P61B-005X6	Flange SW ASTM A105 Class 600 ASME B16.5 RF	
781	2		XS		P61B-001DH	Flange WN ASTM A105 Class 600 ASME B16.5 RF	

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BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67B-000GH	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	0.75				P67B-000GJ	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	1				P67B-000GK	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	1.5				P67B-000GL	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	2				P67B-000GM	Blind flange ASTM A105 Class 300 ASME B16.5 RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000FT	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000FU	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	0.5				P73T-000J8	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	0.75				P73T-000J9	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1				P73T-000JA	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1.5				P73T-000JB	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	2				P73T-000JH	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-2				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
781	0.5-2				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81B-001ZN	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated Fluid-1	
1	0.75				P81B-001ZP	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated Fluid-1	
1	1				P81B-001ZR	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated Fluid-1	
1	1.5				P81B-001ZS	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated Fluid-1	
1	2				P81C-006N8	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated Fluid-1	
714	0.5				P81B-002SA	Gate valve ASTM A105 Class 800 API 602 SW - NPT Trim number 8 BB-BG-OS&Y Handwheel operated Fluid-1	
714	0.75				P81B-002FD	Gate valve ASTM A105 Class 800 API 602 SW - NPT Trim number 8 BB-BG-OS&Y Handwheel operated Fluid-1	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82B-001H8	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated Fluid-1	
1	0.75				P82B-001H9	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated Fluid-1	
1	1				P82B-001HA	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated Fluid-1	
1	1.5				P82B-001HB	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated Fluid-1	
1	2				P82C-0037B	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated Fluid-1	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83B-000FX	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover	
1	0.75				P83B-000ER	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover	
1	1				P83B-000ES	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover	
1	1.5				P83B-000ET	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover	
1	2				P83C-0013H	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	

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BALL VALVE (Q)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P84B-001HP	Ball valve Long-pattern ASTM A105 Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design Fluid-1	
1	0.75				P84B-001HR	Ball valve Long-pattern ASTM A105 Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design Fluid-1	
1	1				P84B-001HS	Ball valve Long-pattern ASTM A105 Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design Fluid-1	
1	1.5				P84B-001HT	Ball valve Long-pattern ASTM A105 Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design Fluid-1	
1	2				P84C-006T6	Ball valve Long-pattern ASTM A216 Grade WCB Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design Fluid-1	
24	0.5				P84B-001JN	Ball valve Long-pattern ASTM A105 Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design Fluid-1	
24	0.75				P84B-001JP	Ball valve Long-pattern ASTM A105 Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design Fluid-1	
24	1				P84B-001JR	Ball valve Long-pattern ASTM A105 Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design Fluid-1	
24	1.5				P84B-001JS	Ball valve Long-pattern ASTM A105 Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design Fluid-1	
24	2				P84C-006UZ	Ball valve Long-pattern ASTM A216 Grade WCB Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design Fluid-1	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71B-000B1	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	0.75				P71B-000B2	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	1				P71B-000B3	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71B-000B4	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	2				P71B-000B6	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	

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BOLT TABLE (B_B2AY04 , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-003V4		
0.75	4	0.625	75	P80S-003XC		
1	4	0.625	80	P80S-003XD		
1.5	4	0.750	95	P80S-00414		
2	8	0.625	90	P80S-003XF		

BOLT TABLE (B_B2AY04_781 , STUD ASME RF, OPTION CODE 781)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	80	P80S-003V6		
0.75	4	0.625	90	P80S-003XF		
1	4	0.625	95	P80S-003XG		
1.5	4	0.750	110	P80S-003XK		
2	8	0.625	110	P80S-003VC		

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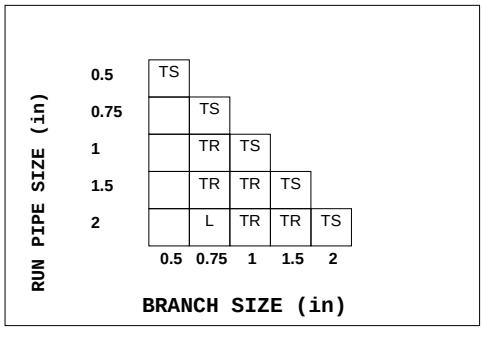
BRANCH TABLE (T_B2AY04)



TR : REDUCING TEE
L : OUTLET
TS : STRAIGHT TEE

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PIPING CLASS

B2DC01 REV NO. 2

Material : 1-1/4Cr - 1/2Mo
Rating : ASME CLASS 300
Flange Face : RF
C.A.(mm) : 3.00
Gasket : Spiral Wound
Service : PROCESS - CATALYST : / CATALYST
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
2	USE OF SOFT SEATED BALL, PLUG AND BUTTERFLY VALVES SHALL BE LIMITED TO MAXIMUM OF 204DEGC (400DEGF)
6	PIPE THICKNESS CALCULATION TO INCLUDE CORROSION AND EROSION ALLOWANCES DUE TO THE PROCESS CATALYST FLOW, AS PER PROCESS LICENSOR SPECIFICATIONS
36	ASTM A691 CR-MO WELDED PIPES SPECIFIED WITH CLASS 22 CAN BE USED IN LIEU OF CLASS 42 IN NON-LICENSED UNITS ONLY. GRADE SHALL BE AS SPECIFIED IN "PIPE / FLANGE MATERIAL" SECTION IN ATTACHMENT 9.0 OF THIS DOCUMENT

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
541	NPT(F) (CA)
781	CLASS 600 (B,F,G)
4608	VALVE WITH NIPPLES (V)

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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P01F-0001X	Pipe ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M PE	
1	0.75		SCH160		P01F-0001Y	Pipe ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M PE	
1	1		SCH160		P01F-0003X	Pipe ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M PE	
1	1.5		SCH160		P01F-0003Y	Pipe ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M PE	
1	2		XS		P01F-0002U	Pipe ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M BE	
1	3		STD		P01F-0002V	Pipe ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M BE	
1	4		STD		P01F-0002W	Pipe ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M BE	
1	6		XS		P01F-0001U	Pipe ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M BE	
1	8		SCH60		P01F-00033	Pipe ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M BE	
1	10		XS		P01F-0003R	Pipe ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M BE	
1	12		XS		P01F-00030	Pipe ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M BE	
1	14		XS		P01F-00031	Pipe ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P02F-00068	90 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	0.75		SCH160		P02F-00069	90 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	1		SCH160		P02F-0005B	90 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	1.5		SCH160		P02F-0005C	90 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	2		XS		P02F-00055	90 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	3		STD		P02F-00056	90 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	4		STD		P02F-00057	90 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	6		XS		P02F-000B3	90 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	8		SCH60		P02F-000CF	90 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	10		XS		P02F-0006A	90 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	12		XS		P02F-0005A	90 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	14		XS		P02F-0008S	90 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P03F-00065	45 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	0.75		SCH160		P03F-00066	45 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	1		SCH160		P03F-00058	45 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	1.5		SCH160		P03F-00059	45 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	2		XS		P03F-00052	45 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	3		STD		P03F-00053	45 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	4		STD		P03F-00054	45 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	6		XS		P03F-000AW	45 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	8		SCH60		P03F-000C8	45 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	10		XS		P03F-00067	45 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	12		XS		P03F-00057	45 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	14		XS		P03F-0008J	45 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P21F-00066	Straight tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	0.75		SCH160		P21F-00067	Straight tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	1		SCH160		P21F-00059	Straight tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	1.5		SCH160		P21F-0005A	Straight tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	2		XS		P21F-00053	Straight tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	3		STD		P21F-00054	Straight tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	4		STD		P21F-00055	Straight tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	6		XS		P21F-000AU	Straight tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	8		SCH60		P21F-000C6	Straight tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	10		XS		P21F-00068	Straight tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	12		XS		P21F-00058	Straight tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	14		XS		P21F-0008K	Straight tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	

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REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75	SCH160	SCH160	P24F-000FA	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	1.5	0.75	SCH160	SCH160	P24F-000F7	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	1.5	1	SCH160	SCH160	P24F-000D6	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	2	1	XS	SCH160	P24F-000CM	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	2	1.5	XS	SCH160	P24F-000CN	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	3	1.5	STD	SCH160	P24F-000CP	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	3	2	STD	XS	P24F-000CR	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	4	2	STD	XS	P24F-000CS	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	4	3	STD	STD	P24F-000CT	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	6	3	XS	STD	P24F-0010R	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	6	4	XS	STD	P24F-0010S	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	8	4	SCH60	STD	P24F-0010T	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	8	6	SCH60	XS	P24F-0010U	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	10	4	XS	STD	P24F-0010W	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	10	6	XS	XS	P24F-0010X	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	10	8	XS	SCH60	P24F-0010Y	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	12	6	XS	XS	P24F-00110	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	12	8	XS	SCH60	P24F-00111	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	12	10	XS	XS	P24F-0010Z	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	14	6	XS	XS	P24F-00115	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	14	8	XS	SCH60	P24F-00116	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	14	10	XS	XS	P24F-00114	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	14	12	XS	XS	P24F-000KK	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	SCH160	P27F-000DT	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	1	0.5	SCH160	SCH160	P27F-000DU	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	1	0.75	SCH160	SCH160	P27F-000DV	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	1.5	0.5	SCH160	SCH160	P27F-000DR	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	1.5	0.75	SCH160	SCH160	P27F-000DS	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	1.5	1	SCH160	SCH160	P27F-000BS	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	2	0.75	XS	SCH160	P27F-000B1	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	2	1	XS	SCH160	P27F-000B2	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	2	1.5	XS	SCH160	P27F-000B3	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	3	1.5	STD	SCH160	P27F-000B4	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	3	2	STD	XS	P27F-000B5	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	4	1.5	STD	SCH160	P27F-000B6	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	4	2	STD	XS	P27F-000B7	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	4	3	STD	STD	P27F-000B8	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	6	3	XS	STD	P27F-000V6	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	6	4	XS	STD	P27F-000V7	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	8	4	SCH60	STD	P27F-000V8	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	8	6	SCH60	XS	P27F-000V9	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	10	4	XS	STD	P27F-000DW	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	10	6	XS	XS	P27F-000VA	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	10	8	XS	SCH60	P27F-000VB	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	12	6	XS	XS	P27F-000VD	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	12	8	XS	SCH60	P27F-000VE	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	12	10	XS	XS	P27F-000VC	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	14	6	XS	XS	P27F-000VG	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	14	8	XS	SCH60	P27F-000VH	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	14	10	XS	XS	P27F-000VF	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	14	12	XS	XS	P27F-000KL	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	SCH160	P28F-000DT	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	1	0.5	SCH160	SCH160	P28F-000DU	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	

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ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75	SCH160	SCH160	P28F-000DV	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	1.5	0.5	SCH160	SCH160	P28F-000DR	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	1.5	0.75	SCH160	SCH160	P28F-000DS	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	1.5	1	SCH160	SCH160	P28F-000BS	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	2	0.75	XS	SCH160	P28F-000B1	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	2	1	XS	SCH160	P28F-000B2	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	2	1.5	XS	SCH160	P28F-000B3	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	3	1.5	STD	SCH160	P28F-000B4	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	3	2	STD	XS	P28F-000B5	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	4	1.5	STD	SCH160	P28F-000B6	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	4	2	STD	XS	P28F-000B7	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	4	3	STD	STD	P28F-000B8	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	6	3	XS	STD	P28F-000V6	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	6	4	XS	STD	P28F-000V7	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	8	4	SCH60	STD	P28F-000V8	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	8	6	SCH60	XS	P28F-000V9	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	10	4	XS	STD	P28F-000DW	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	10	6	XS	XS	P28F-000VA	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	10	8	XS	SCH60	P28F-000VB	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	12	6	XS	XS	P28F-000VD	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	12	8	XS	SCH60	P28F-000VE	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	12	10	XS	XS	P28F-000VC	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	14	6	XS	XS	P28F-000VG	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	14	8	XS	SCH60	P28F-000VH	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	14	10	XS	XS	P28F-000VF	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	14	12	XS	XS	P28F-000KL	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P29F-000BP	Cap ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	0.75		SCH160		P29F-000BR	Cap ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	1		SCH160		P29F-000BS	Cap ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	1.5		SCH160		P29F-000BT	Cap ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	2		XS		P29F-00050	Cap ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	3		STD		P29F-00051	Cap ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	4		STD		P29F-00052	Cap ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	6		XS		P29F-000AL	Cap ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	8		SCH60		P29F-000BU	Cap ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	10		XS		P29F-00060	Cap ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	12		XS		P29F-00055	Cap ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	14		XS		P29F-0008A	Cap ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
541	0.75				P29G-0001R	Cap ASTM A182 Grade F11 Class 1 Class 6000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P41F-0002D	Straight nipple ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		XXS		P41F-0002E	Straight nipple ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		XXS		P41F-0002F	Straight nipple ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		XXS		P41F-0002G	Straight nipple ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2	0.75	XS	SCH160	P31G-001CW	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	3	0.75	STD	SCH160	P31G-001CX	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	4	0.75	STD	SCH160	P31G-001CZ	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	6	0.75	XS	SCH160	P31G-001D2	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	8	0.75	SCH60	SCH160	P31G-001D6	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	10	0.75	XS	SCH160	P31G-001DB	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	12	0.75	XS	SCH160	P31G-001DG	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	

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OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14	0.75	XS	SCH160	P31G-001DN	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	3	1	STD	SCH160	P31G-001CY	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	4	1	STD	SCH160	P31G-001D0	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	6	1	XS	SCH160	P31G-001D3	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	8	1	SCH60	SCH160	P31G-001D7	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	10	1	XS	SCH160	P31G-001DC	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	12	1	XS	SCH160	P31G-001DH	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	14	1	XS	SCH160	P31G-001DP	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	4	1.5	STD	SCH160	P31G-001D1	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	6	1.5	XS	SCH160	P31G-001D4	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	8	1.5	SCH60	SCH160	P31G-001D8	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	10	1.5	XS	SCH160	P31G-001DD	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	12	1.5	XS	SCH160	P31G-001DJ	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	14	1.5	XS	SCH160	P31G-001DR	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	6	2	XS	XS	P31G-001D5	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	8	2	SCH60	XS	P31G-001D9	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	10	2	XS	XS	P31G-001DE	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	12	2	XS	XS	P31G-001DK	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	14	2	XS	XS	P31G-001DS	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	8	3	SCH60	STD	P31G-001DA	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	10	3	XS	STD	P31G-001DF	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	12	3	XS	STD	P31G-001DL	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	14	3	XS	STD	P31G-001DT	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	12	4	XS	STD	P31G-001DM	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	14	4	XS	STD	P31G-001DU	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30G-0001G	Plug ASTM A182 Grade F11 Class 1 ASME B16.11 NPT Round head	
1	0.75				P30G-0001H	Plug ASTM A182 Grade F11 Class 1 ASME B16.11 NPT Round head	
1	1				P30G-0001J	Plug ASTM A182 Grade F11 Class 1 ASME B16.11 NPT Round head	
1	1.5				P30G-0001K	Plug ASTM A182 Grade F11 Class 1 ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P61G-000AP	Flange WN ASTM A182 Grade F11 Class 2 Class 300 ASME B16.5 RF	
1	0.75		SCH160		P61G-000AR	Flange WN ASTM A182 Grade F11 Class 2 Class 300 ASME B16.5 RF	
1	1		SCH160		P61G-0009L	Flange WN ASTM A182 Grade F11 Class 2 Class 300 ASME B16.5 RF	
1	1.5		SCH160		P61G-0009M	Flange WN ASTM A182 Grade F11 Class 2 Class 300 ASME B16.5 RF	
1	2		XS		P61G-0006V	Flange WN ASTM A182 Grade F11 Class 2 Class 300 ASME B16.5 RF	
1	3		STD		P61G-0006Y	Flange WN ASTM A182 Grade F11 Class 2 Class 300 ASME B16.5 RF	
1	4		STD		P61G-0006Z	Flange WN ASTM A182 Grade F11 Class 2 Class 300 ASME B16.5 RF	
1	6		XS		P61G-00075	Flange WN ASTM A182 Grade F11 Class 2 Class 300 ASME B16.5 RF	
1	8		SCH60		P61G-00076	Flange WN ASTM A182 Grade F11 Class 2 Class 300 ASME B16.5 RF	
1	10		XS		P61G-00097	Flange WN ASTM A182 Grade F11 Class 2 Class 300 ASME B16.5 RF	
1	12		XS		P61G-00071	Flange WN ASTM A182 Grade F11 Class 2 Class 300 ASME B16.5 RF	
1	14		XS		P61G-00072	Flange WN ASTM A182 Grade F11 Class 2 Class 300 ASME B16.5 RF	
781	0.5		SCH160		P61G-000AS	Flange WN ASTM A182 Grade F11 Class 2 Class 600 ASME B16.5 RF	
781	0.75		SCH160		P61G-000AT	Flange WN ASTM A182 Grade F11 Class 2 Class 600 ASME B16.5 RF	
781	1		SCH160		P61G-000AL	Flange WN ASTM A182 Grade F11 Class 2 Class 600 ASME B16.5 RF	
781	1.5		SCH160		P61G-000AM	Flange WN ASTM A182 Grade F11 Class 2 Class 600 ASME B16.5 RF	
781	2		XS		P61G-0007B	Flange WN ASTM A182 Grade F11 Class 2 Class 600 ASME B16.5 RF	
781	3		STD		P61G-0007D	Flange WN ASTM A182 Grade F11 Class 2 Class 600 ASME B16.5 RF	
781	4		STD		P61G-0007E	Flange WN ASTM A182 Grade F11 Class 2 Class 600 ASME B16.5 RF	
781	6		XS		P61G-0003X	Flange WN ASTM A182 Grade F11 Class 2 Class 600 ASME B16.5 RF	
781	8		SCH60		P61G-0007F	Flange WN ASTM A182 Grade F11 Class 2 Class 600 ASME B16.5 RF	
781	10		XS		P61G-00098	Flange WN ASTM A182 Grade F11 Class 2 Class 600 ASME B16.5 RF	
781	12		XS		P61G-00078	Flange WN ASTM A182 Grade F11 Class 2 Class 600 ASME B16.5 RF	
781	14		XS		P61G-00079	Flange WN ASTM A182 Grade F11 Class 2 Class 600 ASME B16.5 RF	

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BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67G-0001A	Blind flange ASTM A182 Grade F11 Class 2 Class 300 ASME B16.5 RF	
1	0.75				P67G-0001B	Blind flange ASTM A182 Grade F11 Class 2 Class 300 ASME B16.5 RF	
1	1				P67G-0001C	Blind flange ASTM A182 Grade F11 Class 2 Class 300 ASME B16.5 RF	
1	1.5				P67G-0001D	Blind flange ASTM A182 Grade F11 Class 2 Class 300 ASME B16.5 RF	
1	2				P67G-0004E	Blind flange ASTM A182 Grade F11 Class 2 Class 300 ASME B16.5 RF	
1	3				P67G-0004G	Blind flange ASTM A182 Grade F11 Class 2 Class 300 ASME B16.5 RF	
1	4				P67G-0004H	Blind flange ASTM A182 Grade F11 Class 2 Class 300 ASME B16.5 RF	
1	6				P67G-0001E	Blind flange ASTM A182 Grade F11 Class 2 Class 300 ASME B16.5 RF	
1	8				P67G-0001F	Blind flange ASTM A182 Grade F11 Class 2 Class 300 ASME B16.5 RF	
1	10				P67G-0004A	Blind flange ASTM A182 Grade F11 Class 2 Class 300 ASME B16.5 RF	
1	12				P67G-0004B	Blind flange ASTM A182 Grade F11 Class 2 Class 300 ASME B16.5 RF	
1	14				P67G-0004C	Blind flange ASTM A182 Grade F11 Class 2 Class 300 ASME B16.5 RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-003AM	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	0.75				P73T-003AN	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	1				P73T-003AP	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	1.5				P73T-003AR	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	2				P73T-003AX	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	3				P73T-003B0	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	4				P73T-003B1	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	6				P73T-003B2	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	8				P73T-003B3	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	10				P73T-003AS	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	12				P73T-003AT	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	14				P73T-003AU	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
781	0.5				P73T-003B4	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
781	0.75				P73T-003B5	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
781	1				P73T-003B6	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
781	1.5				P73T-003B7	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
781	2				P73T-003BD	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
781	3				P73T-003BG	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
781	4				P73T-003BH	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
781	6				P73T-003BJ	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
781	8				P73T-003BK	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
781	10				P73T-003B8	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
781	12				P73T-003B9	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
781	14				P73T-003BA	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-10				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B16 / A194 Grade 4 ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	12-14				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B16 / A194 Grade 4 ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
781	0.5-6				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B16 / A194 Grade 4 ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
781	8-14				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B16 / A194 Grade 4 ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	

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GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81G-000CF	Gate valve ASTM A182 Grade F11 Class 2 Class 300 API 602 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2	
1	0.75				P81G-000CG	Gate valve ASTM A182 Grade F11 Class 2 Class 300 API 602 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2	
1	1				P81G-000CH	Gate valve ASTM A182 Grade F11 Class 2 Class 300 API 602 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2	
1	1.5				P81G-000CJ	Gate valve ASTM A182 Grade F11 Class 2 Class 300 API 602 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2	
1	2				P81H-000XL	Gate valve ASTM A217 Grade WC6 Class 300 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2	
1	3				P81H-000XM	Gate valve ASTM A217 Grade WC6 Class 300 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2	
4608	0.75				P81G-000DN	Gate valve ASTM A182 Grade F11 Class 2 Class 300 API 602 BW both sides w/ nipples BE - NPT ASTM A335-P11 XXS-nipple Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2	

BALL VALVE (Q)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P84G-0000D	Ball valve Long-pattern ASTM A182 Grade F11 Class 2 Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	
1	0.75				P84G-0000E	Ball valve Long-pattern ASTM A182 Grade F11 Class 2 Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	
1	1				P84G-0000F	Ball valve Long-pattern ASTM A182 Grade F11 Class 2 Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	
1	1.5				P84G-0000G	Ball valve Long-pattern ASTM A182 Grade F11 Class 2 Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	
1	2				P84H-0001N	Ball valve Long-pattern ASTM A217 Grade WC6 Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	
1	3				P84H-0001P	Ball valve Long-pattern ASTM A217 Grade WC6 Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	
1	4				P84H-0001R	Ball valve Long-pattern ASTM A217 Grade WC6 Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Gear operated Full bore Fire tested design	
1	6				P84H-0001V	Ball valve Long-pattern ASTM A217 Grade WC6 Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design	
1	8				P84H-0001W	Ball valve Long-pattern ASTM A217 Grade WC6 Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design	
1	10				P84H-0001S	Ball valve Long-pattern ASTM A217 Grade WC6 Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design	
1	12				P84H-0001T	Ball valve Long-pattern ASTM A217 Grade WC6 Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design	
1	14				P84H-0001U	Ball valve Long-pattern ASTM A217 Grade WC6 Class 300 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71G-0001B	Spectacle blank ASTM A182 Grade F11 Class 2 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	0.75				P71G-0001C	Spectacle blank ASTM A182 Grade F11 Class 2 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	1				P71G-0001D	Spectacle blank ASTM A182 Grade F11 Class 2 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71G-0001E	Spectacle blank ASTM A182 Grade F11 Class 2 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	2				P71G-0002F	Spectacle blank ASTM A182 Grade F11 Class 2 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	3				P71G-0002G	Spectacle blank ASTM A182 Grade F11 Class 2 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	4				P71G-0002H	Spectacle blank ASTM A182 Grade F11 Class 2 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	6				P71G-0001F	Spectacle blank ASTM A182 Grade F11 Class 2 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	8				P71G-0001G	Spectacle blank ASTM A182 Grade F11 Class 2 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	10				P71G-0002D	Spectacle blank ASTM A182 Grade F11 Class 2 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	12				P71G-0002E	Spectacle blank ASTM A182 Grade F11 Class 2 Class 300 Standard-drawing Flange ASME B16.5 RF	

PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72G-0001C	Paddle blank ASTM A182 Grade F11 Class 2 Class 300 Standard-drawing Flange ASME B16.5 RF	

PADDLE SPACER (PS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72G-0001D	Paddle spacer ASTM A182 Grade F11 Class 2 Class 300 Standard-drawing Flange ASME B16.5 RF	

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BOLT TABLE (B_B2DC01 , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-00GN8		
0.75	4	0.625	75	P80S-00GLL		
1	4	0.625	80	P80S-00GLK		
1.5	4	0.750	95	P80S-00FVE		
2	8	0.625	90	P80S-00GLH		
3	8	0.750	110	P80S-00GLD		
4	8	0.750	115	P80S-00GLC		
6	12	0.750	125	P80S-00GLA		
8	12	0.875	140	P80S-00FV5		
10	16	1.000	160	P80S-00FR9		
12	16	1.125	175	P80S-00FH8		
14	20	1.125	180	P80S-00FH7		

BOLT TABLE (B_B2DC01_781 , STUD ASME RF, OPTION CODE 781)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	80	P80S-00GN6		
0.75	4	0.625	90	P80S-00GLH		
1	4	0.625	95	P80S-00GLG		
1.5	4	0.750	110	P80S-00GLD		
2	8	0.625	110	P80S-00GN0		
3	8	0.750	130	P80S-00GL9		
4	8	0.875	150	P80S-00FV3		
6	12	1.000	175	P80S-00FR6		
8	12	1.125	195	P80S-00FH4		
10	16	1.250	250	P80S-00F9K		
12	20	1.250	255	P80S-00F9J		
14	20	1.375	270	P80S-00F4T		

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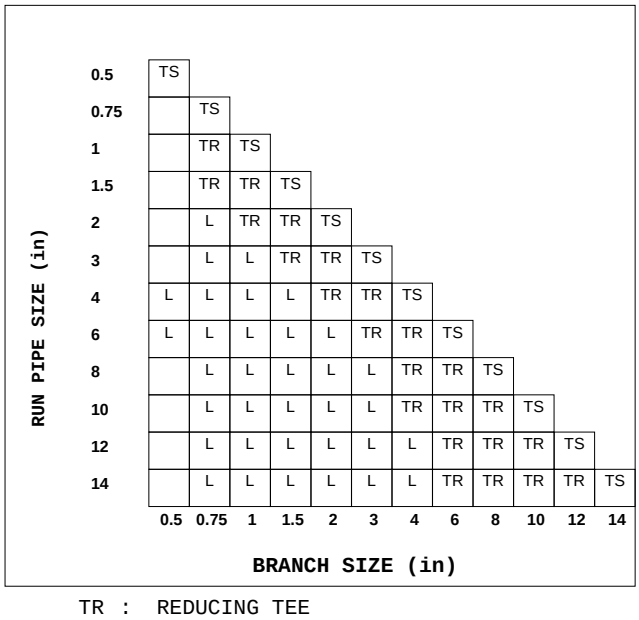
BRANCH TABLE (T_B2DC01)



TR : REDUCING TEE
TS : STRAIGHT TEE
L : OUTLET

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PIPING CLASS

B2DH REV NO. 2

Material : 1-1/4Cr - 1/2Mo
Rating : ASME CLASS 300
Flange Face : RF
C.A.(mm) : 3.00
Gasket : Spiral Wound
Service : PROCESS - HYDROGEN OR HYDROGEN RICH HYDROCARBON MIXTURE : / PROCESS WITH HYDROGEN

Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
16	PIPE CLASS SHALL BE USED WITHIN THE NORMAL OPERATING PRESSURE/TEMPERATURE LIMITS SPECIFIED IN API RP 941. PRESSURE / TEMPERATURE SPECIFIED IN THE PIPE CLASS EXCEEDING API RP 941 LIMITS SHOULD BE REGARDED AS UPSET CONDITIONS RATHER THAN FOR CONTINUOUS SERVICE
24	FOR ALL RELEVANT PIPING CLASSES WITH LINE DESIGN TEMPERATURE ABOVE 427DEGC, IN SPIRAL WOUND GASKET, SUITABLE GASKET FILLER MATERIAL SUCH AS COMBINATION OF MICA LAYERS AND GRAPHITE FILLERS OR EQUIVALENT SHALL BE REVIEWED AND SELECTED OR AS DEFINED BY THE LICENSOR
36	ASTM A691 CR-MO WELDED PIPES SPECIFIED WITH CLASS 22 CAN BE USED IN LIEU OF CLASS 42 IN NON-LICENSED UNITS ONLY. GRADE SHALL BE AS SPECIFIED IN "PIPE / FLANGE MATERIAL" SECTION IN ATTACHMENT 9.0 OF THIS DOCUMENT

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
541	NPT(F) (CA,F,L)
781	CLASS 600 (B,F,G)
4608	VALVE WITH NIPPLES (V)

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PIPING CLASS
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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P01F-0001X	Pipe ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M PE	
1	0.75		SCH160		P01F-0001Y	Pipe ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M PE	
1	1		SCH160		P01F-0003X	Pipe ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M PE	
1	1.5		SCH160		P01F-0003Y	Pipe ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M PE	
1	2		XS		P01F-0002U	Pipe ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M BE	
1	3		STD		P01F-0002V	Pipe ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M BE	
1	4		STD		P01F-0002W	Pipe ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M BE	
1	6		XS		P01F-0001U	Pipe ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M BE	
1	8		SCH60		P01F-00033	Pipe ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M BE	
1	10		XS		P01F-0003R	Pipe ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M BE	
1	12		XS		P01F-00030	Pipe ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M BE	
1	14		XS		P01F-00031	Pipe ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M BE	
1	16		XS		P01F-00032	Pipe ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M BE	
1	18		STD		P01F-0002Y	Pipe ASTM A691 Grade 1-1/4CR Class 22 EFW ASME B36.10M/B36.19M BE	
1	20		XS		P01F-000BY	Pipe ASTM A691 Grade 1-1/4CR Class 22 EFW ASME B36.10M/B36.19M BE	
1	24		XS		P01F-00034	Pipe ASTM A691 Grade 1-1/4CR Class 22 EFW ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P02G-00017	90 degree elbow ASTM A182 Grade F11 Class 1 Class 6000 ASME B16.11 SW	
1	0.75				P02G-00018	90 degree elbow ASTM A182 Grade F11 Class 1 Class 6000 ASME B16.11 SW	
1	1				P02G-0001S	90 degree elbow ASTM A182 Grade F11 Class 1 Class 6000 ASME B16.11 SW	
1	1.5				P02G-0001T	90 degree elbow ASTM A182 Grade F11 Class 1 Class 6000 ASME B16.11 SW	
1	2		XS		P02F-00055	90 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	3		STD		P02F-00056	90 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	4		STD		P02F-00057	90 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	6		XS		P02F-000B3	90 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	8		SCH60		P02F-000CF	90 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	10		XS		P02F-0006A	90 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	12		XS		P02F-0005A	90 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	14		XS		P02F-0008S	90 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	16		XS		P02F-000E1	90 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	18		STD		P02F-000D4	90 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	20		XS		P02F-000E2	90 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	24		XS		P02F-000E3	90 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P03G-00017	45 degree elbow ASTM A182 Grade F11 Class 1 Class 6000 ASME B16.11 SW	
1	0.75				P03G-00018	45 degree elbow ASTM A182 Grade F11 Class 1 Class 6000 ASME B16.11 SW	
1	1				P03G-0001M	45 degree elbow ASTM A182 Grade F11 Class 1 Class 6000 ASME B16.11 SW	
1	1.5				P03G-0001N	45 degree elbow ASTM A182 Grade F11 Class 1 Class 6000 ASME B16.11 SW	
1	2		XS		P03F-00052	45 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	3		STD		P03F-00053	45 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	4		STD		P03F-00054	45 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	6		XS		P03F-000AW	45 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	8		SCH60		P03F-000C8	45 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	10		XS		P03F-00067	45 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	12		XS		P03F-00057	45 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	14		XS		P03F-0008J	45 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	16		XS		P03F-000DU	45 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	18		STD		P03F-000CY	45 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	20		XS		P03F-000DV	45 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	24		XS		P03F-000DW	45 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P21G-00017	Straight tee ASTM A182 Grade F11 Class 1 Class 6000 ASME B16.11 SW	
1	0.75				P21G-00018	Straight tee ASTM A182 Grade F11 Class 1 Class 6000 ASME B16.11 SW	

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STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P21G-0001S	Straight tee ASTM A182 Grade F11 Class 1 Class 6000 ASME B16.11 SW	
1	1.5				P21G-0001T	Straight tee ASTM A182 Grade F11 Class 1 Class 6000 ASME B16.11 SW	
1	2		XS		P21F-00053	Straight tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	3		STD		P21F-00054	Straight tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	4		STD		P21F-00055	Straight tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	6		XS		P21F-000AU	Straight tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	8		SCH60		P21F-000C6	Straight tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	10		XS		P21F-00068	Straight tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	12		XS		P21F-00058	Straight tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	14		XS		P21F-0008K	Straight tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	16		XS		P21F-000DZ	Straight tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	18		STD		P21F-000CZ	Straight tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	
1	20		XS		P21F-000E0	Straight tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	
1	24		XS		P21F-000E1	Straight tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75			P24G-0001S	Reducing tee ASTM A182 Grade F11 Class 1 Class 6000 ASME B16.11 SW	
1	1.5	0.75			P24G-0001T	Reducing tee ASTM A182 Grade F11 Class 1 Class 6000 ASME B16.11 SW	
1	1.5	1			P24G-0001U	Reducing tee ASTM A182 Grade F11 Class 1 Class 6000 ASME B16.11 SW	
1	2	1	XS	SCH160	P24F-000CM	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	2	1.5	XS	SCH160	P24F-000CN	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	3	1.5	STD	SCH160	P24F-000CP	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	3	2	STD	XS	P24F-000CR	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	4	2	STD	XS	P24F-000CS	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	4	3	STD	STD	P24F-000CT	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	6	3	XS	STD	P24F-0010R	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	6	4	XS	STD	P24F-0010S	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	8	4	SCH60	STD	P24F-0010T	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	8	6	SCH60	XS	P24F-0010U	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	10	4	XS	STD	P24F-0010W	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	10	6	XS	XS	P24F-0010X	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	10	8	XS	SCH60	P24F-0010Y	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	12	6	XS	XS	P24F-00110	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	12	8	XS	SCH60	P24F-00111	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	12	10	XS	XS	P24F-0010Z	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	14	6	XS	XS	P24F-00115	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	14	8	XS	SCH60	P24F-00116	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	14	10	XS	XS	P24F-00114	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	14	12	XS	XS	P24F-000KK	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	16	6	XS	XS	P24F-0019S	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	16	8	XS	SCH60	P24F-0019T	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	16	10	XS	XS	P24F-0019N	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	16	12	XS	XS	P24F-0019P	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	16	14	XS	XS	P24F-0019R	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	18	8	STD	SCH60	P24F-0019Y	Reducing tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	
1	18	10	STD	XS	P24F-0019U	Reducing tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	
1	18	12	STD	XS	P24F-0019V	Reducing tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	
1	18	14	STD	XS	P24F-0019W	Reducing tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	
1	18	16	STD	XS	P24F-0019X	Reducing tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	
1	20	8	XS	SCH60	P24F-001A4	Reducing tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	
1	20	10	XS	XS	P24F-0019Z	Reducing tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	
1	20	12	XS	XS	P24F-001A0	Reducing tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	
1	20	14	XS	XS	P24F-001A1	Reducing tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	
1	20	16	XS	XS	P24F-001A2	Reducing tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	
1	20	18	XS	STD	P24F-001A3	Reducing tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	
1	24	10	XS	XS	P24F-001A5	Reducing tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	
1	24	12	XS	XS	P24F-001A6	Reducing tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	
1	24	14	XS	XS	P24F-001A7	Reducing tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	

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REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	24	16	XS	XS	P24F-001A8	Reducing tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	
1	24	18	XS	STD	P24F-001A9	Reducing tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	
1	24	20	XS	XS	P24F-001AA	Reducing tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	STD	XS	P27F-000B5	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	4	2	STD	XS	P27F-000B7	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	4	3	STD	STD	P27F-000B8	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	6	3	XS	STD	P27F-000V6	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	6	4	XS	STD	P27F-000V7	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	8	4	SCH60	STD	P27F-000V8	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	8	6	SCH60	XS	P27F-000V9	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	10	4	XS	STD	P27F-000DW	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	10	6	XS	XS	P27F-000VA	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	10	8	XS	SCH60	P27F-000VB	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	12	6	XS	XS	P27F-000VD	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	12	8	XS	SCH60	P27F-000VE	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	12	10	XS	XS	P27F-000VC	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	14	6	XS	XS	P27F-000VG	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	14	8	XS	SCH60	P27F-000VH	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	14	10	XS	XS	P27F-000VF	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	14	12	XS	XS	P27F-000KL	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	16	8	XS	SCH60	P27F-0012J	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	16	10	XS	XS	P27F-0012F	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	16	12	XS	XS	P27F-0012G	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	16	14	XS	XS	P27F-0012H	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	18	10	STD	XS	P27F-0012K	Concentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	
1	18	12	STD	XS	P27F-0012L	Concentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	
1	18	14	STD	XS	P27F-0012M	Concentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	
1	18	16	STD	XS	P27F-0012N	Concentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	
1	20	12	XS	XS	P27F-0012P	Concentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	
1	20	14	XS	XS	P27F-0012R	Concentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	
1	20	16	XS	XS	P27F-0012S	Concentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	
1	20	18	XS	STD	P27F-0012T	Concentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	
1	24	16	XS	XS	P27F-0012U	Concentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	
1	24	18	XS	STD	P27F-0012V	Concentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	
1	24	20	XS	XS	P27F-0012W	Concentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	STD	XS	P28F-000B5	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	4	2	STD	XS	P28F-000B7	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	4	3	STD	STD	P28F-000B8	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	6	3	XS	STD	P28F-000V6	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	6	4	XS	STD	P28F-000V7	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	8	4	SCH60	STD	P28F-000V8	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	8	6	SCH60	XS	P28F-000V9	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	10	4	XS	STD	P28F-000DW	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	10	6	XS	XS	P28F-000VA	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	10	8	XS	SCH60	P28F-000VB	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	12	6	XS	XS	P28F-000VD	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	12	8	XS	SCH60	P28F-000VE	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	12	10	XS	XS	P28F-000VC	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	14	6	XS	XS	P28F-000VG	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	14	8	XS	SCH60	P28F-000VH	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	14	10	XS	XS	P28F-000VF	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	14	12	XS	XS	P28F-000KL	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	16	8	XS	SCH60	P28F-0012K	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	

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ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	16	10	XS	XS	P28F-0012G	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	16	12	XS	XS	P28F-0012H	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	16	14	XS	XS	P28F-0012J	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	18	10	STD	XS	P28F-0012L	Eccentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	
1	18	12	STD	XS	P28F-0012M	Eccentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	
1	18	14	STD	XS	P28F-0012N	Eccentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	
1	18	16	STD	XS	P28F-0012P	Eccentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	
1	20	12	XS	XS	P28F-0012R	Eccentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	
1	20	14	XS	XS	P28F-0012S	Eccentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	
1	20	16	XS	XS	P28F-0012T	Eccentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	
1	20	18	XS	STD	P28F-0012U	Eccentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	
1	24	16	XS	XS	P28F-0012V	Eccentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	
1	24	18	XS	STD	P28F-0012W	Eccentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	
1	24	20	XS	XS	P28F-0012X	Eccentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P29G-00012	Cap ASTM A182 Grade F11 Class 1 Class 6000 ASME B16.11 SW	
1	0.75				P29G-00013	Cap ASTM A182 Grade F11 Class 1 Class 6000 ASME B16.11 SW	
1	1				P29G-0001G	Cap ASTM A182 Grade F11 Class 1 Class 6000 ASME B16.11 SW	
1	1.5				P29G-0001H	Cap ASTM A182 Grade F11 Class 1 Class 6000 ASME B16.11 SW	
1	2		XS		P29F-00050	Cap ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	3		STD		P29F-00051	Cap ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	4		STD		P29F-00052	Cap ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	6		XS		P29F-000AL	Cap ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	8		SCH60		P29F-000BU	Cap ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	10		XS		P29F-00060	Cap ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	12		XS		P29F-00055	Cap ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	14		XS		P29F-0008A	Cap ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	16		XS		P29F-000DP	Cap ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	18		STD		P29F-000CT	Cap ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	20		XS		P29F-000DR	Cap ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	24		XS		P29F-000DS	Cap ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
541	0.75				P29G-0001R	Cap ASTM A182 Grade F11 Class 1 Class 6000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P41F-0002D	Straight nipple ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		XXS		P41F-0002E	Straight nipple ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		XXS		P41F-0002F	Straight nipple ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		XXS		P41F-0002G	Straight nipple ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

CON SWAGED NIPPLE (SNC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	SCH160	P42F-0001N	Concentric swaged nipple ASTM A234 Grade WP11 Class 1 Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	SCH160	SCH160	P42F-0001P	Concentric swaged nipple ASTM A234 Grade WP11 Class 1 Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	SCH160	SCH160	P42F-0001R	Concentric swaged nipple ASTM A234 Grade WP11 Class 1 Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	SCH160	SCH160	P42F-0001S	Concentric swaged nipple ASTM A234 Grade WP11 Class 1 Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	SCH160	SCH160	P42F-0001T	Concentric swaged nipple ASTM A234 Grade WP11 Class 1 Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	SCH160	SCH160	P42F-0001U	Concentric swaged nipple ASTM A234 Grade WP11 Class 1 Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	XS	SCH160	P42F-0003X	Concentric swaged nipple ASTM A234 Grade WP11 Class 1 Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	XS	SCH160	P42F-0003Y	Concentric swaged nipple ASTM A234 Grade WP11 Class 1 Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	XS	SCH160	P42F-0003Z	Concentric swaged nipple ASTM A234 Grade WP11 Class 1 Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	XS	SCH160	P42F-00040	Concentric swaged nipple ASTM A234 Grade WP11 Class 1 Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	STD	SCH160	P42F-00041	Concentric swaged nipple ASTM A234 Grade WP11 Class 1 Seamless MSS SP-95 BE(L) - PE(S)	

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ECC SWAGED NIPPLE (SNE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	SCH160	P43F-00031	Eccentric swaged nipple ASTM A234 Grade WP11 Class 1 Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	SCH160	SCH160	P43F-00032	Eccentric swaged nipple ASTM A234 Grade WP11 Class 1 Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	SCH160	SCH160	P43F-0001J	Eccentric swaged nipple ASTM A234 Grade WP11 Class 1 Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	SCH160	SCH160	P43F-00033	Eccentric swaged nipple ASTM A234 Grade WP11 Class 1 Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	SCH160	SCH160	P43F-0001L	Eccentric swaged nipple ASTM A234 Grade WP11 Class 1 Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	SCH160	SCH160	P43F-0001M	Eccentric swaged nipple ASTM A234 Grade WP11 Class 1 Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	XS	SCH160	P43F-00038	Eccentric swaged nipple ASTM A234 Grade WP11 Class 1 Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	XS	SCH160	P43F-00039	Eccentric swaged nipple ASTM A234 Grade WP11 Class 1 Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	XS	SCH160	P43F-0003A	Eccentric swaged nipple ASTM A234 Grade WP11 Class 1 Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	XS	SCH160	P43F-0003B	Eccentric swaged nipple ASTM A234 Grade WP11 Class 1 Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	STD	SCH160	P43F-0003C	Eccentric swaged nipple ASTM A234 Grade WP11 Class 1 Seamless MSS SP-95 BE(L) - PE(S)	

COUPLING (CPS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P47G-0001A	Coupling ASTM A182 Grade F11 Class 1 Class 6000 ASME B16.11 SW - SW	
1	0.75				P47G-0001B	Coupling ASTM A182 Grade F11 Class 1 Class 6000 ASME B16.11 SW - SW	
1	1				P47G-0001Y	Coupling ASTM A182 Grade F11 Class 1 Class 6000 ASME B16.11 SW - SW	
1	1.5				P47G-0001Z	Coupling ASTM A182 Grade F11 Class 1 Class 6000 ASME B16.11 SW - SW	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5 - 2.5	0.75			P31G-00360	Outlet ASTM A182 Grade F11 Class 1 Class 6000 MSS SP-97 SW	
1	3 - 10	0.75			P31G-0035Z	Outlet ASTM A182 Grade F11 Class 1 Class 6000 MSS SP-97 SW	
1	12 and larger	0.75			P31G-00361	Outlet ASTM A182 Grade F11 Class 1 Class 6000 MSS SP-97 SW	
1	3 - 10	1			P31G-00363	Outlet ASTM A182 Grade F11 Class 1 Class 6000 MSS SP-97 SW	
1	12 and larger	1			P31G-00362	Outlet ASTM A182 Grade F11 Class 1 Class 6000 MSS SP-97 SW	
1	4 - 5	1.5			P31G-00364	Outlet ASTM A182 Grade F11 Class 1 Class 6000 MSS SP-97 SW	
1	6 - 8	1.5			P31G-00365	Outlet ASTM A182 Grade F11 Class 1 Class 6000 MSS SP-97 SW	
1	10 - 18	1.5			P31G-00366	Outlet ASTM A182 Grade F11 Class 1 Class 6000 MSS SP-97 SW	
1	20 and larger	1.5			P31G-00367	Outlet ASTM A182 Grade F11 Class 1 Class 6000 MSS SP-97 SW	
541	1	0.75			P31G-0035Y	Outlet ASTM A182 Grade F11 Class 1 Class 6000 MSS SP-97 NPT	
541	1.5 - 2.5	0.75			P31G-00369	Outlet ASTM A182 Grade F11 Class 1 Class 6000 MSS SP-97 NPT	
541	3 - 10	0.75			P31G-00368	Outlet ASTM A182 Grade F11 Class 1 Class 6000 MSS SP-97 NPT	
541	12 and larger	0.75			P31G-0036A	Outlet ASTM A182 Grade F11 Class 1 Class 6000 MSS SP-97 NPT	
1	6	2	XS	XS	P31G-001D5	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	8	2	SCH60	XS	P31G-001D9	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	10	2	XS	XS	P31G-001DE	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	12	2	XS	XS	P31G-001DK	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	14	2	XS	XS	P31G-001DS	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	16	2	XS	XS	P31G-001NV	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	18	2	STD	XS	P31G-001KE	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	20	2	XS	XS	P31G-001NZ	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	24	2	XS	XS	P31G-001P3	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	8	3	SCH60	STD	P31G-001DA	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	10	3	XS	STD	P31G-001DF	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	12	3	XS	STD	P31G-001DL	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	14	3	XS	STD	P31G-001DT	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	16	3	XS	STD	P31G-001NW	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	18	3	STD	STD	P31G-001KF	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	20	3	XS	STD	P31G-001P0	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	24	3	XS	STD	P31G-001P4	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	12	4	XS	STD	P31G-001DM	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	14	4	XS	STD	P31G-001DU	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	16	4	XS	STD	P31G-001NX	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	18	4	STD	STD	P31G-001KG	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	20	4	XS	STD	P31G-001P1	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	24	4	XS	STD	P31G-001P5	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	18	6	STD	XS	P31G-001NY	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	20	6	XS	XS	P31G-001P2	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	

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OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	24	6	XS	XS	P31G-001P6	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30G-0001G	Plug ASTM A182 Grade F11 Class 1 ASME B16.11 NPT Round head	
1	0.75				P30G-0001H	Plug ASTM A182 Grade F11 Class 1 ASME B16.11 NPT Round head	
1	1				P30G-0001J	Plug ASTM A182 Grade F11 Class 1 ASME B16.11 NPT Round head	
1	1.5				P30G-0001K	Plug ASTM A182 Grade F11 Class 1 ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P61G-0006M	Flange SW ASTM A182 Grade F11 Class 2 Class 300 ASME B16.5 RF	
1	0.75		SCH160		P61G-0006N	Flange SW ASTM A182 Grade F11 Class 2 Class 300 ASME B16.5 RF	
1	1		SCH160		P61G-0009J	Flange SW ASTM A182 Grade F11 Class 2 Class 300 ASME B16.5 RF	
1	1.5		SCH160		P61G-0009K	Flange SW ASTM A182 Grade F11 Class 2 Class 300 ASME B16.5 RF	
1	2		XS		P61G-0006V	Flange WN ASTM A182 Grade F11 Class 2 Class 300 ASME B16.5 RF	
1	3		STD		P61G-0006Y	Flange WN ASTM A182 Grade F11 Class 2 Class 300 ASME B16.5 RF	
1	4		STD		P61G-0006Z	Flange WN ASTM A182 Grade F11 Class 2 Class 300 ASME B16.5 RF	
1	6		XS		P61G-00075	Flange WN ASTM A182 Grade F11 Class 2 Class 300 ASME B16.5 RF	
1	8		SCH60		P61G-00076	Flange WN ASTM A182 Grade F11 Class 2 Class 300 ASME B16.5 RF	
1	10		XS		P61G-00097	Flange WN ASTM A182 Grade F11 Class 2 Class 300 ASME B16.5 RF	
1	12		XS		P61G-00071	Flange WN ASTM A182 Grade F11 Class 2 Class 300 ASME B16.5 RF	
1	14		XS		P61G-00072	Flange WN ASTM A182 Grade F11 Class 2 Class 300 ASME B16.5 RF	
1	16		XS		P61G-00073	Flange WN ASTM A182 Grade F11 Class 2 Class 300 ASME B16.5 RF	
1	18		STD		P61G-0006U	Flange WN ASTM A182 Grade F11 Class 2 Class 300 ASME B16.5 RF	
1	20		XS		P61G-000ST	Flange WN ASTM A182 Grade F11 Class 2 Class 300 ASME B16.5 RF	
1	24		XS		P61G-00074	Flange WN ASTM A182 Grade F11 Class 2 Class 300 ASME B16.5 RF	
541	0.5				P61G-001BE	Flange NPT ASTM A182 Grade F11 Class 2 Class 300 ASME B16.5 RF	
541	0.75				P61G-0015R	Flange NPT ASTM A182 Grade F11 Class 2 Class 300 ASME B16.5 RF	
781	0.5		SCH160		P61G-0004B	Flange SW ASTM A182 Grade F11 Class 2 Class 600 ASME B16.5 RF	
781	0.75		SCH160		P61G-0004C	Flange SW ASTM A182 Grade F11 Class 2 Class 600 ASME B16.5 RF	
781	1		SCH160		P61G-000JR	Flange SW ASTM A182 Grade F11 Class 2 Class 600 ASME B16.5 RF	
781	1.5		SCH160		P61G-000JS	Flange SW ASTM A182 Grade F11 Class 2 Class 600 ASME B16.5 RF	
781	2		XS		P61G-0007B	Flange WN ASTM A182 Grade F11 Class 2 Class 600 ASME B16.5 RF	
781	3		STD		P61G-0007D	Flange WN ASTM A182 Grade F11 Class 2 Class 600 ASME B16.5 RF	
781	4		STD		P61G-0007E	Flange WN ASTM A182 Grade F11 Class 2 Class 600 ASME B16.5 RF	
781	6		XS		P61G-0003X	Flange WN ASTM A182 Grade F11 Class 2 Class 600 ASME B16.5 RF	
781	8		SCH60		P61G-0007F	Flange WN ASTM A182 Grade F11 Class 2 Class 600 ASME B16.5 RF	
781	10		XS		P61G-00098	Flange WN ASTM A182 Grade F11 Class 2 Class 600 ASME B16.5 RF	
781	12		XS		P61G-00078	Flange WN ASTM A182 Grade F11 Class 2 Class 600 ASME B16.5 RF	
781	14		XS		P61G-00079	Flange WN ASTM A182 Grade F11 Class 2 Class 600 ASME B16.5 RF	
781	16		XS		P61G-0007A	Flange WN ASTM A182 Grade F11 Class 2 Class 600 ASME B16.5 RF	
781	18		STD		P61G-0009A	Flange WN ASTM A182 Grade F11 Class 2 Class 600 ASME B16.5 RF	
781	20		XS		P61G-000JW	Flange WN ASTM A182 Grade F11 Class 2 Class 600 ASME B16.5 RF	
781	24		XS		P61G-0007C	Flange WN ASTM A182 Grade F11 Class 2 Class 600 ASME B16.5 RF	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67G-0001A	Blind flange ASTM A182 Grade F11 Class 2 Class 300 ASME B16.5 RF	
1	0.75				P67G-0001B	Blind flange ASTM A182 Grade F11 Class 2 Class 300 ASME B16.5 RF	
1	1				P67G-0001C	Blind flange ASTM A182 Grade F11 Class 2 Class 300 ASME B16.5 RF	
1	1.5				P67G-0001D	Blind flange ASTM A182 Grade F11 Class 2 Class 300 ASME B16.5 RF	
1	2				P67G-0004E	Blind flange ASTM A182 Grade F11 Class 2 Class 300 ASME B16.5 RF	
1	3				P67G-0004G	Blind flange ASTM A182 Grade F11 Class 2 Class 300 ASME B16.5 RF	
1	4				P67G-0004H	Blind flange ASTM A182 Grade F11 Class 2 Class 300 ASME B16.5 RF	
1	6				P67G-0001E	Blind flange ASTM A182 Grade F11 Class 2 Class 300 ASME B16.5 RF	
1	8				P67G-0001F	Blind flange ASTM A182 Grade F11 Class 2 Class 300 ASME B16.5 RF	
1	10				P67G-0004A	Blind flange ASTM A182 Grade F11 Class 2 Class 300 ASME B16.5 RF	
1	12				P67G-0004B	Blind flange ASTM A182 Grade F11 Class 2 Class 300 ASME B16.5 RF	

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BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P67G-0004C	Blind flange ASTM A182 Grade F11 Class 2 Class 300 ASME B16.5 RF	
1	16				P67G-0004D	Blind flange ASTM A182 Grade F11 Class 2 Class 300 ASME B16.5 RF	
1	18				P67G-00053	Blind flange ASTM A182 Grade F11 Class 2 Class 300 ASME B16.5 RF	
1	20				P67G-0008H	Blind flange ASTM A182 Grade F11 Class 2 Class 300 ASME B16.5 RF	
1	24				P67G-0004F	Blind flange ASTM A182 Grade F11 Class 2 Class 300 ASME B16.5 RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-003AM	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	0.75				P73T-003AN	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	1				P73T-003AP	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	1.5				P73T-003AR	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	2				P73T-003AX	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	3				P73T-003B0	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	4				P73T-003B1	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	6				P73T-003B2	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	8				P73T-003B3	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	10				P73T-003AS	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	12				P73T-003AT	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	14				P73T-003AU	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	16				P73T-003AV	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	18				P73T-003AW	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	20				P73T-003AY	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	24				P73T-003AZ	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
781	0.5				P73T-003B4	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
781	0.75				P73T-003B5	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
781	1				P73T-003B6	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
781	1.5				P73T-003B7	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
781	2				P73T-003BD	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
781	3				P73T-003BG	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
781	4				P73T-003BH	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
781	6				P73T-003BJ	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
781	8				P73T-003BK	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
781	10				P73T-003B8	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
781	12				P73T-003B9	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
781	14				P73T-003BA	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
781	16				P73T-003BB	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
781	18				P73T-003BC	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
781	20				P73T-003BE	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
781	24				P73T-003BF	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-10				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B16 / A194 Grade 4 ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	12-24				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B16 / A194 Grade 4 ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
781	0.5-6				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B16 / A194 Grade 4 ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	

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BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
781	8-24				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B16 / A194 Grade 4 ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81G-000CF	Gate valve ASTM A182 Grade F11 Class 2 Class 300 API 602 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2	
1	0.75				P81G-000CG	Gate valve ASTM A182 Grade F11 Class 2 Class 300 API 602 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2	
1	1				P81G-000CH	Gate valve ASTM A182 Grade F11 Class 2 Class 300 API 602 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2	
1	1.5				P81G-000CJ	Gate valve ASTM A182 Grade F11 Class 2 Class 300 API 602 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2	
1	2				P81H-000XL	Gate valve ASTM A217 Grade WC6 Class 300 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2	
1	3				P81H-000XM	Gate valve ASTM A217 Grade WC6 Class 300 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2	
1	4				P81H-000XN	Gate valve ASTM A217 Grade WC6 Class 300 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2	
1	6				P81H-000XP	Gate valve ASTM A217 Grade WC6 Class 300 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2	
1	8				P81H-000XR	Gate valve ASTM A217 Grade WC6 Class 300 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2	
1	10				P81H-000XS	Gate valve ASTM A217 Grade WC6 Class 300 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Gear operated Fluid-2	
1	12				P81H-000XT	Gate valve ASTM A217 Grade WC6 Class 300 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Gear operated Fluid-2	
1	14				P81H-000XU	Gate valve ASTM A217 Grade WC6 Class 300 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Gear operated Fluid-2	
1	16				P81H-000XV	Gate valve ASTM A217 Grade WC6 Class 300 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Gear operated Fluid-2	
1	18				P81H-000XW	Gate valve ASTM A217 Grade WC6 Class 300 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Gear operated Fluid-2	
1	20				P81H-000XX	Gate valve ASTM A217 Grade WC6 Class 300 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Gear operated Fluid-2	
1	24				P81H-000XY	Gate valve ASTM A217 Grade WC6 Class 300 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Gear operated Fluid-2	
4608	0.75				P81G-000EK	Gate valve ASTM A182 Grade F11 Class 2 Class 800 API 602 SW both sides w/ nipples PE - NPT ASTM A335-P11 XXS-nipple Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82G-00073	Globe valve ASTM A182 Grade F11 Class 2 Class 300 API 602 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2	
1	0.75				P82G-00074	Globe valve ASTM A182 Grade F11 Class 2 Class 300 API 602 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2	
1	1				P82G-00075	Globe valve ASTM A182 Grade F11 Class 2 Class 300 API 602 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2	
1	1.5				P82G-00076	Globe valve ASTM A182 Grade F11 Class 2 Class 300 API 602 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83G-0001R	Check valve ASTM A182 Grade F11 Class 2 Class 300 API 602 Flange ASME B16.5 RF Trim number 5 Lift-type Bolted cover	
1	0.75				P83G-0001S	Check valve ASTM A182 Grade F11 Class 2 Class 300 API 602 Flange ASME B16.5 RF Trim number 5 Lift-type Bolted cover	
1	1				P83G-0001T	Check valve ASTM A182 Grade F11 Class 2 Class 300 API 602 Flange ASME B16.5 RF Trim number 5 Lift-type Bolted cover	
1	1.5				P83G-0001U	Check valve ASTM A182 Grade F11 Class 2 Class 300 API 602 Flange ASME B16.5 RF Trim number 5 Lift-type Bolted cover	
1	2				P83H-0004W	Check valve ASTM A217 Grade WC6 Class 300 BS 1868 Flange ASME B16.5 RF Trim number 5 Swing-type Bolted cover	
1	3				P83H-0004X	Check valve ASTM A217 Grade WC6 Class 300 BS 1868 Flange ASME B16.5 RF Trim number 5 Swing-type Bolted cover	
1	4				P83H-0004Y	Check valve ASTM A217 Grade WC6 Class 300 BS 1868 Flange ASME B16.5 RF Trim number 5 Swing-type Bolted cover	
1	6				P83H-0004Z	Check valve ASTM A217 Grade WC6 Class 300 BS 1868 Flange ASME B16.5 RF Trim number 5 Swing-type Bolted cover	
1	8				P83H-00050	Check valve ASTM A217 Grade WC6 Class 300 BS 1868 Flange ASME B16.5 RF Trim number 5 Swing-type Bolted cover	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71G-0001B	Spectacle blank ASTM A182 Grade F11 Class 2 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	0.75				P71G-0001C	Spectacle blank ASTM A182 Grade F11 Class 2 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	1				P71G-0001D	Spectacle blank ASTM A182 Grade F11 Class 2 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71G-0001E	Spectacle blank ASTM A182 Grade F11 Class 2 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	2				P71G-0002F	Spectacle blank ASTM A182 Grade F11 Class 2 Class 300 Standard-drawing Flange ASME B16.5 RF	

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SPECT BLANK (SB)							
OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3				P71G-0002G	Spectacle blank ASTM A182 Grade F11 Class 2 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	4				P71G-0002H	Spectacle blank ASTM A182 Grade F11 Class 2 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	6				P71G-0001F	Spectacle blank ASTM A182 Grade F11 Class 2 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	8				P71G-0001G	Spectacle blank ASTM A182 Grade F11 Class 2 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	10				P71G-0002D	Spectacle blank ASTM A182 Grade F11 Class 2 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	12				P71G-0002E	Spectacle blank ASTM A182 Grade F11 Class 2 Class 300 Standard-drawing Flange ASME B16.5 RF	

PADDLE BLANK (PB)							
OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72G-0001C	Paddle blank ASTM A182 Grade F11 Class 2 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	16				P72G-0001E	Paddle blank ASTM A182 Grade F11 Class 2 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	18				P72G-0001F	Paddle blank ASTM A182 Grade F11 Class 2 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	20				P72G-0001G	Paddle blank ASTM A182 Grade F11 Class 2 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	24				P72G-0001H	Paddle blank ASTM A182 Grade F11 Class 2 Class 300 Standard-drawing Flange ASME B16.5 RF	

PADDLE SPACER (PS)							
OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72G-0001D	Paddle spacer ASTM A182 Grade F11 Class 2 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	16				P72G-0001J	Paddle spacer ASTM A182 Grade F11 Class 2 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	18				P72G-0001K	Paddle spacer ASTM A182 Grade F11 Class 2 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	20				P72G-0001L	Paddle spacer ASTM A182 Grade F11 Class 2 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	24				P72G-0001M	Paddle spacer ASTM A182 Grade F11 Class 2 Class 300 Standard-drawing Flange ASME B16.5 RF	

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BOLT TABLE (B_B2DH , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-00GN8		
0.75	4	0.625	75	P80S-00GLL		
1	4	0.625	80	P80S-00GLK		
1.5	4	0.750	95	P80S-00FVE		
2	8	0.625	90	P80S-00GLH		
3	8	0.750	110	P80S-00GLD		
4	8	0.750	115	P80S-00GLC		
6	12	0.750	125	P80S-00GLA		
8	12	0.875	140	P80S-00FV5		
10	16	1.000	160	P80S-00FR9		
12	16	1.125	175	P80S-00FH8		
14	20	1.125	180	P80S-00FH7		
16	20	1.250	190	P80S-00F9Y		
18	24	1.250	200	P80S-00F9W		
20	24	1.250	210	P80S-00F9U		
24	24	1.500	235	P80S-00EYL		

BOLT TABLE (B_B2DH_781 , STUD ASME RF, OPTION CODE 781)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	80	P80S-00GN6		
0.75	4	0.625	90	P80S-00GLH		
1	4	0.625	95	P80S-00GLG		
1.5	4	0.750	110	P80S-00GLD		
2	8	0.625	110	P80S-00GN0		
3	8	0.750	130	P80S-00GL9		
4	8	0.875	150	P80S-00FV3		
6	12	1.000	175	P80S-00FR6		
8	12	1.125	195	P80S-00FH4		
10	16	1.250	250	P80S-00F9K		
12	20	1.250	255	P80S-00F9J		
14	20	1.375	270	P80S-00F4T		
16	20	1.500	295	P80S-00EY8		
18	20	1.625	320	P80S-00G0T		
20	24	1.625	335	P80S-00G0P		
24	24	1.875	380	P80S-00FKC		

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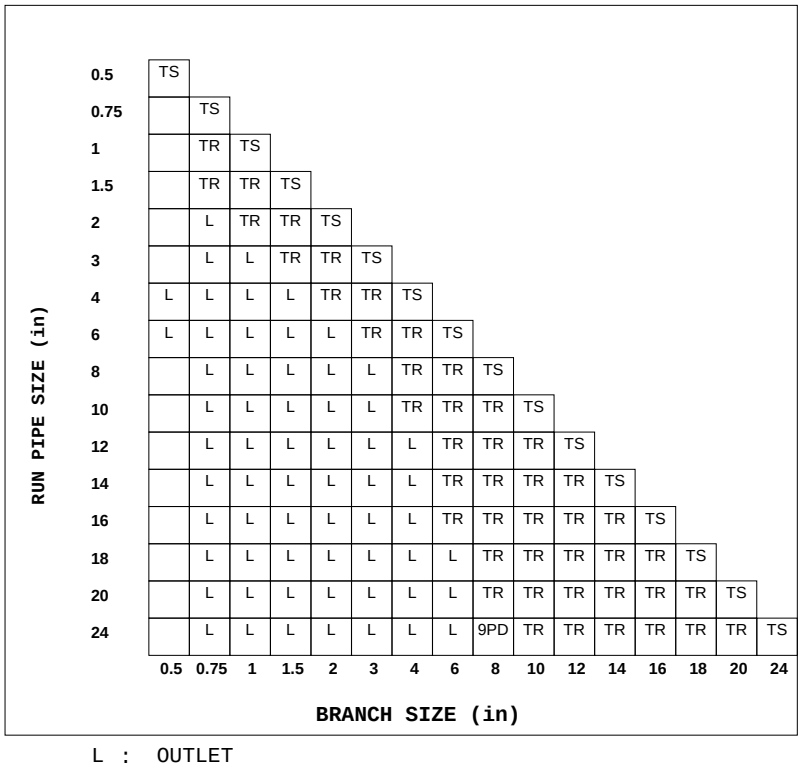
BRANCH TABLE (T_B2DH)



L : OUTLET
TS : STRAIGHT TEE
9PD : REINFORCING PAD 90 DEG
TR : REDUCING TEE

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Material : 1-1/4Cr - 1/2Mo
Rating : ASME CLASS 300
Flange Face : RF
C.A.(mm) : 3.00
Gasket : Spiral Wound
Service : PROCESS - GENERAL PROCESS NON SOUR, NON CORROSIVE
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
24	FOR ALL RELEVANT PIPING CLASSES WITH LINE DESIGN TEMPERATURE ABOVE 427DEGC, IN SPIRAL WOUND GASKET, SUITABLE GASKET FILLER MATERIAL SUCH AS COMBINATION OF MICA LAYERS AND GRAPHITE FILLERS OR EQUIVALENT SHALL BE REVIEWED AND SELECTED OR AS DEFINED BY THE LICENSOR
36	ASTM A691 CR-MO WELDED PIPES SPECIFIED WITH CLASS 22 CAN BE USED IN LIEU OF CLASS 42 IN NON-LICENSED UNITS ONLY. GRADE SHALL BE AS SPECIFIED IN "PIPE / FLANGE MATERIAL" SECTION IN ATTACHMENT 9.0 OF THIS DOCUMENT

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
200	WITH JACK SCREW (FO)
541	NPT(F) (CA,F,L)
781	CLASS 600 (B,F,G)
4202	SHORT RADIUS (9L)
4608	VALVE WITH NIPPLES (V)

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PIPING CLASS
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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P01F-0001X	Pipe ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M PE	
1	0.75		SCH160		P01F-0001Y	Pipe ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M PE	
1	1		SCH160		P01F-0003X	Pipe ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M PE	
1	1.5		SCH160		P01F-0003Y	Pipe ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M PE	
1	2		XS		P01F-0002U	Pipe ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M BE	
1	3		STD		P01F-0002V	Pipe ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M BE	
1	4		STD		P01F-0002W	Pipe ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M BE	
1	6		XS		P01F-0001U	Pipe ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M BE	
1	8		SCH60		P01F-00033	Pipe ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M BE	
1	10		XS		P01F-0003R	Pipe ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M BE	
1	12		XS		P01F-00030	Pipe ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M BE	
1	14		XS		P01F-00031	Pipe ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M BE	
1	16		SCH20		P01F-0001S	Pipe ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M BE	
1	18		SCH20		P01F-000CK	Pipe ASTM A691 Grade 1-1/4CR Class 22 EFW ASME B36.10M/B36.19M BE	
1	20		STD		P01F-0001V	Pipe ASTM A691 Grade 1-1/4CR Class 22 EFW ASME B36.10M/B36.19M BE	
1	24		STD		P01F-0002Z	Pipe ASTM A691 Grade 1-1/4CR Class 22 EFW ASME B36.10M/B36.19M BE	
1	30		XS		P01F-001NZ	Pipe ASTM A691 Grade 1-1/4CR Class 22 EFW ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P02G-00017	90 degree elbow ASTM A182 Grade F11 Class 1 Class 6000 ASME B16.11 SW	
1	0.75				P02G-00018	90 degree elbow ASTM A182 Grade F11 Class 1 Class 6000 ASME B16.11 SW	
1	1				P02G-0001S	90 degree elbow ASTM A182 Grade F11 Class 1 Class 6000 ASME B16.11 SW	
1	1.5				P02G-0001T	90 degree elbow ASTM A182 Grade F11 Class 1 Class 6000 ASME B16.11 SW	
1	2		XS		P02F-00055	90 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	3		STD		P02F-00056	90 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	4		STD		P02F-00057	90 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	6		XS		P02F-000B3	90 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	8		SCH60		P02F-000CF	90 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	10		XS		P02F-0006A	90 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	12		XS		P02F-0005A	90 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	14		XS		P02F-0008S	90 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	16		SCH20		P02F-0008Y	90 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	18		SCH20		P02F-0008Z	90 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	20		STD		P02F-000C2	90 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	24		STD		P02F-000C3	90 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	30		XS		P02F-000HJ	90 degree elbow ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW Long radius	
4202	18		SCH20		P02F-000PR	90 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Short radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P03G-00017	45 degree elbow ASTM A182 Grade F11 Class 1 Class 6000 ASME B16.11 SW	
1	0.75				P03G-00018	45 degree elbow ASTM A182 Grade F11 Class 1 Class 6000 ASME B16.11 SW	
1	1				P03G-0001M	45 degree elbow ASTM A182 Grade F11 Class 1 Class 6000 ASME B16.11 SW	
1	1.5				P03G-0001N	45 degree elbow ASTM A182 Grade F11 Class 1 Class 6000 ASME B16.11 SW	
1	2		XS		P03F-00052	45 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	3		STD		P03F-00053	45 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	4		STD		P03F-00054	45 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	6		XS		P03F-000AW	45 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	8		SCH60		P03F-000C8	45 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	10		XS		P03F-00067	45 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	12		XS		P03F-00057	45 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	14		XS		P03F-0008J	45 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	16		SCH20		P03F-0008R	45 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	18		SCH20		P03F-0008S	45 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	20		STD		P03F-000BV	45 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	24		STD		P03F-000BW	45 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	30		XS		P03F-000H9	45 degree elbow ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW Long radius	

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STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P21G-00017	Straight tee ASTM A182 Grade F11 Class 1 Class 6000 ASME B16.11 SW	
1	0.75				P21G-00018	Straight tee ASTM A182 Grade F11 Class 1 Class 6000 ASME B16.11 SW	
1	1				P21G-0001S	Straight tee ASTM A182 Grade F11 Class 1 Class 6000 ASME B16.11 SW	
1	1.5				P21G-0001T	Straight tee ASTM A182 Grade F11 Class 1 Class 6000 ASME B16.11 SW	
1	2		XS		P21F-00053	Straight tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	3		STD		P21F-00054	Straight tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	4		STD		P21F-00055	Straight tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	6		XS		P21F-000AU	Straight tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	8		SCH60		P21F-000C6	Straight tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	10		XS		P21F-00068	Straight tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	12		XS		P21F-00058	Straight tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	14		XS		P21F-0008K	Straight tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	16		SCH20		P21F-0008S	Straight tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	18		SCH20		P21F-000BS	Straight tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	
1	20		STD		P21F-000BT	Straight tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	
1	24		STD		P21F-000BU	Straight tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	
1	30		XS		P21F-000HD	Straight tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75			P24G-0001S	Reducing tee ASTM A182 Grade F11 Class 1 Class 6000 ASME B16.11 SW	
1	1.5	0.75			P24G-0001T	Reducing tee ASTM A182 Grade F11 Class 1 Class 6000 ASME B16.11 SW	
1	1.5	1			P24G-0001U	Reducing tee ASTM A182 Grade F11 Class 1 Class 6000 ASME B16.11 SW	
1	2	1	XS	SCH160	P24F-000CM	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	2	1.5	XS	SCH160	P24F-000CN	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	3	1.5	STD	SCH160	P24F-000CP	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	3	2	STD	XS	P24F-000CR	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	4	2	STD	XS	P24F-000CS	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	4	3	STD	STD	P24F-000CT	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	6	3	XS	STD	P24F-0010R	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	6	4	XS	STD	P24F-0010S	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	8	4	SCH60	STD	P24F-0010T	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	8	6	SCH60	XS	P24F-0010U	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	10	4	XS	STD	P24F-0010W	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	10	6	XS	XS	P24F-0010X	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	10	8	XS	SCH60	P24F-0010Y	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	12	6	XS	XS	P24F-00110	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	12	8	XS	SCH60	P24F-00111	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	12	10	XS	XS	P24F-0010Z	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	14	6	XS	XS	P24F-00115	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	14	8	XS	SCH60	P24F-00116	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	14	10	XS	XS	P24F-00114	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	14	12	XS	XS	P24F-000KK	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	16	6	SCH20	XS	P24F-0012C	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	16	8	SCH20	SCH60	P24F-001AY	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	16	10	SCH20	XS	P24F-001AV	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	16	12	SCH20	XS	P24F-001AW	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	16	14	SCH20	XS	P24F-001AX	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	18	8	SCH20	SCH60	P24F-001B0	Reducing tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	
1	18	10	SCH20	XS	P24F-0012D	Reducing tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	
1	18	12	SCH20	XS	P24F-001AZ	Reducing tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	
1	18	14	SCH20	XS	P24F-0012E	Reducing tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	
1	18	16	SCH20	SCH20	P24F-000ZW	Reducing tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	
1	20	8	STD	SCH60	P24F-0012J	Reducing tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	
1	20	10	STD	XS	P24F-0012F	Reducing tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	
1	20	12	STD	XS	P24F-0012G	Reducing tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	
1	20	14	STD	XS	P24F-0012H	Reducing tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	
1	20	16	STD	SCH20	P24F-00101	Reducing tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	
1	20	18	STD	SCH20	P24F-00102	Reducing tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	

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REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	24	10	STD	XS	P24F-0012K	Reducing tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	
1	24	12	STD	XS	P24F-001B1	Reducing tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	
1	24	14	STD	XS	P24F-0012L	Reducing tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	
1	24	16	STD	SCH20	P24F-00106	Reducing tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	
1	24	18	STD	SCH20	P24F-00107	Reducing tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	
1	24	20	STD	STD	P24F-00108	Reducing tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	
1	30	10	XS	XS	P24F-0023B	Reducing tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	
1	30	12	XS	XS	P24F-0023C	Reducing tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	
1	30	14	XS	XS	P24F-0023D	Reducing tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	
1	30	16	XS	SCH20	P24F-001XG	Reducing tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	
1	30	18	XS	SCH20	P24F-001XH	Reducing tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	
1	30	20	XS	STD	P24F-001XJ	Reducing tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	
1	30	24	XS	STD	P24F-001XK	Reducing tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	STD	XS	P27F-000B5	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	4	2	STD	XS	P27F-000B7	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	4	3	STD	STD	P27F-000B8	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	6	3	XS	STD	P27F-000V6	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	6	4	XS	STD	P27F-000V7	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	8	4	SCH60	STD	P27F-000V8	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	8	6	SCH60	XS	P27F-000V9	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	10	4	XS	STD	P27F-000DW	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	10	6	XS	XS	P27F-000VA	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	10	8	XS	SCH60	P27F-000VB	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	12	6	XS	XS	P27F-000VD	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	12	8	XS	SCH60	P27F-000VE	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	12	10	XS	XS	P27F-000VC	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	14	6	XS	XS	P27F-000VG	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	14	8	XS	SCH60	P27F-000VH	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	14	10	XS	XS	P27F-000VF	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	14	12	XS	XS	P27F-000KL	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	16	8	SCH20	SCH60	P27F-0013D	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	16	10	SCH20	XS	P27F-000WU	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	16	12	SCH20	XS	P27F-0013B	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	16	14	SCH20	XS	P27F-0013C	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	18	10	SCH20	XS	P27F-000WV	Concentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	
1	18	12	SCH20	XS	P27F-000WW	Concentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	
1	18	14	SCH20	XS	P27F-000WX	Concentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	
1	18	16	SCH20	SCH20	P27F-000UW	Concentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	
1	20	12	STD	XS	P27F-000WY	Concentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	
1	20	14	STD	XS	P27F-000WZ	Concentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	
1	20	16	STD	SCH20	P27F-000UZ	Concentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	
1	20	18	STD	SCH20	P27F-000V0	Concentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	
1	24	16	STD	SCH20	P27F-000V1	Concentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	
1	24	18	STD	SCH20	P27F-000V2	Concentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	
1	24	20	STD	STD	P27F-000V3	Concentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	
1	30	20	XS	STD	P27F-001F6	Concentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	
1	30	24	XS	STD	P27F-001F7	Concentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	STD	XS	P28F-000B5	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	4	2	STD	XS	P28F-000B7	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	4	3	STD	STD	P28F-000B8	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	6	3	XS	STD	P28F-000V6	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	6	4	XS	STD	P28F-000V7	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	8	4	SCH60	STD	P28F-000V8	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	

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ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	8	6	SCH60	XS	P28F-000V9	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	10	4	XS	STD	P28F-000DW	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	10	6	XS	XS	P28F-000VA	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	10	8	XS	SCH60	P28F-000VB	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	12	6	XS	XS	P28F-000VD	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	12	8	XS	SCH60	P28F-000VE	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	12	10	XS	XS	P28F-000VC	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	14	6	XS	XS	P28F-000VG	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	14	8	XS	SCH60	P28F-000VH	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	14	10	XS	XS	P28F-000VF	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	14	12	XS	XS	P28F-000KL	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	16	8	SCH20	SCH60	P28F-0013E	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	16	10	SCH20	XS	P28F-000WU	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	16	12	SCH20	XS	P28F-0013C	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	16	14	SCH20	XS	P28F-0013D	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	18	10	SCH20	XS	P28F-000WV	Eccentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	
1	18	12	SCH20	XS	P28F-000WW	Eccentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	
1	18	14	SCH20	XS	P28F-000WX	Eccentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	
1	18	16	SCH20	SCH20	P28F-000UW	Eccentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	
1	20	12	STD	XS	P28F-000WY	Eccentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	
1	20	14	STD	XS	P28F-000WZ	Eccentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	
1	20	16	STD	SCH20	P28F-000UZ	Eccentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	
1	20	18	STD	SCH20	P28F-000V0	Eccentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	
1	24	16	STD	SCH20	P28F-000V1	Eccentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	
1	24	18	STD	SCH20	P28F-000V2	Eccentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	
1	24	20	STD	STD	P28F-000V3	Eccentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	
1	30	20	XS	STD	P28F-001FM	Eccentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	
1	30	24	XS	STD	P28F-001FN	Eccentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P29G-00012	Cap ASTM A182 Grade F11 Class 1 Class 6000 ASME B16.11 SW	
1	0.75				P29G-00013	Cap ASTM A182 Grade F11 Class 1 Class 6000 ASME B16.11 SW	
1	1				P29G-0001G	Cap ASTM A182 Grade F11 Class 1 Class 6000 ASME B16.11 SW	
1	1.5				P29G-0001H	Cap ASTM A182 Grade F11 Class 1 Class 6000 ASME B16.11 SW	
1	2		XS		P29F-00050	Cap ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	3		STD		P29F-00051	Cap ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	4		STD		P29F-00052	Cap ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	6		XS		P29F-000AL	Cap ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	8		SCH60		P29F-000BU	Cap ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	10		XS		P29F-00060	Cap ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	12		XS		P29F-00055	Cap ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	14		XS		P29F-0008A	Cap ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	16		SCH20		P29F-0008F	Cap ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	18		SCH20		P29F-0008G	Cap ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	20		STD		P29F-000BL	Cap ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	24		STD		P29F-000BM	Cap ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	30		XS		P29F-000GN	Cap ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
541	0.75				P29G-0001R	Cap ASTM A182 Grade F11 Class 1 Class 6000 ASME B16.11 NPT	
541	1				P29G-00024	Cap ASTM A182 Grade F11 Class 1 Class 6000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P41F-0002D	Straight nipple ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		XXS		P41F-0002E	Straight nipple ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		XXS		P41F-0002F	Straight nipple ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		XXS		P41F-0002G	Straight nipple ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

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CON SWAGED NIPPLE (SNC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	SCH160	P42F-0001N	Concentric swaged nipple ASTM A234 Grade WP11 Class 1 Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	SCH160	SCH160	P42F-0001P	Concentric swaged nipple ASTM A234 Grade WP11 Class 1 Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	SCH160	SCH160	P42F-0001R	Concentric swaged nipple ASTM A234 Grade WP11 Class 1 Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	SCH160	SCH160	P42F-0001S	Concentric swaged nipple ASTM A234 Grade WP11 Class 1 Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	SCH160	SCH160	P42F-0001T	Concentric swaged nipple ASTM A234 Grade WP11 Class 1 Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	SCH160	SCH160	P42F-0001U	Concentric swaged nipple ASTM A234 Grade WP11 Class 1 Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	XS	SCH160	P42F-0003X	Concentric swaged nipple ASTM A234 Grade WP11 Class 1 Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	XS	SCH160	P42F-0003Y	Concentric swaged nipple ASTM A234 Grade WP11 Class 1 Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	XS	SCH160	P42F-0003Z	Concentric swaged nipple ASTM A234 Grade WP11 Class 1 Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	XS	SCH160	P42F-00040	Concentric swaged nipple ASTM A234 Grade WP11 Class 1 Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	STD	SCH160	P42F-00041	Concentric swaged nipple ASTM A234 Grade WP11 Class 1 Seamless MSS SP-95 BE(L) - PE(S)	

ECC SWAGED NIPPLE (SNE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	SCH160	P43F-00031	Eccentric swaged nipple ASTM A234 Grade WP11 Class 1 Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	SCH160	SCH160	P43F-00032	Eccentric swaged nipple ASTM A234 Grade WP11 Class 1 Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	SCH160	SCH160	P43F-0001J	Eccentric swaged nipple ASTM A234 Grade WP11 Class 1 Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	SCH160	SCH160	P43F-00033	Eccentric swaged nipple ASTM A234 Grade WP11 Class 1 Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	SCH160	SCH160	P43F-0001L	Eccentric swaged nipple ASTM A234 Grade WP11 Class 1 Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	SCH160	SCH160	P43F-0001M	Eccentric swaged nipple ASTM A234 Grade WP11 Class 1 Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	XS	SCH160	P43F-00038	Eccentric swaged nipple ASTM A234 Grade WP11 Class 1 Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	XS	SCH160	P43F-00039	Eccentric swaged nipple ASTM A234 Grade WP11 Class 1 Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	XS	SCH160	P43F-0003A	Eccentric swaged nipple ASTM A234 Grade WP11 Class 1 Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	XS	SCH160	P43F-0003B	Eccentric swaged nipple ASTM A234 Grade WP11 Class 1 Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	STD	SCH160	P43F-0003C	Eccentric swaged nipple ASTM A234 Grade WP11 Class 1 Seamless MSS SP-95 BE(L) - PE(S)	

COUPLING (CPS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P47G-0001A	Coupling ASTM A182 Grade F11 Class 1 Class 6000 ASME B16.11 SW - SW	
1	0.75				P47G-0001B	Coupling ASTM A182 Grade F11 Class 1 Class 6000 ASME B16.11 SW - SW	
1	1				P47G-0001Y	Coupling ASTM A182 Grade F11 Class 1 Class 6000 ASME B16.11 SW - SW	
1	1.5				P47G-0001Z	Coupling ASTM A182 Grade F11 Class 1 Class 6000 ASME B16.11 SW - SW	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5 - 2.5	0.75			P31G-00360	Outlet ASTM A182 Grade F11 Class 1 Class 6000 MSS SP-97 SW	
1	3 - 10	0.75			P31G-0035Z	Outlet ASTM A182 Grade F11 Class 1 Class 6000 MSS SP-97 SW	
1	12 and larger	0.75			P31G-00361	Outlet ASTM A182 Grade F11 Class 1 Class 6000 MSS SP-97 SW	
1	3 - 10	1			P31G-00363	Outlet ASTM A182 Grade F11 Class 1 Class 6000 MSS SP-97 SW	
1	12 and larger	1			P31G-00362	Outlet ASTM A182 Grade F11 Class 1 Class 6000 MSS SP-97 SW	
1	4 - 5	1.5			P31G-00364	Outlet ASTM A182 Grade F11 Class 1 Class 6000 MSS SP-97 SW	
1	6 - 8	1.5			P31G-00365	Outlet ASTM A182 Grade F11 Class 1 Class 6000 MSS SP-97 SW	
1	10 - 18	1.5			P31G-00366	Outlet ASTM A182 Grade F11 Class 1 Class 6000 MSS SP-97 SW	
1	20 and larger	1.5			P31G-00367	Outlet ASTM A182 Grade F11 Class 1 Class 6000 MSS SP-97 SW	
541	1	0.75			P31G-0035Y	Outlet ASTM A182 Grade F11 Class 1 Class 6000 MSS SP-97 NPT	
541	1.5 - 2.5	0.75			P31G-00369	Outlet ASTM A182 Grade F11 Class 1 Class 6000 MSS SP-97 NPT	
541	3 - 10	0.75			P31G-00368	Outlet ASTM A182 Grade F11 Class 1 Class 6000 MSS SP-97 NPT	
541	12 and larger	0.75			P31G-0036A	Outlet ASTM A182 Grade F11 Class 1 Class 6000 MSS SP-97 NPT	
1	6	2	XS	XS	P31G-001D5	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	8	2	SCH60	XS	P31G-001D9	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	10	2	XS	XS	P31G-001DE	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	12	2	XS	XS	P31G-001DK	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	14	2	XS	XS	P31G-001DS	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	16	2	SCH20	XS	P31G-001CA	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	18	2	SCH20	XS	P31G-001CD	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	20	2	STD	XS	P31G-001CH	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	24	2	STD	XS	P31G-001CM	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	30	2	XS	XS	P31G-0029F	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	8	3	SCH60	STD	P31G-001DA	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	

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OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	10	3	XS	STD	P31G-001DF	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	12	3	XS	STD	P31G-001DL	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	14	3	XS	STD	P31G-001DT	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	16	3	SCH20	STD	P31G-001CB	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	18	3	SCH20	STD	P31G-001CE	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	20	3	STD	STD	P31G-001CJ	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	24	3	STD	STD	P31G-001CN	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	30	3	XS	STD	P31G-0029G	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	12	4	XS	STD	P31G-001DM	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	14	4	XS	STD	P31G-001DU	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	16	4	SCH20	STD	P31G-001CC	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	18	4	SCH20	STD	P31G-001CF	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	20	4	STD	STD	P31G-001CK	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	24	4	STD	STD	P31G-001CP	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	30	4	XS	STD	P31G-0029H	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	18	6	SCH20	XS	P31G-001FN	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	20	6	STD	XS	P31G-001FP	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	24	6	STD	XS	P31G-001FR	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	30	6	XS	XS	P31G-002F8	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30G-0001G	Plug ASTM A182 Grade F11 Class 1 ASME B16.11 NPT Round head	
1	0.75				P30G-0001H	Plug ASTM A182 Grade F11 Class 1 ASME B16.11 NPT Round head	
1	1				P30G-0001J	Plug ASTM A182 Grade F11 Class 1 ASME B16.11 NPT Round head	
1	1.5				P30G-0001K	Plug ASTM A182 Grade F11 Class 1 ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P61G-0006M	Flange SW ASTM A182 Grade F11 Class 2 Class 300 ASME B16.5 RF	
1	0.75		SCH160		P61G-0006N	Flange SW ASTM A182 Grade F11 Class 2 Class 300 ASME B16.5 RF	
1	1		SCH160		P61G-0009J	Flange SW ASTM A182 Grade F11 Class 2 Class 300 ASME B16.5 RF	
1	1.5		SCH160		P61G-0009K	Flange SW ASTM A182 Grade F11 Class 2 Class 300 ASME B16.5 RF	
1	2		XS		P61G-0006V	Flange WN ASTM A182 Grade F11 Class 2 Class 300 ASME B16.5 RF	
1	3		STD		P61G-0006Y	Flange WN ASTM A182 Grade F11 Class 2 Class 300 ASME B16.5 RF	
1	4		STD		P61G-0006Z	Flange WN ASTM A182 Grade F11 Class 2 Class 300 ASME B16.5 RF	
1	6		XS		P61G-00075	Flange WN ASTM A182 Grade F11 Class 2 Class 300 ASME B16.5 RF	
1	8		SCH60		P61G-00076	Flange WN ASTM A182 Grade F11 Class 2 Class 300 ASME B16.5 RF	
1	10		XS		P61G-00097	Flange WN ASTM A182 Grade F11 Class 2 Class 300 ASME B16.5 RF	
1	12		XS		P61G-00071	Flange WN ASTM A182 Grade F11 Class 2 Class 300 ASME B16.5 RF	
1	14		XS		P61G-00072	Flange WN ASTM A182 Grade F11 Class 2 Class 300 ASME B16.5 RF	
1	16		SCH20		P61G-000MA	Flange WN ASTM A182 Grade F11 Class 2 Class 300 ASME B16.5 RF	
1	18		SCH20		P61G-000MB	Flange WN ASTM A182 Grade F11 Class 2 Class 300 ASME B16.5 RF	
1	20		STD		P61G-0006W	Flange WN ASTM A182 Grade F11 Class 2 Class 300 ASME B16.5 RF	
1	24		STD		P61G-0006X	Flange WN ASTM A182 Grade F11 Class 2 Class 300 ASME B16.5 RF	
1	30		XS		P61G-00122	Flange WN ASTM A182 Grade F11 Class 2 Class 300 ASME B16.47 Series B RF	
541	0.5				P61G-001BE	Flange NPT ASTM A182 Grade F11 Class 2 Class 300 ASME B16.5 RF	
541	0.75				P61G-0015R	Flange NPT ASTM A182 Grade F11 Class 2 Class 300 ASME B16.5 RF	
781	0.5		SCH160		P61G-0004B	Flange SW ASTM A182 Grade F11 Class 2 Class 600 ASME B16.5 RF	
781	0.75		SCH160		P61G-0004C	Flange SW ASTM A182 Grade F11 Class 2 Class 600 ASME B16.5 RF	
781	1		SCH160		P61G-000JR	Flange SW ASTM A182 Grade F11 Class 2 Class 600 ASME B16.5 RF	
781	1.5		SCH160		P61G-000JS	Flange SW ASTM A182 Grade F11 Class 2 Class 600 ASME B16.5 RF	
781	2		XS		P61G-0007B	Flange WN ASTM A182 Grade F11 Class 2 Class 600 ASME B16.5 RF	
781	3		STD		P61G-0007D	Flange WN ASTM A182 Grade F11 Class 2 Class 600 ASME B16.5 RF	
781	4		STD		P61G-0007E	Flange WN ASTM A182 Grade F11 Class 2 Class 600 ASME B16.5 RF	
781	6		XS		P61G-0003X	Flange WN ASTM A182 Grade F11 Class 2 Class 600 ASME B16.5 RF	
781	8		SCH60		P61G-0007F	Flange WN ASTM A182 Grade F11 Class 2 Class 600 ASME B16.5 RF	
781	10		XS		P61G-00098	Flange WN ASTM A182 Grade F11 Class 2 Class 600 ASME B16.5 RF	
781	12		XS		P61G-00078	Flange WN ASTM A182 Grade F11 Class 2 Class 600 ASME B16.5 RF	

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FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
781	14		XS		P61G-00079	Flange WN ASTM A182 Grade F11 Class 2 Class 600 ASME B16.5 RF	
781	16		SCH20		P61G-0003T	Flange WN ASTM A182 Grade F11 Class 2 Class 600 ASME B16.5 RF	
781	18		SCH20		P61G-000N6	Flange WN ASTM A182 Grade F11 Class 2 Class 600 ASME B16.5 RF	
781	20		STD		P61G-0003U	Flange WN ASTM A182 Grade F11 Class 2 Class 600 ASME B16.5 RF	
781	24		STD		P61G-000N7	Flange WN ASTM A182 Grade F11 Class 2 Class 600 ASME B16.5 RF	
781	30		XS		P61G-0013N	Flange WN ASTM A182 Grade F11 Class 2 Class 600 ASME B16.47 Series B RF	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67G-0001A	Blind flange ASTM A182 Grade F11 Class 2 Class 300 ASME B16.5 RF	
1	0.75				P67G-0001B	Blind flange ASTM A182 Grade F11 Class 2 Class 300 ASME B16.5 RF	
1	1				P67G-0001C	Blind flange ASTM A182 Grade F11 Class 2 Class 300 ASME B16.5 RF	
1	1.5				P67G-0001D	Blind flange ASTM A182 Grade F11 Class 2 Class 300 ASME B16.5 RF	
1	2				P67G-0004E	Blind flange ASTM A182 Grade F11 Class 2 Class 300 ASME B16.5 RF	
1	3				P67G-0004G	Blind flange ASTM A182 Grade F11 Class 2 Class 300 ASME B16.5 RF	
1	4				P67G-0004H	Blind flange ASTM A182 Grade F11 Class 2 Class 300 ASME B16.5 RF	
1	6				P67G-0001E	Blind flange ASTM A182 Grade F11 Class 2 Class 300 ASME B16.5 RF	
1	8				P67G-0001F	Blind flange ASTM A182 Grade F11 Class 2 Class 300 ASME B16.5 RF	
1	10				P67G-0004A	Blind flange ASTM A182 Grade F11 Class 2 Class 300 ASME B16.5 RF	
1	12				P67G-0004B	Blind flange ASTM A182 Grade F11 Class 2 Class 300 ASME B16.5 RF	
1	14				P67G-0004C	Blind flange ASTM A182 Grade F11 Class 2 Class 300 ASME B16.5 RF	
1	16				P67G-0004D	Blind flange ASTM A182 Grade F11 Class 2 Class 300 ASME B16.5 RF	
1	18				P67G-00053	Blind flange ASTM A182 Grade F11 Class 2 Class 300 ASME B16.5 RF	
1	20				P67G-0008H	Blind flange ASTM A182 Grade F11 Class 2 Class 300 ASME B16.5 RF	
1	24				P67G-0004F	Blind flange ASTM A182 Grade F11 Class 2 Class 300 ASME B16.5 RF	
1	30				P67G-0001G	Blind flange ASTM A182 Grade F11 Class 2 Class 300 ASME B16.47 Series B RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-003AM	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	0.75				P73T-003AN	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	1				P73T-003AP	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	1.5				P73T-003AR	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	2				P73T-003AX	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	3				P73T-003B0	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	4				P73T-003B1	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	6				P73T-003B2	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	8				P73T-003B3	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	10				P73T-003AS	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	12				P73T-003AT	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	14				P73T-003AU	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	16				P73T-003AV	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	18				P73T-003AW	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	20				P73T-003AY	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	24				P73T-003AZ	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	30				P73T-003BL	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
781	0.5				P73T-003B4	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
781	0.75				P73T-003B5	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
781	1				P73T-003B6	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
781	1.5				P73T-003B7	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
781	2				P73T-003BD	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	

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GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
781	3				P73T-003BG	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
781	4				P73T-003BH	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
781	6				P73T-003BJ	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
781	8				P73T-003BK	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
781	10				P73T-003B8	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
781	12				P73T-003B9	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
781	14				P73T-003BA	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
781	16				P73T-003BB	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
781	18				P73T-003BC	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
781	20				P73T-003BE	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
781	24				P73T-003BF	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
781	30				P73T-003BM	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-10				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B16 / A194 Grade 4 ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	12-30				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B16 / A194 Grade 4 ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
781	0.5-6				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B16 / A194 Grade 4 ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
781	8-30				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B16 / A194 Grade 4 ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81G-000CF	Gate valve ASTM A182 Grade F11 Class 2 Class 300 API 602 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2	
1	0.75				P81G-000CG	Gate valve ASTM A182 Grade F11 Class 2 Class 300 API 602 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2	
1	1				P81G-000CH	Gate valve ASTM A182 Grade F11 Class 2 Class 300 API 602 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2	
1	1.5				P81G-000CJ	Gate valve ASTM A182 Grade F11 Class 2 Class 300 API 602 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2	
1	2				P81H-000XL	Gate valve ASTM A217 Grade WC6 Class 300 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2	
1	3				P81H-000XM	Gate valve ASTM A217 Grade WC6 Class 300 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2	
1	4				P81H-000XN	Gate valve ASTM A217 Grade WC6 Class 300 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2	
1	6				P81H-000XP	Gate valve ASTM A217 Grade WC6 Class 300 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2	
1	8				P81H-000XR	Gate valve ASTM A217 Grade WC6 Class 300 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2	
1	10				P81H-000XS	Gate valve ASTM A217 Grade WC6 Class 300 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Gear operated Fluid-2	
1	12				P81H-000XT	Gate valve ASTM A217 Grade WC6 Class 300 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Gear operated Fluid-2	
1	14				P81H-000XU	Gate valve ASTM A217 Grade WC6 Class 300 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Gear operated Fluid-2	
1	16				P81H-000XV	Gate valve ASTM A217 Grade WC6 Class 300 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Gear operated Fluid-2	
1	18				P81H-000XW	Gate valve ASTM A217 Grade WC6 Class 300 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Gear operated Fluid-2	
1	20				P81H-000XX	Gate valve ASTM A217 Grade WC6 Class 300 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Gear operated Fluid-2	
1	24				P81H-000XY	Gate valve ASTM A217 Grade WC6 Class 300 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Gear operated Fluid-2	
1	30				P81H-000XZ	Gate valve ASTM A217 Grade WC6 Class 300 API 600 Flange ASME B16.47-B RF Trim number 5 BB-BG-OS&Y Gear operated Fluid-2	
4608	0.75				P81G-000EK	Gate valve ASTM A182 Grade F11 Class 2 Class 800 API 602 SW both sides w/ nipples PE - NPT ASTM A335-P11 XXS-nipple Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2	
4608	1				P81G-000EP	Gate valve ASTM A182 Grade F11 Class 2 Class 800 API 602 SW both sides w/ nipples PE - NPT ASTM A335-P11 XXS-nipple Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82G-00073	Globe valve ASTM A182 Grade F11 Class 2 Class 300 API 602 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2	
1	0.75				P82G-00074	Globe valve ASTM A182 Grade F11 Class 2 Class 300 API 602 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2	

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GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P82G-00075	Globe valve ASTM A182 Grade F11 Class 2 Class 300 API 602 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2	
1	1.5				P82G-00076	Globe valve ASTM A182 Grade F11 Class 2 Class 300 API 602 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2	
1	2				P82H-000CB	Globe valve ASTM A217 Grade WC6 Class 300 BS 1873 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2	
1	3				P82H-000CC	Globe valve ASTM A217 Grade WC6 Class 300 BS 1873 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83G-0001R	Check valve ASTM A182 Grade F11 Class 2 Class 300 API 602 Flange ASME B16.5 RF Trim number 5 Lift-type Bolted cover	
1	0.75				P83G-0001S	Check valve ASTM A182 Grade F11 Class 2 Class 300 API 602 Flange ASME B16.5 RF Trim number 5 Lift-type Bolted cover	
1	1				P83G-0001T	Check valve ASTM A182 Grade F11 Class 2 Class 300 API 602 Flange ASME B16.5 RF Trim number 5 Lift-type Bolted cover	
1	1.5				P83G-0001U	Check valve ASTM A182 Grade F11 Class 2 Class 300 API 602 Flange ASME B16.5 RF Trim number 5 Lift-type Bolted cover	
1	2				P83H-0004W	Check valve ASTM A217 Grade WC6 Class 300 BS 1868 Flange ASME B16.5 RF Trim number 5 Swing-type Bolted cover	
1	3				P83H-0004X	Check valve ASTM A217 Grade WC6 Class 300 BS 1868 Flange ASME B16.5 RF Trim number 5 Swing-type Bolted cover	
1	4				P83H-0004Y	Check valve ASTM A217 Grade WC6 Class 300 BS 1868 Flange ASME B16.5 RF Trim number 5 Swing-type Bolted cover	
1	6				P83H-0004Z	Check valve ASTM A217 Grade WC6 Class 300 BS 1868 Flange ASME B16.5 RF Trim number 5 Swing-type Bolted cover	
1	8				P83H-00050	Check valve ASTM A217 Grade WC6 Class 300 BS 1868 Flange ASME B16.5 RF Trim number 5 Swing-type Bolted cover	
1	10				P83H-00051	Check valve ASTM A217 Grade WC6 Class 300 BS 1868 Flange ASME B16.5 RF Trim number 5 Swing-type Bolted cover	
1	12				P83H-00052	Check valve ASTM A217 Grade WC6 Class 300 BS 1868 Flange ASME B16.5 RF Trim number 5 Swing-type Bolted cover	
1	14				P83H-00053	Check valve ASTM A217 Grade WC6 Class 300 BS 1868 Flange ASME B16.5 RF Trim number 5 Swing-type Bolted cover	
1	16				P83H-00054	Check valve ASTM A217 Grade WC6 Class 300 BS 1868 Flange ASME B16.5 RF Trim number 5 Swing-type Bolted cover	
1	18				P83H-00055	Check valve ASTM A217 Grade WC6 Class 300 BS 1868 Flange ASME B16.5 RF Trim number 5 Swing-type Bolted cover	

ORIFICE FLANGE (FO)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2		XS		P66G-00070	Orifice flange WN ASTM A182 Grade F11 Class 2 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	3		STD		P66G-00071	Orifice flange WN ASTM A182 Grade F11 Class 2 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	4		STD		P66G-00072	Orifice flange WN ASTM A182 Grade F11 Class 2 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	6		XS		P66G-00073	Orifice flange WN ASTM A182 Grade F11 Class 2 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	8		SCH60		P66G-00074	Orifice flange WN ASTM A182 Grade F11 Class 2 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	10		XS		P66G-0006W	Orifice flange WN ASTM A182 Grade F11 Class 2 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	12		XS		P66G-0006X	Orifice flange WN ASTM A182 Grade F11 Class 2 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	14		XS		P66G-0006Y	Orifice flange WN ASTM A182 Grade F11 Class 2 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	16		SCH20		P66G-0006Z	Orifice flange WN ASTM A182 Grade F11 Class 2 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
200	2		XS		P66G-0007B	Orifice flange WN ASTM A182 Grade F11 Class 2 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	3		STD		P66G-0007C	Orifice flange WN ASTM A182 Grade F11 Class 2 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	4		STD		P66G-0007D	Orifice flange WN ASTM A182 Grade F11 Class 2 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	6		XS		P66G-0007E	Orifice flange WN ASTM A182 Grade F11 Class 2 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	8		SCH60		P66G-0007F	Orifice flange WN ASTM A182 Grade F11 Class 2 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	10		XS		P66G-00077	Orifice flange WN ASTM A182 Grade F11 Class 2 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	12		XS		P66G-00078	Orifice flange WN ASTM A182 Grade F11 Class 2 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	14		XS		P66G-00079	Orifice flange WN ASTM A182 Grade F11 Class 2 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	16		SCH20		P66G-0007A	Orifice flange WN ASTM A182 Grade F11 Class 2 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71G-0001B	Spectacle blank ASTM A182 Grade F11 Class 2 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	0.75				P71G-0001C	Spectacle blank ASTM A182 Grade F11 Class 2 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	1				P71G-0001D	Spectacle blank ASTM A182 Grade F11 Class 2 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71G-0001E	Spectacle blank ASTM A182 Grade F11 Class 2 Class 300 Standard-drawing Flange ASME B16.5 RF	

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SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2				P71G-0002F	Spectacle blank ASTM A182 Grade F11 Class 2 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	3				P71G-0002G	Spectacle blank ASTM A182 Grade F11 Class 2 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	4				P71G-0002H	Spectacle blank ASTM A182 Grade F11 Class 2 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	6				P71G-0001F	Spectacle blank ASTM A182 Grade F11 Class 2 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	8				P71G-0001G	Spectacle blank ASTM A182 Grade F11 Class 2 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	10				P71G-0002D	Spectacle blank ASTM A182 Grade F11 Class 2 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	12				P71G-0002E	Spectacle blank ASTM A182 Grade F11 Class 2 Class 300 Standard-drawing Flange ASME B16.5 RF	

PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72G-0001C	Paddle blank ASTM A182 Grade F11 Class 2 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	16				P72G-0001E	Paddle blank ASTM A182 Grade F11 Class 2 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	18				P72G-0001F	Paddle blank ASTM A182 Grade F11 Class 2 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	20				P72G-0001G	Paddle blank ASTM A182 Grade F11 Class 2 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	24				P72G-0001H	Paddle blank ASTM A182 Grade F11 Class 2 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	30				P72G-00012	Paddle blank ASTM A182 Grade F11 Class 2 Class 300 Standard-drawing Flange ASME B16.47-B RF	

PADDLE SPACER (PS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72G-0001D	Paddle spacer ASTM A182 Grade F11 Class 2 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	16				P72G-0001J	Paddle spacer ASTM A182 Grade F11 Class 2 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	18				P72G-0001K	Paddle spacer ASTM A182 Grade F11 Class 2 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	20				P72G-0001L	Paddle spacer ASTM A182 Grade F11 Class 2 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	24				P72G-0001M	Paddle spacer ASTM A182 Grade F11 Class 2 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	30				P72G-00015	Paddle spacer ASTM A182 Grade F11 Class 2 Class 300 Standard-drawing Flange ASME B16.47-B RF	

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BOLT TABLE (B_B2DP01 , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-00GN8		
0.75	4	0.625	75	P80S-00GLL		
1	4	0.625	80	P80S-00GLK		
1.5	4	0.750	95	P80S-00FVE		
2	8	0.625	90	P80S-00GLH		
3	8	0.750	110	P80S-00GLD		
4	8	0.750	115	P80S-00GLC		
6	12	0.750	125	P80S-00GLA		
8	12	0.875	140	P80S-00FV5		
10	16	1.000	160	P80S-00FR9		
12	16	1.125	175	P80S-00FH8		
14	20	1.125	180	P80S-00FH7		
16	20	1.250	190	P80S-00F9Y		
18	24	1.250	200	P80S-00F9W		
20	24	1.250	210	P80S-00F9U		
24	24	1.500	235	P80S-00EYL		
30	36	1.375	285	P80S-00F2V		

BOLT TABLE (B_B2DP01_781 , STUD ASME RF, OPTION CODE 781)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	80	P80S-00GN6		
0.75	4	0.625	90	P80S-00GLH		
1	4	0.625	95	P80S-00GLG		
1.5	4	0.750	110	P80S-00GLD		
2	8	0.625	110	P80S-00GN0		
3	8	0.750	130	P80S-00GL9		
4	8	0.875	150	P80S-00FV3		
6	12	1.000	175	P80S-00FR6		
8	12	1.125	195	P80S-00FH4		
10	16	1.250	250	P80S-00F9K		
12	20	1.250	255	P80S-00F9J		
14	20	1.375	270	P80S-00F4T		
16	20	1.500	295	P80S-00EY8		
18	20	1.625	320	P80S-00G0T		
20	24	1.625	335	P80S-00G0P		
24	24	1.875	380	P80S-00FKC		
30	28	1.875	435	P80S-00FK1		

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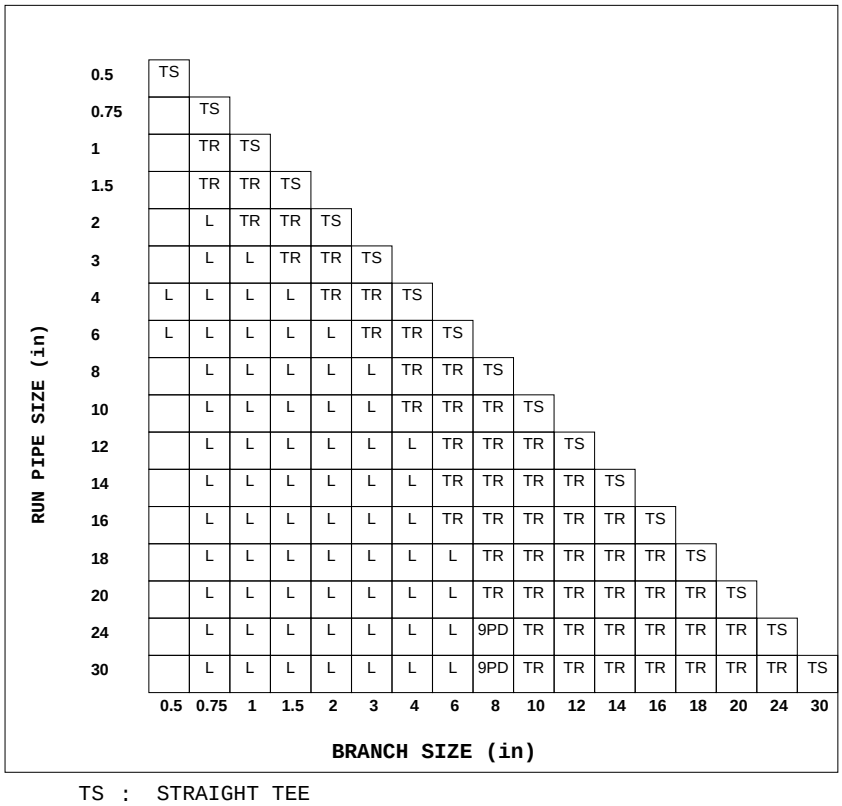
BRANCH TABLE (T_B2DP01)



RUN PIPE SIZE (in) \ BRANCH SIZE (in)	0.5	0.75	1	1.5	2	3	4	6	8	10	12	14	16	18	20	24	30
0.5	TS																
0.75		TS															
1		TR	TS														
1.5		TR	TR	TS													
2		L	TR	TR	TS												
3		L	L	TR	TR	TS											
4	L	L	L	L	TR	TR	TS										
6	L	L	L	L	L	TR	TR	TS									
8		L	L	L	L	L	TR	TR	TS								
10		L	L	L	L	L	TR	TR	TR	TS							
12		L	L	L	L	L	L	TR	TR	TR	TS						
14		L	L	L	L	L	L	TR	TR	TR	TR	TS					
16		L	L	L	L	L	L	TR	TR	TR	TR	TR	TS				
18		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TS			
20		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TR	TS		
24		L	L	L	L	L	L	L	9PD	TR	TR	TR	TR	TR	TR	TS	
30		L	L	L	L	L	L	L	9PD	TR	TR	TR	TR	TR	TR	TR	TS

TS : STRAIGHT TEE
L : OUTLET
9PD : REINFORCING PAD 90 DEG
TR : REDUCING TEE

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PIPING CLASS

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Material : 5Cr-1/2Mo
Rating : ASME CLASS 300
Flange Face : RF
C.A.(mm) : 3.00
Gasket : Spiral Wound
Service : PROCESS - CATALYST : / CATALYST
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
6	PIPE THICKNESS CALCULATION TO INCLUDE CORROSION AND EROSION ALLOWANCES DUE TO THE PROCESS CATALYST FLOW, AS PER PROCESS LICENSOR SPECIFICATIONS
24	FOR ALL RELEVANT PIPING CLASSES WITH LINE DESIGN TEMPERATURE ABOVE 427DEGC, IN SPIRAL WOUND GASKET, SUITABLE GASKET FILLER MATERIAL SUCH AS COMBINATION OF MICA LAYERS AND GRAPHITE FILLERS OR EQUIVALENT SHALL BE REVIEWED AND SELECTED OR AS DEFINED BY THE LICENSOR

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
200	WITH JACK SCREW (FO)
541	NPT(F) (CA,F)
781	CLASS 600 (B,F,G)
4602	DISSIMILAR TYPE CHECK VALVE (XDP)
4608	VALVE WITH NIPPLES (V)

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PIPING CLASS
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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P01F-0001C	Pipe ASTM A335 Grade P5 Seamless ASME B36.10M/B36.19M PE	
1	0.75		SCH160		P01F-0001D	Pipe ASTM A335 Grade P5 Seamless ASME B36.10M/B36.19M PE	
1	1		SCH160		P01F-000CL	Pipe ASTM A335 Grade P5 Seamless ASME B36.10M/B36.19M PE	
1	1.5		SCH160		P01F-000CM	Pipe ASTM A335 Grade P5 Seamless ASME B36.10M/B36.19M PE	
1	2		XS		P01F-0001K	Pipe ASTM A335 Grade P5 Seamless ASME B36.10M/B36.19M BE	
1	3		STD		P01F-0001L	Pipe ASTM A335 Grade P5 Seamless ASME B36.10M/B36.19M BE	
1	4		XS		P01F-0001M	Pipe ASTM A335 Grade P5 Seamless ASME B36.10M/B36.19M BE	
1	6		XS		P01F-00038	Pipe ASTM A335 Grade P5 Seamless ASME B36.10M/B36.19M BE	
1	8		SCH60		P01F-0004H	Pipe ASTM A335 Grade P5 Seamless ASME B36.10M/B36.19M BE	
1	10		XS		P01F-00039	Pipe ASTM A335 Grade P5 Seamless ASME B36.10M/B36.19M BE	
1	12		XS		P01F-0004A	Pipe ASTM A335 Grade P5 Seamless ASME B36.10M/B36.19M BE	
1	14		XS		P01F-0004U	Pipe ASTM A335 Grade P5 Seamless ASME B36.10M/B36.19M BE	
1	16		SCH20		P01F-0006S	Pipe ASTM A335 Grade P5 Seamless ASME B36.10M/B36.19M BE	
1	18		SCH20		P01F-000CP	Pipe ASTM A691 Grade 5CR Class 22 EFW ASME B36.10M/B36.19M BE	
1	20		STD		P01F-0001R	Pipe ASTM A691 Grade 5CR Class 22 EFW ASME B36.10M/B36.19M BE	
1	24		STD		P01F-0003E	Pipe ASTM A691 Grade 5CR Class 22 EFW ASME B36.10M/B36.19M BE	
1	30		XS		P01F-000DE	Pipe ASTM A691 Grade 5CR Class 22 EFW ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P02F-00044	90 degree elbow ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW Long radius	
1	0.75		SCH160		P02F-00045	90 degree elbow ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW Long radius	
1	1		SCH160		P02F-000C5	90 degree elbow ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW Long radius	
1	1.5		SCH160		P02F-000C6	90 degree elbow ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW Long radius	
1	2		XS		P02F-0002H	90 degree elbow ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW Long radius	
1	3		STD		P02F-0002K	90 degree elbow ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW Long radius	
1	4		XS		P02F-0002L	90 degree elbow ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW Long radius	
1	6		XS		P02F-0004B	90 degree elbow ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW Long radius	
1	8		SCH60		P02F-000CJ	90 degree elbow ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW Long radius	
1	10		XS		P02F-0004D	90 degree elbow ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW Long radius	
1	12		XS		P02F-000CG	90 degree elbow ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW Long radius	
1	14		XS		P02F-000CH	90 degree elbow ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW Long radius	
1	16		SCH20		P02F-000CA	90 degree elbow ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW Long radius	
1	18		SCH20		P02F-000CB	90 degree elbow ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW Long radius	
1	20		STD		P02F-0002J	90 degree elbow ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW Long radius	
1	24		STD		P02F-0004C	90 degree elbow ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW Long radius	
1	30		XS		P02F-000DF	90 degree elbow ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P03F-00041	45 degree elbow ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW Long radius	
1	0.75		SCH160		P03F-00042	45 degree elbow ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW Long radius	
1	1		SCH160		P03F-000BY	45 degree elbow ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW Long radius	
1	1.5		SCH160		P03F-000BZ	45 degree elbow ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW Long radius	
1	2		XS		P03F-0002E	45 degree elbow ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW Long radius	
1	3		STD		P03F-0002G	45 degree elbow ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW Long radius	
1	4		XS		P03F-0002H	45 degree elbow ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW Long radius	
1	6		XS		P03F-00048	45 degree elbow ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW Long radius	
1	8		SCH60		P03F-000CB	45 degree elbow ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW Long radius	
1	10		XS		P03F-0004A	45 degree elbow ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW Long radius	
1	12		XS		P03F-000C9	45 degree elbow ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW Long radius	
1	14		XS		P03F-000CA	45 degree elbow ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW Long radius	
1	16		SCH20		P03F-000C3	45 degree elbow ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW Long radius	
1	18		SCH20		P03F-000C4	45 degree elbow ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW Long radius	
1	20		STD		P03F-0002F	45 degree elbow ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW Long radius	
1	24		STD		P03F-00049	45 degree elbow ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW Long radius	
1	30		XS		P03F-000D8	45 degree elbow ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW Long radius	

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STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P21F-00042	Straight tee ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	0.75		SCH160		P21F-00043	Straight tee ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	1		SCH160		P21F-000BW	Straight tee ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	1.5		SCH160		P21F-000BX	Straight tee ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	2		XS		P21F-0002F	Straight tee ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	3		STD		P21F-0002G	Straight tee ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	4		XS		P21F-0002H	Straight tee ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	6		XS		P21F-00049	Straight tee ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	8		SCH60		P21F-000C9	Straight tee ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	10		XS		P21F-0004A	Straight tee ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	12		XS		P21F-000C7	Straight tee ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	14		XS		P21F-000C8	Straight tee ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	16		SCH20		P21F-000C1	Straight tee ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	18		SCH20		P21F-000C4	Straight tee ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	
1	20		STD		P21F-0002L	Straight tee ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	
1	24		STD		P21F-0004F	Straight tee ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	
1	30		XS		P21F-000D4	Straight tee ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75	SCH160	SCH160	P24F-0010G	Reducing tee ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	1.5	0.75	SCH160	SCH160	P24F-0010H	Reducing tee ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	1.5	1	SCH160	SCH160	P24F-0010J	Reducing tee ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	2	1	XS	SCH160	P24F-0010K	Reducing tee ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	2	1.5	XS	SCH160	P24F-0010L	Reducing tee ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	3	1.5	STD	SCH160	P24F-0010M	Reducing tee ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	3	2	STD	XS	P24F-0006J	Reducing tee ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	4	2	XS	XS	P24F-0006K	Reducing tee ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	4	3	XS	STD	P24F-0006L	Reducing tee ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	6	3	XS	STD	P24F-0012P	Reducing tee ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	6	4	XS	XS	P24F-0009S	Reducing tee ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	8	4	SCH60	XS	P24F-0012R	Reducing tee ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	8	6	SCH60	XS	P24F-0012S	Reducing tee ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	10	4	XS	XS	P24F-0012T	Reducing tee ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	10	6	XS	XS	P24F-0012U	Reducing tee ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	10	8	XS	SCH60	P24F-0012V	Reducing tee ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	12	6	XS	XS	P24F-0012X	Reducing tee ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	12	8	XS	SCH60	P24F-0012Y	Reducing tee ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	12	10	XS	XS	P24F-0012W	Reducing tee ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	14	6	XS	XS	P24F-00131	Reducing tee ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	14	8	XS	SCH60	P24F-00132	Reducing tee ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	14	10	XS	XS	P24F-0012Z	Reducing tee ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	14	12	XS	XS	P24F-00130	Reducing tee ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	16	6	SCH20	XS	P24F-00133	Reducing tee ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	16	8	SCH20	SCH60	P24F-001B6	Reducing tee ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	16	10	SCH20	XS	P24F-001B3	Reducing tee ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	16	12	SCH20	XS	P24F-001B4	Reducing tee ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	16	14	SCH20	XS	P24F-001B5	Reducing tee ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	18	8	SCH20	SCH60	P24F-001B8	Reducing tee ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	
1	18	10	SCH20	XS	P24F-00134	Reducing tee ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	
1	18	12	SCH20	XS	P24F-001B7	Reducing tee ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	
1	18	14	SCH20	XS	P24F-00135	Reducing tee ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	
1	18	16	SCH20	SCH20	P24F-0011S	Reducing tee ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	
1	20	8	STD	SCH60	P24F-00139	Reducing tee ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	
1	20	10	STD	XS	P24F-00136	Reducing tee ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	
1	20	12	STD	XS	P24F-00137	Reducing tee ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	
1	20	14	STD	XS	P24F-00138	Reducing tee ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	
1	20	16	STD	SCH20	P24F-0011X	Reducing tee ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	
1	20	18	STD	SCH20	P24F-0011Y	Reducing tee ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	

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REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	24	10	STD	XS	P24F-0013A	Reducing tee ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	
1	24	12	STD	XS	P24F-001B9	Reducing tee ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	
1	24	14	STD	XS	P24F-0013B	Reducing tee ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	
1	24	16	STD	SCH20	P24F-00122	Reducing tee ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	
1	24	18	STD	SCH20	P24F-00123	Reducing tee ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	
1	24	20	STD	STD	P24F-00124	Reducing tee ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	
1	30	10	XS	XS	P24F-0018L	Reducing tee ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	
1	30	12	XS	XS	P24F-00239	Reducing tee ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	
1	30	14	XS	XS	P24F-0023A	Reducing tee ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	
1	30	16	XS	SCH20	P24F-001Y6	Reducing tee ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	
1	30	18	XS	SCH20	P24F-001Y7	Reducing tee ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	
1	30	20	XS	STD	P24F-001Y8	Reducing tee ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	
1	30	24	XS	STD	P24F-001Y9	Reducing tee ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	SCH160	P27F-0008C	Concentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	1	0.5	SCH160	SCH160	P27F-000VJ	Concentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	1	0.75	SCH160	SCH160	P27F-000VK	Concentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	1.5	0.5	SCH160	SCH160	P27F-000VL	Concentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	1.5	0.75	SCH160	SCH160	P27F-000VM	Concentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	1.5	1	SCH160	SCH160	P27F-000VN	Concentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	2	0.75	XS	SCH160	P27F-000VP	Concentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	2	1	XS	SCH160	P27F-000VR	Concentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	2	1.5	XS	SCH160	P27F-000VS	Concentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	3	1.5	STD	SCH160	P27F-000VT	Concentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	3	2	STD	XS	P27F-0005L	Concentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	4	1.5	XS	SCH160	P27F-000X0	Concentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	4	2	XS	XS	P27F-0005M	Concentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	4	3	XS	STD	P27F-0005N	Concentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	6	3	XS	STD	P27F-000X1	Concentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	6	4	XS	XS	P27F-0008S	Concentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	8	4	SCH60	XS	P27F-000X2	Concentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	8	6	SCH60	XS	P27F-000X3	Concentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	10	4	XS	XS	P27F-000X4	Concentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	10	6	XS	XS	P27F-000X5	Concentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	10	8	XS	SCH60	P27F-000X6	Concentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	12	6	XS	XS	P27F-000X8	Concentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	12	8	XS	SCH60	P27F-000X9	Concentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	12	10	XS	XS	P27F-000X7	Concentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	14	6	XS	XS	P27F-000XC	Concentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	14	8	XS	SCH60	P27F-000XD	Concentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	14	10	XS	XS	P27F-000XA	Concentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	14	12	XS	XS	P27F-000XB	Concentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	16	8	SCH20	SCH60	P27F-0013G	Concentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	16	10	SCH20	XS	P27F-000XE	Concentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	16	12	SCH20	XS	P27F-0013E	Concentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	16	14	SCH20	XS	P27F-0013F	Concentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	18	10	SCH20	XS	P27F-000XF	Concentric reducer ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	
1	18	12	SCH20	XS	P27F-000XG	Concentric reducer ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	
1	18	14	SCH20	XS	P27F-000XH	Concentric reducer ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	
1	18	16	SCH20	SCH20	P27F-000WH	Concentric reducer ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	
1	20	12	STD	XS	P27F-000XJ	Concentric reducer ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	
1	20	14	STD	XS	P27F-000XK	Concentric reducer ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	
1	20	16	STD	SCH20	P27F-000WL	Concentric reducer ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	
1	20	18	STD	SCH20	P27F-000WM	Concentric reducer ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	
1	24	16	STD	SCH20	P27F-000WN	Concentric reducer ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	
1	24	18	STD	SCH20	P27F-000WP	Concentric reducer ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	
1	24	20	STD	STD	P27F-000WR	Concentric reducer ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	

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CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	30	20	XS	STD	P27F-001FL	Concentric reducer ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	
1	30	24	XS	STD	P27F-001FM	Concentric reducer ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	SCH160	P28F-0008C	Eccentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	1	0.5	SCH160	SCH160	P28F-000VJ	Eccentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	1	0.75	SCH160	SCH160	P28F-000VK	Eccentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	1.5	0.5	SCH160	SCH160	P28F-000VL	Eccentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	1.5	0.75	SCH160	SCH160	P28F-000VM	Eccentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	1.5	1	SCH160	SCH160	P28F-000VN	Eccentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	2	0.75	XS	SCH160	P28F-000VP	Eccentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	2	1	XS	SCH160	P28F-000VR	Eccentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	2	1.5	XS	SCH160	P28F-000VS	Eccentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	3	1.5	STD	SCH160	P28F-000VT	Eccentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	3	2	STD	XS	P28F-0005L	Eccentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	4	1.5	XS	SCH160	P28F-000X0	Eccentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	4	2	XS	XS	P28F-0005M	Eccentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	4	3	XS	STD	P28F-0005N	Eccentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	6	3	XS	STD	P28F-000X1	Eccentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	6	4	XS	XS	P28F-0008S	Eccentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	8	4	SCH60	XS	P28F-000X2	Eccentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	8	6	SCH60	XS	P28F-000X3	Eccentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	10	4	XS	XS	P28F-000X4	Eccentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	10	6	XS	XS	P28F-000X5	Eccentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	10	8	XS	SCH60	P28F-000X6	Eccentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	12	6	XS	XS	P28F-000X8	Eccentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	12	8	XS	SCH60	P28F-000X9	Eccentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	12	10	XS	XS	P28F-000X7	Eccentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	14	6	XS	XS	P28F-000XC	Eccentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	14	8	XS	SCH60	P28F-000XD	Eccentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	14	10	XS	XS	P28F-000XA	Eccentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	14	12	XS	XS	P28F-000XB	Eccentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	16	8	SCH20	SCH60	P28F-0013H	Eccentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	16	10	SCH20	XS	P28F-000XE	Eccentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	16	12	SCH20	XS	P28F-0013F	Eccentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	16	14	SCH20	XS	P28F-0013G	Eccentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	18	10	SCH20	XS	P28F-000XF	Eccentric reducer ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	
1	18	12	SCH20	XS	P28F-000XG	Eccentric reducer ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	
1	18	14	SCH20	XS	P28F-000XH	Eccentric reducer ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	
1	18	16	SCH20	SCH20	P28F-000WH	Eccentric reducer ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	
1	20	12	STD	XS	P28F-000XJ	Eccentric reducer ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	
1	20	14	STD	XS	P28F-000XK	Eccentric reducer ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	
1	20	16	STD	SCH20	P28F-000WL	Eccentric reducer ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	
1	20	18	STD	SCH20	P28F-000WM	Eccentric reducer ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	
1	24	16	STD	SCH20	P28F-000WN	Eccentric reducer ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	
1	24	18	STD	SCH20	P28F-000WP	Eccentric reducer ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	
1	24	20	STD	STD	P28F-000WR	Eccentric reducer ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	
1	30	20	XS	STD	P28F-001G2	Eccentric reducer ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	
1	30	24	XS	STD	P28F-001G3	Eccentric reducer ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P29F-0003Z	Cap ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	0.75		SCH160		P29F-00040	Cap ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	1		SCH160		P29F-000BV	Cap ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	1.5		SCH160		P29F-000BW	Cap ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	2		XS		P29F-0002C	Cap ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	3		STD		P29F-0002E	Cap ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	

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CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	4		XS		P29F-0002F	Cap ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	6		XS		P29F-00046	Cap ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	8		SCH60		P29F-000C7	Cap ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	10		XS		P29F-00049	Cap ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	12		XS		P29F-000C5	Cap ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	14		XS		P29F-000C6	Cap ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	16		SCH20		P29F-000C0	Cap ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	18		SCH20		P29F-000C1	Cap ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	20		STD		P29F-0002D	Cap ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	24		STD		P29F-00047	Cap ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	30		XS		P29F-000D3	Cap ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
541	0.75				P29G-0001T	Cap ASTM A182 Grade F5 Class 6000 ASME B16.11 NPT	
541	1				P29G-00023	Cap ASTM A182 Grade F5 Class 6000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P41F-0003G	Straight nipple ASTM A335 Grade P5 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		XXS		P41F-0003H	Straight nipple ASTM A335 Grade P5 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		XXS		P41F-0002H	Straight nipple ASTM A335 Grade P5 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		XXS		P41F-0002J	Straight nipple ASTM A335 Grade P5 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2	0.75	XS	SCH160	P31G-001DV	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	3	0.75	STD	SCH160	P31G-001DW	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	4	0.75	XS	SCH160	P31G-000EC	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	6	0.75	XS	SCH160	P31G-000ED	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	8	0.75	SCH60	SCH160	P31G-001FY	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	10	0.75	XS	SCH160	P31G-001G3	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	12	0.75	XS	SCH160	P31G-001G8	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	14	0.75	XS	SCH160	P31G-001GE	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	16	0.75	SCH20	SCH160	P31G-001ER	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	18	0.75	SCH20	SCH160	P31G-001EX	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	20	0.75	STD	SCH160	P31G-001F4	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	24	0.75	STD	SCH160	P31G-001F8	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	30	0.75	XS	SCH160	P31G-0029W	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	3	1	STD	SCH160	P31G-001DX	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	4	1	XS	SCH160	P31G-001FT	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	6	1	XS	SCH160	P31G-001FV	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	8	1	SCH60	SCH160	P31G-001FZ	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	10	1	XS	SCH160	P31G-001G4	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	12	1	XS	SCH160	P31G-001G9	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	14	1	XS	SCH160	P31G-001GF	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	16	1	SCH20	SCH160	P31G-001ES	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	18	1	SCH20	SCH160	P31G-001EY	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	20	1	STD	SCH160	P31G-001F5	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	24	1	STD	SCH160	P31G-001F9	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	30	1	XS	SCH160	P31G-0029X	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	4	1.5	XS	SCH160	P31G-001FU	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	6	1.5	XS	SCH160	P31G-001FW	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	8	1.5	SCH60	SCH160	P31G-001G0	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	10	1.5	XS	SCH160	P31G-001G5	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	12	1.5	XS	SCH160	P31G-001GA	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	14	1.5	XS	SCH160	P31G-001GG	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	16	1.5	SCH20	SCH160	P31G-001ET	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	18	1.5	SCH20	SCH160	P31G-001EZ	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	20	1.5	STD	SCH160	P31G-001F6	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	24	1.5	STD	SCH160	P31G-001FA	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	30	1.5	XS	SCH160	P31G-0029Y	Outlet ASTM A182 Grade F5 MSS SP-97 BW	

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OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	6	2	XS	XS	P31G-001FX	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	8	2	SCH60	XS	P31G-001G1	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	10	2	XS	XS	P31G-001G6	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	12	2	XS	XS	P31G-001GB	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	14	2	XS	XS	P31G-001GH	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	16	2	SCH20	XS	P31G-001EU	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	18	2	SCH20	XS	P31G-001F0	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	20	2	STD	XS	P31G-000C8	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	24	2	STD	XS	P31G-001FB	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	30	2	XS	XS	P31G-0029Z	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	8	3	SCH60	STD	P31G-001G2	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	10	3	XS	STD	P31G-001G7	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	12	3	XS	STD	P31G-001GC	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	14	3	XS	STD	P31G-001GJ	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	16	3	SCH20	STD	P31G-001EV	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	18	3	SCH20	STD	P31G-001F1	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	20	3	STD	STD	P31G-000C9	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	24	3	STD	STD	P31G-001FC	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	30	3	XS	STD	P31G-002A0	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	12	4	XS	XS	P31G-001GD	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	14	4	XS	XS	P31G-001GK	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	16	4	SCH20	XS	P31G-001GL	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	18	4	SCH20	XS	P31G-001GM	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	20	4	STD	XS	P31G-000CA	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	24	4	STD	XS	P31G-001GR	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	30	4	XS	XS	P31G-002F7	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	18	6	SCH20	XS	P31G-001GN	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	20	6	STD	XS	P31G-001GP	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	24	6	STD	XS	P31G-001GS	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	30	6	XS	XS	P31G-001LW	Outlet ASTM A182 Grade F5 MSS SP-97 BW	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30G-0000D	Plug ASTM A182 Grade F5 ASME B16.11 NPT Round head	
1	0.75				P30G-0000E	Plug ASTM A182 Grade F5 ASME B16.11 NPT Round head	
1	1				P30G-0000F	Plug ASTM A182 Grade F5 ASME B16.11 NPT Round head	
1	1.5				P30G-0000G	Plug ASTM A182 Grade F5 ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P61G-0007G	Flange WN ASTM A182 Grade F5 Class 300 ASME B16.5 RF	
1	0.75		SCH160		P61G-0007H	Flange WN ASTM A182 Grade F5 Class 300 ASME B16.5 RF	
1	1		SCH160		P61G-000MW	Flange WN ASTM A182 Grade F5 Class 300 ASME B16.5 RF	
1	1.5		SCH160		P61G-000MX	Flange WN ASTM A182 Grade F5 Class 300 ASME B16.5 RF	
1	2		XS		P61G-00037	Flange WN ASTM A182 Grade F5 Class 300 ASME B16.5 RF	
1	3		STD		P61G-00039	Flange WN ASTM A182 Grade F5 Class 300 ASME B16.5 RF	
1	4		XS		P61G-0003A	Flange WN ASTM A182 Grade F5 Class 300 ASME B16.5 RF	
1	6		XS		P61G-0007P	Flange WN ASTM A182 Grade F5 Class 300 ASME B16.5 RF	
1	8		SCH60		P61G-000NA	Flange WN ASTM A182 Grade F5 Class 300 ASME B16.5 RF	
1	10		XS		P61G-00085	Flange WN ASTM A182 Grade F5 Class 300 ASME B16.5 RF	
1	12		XS		P61G-000N8	Flange WN ASTM A182 Grade F5 Class 300 ASME B16.5 RF	
1	14		XS		P61G-000N9	Flange WN ASTM A182 Grade F5 Class 300 ASME B16.5 RF	
1	16		SCH20		P61G-000N1	Flange WN ASTM A182 Grade F5 Class 300 ASME B16.5 RF	
1	18		SCH20		P61G-000N2	Flange WN ASTM A182 Grade F5 Class 300 ASME B16.5 RF	
1	20		STD		P61G-00038	Flange WN ASTM A182 Grade F5 Class 300 ASME B16.5 RF	
1	24		STD		P61G-00083	Flange WN ASTM A182 Grade F5 Class 300 ASME B16.5 RF	
1	30		XS		P61G-000S3	Flange WN ASTM A182 Grade F5 Class 300 ASME B16.47 Series B RF	
541	0.5				P61G-001BF	Flange NPT ASTM A182 Grade F5 Class 300 ASME B16.5 RF	
541	0.75				P61G-0015S	Flange NPT ASTM A182 Grade F5 Class 300 ASME B16.5 RF	

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FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
781	0.5		SCH160		P61G-0007R	Flange WN ASTM A182 Grade F5 Class 600 ASME B16.5 RF	
781	0.75		SCH160		P61G-0007S	Flange WN ASTM A182 Grade F5 Class 600 ASME B16.5 RF	
781	1		SCH160		P61G-000NB	Flange WN ASTM A182 Grade F5 Class 600 ASME B16.5 RF	
781	1.5		SCH160		P61G-000NC	Flange WN ASTM A182 Grade F5 Class 600 ASME B16.5 RF	
781	2		XS		P61G-0003L	Flange WN ASTM A182 Grade F5 Class 600 ASME B16.5 RF	
781	3		STD		P61G-0003N	Flange WN ASTM A182 Grade F5 Class 600 ASME B16.5 RF	
781	4		XS		P61G-0003P	Flange WN ASTM A182 Grade F5 Class 600 ASME B16.5 RF	
781	6		XS		P61G-0007Y	Flange WN ASTM A182 Grade F5 Class 600 ASME B16.5 RF	
781	8		SCH60		P61G-000NJ	Flange WN ASTM A182 Grade F5 Class 600 ASME B16.5 RF	
781	10		XS		P61G-0008A	Flange WN ASTM A182 Grade F5 Class 600 ASME B16.5 RF	
781	12		XS		P61G-000ND	Flange WN ASTM A182 Grade F5 Class 600 ASME B16.5 RF	
781	14		XS		P61G-000NE	Flange WN ASTM A182 Grade F5 Class 600 ASME B16.5 RF	
781	16		SCH20		P61G-000NF	Flange WN ASTM A182 Grade F5 Class 600 ASME B16.5 RF	
781	18		SCH20		P61G-000NG	Flange WN ASTM A182 Grade F5 Class 600 ASME B16.5 RF	
781	20		STD		P61G-0003M	Flange WN ASTM A182 Grade F5 Class 600 ASME B16.5 RF	
781	24		STD		P61G-000NH	Flange WN ASTM A182 Grade F5 Class 600 ASME B16.5 RF	
781	30		XS		P61G-0013J	Flange WN ASTM A182 Grade F5 Class 600 ASME B16.47 Series B RF	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67G-0001T	Blind flange ASTM A182 Grade F5 Class 300 ASME B16.5 RF	
1	0.75				P67G-0001U	Blind flange ASTM A182 Grade F5 Class 300 ASME B16.5 RF	
1	1				P67G-0001V	Blind flange ASTM A182 Grade F5 Class 300 ASME B16.5 RF	
1	1.5				P67G-0001W	Blind flange ASTM A182 Grade F5 Class 300 ASME B16.5 RF	
1	2				P67G-00020	Blind flange ASTM A182 Grade F5 Class 300 ASME B16.5 RF	
1	3				P67G-00022	Blind flange ASTM A182 Grade F5 Class 300 ASME B16.5 RF	
1	4				P67G-00023	Blind flange ASTM A182 Grade F5 Class 300 ASME B16.5 RF	
1	6				P67G-00024	Blind flange ASTM A182 Grade F5 Class 300 ASME B16.5 RF	
1	8				P67G-00025	Blind flange ASTM A182 Grade F5 Class 300 ASME B16.5 RF	
1	10				P67G-0001X	Blind flange ASTM A182 Grade F5 Class 300 ASME B16.5 RF	
1	12				P67G-0001Y	Blind flange ASTM A182 Grade F5 Class 300 ASME B16.5 RF	
1	14				P67G-0001Z	Blind flange ASTM A182 Grade F5 Class 300 ASME B16.5 RF	
1	16				P67G-0004N	Blind flange ASTM A182 Grade F5 Class 300 ASME B16.5 RF	
1	18				P67G-000AY	Blind flange ASTM A182 Grade F5 Class 300 ASME B16.5 RF	
1	20				P67G-00021	Blind flange ASTM A182 Grade F5 Class 300 ASME B16.5 RF	
1	24				P67G-0004P	Blind flange ASTM A182 Grade F5 Class 300 ASME B16.5 RF	
1	30				P67G-000AZ	Blind flange ASTM A182 Grade F5 Class 300 ASME B16.47 Series B RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-003AM	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	0.75				P73T-003AN	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	1				P73T-003AP	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	1.5				P73T-003AR	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	2				P73T-003AX	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	3				P73T-003B0	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	4				P73T-003B1	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	6				P73T-003B2	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	8				P73T-003B3	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	10				P73T-003AS	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	12				P73T-003AT	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	14				P73T-003AU	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	16				P73T-003AV	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	18				P73T-003AW	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	

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GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	20				P73T-003AY	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	24				P73T-003AZ	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	30				P73T-003BL	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
781	0.5				P73T-003B4	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
781	0.75				P73T-003B5	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
781	1				P73T-003B6	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
781	1.5				P73T-003B7	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
781	2				P73T-003BD	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
781	3				P73T-003BG	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
781	4				P73T-003BH	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
781	6				P73T-003BJ	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
781	8				P73T-003BK	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
781	10				P73T-003B8	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
781	12				P73T-003B9	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
781	14				P73T-003BA	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
781	16				P73T-003BB	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
781	18				P73T-003BC	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
781	20				P73T-003BE	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
781	24				P73T-003BF	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
781	30				P73T-003BM	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-10				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B16 / A194 Grade 4 ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	12-30				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B16 / A194 Grade 4 ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
781	0.5-6				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B16 / A194 Grade 4 ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
781	8-30				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B16 / A194 Grade 4 ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81G-0002Y	Gate valve ASTM A182 Grade F5 Class 300 API 602 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2	
1	0.75				P81G-0002Z	Gate valve ASTM A182 Grade F5 Class 300 API 602 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2	
1	1				P81G-00030	Gate valve ASTM A182 Grade F5 Class 300 API 602 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2	
1	1.5				P81G-00031	Gate valve ASTM A182 Grade F5 Class 300 API 602 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2	
1	2				P81H-000AY	Gate valve ASTM A217 Grade C5 Class 300 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2	
1	3				P81H-000AZ	Gate valve ASTM A217 Grade C5 Class 300 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2	
1	4				P81H-000B0	Gate valve ASTM A217 Grade C5 Class 300 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2	
1	6				P81H-000B1	Gate valve ASTM A217 Grade C5 Class 300 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2	
1	8				P81H-000B2	Gate valve ASTM A217 Grade C5 Class 300 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2	
1	10				P81H-000B3	Gate valve ASTM A217 Grade C5 Class 300 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Gear operated Fluid-2	
1	12				P81H-000Y0	Gate valve ASTM A217 Grade C5 Class 300 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Gear operated Fluid-2	
1	14				P81H-000Y1	Gate valve ASTM A217 Grade C5 Class 300 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Gear operated Fluid-2	
1	16				P81H-000Y2	Gate valve ASTM A217 Grade C5 Class 300 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Gear operated Fluid-2	
1	18				P81H-000Y3	Gate valve ASTM A217 Grade C5 Class 300 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Gear operated Fluid-2	
1	20				P81H-000Y4	Gate valve ASTM A217 Grade C5 Class 300 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Gear operated Fluid-2	

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GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
4608	0.75				P81G-000DR	Gate valve ASTM A182 Grade F5 Class 300 API 602 BW both sides w/ nipples BE - NPT ASTM A335-P5 XXS-nipple Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2	
4608	1				P81G-000ER	Gate valve ASTM A182 Grade F5 Class 300 API 602 BW both sides w/ nipples BE - NPT ASTM A335-P5 XXS-nipple Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83G-0001V	Check valve ASTM A182 Grade F5 Class 300 API 602 Flange ASME B16.5 RF Trim number 5 Lift-type Bolted cover	
1	0.75				P83G-0001W	Check valve ASTM A182 Grade F5 Class 300 API 602 Flange ASME B16.5 RF Trim number 5 Lift-type Bolted cover	
1	1				P83G-0001X	Check valve ASTM A182 Grade F5 Class 300 API 602 Flange ASME B16.5 RF Trim number 5 Lift-type Bolted cover	
1	1.5				P83G-0001Y	Check valve ASTM A182 Grade F5 Class 300 API 602 Flange ASME B16.5 RF Trim number 5 Lift-type Bolted cover	
1	2				P83H-00056	Check valve ASTM A217 Grade C5 Class 300 BS 1868 Flange ASME B16.5 RF Trim number 5 Swing-type Bolted cover	
1	3				P83H-00057	Check valve ASTM A217 Grade C5 Class 300 BS 1868 Flange ASME B16.5 RF Trim number 5 Swing-type Bolted cover	
1	4				P83H-00058	Check valve ASTM A217 Grade C5 Class 300 BS 1868 Flange ASME B16.5 RF Trim number 5 Swing-type Bolted cover	
1	6				P83H-00059	Check valve ASTM A217 Grade C5 Class 300 BS 1868 Flange ASME B16.5 RF Trim number 5 Swing-type Bolted cover	
1	8				P83H-0006U	Check valve ASTM A217 Grade C5 Class 300 BS 1868 Flange ASME B16.5 RF Trim number 5 Swing-type Bolted cover	
1	10				P83H-0006M	Check valve ASTM A217 Grade C5 Class 300 BS 1868 Flange ASME B16.5 RF Trim number 5 Swing-type Bolted cover	
1	12				P83H-0006N	Check valve ASTM A217 Grade C5 Class 300 BS 1868 Flange ASME B16.5 RF Trim number 5 Swing-type Bolted cover	
1	14				P83H-0006P	Check valve ASTM A217 Grade C5 Class 300 BS 1868 Flange ASME B16.5 RF Trim number 5 Swing-type Bolted cover	
1	16				P83H-0006R	Check valve ASTM A217 Grade C5 Class 300 BS 1868 Flange ASME B16.5 RF Trim number 5 Swing-type Bolted cover	
1	18				P83H-0006S	Check valve ASTM A217 Grade C5 Class 300 BS 1868 Flange ASME B16.5 RF Trim number 5 Swing-type Bolted cover	
1	20				P83H-0006T	Check valve ASTM A217 Grade C5 Class 300 BS 1868 Flange ASME B16.5 RF Trim number 5 Swing-type Bolted cover	

DP CHECK VALVE (XDP)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
4602	16				P88H-0005V	Dual plate check valve ASTM A217 Grade C5 Class 300 API 594 Wafer-type ASME B16.5 RF Trim number 5 Internal wetted parts 13Cr Spring Inconel Retainerless-type	

ORIFICE FLANGE (FO)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	12		XS		P66G-000BR	Orifice flange WN ASTM A182 Grade F5 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
200	12		XS		P66G-000BS	Orifice flange WN ASTM A182 Grade F5 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71G-0002J	Spectacle blank ASTM A182 Grade F5 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	0.75				P71G-0002K	Spectacle blank ASTM A182 Grade F5 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	1				P71G-0002L	Spectacle blank ASTM A182 Grade F5 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71G-0002M	Spectacle blank ASTM A182 Grade F5 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	2				P71G-0002R	Spectacle blank ASTM A182 Grade F5 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	3				P71G-0002S	Spectacle blank ASTM A182 Grade F5 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	4				P71G-0002T	Spectacle blank ASTM A182 Grade F5 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	6				P71G-0002U	Spectacle blank ASTM A182 Grade F5 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	8				P71G-0002V	Spectacle blank ASTM A182 Grade F5 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	10				P71G-0002N	Spectacle blank ASTM A182 Grade F5 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	12				P71G-0002P	Spectacle blank ASTM A182 Grade F5 Class 300 Standard-drawing Flange ASME B16.5 RF	

PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72G-0001N	Paddle blank ASTM A182 Grade F5 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	16				P72G-0001P	Paddle blank ASTM A182 Grade F5 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	18				P72G-0001R	Paddle blank ASTM A182 Grade F5 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	20				P72G-0001S	Paddle blank ASTM A182 Grade F5 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	24				P72G-0001T	Paddle blank ASTM A182 Grade F5 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	30				P72G-0001U	Paddle blank ASTM A182 Grade F5 Class 300 Standard-drawing Flange ASME B16.47-B RF	

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PADDLE SPACER (PS)							
OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72G-0001V	Paddle spacer ASTM A182 Grade F5 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	16				P72G-0001W	Paddle spacer ASTM A182 Grade F5 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	18				P72G-0001X	Paddle spacer ASTM A182 Grade F5 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	20				P72G-0001Y	Paddle spacer ASTM A182 Grade F5 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	24				P72G-0001Z	Paddle spacer ASTM A182 Grade F5 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	30				P72G-00020	Paddle spacer ASTM A182 Grade F5 Class 300 Standard-drawing Flange ASME B16.47-B RF	

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BOLT TABLE (B_B2FC01 , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-00GN8		
0.75	4	0.625	75	P80S-00GLL		
1	4	0.625	80	P80S-00GLK		
1.5	4	0.750	95	P80S-00FVE		
2	8	0.625	90	P80S-00GLH		
3	8	0.750	110	P80S-00GLD		
4	8	0.750	115	P80S-00GLC		
6	12	0.750	125	P80S-00GLA		
8	12	0.875	140	P80S-00FV5		
10	16	1.000	160	P80S-00FR9		
12	16	1.125	175	P80S-00FH8		
14	20	1.125	180	P80S-00FH7		
16	20	1.250	190	P80S-00F9Y		
18	24	1.250	200	P80S-00F9W		
20	24	1.250	210	P80S-00F9U		
24	24	1.500	235	P80S-00EYL		
30	36	1.375	285	P80S-00F2V		

BOLT TABLE (B_B2FC01_781 , STUD ASME RF, OPTION CODE 781)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	80	P80S-00GN6		
0.75	4	0.625	90	P80S-00GLH		
1	4	0.625	95	P80S-00GLG		
1.5	4	0.750	110	P80S-00GLD		
2	8	0.625	110	P80S-00GN0		
3	8	0.750	130	P80S-00GL9		
4	8	0.875	150	P80S-00FV3		
6	12	1.000	175	P80S-00FR6		
8	12	1.125	195	P80S-00FH4		
10	16	1.250	250	P80S-00F9K		
12	20	1.250	255	P80S-00F9J		
14	20	1.375	270	P80S-00F4T		
16	20	1.500	295	P80S-00EY8		
18	20	1.625	320	P80S-00G0T		
20	24	1.625	335	P80S-00G0P		
24	24	1.875	380	P80S-00FKC		
30	28	1.875	435	P80S-00FK1		

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BRANCH TABLE (T_B2FC01)

RUN PIPE SIZE (in) \ BRANCH SIZE (in)	0.5	0.75	1	1.5	2	3	4	6	8	10	12	14	16	18	20	24	30
0.5	TS																
0.75		TS															
1		TR	TS														
1.5		TR	TR	TS													
2		L	TR	TR	TS												
3		L	L	TR	TR	TS											
4	L	L	L	L	TR	TR	TS										
6	L	L	L	L	L	TR	TR	TS									
8		L	L	L	L	L	TR	TR	TS								
10		L	L	L	L	L	TR	TR	TR	TS							
12		L	L	L	L	L	L	TR	TR	TR	TS						
14		L	L	L	L	L	L	TR	TR	TR	TR	TS					
16		L	L	L	L	L	L	TR	TR	TR	TR	TR	TS				
18		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TS			
20		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TR	TS		
24		L	L	L	L	L	L	L	9PD	TR	TR	TR	TR	TR	TR	TS	
30		L	L	L	L	L	L	L	9PD	TR	TR	TR	TR	TR	TR	TR	TS

TS : STRAIGHT TEE
TR : REDUCING TEE
L : OUTLET
9PD : REINFORCING PAD 90 DEG

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Material : 5Cr-1/2Mo
Rating : ASME CLASS 300
Flange Face : RF
C.A.(mm) : 3.00
Gasket : Spiral Wound
Service : PROCESS - NON SOUR, NON NACE SOUR : / HAGO / PREHEATED CRUDE / PROCESS WITH H2S (< 25 PPMW)

Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
24	FOR ALL RELEVANT PIPING CLASSES WITH LINE DESIGN TEMPERATURE ABOVE 427DEGC, IN SPIRAL WOUND GASKET, SUITABLE GASKET FILLER MATERIAL SUCH AS COMBINATION OF MICA LAYERS AND GRAPHITE FILLERS OR EQUIVALENT SHALL BE REVIEWED AND SELECTED OR AS DEFINED BY THE LICENSOR
36	ASTM A691 CR-MO WELDED PIPES SPECIFIED WITH CLASS 22 CAN BE USED IN LIEU OF CLASS 42 IN NON-LICENSED UNITS ONLY. GRADE SHALL BE AS SPECIFIED IN "PIPE / FLANGE MATERIAL" SECTION IN ATTACHMENT 9.0 OF THIS DOCUMENT

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
541	NPT(F) (CA,F,L)
781	CLASS 600 (B,F,G)
4608	VALVE WITH NIPPLES (V)

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PIPING CLASS
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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P01F-0001C	Pipe ASTM A335 Grade P5 Seamless ASME B36.10M/B36.19M PE	
1	0.75		SCH160		P01F-0001D	Pipe ASTM A335 Grade P5 Seamless ASME B36.10M/B36.19M PE	
1	1		SCH160		P01F-000CL	Pipe ASTM A335 Grade P5 Seamless ASME B36.10M/B36.19M PE	
1	1.5		SCH160		P01F-000CM	Pipe ASTM A335 Grade P5 Seamless ASME B36.10M/B36.19M PE	
1	2		XS		P01F-0001K	Pipe ASTM A335 Grade P5 Seamless ASME B36.10M/B36.19M BE	
1	3		STD		P01F-0001L	Pipe ASTM A335 Grade P5 Seamless ASME B36.10M/B36.19M BE	
1	4		XS		P01F-0001M	Pipe ASTM A335 Grade P5 Seamless ASME B36.10M/B36.19M BE	
1	6		XS		P01F-00038	Pipe ASTM A335 Grade P5 Seamless ASME B36.10M/B36.19M BE	
1	8		SCH60		P01F-0004H	Pipe ASTM A335 Grade P5 Seamless ASME B36.10M/B36.19M BE	
1	10		XS		P01F-00039	Pipe ASTM A335 Grade P5 Seamless ASME B36.10M/B36.19M BE	
1	12		XS		P01F-0004A	Pipe ASTM A335 Grade P5 Seamless ASME B36.10M/B36.19M BE	
1	14		XS		P01F-0004U	Pipe ASTM A335 Grade P5 Seamless ASME B36.10M/B36.19M BE	
1	16		SCH20		P01F-0006S	Pipe ASTM A335 Grade P5 Seamless ASME B36.10M/B36.19M BE	
1	18		SCH20		P01F-000CP	Pipe ASTM A691 Grade 5CR Class 22 EFW ASME B36.10M/B36.19M BE	
1	20		STD		P01F-0001R	Pipe ASTM A691 Grade 5CR Class 22 EFW ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P02G-00009	90 degree elbow ASTM A182 Grade F5 Class 6000 ASME B16.11 SW	
1	0.75				P02G-0000A	90 degree elbow ASTM A182 Grade F5 Class 6000 ASME B16.11 SW	
1	1				P02G-0001K	90 degree elbow ASTM A182 Grade F5 Class 6000 ASME B16.11 SW	
1	1.5				P02G-0001L	90 degree elbow ASTM A182 Grade F5 Class 6000 ASME B16.11 SW	
1	2		XS		P02F-0002H	90 degree elbow ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW Long radius	
1	3		STD		P02F-0002K	90 degree elbow ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW Long radius	
1	4		XS		P02F-0002L	90 degree elbow ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW Long radius	
1	6		XS		P02F-0004B	90 degree elbow ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW Long radius	
1	8		SCH60		P02F-000CJ	90 degree elbow ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW Long radius	
1	10		XS		P02F-0004D	90 degree elbow ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW Long radius	
1	12		XS		P02F-000CG	90 degree elbow ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW Long radius	
1	14		XS		P02F-000CH	90 degree elbow ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW Long radius	
1	16		SCH20		P02F-000CA	90 degree elbow ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW Long radius	
1	18		SCH20		P02F-000CB	90 degree elbow ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW Long radius	
1	20		STD		P02F-0002J	90 degree elbow ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P03G-00009	45 degree elbow ASTM A182 Grade F5 Class 6000 ASME B16.11 SW	
1	0.75				P03G-0000A	45 degree elbow ASTM A182 Grade F5 Class 6000 ASME B16.11 SW	
1	1				P03G-0001K	45 degree elbow ASTM A182 Grade F5 Class 6000 ASME B16.11 SW	
1	1.5				P03G-0001L	45 degree elbow ASTM A182 Grade F5 Class 6000 ASME B16.11 SW	
1	2		XS		P03F-0002E	45 degree elbow ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW Long radius	
1	3		STD		P03F-0002G	45 degree elbow ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW Long radius	
1	4		XS		P03F-0002H	45 degree elbow ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW Long radius	
1	6		XS		P03F-00048	45 degree elbow ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW Long radius	
1	8		SCH60		P03F-000CB	45 degree elbow ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW Long radius	
1	10		XS		P03F-0004A	45 degree elbow ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW Long radius	
1	12		XS		P03F-000C9	45 degree elbow ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW Long radius	
1	14		XS		P03F-000CA	45 degree elbow ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW Long radius	
1	16		SCH20		P03F-000C3	45 degree elbow ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW Long radius	
1	18		SCH20		P03F-000C4	45 degree elbow ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW Long radius	
1	20		STD		P03F-0002F	45 degree elbow ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P21G-00009	Straight tee ASTM A182 Grade F5 Class 6000 ASME B16.11 SW	
1	0.75				P21G-0000A	Straight tee ASTM A182 Grade F5 Class 6000 ASME B16.11 SW	
1	1				P21G-0001K	Straight tee ASTM A182 Grade F5 Class 6000 ASME B16.11 SW	
1	1.5				P21G-0001L	Straight tee ASTM A182 Grade F5 Class 6000 ASME B16.11 SW	
1	2		XS		P21F-0002F	Straight tee ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	

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STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3		STD		P21F-0002G	Straight tee ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	4		XS		P21F-0002H	Straight tee ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	6		XS		P21F-00049	Straight tee ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	8		SCH60		P21F-000C9	Straight tee ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	10		XS		P21F-0004A	Straight tee ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	12		XS		P21F-000C7	Straight tee ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	14		XS		P21F-000C8	Straight tee ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	16		SCH20		P21F-000C1	Straight tee ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	18		SCH20		P21F-000C4	Straight tee ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	
1	20		STD		P21F-0002L	Straight tee ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75			P24G-0001N	Reducing tee ASTM A182 Grade F5 Class 6000 ASME B16.11 SW	
1	1.5	0.75			P24G-0001P	Reducing tee ASTM A182 Grade F5 Class 6000 ASME B16.11 SW	
1	1.5	1			P24G-0001R	Reducing tee ASTM A182 Grade F5 Class 6000 ASME B16.11 SW	
1	2	1	XS	SCH160	P24F-0010K	Reducing tee ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	2	1.5	XS	SCH160	P24F-0010L	Reducing tee ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	3	1.5	STD	SCH160	P24F-0010M	Reducing tee ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	3	2	STD	XS	P24F-0006J	Reducing tee ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	4	2	XS	XS	P24F-0006K	Reducing tee ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	4	3	XS	STD	P24F-0006L	Reducing tee ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	6	3	XS	STD	P24F-0012P	Reducing tee ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	6	4	XS	XS	P24F-0009S	Reducing tee ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	8	4	SCH60	XS	P24F-0012R	Reducing tee ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	8	6	SCH60	XS	P24F-0012S	Reducing tee ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	10	4	XS	XS	P24F-0012T	Reducing tee ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	10	6	XS	XS	P24F-0012U	Reducing tee ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	10	8	XS	SCH60	P24F-0012V	Reducing tee ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	12	6	XS	XS	P24F-0012X	Reducing tee ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	12	8	XS	SCH60	P24F-0012Y	Reducing tee ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	12	10	XS	XS	P24F-0012W	Reducing tee ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	14	6	XS	XS	P24F-00131	Reducing tee ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	14	8	XS	SCH60	P24F-00132	Reducing tee ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	14	10	XS	XS	P24F-0012Z	Reducing tee ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	14	12	XS	XS	P24F-00130	Reducing tee ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	16	6	SCH20	XS	P24F-00133	Reducing tee ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	16	8	SCH20	SCH60	P24F-001B6	Reducing tee ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	16	10	SCH20	XS	P24F-001B3	Reducing tee ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	16	12	SCH20	XS	P24F-001B4	Reducing tee ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	16	14	SCH20	XS	P24F-001B5	Reducing tee ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	18	8	SCH20	SCH60	P24F-001B8	Reducing tee ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	
1	18	10	SCH20	XS	P24F-00134	Reducing tee ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	
1	18	12	SCH20	XS	P24F-001B7	Reducing tee ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	
1	18	14	SCH20	XS	P24F-00135	Reducing tee ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	
1	18	16	SCH20	SCH20	P24F-0011S	Reducing tee ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	
1	20	8	STD	SCH60	P24F-00139	Reducing tee ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	
1	20	10	STD	XS	P24F-00136	Reducing tee ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	
1	20	12	STD	XS	P24F-00137	Reducing tee ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	
1	20	14	STD	XS	P24F-00138	Reducing tee ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	
1	20	16	STD	SCH20	P24F-0011X	Reducing tee ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	
1	20	18	STD	SCH20	P24F-0011Y	Reducing tee ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	STD	XS	P27F-0005L	Concentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	4	2	XS	XS	P27F-0005M	Concentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	4	3	XS	STD	P27F-0005N	Concentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	6	3	XS	STD	P27F-000X1	Concentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	

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CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	6	4	XS	XS	P27F-0008S	Concentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	8	4	SCH60	XS	P27F-000X2	Concentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	8	6	SCH60	XS	P27F-000X3	Concentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	10	4	XS	XS	P27F-000X4	Concentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	10	6	XS	XS	P27F-000X5	Concentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	10	8	XS	SCH60	P27F-000X6	Concentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	12	6	XS	XS	P27F-000X8	Concentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	12	8	XS	SCH60	P27F-000X9	Concentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	12	10	XS	XS	P27F-000X7	Concentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	14	6	XS	XS	P27F-000XC	Concentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	14	8	XS	SCH60	P27F-000XD	Concentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	14	10	XS	XS	P27F-000XA	Concentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	14	12	XS	XS	P27F-000XB	Concentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	16	8	SCH20	SCH60	P27F-0013G	Concentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	16	10	SCH20	XS	P27F-000XE	Concentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	16	12	SCH20	XS	P27F-0013E	Concentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	16	14	SCH20	XS	P27F-0013F	Concentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	18	10	SCH20	XS	P27F-000XF	Concentric reducer ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	
1	18	12	SCH20	XS	P27F-000XG	Concentric reducer ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	
1	18	14	SCH20	XS	P27F-000XH	Concentric reducer ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	
1	18	16	SCH20	SCH20	P27F-000WH	Concentric reducer ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	
1	20	12	STD	XS	P27F-000XJ	Concentric reducer ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	
1	20	14	STD	XS	P27F-000XK	Concentric reducer ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	
1	20	16	STD	SCH20	P27F-000WL	Concentric reducer ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	
1	20	18	STD	SCH20	P27F-000WM	Concentric reducer ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	STD	XS	P28F-0005L	Eccentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	4	2	XS	XS	P28F-0005M	Eccentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	4	3	XS	STD	P28F-0005N	Eccentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	6	3	XS	STD	P28F-000X1	Eccentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	6	4	XS	XS	P28F-0008S	Eccentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	8	4	SCH60	XS	P28F-000X2	Eccentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	8	6	SCH60	XS	P28F-000X3	Eccentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	10	4	XS	XS	P28F-000X4	Eccentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	10	6	XS	XS	P28F-000X5	Eccentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	10	8	XS	SCH60	P28F-000X6	Eccentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	12	6	XS	XS	P28F-000X8	Eccentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	12	8	XS	SCH60	P28F-000X9	Eccentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	12	10	XS	XS	P28F-000X7	Eccentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	14	6	XS	XS	P28F-000XC	Eccentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	14	8	XS	SCH60	P28F-000XD	Eccentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	14	10	XS	XS	P28F-000XA	Eccentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	14	12	XS	XS	P28F-000XB	Eccentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	16	8	SCH20	SCH60	P28F-0013H	Eccentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	16	10	SCH20	XS	P28F-000XE	Eccentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	16	12	SCH20	XS	P28F-0013F	Eccentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	16	14	SCH20	XS	P28F-0013G	Eccentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	18	10	SCH20	XS	P28F-000XF	Eccentric reducer ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	
1	18	12	SCH20	XS	P28F-000XG	Eccentric reducer ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	
1	18	14	SCH20	XS	P28F-000XH	Eccentric reducer ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	
1	18	16	SCH20	SCH20	P28F-000WH	Eccentric reducer ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	
1	20	12	STD	XS	P28F-000XJ	Eccentric reducer ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	
1	20	14	STD	XS	P28F-000XK	Eccentric reducer ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	
1	20	16	STD	SCH20	P28F-000WL	Eccentric reducer ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	
1	20	18	STD	SCH20	P28F-000WM	Eccentric reducer ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	

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CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P29G-0000D	Cap ASTM A182 Grade F5 Class 6000 ASME B16.11 SW	
1	0.75				P29G-0000E	Cap ASTM A182 Grade F5 Class 6000 ASME B16.11 SW	
1	1				P29G-0001E	Cap ASTM A182 Grade F5 Class 6000 ASME B16.11 SW	
1	1.5				P29G-0001F	Cap ASTM A182 Grade F5 Class 6000 ASME B16.11 SW	
1	2		XS		P29F-0002C	Cap ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	3		STD		P29F-0002E	Cap ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	4		XS		P29F-0002F	Cap ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	6		XS		P29F-00046	Cap ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	8		SCH60		P29F-000C7	Cap ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	10		XS		P29F-00049	Cap ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	12		XS		P29F-000C5	Cap ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	14		XS		P29F-000C6	Cap ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	16		SCH20		P29F-000C0	Cap ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	18		SCH20		P29F-000C1	Cap ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	20		STD		P29F-0002D	Cap ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
541	0.75				P29G-0001T	Cap ASTM A182 Grade F5 Class 6000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P41F-0003G	Straight nipple ASTM A335 Grade P5 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		XXS		P41F-0003H	Straight nipple ASTM A335 Grade P5 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		XXS		P41F-0002H	Straight nipple ASTM A335 Grade P5 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		XXS		P41F-0002J	Straight nipple ASTM A335 Grade P5 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

CON SWAGED NIPPLE (SNC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	SCH160	P42F-0000M	Concentric swaged nipple ASTM A234 Grade WP5 Class 1 Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	SCH160	SCH160	P42F-00059	Concentric swaged nipple ASTM A234 Grade WP5 Class 1 Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	SCH160	SCH160	P42F-0005A	Concentric swaged nipple ASTM A234 Grade WP5 Class 1 Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	SCH160	SCH160	P42F-0005B	Concentric swaged nipple ASTM A234 Grade WP5 Class 1 Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	SCH160	SCH160	P42F-0005C	Concentric swaged nipple ASTM A234 Grade WP5 Class 1 Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	SCH160	SCH160	P42F-0005D	Concentric swaged nipple ASTM A234 Grade WP5 Class 1 Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	XS	SCH160	P42F-0000U	Concentric swaged nipple ASTM A234 Grade WP5 Class 1 Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	XS	SCH160	P42F-0000V	Concentric swaged nipple ASTM A234 Grade WP5 Class 1 Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	XS	SCH160	P42F-0005E	Concentric swaged nipple ASTM A234 Grade WP5 Class 1 Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	XS	SCH160	P42F-0005F	Concentric swaged nipple ASTM A234 Grade WP5 Class 1 Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	STD	SCH160	P42F-0005G	Concentric swaged nipple ASTM A234 Grade WP5 Class 1 Seamless MSS SP-95 BE(L) - PE(S)	

ECC SWAGED NIPPLE (SNE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	SCH160	P43F-0000F	Eccentric swaged nipple ASTM A234 Grade WP5 Class 1 Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	SCH160	SCH160	P43F-0004J	Eccentric swaged nipple ASTM A234 Grade WP5 Class 1 Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	SCH160	SCH160	P43F-0004K	Eccentric swaged nipple ASTM A234 Grade WP5 Class 1 Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	SCH160	SCH160	P43F-0004L	Eccentric swaged nipple ASTM A234 Grade WP5 Class 1 Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	SCH160	SCH160	P43F-0004M	Eccentric swaged nipple ASTM A234 Grade WP5 Class 1 Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	SCH160	SCH160	P43F-0004N	Eccentric swaged nipple ASTM A234 Grade WP5 Class 1 Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	XS	SCH160	P43F-0000M	Eccentric swaged nipple ASTM A234 Grade WP5 Class 1 Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	XS	SCH160	P43F-0000N	Eccentric swaged nipple ASTM A234 Grade WP5 Class 1 Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	XS	SCH160	P43F-0004P	Eccentric swaged nipple ASTM A234 Grade WP5 Class 1 Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	XS	SCH160	P43F-0004R	Eccentric swaged nipple ASTM A234 Grade WP5 Class 1 Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	STD	SCH160	P43F-0004S	Eccentric swaged nipple ASTM A234 Grade WP5 Class 1 Seamless MSS SP-95 BE(L) - PE(S)	

COUPLING (CPS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P47G-0000A	Coupling ASTM A182 Grade F5 Class 6000 ASME B16.11 SW - SW	
1	0.75				P47G-0000B	Coupling ASTM A182 Grade F5 Class 6000 ASME B16.11 SW - SW	
1					P47G-0001S	Coupling ASTM A182 Grade F5 Class 6000 ASME B16.11 SW - SW	
1	1.5				P47G-0001T	Coupling ASTM A182 Grade F5 Class 6000 ASME B16.11 SW - SW	

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OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5 - 2.5	0.75			P31G-0037J	Outlet ASTM A182 Grade F5 Class 6000 MSS SP-97 SW	
1	3 - 10	0.75			P31G-0037K	Outlet ASTM A182 Grade F5 Class 6000 MSS SP-97 SW	
1	12 and larger	0.75			P31G-0037L	Outlet ASTM A182 Grade F5 Class 6000 MSS SP-97 SW	
1	3 - 10	1			P31G-0037M	Outlet ASTM A182 Grade F5 Class 6000 MSS SP-97 SW	
1	12 and larger	1			P31G-0037N	Outlet ASTM A182 Grade F5 Class 6000 MSS SP-97 SW	
1	4 - 5	1.5			P31G-0037P	Outlet ASTM A182 Grade F5 Class 6000 MSS SP-97 SW	
1	6 - 8	1.5			P31G-0037R	Outlet ASTM A182 Grade F5 Class 6000 MSS SP-97 SW	
1	10 - 18	1.5			P31G-0037S	Outlet ASTM A182 Grade F5 Class 6000 MSS SP-97 SW	
1	20 and larger	1.5			P31G-0037T	Outlet ASTM A182 Grade F5 Class 6000 MSS SP-97 SW	
541	1	0.75			P31G-0037U	Outlet ASTM A182 Grade F5 Class 6000 MSS SP-97 NPT	
541	1.5 - 2.5	0.75			P31G-0037V	Outlet ASTM A182 Grade F5 Class 6000 MSS SP-97 NPT	
541	3 - 10	0.75			P31G-0037W	Outlet ASTM A182 Grade F5 Class 6000 MSS SP-97 NPT	
541	12 and larger	0.75			P31G-0037X	Outlet ASTM A182 Grade F5 Class 6000 MSS SP-97 NPT	
1	6	2	XS	XS	P31G-001FX	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	8	2	SCH60	XS	P31G-001G1	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	10	2	XS	XS	P31G-001G6	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	12	2	XS	XS	P31G-001GB	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	14	2	XS	XS	P31G-001GH	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	16	2	SCH20	XS	P31G-001EU	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	18	2	SCH20	XS	P31G-001F0	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	20	2	STD	XS	P31G-000C8	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	8	3	SCH60	STD	P31G-001G2	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	10	3	XS	STD	P31G-001G7	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	12	3	XS	STD	P31G-001GC	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	14	3	XS	STD	P31G-001GJ	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	16	3	SCH20	STD	P31G-001EV	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	18	3	SCH20	STD	P31G-001F1	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	20	3	STD	STD	P31G-000C9	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	12	4	XS	XS	P31G-001GD	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	14	4	XS	XS	P31G-001GK	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	16	4	SCH20	XS	P31G-001GL	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	18	4	SCH20	XS	P31G-001GM	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	20	4	STD	XS	P31G-000CA	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	18	6	SCH20	XS	P31G-001GN	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	20	6	STD	XS	P31G-001GP	Outlet ASTM A182 Grade F5 MSS SP-97 BW	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30G-0000D	Plug ASTM A182 Grade F5 ASME B16.11 NPT Round head	
1	0.75				P30G-0000E	Plug ASTM A182 Grade F5 ASME B16.11 NPT Round head	
1	1				P30G-0000F	Plug ASTM A182 Grade F5 ASME B16.11 NPT Round head	
1	1.5				P30G-0000G	Plug ASTM A182 Grade F5 ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P61G-00030	Flange SW ASTM A182 Grade F5 Class 300 ASME B16.5 RF	
1	0.75		SCH160		P61G-00031	Flange SW ASTM A182 Grade F5 Class 300 ASME B16.5 RF	
1	1		SCH160		P61G-000SU	Flange SW ASTM A182 Grade F5 Class 300 ASME B16.5 RF	
1	1.5		SCH160		P61G-000SV	Flange SW ASTM A182 Grade F5 Class 300 ASME B16.5 RF	
1	2		XS		P61G-00037	Flange WN ASTM A182 Grade F5 Class 300 ASME B16.5 RF	
1	3		STD		P61G-00039	Flange WN ASTM A182 Grade F5 Class 300 ASME B16.5 RF	
1	4		XS		P61G-0003A	Flange WN ASTM A182 Grade F5 Class 300 ASME B16.5 RF	
1	6		XS		P61G-0007P	Flange WN ASTM A182 Grade F5 Class 300 ASME B16.5 RF	
1	8		SCH60		P61G-000NA	Flange WN ASTM A182 Grade F5 Class 300 ASME B16.5 RF	
1	10		XS		P61G-00085	Flange WN ASTM A182 Grade F5 Class 300 ASME B16.5 RF	
1	12		XS		P61G-000N8	Flange WN ASTM A182 Grade F5 Class 300 ASME B16.5 RF	
1	14		XS		P61G-000N9	Flange WN ASTM A182 Grade F5 Class 300 ASME B16.5 RF	
1	16		SCH20		P61G-000N1	Flange WN ASTM A182 Grade F5 Class 300 ASME B16.5 RF	
1	18		SCH20		P61G-000N2	Flange WN ASTM A182 Grade F5 Class 300 ASME B16.5 RF	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	20		STD		P61G-00038	Flange WN ASTM A182 Grade F5 Class 300 ASME B16.5 RF	
541	0.5				P61G-001BF	Flange NPT ASTM A182 Grade F5 Class 300 ASME B16.5 RF	
541	0.75				P61G-0015S	Flange NPT ASTM A182 Grade F5 Class 300 ASME B16.5 RF	
781	0.5		SCH160		P61G-0003D	Flange SW ASTM A182 Grade F5 Class 600 ASME B16.5 RF	
781	0.75		SCH160		P61G-0003E	Flange SW ASTM A182 Grade F5 Class 600 ASME B16.5 RF	
781	1		SCH160		P61G-000SW	Flange SW ASTM A182 Grade F5 Class 600 ASME B16.5 RF	
781	1.5		SCH160		P61G-000SX	Flange SW ASTM A182 Grade F5 Class 600 ASME B16.5 RF	
781	2		XS		P61G-0003L	Flange WN ASTM A182 Grade F5 Class 600 ASME B16.5 RF	
781	3		STD		P61G-0003N	Flange WN ASTM A182 Grade F5 Class 600 ASME B16.5 RF	
781	4		XS		P61G-0003P	Flange WN ASTM A182 Grade F5 Class 600 ASME B16.5 RF	
781	6		XS		P61G-0007Y	Flange WN ASTM A182 Grade F5 Class 600 ASME B16.5 RF	
781	8		SCH60		P61G-000NJ	Flange WN ASTM A182 Grade F5 Class 600 ASME B16.5 RF	
781	10		XS		P61G-0008A	Flange WN ASTM A182 Grade F5 Class 600 ASME B16.5 RF	
781	12		XS		P61G-000ND	Flange WN ASTM A182 Grade F5 Class 600 ASME B16.5 RF	
781	14		XS		P61G-000NE	Flange WN ASTM A182 Grade F5 Class 600 ASME B16.5 RF	
781	16		SCH20		P61G-000NF	Flange WN ASTM A182 Grade F5 Class 600 ASME B16.5 RF	
781	18		SCH20		P61G-000NG	Flange WN ASTM A182 Grade F5 Class 600 ASME B16.5 RF	
781	20		STD		P61G-0003M	Flange WN ASTM A182 Grade F5 Class 600 ASME B16.5 RF	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67G-0001T	Blind flange ASTM A182 Grade F5 Class 300 ASME B16.5 RF	
1	0.75				P67G-0001U	Blind flange ASTM A182 Grade F5 Class 300 ASME B16.5 RF	
1	1				P67G-0001V	Blind flange ASTM A182 Grade F5 Class 300 ASME B16.5 RF	
1	1.5				P67G-0001W	Blind flange ASTM A182 Grade F5 Class 300 ASME B16.5 RF	
1	2				P67G-00020	Blind flange ASTM A182 Grade F5 Class 300 ASME B16.5 RF	
1	3				P67G-00022	Blind flange ASTM A182 Grade F5 Class 300 ASME B16.5 RF	
1	4				P67G-00023	Blind flange ASTM A182 Grade F5 Class 300 ASME B16.5 RF	
1	6				P67G-00024	Blind flange ASTM A182 Grade F5 Class 300 ASME B16.5 RF	
1	8				P67G-00025	Blind flange ASTM A182 Grade F5 Class 300 ASME B16.5 RF	
1	10				P67G-0001X	Blind flange ASTM A182 Grade F5 Class 300 ASME B16.5 RF	
1	12				P67G-0001Y	Blind flange ASTM A182 Grade F5 Class 300 ASME B16.5 RF	
1	14				P67G-0001Z	Blind flange ASTM A182 Grade F5 Class 300 ASME B16.5 RF	
1	16				P67G-0004N	Blind flange ASTM A182 Grade F5 Class 300 ASME B16.5 RF	
1	18				P67G-000AY	Blind flange ASTM A182 Grade F5 Class 300 ASME B16.5 RF	
1	20				P67G-00021	Blind flange ASTM A182 Grade F5 Class 300 ASME B16.5 RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-003AM	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	0.75				P73T-003AN	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	1				P73T-003AP	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	1.5				P73T-003AR	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	2				P73T-003AX	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	3				P73T-003B0	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	4				P73T-003B1	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	6				P73T-003B2	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	8				P73T-003B3	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	10				P73T-003AS	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	12				P73T-003AT	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	14				P73T-003AU	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	16				P73T-003AV	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	18				P73T-003AW	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	20				P73T-003AY	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	

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GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
781	0.5				P73T-003B4	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
781	0.75				P73T-003B5	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
781	1				P73T-003B6	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
781	1.5				P73T-003B7	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
781	2				P73T-003BD	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
781	3				P73T-003BG	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
781	4				P73T-003BH	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
781	6				P73T-003BJ	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
781	8				P73T-003BK	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
781	10				P73T-003B8	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
781	12				P73T-003B9	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
781	14				P73T-003BA	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
781	16				P73T-003BB	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
781	18				P73T-003BC	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
781	20				P73T-003BE	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-10				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B16 / A194 Grade 4 ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	12-20				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B16 / A194 Grade 4 ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
781	0.5-6				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B16 / A194 Grade 4 ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
781	8-20				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B16 / A194 Grade 4 ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81G-0002Y	Gate valve ASTM A182 Grade F5 Class 300 API 602 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2	
1	0.75				P81G-0002Z	Gate valve ASTM A182 Grade F5 Class 300 API 602 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2	
1	1				P81G-00030	Gate valve ASTM A182 Grade F5 Class 300 API 602 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2	
1	1.5				P81G-00031	Gate valve ASTM A182 Grade F5 Class 300 API 602 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2	
1	2				P81H-000AY	Gate valve ASTM A217 Grade C5 Class 300 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2	
1	3				P81H-000AZ	Gate valve ASTM A217 Grade C5 Class 300 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2	
1	4				P81H-000B0	Gate valve ASTM A217 Grade C5 Class 300 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2	
1	6				P81H-000B1	Gate valve ASTM A217 Grade C5 Class 300 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2	
1	8				P81H-000B2	Gate valve ASTM A217 Grade C5 Class 300 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2	
1	10				P81H-000B3	Gate valve ASTM A217 Grade C5 Class 300 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Gear operated Fluid-2	
4608	0.75				P81G-000ES	Gate valve ASTM A182 Grade F5 Class 800 API 602 SW both sides w/ nipples PE - NPT ASTM A335-P5 XXS-nipple Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83G-0001V	Check valve ASTM A182 Grade F5 Class 300 API 602 Flange ASME B16.5 RF Trim number 5 Lift-type Bolted cover	
1	0.75				P83G-0001W	Check valve ASTM A182 Grade F5 Class 300 API 602 Flange ASME B16.5 RF Trim number 5 Lift-type Bolted cover	
1	1				P83G-0001X	Check valve ASTM A182 Grade F5 Class 300 API 602 Flange ASME B16.5 RF Trim number 5 Lift-type Bolted cover	
1	1.5				P83G-0001Y	Check valve ASTM A182 Grade F5 Class 300 API 602 Flange ASME B16.5 RF Trim number 5 Lift-type Bolted cover	
1	2				P83H-00056	Check valve ASTM A217 Grade C5 Class 300 BS 1868 Flange ASME B16.5 RF Trim number 5 Swing-type Bolted cover	
1	3				P83H-00057	Check valve ASTM A217 Grade C5 Class 300 BS 1868 Flange ASME B16.5 RF Trim number 5 Swing-type Bolted cover	
1	4				P83H-00058	Check valve ASTM A217 Grade C5 Class 300 BS 1868 Flange ASME B16.5 RF Trim number 5 Swing-type Bolted cover	

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CHECK VALVE (X)							
OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	6				P83H-00059	Check valve ASTM A217 Grade C5 Class 300 BS 1868 Flange ASME B16.5 RF Trim number 5 Swing-type Bolted cover	

SPECT BLANK (SB)							
OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71G-0002J	Spectacle blank ASTM A182 Grade F5 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	0.75				P71G-0002K	Spectacle blank ASTM A182 Grade F5 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	1				P71G-0002L	Spectacle blank ASTM A182 Grade F5 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71G-0002M	Spectacle blank ASTM A182 Grade F5 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	2				P71G-0002R	Spectacle blank ASTM A182 Grade F5 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	3				P71G-0002S	Spectacle blank ASTM A182 Grade F5 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	4				P71G-0002T	Spectacle blank ASTM A182 Grade F5 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	6				P71G-0002U	Spectacle blank ASTM A182 Grade F5 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	8				P71G-0002V	Spectacle blank ASTM A182 Grade F5 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	10				P71G-0002N	Spectacle blank ASTM A182 Grade F5 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	12				P71G-0002P	Spectacle blank ASTM A182 Grade F5 Class 300 Standard-drawing Flange ASME B16.5 RF	

PADDLE BLANK (PB)							
OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72G-0001N	Paddle blank ASTM A182 Grade F5 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	16				P72G-0001P	Paddle blank ASTM A182 Grade F5 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	18				P72G-0001R	Paddle blank ASTM A182 Grade F5 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	20				P72G-0001S	Paddle blank ASTM A182 Grade F5 Class 300 Standard-drawing Flange ASME B16.5 RF	

PADDLE SPACER (PS)							
OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72G-0001V	Paddle spacer ASTM A182 Grade F5 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	16				P72G-0001W	Paddle spacer ASTM A182 Grade F5 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	18				P72G-0001X	Paddle spacer ASTM A182 Grade F5 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	20				P72G-0001Y	Paddle spacer ASTM A182 Grade F5 Class 300 Standard-drawing Flange ASME B16.5 RF	

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BOLT TABLE (B_B2FP , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-00GN8		
0.75	4	0.625	75	P80S-00GLL		
1	4	0.625	80	P80S-00GLK		
1.5	4	0.750	95	P80S-00FVE		
2	8	0.625	90	P80S-00GLH		
3	8	0.750	110	P80S-00GLD		
4	8	0.750	115	P80S-00GLC		
6	12	0.750	125	P80S-00GLA		
8	12	0.875	140	P80S-00FV5		
10	16	1.000	160	P80S-00FR9		
12	16	1.125	175	P80S-00FH8		
14	20	1.125	180	P80S-00FH7		
16	20	1.250	190	P80S-00F9Y		
18	24	1.250	200	P80S-00F9W		
20	24	1.250	210	P80S-00F9U		

BOLT TABLE (B_B2FP_781 , STUD ASME RF, OPTION CODE 781)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	80	P80S-00GN6		
0.75	4	0.625	90	P80S-00GLH		
1	4	0.625	95	P80S-00GLG		
1.5	4	0.750	110	P80S-00GLD		
2	8	0.625	110	P80S-00GN0		
3	8	0.750	130	P80S-00GL9		
4	8	0.875	150	P80S-00FV3		
6	12	1.000	175	P80S-00FR6		
8	12	1.125	195	P80S-00FH4		
10	16	1.250	250	P80S-00F9K		
12	20	1.250	255	P80S-00F9J		
14	20	1.375	270	P80S-00F4T		
16	20	1.500	295	P80S-00EY8		
18	20	1.625	320	P80S-00G0T		
20	24	1.625	335	P80S-00G0P		

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BRANCH TABLE (T_B2FP)

RUN PIPE SIZE (in) \ BRANCH SIZE (in)	0.5	0.75	1	1.5	2	3	4	6	8	10	12	14	16	18	20
0.5	TS														
0.75		TS													
1		TR	TS												
1.5		TR	TR	TS											
2		L	TR	TR	TS										
3		L	L	TR	TR	TS									
4	L	L	L	L	TR	TR	TS								
6	L	L	L	L	L	TR	TR	TS							
8		L	L	L	L	L	TR	TR	TS						
10		L	L	L	L	L	TR	TR	TR	TS					
12		L	L	L	L	L	L	TR	TR	TR	TS				
14		L	L	L	L	L	L	TR	TR	TR	TR	TS			
16		L	L	L	L	L	L	TR	TR	TR	TR	TR	TS		
18		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TS	
20		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TR	TS

TR : REDUCING TEE
TS : STRAIGHT TEE
L : OUTLET

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PIPING CLASS

B2FP02 REV NO. 2

Material : 5Cr-1/2Mo
Rating : ASME CLASS 300
Flange Face : RF
C.A.(mm) : 3.00
Gasket : Spiral Wound
Service : PROCESS - GENERAL PROCESS NON SOUR, NON CORROSIVE
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
200	WITH JACK SCREW (FO)
541	NPT(F) (CA,F,L)
781	CLASS 600 (B,F,G)
4608	VALVE WITH NIPPLES (V)

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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P01F-0001C	Pipe ASTM A335 Grade P5 Seamless ASME B36.10M/B36.19M PE	
1	0.75		SCH160		P01F-0001D	Pipe ASTM A335 Grade P5 Seamless ASME B36.10M/B36.19M PE	
1	1		SCH160		P01F-000CL	Pipe ASTM A335 Grade P5 Seamless ASME B36.10M/B36.19M PE	
1	1.5		SCH160		P01F-000CM	Pipe ASTM A335 Grade P5 Seamless ASME B36.10M/B36.19M PE	
1	2		XS		P01F-0001K	Pipe ASTM A335 Grade P5 Seamless ASME B36.10M/B36.19M BE	
1	3		STD		P01F-0001L	Pipe ASTM A335 Grade P5 Seamless ASME B36.10M/B36.19M BE	
1	4		XS		P01F-0001M	Pipe ASTM A335 Grade P5 Seamless ASME B36.10M/B36.19M BE	
1	6		XS		P01F-00038	Pipe ASTM A335 Grade P5 Seamless ASME B36.10M/B36.19M BE	
1	8		SCH60		P01F-0004H	Pipe ASTM A335 Grade P5 Seamless ASME B36.10M/B36.19M BE	
1	10		XS		P01F-00039	Pipe ASTM A335 Grade P5 Seamless ASME B36.10M/B36.19M BE	
1	12		XS		P01F-0004A	Pipe ASTM A335 Grade P5 Seamless ASME B36.10M/B36.19M BE	
1	14		XS		P01F-0004U	Pipe ASTM A335 Grade P5 Seamless ASME B36.10M/B36.19M BE	
1	16		SCH20		P01F-0006S	Pipe ASTM A335 Grade P5 Seamless ASME B36.10M/B36.19M BE	
1	18		SCH20		P01F-001T5	Pipe ASTM A691 Grade 5CR Class 32 EFW ASME B36.10M/B36.19M BE Licensor-2	
1	20		STD		P01F-001T6	Pipe ASTM A691 Grade 5CR Class 32 EFW ASME B36.10M/B36.19M BE Licensor-2	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P02G-00009	90 degree elbow ASTM A182 Grade F5 Class 6000 ASME B16.11 SW	
1	0.75				P02G-0000A	90 degree elbow ASTM A182 Grade F5 Class 6000 ASME B16.11 SW	
1	1				P02G-0001K	90 degree elbow ASTM A182 Grade F5 Class 6000 ASME B16.11 SW	
1	1.5				P02G-0001L	90 degree elbow ASTM A182 Grade F5 Class 6000 ASME B16.11 SW	
1	2		XS		P02F-0002H	90 degree elbow ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW Long radius	
1	3		STD		P02F-0002K	90 degree elbow ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW Long radius	
1	4		XS		P02F-0002L	90 degree elbow ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW Long radius	
1	6		XS		P02F-0004B	90 degree elbow ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW Long radius	
1	8		SCH60		P02F-000CJ	90 degree elbow ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW Long radius	
1	10		XS		P02F-0004D	90 degree elbow ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW Long radius	
1	12		XS		P02F-000CG	90 degree elbow ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW Long radius	
1	14		XS		P02F-000CH	90 degree elbow ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW Long radius	
1	16		SCH20		P02F-000CA	90 degree elbow ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW Long radius	
1	18		SCH20		P02F-000CB	90 degree elbow ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW Long radius	
1	20		STD		P02F-0002J	90 degree elbow ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P03G-00009	45 degree elbow ASTM A182 Grade F5 Class 6000 ASME B16.11 SW	
1	0.75				P03G-0000A	45 degree elbow ASTM A182 Grade F5 Class 6000 ASME B16.11 SW	
1	1				P03G-0001K	45 degree elbow ASTM A182 Grade F5 Class 6000 ASME B16.11 SW	
1	1.5				P03G-0001L	45 degree elbow ASTM A182 Grade F5 Class 6000 ASME B16.11 SW	
1	2		XS		P03F-0002E	45 degree elbow ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW Long radius	
1	3		STD		P03F-0002G	45 degree elbow ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW Long radius	
1	4		XS		P03F-0002H	45 degree elbow ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW Long radius	
1	6		XS		P03F-00048	45 degree elbow ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW Long radius	
1	8		SCH60		P03F-000CB	45 degree elbow ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW Long radius	
1	10		XS		P03F-0004A	45 degree elbow ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW Long radius	
1	12		XS		P03F-000C9	45 degree elbow ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW Long radius	
1	14		XS		P03F-000CA	45 degree elbow ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW Long radius	
1	16		SCH20		P03F-000C3	45 degree elbow ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW Long radius	
1	18		SCH20		P03F-000C4	45 degree elbow ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW Long radius	
1	20		STD		P03F-0002F	45 degree elbow ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P21G-00009	Straight tee ASTM A182 Grade F5 Class 6000 ASME B16.11 SW	
1	0.75				P21G-0000A	Straight tee ASTM A182 Grade F5 Class 6000 ASME B16.11 SW	
1	1				P21G-0001K	Straight tee ASTM A182 Grade F5 Class 6000 ASME B16.11 SW	
1	1.5				P21G-0001L	Straight tee ASTM A182 Grade F5 Class 6000 ASME B16.11 SW	
1	2		XS		P21F-0002F	Straight tee ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	

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STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3		STD		P21F-0002G	Straight tee ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	4		XS		P21F-0002H	Straight tee ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	6		XS		P21F-00049	Straight tee ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	8		SCH60		P21F-000C9	Straight tee ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	10		XS		P21F-0004A	Straight tee ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	12		XS		P21F-000C7	Straight tee ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	14		XS		P21F-000C8	Straight tee ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	16		SCH20		P21F-000C1	Straight tee ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	18		SCH20		P21F-000NW	Straight tee ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW Licensor-2	
1	20		STD		P21F-000NX	Straight tee ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW Licensor-2	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75			P24G-0001N	Reducing tee ASTM A182 Grade F5 Class 6000 ASME B16.11 SW	
1	1.5	0.75			P24G-0001P	Reducing tee ASTM A182 Grade F5 Class 6000 ASME B16.11 SW	
1	1.5	1			P24G-0001R	Reducing tee ASTM A182 Grade F5 Class 6000 ASME B16.11 SW	
1	2	1	XS	SCH160	P24F-0010K	Reducing tee ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	2	1.5	XS	SCH160	P24F-0010L	Reducing tee ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	3	1.5	STD	SCH160	P24F-0010M	Reducing tee ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	3	2	STD	XS	P24F-0006J	Reducing tee ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	4	2	XS	XS	P24F-0006K	Reducing tee ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	4	3	XS	STD	P24F-0006L	Reducing tee ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	6	3	XS	STD	P24F-0012P	Reducing tee ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	6	4	XS	XS	P24F-0009S	Reducing tee ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	8	4	SCH60	XS	P24F-0012R	Reducing tee ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	8	6	SCH60	XS	P24F-0012S	Reducing tee ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	10	4	XS	XS	P24F-0012T	Reducing tee ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	10	6	XS	XS	P24F-0012U	Reducing tee ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	10	8	XS	SCH60	P24F-0012V	Reducing tee ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	12	6	XS	XS	P24F-0012X	Reducing tee ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	12	8	XS	SCH60	P24F-0012Y	Reducing tee ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	12	10	XS	XS	P24F-0012W	Reducing tee ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	14	6	XS	XS	P24F-00131	Reducing tee ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	14	8	XS	SCH60	P24F-00132	Reducing tee ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	14	10	XS	XS	P24F-0012Z	Reducing tee ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	14	12	XS	XS	P24F-00130	Reducing tee ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	16	6	SCH20	XS	P24F-00133	Reducing tee ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	16	8	SCH20	SCH60	P24F-001B6	Reducing tee ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	16	10	SCH20	XS	P24F-001B3	Reducing tee ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	16	12	SCH20	XS	P24F-001B4	Reducing tee ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	16	14	SCH20	XS	P24F-001B5	Reducing tee ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	18	8	SCH20	SCH60	P24F-002R7	Reducing tee ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW Licensor-2	
1	18	10	SCH20	XS	P24F-002R3	Reducing tee ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW Licensor-2	
1	18	12	SCH20	XS	P24F-002R4	Reducing tee ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW Licensor-2	
1	18	14	SCH20	XS	P24F-002R5	Reducing tee ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW Licensor-2	
1	18	16	SCH20	SCH20	P24F-002R6	Reducing tee ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW Licensor-2	
1	20	8	STD	SCH60	P24F-002RD	Reducing tee ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW Licensor-2	
1	20	10	STD	XS	P24F-002R8	Reducing tee ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW Licensor-2	
1	20	12	STD	XS	P24F-002R9	Reducing tee ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW Licensor-2	
1	20	14	STD	XS	P24F-002RA	Reducing tee ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW Licensor-2	
1	20	16	STD	SCH20	P24F-002RB	Reducing tee ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW Licensor-2	
1	20	18	STD	SCH20	P24F-002RC	Reducing tee ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW Licensor-2	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	STD	XS	P27F-0005L	Concentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	4	2	XS	XS	P27F-0005M	Concentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	4	3	XS	STD	P27F-0005N	Concentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	6	3	XS	STD	P27F-000X1	Concentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	

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CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	6	4	XS	XS	P27F-0008S	Concentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	8	4	SCH60	XS	P27F-000X2	Concentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	8	6	SCH60	XS	P27F-000X3	Concentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	10	4	XS	XS	P27F-000X4	Concentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	10	6	XS	XS	P27F-000X5	Concentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	10	8	XS	SCH60	P27F-000X6	Concentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	12	6	XS	XS	P27F-000X8	Concentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	12	8	XS	SCH60	P27F-000X9	Concentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	12	10	XS	XS	P27F-000X7	Concentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	14	6	XS	XS	P27F-000XC	Concentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	14	8	XS	SCH60	P27F-000XD	Concentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	14	10	XS	XS	P27F-000XA	Concentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	14	12	XS	XS	P27F-000XB	Concentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	16	8	SCH20	SCH60	P27F-0013G	Concentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	16	10	SCH20	XS	P27F-000XE	Concentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	16	12	SCH20	XS	P27F-0013E	Concentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	16	14	SCH20	XS	P27F-0013F	Concentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	18	10	SCH20	XS	P27F-001Z9	Concentric reducer ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW Licensor-2	
1	18	12	SCH20	XS	P27F-001ZA	Concentric reducer ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW Licensor-2	
1	18	14	SCH20	XS	P27F-001ZB	Concentric reducer ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW Licensor-2	
1	18	16	SCH20	SCH20	P27F-001ZC	Concentric reducer ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW Licensor-2	
1	20	12	STD	XS	P27F-001ZD	Concentric reducer ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW Licensor-2	
1	20	14	STD	XS	P27F-001ZE	Concentric reducer ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW Licensor-2	
1	20	16	STD	SCH20	P27F-001ZF	Concentric reducer ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW Licensor-2	
1	20	18	STD	SCH20	P27F-001ZG	Concentric reducer ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW Licensor-2	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	STD	XS	P28F-0005L	Eccentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	4	2	XS	XS	P28F-0005M	Eccentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	4	3	XS	STD	P28F-0005N	Eccentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	6	3	XS	STD	P28F-000X1	Eccentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	6	4	XS	XS	P28F-0008S	Eccentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	8	4	SCH60	XS	P28F-000X2	Eccentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	8	6	SCH60	XS	P28F-000X3	Eccentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	10	4	XS	XS	P28F-000X4	Eccentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	10	6	XS	XS	P28F-000X5	Eccentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	10	8	XS	SCH60	P28F-000X6	Eccentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	12	6	XS	XS	P28F-000X8	Eccentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	12	8	XS	SCH60	P28F-000X9	Eccentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	12	10	XS	XS	P28F-000X7	Eccentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	14	6	XS	XS	P28F-000XC	Eccentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	14	8	XS	SCH60	P28F-000XD	Eccentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	14	10	XS	XS	P28F-000XA	Eccentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	14	12	XS	XS	P28F-000XB	Eccentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	16	8	SCH20	SCH60	P28F-0013H	Eccentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	16	10	SCH20	XS	P28F-000XE	Eccentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	16	12	SCH20	XS	P28F-0013F	Eccentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	16	14	SCH20	XS	P28F-0013G	Eccentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	18	10	SCH20	XS	P28F-001ZT	Eccentric reducer ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW Licensor-2	
1	18	12	SCH20	XS	P28F-001ZU	Eccentric reducer ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW Licensor-2	
1	18	14	SCH20	XS	P28F-001ZV	Eccentric reducer ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW Licensor-2	
1	18	16	SCH20	SCH20	P28F-001ZW	Eccentric reducer ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW Licensor-2	
1	20	12	STD	XS	P28F-001ZX	Eccentric reducer ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW Licensor-2	
1	20	14	STD	XS	P28F-001ZY	Eccentric reducer ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW Licensor-2	
1	20	16	STD	SCH20	P28F-001ZZ	Eccentric reducer ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW Licensor-2	
1	20	18	STD	SCH20	P28F-00200	Eccentric reducer ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW Licensor-2	

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CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P29G-0000D	Cap ASTM A182 Grade F5 Class 6000 ASME B16.11 SW	
1	0.75				P29G-0000E	Cap ASTM A182 Grade F5 Class 6000 ASME B16.11 SW	
1	1				P29G-0001E	Cap ASTM A182 Grade F5 Class 6000 ASME B16.11 SW	
1	1.5				P29G-0001F	Cap ASTM A182 Grade F5 Class 6000 ASME B16.11 SW	
1	2		XS		P29F-0002C	Cap ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	3		STD		P29F-0002E	Cap ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	4		XS		P29F-0002F	Cap ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	6		XS		P29F-00046	Cap ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	8		SCH60		P29F-000C7	Cap ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	10		XS		P29F-00049	Cap ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	12		XS		P29F-000C5	Cap ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	14		XS		P29F-000C6	Cap ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	16		SCH20		P29F-000C0	Cap ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	18		SCH20		P29F-000C1	Cap ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	20		STD		P29F-0002D	Cap ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
541	0.75				P29G-0001T	Cap ASTM A182 Grade F5 Class 6000 ASME B16.11 NPT	
541	1				P29G-00023	Cap ASTM A182 Grade F5 Class 6000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P41F-0003G	Straight nipple ASTM A335 Grade P5 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		XXS		P41F-0003H	Straight nipple ASTM A335 Grade P5 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		XXS		P41F-0002H	Straight nipple ASTM A335 Grade P5 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		XXS		P41F-0002J	Straight nipple ASTM A335 Grade P5 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

CON SWAGED NIPPLE (SNC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	SCH160	P42F-0000M	Concentric swaged nipple ASTM A234 Grade WP5 Class 1 Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	SCH160	SCH160	P42F-00059	Concentric swaged nipple ASTM A234 Grade WP5 Class 1 Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	SCH160	SCH160	P42F-0005A	Concentric swaged nipple ASTM A234 Grade WP5 Class 1 Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	SCH160	SCH160	P42F-0005B	Concentric swaged nipple ASTM A234 Grade WP5 Class 1 Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	SCH160	SCH160	P42F-0005C	Concentric swaged nipple ASTM A234 Grade WP5 Class 1 Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	SCH160	SCH160	P42F-0005D	Concentric swaged nipple ASTM A234 Grade WP5 Class 1 Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	XS	SCH160	P42F-0000U	Concentric swaged nipple ASTM A234 Grade WP5 Class 1 Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	XS	SCH160	P42F-0000V	Concentric swaged nipple ASTM A234 Grade WP5 Class 1 Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	XS	SCH160	P42F-0005E	Concentric swaged nipple ASTM A234 Grade WP5 Class 1 Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	XS	SCH160	P42F-0005F	Concentric swaged nipple ASTM A234 Grade WP5 Class 1 Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	STD	SCH160	P42F-0005G	Concentric swaged nipple ASTM A234 Grade WP5 Class 1 Seamless MSS SP-95 BE(L) - PE(S)	

ECC SWAGED NIPPLE (SNE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	SCH160	P43F-0000F	Eccentric swaged nipple ASTM A234 Grade WP5 Class 1 Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	SCH160	SCH160	P43F-0004J	Eccentric swaged nipple ASTM A234 Grade WP5 Class 1 Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	SCH160	SCH160	P43F-0004K	Eccentric swaged nipple ASTM A234 Grade WP5 Class 1 Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	SCH160	SCH160	P43F-0004L	Eccentric swaged nipple ASTM A234 Grade WP5 Class 1 Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	SCH160	SCH160	P43F-0004M	Eccentric swaged nipple ASTM A234 Grade WP5 Class 1 Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	SCH160	SCH160	P43F-0004N	Eccentric swaged nipple ASTM A234 Grade WP5 Class 1 Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	XS	SCH160	P43F-0000M	Eccentric swaged nipple ASTM A234 Grade WP5 Class 1 Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	XS	SCH160	P43F-0000N	Eccentric swaged nipple ASTM A234 Grade WP5 Class 1 Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	XS	SCH160	P43F-0004P	Eccentric swaged nipple ASTM A234 Grade WP5 Class 1 Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	XS	SCH160	P43F-0004R	Eccentric swaged nipple ASTM A234 Grade WP5 Class 1 Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	STD	SCH160	P43F-0004S	Eccentric swaged nipple ASTM A234 Grade WP5 Class 1 Seamless MSS SP-95 BE(L) - PE(S)	

COUPLING (CPS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P47G-0000A	Coupling ASTM A182 Grade F5 Class 6000 ASME B16.11 SW - SW	
1	0.75				P47G-0000B	Coupling ASTM A182 Grade F5 Class 6000 ASME B16.11 SW - SW	
1	1				P47G-0001S	Coupling ASTM A182 Grade F5 Class 6000 ASME B16.11 SW - SW	

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COUPLING (CPS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5				P47G-0001T	Coupling ASTM A182 Grade F5 Class 6000 ASME B16.11 SW - SW	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5 - 2.5	0.75			P31G-0037J	Outlet ASTM A182 Grade F5 Class 6000 MSS SP-97 SW	
1	3 - 10	0.75			P31G-0037K	Outlet ASTM A182 Grade F5 Class 6000 MSS SP-97 SW	
1	12 and larger	0.75			P31G-0037L	Outlet ASTM A182 Grade F5 Class 6000 MSS SP-97 SW	
1	3 - 10	1			P31G-0037M	Outlet ASTM A182 Grade F5 Class 6000 MSS SP-97 SW	
1	12 and larger	1			P31G-0037N	Outlet ASTM A182 Grade F5 Class 6000 MSS SP-97 SW	
1	4 - 5	1.5			P31G-0037P	Outlet ASTM A182 Grade F5 Class 6000 MSS SP-97 SW	
1	6 - 8	1.5			P31G-0037R	Outlet ASTM A182 Grade F5 Class 6000 MSS SP-97 SW	
1	10 - 18	1.5			P31G-0037S	Outlet ASTM A182 Grade F5 Class 6000 MSS SP-97 SW	
1	20 and larger	1.5			P31G-0037T	Outlet ASTM A182 Grade F5 Class 6000 MSS SP-97 SW	
541	1	0.75			P31G-0037U	Outlet ASTM A182 Grade F5 Class 6000 MSS SP-97 NPT	
541	1.5 - 2.5	0.75			P31G-0037V	Outlet ASTM A182 Grade F5 Class 6000 MSS SP-97 NPT	
541	3 - 10	0.75			P31G-0037W	Outlet ASTM A182 Grade F5 Class 6000 MSS SP-97 NPT	
541	12 and larger	0.75			P31G-0037X	Outlet ASTM A182 Grade F5 Class 6000 MSS SP-97 NPT	
1	6	2	XS	XS	P31G-001FX	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	8	2	SCH60	XS	P31G-001G1	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	10	2	XS	XS	P31G-001G6	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	12	2	XS	XS	P31G-001GB	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	14	2	XS	XS	P31G-001GH	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	16	2	SCH20	XS	P31G-001EU	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	18	2	SCH20	XS	P31G-001F0	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	20	2	STD	XS	P31G-000C8	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	8	3	SCH60	STD	P31G-001G2	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	10	3	XS	STD	P31G-001G7	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	12	3	XS	STD	P31G-001GC	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	14	3	XS	STD	P31G-001GJ	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	16	3	SCH20	STD	P31G-001EV	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	18	3	SCH20	STD	P31G-001F1	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	20	3	STD	STD	P31G-000C9	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	12	4	XS	XS	P31G-001GD	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	14	4	XS	XS	P31G-001GK	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	16	4	SCH20	XS	P31G-001GL	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	18	4	SCH20	XS	P31G-001GM	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	20	4	STD	XS	P31G-000CA	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	18	6	SCH20	XS	P31G-001GN	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	20	6	STD	XS	P31G-001GP	Outlet ASTM A182 Grade F5 MSS SP-97 BW	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30G-0000D	Plug ASTM A182 Grade F5 ASME B16.11 NPT Round head	
1	0.75				P30G-0000E	Plug ASTM A182 Grade F5 ASME B16.11 NPT Round head	
1	1				P30G-0000F	Plug ASTM A182 Grade F5 ASME B16.11 NPT Round head	
1	1.5				P30G-0000G	Plug ASTM A182 Grade F5 ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P61G-00030	Flange SW ASTM A182 Grade F5 Class 300 ASME B16.5 RF	
1	0.75		SCH160		P61G-00031	Flange SW ASTM A182 Grade F5 Class 300 ASME B16.5 RF	
1	1		SCH160		P61G-000SU	Flange SW ASTM A182 Grade F5 Class 300 ASME B16.5 RF	
1	1.5		SCH160		P61G-000SV	Flange SW ASTM A182 Grade F5 Class 300 ASME B16.5 RF	
1	2		XS		P61G-00037	Flange WN ASTM A182 Grade F5 Class 300 ASME B16.5 RF	
1	3		STD		P61G-00039	Flange WN ASTM A182 Grade F5 Class 300 ASME B16.5 RF	
1	4		XS		P61G-0003A	Flange WN ASTM A182 Grade F5 Class 300 ASME B16.5 RF	
1	6		XS		P61G-0007P	Flange WN ASTM A182 Grade F5 Class 300 ASME B16.5 RF	
1	8		SCH60		P61G-000NA	Flange WN ASTM A182 Grade F5 Class 300 ASME B16.5 RF	
1	10		XS		P61G-00085	Flange WN ASTM A182 Grade F5 Class 300 ASME B16.5 RF	

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FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	12		XS		P61G-000N8	Flange WN ASTM A182 Grade F5 Class 300 ASME B16.5 RF	
1	14		XS		P61G-000N9	Flange WN ASTM A182 Grade F5 Class 300 ASME B16.5 RF	
1	16		SCH20		P61G-000N1	Flange WN ASTM A182 Grade F5 Class 300 ASME B16.5 RF	
1	18		SCH20		P61G-000N2	Flange WN ASTM A182 Grade F5 Class 300 ASME B16.5 RF	
1	20		STD		P61G-00038	Flange WN ASTM A182 Grade F5 Class 300 ASME B16.5 RF	
541	0.5				P61G-001BF	Flange NPT ASTM A182 Grade F5 Class 300 ASME B16.5 RF	
541	0.75				P61G-0015S	Flange NPT ASTM A182 Grade F5 Class 300 ASME B16.5 RF	
781	0.5		SCH160		P61G-0003D	Flange SW ASTM A182 Grade F5 Class 600 ASME B16.5 RF	
781	0.75		SCH160		P61G-0003E	Flange SW ASTM A182 Grade F5 Class 600 ASME B16.5 RF	
781	1		SCH160		P61G-000SW	Flange SW ASTM A182 Grade F5 Class 600 ASME B16.5 RF	
781	1.5		SCH160		P61G-000SX	Flange SW ASTM A182 Grade F5 Class 600 ASME B16.5 RF	
781	2		XS		P61G-0003L	Flange WN ASTM A182 Grade F5 Class 600 ASME B16.5 RF	
781	3		STD		P61G-0003N	Flange WN ASTM A182 Grade F5 Class 600 ASME B16.5 RF	
781	4		XS		P61G-0003P	Flange WN ASTM A182 Grade F5 Class 600 ASME B16.5 RF	
781	6		XS		P61G-0007Y	Flange WN ASTM A182 Grade F5 Class 600 ASME B16.5 RF	
781	8		SCH60		P61G-000NJ	Flange WN ASTM A182 Grade F5 Class 600 ASME B16.5 RF	
781	10		XS		P61G-0008A	Flange WN ASTM A182 Grade F5 Class 600 ASME B16.5 RF	
781	12		XS		P61G-000ND	Flange WN ASTM A182 Grade F5 Class 600 ASME B16.5 RF	
781	14		XS		P61G-000NE	Flange WN ASTM A182 Grade F5 Class 600 ASME B16.5 RF	
781	16		SCH20		P61G-000NF	Flange WN ASTM A182 Grade F5 Class 600 ASME B16.5 RF	
781	18		SCH20		P61G-000NG	Flange WN ASTM A182 Grade F5 Class 600 ASME B16.5 RF	
781	20		STD		P61G-0003M	Flange WN ASTM A182 Grade F5 Class 600 ASME B16.5 RF	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67G-0001T	Blind flange ASTM A182 Grade F5 Class 300 ASME B16.5 RF	
1	0.75				P67G-0001U	Blind flange ASTM A182 Grade F5 Class 300 ASME B16.5 RF	
1	1				P67G-0001V	Blind flange ASTM A182 Grade F5 Class 300 ASME B16.5 RF	
1	1.5				P67G-0001W	Blind flange ASTM A182 Grade F5 Class 300 ASME B16.5 RF	
1	2				P67G-00020	Blind flange ASTM A182 Grade F5 Class 300 ASME B16.5 RF	
1	3				P67G-00022	Blind flange ASTM A182 Grade F5 Class 300 ASME B16.5 RF	
1	4				P67G-00023	Blind flange ASTM A182 Grade F5 Class 300 ASME B16.5 RF	
1	6				P67G-00024	Blind flange ASTM A182 Grade F5 Class 300 ASME B16.5 RF	
1	8				P67G-00025	Blind flange ASTM A182 Grade F5 Class 300 ASME B16.5 RF	
1	10				P67G-0001X	Blind flange ASTM A182 Grade F5 Class 300 ASME B16.5 RF	
1	12				P67G-0001Y	Blind flange ASTM A182 Grade F5 Class 300 ASME B16.5 RF	
1	14				P67G-0001Z	Blind flange ASTM A182 Grade F5 Class 300 ASME B16.5 RF	
1	16				P67G-0004N	Blind flange ASTM A182 Grade F5 Class 300 ASME B16.5 RF	
1	18				P67G-000AY	Blind flange ASTM A182 Grade F5 Class 300 ASME B16.5 RF	
1	20				P67G-00021	Blind flange ASTM A182 Grade F5 Class 300 ASME B16.5 RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-003AM	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	0.75				P73T-003AN	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	1				P73T-003AP	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	1.5				P73T-003AR	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	2				P73T-003AX	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	3				P73T-003B0	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	4				P73T-003B1	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	6				P73T-003B2	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	8				P73T-003B3	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	10				P73T-003AS	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	12				P73T-003AT	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	14				P73T-003AU	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	

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GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	16				P73T-003AV	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	18				P73T-003AW	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	20				P73T-003AY	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
781	0.5				P73T-003B4	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
781	0.75				P73T-003B5	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
781	1				P73T-003B6	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
781	1.5				P73T-003B7	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
781	2				P73T-003BD	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
781	3				P73T-003BG	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
781	4				P73T-003BH	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
781	6				P73T-003BJ	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
781	8				P73T-003BK	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
781	10				P73T-003B8	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
781	12				P73T-003B9	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
781	14				P73T-003BA	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
781	16				P73T-003BB	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
781	18				P73T-003BC	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
781	20				P73T-003BE	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-10				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B16 / A194 Grade 4 ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	12-20				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B16 / A194 Grade 4 ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
781	0.5-6				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B16 / A194 Grade 4 ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
781	8-20				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B16 / A194 Grade 4 ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81G-000EE	Gate valve ASTM A182 Grade F5 Class 300 API 602 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Fluid-2	
1	0.75				P81G-000EF	Gate valve ASTM A182 Grade F5 Class 300 API 602 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Fluid-2	
1	1				P81G-000EG	Gate valve ASTM A182 Grade F5 Class 300 API 602 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Fluid-2	
1	1.5				P81G-000EH	Gate valve ASTM A182 Grade F5 Class 300 API 602 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Fluid-2	
1	2				P81H-0013K	Gate valve ASTM A217 Grade C5 Class 300 API 600 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Fluid-2	
1	3				P81H-0013L	Gate valve ASTM A217 Grade C5 Class 300 API 600 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Fluid-2	
1	4				P81H-0013M	Gate valve ASTM A217 Grade C5 Class 300 API 600 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Fluid-2	
1	6				P81H-0013N	Gate valve ASTM A217 Grade C5 Class 300 API 600 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Fluid-2	
1	8				P81H-0013P	Gate valve ASTM A217 Grade C5 Class 300 API 600 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Fluid-2	
1	10				P81H-0013R	Gate valve ASTM A217 Grade C5 Class 300 API 600 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Gear operated Fluid-2	
4608	0.75				P81G-000EJ	Gate valve ASTM A182 Grade F5 Class 800 API 602 SW both sides w/ nipples PE - NPT ASTM A335-P5 XXS-nipple Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Fluid-2	
4608	1				P81G-000F9	Gate valve ASTM A182 Grade F5 Class 800 API 602 SW both sides w/ nipples PE - NPT ASTM A335-P5 XXS-nipple Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Fluid-2	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83G-00074	Check valve ASTM A182 Grade F5 Class 300 API 602 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 Lift-type Bolted cover	
1	0.75				P83G-00075	Check valve ASTM A182 Grade F5 Class 300 API 602 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 Lift-type Bolted cover	
1	1				P83G-00076	Check valve ASTM A182 Grade F5 Class 300 API 602 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 Lift-type Bolted cover	

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CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5				P83G-00077	Check valve ASTM A182 Grade F5 Class 300 API 602 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 Lift-type Bolted cover	
1	2				P83H-000AU	Check valve ASTM A217 Grade C5 Class 300 BS 1868 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 Swing-type Bolted cover	
1	3				P83H-000AV	Check valve ASTM A217 Grade C5 Class 300 BS 1868 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 Swing-type Bolted cover	
1	4				P83H-000AW	Check valve ASTM A217 Grade C5 Class 300 BS 1868 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 Swing-type Bolted cover	
1	6				P83H-000AX	Check valve ASTM A217 Grade C5 Class 300 BS 1868 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 Swing-type Bolted cover	

ORIFICE FLANGE (FO)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	6		XS		P66G-0007P	Orifice flange WN ASTM A182 Grade F5 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
200	6		XS		P66G-0007W	Orifice flange WN ASTM A182 Grade F5 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71G-0002J	Spectacle blank ASTM A182 Grade F5 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	0.75				P71G-0002K	Spectacle blank ASTM A182 Grade F5 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	1				P71G-0002L	Spectacle blank ASTM A182 Grade F5 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71G-0002M	Spectacle blank ASTM A182 Grade F5 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	2				P71G-0002R	Spectacle blank ASTM A182 Grade F5 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	3				P71G-0002S	Spectacle blank ASTM A182 Grade F5 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	4				P71G-0002T	Spectacle blank ASTM A182 Grade F5 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	6				P71G-0002U	Spectacle blank ASTM A182 Grade F5 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	8				P71G-0002V	Spectacle blank ASTM A182 Grade F5 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	10				P71G-0002N	Spectacle blank ASTM A182 Grade F5 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	12				P71G-0002P	Spectacle blank ASTM A182 Grade F5 Class 300 Standard-drawing Flange ASME B16.5 RF	

PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72G-0001N	Paddle blank ASTM A182 Grade F5 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	16				P72G-0001P	Paddle blank ASTM A182 Grade F5 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	18				P72G-0001R	Paddle blank ASTM A182 Grade F5 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	20				P72G-0001S	Paddle blank ASTM A182 Grade F5 Class 300 Standard-drawing Flange ASME B16.5 RF	

PADDLE SPACER (PS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72G-0001V	Paddle spacer ASTM A182 Grade F5 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	16				P72G-0001W	Paddle spacer ASTM A182 Grade F5 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	18				P72G-0001X	Paddle spacer ASTM A182 Grade F5 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	20				P72G-0001Y	Paddle spacer ASTM A182 Grade F5 Class 300 Standard-drawing Flange ASME B16.5 RF	

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BOLT TABLE (B_B2FP02 , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-00GN8		
0.75	4	0.625	75	P80S-00GLL		
1	4	0.625	80	P80S-00GLK		
1.5	4	0.750	95	P80S-00FVE		
2	8	0.625	90	P80S-00GLH		
3	8	0.750	110	P80S-00GLD		
4	8	0.750	115	P80S-00GLC		
6	12	0.750	125	P80S-00GLA		
8	12	0.875	140	P80S-00FV5		
10	16	1.000	160	P80S-00FR9		
12	16	1.125	175	P80S-00FH8		
14	20	1.125	180	P80S-00FH7		
16	20	1.250	190	P80S-00F9Y		
18	24	1.250	200	P80S-00F9W		
20	24	1.250	210	P80S-00F9U		

BOLT TABLE (B_B2FP02_781 , STUD ASME RF, OPTION CODE 781)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	80	P80S-00GN6		
0.75	4	0.625	90	P80S-00GLH		
1	4	0.625	95	P80S-00GLG		
1.5	4	0.750	110	P80S-00GLD		
2	8	0.625	110	P80S-00GN0		
3	8	0.750	130	P80S-00GL9		
4	8	0.875	150	P80S-00FV3		
6	12	1.000	175	P80S-00FR6		
8	12	1.125	195	P80S-00FH4		
10	16	1.250	250	P80S-00F9K		
12	20	1.250	255	P80S-00F9J		
14	20	1.375	270	P80S-00F4T		
16	20	1.500	295	P80S-00EY8		
18	20	1.625	320	P80S-00G0T		
20	24	1.625	335	P80S-00G0P		

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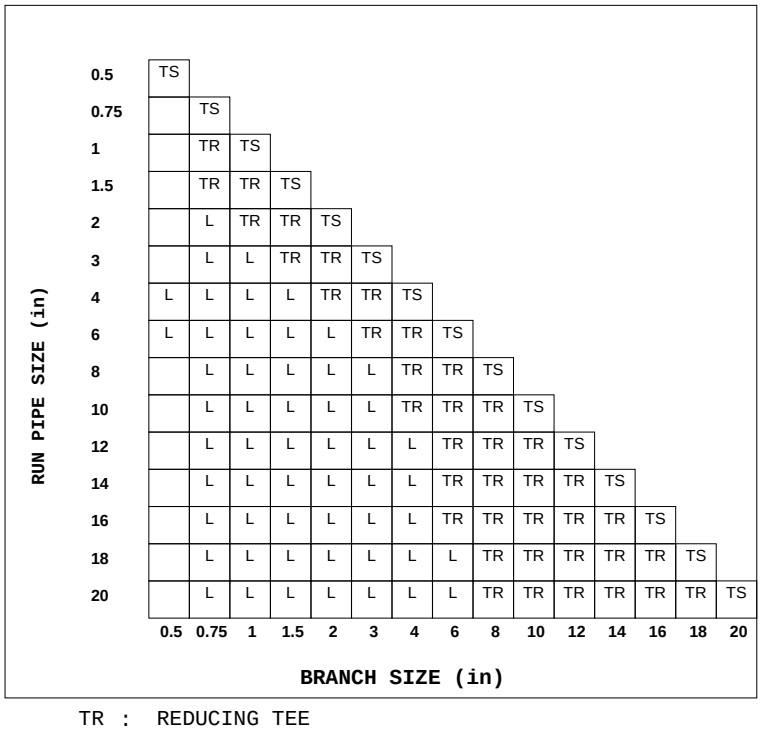
BRANCH TABLE (T_B2FP02)



TR : REDUCING TEE
TS : STRAIGHT TEE
L : OUTLET

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PIPING CLASS

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Material : LTCS
Rating : ASME CLASS 300
Flange Face : RF
C.A.(mm) : 3.00
Gasket : Spiral Wound
Service : PROCESS -WET LOW SEVERITY SOUR SERVICE SUBJECT TO NACE + AMINES OR CAUSTIC - STRESS RELIEVED
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
5	BOLTING CONFIRMING TO B7M / 2HM SHALL BE USED UNDER CONDITIONS (A) DIRECT EXPOSURE TO SOUR ENVIRONMENTS (B) WHEN THE BOLTING WILL BE BURIED OR INSULATED
15	BOLTING CONFIRMING TO L7M / 7M SHALL BE USED UNDER CONDITIONS (A) DIRECT EXPOSURE TO SOUR ENVIRONMENTS (B) WHEN THE BOLTING WILL BE BURIED OR INSULATED
27	PWHT OF CARBON STEEL PIPING IN WET H2S, CAUSTIC AND AMINE SERVICES SHALL BE IN ACCORDANCE WITH SECTION 10.2, 10.3, AND 10.4 OF PROJECT SPECIFICATION 3550-8440-SP-0002 MATERIALS REQUIREMENTS FOR PRESSURISED EQUIPMENT AND PIPING. FOR CAUSTIC AND AMINE SERVICE THE FOLLOWING SHALL APPLY: - PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF ALL SITE PIPING FABRICATION WELDS IS REQUIRED FOR ALL WALL THICKNESSES. FOR MODERATE AND SEVERE WET H2S SERVICE THE FOLLOWING SHALL APPLY: PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF SITE FABRICATION CIRCUMFERENTIAL OR BRANCH WELDS IS NOT REQUIRED IF WELDS ARE MULTIPASS AND IN ACCORDANCE WITH PARA 10.2.12 OF PROJECT SPECIFICATION 3550-8440-SP-0002. FOR SERVICES MEETING THE WET H2S CRITERIA AND CAUSTIC OR AMINE CRITERIA THE MORE STRINGENT PWHT REQUIREMENT SHALL GOVERN.

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
541	NPT(F) (CA,F)
781	CLASS 600 (B,F,G)
4608	VALVE WITH NIPPLES (V)

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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P01A-001Z1	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE	
1	0.75		SCH160		P01A-0016P	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE	
1	1		SCH160		P01A-0011Z	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE	
1	1.5		SCH160		P01A-00127	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE	
1	2		XS		P01A-000XB	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	3		XS		P01A-000XG	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	4		STD		P01A-000YT	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	6		STD		P01A-000Z2	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	8		STD		P01A-000Z8	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	10		STD		P01A-000XH	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P02A-002HP	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	0.75		SCH160		P02A-002GE	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	1		SCH160		P02A-002GF	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	1.5		SCH160		P02A-002GG	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	2		XS		P02A-000B9	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	3		XS		P02A-000BC	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	4		STD		P02A-000E9	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	6		STD		P02A-000EC	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	8		STD		P02A-000EF	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	10		STD		P02A-000EL	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P03A-002F7	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	0.75		SCH160		P03A-002E1	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	1		SCH160		P03A-002E2	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	1.5		SCH160		P03A-002E3	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	2		XS		P03A-0009Y	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	3		XS		P03A-000A0	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	4		STD		P03A-000C6	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	6		STD		P03A-000C9	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	8		STD		P03A-000CB	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	10		STD		P03A-000BL	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P21A-003GA	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	0.75		SCH160		P21A-003EP	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	1		SCH160		P21A-003ER	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	1.5		SCH160		P21A-003ES	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	2		XS		P21A-001BR	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	3		XS		P21A-001BT	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	4		STD		P21A-001FF	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	6		STD		P21A-001FJ	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	8		STD		P21A-001FL	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10		STD		P21A-001F0	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75	SCH160	SCH160	P24A-00GC7	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	1.5	0.75	SCH160	SCH160	P24A-00GC9	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	1.5	1	SCH160	SCH160	P24A-00GCA	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	2	1	XS	SCH160	P24A-00GMD	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	2	1.5	XS	SCH160	P24A-005NK	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	3	1.5	XS	SCH160	P24A-00GMW	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	

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REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	XS	XS	P24A-00270	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	4	2	STD	XS	P24A-006CW	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	4	3	STD	XS	P24A-00M5R	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	6	3	STD	XS	P24A-00M5S	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	6	4	STD	STD	P24A-00289	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	8	4	STD	STD	P24A-0028B	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	8	6	STD	STD	P24A-0028T	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	4	STD	STD	P24A-002K7	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	6	STD	STD	P24A-002AN	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	8	STD	STD	P24A-0028W	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	XXS	P27A-00BFU	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	1	0.5	SCH160	XXS	P27A-00BFV	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	1	0.75	SCH160	SCH160	P27A-00BA1	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	1.5	0.5	SCH160	XXS	P27A-00BFW	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	1.5	0.75	SCH160	SCH160	P27A-00BA3	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	1.5	1	SCH160	SCH160	P27A-00BA4	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	2	0.75	XS	SCH160	P27A-003S6	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	2	1	XS	SCH160	P27A-003S7	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	2	1.5	XS	SCH160	P27A-003S8	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	3	1.5	XS	SCH160	P27A-0047N	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	3	2	XS	XS	P27A-0018T	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	4	1.5	STD	SCH160	P27A-003SA	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	4	2	STD	XS	P27A-003PN	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	4	3	STD	XS	P27A-00G4P	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	6	3	STD	XS	P27A-00G4R	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	6	4	STD	STD	P27A-00181	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	8	4	STD	STD	P27A-0017P	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	8	6	STD	STD	P27A-001B9	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	4	STD	STD	P27A-0017X	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	6	STD	STD	P27A-001BV	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	8	STD	STD	P27A-001D6	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	XXS	P28A-008EA	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	1	0.5	SCH160	XXS	P28A-008EB	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	1	0.75	SCH160	SCH160	P28A-00841	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	1.5	0.5	SCH160	XXS	P28A-008EC	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	1.5	0.75	SCH160	SCH160	P28A-00843	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	1.5	1	SCH160	SCH160	P28A-00844	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	2	0.75	XS	SCH160	P28A-003S2	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	2	1	XS	SCH160	P28A-003S3	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	2	1.5	XS	SCH160	P28A-003S4	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	3	1.5	XS	SCH160	P28A-0047E	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	3	2	XS	XS	P28A-00199	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	4	1.5	STD	SCH160	P28A-003S6	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	4	2	STD	XS	P28A-003PM	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	4	3	STD	XS	P28A-00DBN	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	6	3	STD	XS	P28A-00DBP	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	6	4	STD	STD	P28A-001BL	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	8	4	STD	STD	P28A-001B9	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	8	6	STD	STD	P28A-001CL	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	4	STD	STD	P28A-001BF	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	6	STD	STD	P28A-001CK	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	8	STD	STD	P28A-001E4	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	

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CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P29A-001UU	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service	
1	0.75		SCH160		P29A-001UV	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service	
1	1		SCH160		P29A-001UW	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service	
1	1.5		SCH160		P29A-001UX	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service	
1	2		XS		P29A-001V3	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service	
1	3		XS		P29A-003GH	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service	
1	4		STD		P29A-001V7	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service	
1	6		STD		P29A-001V8	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service	
1	8		STD		P29A-001V9	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service	
1	10		STD		P29A-001UY	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service	
541	0.75				P29B-00015	Cap ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P41A-000DJ	Straight nipple ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		XXS		P41A-000DK	Straight nipple ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		XXS		P41A-000DZ	Straight nipple ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		XXS		P41A-000E0	Straight nipple ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2	0.75	XS	SCH160	P31B-00TPR	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	3	0.75	XS	SCH160	P31B-00ZHG	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	4	0.75	STD	SCH160	P31B-00TPU	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	6	0.75	STD	SCH160	P31B-00TPX	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	8	0.75	STD	SCH160	P31B-00TSA	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	10	0.75	STD	SCH160	P31B-00TSD	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	3	1	XS	SCH160	P31B-00TR5	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	4	1	STD	SCH160	P31B-00TPV	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	6	1	STD	SCH160	P31B-00TPY	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	8	1	STD	SCH160	P31B-00TSB	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	10	1	STD	SCH160	P31B-00TSE	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	4	1.5	STD	SCH160	P31B-00TPW	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	6	1.5	STD	SCH160	P31B-00TPZ	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	8	1.5	STD	SCH160	P31B-00TSC	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	10	1.5	STD	SCH160	P31B-00TSF	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	6	2	STD	XS	P31B-00MFB	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	8	2	STD	XS	P31B-00PAW	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	10	2	STD	XS	P31B-00TPH	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	8	3	STD	XS	P31B-00M9R	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	10	3	STD	XS	P31B-00MBH	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30B-0002V	Plug ASTM A350 Grade LF2 Class 1 ASME B16.11 NPT Round head	
1	0.75				P30B-0002W	Plug ASTM A350 Grade LF2 Class 1 ASME B16.11 NPT Round head	
1	1				P30B-0002X	Plug ASTM A350 Grade LF2 Class 1 ASME B16.11 NPT Round head	
1	1.5				P30B-0002Y	Plug ASTM A350 Grade LF2 Class 1 ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P61B-003SD	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	0.75		SCH160		P61B-003RD	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	1		SCH160		P61B-003RE	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	1.5		SCH160		P61B-003RF	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	2		XS		P61B-003R8	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1			XS		P61B-003SG	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	4		STD		P61B-001N0	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	

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FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	6		STD		P61B-001NM	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	8		STD		P61B-001NZ	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	10		STD		P61B-001L8	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
541	0.5				P61B-0035X	Flange NPT ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
541	0.75				P61B-0035W	Flange NPT ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
781	0.5		XXS		P61B-003WN	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
781	0.75		SCH160		P61B-003E0	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
781	1		SCH160		P61B-003DZ	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
781	1.5		SCH160		P61B-003DY	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
781	2		XS		P61B-001FN	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
781	3		XS		P61B-001K0	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
781	4		STD		P61B-001VT	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
781	6		STD		P61B-001JV	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
781	8		STD		P61B-001KE	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
781	10		STD		P61B-001JH	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67B-000NN	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	0.75				P67B-000MV	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	1				P67B-000MW	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	1.5				P67B-000MX	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	2				P67B-000N3	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	3				P67B-000N6	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	4				P67B-000N7	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	6				P67B-000N8	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	8				P67B-000N9	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	10				P67B-000MY	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000FT	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000FU	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000G5	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000G6	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	6				P73T-000G7	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	8				P73T-000G8	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	10				P73T-000FX	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	0.5				P73T-000J8	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	0.75				P73T-000J9	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1				P73T-000JA	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1.5				P73T-000JB	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	2				P73T-000JH	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	3				P73T-000JL	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	4				P73T-000JM	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	6				P73T-000JN	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	8				P73T-000JP	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	10				P73T-000JC	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

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BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-10				See Attached Bolt Table	Bolt and Nut ASTM A320 Grade L7M / A194 Grade 7M ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
781	0.5-6				See Attached Bolt Table	Bolt and Nut ASTM A320 Grade L7M / A194 Grade 7M ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
781	8-10				See Attached Bolt Table	Bolt and Nut ASTM A320 Grade L7M / A194 Grade 7M ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81B-0020Y	Gate valve ASTM A350 Grade LF2 Class 1 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Amine service Moderate wet H2S service	
1	0.75				P81B-0020Z	Gate valve ASTM A350 Grade LF2 Class 1 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Amine service Moderate wet H2S service	
1	1				P81B-00210	Gate valve ASTM A350 Grade LF2 Class 1 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Amine service Moderate wet H2S service	
1	1.5				P81B-00211	Gate valve ASTM A350 Grade LF2 Class 1 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Amine service Moderate wet H2S service	
1	2				P81C-008R7	Gate valve ASTM A352 Grade LCC Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Amine service Moderate wet H2S service Licensor-4	
1	3				P81C-008R8	Gate valve ASTM A352 Grade LCC Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Amine service Moderate wet H2S service Licensor-4	
1	4				P81C-008R9	Gate valve ASTM A352 Grade LCC Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Amine service Moderate wet H2S service Licensor-4	
1	6				P81C-008RA	Gate valve ASTM A352 Grade LCC Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Amine service Moderate wet H2S service Licensor-4	
1	8				P81C-0091X	Gate valve ASTM A352 Grade LCC Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Amine service Moderate wet H2S service Licensor-4	
1	10				P81C-008RC	Gate valve ASTM A352 Grade LCC Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Amine service Moderate wet H2S service Licensor-4	
4608	0.75				P81B-002X0	Gate valve ASTM A350 Grade LF2 Class 1 Class 300 API 602 BW both sides w/ nipples BE - NPT ASTM A333-6 XXS-nipple Trim number 12 BB-BG-OS&Y Handwheel operated Amine service Moderate wet H2S service	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82B-001JH	Globe valve ASTM A350 Grade LF2 Class 1 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Amine service Moderate wet H2S service	
1	0.75				P82B-001JJ	Globe valve ASTM A350 Grade LF2 Class 1 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Amine service Moderate wet H2S service	
1	1				P82B-001JK	Globe valve ASTM A350 Grade LF2 Class 1 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Amine service Moderate wet H2S service	
1	1.5				P82B-001JL	Globe valve ASTM A350 Grade LF2 Class 1 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Amine service Moderate wet H2S service	
1	2				P82C-0047B	Globe valve ASTM A352 Grade LCC Class 300 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Amine service Moderate wet H2S service Licensor-4	
1	3				P82C-0047C	Globe valve ASTM A352 Grade LCC Class 300 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Amine service Moderate wet H2S service Licensor-4	
1	4				P82C-0047D	Globe valve ASTM A352 Grade LCC Class 300 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Amine service Moderate wet H2S service Licensor-4	
1	6				P82C-0047E	Globe valve ASTM A352 Grade LCC Class 300 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Amine service Moderate wet H2S service Licensor-4	
1	8				P82C-004D2	Globe valve ASTM A352 Grade LCC Class 300 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Amine service Moderate wet H2S service Licensor-4	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83B-00183	Check valve ASTM A350 Grade LF2 Class 1 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Amine service Moderate wet H2S service	
1	0.75				P83B-00184	Check valve ASTM A350 Grade LF2 Class 1 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Amine service Moderate wet H2S service	
1	1				P83B-00185	Check valve ASTM A350 Grade LF2 Class 1 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Amine service Moderate wet H2S service	
1	1.5				P83B-00186	Check valve ASTM A350 Grade LF2 Class 1 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Amine service Moderate wet H2S service	
1	2				P83C-003T9	Check valve ASTM A352 Grade LCC Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Amine service Moderate wet H2S service Licensor-4	
1	3				P83C-003TA	Check valve ASTM A352 Grade LCC Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Amine service Moderate wet H2S service Licensor-4	
1	4				P83C-003TB	Check valve ASTM A352 Grade LCC Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Amine service Moderate wet H2S service Licensor-4	
1	6				P83C-003TC	Check valve ASTM A352 Grade LCC Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Amine service Moderate wet H2S service Licensor-4	
1	8				P83C-003TD	Check valve ASTM A352 Grade LCC Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Amine service Moderate wet H2S service Licensor-4	
1	10				P83C-003T8	Check valve ASTM A352 Grade LCC Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Amine service Moderate wet H2S service Licensor-4	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71B-000BP	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF	

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SPECT BLANK (SB)							
OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75				P71B-000BR	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	1				P71B-000BS	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71B-000BT	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	2				P71B-000BW	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	3				P71B-000BX	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	4				P71B-000BY	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	6				P71B-000BZ	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	8				P71B-000C0	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	10				P71B-000BU	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF	

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BOLT TABLE (B_B2G404 , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-009UL		
0.75	4	0.625	75	P80S-00A01		
1	4	0.625	80	P80S-00A02		
1.5	4	0.750	95	P80S-009X9		
2	8	0.625	90	P80S-00A04		
3	8	0.750	110	P80S-00A08		
4	8	0.750	115	P80S-00A09		
6	12	0.750	125	P80S-00A0B		
8	12	0.875	140	P80S-009XJ		
10	16	1.000	160	P80S-00A3C		

BOLT TABLE (B_B2G404_781 , STUD ASME RF, OPTION CODE 781)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	80	P80S-009UN		
0.75	4	0.625	90	P80S-00A04		
1	4	0.625	95	P80S-00A05		
1.5	4	0.750	110	P80S-00A08		
2	8	0.625	110	P80S-009UV		
3	8	0.750	130	P80S-00A0C		
4	8	0.875	150	P80S-009XL		
6	12	1.000	175	P80S-009XT		
8	12	1.125	195	P80S-00A4X		
10	16	1.250	250	P80S-00CU0		

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BRANCH TABLE (T_B2G404)

RUN PIPE SIZE (in) \ BRANCH SIZE (in)	0.5	0.75	1	1.5	2	3	4	6	8	10
0.5	TS									
0.75		TS								
1		TR	TS							
1.5		TR	TR	TS						
2		L	TR	TR	TS					
3		L	L	TR	TR	TS				
4	L	L	L	L	TR	TR	TS			
6	L	L	L	L	L	TR	TR	TS		
8		L	L	L	L	L	TR	TR	TS	
10		L	L	L	L	L	TR	TR	TR	TS

TR : REDUCING TEE
TS : STRAIGHT TEE
L : OUTLET

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PIPING CLASS

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Material : LTCS
Rating : ASME CLASS 300
Flange Face : RF
C.A.(mm) : 3.00
Gasket : Spiral Wound
Service : PROCESS - WET SEVERE SOUR SERVICE SUBJECT TO NACE + HIC STD + AMINES OR CAUSTIC - STRESS RELIEVED
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
5	BOLTING CONFIRMING TO B7M / 2HM SHALL BE USED UNDER CONDITIONS (A) DIRECT EXPOSURE TO SOUR ENVIRONMENTS (B) WHEN THE BOLTING WILL BE BURIED OR INSULATED
15	BOLTING CONFIRMING TO L7M / 7M SHALL BE USED UNDER CONDITIONS (A) DIRECT EXPOSURE TO SOUR ENVIRONMENTS (B) WHEN THE BOLTING WILL BE BURIED OR INSULATED
27	PWHT OF CARBON STEEL PIPING IN WET H2S, CAUSTIC AND AMINE SERVICES SHALL BE IN ACCORDANCE WITH SECTION 10.2, 10.3, AND 10.4 OF PROJECT SPECIFICATION 3550-8440-SP-0002 MATERIALS REQUIREMENTS FOR PRESSURISED EQUIPMENT AND PIPING. FOR CAUSTIC AND AMINE SERVICE THE FOLLOWING SHALL APPLY: - PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF ALL SITE PIPING FABRICATION WELDS IS REQUIRED FOR ALL WALL THICKNESSES. FOR MODERATE AND SEVERE WET H2S SERVICE THE FOLLOWING SHALL APPLY: PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF SITE FABRICATION CIRCUMFERENTIAL OR BRANCH WELDS IS NOT REQUIRED IF WELDS ARE MULTIPASS AND IN ACCORDANCE WITH PARA 10.2.12 OF PROJECT SPECIFICATION 3550-8440-SP-0002. FOR SERVICES MEETING THE WET H2S CRITERIA AND CAUSTIC OR AMINE CRITERIA THE MORE STRINGENT PWHT REQUIREMENT SHALL GOVERN.

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
541	NPT(F) (CA,F)
781	CLASS 600 (B,F,G)
4608	VALVE WITH NIPPLES (V)

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PIPING CLASS
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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P01A-007G4	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE Severe wet H2S service Licensor-1	
1	0.75		SCH160		P01A-007G5	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE Severe wet H2S service Licensor-1	
1	1		SCH160		P01A-007G6	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE Severe wet H2S service Licensor-1	
1	1.5		SCH160		P01A-007G7	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE Severe wet H2S service Licensor-1	
1	2		XS		P01A-007G9	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE Severe wet H2S service Licensor-1	
1	3		STD		P01A-007GA	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE Severe wet H2S service Licensor-1	
1	4		STD		P01A-007GB	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE Severe wet H2S service Licensor-1	
1	6		STD		P01A-007GC	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE Severe wet H2S service Licensor-1	
1	8		STD		P01A-007GD	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE Severe wet H2S service Licensor-1	
1	10		STD		P01A-007G8	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE Severe wet H2S service Licensor-1	
1	12		SCH40		P01A-007FH	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE Severe wet H2S service Licensor-1	
1	14		SCH40		P01A-007FJ	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE Severe wet H2S service Licensor-1	
1	16		XS		P01A-007FK	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE Severe wet H2S service Licensor-1	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P02A-003Y6	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	0.75		SCH160		P02A-003Y7	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	1		SCH160		P02A-003Y8	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	1.5		SCH160		P02A-003Y9	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	2		XS		P02A-003YB	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	3		STD		P02A-003YC	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	4		STD		P02A-003YD	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	6		STD		P02A-003YE	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	8		STD		P02A-003YF	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	10		STD		P02A-003YA	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	12		SCH40		P02A-003XK	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	14		SCH40		P02A-003XL	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	16		XS		P02A-003XM	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P03A-003VV	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	0.75		SCH160		P03A-003VW	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	1		SCH160		P03A-003VX	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	1.5		SCH160		P03A-003VY	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	2		XS		P03A-003W0	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	3		STD		P03A-003W1	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	4		STD		P03A-003W2	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	6		STD		P03A-003W3	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	8		STD		P03A-003W4	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	10		STD		P03A-003VZ	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	12		SCH40		P03A-003V8	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	14		SCH40		P03A-003V9	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	16		XS		P03A-003VA	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P21A-004FM	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	0.75		SCH160		P21A-004FN	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	

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STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		SCH160		P21A-004FP	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	1.5		SCH160		P21A-004FR	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	2		XS		P21A-004FT	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	3		STD		P21A-004FU	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	4		STD		P21A-004FV	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	6		STD		P21A-004FW	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	8		STD		P21A-004FX	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	10		STD		P21A-004FS	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	12		SCH40		P21A-004F1	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	14		SCH40		P21A-004F2	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	16		XS		P21A-004F3	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75	SCH160	SCH160	P24A-00KS0	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	1.5	0.75	SCH160	SCH160	P24A-00KS1	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	1.5	1	SCH160	SCH160	P24A-00KS2	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	2	1	XS	SCH160	P24A-00KS3	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	2	1.5	XS	SCH160	P24A-00KS4	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	3	1.5	STD	SCH160	P24A-00KS5	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	3	2	STD	XS	P24A-00KS6	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	4	2	STD	XS	P24A-00KS7	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	4	3	STD	STD	P24A-00KS8	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	6	3	STD	STD	P24A-00KS9	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	6	4	STD	STD	P24A-00KSA	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	8	4	STD	STD	P24A-00KSB	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	8	6	STD	STD	P24A-00KSC	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	10	4	STD	STD	P24A-00KSD	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	10	6	STD	STD	P24A-00KSE	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	10	8	STD	STD	P24A-00KSF	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	12	6	SCH40	STD	P24A-00MUG	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	12	8	SCH40	STD	P24A-00MUH	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	12	10	SCH40	STD	P24A-00MUF	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	14	6	SCH40	STD	P24A-00MUK	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	14	8	SCH40	STD	P24A-00MUL	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	14	10	SCH40	STD	P24A-00MUJ	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	14	12	SCH40	SCH40	P24A-00KP3	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	16	6	XS	STD	P24A-00RA6	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	16	8	XS	STD	P24A-00RA7	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	16	10	XS	STD	P24A-00RA5	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	16	12	XS	SCH40	P24A-00KP7	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	16	14	XS	SCH40	P24A-00KP8	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	SCH160	P27A-00F6R	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	1	0.5	SCH160	SCH160	P27A-00F6S	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	1	0.75	SCH160	SCH160	P27A-00F6T	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	1.5	0.5	SCH160	SCH160	P27A-00F6U	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	1.5	0.75	SCH160	SCH160	P27A-00F6V	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	1.5	1	SCH160	SCH160	P27A-00F6W	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	2	0.75	XS	SCH160	P27A-00F6X	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	2	1	XS	SCH160	P27A-00F6Y	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	2	1.5	XS	SCH160	P27A-00F6Z	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	3	1.5	STD	SCH160	P27A-00F70	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	

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CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	STD	XS	P27A-00F71	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	4	1.5	STD	SCH160	P27A-00F72	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	4	2	STD	XS	P27A-00F73	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	4	3	STD	STD	P27A-00F74	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	6	3	STD	STD	P27A-00F75	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	6	4	STD	STD	P27A-00F76	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	8	4	STD	STD	P27A-00F77	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	8	6	STD	STD	P27A-00F78	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	10	4	STD	STD	P27A-00F79	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	10	6	STD	STD	P27A-00F7A	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	10	8	STD	STD	P27A-00F7B	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	12	6	SCH40	STD	P27A-00GMW	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	12	8	SCH40	STD	P27A-00GMX	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	12	10	SCH40	STD	P27A-00GMV	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	14	6	SCH40	STD	P27A-00GMZ	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	14	8	SCH40	STD	P27A-00GN0	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	14	10	SCH40	STD	P27A-00GMY	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	14	12	SCH40	SCH40	P27A-00F5A	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	16	8	XS	STD	P27A-00JGJ	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	16	10	XS	STD	P27A-00JGH	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	16	12	XS	SCH40	P27A-00F5E	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	16	14	XS	SCH40	P27A-00F5F	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	SCH160	P28A-00CAS	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	1	0.5	SCH160	SCH160	P28A-00CAT	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	1	0.75	SCH160	SCH160	P28A-00CAU	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	1.5	0.5	SCH160	SCH160	P28A-00CAV	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	1.5	0.75	SCH160	SCH160	P28A-00CAW	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	1.5	1	SCH160	SCH160	P28A-00CAX	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	2	0.75	XS	SCH160	P28A-00CAY	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	2	1	XS	SCH160	P28A-00CAZ	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	2	1.5	XS	SCH160	P28A-00CB0	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	3	1.5	STD	SCH160	P28A-00CB1	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	3	2	STD	XS	P28A-00CB2	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	4	1.5	STD	SCH160	P28A-00CB3	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	4	2	STD	XS	P28A-00CB4	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	4	3	STD	STD	P28A-00CB5	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	6	3	STD	STD	P28A-00CB6	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	6	4	STD	STD	P28A-00CB7	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	8	4	STD	STD	P28A-00CB8	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	8	6	STD	STD	P28A-00CB9	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	10	4	STD	STD	P28A-00CBA	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	10	6	STD	STD	P28A-00CBB	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	10	8	STD	STD	P28A-00CBC	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	12	6	SCH40	STD	P28A-00DW5	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	12	8	SCH40	STD	P28A-00DW6	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	12	10	SCH40	STD	P28A-00DW4	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	14	6	SCH40	STD	P28A-00DW8	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	14	8	SCH40	STD	P28A-00DW9	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	14	10	SCH40	STD	P28A-00DW7	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	

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ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14	12	SCH40	SCH40	P28A-00C9B	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	16	8	XS	STD	P28A-00FTK	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	16	10	XS	STD	P28A-00FTJ	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	16	12	XS	SCH40	P28A-00C9F	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	16	14	XS	SCH40	P28A-00C9G	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P29A-003AL	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	0.75		SCH160		P29A-003AM	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	1		SCH160		P29A-003AN	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	1.5		SCH160		P29A-003AP	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	2		XS		P29A-003AS	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	3		STD		P29A-003AT	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	4		STD		P29A-003AU	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	6		STD		P29A-003AV	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	8		STD		P29A-003AW	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	10		STD		P29A-003AR	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	12		SCH40		P29A-0039Z	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	14		SCH40		P29A-003A0	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	16		XS		P29A-003A1	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
541	0.75				P29B-0006X	Cap ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 NPT Severe wet H2S service Licensor-1	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P41A-0019K	Straight nipple ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Severe wet H2S service Licensor-1	
1	0.75		XXS		P41A-0019L	Straight nipple ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Severe wet H2S service Licensor-1	
1	1		XXS		P41A-00196	Straight nipple ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Severe wet H2S service Licensor-1	
1	1.5		XXS		P41A-00197	Straight nipple ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Severe wet H2S service Licensor-1	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2	0.75	XS	SCH160	P31B-00Y7W	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	3	0.75	STD	SCH160	P31B-00Y7X	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	4	0.75	STD	SCH160	P31B-00Y7Z	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	6	0.75	STD	SCH160	P31B-00Y82	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	8	0.75	STD	SCH160	P31B-00Y86	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	10	0.75	STD	SCH160	P31B-00Y8B	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	12	0.75	SCH40	SCH160	P31B-0107L	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	14	0.75	SCH40	SCH160	P31B-0107T	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	16	0.75	XS	SCH160	P31B-013B9	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	3	1	STD	SCH160	P31B-00Y7Y	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	4	1	STD	SCH160	P31B-00Y80	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	6	1	STD	SCH160	P31B-00Y83	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	8	1	STD	SCH160	P31B-00Y87	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	10	1	STD	SCH160	P31B-00Y8C	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	12	1	SCH40	SCH160	P31B-0107M	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	14	1	SCH40	SCH160	P31B-0107U	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	16	1	XS	SCH160	P31B-013BA	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	4	1.5	STD	SCH160	P31B-00Y81	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	6	1.5	STD	SCH160	P31B-00Y84	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	8	1.5	STD	SCH160	P31B-00Y88	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	10	1.5	STD	SCH160	P31B-00Y8D	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	12	1.5	SCH40	SCH160	P31B-0107N	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	14	1.5	SCH40	SCH160	P31B-0107V	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	16	1.5	XS	SCH160	P31B-013BB	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	6	2	STD	XS	P31B-00Y85	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Severe wet H2S service Licensor-1	

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OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	8	2	STD	XS	P31B-00Y89	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	10	2	STD	XS	P31B-00Y8E	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	12	2	SCH40	XS	P31B-0107P	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	14	2	SCH40	XS	P31B-0107W	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	16	2	XS	XS	P31B-013BC	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	8	3	STD	STD	P31B-00Y8A	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	10	3	STD	STD	P31B-00Y8F	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	12	3	SCH40	STD	P31B-0107R	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	14	3	SCH40	STD	P31B-0107X	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	16	3	XS	STD	P31B-013BD	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	12	4	SCH40	STD	P31B-0107S	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	14	4	SCH40	STD	P31B-0107Y	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	16	4	XS	STD	P31B-013BE	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Severe wet H2S service Licensor-1	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30B-0006W	Plug ASTM A350 Grade LF2 Class 1 ASME B16.11 NPT Round head Severe wet H2S service Licensor-1	
1	0.75				P30B-0006X	Plug ASTM A350 Grade LF2 Class 1 ASME B16.11 NPT Round head Severe wet H2S service Licensor-1	
1	1				P30B-0006U	Plug ASTM A350 Grade LF2 Class 1 ASME B16.11 NPT Round head Severe wet H2S service Licensor-1	
1	1.5				P30B-0006V	Plug ASTM A350 Grade LF2 Class 1 ASME B16.11 NPT Round head Severe wet H2S service Licensor-1	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P61B-00AAL	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF Severe wet H2S service Licensor-1	
1	0.75		SCH160		P61B-00AAM	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF Severe wet H2S service Licensor-1	
1	1		SCH160		P61B-00AAN	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF Severe wet H2S service Licensor-1	
1	1.5		SCH160		P61B-00AAP	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF Severe wet H2S service Licensor-1	
1	2		XS		P61B-00AAS	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF Severe wet H2S service Licensor-1	
1	3		STD		P61B-00AAT	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF Severe wet H2S service Licensor-1	
1	4		STD		P61B-00AAU	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF Severe wet H2S service Licensor-1	
1	6		STD		P61B-00AAV	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF Severe wet H2S service Licensor-1	
1	8		STD		P61B-00AAW	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF Severe wet H2S service Licensor-1	
1	10		STD		P61B-00AAR	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF Severe wet H2S service Licensor-1	
1	12		SCH40		P61B-00A94	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF Severe wet H2S service Licensor-1	
1	14		SCH40		P61B-00A95	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF Severe wet H2S service Licensor-1	
1	16		XS		P61B-00A96	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF Severe wet H2S service Licensor-1	
541	0.5				P61B-00DME	Flange NPT ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF Severe wet H2S service Licensor-1	
541	0.75				P61B-00CXP	Flange NPT ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF Severe wet H2S service Licensor-1	
781	0.5		SCH160		P61B-00AAX	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF Severe wet H2S service Licensor-1	
781	0.75		SCH160		P61B-00AAY	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF Severe wet H2S service Licensor-1	
781	1		SCH160		P61B-00AAZ	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF Severe wet H2S service Licensor-1	
781	1.5		SCH160		P61B-00AB0	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF Severe wet H2S service Licensor-1	
781	2		XS		P61B-00AB2	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF Severe wet H2S service Licensor-1	
781	3		STD		P61B-00AB3	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF Severe wet H2S service Licensor-1	
781	4		STD		P61B-00AB4	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF Severe wet H2S service Licensor-1	
781	6		STD		P61B-00AB5	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF Severe wet H2S service Licensor-1	
781	8		STD		P61B-00AB6	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF Severe wet H2S service Licensor-1	
781	10		STD		P61B-00AB1	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF Severe wet H2S service Licensor-1	
781	12		SCH40		P61B-00BDE	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF Severe wet H2S service Licensor-1	
781	14		SCH40		P61B-00BDF	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF Severe wet H2S service Licensor-1	
781	16		XS		P61B-00DP7	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF Severe wet H2S service Licensor-1	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67B-002KR	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF Severe wet H2S service Licensor-1	
1	0.75				P67B-002KS	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF Severe wet H2S service Licensor-1	
1	1				P67B-002KT	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF Severe wet H2S service Licensor-1	
1	1.5				P67B-002KU	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF Severe wet H2S service Licensor-1	
1	2				P67B-002KW	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF Severe wet H2S service Licensor-1	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3				P67B-002KX	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF Severe wet H2S service Licensor-1	
1	4				P67B-002KY	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF Severe wet H2S service Licensor-1	
1	6				P67B-002KZ	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF Severe wet H2S service Licensor-1	
1	8				P67B-002L0	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF Severe wet H2S service Licensor-1	
1	10				P67B-002KV	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF Severe wet H2S service Licensor-1	
1	12				P67B-002SV	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF Severe wet H2S service Licensor-1	
1	14				P67B-002SW	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF Severe wet H2S service Licensor-1	
1	16				P67B-0031M	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF Severe wet H2S service Licensor-1	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000FT	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000FU	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000G5	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000G6	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	6				P73T-000G7	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	8				P73T-000G8	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	10				P73T-000FX	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	12				P73T-000FY	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	14				P73T-000FZ	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	16				P73T-000G0	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	0.5				P73T-000J8	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	0.75				P73T-000J9	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1				P73T-000JA	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1.5				P73T-000JB	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	2				P73T-000JH	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	3				P73T-000JL	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	4				P73T-000JM	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	6				P73T-000JN	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	8				P73T-000JP	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	10				P73T-000JC	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	12				P73T-000JD	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	14				P73T-000JE	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	16				P73T-000JF	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-10				See Attached Bolt Table	Bolt and Nut ASTM A320 Grade L7M / A194 Grade 7M ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	12-16				See Attached Bolt Table	Bolt and Nut ASTM A320 Grade L7M / A194 Grade 7M ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
781	0.5-6				See Attached Bolt Table	Bolt and Nut ASTM A320 Grade L7M / A194 Grade 7M ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
781	8-16				See Attached Bolt Table	Bolt and Nut ASTM A320 Grade L7M / A194 Grade 7M ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81B-00214	Gate valve ASTM A350 Grade LF2 Class 1 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service Licensor-1	

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GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75				P81B-00215	Gate valve ASTM A350 Grade LF2 Class 1 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service Licensor-1	
1	1				P81B-00216	Gate valve ASTM A350 Grade LF2 Class 1 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service Licensor-1	
1	1.5				P81B-00217	Gate valve ASTM A350 Grade LF2 Class 1 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service Licensor-1	
1	2				P81C-006M5	Gate valve ASTM A352 Grade LCC Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service Licensor-1	
1	3				P81C-006M6	Gate valve ASTM A352 Grade LCC Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service Licensor-1	
1	4				P81C-006M7	Gate valve ASTM A352 Grade LCC Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service Licensor-1	
1	6				P81C-006M8	Gate valve ASTM A352 Grade LCC Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service Licensor-1	
1	8				P81C-0091Y	Gate valve ASTM A352 Grade LCC Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Severe wet H2S service Amine service Licensor-1	
1	10				P81C-006MA	Gate valve ASTM A352 Grade LCC Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Severe wet H2S service Amine service Licensor-1	
1	12				P81C-006MB	Gate valve ASTM A352 Grade LCC Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Severe wet H2S service Amine service Licensor-1	
1	14				P81C-006MC	Gate valve ASTM A352 Grade LCC Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Severe wet H2S service Amine service Licensor-1	
1	16				P81C-008RD	Gate valve ASTM A352 Grade LCC Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Severe wet H2S service Amine service Licensor-1	
4608	0.75				P81B-002X1	Gate valve ASTM A350 Grade LF2 Class 1 Class 300 API 602 BW both sides w/ nipples BE - NPT ASTM A333-6 XXS-nipple Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service Licensor-1	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82B-001JP	Globe valve ASTM A350 Grade LF2 Class 1 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service Licensor-1	
1	0.75				P82B-001JR	Globe valve ASTM A350 Grade LF2 Class 1 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service Licensor-1	
1	1				P82B-001JS	Globe valve ASTM A350 Grade LF2 Class 1 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service Licensor-1	
1	1.5				P82B-001JT	Globe valve ASTM A350 Grade LF2 Class 1 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service Licensor-1	
1	2				P82C-0036P	Globe valve ASTM A352 Grade LCC Class 300 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service Licensor-1	
1	3				P82C-0036R	Globe valve ASTM A352 Grade LCC Class 300 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service Licensor-1	
1	4				P82C-0036S	Globe valve ASTM A352 Grade LCC Class 300 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service Licensor-1	
1	6				P82C-0036T	Globe valve ASTM A352 Grade LCC Class 300 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service Licensor-1	
1	8				P82C-004D3	Globe valve ASTM A352 Grade LCC Class 300 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Severe wet H2S service Amine service Licensor-1	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83B-00189	Check valve ASTM A350 Grade LF2 Class 1 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Severe wet H2S service Amine service Licensor-1	
1	0.75				P83B-0018A	Check valve ASTM A350 Grade LF2 Class 1 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Severe wet H2S service Amine service Licensor-1	
1	1				P83B-0018B	Check valve ASTM A350 Grade LF2 Class 1 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Severe wet H2S service Amine service Licensor-1	
1	1.5				P83B-0018C	Check valve ASTM A350 Grade LF2 Class 1 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Severe wet H2S service Amine service Licensor-1	
1	2				P83C-00331	Check valve ASTM A352 Grade LCC Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service Amine service Licensor-1	
1	3				P83C-00332	Check valve ASTM A352 Grade LCC Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service Amine service Licensor-1	
1	4				P83C-00333	Check valve ASTM A352 Grade LCC Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service Amine service Licensor-1	
1	6				P83C-00334	Check valve ASTM A352 Grade LCC Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service Amine service Licensor-1	
1	8				P83C-00335	Check valve ASTM A352 Grade LCC Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service Amine service Licensor-1	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71B-000DC	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service Licensor-1	
1	0.75				P71B-000DD	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service Licensor-1	
1	1				P71B-000DE	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service Licensor-1	
1	1.5				P71B-000DF	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service Licensor-1	
1	2				P71B-000DH	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service Licensor-1	

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SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3				P71B-000DJ	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service Licensor-1	
1	4				P71B-000DK	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service Licensor-1	
1	6				P71B-000DL	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service Licensor-1	
1	8				P71B-000DM	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service Licensor-1	
1	10				P71B-000DG	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service Licensor-1	
1	12				P71B-000FY	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service Licensor-1	

PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000NX	Paddle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service Licensor-1	
1	16				P72B-000Y5	Paddle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service Licensor-1	

PADDLE SPACER (PS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000NY	Paddle spacer ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service Licensor-1	
1	16				P72B-000Y4	Paddle spacer ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service Licensor-1	

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PIPING CLASS
B2G501 REV NO. 2

BOLT TABLE (B_B2G501 , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-009UL		
0.75	4	0.625	75	P80S-00A01		
1	4	0.625	80	P80S-00A02		
1.5	4	0.750	95	P80S-009X9		
2	8	0.625	90	P80S-00A04		
3	8	0.750	110	P80S-00A08		
4	8	0.750	115	P80S-00A09		
6	12	0.750	125	P80S-00A0B		
8	12	0.875	140	P80S-009XJ		
10	16	1.000	160	P80S-00A3C		
12	16	1.125	175	P80S-00A4T		
14	20	1.125	180	P80S-00A4U		
16	20	1.250	190	P80S-00CTM		

BOLT TABLE (B_B2G501_781 , STUD ASME RF, OPTION CODE 781)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	80	P80S-009UN		
0.75	4	0.625	90	P80S-00A04		
1	4	0.625	95	P80S-00A05		
1.5	4	0.750	110	P80S-00A08		
2	8	0.625	110	P80S-009UV		
3	8	0.750	130	P80S-00A0C		
4	8	0.875	150	P80S-009XL		
6	12	1.000	175	P80S-009XT		
8	12	1.125	195	P80S-00A4X		
10	16	1.250	250	P80S-00CU0		
12	20	1.250	255	P80S-00CU1		
14	20	1.375	270	P80S-00D0L		
16	20	1.500	295	P80S-00D5B		

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PIPING CLASS

B2G501 REV NO. 2

BRANCH TABLE (T_B2G501)

RUN PIPE SIZE (in) \ BRANCH SIZE (in)	0.5	0.75	1	1.5	2	3	4	6	8	10	12	14	16
0.5	TS												
0.75		TS											
1		TR	TS										
1.5		TR	TR	TS									
2		L	TR	TR	TS								
3		L	L	TR	TR	TS							
4	L	L	L	L	TR	TR	TS						
6	L	L	L	L	L	TR	TR	TS					
8		L	L	L	L	L	TR	TR	TS				
10		L	L	L	L	L	TR	TR	TR	TS			
12		L	L	L	L	L	L	TR	TR	TR	TS		
14		L	L	L	L	L	L	TR	TR	TR	TR	TS	
16		L	L	L	L	L	L	TR	TR	TR	TR	TR	TS

TR : REDUCING TEE
L : OUTLET
TS : STRAIGHT TEE

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PIPING CLASS

B2GH04 REV NO. 2

Material : LTCS
Rating : ASME CLASS 300
Flange Face : RF
C.A.(mm) : 3.00
Gasket : Spiral Wound
Service : PROCESS - HYDROGEN OR HYDROGEN RICH HYDROCARBON MIXTURES
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
2	USE OF SOFT SEATED BALL, PLUG AND BUTTERFLY VALVES SHALL BE LIMITED TO MAXIMUM OF 204DEGC (400DEGF)

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
541	NPT(F) (CA,L)
714	SW - NPT(F) (V)
781	CLASS 600 (B,F,G)

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PIPING CLASS
B2GH04 REV NO. 2

PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P01A-001Z1	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE	
1	0.75		SCH160		P01A-0016P	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE	
1	1		SCH160		P01A-0011Z	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE	
1	1.5		SCH160		P01A-00127	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE	
1	2		XS		P01A-000XB	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	3		XS		P01A-000XG	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	4		STD		P01A-000YT	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	6		STD		P01A-000Z2	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	8		STD		P01A-000Z8	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	10		STD		P01A-000XH	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	12		SCH40		P01A-0018G	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	14		SCH40		P01A-0019M	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	16		STD		P01A-000Y8	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	18		STD		P01A-0042P	Pipe ASTM A671 Grade CC60 Class 22 EFW ASME B36.10M/B36.19M BE	
1	20		XS		P01A-0091U	Pipe ASTM A671 Grade CC60 Class 22 EFW ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P02B-0002X	90 degree elbow ASTM A350 Grade LF2 Class 1 Class 9000 ASME B16.11 SW	
1	0.75				P02B-0001W	90 degree elbow ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW	
1	1				P02B-0001X	90 degree elbow ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW	
1	1.5				P02B-0001Y	90 degree elbow ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW	
1	2		XS		P02A-000B9	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	3		XS		P02A-000BC	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	4		STD		P02A-000E9	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	6		STD		P02A-000EC	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	8		STD		P02A-000EF	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	10		STD		P02A-000EL	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	12		SCH40		P02A-000JZ	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	14		SCH40		P02A-000K0	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	16		STD		P02A-000E1	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	18		STD		P02A-002HN	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	20		XS		P02A-001K3	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P03B-0002T	45 degree elbow ASTM A350 Grade LF2 Class 1 Class 9000 ASME B16.11 SW	
1	0.75				P03B-0001T	45 degree elbow ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW	
1	1				P03B-0001U	45 degree elbow ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW	
1	1.5				P03B-0001V	45 degree elbow ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW	
1	2		XS		P03A-0009Y	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	3		XS		P03A-000A0	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	4		STD		P03A-000C6	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	6		STD		P03A-000C9	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	8		STD		P03A-000CB	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	10		STD		P03A-000BL	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	12		SCH40		P03A-000GX	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	14		SCH40		P03A-000GY	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	16		STD		P03A-000BY	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	18		STD		P03A-002F6	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	20		XS		P03A-001E7	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P21B-0002W	Straight tee ASTM A350 Grade LF2 Class 1 Class 9000 ASME B16.11 SW	
1	0.75				P21B-0001T	Straight tee ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW	
1	1				P21B-0001U	Straight tee ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW	
1	1.5				P21B-0001V	Straight tee ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW	
1	2		XS		P21A-001BR	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	

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STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3		XS		P21A-001BT	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	4		STD		P21A-001FF	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	6		STD		P21A-001FJ	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	8		STD		P21A-001FL	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10		STD		P21A-001F0	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12		SCH40		P21A-00239	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14		SCH40		P21A-0023A	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16		STD		P21A-001F7	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	18		STD		P21A-001F1	Straight tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	20		XS		P21A-001ZX	Straight tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75			P24B-0003M	Reducing tee ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW	
1	1.5	0.75			P24B-0003P	Reducing tee ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW	
1	1.5	1			P24B-0003R	Reducing tee ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW	
1	2	1	XS	SCH160	P24A-00GMD	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	2	1.5	XS	SCH160	P24A-005NK	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	3	1.5	XS	SCH160	P24A-00GMW	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	3	2	XS	XS	P24A-00270	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	4	2	STD	XS	P24A-006CW	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	4	3	STD	XS	P24A-00M5R	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	6	3	STD	XS	P24A-00M5S	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	6	4	STD	STD	P24A-00289	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	8	4	STD	STD	P24A-0028B	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	8	6	STD	STD	P24A-0028T	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	4	STD	STD	P24A-002K7	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	6	STD	STD	P24A-002AN	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	8	STD	STD	P24A-0028W	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	6	SCH40	STD	P24A-00M0Y	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	8	SCH40	STD	P24A-00674	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	10	SCH40	STD	P24A-00673	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	6	SCH40	STD	P24A-00M0Z	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	8	SCH40	STD	P24A-00M10	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	10	SCH40	STD	P24A-00675	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	12	SCH40	SCH40	P24A-0036F	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	6	STD	STD	P24A-002PL	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	8	STD	STD	P24A-002R6	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	10	STD	STD	P24A-0028N	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	12	STD	SCH40	P24A-00NEM	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	14	STD	SCH40	P24A-00NEN	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	18	8	STD	STD	P24A-002RC	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	18	10	STD	STD	P24A-0028J	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	18	12	STD	SCH40	P24A-00NEP	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	18	14	STD	SCH40	P24A-00NER	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	18	16	STD	STD	P24A-0029U	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	20	8	XS	STD	P24A-002U0	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	20	10	XS	STD	P24A-002LH	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	20	12	XS	SCH40	P24A-00PY9	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	20	14	XS	SCH40	P24A-00PYA	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	20	16	XS	STD	P24A-00PYB	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	20	18	XS	STD	P24A-00PYC	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	XS	XS	P27A-0018T	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	4	2	STD	XS	P27A-003PN	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	4	3	STD	XS	P27A-00G4P	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	6	3	STD	XS	P27A-00G4R	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	

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CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	6	4	STD	STD	P27A-00181	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	8	4	STD	STD	P27A-0017P	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	8	6	STD	STD	P27A-001B9	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	4	STD	STD	P27A-0017X	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	6	STD	STD	P27A-001BV	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	8	STD	STD	P27A-001D6	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	6	SCH40	STD	P27A-00G2V	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	8	SCH40	STD	P27A-0047Z	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	10	SCH40	STD	P27A-0047X	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	6	SCH40	STD	P27A-00G2W	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	8	SCH40	STD	P27A-00482	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	10	SCH40	STD	P27A-00480	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	12	SCH40	SCH40	P27A-00224	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	8	STD	STD	P27A-001EG	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	10	STD	STD	P27A-001BD	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	12	STD	SCH40	P27A-00H3Z	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	14	STD	SCH40	P27A-00H40	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	18	10	STD	STD	P27A-001B6	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	18	12	STD	SCH40	P27A-00H43	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	18	14	STD	SCH40	P27A-00H44	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	18	16	STD	STD	P27A-001EF	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	20	12	XS	SCH40	P27A-00J83	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	20	14	XS	SCH40	P27A-00J84	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	20	16	XS	STD	P27A-00J85	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	20	18	XS	STD	P27A-00J86	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	XS	XS	P28A-00199	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	4	2	STD	XS	P28A-003PM	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	4	3	STD	XS	P28A-00DBN	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	6	3	STD	XS	P28A-00DBP	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	6	4	STD	STD	P28A-001BL	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	8	4	STD	STD	P28A-001B9	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	8	6	STD	STD	P28A-001CL	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	4	STD	STD	P28A-001BF	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	6	STD	STD	P28A-001CK	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	8	STD	STD	P28A-001E4	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	6	SCH40	STD	P28A-00D93	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	8	SCH40	STD	P28A-0047R	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	10	SCH40	STD	P28A-0047N	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	6	SCH40	STD	P28A-00D94	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	8	SCH40	STD	P28A-0047U	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	10	SCH40	STD	P28A-0047S	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	12	SCH40	SCH40	P28A-0021T	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	8	STD	STD	P28A-001FK	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	10	STD	STD	P28A-001C7	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	12	STD	SCH40	P28A-00EB6	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	14	STD	SCH40	P28A-00EB7	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	18	10	STD	STD	P28A-001BT	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	18	12	STD	SCH40	P28A-00EBA	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	18	14	STD	SCH40	P28A-00EBB	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	18	16	STD	STD	P28A-001FG	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	20	12	XS	SCH40	P28A-00FJ4	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	20	14	XS	SCH40	P28A-00FJ5	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	20	16	XS	STD	P28A-00FJ6	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	20	18	XS	STD	P28A-00FJ7	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	

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CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P29B-0005A	Cap ASTM A350 Grade LF2 Class 1 Class 9000 ASME B16.11 SW	
1	0.75				P29B-0002K	Cap ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW	
1	1				P29B-0002L	Cap ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW	
1	1.5				P29B-0002H	Cap ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW	
1	2		XS		P29A-000BG	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	3		XS		P29A-0009U	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	4		STD		P29A-000AH	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	6		STD		P29A-000DE	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	8		STD		P29A-000DH	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10		STD		P29A-000B0	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12		SCH40		P29A-000GW	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14		SCH40		P29A-000GX	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16		STD		P29A-000BC	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	18		STD		P29A-000BH	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	20		XS		P29A-000CJ	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
541	0.75				P29B-00015	Cap ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P41A-000DJ	Straight nipple ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		XXS		P41A-000DK	Straight nipple ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		XXS		P41A-000DZ	Straight nipple ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		XXS		P41A-000E0	Straight nipple ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

CON SWAGED NIPPLE (SNC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	XXS	P42A-0009Z	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	SCH160	XXS	P42A-000A0	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	SCH160	SCH160	P42A-000A1	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	SCH160	XXS	P42A-000A2	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	SCH160	SCH160	P42A-000A3	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	SCH160	SCH160	P42A-000A4	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	XS	XXS	P42A-0010J	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	XS	SCH160	P42A-000L2	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	XS	SCH160	P42A-000L3	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	XS	SCH160	P42A-000L4	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	XS	SCH160	P42A-000LK	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 BE(L) - PE(S)	

ECC SWAGED NIPPLE (SNE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	XXS	P43A-000HB	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	SCH160	XXS	P43A-000HC	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	SCH160	SCH160	P43A-000D4	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	SCH160	XXS	P43A-000HD	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	SCH160	SCH160	P43A-000D6	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	SCH160	SCH160	P43A-000D7	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	XS	XXS	P43A-000MC	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	XS	SCH160	P43A-000D9	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	XS	SCH160	P43A-000DA	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	XS	SCH160	P43A-000DB	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	XS	SCH160	P43A-000E4	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 BE(L) - PE(S)	

COUPLING (CPS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P47B-00036	Coupling ASTM A350 Grade LF2 Class 1 Class 9000 ASME B16.11 SW - SW	
1	0.75				P47B-0001T	Coupling ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW - SW	
1	1				P47B-0001U	Coupling ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW - SW	
1	1.5				P47B-0001V	Coupling ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW - SW	

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OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5 - 2.5	0.75			P31B-0138C	Outlet ASTM A350 Grade LF2 Class 1 Class 6000 MSS SP-97 SW	
1	3 - 10	0.75			P31B-007DK	Outlet ASTM A350 Grade LF2 Class 1 Class 6000 MSS SP-97 SW	
1	12 and larger	0.75			P31B-0138B	Outlet ASTM A350 Grade LF2 Class 1 Class 6000 MSS SP-97 SW	
1	3 - 10	1			P31B-007BL	Outlet ASTM A350 Grade LF2 Class 1 Class 6000 MSS SP-97 SW	
1	12 and larger	1			P31B-0138D	Outlet ASTM A350 Grade LF2 Class 1 Class 6000 MSS SP-97 SW	
1	4 - 5	1.5			P31B-00514	Outlet ASTM A350 Grade LF2 Class 1 Class 6000 MSS SP-97 SW	
1	6 - 8	1.5			P31B-007B0	Outlet ASTM A350 Grade LF2 Class 1 Class 6000 MSS SP-97 SW	
1	10 - 18	1.5			P31B-007BC	Outlet ASTM A350 Grade LF2 Class 1 Class 6000 MSS SP-97 SW	
1	20 and larger	1.5			P31B-0138E	Outlet ASTM A350 Grade LF2 Class 1 Class 6000 MSS SP-97 SW	
541	1	0.75			P31B-004HD	Outlet ASTM A350 Grade LF2 Class 1 Class 6000 MSS SP-97 NPT	
541	1.5 - 2.5	0.75			P31B-0138F	Outlet ASTM A350 Grade LF2 Class 1 Class 6000 MSS SP-97 NPT	
541	3 - 10	0.75			P31B-007CY	Outlet ASTM A350 Grade LF2 Class 1 Class 6000 MSS SP-97 NPT	
541	12 and larger	0.75			P31B-0138G	Outlet ASTM A350 Grade LF2 Class 1 Class 6000 MSS SP-97 NPT	
1	6	2	STD	XS	P31B-00MFB	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	8	2	STD	XS	P31B-00PAW	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	10	2	STD	XS	P31B-00TPH	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	12	2	SCH40	XS	P31B-00ZG2	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	14	2	SCH40	XS	P31B-00ZG5	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	16	2	STD	XS	P31B-00TPK	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	18	2	STD	XS	P31B-00TPL	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	20	2	XS	XS	P31B-00VYT	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	8	3	STD	XS	P31B-00M9R	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	10	3	STD	XS	P31B-00MBH	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	12	3	SCH40	XS	P31B-00MJB	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	14	3	SCH40	XS	P31B-00MJD	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	16	3	STD	XS	P31B-010SV	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	18	3	STD	XS	P31B-00ME5	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	20	3	XS	XS	P31B-00MEA	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	12	4	SCH40	STD	P31B-00ZG4	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	14	4	SCH40	STD	P31B-00ZG7	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	16	4	STD	STD	P31B-00E8A	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	18	4	STD	STD	P31B-00E8D	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	20	4	XS	STD	P31B-00E9B	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	18	6	STD	STD	P31B-00E85	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	20	6	XS	STD	P31B-00E93	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30B-0002V	Plug ASTM A350 Grade LF2 Class 1 ASME B16.11 NPT Round head	
1	0.75				P30B-0002W	Plug ASTM A350 Grade LF2 Class 1 ASME B16.11 NPT Round head	
1	1				P30B-0002X	Plug ASTM A350 Grade LF2 Class 1 ASME B16.11 NPT Round head	
1	1.5				P30B-0002Y	Plug ASTM A350 Grade LF2 Class 1 ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P61B-001D1	Flange SW ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	0.75		SCH160		P61B-001D5	Flange SW ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	1		SCH160		P61B-001GC	Flange SW ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	1.5		SCH160		P61B-001GZ	Flange SW ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	2		XS		P61B-003R8	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	3		XS		P61B-003SG	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	4		STD		P61B-001N0	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	6		STD		P61B-001NM	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	8		STD		P61B-001NZ	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	10		STD		P61B-001L8	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	12		SCH40		P61B-001NV	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	14		SCH40		P61B-0021C	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	16		STD		P61B-001LM	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	18		STD		P61B-001MF	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	20		XS		P61B-001K7	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
781	0.5		XXS		P61B-001Y9	Flange SW ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
781	0.75		SCH160		P61B-001YD	Flange SW ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
781	1		SCH160		P61B-001YU	Flange SW ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
781	1.5		SCH160		P61B-001XN	Flange SW ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
781	2		XS		P61B-001FN	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
781	3		XS		P61B-001K0	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
781	4		STD		P61B-001VT	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
781	6		STD		P61B-001JV	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
781	8		STD		P61B-001KE	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
781	10		STD		P61B-001JH	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
781	12		SCH40		P61B-003WP	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
781	14		SCH40		P61B-008YZ	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
781	16		STD		P61B-003H9	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
781	18		STD		P61B-003H7	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
781	20		XS		P61B-001S9	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67B-000NN	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	0.75				P67B-000MV	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	1				P67B-000MW	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	1.5				P67B-000MX	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	2				P67B-000N3	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	3				P67B-000N6	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	4				P67B-000N7	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	6				P67B-000N8	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	8				P67B-000N9	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	10				P67B-000MY	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	12				P67B-000MZ	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	14				P67B-000N0	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	16				P67B-000N1	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	18				P67B-000N2	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	20				P67B-000N4	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000FT	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000FU	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000G5	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000G6	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	6				P73T-000G7	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	8				P73T-000G8	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	10				P73T-000FX	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	12				P73T-000FY	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	14				P73T-000FZ	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	16				P73T-000G0	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	18				P73T-000G1	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	20				P73T-000G3	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	0.5				P73T-000J8	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

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GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
781	0.75				P73T-000J9	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1				P73T-000JA	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1.5				P73T-000JB	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	2				P73T-000JH	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	3				P73T-000JL	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	4				P73T-000JM	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	6				P73T-000JN	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	8				P73T-000JP	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	10				P73T-000JC	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	12				P73T-000JD	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	14				P73T-000JE	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	16				P73T-000JF	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	18				P73T-000JG	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	20				P73T-000JJ	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-10				See Attached Bolt Table	Bolt and Nut ASTM A320 Grade L7 / A194 Grade 4 ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	12-20				See Attached Bolt Table	Bolt and Nut ASTM A320 Grade L7 / A194 Grade 4 ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
781	0.5-6				See Attached Bolt Table	Bolt and Nut ASTM A320 Grade L7 / A194 Grade 4 ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
781	8-20				See Attached Bolt Table	Bolt and Nut ASTM A320 Grade L7 / A194 Grade 4 ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81B-001KB	Gate valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	0.75				P81B-001KC	Gate valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	1				P81B-001KD	Gate valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	1.5				P81B-001KE	Gate valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	2				P81C-005AG	Gate valve ASTM A352 Grade LCC Class 300 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	3				P81C-005AH	Gate valve ASTM A352 Grade LCC Class 300 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	4				P81C-005AJ	Gate valve ASTM A352 Grade LCC Class 300 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	6				P81C-005AK	Gate valve ASTM A352 Grade LCC Class 300 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	8				P81C-0091H	Gate valve ASTM A352 Grade LCC Class 300 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated	
1	10				P81C-008PX	Gate valve ASTM A352 Grade LCC Class 300 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated	
1	12				P81C-008PY	Gate valve ASTM A352 Grade LCC Class 300 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated	
1	14				P81C-008PZ	Gate valve ASTM A352 Grade LCC Class 300 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated	
1	16				P81C-008R0	Gate valve ASTM A352 Grade LCC Class 300 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated	
1	18				P81C-008R1	Gate valve ASTM A352 Grade LCC Class 300 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated	
1	20				P81C-008R2	Gate valve ASTM A352 Grade LCC Class 300 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated	
714	0.5				P81B-002SC	Gate valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW - NPT Trim number 8 BB-BG-OS&Y Handwheel operated	
714	0.75				P81B-002FE	Gate valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW - NPT Trim number 8 BB-BG-OS&Y Handwheel operated	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82B-0019P	Globe valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	0.75				P82B-0019R	Globe valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	

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GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P82B-0019S	Globe valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	1.5				P82B-0019T	Globe valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	2				P82C-002KK	Globe valve ASTM A352 Grade LCC Class 300 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	3				P82C-002KL	Globe valve ASTM A352 Grade LCC Class 300 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	4				P82C-002KM	Globe valve ASTM A352 Grade LCC Class 300 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	6				P82C-002KN	Globe valve ASTM A352 Grade LCC Class 300 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	8				P82C-004CS	Globe valve ASTM A352 Grade LCC Class 300 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83B-0011G	Check valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover	
1	0.75				P83B-0011H	Check valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover	
1	1				P83B-0011J	Check valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover	
1	1.5				P83B-0011K	Check valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover	
1	2				P83C-002MV	Check valve ASTM A352 Grade LCC Class 300 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	3				P83C-002MW	Check valve ASTM A352 Grade LCC Class 300 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	4				P83C-002MX	Check valve ASTM A352 Grade LCC Class 300 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	6				P83C-002MY	Check valve ASTM A352 Grade LCC Class 300 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	8				P83C-003T6	Check valve ASTM A352 Grade LCC Class 300 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	10				P83C-003T5	Check valve ASTM A352 Grade LCC Class 300 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71B-000BP	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	0.75				P71B-000BR	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	1				P71B-000BS	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71B-000BT	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	2				P71B-000BW	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	3				P71B-000BX	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	4				P71B-000BY	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	6				P71B-000BZ	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	8				P71B-000C0	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	10				P71B-000BU	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	12				P71B-000BV	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF	

PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000G1	Paddle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	16				P72B-000G2	Paddle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	18				P72B-000G3	Paddle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	20				P72B-000G4	Paddle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF	

PADDLE SPACER (PS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000G6	Paddle spacer ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	16				P72B-000G7	Paddle spacer ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	18				P72B-000G8	Paddle spacer ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	20				P72B-000G9	Paddle spacer ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF	

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BOLT TABLE (B_B2GH04 , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-003VL		
0.75	4	0.625	75	P80S-003Z2		
1	4	0.625	80	P80S-003Z3		
1.5	4	0.750	95	P80S-0045X		
2	8	0.625	90	P80S-003Z5		
3	8	0.750	110	P80S-003Z9		
4	8	0.750	115	P80S-003ZA		
6	12	0.750	125	P80S-003ZC		
8	12	0.875	140	P80S-00466		
10	16	1.000	160	P80S-004BH		
12	16	1.125	175	P80S-004J7		
14	20	1.125	180	P80S-004J8		
16	20	1.250	190	P80S-004LJ		
18	24	1.250	200	P80S-004LL		
20	24	1.250	210	P80S-004LN		

BOLT TABLE (B_B2GH04_781 , STUD ASME RF, OPTION CODE 781)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	80	P80S-003VN		
0.75	4	0.625	90	P80S-003Z5		
1	4	0.625	95	P80S-003Z6		
1.5	4	0.750	110	P80S-003Z9		
2	8	0.625	110	P80S-003VV		
3	8	0.750	130	P80S-003ZD		
4	8	0.875	150	P80S-00468		
6	12	1.000	175	P80S-004BM		
8	12	1.125	195	P80S-004JB		
10	16	1.250	250	P80S-004LX		
12	20	1.250	255	P80S-004LY		
14	20	1.375	270	P80S-003M5		
16	20	1.500	295	P80S-003D1		
18	20	1.625	320	P80S-00CB3		
20	24	1.625	335	P80S-00CB6		

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BRANCH TABLE (T_B2GH04)

RUN PIPE SIZE (in) \ BRANCH SIZE (in)	0.5	0.75	1	1.5	2	3	4	6	8	10	12	14	16	18	20
0.5	TS														
0.75		TS													
1		TR	TS												
1.5		TR	TR	TS											
2		L	TR	TR	TS										
3		L	L	TR	TR	TS									
4	L	L	L	L	TR	TR	TS								
6	L	L	L	L	L	TR	TR	TS							
8		L	L	L	L	L	TR	TR	TS						
10		L	L	L	L	L	TR	TR	TR	TS					
12		L	L	L	L	L	L	TR	TR	TR	TS				
14		L	L	L	L	L	L	TR	TR	TR	TR	TS			
16		L	L	L	L	L	L	TR	TR	TR	TR	TR	TS		
18		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TS	
20		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TR	TS

L : OUTLET
TR : REDUCING TEE
TS : STRAIGHT TEE

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Material : LTCS
Rating : ASME CLASS 300
Flange Face : RF
C.A.(mm) : 3.00
Gasket : Spiral Wound
Service : CAUSTIC SERVICE
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
9	ALL ACID AND CAUSTIC SERVICE LINE FLANGED JOINTS SHALL BE COVERED WITH SAFETY SPLASH GUARDS
27	PWHT OF CARBON STEEL PIPING IN WET H2S, CAUSTIC AND AMINE SERVICES SHALL BE IN ACCORDANCE WITH SECTION 10.2, 10.3, AND 10.4 OF PROJECT SPECIFICATION 3550-8440-SP-0002 MATERIALS REQUIREMENTS FOR PRESSURISED EQUIPMENT AND PIPING. FOR CAUSTIC AND AMINE SERVICE THE FOLLOWING SHALL APPLY: - PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF ALL SITE PIPING FABRICATION WELDS IS REQUIRED FOR ALL WALL THICKNESSES. FOR MODERATE AND SEVERE WET H2S SERVICE THE FOLLOWING SHALL APPLY: PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF SITE FABRICATION CIRCUMFERENTIAL OR BRANCH WELDS IS NOT REQUIRED IF WELDS ARE MULTIPASS AND IN ACCORDANCE WITH PARA 10.2.12 OF PROJECT SPECIFICATION 3550-8440-SP-0002. FOR SERVICES MEETING THE WET H2S CRITERIA AND CAUSTIC OR AMINE CRITERIA THE MORE STRINGENT PWHT REQUIREMENT SHALL GOVERN.

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
24	FULL PORT (Q)
541	NPT(F) (CA,F)
781	CLASS 600 (B,F,G)
4608	VALVE WITH NIPPLES (V)

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PIPING CLASS
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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P01A-001Z1	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE	
1	0.75		SCH160		P01A-0016P	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE	
1	1		SCH160		P01A-0011Z	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE	
1	1.5		SCH160		P01A-00127	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE	
1	2		XS		P01A-000XB	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	3		XS		P01A-000XG	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	4		STD		P01A-000YT	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	6		STD		P01A-000Z2	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	8		STD		P01A-000Z8	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	10		STD		P01A-000XH	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	12		SCH40		P01A-0018G	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	14		SCH40		P01A-0019M	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	16		XS		P01A-0011L	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	18		SCH30		P01A-009KH	Pipe ASTM A671 Grade CC60 Class 22 EFW ASME B36.10M/B36.19M BE	
1	20		XS		P01A-0091U	Pipe ASTM A671 Grade CC60 Class 22 EFW ASME B36.10M/B36.19M BE	
1	24		XS		P01A-0091V	Pipe ASTM A671 Grade CC60 Class 22 EFW ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P02A-002HP	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	0.75		SCH160		P02A-002GE	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	1		SCH160		P02A-002GF	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	1.5		SCH160		P02A-002GG	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	2		XS		P02A-000B9	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	3		XS		P02A-000BC	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	4		STD		P02A-000E9	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	6		STD		P02A-000EC	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	8		STD		P02A-000EF	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	10		STD		P02A-000EL	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	12		SCH40		P02A-000JZ	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	14		SCH40		P02A-000K0	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	16		XS		P02A-000FJ	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	18		SCH30		P02A-002HU	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	20		XS		P02A-001K3	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	24		XS		P02A-001K4	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P03A-002F7	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	0.75		SCH160		P03A-002E1	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	1		SCH160		P03A-002E2	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	1.5		SCH160		P03A-002E3	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	2		XS		P03A-0009Y	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	3		XS		P03A-000A0	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	4		STD		P03A-000C6	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	6		STD		P03A-000C9	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	8		STD		P03A-000CB	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	10		STD		P03A-000BL	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	12		SCH40		P03A-000GX	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	14		SCH40		P03A-000GY	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	16		XS		P03A-000DJ	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	18		SCH30		P03A-002FB	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	20		XS		P03A-001E7	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	24		XS		P03A-001E8	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P21A-003GA	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	0.75		SCH160		P21A-003EP	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	

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STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		SCH160		P21A-003ER	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	1.5		SCH160		P21A-003ES	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	2		XS		P21A-001BR	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	3		XS		P21A-001BT	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	4		STD		P21A-001FF	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	6		STD		P21A-001FJ	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	8		STD		P21A-001FL	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10		STD		P21A-001F0	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12		SCH40		P21A-00239	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14		SCH40		P21A-0023A	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16		XS		P21A-001ZZ	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	18		SCH30		P21A-0057L	Straight tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	20		XS		P21A-001ZX	Straight tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	24		XS		P21A-001ZY	Straight tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75	SCH160	SCH160	P24A-00GC7	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	1.5	0.75	SCH160	SCH160	P24A-00GC9	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	1.5	1	SCH160	SCH160	P24A-00GCA	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	2	1	XS	SCH160	P24A-00GMD	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	2	1.5	XS	SCH160	P24A-005NK	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	3	1.5	XS	SCH160	P24A-00GMW	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	3	2	XS	XS	P24A-00270	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	4	2	STD	XS	P24A-006CW	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	4	3	STD	XS	P24A-00M5R	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	6	3	STD	XS	P24A-00M5S	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	6	4	STD	STD	P24A-00289	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	8	4	STD	STD	P24A-0028B	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	8	6	STD	STD	P24A-0028T	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	4	STD	STD	P24A-002K7	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	6	STD	STD	P24A-002AN	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	8	STD	STD	P24A-0028W	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	6	SCH40	STD	P24A-00M0Y	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	8	SCH40	STD	P24A-00674	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	10	SCH40	STD	P24A-00673	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	6	SCH40	STD	P24A-00M0Z	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	8	SCH40	STD	P24A-00M10	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	10	SCH40	STD	P24A-00675	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	12	SCH40	SCH40	P24A-0036F	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	6	XS	STD	P24A-00J3P	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	8	XS	STD	P24A-002RN	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	10	XS	STD	P24A-002LL	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	12	XS	SCH40	P24A-00676	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	14	XS	SCH40	P24A-00677	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	18	8	SCH30	STD	P24A-00RAE	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	18	10	SCH30	STD	P24A-00RAA	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	18	12	SCH30	SCH40	P24A-00RAB	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	18	14	SCH30	SCH40	P24A-00RAC	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	18	16	SCH30	XS	P24A-00RAD	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	20	8	XS	STD	P24A-002U0	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	20	10	XS	STD	P24A-002LH	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	20	12	XS	SCH40	P24A-00PY9	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	20	14	XS	SCH40	P24A-00PYA	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	20	16	XS	XS	P24A-002R3	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	20	18	XS	SCH30	P24A-00RAF	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	24	10	XS	STD	P24A-002LF	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	24	12	XS	SCH40	P24A-00RAG	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	24	14	XS	SCH40	P24A-00RAH	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	

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REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	24	16	XS	XS	P24A-002R2	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	24	18	XS	SCH30	P24A-00RAJ	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	24	20	XS	XS	P24A-002SZ	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	XXS	P27A-00BFU	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	1	0.5	SCH160	XXS	P27A-00BFV	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	1	0.75	SCH160	SCH160	P27A-00BA1	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	1.5	0.5	SCH160	XXS	P27A-00BFW	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	1.5	0.75	SCH160	SCH160	P27A-00BA3	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	1.5	1	SCH160	SCH160	P27A-00BA4	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	2	0.75	XS	SCH160	P27A-003S6	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	2	1	XS	SCH160	P27A-003S7	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	2	1.5	XS	SCH160	P27A-003S8	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	3	1.5	XS	SCH160	P27A-0047N	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	3	2	XS	XS	P27A-0018T	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	4	1.5	STD	SCH160	P27A-003SA	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	4	2	STD	XS	P27A-003PN	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	4	3	STD	XS	P27A-00G4P	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	6	3	STD	XS	P27A-00G4R	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	6	4	STD	STD	P27A-00181	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	8	4	STD	STD	P27A-0017P	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	8	6	STD	STD	P27A-001B9	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	4	STD	STD	P27A-0017X	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	6	STD	STD	P27A-001BV	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	8	STD	STD	P27A-001D6	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	6	SCH40	STD	P27A-00G2V	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	8	SCH40	STD	P27A-0047Z	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	10	SCH40	STD	P27A-0047X	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	6	SCH40	STD	P27A-00G2W	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	8	SCH40	STD	P27A-00482	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	10	SCH40	STD	P27A-00480	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	12	SCH40	SCH40	P27A-00224	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	8	XS	STD	P27A-001SR	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	10	XS	STD	P27A-001NX	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	12	XS	SCH40	P27A-00483	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	14	XS	SCH40	P27A-00484	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	18	10	SCH30	STD	P27A-00JGL	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	18	12	SCH30	SCH40	P27A-00JGM	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	18	14	SCH30	SCH40	P27A-00JGN	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	18	16	SCH30	XS	P27A-00JGP	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	20	12	XS	SCH40	P27A-00J83	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	20	14	XS	SCH40	P27A-00J84	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	20	16	XS	XS	P27A-001RM	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	20	18	XS	SCH30	P27A-00JGR	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	24	16	XS	XS	P27A-001P1	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	24	18	XS	SCH30	P27A-00JGS	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	24	20	XS	XS	P27A-001RJ	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	XXS	P28A-008EA	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	1	0.5	SCH160	XXS	P28A-008EB	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	1	0.75	SCH160	SCH160	P28A-00841	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	1.5	0.5	SCH160	XXS	P28A-008EC	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	1.5	0.75	SCH160	SCH160	P28A-00843	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	1.5	1	SCH160	SCH160	P28A-00844	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	2	0.75	XS	SCH160	P28A-003S2	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2	1	XS	SCH160	P28A-003S3	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	2	1.5	XS	SCH160	P28A-003S4	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	3	1.5	XS	SCH160	P28A-0047E	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	3	2	XS	XS	P28A-00199	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	4	1.5	STD	SCH160	P28A-003S6	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	4	2	STD	XS	P28A-003PM	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	4	3	STD	XS	P28A-00DBN	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	6	3	STD	XS	P28A-00DBP	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	6	4	STD	STD	P28A-001BL	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	8	4	STD	STD	P28A-001B9	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	8	6	STD	STD	P28A-001CL	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	4	STD	STD	P28A-001BF	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	6	STD	STD	P28A-001CK	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	8	STD	STD	P28A-001E4	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	6	SCH40	STD	P28A-00D93	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	8	SCH40	STD	P28A-0047R	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	10	SCH40	STD	P28A-0047N	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	6	SCH40	STD	P28A-00D94	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	8	SCH40	STD	P28A-0047U	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	10	SCH40	STD	P28A-0047S	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	12	SCH40	SCH40	P28A-0021T	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	8	XS	STD	P28A-001T0	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	10	XS	STD	P28A-001SD	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	12	XS	SCH40	P28A-0047V	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	14	XS	SCH40	P28A-0047W	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	18	10	SCH30	STD	P28A-00FTM	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	18	12	SCH30	SCH40	P28A-00FTN	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	18	14	SCH30	SCH40	P28A-00FTP	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	18	16	SCH30	XS	P28A-00FTR	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	20	12	XS	SCH40	P28A-00FJ4	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	20	14	XS	SCH40	P28A-00FJ5	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	20	16	XS	XS	P28A-001SX	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	20	18	XS	SCH30	P28A-00FTS	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	24	16	XS	XS	P28A-001SF	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	24	18	XS	SCH30	P28A-00FTT	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	24	20	XS	XS	P28A-001SU	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P29A-001TB	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	0.75		SCH160		P29A-000R1	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	1		SCH160		P29A-000R2	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	1.5		SCH160		P29A-000R3	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	2		XS		P29A-000BG	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	3		XS		P29A-0009U	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	4		STD		P29A-000AH	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	6		STD		P29A-000DE	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	8		STD		P29A-000DH	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10		STD		P29A-000B0	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12		SCH40		P29A-000GW	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14		SCH40		P29A-000GX	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16		XS		P29A-000DL	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	18		SCH30		P29A-002XE	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	20		XS		P29A-000CJ	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	24		XS		P29A-000CN	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
541	0.75				P29B-00015	Cap ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 NPT	

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STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P41A-000DJ	Straight nipple ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		XXS		P41A-000DK	Straight nipple ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		XXS		P41A-000DZ	Straight nipple ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		XXS		P41A-000E0	Straight nipple ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2	0.75	XS	SCH160	P31B-00TPR	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	3	0.75	XS	SCH160	P31B-00ZHG	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	4	0.75	STD	SCH160	P31B-00TPU	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	6	0.75	STD	SCH160	P31B-00TPX	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	8	0.75	STD	SCH160	P31B-00TSA	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	10	0.75	STD	SCH160	P31B-00TSD	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	12	0.75	SCH40	SCH160	P31B-00ZVU	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	14	0.75	SCH40	SCH160	P31B-00ZVV	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	16	0.75	XS	SCH160	P31B-013BF	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	18	0.75	SCH30	SCH160	P31B-013BG	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	20	0.75	XS	SCH160	P31B-012UD	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	24	0.75	XS	SCH160	P31B-00TSY	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	3	1	XS	SCH160	P31B-00TR5	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	4	1	STD	SCH160	P31B-00TPV	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	6	1	STD	SCH160	P31B-00TPY	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	8	1	STD	SCH160	P31B-00TSB	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	10	1	STD	SCH160	P31B-00TSE	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	12	1	SCH40	SCH160	P31B-00TRG	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	14	1	SCH40	SCH160	P31B-00TRJ	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	16	1	XS	SCH160	P31B-00TRL	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	18	1	SCH30	SCH160	P31B-00TVT	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	20	1	XS	SCH160	P31B-00TRT	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	24	1	XS	SCH160	P31B-00TRV	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	4	1.5	STD	SCH160	P31B-00TPW	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	6	1.5	STD	SCH160	P31B-00TPZ	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	8	1.5	STD	SCH160	P31B-00TSC	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	10	1.5	STD	SCH160	P31B-00TSF	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	12	1.5	SCH40	SCH160	P31B-00TRH	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	14	1.5	SCH40	SCH160	P31B-00TRK	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	16	1.5	XS	SCH160	P31B-00TRM	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	18	1.5	SCH30	SCH160	P31B-00TVU	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	20	1.5	XS	SCH160	P31B-00TRU	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	24	1.5	XS	SCH160	P31B-00TRW	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	6	2	STD	XS	P31B-00MFB	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	8	2	STD	XS	P31B-00PAW	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	10	2	STD	XS	P31B-00TPH	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	12	2	SCH40	XS	P31B-00ZG2	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	14	2	SCH40	XS	P31B-00ZG5	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	16	2	XS	XS	P31B-00MG4	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	18	2	SCH30	XS	P31B-013BH	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	20	2	XS	XS	P31B-00VYT	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	24	2	XS	XS	P31B-00M6H	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	8	3	STD	XS	P31B-00M9R	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	10	3	STD	XS	P31B-00MBH	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	12	3	SCH40	XS	P31B-00MJB	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	14	3	SCH40	XS	P31B-00MJD	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	16	3	XS	XS	P31B-00ME0	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	18	3	SCH30	XS	P31B-00TRP	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	20	3	XS	XS	P31B-00MEA	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	24	3	XS	XS	P31B-00MEL	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	12	4	SCH40	STD	P31B-00ZG4	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	14	4	SCH40	STD	P31B-00ZG7	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	

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OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	16	4	XS	STD	P31B-00E9A	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	18	4	SCH30	STD	P31B-013BJ	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	20	4	XS	STD	P31B-00E9B	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	24	4	XS	STD	P31B-00M6K	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	18	6	SCH30	STD	P31B-013BK	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	20	6	XS	STD	P31B-00E93	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	24	6	XS	STD	P31B-00M6L	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30B-0002V	Plug ASTM A350 Grade LF2 Class 1 ASME B16.11 NPT Round head	
1	0.75				P30B-0002W	Plug ASTM A350 Grade LF2 Class 1 ASME B16.11 NPT Round head	
1	1				P30B-0002X	Plug ASTM A350 Grade LF2 Class 1 ASME B16.11 NPT Round head	
1	1.5				P30B-0002Y	Plug ASTM A350 Grade LF2 Class 1 ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P61B-003SD	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	0.75		SCH160		P61B-003RD	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	1		SCH160		P61B-003RE	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	1.5		SCH160		P61B-003RF	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	2		XS		P61B-003R8	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	3		XS		P61B-003SG	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	4		STD		P61B-001N0	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	6		STD		P61B-001NM	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	8		STD		P61B-001NZ	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	10		STD		P61B-001L8	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	12		SCH40		P61B-001NV	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	14		SCH40		P61B-0021C	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	16		XS		P61B-001SP	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	18		SCH30		P61B-0064X	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	20		XS		P61B-001K7	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	24		XS		P61B-001LK	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
541	0.5				P61B-0035X	Flange NPT ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
541	0.75				P61B-0035W	Flange NPT ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
781	0.5		XXS		P61B-003WN	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
781	0.75		SCH160		P61B-003E0	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
781	1		SCH160		P61B-003DZ	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
781	1.5		SCH160		P61B-003DY	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
781	2		XS		P61B-001FN	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
781	3		XS		P61B-001K0	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
781	4		STD		P61B-001VT	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
781	6		STD		P61B-001JV	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
781	8		STD		P61B-001KE	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
781	10		STD		P61B-001JH	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
781	12		SCH40		P61B-003WP	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
781	14		SCH40		P61B-008YZ	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
781	16		XS		P61B-001PY	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
781	18		SCH30		P61B-00DP8	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
781	20		XS		P61B-001S9	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
781	24		XS		P61B-001SU	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67B-000NN	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	0.75				P67B-000MV	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	1				P67B-000MW	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	1.5				P67B-000MX	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	2				P67B-000N3	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3				P67B-000N6	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	4				P67B-000N7	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	6				P67B-000N8	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	8				P67B-000N9	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	10				P67B-000MY	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	12				P67B-000MZ	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	14				P67B-000N0	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	16				P67B-000N1	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	18				P67B-000N2	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	20				P67B-000N4	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	24				P67B-000N5	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000FT	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000FU	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000G5	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000G6	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	6				P73T-000G7	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	8				P73T-000G8	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	10				P73T-000FX	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	12				P73T-000FY	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	14				P73T-000FZ	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	16				P73T-000G0	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	18				P73T-000G1	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	20				P73T-000G3	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	24				P73T-000G4	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	0.5				P73T-000J8	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	0.75				P73T-000J9	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1				P73T-000JA	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1.5				P73T-000JB	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	2				P73T-000JH	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	3				P73T-000JL	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	4				P73T-000JM	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	6				P73T-000JN	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	8				P73T-000JP	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	10				P73T-000JC	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	12				P73T-000JD	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	14				P73T-000JE	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	16				P73T-000JF	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	18				P73T-000JG	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	20				P73T-000JJ	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	24				P73T-000JK	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

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BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-10				See Attached Bolt Table	Bolt and Nut ASTM A320 Grade L7 / A194 Grade 4 ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	12-24				See Attached Bolt Table	Bolt and Nut ASTM A320 Grade L7 / A194 Grade 4 ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
781	0.5-6				See Attached Bolt Table	Bolt and Nut ASTM A320 Grade L7 / A194 Grade 4 ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
781	8-24				See Attached Bolt Table	Bolt and Nut ASTM A320 Grade L7 / A194 Grade 4 ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81B-001NJ	Gate valve ASTM A350 Grade LF2 Class 1 Class 300 API 602 Flange ASME B16.5 RF Trim number 9 BB-BG-OS&Y Handwheel operated Caustic service	
1	0.75				P81B-001NK	Gate valve ASTM A350 Grade LF2 Class 1 Class 300 API 602 Flange ASME B16.5 RF Trim number 9 BB-BG-OS&Y Handwheel operated Caustic service	
1	1				P81B-001NL	Gate valve ASTM A350 Grade LF2 Class 1 Class 300 API 602 Flange ASME B16.5 RF Trim number 9 BB-BG-OS&Y Handwheel operated Caustic service	
1	1.5				P81B-001NM	Gate valve ASTM A350 Grade LF2 Class 1 Class 300 API 602 Flange ASME B16.5 RF Trim number 9 BB-BG-OS&Y Handwheel operated Caustic service	
1	2				P81C-005EV	Gate valve ASTM A352 Grade LCC Class 300 API 600 Flange ASME B16.5 RF Trim number 9 BB-BG-OS&Y Handwheel operated Caustic service	
1	3				P81C-005EW	Gate valve ASTM A352 Grade LCC Class 300 API 600 Flange ASME B16.5 RF Trim number 9 BB-BG-OS&Y Handwheel operated Caustic service	
1	4				P81C-005EX	Gate valve ASTM A352 Grade LCC Class 300 API 600 Flange ASME B16.5 RF Trim number 9 BB-BG-OS&Y Handwheel operated Caustic service	
1	6				P81C-005EY	Gate valve ASTM A352 Grade LCC Class 300 API 600 Flange ASME B16.5 RF Trim number 9 BB-BG-OS&Y Handwheel operated Caustic service	
1	8				P81C-0091Z	Gate valve ASTM A352 Grade LCC Class 300 API 600 Flange ASME B16.5 RF Trim number 9 BB-BG-OS&Y Gear operated Caustic service	
1	10				P81C-005F0	Gate valve ASTM A352 Grade LCC Class 300 API 600 Flange ASME B16.5 RF Trim number 9 BB-BG-OS&Y Gear operated Caustic service	
1	12				P81C-005SC	Gate valve ASTM A352 Grade LCC Class 300 API 600 Flange ASME B16.5 RF Trim number 9 BB-BG-OS&Y Gear operated Caustic service	
1	14				P81C-005SD	Gate valve ASTM A352 Grade LCC Class 300 API 600 Flange ASME B16.5 RF Trim number 9 BB-BG-OS&Y Gear operated Caustic service	
1	16				P81C-008RL	Gate valve ASTM A352 Grade LCC Class 300 API 600 Flange ASME B16.5 RF Trim number 9 BB-BG-OS&Y Gear operated Caustic service	
1	18				P81C-008RM	Gate valve ASTM A352 Grade LCC Class 300 API 600 Flange ASME B16.5 RF Trim number 9 BB-BG-OS&Y Gear operated Caustic service	
1	20				P81C-008RN	Gate valve ASTM A352 Grade LCC Class 300 API 600 Flange ASME B16.5 RF Trim number 9 BB-BG-OS&Y Gear operated Caustic service	
1	24				P81C-008RP	Gate valve ASTM A352 Grade LCC Class 300 API 600 Flange ASME B16.5 RF Trim number 9 BB-BG-OS&Y Gear operated Caustic service	
4608	0.75				P81B-002X2	Gate valve ASTM A350 Grade LF2 Class 1 Class 300 API 602 BW both sides w/ nipples BE - NPT ASTM A333-6 XXS-nipple Trim number 9 BB-BG-OS&Y Handwheel operated Caustic service	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82B-001CY	Globe valve ASTM A350 Grade LF2 Class 1 Class 300 API 602 Flange ASME B16.5 RF Trim number 9 BB-BG-OS&Y Handwheel operated Caustic service	
1	0.75				P82B-001CZ	Globe valve ASTM A350 Grade LF2 Class 1 Class 300 API 602 Flange ASME B16.5 RF Trim number 9 BB-BG-OS&Y Handwheel operated Caustic service	
1	1				P82B-001D0	Globe valve ASTM A350 Grade LF2 Class 1 Class 300 API 602 Flange ASME B16.5 RF Trim number 9 BB-BG-OS&Y Handwheel operated Caustic service	
1	1.5				P82B-001D1	Globe valve ASTM A350 Grade LF2 Class 1 Class 300 API 602 Flange ASME B16.5 RF Trim number 9 BB-BG-OS&Y Handwheel operated Caustic service	
1	2				P82C-002P9	Globe valve ASTM A352 Grade LCC Class 300 BS 1873 Flange ASME B16.5 RF Trim number 9 BB-BG-OS&Y Handwheel operated Caustic service	
1	3				P82C-002PA	Globe valve ASTM A352 Grade LCC Class 300 BS 1873 Flange ASME B16.5 RF Trim number 9 BB-BG-OS&Y Handwheel operated Caustic service	
1	4				P82C-002PB	Globe valve ASTM A352 Grade LCC Class 300 BS 1873 Flange ASME B16.5 RF Trim number 9 BB-BG-OS&Y Handwheel operated Caustic service	
1	6				P82C-002PC	Globe valve ASTM A352 Grade LCC Class 300 BS 1873 Flange ASME B16.5 RF Trim number 9 BB-BG-OS&Y Handwheel operated Caustic service	
1	8				P82C-004D4	Globe valve ASTM A352 Grade LCC Class 300 BS 1873 Flange ASME B16.5 RF Trim number 9 BB-BG-OS&Y Gear operated Caustic service	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83B-0013C	Check valve ASTM A350 Grade LF2 Class 1 Class 300 API 602 Flange ASME B16.5 RF Trim number 9 Lift-type Bolted cover Caustic service	
1	0.75				P83B-0013D	Check valve ASTM A350 Grade LF2 Class 1 Class 300 API 602 Flange ASME B16.5 RF Trim number 9 Lift-type Bolted cover Caustic service	
1	1				P83B-0013E	Check valve ASTM A350 Grade LF2 Class 1 Class 300 API 602 Flange ASME B16.5 RF Trim number 9 Lift-type Bolted cover Caustic service	
1	1.5				P83B-0013F	Check valve ASTM A350 Grade LF2 Class 1 Class 300 API 602 Flange ASME B16.5 RF Trim number 9 Lift-type Bolted cover Caustic service	
1	2				P83C-002SD	Check valve ASTM A352 Grade LCC Class 300 BS 1868 Flange ASME B16.5 RF Trim number 9 Swing-type Bolted cover Caustic service	
1	3				P83C-002SE	Check valve ASTM A352 Grade LCC Class 300 BS 1868 Flange ASME B16.5 RF Trim number 9 Swing-type Bolted cover Caustic service	
1	4				P83C-002SF	Check valve ASTM A352 Grade LCC Class 300 BS 1868 Flange ASME B16.5 RF Trim number 9 Swing-type Bolted cover Caustic service	

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CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	6				P83C-002SG	Check valve ASTM A352 Grade LCC Class 300 BS 1868 Flange ASME B16.5 RF Trim number 9 Swing-type Bolted cover Caustic service	
1	8				P83C-002SH	Check valve ASTM A352 Grade LCC Class 300 BS 1868 Flange ASME B16.5 RF Trim number 9 Swing-type Bolted cover Caustic service	
1	10				P83C-002SC	Check valve ASTM A352 Grade LCC Class 300 BS 1868 Flange ASME B16.5 RF Trim number 9 Swing-type Bolted cover Caustic service	

BALL VALVE (Q)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P84B-001DV	Ball valve Long-pattern ASTM A350 Grade LF2 Class 1 Class 300 API 608 Flange ASME B16.5 RF Ball UNS N04400 Seat R-PTFE Trim UNS N04400 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design Caustic service	
1	0.75				P84B-001DW	Ball valve Long-pattern ASTM A350 Grade LF2 Class 1 Class 300 API 608 Flange ASME B16.5 RF Ball UNS N04400 Seat R-PTFE Trim UNS N04400 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design Caustic service	
1	1				P84B-001DX	Ball valve Long-pattern ASTM A350 Grade LF2 Class 1 Class 300 API 608 Flange ASME B16.5 RF Ball UNS N04400 Seat R-PTFE Trim UNS N04400 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design Caustic service	
1	1.5				P84B-001DY	Ball valve Long-pattern ASTM A350 Grade LF2 Class 1 Class 300 API 608 Flange ASME B16.5 RF Ball UNS N04400 Seat R-PTFE Trim UNS N04400 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design Caustic service	
1	2				P84C-006LR	Ball valve Long-pattern ASTM A352 Grade LCC Class 300 API 608 Flange ASME B16.5 RF Ball UNS N04400 Seat R-PTFE Trim UNS N04400 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design Caustic service	
1	3				P84C-006LS	Ball valve Long-pattern ASTM A352 Grade LCC Class 300 API 608 Flange ASME B16.5 RF Ball UNS N04400 Seat R-PTFE Trim UNS N04400 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design Caustic service	
1	4				P84C-006LT	Ball valve Long-pattern ASTM A352 Grade LCC Class 300 API 608 Flange ASME B16.5 RF Ball UNS N04400 Seat R-PTFE Trim UNS N04400 Floating-type Side-entry Gear operated Reduced bore Fire tested design Caustic service	
1	6				P84C-006LV	Ball valve Long-pattern ASTM A352 Grade LCC Class 300 API 608 Flange ASME B16.5 RF Ball UNS N04400 Seat R-PTFE Trim UNS N04400 Trunnion-type Side-entry Gear operated Reduced bore Fire tested design Caustic service	
1	8				P84C-006LW	Ball valve Long-pattern ASTM A352 Grade LCC Class 300 API 608 Flange ASME B16.5 RF Ball UNS N04400 Seat R-PTFE Trim UNS N04400 Trunnion-type Side-entry Gear operated Reduced bore Fire tested design Caustic service	
1	10				P84C-006LU	Ball valve Long-pattern ASTM A352 Grade LCC Class 300 API 608 Flange ASME B16.5 RF Ball UNS N04400 Seat R-PTFE Trim UNS N04400 Trunnion-type Side-entry Gear operated Reduced bore Fire tested design Caustic service	
1	12				P84C-006NH	Ball valve Long-pattern ASTM A352 Grade LCC Class 300 API 608 Flange ASME B16.5 RF Ball UNS N04400 Seat R-PTFE Trim UNS N04400 Trunnion-type Side-entry Gear operated Reduced bore Fire tested design Caustic service	
1	14				P84C-006NJ	Ball valve Long-pattern ASTM A352 Grade LCC Class 300 API 608 Flange ASME B16.5 RF Ball UNS N04400 Seat R-PTFE Trim UNS N04400 Trunnion-type Side-entry Gear operated Reduced bore Fire tested design Caustic service	
24	0.5				P84B-001DZ	Ball valve Long-pattern ASTM A350 Grade LF2 Class 1 Class 300 API 608 Flange ASME B16.5 RF Ball UNS N04400 Seat R-PTFE Trim UNS N04400 Floating-type Side-entry Wrench lever operated Full bore Fire tested design Caustic service	
24	0.75				P84B-001E0	Ball valve Long-pattern ASTM A350 Grade LF2 Class 1 Class 300 API 608 Flange ASME B16.5 RF Ball UNS N04400 Seat R-PTFE Trim UNS N04400 Floating-type Side-entry Wrench lever operated Full bore Fire tested design Caustic service	
24	1				P84B-001E1	Ball valve Long-pattern ASTM A350 Grade LF2 Class 1 Class 300 API 608 Flange ASME B16.5 RF Ball UNS N04400 Seat R-PTFE Trim UNS N04400 Floating-type Side-entry Wrench lever operated Full bore Fire tested design Caustic service	
24	1.5				P84B-001E2	Ball valve Long-pattern ASTM A350 Grade LF2 Class 1 Class 300 API 608 Flange ASME B16.5 RF Ball UNS N04400 Seat R-PTFE Trim UNS N04400 Floating-type Side-entry Wrench lever operated Full bore Fire tested design Caustic service	
24	2				P84C-006LX	Ball valve Long-pattern ASTM A352 Grade LCC Class 300 API 608 Flange ASME B16.5 RF Ball UNS N04400 Seat R-PTFE Trim UNS N04400 Floating-type Side-entry Wrench lever operated Full bore Fire tested design Caustic service	
24	3				P84C-006LY	Ball valve Long-pattern ASTM A352 Grade LCC Class 300 API 608 Flange ASME B16.5 RF Ball UNS N04400 Seat R-PTFE Trim UNS N04400 Floating-type Side-entry Wrench lever operated Full bore Fire tested design Caustic service	
24	4				P84C-006LZ	Ball valve Long-pattern ASTM A352 Grade LCC Class 300 API 608 Flange ASME B16.5 RF Ball UNS N04400 Seat R-PTFE Trim UNS N04400 Floating-type Side-entry Gear operated Full bore Fire tested design Caustic service	
24	6				P84C-006M1	Ball valve Long-pattern ASTM A352 Grade LCC Class 300 API 608 Flange ASME B16.5 RF Ball UNS N04400 Seat R-PTFE Trim UNS N04400 Trunnion-type Side-entry Gear operated Full bore Fire tested design Caustic service	
24	8				P84C-006M2	Ball valve Long-pattern ASTM A352 Grade LCC Class 300 API 608 Flange ASME B16.5 RF Ball UNS N04400 Seat R-PTFE Trim UNS N04400 Trunnion-type Side-entry Gear operated Full bore Fire tested design Caustic service	
24	10				P84C-006M0	Ball valve Long-pattern ASTM A352 Grade LCC Class 300 API 608 Flange ASME B16.5 RF Ball UNS N04400 Seat R-PTFE Trim UNS N04400 Trunnion-type Side-entry Gear operated Full bore Fire tested design Caustic service	
24	12				P84C-006NK	Ball valve Long-pattern ASTM A352 Grade LCC Class 300 API 608 Flange ASME B16.5 RF Ball UNS N04400 Seat R-PTFE Trim UNS N04400 Trunnion-type Side-entry Gear operated Full bore Fire tested design Caustic service	
24	14				P84C-006NL	Ball valve Long-pattern ASTM A352 Grade LCC Class 300 API 608 Flange ASME B16.5 RF Ball UNS N04400 Seat R-PTFE Trim UNS N04400 Trunnion-type Side-entry Gear operated Full bore Fire tested design Caustic service	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71B-000BP	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF	

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SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75				P71B-000BR	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	1				P71B-000BS	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71B-000BT	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	2				P71B-000BW	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	3				P71B-000BX	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	4				P71B-000BY	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	6				P71B-000BZ	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	8				P71B-000C0	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	10				P71B-000BU	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	12				P71B-000BV	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF	

PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000G1	Paddle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	16				P72B-000G2	Paddle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	18				P72B-000G3	Paddle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	20				P72B-000G4	Paddle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	24				P72B-000G5	Paddle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF	

PADDLE SPACER (PS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000G6	Paddle spacer ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	16				P72B-000G7	Paddle spacer ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	18				P72B-000G8	Paddle spacer ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	20				P72B-000G9	Paddle spacer ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	24				P72B-000GA	Paddle spacer ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF	

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BOLT TABLE (B_B2GN04 , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-003VL		
0.75	4	0.625	75	P80S-003Z2		
1	4	0.625	80	P80S-003Z3		
1.5	4	0.750	95	P80S-0045X		
2	8	0.625	90	P80S-003Z5		
3	8	0.750	110	P80S-003Z9		
4	8	0.750	115	P80S-003ZA		
6	12	0.750	125	P80S-003ZC		
8	12	0.875	140	P80S-00466		
10	16	1.000	160	P80S-004BH		
12	16	1.125	175	P80S-004J7		
14	20	1.125	180	P80S-004J8		
16	20	1.250	190	P80S-004LJ		
18	24	1.250	200	P80S-004LL		
20	24	1.250	210	P80S-004LN		
24	24	1.500	235	P80S-003A7		

BOLT TABLE (B_B2GN04_781 , STUD ASME RF, OPTION CODE 781)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	80	P80S-003VN		
0.75	4	0.625	90	P80S-003Z5		
1	4	0.625	95	P80S-003Z6		
1.5	4	0.750	110	P80S-003Z9		
2	8	0.625	110	P80S-003VV		
3	8	0.750	130	P80S-003ZD		
4	8	0.875	150	P80S-00468		
6	12	1.000	175	P80S-004BM		
8	12	1.125	195	P80S-004JB		
10	16	1.250	250	P80S-004LX		
12	20	1.250	255	P80S-004LY		
14	20	1.375	270	P80S-003M5		
16	20	1.500	295	P80S-003D1		
18	20	1.625	320	P80S-00CB3		
20	24	1.625	335	P80S-00CB6		
24	24	1.875	380	P80S-00ACJ		

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BRANCH TABLE (T_B2GN04)

RUN PIPE SIZE (in) \ BRANCH SIZE (in)	0.5	0.75	1	1.5	2	3	4	6	8	10	12	14	16	18	20	24
0.5	TS															
0.75		TS														
1		TR	TS													
1.5		TR	TR	TS												
2		L	TR	TR	TS											
3		L	L	TR	TR	TS										
4	L	L	L	L	TR	TR	TS									
6	L	L	L	L	L	TR	TR	TS								
8		L	L	L	L	L	TR	TR	TS							
10		L	L	L	L	L	TR	TR	TR	TS						
12		L	L	L	L	L	L	TR	TR	TR	TS					
14		L	L	L	L	L	L	TR	TR	TR	TR	TS				
16		L	L	L	L	L	L	TR	TR	TR	TR	TR	TS			
18		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TS		
20		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TR	TS	
24		L	L	L	L	L	L	L	9PD	TR	TR	TR	TR	TR	TR	TS

9PD : REINFORCING PAD 90 DEG
TR : REDUCING TEE
L : OUTLET
TS : STRAIGHT TEE

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PIPING CLASS

B2GP **REV NO. 2**

Material : LTCS
Rating : ASME CLASS 300
Flange Face : RF
C.A.(mm) : 3.00
Gasket : Spiral Wound
Service : PROCESS- GENERAL PROCESS NON SOUR NON CORROSIVE
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
2	USE OF SOFT SEATED BALL, PLUG AND BUTTERFLY VALVES SHALL BE LIMITED TO MAXIMUM OF 204DEGC (400DEGF)

DETAIL NOTES :

NO.	DESCRIPTION
38	TO BE USED FOR STAND PIPE

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
541	NPT(F) (CA,L)
714	SW - NPT(F) (V)
781	CLASS 600 (B,F,G)
4212	WELDOLET FOR STAND PIPE (L)
4602	DISSIMILAR TYPE CHECK VALVE (XDP)

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PIPING CLASS
B2GP REV NO. 2

PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P01A-00167	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE	
1	0.75		SCH160		P01A-0016P	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE	
1	1		SCH160		P01A-0011Z	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE	
1	1.5		SCH160		P01A-00127	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE	
1	2		XS		P01A-000XB	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	3		STD		P01A-000YL	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	4		STD		P01A-000YT	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	6		STD		P01A-000Z2	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	8		STD		P01A-000Z8	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	10		STD		P01A-000XH	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	12		SCH40		P01A-0018G	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P02B-0001V	90 degree elbow ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW	
1	0.75				P02B-0001W	90 degree elbow ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW	
1	1				P02B-0001X	90 degree elbow ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW	
1	1.5				P02B-0001Y	90 degree elbow ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW	
1	2		XS		P02A-000B9	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	3		STD		P02A-000E7	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	4		STD		P02A-000E9	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	6		STD		P02A-000EC	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	8		STD		P02A-000EF	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	10		STD		P02A-000EL	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	12		SCH40		P02A-000JZ	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P03B-0001S	45 degree elbow ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW	
1	0.75				P03B-0001T	45 degree elbow ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW	
1	1				P03B-0001U	45 degree elbow ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW	
1	1.5				P03B-0001V	45 degree elbow ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW	
1	2		XS		P03A-0009Y	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	3		STD		P03A-000C4	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	4		STD		P03A-000C6	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	6		STD		P03A-000C9	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	8		STD		P03A-000CB	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	10		STD		P03A-000BL	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	12		SCH40		P03A-000GX	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P21B-0001S	Straight tee ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW	
1	0.75				P21B-0001T	Straight tee ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW	
1	1				P21B-0001U	Straight tee ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW	
1	1.5				P21B-0001V	Straight tee ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW	
1	2		XS		P21A-001BR	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	3		STD		P21A-001FE	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	4		STD		P21A-001FF	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	6		STD		P21A-001FJ	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	8		STD		P21A-001FL	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10		STD		P21A-001F0	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12		SCH40		P21A-00239	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1		0.75			P24B-0003M	Reducing tee ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW	
1	1.5	0.75			P24B-0003P	Reducing tee ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW	

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REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5	1			P24B-0003R	Reducing tee ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW	
1	2	1	XS	SCH160	P24A-00GMD	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	2	1.5	XS	SCH160	P24A-005NK	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	3	1.5	STD	SCH160	P24A-00GME	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	3	2	STD	XS	P24A-005M3	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	4	2	STD	XS	P24A-006CW	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	4	3	STD	STD	P24A-0028C	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	6	3	STD	STD	P24A-002AL	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	6	4	STD	STD	P24A-00289	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	8	4	STD	STD	P24A-0028B	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	8	6	STD	STD	P24A-0028T	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	4	STD	STD	P24A-002K7	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	6	STD	STD	P24A-002AN	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	8	STD	STD	P24A-0028W	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	6	SCH40	STD	P24A-00M0Y	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	8	SCH40	STD	P24A-00674	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	10	SCH40	STD	P24A-00673	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	STD	XS	P27A-003PM	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	4	2	STD	XS	P27A-003PN	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	4	3	STD	STD	P27A-001BA	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	6	3	STD	STD	P27A-001H9	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	6	4	STD	STD	P27A-00181	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	8	4	STD	STD	P27A-0017P	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	8	6	STD	STD	P27A-001B9	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	4	STD	STD	P27A-0017X	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	6	STD	STD	P27A-001BV	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	8	STD	STD	P27A-001D6	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	6	SCH40	STD	P27A-00G2V	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	8	SCH40	STD	P27A-0047Z	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	10	SCH40	STD	P27A-0047X	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	STD	XS	P28A-003PL	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	4	2	STD	XS	P28A-003PM	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	4	3	STD	STD	P28A-001CF	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	6	3	STD	STD	P28A-001AL	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	6	4	STD	STD	P28A-001BL	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	8	4	STD	STD	P28A-001B9	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	8	6	STD	STD	P28A-001CL	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	4	STD	STD	P28A-001BF	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	6	STD	STD	P28A-001CK	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	8	STD	STD	P28A-001E4	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	6	SCH40	STD	P28A-00D93	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	8	SCH40	STD	P28A-0047R	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	10	SCH40	STD	P28A-0047N	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P29B-0002J	Cap ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW	
1	0.75				P29B-0002K	Cap ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW	
1	1				P29B-0002L	Cap ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW	
1	1.5				P29B-0002H	Cap ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW	
1	2		XS		P29A-000BG	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	3		STD		P29A-0009Y	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	4		STD		P29A-000AH	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	

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CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	6		STD		P29A-000DE	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	8		STD		P29A-000DH	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10		STD		P29A-000B0	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12		SCH40		P29A-000GW	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
541	0.75				P29B-00015	Cap ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P41A-000DJ	Straight nipple ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		XXS		P41A-000DK	Straight nipple ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		XXS		P41A-000DZ	Straight nipple ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		XXS		P41A-000E0	Straight nipple ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

CON SWAGED NIPPLE (SNC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	SCH160	P42A-000A8	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	SCH160	SCH160	P42A-000A9	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	SCH160	SCH160	P42A-000A1	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	SCH160	SCH160	P42A-000AA	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	SCH160	SCH160	P42A-000A3	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	SCH160	SCH160	P42A-000A4	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	XS	SCH160	P42A-000L1	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	XS	SCH160	P42A-000L2	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	XS	SCH160	P42A-000L3	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	XS	SCH160	P42A-000L4	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	STD	SCH160	P42A-000L5	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 BE(L) - PE(S)	

ECC SWAGED NIPPLE (SNE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	SCH160	P43A-000D2	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	SCH160	SCH160	P43A-000D3	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	SCH160	SCH160	P43A-000D4	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	SCH160	SCH160	P43A-000D5	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	SCH160	SCH160	P43A-000D6	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	SCH160	SCH160	P43A-000D7	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	XS	SCH160	P43A-000D8	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	XS	SCH160	P43A-000D9	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	XS	SCH160	P43A-000DA	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	XS	SCH160	P43A-000DB	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	STD	SCH160	P43A-000DC	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 BE(L) - PE(S)	

COUPLING (CPS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P47B-0001S	Coupling ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW - SW	
1	0.75				P47B-0001T	Coupling ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW - SW	
1	1				P47B-0001U	Coupling ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW - SW	
1	1.5				P47B-0001V	Coupling ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW - SW	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5 - 2.5	0.75			P31B-0138C	Outlet ASTM A350 Grade LF2 Class 1 Class 6000 MSS SP-97 SW	
1	3 - 10	0.75			P31B-007DK	Outlet ASTM A350 Grade LF2 Class 1 Class 6000 MSS SP-97 SW	
1	12 and larger	0.75			P31B-0138B	Outlet ASTM A350 Grade LF2 Class 1 Class 6000 MSS SP-97 SW	
1	3 - 10	1			P31B-007BL	Outlet ASTM A350 Grade LF2 Class 1 Class 6000 MSS SP-97 SW	
1	12 and larger	1			P31B-0138D	Outlet ASTM A350 Grade LF2 Class 1 Class 6000 MSS SP-97 SW	
1	1 - 5	1.5			P31B-00514	Outlet ASTM A350 Grade LF2 Class 1 Class 6000 MSS SP-97 SW	
1	6 - 8	1.5			P31B-007B0	Outlet ASTM A350 Grade LF2 Class 1 Class 6000 MSS SP-97 SW	
1	10 - 18	1.5			P31B-007BC	Outlet ASTM A350 Grade LF2 Class 1 Class 6000 MSS SP-97 SW	

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OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
541	1	0.75			P31B-004HD	Outlet ASTM A350 Grade LF2 Class 1 Class 6000 MSS SP-97 NPT	
541	1.5 - 2.5	0.75			P31B-0138F	Outlet ASTM A350 Grade LF2 Class 1 Class 6000 MSS SP-97 NPT	
541	3 - 10	0.75			P31B-007CY	Outlet ASTM A350 Grade LF2 Class 1 Class 6000 MSS SP-97 NPT	
541	12 and larger	0.75			P31B-0138G	Outlet ASTM A350 Grade LF2 Class 1 Class 6000 MSS SP-97 NPT	
1	6	2	STD	XS	P31B-00MFB	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	8	2	STD	XS	P31B-00PAW	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	10	2	STD	XS	P31B-00TPH	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	12	2	SCH40	XS	P31B-00ZG2	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	8	3	STD	STD	P31B-00E6Y	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	10	3	STD	STD	P31B-00E6V	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	12	3	SCH40	STD	P31B-00ZG3	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	12	4	SCH40	STD	P31B-00ZG4	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
4212	3	2	STD	XS	P31B-00VA7	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	38

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30B-0002V	Plug ASTM A350 Grade LF2 Class 1 ASME B16.11 NPT Round head	
1	0.75				P30B-0002W	Plug ASTM A350 Grade LF2 Class 1 ASME B16.11 NPT Round head	
1	1				P30B-0002X	Plug ASTM A350 Grade LF2 Class 1 ASME B16.11 NPT Round head	
1	1.5				P30B-0002Y	Plug ASTM A350 Grade LF2 Class 1 ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P61B-001CU	Flange SW ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	0.75		SCH160		P61B-001D5	Flange SW ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	1		SCH160		P61B-001GC	Flange SW ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	1.5		SCH160		P61B-001GZ	Flange SW ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	2		XS		P61B-003R8	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	3		STD		P61B-001MB	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	4		STD		P61B-001N0	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	6		STD		P61B-001NM	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	8		STD		P61B-001NZ	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	10		STD		P61B-001L8	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	12		SCH40		P61B-001NV	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
781	0.5		SCH160		P61B-001Y2	Flange SW ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
781	0.75		SCH160		P61B-001YD	Flange SW ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
781	1		SCH160		P61B-001YU	Flange SW ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
781	1.5		SCH160		P61B-001XN	Flange SW ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
781	2		XS		P61B-001FN	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
781	3		STD		P61B-001TV	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
781	4		STD		P61B-001VT	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
781	6		STD		P61B-001JV	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
781	8		STD		P61B-001KE	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
781	10		STD		P61B-001JH	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
781	12		SCH40		P61B-003WP	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67B-000NN	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	0.75				P67B-000MV	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	1				P67B-000MW	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	1.5				P67B-000MX	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	2				P67B-000N3	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	3				P67B-000N6	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	4				P67B-000N7	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	6				P67B-000N8	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	8				P67B-000N9	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	10				P67B-000MY	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	12				P67B-000MZ	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	

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GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000FT	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000FU	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000G5	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000G6	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	6				P73T-000G7	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	8				P73T-000G8	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	10				P73T-000FX	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	12				P73T-000FY	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	0.5				P73T-000J8	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	0.75				P73T-000J9	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1				P73T-000JA	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1.5				P73T-000JB	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	2				P73T-000JH	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	3				P73T-000JL	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	4				P73T-000JM	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	6				P73T-000JN	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	8				P73T-000JP	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	10				P73T-000JC	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	12				P73T-000JD	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-10				See Attached Bolt Table	Bolt and Nut ASTM A320 Grade L7 / A194 Grade 4 ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	12				See Attached Bolt Table	Bolt and Nut ASTM A320 Grade L7 / A194 Grade 4 ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
781	0.5-6				See Attached Bolt Table	Bolt and Nut ASTM A320 Grade L7 / A194 Grade 4 ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
781	8-12				See Attached Bolt Table	Bolt and Nut ASTM A320 Grade L7 / A194 Grade 4 ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81B-0018C	Gate valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	0.75				P81B-0018D	Gate valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	1				P81B-0018E	Gate valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	1.5				P81B-0018F	Gate valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	2				P81C-004HG	Gate valve ASTM A352 Grade LCC Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	3				P81C-004HH	Gate valve ASTM A352 Grade LCC Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	4				P81C-004HJ	Gate valve ASTM A352 Grade LCC Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	6				P81C-004HK	Gate valve ASTM A352 Grade LCC Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	8				P81C-0091J	Gate valve ASTM A352 Grade LCC Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated	
1	10				P81C-004HM	Gate valve ASTM A352 Grade LCC Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated	
1	12				P81C-004HN	Gate valve ASTM A352 Grade LCC Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated	
714	0.5				P81B-002S4	Gate valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW - NPT Trim number 12 BB-BG-OS&Y Handwheel operated	
714	0.75				P81B-002FB	Gate valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW - NPT Trim number 12 BB-BG-OS&Y Handwheel operated	

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GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82B-0011H	Globe valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	0.75				P82B-0011J	Globe valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	1				P82B-0011K	Globe valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	1.5				P82B-0011L	Globe valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	2				P82C-0027X	Globe valve ASTM A352 Grade LCC Class 300 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	3				P82C-0027Y	Globe valve ASTM A352 Grade LCC Class 300 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	4				P82C-0027Z	Globe valve ASTM A352 Grade LCC Class 300 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	6				P82C-00280	Globe valve ASTM A352 Grade LCC Class 300 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	8				P82C-004CT	Globe valve ASTM A352 Grade LCC Class 300 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83B-000TS	Check valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 12 Lift-type Bolted cover	
1	0.75				P83B-000TT	Check valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 12 Lift-type Bolted cover	
1	1				P83B-000TU	Check valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 12 Lift-type Bolted cover	
1	1.5				P83B-000TV	Check valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 12 Lift-type Bolted cover	
1	2				P83C-0024D	Check valve ASTM A352 Grade LCC Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	3				P83C-0024G	Check valve ASTM A352 Grade LCC Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	4				P83C-0024H	Check valve ASTM A352 Grade LCC Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	6				P83C-0024J	Check valve ASTM A352 Grade LCC Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	8				P83C-0024K	Check valve ASTM A352 Grade LCC Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	10				P83C-00248	Check valve ASTM A352 Grade LCC Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	

DP CHECK VALVE (XDP)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
4602	3				P88C-003CE	Dual plate check valve ASTM A352 Grade LCC Class 300 API 594 Wafer-type ASME B16.5 RF Trim number 12 Internal wetted parts SS316 Spring Inconel Retainerless-type	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71B-000BP	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	0.75				P71B-000BR	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	1				P71B-000BS	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71B-000BT	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	2				P71B-000BW	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	3				P71B-000BX	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	4				P71B-000BY	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	6				P71B-000BZ	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	8				P71B-000C0	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	10				P71B-000BU	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	12				P71B-000BV	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF	

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BOLT TABLE (B_B2GP , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-003VL		
0.75	4	0.625	75	P80S-003Z2		
1	4	0.625	80	P80S-003Z3		
1.5	4	0.750	95	P80S-0045X		
2	8	0.625	90	P80S-003Z5		
3	8	0.750	110	P80S-003Z9		
4	8	0.750	115	P80S-003ZA		
6	12	0.750	125	P80S-003ZC		
8	12	0.875	140	P80S-00466		
10	16	1.000	160	P80S-004BH		
12	16	1.125	175	P80S-004J7		

BOLT TABLE (B_B2GP_781 , STUD ASME RF, OPTION CODE 781)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	80	P80S-003VN		
0.75	4	0.625	90	P80S-003Z5		
1	4	0.625	95	P80S-003Z6		
1.5	4	0.750	110	P80S-003Z9		
2	8	0.625	110	P80S-003VV		
3	8	0.750	130	P80S-003ZD		
4	8	0.875	150	P80S-00468		
6	12	1.000	175	P80S-004BM		
8	12	1.125	195	P80S-004JB		
10	16	1.250	250	P80S-004LX		
12	20	1.250	255	P80S-004LY		

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BRANCH TABLE (T_B2GP)

RUN PIPE SIZE (in) \ BRANCH SIZE (in)	0.5	0.75	1	1.5	2	3	4	6	8	10	12
0.5	TS										
0.75		TS									
1		TR	TS								
1.5		TR	TR	TS							
2		L	TR	TR	TS						
3		L	L	TR	TR	TS					
4	L	L	L	L	TR	TR	TS				
6	L	L	L	L	L	TR	TR	TS			
8		L	L	L	L	L	TR	TR	TS		
10		L	L	L	L	L	TR	TR	TR	TS	
12		L	L	L	L	L	L	TR	TR	TR	TS

TR : REDUCING TEE
L : OUTLET
TS : STRAIGHT TEE

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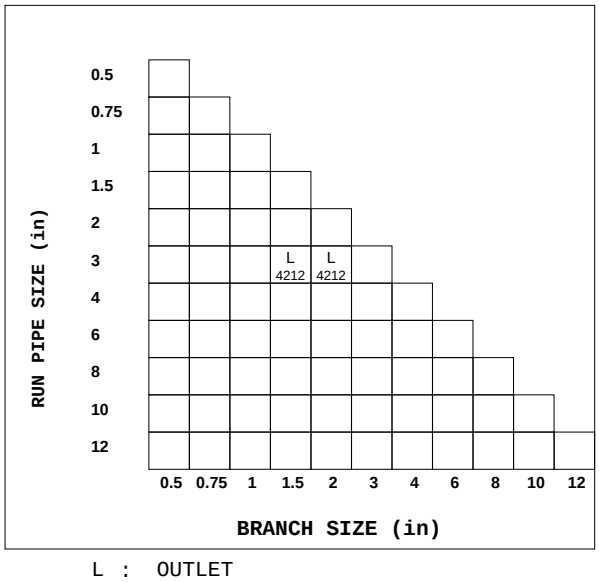
BRANCH TABLE (T_B2GP_4)



L : OUTLET

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PIPING CLASS

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Material : LTCS
Rating : ASME CLASS 300
Flange Face : RF
C.A.(mm) : 3.00
Gasket : Spiral Wound
Service : PROCESS - GENERAL PROCESS NON SOUR, NON CORROSIVE
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
200	WITH JACK SCREW (FO)
541	NPT(F) (CA,L)
714	SW - NPT(F) (V)
781	CLASS 600 (B,F,G)

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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P01A-00791	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE Licensor-1	
1	0.75		SCH160		P01A-00792	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE Licensor-1	
1	1		SCH160		P01A-00793	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE Licensor-1	
1	1.5		SCH160		P01A-00794	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE Licensor-1	
1	2		XS		P01A-00799	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE Licensor-1	
1	3		STD		P01A-0079A	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE Licensor-1	
1	4		STD		P01A-007C6	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE Licensor-1	
1	6		STD		P01A-007C7	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE Licensor-1	
1	8		STD		P01A-008V2	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE Licensor-1	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P02B-0007C	90 degree elbow ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW Licensor-1	
1	0.75				P02B-0007D	90 degree elbow ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW Licensor-1	
1	1				P02B-0007E	90 degree elbow ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW Licensor-1	
1	1.5				P02B-0007F	90 degree elbow ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW Licensor-1	
1	2		XS		P02A-003RF	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Licensor-1	
1	3		STD		P02A-003RH	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Licensor-1	
1	4		STD		P02A-003U9	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Licensor-1	
1	6		STD		P02A-003UA	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Licensor-1	
1	8		STD		P02A-004Y7	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Licensor-1	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P03B-00070	45 degree elbow ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW Licensor-1	
1	0.75				P03B-00071	45 degree elbow ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW Licensor-1	
1	1				P03B-00072	45 degree elbow ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW Licensor-1	
1	1.5				P03B-00073	45 degree elbow ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW Licensor-1	
1	2		XS		P03A-003N4	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Licensor-1	
1	3		STD		P03A-003N6	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Licensor-1	
1	4		STD		P03A-003RY	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Licensor-1	
1	6		STD		P03A-003RZ	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Licensor-1	
1	8		STD		P03A-004HP	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Licensor-1	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P21B-0006X	Straight tee ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW Licensor-1	
1	0.75				P21B-0006Y	Straight tee ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW Licensor-1	
1	1				P21B-0006Z	Straight tee ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW Licensor-1	
1	1.5				P21B-00070	Straight tee ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW Licensor-1	
1	2		XS		P21A-0048U	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	3		STD		P21A-0048V	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	4		STD		P21A-004BP	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	6		STD		P21A-004BR	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	8		STD		P21A-00522	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75			P24B-000BT	Reducing tee ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW Licensor-1	
1	1.5	0.75			P24B-000BU	Reducing tee ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW Licensor-1	
1	1.5	1			P24B-000BV	Reducing tee ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW Licensor-1	
1	2	1	XS	SCH160	P24A-00K15	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	2	1.5	XS	SCH160	P24A-00K16	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	3	1.5	STD	SCH160	P24A-00K17	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	3	2	STD	XS	P24A-00K18	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	4	2	STD	XS	P24A-00K9U	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	4	3	STD	STD	P24A-00K9V	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	6	3	STD	STD	P24A-00K9W	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	

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REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	6	4	STD	STD	P24A-00K9X	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	8	4	STD	STD	P24A-00PBS	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	8	6	STD	STD	P24A-00PBT	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	STD	XS	P27A-00EL6	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	4	2	STD	XS	P27A-00EUZ	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	4	3	STD	STD	P27A-00EV0	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	6	3	STD	STD	P27A-00EV1	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	6	4	STD	STD	P27A-00EV2	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	8	4	STD	STD	P27A-00HR5	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	8	6	STD	STD	P27A-00HR6	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	STD	XS	P28A-00BPY	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	4	2	STD	XS	P28A-00BYU	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	4	3	STD	STD	P28A-00BYV	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	6	3	STD	STD	P28A-00BYW	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	6	4	STD	STD	P28A-00BYX	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	8	4	STD	STD	P28A-00F0K	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	8	6	STD	STD	P28A-00F0L	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P29B-0005G	Cap ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW Licensor-1	
1	0.75				P29B-0005H	Cap ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW Licensor-1	
1	1				P29B-0005J	Cap ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW Licensor-1	
1	1.5				P29B-0005K	Cap ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW Licensor-1	
1	2		XS		P29A-0032L	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	3		STD		P29A-0032N	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	4		STD		P29A-00368	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	6		STD		P29A-0036A	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	8		STD		P29A-003Y6	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
541	0.75				P29B-0006C	Cap ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 NPT Licensor-1	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P41A-0019Z	Straight nipple ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Licensor-1	
1	0.75		XXS		P41A-001A0	Straight nipple ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Licensor-1	
1	1		XXS		P41A-001A1	Straight nipple ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Licensor-1	
1	1.5		XXS		P41A-001A2	Straight nipple ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Licensor-1	

CON SWAGED NIPPLE (SNC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	SCH160	P42A-000UB	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S) Licensor-1	
1	1	0.5	SCH160	SCH160	P42A-000UC	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S) Licensor-1	
1	1	0.75	SCH160	SCH160	P42A-000UD	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S) Licensor-1	
1	1.5	0.5	SCH160	SCH160	P42A-000UE	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S) Licensor-1	
1	1.5	0.75	SCH160	SCH160	P42A-000UF	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S) Licensor-1	
1	1.5	1	SCH160	SCH160	P42A-000UG	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S) Licensor-1	
1	2	0.5	XS	SCH160	P42A-000UH	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 BE(L) - PE(S) Licensor-1	
1	2	0.75	XS	SCH160	P42A-000UJ	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 BE(L) - PE(S) Licensor-1	
1	2	1	XS	SCH160	P42A-000UK	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 BE(L) - PE(S) Licensor-1	
1	2	1.5	XS	SCH160	P42A-000UL	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 BE(L) - PE(S) Licensor-1	
1	3	1.5	STD	SCH160	P42A-000UM	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 BE(L) - PE(S) Licensor-1	

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ECC SWAGED NIPPLE (SNE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	SCH160	P43A-000KE	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S) Licensor-1	
1	1	0.5	SCH160	SCH160	P43A-000KF	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S) Licensor-1	
1	1	0.75	SCH160	SCH160	P43A-000KG	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S) Licensor-1	
1	1.5	0.5	SCH160	SCH160	P43A-000KH	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S) Licensor-1	
1	1.5	0.75	SCH160	SCH160	P43A-000KJ	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S) Licensor-1	
1	1.5	1	SCH160	SCH160	P43A-000KK	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S) Licensor-1	
1	2	0.5	XS	SCH160	P43A-000KL	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 BE(L) - PE(S) Licensor-1	
1	2	0.75	XS	SCH160	P43A-000KM	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 BE(L) - PE(S) Licensor-1	
1	2	1	XS	SCH160	P43A-000KN	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 BE(L) - PE(S) Licensor-1	
1	2	1.5	XS	SCH160	P43A-000KP	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 BE(L) - PE(S) Licensor-1	
1	3	1.5	STD	SCH160	P43A-000KR	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 BE(L) - PE(S) Licensor-1	

COUPLING (CPS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P47B-0007R	Coupling ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW - SW Licensor-1	
1	0.75				P47B-0007S	Coupling ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW - SW Licensor-1	
1	1				P47B-0007T	Coupling ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW - SW Licensor-1	
1	1.5				P47B-0007U	Coupling ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW - SW Licensor-1	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5 - 2.5	0.75			P31B-0149H	Outlet ASTM A350 Grade LF2 Class 1 Class 6000 MSS SP-97 SW Licensor-1	
1	3 - 10	0.75			P31B-0149G	Outlet ASTM A350 Grade LF2 Class 1 Class 6000 MSS SP-97 SW Licensor-1	
1	3 - 10	1			P31B-0149L	Outlet ASTM A350 Grade LF2 Class 1 Class 6000 MSS SP-97 SW Licensor-1	
1	4 - 5	1.5			P31B-0149M	Outlet ASTM A350 Grade LF2 Class 1 Class 6000 MSS SP-97 SW Licensor-1	
1	6 - 8	1.5			P31B-0149N	Outlet ASTM A350 Grade LF2 Class 1 Class 6000 MSS SP-97 SW Licensor-1	
541	1	0.75			P31B-011V1	Outlet ASTM A350 Grade LF2 Class 1 Class 6000 MSS SP-97 NPT Licensor-1	
541	1.5 - 2.5	0.75			P31B-0149K	Outlet ASTM A350 Grade LF2 Class 1 Class 6000 MSS SP-97 NPT Licensor-1	
541	3 - 10	0.75			P31B-0149J	Outlet ASTM A350 Grade LF2 Class 1 Class 6000 MSS SP-97 NPT Licensor-1	
1	6	2	STD	XS	P31B-00XS1	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Licensor-1	
1	8	2	STD	XS	P31B-011NP	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Licensor-1	
1	8	3	STD	STD	P31B-011NR	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Licensor-1	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30B-0006B	Plug ASTM A350 Grade LF2 Class 1 ASME B16.11 NPT Round head Licensor-1	
1	0.75				P30B-0006C	Plug ASTM A350 Grade LF2 Class 1 ASME B16.11 NPT Round head Licensor-1	
1	1				P30B-0006D	Plug ASTM A350 Grade LF2 Class 1 ASME B16.11 NPT Round head Licensor-1	
1	1.5				P30B-0006E	Plug ASTM A350 Grade LF2 Class 1 ASME B16.11 NPT Round head Licensor-1	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P61B-00D0J	Flange SW ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF Licensor-1	
1	0.75		SCH160		P61B-00D0K	Flange SW ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF Licensor-1	
1	1		SCH160		P61B-00D0L	Flange SW ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF Licensor-1	
1	1.5		SCH160		P61B-00D0M	Flange SW ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF Licensor-1	
1	2		XS		P61B-00A1Y	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF Licensor-1	
1	3		STD		P61B-00A21	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF Licensor-1	
1	4		STD		P61B-00A22	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF Licensor-1	
1	6		STD		P61B-00A23	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF Licensor-1	
1	8		STD		P61B-00D0N	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF Licensor-1	
781	0.5		SCH160		P61B-009TY	Flange SW ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF Licensor-1	
781	0.75		SCH160		P61B-009TZ	Flange SW ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF Licensor-1	
781	1		SCH160		P61B-009U0	Flange SW ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF Licensor-1	
781	1.5		SCH160		P61B-009U1	Flange SW ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF Licensor-1	
781	2		XS		P61B-009U7	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF Licensor-1	
781	3		STD		P61B-009U9	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF Licensor-1	
781	4		STD		P61B-00ACY	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF Licensor-1	

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FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
781	6		STD		P61B-00ACZ	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF Licensor-1	
781	8		STD		P61B-00D0P	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF Licensor-1	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67B-002LB	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF Licensor-1	
1	0.75				P67B-002LC	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF Licensor-1	
1	1				P67B-002LD	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF Licensor-1	
1	1.5				P67B-002LE	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF Licensor-1	
1	2				P67B-002LL	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF Licensor-1	
1	3				P67B-002LP	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF Licensor-1	
1	4				P67B-002LR	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF Licensor-1	
1	6				P67B-002LS	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF Licensor-1	
1	8				P67B-002LT	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF Licensor-1	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000FT	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000FU	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000G5	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000G6	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	6				P73T-000G7	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	8				P73T-000G8	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	0.5				P73T-000J8	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	0.75				P73T-000J9	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1				P73T-000JA	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1.5				P73T-000JB	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	2				P73T-000JH	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	3				P73T-000JL	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	4				P73T-000JM	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	6				P73T-000JN	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	8				P73T-000JP	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-8				See Attached Bolt Table	Bolt and Nut ASTM A320 Grade L7 / A194 Grade 4 ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
781	0.5-6				See Attached Bolt Table	Bolt and Nut ASTM A320 Grade L7 / A194 Grade 4 ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
781	8				See Attached Bolt Table	Bolt and Nut ASTM A320 Grade L7 / A194 Grade 4 ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81B-001D1	Gate valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated Licensor-1	
1	0.75				P81B-001D2	Gate valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated Licensor-1	
1	1				P81B-001D3	Gate valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated Licensor-1	
1	1.5				P81B-001D4	Gate valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated Licensor-1	
1	2				P81C-004HG	Gate valve ASTM A352 Grade LCC Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	

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GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3				P81C-004HH	Gate valve ASTM A352 Grade LCC Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	4				P81C-004HJ	Gate valve ASTM A352 Grade LCC Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	6				P81C-004HK	Gate valve ASTM A352 Grade LCC Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	8				P81C-0091J	Gate valve ASTM A352 Grade LCC Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated	
714	0.5				P81B-002S5	Gate valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW - NPT Trim number 12 BB-BG-OS&Y Handwheel operated Licensor-1	
714	0.75				P81B-002FF	Gate valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW - NPT Trim number 12 BB-BG-OS&Y Handwheel operated Licensor-1	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82B-0014R	Globe valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated Licensor-1	
1	0.75				P82B-0014S	Globe valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated Licensor-1	
1	1				P82B-0014T	Globe valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated Licensor-1	
1	1.5				P82B-0014U	Globe valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated Licensor-1	
1	2				P82C-0027X	Globe valve ASTM A352 Grade LCC Class 300 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	3				P82C-0027Y	Globe valve ASTM A352 Grade LCC Class 300 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	4				P82C-0027Z	Globe valve ASTM A352 Grade LCC Class 300 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	6				P82C-00280	Globe valve ASTM A352 Grade LCC Class 300 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	8				P82C-004CT	Globe valve ASTM A352 Grade LCC Class 300 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83B-000WJ	Check valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 12 Lift-type Bolted cover Licensor-1	
1	0.75				P83B-000WK	Check valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 12 Lift-type Bolted cover Licensor-1	
1	1				P83B-000WL	Check valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 12 Lift-type Bolted cover Licensor-1	
1	1.5				P83B-000WM	Check valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 12 Lift-type Bolted cover Licensor-1	
1	2				P83C-0024D	Check valve ASTM A352 Grade LCC Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	3				P83C-0024G	Check valve ASTM A352 Grade LCC Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	4				P83C-0024H	Check valve ASTM A352 Grade LCC Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	6				P83C-0024J	Check valve ASTM A352 Grade LCC Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	8				P83C-0024K	Check valve ASTM A352 Grade LCC Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	

ORIFICE FLANGE (FO)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2		XS		P66B-008AY	Orifice flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Licensor-1	
1	3		STD		P66B-008B1	Orifice flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Licensor-1	
1	4		STD		P66B-008B2	Orifice flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Licensor-1	
1	6		STD		P66B-008B3	Orifice flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Licensor-1	
1	8		STD		P66B-008KC	Orifice flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Licensor-1	
200	2		XS		P66B-008BD	Orifice flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw Licensor-1	
200	3		STD		P66B-008BG	Orifice flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw Licensor-1	
200	4		STD		P66B-008BH	Orifice flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw Licensor-1	
200	6		STD		P66B-008BJ	Orifice flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw Licensor-1	
200	8		STD		P66B-008CZ	Orifice flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw Licensor-1	

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SPECT BLANK (SB)							
OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71B-000C1	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	0.75				P71B-000C2	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	1				P71B-000C3	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	1.5				P71B-000C4	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	2				P71B-000C7	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	3				P71B-000C8	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	4				P71B-000C9	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	6				P71B-000CA	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	8				P71B-000CB	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF Licensor-1	

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BOLT TABLE (B_B2GP01 , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-003VL		
0.75	4	0.625	75	P80S-003Z2		
1	4	0.625	80	P80S-003Z3		
1.5	4	0.750	95	P80S-0045X		
2	8	0.625	90	P80S-003Z5		
3	8	0.750	110	P80S-003Z9		
4	8	0.750	115	P80S-003ZA		
6	12	0.750	125	P80S-003ZC		
8	12	0.875	140	P80S-00466		

BOLT TABLE (B_B2GP01_781 , STUD ASME RF, OPTION CODE 781)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	80	P80S-003VN		
0.75	4	0.625	90	P80S-003Z5		
1	4	0.625	95	P80S-003Z6		
1.5	4	0.750	110	P80S-003Z9		
2	8	0.625	110	P80S-003VV		
3	8	0.750	130	P80S-003ZD		
4	8	0.875	150	P80S-00468		
6	12	1.000	175	P80S-004BM		
8	12	1.125	195	P80S-004JB		

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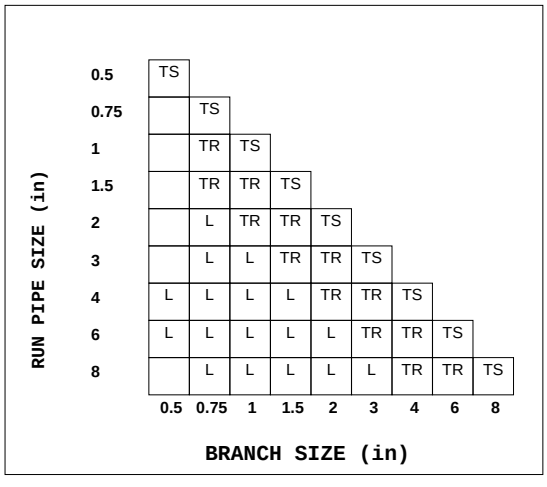
BRANCH TABLE (T_B2GP01)



TS : STRAIGHT TEE
L : OUTLET
TR : REDUCING TEE

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PIPING CLASS

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Material : LTCS
Rating : ASME CLASS 300
Flange Face : RF
C.A.(mm) : 3.00
Gasket : Spiral Wound
Service : PROCESS - GENERAL PROCESS NON SOUR, NON CORROSIVE
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
2	USE OF SOFT SEATED BALL, PLUG AND BUTTERFLY VALVES SHALL BE LIMITED TO MAXIMUM OF 204DEGC (400DEGF)

DETAIL NOTES :

NO.	DESCRIPTION
38	TO BE USED FOR STAND PIPE

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
200	WITH JACK SCREW (FO)
541	NPT(F) (CA,L)
714	SW - NPT(F) (V)
781	CLASS 600 (B,F,G)
4212	WELDOLET FOR STAND PIPE (L)

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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P01A-001Z1	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE	
1	0.75		SCH160		P01A-0016P	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE	
1	1		SCH160		P01A-0011Z	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE	
1	1.5		SCH160		P01A-00127	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE	
1	2		XS		P01A-000XB	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	3		XS		P01A-000XG	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	4		STD		P01A-000YT	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	6		STD		P01A-000Z2	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	8		STD		P01A-000Z8	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	10		STD		P01A-000XH	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	12		SCH40		P01A-0018G	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	14		SCH40		P01A-0019M	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	16		STD		P01A-000Y8	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	18		STD		P01A-0042P	Pipe ASTM A671 Grade CC60 Class 22 EFW ASME B36.10M/B36.19M BE	
1	20		XS		P01A-0091U	Pipe ASTM A671 Grade CC60 Class 22 EFW ASME B36.10M/B36.19M BE	
1	24		STD		P01A-0042S	Pipe ASTM A671 Grade CC60 Class 22 EFW ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P02B-0002X	90 degree elbow ASTM A350 Grade LF2 Class 1 Class 9000 ASME B16.11 SW	
1	0.75				P02B-0001W	90 degree elbow ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW	
1	1				P02B-0001X	90 degree elbow ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW	
1	1.5				P02B-0001Y	90 degree elbow ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW	
1	2		XS		P02A-000B9	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	3		XS		P02A-000BC	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	4		STD		P02A-000E9	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	6		STD		P02A-000EC	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	8		STD		P02A-000EF	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	10		STD		P02A-000EL	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	12		SCH40		P02A-000JZ	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	14		SCH40		P02A-000K0	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	16		STD		P02A-000E1	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	18		STD		P02A-002HN	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	20		XS		P02A-001K3	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	24		STD		P02A-001K1	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P03B-0002T	45 degree elbow ASTM A350 Grade LF2 Class 1 Class 9000 ASME B16.11 SW	
1	0.75				P03B-0001T	45 degree elbow ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW	
1	1				P03B-0001U	45 degree elbow ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW	
1	1.5				P03B-0001V	45 degree elbow ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW	
1	2		XS		P03A-0009Y	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	3		XS		P03A-000A0	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	4		STD		P03A-000C6	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	6		STD		P03A-000C9	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	8		STD		P03A-000CB	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	10		STD		P03A-000BL	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	12		SCH40		P03A-000GX	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	14		SCH40		P03A-000GY	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	16		STD		P03A-000BY	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	18		STD		P03A-002F6	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	20		XS		P03A-001E7	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	24		STD		P03A-001E5	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P21B-0002W	Straight tee ASTM A350 Grade LF2 Class 1 Class 9000 ASME B16.11 SW	
1	0.75				P21B-0001T	Straight tee ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW	

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STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P21B-0001U	Straight tee ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW	
1	1.5				P21B-0001V	Straight tee ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW	
1	2		XS		P21A-001BR	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	3		XS		P21A-001BT	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	4		STD		P21A-001FF	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	6		STD		P21A-001FJ	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	8		STD		P21A-001FL	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10		STD		P21A-001F0	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12		SCH40		P21A-00239	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14		SCH40		P21A-0023A	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16		STD		P21A-001F7	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	18		STD		P21A-001F1	Straight tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	20		XS		P21A-001ZX	Straight tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	24		STD		P21A-001F8	Straight tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75			P24B-0003M	Reducing tee ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW	
1	1.5	0.75			P24B-0003P	Reducing tee ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW	
1	1.5	1			P24B-0003R	Reducing tee ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW	
1	2	1	XS	SCH160	P24A-00GMD	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	2	1.5	XS	SCH160	P24A-005NK	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	3	1.5	XS	SCH160	P24A-00GMW	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	3	2	XS	XS	P24A-00270	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	4	2	STD	XS	P24A-006CW	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	4	3	STD	XS	P24A-00M5R	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	6	3	STD	XS	P24A-00M5S	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	6	4	STD	STD	P24A-00289	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	8	4	STD	STD	P24A-0028B	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	8	6	STD	STD	P24A-0028T	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	4	STD	STD	P24A-002K7	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	6	STD	STD	P24A-002AN	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	8	STD	STD	P24A-0028W	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	6	SCH40	STD	P24A-00M0Y	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	8	SCH40	STD	P24A-00674	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	10	SCH40	STD	P24A-00673	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	6	SCH40	STD	P24A-00M0Z	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	8	SCH40	STD	P24A-00M10	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	10	SCH40	STD	P24A-00675	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	12	SCH40	SCH40	P24A-0036F	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	6	STD	STD	P24A-002PL	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	8	STD	STD	P24A-002R6	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	10	STD	STD	P24A-0028N	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	12	STD	SCH40	P24A-00NEM	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	14	STD	SCH40	P24A-00NEN	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	18	8	STD	STD	P24A-002RC	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	18	10	STD	STD	P24A-0028J	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	18	12	STD	SCH40	P24A-00NEP	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	18	14	STD	SCH40	P24A-00NER	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	18	16	STD	STD	P24A-0029U	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	20	8	XS	STD	P24A-002U0	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	20	10	XS	STD	P24A-002LH	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	20	12	XS	SCH40	P24A-00PY9	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	20	14	XS	SCH40	P24A-00PYA	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	20	16	XS	STD	P24A-00PYB	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	20	18	XS	STD	P24A-00PYC	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	24	10	STD	STD	P24A-002KU	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	24	12	STD	SCH40	P24A-00M1A	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	24	14	STD	SCH40	P24A-00M1B	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	

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REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	24	16	STD	STD	P24A-0028M	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	24	18	STD	STD	P24A-0029A	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	24	20	STD	XS	P24A-00PYH	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	XS	XS	P27A-0018T	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	4	2	STD	XS	P27A-003PN	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	4	3	STD	XS	P27A-00G4P	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	6	3	STD	XS	P27A-00G4R	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	6	4	STD	STD	P27A-00181	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	8	4	STD	STD	P27A-0017P	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	8	6	STD	STD	P27A-001B9	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	4	STD	STD	P27A-0017X	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	6	STD	STD	P27A-001BV	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	8	STD	STD	P27A-001D6	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	6	SCH40	STD	P27A-00G2V	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	8	SCH40	STD	P27A-0047Z	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	10	SCH40	STD	P27A-0047X	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	6	SCH40	STD	P27A-00G2W	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	8	SCH40	STD	P27A-00482	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	10	SCH40	STD	P27A-00480	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	12	SCH40	SCH40	P27A-00224	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	8	STD	STD	P27A-001EG	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	10	STD	STD	P27A-001BD	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	12	STD	SCH40	P27A-00H3Z	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	14	STD	SCH40	P27A-00H40	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	18	10	STD	STD	P27A-001B6	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	18	12	STD	SCH40	P27A-00H43	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	18	14	STD	SCH40	P27A-00H44	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	18	16	STD	STD	P27A-001EF	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	20	12	XS	SCH40	P27A-00J83	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	20	14	XS	SCH40	P27A-00J84	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	20	16	XS	STD	P27A-00J85	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	20	18	XS	STD	P27A-00J86	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	24	16	STD	STD	P27A-001BC	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	24	18	STD	STD	P27A-001CM	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	24	20	STD	XS	P27A-00J8B	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	XS	XS	P28A-00199	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	4	2	STD	XS	P28A-003PM	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	4	3	STD	XS	P28A-00DBN	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	6	3	STD	XS	P28A-00DBP	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	6	4	STD	STD	P28A-001BL	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	8	4	STD	STD	P28A-001B9	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	8	6	STD	STD	P28A-001CL	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	4	STD	STD	P28A-001BF	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	6	STD	STD	P28A-001CK	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	8	STD	STD	P28A-001E4	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	6	SCH40	STD	P28A-00D93	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	8	SCH40	STD	P28A-0047R	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	10	SCH40	STD	P28A-0047N	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	6	SCH40	STD	P28A-00D94	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	8	SCH40	STD	P28A-0047U	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	10	SCH40	STD	P28A-0047S	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	12	SCH40	SCH40	P28A-0021T	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	8	STD	STD	P28A-001FK	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	

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ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	16	10	STD	STD	P28A-001C7	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	12	STD	SCH40	P28A-00EB6	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	14	STD	SCH40	P28A-00EB7	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	18	10	STD	STD	P28A-001BT	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	18	12	STD	SCH40	P28A-00EBA	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	18	14	STD	SCH40	P28A-00EBB	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	18	16	STD	STD	P28A-001FG	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	20	12	XS	SCH40	P28A-00FJ4	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	20	14	XS	SCH40	P28A-00FJ5	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	20	16	XS	STD	P28A-00FJ6	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	20	18	XS	STD	P28A-00FJ7	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	24	16	STD	STD	P28A-001C8	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	24	18	STD	STD	P28A-001DG	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	24	20	STD	XS	P28A-00FJC	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P29B-0005A	Cap ASTM A350 Grade LF2 Class 1 Class 9000 ASME B16.11 SW	
1	0.75				P29B-0002K	Cap ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW	
1	1				P29B-0002L	Cap ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW	
1	1.5				P29B-0002H	Cap ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW	
1	2		XS		P29A-000BG	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	3		XS		P29A-0009U	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	4		STD		P29A-000AH	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	6		STD		P29A-000DE	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	8		STD		P29A-000DH	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10		STD		P29A-000B0	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12		SCH40		P29A-000GW	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14		SCH40		P29A-000GX	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16		STD		P29A-000BC	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	18		STD		P29A-000BH	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	20		XS		P29A-000CJ	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	24		STD		P29A-0009T	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
541	0.75				P29B-00015	Cap ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P41A-000DJ	Straight nipple ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		XXS		P41A-000DK	Straight nipple ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		XXS		P41A-000DZ	Straight nipple ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		XXS		P41A-000E0	Straight nipple ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

CON SWAGED NIPPLE (SNC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	XXS	P42A-0009Z	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	SCH160	XXS	P42A-000A0	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	SCH160	SCH160	P42A-000A1	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	SCH160	XXS	P42A-000A2	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	SCH160	SCH160	P42A-000A3	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	SCH160	SCH160	P42A-000A4	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	XS	XXS	P42A-0010J	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	XS	SCH160	P42A-000L2	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	XS	SCH160	P42A-000L3	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	XS	SCH160	P42A-000L4	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	XS	SCH160	P42A-000LK	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 BE(L) - PE(S)	

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ECC SWAGED NIPPLE (SNE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	XXS	P43A-000HB	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	SCH160	XXS	P43A-000HC	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	SCH160	SCH160	P43A-000D4	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	SCH160	XXS	P43A-000HD	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	SCH160	SCH160	P43A-000D6	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	SCH160	SCH160	P43A-000D7	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	XS	XXS	P43A-000MC	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	XS	SCH160	P43A-000D9	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	XS	SCH160	P43A-000DA	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	XS	SCH160	P43A-000DB	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	XS	SCH160	P43A-000E4	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 BE(L) - PE(S)	

COUPLING (CPS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P47B-00036	Coupling ASTM A350 Grade LF2 Class 1 Class 9000 ASME B16.11 SW - SW	
1	0.75				P47B-0001T	Coupling ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW - SW	
1	1				P47B-0001U	Coupling ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW - SW	
1	1.5				P47B-0001V	Coupling ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW - SW	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5 - 2.5	0.75			P31B-0138C	Outlet ASTM A350 Grade LF2 Class 1 Class 6000 MSS SP-97 SW	
1	3 - 10	0.75			P31B-007DK	Outlet ASTM A350 Grade LF2 Class 1 Class 6000 MSS SP-97 SW	
1	12 and larger	0.75			P31B-0138B	Outlet ASTM A350 Grade LF2 Class 1 Class 6000 MSS SP-97 SW	
1	3 - 10	1			P31B-007BL	Outlet ASTM A350 Grade LF2 Class 1 Class 6000 MSS SP-97 SW	
1	12 and larger	1			P31B-0138D	Outlet ASTM A350 Grade LF2 Class 1 Class 6000 MSS SP-97 SW	
1	4 - 5	1.5			P31B-00514	Outlet ASTM A350 Grade LF2 Class 1 Class 6000 MSS SP-97 SW	
1	6 - 8	1.5			P31B-007B0	Outlet ASTM A350 Grade LF2 Class 1 Class 6000 MSS SP-97 SW	
1	10 - 18	1.5			P31B-007BC	Outlet ASTM A350 Grade LF2 Class 1 Class 6000 MSS SP-97 SW	
1	20 and larger	1.5			P31B-0138E	Outlet ASTM A350 Grade LF2 Class 1 Class 6000 MSS SP-97 SW	
541	1	0.75			P31B-004HD	Outlet ASTM A350 Grade LF2 Class 1 Class 6000 MSS SP-97 NPT	
541	1.5 - 2.5	0.75			P31B-0138F	Outlet ASTM A350 Grade LF2 Class 1 Class 6000 MSS SP-97 NPT	
541	3 - 10	0.75			P31B-007CY	Outlet ASTM A350 Grade LF2 Class 1 Class 6000 MSS SP-97 NPT	
541	12 and larger	0.75			P31B-0138G	Outlet ASTM A350 Grade LF2 Class 1 Class 6000 MSS SP-97 NPT	
1	6	2	STD	XS	P31B-00MFB	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	8	2	STD	XS	P31B-00PAW	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	10	2	STD	XS	P31B-00TPH	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	12	2	SCH40	XS	P31B-00ZG2	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	14	2	SCH40	XS	P31B-00ZG5	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	16	2	STD	XS	P31B-00TPK	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	18	2	STD	XS	P31B-00TPL	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	20	2	XS	XS	P31B-00VYT	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	24	2	STD	XS	P31B-00M4U	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	8	3	STD	XS	P31B-00M9R	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	10	3	STD	XS	P31B-00MBH	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	12	3	SCH40	XS	P31B-00MJB	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	14	3	SCH40	XS	P31B-00MJD	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	16	3	STD	XS	P31B-010SV	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	18	3	STD	XS	P31B-00ME5	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	20	3	XS	XS	P31B-00MEA	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	24	3	STD	XS	P31B-00MAS	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	12	4	SCH40	STD	P31B-00ZG4	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	14	4	SCH40	STD	P31B-00ZG7	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	16	4	STD	STD	P31B-00E8A	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	18	4	STD	STD	P31B-00E8D	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	20	4	XS	STD	P31B-00E9B	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	24	4	STD	STD	P31B-00E8C	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	18	6	STD	STD	P31B-00E85	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	20	6	XS	STD	P31B-00E93	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	

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OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	24	6	STD	STD	P31B-00E84	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
4212	3	2	XS	XS	P31B-00VAP	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	38

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30B-0002V	Plug ASTM A350 Grade LF2 Class 1 ASME B16.11 NPT Round head	
1	0.75				P30B-0002W	Plug ASTM A350 Grade LF2 Class 1 ASME B16.11 NPT Round head	
1	1				P30B-0002X	Plug ASTM A350 Grade LF2 Class 1 ASME B16.11 NPT Round head	
1	1.5				P30B-0002Y	Plug ASTM A350 Grade LF2 Class 1 ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P61B-001D1	Flange SW ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	0.75		SCH160		P61B-001D5	Flange SW ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	1		SCH160		P61B-001GC	Flange SW ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	1.5		SCH160		P61B-001GZ	Flange SW ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	2		XS		P61B-003R8	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	3		XS		P61B-003SG	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	4		STD		P61B-001N0	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	6		STD		P61B-001NM	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	8		STD		P61B-001NZ	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	10		STD		P61B-001L8	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	12		SCH40		P61B-001NV	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	14		SCH40		P61B-0021C	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	16		STD		P61B-001LM	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	18		STD		P61B-001MF	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	20		XS		P61B-001K7	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	24		STD		P61B-001P1	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
781	0.5		XXS		P61B-001Y9	Flange SW ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
781	0.75		SCH160		P61B-001YD	Flange SW ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
781	1		SCH160		P61B-001YU	Flange SW ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
781	1.5		SCH160		P61B-001XN	Flange SW ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
781	2		XS		P61B-001FN	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
781	3		XS		P61B-001K0	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
781	4		STD		P61B-001VT	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
781	6		STD		P61B-001JV	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
781	8		STD		P61B-001KE	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
781	10		STD		P61B-001JH	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
781	12		SCH40		P61B-003WP	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
781	14		SCH40		P61B-008YZ	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
781	16		STD		P61B-003H9	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
781	18		STD		P61B-003H7	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
781	20		XS		P61B-001S9	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
781	24		STD		P61B-003H4	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67B-000NN	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	0.75				P67B-000MV	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	1				P67B-000MW	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	1.5				P67B-000MX	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	2				P67B-000N3	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	3				P67B-000N6	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	4				P67B-000N7	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	6				P67B-000N8	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	8				P67B-000N9	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	10				P67B-000MY	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	12				P67B-000MZ	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	14				P67B-000N0	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	

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BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	16				P67B-000N1	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	18				P67B-000N2	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	20				P67B-000N4	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	24				P67B-000N5	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000FT	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000FU	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000G5	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000G6	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	6				P73T-000G7	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	8				P73T-000G8	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	10				P73T-000FX	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	12				P73T-000FY	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	14				P73T-000FZ	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	16				P73T-000G0	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	18				P73T-000G1	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	20				P73T-000G3	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	24				P73T-000G4	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	0.5				P73T-000J8	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	0.75				P73T-000J9	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1				P73T-000JA	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1.5				P73T-000JB	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	2				P73T-000JH	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	3				P73T-000JL	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	4				P73T-000JM	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	6				P73T-000JN	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	8				P73T-000JP	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	10				P73T-000JC	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	12				P73T-000JD	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	14				P73T-000JE	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	16				P73T-000JF	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	18				P73T-000JG	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	20				P73T-000JJ	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	24				P73T-000JK	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-10				See Attached Bolt Table	Bolt and Nut ASTM A320 Grade L7 / A194 Grade 4 ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	12-24				See Attached Bolt Table	Bolt and Nut ASTM A320 Grade L7 / A194 Grade 4 ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
781	0.5-6				See Attached Bolt Table	Bolt and Nut ASTM A320 Grade L7 / A194 Grade 4 ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
781	8-24				See Attached Bolt Table	Bolt and Nut ASTM A320 Grade L7 / A194 Grade 4 ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	

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PIPING CLASS
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GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81B-0018C	Gate valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	0.75				P81B-0018D	Gate valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	1				P81B-0018E	Gate valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	1.5				P81B-0018F	Gate valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	2				P81C-004HG	Gate valve ASTM A352 Grade LCC Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	3				P81C-004HH	Gate valve ASTM A352 Grade LCC Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	4				P81C-004HJ	Gate valve ASTM A352 Grade LCC Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	6				P81C-004HK	Gate valve ASTM A352 Grade LCC Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	8				P81C-0091J	Gate valve ASTM A352 Grade LCC Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated	
1	10				P81C-004HM	Gate valve ASTM A352 Grade LCC Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated	
1	12				P81C-004HN	Gate valve ASTM A352 Grade LCC Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated	
1	14				P81C-004HP	Gate valve ASTM A352 Grade LCC Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated	
1	16				P81C-004HR	Gate valve ASTM A352 Grade LCC Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated	
1	18				P81C-004HS	Gate valve ASTM A352 Grade LCC Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated	
1	20				P81C-004HT	Gate valve ASTM A352 Grade LCC Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated	
1	24				P81C-004HU	Gate valve ASTM A352 Grade LCC Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated	
714	0.5				P81B-002S4	Gate valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW - NPT Trim number 12 BB-BG-OS&Y Handwheel operated	
714	0.75				P81B-002FB	Gate valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW - NPT Trim number 12 BB-BG-OS&Y Handwheel operated	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82B-0011H	Globe valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	0.75				P82B-0011J	Globe valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	1				P82B-0011K	Globe valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	1.5				P82B-0011L	Globe valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	2				P82C-0027X	Globe valve ASTM A352 Grade LCC Class 300 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	3				P82C-0027Y	Globe valve ASTM A352 Grade LCC Class 300 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	4				P82C-0027Z	Globe valve ASTM A352 Grade LCC Class 300 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	6				P82C-00280	Globe valve ASTM A352 Grade LCC Class 300 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	8				P82C-004CT	Globe valve ASTM A352 Grade LCC Class 300 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83B-000TS	Check valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 12 Lift-type Bolted cover	
1	0.75				P83B-000TT	Check valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 12 Lift-type Bolted cover	
1	1				P83B-000TU	Check valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 12 Lift-type Bolted cover	
1	1.5				P83B-000TV	Check valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 12 Lift-type Bolted cover	
1	2				P83C-0024D	Check valve ASTM A352 Grade LCC Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	3				P83C-0024G	Check valve ASTM A352 Grade LCC Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	4				P83C-0024H	Check valve ASTM A352 Grade LCC Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	6				P83C-0024J	Check valve ASTM A352 Grade LCC Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	8				P83C-0024K	Check valve ASTM A352 Grade LCC Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	10				P83C-00248	Check valve ASTM A352 Grade LCC Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	

ORIFICE FLANGE (FO)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	4		STD		P66B-00864	Orifice flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	

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ORIFICE FLANGE (FO)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
200	4		STD		P66B-0086B	Orifice flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71B-000BP	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	0.75				P71B-000BR	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	1				P71B-000BS	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71B-000BT	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	2				P71B-000BW	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	3				P71B-000BX	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	4				P71B-000BY	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	6				P71B-000BZ	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	8				P71B-000C0	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	10				P71B-000BU	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	12				P71B-000BV	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF	

PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000G1	Paddle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	16				P72B-000G2	Paddle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	18				P72B-000G3	Paddle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	20				P72B-000G4	Paddle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	24				P72B-000G5	Paddle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF	

PADDLE SPACER (PS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000G6	Paddle spacer ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	16				P72B-000G7	Paddle spacer ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	18				P72B-000G8	Paddle spacer ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	20				P72B-000G9	Paddle spacer ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	24				P72B-000GA	Paddle spacer ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF	

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BOLT TABLE (B_B2GP04 , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-003VL		
0.75	4	0.625	75	P80S-003Z2		
1	4	0.625	80	P80S-003Z3		
1.5	4	0.750	95	P80S-0045X		
2	8	0.625	90	P80S-003Z5		
3	8	0.750	110	P80S-003Z9		
4	8	0.750	115	P80S-003ZA		
6	12	0.750	125	P80S-003ZC		
8	12	0.875	140	P80S-00466		
10	16	1.000	160	P80S-004BH		
12	16	1.125	175	P80S-004J7		
14	20	1.125	180	P80S-004J8		
16	20	1.250	190	P80S-004LJ		
18	24	1.250	200	P80S-004LL		
20	24	1.250	210	P80S-004LN		
24	24	1.500	235	P80S-003A7		

BOLT TABLE (B_B2GP04_781 , STUD ASME RF, OPTION CODE 781)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	80	P80S-003VN		
0.75	4	0.625	90	P80S-003Z5		
1	4	0.625	95	P80S-003Z6		
1.5	4	0.750	110	P80S-003Z9		
2	8	0.625	110	P80S-003VV		
3	8	0.750	130	P80S-003ZD		
4	8	0.875	150	P80S-00468		
6	12	1.000	175	P80S-004BM		
8	12	1.125	195	P80S-004JB		
10	16	1.250	250	P80S-004LX		
12	20	1.250	255	P80S-004LY		
14	20	1.375	270	P80S-003M5		
16	20	1.500	295	P80S-003D1		
18	20	1.625	320	P80S-00CB3		
20	24	1.625	335	P80S-00CB6		
24	24	1.875	380	P80S-00ACJ		

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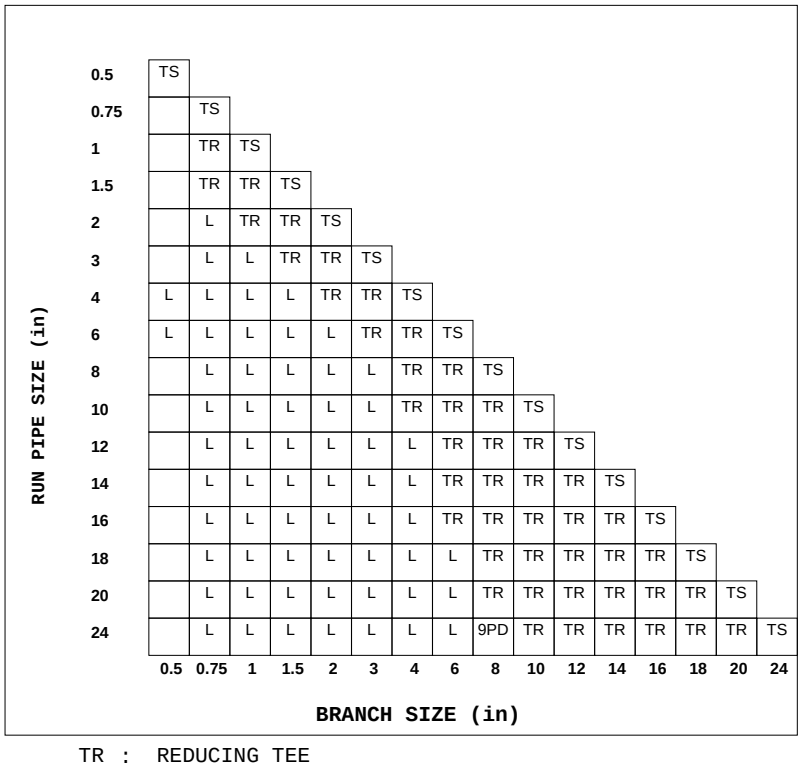
BRANCH TABLE (T_B2GP04)



TR : REDUCING TEE
L : OUTLET
TS : STRAIGHT TEE
9PD : REINFORCING PAD 90 DEG

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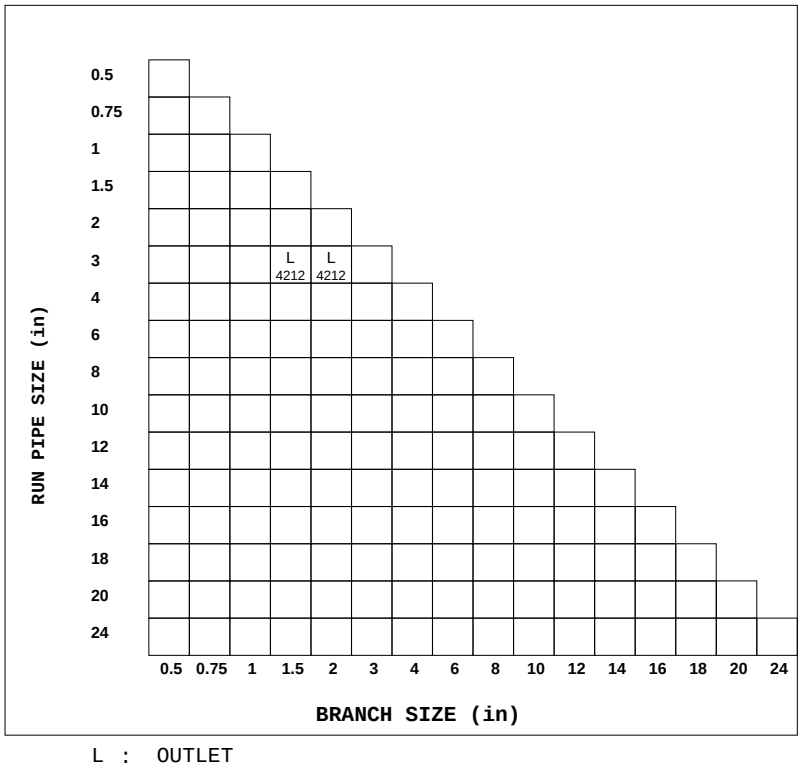
BRANCH TABLE (T_B2GP04_4)



L : OUTLET

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PIPING CLASS

B2GQ

REV NO. 2

Material : LTCS
Rating : ASME CLASS 300
Flange Face : RF
C.A.(mm) : 3.00
Gasket : Spiral Wound
Service : PROCESS - WET SOUR SERVICE SUBJECT TO NACE STD. : / DE-ETHANISER REFLUX / PROCESS, HYDROCARBONS

Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
2	USE OF SOFT SEATED BALL, PLUG AND BUTTERFLY VALVES SHALL BE LIMITED TO MAXIMUM OF 204DEGC (400DEGF)
5	BOLTING CONFIRMING TO B7M / 2HM SHALL BE USED UNDER CONDITIONS (A) DIRECT EXPOSURE TO SOUR ENVIRONMENTS (B) WHEN THE BOLTING WILL BE BURIED OR INSULATED
15	BOLTING CONFIRMING TO L7M / 7M SHALL BE USED UNDER CONDITIONS (A) DIRECT EXPOSURE TO SOUR ENVIRONMENTS (B) WHEN THE BOLTING WILL BE BURIED OR INSULATED
27	PWHT OF CARBON STEEL PIPING IN WET H2S, CAUSTIC AND AMINE SERVICES SHALL BE IN ACCORDANCE WITH SECTION 10.2, 10.3, AND 10.4 OF PROJECT SPECIFICATION 3550-8440-SP-0002 MATERIALS REQUIREMENTS FOR PRESSURISED EQUIPMENT AND PIPING. FOR CAUSTIC AND AMINE SERVICE THE FOLLOWING SHALL APPLY: - PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF ALL SITE PIPING FABRICATION WELDS IS REQUIRED FOR ALL WALL THICKNESSES. FOR MODERATE AND SEVERE WET H2S SERVICE THE FOLLOWING SHALL APPLY: PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF SITE FABRICATION CIRCUMFERENTIAL OR BRANCH WELDS IS NOT REQUIRED IF WELDS ARE MULTIPASS AND IN ACCORDANCE WITH PARA 10.2.12 OF PROJECT SPECIFICATION 3550-8440-SP-0002. FOR SERVICES MEETING THE WET H2S CRITERIA AND CAUSTIC OR AMINE CRITERIA THE MORE STRINGENT PWHT REQUIREMENT SHALL GOVERN.

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
541	NPT(F) (CA,F)
781	CLASS 600 (B,F,G)
4608	VALVE WITH NIPPLES (V)

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PIPING CLASS
B2GQ REV NO. 2

PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P01A-00167	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE	
1	0.75		SCH160		P01A-0016P	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE	
1	1		SCH160		P01A-0011Z	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE	
1	1.5		SCH160		P01A-00127	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE	
1	2		XS		P01A-000XB	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	3		STD		P01A-000YL	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	4		STD		P01A-000YT	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	6		STD		P01A-000Z2	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	8		STD		P01A-000Z8	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	10		STD		P01A-000XH	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	12		SCH40		P01A-0018G	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	14		SCH40		P01A-0019M	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	16		STD		P01A-000Y8	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	18		STD		P01A-0043H	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	20		XS		P01A-00379	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	24		XS		P01A-0037A	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P02A-002GD	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	0.75		SCH160		P02A-002GE	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	1		SCH160		P02A-002GF	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	1.5		SCH160		P02A-002GG	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	2		XS		P02A-000B9	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	3		STD		P02A-000E7	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	4		STD		P02A-000E9	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	6		STD		P02A-000EC	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	8		STD		P02A-000EF	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	10		STD		P02A-000EL	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	12		SCH40		P02A-000JZ	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	14		SCH40		P02A-000K0	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	16		STD		P02A-000E1	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	18		STD		P02A-002HN	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	20		XS		P02A-001K3	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	24		XS		P02A-001K4	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P03A-002E0	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	0.75		SCH160		P03A-002E1	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	1		SCH160		P03A-002E2	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	1.5		SCH160		P03A-002E3	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	2		XS		P03A-0009Y	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	3		STD		P03A-000C4	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	4		STD		P03A-000C6	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	6		STD		P03A-000C9	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	8		STD		P03A-000CB	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	10		STD		P03A-000BL	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	12		SCH40		P03A-000GX	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	14		SCH40		P03A-000GY	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	16		STD		P03A-000BY	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	18		STD		P03A-002F6	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	20		XS		P03A-001E7	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	24		XS		P03A-001E8	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P21A-003EN	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	0.75		SCH160		P21A-003EP	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	

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STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		SCH160		P21A-003ER	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	1.5		SCH160		P21A-003ES	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	2		XS		P21A-001BR	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	3		STD		P21A-001FE	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	4		STD		P21A-001FF	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	6		STD		P21A-001FJ	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	8		STD		P21A-001FL	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10		STD		P21A-001F0	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12		SCH40		P21A-00239	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14		SCH40		P21A-0023A	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16		STD		P21A-001F7	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	18		STD		P21A-003H0	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	20		XS		P21A-002YB	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	24		XS		P21A-002YC	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75	SCH160	SCH160	P24A-00GC7	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	1.5	0.75	SCH160	SCH160	P24A-00GC9	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	1.5	1	SCH160	SCH160	P24A-00GCA	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	2	1	XS	SCH160	P24A-00GMD	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	2	1.5	XS	SCH160	P24A-005NK	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	3	1.5	STD	SCH160	P24A-00GME	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	3	2	STD	XS	P24A-005M3	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	4	2	STD	XS	P24A-006CW	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	4	3	STD	STD	P24A-0028C	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	6	3	STD	STD	P24A-002AL	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	6	4	STD	STD	P24A-00289	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	8	4	STD	STD	P24A-0028B	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	8	6	STD	STD	P24A-0028T	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	4	STD	STD	P24A-002K7	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	6	STD	STD	P24A-002AN	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	8	STD	STD	P24A-0028W	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	6	SCH40	STD	P24A-00M0Y	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	8	SCH40	STD	P24A-00674	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	10	SCH40	STD	P24A-00673	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	6	SCH40	STD	P24A-00M0Z	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	8	SCH40	STD	P24A-00M10	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	10	SCH40	STD	P24A-00675	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	12	SCH40	SCH40	P24A-0036F	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	6	STD	STD	P24A-002PL	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	8	STD	STD	P24A-002R6	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	10	STD	STD	P24A-0028N	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	12	STD	SCH40	P24A-00NEM	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	14	STD	SCH40	P24A-00NEN	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	18	8	STD	STD	P24A-00GPX	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	18	10	STD	STD	P24A-00GPT	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	18	12	STD	SCH40	P24A-00R5X	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	18	14	STD	SCH40	P24A-00R5Y	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	18	16	STD	STD	P24A-00GPW	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	20	8	XS	STD	P24A-00R61	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	20	10	XS	STD	P24A-00PLU	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	20	12	XS	SCH40	P24A-00GNG	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	20	14	XS	SCH40	P24A-00GNH	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	20	16	XS	STD	P24A-00R5Z	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	20	18	XS	STD	P24A-00R60	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	24	10	XS	STD	P24A-00GR3	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	24	12	XS	SCH40	P24A-00GNM	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	24	14	XS	SCH40	P24A-00GNN	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	

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REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	24	16	XS	STD	P24A-00GR6	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	24	18	XS	STD	P24A-00GR7	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	24	20	XS	XS	P24A-0088V	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	SCH160	P27A-00B9Z	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	1	0.5	SCH160	SCH160	P27A-00BA0	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	1	0.75	SCH160	SCH160	P27A-00BA1	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	1.5	0.5	SCH160	SCH160	P27A-00BA2	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	1.5	0.75	SCH160	SCH160	P27A-00BA3	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	1.5	1	SCH160	SCH160	P27A-00BA4	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	2	0.75	XS	SCH160	P27A-003S6	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	2	1	XS	SCH160	P27A-003S7	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	2	1.5	XS	SCH160	P27A-003S8	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	3	1.5	STD	SCH160	P27A-003S9	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	3	2	STD	XS	P27A-003PM	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	4	1.5	STD	SCH160	P27A-003SA	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	4	2	STD	XS	P27A-003PN	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	4	3	STD	STD	P27A-001BA	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	6	3	STD	STD	P27A-001H9	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	6	4	STD	STD	P27A-00181	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	8	4	STD	STD	P27A-0017P	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	8	6	STD	STD	P27A-001B9	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	4	STD	STD	P27A-0017X	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	6	STD	STD	P27A-001BV	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	8	STD	STD	P27A-001D6	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	6	SCH40	STD	P27A-00G2V	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	8	SCH40	STD	P27A-0047Z	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	10	SCH40	STD	P27A-0047X	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	6	SCH40	STD	P27A-00G2W	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	8	SCH40	STD	P27A-00482	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	10	SCH40	STD	P27A-00480	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	12	SCH40	SCH40	P27A-00224	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	8	STD	STD	P27A-001EG	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	10	STD	STD	P27A-001BD	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	12	STD	SCH40	P27A-00H3Z	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	14	STD	SCH40	P27A-00H40	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	18	10	STD	STD	P27A-00BHC	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	18	12	STD	SCH40	P27A-00JEA	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	18	14	STD	SCH40	P27A-00JEB	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	18	16	STD	STD	P27A-00BHF	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	20	12	XS	SCH40	P27A-00BGB	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	20	14	XS	SCH40	P27A-00BGC	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	20	16	XS	STD	P27A-00JEC	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	20	18	XS	STD	P27A-00JED	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	24	16	XS	STD	P27A-00BHK	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	24	18	XS	STD	P27A-00BHL	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	24	20	XS	XS	P27A-009CV	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	SCH160	P28A-0083Z	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	1	0.5	SCH160	SCH160	P28A-00840	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	1	0.75	SCH160	SCH160	P28A-00841	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	1.5	0.5	SCH160	SCH160	P28A-00842	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	1.5	0.75	SCH160	SCH160	P28A-00843	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	1.5	1	SCH160	SCH160	P28A-00844	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	2	0.75	XS	SCH160	P28A-003S2	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2	1	XS	SCH160	P28A-003S3	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	2	1.5	XS	SCH160	P28A-003S4	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	3	1.5	STD	SCH160	P28A-003S5	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	3	2	STD	XS	P28A-003PL	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	4	1.5	STD	SCH160	P28A-003S6	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	4	2	STD	XS	P28A-003PM	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	4	3	STD	STD	P28A-001CF	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	6	3	STD	STD	P28A-001AL	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	6	4	STD	STD	P28A-001BL	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	8	4	STD	STD	P28A-001B9	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	8	6	STD	STD	P28A-001CL	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	4	STD	STD	P28A-001BF	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	6	STD	STD	P28A-001CK	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	8	STD	STD	P28A-001E4	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	6	SCH40	STD	P28A-00D93	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	8	SCH40	STD	P28A-0047R	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	10	SCH40	STD	P28A-0047N	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	6	SCH40	STD	P28A-00D94	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	8	SCH40	STD	P28A-0047U	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	10	SCH40	STD	P28A-0047S	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	12	SCH40	SCH40	P28A-0021T	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	8	STD	STD	P28A-001FK	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	10	STD	STD	P28A-001C7	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	12	STD	SCH40	P28A-00EB6	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	14	STD	SCH40	P28A-00EB7	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	18	10	STD	STD	P28A-008GS	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	18	12	STD	SCH40	P28A-00FRC	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	18	14	STD	SCH40	P28A-00FRD	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	18	16	STD	STD	P28A-008GV	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	20	12	XS	SCH40	P28A-008F0	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	20	14	XS	SCH40	P28A-008F1	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	20	16	XS	STD	P28A-00FRE	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	20	18	XS	STD	P28A-00FRF	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	24	16	XS	STD	P28A-008GZ	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	24	18	XS	STD	P28A-008H0	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	24	20	XS	XS	P28A-00650	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P29A-003AK	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service	
1	0.75		SCH160		P29A-001UV	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service	
1	1		SCH160		P29A-001UW	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service	
1	1.5		SCH160		P29A-001UX	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service	
1	2		XS		P29A-001V3	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service	
1	3		STD		P29A-001V6	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service	
1	4		STD		P29A-001V7	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service	
1	6		STD		P29A-001V8	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service	
1	8		STD		P29A-001V9	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service	
1	10		STD		P29A-001UY	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service	
1	12		SCH40		P29A-005MB	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service	
1	14		SCH40		P29A-005MC	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service	
1	16		STD		P29A-001V1	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service	
1	18		STD		P29A-001V2	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service	
1	20		XS		P29A-005L3	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service	
1	24		XS		P29A-001V5	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service	
541	0.75				P29B-00015	Cap ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 NPT	

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STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P41A-000AD	Straight nipple ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		SCH160		P41A-000BB	Straight nipple ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		SCH160		P41A-000AN	Straight nipple ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		SCH160		P41A-000AP	Straight nipple ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2	0.75	XS	SCH160	P31B-00TPR	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	3	0.75	STD	SCH160	P31B-00TPS	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	4	0.75	STD	SCH160	P31B-00TPU	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	6	0.75	STD	SCH160	P31B-00TPX	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	8	0.75	STD	SCH160	P31B-00TSA	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	10	0.75	STD	SCH160	P31B-00TSD	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	12	0.75	SCH40	SCH160	P31B-00ZVU	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	14	0.75	SCH40	SCH160	P31B-00ZVV	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	16	0.75	STD	SCH160	P31B-00TSN	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	18	0.75	STD	SCH160	P31B-00TSS	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	20	0.75	XS	SCH160	P31B-012UD	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	24	0.75	XS	SCH160	P31B-00TSY	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	3	1	STD	SCH160	P31B-00TPT	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	4	1	STD	SCH160	P31B-00TPV	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	6	1	STD	SCH160	P31B-00TPY	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	8	1	STD	SCH160	P31B-00TSB	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	10	1	STD	SCH160	P31B-00TSE	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	12	1	SCH40	SCH160	P31B-00TRG	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	14	1	SCH40	SCH160	P31B-00TRJ	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	16	1	STD	SCH160	P31B-00TSP	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	18	1	STD	SCH160	P31B-00TST	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	20	1	XS	SCH160	P31B-00TRT	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	24	1	XS	SCH160	P31B-00TRV	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	4	1.5	STD	SCH160	P31B-00TPW	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	6	1.5	STD	SCH160	P31B-00TPZ	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	8	1.5	STD	SCH160	P31B-00TSC	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	10	1.5	STD	SCH160	P31B-00TSF	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	12	1.5	SCH40	SCH160	P31B-00TRH	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	14	1.5	SCH40	SCH160	P31B-00TRK	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	16	1.5	STD	SCH160	P31B-00TSR	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	18	1.5	STD	SCH160	P31B-00TSU	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	20	1.5	XS	SCH160	P31B-00TRU	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	24	1.5	XS	SCH160	P31B-00TRW	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	6	2	STD	XS	P31B-00MFB	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	8	2	STD	XS	P31B-00PAW	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	10	2	STD	XS	P31B-00TPH	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	12	2	SCH40	XS	P31B-00ZG2	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	14	2	SCH40	XS	P31B-00ZG5	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	16	2	STD	XS	P31B-00TPK	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	18	2	STD	XS	P31B-00TPL	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	20	2	XS	XS	P31B-00VYT	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	24	2	XS	XS	P31B-00M6H	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	8	3	STD	STD	P31B-00E6Y	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	10	3	STD	STD	P31B-00E6V	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	12	3	SCH40	STD	P31B-00ZG3	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	14	3	SCH40	STD	P31B-00ZG6	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	16	3	STD	STD	P31B-00E8R	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	18	3	STD	STD	P31B-00E8W	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	20	3	XS	STD	P31B-00E9H	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	24	3	XS	STD	P31B-00M6J	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	12	4	SCH40	STD	P31B-00ZG4	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	14	4	SCH40	STD	P31B-00ZG7	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	

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OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	16	4	STD	STD	P31B-00E8A	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	18	4	STD	STD	P31B-00E8D	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	20	4	XS	STD	P31B-00E9B	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	24	4	XS	STD	P31B-00M6K	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	18	6	STD	STD	P31B-00E85	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	20	6	XS	STD	P31B-00E93	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	24	6	XS	STD	P31B-00M6L	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30B-0002V	Plug ASTM A350 Grade LF2 Class 1 ASME B16.11 NPT Round head	
1	0.75				P30B-0002W	Plug ASTM A350 Grade LF2 Class 1 ASME B16.11 NPT Round head	
1	1				P30B-0002X	Plug ASTM A350 Grade LF2 Class 1 ASME B16.11 NPT Round head	
1	1.5				P30B-0002Y	Plug ASTM A350 Grade LF2 Class 1 ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P61B-003RC	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	0.75		SCH160		P61B-003RD	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	1		SCH160		P61B-003RE	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	1.5		SCH160		P61B-003RF	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	2		XS		P61B-003R8	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	3		STD		P61B-001MB	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	4		STD		P61B-001N0	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	6		STD		P61B-001NM	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	8		STD		P61B-001NZ	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	10		STD		P61B-001L8	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	12		SCH40		P61B-001NV	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	14		SCH40		P61B-0021C	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	16		STD		P61B-001LM	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	18		STD		P61B-001MF	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	20		XS		P61B-001K7	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	24		XS		P61B-001LK	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
541	0.5				P61B-0035X	Flange NPT ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
541	0.75				P61B-0035W	Flange NPT ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
781	0.5		SCH160		P61B-003E1	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
781	0.75		SCH160		P61B-003E0	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
781	1		SCH160		P61B-003DZ	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
781	1.5		SCH160		P61B-003DY	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
781	2		XS		P61B-001FN	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
781	3		STD		P61B-001TV	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
781	4		STD		P61B-001VT	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
781	6		STD		P61B-001JV	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
781	8		STD		P61B-001KE	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
781	10		STD		P61B-001JH	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
781	12		SCH40		P61B-003WP	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
781	14		SCH40		P61B-008YZ	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
781	16		STD		P61B-003H9	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
781	18		STD		P61B-003H7	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
781	20		XS		P61B-001S9	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
781	24		XS		P61B-001SU	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67B-000NN	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	0.75				P67B-000MV	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	1				P67B-000MW	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	1.5				P67B-000MX	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	2				P67B-000N3	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	

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BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3				P67B-000N6	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	4				P67B-000N7	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	6				P67B-000N8	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	8				P67B-000N9	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	10				P67B-000MY	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	12				P67B-000MZ	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	14				P67B-000N0	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	16				P67B-000N1	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	18				P67B-000N2	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	20				P67B-000N4	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	24				P67B-000N5	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000FT	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000FU	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000G5	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000G6	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	6				P73T-000G7	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	8				P73T-000G8	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	10				P73T-000FX	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	12				P73T-000FY	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	14				P73T-000FZ	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	16				P73T-000G0	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	18				P73T-000G1	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	20				P73T-000G3	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	24				P73T-000G4	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	0.5				P73T-000J8	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	0.75				P73T-000J9	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1				P73T-000JA	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1.5				P73T-000JB	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	2				P73T-000JH	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	3				P73T-000JL	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	4				P73T-000JM	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	6				P73T-000JN	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	8				P73T-000JP	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	10				P73T-000JC	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	12				P73T-000JD	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	14				P73T-000JE	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	16				P73T-000JF	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	18				P73T-000JG	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	20				P73T-000JJ	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	24				P73T-000JK	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

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BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-10				See Attached Bolt Table	Bolt and Nut ASTM A320 Grade L7M / A194 Grade 7M ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	12-24				See Attached Bolt Table	Bolt and Nut ASTM A320 Grade L7M / A194 Grade 7M ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
781	0.5-6				See Attached Bolt Table	Bolt and Nut ASTM A320 Grade L7M / A194 Grade 7M ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
781	8-24				See Attached Bolt Table	Bolt and Nut ASTM A320 Grade L7M / A194 Grade 7M ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81B-00199	Gate valve ASTM A350 Grade LF2 Class 1 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	0.75				P81B-0019A	Gate valve ASTM A350 Grade LF2 Class 1 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	1				P81B-0019B	Gate valve ASTM A350 Grade LF2 Class 1 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	1.5				P81B-0019C	Gate valve ASTM A350 Grade LF2 Class 1 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	2				P81C-004J9	Gate valve ASTM A352 Grade LCC Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	3				P81C-004JA	Gate valve ASTM A352 Grade LCC Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	4				P81C-004JB	Gate valve ASTM A352 Grade LCC Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	6				P81C-004JC	Gate valve ASTM A352 Grade LCC Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	8				P81C-00920	Gate valve ASTM A352 Grade LCC Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Moderate wet H2S service	
1	10				P81C-004JE	Gate valve ASTM A352 Grade LCC Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Moderate wet H2S service	
1	12				P81C-004JF	Gate valve ASTM A352 Grade LCC Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Moderate wet H2S service	
1	14				P81C-004JG	Gate valve ASTM A352 Grade LCC Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Moderate wet H2S service	
1	16				P81C-004JH	Gate valve ASTM A352 Grade LCC Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Moderate wet H2S service	
1	18				P81C-004JJ	Gate valve ASTM A352 Grade LCC Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Moderate wet H2S service	
1	20				P81C-004JK	Gate valve ASTM A352 Grade LCC Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Moderate wet H2S service	
1	24				P81C-004JL	Gate valve ASTM A352 Grade LCC Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Moderate wet H2S service	
4608	0.75				P81B-002X3	Gate valve ASTM A350 Grade LF2 Class 1 Class 300 API 602 BW both sides w/ nipples BE - NPT ASTM A333-6 XXS-nipple Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82B-00128	Globe valve ASTM A350 Grade LF2 Class 1 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	0.75				P82B-00129	Globe valve ASTM A350 Grade LF2 Class 1 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	1				P82B-0012A	Globe valve ASTM A350 Grade LF2 Class 1 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	1.5				P82B-0012B	Globe valve ASTM A350 Grade LF2 Class 1 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	2				P82C-00288	Globe valve ASTM A352 Grade LCC Class 300 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	3				P82C-00289	Globe valve ASTM A352 Grade LCC Class 300 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	4				P82C-0028A	Globe valve ASTM A352 Grade LCC Class 300 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	6				P82C-0028B	Globe valve ASTM A352 Grade LCC Class 300 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83B-000UN	Check valve ASTM A350 Grade LF2 Class 1 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Moderate wet H2S service	
1	0.75				P83B-000UP	Check valve ASTM A350 Grade LF2 Class 1 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Moderate wet H2S service	
1	1				P83B-000UR	Check valve ASTM A350 Grade LF2 Class 1 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Moderate wet H2S service	
1	1.5				P83B-000US	Check valve ASTM A350 Grade LF2 Class 1 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Moderate wet H2S service	
1	2				P83C-0024Z	Check valve ASTM A352 Grade LCC Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Moderate wet H2S service	
1	3				P83C-00250	Check valve ASTM A352 Grade LCC Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Moderate wet H2S service	
1	4				P83C-00251	Check valve ASTM A352 Grade LCC Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Moderate wet H2S service	
1	6				P83C-00252	Check valve ASTM A352 Grade LCC Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Moderate wet H2S service	

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CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	8				P83C-00253	Check valve ASTM A352 Grade LCC Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Moderate wet H2S service	
1	10				P83C-0024V	Check valve ASTM A352 Grade LCC Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Moderate wet H2S service	
1	12				P83C-0024W	Check valve ASTM A352 Grade LCC Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Moderate wet H2S service	
1	14				P83C-0024X	Check valve ASTM A352 Grade LCC Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Moderate wet H2S service	
1	16				P83C-0024Y	Check valve ASTM A352 Grade LCC Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Moderate wet H2S service	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71B-000BP	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	0.75				P71B-000BR	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	1				P71B-000BS	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71B-000BT	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	2				P71B-000BW	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	3				P71B-000BX	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	4				P71B-000BY	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	6				P71B-000BZ	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	8				P71B-000C0	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	10				P71B-000BU	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	12				P71B-000BV	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF	

PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000G1	Paddle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	16				P72B-000G2	Paddle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	18				P72B-000G3	Paddle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	20				P72B-000G4	Paddle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	24				P72B-000G5	Paddle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF	

PADDLE SPACER (PS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000G6	Paddle spacer ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	16				P72B-000G7	Paddle spacer ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	18				P72B-000G8	Paddle spacer ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	20				P72B-000G9	Paddle spacer ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	24				P72B-000GA	Paddle spacer ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF	

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BOLT TABLE (B_B2GQ , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-009UL		
0.75	4	0.625	75	P80S-00A01		
1	4	0.625	80	P80S-00A02		
1.5	4	0.750	95	P80S-009X9		
2	8	0.625	90	P80S-00A04		
3	8	0.750	110	P80S-00A08		
4	8	0.750	115	P80S-00A09		
6	12	0.750	125	P80S-00A0B		
8	12	0.875	140	P80S-009XJ		
10	16	1.000	160	P80S-00A3C		
12	16	1.125	175	P80S-00A4T		
14	20	1.125	180	P80S-00A4U		
16	20	1.250	190	P80S-00CTM		
18	24	1.250	200	P80S-00CTP		
20	24	1.250	210	P80S-00CTS		
24	24	1.500	235	P80S-00D4Z		

BOLT TABLE (B_B2GQ_781 , STUD ASME RF, OPTION CODE 781)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	80	P80S-009UN		
0.75	4	0.625	90	P80S-00A04		
1	4	0.625	95	P80S-00A05		
1.5	4	0.750	110	P80S-00A08		
2	8	0.625	110	P80S-009UV		
3	8	0.750	130	P80S-00A0C		
4	8	0.875	150	P80S-009XL		
6	12	1.000	175	P80S-009XT		
8	12	1.125	195	P80S-00A4X		
10	16	1.250	250	P80S-00CU0		
12	20	1.250	255	P80S-00CU1		
14	20	1.375	270	P80S-00D0L		
16	20	1.500	295	P80S-00D5B		
18	20	1.625	320	P80S-00DCR		
20	24	1.625	335	P80S-00DCU		
24	24	1.875	380	P80S-00CVW		

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BRANCH TABLE (T_B2GQ)

RUN PIPE SIZE (in) \ BRANCH SIZE (in)	0.5	0.75	1	1.5	2	3	4	6	8	10	12	14	16	18	20	24
0.5	TS															
0.75		TS														
1		TR	TS													
1.5		TR	TR	TS												
2		L	TR	TR	TS											
3		L	L	TR	TR	TS										
4	L	L	L	L	TR	TR	TS									
6	L	L	L	L	L	TR	TR	TS								
8		L	L	L	L	L	TR	TR	TS							
10		L	L	L	L	L	TR	TR	TR	TS						
12		L	L	L	L	L	L	TR	TR	TR	TS					
14		L	L	L	L	L	L	TR	TR	TR	TR	TS				
16		L	L	L	L	L	L	TR	TR	TR	TR	TR	TS			
18		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TS		
20		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TR	TS	
24		L	L	L	L	L	L	L	9PD	TR	TR	TR	TR	TR	TR	TS

9PD : REINFORCING PAD 90 DEG
L : OUTLET
TR : REDUCING TEE
TS : STRAIGHT TEE

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PIPING CLASS

B2GQ01 REV NO. 2

Material : LTCS
Rating : ASME CLASS 300
Flange Face : RF
C.A.(mm) : 3.00
Gasket : Spiral Wound
Service : PROCESS -WET SOUR SERVICE SUBJECT TO NACE STD. : / DE-ETHANISER REFLUX / PROCESS, HYDROCARBONS
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
2	USE OF SOFT SEATED BALL, PLUG AND BUTTERFLY VALVES SHALL BE LIMITED TO MAXIMUM OF 204DEGC (400DEGF)
5	BOLTING CONFIRMING TO B7M / 2HM SHALL BE USED UNDER CONDITIONS (A) DIRECT EXPOSURE TO SOUR ENVIRONMENTS (B) WHEN THE BOLTING WILL BE BURIED OR INSULATED
15	BOLTING CONFIRMING TO L7M / 7M SHALL BE USED UNDER CONDITIONS (A) DIRECT EXPOSURE TO SOUR ENVIRONMENTS (B) WHEN THE BOLTING WILL BE BURIED OR INSULATED
27	PWHT OF CARBON STEEL PIPING IN WET H2S, CAUSTIC AND AMINE SERVICES SHALL BE IN ACCORDANCE WITH SECTION 10.2, 10.3, AND 10.4 OF PROJECT SPECIFICATION 3550-8440-SP-0002 MATERIALS REQUIREMENTS FOR PRESSURISED EQUIPMENT AND PIPING. FOR CAUSTIC AND AMINE SERVICE THE FOLLOWING SHALL APPLY: - PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF ALL SITE PIPING FABRICATION WELDS IS REQUIRED FOR ALL WALL THICKNESSES. FOR MODERATE AND SEVERE WET H2S SERVICE THE FOLLOWING SHALL APPLY: PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF SITE FABRICATION CIRCUMFERENTIAL OR BRANCH WELDS IS NOT REQUIRED IF WELDS ARE MULTIPASS AND IN ACCORDANCE WITH PARA 10.2.12 OF PROJECT SPECIFICATION 3550-8440-SP-0002. FOR SERVICES MEETING THE WET H2S CRITERIA AND CAUSTIC OR AMINE CRITERIA THE MORE STRINGENT PWHT REQUIREMENT SHALL GOVERN.

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
200	WITH JACK SCREW (FO)
541	NPT(F) (CA,F)
781	CLASS 600 (B,F,G)
4608	VALVE WITH NIPPLES (V)

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PIPING CLASS
B2GQ01 REV NO. 2

PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P01A-007EF	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE Moderate wet H2S service Licensor-1	
1	0.75		SCH160		P01A-007EG	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE Moderate wet H2S service Licensor-1	
1	1		SCH160		P01A-007EH	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE Moderate wet H2S service Licensor-1	
1	1.5		SCH160		P01A-007EJ	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE Moderate wet H2S service Licensor-1	
1	2		XS		P01A-007ER	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE Moderate wet H2S service Licensor-1	
1	3		STD		P01A-007EU	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE Moderate wet H2S service Licensor-1	
1	4		STD		P01A-007EV	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE Moderate wet H2S service Licensor-1	
1	6		STD		P01A-007EW	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE Moderate wet H2S service Licensor-1	
1	8		STD		P01A-007G3	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE Moderate wet H2S service Licensor-1	
1	10		STD		P01A-007FW	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE Moderate wet H2S service Licensor-1	
1	12		SCH40		P01A-007FX	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE Moderate wet H2S service Licensor-1	
1	14		SCH40		P01A-007FY	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE Moderate wet H2S service Licensor-1	
1	16		STD		P01A-007FZ	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE Moderate wet H2S service Licensor-1	
1	18		STD		P01A-007G0	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE Moderate wet H2S service Licensor-1	
1	20		XS		P01A-007G1	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE Moderate wet H2S service Licensor-1	
1	24		XS		P01A-007G2	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE Moderate wet H2S service Licensor-1	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P02A-003WH	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Moderate wet H2S service Licensor-1	
1	0.75		SCH160		P02A-003WJ	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Moderate wet H2S service Licensor-1	
1	1		SCH160		P02A-003WK	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Moderate wet H2S service Licensor-1	
1	1.5		SCH160		P02A-003WL	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Moderate wet H2S service Licensor-1	
1	2		XS		P02A-003WT	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Moderate wet H2S service Licensor-1	
1	3		STD		P02A-003WW	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Moderate wet H2S service Licensor-1	
1	4		STD		P02A-003WX	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Moderate wet H2S service Licensor-1	
1	6		STD		P02A-003WY	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Moderate wet H2S service Licensor-1	
1	8		STD		P02A-003Y5	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Moderate wet H2S service Licensor-1	
1	10		STD		P02A-003XY	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Moderate wet H2S service Licensor-1	
1	12		SCH40		P02A-003XZ	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Moderate wet H2S service Licensor-1	
1	14		SCH40		P02A-003Y0	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Moderate wet H2S service Licensor-1	
1	16		STD		P02A-003Y1	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Moderate wet H2S service Licensor-1	
1	18		STD		P02A-003Y2	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Moderate wet H2S service Licensor-1	
1	20		XS		P02A-003Y3	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Moderate wet H2S service Licensor-1	
1	24		XS		P02A-003Y4	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Moderate wet H2S service Licensor-1	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P03A-003U6	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Moderate wet H2S service Licensor-1	
1	0.75		SCH160		P03A-003U7	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Moderate wet H2S service Licensor-1	
1	1		SCH160		P03A-003U8	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Moderate wet H2S service Licensor-1	
1	1.5		SCH160		P03A-003U9	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Moderate wet H2S service Licensor-1	
1	2		XS		P03A-003UF	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Moderate wet H2S service Licensor-1	
1	3		STD		P03A-003UJ	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Moderate wet H2S service Licensor-1	
1	4		STD		P03A-003UK	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Moderate wet H2S service Licensor-1	
1	6		STD		P03A-003UL	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Moderate wet H2S service Licensor-1	
1	8		STD		P03A-003VU	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Moderate wet H2S service Licensor-1	
1	10		STD		P03A-003VL	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Moderate wet H2S service Licensor-1	
1	12		SCH40		P03A-003VM	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Moderate wet H2S service Licensor-1	

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45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14		SCH40		P03A-003VN	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Moderate wet H2S service Licensor-1	
1	16		STD		P03A-003VP	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Moderate wet H2S service Licensor-1	
1	18		STD		P03A-003VR	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Moderate wet H2S service Licensor-1	
1	20		XS		P03A-003VS	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Moderate wet H2S service Licensor-1	
1	24		XS		P03A-003VT	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Moderate wet H2S service Licensor-1	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P21A-004DZ	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	0.75		SCH160		P21A-004E0	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	1		SCH160		P21A-004E1	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	1.5		SCH160		P21A-004E2	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	2		XS		P21A-004E8	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	3		STD		P21A-004EB	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	4		STD		P21A-004EC	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	6		STD		P21A-004ED	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	8		STD		P21A-004FL	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	10		STD		P21A-004FD	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	12		SCH40		P21A-004FE	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	14		SCH40		P21A-004FF	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	16		STD		P21A-004FG	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	18		STD		P21A-004FH	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	20		XS		P21A-004FJ	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	24		XS		P21A-004FK	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75	SCH160	SCH160	P24A-00KK3	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	1.5	0.75	SCH160	SCH160	P24A-00KK4	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	1.5	1	SCH160	SCH160	P24A-00KK5	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	2	1	XS	SCH160	P24A-00KK6	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	2	1.5	XS	SCH160	P24A-00KK7	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	3	1.5	STD	SCH160	P24A-00KK8	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	3	2	STD	XS	P24A-00KK9	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	4	2	STD	XS	P24A-00KKA	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	4	3	STD	STD	P24A-00KKB	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	6	3	STD	STD	P24A-00KKC	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	6	4	STD	STD	P24A-00KKD	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	8	4	STD	STD	P24A-00KPZ	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	8	6	STD	STD	P24A-00KR0	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	10	4	STD	STD	P24A-00KR1	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	10	6	STD	STD	P24A-00KR2	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	10	8	STD	STD	P24A-00KR3	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	12	6	SCH40	STD	P24A-00KR5	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	12	8	SCH40	STD	P24A-00KR6	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	12	10	SCH40	STD	P24A-00KR4	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	14	6	SCH40	STD	P24A-00KR9	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	14	8	SCH40	STD	P24A-00KRA	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	14	10	SCH40	STD	P24A-00KR7	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	14	12	SCH40	SCH40	P24A-00KR8	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	16	6	STD	STD	P24A-00KRE	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	16	8	STD	STD	P24A-00KRF	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	16	10	STD	STD	P24A-00KRB	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	16	12	STD	SCH40	P24A-00KRC	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	16	14	STD	SCH40	P24A-00KRD	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	18	8	STD	STD	P24A-00KRL	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	18	10	STD	STD	P24A-00KRG	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	18	12	STD	SCH40	P24A-00KRH	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	18	14	STD	SCH40	P24A-00KRJ	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	18	16	STD	STD	P24A-00KRK	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	20	8	XS	STD	P24A-00KRT	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	20	10	XS	STD	P24A-00KRM	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	20	12	XS	SCH40	P24A-00KRN	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	20	14	XS	SCH40	P24A-00KRP	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	20	16	XS	STD	P24A-00KRR	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	20	18	XS	STD	P24A-00KRS	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	24	10	XS	STD	P24A-00KRU	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	24	12	XS	SCH40	P24A-00KRV	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	24	14	XS	SCH40	P24A-00KRW	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	24	16	XS	STD	P24A-00KRX	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	24	18	XS	STD	P24A-00KRY	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	24	20	XS	XS	P24A-00KRZ	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	SCH160	P27A-00F1R	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	1	0.5	SCH160	SCH160	P27A-00F1S	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	1	0.75	SCH160	SCH160	P27A-00F1T	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	1.5	0.5	SCH160	SCH160	P27A-00F1U	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	1.5	0.75	SCH160	SCH160	P27A-00F1V	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	1.5	1	SCH160	SCH160	P27A-00F1W	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	2	0.75	XS	SCH160	P27A-00F1X	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	2	1	XS	SCH160	P27A-00F1Y	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	2	1.5	XS	SCH160	P27A-00F1Z	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	3	1.5	STD	SCH160	P27A-00F20	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	3	2	STD	XS	P27A-00F21	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	4	1.5	STD	SCH160	P27A-00F22	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	4	2	STD	XS	P27A-00F23	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	4	3	STD	STD	P27A-00F24	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	6	3	STD	STD	P27A-00F25	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	6	4	STD	STD	P27A-00F26	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	8	4	STD	STD	P27A-00F5X	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	8	6	STD	STD	P27A-00F5Y	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	10	4	STD	STD	P27A-00F5Z	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	10	6	STD	STD	P27A-00F60	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	10	8	STD	STD	P27A-00F61	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	12	6	SCH40	STD	P27A-00F63	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	12	8	SCH40	STD	P27A-00F64	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	12	10	SCH40	STD	P27A-00F62	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	14	6	SCH40	STD	P27A-00F67	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	14	8	SCH40	STD	P27A-00F68	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	14	10	SCH40	STD	P27A-00F65	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	14	12	SCH40	SCH40	P27A-00F66	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	16	8	STD	STD	P27A-00F6C	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	16	10	STD	STD	P27A-00F69	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	

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CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	16	12	STD	SCH40	P27A-00F6A	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	16	14	STD	SCH40	P27A-00F6B	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	18	10	STD	STD	P27A-00F6D	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	18	12	STD	SCH40	P27A-00F6E	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	18	14	STD	SCH40	P27A-00F6F	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	18	16	STD	STD	P27A-00F6G	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	20	12	XS	SCH40	P27A-00F6H	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	20	14	XS	SCH40	P27A-00F6J	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	20	16	XS	STD	P27A-00F6K	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	20	18	XS	STD	P27A-00F6L	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	24	16	XS	STD	P27A-00F6M	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	24	18	XS	STD	P27A-00F6N	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	24	20	XS	XS	P27A-00F6P	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	SCH160	P28A-00C5S	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	1	0.5	SCH160	SCH160	P28A-00C5T	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	1	0.75	SCH160	SCH160	P28A-00C5U	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	1.5	0.5	SCH160	SCH160	P28A-00C5V	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	1.5	0.75	SCH160	SCH160	P28A-00C5W	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	1.5	1	SCH160	SCH160	P28A-00C5X	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	2	0.75	XS	SCH160	P28A-00C5Y	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	2	1	XS	SCH160	P28A-00C5Z	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	2	1.5	XS	SCH160	P28A-00C60	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	3	1.5	STD	SCH160	P28A-00C61	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	3	2	STD	XS	P28A-00C62	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	4	1.5	STD	SCH160	P28A-00C63	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	4	2	STD	XS	P28A-00C64	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	4	3	STD	STD	P28A-00C65	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	6	3	STD	STD	P28A-00C66	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	6	4	STD	STD	P28A-00C67	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	8	4	STD	STD	P28A-00C9Y	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	8	6	STD	STD	P28A-00C9Z	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	10	4	STD	STD	P28A-00CA0	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	10	6	STD	STD	P28A-00CA1	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	10	8	STD	STD	P28A-00CA2	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	12	6	SCH40	STD	P28A-00CA4	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	12	8	SCH40	STD	P28A-00CA5	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	12	10	SCH40	STD	P28A-00CA3	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	14	6	SCH40	STD	P28A-00CA8	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	14	8	SCH40	STD	P28A-00CA9	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	14	10	SCH40	STD	P28A-00CA6	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	14	12	SCH40	SCH40	P28A-00CA7	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	16	8	STD	STD	P28A-00CAD	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	

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PIPING CLASS
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ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	16	10	STD	STD	P28A-00CAA	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	16	12	STD	SCH40	P28A-00CAB	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	16	14	STD	SCH40	P28A-00CAC	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	18	10	STD	STD	P28A-00CAE	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	18	12	STD	SCH40	P28A-00CAF	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	18	14	STD	SCH40	P28A-00CAG	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	18	16	STD	STD	P28A-00CAH	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	20	12	XS	SCH40	P28A-00CAJ	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	20	14	XS	SCH40	P28A-00CAK	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	20	16	XS	STD	P28A-00CAL	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	20	18	XS	STD	P28A-00CAM	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	24	16	XS	STD	P28A-00CAN	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	24	18	XS	STD	P28A-00CAP	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	24	20	XS	XS	P28A-00CAR	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P29A-0038X	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	0.75		SCH160		P29A-0038Y	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	1		SCH160		P29A-0038Z	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	1.5		SCH160		P29A-00390	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	2		XS		P29A-00396	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	3		STD		P29A-00399	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	4		STD		P29A-0039A	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	6		STD		P29A-0039B	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	8		STD		P29A-003AJ	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	10		STD		P29A-003AB	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	12		SCH40		P29A-003AC	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	14		SCH40		P29A-003AD	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	16		STD		P29A-003AE	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	18		STD		P29A-003AF	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	20		XS		P29A-003AG	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	24		XS		P29A-003AH	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
541	0.75				P29B-0006W	Cap ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 NPT Moderate wet H2S service Licensor-1	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P41A-0019S	Straight nipple ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Moderate wet H2S service Licensor-1	
1	0.75		XXS		P41A-0019T	Straight nipple ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Moderate wet H2S service Licensor-1	
1	1		XXS		P41A-0019U	Straight nipple ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Moderate wet H2S service Licensor-1	
1	1.5		XXS		P41A-0019V	Straight nipple ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Moderate wet H2S service Licensor-1	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2	0.75	XS	SCH160	P31B-00Y0K	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	3	0.75	STD	SCH160	P31B-00Y0L	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	4	0.75	STD	SCH160	P31B-00Y0N	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	6	0.75	STD	SCH160	P31B-00Y0S	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	8	0.75	STD	SCH160	P31B-00Y6D	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	10	0.75	STD	SCH160	P31B-00Y6J	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	12	0.75	SCH40	SCH160	P31B-00Y6P	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	14	0.75	SCH40	SCH160	P31B-00Y6W	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Moderate wet H2S service Licensor-1	

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OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	16	0.75	STD	SCH160	P31B-00Y72	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	18	0.75	STD	SCH160	P31B-00Y78	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	20	0.75	XS	SCH160	P31B-00Y7F	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	24	0.75	XS	SCH160	P31B-00Y7N	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	3	1	STD	SCH160	P31B-00Y0M	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	4	1	STD	SCH160	P31B-00Y0P	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	6	1	STD	SCH160	P31B-00Y0T	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	8	1	STD	SCH160	P31B-00Y6E	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	10	1	STD	SCH160	P31B-00Y6K	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	12	1	SCH40	SCH160	P31B-00Y6R	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	14	1	SCH40	SCH160	P31B-00Y6X	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	16	1	STD	SCH160	P31B-00Y73	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	18	1	STD	SCH160	P31B-00Y79	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	20	1	XS	SCH160	P31B-00Y7G	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	24	1	XS	SCH160	P31B-00Y7P	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	4	1.5	STD	SCH160	P31B-00Y0R	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	6	1.5	STD	SCH160	P31B-00Y0U	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	8	1.5	STD	SCH160	P31B-00Y6F	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	10	1.5	STD	SCH160	P31B-00Y6L	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	12	1.5	SCH40	SCH160	P31B-00Y6S	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	14	1.5	SCH40	SCH160	P31B-00Y6Y	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	16	1.5	STD	SCH160	P31B-00Y74	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	18	1.5	STD	SCH160	P31B-00Y7A	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	20	1.5	XS	SCH160	P31B-00Y7H	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	24	1.5	XS	SCH160	P31B-00Y7R	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	6	2	STD	XS	P31B-00Y0V	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	8	2	STD	XS	P31B-00Y6G	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	10	2	STD	XS	P31B-00Y6M	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	12	2	SCH40	XS	P31B-00Y6T	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	14	2	SCH40	XS	P31B-00Y6Z	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	16	2	STD	XS	P31B-00Y75	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	18	2	STD	XS	P31B-00Y7B	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	20	2	XS	XS	P31B-00Y7J	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	24	2	XS	XS	P31B-00Y7S	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	8	3	STD	STD	P31B-00Y6H	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	10	3	STD	STD	P31B-00Y6N	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	12	3	SCH40	STD	P31B-00Y6U	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	14	3	SCH40	STD	P31B-00Y70	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	16	3	STD	STD	P31B-00Y76	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	18	3	STD	STD	P31B-00Y7C	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	20	3	XS	STD	P31B-00Y7K	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	24	3	XS	STD	P31B-00Y7T	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	12	4	SCH40	STD	P31B-00Y6V	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	14	4	SCH40	STD	P31B-00Y71	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	16	4	STD	STD	P31B-00Y77	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	18	4	STD	STD	P31B-00Y7D	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	20	4	XS	STD	P31B-00Y7L	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	24	4	XS	STD	P31B-00Y7U	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	18	6	STD	STD	P31B-00Y7E	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	20	6	XS	STD	P31B-00Y7M	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	24	6	XS	STD	P31B-00Y7V	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Moderate wet H2S service Licensor-1	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30B-0006P	Plug ASTM A350 Grade LF2 Class 1 ASME B16.11 NPT Round head Moderate wet H2S service Licensor-1	
1	0.75				P30B-0006R	Plug ASTM A350 Grade LF2 Class 1 ASME B16.11 NPT Round head Moderate wet H2S service Licensor-1	
1	1				P30B-0006S	Plug ASTM A350 Grade LF2 Class 1 ASME B16.11 NPT Round head Moderate wet H2S service Licensor-1	
1	1.5				P30B-0006T	Plug ASTM A350 Grade LF2 Class 1 ASME B16.11 NPT Round head Moderate wet H2S service Licensor-1	

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FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P61B-00A6U	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	0.75		SCH160		P61B-00A6V	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	1		SCH160		P61B-00A6W	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	1.5		SCH160		P61B-00A6X	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	2		XS		P61B-00A73	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	3		STD		P61B-00A76	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	4		STD		P61B-00A77	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	6		STD		P61B-00A78	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	8		STD		P61B-00AA3	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	10		STD		P61B-00A9W	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	12		SCH40		P61B-00A9X	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	14		SCH40		P61B-00A9Y	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	16		STD		P61B-00A9Z	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	18		STD		P61B-00AA0	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	20		XS		P61B-00AA1	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	24		XS		P61B-00AA2	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF Moderate wet H2S service Licensor-1	
541	0.5				P61B-00DMH	Flange NPT ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF Moderate wet H2S service Licensor-1	
541	0.75				P61B-00CXR	Flange NPT ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF Moderate wet H2S service Licensor-1	
781	0.5		SCH160		P61B-00AA4	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF Moderate wet H2S service Licensor-1	
781	0.75		SCH160		P61B-00AA5	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF Moderate wet H2S service Licensor-1	
781	1		SCH160		P61B-00AA6	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF Moderate wet H2S service Licensor-1	
781	1.5		SCH160		P61B-00AA7	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF Moderate wet H2S service Licensor-1	
781	2		XS		P61B-00AAD	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF Moderate wet H2S service Licensor-1	
781	3		STD		P61B-00AAG	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF Moderate wet H2S service Licensor-1	
781	4		STD		P61B-00AAH	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF Moderate wet H2S service Licensor-1	
781	6		STD		P61B-00AAJ	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF Moderate wet H2S service Licensor-1	
781	8		STD		P61B-00AAK	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF Moderate wet H2S service Licensor-1	
781	10		STD		P61B-00AA8	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF Moderate wet H2S service Licensor-1	
781	12		SCH40		P61B-00AA9	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF Moderate wet H2S service Licensor-1	
781	14		SCH40		P61B-00AAA	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF Moderate wet H2S service Licensor-1	
781	16		STD		P61B-00AAB	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF Moderate wet H2S service Licensor-1	
781	18		STD		P61B-00AAC	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF Moderate wet H2S service Licensor-1	
781	20		XS		P61B-00AAE	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF Moderate wet H2S service Licensor-1	
781	24		XS		P61B-00AAF	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF Moderate wet H2S service Licensor-1	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67B-002K8	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	0.75				P67B-002K9	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	1				P67B-002KA	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	1.5				P67B-002KB	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	2				P67B-002KH	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	3				P67B-002KL	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	4				P67B-002KM	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	6				P67B-002KN	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF Moderate wet H2S service Licensor-1	

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BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	8				P67B-002KP	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	10				P67B-002KC	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	12				P67B-002KD	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	14				P67B-002KE	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	16				P67B-002KF	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	18				P67B-002KG	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	20				P67B-002KJ	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	24				P67B-002KK	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF Moderate wet H2S service Licensor-1	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000FT	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000FU	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000G5	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000G6	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	6				P73T-000G7	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	8				P73T-000G8	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	10				P73T-000FX	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	12				P73T-000FY	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	14				P73T-000FZ	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	16				P73T-000G0	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	18				P73T-000G1	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	20				P73T-000G3	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	24				P73T-000G4	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	0.5				P73T-000J8	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	0.75				P73T-000J9	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1				P73T-000JA	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1.5				P73T-000JB	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	2				P73T-000JH	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	3				P73T-000JL	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	4				P73T-000JM	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	6				P73T-000JN	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	8				P73T-000JP	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	10				P73T-000JC	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	12				P73T-000JD	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	14				P73T-000JE	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	16				P73T-000JF	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	18				P73T-000JG	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	20				P73T-000JJ	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	24				P73T-000JK	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

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BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-10				See Attached Bolt Table	Bolt and Nut ASTM A320 Grade L7M / A194 Grade 7M ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	12-24				See Attached Bolt Table	Bolt and Nut ASTM A320 Grade L7M / A194 Grade 7M ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
781	0.5-6				See Attached Bolt Table	Bolt and Nut ASTM A320 Grade L7M / A194 Grade 7M ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
781	8-24				See Attached Bolt Table	Bolt and Nut ASTM A320 Grade L7M / A194 Grade 7M ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81B-001G7	Gate valve ASTM A350 Grade LF2 Class 1 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Licensor-1	
1	0.75				P81B-001G8	Gate valve ASTM A350 Grade LF2 Class 1 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Licensor-1	
1	1				P81B-001G9	Gate valve ASTM A350 Grade LF2 Class 1 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Licensor-1	
1	1.5				P81B-001GA	Gate valve ASTM A350 Grade LF2 Class 1 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Licensor-1	
1	2				P81C-0050M	Gate valve ASTM A352 Grade LCC Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Licensor-1	
1	3				P81C-0050N	Gate valve ASTM A352 Grade LCC Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Licensor-1	
1	4				P81C-0050P	Gate valve ASTM A352 Grade LCC Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Licensor-1	
1	6				P81C-0050R	Gate valve ASTM A352 Grade LCC Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Licensor-1	
1	8				P81C-00921	Gate valve ASTM A352 Grade LCC Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Moderate wet H2S service Licensor-1	
1	10				P81C-0050T	Gate valve ASTM A352 Grade LCC Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Moderate wet H2S service Licensor-1	
1	12				P81C-0050U	Gate valve ASTM A352 Grade LCC Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Moderate wet H2S service Licensor-1	
1	14				P81C-0050V	Gate valve ASTM A352 Grade LCC Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Moderate wet H2S service Licensor-1	
1	16				P81C-0050W	Gate valve ASTM A352 Grade LCC Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Moderate wet H2S service Licensor-1	
1	18				P81C-0050X	Gate valve ASTM A352 Grade LCC Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Moderate wet H2S service Licensor-1	
1	20				P81C-0050Y	Gate valve ASTM A352 Grade LCC Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Moderate wet H2S service Licensor-1	
1	24				P81C-0050Z	Gate valve ASTM A352 Grade LCC Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Moderate wet H2S service Licensor-1	
4608	0.75				P81B-002X4	Gate valve ASTM A350 Grade LF2 Class 1 Class 300 API 602 BW both sides w/ nipples BE - NPT ASTM A333-6 XXS-nipple Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Licensor-1	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82B-0017X	Globe valve ASTM A350 Grade LF2 Class 1 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Licensor-1	
1	0.75				P82B-0017Y	Globe valve ASTM A350 Grade LF2 Class 1 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Licensor-1	
1	1				P82B-0017Z	Globe valve ASTM A350 Grade LF2 Class 1 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Licensor-1	
1	1.5				P82B-00180	Globe valve ASTM A350 Grade LF2 Class 1 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Licensor-1	
1	2				P82C-002EF	Globe valve ASTM A352 Grade LCC Class 300 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Licensor-1	
1	3				P82C-002EG	Globe valve ASTM A352 Grade LCC Class 300 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Licensor-1	
1	4				P82C-002EH	Globe valve ASTM A352 Grade LCC Class 300 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Licensor-1	
1	6				P82C-002EJ	Globe valve ASTM A352 Grade LCC Class 300 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Licensor-1	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83B-000ZM	Check valve ASTM A350 Grade LF2 Class 1 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Moderate wet H2S service Licensor-1	
1	0.75				P83B-000ZN	Check valve ASTM A350 Grade LF2 Class 1 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Moderate wet H2S service Licensor-1	
1	1				P83B-000ZP	Check valve ASTM A350 Grade LF2 Class 1 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Moderate wet H2S service Licensor-1	
1	1.5				P83B-000ZR	Check valve ASTM A350 Grade LF2 Class 1 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Moderate wet H2S service Licensor-1	
1	2				P83C-002EP	Check valve ASTM A352 Grade LCC Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Moderate wet H2S service Licensor-1	
1	3				P83C-002ER	Check valve ASTM A352 Grade LCC Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Moderate wet H2S service Licensor-1	
1	4				P83C-002ES	Check valve ASTM A352 Grade LCC Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Moderate wet H2S service Licensor-1	

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CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	6				P83C-002ET	Check valve ASTM A352 Grade LCC Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Moderate wet H2S service Licensor-1	
1	8				P83C-002EU	Check valve ASTM A352 Grade LCC Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Moderate wet H2S service Licensor-1	
1	10				P83C-002EK	Check valve ASTM A352 Grade LCC Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Moderate wet H2S service Licensor-1	
1	12				P83C-002EL	Check valve ASTM A352 Grade LCC Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Moderate wet H2S service Licensor-1	
1	14				P83C-002EM	Check valve ASTM A352 Grade LCC Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Moderate wet H2S service Licensor-1	
1	16				P83C-002EN	Check valve ASTM A352 Grade LCC Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Moderate wet H2S service Licensor-1	

ORIFICE FLANGE (FO)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2		XS		P66B-008D6	Orifice flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Moderate wet H2S service Licensor-1	
1	3		STD		P66B-008D7	Orifice flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Moderate wet H2S service Licensor-1	
1	4		STD		P66B-008D8	Orifice flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Moderate wet H2S service Licensor-1	
1	6		STD		P66B-008D9	Orifice flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Moderate wet H2S service Licensor-1	
1	8		STD		P66B-008DA	Orifice flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Moderate wet H2S service Licensor-1	
1	10		STD		P66B-008D2	Orifice flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Moderate wet H2S service Licensor-1	
1	12		SCH40		P66B-008D3	Orifice flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Moderate wet H2S service Licensor-1	
1	14		SCH40		P66B-008D4	Orifice flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Moderate wet H2S service Licensor-1	
1	16		STD		P66B-008D5	Orifice flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Moderate wet H2S service Licensor-1	
200	2		XS		P66B-008DH	Orifice flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Moderate wet H2S service with Jack screw Licensor-1	
200	3		STD		P66B-008DJ	Orifice flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Moderate wet H2S service with Jack screw Licensor-1	
200	4		STD		P66B-008DK	Orifice flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Moderate wet H2S service with Jack screw Licensor-1	
200	6		STD		P66B-008DL	Orifice flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Moderate wet H2S service with Jack screw Licensor-1	
200	8		STD		P66B-008DM	Orifice flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Moderate wet H2S service with Jack screw Licensor-1	
200	10		STD		P66B-008DD	Orifice flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Moderate wet H2S service with Jack screw Licensor-1	
200	12		SCH40		P66B-008DE	Orifice flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Moderate wet H2S service with Jack screw Licensor-1	
200	14		SCH40		P66B-008DF	Orifice flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Moderate wet H2S service with Jack screw Licensor-1	
200	16		STD		P66B-008DG	Orifice flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Moderate wet H2S service with Jack screw Licensor-1	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71B-000D1	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	0.75				P71B-000D2	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	1				P71B-000D3	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	1.5				P71B-000D4	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	2				P71B-000D7	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	3				P71B-000D8	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	4				P71B-000D9	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	6				P71B-000DA	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	8				P71B-000DB	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	10				P71B-000D5	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	12				P71B-000D6	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service Licensor-1	

PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	4				P72B-000H4	Paddle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	16				P72B-000H5	Paddle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service Licensor-1	

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PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	18				P72B-000H6	Paddle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	20				P72B-000H7	Paddle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	24				P72B-000H8	Paddle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service Licensor-1	

PADDLE SPACER (PS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000H9	Paddle spacer ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	16				P72B-000HA	Paddle spacer ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	18				P72B-000HB	Paddle spacer ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	20				P72B-000HC	Paddle spacer ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	24				P72B-000HD	Paddle spacer ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service Licensor-1	

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PIPING CLASS
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BOLT TABLE (B_B2GQ01 , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-009UL		
0.75	4	0.625	75	P80S-00A01		
1	4	0.625	80	P80S-00A02		
1.5	4	0.750	95	P80S-009X9		
2	8	0.625	90	P80S-00A04		
3	8	0.750	110	P80S-00A08		
4	8	0.750	115	P80S-00A09		
6	12	0.750	125	P80S-00A0B		
8	12	0.875	140	P80S-009XJ		
10	16	1.000	160	P80S-00A3C		
12	16	1.125	175	P80S-00A4T		
14	20	1.125	180	P80S-00A4U		
16	20	1.250	190	P80S-00CTM		
18	24	1.250	200	P80S-00CTP		
20	24	1.250	210	P80S-00CTS		
24	24	1.500	235	P80S-00D4Z		

BOLT TABLE (B_B2GQ01_781 , STUD ASME RF, OPTION CODE 781)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	80	P80S-009UN		
0.75	4	0.625	90	P80S-00A04		
1	4	0.625	95	P80S-00A05		
1.5	4	0.750	110	P80S-00A08		
2	8	0.625	110	P80S-009UV		
3	8	0.750	130	P80S-00A0C		
4	8	0.875	150	P80S-009XL		
6	12	1.000	175	P80S-009XT		
8	12	1.125	195	P80S-00A4X		
10	16	1.250	250	P80S-00CU0		
12	20	1.250	255	P80S-00CU1		
14	20	1.375	270	P80S-00D0L		
16	20	1.500	295	P80S-00D5B		
18	20	1.625	320	P80S-00DCR		
20	24	1.625	335	P80S-00DCU		
24	24	1.875	380	P80S-00CVW		

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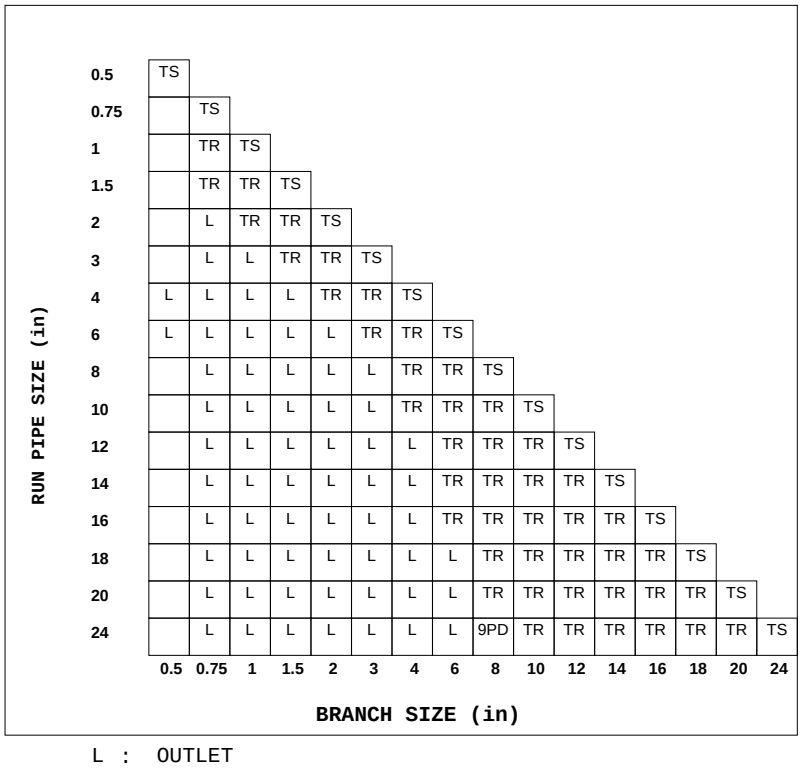
BRANCH TABLE (T_B2GQ01)



RUN PIPE SIZE (in)	0.5	0.75	1	1.5	2	3	4	6	8	10	12	14	16	18	20	24
0.5	TS															
0.75		TS														
1		TR	TS													
1.5		TR	TR	TS												
2		L	TR	TR	TS											
3		L	L	TR	TR	TS										
4	L	L	L	L	TR	TR	TS									
6	L	L	L	L	L	TR	TR	TS								
8		L	L	L	L	L	TR	TR	TS							
10		L	L	L	L	L	TR	TR	TR	TS						
12		L	L	L	L	L	L	TR	TR	TR	TS					
14		L	L	L	L	L	L	TR	TR	TR	TR	TS				
16		L	L	L	L	L	L	TR	TR	TR	TR	TR	TS			
18		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TS		
20		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TR	TS	
24		L	L	L	L	L	L	L	9PD	TR	TR	TR	TR	TR	TR	TS

L : OUTLET
TR : REDUCING TEE
TS : STRAIGHT TEE
9PD : REINFORCING PAD 90 DEG

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PIPING CLASS

B2GQ04 REV NO. 2

Material : LTCS
Rating : ASME CLASS 300
Flange Face : RF
C.A.(mm) : 3.00
Gasket : Spiral Wound
Service : PROCESS -WET SOUR SERVICE SUBJECT TO NACE STD. : / DE-ETHANISER REFLUX / PROCESS, HYDROCARBONS
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
2	USE OF SOFT SEATED BALL, PLUG AND BUTTERFLY VALVES SHALL BE LIMITED TO MAXIMUM OF 204DEGC (400DEGF)
5	BOLTING CONFIRMING TO B7M / 2HM SHALL BE USED UNDER CONDITIONS (A) DIRECT EXPOSURE TO SOUR ENVIRONMENTS (B) WHEN THE BOLTING WILL BE BURIED OR INSULATED
15	BOLTING CONFIRMING TO L7M / 7M SHALL BE USED UNDER CONDITIONS (A) DIRECT EXPOSURE TO SOUR ENVIRONMENTS (B) WHEN THE BOLTING WILL BE BURIED OR INSULATED
27	PWHT OF CARBON STEEL PIPING IN WET H2S, CAUSTIC AND AMINE SERVICES SHALL BE IN ACCORDANCE WITH SECTION 10.2, 10.3, AND 10.4 OF PROJECT SPECIFICATION 3550-8440-SP-0002 MATERIALS REQUIREMENTS FOR PRESSURISED EQUIPMENT AND PIPING. FOR CAUSTIC AND AMINE SERVICE THE FOLLOWING SHALL APPLY: - PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF ALL SITE PIPING FABRICATION WELDS IS REQUIRED FOR ALL WALL THICKNESSES. FOR MODERATE AND SEVERE WET H2S SERVICE THE FOLLOWING SHALL APPLY: PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF SITE FABRICATION CIRCUMFERENTIAL OR BRANCH WELDS IS NOT REQUIRED IF WELDS ARE MULTIPASS AND IN ACCORDANCE WITH PARA 10.2.12 OF PROJECT SPECIFICATION 3550-8440-SP-0002. FOR SERVICES MEETING THE WET H2S CRITERIA AND CAUSTIC OR AMINE CRITERIA THE MORE STRINGENT PWHT REQUIREMENT SHALL GOVERN.

DETAIL NOTES :

NO.	DESCRIPTION
38	TO BE USED FOR STAND PIPE

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
200	WITH JACK SCREW (FO)
541	NPT(F) (CA,F)
781	CLASS 600 (B,F,G)
4212	WELDOLET FOR STAND PIPE (L)
4608	VALVE WITH NIPPLES (V)

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PIPING CLASS
B2GQ04 REV NO. 2

PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P01A-001Z1	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE	
1	0.75		SCH160		P01A-0016P	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE	
1	1		SCH160		P01A-0011Z	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE	
1	1.5		SCH160		P01A-00127	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE	
1	2		XS		P01A-000XB	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	3		XS		P01A-000XG	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	4		STD		P01A-000YT	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	6		STD		P01A-000Z2	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	8		STD		P01A-000Z8	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	10		STD		P01A-000XH	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P02A-002HP	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	0.75		SCH160		P02A-002GE	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	1		SCH160		P02A-002GF	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	1.5		SCH160		P02A-002GG	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	2		XS		P02A-000B9	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	3		XS		P02A-000BC	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	4		STD		P02A-000E9	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	6		STD		P02A-000EC	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	8		STD		P02A-000EF	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	10		STD		P02A-000EL	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P03A-002F7	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	0.75		SCH160		P03A-002E1	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	1		SCH160		P03A-002E2	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	1.5		SCH160		P03A-002E3	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	2		XS		P03A-0009Y	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	3		XS		P03A-000A0	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	4		STD		P03A-000C6	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	6		STD		P03A-000C9	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	8		STD		P03A-000CB	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	10		STD		P03A-000BL	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P21A-003GA	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	0.75		SCH160		P21A-003EP	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	1		SCH160		P21A-003ER	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	1.5		SCH160		P21A-003ES	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	2		XS		P21A-001BR	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	3		XS		P21A-001BT	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	4		STD		P21A-001FF	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	6		STD		P21A-001FJ	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	8		STD		P21A-001FL	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10		STD		P21A-001F0	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75	SCH160	SCH160	P24A-00GC7	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	1.5	0.75	SCH160	SCH160	P24A-00GC9	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	1.5	1	SCH160	SCH160	P24A-00GCA	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	2	1	XS	SCH160	P24A-00GMD	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	2	1.5	XS	SCH160	P24A-005NK	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	3	1.5	XS	SCH160	P24A-00GMW	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	

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REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	XS	XS	P24A-00270	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	4	2	STD	XS	P24A-006CW	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	4	3	STD	XS	P24A-00M5R	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	6	3	STD	XS	P24A-00M5S	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	6	4	STD	STD	P24A-00289	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	8	4	STD	STD	P24A-0028B	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	8	6	STD	STD	P24A-0028T	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	4	STD	STD	P24A-002K7	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	6	STD	STD	P24A-002AN	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	8	STD	STD	P24A-0028W	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	XXS	P27A-00BFU	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	1	0.5	SCH160	XXS	P27A-00BFV	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	1	0.75	SCH160	SCH160	P27A-00BA1	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	1.5	0.5	SCH160	XXS	P27A-00BFW	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	1.5	0.75	SCH160	SCH160	P27A-00BA3	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	1.5	1	SCH160	SCH160	P27A-00BA4	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	2	0.75	XS	SCH160	P27A-003S6	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	2	1	XS	SCH160	P27A-003S7	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	2	1.5	XS	SCH160	P27A-003S8	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	3	1.5	XS	SCH160	P27A-0047N	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	3	2	XS	XS	P27A-0018T	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	4	1.5	STD	SCH160	P27A-003SA	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	4	2	STD	XS	P27A-003PN	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	4	3	STD	XS	P27A-00G4P	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	6	3	STD	XS	P27A-00G4R	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	6	4	STD	STD	P27A-00181	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	8	4	STD	STD	P27A-0017P	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	8	6	STD	STD	P27A-001B9	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	4	STD	STD	P27A-0017X	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	6	STD	STD	P27A-001BV	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	8	STD	STD	P27A-001D6	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	XXS	P28A-008EA	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	1	0.5	SCH160	XXS	P28A-008EB	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	1	0.75	SCH160	SCH160	P28A-00841	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	1.5	0.5	SCH160	XXS	P28A-008EC	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	1.5	0.75	SCH160	SCH160	P28A-00843	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	1.5	1	SCH160	SCH160	P28A-00844	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	2	0.75	XS	SCH160	P28A-003S2	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	2	1	XS	SCH160	P28A-003S3	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	2	1.5	XS	SCH160	P28A-003S4	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	3	1.5	XS	SCH160	P28A-0047E	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	3	2	XS	XS	P28A-00199	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	4	1.5	STD	SCH160	P28A-003S6	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	4	2	STD	XS	P28A-003PM	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	4	3	STD	XS	P28A-00DBN	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	6	3	STD	XS	P28A-00DBP	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	6	4	STD	STD	P28A-001BL	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	8	4	STD	STD	P28A-001B9	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	8	6	STD	STD	P28A-001CL	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	4	STD	STD	P28A-001BF	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	6	STD	STD	P28A-001CK	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	8	STD	STD	P28A-001E4	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	

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CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P29A-001UU	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service	
1	0.75		SCH160		P29A-001UV	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service	
1	1		SCH160		P29A-001UW	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service	
1	1.5		SCH160		P29A-001UX	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service	
1	2		XS		P29A-001V3	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service	
1	3		XS		P29A-003GH	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service	
1	4		STD		P29A-001V7	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service	
1	6		STD		P29A-001V8	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service	
1	8		STD		P29A-001V9	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service	
1	10		STD		P29A-001UY	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service	
541	0.75				P29B-00015	Cap ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P41A-000DJ	Straight nipple ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		XXS		P41A-000DK	Straight nipple ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		XXS		P41A-000DZ	Straight nipple ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		XXS		P41A-000E0	Straight nipple ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2	0.75	XS	SCH160	P31B-00TPR	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	3	0.75	XS	SCH160	P31B-00ZHG	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	4	0.75	STD	SCH160	P31B-00TPU	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	6	0.75	STD	SCH160	P31B-00TPX	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	8	0.75	STD	SCH160	P31B-00TSA	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	10	0.75	STD	SCH160	P31B-00TSD	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	3	1	XS	SCH160	P31B-00TR5	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	4	1	STD	SCH160	P31B-00TPV	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	6	1	STD	SCH160	P31B-00TPY	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	8	1	STD	SCH160	P31B-00TSB	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	10	1	STD	SCH160	P31B-00TSE	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	4	1.5	STD	SCH160	P31B-00TPW	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	6	1.5	STD	SCH160	P31B-00TPZ	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	8	1.5	STD	SCH160	P31B-00TSC	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	10	1.5	STD	SCH160	P31B-00TSF	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	6	2	STD	XS	P31B-00MFB	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	8	2	STD	XS	P31B-00PAW	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	10	2	STD	XS	P31B-00TPH	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	8	3	STD	XS	P31B-00M9R	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	10	3	STD	XS	P31B-00MBH	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
4212	3	2	XS	XS	P31B-00VAP	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	38

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30B-0002V	Plug ASTM A350 Grade LF2 Class 1 ASME B16.11 NPT Round head	
1	0.75				P30B-0002W	Plug ASTM A350 Grade LF2 Class 1 ASME B16.11 NPT Round head	
1	1				P30B-0002X	Plug ASTM A350 Grade LF2 Class 1 ASME B16.11 NPT Round head	
1	1.5				P30B-0002Y	Plug ASTM A350 Grade LF2 Class 1 ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P61B-003SD	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	0.75		SCH160		P61B-003RD	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	1		SCH160		P61B-003RE	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	1.5		SCH160		P61B-003RF	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	2		XS		P61B-003R8	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	3		XS		P61B-003SG	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	

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FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	4		STD		P61B-001N0	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	6		STD		P61B-001NM	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	8		STD		P61B-001NZ	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	10		STD		P61B-001L8	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
541	0.5				P61B-0035X	Flange NPT ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
541	0.75				P61B-0035W	Flange NPT ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
781	0.5		XXS		P61B-003WN	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
781	0.75		SCH160		P61B-003E0	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
781	1		SCH160		P61B-003DZ	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
781	1.5		SCH160		P61B-003DY	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
781	2		XS		P61B-001FN	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
781	3		XS		P61B-001K0	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
781	4		STD		P61B-001VT	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
781	6		STD		P61B-001JV	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
781	8		STD		P61B-001KE	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
781	10		STD		P61B-001JH	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67B-000NN	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	0.75				P67B-000MV	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	1				P67B-000MW	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	1.5				P67B-000MX	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	2				P67B-000N3	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	3				P67B-000N6	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	4				P67B-000N7	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	6				P67B-000N8	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	8				P67B-000N9	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	10				P67B-000MY	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000FT	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000FU	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000G5	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000G6	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	6				P73T-000G7	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	8				P73T-000G8	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	10				P73T-000FX	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	0.5				P73T-000J8	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	0.75				P73T-000J9	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1				P73T-000JA	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1.5				P73T-000JB	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	2				P73T-000JH	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	3				P73T-000JL	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	4				P73T-000JM	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	6				P73T-000JN	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	8				P73T-000JP	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	10				P73T-000JC	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

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BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-10				See Attached Bolt Table	Bolt and Nut ASTM A320 Grade L7M / A194 Grade 7M ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
781	0.5-6				See Attached Bolt Table	Bolt and Nut ASTM A320 Grade L7M / A194 Grade 7M ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
781	8-10				See Attached Bolt Table	Bolt and Nut ASTM A320 Grade L7M / A194 Grade 7M ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81B-00199	Gate valve ASTM A350 Grade LF2 Class 1 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	0.75				P81B-0019A	Gate valve ASTM A350 Grade LF2 Class 1 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	1				P81B-0019B	Gate valve ASTM A350 Grade LF2 Class 1 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	1.5				P81B-0019C	Gate valve ASTM A350 Grade LF2 Class 1 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	2				P81C-006RK	Gate valve ASTM A352 Grade LCC Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Licensor-4	
1	3				P81C-006RL	Gate valve ASTM A352 Grade LCC Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Licensor-4	
1	4				P81C-006RM	Gate valve ASTM A352 Grade LCC Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Licensor-4	
1	6				P81C-006RN	Gate valve ASTM A352 Grade LCC Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Licensor-4	
1	8				P81C-00922	Gate valve ASTM A352 Grade LCC Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Moderate wet H2S service Licensor-4	
1	10				P81C-006RR	Gate valve ASTM A352 Grade LCC Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Moderate wet H2S service Licensor-4	
4608	0.75				P81B-002X3	Gate valve ASTM A350 Grade LF2 Class 1 Class 300 API 602 BW both sides w/ nipples BE - NPT ASTM A333-6 XXS-nipple Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82B-00128	Globe valve ASTM A350 Grade LF2 Class 1 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	0.75				P82B-00129	Globe valve ASTM A350 Grade LF2 Class 1 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	1				P82B-0012A	Globe valve ASTM A350 Grade LF2 Class 1 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	1.5				P82B-0012B	Globe valve ASTM A350 Grade LF2 Class 1 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	2				P82C-0039C	Globe valve ASTM A352 Grade LCC Class 300 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Licensor-4	
1	3				P82C-0039D	Globe valve ASTM A352 Grade LCC Class 300 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Licensor-4	
1	4				P82C-0039E	Globe valve ASTM A352 Grade LCC Class 300 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Licensor-4	
1	6				P82C-0039F	Globe valve ASTM A352 Grade LCC Class 300 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Licensor-4	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83B-000UN	Check valve ASTM A350 Grade LF2 Class 1 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Moderate wet H2S service	
1	0.75				P83B-000UP	Check valve ASTM A350 Grade LF2 Class 1 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Moderate wet H2S service	
1	1				P83B-000UR	Check valve ASTM A350 Grade LF2 Class 1 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Moderate wet H2S service	
1	1.5				P83B-000US	Check valve ASTM A350 Grade LF2 Class 1 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Moderate wet H2S service	
1	2				P83C-00354	Check valve ASTM A352 Grade LCC Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Moderate wet H2S service Licensor-4	
1	3				P83C-00355	Check valve ASTM A352 Grade LCC Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Moderate wet H2S service Licensor-4	
1	4				P83C-00356	Check valve ASTM A352 Grade LCC Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Moderate wet H2S service Licensor-4	
1	6				P83C-00357	Check valve ASTM A352 Grade LCC Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Moderate wet H2S service Licensor-4	
1	8				P83C-00358	Check valve ASTM A352 Grade LCC Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Moderate wet H2S service Licensor-4	
1	10				P83C-00353	Check valve ASTM A352 Grade LCC Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Moderate wet H2S service Licensor-4	

ORIFICE FLANGE (FO)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	4		STD		P66B-00864	Orifice flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
200	4		STD		P66B-0086B	Orifice flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	

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SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71B-000BP	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	0.75				P71B-000BR	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	1				P71B-000BS	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71B-000BT	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	2				P71B-000BW	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	3				P71B-000BX	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	4				P71B-000BY	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	6				P71B-000BZ	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	8				P71B-000C0	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	10				P71B-000BU	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF	

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BOLT TABLE (B_B2GQ04 , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-009UL		
0.75	4	0.625	75	P80S-00A01		
1	4	0.625	80	P80S-00A02		
1.5	4	0.750	95	P80S-009X9		
2	8	0.625	90	P80S-00A04		
3	8	0.750	110	P80S-00A08		
4	8	0.750	115	P80S-00A09		
6	12	0.750	125	P80S-00A0B		
8	12	0.875	140	P80S-009XJ		
10	16	1.000	160	P80S-00A3C		

BOLT TABLE (B_B2GQ04_781 , STUD ASME RF, OPTION CODE 781)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	80	P80S-009UN		
0.75	4	0.625	90	P80S-00A04		
1	4	0.625	95	P80S-00A05		
1.5	4	0.750	110	P80S-00A08		
2	8	0.625	110	P80S-009UV		
3	8	0.750	130	P80S-00A0C		
4	8	0.875	150	P80S-009XL		
6	12	1.000	175	P80S-009XT		
8	12	1.125	195	P80S-00A4X		
10	16	1.250	250	P80S-00CU0		

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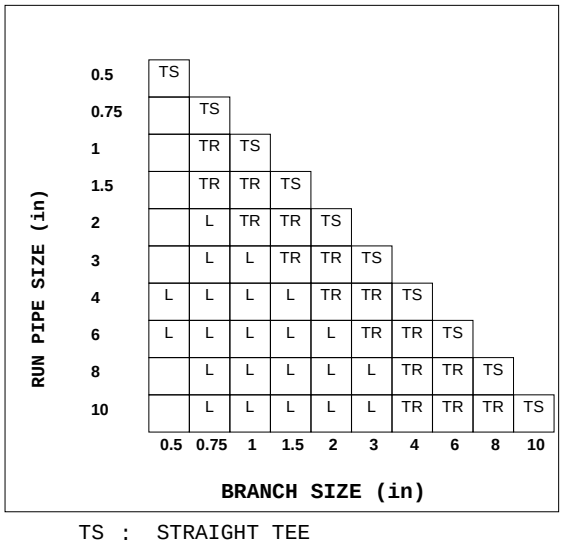
BRANCH TABLE (T_B2GQ04)



RUN PIPE SIZE (in) \ BRANCH SIZE (in)	0.5	0.75	1	1.5	2	3	4	6	8	10
0.5	TS									
0.75		TS								
1		TR	TS							
1.5		TR	TR	TS						
2		L	TR	TR	TS					
3		L	L	TR	TR	TS				
4	L	L	L	L	TR	TR	TS			
6	L	L	L	L	L	TR	TR	TS		
8		L	L	L	L	L	TR	TR	TS	
10		L	L	L	L	L	TR	TR	TR	TS

TS : STRAIGHT TEE
TR : REDUCING TEE
L : OUTLET

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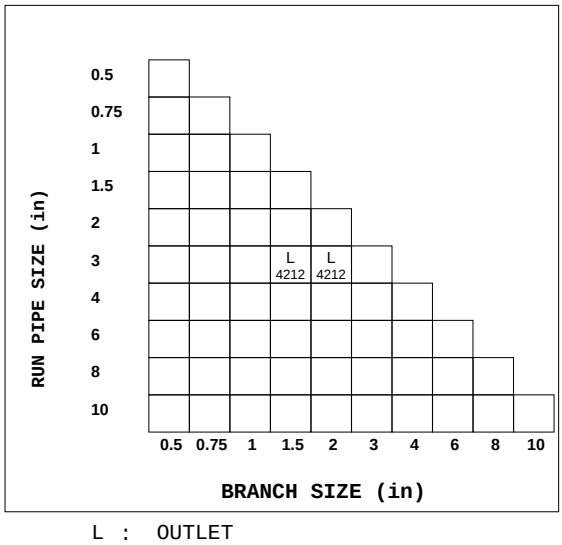
BRANCH TABLE (T_B2GQ04_4)



L : OUTLET

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Material : LTCS
Rating : ASME CLASS 300
Flange Face : RF
C.A.(mm) : 3.00
Gasket : Spiral Wound
Service : PROCESS -WET SEVERE SOUR SERVICE SUBJECT TO NACE + HIC STD.:
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
5	BOLTING CONFIRMING TO B7M / 2HM SHALL BE USED UNDER CONDITIONS (A) DIRECT EXPOSURE TO SOUR ENVIRONMENTS (B) WHEN THE BOLTING WILL BE BURIED OR INSULATED
15	BOLTING CONFIRMING TO L7M / 7M SHALL BE USED UNDER CONDITIONS (A) DIRECT EXPOSURE TO SOUR ENVIRONMENTS (B) WHEN THE BOLTING WILL BE BURIED OR INSULATED
27	PWHT OF CARBON STEEL PIPING IN WET H2S, CAUSTIC AND AMINE SERVICES SHALL BE IN ACCORDANCE WITH SECTION 10.2, 10.3, AND 10.4 OF PROJECT SPECIFICATION 3550-8440-SP-0002 MATERIALS REQUIREMENTS FOR PRESSURISED EQUIPMENT AND PIPING. FOR CAUSTIC AND AMINE SERVICE THE FOLLOWING SHALL APPLY: - PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF ALL SITE PIPING FABRICATION WELDS IS REQUIRED FOR ALL WALL THICKNESSES. FOR MODERATE AND SEVERE WET H2S SERVICE THE FOLLOWING SHALL APPLY: PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF SITE FABRICATION CIRCUMFERENTIAL OR BRANCH WELDS IS NOT REQUIRED IF WELDS ARE MULTIPASS AND IN ACCORDANCE WITH PARA 10.2.12 OF PROJECT SPECIFICATION 3550-8440-SP-0002. FOR SERVICES MEETING THE WET H2S CRITERIA AND CAUSTIC OR AMINE CRITERIA THE MORE STRINGENT PWHT REQUIREMENT SHALL GOVERN.

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
541	NPT(F) (CA,F)
781	CLASS 600 (B,F,G)
4608	VALVE WITH NIPPLES (V)

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PIPING CLASS
B2GR01 REV NO. 2

PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P01A-007G4	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE Severe wet H2S service Licensor-1	
1	0.75		SCH160		P01A-007G5	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE Severe wet H2S service Licensor-1	
1	1		SCH160		P01A-007G6	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE Severe wet H2S service Licensor-1	
1	1.5		SCH160		P01A-007G7	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE Severe wet H2S service Licensor-1	
1	2		XS		P01A-007G9	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE Severe wet H2S service Licensor-1	
1	3		STD		P01A-007GA	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE Severe wet H2S service Licensor-1	
1	4		STD		P01A-007GB	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE Severe wet H2S service Licensor-1	
1	6		STD		P01A-007GC	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE Severe wet H2S service Licensor-1	
1	8		STD		P01A-007GD	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE Severe wet H2S service Licensor-1	
1	10		STD		P01A-007G8	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE Severe wet H2S service Licensor-1	
1	12		SCH40		P01A-007FH	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE Severe wet H2S service Licensor-1	
1	14		SCH40		P01A-007FJ	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE Severe wet H2S service Licensor-1	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P02A-003Y6	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	0.75		SCH160		P02A-003Y7	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	1		SCH160		P02A-003Y8	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	1.5		SCH160		P02A-003Y9	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	2		XS		P02A-003YB	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	3		STD		P02A-003YC	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	4		STD		P02A-003YD	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	6		STD		P02A-003YE	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	8		STD		P02A-003YF	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	10		STD		P02A-003YA	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	12		SCH40		P02A-003XK	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	14		SCH40		P02A-003XL	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P03A-003VV	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	0.75		SCH160		P03A-003VW	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	1		SCH160		P03A-003VX	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	1.5		SCH160		P03A-003VY	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	2		XS		P03A-003W0	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	3		STD		P03A-003W1	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	4		STD		P03A-003W2	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	6		STD		P03A-003W3	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	8		STD		P03A-003W4	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	10		STD		P03A-003VZ	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	12		SCH40		P03A-003V8	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	14		SCH40		P03A-003V9	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P21A-004FM	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	0.75		SCH160		P21A-004FN	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	1		SCH160		P21A-004FP	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	1.5		SCH160		P21A-004FR	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	2		XS		P21A-004FT	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	

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STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3		STD		P21A-004FU	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	4		STD		P21A-004FV	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	6		STD		P21A-004FW	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	8		STD		P21A-004FX	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	10		STD		P21A-004FS	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	12		SCH40		P21A-004F1	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	14		SCH40		P21A-004F2	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75	SCH160	SCH160	P24A-00KS0	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	1.5	0.75	SCH160	SCH160	P24A-00KS1	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	1.5	1	SCH160	SCH160	P24A-00KS2	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	2	1	XS	SCH160	P24A-00KS3	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	2	1.5	XS	SCH160	P24A-00KS4	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	3	1.5	STD	SCH160	P24A-00KS5	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	3	2	STD	XS	P24A-00KS6	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	4	2	STD	XS	P24A-00KS7	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	4	3	STD	STD	P24A-00KS8	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	6	3	STD	STD	P24A-00KS9	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	6	4	STD	STD	P24A-00KSA	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	8	4	STD	STD	P24A-00KSB	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	8	6	STD	STD	P24A-00KSC	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	10	4	STD	STD	P24A-00KSD	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	10	6	STD	STD	P24A-00KSE	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	10	8	STD	STD	P24A-00KSF	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	12	6	SCH40	STD	P24A-00MUG	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	12	8	SCH40	STD	P24A-00MUH	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	12	10	SCH40	STD	P24A-00MUF	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	14	6	SCH40	STD	P24A-00MUK	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	14	8	SCH40	STD	P24A-00MUL	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	14	10	SCH40	STD	P24A-00MUJ	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	14	12	SCH40	SCH40	P24A-00KP3	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	SCH160	P27A-00F6R	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	1	0.5	SCH160	SCH160	P27A-00F6S	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	1	0.75	SCH160	SCH160	P27A-00F6T	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	1.5	0.5	SCH160	SCH160	P27A-00F6U	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	1.5	0.75	SCH160	SCH160	P27A-00F6V	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	1.5	1	SCH160	SCH160	P27A-00F6W	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	2	0.75	XS	SCH160	P27A-00F6X	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	2	1	XS	SCH160	P27A-00F6Y	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	2	1.5	XS	SCH160	P27A-00F6Z	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	3	1.5	STD	SCH160	P27A-00F70	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	3	2	STD	XS	P27A-00F71	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	4	1.5	STD	SCH160	P27A-00F72	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	4	2	STD	XS	P27A-00F73	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	4	3	STD	STD	P27A-00F74	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	6	3	STD	STD	P27A-00F75	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	6	4	STD	STD	P27A-00F76	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	8	4	STD	STD	P27A-00F77	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	

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CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	8	6	STD	STD	P27A-00F78	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	10	4	STD	STD	P27A-00F79	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	10	6	STD	STD	P27A-00F7A	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	10	8	STD	STD	P27A-00F7B	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	12	6	SCH40	STD	P27A-00GMW	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	12	8	SCH40	STD	P27A-00GMX	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	12	10	SCH40	STD	P27A-00GMV	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	14	6	SCH40	STD	P27A-00GMZ	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	14	8	SCH40	STD	P27A-00GN0	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	14	10	SCH40	STD	P27A-00GMY	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	14	12	SCH40	SCH40	P27A-00F5A	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	SCH160	P28A-00CAS	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	1	0.5	SCH160	SCH160	P28A-00CAT	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	1	0.75	SCH160	SCH160	P28A-00CAU	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	1.5	0.5	SCH160	SCH160	P28A-00CAV	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	1.5	0.75	SCH160	SCH160	P28A-00CAW	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	1.5	1	SCH160	SCH160	P28A-00CAX	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	2	0.75	XS	SCH160	P28A-00CAY	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	2	1	XS	SCH160	P28A-00CAZ	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	2	1.5	XS	SCH160	P28A-00CB0	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	3	1.5	STD	SCH160	P28A-00CB1	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	3	2	STD	XS	P28A-00CB2	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	4	1.5	STD	SCH160	P28A-00CB3	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	4	2	STD	XS	P28A-00CB4	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	4	3	STD	STD	P28A-00CB5	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	6	3	STD	STD	P28A-00CB6	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	6	4	STD	STD	P28A-00CB7	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	8	4	STD	STD	P28A-00CB8	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	8	6	STD	STD	P28A-00CB9	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	10	4	STD	STD	P28A-00CBA	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	10	6	STD	STD	P28A-00CBB	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	10	8	STD	STD	P28A-00CBC	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	12	6	SCH40	STD	P28A-00DW5	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	12	8	SCH40	STD	P28A-00DW6	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	12	10	SCH40	STD	P28A-00DW4	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	14	6	SCH40	STD	P28A-00DW8	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	14	8	SCH40	STD	P28A-00DW9	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	14	10	SCH40	STD	P28A-00DW7	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	14	12	SCH40	SCH40	P28A-00C9B	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P29A-003AL	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	0.75		SCH160		P29A-003AM	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	1		SCH160		P29A-003AN	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	1.5		SCH160		P29A-003AP	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	2		XS		P29A-003AS	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	3		STD		P29A-003AT	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	4		STD		P29A-003AU	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	6		STD		P29A-003AV	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	8		STD		P29A-003AW	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	10		STD		P29A-003AR	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	

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CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	12		SCH40		P29A-0039Z	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	14		SCH40		P29A-003A0	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
541	0.75				P29B-0006X	Cap ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 NPT Severe wet H2S service Licensor-1	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P41A-0019K	Straight nipple ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Severe wet H2S service Licensor-1	
1	0.75		XXS		P41A-0019L	Straight nipple ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Severe wet H2S service Licensor-1	
1	1		XXS		P41A-00196	Straight nipple ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Severe wet H2S service Licensor-1	
1	1.5		XXS		P41A-00197	Straight nipple ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Severe wet H2S service Licensor-1	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2	0.75	XS	SCH160	P31B-00Y7W	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	3	0.75	STD	SCH160	P31B-00Y7X	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	4	0.75	STD	SCH160	P31B-00Y7Z	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	6	0.75	STD	SCH160	P31B-00Y82	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	8	0.75	STD	SCH160	P31B-00Y86	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	10	0.75	STD	SCH160	P31B-00Y8B	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	12	0.75	SCH40	SCH160	P31B-0107L	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	14	0.75	SCH40	SCH160	P31B-0107T	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	3	1	STD	SCH160	P31B-00Y7Y	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	4	1	STD	SCH160	P31B-00Y80	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	6	1	STD	SCH160	P31B-00Y83	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	8	1	STD	SCH160	P31B-00Y87	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	10	1	STD	SCH160	P31B-00Y8C	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	12	1	SCH40	SCH160	P31B-0107M	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	14	1	SCH40	SCH160	P31B-0107U	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	4	1.5	STD	SCH160	P31B-00Y81	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	6	1.5	STD	SCH160	P31B-00Y84	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	8	1.5	STD	SCH160	P31B-00Y88	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	10	1.5	STD	SCH160	P31B-00Y8D	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	12	1.5	SCH40	SCH160	P31B-0107N	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	14	1.5	SCH40	SCH160	P31B-0107V	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	6	2	STD	XS	P31B-00Y85	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	8	2	STD	XS	P31B-00Y89	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	10	2	STD	XS	P31B-00Y8E	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	12	2	SCH40	XS	P31B-0107P	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	14	2	SCH40	XS	P31B-0107W	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	8	3	STD	STD	P31B-00Y8A	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	10	3	STD	STD	P31B-00Y8F	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	12	3	SCH40	STD	P31B-0107R	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	14	3	SCH40	STD	P31B-0107X	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	12	4	SCH40	STD	P31B-0107S	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	14	4	SCH40	STD	P31B-0107Y	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Severe wet H2S service Licensor-1	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30B-0006W	Plug ASTM A350 Grade LF2 Class 1 ASME B16.11 NPT Round head Severe wet H2S service Licensor-1	
1	0.75				P30B-0006X	Plug ASTM A350 Grade LF2 Class 1 ASME B16.11 NPT Round head Severe wet H2S service Licensor-1	
1	1				P30B-0006U	Plug ASTM A350 Grade LF2 Class 1 ASME B16.11 NPT Round head Severe wet H2S service Licensor-1	
1	1.5				P30B-0006V	Plug ASTM A350 Grade LF2 Class 1 ASME B16.11 NPT Round head Severe wet H2S service Licensor-1	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P61B-00AAL	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF Severe wet H2S service Licensor-1	
1	0.75		SCH160		P61B-00AAM	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF Severe wet H2S service Licensor-1	

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FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		SCH160		P61B-00AAN	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF Severe wet H2S service Licensor-1	
1	1.5		SCH160		P61B-00AAP	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF Severe wet H2S service Licensor-1	
1	2		XS		P61B-00AAS	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF Severe wet H2S service Licensor-1	
1	3		STD		P61B-00AAT	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF Severe wet H2S service Licensor-1	
1	4		STD		P61B-00AAU	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF Severe wet H2S service Licensor-1	
1	6		STD		P61B-00AAV	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF Severe wet H2S service Licensor-1	
1	8		STD		P61B-00AAW	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF Severe wet H2S service Licensor-1	
1	10		STD		P61B-00AAR	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF Severe wet H2S service Licensor-1	
1	12		SCH40		P61B-00A94	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF Severe wet H2S service Licensor-1	
1	14		SCH40		P61B-00A95	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF Severe wet H2S service Licensor-1	
541	0.5				P61B-00DME	Flange NPT ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF Severe wet H2S service Licensor-1	
541	0.75				P61B-00CXP	Flange NPT ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF Severe wet H2S service Licensor-1	
781	0.5		SCH160		P61B-00AAX	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF Severe wet H2S service Licensor-1	
781	0.75		SCH160		P61B-00AAY	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF Severe wet H2S service Licensor-1	
781	1		SCH160		P61B-00AAZ	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF Severe wet H2S service Licensor-1	
781	1.5		SCH160		P61B-00AB0	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF Severe wet H2S service Licensor-1	
781	2		XS		P61B-00AB2	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF Severe wet H2S service Licensor-1	
781	3		STD		P61B-00AB3	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF Severe wet H2S service Licensor-1	
781	4		STD		P61B-00AB4	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF Severe wet H2S service Licensor-1	
781	6		STD		P61B-00AB5	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF Severe wet H2S service Licensor-1	
781	8		STD		P61B-00AB6	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF Severe wet H2S service Licensor-1	
781	10		STD		P61B-00AB1	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF Severe wet H2S service Licensor-1	
781	12		SCH40		P61B-00BDE	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF Severe wet H2S service Licensor-1	
781	14		SCH40		P61B-00BDF	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF Severe wet H2S service Licensor-1	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67B-002KR	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF Severe wet H2S service Licensor-1	
1	0.75				P67B-002KS	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF Severe wet H2S service Licensor-1	
1	1				P67B-002KT	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF Severe wet H2S service Licensor-1	
1	1.5				P67B-002KU	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF Severe wet H2S service Licensor-1	
1	2				P67B-002KW	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF Severe wet H2S service Licensor-1	
1	3				P67B-002KX	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF Severe wet H2S service Licensor-1	
1	4				P67B-002KY	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF Severe wet H2S service Licensor-1	
1	6				P67B-002KZ	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF Severe wet H2S service Licensor-1	
1	8				P67B-002L0	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF Severe wet H2S service Licensor-1	
1	10				P67B-002KV	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF Severe wet H2S service Licensor-1	
1	12				P67B-002SV	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF Severe wet H2S service Licensor-1	
1	14				P67B-002SW	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF Severe wet H2S service Licensor-1	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000FT	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000FU	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000G5	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000G6	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	6				P73T-000G7	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	8				P73T-000G8	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	10				P73T-000FX	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	12				P73T-000FY	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	14				P73T-000FZ	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

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GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
781	0.5				P73T-000J8	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	0.75				P73T-000J9	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1				P73T-000JA	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1.5				P73T-000JB	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	2				P73T-000JH	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	3				P73T-000JL	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	4				P73T-000JM	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	6				P73T-000JN	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	8				P73T-000JP	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	10				P73T-000JC	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	12				P73T-000JD	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	14				P73T-000JE	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-10				See Attached Bolt Table	Bolt and Nut ASTM A320 Grade L7M / A194 Grade 7M ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	12-14				See Attached Bolt Table	Bolt and Nut ASTM A320 Grade L7M / A194 Grade 7M ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
781	0.5-6				See Attached Bolt Table	Bolt and Nut ASTM A320 Grade L7M / A194 Grade 7M ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
781	8-14				See Attached Bolt Table	Bolt and Nut ASTM A320 Grade L7M / A194 Grade 7M ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81B-001GB	Gate valve ASTM A350 Grade LF2 Class 1 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Licensor-1	
1	0.75				P81B-001GC	Gate valve ASTM A350 Grade LF2 Class 1 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Licensor-1	
1	1				P81B-001GD	Gate valve ASTM A350 Grade LF2 Class 1 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Licensor-1	
1	1.5				P81B-001GE	Gate valve ASTM A350 Grade LF2 Class 1 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Licensor-1	
1	2				P81C-00519	Gate valve ASTM A352 Grade LCC Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Licensor-1	
1	3				P81C-0051A	Gate valve ASTM A352 Grade LCC Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Licensor-1	
1	4				P81C-0051B	Gate valve ASTM A352 Grade LCC Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Licensor-1	
1	6				P81C-0051C	Gate valve ASTM A352 Grade LCC Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Licensor-1	
1	8				P81C-00923	Gate valve ASTM A352 Grade LCC Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Severe wet H2S service Licensor-1	
1	10				P81C-005SE	Gate valve ASTM A352 Grade LCC Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Severe wet H2S service Licensor-1	
1	12				P81C-005SF	Gate valve ASTM A352 Grade LCC Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Severe wet H2S service Licensor-1	
1	14				P81C-005SG	Gate valve ASTM A352 Grade LCC Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Severe wet H2S service Licensor-1	
4608	0.75				P81B-002X5	Gate valve ASTM A350 Grade LF2 Class 1 Class 300 API 602 BW both sides w/ nipples BE - NPT ASTM A333-6 XXS-nipple Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Licensor-1	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82B-00181	Globe valve ASTM A350 Grade LF2 Class 1 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Licensor-1	
1	0.75				P82B-00182	Globe valve ASTM A350 Grade LF2 Class 1 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Licensor-1	
1	1				P82B-00183	Globe valve ASTM A350 Grade LF2 Class 1 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Licensor-1	
1	1.5				P82B-00184	Globe valve ASTM A350 Grade LF2 Class 1 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Licensor-1	
1	2				P82C-002EK	Globe valve ASTM A352 Grade LCC Class 300 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Licensor-1	
1	3				P82C-002EL	Globe valve ASTM A352 Grade LCC Class 300 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Licensor-1	
1	4				P82C-002EM	Globe valve ASTM A352 Grade LCC Class 300 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Licensor-1	
1	6				P82C-002EN	Globe valve ASTM A352 Grade LCC Class 300 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Licensor-1	

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GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	8				P82C-004D5	Globe valve ASTM A352 Grade LCC Class 300 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Severe wet H2S service Licensor-1	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83B-000ZS	Check valve ASTM A350 Grade LF2 Class 1 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Severe wet H2S service Licensor-1	
1	0.75				P83B-000ZT	Check valve ASTM A350 Grade LF2 Class 1 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Severe wet H2S service Licensor-1	
1	1				P83B-000ZU	Check valve ASTM A350 Grade LF2 Class 1 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Severe wet H2S service Licensor-1	
1	1.5				P83B-000ZV	Check valve ASTM A350 Grade LF2 Class 1 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Severe wet H2S service Licensor-1	
1	2				P83C-002EV	Check valve ASTM A352 Grade LCC Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service Licensor-1	
1	3				P83C-002EW	Check valve ASTM A352 Grade LCC Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service Licensor-1	
1	4				P83C-002EX	Check valve ASTM A352 Grade LCC Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service Licensor-1	
1	6				P83C-002EY	Check valve ASTM A352 Grade LCC Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service Licensor-1	
1	8				P83C-002EZ	Check valve ASTM A352 Grade LCC Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service Licensor-1	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71B-000DC	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service Licensor-1	
1	0.75				P71B-000DD	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service Licensor-1	
1	1				P71B-000DE	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service Licensor-1	
1	1.5				P71B-000DF	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service Licensor-1	
1	2				P71B-000DH	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service Licensor-1	
1	3				P71B-000DJ	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service Licensor-1	
1	4				P71B-000DK	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service Licensor-1	
1	6				P71B-000DL	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service Licensor-1	
1	8				P71B-000DM	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service Licensor-1	
1	10				P71B-000DG	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service Licensor-1	
1	12				P71B-000FY	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service Licensor-1	

PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000NX	Paddle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service Licensor-1	

PADDLE SPACER (PS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000NY	Paddle spacer ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service Licensor-1	

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BOLT TABLE (B_B2GR01 , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-009UL		
0.75	4	0.625	75	P80S-00A01		
1	4	0.625	80	P80S-00A02		
1.5	4	0.750	95	P80S-009X9		
2	8	0.625	90	P80S-00A04		
3	8	0.750	110	P80S-00A08		
4	8	0.750	115	P80S-00A09		
6	12	0.750	125	P80S-00A0B		
8	12	0.875	140	P80S-009XJ		
10	16	1.000	160	P80S-00A3C		
12	16	1.125	175	P80S-00A4T		
14	20	1.125	180	P80S-00A4U		

BOLT TABLE (B_B2GR01_781 , STUD ASME RF, OPTION CODE 781)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	80	P80S-009UN		
0.75	4	0.625	90	P80S-00A04		
1	4	0.625	95	P80S-00A05		
1.5	4	0.750	110	P80S-00A08		
2	8	0.625	110	P80S-009UV		
3	8	0.750	130	P80S-00A0C		
4	8	0.875	150	P80S-009XL		
6	12	1.000	175	P80S-009XT		
8	12	1.125	195	P80S-00A4X		
10	16	1.250	250	P80S-00CU0		
12	20	1.250	255	P80S-00CU1		
14	20	1.375	270	P80S-00D0L		

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BRANCH TABLE (T_B2GR01)

RUN PIPE SIZE (in) \ BRANCH SIZE (in)	0.5	0.75	1	1.5	2	3	4	6	8	10	12	14
0.5	TS											
0.75		TS										
1		TR	TS									
1.5		TR	TR	TS								
2		L	TR	TR	TS							
3		L	L	TR	TR	TS						
4	L	L	L	L	TR	TR	TS					
6	L	L	L	L	L	TR	TR	TS				
8		L	L	L	L	L	TR	TR	TS			
10		L	L	L	L	L	TR	TR	TR	TS		
12		L	L	L	L	L	L	TR	TR	TR	TS	
14		L	L	L	L	L	L	TR	TR	TR	TR	TS

L : OUTLET
TS : STRAIGHT TEE
TR : REDUCING TEE

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PIPING CLASS

B31D05 REV NO. 2

Material : LTCS
Rating : ASME CLASS 300
Flange Face : RF
C.A.(mm) : 3.00
Gasket : Spiral Wound
Service : PROPYLENE
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
541	NPT(F) (CA,L)
714	SW - NPT(F) (V)
781	CLASS 600 (B,F,G)

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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P01A-00167	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE	
1	0.75		SCH160		P01A-0016P	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE	
1	1		SCH160		P01A-0011Z	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE	
1	1.5		SCH160		P01A-00127	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE	
1	2		XS		P01A-000XB	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	3		STD		P01A-000YL	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	4		STD		P01A-000YT	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	6		STD		P01A-000Z2	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P02B-0001V	90 degree elbow ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW	
1	0.75				P02B-0001W	90 degree elbow ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW	
1	1				P02B-0001X	90 degree elbow ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW	
1	1.5				P02B-0001Y	90 degree elbow ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW	
1	2		XS		P02A-000B9	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	3		STD		P02A-000E7	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	4		STD		P02A-000E9	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	6		STD		P02A-000EC	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P03B-0001S	45 degree elbow ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW	
1	0.75				P03B-0001T	45 degree elbow ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW	
1	1				P03B-0001U	45 degree elbow ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW	
1	1.5				P03B-0001V	45 degree elbow ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW	
1	2		XS		P03A-0009Y	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	3		STD		P03A-000C4	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	4		STD		P03A-000C6	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	6		STD		P03A-000C9	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P21B-0001S	Straight tee ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW	
1	0.75				P21B-0001T	Straight tee ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW	
1	1				P21B-0001U	Straight tee ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW	
1	1.5				P21B-0001V	Straight tee ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW	
1	2		XS		P21A-001BR	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	3		STD		P21A-001FE	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	4		STD		P21A-001FF	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	6		STD		P21A-001FJ	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75			P24B-0003M	Reducing tee ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW	
1	1.5	0.75			P24B-0003P	Reducing tee ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW	
1	1.5	1			P24B-0003R	Reducing tee ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW	
1	2	1	XS	SCH160	P24A-00GMD	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	2	1.5	XS	SCH160	P24A-005NK	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	3	1.5	STD	SCH160	P24A-00GME	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	3	2	STD	XS	P24A-005M3	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	4	2	STD	XS	P24A-006CW	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	4	3	STD	STD	P24A-0028C	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	6	3	STD	STD	P24A-002AL	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	6	4	STD	STD	P24A-00289	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	

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CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	STD	XS	P27A-003PM	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	4	2	STD	XS	P27A-003PN	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	4	3	STD	STD	P27A-001BA	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	6	3	STD	STD	P27A-001H9	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	6	4	STD	STD	P27A-00181	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	STD	XS	P28A-003PL	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	4	2	STD	XS	P28A-003PM	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	4	3	STD	STD	P28A-001CF	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	6	3	STD	STD	P28A-001AL	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	6	4	STD	STD	P28A-001BL	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P29B-0002J	Cap ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW	
1	0.75				P29B-0002K	Cap ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW	
1	1				P29B-0002L	Cap ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW	
1	1.5				P29B-0002H	Cap ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW	
1	2		XS		P29A-000BG	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	3		STD		P29A-0009Y	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	4		STD		P29A-000AH	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	6		STD		P29A-000DE	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
541	0.75				P29B-00015	Cap ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P41A-000DJ	Straight nipple ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		XXS		P41A-000DK	Straight nipple ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		XXS		P41A-000DZ	Straight nipple ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		XXS		P41A-000E0	Straight nipple ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

CON SWAGED NIPPLE (SNC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	SCH160	P42A-000A8	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	SCH160	SCH160	P42A-000A9	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	SCH160	SCH160	P42A-000A1	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	SCH160	SCH160	P42A-000AA	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	SCH160	SCH160	P42A-000A3	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	SCH160	SCH160	P42A-000A4	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	XS	SCH160	P42A-000L1	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	XS	SCH160	P42A-000L2	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	XS	SCH160	P42A-000L3	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	XS	SCH160	P42A-000L4	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	STD	SCH160	P42A-000L5	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 BE(L) - PE(S)	

ECC SWAGED NIPPLE (SNE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	SCH160	P43A-000D2	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	SCH160	SCH160	P43A-000D3	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	SCH160	SCH160	P43A-000D4	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	SCH160	SCH160	P43A-000D5	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	SCH160	SCH160	P43A-000D6	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	SCH160	SCH160	P43A-000D7	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	XS	SCH160	P43A-000D8	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	XS	SCH160	P43A-000D9	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	XS	SCH160	P43A-000DA	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 BE(L) - PE(S)	

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ECC SWAGED NIPPLE (SNE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2	1.5	XS	SCH160	P43A-000DB	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	STD	SCH160	P43A-000DC	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 BE(L) - PE(S)	

COUPLING (CPS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P47B-0001S	Coupling ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW - SW	
1	0.75				P47B-0001T	Coupling ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW - SW	
1	1				P47B-0001U	Coupling ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW - SW	
1	1.5				P47B-0001V	Coupling ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW - SW	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5 - 2.5	0.75			P31B-0138C	Outlet ASTM A350 Grade LF2 Class 1 Class 6000 MSS SP-97 SW	
1	3 - 10	0.75			P31B-007DK	Outlet ASTM A350 Grade LF2 Class 1 Class 6000 MSS SP-97 SW	
1	3 - 10	1			P31B-007BL	Outlet ASTM A350 Grade LF2 Class 1 Class 6000 MSS SP-97 SW	
1	4 - 5	1.5			P31B-00514	Outlet ASTM A350 Grade LF2 Class 1 Class 6000 MSS SP-97 SW	
1	6 - 8	1.5			P31B-007B0	Outlet ASTM A350 Grade LF2 Class 1 Class 6000 MSS SP-97 SW	
541	1	0.75			P31B-004HD	Outlet ASTM A350 Grade LF2 Class 1 Class 6000 MSS SP-97 NPT	
541	1.5 - 2.5	0.75			P31B-0138F	Outlet ASTM A350 Grade LF2 Class 1 Class 6000 MSS SP-97 NPT	
541	3 - 10	0.75			P31B-007CY	Outlet ASTM A350 Grade LF2 Class 1 Class 6000 MSS SP-97 NPT	
1	6	2	STD	XS	P31B-00MFB	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30B-0002V	Plug ASTM A350 Grade LF2 Class 1 ASME B16.11 NPT Round head	
1	0.75				P30B-0002W	Plug ASTM A350 Grade LF2 Class 1 ASME B16.11 NPT Round head	
1	1				P30B-0002X	Plug ASTM A350 Grade LF2 Class 1 ASME B16.11 NPT Round head	
1	1.5				P30B-0002Y	Plug ASTM A350 Grade LF2 Class 1 ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P61B-001CU	Flange SW ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	0.75		SCH160		P61B-001D5	Flange SW ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	1		SCH160		P61B-001GC	Flange SW ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	1.5		SCH160		P61B-001GZ	Flange SW ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	2		XS		P61B-003R8	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	3		STD		P61B-001MB	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	4		STD		P61B-001N0	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	6		STD		P61B-001NM	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
781	0.5		SCH160		P61B-001Y2	Flange SW ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
781	0.75		SCH160		P61B-001YD	Flange SW ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
781	1		SCH160		P61B-001YU	Flange SW ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
781	1.5		SCH160		P61B-001XN	Flange SW ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
781	2		XS		P61B-001FN	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
781	3		STD		P61B-001TV	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
781	4		STD		P61B-001VT	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
781	6		STD		P61B-001JV	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67B-000NN	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	0.75				P67B-000MV	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	1				P67B-000MW	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	1.5				P67B-000MX	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	2				P67B-000N3	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	3				P67B-000N6	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	4				P67B-000N7	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	6				P67B-000N8	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	

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GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-00356	Spiral wound gasket SS316 winding / Non-asbestos filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-6	
1	0.75				P73T-00357	Spiral wound gasket SS316 winding / Non-asbestos filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-6	
1	1				P73T-00358	Spiral wound gasket SS316 winding / Non-asbestos filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-6	
1	1.5				P73T-00359	Spiral wound gasket SS316 winding / Non-asbestos filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-6	
1	2				P73T-0035A	Spiral wound gasket SS316 winding / Non-asbestos filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-6	
1	3				P73T-0035B	Spiral wound gasket SS316 winding / Non-asbestos filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-6	
1	4				P73T-0035C	Spiral wound gasket SS316 winding / Non-asbestos filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-6	
1	6				P73T-0035D	Spiral wound gasket SS316 winding / Non-asbestos filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-6	
781	0.5				P73T-0035E	Spiral wound gasket SS316 winding / Non-asbestos filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-6	
781	0.75				P73T-0035F	Spiral wound gasket SS316 winding / Non-asbestos filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-6	
781	1				P73T-0035G	Spiral wound gasket SS316 winding / Non-asbestos filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-6	
781	1.5				P73T-0035H	Spiral wound gasket SS316 winding / Non-asbestos filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-6	
781	2				P73T-0035J	Spiral wound gasket SS316 winding / Non-asbestos filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-6	
781	3				P73T-0035K	Spiral wound gasket SS316 winding / Non-asbestos filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-6	
781	4				P73T-0035L	Spiral wound gasket SS316 winding / Non-asbestos filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-6	
781	6				P73T-0035M	Spiral wound gasket SS316 winding / Non-asbestos filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-6	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-6				See Attached Bolt Table	Bolt and Nut ASTM A320 Grade L7 / A194 Grade 4 ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
781	0.5-6				See Attached Bolt Table	Bolt and Nut ASTM A320 Grade L7 / A194 Grade 4 ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81B-001KB	Gate valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	0.75				P81B-001KC	Gate valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	1				P81B-001KD	Gate valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	1.5				P81B-001KE	Gate valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	2				P81C-005AG	Gate valve ASTM A352 Grade LCC Class 300 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	3				P81C-005AH	Gate valve ASTM A352 Grade LCC Class 300 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	4				P81C-005AJ	Gate valve ASTM A352 Grade LCC Class 300 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	6				P81C-005AK	Gate valve ASTM A352 Grade LCC Class 300 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
714	0.5				P81B-002SC	Gate valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW - NPT Trim number 8 BB-BG-OS&Y Handwheel operated	
714	0.75				P81B-002FE	Gate valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW - NPT Trim number 8 BB-BG-OS&Y Handwheel operated	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82B-0019P	Globe valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	0.75				P82B-0019R	Globe valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	1				P82B-0019S	Globe valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	1.5				P82B-0019T	Globe valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	2				P82C-002KK	Globe valve ASTM A352 Grade LCC Class 300 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	3				P82C-002KL	Globe valve ASTM A352 Grade LCC Class 300 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	4				P82C-002KM	Globe valve ASTM A352 Grade LCC Class 300 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	6				P82C-002KN	Globe valve ASTM A352 Grade LCC Class 300 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	

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CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83B-0011G	Check valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover	
1	0.75				P83B-0011H	Check valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover	
1	1				P83B-0011J	Check valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover	
1	1.5				P83B-0011K	Check valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover	
1	2				P83C-002MV	Check valve ASTM A352 Grade LCC Class 300 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	3				P83C-002MW	Check valve ASTM A352 Grade LCC Class 300 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	4				P83C-002MX	Check valve ASTM A352 Grade LCC Class 300 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	6				P83C-002MY	Check valve ASTM A352 Grade LCC Class 300 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71B-000BP	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	0.75				P71B-000BR	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	1				P71B-000BS	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71B-000BT	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	2				P71B-000BW	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	3				P71B-000BX	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	4				P71B-000BY	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	6				P71B-000BZ	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF	

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BOLT TABLE (B_B31D05 , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-003VL		
0.75	4	0.625	75	P80S-003Z2		
1	4	0.625	80	P80S-003Z3		
1.5	4	0.750	95	P80S-0045X		
2	8	0.625	90	P80S-003Z5		
3	8	0.750	110	P80S-003Z9		
4	8	0.750	115	P80S-003ZA		
6	12	0.750	125	P80S-003ZC		

BOLT TABLE (B_B31D05_781 , STUD ASME RF, OPTION CODE 781)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	80	P80S-003VN		
0.75	4	0.625	90	P80S-003Z5		
1	4	0.625	95	P80S-003Z6		
1.5	4	0.750	110	P80S-003Z9		
2	8	0.625	110	P80S-003VV		
3	8	0.750	130	P80S-003ZD		
4	8	0.875	150	P80S-00468		
6	12	1.000	175	P80S-004BM		

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BRANCH TABLE (T_B31D05)

RUN PIPE SIZE (in) \ BRANCH SIZE (in)	0.5	0.75	1	1.5	2	3	4	6
0.5	TS							
0.75		TS						
1		TR	TS					
1.5		TR	TR	TS				
2		L	TR	TR	TS			
3		L	L	TR	TR	TS		
4	L	L	L	L	TR	TR	TS	
6	L	L	L	L	L	TR	TR	TS

TS : STRAIGHT TEE
L : OUTLET
TR : REDUCING TEE

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PIPING CLASS

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Material : Killed CS
Rating : ASME CLASS 300
Flange Face : RF
C.A.(mm) : 4.50
Gasket : Spiral Wound
Service : PROCESS - WET SEVERE SOUR SERVICE SUBJECT TO NACE + HIC STD + AMINES OR CAUSTIC - STRESS RELIEVED
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
2	USE OF SOFT SEATED BALL, PLUG AND BUTTERFLY VALVES SHALL BE LIMITED TO MAXIMUM OF 204DEGC (400DEGF)
5	BOLTING CONFIRMING TO B7M / 2HM SHALL BE USED UNDER CONDITIONS (A) DIRECT EXPOSURE TO SOUR ENVIRONMENTS (B) WHEN THE BOLTING WILL BE BURIED OR INSULATED
27	PWHT OF CARBON STEEL PIPING IN WET H2S, CAUSTIC AND AMINE SERVICES SHALL BE IN ACCORDANCE WITH SECTION 10.2, 10.3, AND 10.4 OF PROJECT SPECIFICATION 3550-8440-SP-0002 MATERIALS REQUIREMENTS FOR PRESSURISED EQUIPMENT AND PIPING. FOR CAUSTIC AND AMINE SERVICE THE FOLLOWING SHALL APPLY: - PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF ALL SITE PIPING FABRICATION WELDS IS REQUIRED FOR ALL WALL THICKNESSES. FOR MODERATE AND SEVERE WET H2S SERVICE THE FOLLOWING SHALL APPLY: PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF SITE FABRICATION CIRCUMFERENTIAL OR BRANCH WELDS IS NOT REQUIRED IF WELDS ARE MULTIPASS AND IN ACCORDANCE WITH PARA 10.2.12 OF PROJECT SPECIFICATION 3550-8440-SP-0002. FOR SERVICES MEETING THE WET H2S CRITERIA AND CAUSTIC OR AMINE CRITERIA THE MORE STRINGENT PWHT REQUIREMENT SHALL GOVERN.

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
24	FULL PORT (Q)
541	NPT(F) (CA,F)
781	CLASS 600 (B,F,G)
4601	Y-PATTERN (W)
4608	VALVE WITH NIPPLES (V)

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PIPING CLASS
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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P01A-00143	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	0.75		XXS		P01A-0014D	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1		XXS		P01A-0014U	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1.5		SCH160		P01A-0015J	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	2		SCH160		P01A-0019T	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P02A-00172	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	0.75		XXS		P02A-000XH	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1		XXS		P02A-000XJ	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1.5		SCH160		P02A-000V9	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	2		SCH160		P02A-000KW	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P03A-0012Y	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	0.75		XXS		P03A-000U9	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1		XXS		P03A-000U8	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1.5		SCH160		P03A-000RP	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	2		SCH160		P03A-000HU	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P21A-002M0	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	0.75		XXS		P21A-002DR	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1		XXS		P21A-002DP	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5		SCH160		P21A-002B9	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2		SCH160		P21A-00245	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75	XXS	XXS	P24A-004LR	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.75	SCH160	XXS	P24A-004LP	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	1	SCH160	XXS	P24A-004LJ	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	SCH160	XXS	P24A-0044B	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	SCH160	SCH160	P24A-003AX	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	XXS	XXS	P27A-004M7	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.5	XXS	XXS	P27A-004MF	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.75	XXS	XXS	P27A-002ZZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.5	SCH160	XXS	P27A-003ZN	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.75	SCH160	XXS	P27A-002ZY	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	1	SCH160	XXS	P27A-00302	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	0.75	SCH160	XXS	P27A-0029F	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	SCH160	XXS	P27A-0029H	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	SCH160	SCH160	P27A-0025J	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	XXS	XXS	P28A-00BNX	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.5	XXS	XXS	P28A-00BNY	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.75	XXS	XXS	P28A-0030M	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.5	SCH160	XXS	P28A-003ZG	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.75	SCH160	XXS	P28A-0030L	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	1	SCH160	XXS	P28A-0030E	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2	0.75	SCH160	XXS	P28A-00288	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	SCH160	XXS	P28A-00289	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	SCH160	SCH160	P28A-002SS	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P29A-00336	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	0.75		XXS		P29A-00337	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	1		XXS		P29A-00338	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5		SCH160		P29A-001VX	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	2		SCH160		P29A-001W3	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
541	0.75				P29B-0000Y	Cap ASTM A105 Class 6000 ASME B16.11 NPT	
541	1				P29B-0000Z	Cap ASTM A105 Class 6000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P41A-000B9	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		XXS		P41A-000BA	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		XXS		P41A-000D8	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		XXS		P41A-000D9	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2	0.75	SCH160	XXS	P31B-00CP2	Outlet ASTM A105 MSS SP-97 BW	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30B-0002D	Plug ASTM A105 ASME B16.11 NPT Round head	
1	0.75				P30B-0002E	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1				P30B-0002F	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1.5				P30B-0002G	Plug ASTM A105 ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P61B-003LW	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	0.75		XXS		P61B-003MA	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	1		XXS		P61B-003MB	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	1.5		SCH160		P61B-0037J	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	2		SCH160		P61B-002R8	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
541	0.5				P61B-003U3	Flange NPT ASTM A105 Class 300 ASME B16.5 RF	
541	0.75				P61B-003U4	Flange NPT ASTM A105 Class 300 ASME B16.5 RF	
781	0.5		XXS		P61B-003T1	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	0.75		XXS		P61B-003TB	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	1		XXS		P61B-003TC	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	1.5		SCH160		P61B-003T4	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	2		SCH160		P61B-003T7	Flange WN ASTM A105 Class 600 ASME B16.5 RF	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67B-000GH	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	0.75				P67B-000GJ	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	1				P67B-000GK	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	1.5				P67B-000GL	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	2				P67B-000GM	Blind flange ASTM A105 Class 300 ASME B16.5 RF	

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REDUCING FLANGE (FR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2	0.75		XXS	P62B-000NS	Reducing flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	2	1		XXS	P62B-000N8	Reducing flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	2	1.5		SCH160	P62B-000MG	Reducing flange WN ASTM A105 Class 300 ASME B16.5 RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000FT	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000FU	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	0.5				P73T-000J8	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	0.75				P73T-000J9	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1				P73T-000JA	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1.5				P73T-000JB	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	2				P73T-000JH	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-2				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
781	0.5-2				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81B-002EK	Gate valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service C.A.=4.5mm	
1	0.75				P81B-002EL	Gate valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service C.A.=4.5mm	
1	1				P81B-002EM	Gate valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service C.A.=4.5mm	
1	1.5				P81B-002EN	Gate valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service C.A.=4.5mm	
1	2				P81C-007GS	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service C.A.=4.5mm	
4608	0.75				P81B-002X6	Gate valve ASTM A105 Class 300 API 602 BW both sides w/ nipples BE - NPT ASTM A106-B XXS-nipple Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service C.A.=4.5mm	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82B-001U1	Globe valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service C.A.=4.5mm	
1	0.75				P82B-001U2	Globe valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service C.A.=4.5mm	
1	1				P82B-001U3	Globe valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service C.A.=4.5mm	
1	1.5				P82B-001U4	Globe valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service C.A.=4.5mm	
1	2				P82C-003SL	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service C.A.=4.5mm	
4601	0.5				P82B-0022F	Y-pattern globe valve ASTM A105 Class 300 ASME B16.34 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service C.A.=4.5mm	
4601	0.75				P82B-0022G	Y-pattern globe valve ASTM A105 Class 300 ASME B16.34 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service C.A.=4.5mm	
4601	1				P82B-0022H	Y-pattern globe valve ASTM A105 Class 300 ASME B16.34 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service C.A.=4.5mm	
4601	1.5				P82B-0022J	Y-pattern globe valve ASTM A105 Class 300 ASME B16.34 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service C.A.=4.5mm	
4601	2				P82C-0047G	Y-pattern globe valve ASTM A216 Grade WCB Class 300 ASME B16.34 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service C.A.=4.5mm	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83B-001CL	Check valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 Lift-type Bolted cover Severe wet H2S service Amine service C.A.=4.5mm	

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CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75				P83B-001CM	Check valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 Lift-type Bolted cover Severe wet H2S service Amine service C.A.=4.5mm	
1	1				P83B-001CN	Check valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 Lift-type Bolted cover Severe wet H2S service Amine service C.A.=4.5mm	
1	1.5				P83B-001CP	Check valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 Lift-type Bolted cover Severe wet H2S service Amine service C.A.=4.5mm	
1	2				P83C-0038K	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 Swing-type Bolted cover Severe wet H2S service Amine service C.A.=4.5mm	

BALL VALVE (Q)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P84B-001KF	Ball valve Long-pattern ASTM A105 Class 300 API 608 Flange ASME B16.5 RF Ball SS316L Seat R-PTFE Trim SS316L Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design Severe wet H2S service Amine service C.A.=4.5mm	
1	0.75				P84B-001KG	Ball valve Long-pattern ASTM A105 Class 300 API 608 Flange ASME B16.5 RF Ball SS316L Seat R-PTFE Trim SS316L Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design Severe wet H2S service Amine service C.A.=4.5mm	
1	1				P84B-001KH	Ball valve Long-pattern ASTM A105 Class 300 API 608 Flange ASME B16.5 RF Ball SS316L Seat R-PTFE Trim SS316L Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design Severe wet H2S service Amine service C.A.=4.5mm	
1	1.5				P84B-001KJ	Ball valve Long-pattern ASTM A105 Class 300 API 608 Flange ASME B16.5 RF Ball SS316L Seat R-PTFE Trim SS316L Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design Severe wet H2S service Amine service C.A.=4.5mm	
1	2				P84C-006Z1	Ball valve Long-pattern ASTM A216 Grade WCB Class 300 API 608 Flange ASME B16.5 RF Ball SS316L Seat R-PTFE Trim SS316L Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design Severe wet H2S service Amine service C.A.=4.5mm	
24	0.5				P84B-001KK	Ball valve Long-pattern ASTM A105 Class 300 API 608 Flange ASME B16.5 RF Ball SS316L Seat R-PTFE Trim SS316L Floating-type Side-entry Wrench lever operated Full bore Fire tested design Severe wet H2S service Amine service C.A.=4.5mm	
24	0.75				P84B-001KL	Ball valve Long-pattern ASTM A105 Class 300 API 608 Flange ASME B16.5 RF Ball SS316L Seat R-PTFE Trim SS316L Floating-type Side-entry Wrench lever operated Full bore Fire tested design Severe wet H2S service Amine service C.A.=4.5mm	
24	1				P84B-001KM	Ball valve Long-pattern ASTM A105 Class 300 API 608 Flange ASME B16.5 RF Ball SS316L Seat R-PTFE Trim SS316L Floating-type Side-entry Wrench lever operated Full bore Fire tested design Severe wet H2S service Amine service C.A.=4.5mm	
24	1.5				P84B-001KN	Ball valve Long-pattern ASTM A105 Class 300 API 608 Flange ASME B16.5 RF Ball SS316L Seat R-PTFE Trim SS316L Floating-type Side-entry Wrench lever operated Full bore Fire tested design Severe wet H2S service Amine service C.A.=4.5mm	
24	2				P84C-006Z2	Ball valve Long-pattern ASTM A216 Grade WCB Class 300 API 608 Flange ASME B16.5 RF Ball SS316L Seat R-PTFE Trim SS316L Floating-type Side-entry Wrench lever operated Full bore Fire tested design Severe wet H2S service Amine service C.A.=4.5mm	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71B-000B1	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	0.75				P71B-000B2	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	1				P71B-000B3	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71B-000B4	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	2				P71B-000B6	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	

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BOLT TABLE (B_B3A502 , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-008T0		
0.75	4	0.625	75	P80S-00908		
1	4	0.625	80	P80S-00909		
1.5	4	0.750	95	P80S-005Z4		
2	8	0.625	90	P80S-0090B		

BOLT TABLE (B_B3A502_781 , STUD ASME RF, OPTION CODE 781)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	80	P80S-008T2		
0.75	4	0.625	90	P80S-0090B		
1	4	0.625	95	P80S-0090C		
1.5	4	0.750	110	P80S-0090F		
2	8	0.625	110	P80S-008T8		

BOLT TABLE (B_B3A502_797 , STUD ASME RJ, OPTION CODE 797)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	110		R12	
0.75	4	0.750	115		R14	
1	4	0.875	130		R16	
1.5	4	1.000	140		R20	
2	8	0.875	150		R24	

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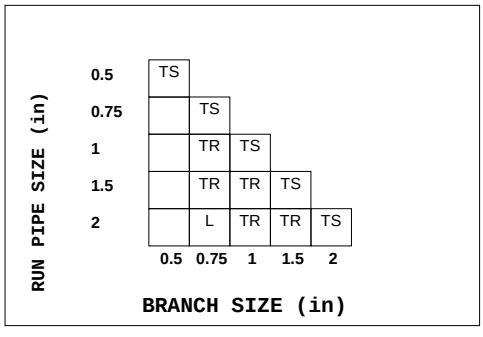
BRANCH TABLE (T_B3A502)



TR : REDUCING TEE
L : OUTLET
TS : STRAIGHT TEE

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PIPING CLASS

B3A702 REV NO. 2

Material : Killed CS
Rating : ASME CLASS 300
Flange Face : RF
C.A.(mm) : 4.50
Gasket : Spiral Wound
Service : PROCESS - WET SEVERE SOUR SERVICE SUBJECT TO NACE + HIC STD + HYDROGEN SERVICE
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
2	USE OF SOFT SEATED BALL, PLUG AND BUTTERFLY VALVES SHALL BE LIMITED TO MAXIMUM OF 204DEGC (400DEGF)
5	BOLTING CONFIRMING TO B7M / 2HM SHALL BE USED UNDER CONDITIONS (A) DIRECT EXPOSURE TO SOUR ENVIRONMENTS (B) WHEN THE BOLTING WILL BE BURIED OR INSULATED
27	PWHT OF CARBON STEEL PIPING IN WET H2S, CAUSTIC AND AMINE SERVICES SHALL BE IN ACCORDANCE WITH SECTION 10.2, 10.3, AND 10.4 OF PROJECT SPECIFICATION 3550-8440-SP-0002 MATERIALS REQUIREMENTS FOR PRESSURISED EQUIPMENT AND PIPING. FOR CAUSTIC AND AMINE SERVICE THE FOLLOWING SHALL APPLY: - PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF ALL SITE PIPING FABRICATION WELDS IS REQUIRED FOR ALL WALL THICKNESSES. FOR MODERATE AND SEVERE WET H2S SERVICE THE FOLLOWING SHALL APPLY: PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF SITE FABRICATION CIRCUMFERENTIAL OR BRANCH WELDS IS NOT REQUIRED IF WELDS ARE MULTIPASS AND IN ACCORDANCE WITH PARA 10.2.12 OF PROJECT SPECIFICATION 3550-8440-SP-0002. FOR SERVICES MEETING THE WET H2S CRITERIA AND CAUSTIC OR AMINE CRITERIA THE MORE STRINGENT PWHT REQUIREMENT SHALL GOVERN.

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
541	NPT(F) (CA,F)
781	CLASS 600 (B,F,G)
797	CLASS 1500 (B,F,G)
2489	CLASS 600 RJ (B,F,G)
4601	Y-PATTERN (W)
4608	VALVE WITH NIPPLES (V)

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PIPING CLASS
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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P01A-00143	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	0.75		XXS		P01A-0014D	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1		XXS		P01A-0014U	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1.5		SCH160		P01A-0015J	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	2		SCH160		P01A-0019T	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	3		XS		P01A-000Z4	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	4		XS		P01A-000Z9	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	6		XS		P01A-000ZF	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	8		SCH60		P01A-001BK	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	10		XS		P01A-000Y2	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P02A-00172	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	0.75		XXS		P02A-000XH	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1		XXS		P02A-000XJ	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1.5		SCH160		P02A-000V9	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	2		SCH160		P02A-000KW	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		XS		P02A-000CX	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		XS		P02A-000D3	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		XS		P02A-000DA	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		SCH60		P02A-000MC	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	10		XS		P02A-000BN	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P03A-0012Y	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	0.75		XXS		P03A-000U9	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1		XXS		P03A-000U8	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1.5		SCH160		P03A-000RP	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	2		SCH160		P03A-000HU	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		XS		P03A-000AZ	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		XS		P03A-000B3	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		XS		P03A-000B8	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		SCH60		P03A-000K5	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	10		XS		P03A-000A3	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P21A-002M0	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	0.75		XXS		P21A-002DR	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1		XXS		P21A-002DP	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5		SCH160		P21A-002B9	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2		SCH160		P21A-00245	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		XS		P21A-001CR	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		XS		P21A-001CV	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6		XS		P21A-001D4	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8		SCH60		P21A-0025S	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10		XS		P21A-001C0	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75	XXS	XXS	P24A-004LR	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.75	SCH160	XXS	P24A-004LP	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	1	SCH160	XXS	P24A-004LJ	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	SCH160	XXS	P24A-0044B	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	SCH160	SCH160	P24A-003AX	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	XS	SCH160	P24A-00GNV	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	XS	SCH160	P24A-00560	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	XS	SCH160	P24A-00561	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	XS	XS	P24A-0024A	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	XS	XS	P24A-0023F	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	XS	XS	P24A-00243	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH60	XS	P24A-00GAV	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH60	XS	P24A-0062G	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	XS	XS	P24A-0023C	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	XS	XS	P24A-00241	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	XS	SCH60	P24A-0062H	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	XXS	XXS	P27A-004M7	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.5	XXS	XXS	P27A-004MF	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.75	XXS	XXS	P27A-002ZZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.5	SCH160	XXS	P27A-003ZN	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.75	SCH160	XXS	P27A-002ZY	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	1	SCH160	XXS	P27A-00302	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	0.75	SCH160	XXS	P27A-0029F	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	SCH160	XXS	P27A-0029H	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	SCH160	SCH160	P27A-0025J	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	XS	SCH160	P27A-003N1	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	XS	SCH160	P27A-0037V	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	1.5	XS	SCH160	P27A-003N2	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	XS	SCH160	P27A-0037W	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	XS	XS	P27A-001EP	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	XS	XS	P27A-001DM	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	XS	XS	P27A-001EB	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH60	XS	P27A-00435	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH60	XS	P27A-00436	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	XS	XS	P27A-001E8	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	XS	XS	P27A-001F2	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	XS	SCH60	P27A-00437	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	XXS	XXS	P28A-00BNX	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.5	XXS	XXS	P28A-00BNY	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.75	XXS	XXS	P28A-0030M	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.5	SCH160	XXS	P28A-003ZG	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.75	SCH160	XXS	P28A-0030L	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	1	SCH160	XXS	P28A-0030E	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	0.75	SCH160	XXS	P28A-00288	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	SCH160	XXS	P28A-00289	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	SCH160	SCH160	P28A-002SS	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	XS	SCH160	P28A-003MV	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	XS	SCH160	P28A-0037B	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	1.5	XS	SCH160	P28A-003MW	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	XS	SCH160	P28A-0037C	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	XS	XS	P28A-001F8	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	XS	XS	P28A-001DU	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	XS	XS	P28A-001ER	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH60	XS	P28A-0042X	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH60	XS	P28A-0042Y	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	XS	XS	P28A-001EM	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	XS	XS	P28A-001FR	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	XS	SCH60	P28A-0042Z	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P29A-00336	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	0.75		XXS		P29A-00337	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	1		XXS		P29A-00338	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5		SCH160		P29A-001VX	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	2		SCH160		P29A-001W3	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	3		XS		P29A-0035D	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	4		XS		P29A-0035E	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	6		XS		P29A-001WA	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	8		SCH60		P29A-0035F	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	10		XS		P29A-001VY	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
541	0.75				P29B-0000Y	Cap ASTM A105 Class 6000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P41A-000B9	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		XXS		P41A-000BA	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		XXS		P41A-000D8	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		XXS		P41A-000D9	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2	0.75	SCH160	XXS	P31B-00CP2	Outlet ASTM A105 MSS SP-97 BW	
1	3	0.75	XS	XXS	P31B-00CMK	Outlet ASTM A105 MSS SP-97 BW	
1	4	0.75	XS	XXS	P31B-00CLH	Outlet ASTM A105 MSS SP-97 BW	
1	6	0.75	XS	XXS	P31B-00CK9	Outlet ASTM A105 MSS SP-97 BW	
1	8	0.75	SCH60	XXS	P31B-00C51	Outlet ASTM A105 MSS SP-97 BW	
1	10	0.75	XS	XXS	P31B-00CEY	Outlet ASTM A105 MSS SP-97 BW	
1	3	1	XS	XXS	P31B-00B49	Outlet ASTM A105 MSS SP-97 BW	
1	4	1	XS	XXS	P31B-00B05	Outlet ASTM A105 MSS SP-97 BW	
1	6	1	XS	XXS	P31B-00AYZ	Outlet ASTM A105 MSS SP-97 BW	
1	8	1	SCH60	XXS	P31B-00YDK	Outlet ASTM A105 MSS SP-97 BW	
1	10	1	XS	XXS	P31B-00BW4	Outlet ASTM A105 MSS SP-97 BW	
1	4	1.5	XS	SCH160	P31B-00BP3	Outlet ASTM A105 MSS SP-97 BW	
1	6	1.5	XS	SCH160	P31B-00BJG	Outlet ASTM A105 MSS SP-97 BW	
1	8	1.5	SCH60	SCH160	P31B-00BHL	Outlet ASTM A105 MSS SP-97 BW	
1	10	1.5	XS	SCH160	P31B-00TR0	Outlet ASTM A105 MSS SP-97 BW	
1	6	2	XS	SCH160	P31B-007SR	Outlet ASTM A105 MSS SP-97 BW	
1	8	2	SCH60	SCH160	P31B-0068W	Outlet ASTM A105 MSS SP-97 BW	
1	10	2	XS	SCH160	P31B-00ASR	Outlet ASTM A105 MSS SP-97 BW	
1	8	3	SCH60	XS	P31B-009Y2	Outlet ASTM A105 MSS SP-97 BW	
1	10	3	XS	XS	P31B-009CF	Outlet ASTM A105 MSS SP-97 BW	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30B-0002D	Plug ASTM A105 ASME B16.11 NPT Round head	
1	0.75				P30B-0002E	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1				P30B-0002F	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1.5				P30B-0002G	Plug ASTM A105 ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P61B-003LW	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	0.75		XXS		P61B-003MA	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	1		XXS		P61B-003MB	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	1.5		SCH160		P61B-0037J	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	2		SCH160		P61B-002R8	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	3		XS		P61B-001DK	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	4		XS		P61B-001F5	Flange WN ASTM A105 Class 300 ASME B16.5 RF	

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FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	6		XS		P61B-001FE	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	8		SCH60		P61B-002RE	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	10		XS		P61B-001FD	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
2489	10		XS		P61B-00E1H	Flange WN ASTM A105 Class 600 ASME B16.5 RJ	
541	0.5				P61B-003U3	Flange NPT ASTM A105 Class 300 ASME B16.5 RF	
541	0.75				P61B-003U4	Flange NPT ASTM A105 Class 300 ASME B16.5 RF	
781	0.5		XXS		P61B-003T1	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	0.75		XXS		P61B-003TB	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	1		XXS		P61B-003TC	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	1.5		SCH160		P61B-003T4	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	2		SCH160		P61B-003T7	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	3		XS		P61B-001M8	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	4		XS		P61B-001SH	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	6		XS		P61B-001T1	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	8		SCH60		P61B-003TE	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	10		XS		P61B-001JN	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
797	1.5		SCH160		P61B-0065W	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
797	6		XS		P61B-00BLZ	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67B-000GH	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	0.75				P67B-000GJ	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	1				P67B-000GK	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	1.5				P67B-000GL	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	2				P67B-000GM	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	3				P67B-000GN	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	4				P67B-000GP	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	6				P67B-000GY	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	8				P67B-000GZ	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	10				P67B-000GR	Blind flange ASTM A105 Class 300 ASME B16.5 RF	

REDUCING FLANGE (FR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2	0.75		XXS	P62B-000NS	Reducing flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	2	1		XXS	P62B-000N8	Reducing flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	2	1.5		SCH160	P62B-000MG	Reducing flange WN ASTM A105 Class 300 ASME B16.5 RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000FT	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000FU	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000G5	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000G6	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	6				P73T-000G7	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	8				P73T-000G8	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	10				P73T-000FX	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
2489	10				P75T-000YD	Ring joint gasket Soft iron Class 600 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
781	0.5				P73T-000J8	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	0.75				P73T-000J9	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1				P73T-000JA	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

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GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
781	1.5				P73T-000JB	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	2				P73T-000JH	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	3				P73T-000JL	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	4				P73T-000JM	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	6				P73T-000JN	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	8				P73T-000JP	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	10				P73T-000JC	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
797	1.5				P75T-000JW	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	6				P75T-0008C	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-10				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
2489	10				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
781	0.5-6				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
781	8-10				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
797	1.5				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
797	6				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81B-001VD	Gate valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Severe wet H2S service C.A.=4.5mm	
1	0.75				P81B-001VE	Gate valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Severe wet H2S service C.A.=4.5mm	
1	1				P81B-001VF	Gate valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Severe wet H2S service C.A.=4.5mm	
1	1.5				P81B-001VG	Gate valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Severe wet H2S service C.A.=4.5mm	
1	2				P81C-0062K	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Severe wet H2S service C.A.=4.5mm	
1	3				P81C-0062L	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Severe wet H2S service C.A.=4.5mm	
1	4				P81C-0062M	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Severe wet H2S service C.A.=4.5mm	
1	6				P81C-0062N	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Severe wet H2S service C.A.=4.5mm	
1	8				P81C-00924	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Gear operated Severe wet H2S service C.A.=4.5mm	
1	10				P81C-0062R	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Gear operated Severe wet H2S service C.A.=4.5mm	
4608	0.75				P81B-002X7	Gate valve ASTM A105 Class 300 API 602 BW both sides w/ nipples BE - NPT ASTM A106-B XXS-nipple Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Severe wet H2S service C.A.=4.5mm	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82B-001G1	Globe valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Severe wet H2S service C.A.=4.5mm	
1	0.75				P82B-001G2	Globe valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Severe wet H2S service C.A.=4.5mm	
1	1				P82B-001G3	Globe valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Severe wet H2S service C.A.=4.5mm	
1	1.5				P82B-001G4	Globe valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Severe wet H2S service C.A.=4.5mm	
1	2				P82C-002ZB	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Severe wet H2S service C.A.=4.5mm	
1	3				P82C-002ZC	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Severe wet H2S service C.A.=4.5mm	
1	4				P82C-002ZD	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Severe wet H2S service C.A.=4.5mm	
1	6				P82C-002ZE	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Severe wet H2S service C.A.=4.5mm	
1	8				P82C-004D6	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Gear operated Severe wet H2S service C.A.=4.5mm	
4601	1.5				P82B-001AK	Y-pattern globe valve ASTM A105 Class 300 ASME B16.34 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Severe wet H2S service C.A.=4.5mm	

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GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
4601	2				P82C-002M8	Y-pattern globe valve ASTM A216 Grade WCB Class 300 ASME B16.34 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Severe wet H2S service C.A.=4.5mm	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83B-0015P	Check valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 Lift-type Bolted cover Severe wet H2S service C.A.=4.5mm	
1	0.75				P83B-0015R	Check valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 Lift-type Bolted cover Severe wet H2S service C.A.=4.5mm	
1	1				P83B-0015S	Check valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 Lift-type Bolted cover Severe wet H2S service C.A.=4.5mm	
1	1.5				P83B-0015T	Check valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 Lift-type Bolted cover Severe wet H2S service C.A.=4.5mm	
1	2				P83C-002Y8	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 Swing-type Bolted cover Severe wet H2S service C.A.=4.5mm	
1	3				P83C-002Y9	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 Swing-type Bolted cover Severe wet H2S service C.A.=4.5mm	
1	4				P83C-002YA	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 Swing-type Bolted cover Severe wet H2S service C.A.=4.5mm	
1	6				P83C-002YB	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 Swing-type Bolted cover Severe wet H2S service C.A.=4.5mm	
1	8				P83C-002YC	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 Swing-type Bolted cover Severe wet H2S service C.A.=4.5mm	
1	10				P83C-002Y6	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 Swing-type Bolted cover Severe wet H2S service C.A.=4.5mm	

BUTTERFLY VALVE (H)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	10				P86C-0025D	Offset design butterfly valve ASTM A216 Grade WCB Class 300 API 609 Category B Lug-type ASME B16.5 RF Disc CS Seat Stellite-6 Trim SS316L Triple eccentric design BG Gear operated Severe wet H2S service C.A.=4.5mm	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71B-000B1	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	0.75				P71B-000B2	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	1				P71B-000B3	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71B-000B4	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	2				P71B-000B6	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	3				P71B-000B7	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	4				P71B-000B8	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	6				P71B-000B9	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	8				P71B-000BA	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	10				P71B-000B5	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	

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BOLT TABLE (B_B3A702 , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-008T0		
0.75	4	0.625	75	P80S-00908		
1	4	0.625	80	P80S-00909		
1.5	4	0.750	95	P80S-005Z4		
2	8	0.625	90	P80S-0090B		
3	8	0.750	110	P80S-0090F		
4	8	0.750	115	P80S-0090G		
6	12	0.750	125	P80S-0090J		
8	12	0.875	140	P80S-005ZD		
10	16	1.000	160	P80S-0061E		

BOLT TABLE (B_B3A702_2489 , STUD ASME RJ, OPTION CODE 2489)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	80		R11	
0.75	4	0.625	90		R13	
1	4	0.625	95		R16	
1.5	4	0.750	110		R20	
2	8	0.625	115		R23	
3	8	0.750	135		R31	
4	8	0.875	150		R37	
6	12	1.000	175		R45	
8	12	1.125	200		R49	
10	16	1.250	255	P80S-0068N	R53	P75T-000YD

BOLT TABLE (B_B3A702_781 , STUD ASME RF, OPTION CODE 781)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	80	P80S-008T2		
0.75	4	0.625	90	P80S-0090B		
1	4	0.625	95	P80S-0090C		
1.5	4	0.750	110	P80S-0090F		
2	8	0.625	110	P80S-008T8		
3	8	0.750	130	P80S-0090K		
4	8	0.875	150	P80S-005ZF		
6	12	1.000	175	P80S-0061H		
8	12	1.125	195	P80S-0064W		
10	16	1.250	250	P80S-0068M		

BOLT TABLE (B_B3A702_797 , STUD ASME RJ, OPTION CODE 797)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	110		R12	
0.75	4	0.750	115		R14	
1	4	0.875	130		R16	
1.5	4	1.000	140	P80S-0061A	R20	P75T-000JW
2	8	0.875	150		R24	
3	8	1.125	180		R35	
4	8	1.250	230		R39	
6	12	1.375	300	P80S-006J1	R46	P75T-0008C
8	12	1.625	345		R50	
10	12	1.875	395		R54	

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BRANCH TABLE (T_B3A702)

RUN PIPE SIZE (in) \ BRANCH SIZE (in)	0.5	0.75	1	1.5	2	3	4	6	8	10
0.5	TS									
0.75		TS								
1		TR	TS							
1.5		TR	TR	TS						
2		L	TR	TR	TS					
3		L	L	TR	TR	TS				
4	L	L	L	L	TR	TR	TS			
6	L	L	L	L	L	TR	TR	TS		
8		L	L	L	L	L	TR	TR	TS	
10		L	L	L	L	L	TR	TR	TR	TS

TS : STRAIGHT TEE
TR : REDUCING TEE
L : OUTLET

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Material : Killed CS
Rating : ASME CLASS 300
Flange Face : RF
C.A.(mm) : 4.50
Gasket : Spiral Wound
Service : PROCESS - HYDROGEN OR HYDROGEN RICH HYDROCARBON MIXTURES
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
16	PIPE CLASS SHALL BE USED WITHIN THE NORMAL OPERATING PRESSURE/TEMPERATURE LIMITS SPECIFIED IN API RP 941. PRESSURE / TEMPERATURE SPECIFIED IN THE PIPE CLASS EXCEEDING API RP 941 LIMITS SHOULD BE REGARDED AS UPSET CONDITIONS RATHER THAN FOR CONTINUOUS SERVICE

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
24	FULL PORT (Q)
541	NPT(F) (CA,L)
781	CLASS 600 (B,F,G)
4601	Y-PATTERN (W)
4608	VALVE WITH NIPPLES (V)

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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P01A-00143	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	0.75		XXS		P01A-0014D	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1		XXS		P01A-0014U	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1.5		SCH160		P01A-0015J	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	2		SCH160		P01A-0019T	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	3		XS		P01A-000Z4	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	4		XS		P01A-000Z9	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P02A-00172	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	0.75		XXS		P02A-000XH	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1		XXS		P02A-000XJ	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1.5		SCH160		P02A-000V9	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	2		SCH160		P02A-000KW	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		XS		P02A-000CX	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		XS		P02A-000D3	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P03A-0012Y	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	0.75		XXS		P03A-000U9	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1		XXS		P03A-000U8	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1.5		SCH160		P03A-000RP	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	2		SCH160		P03A-000HU	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		XS		P03A-000AZ	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		XS		P03A-000B3	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P21A-002M0	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	0.75		XXS		P21A-002DR	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1		XXS		P21A-002DP	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5		SCH160		P21A-002B9	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2		SCH160		P21A-00245	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		XS		P21A-001CR	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		XS		P21A-001CV	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75	XXS	XXS	P24A-004LR	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.75	SCH160	XXS	P24A-004LP	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	1	SCH160	XXS	P24A-004LJ	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	SCH160	XXS	P24A-0044B	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	SCH160	SCH160	P24A-003AX	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	XS	SCH160	P24A-00GNV	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	XS	SCH160	P24A-00560	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	XS	SCH160	P24A-00561	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	XS	XS	P24A-0024A	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	XXS	XXS	P27A-004M7	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.5	XXS	XXS	P27A-004MF	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.75	XXS	XXS	P27A-002ZZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.5	SCH160	XXS	P27A-003ZN	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.75	SCH160	XXS	P27A-002ZY	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	1	SCH160	XXS	P27A-00302	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2	0.75	SCH160	XXS	P27A-0029F	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	SCH160	XXS	P27A-0029H	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	SCH160	SCH160	P27A-0025J	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	XS	SCH160	P27A-003N1	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	XS	SCH160	P27A-0037V	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	1.5	XS	SCH160	P27A-003N2	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	XS	SCH160	P27A-0037W	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	XS	XS	P27A-001EP	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	XXS	XXS	P28A-00BNX	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.5	XXS	XXS	P28A-00BNY	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.75	XXS	XXS	P28A-0030M	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.5	SCH160	XXS	P28A-003ZG	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.75	SCH160	XXS	P28A-0030L	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	1	SCH160	XXS	P28A-0030E	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	0.75	SCH160	XXS	P28A-00288	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	SCH160	XXS	P28A-00289	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	SCH160	SCH160	P28A-002SS	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	XS	SCH160	P28A-003MV	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	XS	SCH160	P28A-0037B	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	1.5	XS	SCH160	P28A-003MW	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	XS	SCH160	P28A-0037C	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	XS	XS	P28A-001F8	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P29A-0013Z	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	0.75		XXS		P29A-000W5	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1		XXS		P29A-000W3	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5		SCH160		P29A-000TZ	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2		SCH160		P29A-000HR	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		XS		P29A-000AT	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		XS		P29A-000B9	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
541	0.75				P29B-0000Y	Cap ASTM A105 Class 6000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P41A-000B9	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		XXS		P41A-000BA	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		XXS		P41A-000D8	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		XXS		P41A-000D9	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
541	1	0.75			P31B-005HL	Outlet ASTM A105 Class 6000 MSS SP-97 NPT	
541	1.5 - 2.5	0.75			P31B-0137F	Outlet ASTM A105 Class 6000 MSS SP-97 NPT	
541	3 - 10	0.75			P31B-007KP	Outlet ASTM A105 Class 6000 MSS SP-97 NPT	
1	2	0.75	SCH160	XXS	P31B-00CP2	Outlet ASTM A105 MSS SP-97 BW	
1	3	0.75	XS	XXS	P31B-00CMK	Outlet ASTM A105 MSS SP-97 BW	
1	4	0.75	XS	XXS	P31B-00CLH	Outlet ASTM A105 MSS SP-97 BW	
1	3	1	XS	XXS	P31B-00B49	Outlet ASTM A105 MSS SP-97 BW	
1	4	1	XS	XXS	P31B-00B05	Outlet ASTM A105 MSS SP-97 BW	
1	4	1.5	XS	SCH160	P31B-00BP3	Outlet ASTM A105 MSS SP-97 BW	

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PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30B-0002D	Plug ASTM A105 ASME B16.11 NPT Round head	
1	0.75				P30B-0002E	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1				P30B-0002F	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1.5				P30B-0002G	Plug ASTM A105 ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P61B-003LW	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	0.75		XXS		P61B-003MA	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	1		XXS		P61B-003MB	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	1.5		SCH160		P61B-0037J	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	2		SCH160		P61B-002R8	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	3		XS		P61B-001DK	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	4		XS		P61B-001F5	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
781	0.5		XXS		P61B-003T1	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	0.75		XXS		P61B-003TB	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	1		XXS		P61B-003TC	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	1.5		SCH160		P61B-003T4	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	2		SCH160		P61B-003T7	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	3		XS		P61B-001M8	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	4		XS		P61B-001SH	Flange WN ASTM A105 Class 600 ASME B16.5 RF	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67B-000GH	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	0.75				P67B-000GJ	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	1				P67B-000GK	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	1.5				P67B-000GL	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	2				P67B-000GM	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	3				P67B-000GN	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	4				P67B-000GP	Blind flange ASTM A105 Class 300 ASME B16.5 RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000FT	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000FU	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000G5	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000G6	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	0.5				P73T-000J8	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	0.75				P73T-000J9	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1				P73T-000JA	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1.5				P73T-000JB	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	2				P73T-000JH	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	3				P73T-000JL	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	4				P73T-000JM	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-4				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
781	0.5-4				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	

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GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81B-002V6	Gate valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated C.A.=4.5mm	
1	0.75				P81B-002V7	Gate valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated C.A.=4.5mm	
1	1				P81B-002V8	Gate valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated C.A.=4.5mm	
1	1.5				P81B-002V9	Gate valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated C.A.=4.5mm	
1	2				P81C-0062G	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated C.A.=4.5mm	
1	3				P81C-006SU	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated C.A.=4.5mm	
1	4				P81C-006SV	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated C.A.=4.5mm	
4608	0.75				P81B-002X8	Gate valve ASTM A105 Class 300 API 602 BW both sides w/ nipples BE - NPT ASTM A106-B XXS-nipple Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated C.A.=4.5mm	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82B-0021C	Globe valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated C.A.=4.5mm	
1	0.75				P82B-0021D	Globe valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated C.A.=4.5mm	
1	1				P82B-0021E	Globe valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated C.A.=4.5mm	
1	1.5				P82B-0021F	Globe valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated C.A.=4.5mm	
1	2				P82C-002Z8	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated C.A.=4.5mm	
1	3				P82C-0039V	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated C.A.=4.5mm	
1	4				P82C-0039W	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated C.A.=4.5mm	
4601	0.75				P82B-001AE	Y-pattern globe valve ASTM A105 Class 300 ASME B16.34 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated C.A.=4.5mm	
4601	1				P82B-001AF	Y-pattern globe valve ASTM A105 Class 300 ASME B16.34 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated C.A.=4.5mm	
4601	1.5				P82B-001AG	Y-pattern globe valve ASTM A105 Class 300 ASME B16.34 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated C.A.=4.5mm	
4601	2				P82C-002M7	Y-pattern globe valve ASTM A216 Grade WCB Class 300 ASME B16.34 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated C.A.=4.5mm	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83B-001J5	Check valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 Lift-type Bolted cover C.A.=4.5mm	
1	0.75				P83B-001J6	Check valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 Lift-type Bolted cover C.A.=4.5mm	
1	1				P83B-001J7	Check valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 Lift-type Bolted cover C.A.=4.5mm	
1	1.5				P83B-001J8	Check valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 Lift-type Bolted cover C.A.=4.5mm	
1	2				P83C-002Y3	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 Swing-type Bolted cover C.A.=4.5mm	
1	3				P83C-002Y4	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 Swing-type Bolted cover C.A.=4.5mm	
1	4				P83C-002Y5	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 Swing-type Bolted cover C.A.=4.5mm	

BALL VALVE (Q)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P84B-001G8	Ball valve Long-pattern ASTM A105 Class 300 API 608 Flange ASME B16.5 RF Ball SS316L Seat R-PTFE Trim SS316L Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design C.A.=4.5mm	
1	0.75				P84B-001G9	Ball valve Long-pattern ASTM A105 Class 300 API 608 Flange ASME B16.5 RF Ball SS316L Seat R-PTFE Trim SS316L Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design C.A.=4.5mm	
1	1				P84B-001GA	Ball valve Long-pattern ASTM A105 Class 300 API 608 Flange ASME B16.5 RF Ball SS316L Seat R-PTFE Trim SS316L Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design C.A.=4.5mm	
1	1.5				P84B-001GB	Ball valve Long-pattern ASTM A105 Class 300 API 608 Flange ASME B16.5 RF Ball SS316L Seat R-PTFE Trim SS316L Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design C.A.=4.5mm	
1	2				P84C-006R2	Ball valve Long-pattern ASTM A216 Grade WCB Class 300 API 608 Flange ASME B16.5 RF Ball SS316L Seat R-PTFE Trim SS316L Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design C.A.=4.5mm	
1	3				P84C-006R3	Ball valve Long-pattern ASTM A216 Grade WCB Class 300 API 608 Flange ASME B16.5 RF Ball SS316L Seat R-PTFE Trim SS316L Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design C.A.=4.5mm	
1	4				P84C-006R4	Ball valve Long-pattern ASTM A216 Grade WCB Class 300 API 608 Flange ASME B16.5 RF Ball SS316L Seat R-PTFE Trim SS316L Floating-type Side-entry Gear operated Reduced bore Fire tested design C.A.=4.5mm	
24	0.5				P84B-001GC	Ball valve Long-pattern ASTM A105 Class 300 API 608 Flange ASME B16.5 RF Ball SS316L Seat R-PTFE Trim SS316L Floating-type Side-entry Wrench lever operated Full bore Fire tested design C.A.=4.5mm	
24	0.75				P84B-001GD	Ball valve Long-pattern ASTM A105 Class 300 API 608 Flange ASME B16.5 RF Ball SS316L Seat R-PTFE Trim SS316L Floating-type Side-entry Wrench lever operated Full bore Fire tested design C.A.=4.5mm	

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BALL VALVE (Q)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
24	1				P84B-001GE	Ball valve Long-pattern ASTM A105 Class 300 API 608 Flange ASME B16.5 RF Ball SS316L Seat R-PTFE Trim SS316L Floating-type Side-entry Wrench lever operated Full bore Fire tested design C.A.=4.5mm	
24	1.5				P84B-001GF	Ball valve Long-pattern ASTM A105 Class 300 API 608 Flange ASME B16.5 RF Ball SS316L Seat R-PTFE Trim SS316L Floating-type Side-entry Wrench lever operated Full bore Fire tested design C.A.=4.5mm	
24	2				P84C-006R5	Ball valve Long-pattern ASTM A216 Grade WCB Class 300 API 608 Flange ASME B16.5 RF Ball SS316L Seat R-PTFE Trim SS316L Floating-type Side-entry Wrench lever operated Full bore Fire tested design C.A.=4.5mm	
24	3				P84C-006R6	Ball valve Long-pattern ASTM A216 Grade WCB Class 300 API 608 Flange ASME B16.5 RF Ball SS316L Seat R-PTFE Trim SS316L Floating-type Side-entry Wrench lever operated Full bore Fire tested design C.A.=4.5mm	
24	4				P84C-006R7	Ball valve Long-pattern ASTM A216 Grade WCB Class 300 API 608 Flange ASME B16.5 RF Ball SS316L Seat R-PTFE Trim SS316L Floating-type Side-entry Gear operated Full bore Fire tested design C.A.=4.5mm	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71B-000B1	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	0.75				P71B-000B2	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	1				P71B-000B3	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71B-000B4	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	2				P71B-000B6	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	3				P71B-000B7	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	4				P71B-000B8	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	

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BOLT TABLE (B_B3AH02 , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-003V4		
0.75	4	0.625	75	P80S-003XC		
1	4	0.625	80	P80S-003XD		
1.5	4	0.750	95	P80S-00414		
2	8	0.625	90	P80S-003XF		
3	8	0.750	110	P80S-003XK		
4	8	0.750	115	P80S-003XL		

BOLT TABLE (B_B3AH02_781 , STUD ASME RF, OPTION CODE 781)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	80	P80S-003V6		
0.75	4	0.625	90	P80S-003XF		
1	4	0.625	95	P80S-003XG		
1.5	4	0.750	110	P80S-003XK		
2	8	0.625	110	P80S-003VC		
3	8	0.750	130	P80S-003XP		
4	8	0.875	150	P80S-0041F		

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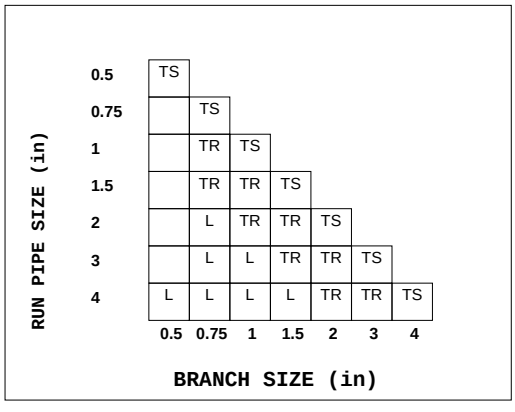
BRANCH TABLE (T_B3AH02)



TS : STRAIGHT TEE
TR : REDUCING TEE
L : OUTLET

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Material : Killed CS
Rating : ASME CLASS 300
Flange Face : RF
C.A.(mm) : 4.50
Gasket : Spiral Wound
Service : PROCESS - WET SEVERE SOUR SERVICE SUBJECT TO NACE + HIC STD.
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
2	USE OF SOFT SEATED BALL, PLUG AND BUTTERFLY VALVES SHALL BE LIMITED TO MAXIMUM OF 204DEGC (400DEGF)
5	BOLTING CONFIRMING TO B7M / 2HM SHALL BE USED UNDER CONDITIONS (A) DIRECT EXPOSURE TO SOUR ENVIRONMENTS (B) WHEN THE BOLTING WILL BE BURIED OR INSULATED
27	PWHT OF CARBON STEEL PIPING IN WET H2S, CAUSTIC AND AMINE SERVICES SHALL BE IN ACCORDANCE WITH SECTION 10.2, 10.3, AND 10.4 OF PROJECT SPECIFICATION 3550-8440-SP-0002 MATERIALS REQUIREMENTS FOR PRESSURISED EQUIPMENT AND PIPING. FOR CAUSTIC AND AMINE SERVICE THE FOLLOWING SHALL APPLY: - PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF ALL SITE PIPING FABRICATION WELDS IS REQUIRED FOR ALL WALL THICKNESSES. FOR MODERATE AND SEVERE WET H2S SERVICE THE FOLLOWING SHALL APPLY: PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF SITE FABRICATION CIRCUMFERENTIAL OR BRANCH WELDS IS NOT REQUIRED IF WELDS ARE MULTIPASS AND IN ACCORDANCE WITH PARA 10.2.12 OF PROJECT SPECIFICATION 3550-8440-SP-0002. FOR SERVICES MEETING THE WET H2S CRITERIA AND CAUSTIC OR AMINE CRITERIA THE MORE STRINGENT PWHT REQUIREMENT SHALL GOVERN.

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
541	NPT(F) (CA,F)
781	CLASS 600 (B,F,G)
797	CLASS 1500 (B,F,G)
4601	Y-PATTERN (W)
4608	VALVE WITH NIPPLES (V)

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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P01A-00143	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	0.75		XXS		P01A-0014D	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1		XXS		P01A-0014U	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1.5		SCH160		P01A-0015J	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	2		SCH160		P01A-0019T	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	3		XS		P01A-000Z4	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	4		XS		P01A-000Z9	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	6		XS		P01A-000ZF	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	8		SCH60		P01A-001BK	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	10		XS		P01A-000Y2	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	12		XS		P01A-000YB	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P02A-00172	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	0.75		XXS		P02A-000XH	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1		XXS		P02A-000XJ	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1.5		SCH160		P02A-000V9	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	2		SCH160		P02A-000KW	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		XS		P02A-000CX	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		XS		P02A-000D3	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		XS		P02A-000DA	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		SCH60		P02A-000MC	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	10		XS		P02A-000BN	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	12		XS		P02A-000BX	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P03A-0012Y	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	0.75		XXS		P03A-000U9	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1		XXS		P03A-000U8	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1.5		SCH160		P03A-000RP	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	2		SCH160		P03A-000HU	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		XS		P03A-000AZ	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		XS		P03A-000B3	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		XS		P03A-000B8	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		SCH60		P03A-000K5	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	10		XS		P03A-000A3	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	12		XS		P03A-000A8	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P21A-002M0	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	0.75		XXS		P21A-002DR	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1		XXS		P21A-002DP	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5		SCH160		P21A-002B9	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2		SCH160		P21A-00245	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		XS		P21A-001CR	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		XS		P21A-001CV	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6		XS		P21A-001D4	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8		SCH60		P21A-0025S	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10		XS		P21A-001C0	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12		XS		P21A-001C5	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75	XXS	XXS	P24A-004LR	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.75	SCH160	XXS	P24A-004LP	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5	1	SCH160	XXS	P24A-004LJ	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	SCH160	XXS	P24A-0044B	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	SCH160	SCH160	P24A-003AX	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	XS	SCH160	P24A-00GNV	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	XS	SCH160	P24A-00560	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	XS	SCH160	P24A-00561	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	XS	XS	P24A-0024A	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	XS	XS	P24A-0023F	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	XS	XS	P24A-00243	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH60	XS	P24A-00GAV	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH60	XS	P24A-0062G	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	XS	XS	P24A-0023C	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	XS	XS	P24A-00241	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	XS	SCH60	P24A-0062H	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	XS	XS	P24A-0024J	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	XS	SCH60	P24A-0062J	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	XS	XS	P24A-00240	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	XXS	XXS	P27A-004M7	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.5	XXS	XXS	P27A-004MF	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.75	XXS	XXS	P27A-002ZZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.5	SCH160	XXS	P27A-003ZN	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.75	SCH160	XXS	P27A-002ZY	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	1	SCH160	XXS	P27A-00302	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	0.75	SCH160	XXS	P27A-0029F	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	SCH160	XXS	P27A-0029H	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	SCH160	SCH160	P27A-0025J	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	XS	SCH160	P27A-003N1	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	XS	SCH160	P27A-0037V	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	1.5	XS	SCH160	P27A-003N2	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	XS	SCH160	P27A-0037W	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	XS	XS	P27A-001EP	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	XS	XS	P27A-001DM	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	XS	XS	P27A-001EB	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH60	XS	P27A-00435	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH60	XS	P27A-00436	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	XS	XS	P27A-001E8	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	XS	XS	P27A-001F2	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	XS	SCH60	P27A-00437	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	XS	XS	P27A-001F3	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	XS	SCH60	P27A-00438	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	XS	XS	P27A-001EA	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	XXS	XXS	P28A-00BNX	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.5	XXS	XXS	P28A-00BNY	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.75	XXS	XXS	P28A-0030M	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.5	SCH160	XXS	P28A-003ZG	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.75	SCH160	XXS	P28A-0030L	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	1	SCH160	XXS	P28A-0030E	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	0.75	SCH160	XXS	P28A-00288	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	SCH160	XXS	P28A-00289	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	SCH160	SCH160	P28A-002SS	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	XS	SCH160	P28A-003MV	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	XS	SCH160	P28A-0037B	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	1.5	XS	SCH160	P28A-003MW	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	4	2	XS	SCH160	P28A-0037C	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	XS	XS	P28A-001F8	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	XS	XS	P28A-001DU	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	XS	XS	P28A-001ER	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH60	XS	P28A-0042X	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH60	XS	P28A-0042Y	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	XS	XS	P28A-001EM	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	XS	XS	P28A-001FR	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	XS	SCH60	P28A-0042Z	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	XS	XS	P28A-001GE	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	XS	SCH60	P28A-00430	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	XS	XS	P28A-001EP	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P29A-00336	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	0.75		XXS		P29A-00337	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	1		XXS		P29A-00338	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5		SCH160		P29A-001VX	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	2		SCH160		P29A-001W3	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	3		XS		P29A-0035D	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	4		XS		P29A-0035E	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	6		XS		P29A-001WA	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	8		SCH60		P29A-0035F	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	10		XS		P29A-001VY	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	12		XS		P29A-0035C	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
541	0.75				P29B-0000Y	Cap ASTM A105 Class 6000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P41A-000B9	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		XXS		P41A-000BA	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		XXS		P41A-000D8	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		XXS		P41A-000D9	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2	0.75	SCH160	XXS	P31B-00CP2	Outlet ASTM A105 MSS SP-97 BW	
1	3	0.75	XS	XXS	P31B-00CMK	Outlet ASTM A105 MSS SP-97 BW	
1	4	0.75	XS	XXS	P31B-00CLH	Outlet ASTM A105 MSS SP-97 BW	
1	6	0.75	XS	XXS	P31B-00CK9	Outlet ASTM A105 MSS SP-97 BW	
1	8	0.75	SCH60	XXS	P31B-00C51	Outlet ASTM A105 MSS SP-97 BW	
1	10	0.75	XS	XXS	P31B-00CEY	Outlet ASTM A105 MSS SP-97 BW	
1	12	0.75	XS	XXS	P31B-00CRS	Outlet ASTM A105 MSS SP-97 BW	
1	3	1	XS	XXS	P31B-00B49	Outlet ASTM A105 MSS SP-97 BW	
1	4	1	XS	XXS	P31B-00B05	Outlet ASTM A105 MSS SP-97 BW	
1	6	1	XS	XXS	P31B-00AYZ	Outlet ASTM A105 MSS SP-97 BW	
1	8	1	SCH60	XXS	P31B-00YDK	Outlet ASTM A105 MSS SP-97 BW	
1	10	1	XS	XXS	P31B-00BW4	Outlet ASTM A105 MSS SP-97 BW	
1	12	1	XS	XXS	P31B-00BRR	Outlet ASTM A105 MSS SP-97 BW	
1	4	1.5	XS	SCH160	P31B-00BP3	Outlet ASTM A105 MSS SP-97 BW	
1	6	1.5	XS	SCH160	P31B-00BJG	Outlet ASTM A105 MSS SP-97 BW	
1	8	1.5	SCH60	SCH160	P31B-00BHL	Outlet ASTM A105 MSS SP-97 BW	
1	10	1.5	XS	SCH160	P31B-00TR0	Outlet ASTM A105 MSS SP-97 BW	
1	12	1.5	XS	SCH160	P31B-00UUZ	Outlet ASTM A105 MSS SP-97 BW	
1	6	2	XS	SCH160	P31B-007SR	Outlet ASTM A105 MSS SP-97 BW	
1	8	2	SCH60	SCH160	P31B-0068W	Outlet ASTM A105 MSS SP-97 BW	
1	10	2	XS	SCH160	P31B-00ASR	Outlet ASTM A105 MSS SP-97 BW	
1	12	2	XS	SCH160	P31B-00ARK	Outlet ASTM A105 MSS SP-97 BW	

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OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	8	3	SCH60	XS	P31B-009Y2	Outlet ASTM A105 MSS SP-97 BW	
1	10	3	XS	XS	P31B-009CF	Outlet ASTM A105 MSS SP-97 BW	
1	12	3	XS	XS	P31B-0096E	Outlet ASTM A105 MSS SP-97 BW	
1	12	4	XS	XS	P31B-008ZP	Outlet ASTM A105 MSS SP-97 BW	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30B-0002D	Plug ASTM A105 ASME B16.11 NPT Round head	
1	0.75				P30B-0002E	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1				P30B-0002F	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1.5				P30B-0002G	Plug ASTM A105 ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P61B-003LW	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	0.75		XXS		P61B-003MA	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	1		XXS		P61B-003MB	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	1.5		SCH160		P61B-0037J	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	2		SCH160		P61B-002R8	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	3		XS		P61B-001DK	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	4		XS		P61B-001F5	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	6		XS		P61B-001FE	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	8		SCH60		P61B-002RE	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	10		XS		P61B-001FD	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	12		XS		P61B-001FU	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
541	0.5				P61B-003U3	Flange NPT ASTM A105 Class 300 ASME B16.5 RF	
541	0.75				P61B-003U4	Flange NPT ASTM A105 Class 300 ASME B16.5 RF	
781	0.5		XXS		P61B-003T1	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	0.75		XXS		P61B-003TB	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	1		XXS		P61B-003TC	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	1.5		SCH160		P61B-003T4	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	2		SCH160		P61B-003T7	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	3		XS		P61B-001M8	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	4		XS		P61B-001SH	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	6		XS		P61B-001T1	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	8		SCH60		P61B-003TE	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	10		XS		P61B-001JN	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	12		XS		P61B-001PC	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
797	1.5		SCH160		P61B-0065W	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
797	2		SCH160		P61B-0066J	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
797	3		XS		P61B-00660	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
797	4		XS		P61B-00BLY	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
797	6		XS		P61B-00BLZ	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67B-000GH	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	0.75				P67B-000GJ	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	1				P67B-000GK	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	1.5				P67B-000GL	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	2				P67B-000GM	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	3				P67B-000GN	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	4				P67B-000GP	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	6				P67B-000GY	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	8				P67B-000GZ	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	10				P67B-000GR	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	12				P67B-000GS	Blind flange ASTM A105 Class 300 ASME B16.5 RF	

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REDUCING FLANGE (FR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2	0.75		XXS	P62B-000NS	Reducing flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	2	1		XXS	P62B-000N8	Reducing flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	2	1.5		SCH160	P62B-000MG	Reducing flange WN ASTM A105 Class 300 ASME B16.5 RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000FT	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000FU	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000G5	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000G6	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	6				P73T-000G7	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	8				P73T-000G8	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	10				P73T-000FX	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	12				P73T-000FY	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	0.5				P73T-000J8	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	0.75				P73T-000J9	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1				P73T-000JA	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1.5				P73T-000JB	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	2				P73T-000JH	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	3				P73T-000JL	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	4				P73T-000JM	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	6				P73T-000JN	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	8				P73T-000JP	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	10				P73T-000JC	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	12				P73T-000JD	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
797	1.5				P75T-000JW	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	2				P75T-0008A	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	3				P75T-0008E	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	4				P75T-0008D	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	6				P75T-0008C	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-10				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	12				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
781	0.5-6				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
781	8-12				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
797	1-2				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
797	3-6				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81B-001VD	Gate valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Severe wet H2S service C.A.=4.5mm	
1	0.75				P81B-001VE	Gate valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Severe wet H2S service C.A.=4.5mm	
1	1				P81B-001VF	Gate valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Severe wet H2S service C.A.=4.5mm	

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GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5				P81B-001VG	Gate valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Severe wet H2S service C.A.=4.5mm	
1	2				P81C-0062K	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Severe wet H2S service C.A.=4.5mm	
1	3				P81C-0062L	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Severe wet H2S service C.A.=4.5mm	
1	4				P81C-0062M	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Severe wet H2S service C.A.=4.5mm	
1	6				P81C-0062N	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Severe wet H2S service C.A.=4.5mm	
1	8				P81C-00924	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Gear operated Severe wet H2S service C.A.=4.5mm	
1	10				P81C-0062R	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Gear operated Severe wet H2S service C.A.=4.5mm	
1	12				P81C-0062S	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Gear operated Severe wet H2S service C.A.=4.5mm	
4608	0.75				P81B-002X7	Gate valve ASTM A105 Class 300 API 602 BW both sides w/ nipples BE - NPT ASTM A106-B XXS-nipple Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Severe wet H2S service C.A.=4.5mm	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82B-001G1	Globe valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Severe wet H2S service C.A.=4.5mm	
1	0.75				P82B-001G2	Globe valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Severe wet H2S service C.A.=4.5mm	
1	1				P82B-001G3	Globe valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Severe wet H2S service C.A.=4.5mm	
1	1.5				P82B-001G4	Globe valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Severe wet H2S service C.A.=4.5mm	
1	2				P82C-002ZB	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Severe wet H2S service C.A.=4.5mm	
1	3				P82C-002ZC	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Severe wet H2S service C.A.=4.5mm	
1	4				P82C-002ZD	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Severe wet H2S service C.A.=4.5mm	
1	6				P82C-002ZE	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Severe wet H2S service C.A.=4.5mm	
1	8				P82C-004D6	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Gear operated Severe wet H2S service C.A.=4.5mm	
4601	0.75				P82B-001AH	Y-pattern globe valve ASTM A105 Class 300 ASME B16.34 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Severe wet H2S service C.A.=4.5mm	
4601	1				P82B-001AJ	Y-pattern globe valve ASTM A105 Class 300 ASME B16.34 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Severe wet H2S service C.A.=4.5mm	
4601	1.5				P82B-001AK	Y-pattern globe valve ASTM A105 Class 300 ASME B16.34 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Severe wet H2S service C.A.=4.5mm	
4601	2				P82C-002M8	Y-pattern globe valve ASTM A216 Grade WCB Class 300 ASME B16.34 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Severe wet H2S service C.A.=4.5mm	
4601	3				P82C-002M9	Y-pattern globe valve ASTM A216 Grade WCB Class 300 ASME B16.34 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Severe wet H2S service C.A.=4.5mm	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83B-0015P	Check valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 Lift-type Bolted cover Severe wet H2S service C.A.=4.5mm	
1	0.75				P83B-0015R	Check valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 Lift-type Bolted cover Severe wet H2S service C.A.=4.5mm	
1	1				P83B-0015S	Check valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 Lift-type Bolted cover Severe wet H2S service C.A.=4.5mm	
1	1.5				P83B-0015T	Check valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 Lift-type Bolted cover Severe wet H2S service C.A.=4.5mm	
1	2				P83C-002Y8	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 Swing-type Bolted cover Severe wet H2S service C.A.=4.5mm	
1	3				P83C-002Y9	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 Swing-type Bolted cover Severe wet H2S service C.A.=4.5mm	
1	4				P83C-002YA	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 Swing-type Bolted cover Severe wet H2S service C.A.=4.5mm	
1	6				P83C-002YB	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 Swing-type Bolted cover Severe wet H2S service C.A.=4.5mm	
1	8				P83C-002YC	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 Swing-type Bolted cover Severe wet H2S service C.A.=4.5mm	
1	10				P83C-002Y6	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 Swing-type Bolted cover Severe wet H2S service C.A.=4.5mm	
1	12				P83C-002Y7	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 Swing-type Bolted cover Severe wet H2S service C.A.=4.5mm	

BUTTERFLY VALVE (H)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	10				P86C-0025D	Offset design butterfly valve ASTM A216 Grade WCB Class 300 API 609 Category B Lug-type ASME B16.5 RF Disc CS Seat Stellite-6 Trim SS316L Triple eccentric design BG Gear operated Severe wet H2S service C.A.=4.5mm	

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NEEDLE VALVE (NV)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82B-001M4	Needle valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Severe wet H2S service C.A.=4.5mm	
1	0.75				P82B-001M5	Needle valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Severe wet H2S service C.A.=4.5mm	
1	1				P82B-001M6	Needle valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Severe wet H2S service C.A.=4.5mm	
1	1.5				P82B-001M7	Needle valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Severe wet H2S service C.A.=4.5mm	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71B-000B1	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	0.75				P71B-000B2	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	1				P71B-000B3	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71B-000B4	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	2				P71B-000B6	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	3				P71B-000B7	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	4				P71B-000B8	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	6				P71B-000B9	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	8				P71B-000BA	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	10				P71B-000B5	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	12				P71B-000BB	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	

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PIPING CLASS
B3AR02 REV NO. 2

BOLT TABLE (B_B3AR02 , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-008T0		
0.75	4	0.625	75	P80S-00908		
1	4	0.625	80	P80S-00909		
1.5	4	0.750	95	P80S-005Z4		
2	8	0.625	90	P80S-0090B		
3	8	0.750	110	P80S-0090F		
4	8	0.750	115	P80S-0090G		
6	12	0.750	125	P80S-0090J		
8	12	0.875	140	P80S-005ZD		
10	16	1.000	160	P80S-0061E		
12	16	1.125	175	P80S-0064S		

BOLT TABLE (B_B3AR02_781 , STUD ASME RF, OPTION CODE 781)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	80	P80S-008T2		
0.75	4	0.625	90	P80S-0090B		
1	4	0.625	95	P80S-0090C		
1.5	4	0.750	110	P80S-0090F		
2	8	0.625	110	P80S-008T8		
3	8	0.750	130	P80S-0090K		
4	8	0.875	150	P80S-005ZF		
6	12	1.000	175	P80S-0061H		
8	12	1.125	195	P80S-0064W		
10	16	1.250	250	P80S-0068M		
12	20	1.250	255	P80S-0068N		

BOLT TABLE (B_B3AR02_797 , STUD ASME RJ, OPTION CODE 797)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	110		R12	
0.75	4	0.750	115		R14	
1	4	0.875	130	P80S-005ZB	R16	
1.5	4	1.000	140	P80S-0061A	R20	P75T-000JW
2	8	0.875	150	P80S-005ZF	R24	P75T-0008A
3	8	1.125	180	P80S-0064T	R35	P75T-0008E
4	8	1.250	230	P80S-0068H	R39	P75T-0008D
6	12	1.375	300	P80S-006J1	R46	P75T-0008C
8	12	1.625	345		R50	
10	12	1.875	395		R54	
12	16	2.000	445		R58	

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PIPING CLASS

B3AR02 REV NO. 2

BRANCH TABLE (T_B3AR02)

RUN PIPE SIZE (in) \ BRANCH SIZE (in)	0.5	0.75	1	1.5	2	3	4	6	8	10	12
0.5	TS										
0.75		TS									
1		TR	TS								
1.5		TR	TR	TS							
2		L	TR	TR	TS						
3		L	L	TR	TR	TS					
4	L	L	L	L	TR	TR	TS				
6	L	L	L	L	L	TR	TR	TS			
8		L	L	L	L	L	TR	TR	TS		
10		L	L	L	L	L	TR	TR	TR	TS	
12		L	L	L	L	L	L	TR	TR	TR	TS

L : OUTLET
TS : STRAIGHT TEE
TR : REDUCING TEE

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PIPING CLASS

B4A4 REV NO. 2

Material	:	Killed CS
Rating	:	ASME CLASS 300
Flange Face	:	RF
C.A.(mm)	:	6.00
Gasket	:	Spiral Wound
Service	:	PROCESS -WET LOW SEVERITY SOUR SERVICE SUBJECT TO NACE + AMINES OR CAUSTIC - STRESS RELIEVED
Design Code	:	ASME B31.3
Heat Treatment	:	

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
5	BOLTING CONFIRMING TO B7M / 2HM SHALL BE USED UNDER CONDITIONS (A) DIRECT EXPOSURE TO SOUR ENVIRONMENTS (B) WHEN THE BOLTING WILL BE BURIED OR INSULATED
27	PWHT OF CARBON STEEL PIPING IN WET H2S, CAUSTIC AND AMINE SERVICES SHALL BE IN ACCORDANCE WITH SECTION 10.2, 10.3, AND 10.4 OF PROJECT SPECIFICATION 3550-8440-SP-0002 MATERIALS REQUIREMENTS FOR PRESSURISED EQUIPMENT AND PIPING. FOR CAUSTIC AND AMINE SERVICE THE FOLLOWING SHALL APPLY: - PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF ALL SITE PIPING FABRICATION WELDS IS REQUIRED FOR ALL WALL THICKNESSES. FOR MODERATE AND SEVERE WET H2S SERVICE THE FOLLOWING SHALL APPLY: PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF SITE FABRICATION CIRCUMFERENTIAL OR BRANCH WELDS IS NOT REQUIRED IF WELDS ARE MULTIPASS AND IN ACCORDANCE WITH PARA 10.2.12 OF PROJECT SPECIFICATION 3550-8440-SP-0002. FOR SERVICES MEETING THE WET H2S CRITERIA AND CAUSTIC OR AMINE CRITERIA THE MORE STRINGENT PWHT REQUIREMENT SHALL GOVERN.

DETAIL NOTES :

NO.	DESCRIPTION
37	TO BE USED ONLY FOR ORIFICE FLANGE ASSEMLY UPTO 425 DEG C

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
200	WITH JACK SCREW (FO)
541	NPT(F) (CA,F)
781	CLASS 600 (B,F,G)
4001	ALTERNATIVE MATERIAL FOR INSTRUMENT CONNECTION (F,P,V)
4405	FLANGE NPT WITH ALTERNATIVE MATERIAL FOR INSTRUMENT CONNECTION (F)
4608	VALVE WITH NIPPLES (V)

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PIPING CLASS
B4A4 REV NO. 2

PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		XXS		P01A-0014U	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1.5		XXS		P01A-00162	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	2		SCH160		P01A-0019T	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	3		SCH160		P01A-001S5	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	4		SCH120		P01A-001TM	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	6		XS		P01A-000ZF	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	8		XS		P01A-000ZJ	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	10		XS		P01A-000Y2	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	12		SCH60		P01A-001LH	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	14		SCH60		P01A-001MU	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	16		SCH60		P01A-001P9	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	18		SCH60		P01A-003Y2	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	20		SCH60		P01A-003Y3	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	24		SCH60		P01A-003Y4	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
4001	0.5		SCH80S		P01J-002CY	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE Moderate wet H2S service	37

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		XXS		P02A-000XJ	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1.5		XXS		P02A-002N4	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	2		SCH160		P02A-000KW	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		SCH160		P02A-000U4	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		SCH120		P02A-000U5	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		XS		P02A-000DA	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		XS		P02A-000DG	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	10		XS		P02A-000BN	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	12		SCH60		P02A-0019S	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	14		SCH60		P02A-000UC	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	16		SCH60		P02A-000U2	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	18		SCH60		P02A-000UD	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	20		SCH60		P02A-002G7	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	24		SCH60		P02A-002G8	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		XXS		P03A-000U8	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1.5		XXS		P03A-002KD	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	2		SCH160		P03A-000HU	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		SCH160		P03A-000RB	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		SCH120		P03A-000RC	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		XS		P03A-000B8	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		XS		P03A-000BC	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	10		XS		P03A-000A3	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	12		SCH60		P03A-0015P	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	14		SCH60		P03A-000RZ	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	16		SCH60		P03A-000R9	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	18		SCH60		P03A-000RY	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	20		SCH60		P03A-002DP	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	24		SCH60		P03A-002DR	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		XXS		P21A-002DP	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5		XXS		P21A-003KU	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2		SCH160		P21A-00245	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		SCH160		P21A-002AG	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		SCH120		P21A-002AH	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6		XS		P21A-001D4	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	8		XS		P21A-001D6	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10		XS		P21A-001C0	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12		SCH60		P21A-002PC	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14		SCH60		P21A-002AK	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16		SCH60		P21A-002AE	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18		SCH60		P21A-002AL	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20		SCH60		P21A-003FD	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24		SCH60		P21A-003FE	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5	1	XXS	XXS	P24A-00H61	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	SCH160	XXS	P24A-0044B	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	SCH160	XXS	P24A-003GG	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	SCH160	XXS	P24A-0045F	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	SCH160	SCH160	P24A-0045H	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	SCH120	SCH160	P24A-0045G	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	SCH120	SCH160	P24A-0045E	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	XS	SCH160	P24A-00GDY	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	XS	SCH120	P24A-00GDZ	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	XS	SCH120	P24A-00GE0	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	XS	XS	P24A-0024M	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	XS	SCH120	P24A-00GF8	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	XS	XS	P24A-00241	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	XS	XS	P24A-0024K	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	SCH60	XS	P24A-00GE1	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH60	XS	P24A-0067T	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH60	XS	P24A-0067S	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	SCH60	XS	P24A-00GUS	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	SCH60	XS	P24A-00GE2	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	SCH60	XS	P24A-0067U	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	SCH60	SCH60	P24A-0067V	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	6	SCH60	XS	P24A-00GV7	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	SCH60	XS	P24A-00GDN	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	SCH60	XS	P24A-0067W	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	SCH60	SCH60	P24A-0067X	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	SCH60	SCH60	P24A-004R9	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	8	SCH60	XS	P24A-00P12	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	10	SCH60	XS	P24A-00GDP	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	12	SCH60	SCH60	P24A-00GE3	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	14	SCH60	SCH60	P24A-004R7	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	16	SCH60	SCH60	P24A-004R6	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	8	SCH60	XS	P24A-00GTD	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	10	SCH60	XS	P24A-00GDT	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	12	SCH60	SCH60	P24A-00GE4	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	14	SCH60	SCH60	P24A-00GE5	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	16	SCH60	SCH60	P24A-00GDW	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	18	SCH60	SCH60	P24A-00GDX	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24	10	SCH60	XS	P24A-00P13	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24	12	SCH60	SCH60	P24A-00GE6	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24	14	SCH60	SCH60	P24A-00GE7	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24	16	SCH60	SCH60	P24A-00GE8	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24	18	SCH60	SCH60	P24A-00GE9	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24	20	SCH60	SCH60	P24A-00GEA	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5	1	XXS	XXS	P27A-004NR	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	SCH160	XXS	P27A-0029H	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2	1.5	SCH160	XXS	P27A-0029K	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	SCH160	XXS	P27A-002NG	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	SCH160	SCH160	P27A-002NC	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	1.5	SCH120	XXS	P27A-002NH	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	SCH120	SCH160	P27A-002ND	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	SCH120	SCH160	P27A-002NM	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	XS	SCH160	P27A-007P7	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	XS	SCH120	P27A-007PZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	XS	SCH120	P27A-004KD	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	XS	XS	P27A-001EY	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	XS	SCH120	P27A-004PY	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	XS	XS	P27A-001F2	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	XS	XS	P27A-001FR	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	SCH60	XS	P27A-0048V	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH60	XS	P27A-0048W	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH60	XS	P27A-0048U	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	SCH60	XS	P27A-0048Z	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	SCH60	XS	P27A-00490	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	SCH60	XS	P27A-0048X	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	SCH60	SCH60	P27A-0048Y	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	SCH60	XS	P27A-00493	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	SCH60	XS	P27A-00491	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	SCH60	SCH60	P27A-00492	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	SCH60	SCH60	P27A-002NW	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	10	SCH60	XS	P27A-005BD	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	12	SCH60	SCH60	P27A-005DG	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	14	SCH60	SCH60	P27A-002NX	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	16	SCH60	SCH60	P27A-002NY	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	12	SCH60	SCH60	P27A-005LL	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	14	SCH60	SCH60	P27A-005NR	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	16	SCH60	SCH60	P27A-005S0	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	18	SCH60	SCH60	P27A-005TM	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24	16	SCH60	SCH60	P27A-005Y0	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24	18	SCH60	SCH60	P27A-005ZP	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24	20	SCH60	SCH60	P27A-0061E	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5	1	XXS	XXS	P28A-008W0	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	SCH160	XXS	P28A-00289	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	SCH160	XXS	P28A-0028A	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	SCH160	XXS	P28A-002P1	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	SCH160	SCH160	P28A-002NY	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	1.5	SCH120	XXS	P28A-002P0	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	SCH120	SCH160	P28A-002NZ	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	SCH120	SCH160	P28A-002P2	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	XS	SCH160	P28A-0085V	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	XS	SCH120	P28A-0085W	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	XS	SCH120	P28A-004KS	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	XS	XS	P28A-001FT	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	XS	SCH120	P28A-0085X	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	XS	XS	P28A-001FR	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	XS	XS	P28A-001GT	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	SCH60	XS	P28A-0048L	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH60	XS	P28A-0048M	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH60	XS	P28A-0048K	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	SCH60	XS	P28A-0048R	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	SCH60	XS	P28A-0048S	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	SCH60	XS	P28A-0048N	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14	12	SCH60	SCH60	P28A-0048P	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	SCH60	XS	P28A-0048V	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	SCH60	XS	P28A-0048T	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	SCH60	SCH60	P28A-0048U	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	SCH60	SCH60	P28A-002PB	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	10	SCH60	XS	P28A-0085M	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	12	SCH60	SCH60	P28A-0085Y	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	14	SCH60	SCH60	P28A-002PA	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	16	SCH60	SCH60	P28A-002PC	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	12	SCH60	SCH60	P28A-0085Z	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	14	SCH60	SCH60	P28A-00860	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	16	SCH60	SCH60	P28A-0085T	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	18	SCH60	SCH60	P28A-0085U	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24	16	SCH60	SCH60	P28A-00861	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24	18	SCH60	SCH60	P28A-00862	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24	20	SCH60	SCH60	P28A-00863	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		XXS		P29A-0033Z	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	1.5		XXS		P29A-00340	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	2		SCH160		P29A-001TK	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	3		SCH160		P29A-001TN	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	4		SCH120		P29A-001WM	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	6		XS		P29A-001TU	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	8		XS		P29A-001TV	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	10		XS		P29A-001TE	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	12		SCH60		P29A-001WE	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	14		SCH60		P29A-001WF	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	16		SCH60		P29A-001WG	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	18		SCH60		P29A-003Y8	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	20		SCH60		P29A-003Y9	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	24		SCH60		P29A-003YA	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
541	1				P29B-0000Z	Cap ASTM A105 Class 6000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		10.60mm		P41A-001AT	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		10.60mm		P41A-001AU	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	1	SCH160	XXS	P31B-00B4A	Outlet ASTM A105 MSS SP-97 BW	
1	4	1	SCH120	XXS	P31B-00B08	Outlet ASTM A105 MSS SP-97 BW	
1	6	1	XS	XXS	P31B-00AYZ	Outlet ASTM A105 MSS SP-97 BW	
1	8	1	XS	XXS	P31B-00AUZ	Outlet ASTM A105 MSS SP-97 BW	
1	10	1	XS	XXS	P31B-00BW4	Outlet ASTM A105 MSS SP-97 BW	
1	12	1	SCH60	XXS	P31B-00BRT	Outlet ASTM A105 MSS SP-97 BW	
1	14	1	SCH60	XXS	P31B-00BRB	Outlet ASTM A105 MSS SP-97 BW	
1	16	1	SCH60	XXS	P31B-00BCE	Outlet ASTM A105 MSS SP-97 BW	
1	18	1	SCH60	XXS	P31B-00B8X	Outlet ASTM A105 MSS SP-97 BW	
1	20	1	SCH60	XXS	P31B-00B8A	Outlet ASTM A105 MSS SP-97 BW	
1	24	1	SCH60	XXS	P31B-00B4N	Outlet ASTM A105 MSS SP-97 BW	
1	4	1.5	SCH120	XXS	P31B-00BNX	Outlet ASTM A105 MSS SP-97 BW	
1	6	1.5	XS	XXS	P31B-00BJ4	Outlet ASTM A105 MSS SP-97 BW	
1	8	1.5	XS	XXS	P31B-00BFF	Outlet ASTM A105 MSS SP-97 BW	
1	10	1.5	XS	XXS	P31B-00CER	Outlet ASTM A105 MSS SP-97 BW	
1	12	1.5	SCH60	XXS	P31B-00CDZ	Outlet ASTM A105 MSS SP-97 BW	
1	14	1.5	SCH60	XXS	P31B-00C9J	Outlet ASTM A105 MSS SP-97 BW	

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OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	16	1.5	SCH60	XXS	P31B-00C8R	Outlet ASTM A105 MSS SP-97 BW	
1	18	1.5	SCH60	XXS	P31B-00C49	Outlet ASTM A105 MSS SP-97 BW	
1	20	1.5	SCH60	XXS	P31B-00C3H	Outlet ASTM A105 MSS SP-97 BW	
1	24	1.5	SCH60	XXS	P31B-00BZ5	Outlet ASTM A105 MSS SP-97 BW	
1	6	2	XS	SCH160	P31B-007SR	Outlet ASTM A105 MSS SP-97 BW	
1	8	2	XS	SCH160	P31B-00AHC	Outlet ASTM A105 MSS SP-97 BW	
1	10	2	XS	SCH160	P31B-00ASR	Outlet ASTM A105 MSS SP-97 BW	
1	12	2	SCH60	SCH160	P31B-00ARL	Outlet ASTM A105 MSS SP-97 BW	
1	14	2	SCH60	SCH160	P31B-00CB8	Outlet ASTM A105 MSS SP-97 BW	
1	16	2	SCH60	SCH160	P31B-00C6E	Outlet ASTM A105 MSS SP-97 BW	
1	18	2	SCH60	SCH160	P31B-00C16	Outlet ASTM A105 MSS SP-97 BW	
1	20	2	SCH60	SCH160	P31B-009EV	Outlet ASTM A105 MSS SP-97 BW	
1	24	2	SCH60	SCH160	P31B-0098G	Outlet ASTM A105 MSS SP-97 BW	
1	8	3	XS	SCH160	P31B-00A33	Outlet ASTM A105 MSS SP-97 BW	
1	10	3	XS	SCH160	P31B-009D0	Outlet ASTM A105 MSS SP-97 BW	
1	12	3	SCH60	SCH160	P31B-0097A	Outlet ASTM A105 MSS SP-97 BW	
1	14	3	SCH60	SCH160	P31B-0091F	Outlet ASTM A105 MSS SP-97 BW	
1	16	3	SCH60	SCH160	P31B-00905	Outlet ASTM A105 MSS SP-97 BW	
1	18	3	SCH60	SCH160	P31B-008U2	Outlet ASTM A105 MSS SP-97 BW	
1	20	3	SCH60	SCH160	P31B-008LY	Outlet ASTM A105 MSS SP-97 BW	
1	24	3	SCH60	SCH160	P31B-008EM	Outlet ASTM A105 MSS SP-97 BW	
1	12	4	SCH60	SCH120	P31B-00957	Outlet ASTM A105 MSS SP-97 BW	
1	14	4	SCH60	SCH120	P31B-008ZD	Outlet ASTM A105 MSS SP-97 BW	
1	16	4	SCH60	SCH120	P31B-008TH	Outlet ASTM A105 MSS SP-97 BW	
1	18	4	SCH60	SCH120	P31B-008LA	Outlet ASTM A105 MSS SP-97 BW	
1	20	4	SCH60	SCH120	P31B-008E5	Outlet ASTM A105 MSS SP-97 BW	
1	24	4	SCH60	SCH120	P31B-0087Y	Outlet ASTM A105 MSS SP-97 BW	
1	18	6	SCH60	XS	P31B-008RT	Outlet ASTM A105 MSS SP-97 BW	
1	20	6	SCH60	XS	P31B-008PV	Outlet ASTM A105 MSS SP-97 BW	
1	24	6	SCH60	XS	P31B-008J9	Outlet ASTM A105 MSS SP-97 BW	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P30B-0002F	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1.5				P30B-0002G	Plug ASTM A105 ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		XXS		P61B-003MB	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	1.5		XXS		P61B-003MR	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	2		SCH160		P61B-002R8	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	3		SCH160		P61B-003JL	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	4		SCH120		P61B-003MU	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	6		XS		P61B-001FE	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	8		XS		P61B-001FV	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	10		XS		P61B-001FD	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	12		SCH60		P61B-005XC	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	14		SCH60		P61B-005XD	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	16		SCH60		P61B-005XB	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	18		SCH60		P61B-002G1	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	20		SCH60		P61B-002G3	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	24		SCH60		P61B-002G4	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
4001	0.5		SCH80S		P61K-005BE	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Moderate wet H2S service	37
4405	0.5				P61K-0069S	Flange NPT ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Moderate wet H2S service	37
541	1				P61B-003U5	Flange NPT ASTM A105 Class 300 ASME B16.5 RF	
781	1		XXS		P61B-003TC	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	1.5		XXS		P61B-009N1	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	2		SCH160		P61B-003T7	Flange WN ASTM A105 Class 600 ASME B16.5 RF	

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FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
781	3		SCH160		P61B-003JS	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	4		SCH120		P61B-005X8	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	6		XS		P61B-001T1	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	8		XS		P61B-001UC	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	10		XS		P61B-001JN	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	12		SCH60		P61B-003XC	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	14		SCH60		P61B-003XD	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	16		SCH60		P61B-003XE	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	18		SCH60		P61B-001KS	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	20		SCH60		P61B-001MM	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	24		SCH60		P61B-001NN	Flange WN ASTM A105 Class 600 ASME B16.5 RF	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P67B-000GK	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	1.5				P67B-000GL	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	2				P67B-000GM	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	3				P67B-000GN	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	4				P67B-000GP	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	6				P67B-000GY	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	8				P67B-000GZ	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	10				P67B-000GR	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	12				P67B-000GS	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	14				P67B-000GT	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	16				P67B-000GU	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	18				P67B-000GV	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	20				P67B-000GW	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	24				P67B-000GX	Blind flange ASTM A105 Class 300 ASME B16.5 RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000FT	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000G5	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000G6	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	6				P73T-000G7	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	8				P73T-000G8	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	10				P73T-000FX	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	12				P73T-000FY	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	14				P73T-000FZ	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	16				P73T-000G0	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	18				P73T-000G1	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	20				P73T-000G3	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	24				P73T-000G4	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1				P73T-000JA	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1.5				P73T-000JB	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	2				P73T-000JH	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	3				P73T-000JL	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	4				P73T-000JM	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	6				P73T-000JN	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

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GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
781	8				P73T-000JP	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	10				P73T-000JC	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	12				P73T-000JD	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	14				P73T-000JE	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	16				P73T-000JF	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	18				P73T-000JG	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	20				P73T-000JJ	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	24				P73T-000JK	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-10				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	12-24				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
781	1-6				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
781	8-24				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P81B-00212	Gate valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Amine service Moderate wet H2S service C.A.=6.0mm	
1	1.5				P81B-00213	Gate valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Amine service Moderate wet H2S service C.A.=6.0mm	
1	2				P81C-006LW	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Amine service Moderate wet H2S service C.A.=6.0mm	
1	3				P81C-006LX	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Amine service Moderate wet H2S service C.A.=6.0mm	
1	4				P81C-006LY	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Amine service Moderate wet H2S service C.A.=6.0mm	
1	6				P81C-006LZ	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Amine service Moderate wet H2S service C.A.=6.0mm	
1	8				P81C-00925	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Amine service Moderate wet H2S service C.A.=6.0mm	
1	10				P81C-006SW	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Amine service Moderate wet H2S service C.A.=6.0mm	
1	12				P81C-006SX	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Amine service Moderate wet H2S service C.A.=6.0mm	
1	14				P81C-006M1	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Amine service Moderate wet H2S service C.A.=6.0mm	
1	16				P81C-006M2	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Amine service Moderate wet H2S service C.A.=6.0mm	
1	18				P81C-006M3	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Amine service Moderate wet H2S service C.A.=6.0mm	
1	20				P81C-006M4	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Amine service Moderate wet H2S service C.A.=6.0mm	
4001	0.5				P81K-001PJ	Gate valve ASTM A182 Grade F316/F316L dual grade Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Amine service Moderate wet H2S service	37
4608	1				P81B-002X9	Gate valve ASTM A105 Class 300 API 602 BW both sides w/ nipples BE - NPT ASTM A106-B T=10.60MM-nipple Trim number 12 BB-BG-OS&Y Handwheel operated Amine service Moderate wet H2S service C.A.=6.0mm	
4608	1.5				P81B-00358	Gate valve ASTM A105 Class 300 API 602 BW both sides w/ nipples BE - NPT ASTM A106-B T=10.60MM-nipple Trim number 12 BB-BG-OS&Y Handwheel operated Amine service Moderate wet H2S service C.A.=6.0mm	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P82B-001JM	Globe valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Amine service Moderate wet H2S service C.A.=6.0mm	
1	1.5				P82B-001JN	Globe valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Amine service Moderate wet H2S service C.A.=6.0mm	
1	2				P82C-0036L	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Amine service Moderate wet H2S service C.A.=6.0mm	
1	3				P82C-0036M	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Amine service Moderate wet H2S service C.A.=6.0mm	
1	4				P82C-0036N	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Amine service Moderate wet H2S service C.A.=6.0mm	
1	6				P82C-0046G	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Amine service Moderate wet H2S service C.A.=6.0mm	

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CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P83B-00187	Check valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Amine service Moderate wet H2S service C.A.=6.0mm	
1	1.5				P83B-00188	Check valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Amine service Moderate wet H2S service C.A.=6.0mm	
1	2				P83C-0032X	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Amine service Moderate wet H2S service C.A.=6.0mm	
1	3				P83C-0032Y	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Amine service Moderate wet H2S service C.A.=6.0mm	
1	4				P83C-0032Z	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Amine service Moderate wet H2S service C.A.=6.0mm	
1	6				P83C-00330	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Amine service Moderate wet H2S service C.A.=6.0mm	
1	8				P83C-003AW	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Amine service Moderate wet H2S service C.A.=6.0mm	
1	10				P83C-003C2	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Amine service Moderate wet H2S service C.A.=6.0mm	
1	12				P83C-003C3	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Amine service Moderate wet H2S service C.A.=6.0mm	
1	14				P83C-003C4	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Amine service Moderate wet H2S service C.A.=6.0mm	
1	16				P83C-003C5	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Amine service Moderate wet H2S service C.A.=6.0mm	
1	18				P83C-003SF	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Amine service Moderate wet H2S service C.A.=6.0mm	
1	20				P83C-003SG	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Amine service Moderate wet H2S service C.A.=6.0mm	

ORIFICE FLANGE (FO)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2		SCH160		P66B-00889	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	3		SCH160		P66B-0088C	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	4		SCH120		P66B-0088D	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	6		XS		P66B-0088E	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	8		XS		P66B-008DS	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	10		XS		P66B-00884	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	12		SCH60		P66B-008DN	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	14		SCH60		P66B-008DP	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	16		SCH60		P66B-008DR	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	18		SCH60		P66B-008SL	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	20		SCH60		P66B-008SM	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
200	2		SCH160		P66B-0088P	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	3		SCH160		P66B-0088T	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	4		SCH120		P66B-0088U	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	6		XS		P66B-0088V	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	8		XS		P66B-008DW	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	10		XS		P66B-0088J	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	12		SCH60		P66B-008DT	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	14		SCH60		P66B-008DU	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	16		SCH60		P66B-008DV	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	18		SCH60		P66B-008SN	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	20		SCH60		P66B-008SP	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P71B-000B3	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71B-000B4	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	2				P71B-000B6	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	3				P71B-000B7	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	4				P71B-000B8	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	6				P71B-000B9	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	8				P71B-000BA	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	10				P71B-000B5	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	12				P71B-000BB	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	

PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000FA	Paddle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	

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PADDLE BLANK (PB)							
OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	16				P72B-000FB	Paddle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	18				P72B-000FC	Paddle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	20				P72B-000FD	Paddle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	24				P72B-000FE	Paddle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	

PADDLE SPACER (PS)							
OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000FG	Paddle spacer ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	16				P72B-000FH	Paddle spacer ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	18				P72B-000FJ	Paddle spacer ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	20				P72B-000FK	Paddle spacer ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	24				P72B-000FL	Paddle spacer ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	

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BOLT TABLE (B_B4A4 , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-008T0		
1	4	0.625	80	P80S-00909		
1.5	4	0.750	95	P80S-005Z4		
2	8	0.625	90	P80S-0090B		
3	8	0.750	110	P80S-0090F		
4	8	0.750	115	P80S-0090G		
6	12	0.750	125	P80S-0090J		
8	12	0.875	140	P80S-005ZD		
10	16	1.000	160	P80S-0061E		
12	16	1.125	175	P80S-0064S		
14	20	1.125	180	P80S-0064T		
16	20	1.250	190	P80S-00689		
18	24	1.250	200	P80S-0068B		
20	24	1.250	210	P80S-0068D		
24	24	1.500	235	P80S-006LB		

BOLT TABLE (B_B4A4_781 , STUD ASME RF, OPTION CODE 781)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	80			
1	4	0.625	95	P80S-0090C		
1.5	4	0.750	110	P80S-0090F		
2	8	0.625	110	P80S-008T8		
3	8	0.750	130	P80S-0090K		
4	8	0.875	150	P80S-005ZF		
6	12	1.000	175	P80S-0061H		
8	12	1.125	195	P80S-0064W		
10	16	1.250	250	P80S-0068M		
12	20	1.250	255	P80S-0068N		
14	20	1.375	270	P80S-006HV		
16	20	1.500	295	P80S-006LP		
18	20	1.625	320	P80S-00A5E		
20	24	1.625	335	P80S-00A5H		
24	24	1.875	380	P80S-00AW5		

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BRANCH TABLE (T_B4A4)

RUN PIPE SIZE (in) \ BRANCH SIZE (in)	0.5	1	1.5	2	3	4	6	8	10	12	14	16	18	20	24
0.5	TS														
1		TS													
1.5		TR	TS												
2		TR	TR	TS											
3		L	TR	TR	TS										
4	L	L	L	TR	TR	TS									
6	L	L	L	L	TR	TR	TS								
8		L	L	L	L	TR	TR	TS							
10		L	L	L	L	TR	TR	TR	TS						
12		L	L	L	L	L	TR	TR	TR	TS					
14		L	L	L	L	L	TR	TR	TR	TR	TS				
16		L	L	L	L	L	TR	TR	TR	TR	TR	TS			
18		L	L	L	L	L	L	TR	TR	TR	TR	TR	TS		
20		L	L	L	L	L	L	TR	TR	TR	TR	TR	TR	TS	
24		L	L	L	L	L	L	9PD	TR	TR	TR	TR	TR	TR	TS

9PD : REINFORCING PAD 90 DEG
TS : STRAIGHT TEE
TR : REDUCING TEE
L : OUTLET

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PIPING CLASS

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Material : Killed CS
Rating : ASME CLASS 300
Flange Face : RF
C.A.(mm) : 6.00
Gasket : Spiral Wound
Service : PROCESS -WET LOW SEVERITY SOUR SERVICE SUBJECT TO NACE + AMINES OR CAUSTIC - STRESS RELIEVED
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
5	BOLTING CONFIRMING TO B7M / 2HM SHALL BE USED UNDER CONDITIONS (A) DIRECT EXPOSURE TO SOUR ENVIRONMENTS (B) WHEN THE BOLTING WILL BE BURIED OR INSULATED
27	PWHT OF CARBON STEEL PIPING IN WET H2S, CAUSTIC AND AMINE SERVICES SHALL BE IN ACCORDANCE WITH SECTION 10.2, 10.3, AND 10.4 OF PROJECT SPECIFICATION 3550-8440-SP-0002 MATERIALS REQUIREMENTS FOR PRESSURISED EQUIPMENT AND PIPING. FOR CAUSTIC AND AMINE SERVICE THE FOLLOWING SHALL APPLY: - PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF ALL SITE PIPING FABRICATION WELDS IS REQUIRED FOR ALL WALL THICKNESSES. FOR MODERATE AND SEVERE WET H2S SERVICE THE FOLLOWING SHALL APPLY: PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF SITE FABRICATION CIRCUMFERENTIAL OR BRANCH WELDS IS NOT REQUIRED IF WELDS ARE MULTIPASS AND IN ACCORDANCE WITH PARA 10.2.12 OF PROJECT SPECIFICATION 3550-8440-SP-0002. FOR SERVICES MEETING THE WET H2S CRITERIA AND CAUSTIC OR AMINE CRITERIA THE MORE STRINGENT PWHT REQUIREMENT SHALL GOVERN.

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
541	NPT(F) (CA,F)
781	CLASS 600 (B,F,G)
4608	VALVE WITH NIPPLES (V)

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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		XXS		P01A-0014U	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1.5		XXS		P01A-00162	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	2		SCH160		P01A-0019T	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	3		SCH160		P01A-001S5	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	4		SCH120		P01A-001TM	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	6		XS		P01A-000ZF	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	8		XS		P01A-000ZJ	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	10		XS		P01A-000Y2	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	12		SCH60		P01A-001LH	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	14		SCH60		P01A-001MU	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		XXS		P02A-000XJ	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1.5		XXS		P02A-002N4	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	2		SCH160		P02A-000KW	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		SCH160		P02A-000U4	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		SCH120		P02A-000U5	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		XS		P02A-000DA	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		XS		P02A-000DG	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	10		XS		P02A-000BN	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	12		SCH60		P02A-0019S	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	14		SCH60		P02A-000UC	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		XXS		P03A-000U8	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1.5		XXS		P03A-002KD	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	2		SCH160		P03A-000HU	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		SCH160		P03A-000RB	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		SCH120		P03A-000RC	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		XS		P03A-000B8	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		XS		P03A-000BC	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	10		XS		P03A-000A3	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	12		SCH60		P03A-0015P	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	14		SCH60		P03A-000RZ	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		XXS		P21A-002DP	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5		XXS		P21A-003KU	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2		SCH160		P21A-00245	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		SCH160		P21A-002AG	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		SCH120		P21A-002AH	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6		XS		P21A-001D4	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8		XS		P21A-001D6	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10		XS		P21A-001C0	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12		SCH60		P21A-002PC	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14		SCH60		P21A-002AK	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5	1	XXS	XXS	P24A-00H61	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	SCH160	XXS	P24A-0044B	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	SCH160	XXS	P24A-003GG	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	SCH160	XXS	P24A-0045F	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	SCH160	SCH160	P24A-0045H	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	SCH120	SCH160	P24A-0045G	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	4	3	SCH120	SCH160	P24A-0045E	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	XS	SCH160	P24A-00GDY	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	XS	SCH120	P24A-00GDZ	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	XS	SCH120	P24A-00GE0	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	XS	XS	P24A-0024M	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	XS	SCH120	P24A-00GF8	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	XS	XS	P24A-00241	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	XS	XS	P24A-0024K	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	SCH60	XS	P24A-00GE1	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH60	XS	P24A-0067T	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH60	XS	P24A-0067S	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	SCH60	XS	P24A-00GUS	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	SCH60	XS	P24A-00GE2	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	SCH60	XS	P24A-0067U	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	SCH60	SCH60	P24A-0067V	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5	1	XXS	XXS	P27A-004NR	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	SCH160	XXS	P27A-0029H	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	SCH160	XXS	P27A-0029K	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	SCH160	XXS	P27A-002NG	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	SCH160	SCH160	P27A-002NC	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	1.5	SCH120	XXS	P27A-002NH	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	SCH120	SCH160	P27A-002ND	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	SCH120	SCH160	P27A-002NM	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	XS	SCH160	P27A-007P7	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	XS	SCH120	P27A-007PZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	XS	SCH120	P27A-004KD	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	XS	XS	P27A-001EY	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	XS	SCH120	P27A-004PY	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	XS	XS	P27A-001F2	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	XS	XS	P27A-001FR	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	SCH60	XS	P27A-0048V	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH60	XS	P27A-0048W	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH60	XS	P27A-0048U	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	SCH60	XS	P27A-0048Z	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	SCH60	XS	P27A-00490	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	SCH60	XS	P27A-0048X	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	SCH60	SCH60	P27A-0048Y	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5	1	XXS	XXS	P28A-008W0	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	SCH160	XXS	P28A-00289	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	SCH160	XXS	P28A-0028A	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	SCH160	XXS	P28A-002P1	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	SCH160	SCH160	P28A-002NY	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	1.5	SCH120	XXS	P28A-002P0	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	SCH120	SCH160	P28A-002NZ	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	SCH120	SCH160	P28A-002P2	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	XS	SCH160	P28A-0085V	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	XS	SCH120	P28A-0085W	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	XS	SCH120	P28A-004KS	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	XS	XS	P28A-001FT	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	XS	SCH120	P28A-0085X	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	XS	XS	P28A-001FR	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	XS	XS	P28A-001GT	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	SCH60	XS	P28A-0048L	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	12	8	SCH60	XS	P28A-0048M	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH60	XS	P28A-0048K	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	SCH60	XS	P28A-0048R	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	SCH60	XS	P28A-0048S	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	SCH60	XS	P28A-0048N	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	SCH60	SCH60	P28A-0048P	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		XXS		P29A-0033Z	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	1.5		XXS		P29A-00340	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	2		SCH160		P29A-001TK	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	3		SCH160		P29A-001TN	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	4		SCH120		P29A-001WM	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	6		XS		P29A-001TU	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	8		XS		P29A-001TV	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	10		XS		P29A-001TE	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	12		SCH60		P29A-001WE	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	14		SCH60		P29A-001WF	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
541	1				P29B-0000Z	Cap ASTM A105 Class 6000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		10.60mm		P41A-001AT	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		10.60mm		P41A-001AU	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	1	SCH160	XXS	P31B-00B4A	Outlet ASTM A105 MSS SP-97 BW	
1	4	1	SCH120	XXS	P31B-00B08	Outlet ASTM A105 MSS SP-97 BW	
1	6	1	XS	XXS	P31B-00AYZ	Outlet ASTM A105 MSS SP-97 BW	
1	8	1	XS	XXS	P31B-00AUZ	Outlet ASTM A105 MSS SP-97 BW	
1	10	1	XS	XXS	P31B-00BW4	Outlet ASTM A105 MSS SP-97 BW	
1	12	1	SCH60	XXS	P31B-00BRT	Outlet ASTM A105 MSS SP-97 BW	
1	14	1	SCH60	XXS	P31B-00BRB	Outlet ASTM A105 MSS SP-97 BW	
1	4	1.5	SCH120	XXS	P31B-00BNX	Outlet ASTM A105 MSS SP-97 BW	
1	6	1.5	XS	XXS	P31B-00BJ4	Outlet ASTM A105 MSS SP-97 BW	
1	8	1.5	XS	XXS	P31B-00BFF	Outlet ASTM A105 MSS SP-97 BW	
1	10	1.5	XS	XXS	P31B-00CER	Outlet ASTM A105 MSS SP-97 BW	
1	12	1.5	SCH60	XXS	P31B-00CDZ	Outlet ASTM A105 MSS SP-97 BW	
1	14	1.5	SCH60	XXS	P31B-00C9J	Outlet ASTM A105 MSS SP-97 BW	
1	6	2	XS	SCH160	P31B-007SR	Outlet ASTM A105 MSS SP-97 BW	
1	8	2	XS	SCH160	P31B-00AHC	Outlet ASTM A105 MSS SP-97 BW	
1	10	2	XS	SCH160	P31B-00ASR	Outlet ASTM A105 MSS SP-97 BW	
1	12	2	SCH60	SCH160	P31B-00ARL	Outlet ASTM A105 MSS SP-97 BW	
1	14	2	SCH60	SCH160	P31B-00CB8	Outlet ASTM A105 MSS SP-97 BW	
1	8	3	XS	SCH160	P31B-00A33	Outlet ASTM A105 MSS SP-97 BW	
1	10	3	XS	SCH160	P31B-009D0	Outlet ASTM A105 MSS SP-97 BW	
1	12	3	SCH60	SCH160	P31B-0097A	Outlet ASTM A105 MSS SP-97 BW	
1	14	3	SCH60	SCH160	P31B-0091F	Outlet ASTM A105 MSS SP-97 BW	
1	12	4	SCH60	SCH120	P31B-00957	Outlet ASTM A105 MSS SP-97 BW	
1	14	4	SCH60	SCH120	P31B-008ZD	Outlet ASTM A105 MSS SP-97 BW	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P30B-0002F	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1.5				P30B-0002G	Plug ASTM A105 ASME B16.11 NPT Round head	

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FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		XXS		P61B-003MB	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	1.5		XXS		P61B-003MR	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	2		SCH160		P61B-002R8	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	3		SCH160		P61B-003JL	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	4		SCH120		P61B-003MU	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	6		XS		P61B-001FE	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	8		XS		P61B-001FV	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	10		XS		P61B-001FD	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	12		SCH60		P61B-005XC	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	14		SCH60		P61B-005XD	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
541	1				P61B-003U5	Flange NPT ASTM A105 Class 300 ASME B16.5 RF	
781	1		XXS		P61B-003TC	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	1.5		XXS		P61B-009N1	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	2		SCH160		P61B-003T7	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	3		SCH160		P61B-003JS	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	4		SCH120		P61B-005X8	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	6		XS		P61B-001T1	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	8		XS		P61B-001UC	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	10		XS		P61B-001JN	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	12		SCH60		P61B-003XC	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	14		SCH60		P61B-003XD	Flange WN ASTM A105 Class 600 ASME B16.5 RF	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P67B-000GK	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	1.5				P67B-000GL	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	2				P67B-000GM	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	3				P67B-000GN	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	4				P67B-000GP	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	6				P67B-000GY	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	8				P67B-000GZ	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	10				P67B-000GR	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	12				P67B-000GS	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	14				P67B-000GT	Blind flange ASTM A105 Class 300 ASME B16.5 RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000G5	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000G6	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	6				P73T-000G7	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	8				P73T-000G8	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	10				P73T-000FX	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	12				P73T-000FY	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	14				P73T-000FZ	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1				P73T-000JA	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1.5				P73T-000JB	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	2				P73T-000JH	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	3				P73T-000JL	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	4				P73T-000JM	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	6				P73T-000JN	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

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GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
781	8				P73T-000JP	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	10				P73T-000JC	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	12				P73T-000JD	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	14				P73T-000JE	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1-10				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	12-14				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
781	1-6				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
781	8-14				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
4608	1				P81B-0034M	Gate valve ASTM A105 Class 300 API 602 BW both sides w/ nipples BE - NPT ASTM A106-B T=10.60MM-nipple Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Amine service Moderate wet H2S service C.A.=6.0mm	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P82B-0025P	Globe valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Amine service Moderate wet H2S service C.A.=6.0mm	
1	1.5				P82B-0025R	Globe valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Amine service Moderate wet H2S service C.A.=6.0mm	
1	2				P82C-004KB	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Amine service Moderate wet H2S service C.A.=6.0mm	
1	3				P82C-004KC	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Amine service Moderate wet H2S service C.A.=6.0mm	
1	4				P82C-004KD	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Amine service Moderate wet H2S service C.A.=6.0mm	
1	6				P82C-004KE	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Amine service Moderate wet H2S service C.A.=6.0mm	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P71B-000B3	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71B-000B4	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	2				P71B-000B6	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	3				P71B-000B7	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	4				P71B-000B8	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	6				P71B-000B9	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	8				P71B-000BA	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	10				P71B-000B5	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	12				P71B-000BB	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	

PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000FA	Paddle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	

PADDLE SPACER (PS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000FG	Paddle spacer ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	

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BOLT TABLE (B_B4A402 , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
1	4	0.625	80	P80S-00909		
1.5	4	0.750	95	P80S-005Z4		
2	8	0.625	90	P80S-0090B		
3	8	0.750	110	P80S-0090F		
4	8	0.750	115	P80S-0090G		
6	12	0.750	125	P80S-0090J		
8	12	0.875	140	P80S-005ZD		
10	16	1.000	160	P80S-0061E		
12	16	1.125	175	P80S-0064S		
14	20	1.125	180	P80S-0064T		

BOLT TABLE (B_B4A402_781 , STUD ASME RF, OPTION CODE 781)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
1	4	0.625	95	P80S-0090C		
1.5	4	0.750	110	P80S-0090F		
2	8	0.625	110	P80S-008T8		
3	8	0.750	130	P80S-0090K		
4	8	0.875	150	P80S-005ZF		
6	12	1.000	175	P80S-0061H		
8	12	1.125	195	P80S-0064W		
10	16	1.250	250	P80S-0068M		
12	20	1.250	255	P80S-0068N		
14	20	1.375	270	P80S-006HV		

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BRANCH TABLE (T_B4A402)

RUN PIPE SIZE (in) \ BRANCH SIZE (in)	1	1.5	2	3	4	6	8	10	12	14
1	TS									
1.5	TR	TS								
2	TR	TR	TS							
3	L	TR	TR	TS						
4	L	L	TR	TR	TS					
6	L	L	L	TR	TR	TS				
8	L	L	L	L	TR	TR	TS			
10	L	L	L	L	TR	TR	TR	TS		
12	L	L	L	L	L	TR	TR	TR	TS	
14	L	L	L	L	L	TR	TR	TR	TR	TS

TR : REDUCING TEE
TS : STRAIGHT TEE
L : OUTLET

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PIPING CLASS

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Material	:	Killed CS
Rating	:	ASME CLASS 300
Flange Face	:	RF
C.A.(mm)	:	6.00
Gasket	:	Spiral Wound
Service	:	PROCESS - WET SEVERE SOUR SERVICE SUBJECT TO NACE + HIC STD + AMINES OR CAUSTIC - STRESS RELIEVED
Design Code	:	ASME B31.3
Heat Treatment	:	

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
5	BOLTING CONFIRMING TO B7M / 2HM SHALL BE USED UNDER CONDITIONS (A) DIRECT EXPOSURE TO SOUR ENVIRONMENTS (B) WHEN THE BOLTING WILL BE BURIED OR INSULATED
27	PWHT OF CARBON STEEL PIPING IN WET H2S, CAUSTIC AND AMINE SERVICES SHALL BE IN ACCORDANCE WITH SECTION 10.2, 10.3, AND 10.4 OF PROJECT SPECIFICATION 3550-8440-SP-0002 MATERIALS REQUIREMENTS FOR PRESSURISED EQUIPMENT AND PIPING. FOR CAUSTIC AND AMINE SERVICE THE FOLLOWING SHALL APPLY: - PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF ALL SITE PIPING FABRICATION WELDS IS REQUIRED FOR ALL WALL THICKNESSES. FOR MODERATE AND SEVERE WET H2S SERVICE THE FOLLOWING SHALL APPLY: PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF SITE FABRICATION CIRCUMFERENTIAL OR BRANCH WELDS IS NOT REQUIRED IF WELDS ARE MULTIPASS AND IN ACCORDANCE WITH PARA 10.2.12 OF PROJECT SPECIFICATION 3550-8440-SP-0002. FOR SERVICES MEETING THE WET H2S CRITERIA AND CAUSTIC OR AMINE CRITERIA THE MORE STRINGENT PWHT REQUIREMENT SHALL GOVERN.

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
541	NPT(F) (CA,F)
781	CLASS 600 (B,F,G)
4608	VALVE WITH NIPPLES (V)

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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		XXS		P01A-0014U	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1.5		XXS		P01A-00162	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	2		SCH160		P01A-0019T	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	3		SCH160		P01A-001S5	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	4		SCH120		P01A-001TM	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	6		XS		P01A-000ZF	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	8		XS		P01A-000ZJ	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	10		XS		P01A-000Y2	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	12		SCH60		P01A-001LH	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	14		SCH60		P01A-001MU	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	16		XS		P01A-000YS	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	18		XS		P01A-00372	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	20		SCH40		P01A-0048W	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		XXS		P02A-000XJ	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1.5		XXS		P02A-002N4	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	2		SCH160		P02A-000KW	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		SCH160		P02A-000U4	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		SCH120		P02A-000U5	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		XS		P02A-000DA	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		XS		P02A-000DG	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	10		XS		P02A-000BN	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	12		SCH60		P02A-0019S	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	14		SCH60		P02A-000UC	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	16		XS		P02A-000CE	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	18		XS		P02A-000M9	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	20		SCH40		P02A-002HW	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		XXS		P03A-000U8	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1.5		XXS		P03A-002KD	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	2		SCH160		P03A-000HU	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		SCH160		P03A-000RB	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		SCH120		P03A-000RC	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		XS		P03A-000B8	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		XS		P03A-000BC	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	10		XS		P03A-000A3	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	12		SCH60		P03A-0015P	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	14		SCH60		P03A-000RZ	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	16		XS		P03A-000AP	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	18		XS		P03A-001DZ	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	20		SCH40		P03A-002FD	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		XXS		P21A-002DP	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5		XXS		P21A-003KU	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2		SCH160		P21A-00245	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		SCH160		P21A-002AG	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		SCH120		P21A-002AH	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6		XS		P21A-001D4	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8		XS		P21A-001D6	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10		XS		P21A-001C0	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12		SCH60		P21A-002PC	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14		SCH60		P21A-002AK	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16		XS		P21A-001CG	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	18		XS		P21A-002Y3	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20		SCH40		P21A-004SV	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5	1	XXS	XXS	P24A-00H61	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	SCH160	XXS	P24A-0044B	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	SCH160	XXS	P24A-003GG	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	SCH160	XXS	P24A-0045F	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	SCH160	SCH160	P24A-0045H	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	SCH120	SCH160	P24A-0045G	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	SCH120	SCH160	P24A-0045E	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	XS	SCH160	P24A-00GDY	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	XS	SCH120	P24A-00GDZ	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	XS	SCH120	P24A-00GE0	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	XS	XS	P24A-0024M	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	XS	SCH120	P24A-00GF8	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	XS	XS	P24A-00241	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	XS	XS	P24A-0024K	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	SCH60	XS	P24A-00GE1	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH60	XS	P24A-0067T	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH60	XS	P24A-0067S	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	SCH60	XS	P24A-00GUS	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	SCH60	XS	P24A-00GE2	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	SCH60	XS	P24A-0067U	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	SCH60	SCH60	P24A-0067V	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	6	XS	XS	P24A-0025G	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	XS	XS	P24A-0025P	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	XS	XS	P24A-00242	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	XS	SCH60	P24A-00GNZ	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	XS	SCH60	P24A-00GP0	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	8	XS	XS	P24A-00GMK	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	10	XS	XS	P24A-00GMG	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	12	XS	SCH60	P24A-00GWT	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	14	XS	SCH60	P24A-00GWU	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	16	XS	XS	P24A-0087Y	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	8	SCH40	XS	P24A-00PJ5	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	10	SCH40	XS	P24A-00PJ0	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	12	SCH40	SCH60	P24A-00PJ1	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	14	SCH40	SCH60	P24A-00PJ2	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	16	SCH40	XS	P24A-00PJ3	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	18	SCH40	XS	P24A-00PJ4	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5	1	XXS	XXS	P27A-004NR	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	SCH160	XXS	P27A-0029H	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	SCH160	XXS	P27A-0029K	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	SCH160	XXS	P27A-002NG	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	SCH160	SCH160	P27A-002NC	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	1.5	SCH120	XXS	P27A-002NH	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	SCH120	SCH160	P27A-002ND	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	SCH120	SCH160	P27A-002NM	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	XS	SCH160	P27A-007P7	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	XS	SCH120	P27A-007PZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	XS	SCH120	P27A-004KD	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	XS	XS	P27A-001EY	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	XS	SCH120	P27A-004PY	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	XS	XS	P27A-001F2	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	10	8	XS	XS	P27A-001FR	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	SCH60	XS	P27A-0048V	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH60	XS	P27A-0048W	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH60	XS	P27A-0048U	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	SCH60	XS	P27A-0048Z	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	SCH60	XS	P27A-00490	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	SCH60	XS	P27A-0048X	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	SCH60	SCH60	P27A-0048Y	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	XS	XS	P27A-001GV	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	XS	XS	P27A-001EN	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	XS	SCH60	P27A-0056B	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	XS	SCH60	P27A-0057V	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	10	XS	XS	P27A-005BV	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	12	XS	SCH60	P27A-00BLF	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	14	XS	SCH60	P27A-00BLG	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	16	XS	XS	P27A-005J1	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	12	SCH40	SCH60	P27A-005LF	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	14	SCH40	SCH60	P27A-005NK	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	16	SCH40	XS	P27A-005RX	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	18	SCH40	XS	P27A-005TL	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5	1	XXS	XXS	P28A-008W0	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	SCH160	XXS	P28A-00289	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	SCH160	XXS	P28A-0028A	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	SCH160	XXS	P28A-002P1	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	SCH160	SCH160	P28A-002NY	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	1.5	SCH120	XXS	P28A-002P0	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	SCH120	SCH160	P28A-002NZ	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	SCH120	SCH160	P28A-002P2	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	XS	SCH160	P28A-0085V	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	XS	SCH120	P28A-0085W	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	XS	SCH120	P28A-004KS	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	XS	XS	P28A-001FT	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	XS	SCH120	P28A-0085X	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	XS	XS	P28A-001FR	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	XS	XS	P28A-001GT	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	SCH60	XS	P28A-0048L	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH60	XS	P28A-0048M	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH60	XS	P28A-0048K	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	SCH60	XS	P28A-0048R	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	SCH60	XS	P28A-0048S	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	SCH60	XS	P28A-0048N	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	SCH60	SCH60	P28A-0048P	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	XS	XS	P28A-0018A	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	XS	XS	P28A-001F9	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	XS	SCH60	P28A-008FA	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	XS	SCH60	P28A-008FB	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	10	XS	XS	P28A-008EE	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	12	XS	SCH60	P28A-008LR	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	14	XS	SCH60	P28A-008LS	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	16	XS	XS	P28A-0063K	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	12	SCH40	SCH60	P28A-00F5T	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	14	SCH40	SCH60	P28A-00F5U	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	16	SCH40	XS	P28A-00F5V	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	18	SCH40	XS	P28A-00F5W	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		XXS		P29A-00338	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5		XXS		P29A-00339	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	2		SCH160		P29A-001W3	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	3		SCH160		P29A-001W6	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	4		SCH120		P29A-001W9	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	6		XS		P29A-001WA	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	8		XS		P29A-001WB	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	10		XS		P29A-001VY	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	12		SCH60		P29A-001WU	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	14		SCH60		P29A-001WV	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	16		XS		P29A-001W1	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	18		XS		P29A-001W2	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	20		SCH40		P29A-004D2	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
541	1				P29B-0000Z	Cap ASTM A105 Class 6000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		10.60mm		P41A-001AT	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		10.60mm		P41A-001AU	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	1	SCH160	XXS	P31B-00B4A	Outlet ASTM A105 MSS SP-97 BW	
1	4	1	SCH120	XXS	P31B-00B08	Outlet ASTM A105 MSS SP-97 BW	
1	6	1	XS	XXS	P31B-00AYZ	Outlet ASTM A105 MSS SP-97 BW	
1	8	1	XS	XXS	P31B-00AUZ	Outlet ASTM A105 MSS SP-97 BW	
1	10	1	XS	XXS	P31B-00BW4	Outlet ASTM A105 MSS SP-97 BW	
1	12	1	SCH60	XXS	P31B-00BRT	Outlet ASTM A105 MSS SP-97 BW	
1	14	1	SCH60	XXS	P31B-00BRB	Outlet ASTM A105 MSS SP-97 BW	
1	16	1	XS	XXS	P31B-00BCD	Outlet ASTM A105 MSS SP-97 BW	
1	18	1	XS	XXS	P31B-00B8W	Outlet ASTM A105 MSS SP-97 BW	
1	20	1	SCH40	XXS	P31B-011UM	Outlet ASTM A105 MSS SP-97 BW	
1	4	1.5	SCH120	XXS	P31B-00BNX	Outlet ASTM A105 MSS SP-97 BW	
1	6	1.5	XS	XXS	P31B-00BJ4	Outlet ASTM A105 MSS SP-97 BW	
1	8	1.5	XS	XXS	P31B-00BFF	Outlet ASTM A105 MSS SP-97 BW	
1	10	1.5	XS	XXS	P31B-00CER	Outlet ASTM A105 MSS SP-97 BW	
1	12	1.5	SCH60	XXS	P31B-00CDZ	Outlet ASTM A105 MSS SP-97 BW	
1	14	1.5	SCH60	XXS	P31B-00C9J	Outlet ASTM A105 MSS SP-97 BW	
1	16	1.5	XS	XXS	P31B-00C8P	Outlet ASTM A105 MSS SP-97 BW	
1	18	1.5	XS	XXS	P31B-00C48	Outlet ASTM A105 MSS SP-97 BW	
1	20	1.5	SCH40	XXS	P31B-011UN	Outlet ASTM A105 MSS SP-97 BW	
1	6	2	XS	SCH160	P31B-007SR	Outlet ASTM A105 MSS SP-97 BW	
1	8	2	XS	SCH160	P31B-00AHC	Outlet ASTM A105 MSS SP-97 BW	
1	10	2	XS	SCH160	P31B-00ASR	Outlet ASTM A105 MSS SP-97 BW	
1	12	2	SCH60	SCH160	P31B-00ARL	Outlet ASTM A105 MSS SP-97 BW	
1	14	2	SCH60	SCH160	P31B-00CB8	Outlet ASTM A105 MSS SP-97 BW	
1	16	2	XS	SCH160	P31B-00C6D	Outlet ASTM A105 MSS SP-97 BW	
1	18	2	XS	SCH160	P31B-006P6	Outlet ASTM A105 MSS SP-97 BW	
1	20	2	SCH40	SCH160	P31B-009EW	Outlet ASTM A105 MSS SP-97 BW	
1	8	3	XS	SCH160	P31B-00A33	Outlet ASTM A105 MSS SP-97 BW	
1	10	3	XS	SCH160	P31B-009D0	Outlet ASTM A105 MSS SP-97 BW	
1	12	3	SCH60	SCH160	P31B-0097A	Outlet ASTM A105 MSS SP-97 BW	
1	14	3	SCH60	SCH160	P31B-0091F	Outlet ASTM A105 MSS SP-97 BW	
1	16	3	XS	SCH160	P31B-00903	Outlet ASTM A105 MSS SP-97 BW	
1	18	3	XS	SCH160	P31B-008U0	Outlet ASTM A105 MSS SP-97 BW	
1	20	3	SCH40	SCH160	P31B-011UP	Outlet ASTM A105 MSS SP-97 BW	
1	12	4	SCH60	SCH120	P31B-00957	Outlet ASTM A105 MSS SP-97 BW	
1	14	4	SCH60	SCH120	P31B-008ZD	Outlet ASTM A105 MSS SP-97 BW	
1	16	4	XS	SCH120	P31B-00TU5	Outlet ASTM A105 MSS SP-97 BW	

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OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	18	4	XS	SCH120	P31B-00TU6	Outlet ASTM A105 MSS SP-97 BW	
1	20	4	SCH40	SCH120	P31B-011UR	Outlet ASTM A105 MSS SP-97 BW	
1	18	6	XS	XS	P31B-008RR	Outlet ASTM A105 MSS SP-97 BW	
1	20	6	SCH40	XS	P31B-008PW	Outlet ASTM A105 MSS SP-97 BW	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P30B-0002F	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1.5				P30B-0002G	Plug ASTM A105 ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		XXS		P61B-003MB	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	1.5		XXS		P61B-003MR	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	2		SCH160		P61B-002R8	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	3		SCH160		P61B-003JL	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	4		SCH120		P61B-003MU	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	6		XS		P61B-001FE	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	8		XS		P61B-001FV	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	10		XS		P61B-001FD	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	12		SCH60		P61B-005XC	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	14		SCH60		P61B-005XD	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	16		XS		P61B-001HU	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	18		XS		P61B-001T0	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	20		SCH40		P61B-001HY	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
541	1				P61B-003U5	Flange NPT ASTM A105 Class 300 ASME B16.5 RF	
781	1		XXS		P61B-003TC	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	1.5		XXS		P61B-009N1	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	2		SCH160		P61B-003T7	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	3		SCH160		P61B-003JS	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	4		SCH120		P61B-005X8	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	6		XS		P61B-001T1	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	8		XS		P61B-001UC	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	10		XS		P61B-001JN	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	12		SCH60		P61B-003XC	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	14		SCH60		P61B-003XD	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	16		XS		P61B-001R3	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	18		XS		P61B-001RG	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	20		SCH40		P61B-001K1	Flange WN ASTM A105 Class 600 ASME B16.5 RF	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P67B-000GK	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	1.5				P67B-000GL	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	2				P67B-000GM	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	3				P67B-000GN	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	4				P67B-000GP	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	6				P67B-000GY	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	8				P67B-000GZ	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	10				P67B-000GR	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	12				P67B-000GS	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	14				P67B-000GT	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	16				P67B-000GU	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	18				P67B-000GV	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	20				P67B-000GW	Blind flange ASTM A105 Class 300 ASME B16.5 RF	

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GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000FT	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000G5	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000G6	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	6				P73T-000G7	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	8				P73T-000G8	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	10				P73T-000FX	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	12				P73T-000FY	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	14				P73T-000FZ	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	16				P73T-000G0	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	18				P73T-000G1	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	20				P73T-000G3	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1				P73T-000JA	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1.5				P73T-000JB	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	2				P73T-000JH	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	3				P73T-000JL	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	4				P73T-000JM	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	6				P73T-000JN	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	8				P73T-000JP	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	10				P73T-000JC	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	12				P73T-000JD	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	14				P73T-000JE	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	16				P73T-000JF	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	18				P73T-000JG	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	20				P73T-000JJ	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-10				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	12-20				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
781	1-6				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
781	8-20				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P81B-002KK	Gate valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service C.A.=6.0mm	
1	1.5				P81B-002KL	Gate valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service C.A.=6.0mm	
1	2				P81C-0084T	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service C.A.=6.0mm	
1	3				P81C-0084U	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service C.A.=6.0mm	
1	4				P81C-0084V	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service C.A.=6.0mm	
1	6				P81C-0084W	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service C.A.=6.0mm	
1	8				P81C-00926	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Severe wet H2S service Amine service C.A.=6.0mm	
1	10				P81C-008P1	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Severe wet H2S service Amine service C.A.=6.0mm	

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GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	12				P81C-008P2	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Severe wet H2S service Amine service C.A.=6.0mm	
1	14				P81C-0084Y	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Severe wet H2S service Amine service C.A.=6.0mm	
1	16				P81C-0084Z	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Severe wet H2S service Amine service C.A.=6.0mm	
1	18				P81C-00850	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Severe wet H2S service Amine service C.A.=6.0mm	
1	20				P81C-00851	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Severe wet H2S service Amine service C.A.=6.0mm	
4608	1				P81B-002XA	Gate valve ASTM A105 Class 300 API 602 BW both sides w/ nipples BE - NPT ASTM A106-B T=10.60MM-nipple Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service C.A.=6.0mm	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P82B-001V9	Globe valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service C.A.=6.0mm	
1	1.5				P82B-001VA	Globe valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service C.A.=6.0mm	
1	2				P82C-003WY	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service C.A.=6.0mm	
1	3				P82C-003WZ	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service C.A.=6.0mm	
1	4				P82C-003X0	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service C.A.=6.0mm	
1	6				P82C-003X1	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service C.A.=6.0mm	
1	8				P82C-004D7	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Severe wet H2S service Amine service C.A.=6.0mm	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P83B-001E3	Check valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Severe wet H2S service Amine service C.A.=6.0mm	
1	1.5				P83B-001E4	Check valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Severe wet H2S service Amine service C.A.=6.0mm	
1	2				P83C-003D3	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service Amine service C.A.=6.0mm	
1	3				P83C-003D5	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service Amine service C.A.=6.0mm	
1	4				P83C-003D6	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service Amine service C.A.=6.0mm	
1	6				P83C-003D7	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service Amine service C.A.=6.0mm	
1	8				P83C-003D8	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service Amine service C.A.=6.0mm	
1	10				P83C-003CY	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service Amine service C.A.=6.0mm	
1	12				P83C-003CZ	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service Amine service C.A.=6.0mm	
1	14				P83C-003D0	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service Amine service C.A.=6.0mm	
1	16				P83C-003D1	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service Amine service C.A.=6.0mm	
1	18				P83C-003D2	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service Amine service C.A.=6.0mm	
1	20				P83C-003D4	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service Amine service C.A.=6.0mm	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P71B-000B3	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71B-000B4	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	2				P71B-000B6	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	3				P71B-000B7	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	4				P71B-000B8	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	6				P71B-000B9	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	8				P71B-000BA	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	10				P71B-000B5	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	12				P71B-000BB	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	

PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000FA	Paddle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	16				P72B-000FB	Paddle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	

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PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	18				P72B-000FC	Paddle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	20				P72B-000FD	Paddle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	

PADDLE SPACER (PS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000FG	Paddle spacer ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	16				P72B-000FH	Paddle spacer ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	18				P72B-000FJ	Paddle spacer ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	20				P72B-000FK	Paddle spacer ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	

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BOLT TABLE (B_B4A5 , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-008T0		
1	4	0.625	80	P80S-00909		
1.5	4	0.750	95	P80S-005Z4		
2	8	0.625	90	P80S-0090B		
3	8	0.750	110	P80S-0090F		
4	8	0.750	115	P80S-0090G		
6	12	0.750	125	P80S-0090J		
8	12	0.875	140	P80S-005ZD		
10	16	1.000	160	P80S-0061E		
12	16	1.125	175	P80S-0064S		
14	20	1.125	180	P80S-0064T		
16	20	1.250	190	P80S-00689		
18	24	1.250	200	P80S-0068B		
20	24	1.250	210	P80S-0068D		

BOLT TABLE (B_B4A5_781 , STUD ASME RF, OPTION CODE 781)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	80			
1	4	0.625	95	P80S-0090C		
1.5	4	0.750	110	P80S-0090F		
2	8	0.625	110	P80S-008T8		
3	8	0.750	130	P80S-0090K		
4	8	0.875	150	P80S-005ZF		
6	12	1.000	175	P80S-0061H		
8	12	1.125	195	P80S-0064W		
10	16	1.250	250	P80S-0068M		
12	20	1.250	255	P80S-0068N		
14	20	1.375	270	P80S-006HV		
16	20	1.500	295	P80S-006LP		
18	20	1.625	320	P80S-00A5E		
20	24	1.625	335	P80S-00A5H		

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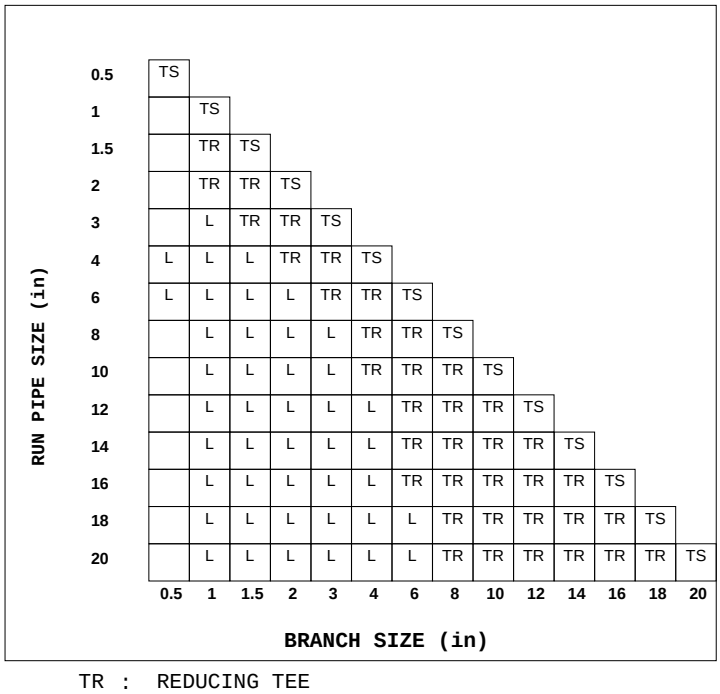
BRANCH TABLE (T_B4A5)



TR : REDUCING TEE
TS : STRAIGHT TEE
L : OUTLET

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PIPING CLASS

B4A704 REV NO. 2

Material : Killed CS
Rating : ASME CLASS 300
Flange Face : RF
C.A.(mm) : 6.00
Gasket : Spiral Wound
Service : PROCESS - WET SEVERE SOUR SERVICE SUBJECT TO NACE + HIC STD + H2 SERVICE
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
2	USE OF SOFT SEATED BALL, PLUG AND BUTTERFLY VALVES SHALL BE LIMITED TO MAXIMUM OF 204DEGC (400DEGF)
5	BOLTING CONFIRMING TO B7M / 2HM SHALL BE USED UNDER CONDITIONS (A) DIRECT EXPOSURE TO SOUR ENVIRONMENTS (B) WHEN THE BOLTING WILL BE BURIED OR INSULATED
27	PWHT OF CARBON STEEL PIPING IN WET H2S, CAUSTIC AND AMINE SERVICES SHALL BE IN ACCORDANCE WITH SECTION 10.2, 10.3, AND 10.4 OF PROJECT SPECIFICATION 3550-8440-SP-0002 MATERIALS REQUIREMENTS FOR PRESSURISED EQUIPMENT AND PIPING. FOR CAUSTIC AND AMINE SERVICE THE FOLLOWING SHALL APPLY: - PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF ALL SITE PIPING FABRICATION WELDS IS REQUIRED FOR ALL WALL THICKNESSES. FOR MODERATE AND SEVERE WET H2S SERVICE THE FOLLOWING SHALL APPLY: PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF SITE FABRICATION CIRCUMFERENTIAL OR BRANCH WELDS IS NOT REQUIRED IF WELDS ARE MULTIPASS AND IN ACCORDANCE WITH PARA 10.2.12 OF PROJECT SPECIFICATION 3550-8440-SP-0002. FOR SERVICES MEETING THE WET H2S CRITERIA AND CAUSTIC OR AMINE CRITERIA THE MORE STRINGENT PWHT REQUIREMENT SHALL GOVERN.

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
541	NPT(F) (CA,F)
781	CLASS 600 (B,F,G)
4608	VALVE WITH NIPPLES (V)

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PIPING CLASS
B4A704 REV NO. 2

PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		XXS		P01A-0014U	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1.5		XXS		P01A-00162	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	2		XXS		P01A-001R0	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	3		SCH160		P01A-001S5	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	4		SCH120		P01A-001TM	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	6		XS		P01A-000ZF	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	8		XS		P01A-000ZJ	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	10		XS		P01A-000Y2	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	12		SCH60		P01A-001LH	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	14		SCH60		P01A-001MU	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	16		XS		P01A-000YS	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	18		SCH40		P01A-0048V	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		XXS		P02A-000XJ	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1.5		XXS		P02A-002N4	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	2		XXS		P02A-00111	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		SCH160		P02A-000U4	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		SCH120		P02A-000U5	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		XS		P02A-000DA	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		XS		P02A-000DG	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	10		XS		P02A-000BN	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	12		SCH60		P02A-0019S	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	14		SCH60		P02A-000UC	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	16		XS		P02A-000CE	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	18		SCH40		P02A-000U3	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		XXS		P03A-000U8	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1.5		XXS		P03A-002KD	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	2		XXS		P03A-000XH	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		SCH160		P03A-000RB	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		SCH120		P03A-000RC	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		XS		P03A-000B8	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		XS		P03A-000BC	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	10		XS		P03A-000A3	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	12		SCH60		P03A-0015P	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	14		SCH60		P03A-000RZ	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	16		XS		P03A-000AP	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	18		SCH40		P03A-000RA	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		XXS		P21A-002DP	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5		XXS		P21A-003KU	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2		XXS		P21A-002G3	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		SCH160		P21A-002AG	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		SCH120		P21A-002AH	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6		XS		P21A-001D4	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8		XS		P21A-001D6	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10		XS		P21A-001C0	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12		SCH60		P21A-002PC	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14		SCH60		P21A-002AK	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16		XS		P21A-001CG	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18		SCH40		P21A-002AF	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5	1	XXS	XXS	P24A-00H61	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	XXS	XXS	P24A-00H63	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	XXS	XXS	P24A-006TT	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	SCH160	XXS	P24A-0045F	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	SCH160	XXS	P24A-0056E	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	SCH120	XXS	P24A-00M3U	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	SCH120	SCH160	P24A-0045E	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	XS	SCH160	P24A-00GDY	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	XS	SCH120	P24A-00GDZ	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	XS	SCH120	P24A-00GE0	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	XS	XS	P24A-0024M	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	XS	SCH120	P24A-00GF8	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	XS	XS	P24A-00241	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	XS	XS	P24A-0024K	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	SCH60	XS	P24A-00GE1	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH60	XS	P24A-0067T	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH60	XS	P24A-0067S	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	SCH60	XS	P24A-00GUS	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	SCH60	XS	P24A-00GE2	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	SCH60	XS	P24A-0067U	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	SCH60	SCH60	P24A-0067V	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	6	XS	XS	P24A-0025G	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	XS	XS	P24A-0025P	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	XS	XS	P24A-00242	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	XS	SCH60	P24A-00GNZ	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	XS	SCH60	P24A-00GP0	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	8	SCH40	XS	P24A-00P1K	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	10	SCH40	XS	P24A-00HUS	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	12	SCH40	SCH60	P24A-00P1H	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	14	SCH40	SCH60	P24A-00P1J	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	16	SCH40	XS	P24A-00HUV	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5	1	XXS	XXS	P27A-004NR	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	XXS	XXS	P27A-0033N	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	XXS	XXS	P27A-00339	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	SCH160	XXS	P27A-002NG	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	SCH160	XXS	P27A-0038P	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	1.5	SCH120	XXS	P27A-002NH	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	SCH120	XXS	P27A-004KC	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	SCH120	SCH160	P27A-002NM	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	XS	SCH160	P27A-007P7	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	XS	SCH120	P27A-007PZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	XS	SCH120	P27A-004KD	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	XS	XS	P27A-001EY	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	XS	SCH120	P27A-004PY	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	XS	XS	P27A-001F2	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	XS	XS	P27A-001FR	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	SCH60	XS	P27A-0048V	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH60	XS	P27A-0048W	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH60	XS	P27A-0048U	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	SCH60	XS	P27A-0048Z	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	SCH60	XS	P27A-00490	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	SCH60	XS	P27A-0048X	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	SCH60	SCH60	P27A-0048Y	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	XS	XS	P27A-001GV	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	XS	XS	P27A-001EN	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	XS	SCH60	P27A-0056B	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	16	14	XS	SCH60	P27A-0057V	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	10	SCH40	XS	P27A-005B8	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	12	SCH40	SCH60	P27A-005DB	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	14	SCH40	SCH60	P27A-005FA	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	16	SCH40	XS	P27A-005HG	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5	1	XXS	XXS	P28A-008W0	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	XXS	XXS	P28A-004KN	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	XXS	XXS	P28A-004KP	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	SCH160	XXS	P28A-002P1	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	SCH160	XXS	P28A-00386	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	1.5	SCH120	XXS	P28A-002P0	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	SCH120	XXS	P28A-004KR	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	SCH120	SCH160	P28A-002P2	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	XS	SCH160	P28A-0085V	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	XS	SCH120	P28A-0085W	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	XS	SCH120	P28A-004KS	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	XS	XS	P28A-001FT	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	XS	SCH120	P28A-0085X	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	XS	XS	P28A-001FR	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	XS	XS	P28A-001GT	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	SCH60	XS	P28A-0048L	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH60	XS	P28A-0048M	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH60	XS	P28A-0048K	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	SCH60	XS	P28A-0048R	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	SCH60	XS	P28A-0048S	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	SCH60	XS	P28A-0048N	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	SCH60	SCH60	P28A-0048P	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	XS	XS	P28A-0018A	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	XS	XS	P28A-001F9	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	XS	SCH60	P28A-008FA	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	XS	SCH60	P28A-008FB	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	10	SCH40	XS	P28A-009DD	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	12	SCH40	SCH60	P28A-00EU8	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	14	SCH40	SCH60	P28A-00EU9	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	16	SCH40	XS	P28A-009DG	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		XXS		P29A-00338	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5		XXS		P29A-00339	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	2		XXS		P29A-0033A	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	3		SCH160		P29A-001W6	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	4		SCH120		P29A-001W9	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	6		XS		P29A-001WA	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	8		XS		P29A-001WB	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	10		XS		P29A-001VY	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	12		SCH60		P29A-001WU	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	14		SCH60		P29A-001WV	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	16		XS		P29A-001W1	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	18		SCH40		P29A-003VT	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
541	1				P29B-0000Z	Cap ASTM A105 Class 6000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		10.60mm		P41A-001AT	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		10.60mm		P41A-001AU	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

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OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	1	SCH160	XXS	P31B-00B4A	Outlet ASTM A105 MSS SP-97 BW	
1	4	1	SCH120	XXS	P31B-00B08	Outlet ASTM A105 MSS SP-97 BW	
1	6	1	XS	XXS	P31B-00AYZ	Outlet ASTM A105 MSS SP-97 BW	
1	8	1	XS	XXS	P31B-00AUZ	Outlet ASTM A105 MSS SP-97 BW	
1	10	1	XS	XXS	P31B-00BW4	Outlet ASTM A105 MSS SP-97 BW	
1	12	1	SCH60	XXS	P31B-00BRT	Outlet ASTM A105 MSS SP-97 BW	
1	14	1	SCH60	XXS	P31B-00BRB	Outlet ASTM A105 MSS SP-97 BW	
1	16	1	XS	XXS	P31B-00BCD	Outlet ASTM A105 MSS SP-97 BW	
1	18	1	SCH40	XXS	P31B-01182	Outlet ASTM A105 MSS SP-97 BW	
1	4	1.5	SCH120	XXS	P31B-00BNX	Outlet ASTM A105 MSS SP-97 BW	
1	6	1.5	XS	XXS	P31B-00BJ4	Outlet ASTM A105 MSS SP-97 BW	
1	8	1.5	XS	XXS	P31B-00BFF	Outlet ASTM A105 MSS SP-97 BW	
1	10	1.5	XS	XXS	P31B-00CER	Outlet ASTM A105 MSS SP-97 BW	
1	12	1.5	SCH60	XXS	P31B-00CDZ	Outlet ASTM A105 MSS SP-97 BW	
1	14	1.5	SCH60	XXS	P31B-00C9J	Outlet ASTM A105 MSS SP-97 BW	
1	16	1.5	XS	XXS	P31B-00C8P	Outlet ASTM A105 MSS SP-97 BW	
1	18	1.5	SCH40	XXS	P31B-01183	Outlet ASTM A105 MSS SP-97 BW	
1	6	2	XS	XXS	P31B-00ZHK	Outlet ASTM A105 MSS SP-97 BW	
1	8	2	XS	XXS	P31B-0112W	Outlet ASTM A105 MSS SP-97 BW	
1	10	2	XS	XXS	P31B-0112V	Outlet ASTM A105 MSS SP-97 BW	
1	12	2	SCH60	XXS	P31B-00WGW	Outlet ASTM A105 MSS SP-97 BW	
1	14	2	SCH60	XXS	P31B-00WGY	Outlet ASTM A105 MSS SP-97 BW	
1	16	2	XS	XXS	P31B-011BM	Outlet ASTM A105 MSS SP-97 BW	
1	18	2	SCH40	XXS	P31B-011BN	Outlet ASTM A105 MSS SP-97 BW	
1	8	3	XS	SCH160	P31B-00A33	Outlet ASTM A105 MSS SP-97 BW	
1	10	3	XS	SCH160	P31B-009D0	Outlet ASTM A105 MSS SP-97 BW	
1	12	3	SCH60	SCH160	P31B-0097A	Outlet ASTM A105 MSS SP-97 BW	
1	14	3	SCH60	SCH160	P31B-0091F	Outlet ASTM A105 MSS SP-97 BW	
1	16	3	XS	SCH160	P31B-00903	Outlet ASTM A105 MSS SP-97 BW	
1	18	3	SCH40	SCH160	P31B-01184	Outlet ASTM A105 MSS SP-97 BW	
1	12	4	SCH60	SCH120	P31B-00957	Outlet ASTM A105 MSS SP-97 BW	
1	14	4	SCH60	SCH120	P31B-008ZD	Outlet ASTM A105 MSS SP-97 BW	
1	16	4	XS	SCH120	P31B-00TU5	Outlet ASTM A105 MSS SP-97 BW	
1	18	4	SCH40	SCH120	P31B-01185	Outlet ASTM A105 MSS SP-97 BW	
1	18	6	SCH40	XS	P31B-008RU	Outlet ASTM A105 MSS SP-97 BW	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P30B-0002F	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1.5				P30B-0002G	Plug ASTM A105 ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		XXS		P61B-003MB	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	1.5		XXS		P61B-003MR	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	2		XXS		P61B-003MS	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	3		SCH160		P61B-003JL	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	4		SCH120		P61B-003MU	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	6		XS		P61B-001FE	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	8		XS		P61B-001FV	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	10		XS		P61B-001FD	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	12		SCH60		P61B-005XC	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	14		SCH60		P61B-005XD	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	16		XS		P61B-001HU	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	18		SCH40		P61B-001HX	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
541	1				P61B-003U5	Flange NPT ASTM A105 Class 300 ASME B16.5 RF	
781	1		XXS		P61B-003TC	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	1.5		XXS		P61B-009N1	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	2		XXS		P61B-003JR	Flange WN ASTM A105 Class 600 ASME B16.5 RF	

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FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
781	3		SCH160		P61B-003JS	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	4		SCH120		P61B-005X8	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	6		XS		P61B-001T1	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	8		XS		P61B-001UC	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	10		XS		P61B-001JN	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	12		SCH60		P61B-003XC	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	14		SCH60		P61B-003XD	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	16		XS		P61B-001R3	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	18		SCH40		P61B-001G1	Flange WN ASTM A105 Class 600 ASME B16.5 RF	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P67B-000GK	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	1.5				P67B-000GL	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	2				P67B-000GM	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	3				P67B-000GN	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	4				P67B-000GP	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	6				P67B-000GY	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	8				P67B-000GZ	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	10				P67B-000GR	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	12				P67B-000GS	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	14				P67B-000GT	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	16				P67B-000GU	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	18				P67B-000GV	Blind flange ASTM A105 Class 300 ASME B16.5 RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000G5	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000G6	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	6				P73T-000G7	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	8				P73T-000G8	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	10				P73T-000FX	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	12				P73T-000FY	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	14				P73T-000FZ	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	16				P73T-000G0	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	18				P73T-000G1	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1				P73T-000JA	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1.5				P73T-000JB	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	2				P73T-000JH	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	3				P73T-000JL	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	4				P73T-000JM	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	6				P73T-000JN	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	8				P73T-000JP	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	10				P73T-000JC	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	12				P73T-000JD	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	14				P73T-000JE	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	16				P73T-000JF	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	18				P73T-000JG	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

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BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1-10				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	12-18				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
781	1-6				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
781	8-18				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P81B-0019H	Gate valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service C.A.=6.0mm	
1	1.5				P81B-0019J	Gate valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service C.A.=6.0mm	
1	2				P81C-006RB	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service C.A.=6.0mm Licensor-4	
1	3				P81C-006RC	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service C.A.=6.0mm Licensor-4	
1	4				P81C-006RD	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service C.A.=6.0mm Licensor-4	
1	6				P81C-006RE	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service C.A.=6.0mm Licensor-4	
1	8				P81C-00927	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Severe wet H2S service C.A.=6.0mm Licensor-4	
1	10				P81C-006RG	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Severe wet H2S service C.A.=6.0mm Licensor-4	
1	12				P81C-006RH	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Severe wet H2S service C.A.=6.0mm Licensor-4	
1	14				P81C-006RJ	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Severe wet H2S service C.A.=6.0mm Licensor-4	
1	16				P81C-008RR	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Severe wet H2S service C.A.=6.0mm Licensor-4	
1	18				P81C-008RS	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Severe wet H2S service C.A.=6.0mm Licensor-4	
4608	1				P81B-002XB	Gate valve ASTM A105 Class 300 API 602 BW both sides w/ nipples BE - NPT ASTM A106-B T=10.60MM-nipple Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service C.A.=6.0mm	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P82B-0012G	Globe valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service C.A.=6.0mm	
1	1.5				P82B-0012H	Globe valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service C.A.=6.0mm	
1	2				P82C-00396	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service C.A.=6.0mm Licensor-4	
1	3				P82C-00397	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service C.A.=6.0mm Licensor-4	
1	4				P82C-00398	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service C.A.=6.0mm Licensor-4	
1	6				P82C-00399	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service C.A.=6.0mm Licensor-4	
1	8				P82C-004D8	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Severe wet H2S service C.A.=6.0mm Licensor-4	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P83B-000UX	Check valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Severe wet H2S service C.A.=6.0mm	
1	1.5				P83B-000UY	Check valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Severe wet H2S service C.A.=6.0mm	
1	2				P83C-0034Y	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service C.A.=6.0mm Licensor-4	
1	3				P83C-0034Z	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service C.A.=6.0mm Licensor-4	
1	4				P83C-00350	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service C.A.=6.0mm Licensor-4	
1	6				P83C-00351	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service C.A.=6.0mm Licensor-4	
1	8				P83C-00352	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service C.A.=6.0mm Licensor-4	
1	10				P83C-0034V	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service C.A.=6.0mm Licensor-4	
1	12				P83C-0034W	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service C.A.=6.0mm Licensor-4	
1	14				P83C-0034X	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service C.A.=6.0mm Licensor-4	
1	16				P83C-003TE	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service C.A.=6.0mm Licensor-4	
1	18				P83C-003TF	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service C.A.=6.0mm Licensor-4	

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SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P71B-000B3	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71B-000B4	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	2				P71B-000B6	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	3				P71B-000B7	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	4				P71B-000B8	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	6				P71B-000B9	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	8				P71B-000BA	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	10				P71B-000B5	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	12				P71B-000BB	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	

PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000FA	Paddle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	16				P72B-000FB	Paddle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	18				P72B-000FC	Paddle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	

PADDLE SPACER (PS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000FG	Paddle spacer ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	16				P72B-000FH	Paddle spacer ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	18				P72B-000FJ	Paddle spacer ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	

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BOLT TABLE (B_B4A704 , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
1	4	0.625	80	P80S-00909		
1.5	4	0.750	95	P80S-005Z4		
2	8	0.625	90	P80S-0090B		
3	8	0.750	110	P80S-0090F		
4	8	0.750	115	P80S-0090G		
6	12	0.750	125	P80S-0090J		
8	12	0.875	140	P80S-005ZD		
10	16	1.000	160	P80S-0061E		
12	16	1.125	175	P80S-0064S		
14	20	1.125	180	P80S-0064T		
16	20	1.250	190	P80S-00689		
18	24	1.250	200	P80S-0068B		

BOLT TABLE (B_B4A704_781 , STUD ASME RF, OPTION CODE 781)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
1	4	0.625	95	P80S-0090C		
1.5	4	0.750	110	P80S-0090F		
2	8	0.625	110	P80S-008T8		
3	8	0.750	130	P80S-0090K		
4	8	0.875	150	P80S-005ZF		
6	12	1.000	175	P80S-0061H		
8	12	1.125	195	P80S-0064W		
10	16	1.250	250	P80S-0068M		
12	20	1.250	255	P80S-0068N		
14	20	1.375	270	P80S-006HV		
16	20	1.500	295	P80S-006LP		
18	20	1.625	320	P80S-00A5E		

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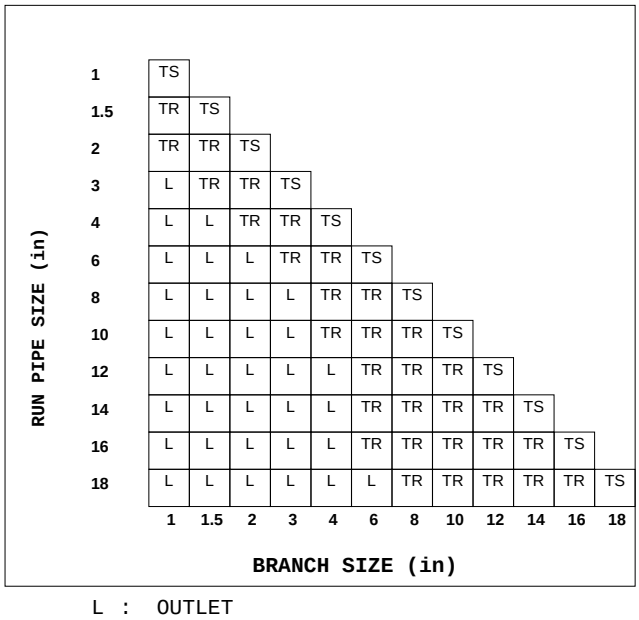
BRANCH TABLE (T_B4A704)



L : OUTLET
TS : STRAIGHT TEE
TR : REDUCING TEE

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Material : Killed CS
Rating : ASME CLASS 300
Flange Face : RF
C.A.(mm) : 6.00
Gasket : Spiral Wound
Service : PROCESS - GENERAL PROCESS NON SOUR, NON CORROSIVE
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED

DETAIL NOTES :

NO.	DESCRIPTION
37	TO BE USED ONLY FOR ORIFICE FLANGE ASSEMLY UPTO 425 DEG C

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
200	WITH JACK SCREW (FO)
541	NPT(F) (CA,F,L)
781	CLASS 600 (B,F,G)
4001	ALTERNATIVE MATERIAL FOR INSTRUMENT CONNECTION (F,P,V)
4405	FLANGE NPT WITH ALTERNATIVE MATERIAL FOR INSTRUMENT CONNECTION (F)
4608	VALVE WITH NIPPLES (V)

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PIPING CLASS
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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		XXS		P01A-0078C	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE Licensor-1	
1	1.5		XXS		P01A-0078D	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE Licensor-1	
1	2		SCH160		P01A-007A4	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Licensor-1	
1	3		SCH160		P01A-007A5	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Licensor-1	
1	4		SCH120		P01A-007A6	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Licensor-1	
1	6		XS		P01A-007A7	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Licensor-1	
1	8		XS		P01A-007A8	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Licensor-1	
1	10		XS		P01A-007A0	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Licensor-1	
1	12		SCH60		P01A-007A1	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Licensor-1	
1	14		SCH60		P01A-007A2	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Licensor-1	
1	16		XS		P01A-007A3	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Licensor-1	
1	18		SCH30		P01A-007A9	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE Licensor-1	
4001	0.5		SCH80S		P01J-0014A	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE	37

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		XXS		P02A-003PU	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	1.5		XXS		P02A-003PV	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	2		SCH160		P02A-003S8	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	3		SCH160		P02A-003S9	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	4		SCH120		P02A-003SA	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	6		XS		P02A-003SB	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	8		XS		P02A-003SC	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	10		XS		P02A-003S3	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	12		SCH60		P02A-003S4	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	14		SCH60		P02A-003S5	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	16		XS		P02A-003S6	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	18		SCH30		P02A-003S7	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		XXS		P03A-003MG	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	1.5		XXS		P03A-003MH	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	2		SCH160		P03A-003NX	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	3		SCH160		P03A-003NY	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	4		SCH120		P03A-003NZ	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	6		XS		P03A-003P0	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	8		XS		P03A-003P1	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	10		XS		P03A-003NS	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	12		SCH60		P03A-003NT	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	14		SCH60		P03A-003NU	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	16		XS		P03A-003NV	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	18		SCH30		P03A-003NW	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		XXS		P21A-0048B	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	1.5		XXS		P21A-0048C	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	2		SCH160		P21A-0049L	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	3		SCH160		P21A-0049M	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	4		SCH120		P21A-0049N	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	6		XS		P21A-0049P	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	8		XS		P21A-0049R	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	10		XS		P21A-0049G	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	12		SCH60		P21A-0049H	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	14		SCH60		P21A-0049J	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	16		XS		P21A-0049K	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	18		SCH30		P21A-0049S	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	

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REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5	1	XXS	XXS	P24A-00JZS	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	2	1	SCH160	XXS	P24A-00K33	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	2	1.5	SCH160	XXS	P24A-00K34	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	3	1.5	SCH160	XXS	P24A-00K36	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	3	2	SCH160	SCH160	P24A-00K37	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	4	2	SCH120	SCH160	P24A-00K3A	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	4	3	SCH120	SCH160	P24A-00K3B	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	6	3	XS	SCH160	P24A-00K3C	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	6	4	XS	SCH120	P24A-00K3D	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	8	4	XS	SCH120	P24A-00K3E	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	8	6	XS	XS	P24A-00K3F	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	10	4	XS	SCH120	P24A-00K3G	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	10	6	XS	XS	P24A-00K3H	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	10	8	XS	XS	P24A-00K3J	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	12	6	SCH60	XS	P24A-00K3L	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	12	8	SCH60	XS	P24A-00K3M	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	12	10	SCH60	XS	P24A-00K3K	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	14	6	SCH60	XS	P24A-00K3R	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	14	8	SCH60	XS	P24A-00K3S	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	14	10	SCH60	XS	P24A-00K3N	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	14	12	SCH60	SCH60	P24A-00K3P	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	16	6	XS	XS	P24A-00K3W	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	16	8	XS	XS	P24A-00K3X	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	16	10	XS	XS	P24A-00K3T	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	16	12	XS	SCH60	P24A-00K3U	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	16	14	XS	SCH60	P24A-00K3V	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	18	8	SCH30	XS	P24A-00K42	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	18	10	SCH30	XS	P24A-00K3Y	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	18	12	SCH30	SCH60	P24A-00K3Z	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	18	14	SCH30	SCH60	P24A-00K40	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	18	16	SCH30	XS	P24A-00K41	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5	1	XXS	XXS	P27A-00EK4	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	2	1	SCH160	XXS	P27A-00END	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	2	1.5	SCH160	XXS	P27A-00ENE	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	3	1.5	SCH160	XXS	P27A-00ENF	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	3	2	SCH160	SCH160	P27A-00ENG	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	4	1.5	SCH120	XXS	P27A-00ENH	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	4	2	SCH120	SCH160	P27A-00ENJ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	4	3	SCH120	SCH160	P27A-00ENK	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	6	3	XS	SCH160	P27A-00ENL	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	6	4	XS	SCH120	P27A-00ENM	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	8	4	XS	SCH120	P27A-00ENN	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	8	6	XS	XS	P27A-00ENP	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	10	4	XS	SCH120	P27A-00ENR	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	10	6	XS	XS	P27A-00ENS	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	10	8	XS	XS	P27A-00ENT	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	12	6	SCH60	XS	P27A-00ENV	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	12	8	SCH60	XS	P27A-00ENW	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	12	10	SCH60	XS	P27A-00ENU	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	14	6	SCH60	XS	P27A-00ENZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	14	8	SCH60	XS	P27A-00EP0	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	14	10	SCH60	XS	P27A-00ENX	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	14	12	SCH60	SCH60	P27A-00ENY	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	16	8	XS	XS	P27A-00EP4	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	16	10	XS	XS	P27A-00EP1	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	16	12	XS	SCH60	P27A-00EP2	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	16	14	XS	SCH60	P27A-00EP3	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	18	10	SCH30	XS	P27A-00EP5	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	18	12	SCH30	SCH60	P27A-00EP6	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	18	14	SCH30	SCH60	P27A-00EP7	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	18	16	SCH30	XS	P27A-00EP8	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5	1	XXS	XXS	P28A-00BNE	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	2	1	SCH160	XXS	P28A-00BT5	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	2	1.5	SCH160	XXS	P28A-00BT6	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	3	1.5	SCH160	XXS	P28A-00BT7	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	3	2	SCH160	SCH160	P28A-00BT8	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	4	1.5	SCH120	XXS	P28A-00BT9	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	4	2	SCH120	SCH160	P28A-00BTA	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	4	3	SCH120	SCH160	P28A-00BTB	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	6	3	XS	SCH160	P28A-00BTC	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	6	4	XS	SCH120	P28A-00BTD	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	8	4	XS	SCH120	P28A-00BTE	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	8	6	XS	XS	P28A-00BTF	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	10	4	XS	SCH120	P28A-00BTG	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	10	6	XS	XS	P28A-00BTH	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	10	8	XS	XS	P28A-00BTJ	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	12	6	SCH60	XS	P28A-00BTL	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	12	8	SCH60	XS	P28A-00BTM	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	12	10	SCH60	XS	P28A-00BTK	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	14	6	SCH60	XS	P28A-00BTR	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	14	8	SCH60	XS	P28A-00BTS	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	14	10	SCH60	XS	P28A-00BTN	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	14	12	SCH60	SCH60	P28A-00BTP	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	16	8	XS	XS	P28A-00BTW	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	16	10	XS	XS	P28A-00BTT	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	16	12	XS	SCH60	P28A-00BTU	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	16	14	XS	SCH60	P28A-00BTV	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	18	10	SCH30	XS	P28A-00BTX	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	18	12	SCH30	SCH60	P28A-00BTY	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	18	14	SCH30	SCH60	P28A-00BTZ	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	18	16	SCH30	XS	P28A-00BU0	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		XXS		P29A-0031W	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	1.5		XXS		P29A-0031X	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	2		SCH160		P29A-0033S	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	3		SCH160		P29A-0033T	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	4		SCH120		P29A-0033U	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	6		XS		P29A-0033V	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	8		XS		P29A-0033W	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	10		XS		P29A-0033L	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	12		SCH60		P29A-0033M	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	14		SCH60		P29A-0033N	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	16		XS		P29A-0033P	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	18		SCH30		P29A-0033R	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
541	1				P29B-0006N	Cap ASTM A105 Class 6000 ASME B16.11 NPT Licensor-1	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		10.60mm		P41A-001AR	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Licensor-1	
1	1.5		10.60mm		P41A-001AS	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Licensor-1	

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OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
541	1.5	1			P31B-0118C	Outlet ASTM A105 Class 6000 MSS SP-97 NPT Licensor-1	
541	2 - 2.5	1			P31B-0136R	Outlet ASTM A105 Class 6000 MSS SP-97 NPT Licensor-1	
541	3 - 10	1			P31B-0136S	Outlet ASTM A105 Class 6000 MSS SP-97 NPT Licensor-1	
541	12 and larger	1			P31B-0136T	Outlet ASTM A105 Class 6000 MSS SP-97 NPT Licensor-1	
1	3	1	SCH160	XXS	P31B-00XJX	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	4	1	SCH120	XXS	P31B-00XJY	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	6	1	XS	XXS	P31B-00XK0	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	8	1	XS	XXS	P31B-00XK3	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	10	1	XS	XXS	P31B-00XK7	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	12	1	SCH60	XXS	P31B-00XKB	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	14	1	SCH60	XXS	P31B-00XKG	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	16	1	XS	XXS	P31B-00XKM	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	18	1	SCH30	XXS	P31B-00YFK	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	4	1.5	SCH120	XXS	P31B-00XJZ	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	6	1.5	XS	XXS	P31B-00XK1	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	8	1.5	XS	XXS	P31B-00XK4	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	10	1.5	XS	XXS	P31B-00XK8	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	12	1.5	SCH60	XXS	P31B-00XKC	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	14	1.5	SCH60	XXS	P31B-00XKH	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	16	1.5	XS	XXS	P31B-00XKN	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	18	1.5	SCH30	XXS	P31B-00XKT	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	6	2	XS	SCH160	P31B-00XK2	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	8	2	XS	SCH160	P31B-00XK5	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	10	2	XS	SCH160	P31B-00XK9	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	12	2	SCH60	SCH160	P31B-00XKD	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	14	2	SCH60	SCH160	P31B-00XKJ	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	16	2	XS	SCH160	P31B-00XKP	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	18	2	SCH30	SCH160	P31B-00XKU	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	8	3	XS	SCH160	P31B-00XK6	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	10	3	XS	SCH160	P31B-00XKA	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	12	3	SCH60	SCH160	P31B-00XKE	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	14	3	SCH60	SCH160	P31B-00XKK	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	16	3	XS	SCH160	P31B-00XKR	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	18	3	SCH30	SCH160	P31B-00XKV	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	12	4	SCH60	SCH120	P31B-00XKF	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	14	4	SCH60	SCH120	P31B-00XKL	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	16	4	XS	SCH120	P31B-00XKS	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	18	4	SCH30	SCH120	P31B-00XKW	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	18	6	SCH30	XS	P31B-00XKX	Outlet ASTM A105 MSS SP-97 BW Licensor-1	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P30B-00069	Plug ASTM A105 ASME B16.11 NPT Round head Licensor-1	
1	1.5				P30B-0006A	Plug ASTM A105 ASME B16.11 NPT Round head Licensor-1	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		XXS		P61B-009S3	Flange WN ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
1	1.5		XXS		P61B-009S4	Flange WN ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
1	2		SCH160		P61B-009WT	Flange WN ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
1	3		SCH160		P61B-009WU	Flange WN ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
1	4		SCH120		P61B-009WV	Flange WN ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
1	6		XS		P61B-009WW	Flange WN ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
1	8		XS		P61B-009WX	Flange WN ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
1	10		XS		P61B-009WM	Flange WN ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
1	12		SCH60		P61B-009WN	Flange WN ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
1	14		SCH60		P61B-009WP	Flange WN ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
1	16		XS		P61B-009WR	Flange WN ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
1	18		SCH30		P61B-009WS	Flange WN ASTM A105 Class 300 ASME B16.5 RF Licensor-1	

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FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
4001	0.5		SCH80S		P61K-002LC	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF	37
4405	0.5				P61K-0045U	Flange NPT ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF	37
541	1				P61B-00CX5	Flange NPT ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
781	1		XXS		P61B-009WY	Flange WN ASTM A105 Class 600 ASME B16.5 RF Licensor-1	
781	1.5		XXS		P61B-009WZ	Flange WN ASTM A105 Class 600 ASME B16.5 RF Licensor-1	
781	2		SCH160		P61B-009X5	Flange WN ASTM A105 Class 600 ASME B16.5 RF Licensor-1	
781	3		SCH160		P61B-009X6	Flange WN ASTM A105 Class 600 ASME B16.5 RF Licensor-1	
781	4		SCH120		P61B-009X7	Flange WN ASTM A105 Class 600 ASME B16.5 RF Licensor-1	
781	6		XS		P61B-009X8	Flange WN ASTM A105 Class 600 ASME B16.5 RF Licensor-1	
781	8		XS		P61B-009X9	Flange WN ASTM A105 Class 600 ASME B16.5 RF Licensor-1	
781	10		XS		P61B-009X0	Flange WN ASTM A105 Class 600 ASME B16.5 RF Licensor-1	
781	12		SCH60		P61B-009X1	Flange WN ASTM A105 Class 600 ASME B16.5 RF Licensor-1	
781	14		SCH60		P61B-009X2	Flange WN ASTM A105 Class 600 ASME B16.5 RF Licensor-1	
781	16		XS		P61B-009X3	Flange WN ASTM A105 Class 600 ASME B16.5 RF Licensor-1	
781	18		SCH30		P61B-009X4	Flange WN ASTM A105 Class 600 ASME B16.5 RF Licensor-1	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P67B-002EK	Blind flange ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
1	1.5				P67B-002EL	Blind flange ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
1	2				P67B-002ET	Blind flange ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
1	3				P67B-002EU	Blind flange ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
1	4				P67B-002EV	Blind flange ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
1	6				P67B-002EW	Blind flange ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
1	8				P67B-002EX	Blind flange ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
1	10				P67B-002EM	Blind flange ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
1	12				P67B-002EN	Blind flange ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
1	14				P67B-002EP	Blind flange ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
1	16				P67B-002ER	Blind flange ASTM A105 Class 300 ASME B16.5 RF Licensor-1	
1	18				P67B-002ES	Blind flange ASTM A105 Class 300 ASME B16.5 RF Licensor-1	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000FT	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000G5	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000G6	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	6				P73T-000G7	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	8				P73T-000G8	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	10				P73T-000FX	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	12				P73T-000FY	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	14				P73T-000FZ	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	16				P73T-000G0	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	18				P73T-000G1	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1				P73T-000JA	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1.5				P73T-000JB	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	2				P73T-000JH	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	3				P73T-000JL	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	4				P73T-000JM	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	6				P73T-000JN	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

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GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
781	8				P73T-000JP	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	10				P73T-000JC	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	12				P73T-000JD	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	14				P73T-000JE	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	16				P73T-000JF	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	18				P73T-000JG	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-10				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	12-18				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
781	1-6				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
781	8-18				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P81B-001VM	Gate valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated C.A.=6.0mm Licensor-1	
1	1.5				P81B-001VN	Gate valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated C.A.=6.0mm Licensor-1	
1	2				P81C-0062Z	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated C.A.=6.0mm Licensor-1	
1	3				P81C-00630	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated C.A.=6.0mm Licensor-1	
1	4				P81C-00631	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated C.A.=6.0mm Licensor-1	
1	6				P81C-00632	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated C.A.=6.0mm Licensor-1	
1	8				P81C-00918	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated C.A.=6.0mm Licensor-1	
1	10				P81C-00634	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated C.A.=6.0mm Licensor-1	
1	12				P81C-00635	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated C.A.=6.0mm Licensor-1	
1	14				P81C-00636	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated C.A.=6.0mm Licensor-1	
1	16				P81C-00637	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated C.A.=6.0mm Licensor-1	
4001	0.5				P81K-0015S	Gate valve ASTM A182 Grade F316/F316L dual grade Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	37
4608	1				P81B-002VT	Gate valve ASTM A105 Class 300 API 602 BW both sides w/ nipples BE - NPT ASTM A106-B T=10.60MM-nipple Trim number 12 BB-BG-OS&Y Handwheel operated C.A.=6.0mm Licensor-1	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P82B-001G5	Globe valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated C.A.=6.0mm Licensor-1	
1	1.5				P82B-001G6	Globe valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated C.A.=6.0mm Licensor-1	
1	2				P82C-002ZG	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated C.A.=6.0mm Licensor-1	
1	3				P82C-002ZH	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated C.A.=6.0mm Licensor-1	
1	4				P82C-002ZJ	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated C.A.=6.0mm Licensor-1	
1	6				P82C-002ZK	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated C.A.=6.0mm Licensor-1	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P83B-0015W	Check valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover C.A.=6.0mm Licensor-1	
1	1.5				P83B-0015X	Check valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover C.A.=6.0mm Licensor-1	
1	2				P83C-002YH	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover C.A.=6.0mm Licensor-1	
1	3				P83C-002YJ	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover C.A.=6.0mm Licensor-1	
1	4				P83C-002YK	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover C.A.=6.0mm Licensor-1	

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CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	6				P83C-002YL	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover C.A.=6.0mm Licensor-1	

ORIFICE FLANGE (FO)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2		SCH160		P66B-008E3	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Licensor-1	
1	3		SCH160		P66B-008E4	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Licensor-1	
1	4		SCH120		P66B-008E5	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Licensor-1	
1	6		XS		P66B-008E6	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Licensor-1	
1	8		XS		P66B-008E7	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Licensor-1	
1	10		XS		P66B-008DZ	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Licensor-1	
1	12		SCH60		P66B-008E0	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Licensor-1	
1	14		SCH60		P66B-008E1	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Licensor-1	
1	16		XS		P66B-008E2	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Licensor-1	
1	18		SCH30		P66B-008UL	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Licensor-1	
200	2		SCH160		P66B-008EE	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw Licensor-1	
200	3		SCH160		P66B-008EF	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw Licensor-1	
200	4		SCH120		P66B-008EG	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw Licensor-1	
200	6		XS		P66B-008EH	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw Licensor-1	
200	8		XS		P66B-008EJ	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw Licensor-1	
200	10		XS		P66B-008EA	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw Licensor-1	
200	12		SCH60		P66B-008EB	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw Licensor-1	
200	14		SCH60		P66B-008EC	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw Licensor-1	
200	16		XS		P66B-008ED	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw Licensor-1	
200	18		SCH30		P66B-008UK	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw Licensor-1	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P71B-000AT	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	1.5				P71B-000AU	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	2				P71B-000AW	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	3				P71B-000AX	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	4				P71B-000AY	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	6				P71B-000AZ	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	8				P71B-000B0	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	10				P71B-000AV	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	12				P71B-000BN	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF Licensor-1	

PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000FN	Paddle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	16				P72B-000FP	Paddle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	18				P72B-000FR	Paddle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF Licensor-1	

PADDLE SPACER (PS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000FV	Paddle spacer ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	16				P72B-000FW	Paddle spacer ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	18				P72B-000FX	Paddle spacer ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF Licensor-1	

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BOLT TABLE (B_B4AP01 , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-003V4		
1	4	0.625	80	P80S-003XD		
1.5	4	0.750	95	P80S-00414		
2	8	0.625	90	P80S-003XF		
3	8	0.750	110	P80S-003XK		
4	8	0.750	115	P80S-003XL		
6	12	0.750	125	P80S-003XN		
8	12	0.875	140	P80S-0041D		
10	16	1.000	160	P80S-0043K		
12	16	1.125	175	P80S-0046S		
14	20	1.125	180	P80S-0046T		
16	20	1.250	190	P80S-004AK		
18	24	1.250	200	P80S-004AM		

BOLT TABLE (B_B4AP01_781 , STUD ASME RF, OPTION CODE 781)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	80			
1	4	0.625	95	P80S-003XG		
1.5	4	0.750	110	P80S-003XK		
2	8	0.625	110	P80S-003VC		
3	8	0.750	130	P80S-003XP		
4	8	0.875	150	P80S-0041F		
6	12	1.000	175	P80S-0043P		
8	12	1.125	195	P80S-0046W		
10	16	1.250	250	P80S-004AY		
12	20	1.250	255	P80S-004AZ		
14	20	1.375	270	P80S-003E7		
16	20	1.500	295	P80S-003FL		
18	20	1.625	320	P80S-005TT		

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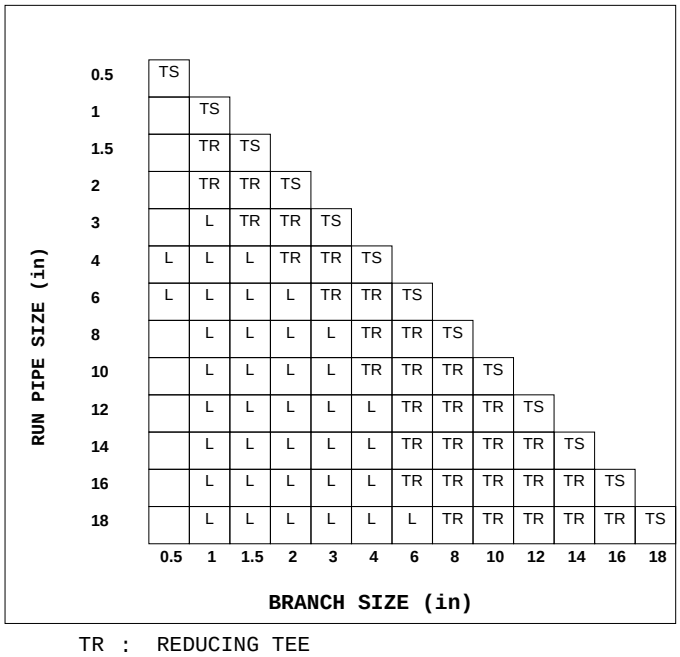
BRANCH TABLE (T_B4AP01)



TR : REDUCING TEE
L : OUTLET
TS : STRAIGHT TEE

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PIPING CLASS

B4AP02 REV NO. 2

Material : Killed CS
Rating : ASME CLASS 300
Flange Face : RF
C.A.(mm) : 6.00
Gasket : Spiral Wound
Service : PROCESS - GENERAL PROCESS NON SOUR, NON CORROSIVE
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
541	NPT(F) (CA,F,L)
781	CLASS 600 (B,F,G)
805	CLASS 2500 (B,F,G)
4608	VALVE WITH NIPPLES (V)

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PIPING CLASS
B4AP02 REV NO. 2

PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		XXS		P01A-0014U	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1.5		XXS		P01A-00162	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	2		SCH160		P01A-0019T	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	3		SCH160		P01A-001S5	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	4		SCH120		P01A-001TM	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	6		XS		P01A-000ZF	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	8		XS		P01A-000ZJ	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		XXS		P02A-000XJ	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1.5		XXS		P02A-002N4	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	2		SCH160		P02A-000KW	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		SCH160		P02A-000U4	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		SCH120		P02A-000U5	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		XS		P02A-000DA	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		XS		P02A-000DG	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		XXS		P03A-000U8	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1.5		XXS		P03A-002KD	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	2		SCH160		P03A-000HU	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		SCH160		P03A-000RB	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		SCH120		P03A-000RC	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		XS		P03A-000B8	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		XS		P03A-000BC	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		XXS		P21A-002DP	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5		XXS		P21A-003KU	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2		SCH160		P21A-00245	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		SCH160		P21A-002AG	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		SCH120		P21A-002AH	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6		XS		P21A-001D4	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8		XS		P21A-001D6	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5	1	XXS	XXS	P24A-00H61	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	SCH160	XXS	P24A-0044B	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	SCH160	XXS	P24A-003GG	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	SCH160	XXS	P24A-0045F	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	SCH160	SCH160	P24A-0045H	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	SCH120	SCH160	P24A-0045G	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	SCH120	SCH160	P24A-0045E	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	XS	SCH160	P24A-00GDY	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	XS	SCH120	P24A-00GDZ	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	XS	SCH120	P24A-00GE0	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	XS	XS	P24A-0024M	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5	1	XXS	XXS	P27A-004NR	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	SCH160	XXS	P27A-0029H	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	SCH160	XXS	P27A-0029K	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	SCH160	XXS	P27A-002NG	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	SCH160	SCH160	P27A-002NC	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	1.5	SCH120	XXS	P27A-002NH	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	SCH120	SCH160	P27A-002ND	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	SCH120	SCH160	P27A-002NM	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	XS	SCH160	P27A-007P7	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	XS	SCH120	P27A-007PZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	XS	SCH120	P27A-004KD	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	XS	XS	P27A-001EY	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5	1	XXS	XXS	P28A-008W0	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	SCH160	XXS	P28A-00289	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	SCH160	XXS	P28A-0028A	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	SCH160	XXS	P28A-002P1	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	SCH160	SCH160	P28A-002NY	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	1.5	SCH120	XXS	P28A-002P0	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	SCH120	SCH160	P28A-002NZ	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	SCH120	SCH160	P28A-002P2	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	XS	SCH160	P28A-0085V	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	XS	SCH120	P28A-0085W	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	XS	SCH120	P28A-004KS	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	XS	XS	P28A-001FT	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		XXS		P29A-000W3	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5		XXS		P29A-0031N	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2		SCH160		P29A-000HR	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		SCH160		P29A-000KY	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		SCH120		P29A-000LY	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6		XS		P29A-000BF	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8		XS		P29A-000BL	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
541	1				P29B-0000Z	Cap ASTM A105 Class 6000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		10.60mm		P41A-001AT	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		10.60mm		P41A-001AU	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
541	1.5	1			P31B-005J1	Outlet ASTM A105 Class 6000 MSS SP-97 NPT	
541	2 - 2.5	1			P31B-005J3	Outlet ASTM A105 Class 6000 MSS SP-97 NPT	
541	3 - 10	1			P31B-007KG	Outlet ASTM A105 Class 6000 MSS SP-97 NPT	
1	3	1	SCH160	XXS	P31B-00B4A	Outlet ASTM A105 MSS SP-97 BW	
1	4	1	SCH120	XXS	P31B-00B08	Outlet ASTM A105 MSS SP-97 BW	
1	6	1	XS	XXS	P31B-00AYZ	Outlet ASTM A105 MSS SP-97 BW	
1	8	1	XS	XXS	P31B-00AUZ	Outlet ASTM A105 MSS SP-97 BW	
1	4	1.5	SCH120	XXS	P31B-00BNX	Outlet ASTM A105 MSS SP-97 BW	
1	6	1.5	XS	XXS	P31B-00BJ4	Outlet ASTM A105 MSS SP-97 BW	
1	8	1.5	XS	XXS	P31B-00BFF	Outlet ASTM A105 MSS SP-97 BW	
1	6	2	XS	SCH160	P31B-007SR	Outlet ASTM A105 MSS SP-97 BW	
1	8	2	XS	SCH160	P31B-00AHC	Outlet ASTM A105 MSS SP-97 BW	
1	8	3	XS	SCH160	P31B-00A33	Outlet ASTM A105 MSS SP-97 BW	

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PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P30B-0002F	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1.5				P30B-0002G	Plug ASTM A105 ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		XXS		P61B-003MB	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	1.5		XXS		P61B-003MR	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	2		SCH160		P61B-002R8	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	3		SCH160		P61B-003JL	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	4		SCH120		P61B-003MU	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	6		XS		P61B-001FE	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	8		XS		P61B-001FV	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
541	1				P61B-003U5	Flange NPT ASTM A105 Class 300 ASME B16.5 RF	
781	1		XXS		P61B-003TC	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	1.5		XXS		P61B-009N1	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	2		SCH160		P61B-003T7	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	3		SCH160		P61B-003JS	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	4		SCH120		P61B-005X8	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	6		XS		P61B-001T1	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	8		XS		P61B-001UC	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
805	6		XS		P61B-00ETC	Flange WN ASTM A105 Class 2500 ASME B16.5 RJ	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P67B-000GK	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	1.5				P67B-000GL	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	2				P67B-000GM	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	3				P67B-000GN	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	4				P67B-000GP	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	6				P67B-000GY	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	8				P67B-000GZ	Blind flange ASTM A105 Class 300 ASME B16.5 RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000G5	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000G6	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	6				P73T-000G7	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	8				P73T-000G8	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1				P73T-000JA	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1.5				P73T-000JB	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	2				P73T-000JH	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	3				P73T-000JL	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	4				P73T-000JM	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	6				P73T-000JN	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	8				P73T-000JP	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
805	6				P75T-000L7	Ring joint gasket Soft iron Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1-8				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	

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BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
781	1-6				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
781	8				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
805	6-8				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P81B-0019D	Gate valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated C.A.=6.0mm	
1	1.5				P81B-0019E	Gate valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated C.A.=6.0mm	
1	2				P81C-004JS	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated C.A.=6.0mm	
1	3				P81C-004JT	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated C.A.=6.0mm	
1	4				P81C-004JU	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated C.A.=6.0mm	
1	6				P81C-004JV	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated C.A.=6.0mm	
4608	1				P81B-0030X	Gate valve ASTM A105 Class 300 API 602 BW both sides w/ nipples BE - NPT ASTM A106-B T=10.60MM-nipple Trim number 8 BB-BG-OS&Y Handwheel operated C.A.=6.0mm	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P71B-000B3	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71B-000B4	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	2				P71B-000B6	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	3				P71B-000B7	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	4				P71B-000B8	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	6				P71B-000B9	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	8				P71B-000BA	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	

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BOLT TABLE (B_B4AP02 , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
1	4	0.625	80	P80S-003XD		
1.5	4	0.750	95	P80S-00414		
2	8	0.625	90	P80S-003XF		
3	8	0.750	110	P80S-003XK		
4	8	0.750	115	P80S-003XL		
6	12	0.750	125	P80S-003XN		
8	12	0.875	140	P80S-0041D		

BOLT TABLE (B_B4AP02_781 , STUD ASME RF, OPTION CODE 781)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
1	4	0.625	95	P80S-003XG		
1.5	4	0.750	110	P80S-003XK		
2	8	0.625	110	P80S-003VC		
3	8	0.750	130	P80S-003XP		
4	8	0.875	150	P80S-0041F		
6	12	1.000	175	P80S-0043P		
8	12	1.125	195	P80S-0046W		

BOLT TABLE (B_B4AP02_805 , STUD ASME RJ, OPTION CODE 805)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
1	4	0.875	140		R18	
1.5	4	1.125	175		R23	
2	8	1.000	180		R26	
3	8	1.250	260		R32	
4	8	1.500	305		R38	
6	8	2.000	410	P80S-005VF	R47	P75T-000L7
8	12	2.000	450	P80S-005VP	R51	

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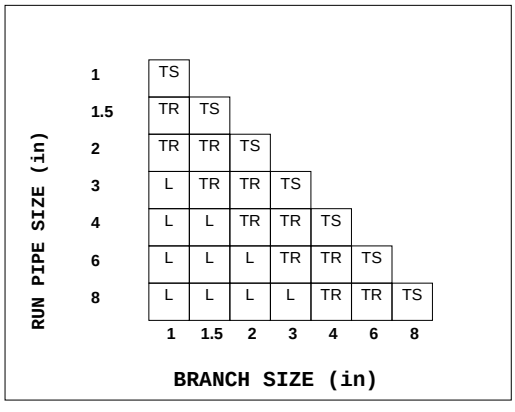
BRANCH TABLE (T_B4AP02)



TS : STRAIGHT TEE
L : OUTLET
TR : REDUCING TEE

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PIPING CLASS

B4AQ

REV NO. 2

Material : Killed CS
Rating : ASME CLASS 300
Flange Face : RF
C.A.(mm) : 6.00
Gasket : Spiral Wound
Service : PROCESS -WET SOUR SERVICE SUBJECT TO NACE STD.:

Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
2	USE OF SOFT SEATED BALL, PLUG AND BUTTERFLY VALVES SHALL BE LIMITED TO MAXIMUM OF 204DEGC (400DEGF)
5	BOLTING CONFIRMING TO B7M / 2HM SHALL BE USED UNDER CONDITIONS (A) DIRECT EXPOSURE TO SOUR ENVIRONMENTS (B) WHEN THE BOLTING WILL BE BURIED OR INSULATED
27	PWHT OF CARBON STEEL PIPING IN WET H2S, CAUSTIC AND AMINE SERVICES SHALL BE IN ACCORDANCE WITH SECTION 10.2, 10.3, AND 10.4 OF PROJECT SPECIFICATION 3550-8440-SP-0002 MATERIALS REQUIREMENTS FOR PRESSURISED EQUIPMENT AND PIPING. FOR CAUSTIC AND AMINE SERVICE THE FOLLOWING SHALL APPLY: - PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF ALL SITE PIPING FABRICATION WELDS IS REQUIRED FOR ALL WALL THICKNESSES. FOR MODERATE AND SEVERE WET H2S SERVICE THE FOLLOWING SHALL APPLY: PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF SITE FABRICATION CIRCUMFERENTIAL OR BRANCH WELDS IS NOT REQUIRED IF WELDS ARE MULTIPASS AND IN ACCORDANCE WITH PARA 10.2.12 OF PROJECT SPECIFICATION 3550-8440-SP-0002. FOR SERVICES MEETING THE WET H2S CRITERIA AND CAUSTIC OR AMINE CRITERIA THE MORE STRINGENT PWHT REQUIREMENT SHALL GOVERN.

DETAIL NOTES :

NO.	DESCRIPTION
37	TO BE USED ONLY FOR ORIFICE FLANGE ASSEMLY UPTO 425 DEG C

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
200	WITH JACK SCREW (FO)
541	NPT(F) (CA,F,L)
781	CLASS 600 (B,F,G)
4001	ALTERNATIVE MATERIAL FOR INSTRUMENT CONNECTION (F,P,V)
4405	FLANGE NPT WITH ALTERNATIVE MATERIAL FOR INSTRUMENT CONNECTION (F)
4602	DISSIMILAR TYPE CHECK VALVE (XDP)
4608	VALVE WITH NIPPLES (V)

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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		XXS		P01A-0014U	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1.5		XXS		P01A-00162	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	2		SCH160		P01A-0019T	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	3		SCH160		P01A-001S5	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	4		SCH120		P01A-001TM	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	6		XS		P01A-000ZF	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	8		XS		P01A-000ZJ	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	10		XS		P01A-000Y2	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	12		SCH60		P01A-001LH	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	14		SCH60		P01A-001MU	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	16		XS		P01A-000YS	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	18		SCH30		P01A-003WP	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	20		XS		P01A-00373	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
4001	0.5		SCH80S		P01J-002CY	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE Moderate wet H2S service	37

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		XXS		P02A-000XJ	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1.5		XXS		P02A-002N4	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	2		SCH160		P02A-000KW	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		SCH160		P02A-000U4	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		SCH120		P02A-000U5	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		XS		P02A-000DA	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		XS		P02A-000DG	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	10		XS		P02A-000BN	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	12		SCH60		P02A-0019S	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	14		SCH60		P02A-000UC	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	16		XS		P02A-000CE	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	18		SCH30		P02A-002G3	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	20		XS		P02A-001JX	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		XXS		P03A-000U8	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1.5		XXS		P03A-002KD	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	2		SCH160		P03A-000HU	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		SCH160		P03A-000RB	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		SCH120		P03A-000RC	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		XS		P03A-000B8	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		XS		P03A-000BC	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	10		XS		P03A-000A3	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	12		SCH60		P03A-0015P	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	14		SCH60		P03A-000RZ	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	16		XS		P03A-000AP	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	18		SCH30		P03A-002DJ	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	20		XS		P03A-001E0	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		XXS		P21A-002DP	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5		XXS		P21A-003KU	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2		SCH160		P21A-00245	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		SCH160		P21A-002AG	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		SCH120		P21A-002AH	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6		XS		P21A-001D4	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8		XS		P21A-001D6	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10		XS		P21A-001C0	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12		SCH60		P21A-002PC	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14		SCH60		P21A-002AK	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16		XS		P21A-001CG	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18		SCH30		P21A-003EA	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20		XS		P21A-002Y4	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5	1	XXS	XXS	P24A-00H61	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	SCH160	XXS	P24A-0044B	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	SCH160	XXS	P24A-003GG	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	SCH160	XXS	P24A-0045F	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	SCH160	SCH160	P24A-0045H	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	SCH120	SCH160	P24A-0045G	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	SCH120	SCH160	P24A-0045E	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	XS	SCH160	P24A-00GDY	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	XS	SCH120	P24A-00GDZ	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	XS	SCH120	P24A-00GE0	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	XS	XS	P24A-0024M	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	XS	SCH120	P24A-00GF8	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	XS	XS	P24A-00241	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	XS	XS	P24A-0024K	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	SCH60	XS	P24A-00GE1	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH60	XS	P24A-0067T	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH60	XS	P24A-0067S	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	SCH60	XS	P24A-00GUS	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	SCH60	XS	P24A-00GE2	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	SCH60	XS	P24A-0067U	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	SCH60	SCH60	P24A-0067V	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	6	XS	XS	P24A-0025G	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	XS	XS	P24A-0025P	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	XS	XS	P24A-00242	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	XS	SCH60	P24A-00GNZ	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	XS	SCH60	P24A-00GP0	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	8	SCH30	XS	P24A-00L42	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	10	SCH30	XS	P24A-00L1V	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	12	SCH30	SCH60	P24A-00L40	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	14	SCH30	SCH60	P24A-00L41	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	16	SCH30	XS	P24A-00HL6	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	8	XS	XS	P24A-00GMP	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	10	XS	XS	P24A-00GML	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	12	XS	SCH60	P24A-00L6M	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	14	XS	SCH60	P24A-00L6N	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	16	XS	XS	P24A-0087Z	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	18	XS	SCH30	P24A-00HL8	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5	1	XXS	XXS	P27A-004NR	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	SCH160	XXS	P27A-0029H	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	SCH160	XXS	P27A-0029K	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	SCH160	XXS	P27A-002NG	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	SCH160	SCH160	P27A-002NC	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	1.5	SCH120	XXS	P27A-002NH	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	SCH120	SCH160	P27A-002ND	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	SCH120	SCH160	P27A-002NM	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	XS	SCH160	P27A-007P7	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	XS	SCH120	P27A-007PZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	XS	SCH120	P27A-004KD	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	XS	XS	P27A-001EY	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	10	4	XS	SCH120	P27A-004PY	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	XS	XS	P27A-001F2	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	XS	XS	P27A-001FR	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	SCH60	XS	P27A-0048V	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH60	XS	P27A-0048W	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH60	XS	P27A-0048U	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	SCH60	XS	P27A-0048Z	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	SCH60	XS	P27A-00490	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	SCH60	XS	P27A-0048X	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	SCH60	SCH60	P27A-0048Y	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	XS	XS	P27A-001GV	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	XS	XS	P27A-001EN	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	XS	SCH60	P27A-0056B	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	XS	SCH60	P27A-0057V	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	10	SCH30	XS	P27A-00FBX	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	12	SCH30	SCH60	P27A-00CL2	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	14	SCH30	SCH60	P27A-00CL3	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	16	SCH30	XS	P27A-005HC	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	12	XS	SCH60	P27A-00FE6	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	14	XS	SCH60	P27A-00FE7	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	16	XS	XS	P27A-005SB	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	18	XS	SCH30	P27A-005TX	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5	1	XXS	XXS	P28A-008W0	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	SCH160	XXS	P28A-00289	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	SCH160	XXS	P28A-0028A	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	SCH160	XXS	P28A-002P1	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	SCH160	SCH160	P28A-002NY	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	1.5	SCH120	XXS	P28A-002P0	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	SCH120	SCH160	P28A-002NZ	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	SCH120	SCH160	P28A-002P2	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	XS	SCH160	P28A-0085V	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	XS	SCH120	P28A-0085W	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	XS	SCH120	P28A-004KS	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	XS	XS	P28A-001FT	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	XS	SCH120	P28A-0085X	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	XS	XS	P28A-001FR	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	XS	XS	P28A-001GT	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	SCH60	XS	P28A-0048L	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH60	XS	P28A-0048M	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH60	XS	P28A-0048K	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	SCH60	XS	P28A-0048R	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	SCH60	XS	P28A-0048S	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	SCH60	XS	P28A-0048N	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	SCH60	SCH60	P28A-0048P	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	XS	XS	P28A-0018A	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	XS	XS	P28A-001F9	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	XS	SCH60	P28A-008FA	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	XS	SCH60	P28A-008FB	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	10	SCH30	XS	P28A-00CGP	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	12	SCH30	SCH60	P28A-009KL	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	14	SCH30	SCH60	P28A-009KM	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	16	SCH30	XS	P28A-00970	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	12	XS	SCH60	P28A-00CK4	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	14	XS	SCH60	P28A-00CK5	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	16	XS	XS	P28A-0063N	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	18	XS	SCH30	P28A-00971	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		XXS		P29A-0033Z	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	1.5		XXS		P29A-00340	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	2		SCH160		P29A-001TK	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	3		SCH160		P29A-001TN	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	4		SCH120		P29A-001WM	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	6		XS		P29A-001TU	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	8		XS		P29A-001TV	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	10		XS		P29A-001TE	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	12		SCH60		P29A-001WE	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	14		SCH60		P29A-001WF	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	16		XS		P29A-001TH	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	18		SCH30		P29A-003BW	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	20		XS		P29A-001TL	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
541	1				P29B-0000Z	Cap ASTM A105 Class 6000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		10.60mm		P41A-001AT	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		10.60mm		P41A-001AU	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
541	1.5	1			P31B-005J1	Outlet ASTM A105 Class 6000 MSS SP-97 NPT	
541	2 - 2.5	1			P31B-005J3	Outlet ASTM A105 Class 6000 MSS SP-97 NPT	
541	3 - 10	1			P31B-007KG	Outlet ASTM A105 Class 6000 MSS SP-97 NPT	
541	12 and larger	1			P31B-0137G	Outlet ASTM A105 Class 6000 MSS SP-97 NPT	
1	3	1	SCH160	XXS	P31B-00B4A	Outlet ASTM A105 MSS SP-97 BW	
1	4	1	SCH120	XXS	P31B-00B08	Outlet ASTM A105 MSS SP-97 BW	
1	6	1	XS	XXS	P31B-00AYZ	Outlet ASTM A105 MSS SP-97 BW	
1	8	1	XS	XXS	P31B-00AUZ	Outlet ASTM A105 MSS SP-97 BW	
1	10	1	XS	XXS	P31B-00BW4	Outlet ASTM A105 MSS SP-97 BW	
1	12	1	SCH60	XXS	P31B-00BRT	Outlet ASTM A105 MSS SP-97 BW	
1	14	1	SCH60	XXS	P31B-00BRB	Outlet ASTM A105 MSS SP-97 BW	
1	16	1	XS	XXS	P31B-00BCD	Outlet ASTM A105 MSS SP-97 BW	
1	18	1	SCH30	XXS	P31B-00YDP	Outlet ASTM A105 MSS SP-97 BW	
1	20	1	XS	XXS	P31B-00B88	Outlet ASTM A105 MSS SP-97 BW	
1	4	1.5	SCH120	XXS	P31B-00BNX	Outlet ASTM A105 MSS SP-97 BW	
1	6	1.5	XS	XXS	P31B-00BJ4	Outlet ASTM A105 MSS SP-97 BW	
1	8	1.5	XS	XXS	P31B-00BFF	Outlet ASTM A105 MSS SP-97 BW	
1	10	1.5	XS	XXS	P31B-00CER	Outlet ASTM A105 MSS SP-97 BW	
1	12	1.5	SCH60	XXS	P31B-00CDZ	Outlet ASTM A105 MSS SP-97 BW	
1	14	1.5	SCH60	XXS	P31B-00C9J	Outlet ASTM A105 MSS SP-97 BW	
1	16	1.5	XS	XXS	P31B-00C8P	Outlet ASTM A105 MSS SP-97 BW	
1	18	1.5	SCH30	XXS	P31B-00XCH	Outlet ASTM A105 MSS SP-97 BW	
1	20	1.5	XS	XXS	P31B-00C3G	Outlet ASTM A105 MSS SP-97 BW	
1	6	2	XS	SCH160	P31B-007SR	Outlet ASTM A105 MSS SP-97 BW	
1	8	2	XS	SCH160	P31B-00AHC	Outlet ASTM A105 MSS SP-97 BW	
1	10	2	XS	SCH160	P31B-00ASR	Outlet ASTM A105 MSS SP-97 BW	
1	12	2	SCH60	SCH160	P31B-00ARL	Outlet ASTM A105 MSS SP-97 BW	
1	14	2	SCH60	SCH160	P31B-00CB8	Outlet ASTM A105 MSS SP-97 BW	
1	16	2	XS	SCH160	P31B-00C6D	Outlet ASTM A105 MSS SP-97 BW	
1	18	2	SCH30	SCH160	P31B-00C18	Outlet ASTM A105 MSS SP-97 BW	
1	20	2	XS	SCH160	P31B-009ET	Outlet ASTM A105 MSS SP-97 BW	
1	8	3	XS	SCH160	P31B-00A33	Outlet ASTM A105 MSS SP-97 BW	
1	10	3	XS	SCH160	P31B-009D0	Outlet ASTM A105 MSS SP-97 BW	
1	12	3	SCH60	SCH160	P31B-0097A	Outlet ASTM A105 MSS SP-97 BW	
1	14	3	SCH60	SCH160	P31B-0091F	Outlet ASTM A105 MSS SP-97 BW	
1	16	3	XS	SCH160	P31B-00903	Outlet ASTM A105 MSS SP-97 BW	
1	18	3	SCH30	SCH160	P31B-008U3	Outlet ASTM A105 MSS SP-97 BW	

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OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	20	3	XS	SCH160	P31B-008LW	Outlet ASTM A105 MSS SP-97 BW	
1	12	4	SCH60	SCH120	P31B-00957	Outlet ASTM A105 MSS SP-97 BW	
1	14	4	SCH60	SCH120	P31B-008ZD	Outlet ASTM A105 MSS SP-97 BW	
1	16	4	XS	SCH120	P31B-00TU5	Outlet ASTM A105 MSS SP-97 BW	
1	18	4	SCH30	SCH120	P31B-00TW0	Outlet ASTM A105 MSS SP-97 BW	
1	20	4	XS	SCH120	P31B-00TU7	Outlet ASTM A105 MSS SP-97 BW	
1	18	6	SCH30	XS	P31B-008RV	Outlet ASTM A105 MSS SP-97 BW	
1	20	6	XS	XS	P31B-008K4	Outlet ASTM A105 MSS SP-97 BW	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P30B-0002F	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1.5				P30B-0002G	Plug ASTM A105 ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		XXS		P61B-003MB	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	1.5		XXS		P61B-003MR	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	2		SCH160		P61B-002R8	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	3		SCH160		P61B-003JL	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	4		SCH120		P61B-003MU	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	6		XS		P61B-001FE	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	8		XS		P61B-001FV	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	10		XS		P61B-001FD	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	12		SCH60		P61B-005XC	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	14		SCH60		P61B-005XD	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	16		XS		P61B-001HU	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	18		SCH30		P61B-004GU	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	20		XS		P61B-003A5	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
4001	0.5		SCH80S		P61K-005BE	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Moderate wet H2S service	37
4405	0.5				P61K-0069S	Flange NPT ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Moderate wet H2S service	37
541	1				P61B-003U5	Flange NPT ASTM A105 Class 300 ASME B16.5 RF	
781	1		XXS		P61B-003TC	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	1.5		XXS		P61B-009N1	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	2		SCH160		P61B-003T7	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	3		SCH160		P61B-003JS	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	4		SCH120		P61B-005X8	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	6		XS		P61B-001T1	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	8		XS		P61B-001UC	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	10		XS		P61B-001JN	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	12		SCH60		P61B-003XC	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	14		SCH60		P61B-003XD	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	16		XS		P61B-001R3	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	18		SCH30		P61B-005TU	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	20		XS		P61B-004UW	Flange WN ASTM A105 Class 600 ASME B16.5 RF	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P67B-000GK	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	1.5				P67B-000GL	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	2				P67B-000GM	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	3				P67B-000GN	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	4				P67B-000GP	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	6				P67B-000GY	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	8				P67B-000GZ	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	10				P67B-000GR	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	12				P67B-000GS	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	14				P67B-000GT	Blind flange ASTM A105 Class 300 ASME B16.5 RF	

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BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	16				P67B-000GU	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	18				P67B-000GV	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	20				P67B-000GW	Blind flange ASTM A105 Class 300 ASME B16.5 RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000FT	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000G5	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000G6	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	6				P73T-000G7	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	8				P73T-000G8	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	10				P73T-000FX	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	12				P73T-000FY	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	14				P73T-000FZ	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	16				P73T-000G0	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	18				P73T-000G1	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	20				P73T-000G3	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1				P73T-000JA	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1.5				P73T-000JB	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	2				P73T-000JH	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	3				P73T-000JL	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	4				P73T-000JM	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	6				P73T-000JN	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	8				P73T-000JP	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	10				P73T-000JC	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	12				P73T-000JD	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	14				P73T-000JE	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	16				P73T-000JF	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	18				P73T-000JG	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	20				P73T-000JJ	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-10				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	12-20				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
781	1-6				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
781	8-20				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P81B-0019F	Gate valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service C.A.=6.0mm	
1	1.5				P81B-0019G	Gate valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service C.A.=6.0mm	
1	2				P81C-004JX	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service C.A.=6.0mm	

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GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3				P81C-004JY	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service C.A.=6.0mm	
1	4				P81C-004JZ	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service C.A.=6.0mm	
1	6				P81C-004K0	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service C.A.=6.0mm	
1	8				P81C-00928	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Moderate wet H2S service C.A.=6.0mm	
1	10				P81C-004K2	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Moderate wet H2S service C.A.=6.0mm	
1	12				P81C-004K3	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Moderate wet H2S service C.A.=6.0mm	
1	14				P81C-004K4	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Moderate wet H2S service C.A.=6.0mm	
1	16				P81C-004K5	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Moderate wet H2S service C.A.=6.0mm	
1	18				P81C-005H3	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Moderate wet H2S service C.A.=6.0mm	
1	20				P81C-005H4	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Moderate wet H2S service C.A.=6.0mm	
4001	0.5				P81K-00117	Gate valve ASTM A182 Grade F316/F316L dual grade Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	37
4608	1				P81B-002XC	Gate valve ASTM A105 Class 300 API 602 BW both sides w/ nipples BE - NPT ASTM A106-B T=10.60MM-nipple Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service C.A.=6.0mm	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P82B-0012E	Globe valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service C.A.=6.0mm	
1	1.5				P82B-0012F	Globe valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service C.A.=6.0mm	
1	2				P82C-0028G	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service C.A.=6.0mm	
1	3				P82C-0028H	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service C.A.=6.0mm	
1	4				P82C-0039B	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service C.A.=6.0mm	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P83B-000UV	Check valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Moderate wet H2S service C.A.=6.0mm	
1	1.5				P83B-000UW	Check valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Moderate wet H2S service C.A.=6.0mm	
1	2				P83C-0025A	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Moderate wet H2S service C.A.=6.0mm	
1	3				P83C-0025B	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Moderate wet H2S service C.A.=6.0mm	
1	4				P83C-0025C	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Moderate wet H2S service C.A.=6.0mm	
1	6				P83C-0025D	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Moderate wet H2S service C.A.=6.0mm	
1	8				P83C-0025E	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Moderate wet H2S service C.A.=6.0mm	
1	10				P83C-00258	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Moderate wet H2S service C.A.=6.0mm	
1	12				P83C-00259	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Moderate wet H2S service C.A.=6.0mm	

DP CHECK VALVE (XDP)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
4602	2				P88C-0035J	Dual plate check valve ASTM A216 Grade WCB Class 300 API 594 Wafer-type ASME B16.5 RF Trim number 12 Internal wetted parts SS316 Spring Inconel Retainerless-type Moderate wet H2S service C.A.=6.0mm	
4602	3				P88C-0035K	Dual plate check valve ASTM A216 Grade WCB Class 300 API 594 Wafer-type ASME B16.5 RF Trim number 12 Internal wetted parts SS316 Spring Inconel Retainerless-type Moderate wet H2S service C.A.=6.0mm	

ORIFICE FLANGE (FO)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2		SCH160		P66B-00889	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	3		SCH160		P66B-0088C	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	4		SCH120		P66B-0088D	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	6		XS		P66B-0088E	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	8		XS		P66B-008DS	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	10		XS		P66B-00884	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	12		SCH60		P66B-008DN	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	

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ORIFICE FLANGE (FO)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
200	2		SCH160		P66B-0088P	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	3		SCH160		P66B-0088T	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	4		SCH120		P66B-0088U	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	6		XS		P66B-0088V	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	8		XS		P66B-008DW	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	10		XS		P66B-0088J	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	12		SCH60		P66B-008DT	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P71B-000B3	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71B-000B4	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	2				P71B-000B6	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	3				P71B-000B7	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	4				P71B-000B8	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	6				P71B-000B9	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	8				P71B-000BA	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	10				P71B-000B5	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	12				P71B-000BB	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	

PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000FA	Paddle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	16				P72B-000FB	Paddle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	18				P72B-000FC	Paddle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	20				P72B-000FD	Paddle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	

PADDLE SPACER (PS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000FG	Paddle spacer ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	16				P72B-000FH	Paddle spacer ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	18				P72B-000FJ	Paddle spacer ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	20				P72B-000FK	Paddle spacer ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	

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BOLT TABLE (B_B4AQ , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-008T0		
1	4	0.625	80	P80S-00909		
1.5	4	0.750	95	P80S-005Z4		
2	8	0.625	90	P80S-0090B		
3	8	0.750	110	P80S-0090F		
4	8	0.750	115	P80S-0090G		
6	12	0.750	125	P80S-0090J		
8	12	0.875	140	P80S-005ZD		
10	16	1.000	160	P80S-0061E		
12	16	1.125	175	P80S-0064S		
14	20	1.125	180	P80S-0064T		
16	20	1.250	190	P80S-00689		
18	24	1.250	200	P80S-0068B		
20	24	1.250	210	P80S-0068D		

BOLT TABLE (B_B4AQ_781 , STUD ASME RF, OPTION CODE 781)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	80			
1	4	0.625	95	P80S-0090C		
1.5	4	0.750	110	P80S-0090F		
2	8	0.625	110	P80S-008T8		
3	8	0.750	130	P80S-0090K		
4	8	0.875	150	P80S-005ZF		
6	12	1.000	175	P80S-0061H		
8	12	1.125	195	P80S-0064W		
10	16	1.250	250	P80S-0068M		
12	20	1.250	255	P80S-0068N		
14	20	1.375	270	P80S-006HV		
16	20	1.500	295	P80S-006LP		
18	20	1.625	320	P80S-00A5E		
20	24	1.625	335	P80S-00A5H		

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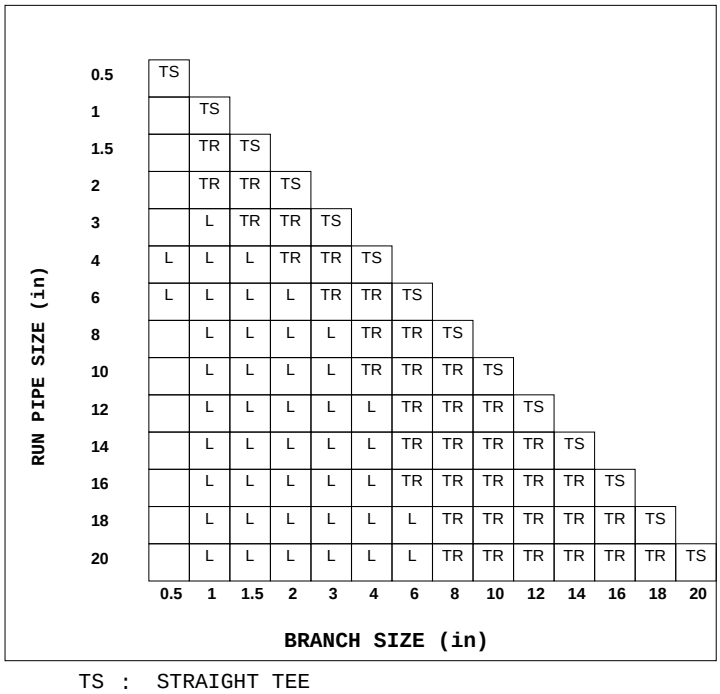
BRANCH TABLE (T_B4AQ)



TS : STRAIGHT TEE
TR : REDUCING TEE
L : OUTLET

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Material : Killed CS
Rating : ASME CLASS 300
Flange Face : RF
C.A.(mm) : 6.00
Gasket : Spiral Wound
Service : PROCESS -WET LOW SEVERITY SOUR SERVICE SUBJECT TO NACE
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
2	USE OF SOFT SEATED BALL, PLUG AND BUTTERFLY VALVES SHALL BE LIMITED TO MAXIMUM OF 204DEGC (400DEGF)
5	BOLTING CONFIRMING TO B7M / 2HM SHALL BE USED UNDER CONDITIONS (A) DIRECT EXPOSURE TO SOUR ENVIRONMENTS (B) WHEN THE BOLTING WILL BE BURIED OR INSULATED
27	PWHT OF CARBON STEEL PIPING IN WET H2S, CAUSTIC AND AMINE SERVICES SHALL BE IN ACCORDANCE WITH SECTION 10.2, 10.3, AND 10.4 OF PROJECT SPECIFICATION 3550-8440-SP-0002 MATERIALS REQUIREMENTS FOR PRESSURISED EQUIPMENT AND PIPING. FOR CAUSTIC AND AMINE SERVICE THE FOLLOWING SHALL APPLY: - PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF ALL SITE PIPING FABRICATION WELDS IS REQUIRED FOR ALL WALL THICKNESSES. FOR MODERATE AND SEVERE WET H2S SERVICE THE FOLLOWING SHALL APPLY: PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF SITE FABRICATION CIRCUMFERENTIAL OR BRANCH WELDS IS NOT REQUIRED IF WELDS ARE MULTIPASS AND IN ACCORDANCE WITH PARA 10.2.12 OF PROJECT SPECIFICATION 3550-8440-SP-0002. FOR SERVICES MEETING THE WET H2S CRITERIA AND CAUSTIC OR AMINE CRITERIA THE MORE STRINGENT PWHT REQUIREMENT SHALL GOVERN.

DETAIL NOTES :

NO.	DESCRIPTION
37	TO BE USED ONLY FOR ORIFICE FLANGE ASSEMLY UPTO 425 DEG C

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
200	WITH JACK SCREW (FO)
541	NPT(F) (CA,F)
781	CLASS 600 (B,F,G)
4001	ALTERNATIVE MATERIAL FOR INSTRUMENT CONNECTION (F,P,V)
4405	FLANGE NPT WITH ALTERNATIVE MATERIAL FOR INSTRUMENT CONNECTION (F)
4608	VALVE WITH NIPPLES (V)

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PIPING CLASS
B4AQ01 REV NO. 2

PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		XXS		P01A-007AE	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE Moderate wet H2S service Licensor-1	
1	1.5		XXS		P01A-007AF	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE Moderate wet H2S service Licensor-1	
1	2		SCH160		P01A-0079M	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Moderate wet H2S service Licensor-1	
1	3		SCH160		P01A-007AJ	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Moderate wet H2S service Licensor-1	
1	4		SCH120		P01A-007AK	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Moderate wet H2S service Licensor-1	
1	6		XS		P01A-0079R	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Moderate wet H2S service Licensor-1	
1	8		XS		P01A-0079S	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Moderate wet H2S service Licensor-1	
1	10		XS		P01A-007AG	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Moderate wet H2S service Licensor-1	
1	12		SCH60		P01A-007AH	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Moderate wet H2S service Licensor-1	
4001	0.5		SCH80S		P01J-002CY	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE Moderate wet H2S service	37

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		XXS		P02A-003SJ	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Moderate wet H2S service Licensor-1	
1	1.5		XXS		P02A-003SK	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Moderate wet H2S service Licensor-1	
1	2		SCH160		P02A-003RT	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Moderate wet H2S service Licensor-1	
1	3		SCH160		P02A-003SN	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Moderate wet H2S service Licensor-1	
1	4		SCH120		P02A-003SP	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Moderate wet H2S service Licensor-1	
1	6		XS		P02A-003RW	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Moderate wet H2S service Licensor-1	
1	8		XS		P02A-003RX	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Moderate wet H2S service Licensor-1	
1	10		XS		P02A-003SL	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Moderate wet H2S service Licensor-1	
1	12		SCH60		P02A-003SM	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Moderate wet H2S service Licensor-1	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		XXS		P03A-003P7	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Moderate wet H2S service Licensor-1	
1	1.5		XXS		P03A-003P8	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Moderate wet H2S service Licensor-1	
1	2		SCH160		P03A-003NF	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Moderate wet H2S service Licensor-1	
1	3		SCH160		P03A-003PB	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Moderate wet H2S service Licensor-1	
1	4		SCH120		P03A-003PC	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Moderate wet H2S service Licensor-1	
1	6		XS		P03A-003NJ	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Moderate wet H2S service Licensor-1	
1	8		XS		P03A-003NK	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Moderate wet H2S service Licensor-1	
1	10		XS		P03A-003P9	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Moderate wet H2S service Licensor-1	
1	12		SCH60		P03A-003PA	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Moderate wet H2S service Licensor-1	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		XXS		P21A-0049X	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	1.5		XXS		P21A-0049Y	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	2		SCH160		P21A-00496	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	3		SCH160		P21A-004A1	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	4		SCH120		P21A-004A2	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	6		XS		P21A-00499	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	8		XS		P21A-0049A	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	10		XS		P21A-0049Z	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	12		SCH60		P21A-004A0	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5	1	XXS	XXS	P24A-00K44	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	2	1	SCH160	XXS	P24A-00K45	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	2	1.5	SCH160	XXS	P24A-00K46	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	

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REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	1.5	SCH160	XXS	P24A-00K47	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	3	2	SCH160	SCH160	P24A-00K48	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	4	2	SCH120	SCH160	P24A-00K49	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	4	3	SCH120	SCH160	P24A-00K4A	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	6	3	XS	SCH160	P24A-00K4B	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	6	4	XS	SCH120	P24A-00K4C	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	8	4	XS	SCH120	P24A-00K4D	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	8	6	XS	XS	P24A-00K2J	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	10	4	XS	SCH120	P24A-00K4E	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	10	6	XS	XS	P24A-00K4F	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	10	8	XS	XS	P24A-00K4G	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	12	6	SCH60	XS	P24A-00K4J	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	12	8	SCH60	XS	P24A-00K4K	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	12	10	SCH60	XS	P24A-00K4H	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5	1	XXS	XXS	P27A-00EP9	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	2	1	SCH160	XXS	P27A-00EPA	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	2	1.5	SCH160	XXS	P27A-00EPB	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	3	1.5	SCH160	XXS	P27A-00EPC	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	3	2	SCH160	SCH160	P27A-00EPD	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	4	1.5	SCH120	XXS	P27A-00EPE	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	4	2	SCH120	SCH160	P27A-00EPF	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	4	3	SCH120	SCH160	P27A-00EPG	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	6	3	XS	SCH160	P27A-00EPH	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	6	4	XS	SCH120	P27A-00EPJ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	8	4	XS	SCH120	P27A-00EPK	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	8	6	XS	XS	P27A-00EMH	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	10	4	XS	SCH120	P27A-00EPL	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	10	6	XS	XS	P27A-00EPM	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	10	8	XS	XS	P27A-00EPN	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	12	6	SCH60	XS	P27A-00EPR	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	12	8	SCH60	XS	P27A-00EPS	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	12	10	SCH60	XS	P27A-00EPP	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5	1	XXS	XXS	P28A-00BU1	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	2	1	SCH160	XXS	P28A-00BU2	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	2	1.5	SCH160	XXS	P28A-00BU3	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	3	1.5	SCH160	XXS	P28A-00BU4	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	3	2	SCH160	SCH160	P28A-00BU5	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	4	1.5	SCH120	XXS	P28A-00BU6	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	4	2	SCH120	SCH160	P28A-00BU7	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	4	3	SCH120	SCH160	P28A-00BU8	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	6	3	XS	SCH160	P28A-00BU9	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	6	4	XS	SCH120	P28A-00BUA	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	8	4	XS	SCH120	P28A-00BUB	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	8	6	XS	XS	P28A-00BSE	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	10	4	XS	SCH120	P28A-00BUC	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	10	6	XS	XS	P28A-00BUD	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	10	8	XS	XS	P28A-00BUE	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	

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ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	12	6	SCH60	XS	P28A-00BUG	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	12	8	SCH60	XS	P28A-00BUH	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	12	10	SCH60	XS	P28A-00BUF	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		XXS		P29A-00341	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	1.5		XXS		P29A-00342	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	2		SCH160		P29A-0032Y	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	3		SCH160		P29A-00345	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	4		SCH120		P29A-00346	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	6		XS		P29A-00331	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	8		XS		P29A-00332	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	10		XS		P29A-00343	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	12		SCH60		P29A-00344	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
541	1				P29B-0006R	Cap ASTM A105 Class 6000 ASME B16.11 NPT Moderate wet H2S service Licensor-1	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		10.60mm		P41A-001AV	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Moderate wet H2S service Licensor-1	
1	1.5		10.60mm		P41A-001AW	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Moderate wet H2S service Licensor-1	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	1	SCH160	XXS	P31B-00XKY	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	4	1	SCH120	XXS	P31B-00XKZ	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	6	1	XS	XXS	P31B-00XL1	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	8	1	XS	XXS	P31B-00XL3	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	10	1	XS	XXS	P31B-00XL6	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	12	1	SCH60	XXS	P31B-00XLA	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	4	1.5	SCH120	XXS	P31B-00XL0	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	6	1.5	XS	XXS	P31B-00XL2	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	8	1.5	XS	XXS	P31B-00XL4	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	10	1.5	XS	XXS	P31B-00XL7	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	12	1.5	SCH60	XXS	P31B-00XLB	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	6	2	XS	SCH160	P31B-00XJ4	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	8	2	XS	SCH160	P31B-00XJ8	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	10	2	XS	SCH160	P31B-00XL8	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	12	2	SCH60	SCH160	P31B-00XLC	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	8	3	XS	SCH160	P31B-00XL5	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	10	3	XS	SCH160	P31B-00XL9	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	12	3	SCH60	SCH160	P31B-00XLD	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	12	4	SCH60	SCH120	P31B-00XLE	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P30B-0006H	Plug ASTM A105 ASME B16.11 NPT Round head Moderate wet H2S service Licensor-1	
1	1.5				P30B-0006J	Plug ASTM A105 ASME B16.11 NPT Round head Moderate wet H2S service Licensor-1	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		XXS		P61B-009XB	Flange WN ASTM A105 Class 300 ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	1.5		XXS		P61B-009XC	Flange WN ASTM A105 Class 300 ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	2		SCH160		P61B-009XF	Flange WN ASTM A105 Class 300 ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	3		SCH160		P61B-009XG	Flange WN ASTM A105 Class 300 ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	4		SCH120		P61B-009XH	Flange WN ASTM A105 Class 300 ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	6		XS		P61B-009XJ	Flange WN ASTM A105 Class 300 ASME B16.5 RF Moderate wet H2S service Licensor-1	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	8		XS		P61B-009XK	Flange WN ASTM A105 Class 300 ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	10		XS		P61B-009XD	Flange WN ASTM A105 Class 300 ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	12		SCH60		P61B-009XE	Flange WN ASTM A105 Class 300 ASME B16.5 RF Moderate wet H2S service Licensor-1	
4001	0.5		SCH80S		P61K-005BE	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Moderate wet H2S service	37
4405	0.5				P61K-0069S	Flange NPT ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Moderate wet H2S service	37
541	1				P61B-00CYA	Flange NPT ASTM A105 Class 300 ASME B16.5 RF Moderate wet H2S service Licensor-1	
781	1		XXS		P61B-009XL	Flange WN ASTM A105 Class 600 ASME B16.5 RF Moderate wet H2S service Licensor-1	
781	1.5		XXS		P61B-009XM	Flange WN ASTM A105 Class 600 ASME B16.5 RF Moderate wet H2S service Licensor-1	
781	2		SCH160		P61B-009V4	Flange WN ASTM A105 Class 600 ASME B16.5 RF Moderate wet H2S service Licensor-1	
781	3		SCH160		P61B-009XR	Flange WN ASTM A105 Class 600 ASME B16.5 RF Moderate wet H2S service Licensor-1	
781	4		SCH120		P61B-009XS	Flange WN ASTM A105 Class 600 ASME B16.5 RF Moderate wet H2S service Licensor-1	
781	6		XS		P61B-009V7	Flange WN ASTM A105 Class 600 ASME B16.5 RF Moderate wet H2S service Licensor-1	
781	8		XS		P61B-009V8	Flange WN ASTM A105 Class 600 ASME B16.5 RF Moderate wet H2S service Licensor-1	
781	10		XS		P61B-009XN	Flange WN ASTM A105 Class 600 ASME B16.5 RF Moderate wet H2S service Licensor-1	
781	12		SCH60		P61B-009XP	Flange WN ASTM A105 Class 600 ASME B16.5 RF Moderate wet H2S service Licensor-1	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P67B-002EY	Blind flange ASTM A105 Class 300 ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	1.5				P67B-002EZ	Blind flange ASTM A105 Class 300 ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	2				P67B-002F2	Blind flange ASTM A105 Class 300 ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	3				P67B-002F3	Blind flange ASTM A105 Class 300 ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	4				P67B-002F4	Blind flange ASTM A105 Class 300 ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	6				P67B-002F5	Blind flange ASTM A105 Class 300 ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	8				P67B-002F6	Blind flange ASTM A105 Class 300 ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	10				P67B-002F0	Blind flange ASTM A105 Class 300 ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	12				P67B-002F1	Blind flange ASTM A105 Class 300 ASME B16.5 RF Moderate wet H2S service Licensor-1	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000FT	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000G5	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000G6	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	6				P73T-000G7	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	8				P73T-000G8	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	10				P73T-000FX	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	12				P73T-000FY	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1				P73T-000JA	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1.5				P73T-000JB	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	2				P73T-000JH	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	3				P73T-000JL	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	4				P73T-000JM	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	6				P73T-000JN	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	8				P73T-000JP	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	10				P73T-000JC	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	12				P73T-000JD	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

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BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-10				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	12				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
781	1-6				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
781	8-12				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P81B-001DL	Gate valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service C.A.=6.0mm Licensor-1	
1	1.5				P81B-001DM	Gate valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service C.A.=6.0mm Licensor-1	
1	2				P81C-004SS	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service C.A.=6.0mm Licensor-1	
1	3				P81C-004ST	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service C.A.=6.0mm Licensor-1	
1	4				P81C-004SU	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service C.A.=6.0mm Licensor-1	
1	6				P81C-004SV	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service C.A.=6.0mm Licensor-1	
1	8				P81C-00929	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Moderate wet H2S service C.A.=6.0mm Licensor-1	
1	10				P81C-004SX	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Moderate wet H2S service C.A.=6.0mm Licensor-1	
1	12				P81C-004SY	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Moderate wet H2S service C.A.=6.0mm Licensor-1	
4001	0.5				P81K-00117	Gate valve ASTM A182 Grade F316/F316L dual grade Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	37
4608	1				P81B-002XD	Gate valve ASTM A105 Class 300 API 602 BW both sides w/ nipples BE - NPT ASTM A106-B T=10.60MM-nipple Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service C.A.=6.0mm Licensor-1	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P82B-0015B	Globe valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service C.A.=6.0mm Licensor-1	
1	1.5				P82B-0015C	Globe valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service C.A.=6.0mm Licensor-1	
1	2				P82C-002B7	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service C.A.=6.0mm Licensor-1	
1	3				P82C-002B8	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service C.A.=6.0mm Licensor-1	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P83B-000X3	Check valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Moderate wet H2S service C.A.=6.0mm Licensor-1	
1	1.5				P83B-000X4	Check valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Moderate wet H2S service C.A.=6.0mm Licensor-1	
1	2				P83C-0028D	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Moderate wet H2S service C.A.=6.0mm Licensor-1	
1	3				P83C-0028E	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Moderate wet H2S service C.A.=6.0mm Licensor-1	
1	4				P83C-0028F	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Moderate wet H2S service C.A.=6.0mm Licensor-1	
1	6				P83C-0028G	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Moderate wet H2S service C.A.=6.0mm Licensor-1	
1	8				P83C-0028H	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Moderate wet H2S service C.A.=6.0mm Licensor-1	
1	10				P83C-0028B	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Moderate wet H2S service C.A.=6.0mm Licensor-1	
1	12				P83C-0028C	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Moderate wet H2S service C.A.=6.0mm Licensor-1	

ORIFICE FLANGE (FO)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2		SCH160		P66B-0088Z	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Moderate wet H2S service Licensor-1	
1	3		SCH160		P66B-00890	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Moderate wet H2S service Licensor-1	
1	4		SCH120		P66B-00891	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Moderate wet H2S service Licensor-1	
1	6		XS		P66B-00892	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Moderate wet H2S service Licensor-1	
1	8		XS		P66B-008EK	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Moderate wet H2S service Licensor-1	
200	2		SCH160		P66B-00895	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Moderate wet H2S service with Jack screw Licensor-1	

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PIPING CLASS
B4AQ01 REV NO. 2

ORIFICE FLANGE (FO)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
200	3		SCH160		P66B-00896	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Moderate wet H2S service with Jack screw Licensor-1	
200	4		SCH120		P66B-00897	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Moderate wet H2S service with Jack screw Licensor-1	
200	6		XS		P66B-00898	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Moderate wet H2S service with Jack screw Licensor-1	
200	8		XS		P66B-008EL	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Moderate wet H2S service with Jack screw Licensor-1	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P71B-000CE	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	1.5				P71B-000CF	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	2				P71B-000CJ	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	3				P71B-000CK	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	4				P71B-000CL	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	6				P71B-000CM	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	8				P71B-000CN	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	10				P71B-000CG	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	12				P71B-000CH	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service Licensor-1	

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PIPING CLASS
B4AQ01 REV NO. 2

BOLT TABLE (B_B4AQ01 , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-008T0		
1	4	0.625	80	P80S-00909		
1.5	4	0.750	95	P80S-005Z4		
2	8	0.625	90	P80S-0090B		
3	8	0.750	110	P80S-0090F		
4	8	0.750	115	P80S-0090G		
6	12	0.750	125	P80S-0090J		
8	12	0.875	140	P80S-005ZD		
10	16	1.000	160	P80S-0061E		
12	16	1.125	175	P80S-0064S		

BOLT TABLE (B_B4AQ01_781 , STUD ASME RF, OPTION CODE 781)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	80			
1	4	0.625	95	P80S-0090C		
1.5	4	0.750	110	P80S-0090F		
2	8	0.625	110	P80S-008T8		
3	8	0.750	130	P80S-0090K		
4	8	0.875	150	P80S-005ZF		
6	12	1.000	175	P80S-0061H		
8	12	1.125	195	P80S-0064W		
10	16	1.250	250	P80S-0068M		
12	20	1.250	255	P80S-0068N		

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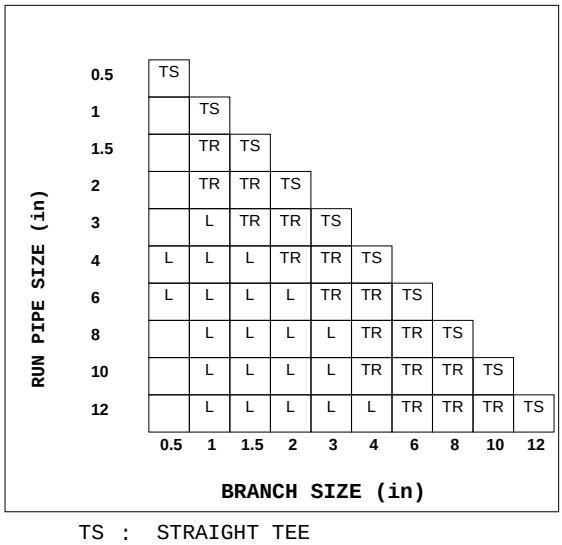
B4AQ01 REV NO. 2

BRANCH TABLE (T_B4AQ01)



0.5	TS								
1		TS							
1.5		TR	TS						
2		TR	TR	TS					
3		L	TR	TR	TS				
4	L	L	L	TR	TR	TS			
6	L	L	L	L	TR	TR	TS		
8		L	L	L	L	TR	TR	TS	
10		L	L	L	L	TR	TR	TR	TS
12		L	L	L	L	L	TR	TR	TR	TS

TS : STRAIGHT TEE
L : OUTLET
TR : REDUCING TEE

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PIPING CLASS

B4AR REV NO. 2

Material : Killed CS
Rating : ASME CLASS 300
Flange Face : RF
C.A.(mm) : 6.00
Gasket : Spiral Wound
Service : PROCESS - WET SEVERE SOUR SERVICE SUBJECT TO NACE + HIC STD. : / RECONTACTOR LIQUID / OFFGAS COMP. DISCHARGE / SOUR WATER / SLOPS / FLARE / RICH AMINE / LEAN AMINE

Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
2	USE OF SOFT SEATED BALL, PLUG AND BUTTERFLY VALVES SHALL BE LIMITED TO MAXIMUM OF 204DEGC (400DEGF)
5	BOLTING CONFIRMING TO B7M / 2HM SHALL BE USED UNDER CONDITIONS (A) DIRECT EXPOSURE TO SOUR ENVIRONMENTS (B) WHEN THE BOLTING WILL BE BURIED OR INSULATED
27	PWHT OF CARBON STEEL PIPING IN WET H2S, CAUSTIC AND AMINE SERVICES SHALL BE IN ACCORDANCE WITH SECTION 10.2, 10.3, AND 10.4 OF PROJECT SPECIFICATION 3550-8440-SP-0002 MATERIALS REQUIREMENTS FOR PRESSURISED EQUIPMENT AND PIPING. FOR CAUSTIC AND AMINE SERVICE THE FOLLOWING SHALL APPLY: - PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF ALL SITE PIPING FABRICATION WELDS IS REQUIRED FOR ALL WALL THICKNESSES. FOR MODERATE AND SEVERE WET H2S SERVICE THE FOLLOWING SHALL APPLY: PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF SITE FABRICATION CIRCUMFERENTIAL OR BRANCH WELDS IS NOT REQUIRED IF WELDS ARE MULTIPASS AND IN ACCORDANCE WITH PARA 10.2.12 OF PROJECT SPECIFICATION 3550-8440-SP-0002. FOR SERVICES MEETING THE WET H2S CRITERIA AND CAUSTIC OR AMINE CRITERIA THE MORE STRINGENT PWHT REQUIREMENT SHALL GOVERN.

DETAIL NOTES :

NO.	DESCRIPTION
37	TO BE USED ONLY FOR ORIFICE FLANGE ASSEMLY UPTO 425 DEG C

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
200	WITH JACK SCREW (FO)
541	NPT(F) (CA,F,L)
781	CLASS 600 (B,F,G)
4001	ALTERNATIVE MATERIAL FOR INSTRUMENT CONNECTION (F,P,V)
4405	FLANGE NPT WITH ALTERNATIVE MATERIAL FOR INSTRUMENT CONNECTION (F)
4602	DISSIMILAR TYPE CHECK VALVE (XDP)
4608	VALVE WITH NIPPLES (V)

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PIPING CLASS
B4AR REV NO. 2

PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		XXS		P01A-0014U	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1.5		XXS		P01A-00162	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	2		SCH160		P01A-0019T	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	3		SCH160		P01A-001S5	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	4		SCH120		P01A-001TM	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	6		XS		P01A-000ZF	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	8		XS		P01A-000ZJ	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	10		XS		P01A-000Y2	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	12		SCH60		P01A-001LH	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	14		SCH60		P01A-001MU	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	16		XS		P01A-000YS	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	18		XS		P01A-00372	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	20		XS		P01A-00373	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
4001	0.5		SCH80S		P01J-002ES	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE Severe wet H2S service	37

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		XXS		P02A-000XJ	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1.5		XXS		P02A-002N4	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	2		SCH160		P02A-000KW	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		SCH160		P02A-000U4	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		SCH120		P02A-000U5	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		XS		P02A-000DA	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		XS		P02A-000DG	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	10		XS		P02A-000BN	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	12		SCH60		P02A-0019S	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	14		SCH60		P02A-000UC	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	16		XS		P02A-000CE	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	18		XS		P02A-000M9	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	20		XS		P02A-001JX	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		XXS		P03A-000U8	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1.5		XXS		P03A-002KD	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	2		SCH160		P03A-000HU	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		SCH160		P03A-000RB	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		SCH120		P03A-000RC	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		XS		P03A-000B8	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		XS		P03A-000BC	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	10		XS		P03A-000A3	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	12		SCH60		P03A-0015P	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	14		SCH60		P03A-000RZ	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	16		XS		P03A-000AP	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	18		XS		P03A-001DZ	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	20		XS		P03A-001E0	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		XXS		P21A-002DP	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5		XXS		P21A-003KU	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2		SCH160		P21A-00245	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		SCH160		P21A-002AG	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		SCH120		P21A-002AH	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6		XS		P21A-001D4	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8		XS		P21A-001D6	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10		XS		P21A-001C0	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12		SCH60		P21A-002PC	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14		SCH60		P21A-002AK	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16		XS		P21A-001CG	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18		XS		P21A-002Y3	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20		XS		P21A-002Y4	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5	1	XXS	XXS	P24A-00H61	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	SCH160	XXS	P24A-0044B	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	SCH160	XXS	P24A-003GG	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	SCH160	XXS	P24A-0045F	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	SCH160	SCH160	P24A-0045H	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	SCH120	SCH160	P24A-0045G	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	SCH120	SCH160	P24A-0045E	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	XS	SCH160	P24A-00GDY	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	XS	SCH120	P24A-00GDZ	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	XS	SCH120	P24A-00GE0	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	XS	XS	P24A-0024M	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	XS	SCH120	P24A-00GF8	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	XS	XS	P24A-00241	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	XS	XS	P24A-0024K	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	SCH60	XS	P24A-00GE1	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH60	XS	P24A-0067T	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH60	XS	P24A-0067S	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	SCH60	XS	P24A-00GUS	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	SCH60	XS	P24A-00GE2	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	SCH60	XS	P24A-0067U	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	SCH60	SCH60	P24A-0067V	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	6	XS	XS	P24A-0025G	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	XS	XS	P24A-0025P	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	XS	XS	P24A-00242	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	XS	SCH60	P24A-00GNZ	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	XS	SCH60	P24A-00GP0	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	8	XS	XS	P24A-00GMK	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	10	XS	XS	P24A-00GMG	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	12	XS	SCH60	P24A-00GWT	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	14	XS	SCH60	P24A-00GWU	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	16	XS	XS	P24A-0087Y	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	8	XS	XS	P24A-00GMP	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	10	XS	XS	P24A-00GML	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	12	XS	SCH60	P24A-00L6M	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	14	XS	SCH60	P24A-00L6N	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	16	XS	XS	P24A-0087Z	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	18	XS	XS	P24A-00880	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5	1	XXS	XXS	P27A-004NR	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	SCH160	XXS	P27A-0029H	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	SCH160	XXS	P27A-0029K	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	SCH160	XXS	P27A-002NG	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	SCH160	SCH160	P27A-002NC	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	1.5	SCH120	XXS	P27A-002NH	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	SCH120	SCH160	P27A-002ND	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	SCH120	SCH160	P27A-002NM	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	XS	SCH160	P27A-007P7	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	XS	SCH120	P27A-007PZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	XS	SCH120	P27A-004KD	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	XS	XS	P27A-001EY	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	10	4	XS	SCH120	P27A-004PY	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	XS	XS	P27A-001F2	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	XS	XS	P27A-001FR	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	SCH60	XS	P27A-0048V	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH60	XS	P27A-0048W	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH60	XS	P27A-0048U	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	SCH60	XS	P27A-0048Z	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	SCH60	XS	P27A-00490	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	SCH60	XS	P27A-0048X	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	SCH60	SCH60	P27A-0048Y	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	XS	XS	P27A-001GV	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	XS	XS	P27A-001EN	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	XS	SCH60	P27A-0056B	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	XS	SCH60	P27A-0057V	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	10	XS	XS	P27A-005BV	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	12	XS	SCH60	P27A-00BLF	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	14	XS	SCH60	P27A-00BLG	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	16	XS	XS	P27A-005J1	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	12	XS	SCH60	P27A-00FE6	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	14	XS	SCH60	P27A-00FE7	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	16	XS	XS	P27A-005SB	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	18	XS	XS	P27A-005TZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5	1	XXS	XXS	P28A-008W0	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	SCH160	XXS	P28A-00289	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	SCH160	XXS	P28A-0028A	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	SCH160	XXS	P28A-002P1	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	SCH160	SCH160	P28A-002NY	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	1.5	SCH120	XXS	P28A-002P0	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	SCH120	SCH160	P28A-002NZ	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	SCH120	SCH160	P28A-002P2	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	XS	SCH160	P28A-0085V	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	XS	SCH120	P28A-0085W	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	XS	SCH120	P28A-004KS	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	XS	XS	P28A-001FT	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	XS	SCH120	P28A-0085X	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	XS	XS	P28A-001FR	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	XS	XS	P28A-001GT	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	SCH60	XS	P28A-0048L	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH60	XS	P28A-0048M	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH60	XS	P28A-0048K	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	SCH60	XS	P28A-0048R	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	SCH60	XS	P28A-0048S	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	SCH60	XS	P28A-0048N	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	SCH60	SCH60	P28A-0048P	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	XS	XS	P28A-0018A	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	XS	XS	P28A-001F9	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	XS	SCH60	P28A-008FA	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	XS	SCH60	P28A-008FB	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	10	XS	XS	P28A-008EE	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	12	XS	SCH60	P28A-008LR	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	14	XS	SCH60	P28A-008LS	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	16	XS	XS	P28A-0063K	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	12	XS	SCH60	P28A-00CK4	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	14	XS	SCH60	P28A-00CK5	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	16	XS	XS	P28A-0063N	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	18	XS	XS	P28A-0063P	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		XXS		P29A-00338	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5		XXS		P29A-00339	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	2		SCH160		P29A-001W3	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	3		SCH160		P29A-001W6	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	4		SCH120		P29A-001W9	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	6		XS		P29A-001WA	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	8		XS		P29A-001WB	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	10		XS		P29A-001VY	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	12		SCH60		P29A-001WU	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	14		SCH60		P29A-001WV	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	16		XS		P29A-001W1	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	18		XS		P29A-001W2	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	20		XS		P29A-001W4	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
541	1				P29B-0000Z	Cap ASTM A105 Class 6000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		10.60mm		P41A-001AT	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		10.60mm		P41A-001AU	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
541	1.5	1			P31B-005J1	Outlet ASTM A105 Class 6000 MSS SP-97 NPT	
541	2 - 2.5	1			P31B-005J3	Outlet ASTM A105 Class 6000 MSS SP-97 NPT	
541	3 - 10	1			P31B-007KG	Outlet ASTM A105 Class 6000 MSS SP-97 NPT	
541	12 and larger	1			P31B-0137G	Outlet ASTM A105 Class 6000 MSS SP-97 NPT	
1	3	1	SCH160	XXS	P31B-00B4A	Outlet ASTM A105 MSS SP-97 BW	
1	4	1	SCH120	XXS	P31B-00B08	Outlet ASTM A105 MSS SP-97 BW	
1	6	1	XS	XXS	P31B-00AYZ	Outlet ASTM A105 MSS SP-97 BW	
1	8	1	XS	XXS	P31B-00AUZ	Outlet ASTM A105 MSS SP-97 BW	
1	10	1	XS	XXS	P31B-00BW4	Outlet ASTM A105 MSS SP-97 BW	
1	12	1	SCH60	XXS	P31B-00BRT	Outlet ASTM A105 MSS SP-97 BW	
1	14	1	SCH60	XXS	P31B-00BRB	Outlet ASTM A105 MSS SP-97 BW	
1	16	1	XS	XXS	P31B-00BCD	Outlet ASTM A105 MSS SP-97 BW	
1	18	1	XS	XXS	P31B-00B8W	Outlet ASTM A105 MSS SP-97 BW	
1	20	1	XS	XXS	P31B-00B88	Outlet ASTM A105 MSS SP-97 BW	
1	4	1.5	SCH120	XXS	P31B-00BNX	Outlet ASTM A105 MSS SP-97 BW	
1	6	1.5	XS	XXS	P31B-00BJ4	Outlet ASTM A105 MSS SP-97 BW	
1	8	1.5	XS	XXS	P31B-00BFF	Outlet ASTM A105 MSS SP-97 BW	
1	10	1.5	XS	XXS	P31B-00CER	Outlet ASTM A105 MSS SP-97 BW	
1	12	1.5	SCH60	XXS	P31B-00CDZ	Outlet ASTM A105 MSS SP-97 BW	
1	14	1.5	SCH60	XXS	P31B-00C9J	Outlet ASTM A105 MSS SP-97 BW	
1	16	1.5	XS	XXS	P31B-00C8P	Outlet ASTM A105 MSS SP-97 BW	
1	18	1.5	XS	XXS	P31B-00C48	Outlet ASTM A105 MSS SP-97 BW	
1	20	1.5	XS	XXS	P31B-00C3G	Outlet ASTM A105 MSS SP-97 BW	
1	6	2	XS	SCH160	P31B-007SR	Outlet ASTM A105 MSS SP-97 BW	
1	8	2	XS	SCH160	P31B-00AHC	Outlet ASTM A105 MSS SP-97 BW	
1	10	2	XS	SCH160	P31B-00ASR	Outlet ASTM A105 MSS SP-97 BW	
1	12	2	SCH60	SCH160	P31B-00ARL	Outlet ASTM A105 MSS SP-97 BW	
1	14	2	SCH60	SCH160	P31B-00CB8	Outlet ASTM A105 MSS SP-97 BW	
1	16	2	XS	SCH160	P31B-00C6D	Outlet ASTM A105 MSS SP-97 BW	
1	18	2	XS	SCH160	P31B-006P6	Outlet ASTM A105 MSS SP-97 BW	
1	20	2	XS	SCH160	P31B-009ET	Outlet ASTM A105 MSS SP-97 BW	
1	8	3	XS	SCH160	P31B-00A33	Outlet ASTM A105 MSS SP-97 BW	
1	10	3	XS	SCH160	P31B-009D0	Outlet ASTM A105 MSS SP-97 BW	
1	12	3	SCH60	SCH160	P31B-0097A	Outlet ASTM A105 MSS SP-97 BW	
1	14	3	SCH60	SCH160	P31B-0091F	Outlet ASTM A105 MSS SP-97 BW	
1	16	3	XS	SCH160	P31B-00903	Outlet ASTM A105 MSS SP-97 BW	
1	18	3	XS	SCH160	P31B-008U0	Outlet ASTM A105 MSS SP-97 BW	

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OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	20	3	XS	SCH160	P31B-008LW	Outlet ASTM A105 MSS SP-97 BW	
1	12	4	SCH60	SCH120	P31B-00957	Outlet ASTM A105 MSS SP-97 BW	
1	14	4	SCH60	SCH120	P31B-008ZD	Outlet ASTM A105 MSS SP-97 BW	
1	16	4	XS	SCH120	P31B-00TU5	Outlet ASTM A105 MSS SP-97 BW	
1	18	4	XS	SCH120	P31B-00TU6	Outlet ASTM A105 MSS SP-97 BW	
1	20	4	XS	SCH120	P31B-00TU7	Outlet ASTM A105 MSS SP-97 BW	
1	18	6	XS	XS	P31B-008RR	Outlet ASTM A105 MSS SP-97 BW	
1	20	6	XS	XS	P31B-008K4	Outlet ASTM A105 MSS SP-97 BW	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P30B-0002F	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1.5				P30B-0002G	Plug ASTM A105 ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		XXS		P61B-003MB	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	1.5		XXS		P61B-003MR	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	2		SCH160		P61B-002R8	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	3		SCH160		P61B-003JL	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	4		SCH120		P61B-003MU	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	6		XS		P61B-001FE	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	8		XS		P61B-001FV	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	10		XS		P61B-001FD	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	12		SCH60		P61B-005XC	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	14		SCH60		P61B-005XD	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	16		XS		P61B-001HU	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	18		XS		P61B-001T0	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	20		XS		P61B-003A5	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
4001	0.5		SCH80S		P61K-005FX	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	37
4405	0.5				P61K-0069N	Flange NPT ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	37
541	1				P61B-003U5	Flange NPT ASTM A105 Class 300 ASME B16.5 RF	
781	1		XXS		P61B-003TC	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	1.5		XXS		P61B-009N1	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	2		SCH160		P61B-003T7	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	3		SCH160		P61B-003JS	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	4		SCH120		P61B-005X8	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	6		XS		P61B-001T1	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	8		XS		P61B-001UC	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	10		XS		P61B-001JN	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	12		SCH60		P61B-003XC	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	14		SCH60		P61B-003XD	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	16		XS		P61B-001R3	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	18		XS		P61B-001RG	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	20		XS		P61B-004UW	Flange WN ASTM A105 Class 600 ASME B16.5 RF	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P67B-000GK	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	1.5				P67B-000GL	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	2				P67B-000GM	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	3				P67B-000GN	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	4				P67B-000GP	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	6				P67B-000GY	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	8				P67B-000GZ	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	10				P67B-000GR	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	12				P67B-000GS	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	14				P67B-000GT	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	16				P67B-000GU	Blind flange ASTM A105 Class 300 ASME B16.5 RF	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	18				P67B-000GV	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	20				P67B-000GW	Blind flange ASTM A105 Class 300 ASME B16.5 RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000FT	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000G5	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000G6	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	6				P73T-000G7	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	8				P73T-000G8	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	10				P73T-000FX	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	12				P73T-000FY	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	14				P73T-000FZ	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	16				P73T-000G0	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	18				P73T-000G1	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	20				P73T-000G3	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1				P73T-000JA	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1.5				P73T-000JB	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	2				P73T-000JH	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	3				P73T-000JL	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	4				P73T-000JM	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	6				P73T-000JN	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	8				P73T-000JP	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	10				P73T-000JC	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	12				P73T-000JD	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	14				P73T-000JE	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	16				P73T-000JF	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	18				P73T-000JG	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	20				P73T-000JJ	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-10				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	12-20				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
781	1-6				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
781	8-20				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P81B-0019H	Gate valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service C.A.=6.0mm	
1	1.5				P81B-0019J	Gate valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service C.A.=6.0mm	
1	2				P81C-004K6	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service C.A.=6.0mm	
1	3				P81C-004K7	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service C.A.=6.0mm	

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GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	4				P81C-004K8	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service C.A.=6.0mm	
1	6				P81C-004K9	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service C.A.=6.0mm	
1	8				P81C-0092A	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Severe wet H2S service C.A.=6.0mm	
1	10				P81C-004KB	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Severe wet H2S service C.A.=6.0mm	
1	12				P81C-004KC	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Severe wet H2S service C.A.=6.0mm	
1	14				P81C-004KD	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Severe wet H2S service C.A.=6.0mm	
1	16				P81C-004KE	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Severe wet H2S service C.A.=6.0mm	
1	18				P81C-004KF	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Severe wet H2S service C.A.=6.0mm	
1	20				P81C-004KG	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Severe wet H2S service C.A.=6.0mm	
4001	0.5				P81K-0015M	Gate valve ASTM A182 Grade F316/F316L dual grade Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	37
4608	1				P81B-002XB	Gate valve ASTM A105 Class 300 API 602 BW both sides w/ nipples BE - NPT ASTM A106-B T=10.60MM-nipple Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service C.A.=6.0mm	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P82B-0012G	Globe valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service C.A.=6.0mm	
1	1.5				P82B-0012H	Globe valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service C.A.=6.0mm	
1	2				P82C-0028J	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service C.A.=6.0mm	
1	3				P82C-0028K	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service C.A.=6.0mm	
1	4				P82C-0028L	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service C.A.=6.0mm	
1	6				P82C-0028M	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service C.A.=6.0mm	
1	8				P82C-004D9	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Severe wet H2S service C.A.=6.0mm	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P83B-000UX	Check valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Severe wet H2S service C.A.=6.0mm	
1	1.5				P83B-000UY	Check valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Severe wet H2S service C.A.=6.0mm	
1	2				P83C-0025L	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service C.A.=6.0mm	
1	3				P83C-0025N	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service C.A.=6.0mm	
1	4				P83C-0025P	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service C.A.=6.0mm	
1	6				P83C-0025R	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service C.A.=6.0mm	
1	8				P83C-0025S	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service C.A.=6.0mm	
1	10				P83C-0025F	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service C.A.=6.0mm	
1	12				P83C-0025G	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service C.A.=6.0mm	
1	14				P83C-0025H	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service C.A.=6.0mm	
1	16				P83C-0025J	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service C.A.=6.0mm	
1	18				P83C-0025K	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service C.A.=6.0mm	
1	20				P83C-0025M	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service C.A.=6.0mm	

DP CHECK VALVE (XDP)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
4602	3				P88C-0035E	Dual plate check valve ASTM A216 Grade WCB Class 300 API 594 Wafer-type ASME B16.5 RF Trim number 12 Internal wetted parts SS316 Spring Inconel Retainerless-type Severe wet H2S service C.A.=6.0mm	
4602	4				P88C-0035F	Dual plate check valve ASTM A216 Grade WCB Class 300 API 594 Wafer-type ASME B16.5 RF Trim number 12 Internal wetted parts SS316 Spring Inconel Retainerless-type Severe wet H2S service C.A.=6.0mm	
4602	6				P88C-0035G	Dual plate check valve ASTM A216 Grade WCB Class 300 API 594 Wafer-type ASME B16.5 RF Trim number 12 Internal wetted parts SS316 Spring Inconel Retainerless-type Severe wet H2S service C.A.=6.0mm	
4602	8				P88C-0035H	Dual plate check valve ASTM A216 Grade WCB Class 300 API 594 Wafer-type ASME B16.5 RF Trim number 12 Internal wetted parts SS316 Spring Inconel Retainerless-type Severe wet H2S service C.A.=6.0mm	

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BUTTERFLY VALVE (H)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	10				P86C-0025E	Offset design butterfly valve ASTM A216 Grade WCB Class 300 API 609 Category B Lug-type ASME B16.5 RF Disc CS Seat Stellite-6 Trim SS316 Triple eccentric design BG Gear operated Severe wet H2S service C.A.=6.0mm	

NEEDLE VALVE (NV)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P82B-001M2	Needle valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service C.A.=6.0mm	
1	1.5				P82B-001M3	Needle valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service C.A.=6.0mm	

ORIFICE FLANGE (FO)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2		SCH160		P66B-00889	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	3		SCH160		P66B-0088C	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	4		SCH120		P66B-0088D	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	6		XS		P66B-0088E	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	8		XS		P66B-008DS	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	10		XS		P66B-00884	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	12		SCH60		P66B-008DN	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	14		SCH60		P66B-008DP	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	16		XS		P66B-00887	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	18		XS		P66B-00888	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	20		XS		P66B-0088A	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
200	2		SCH160		P66B-0088P	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	3		SCH160		P66B-0088T	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	4		SCH120		P66B-0088U	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	6		XS		P66B-0088V	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	8		XS		P66B-008DW	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	10		XS		P66B-0088J	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	12		SCH60		P66B-008DT	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	14		SCH60		P66B-008DU	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	16		XS		P66B-0088M	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	18		XS		P66B-0088N	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	20		XS		P66B-0088R	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P71B-000B3	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71B-000B4	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	2				P71B-000B6	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	3				P71B-000B7	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	4				P71B-000B8	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	6				P71B-000B9	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	8				P71B-000BA	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	10				P71B-000B5	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	12				P71B-000BB	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	

PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000FA	Paddle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	16				P72B-000FB	Paddle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	18				P72B-000FC	Paddle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	20				P72B-000FD	Paddle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	

PADDLE SPACER (PS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000FG	Paddle spacer ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	16				P72B-000FH	Paddle spacer ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	18				P72B-000FJ	Paddle spacer ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	

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PADDLE SPACER (PS)							
OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	20				P72B-000FK	Paddle spacer ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	

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BOLT TABLE (B_B4AR , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-008T0		
1	4	0.625	80	P80S-00909		
1.5	4	0.750	95	P80S-005Z4		
2	8	0.625	90	P80S-0090B		
3	8	0.750	110	P80S-0090F		
4	8	0.750	115	P80S-0090G		
6	12	0.750	125	P80S-0090J		
8	12	0.875	140	P80S-005ZD		
10	16	1.000	160	P80S-0061E		
12	16	1.125	175	P80S-0064S		
14	20	1.125	180	P80S-0064T		
16	20	1.250	190	P80S-00689		
18	24	1.250	200	P80S-0068B		
20	24	1.250	210	P80S-0068D		

BOLT TABLE (B_B4AR_781 , STUD ASME RF, OPTION CODE 781)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	80			
1	4	0.625	95	P80S-0090C		
1.5	4	0.750	110	P80S-0090F		
2	8	0.625	110	P80S-008T8		
3	8	0.750	130	P80S-0090K		
4	8	0.875	150	P80S-005ZF		
6	12	1.000	175	P80S-0061H		
8	12	1.125	195	P80S-0064W		
10	16	1.250	250	P80S-0068M		
12	20	1.250	255	P80S-0068N		
14	20	1.375	270	P80S-006HV		
16	20	1.500	295	P80S-006LP		
18	20	1.625	320	P80S-00A5E		
20	24	1.625	335	P80S-00A5H		

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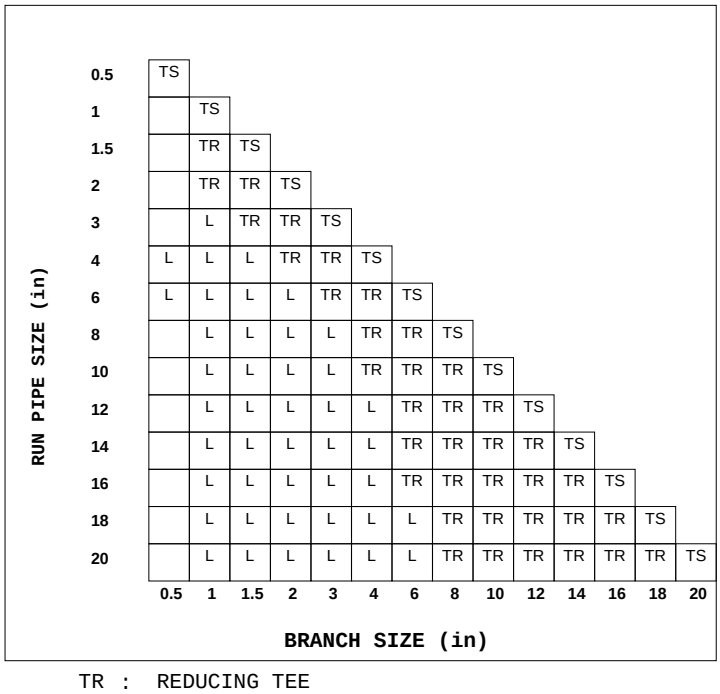
BRANCH TABLE (T_B4AR)



TR : REDUCING TEE
TS : STRAIGHT TEE
L : OUTLET

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PIPING CLASS

B4AR01 REV NO. 2

Material : Killed CS
Rating : ASME CLASS 300
Flange Face : RF
C.A.(mm) : 6.00
Gasket : Spiral Wound
Service : PROCESS - WET SEVERE SOUR SERVICE SUBJECT TO NACE + HIC STD.
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
2	USE OF SOFT SEATED BALL, PLUG AND BUTTERFLY VALVES SHALL BE LIMITED TO MAXIMUM OF 204DEGC (400DEGF)
5	BOLTING CONFIRMING TO B7M / 2HM SHALL BE USED UNDER CONDITIONS (A) DIRECT EXPOSURE TO SOUR ENVIRONMENTS (B) WHEN THE BOLTING WILL BE BURIED OR INSULATED
27	PWHT OF CARBON STEEL PIPING IN WET H2S, CAUSTIC AND AMINE SERVICES SHALL BE IN ACCORDANCE WITH SECTION 10.2, 10.3, AND 10.4 OF PROJECT SPECIFICATION 3550-8440-SP-0002 MATERIALS REQUIREMENTS FOR PRESSURISED EQUIPMENT AND PIPING. FOR CAUSTIC AND AMINE SERVICE THE FOLLOWING SHALL APPLY: - PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF ALL SITE PIPING FABRICATION WELDS IS REQUIRED FOR ALL WALL THICKNESSES. FOR MODERATE AND SEVERE WET H2S SERVICE THE FOLLOWING SHALL APPLY: PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF SITE FABRICATION CIRCUMFERENTIAL OR BRANCH WELDS IS NOT REQUIRED IF WELDS ARE MULTIPASS AND IN ACCORDANCE WITH PARA 10.2.12 OF PROJECT SPECIFICATION 3550-8440-SP-0002. FOR SERVICES MEETING THE WET H2S CRITERIA AND CAUSTIC OR AMINE CRITERIA THE MORE STRINGENT PWHT REQUIREMENT SHALL GOVERN.

DETAIL NOTES :

NO.	DESCRIPTION
37	TO BE USED ONLY FOR ORIFICE FLANGE ASSEMLY UPTO 425 DEG C

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
200	WITH JACK SCREW (FO)
541	NPT(F) (CA,F)
781	CLASS 600 (B,F,G)
4001	ALTERNATIVE MATERIAL FOR INSTRUMENT CONNECTION (F,P,V)
4405	FLANGE NPT WITH ALTERNATIVE MATERIAL FOR INSTRUMENT CONNECTION (F)
4602	DISSIMILAR TYPE CHECK VALVE (XDP)
4608	VALVE WITH NIPPLES (V)

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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		XXS		P01A-007AL	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE Severe wet H2S service Licensor-1	
1	1.5		XXS		P01A-007AM	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE Severe wet H2S service Licensor-1	
1	2		SCH160		P01A-007AU	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Severe wet H2S service Licensor-1	
1	3		SCH160		P01A-007AV	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Severe wet H2S service Licensor-1	
1	4		SCH120		P01A-007AW	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Severe wet H2S service Licensor-1	
1	6		XS		P01A-007AX	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Severe wet H2S service Licensor-1	
1	8		XS		P01A-007AY	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Severe wet H2S service Licensor-1	
1	10		XS		P01A-007AN	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Severe wet H2S service Licensor-1	
1	12		SCH60		P01A-007AP	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Severe wet H2S service Licensor-1	
1	14		SCH60		P01A-007AR	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Severe wet H2S service Licensor-1	
1	16		XS		P01A-007AS	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Severe wet H2S service Licensor-1	
1	18		XS		P01A-008P4	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Severe wet H2S service Licensor-1	
4001	0.5		SCH80S		P01J-002ES	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE Severe wet H2S service	37

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		XXS		P02A-003SS	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	1.5		XXS		P02A-003ST	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	2		SCH160		P02A-003SZ	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	3		SCH160		P02A-003T0	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	4		SCH120		P02A-003T1	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	6		XS		P02A-003T2	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	8		XS		P02A-003T3	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	10		XS		P02A-003SU	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	12		SCH60		P02A-003SV	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	14		SCH60		P02A-003SW	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	16		XS		P02A-003SX	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	18		XS		P02A-004GG	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		XXS		P03A-003PE	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	1.5		XXS		P03A-003PF	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	2		SCH160		P03A-003PM	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	3		SCH160		P03A-003PN	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	4		SCH120		P03A-003PP	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	6		XS		P03A-003PR	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	8		XS		P03A-003PS	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	10		XS		P03A-003PG	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	12		SCH60		P03A-003PH	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	14		SCH60		P03A-003PJ	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	16		XS		P03A-003PK	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	18		XS		P03A-004DN	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		XXS		P21A-004A4	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	1.5		XXS		P21A-004A5	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	2		SCH160		P21A-004AB	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	3		SCH160		P21A-004AC	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	

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STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	4		SCH120		P21A-004AD	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	6		XS		P21A-004AE	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	8		XS		P21A-004AF	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	10		XS		P21A-004A6	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	12		SCH60		P21A-004A7	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	14		SCH60		P21A-004A8	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	16		XS		P21A-004A9	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	18		XS		P21A-004Z5	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5	1	XXS	XXS	P24A-00K4T	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	2	1	SCH160	XXS	P24A-00K4U	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	2	1.5	SCH160	XXS	P24A-00K4V	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	3	1.5	SCH160	XXS	P24A-00K4W	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	3	2	SCH160	SCH160	P24A-00K4X	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	4	2	SCH120	SCH160	P24A-00K4Y	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	4	3	SCH120	SCH160	P24A-00K4Z	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	6	3	XS	SCH160	P24A-00K50	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	6	4	XS	SCH120	P24A-00K51	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	8	4	XS	SCH120	P24A-00K52	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	8	6	XS	XS	P24A-00K53	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	10	4	XS	SCH120	P24A-00K54	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	10	6	XS	XS	P24A-00K55	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	10	8	XS	XS	P24A-00K56	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	12	6	SCH60	XS	P24A-00K58	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	12	8	SCH60	XS	P24A-00K59	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	12	10	SCH60	XS	P24A-00K57	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	14	6	SCH60	XS	P24A-00K5C	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	14	8	SCH60	XS	P24A-00K5D	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	14	10	SCH60	XS	P24A-00K5A	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	14	12	SCH60	SCH60	P24A-00K5B	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	16	6	XS	XS	P24A-00K5H	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	16	8	XS	XS	P24A-00K5J	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	16	10	XS	XS	P24A-00K5E	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	16	12	XS	SCH60	P24A-00K5F	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	16	14	XS	SCH60	P24A-00K5G	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	18	8	XS	XS	P24A-00NYR	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	18	10	XS	XS	P24A-00NU4	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	18	12	XS	SCH60	P24A-00NYN	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	18	14	XS	SCH60	P24A-00NYP	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	18	16	XS	XS	P24A-00NU7	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5	1	XXS	XXS	P27A-00EPX	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	2	1	SCH160	XXS	P27A-00EPY	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	2	1.5	SCH160	XXS	P27A-00EPZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	3	1.5	SCH160	XXS	P27A-00ER0	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	3	2	SCH160	SCH160	P27A-00ER1	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	4	1.5	SCH120	XXS	P27A-00ER2	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	4	2	SCH120	SCH160	P27A-00ER3	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	4	3	SCH120	SCH160	P27A-00ER4	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	6	3	XS	SCH160	P27A-00ER5	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	6	4	XS	SCH120	P27A-00ER6	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	8	4	XS	SCH120	P27A-00ER7	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	8	6	XS	XS	P27A-00ER8	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	10	4	XS	SCH120	P27A-00ER9	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	10	6	XS	XS	P27A-00ERA	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	

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CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	10	8	XS	XS	P27A-00ERB	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	12	6	SCH60	XS	P27A-00ERD	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	12	8	SCH60	XS	P27A-00ERE	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	12	10	SCH60	XS	P27A-00ERC	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	14	6	SCH60	XS	P27A-00ERH	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	14	8	SCH60	XS	P27A-00ERJ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	14	10	SCH60	XS	P27A-00ERF	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	14	12	SCH60	SCH60	P27A-00ERG	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	16	8	XS	XS	P27A-00ERN	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	16	10	XS	XS	P27A-00ERK	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	16	12	XS	SCH60	P27A-00ERL	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	16	14	XS	SCH60	P27A-00ERM	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	18	10	XS	XS	P27A-00HB2	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	18	12	XS	SCH60	P27A-00HDT	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	18	14	XS	SCH60	P27A-00HDU	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	18	16	XS	XS	P27A-00HB5	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5	1	XXS	XXS	P28A-00BUR	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	2	1	SCH160	XXS	P28A-00BUS	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	2	1.5	SCH160	XXS	P28A-00BUT	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	3	1.5	SCH160	XXS	P28A-00BUU	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	3	2	SCH160	SCH160	P28A-00BUV	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	4	1.5	SCH120	XXS	P28A-00BUW	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	4	2	SCH120	SCH160	P28A-00BUX	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	4	3	SCH120	SCH160	P28A-00BUY	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	6	3	XS	SCH160	P28A-00BUZ	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	6	4	XS	SCH120	P28A-00BV0	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	8	4	XS	SCH120	P28A-00BV1	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	8	6	XS	XS	P28A-00BV2	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	10	4	XS	SCH120	P28A-00BV3	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	10	6	XS	XS	P28A-00BV4	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	10	8	XS	XS	P28A-00BV5	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	12	6	SCH60	XS	P28A-00BV7	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	12	8	SCH60	XS	P28A-00BV8	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	12	10	SCH60	XS	P28A-00BV6	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	14	6	SCH60	XS	P28A-00BVB	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	14	8	SCH60	XS	P28A-00BVC	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	14	10	SCH60	XS	P28A-00BV9	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	14	12	SCH60	SCH60	P28A-00BVA	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	16	8	XS	XS	P28A-00BVG	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	16	10	XS	XS	P28A-00BVD	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	16	12	XS	SCH60	P28A-00BVE	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	16	14	XS	SCH60	P28A-00BVF	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	18	10	XS	XS	P28A-00EJS	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	18	12	XS	SCH60	P28A-00EMG	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	18	14	XS	SCH60	P28A-00EMH	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	18	16	XS	XS	P28A-00EJV	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		XXS		P29A-00348	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	1.5		XXS		P29A-00349	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	2		SCH160		P29A-0034F	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	3		SCH160		P29A-0034G	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	4		SCH120		P29A-0034H	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	6		XS		P29A-0034J	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	8		XS		P29A-0034K	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	

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CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	10		XS		P29A-0034A	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	12		SCH60		P29A-0034B	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	14		SCH60		P29A-0034C	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	16		XS		P29A-0034D	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	18		XS		P29A-003TF	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
541	1				P29B-0006S	Cap ASTM A105 Class 6000 ASME B16.11 NPT Severe wet H2S service Licensor-1	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		10.60mm		P41A-001AX	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Severe wet H2S service Licensor-1	
1	1.5		10.60mm		P41A-001AY	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Severe wet H2S service Licensor-1	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	1	SCH160	XXS	P31B-00XLK	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	4	1	SCH120	XXS	P31B-00XLL	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	6	1	XS	XXS	P31B-00XLN	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	8	1	XS	XXS	P31B-00XLS	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	10	1	XS	XXS	P31B-00XLW	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	12	1	SCH60	XXS	P31B-00XM0	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	14	1	SCH60	XXS	P31B-00XM5	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	16	1	XS	XXS	P31B-00XMA	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	18	1	XS	XXS	P31B-010ZE	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	4	1.5	SCH120	XXS	P31B-00XLM	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	6	1.5	XS	XXS	P31B-00XLP	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	8	1.5	XS	XXS	P31B-00XLT	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	10	1.5	XS	XXS	P31B-00XLX	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	12	1.5	SCH60	XXS	P31B-00XM1	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	14	1.5	SCH60	XXS	P31B-00XM6	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	16	1.5	XS	XXS	P31B-00XMB	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	18	1.5	XS	XXS	P31B-010ZF	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	6	2	XS	SCH160	P31B-00XLR	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	8	2	XS	SCH160	P31B-00XLU	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	10	2	XS	SCH160	P31B-00XLY	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	12	2	SCH60	SCH160	P31B-00XM2	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	14	2	SCH60	SCH160	P31B-00XM7	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	16	2	XS	SCH160	P31B-00XMC	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	18	2	XS	SCH160	P31B-010ZG	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	8	3	XS	SCH160	P31B-00XLV	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	10	3	XS	SCH160	P31B-00XLZ	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	12	3	SCH60	SCH160	P31B-00XM3	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	14	3	SCH60	SCH160	P31B-00XM8	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	16	3	XS	SCH160	P31B-00XMD	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	18	3	XS	SCH160	P31B-010ZH	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	12	4	SCH60	SCH120	P31B-00XM4	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	14	4	SCH60	SCH120	P31B-00XM9	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	16	4	XS	SCH120	P31B-00XME	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	18	4	XS	SCH120	P31B-010ZJ	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	18	6	XS	XS	P31B-010ZK	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P30B-0006K	Plug ASTM A105 ASME B16.11 NPT Round head Severe wet H2S service Licensor-1	
1	1.5				P30B-0006L	Plug ASTM A105 ASME B16.11 NPT Round head Severe wet H2S service Licensor-1	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		XXS		P61B-009XU	Flange WN ASTM A105 Class 300 ASME B16.5 RF Severe wet H2S service Licensor-1	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5		XXS		P61B-009XV	Flange WN ASTM A105 Class 300 ASME B16.5 RF Severe wet H2S service Licensor-1	
1	2		SCH160		P61B-009Y1	Flange WN ASTM A105 Class 300 ASME B16.5 RF Severe wet H2S service Licensor-1	
1	3		SCH160		P61B-009Y2	Flange WN ASTM A105 Class 300 ASME B16.5 RF Severe wet H2S service Licensor-1	
1	4		SCH120		P61B-009Y3	Flange WN ASTM A105 Class 300 ASME B16.5 RF Severe wet H2S service Licensor-1	
1	6		XS		P61B-009Y4	Flange WN ASTM A105 Class 300 ASME B16.5 RF Severe wet H2S service Licensor-1	
1	8		XS		P61B-009Y5	Flange WN ASTM A105 Class 300 ASME B16.5 RF Severe wet H2S service Licensor-1	
1	10		XS		P61B-009XW	Flange WN ASTM A105 Class 300 ASME B16.5 RF Severe wet H2S service Licensor-1	
1	12		SCH60		P61B-009XX	Flange WN ASTM A105 Class 300 ASME B16.5 RF Severe wet H2S service Licensor-1	
1	14		SCH60		P61B-009XY	Flange WN ASTM A105 Class 300 ASME B16.5 RF Severe wet H2S service Licensor-1	
1	16		XS		P61B-009XZ	Flange WN ASTM A105 Class 300 ASME B16.5 RF Severe wet H2S service Licensor-1	
1	18		XS		P61B-00BU0	Flange WN ASTM A105 Class 300 ASME B16.5 RF Severe wet H2S service Licensor-1	
4001	0.5		SCH80S		P61K-005FX	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	37
4405	0.5				P61K-0069N	Flange NPT ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Severe wet H2S service	37
541	1				P61B-00CYB	Flange NPT ASTM A105 Class 300 ASME B16.5 RF Severe wet H2S service Licensor-1	
781	1		XXS		P61B-009Y6	Flange WN ASTM A105 Class 600 ASME B16.5 RF Severe wet H2S service Licensor-1	
781	1.5		XXS		P61B-009Y7	Flange WN ASTM A105 Class 600 ASME B16.5 RF Severe wet H2S service Licensor-1	
781	2		SCH160		P61B-009YD	Flange WN ASTM A105 Class 600 ASME B16.5 RF Severe wet H2S service Licensor-1	
781	3		SCH160		P61B-009YE	Flange WN ASTM A105 Class 600 ASME B16.5 RF Severe wet H2S service Licensor-1	
781	4		SCH120		P61B-009YF	Flange WN ASTM A105 Class 600 ASME B16.5 RF Severe wet H2S service Licensor-1	
781	6		XS		P61B-009YG	Flange WN ASTM A105 Class 600 ASME B16.5 RF Severe wet H2S service Licensor-1	
781	8		XS		P61B-009YH	Flange WN ASTM A105 Class 600 ASME B16.5 RF Severe wet H2S service Licensor-1	
781	10		XS		P61B-009Y8	Flange WN ASTM A105 Class 600 ASME B16.5 RF Severe wet H2S service Licensor-1	
781	12		SCH60		P61B-009Y9	Flange WN ASTM A105 Class 600 ASME B16.5 RF Severe wet H2S service Licensor-1	
781	14		SCH60		P61B-009YA	Flange WN ASTM A105 Class 600 ASME B16.5 RF Severe wet H2S service Licensor-1	
781	16		XS		P61B-009YB	Flange WN ASTM A105 Class 600 ASME B16.5 RF Severe wet H2S service Licensor-1	
781	18		XS		P61B-00BVK	Flange WN ASTM A105 Class 600 ASME B16.5 RF Severe wet H2S service Licensor-1	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P67B-002F7	Blind flange ASTM A105 Class 300 ASME B16.5 RF Severe wet H2S service Licensor-1	
1	1.5				P67B-002F8	Blind flange ASTM A105 Class 300 ASME B16.5 RF Severe wet H2S service Licensor-1	
1	2				P67B-002FE	Blind flange ASTM A105 Class 300 ASME B16.5 RF Severe wet H2S service Licensor-1	
1	3				P67B-002FF	Blind flange ASTM A105 Class 300 ASME B16.5 RF Severe wet H2S service Licensor-1	
1	4				P67B-002FG	Blind flange ASTM A105 Class 300 ASME B16.5 RF Severe wet H2S service Licensor-1	
1	6				P67B-002FH	Blind flange ASTM A105 Class 300 ASME B16.5 RF Severe wet H2S service Licensor-1	
1	8				P67B-002FJ	Blind flange ASTM A105 Class 300 ASME B16.5 RF Severe wet H2S service Licensor-1	
1	10				P67B-002F9	Blind flange ASTM A105 Class 300 ASME B16.5 RF Severe wet H2S service Licensor-1	
1	12				P67B-002FA	Blind flange ASTM A105 Class 300 ASME B16.5 RF Severe wet H2S service Licensor-1	
1	14				P67B-002FB	Blind flange ASTM A105 Class 300 ASME B16.5 RF Severe wet H2S service Licensor-1	
1	16				P67B-002FC	Blind flange ASTM A105 Class 300 ASME B16.5 RF Severe wet H2S service Licensor-1	
1	18				P67B-002FD	Blind flange ASTM A105 Class 300 ASME B16.5 RF Severe wet H2S service Licensor-1	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000FT	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000G5	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000G6	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	6				P73T-000G7	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	8				P73T-000G8	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	10				P73T-000FX	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	12				P73T-000FY	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	14				P73T-000FZ	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

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GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	16				P73T-000G0	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	18				P73T-000G1	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1				P73T-000JA	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1.5				P73T-000JB	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	2				P73T-000JH	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	3				P73T-000JL	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	4				P73T-000JM	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	6				P73T-000JN	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	8				P73T-000JP	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	10				P73T-000JC	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	12				P73T-000JD	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	14				P73T-000JE	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	16				P73T-000JF	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	18				P73T-000JG	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-10				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	12-18				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
781	1-6				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
781	8-18				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P81B-001DN	Gate valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service C.A.=6.0mm Licensor-1	
1	1.5				P81B-001DP	Gate valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service C.A.=6.0mm Licensor-1	
1	2				P81C-004SZ	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service C.A.=6.0mm Licensor-1	
1	3				P81C-004T0	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service C.A.=6.0mm Licensor-1	
1	4				P81C-004T1	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service C.A.=6.0mm Licensor-1	
1	6				P81C-004T2	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service C.A.=6.0mm Licensor-1	
1	8				P81C-0092B	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Severe wet H2S service C.A.=6.0mm Licensor-1	
1	10				P81C-004T4	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Severe wet H2S service C.A.=6.0mm Licensor-1	
1	12				P81C-004T5	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Severe wet H2S service C.A.=6.0mm Licensor-1	
1	14				P81C-004T6	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Severe wet H2S service C.A.=6.0mm Licensor-1	
1	16				P81C-004T7	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Severe wet H2S service C.A.=6.0mm Licensor-1	
1	18				P81C-004T8	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Severe wet H2S service C.A.=6.0mm Licensor-1	
4001	0.5				P81K-0015M	Gate valve ASTM A182 Grade F316/F316L dual grade Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service	37
4608	1				P81B-002XF	Gate valve ASTM A105 Class 300 API 602 BW both sides w/ nipples BE - NPT ASTM A106-B T=10.60MM-nipple Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service C.A.=6.0mm Licensor-1	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P82B-0015D	Globe valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service C.A.=6.0mm Licensor-1	
1	1.5				P82B-0015E	Globe valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service C.A.=6.0mm Licensor-1	
1	2				P82C-002B9	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service C.A.=6.0mm Licensor-1	
1	3				P82C-002BA	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service C.A.=6.0mm Licensor-1	
1	4				P82C-002BB	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service C.A.=6.0mm Licensor-1	

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GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	6				P82C-002BC	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service C.A.=6.0mm Licensor-1	
1	8				P82C-004DA	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Severe wet H2S service C.A.=6.0mm Licensor-1	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P83B-000X5	Check valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Severe wet H2S service C.A.=6.0mm Licensor-1	
1	1.5				P83B-000X6	Check valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Severe wet H2S service C.A.=6.0mm Licensor-1	
1	2				P83C-0028P	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service C.A.=6.0mm Licensor-1	
1	3				P83C-0028R	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service C.A.=6.0mm Licensor-1	
1	4				P83C-0028S	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service C.A.=6.0mm Licensor-1	
1	6				P83C-0028T	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service C.A.=6.0mm Licensor-1	
1	8				P83C-0028U	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service C.A.=6.0mm Licensor-1	
1	10				P83C-0028J	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service C.A.=6.0mm Licensor-1	
1	12				P83C-0028K	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service C.A.=6.0mm Licensor-1	
1	14				P83C-0028L	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service C.A.=6.0mm Licensor-1	
1	16				P83C-0028M	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service C.A.=6.0mm Licensor-1	
1	18				P83C-0028N	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service C.A.=6.0mm Licensor-1	

DP CHECK VALVE (XDP)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
4602	6				P88C-0035C	Dual plate check valve ASTM A216 Grade WCB Class 300 API 594 Wafer-type ASME B16.5 RF Trim number 12 Internal wetted parts SS316 Spring Inconel Retainerless-type Severe wet H2S service C.A.=6.0mm Licensor-1	
4602	8				P88C-0035D	Dual plate check valve ASTM A216 Grade WCB Class 300 API 594 Wafer-type ASME B16.5 RF Trim number 12 Internal wetted parts SS316 Spring Inconel Retainerless-type Severe wet H2S service C.A.=6.0mm Licensor-1	
4602	10				P88C-0035B	Dual plate check valve ASTM A216 Grade WCB Class 300 API 594 Wafer-type ASME B16.5 RF Trim number 12 Internal wetted parts SS316 Spring Inconel Retainerless-type Severe wet H2S service C.A.=6.0mm Licensor-1	

BUTTERFLY VALVE (H)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	10				P86C-0025F	Offset design butterfly valve ASTM A216 Grade WCB Class 300 API 609 Category B Lug-type ASME B16.5 RF Disc CS Seat Stellite-6 Trim SS316 Triple eccentric design BG Gear operated Severe wet H2S service C.A.=6.0mm Licensor-1	

ORIFICE FLANGE (FO)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2		SCH160		P66B-0089G	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Severe wet H2S service Licensor-1	
1	3		SCH160		P66B-0089J	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Severe wet H2S service Licensor-1	
1	4		SCH120		P66B-0089K	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Severe wet H2S service Licensor-1	
1	6		XS		P66B-0089L	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Severe wet H2S service Licensor-1	
1	8		XS		P66B-008EP	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Severe wet H2S service Licensor-1	
1	10		XS		P66B-0089B	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Severe wet H2S service Licensor-1	
1	12		SCH60		P66B-008EM	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Severe wet H2S service Licensor-1	
1	14		SCH60		P66B-008EN	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Severe wet H2S service Licensor-1	
1	16		XS		P66B-0089E	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Severe wet H2S service Licensor-1	
1	18		XS		P66B-0089F	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Severe wet H2S service Licensor-1	
200	2		SCH160		P66B-0089W	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Severe wet H2S service with Jack screw Licensor-1	
200	3		SCH160		P66B-0089Y	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Severe wet H2S service with Jack screw Licensor-1	
200	4		SCH120		P66B-0089Z	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Severe wet H2S service with Jack screw Licensor-1	
200	6		XS		P66B-008A0	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Severe wet H2S service with Jack screw Licensor-1	

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ORIFICE FLANGE (FO)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
200	8		XS		P66B-008ET	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Severe wet H2S service with Jack screw Licensor-1	
200	10		XS		P66B-0089R	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Severe wet H2S service with Jack screw Licensor-1	
200	12		SCH60		P66B-008ER	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Severe wet H2S service with Jack screw Licensor-1	
200	14		SCH60		P66B-008ES	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Severe wet H2S service with Jack screw Licensor-1	
200	16		XS		P66B-0089U	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Severe wet H2S service with Jack screw Licensor-1	
200	18		XS		P66B-0089V	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 Severe wet H2S service with Jack screw Licensor-1	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P71B-000CS	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service Licensor-1	
1	1.5				P71B-000CT	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service Licensor-1	
1	2				P71B-000CW	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service Licensor-1	
1	3				P71B-000CX	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service Licensor-1	
1	4				P71B-000CY	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service Licensor-1	
1	6				P71B-000CZ	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service Licensor-1	
1	8				P71B-000D0	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service Licensor-1	
1	10				P71B-000CU	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service Licensor-1	
1	12				P71B-000CV	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service Licensor-1	

PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000GU	Paddle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service Licensor-1	
1	16				P72B-000GV	Paddle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service Licensor-1	
1	18				P72B-000GW	Paddle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service Licensor-1	

PADDLE SPACER (PS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000GZ	Paddle spacer ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service Licensor-1	
1	16				P72B-000H0	Paddle spacer ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service Licensor-1	
1	18				P72B-000H1	Paddle spacer ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service Licensor-1	

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BOLT TABLE (B_B4AR01 , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-008T0		
1	4	0.625	80	P80S-00909		
1.5	4	0.750	95	P80S-005Z4		
2	8	0.625	90	P80S-0090B		
3	8	0.750	110	P80S-0090F		
4	8	0.750	115	P80S-0090G		
6	12	0.750	125	P80S-0090J		
8	12	0.875	140	P80S-005ZD		
10	16	1.000	160	P80S-0061E		
12	16	1.125	175	P80S-0064S		
14	20	1.125	180	P80S-0064T		
16	20	1.250	190	P80S-00689		
18	24	1.250	200	P80S-0068B		

BOLT TABLE (B_B4AR01_781 , STUD ASME RF, OPTION CODE 781)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	80			
1	4	0.625	95	P80S-0090C		
1.5	4	0.750	110	P80S-0090F		
2	8	0.625	110	P80S-008T8		
3	8	0.750	130	P80S-0090K		
4	8	0.875	150	P80S-005ZF		
6	12	1.000	175	P80S-0061H		
8	12	1.125	195	P80S-0064W		
10	16	1.250	250	P80S-0068M		
12	20	1.250	255	P80S-0068N		
14	20	1.375	270	P80S-006HV		
16	20	1.500	295	P80S-006LP		
18	20	1.625	320	P80S-00A5E		

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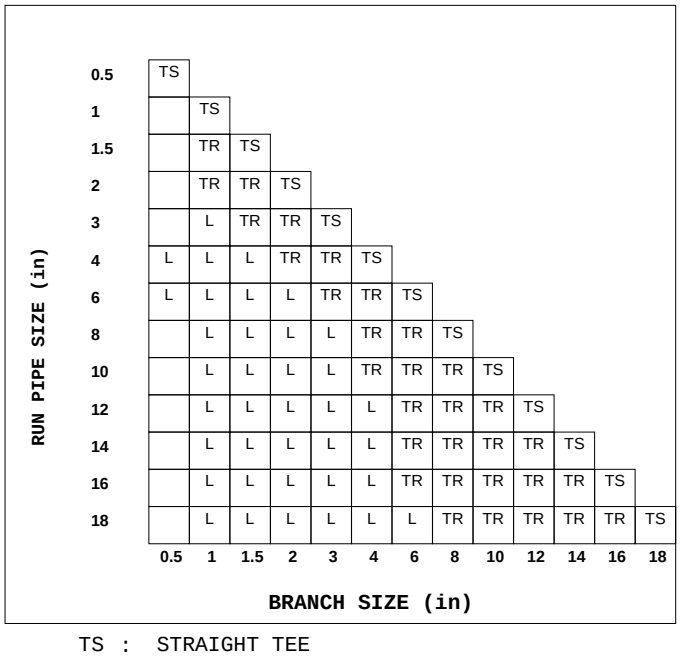
BRANCH TABLE (T_B4AR01)



TS : STRAIGHT TEE
TR : REDUCING TEE
L : OUTLET

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PIPING CLASS

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Material : Killed CS
Rating : ASME CLASS 300
Flange Face : RF
C.A.(mm) : 6.00
Gasket : Spiral Wound
Service : PROCESS - WET SEVERE SOUR SERVICE SUBJECT TO NACE + HIC STD.
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
5	BOLTING CONFIRMING TO B7M / 2HM SHALL BE USED UNDER CONDITIONS (A) DIRECT EXPOSURE TO SOUR ENVIRONMENTS (B) WHEN THE BOLTING WILL BE BURIED OR INSULATED
27	PWHT OF CARBON STEEL PIPING IN WET H2S, CAUSTIC AND AMINE SERVICES SHALL BE IN ACCORDANCE WITH SECTION 10.2, 10.3, AND 10.4 OF PROJECT SPECIFICATION 3550-8440-SP-0002 MATERIALS REQUIREMENTS FOR PRESSURISED EQUIPMENT AND PIPING. FOR CAUSTIC AND AMINE SERVICE THE FOLLOWING SHALL APPLY: - PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF ALL SITE PIPING FABRICATION WELDS IS REQUIRED FOR ALL WALL THICKNESSES. FOR MODERATE AND SEVERE WET H2S SERVICE THE FOLLOWING SHALL APPLY: PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF SITE FABRICATION CIRCUMFERENTIAL OR BRANCH WELDS IS NOT REQUIRED IF WELDS ARE MULTIPASS AND IN ACCORDANCE WITH PARA 10.2.12 OF PROJECT SPECIFICATION 3550-8440-SP-0002. FOR SERVICES MEETING THE WET H2S CRITERIA AND CAUSTIC OR AMINE CRITERIA THE MORE STRINGENT PWHT REQUIREMENT SHALL GOVERN.

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
541	NPT(F) (CA,F,L)
781	CLASS 600 (B,F,G)
4608	VALVE WITH NIPPLES (V)

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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		XXS		P01A-0014U	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1.5		XXS		P01A-00162	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	2		SCH160		P01A-0019T	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	3		SCH160		P01A-001S5	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	4		SCH120		P01A-001TM	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	6		XS		P01A-000ZF	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		XXS		P02A-000XJ	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1.5		XXS		P02A-002N4	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	2		SCH160		P02A-000KW	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		SCH160		P02A-000U4	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		SCH120		P02A-000U5	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		XS		P02A-000DA	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		XXS		P03A-000U8	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1.5		XXS		P03A-002KD	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	2		SCH160		P03A-000HU	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		SCH160		P03A-000RB	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		SCH120		P03A-000RC	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		XS		P03A-000B8	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		XXS		P21A-002DP	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5		XXS		P21A-003KU	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2		SCH160		P21A-00245	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		SCH160		P21A-002AG	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		SCH120		P21A-002AH	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6		XS		P21A-001D4	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5	1	XXS	XXS	P24A-00H61	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	SCH160	XXS	P24A-0044B	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	SCH160	XXS	P24A-003GG	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	SCH160	XXS	P24A-0045F	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	SCH160	SCH160	P24A-0045H	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	SCH120	SCH160	P24A-0045G	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	SCH120	SCH160	P24A-0045E	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	XS	SCH160	P24A-00GDY	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	XS	SCH120	P24A-00GDZ	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5	1	XXS	XXS	P27A-004NR	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	SCH160	XXS	P27A-0029H	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	SCH160	XXS	P27A-0029K	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	SCH160	XXS	P27A-002NG	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	SCH160	SCH160	P27A-002NC	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	1.5	SCH120	XXS	P27A-002NH	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	SCH120	SCH160	P27A-002ND	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	SCH120	SCH160	P27A-002NM	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	XS	SCH160	P27A-007P7	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	XS	SCH120	P27A-007PZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5	1	XXS	XXS	P28A-008W0	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	SCH160	XXS	P28A-00289	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	SCH160	XXS	P28A-0028A	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	SCH160	XXS	P28A-002P1	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	SCH160	SCH160	P28A-002NY	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	1.5	SCH120	XXS	P28A-002P0	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	SCH120	SCH160	P28A-002NZ	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	SCH120	SCH160	P28A-002P2	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	XS	SCH160	P28A-0085V	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	XS	SCH120	P28A-0085W	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		XXS		P29A-00338	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5		XXS		P29A-00339	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	2		SCH160		P29A-001W3	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	3		SCH160		P29A-001W6	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	4		SCH120		P29A-001W9	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	6		XS		P29A-001WA	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
541	1				P29B-0000Z	Cap ASTM A105 Class 6000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		10.60mm		P41A-001AT	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		10.60mm		P41A-001AU	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
541	1.5	1			P31B-005J1	Outlet ASTM A105 Class 6000 MSS SP-97 NPT	
541	2 - 2.5	1			P31B-005J3	Outlet ASTM A105 Class 6000 MSS SP-97 NPT	
541	3 - 10	1			P31B-007KG	Outlet ASTM A105 Class 6000 MSS SP-97 NPT	
1	3	1	SCH160	XXS	P31B-00B4A	Outlet ASTM A105 MSS SP-97 BW	
1	4	1	SCH120	XXS	P31B-00B08	Outlet ASTM A105 MSS SP-97 BW	
1	6	1	XS	XXS	P31B-00AYZ	Outlet ASTM A105 MSS SP-97 BW	
1	4	1.5	SCH120	XXS	P31B-00BNX	Outlet ASTM A105 MSS SP-97 BW	
1	6	1.5	XS	XXS	P31B-00BJ4	Outlet ASTM A105 MSS SP-97 BW	
1	6	2	XS	SCH160	P31B-007SR	Outlet ASTM A105 MSS SP-97 BW	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P30B-0002F	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1.5				P30B-0002G	Plug ASTM A105 ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		XXS		P61B-003MB	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	1.5		XXS		P61B-003MR	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	2		SCH160		P61B-002R8	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	3		SCH160		P61B-003JL	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	4		SCH120		P61B-003MU	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	6		XS		P61B-001FE	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
541	1				P61B-003U5	Flange NPT ASTM A105 Class 300 ASME B16.5 RF	
781	1		XXS		P61B-003TC	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	1.5		XXS		P61B-009N1	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	2		SCH160		P61B-003T7	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	3		SCH160		P61B-003JS	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	4		SCH120		P61B-005X8	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	6		XS		P61B-001T1	Flange WN ASTM A105 Class 600 ASME B16.5 RF	

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BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P67B-000GK	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	1.5				P67B-000GL	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	2				P67B-000GM	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	3				P67B-000GN	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	4				P67B-000GP	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	6				P67B-000GY	Blind flange ASTM A105 Class 300 ASME B16.5 RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000G5	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000G6	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	6				P73T-000G7	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1				P73T-000JA	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1.5				P73T-000JB	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	2				P73T-000JH	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	3				P73T-000JL	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	4				P73T-000JM	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	6				P73T-000JN	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1-6				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
781	1-6				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
4608	1				P81B-0034N	Gate valve ASTM A105 Class 300 API 602 BW both sides w/ nipples BE - NPT ASTM A106-B T=10.60MM-nipple Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Severe wet H2S service C.A.=6.0mm	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P82B-001G7	Globe valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Severe wet H2S service C.A.=6.0mm	
1	1.5				P82B-001G8	Globe valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Severe wet H2S service C.A.=6.0mm	
1	2				P82C-002ZL	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Severe wet H2S service C.A.=6.0mm	
1	3				P82C-002ZM	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Severe wet H2S service C.A.=6.0mm	
1	4				P82C-002ZN	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Severe wet H2S service C.A.=6.0mm	
1	6				P82C-002ZP	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Severe wet H2S service C.A.=6.0mm	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P71B-000B3	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71B-000B4	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	2				P71B-000B6	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	3				P71B-000B7	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	4				P71B-000B8	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	6				P71B-000B9	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	

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BOLT TABLE (B_B4AR02 , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
1	4	0.625	80	P80S-00909		
1.5	4	0.750	95	P80S-005Z4		
2	8	0.625	90	P80S-0090B		
3	8	0.750	110	P80S-0090F		
4	8	0.750	115	P80S-0090G		
6	12	0.750	125	P80S-0090J		

BOLT TABLE (B_B4AR02_781 , STUD ASME RF, OPTION CODE 781)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
1	4	0.625	95	P80S-0090C		
1.5	4	0.750	110	P80S-0090F		
2	8	0.625	110	P80S-008T8		
3	8	0.750	130	P80S-0090K		
4	8	0.875	150	P80S-005ZF		
6	12	1.000	175	P80S-0061H		

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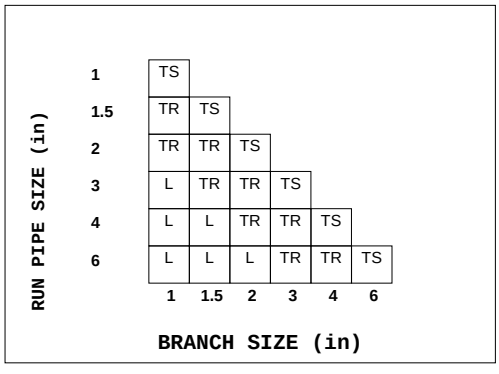
BRANCH TABLE (T_B4AR02)



TR : REDUCING TEE
TS : STRAIGHT TEE
L : OUTLET

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PIPING CLASS

B4AR04 REV NO. 2

Material : Killed CS
Rating : ASME CLASS 300
Flange Face : RF
C.A.(mm) : 6.00
Gasket : Spiral Wound
Service : PROCESS - WET SEVERE SOUR SERVICE SUBJECT TO NACE + HIC STD.
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
2	USE OF SOFT SEATED BALL, PLUG AND BUTTERFLY VALVES SHALL BE LIMITED TO MAXIMUM OF 204DEGC (400DEGF)
5	BOLTING CONFIRMING TO B7M / 2HM SHALL BE USED UNDER CONDITIONS (A) DIRECT EXPOSURE TO SOUR ENVIRONMENTS (B) WHEN THE BOLTING WILL BE BURIED OR INSULATED
27	PWHT OF CARBON STEEL PIPING IN WET H2S, CAUSTIC AND AMINE SERVICES SHALL BE IN ACCORDANCE WITH SECTION 10.2, 10.3, AND 10.4 OF PROJECT SPECIFICATION 3550-8440-SP-0002 MATERIALS REQUIREMENTS FOR PRESSURISED EQUIPMENT AND PIPING. FOR CAUSTIC AND AMINE SERVICE THE FOLLOWING SHALL APPLY: - PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF ALL SITE PIPING FABRICATION WELDS IS REQUIRED FOR ALL WALL THICKNESSES. FOR MODERATE AND SEVERE WET H2S SERVICE THE FOLLOWING SHALL APPLY: PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF SITE FABRICATION CIRCUMFERENTIAL OR BRANCH WELDS IS NOT REQUIRED IF WELDS ARE MULTIPASS AND IN ACCORDANCE WITH PARA 10.2.12 OF PROJECT SPECIFICATION 3550-8440-SP-0002. FOR SERVICES MEETING THE WET H2S CRITERIA AND CAUSTIC OR AMINE CRITERIA THE MORE STRINGENT PWHT REQUIREMENT SHALL GOVERN.

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
541	NPT(F) (CA,F)
781	CLASS 600 (B,F,G)
4602	DISSIMILAR TYPE CHECK VALVE (XDP)
4608	VALVE WITH NIPPLES (V)

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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		XXS		P01A-0014U	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1.5		XXS		P01A-00162	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	2		XXS		P01A-001R0	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	3		SCH160		P01A-001S5	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	4		SCH120		P01A-001TM	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	6		XS		P01A-000ZF	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	8		XS		P01A-000ZJ	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	10		XS		P01A-000Y2	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	12		SCH60		P01A-001LH	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	14		SCH60		P01A-001MU	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		XXS		P02A-000XJ	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1.5		XXS		P02A-002N4	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	2		XXS		P02A-00111	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		SCH160		P02A-000U4	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		SCH120		P02A-000U5	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		XS		P02A-000DA	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		XS		P02A-000DG	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	10		XS		P02A-000BN	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	12		SCH60		P02A-0019S	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	14		SCH60		P02A-000UC	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		XXS		P03A-000U8	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1.5		XXS		P03A-002KD	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	2		XXS		P03A-000XH	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		SCH160		P03A-000RB	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		SCH120		P03A-000RC	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		XS		P03A-000B8	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		XS		P03A-000BC	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	10		XS		P03A-000A3	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	12		SCH60		P03A-0015P	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	14		SCH60		P03A-000RZ	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		XXS		P21A-002DP	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5		XXS		P21A-003KU	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2		XXS		P21A-002G3	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		SCH160		P21A-002AG	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		SCH120		P21A-002AH	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6		XS		P21A-001D4	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8		XS		P21A-001D6	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10		XS		P21A-001C0	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12		SCH60		P21A-002PC	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14		SCH60		P21A-002AK	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5	1	XXS	XXS	P24A-00H61	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	XXS	XXS	P24A-00H63	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	XXS	XXS	P24A-006TT	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	SCH160	XXS	P24A-0045F	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	SCH160	XXS	P24A-0056E	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	SCH120	XXS	P24A-00M3U	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	4	3	SCH120	SCH160	P24A-0045E	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	XS	SCH160	P24A-00GDY	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	XS	SCH120	P24A-00GDZ	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	XS	SCH120	P24A-00GE0	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	XS	XS	P24A-0024M	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	XS	SCH120	P24A-00GF8	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	XS	XS	P24A-00241	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	XS	XS	P24A-0024K	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	SCH60	XS	P24A-00GE1	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH60	XS	P24A-0067T	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH60	XS	P24A-0067S	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	SCH60	XS	P24A-00GUS	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	SCH60	XS	P24A-00GE2	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	SCH60	XS	P24A-0067U	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	SCH60	SCH60	P24A-0067V	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5	1	XXS	XXS	P27A-004NR	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	XXS	XXS	P27A-0033N	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	XXS	XXS	P27A-00339	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	SCH160	XXS	P27A-002NG	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	SCH160	XXS	P27A-0038P	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	1.5	SCH120	XXS	P27A-002NH	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	SCH120	XXS	P27A-004KC	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	SCH120	SCH160	P27A-002NM	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	XS	SCH160	P27A-007P7	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	XS	SCH120	P27A-007PZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	XS	SCH120	P27A-004KD	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	XS	XS	P27A-001EY	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	XS	SCH120	P27A-004PY	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	XS	XS	P27A-001F2	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	XS	XS	P27A-001FR	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	SCH60	XS	P27A-0048V	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH60	XS	P27A-0048W	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH60	XS	P27A-0048U	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	SCH60	XS	P27A-0048Z	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	SCH60	XS	P27A-00490	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	SCH60	XS	P27A-0048X	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	SCH60	SCH60	P27A-0048Y	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5	1	XXS	XXS	P28A-008W0	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	XXS	XXS	P28A-004KN	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	XXS	XXS	P28A-004KP	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	SCH160	XXS	P28A-002P1	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	SCH160	XXS	P28A-00386	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	1.5	SCH120	XXS	P28A-002P0	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	SCH120	XXS	P28A-004KR	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	SCH120	SCH160	P28A-002P2	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	XS	SCH160	P28A-0085V	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	XS	SCH120	P28A-0085W	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	XS	SCH120	P28A-004KS	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	XS	XS	P28A-001FT	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	XS	SCH120	P28A-0085X	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	XS	XS	P28A-001FR	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	XS	XS	P28A-001GT	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	SCH60	XS	P28A-0048L	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	12	8	SCH60	XS	P28A-0048M	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH60	XS	P28A-0048K	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	SCH60	XS	P28A-0048R	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	SCH60	XS	P28A-0048S	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	SCH60	XS	P28A-0048N	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	SCH60	SCH60	P28A-0048P	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		XXS		P29A-00338	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5		XXS		P29A-00339	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	2		XXS		P29A-0033A	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	3		SCH160		P29A-001W6	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	4		SCH120		P29A-001W9	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	6		XS		P29A-001WA	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	8		XS		P29A-001WB	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	10		XS		P29A-001VY	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	12		SCH60		P29A-001WU	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	14		SCH60		P29A-001WV	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
541	1				P29B-0000Z	Cap ASTM A105 Class 6000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		10.60mm		P41A-001AT	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		10.60mm		P41A-001AU	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	1	SCH160	XXS	P31B-00B4A	Outlet ASTM A105 MSS SP-97 BW	
1	4	1	SCH120	XXS	P31B-00B08	Outlet ASTM A105 MSS SP-97 BW	
1	6	1	XS	XXS	P31B-00AYZ	Outlet ASTM A105 MSS SP-97 BW	
1	8	1	XS	XXS	P31B-00AUZ	Outlet ASTM A105 MSS SP-97 BW	
1	10	1	XS	XXS	P31B-00BW4	Outlet ASTM A105 MSS SP-97 BW	
1	12	1	SCH60	XXS	P31B-00BRT	Outlet ASTM A105 MSS SP-97 BW	
1	14	1	SCH60	XXS	P31B-00BRB	Outlet ASTM A105 MSS SP-97 BW	
1	4	1.5	SCH120	XXS	P31B-00BNX	Outlet ASTM A105 MSS SP-97 BW	
1	6	1.5	XS	XXS	P31B-00BJ4	Outlet ASTM A105 MSS SP-97 BW	
1	8	1.5	XS	XXS	P31B-00BFF	Outlet ASTM A105 MSS SP-97 BW	
1	10	1.5	XS	XXS	P31B-00CER	Outlet ASTM A105 MSS SP-97 BW	
1	12	1.5	SCH60	XXS	P31B-00CDZ	Outlet ASTM A105 MSS SP-97 BW	
1	14	1.5	SCH60	XXS	P31B-00C9J	Outlet ASTM A105 MSS SP-97 BW	
1	6	2	XS	XXS	P31B-00ZHK	Outlet ASTM A105 MSS SP-97 BW	
1	8	2	XS	XXS	P31B-0112W	Outlet ASTM A105 MSS SP-97 BW	
1	10	2	XS	XXS	P31B-0112V	Outlet ASTM A105 MSS SP-97 BW	
1	12	2	SCH60	XXS	P31B-00WGW	Outlet ASTM A105 MSS SP-97 BW	
1	14	2	SCH60	XXS	P31B-00WGY	Outlet ASTM A105 MSS SP-97 BW	
1	8	3	XS	SCH160	P31B-00A33	Outlet ASTM A105 MSS SP-97 BW	
1	10	3	XS	SCH160	P31B-009D0	Outlet ASTM A105 MSS SP-97 BW	
1	12	3	SCH60	SCH160	P31B-0097A	Outlet ASTM A105 MSS SP-97 BW	
1	14	3	SCH60	SCH160	P31B-0091F	Outlet ASTM A105 MSS SP-97 BW	
1	12	4	SCH60	SCH120	P31B-00957	Outlet ASTM A105 MSS SP-97 BW	
1	14	4	SCH60	SCH120	P31B-008ZD	Outlet ASTM A105 MSS SP-97 BW	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P30B-0002F	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1.5				P30B-0002G	Plug ASTM A105 ASME B16.11 NPT Round head	

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FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		XXS		P61B-003MB	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	1.5		XXS		P61B-003MR	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	2		XXS		P61B-003MS	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	3		SCH160		P61B-003JL	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	4		SCH120		P61B-003MU	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	6		XS		P61B-001FE	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	8		XS		P61B-001FV	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	10		XS		P61B-001FD	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	12		SCH60		P61B-005XC	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	14		SCH60		P61B-005XD	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
541	1				P61B-003U5	Flange NPT ASTM A105 Class 300 ASME B16.5 RF	
781	1		XXS		P61B-003TC	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	1.5		XXS		P61B-009N1	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	2		XXS		P61B-003JR	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	3		SCH160		P61B-003JS	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	4		SCH120		P61B-005X8	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	6		XS		P61B-001T1	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	8		XS		P61B-001UC	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	10		XS		P61B-001JN	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	12		SCH60		P61B-003XC	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	14		SCH60		P61B-003XD	Flange WN ASTM A105 Class 600 ASME B16.5 RF	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P67B-000GK	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	1.5				P67B-000GL	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	2				P67B-000GM	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	3				P67B-000GN	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	4				P67B-000GP	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	6				P67B-000GY	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	8				P67B-000GZ	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	10				P67B-000GR	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	12				P67B-000GS	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	14				P67B-000GT	Blind flange ASTM A105 Class 300 ASME B16.5 RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000G5	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000G6	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	6				P73T-000G7	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	8				P73T-000G8	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	10				P73T-000FX	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	12				P73T-000FY	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	14				P73T-000FZ	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1				P73T-000JA	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1.5				P73T-000JB	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	2				P73T-000JH	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	3				P73T-000JL	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	4				P73T-000JM	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	6				P73T-000JN	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

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GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
781	8				P73T-000JP	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	10				P73T-000JC	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	12				P73T-000JD	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	14				P73T-000JE	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1-10				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	12-14				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
781	1-6				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
781	8-14				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P81B-0019H	Gate valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service C.A.=6.0mm	
1	1.5				P81B-0019J	Gate valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service C.A.=6.0mm	
1	2				P81C-006RB	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service C.A.=6.0mm Licensor-4	
1	3				P81C-006RC	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service C.A.=6.0mm Licensor-4	
1	4				P81C-006RD	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service C.A.=6.0mm Licensor-4	
1	6				P81C-006RE	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service C.A.=6.0mm Licensor-4	
1	8				P81C-00927	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Severe wet H2S service C.A.=6.0mm Licensor-4	
1	10				P81C-006RG	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Severe wet H2S service C.A.=6.0mm Licensor-4	
1	12				P81C-006RH	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Severe wet H2S service C.A.=6.0mm Licensor-4	
1	14				P81C-006RJ	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Severe wet H2S service C.A.=6.0mm Licensor-4	
4608	1				P81B-002XB	Gate valve ASTM A105 Class 300 API 602 BW both sides w/ nipples BE - NPT ASTM A106-B T=10.60MM-nipple Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service C.A.=6.0mm	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P82B-0012G	Globe valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service C.A.=6.0mm	
1	1.5				P82B-0012H	Globe valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service C.A.=6.0mm	
1	2				P82C-00396	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service C.A.=6.0mm Licensor-4	
1	3				P82C-00397	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service C.A.=6.0mm Licensor-4	
1	4				P82C-00398	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service C.A.=6.0mm Licensor-4	
1	6				P82C-00399	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service C.A.=6.0mm Licensor-4	
1	8				P82C-004D8	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Severe wet H2S service C.A.=6.0mm Licensor-4	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P83B-000UX	Check valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Severe wet H2S service C.A.=6.0mm	
1	1.5				P83B-000UY	Check valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Severe wet H2S service C.A.=6.0mm	
1	2				P83C-0034Y	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service C.A.=6.0mm Licensor-4	
1	3				P83C-0034Z	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service C.A.=6.0mm Licensor-4	
1	4				P83C-00350	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service C.A.=6.0mm Licensor-4	
1	6				P83C-00351	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service C.A.=6.0mm Licensor-4	
1	8				P83C-00352	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service C.A.=6.0mm Licensor-4	
1	10				P83C-0034V	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service C.A.=6.0mm Licensor-4	

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CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	12				P83C-0034W	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service C.A.=6.0mm Licensor-4	
1	14				P83C-0034X	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service C.A.=6.0mm Licensor-4	

DP CHECK VALVE (XDP)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
4602	2				P88C-003CF	Dual plate check valve ASTM A216 Grade WCB Class 300 API 594 Wafer-type ASME B16.5 RF Trim number 12 Internal wetted parts SS316 Spring Inconel Retainerless-type Severe wet H2S service C.A.=6.0mm Licensor-4	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P71B-000B3	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71B-000B4	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	2				P71B-000B6	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	3				P71B-000B7	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	4				P71B-000B8	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	6				P71B-000B9	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	8				P71B-000BA	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	10				P71B-000B5	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	12				P71B-000BB	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	

PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000FA	Paddle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	

PADDLE SPACER (PS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000FG	Paddle spacer ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	

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BOLT TABLE (B_B4AR04 , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
1	4	0.625	80	P80S-00909		
1.5	4	0.750	95	P80S-005Z4		
2	8	0.625	90	P80S-0090B		
3	8	0.750	110	P80S-0090F		
4	8	0.750	115	P80S-0090G		
6	12	0.750	125	P80S-0090J		
8	12	0.875	140	P80S-005ZD		
10	16	1.000	160	P80S-0061E		
12	16	1.125	175	P80S-0064S		
14	20	1.125	180	P80S-0064T		

BOLT TABLE (B_B4AR04_781 , STUD ASME RF, OPTION CODE 781)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
1	4	0.625	95	P80S-0090C		
1.5	4	0.750	110	P80S-0090F		
2	8	0.625	110	P80S-008T8		
3	8	0.750	130	P80S-0090K		
4	8	0.875	150	P80S-005ZF		
6	12	1.000	175	P80S-0061H		
8	12	1.125	195	P80S-0064W		
10	16	1.250	250	P80S-0068M		
12	20	1.250	255	P80S-0068N		
14	20	1.375	270	P80S-006HV		

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PIPING CLASS

B4AR04 REV NO. 2

BRANCH TABLE (T_B4AR04)

RUN PIPE SIZE (in) \ BRANCH SIZE (in)	1	1.5	2	3	4	6	8	10	12	14
1	TS									
1.5	TR	TS								
2	TR	TR	TS							
3	L	TR	TR	TS						
4	L	L	TR	TR	TS					
6	L	L	L	TR	TR	TS				
8	L	L	L	L	TR	TR	TS			
10	L	L	L	L	TR	TR	TR	TS		
12	L	L	L	L	L	TR	TR	TR	TS	
14	L	L	L	L	L	TR	TR	TR	TR	TS

TR : REDUCING TEE
TS : STRAIGHT TEE
L : OUTLET

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PIPING CLASS

B4AV REV NO. 2

Material : Killed CS
Rating : ASME CLASS 300
Flange Face : RF
C.A.(mm) : 6.00
Gasket : Spiral Wound
Service : PROCESS - NON SOUR, CORROSIVE SERVICE : / DESALTER EFFLUENT (AL-BRZ TRIM) / HAGO / PROCESS / WASH WATER / NON-ACIDIC DRAIN

Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
2	USE OF SOFT SEATED BALL, PLUG AND BUTTERFLY VALVES SHALL BE LIMITED TO MAXIMUM OF 204DEGC (400DEGF)

DETAIL NOTES :

NO.	DESCRIPTION
37	TO BE USED ONLY FOR ORIFICE FLANGE ASSEMLY UPTO 425 DEG C

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
200	WITH JACK SCREW (FO)
541	NPT(F) (CA,F,L)
781	CLASS 600 (B,F,G)
4001	ALTERNATIVE MATERIAL FOR INSTRUMENT CONNECTION (F,P,V)
4405	FLANGE NPT WITH ALTERNATIVE MATERIAL FOR INSTRUMENT CONNECTION (F)
4608	VALVE WITH NIPPLES (V)

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PIPING CLASS
B4AV REV NO. 2

PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		XXS		P01A-0014U	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1.5		XXS		P01A-00162	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	2		SCH160		P01A-0019T	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	3		SCH160		P01A-001S5	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	4		SCH120		P01A-001TM	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	6		XS		P01A-000ZF	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	8		XS		P01A-000ZJ	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	10		XS		P01A-000Y2	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	12		SCH60		P01A-001LH	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
4001	0.5		SCH80S		P01J-0014A	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE	37

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		XXS		P02A-000XJ	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1.5		XXS		P02A-002N4	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	2		SCH160		P02A-000KW	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		SCH160		P02A-000U4	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		SCH120		P02A-000U5	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		XS		P02A-000DA	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		XS		P02A-000DG	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	10		XS		P02A-000BN	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	12		SCH60		P02A-0019S	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		XXS		P03A-000U8	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1.5		XXS		P03A-002KD	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	2		SCH160		P03A-000HU	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		SCH160		P03A-000RB	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		SCH120		P03A-000RC	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		XS		P03A-000B8	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		XS		P03A-000BC	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	10		XS		P03A-000A3	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	12		SCH60		P03A-0015P	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		XXS		P21A-002DP	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5		XXS		P21A-003KU	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2		SCH160		P21A-00245	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		SCH160		P21A-002AG	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		SCH120		P21A-002AH	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6		XS		P21A-001D4	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8		XS		P21A-001D6	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10		XS		P21A-001C0	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12		SCH60		P21A-002PC	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5	1	XXS	XXS	P24A-00H61	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	SCH160	XXS	P24A-0044B	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	SCH160	XXS	P24A-003GG	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	SCH160	XXS	P24A-0045F	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	SCH160	SCH160	P24A-0045H	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	SCH120	SCH160	P24A-0045G	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	SCH120	SCH160	P24A-0045E	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	XS	SCH160	P24A-00GDY	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	XS	SCH120	P24A-00GDZ	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	8	4	XS	SCH120	P24A-00GE0	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	XS	XS	P24A-0024M	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	XS	SCH120	P24A-00GF8	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	XS	XS	P24A-00241	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	XS	XS	P24A-0024K	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	SCH60	XS	P24A-00GE1	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH60	XS	P24A-0067T	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH60	XS	P24A-0067S	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5	1	XXS	XXS	P27A-004NR	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	SCH160	XXS	P27A-0029H	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	SCH160	XXS	P27A-0029K	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	SCH160	XXS	P27A-002NG	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	SCH160	SCH160	P27A-002NC	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	1.5	SCH120	XXS	P27A-002NH	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	SCH120	SCH160	P27A-002ND	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	SCH120	SCH160	P27A-002NM	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	XS	SCH160	P27A-007P7	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	XS	SCH120	P27A-007PZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	XS	SCH120	P27A-004KD	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	XS	XS	P27A-001EY	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	XS	SCH120	P27A-004PY	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	XS	XS	P27A-001F2	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	XS	XS	P27A-001FR	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	SCH60	XS	P27A-0048V	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH60	XS	P27A-0048W	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH60	XS	P27A-0048U	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5	1	XXS	XXS	P28A-008W0	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	SCH160	XXS	P28A-00289	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	SCH160	XXS	P28A-0028A	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	SCH160	XXS	P28A-002P1	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	SCH160	SCH160	P28A-002NY	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	1.5	SCH120	XXS	P28A-002P0	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	SCH120	SCH160	P28A-002NZ	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	SCH120	SCH160	P28A-002P2	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	XS	SCH160	P28A-0085V	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	XS	SCH120	P28A-0085W	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	XS	SCH120	P28A-004KS	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	XS	XS	P28A-001FT	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	XS	SCH120	P28A-0085X	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	XS	XS	P28A-001FR	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	XS	XS	P28A-001GT	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	SCH60	XS	P28A-0048L	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH60	XS	P28A-0048M	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH60	XS	P28A-0048K	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		XXS		P29A-000W3	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5		XXS		P29A-0031N	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2		SCH160		P29A-000HR	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		SCH160		P29A-000KY	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		SCH120		P29A-000LY	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6		XS		P29A-000BF	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	8		XS		P29A-000BL	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10		XS		P29A-000BD	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12		SCH60		P29A-00155	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
541	1				P29B-0000Z	Cap ASTM A105 Class 6000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		10.60mm		P41A-001AT	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		10.60mm		P41A-001AU	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
541	1.5	1			P31B-005J1	Outlet ASTM A105 Class 6000 MSS SP-97 NPT	
541	2 - 2.5	1			P31B-005J3	Outlet ASTM A105 Class 6000 MSS SP-97 NPT	
541	3 - 10	1			P31B-007KG	Outlet ASTM A105 Class 6000 MSS SP-97 NPT	
541	12 and larger	1			P31B-0137G	Outlet ASTM A105 Class 6000 MSS SP-97 NPT	
1	3	1	SCH160	XXS	P31B-00B4A	Outlet ASTM A105 MSS SP-97 BW	
1	4	1	SCH120	XXS	P31B-00B08	Outlet ASTM A105 MSS SP-97 BW	
1	6	1	XS	XXS	P31B-00AYZ	Outlet ASTM A105 MSS SP-97 BW	
1	8	1	XS	XXS	P31B-00AUZ	Outlet ASTM A105 MSS SP-97 BW	
1	10	1	XS	XXS	P31B-00BW4	Outlet ASTM A105 MSS SP-97 BW	
1	12	1	SCH60	XXS	P31B-00BRT	Outlet ASTM A105 MSS SP-97 BW	
1	4	1.5	SCH120	XXS	P31B-00BNX	Outlet ASTM A105 MSS SP-97 BW	
1	6	1.5	XS	XXS	P31B-00BJ4	Outlet ASTM A105 MSS SP-97 BW	
1	8	1.5	XS	XXS	P31B-00BFF	Outlet ASTM A105 MSS SP-97 BW	
1	10	1.5	XS	XXS	P31B-00CER	Outlet ASTM A105 MSS SP-97 BW	
1	12	1.5	SCH60	XXS	P31B-00CDZ	Outlet ASTM A105 MSS SP-97 BW	
1	6	2	XS	SCH160	P31B-007SR	Outlet ASTM A105 MSS SP-97 BW	
1	8	2	XS	SCH160	P31B-00AHC	Outlet ASTM A105 MSS SP-97 BW	
1	10	2	XS	SCH160	P31B-00ASR	Outlet ASTM A105 MSS SP-97 BW	
1	12	2	SCH60	SCH160	P31B-00ARL	Outlet ASTM A105 MSS SP-97 BW	
1	8	3	XS	SCH160	P31B-00A33	Outlet ASTM A105 MSS SP-97 BW	
1	10	3	XS	SCH160	P31B-009D0	Outlet ASTM A105 MSS SP-97 BW	
1	12	3	SCH60	SCH160	P31B-0097A	Outlet ASTM A105 MSS SP-97 BW	
1	12	4	SCH60	SCH120	P31B-00957	Outlet ASTM A105 MSS SP-97 BW	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P30B-0002F	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1.5				P30B-0002G	Plug ASTM A105 ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		XXS		P61B-003MB	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	1.5		XXS		P61B-003MR	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	2		SCH160		P61B-002R8	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	3		SCH160		P61B-003JL	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	4		SCH120		P61B-003MU	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	6		XS		P61B-001FE	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	8		XS		P61B-001FV	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	10		XS		P61B-001FD	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
1	12		SCH60		P61B-005XC	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
4001	0.5		SCH80S		P61K-002LC	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF	37
4405	0.5				P61K-0045U	Flange NPT ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF	37
541	1				P61B-003U5	Flange NPT ASTM A105 Class 300 ASME B16.5 RF	
781	1		XXS		P61B-003TC	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	1.5		XXS		P61B-009N1	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	2		SCH160		P61B-003T7	Flange WN ASTM A105 Class 600 ASME B16.5 RF	

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FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
781	3		SCH160		P61B-003JS	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	4		SCH120		P61B-005X8	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	6		XS		P61B-001T1	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	8		XS		P61B-001UC	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	10		XS		P61B-001JN	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
781	12		SCH60		P61B-003XC	Flange WN ASTM A105 Class 600 ASME B16.5 RF	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P67B-000GK	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	1.5				P67B-000GL	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	2				P67B-000GM	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	3				P67B-000GN	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	4				P67B-000GP	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	6				P67B-000GY	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	8				P67B-000GZ	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	10				P67B-000GR	Blind flange ASTM A105 Class 300 ASME B16.5 RF	
1	12				P67B-000GS	Blind flange ASTM A105 Class 300 ASME B16.5 RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000FT	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000G5	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000G6	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	6				P73T-000G7	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	8				P73T-000G8	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	10				P73T-000FX	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	12				P73T-000FY	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1				P73T-000JA	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1.5				P73T-000JB	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	2				P73T-000JH	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	3				P73T-000JL	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	4				P73T-000JM	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	6				P73T-000JN	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	8				P73T-000JP	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	10				P73T-000JC	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	12				P73T-000JD	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-10				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	12				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
781	1-6				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
781	8-12				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	

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GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P81B-0019K	Gate valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated C.A.=6.0mm	
1	1.5				P81B-0019L	Gate valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated C.A.=6.0mm	
1	2				P81C-004KH	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated C.A.=6.0mm	
1	3				P81C-004KJ	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated C.A.=6.0mm	
1	4				P81C-004KK	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated C.A.=6.0mm	
1	6				P81C-004KL	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated C.A.=6.0mm	
1	8				P81C-0092C	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated C.A.=6.0mm	
1	10				P81C-0062U	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated C.A.=6.0mm	
1	12				P81C-0062V	Gate valve ASTM A216 Grade WCB Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated C.A.=6.0mm	
4001	0.5				P81K-0015S	Gate valve ASTM A182 Grade F316/F316L dual grade Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	37
4608	1				P81B-002XG	Gate valve ASTM A105 Class 300 API 602 BW both sides w/ nipples BE - NPT ASTM A106-B T=10.60MM-nipple Trim number 12 BB-BG-OS&Y Handwheel operated C.A.=6.0mm	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P82B-0012J	Globe valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated C.A.=6.0mm	
1	1.5				P82B-0012K	Globe valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated C.A.=6.0mm	
1	2				P82C-0028P	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated C.A.=6.0mm	
1	3				P82C-0028R	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated C.A.=6.0mm	
1	4				P82C-0028S	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated C.A.=6.0mm	
1	6				P82C-0028T	Globe valve ASTM A216 Grade WCB Class 300 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated C.A.=6.0mm	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	4				P83C-002YF	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover C.A.=6.0mm	
1	6				P83C-002YG	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover C.A.=6.0mm	
1	8				P83C-004FD	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover C.A.=6.0mm	
1	10				P83C-004FB	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover C.A.=6.0mm	
1	12				P83C-004FC	Check valve ASTM A216 Grade WCB Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover C.A.=6.0mm	

NEEDLE VALVE (NV)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P82B-001M0	Needle valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated C.A.=6.0mm	
1	1.5				P82B-001M1	Needle valve ASTM A105 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated C.A.=6.0mm	

ORIFICE FLANGE (FO)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2		SCH160		P66B-00889	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	3		SCH160		P66B-0088C	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	4		SCH120		P66B-0088D	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	6		XS		P66B-0088E	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
200	2		SCH160		P66B-0088P	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	3		SCH160		P66B-0088T	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	4		SCH120		P66B-0088U	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	6		XS		P66B-0088V	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P71B-000B3	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71B-000B4	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	2				P71B-000B6	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	

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SPECT BLANK (SB)							
OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3				P71B-000B7	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	4				P71B-000B8	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	6				P71B-000B9	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	8				P71B-000BA	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	10				P71B-000B5	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	12				P71B-000BB	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 RF	

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BOLT TABLE (B_B4AV , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-003V4		
1	4	0.625	80	P80S-003XD		
1.5	4	0.750	95	P80S-00414		
2	8	0.625	90	P80S-003XF		
3	8	0.750	110	P80S-003XK		
4	8	0.750	115	P80S-003XL		
6	12	0.750	125	P80S-003XN		
8	12	0.875	140	P80S-0041D		
10	16	1.000	160	P80S-0043K		
12	16	1.125	175	P80S-0046S		

BOLT TABLE (B_B4AV_781 , STUD ASME RF, OPTION CODE 781)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	80			
1	4	0.625	95	P80S-003XG		
1.5	4	0.750	110	P80S-003XK		
2	8	0.625	110	P80S-003VC		
3	8	0.750	130	P80S-003XP		
4	8	0.875	150	P80S-0041F		
6	12	1.000	175	P80S-0043P		
8	12	1.125	195	P80S-0046W		
10	16	1.250	250	P80S-004AY		
12	20	1.250	255	P80S-004AZ		

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BRANCH TABLE (T_B4AV)

RUN PIPE SIZE (in) \ BRANCH SIZE (in)	0.5	1	1.5	2	3	4	6	8	10	12
0.5	TS									
1		TS								
1.5		TR	TS							
2		TR	TR	TS						
3		L	TR	TR	TS					
4	L	L	L	TR	TR	TS				
6	L	L	L	L	TR	TR	TS			
8		L	L	L	L	TR	TR	TS		
10		L	L	L	L	TR	TR	TR	TS	
12		L	L	L	L	L	TR	TR	TR	TS

TR : REDUCING TEE
TS : STRAIGHT TEE
L : OUTLET

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Material : 5Cr-1/2Mo
Rating : ASME CLASS 300
Flange Face : RF
C.A.(mm) : 6.00
Gasket : Spiral Wound
Service : PROCESS - NON SOUR, NON NACE SOUR : / HAGO / PREHEATED CRUDE / PROCESS WITH H2S (< 25 PPMW)

Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
36	ASTM A691 CR-MO WELDED PIPES SPECIFIED WITH CLASS 22 CAN BE USED IN LIEU OF CLASS 42 IN NON-LICENSED UNITS ONLY. GRADE SHALL BE AS SPECIFIED IN "PIPE / FLANGE MATERIAL" SECTION IN ATTACHMENT 9.0 OF THIS DOCUMENT

DETAIL NOTES :

NO.	DESCRIPTION
37	TO BE USED ONLY FOR ORIFICE FLANGE ASSEMLY UPTO 425 DEG C

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
200	WITH JACK SCREW (FO)
541	NPT(F) (CA,F)
781	CLASS 600 (B,F,G)
4001	ALTERNATIVE MATERIAL FOR INSTRUMENT CONNECTION (F,P,V)
4405	FLANGE NPT WITH ALTERNATIVE MATERIAL FOR INSTRUMENT CONNECTION (F)
4608	VALVE WITH NIPPLES (V)

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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		XXS		P01F-000DB	Pipe ASTM A335 Grade P5 Seamless ASME B36.10M/B36.19M PE	
1	1.5		XXS		P01F-000DC	Pipe ASTM A335 Grade P5 Seamless ASME B36.10M/B36.19M PE	
1	2		SCH160		P01F-00036	Pipe ASTM A335 Grade P5 Seamless ASME B36.10M/B36.19M BE	
1	3		SCH160		P01F-0004G	Pipe ASTM A335 Grade P5 Seamless ASME B36.10M/B36.19M BE	
1	4		SCH120		P01F-0004X	Pipe ASTM A335 Grade P5 Seamless ASME B36.10M/B36.19M BE	
1	6		XS		P01F-00038	Pipe ASTM A335 Grade P5 Seamless ASME B36.10M/B36.19M BE	
1	8		XS		P01F-0001P	Pipe ASTM A335 Grade P5 Seamless ASME B36.10M/B36.19M BE	
1	10		SCH80		P01F-0004V	Pipe ASTM A335 Grade P5 Seamless ASME B36.10M/B36.19M BE	
1	12		SCH60		P01F-0003A	Pipe ASTM A335 Grade P5 Seamless ASME B36.10M/B36.19M BE	
1	14		SCH60		P01F-0001J	Pipe ASTM A335 Grade P5 Seamless ASME B36.10M/B36.19M BE	
1	16		SCH60		P01F-0003B	Pipe ASTM A335 Grade P5 Seamless ASME B36.10M/B36.19M BE	
1	18		SCH40		P01F-000DV	Pipe ASTM A691 Grade 5CR Class 22 EFW ASME B36.10M/B36.19M BE	
1	20		SCH40		P01F-000DM	Pipe ASTM A691 Grade 5CR Class 22 EFW ASME B36.10M/B36.19M BE	
1	24		XS		P01F-000DD	Pipe ASTM A691 Grade 5CR Class 22 EFW ASME B36.10M/B36.19M BE	
1	30		XS		P01F-000DE	Pipe ASTM A691 Grade 5CR Class 22 EFW ASME B36.10M/B36.19M BE	
1	36		XS		P01F-001PT	Pipe ASTM A691 Grade 5CR Class 22 EFW ASME B36.10M/B36.19M BE	
1	42		14.27mm		P01F-001PU	Pipe ASTM A691 Grade 5CR Class 22 EFW ASME B36.10M/B36.19M BE	
4001	0.5		SCH80S		P01J-0014A	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE	37

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		XXS		P02F-000D6	90 degree elbow ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW Long radius	
1	1.5		XXS		P02F-000D7	90 degree elbow ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW Long radius	
1	2		SCH160		P02F-00049	90 degree elbow ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW Long radius	
1	3		SCH160		P02F-000DD	90 degree elbow ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW Long radius	
1	4		SCH120		P02F-000DE	90 degree elbow ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW Long radius	
1	6		XS		P02F-0004B	90 degree elbow ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW Long radius	
1	8		XS		P02F-0002N	90 degree elbow ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW Long radius	
1	10		SCH80		P02F-000DT	90 degree elbow ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW Long radius	
1	12		SCH60		P02F-0004E	90 degree elbow ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW Long radius	
1	14		SCH60		P02F-0002G	90 degree elbow ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW Long radius	
1	16		SCH60		P02F-0004F	90 degree elbow ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW Long radius	
1	18		SCH40		P02F-000DU	90 degree elbow ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW Long radius	
1	20		SCH40		P02F-000DV	90 degree elbow ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW Long radius	
1	24		XS		P02F-000DC	90 degree elbow ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW Long radius	
1	30		XS		P02F-000DF	90 degree elbow ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW Long radius	
1	36		XS		P02F-000JH	90 degree elbow ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW Long radius	
1	42		14.27mm		P02F-000JJ	90 degree elbow ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		XXS		P03F-000CZ	45 degree elbow ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW Long radius	
1	1.5		XXS		P03F-000D0	45 degree elbow ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW Long radius	
1	2		SCH160		P03F-00046	45 degree elbow ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW Long radius	
1	3		SCH160		P03F-000D6	45 degree elbow ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW Long radius	
1	4		SCH120		P03F-000D7	45 degree elbow ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW Long radius	
1	6		XS		P03F-00048	45 degree elbow ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW Long radius	
1	8		XS		P03F-0002K	45 degree elbow ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW Long radius	
1	10		SCH80		P03F-000DK	45 degree elbow ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW Long radius	
1	12		SCH60		P03F-0004B	45 degree elbow ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW Long radius	
1	14		SCH60		P03F-0002D	45 degree elbow ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW Long radius	
1	16		SCH60		P03F-0004C	45 degree elbow ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW Long radius	
1	18		SCH40		P03F-000DL	45 degree elbow ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW Long radius	
1	20		SCH40		P03F-000DM	45 degree elbow ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW Long radius	
1	24		XS		P03F-000D5	45 degree elbow ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW Long radius	
1	30		XS		P03F-000D8	45 degree elbow ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW Long radius	
1	36		XS		P03F-000J8	45 degree elbow ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW Long radius	
1	42		14.27mm		P03F-000J9	45 degree elbow ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW Long radius	

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STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		XXS		P21F-000D1	Straight tee ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	1.5		XXS		P21F-000D2	Straight tee ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	2		SCH160		P21F-00047	Straight tee ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	3		SCH160		P21F-000DG	Straight tee ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	4		SCH120		P21F-000DH	Straight tee ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	6		XS		P21F-00049	Straight tee ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	8		XS		P21F-0002K	Straight tee ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	10		SCH80		P21F-000DF	Straight tee ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	12		SCH60		P21F-0004B	Straight tee ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	14		SCH60		P21F-0002E	Straight tee ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	16		SCH60		P21F-0004C	Straight tee ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	18		SCH40		P21F-000E2	Straight tee ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	
1	20		SCH40		P21F-000DJ	Straight tee ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	
1	24		XS		P21F-000D3	Straight tee ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	
1	30		XS		P21F-000D4	Straight tee ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	
1	36		XS		P21F-000JC	Straight tee ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	
1	42		14.27mm		P21F-000JD	Straight tee ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5	1	XXS	XXS	P24F-0016W	Reducing tee ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	2	1	SCH160	XXS	P24F-00177	Reducing tee ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	2	1.5	SCH160	XXS	P24F-00178	Reducing tee ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	3	1.5	SCH160	XXS	P24F-0017H	Reducing tee ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	3	2	SCH160	SCH160	P24F-0017J	Reducing tee ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	4	2	SCH120	SCH160	P24F-0017K	Reducing tee ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	4	3	SCH120	SCH160	P24F-0017L	Reducing tee ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	6	3	XS	SCH160	P24F-0017M	Reducing tee ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	6	4	XS	SCH120	P24F-0017N	Reducing tee ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	8	4	XS	SCH120	P24F-001AG	Reducing tee ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	8	6	XS	XS	P24F-0009T	Reducing tee ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	10	4	SCH80	SCH120	P24F-001AH	Reducing tee ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	10	6	SCH80	XS	P24F-001AJ	Reducing tee ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	10	8	SCH80	XS	P24F-00179	Reducing tee ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	12	6	SCH60	XS	P24F-001AK	Reducing tee ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	12	8	SCH60	XS	P24F-000A0	Reducing tee ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	12	10	SCH60	SCH80	P24F-0017A	Reducing tee ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	14	6	SCH60	XS	P24F-001AL	Reducing tee ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	14	8	SCH60	XS	P24F-0006U	Reducing tee ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	14	10	SCH60	SCH80	P24F-0017B	Reducing tee ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	14	12	SCH60	SCH60	P24F-000A2	Reducing tee ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	16	6	SCH60	XS	P24F-001AM	Reducing tee ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	16	8	SCH60	XS	P24F-000A6	Reducing tee ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	16	10	SCH60	SCH80	P24F-0017C	Reducing tee ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	16	12	SCH60	SCH60	P24F-000A4	Reducing tee ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	16	14	SCH60	SCH60	P24F-000A5	Reducing tee ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	18	8	SCH40	XS	P24F-001AT	Reducing tee ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	
1	18	10	SCH40	SCH80	P24F-001AN	Reducing tee ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	
1	18	12	SCH40	SCH60	P24F-001AP	Reducing tee ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	
1	18	14	SCH40	SCH60	P24F-001AR	Reducing tee ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	
1	18	16	SCH40	SCH60	P24F-001AS	Reducing tee ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	
1	20	8	SCH40	XS	P24F-0017G	Reducing tee ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	
1	20	10	SCH40	SCH80	P24F-0017D	Reducing tee ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	
1	20	12	SCH40	SCH60	P24F-0017E	Reducing tee ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	
1	20	14	SCH40	SCH60	P24F-0017F	Reducing tee ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	
1	20	16	SCH40	SCH60	P24F-001BF	Reducing tee ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	
1	20	18	SCH40	SCH40	P24F-001AU	Reducing tee ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	
1	24	10	XS	SCH80	P24F-001BG	Reducing tee ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	
1	24	12	XS	SCH60	P24F-001BH	Reducing tee ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	

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REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	24	14	XS	SCH60	P24F-001BJ	Reducing tee ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	
1	24	16	XS	SCH60	P24F-001BK	Reducing tee ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	
1	24	18	XS	SCH40	P24F-001BL	Reducing tee ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	
1	24	20	XS	SCH40	P24F-001BM	Reducing tee ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	
1	30	10	XS	SCH80	P24F-0022X	Reducing tee ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	
1	30	12	XS	SCH60	P24F-0022Y	Reducing tee ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	
1	30	14	XS	SCH60	P24F-0022Z	Reducing tee ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	
1	30	16	XS	SCH60	P24F-00230	Reducing tee ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	
1	30	18	XS	SCH40	P24F-00231	Reducing tee ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	
1	30	20	XS	SCH40	P24F-0022J	Reducing tee ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	
1	30	24	XS	XS	P24F-0016X	Reducing tee ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	
1	36	16	XS	SCH60	P24F-0022R	Reducing tee ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	
1	36	18	XS	SCH40	P24F-0022S	Reducing tee ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	
1	36	20	XS	SCH40	P24F-0022T	Reducing tee ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	
1	36	24	XS	XS	P24F-0022K	Reducing tee ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	
1	36	30	XS	XS	P24F-0022L	Reducing tee ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	
1	42	16	14.27mm	SCH60	P24F-0022U	Reducing tee ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	
1	42	18	14.27mm	SCH40	P24F-0022V	Reducing tee ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	
1	42	20	14.27mm	SCH40	P24F-0022W	Reducing tee ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	
1	42	24	14.27mm	XS	P24F-0022M	Reducing tee ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	
1	42	30	14.27mm	XS	P24F-0022N	Reducing tee ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	
1	42	36	14.27mm	XS	P24F-0022P	Reducing tee ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5	1	XXS	XXS	P27F-00108	Concentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	2	1	SCH160	XXS	P27F-0010L	Concentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	2	1.5	SCH160	XXS	P27F-0010M	Concentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	3	1.5	SCH160	XXS	P27F-0010V	Concentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	3	2	SCH160	SCH160	P27F-0010W	Concentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	4	1.5	SCH120	XXS	P27F-0010X	Concentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	4	2	SCH120	SCH160	P27F-0010Y	Concentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	4	3	SCH120	SCH160	P27F-0010Z	Concentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	6	3	XS	SCH160	P27F-00110	Concentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	6	4	XS	SCH120	P27F-00111	Concentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	8	4	XS	SCH120	P27F-00131	Concentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	8	6	XS	XS	P27F-0008T	Concentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	10	4	SCH80	SCH120	P27F-00132	Concentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	10	6	SCH80	XS	P27F-00133	Concentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	10	8	SCH80	XS	P27F-0010N	Concentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	12	6	SCH60	XS	P27F-00134	Concentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	12	8	SCH60	XS	P27F-00090	Concentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	12	10	SCH60	SCH80	P27F-0010P	Concentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	14	6	SCH60	XS	P27F-00135	Concentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	14	8	SCH60	XS	P27F-0005Y	Concentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	14	10	SCH60	SCH80	P27F-0010R	Concentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	14	12	SCH60	SCH60	P27F-00092	Concentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	16	8	SCH60	XS	P27F-00096	Concentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	16	10	SCH60	SCH80	P27F-0010S	Concentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	16	12	SCH60	SCH60	P27F-00094	Concentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	16	14	SCH60	SCH60	P27F-00095	Concentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	18	10	SCH40	SCH80	P27F-00136	Concentric reducer ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	
1	18	12	SCH40	SCH60	P27F-00137	Concentric reducer ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	
1	18	14	SCH40	SCH60	P27F-00138	Concentric reducer ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	
1	18	16	SCH40	SCH60	P27F-00139	Concentric reducer ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	
1	20	12	SCH40	SCH60	P27F-0010T	Concentric reducer ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	
1	20	14	SCH40	SCH60	P27F-0010U	Concentric reducer ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	
1	20	16	SCH40	SCH60	P27F-0013J	Concentric reducer ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	
1	20	18	SCH40	SCH40	P27F-0013A	Concentric reducer ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	

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CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	24	16	XS	SCH60	P27F-0013K	Concentric reducer ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	
1	24	18	XS	SCH40	P27F-0013L	Concentric reducer ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	
1	24	20	XS	SCH40	P27F-0013M	Concentric reducer ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	
1	30	20	XS	SCH40	P27F-001JX	Concentric reducer ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	
1	30	24	XS	XS	P27F-00109	Concentric reducer ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	
1	36	24	XS	XS	P27F-001JY	Concentric reducer ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	
1	36	30	XS	XS	P27F-001JZ	Concentric reducer ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	
1	42	30	14.27mm	XS	P27F-001K0	Concentric reducer ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	
1	42	36	14.27mm	XS	P27F-001K1	Concentric reducer ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5	1	XXS	XXS	P28F-00108	Eccentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	2	1	SCH160	XXS	P28F-0010L	Eccentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	2	1.5	SCH160	XXS	P28F-0010M	Eccentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	3	1.5	SCH160	XXS	P28F-0010W	Eccentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	3	2	SCH160	SCH160	P28F-0010X	Eccentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	4	1.5	SCH120	XXS	P28F-0010Y	Eccentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	4	2	SCH120	SCH160	P28F-0010Z	Eccentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	4	3	SCH120	SCH160	P28F-00110	Eccentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	6	3	XS	SCH160	P28F-00111	Eccentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	6	4	XS	SCH120	P28F-00112	Eccentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	8	4	XS	SCH120	P28F-00132	Eccentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	8	6	XS	XS	P28F-0008T	Eccentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	10	4	SCH80	SCH120	P28F-00133	Eccentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	10	6	SCH80	XS	P28F-00134	Eccentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	10	8	SCH80	XS	P28F-0010N	Eccentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	12	6	SCH60	XS	P28F-00135	Eccentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	12	8	SCH60	XS	P28F-00090	Eccentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	12	10	SCH60	SCH80	P28F-0010P	Eccentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	14	6	SCH60	XS	P28F-00136	Eccentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	14	8	SCH60	XS	P28F-0005Y	Eccentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	14	10	SCH60	SCH80	P28F-0010R	Eccentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	14	12	SCH60	SCH60	P28F-00092	Eccentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	16	8	SCH60	XS	P28F-00096	Eccentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	16	10	SCH60	SCH80	P28F-0010S	Eccentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	16	12	SCH60	SCH60	P28F-00094	Eccentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	16	14	SCH60	SCH60	P28F-00095	Eccentric reducer ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	18	10	SCH40	SCH80	P28F-00137	Eccentric reducer ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	
1	18	12	SCH40	SCH60	P28F-00138	Eccentric reducer ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	
1	18	14	SCH40	SCH60	P28F-00139	Eccentric reducer ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	
1	18	16	SCH40	SCH60	P28F-0013A	Eccentric reducer ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	
1	20	12	SCH40	SCH60	P28F-0010T	Eccentric reducer ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	
1	20	14	SCH40	SCH60	P28F-0010U	Eccentric reducer ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	
1	20	16	SCH40	SCH60	P28F-0013K	Eccentric reducer ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	
1	20	18	SCH40	SCH40	P28F-0013B	Eccentric reducer ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	
1	24	16	XS	SCH60	P28F-0013L	Eccentric reducer ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	
1	24	18	XS	SCH40	P28F-0013M	Eccentric reducer ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	
1	24	20	XS	SCH40	P28F-0013N	Eccentric reducer ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	
1	30	20	XS	SCH40	P28F-001KE	Eccentric reducer ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	
1	30	24	XS	XS	P28F-00109	Eccentric reducer ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	
1	36	24	XS	XS	P28F-001KF	Eccentric reducer ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	
1	36	30	XS	XS	P28F-001KG	Eccentric reducer ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	
1	42	30	14.27mm	XS	P28F-001KH	Eccentric reducer ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	
1	42	36	14.27mm	XS	P28F-001KJ	Eccentric reducer ASTM A234 Grade WP5-W Class 1 Weld ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		XXS		P29F-000CV	Cap ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	

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CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5		XXS		P29F-000CW	Cap ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	2		SCH160		P29F-00044	Cap ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	3		SCH160		P29F-000D2	Cap ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	4		SCH120		P29F-000D4	Cap ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	6		XS		P29F-00046	Cap ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	8		XS		P29F-0002H	Cap ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	10		SCH80		P29F-000DF	Cap ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	12		SCH60		P29F-0004A	Cap ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	14		SCH60		P29F-0002B	Cap ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	16		SCH60		P29F-0004B	Cap ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	18		SCH40		P29F-000DG	Cap ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	20		SCH40		P29F-000DH	Cap ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	24		XS		P29F-000D1	Cap ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	30		XS		P29F-000D3	Cap ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	36		XS		P29F-000HM	Cap ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
1	42		14.27mm		P29F-000HN	Cap ASTM A234 Grade WP5 Class 1 Seamless ASME B16.9 BW	
541	1				P29G-00023	Cap ASTM A182 Grade F5 Class 6000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		10.60mm		P41F-0003N	Straight nipple ASTM A335 Grade P5 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		10.60mm		P41F-0003P	Straight nipple ASTM A335 Grade P5 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	1	SCH160	XXS	P31G-001LX	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	4	1	SCH120	XXS	P31G-001LY	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	6	1	XS	XXS	P31G-001M0	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	8	1	XS	XXS	P31G-001LA	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	10	1	SCH80	XXS	P31G-001LC	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	12	1	SCH60	XXS	P31G-001LF	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	14	1	SCH60	XXS	P31G-001LH	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	16	1	SCH60	XXS	P31G-001LK	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	18	1	SCH40	XXS	P31G-001PK	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	20	1	SCH40	XXS	P31G-001PP	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	24	1	XS	XXS	P31G-001L1	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	30	1	XS	XXS	P31G-001L3	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	36	1	XS	XXS	P31G-002EM	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	42	1	14.27mm	XXS	P31G-002EU	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	4	1.5	SCH120	XXS	P31G-001LZ	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	6	1.5	XS	XXS	P31G-001M1	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	8	1.5	XS	XXS	P31G-001LB	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	10	1.5	SCH80	XXS	P31G-001LD	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	12	1.5	SCH60	XXS	P31G-001LG	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	14	1.5	SCH60	XXS	P31G-001LJ	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	16	1.5	SCH60	XXS	P31G-001LL	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	18	1.5	SCH40	XXS	P31G-001PL	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	20	1.5	SCH40	XXS	P31G-001PR	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	24	1.5	XS	XXS	P31G-001L2	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	30	1.5	XS	XXS	P31G-001L4	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	36	1.5	XS	XXS	P31G-002EN	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	42	1.5	14.27mm	XXS	P31G-002EV	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	6	2	XS	SCH160	P31G-000EE	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	8	2	XS	SCH160	P31G-000EG	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	10	2	SCH80	SCH160	P31G-001LE	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	12	2	SCH60	SCH160	P31G-000EY	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	14	2	SCH60	SCH160	P31G-000F0	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	16	2	SCH60	SCH160	P31G-000F2	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	18	2	SCH40	SCH160	P31G-001PG	Outlet ASTM A182 Grade F5 MSS SP-97 BW	

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OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	20	2	SCH40	SCH160	P31G-001LM	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	24	2	XS	SCH160	P31G-001LN	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	30	2	XS	SCH160	P31G-001LT	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	36	2	XS	SCH160	P31G-002EP	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	42	2	14.27mm	SCH160	P31G-002EW	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	8	3	XS	SCH160	P31G-001P8	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	10	3	SCH80	SCH160	P31G-001P9	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	12	3	SCH60	SCH160	P31G-001PA	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	14	3	SCH60	SCH160	P31G-001PC	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	16	3	SCH60	SCH160	P31G-001PE	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	18	3	SCH40	SCH160	P31G-001PM	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	20	3	SCH40	SCH160	P31G-001PS	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	24	3	XS	SCH160	P31G-001LP	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	30	3	XS	SCH160	P31G-001LU	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	36	3	XS	SCH160	P31G-002ER	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	42	3	14.27mm	SCH160	P31G-002EX	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	12	4	SCH60	SCH120	P31G-001PB	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	14	4	SCH60	SCH120	P31G-001PD	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	16	4	SCH60	SCH120	P31G-001PF	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	18	4	SCH40	SCH120	P31G-001PN	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	20	4	SCH40	SCH120	P31G-001PT	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	24	4	XS	SCH120	P31G-001LR	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	30	4	XS	SCH120	P31G-001LV	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	36	4	XS	SCH120	P31G-002ES	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	42	4	14.27mm	SCH120	P31G-002EY	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	18	6	SCH40	XS	P31G-001PH	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	20	6	SCH40	XS	P31G-001PJ	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	24	6	XS	XS	P31G-001LS	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	30	6	XS	XS	P31G-001LW	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	36	6	XS	XS	P31G-002ET	Outlet ASTM A182 Grade F5 MSS SP-97 BW	
1	42	6	14.27mm	XS	P31G-002EZ	Outlet ASTM A182 Grade F5 MSS SP-97 BW	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P30G-0000F	Plug ASTM A182 Grade F5 ASME B16.11 NPT Round head	
1	1.5				P30G-0000G	Plug ASTM A182 Grade F5 ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		XXS		P61G-000RU	Flange WN ASTM A182 Grade F5 Class 300 ASME B16.5 RF	
1	1.5		XXS		P61G-000RV	Flange WN ASTM A182 Grade F5 Class 300 ASME B16.5 RF	
1	2		SCH160		P61G-0007M	Flange WN ASTM A182 Grade F5 Class 300 ASME B16.5 RF	
1	3		SCH160		P61G-000S1	Flange WN ASTM A182 Grade F5 Class 300 ASME B16.5 RF	
1	4		SCH120		P61G-000S2	Flange WN ASTM A182 Grade F5 Class 300 ASME B16.5 RF	
1	6		XS		P61G-0007P	Flange WN ASTM A182 Grade F5 Class 300 ASME B16.5 RF	
1	8		XS		P61G-0003C	Flange WN ASTM A182 Grade F5 Class 300 ASME B16.5 RF	
1	10		SCH80		P61G-000TD	Flange WN ASTM A182 Grade F5 Class 300 ASME B16.5 RF	
1	12		SCH60		P61G-00086	Flange WN ASTM A182 Grade F5 Class 300 ASME B16.5 RF	
1	14		SCH60		P61G-00036	Flange WN ASTM A182 Grade F5 Class 300 ASME B16.5 RF	
1	16		SCH60		P61G-00087	Flange WN ASTM A182 Grade F5 Class 300 ASME B16.5 RF	
1	18		SCH40		P61G-000TE	Flange WN ASTM A182 Grade F5 Class 300 ASME B16.5 RF	
1	20		SCH40		P61G-000TF	Flange WN ASTM A182 Grade F5 Class 300 ASME B16.5 RF	
1	24		XS		P61G-000S0	Flange WN ASTM A182 Grade F5 Class 300 ASME B16.5 RF	
1	30		XS		P61G-000S3	Flange WN ASTM A182 Grade F5 Class 300 ASME B16.47 Series B RF	
1	36		XS		P61G-0013G	Flange WN ASTM A182 Grade F5 Class 300 ASME B16.47 Series B RF	
1	42		14.27mm		P61G-0013H	Flange WN ASTM A182 Grade F5 Class 300 ASME B16.47 Series B RF	
4001	0.5		SCH80S		P61K-002LC	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF	37
4415	0.5				P61K-0045U	Flange NPT ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF	37
541	1				P61G-00161	Flange NPT ASTM A182 Grade F5 Class 300 ASME B16.5 RF	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
781	1		XXS		P61G-000TG	Flange WN ASTM A182 Grade F5 Class 600 ASME B16.5 RF	
781	1.5		XXS		P61G-000TH	Flange WN ASTM A182 Grade F5 Class 600 ASME B16.5 RF	
781	2		SCH160		P61G-0007W	Flange WN ASTM A182 Grade F5 Class 600 ASME B16.5 RF	
781	3		SCH160		P61G-000TN	Flange WN ASTM A182 Grade F5 Class 600 ASME B16.5 RF	
781	4		SCH120		P61G-000TP	Flange WN ASTM A182 Grade F5 Class 600 ASME B16.5 RF	
781	6		XS		P61G-0007Y	Flange WN ASTM A182 Grade F5 Class 600 ASME B16.5 RF	
781	8		XS		P61G-0003S	Flange WN ASTM A182 Grade F5 Class 600 ASME B16.5 RF	
781	10		SCH80		P61G-000TJ	Flange WN ASTM A182 Grade F5 Class 600 ASME B16.5 RF	
781	12		SCH60		P61G-0008B	Flange WN ASTM A182 Grade F5 Class 600 ASME B16.5 RF	
781	14		SCH60		P61G-0003K	Flange WN ASTM A182 Grade F5 Class 600 ASME B16.5 RF	
781	16		SCH60		P61G-0008C	Flange WN ASTM A182 Grade F5 Class 600 ASME B16.5 RF	
781	18		SCH40		P61G-000TK	Flange WN ASTM A182 Grade F5 Class 600 ASME B16.5 RF	
781	20		SCH40		P61G-000TL	Flange WN ASTM A182 Grade F5 Class 600 ASME B16.5 RF	
781	24		XS		P61G-000TM	Flange WN ASTM A182 Grade F5 Class 600 ASME B16.5 RF	
781	30		XS		P61G-0013J	Flange WN ASTM A182 Grade F5 Class 600 ASME B16.47 Series B RF	
781	36		XS		P61G-0013K	Flange WN ASTM A182 Grade F5 Class 600 ASME B16.47 Series B RF	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P67G-0001V	Blind flange ASTM A182 Grade F5 Class 300 ASME B16.5 RF	
1	1.5				P67G-0001W	Blind flange ASTM A182 Grade F5 Class 300 ASME B16.5 RF	
1	2				P67G-00020	Blind flange ASTM A182 Grade F5 Class 300 ASME B16.5 RF	
1	3				P67G-00022	Blind flange ASTM A182 Grade F5 Class 300 ASME B16.5 RF	
1	4				P67G-00023	Blind flange ASTM A182 Grade F5 Class 300 ASME B16.5 RF	
1	6				P67G-00024	Blind flange ASTM A182 Grade F5 Class 300 ASME B16.5 RF	
1	8				P67G-00025	Blind flange ASTM A182 Grade F5 Class 300 ASME B16.5 RF	
1	10				P67G-0001X	Blind flange ASTM A182 Grade F5 Class 300 ASME B16.5 RF	
1	12				P67G-0001Y	Blind flange ASTM A182 Grade F5 Class 300 ASME B16.5 RF	
1	14				P67G-0001Z	Blind flange ASTM A182 Grade F5 Class 300 ASME B16.5 RF	
1	16				P67G-0004N	Blind flange ASTM A182 Grade F5 Class 300 ASME B16.5 RF	
1	18				P67G-000AY	Blind flange ASTM A182 Grade F5 Class 300 ASME B16.5 RF	
1	20				P67G-00021	Blind flange ASTM A182 Grade F5 Class 300 ASME B16.5 RF	
1	24				P67G-0004P	Blind flange ASTM A182 Grade F5 Class 300 ASME B16.5 RF	
1	30				P67G-000AZ	Blind flange ASTM A182 Grade F5 Class 300 ASME B16.47 Series B RF	
1	36				P67G-000DA	Blind flange ASTM A182 Grade F5 Class 300 ASME B16.47 Series B RF	
1	42				P67G-000DB	Blind flange ASTM A182 Grade F5 Class 300 ASME B16.47 Series B RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-003AM	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	1				P73T-003AP	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	1.5				P73T-003AR	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	2				P73T-003AX	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	3				P73T-003B0	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	4				P73T-003B1	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	6				P73T-003B2	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	8				P73T-003B3	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	10				P73T-003AS	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	12				P73T-003AT	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	14				P73T-003AU	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	16				P73T-003AV	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	18				P73T-003AW	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	20				P73T-003AY	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	24				P73T-003AZ	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	

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GASKET (G)

OPTION CODE	SIZE L / RUN	SIZE S / BRN	WALL THICKNESS (L)	WALL THICKNESS (S)	IDENT CODE	DESCRIPTION	NOTE
1	30				P73T-003BL	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	36				P73T-003DU	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	42				P73T-003DV	Spiral wound gasket SS316 winding / Graphite-mica filler Class 300 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
781	1				P73T-003B6	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
781	1.5				P73T-003B7	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
781	2				P73T-003BD	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
781	3				P73T-003BG	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
781	4				P73T-003BH	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
781	6				P73T-003BJ	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
781	8				P73T-003BK	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
781	10				P73T-003B8	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
781	12				P73T-003B9	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
781	14				P73T-003BA	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
781	16				P73T-003BB	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
781	18				P73T-003BC	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
781	20				P73T-003BE	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
781	24				P73T-003BF	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
781	30				P73T-003BM	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
781	36				P73T-003DX	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	

BOLT AND NUT (B)

OPTION CODE	SIZE L / RUN	SIZE S / BRN	WALL THICKNESS (L)	WALL THICKNESS (S)	IDENT CODE	DESCRIPTION	NOTE
1	1-10				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B16 / A194 Grade 4 ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	12-42				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B16 / A194 Grade 4 ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
781	1-6				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B16 / A194 Grade 4 ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
781	8-36				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B16 / A194 Grade 4 ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE L / RUN	SIZE S / BRN	WALL THICKNESS (L)	WALL THICKNESS (S)	IDENT CODE	DESCRIPTION	NOTE
1	1				P81G-000CU	Gate valve ASTM A182 Grade F5 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Fluid-2 C.A.=6.0mm	
1	1.5				P81G-000CV	Gate valve ASTM A182 Grade F5 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Fluid-2 C.A.=6.0mm	
1	2				P81H-000YF	Gate valve ASTM A217 Grade C5 Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Fluid-2 C.A.=6.0mm	
1	3				P81H-000YG	Gate valve ASTM A217 Grade C5 Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Fluid-2 C.A.=6.0mm	
1	4				P81H-000YH	Gate valve ASTM A217 Grade C5 Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Fluid-2 C.A.=6.0mm	
1	6				P81H-000YJ	Gate valve ASTM A217 Grade C5 Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Fluid-2 C.A.=6.0mm	
1	8				P81H-000YK	Gate valve ASTM A217 Grade C5 Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Fluid-2 C.A.=6.0mm	
1	10				P81H-000YL	Gate valve ASTM A217 Grade C5 Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Fluid-2 C.A.=6.0mm	
1	12				P81H-000YM	Gate valve ASTM A217 Grade C5 Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Fluid-2 C.A.=6.0mm	
1	14				P81H-000YN	Gate valve ASTM A217 Grade C5 Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Fluid-2 C.A.=6.0mm	
1	16				P81H-000YP	Gate valve ASTM A217 Grade C5 Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Fluid-2 C.A.=6.0mm	
1	18				P81H-000YR	Gate valve ASTM A217 Grade C5 Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Fluid-2 C.A.=6.0mm	
1	20				P81H-000YS	Gate valve ASTM A217 Grade C5 Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Fluid-2 C.A.=6.0mm	
1	24				P81H-000YT	Gate valve ASTM A217 Grade C5 Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Fluid-2 C.A.=6.0mm	
4001	0.5				P81K-0015S	Gate valve ASTM A182 Grade F316/F316L dual grade Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	37
4608	1				P81G-000DT	Gate valve ASTM A182 Grade F5 Class 300 API 602 BW both sides w/ nipples BE - NPT ASTM A335-P5 T=10.60MM-nipple Trim number 12 BB-BG-OS&Y Handwheel operated Fluid-2 C.A.=6.0mm	

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PIPING CLASS
B4FV REV NO. 2

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P83G-0003X	Check valve ASTM A182 Grade F5 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover C.A.=6.0mm	
1	1.5				P83G-0003Y	Check valve ASTM A182 Grade F5 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover C.A.=6.0mm	
1	2				P83H-00077	Check valve ASTM A217 Grade C5 Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover C.A.=6.0mm	
1	3				P83H-00078	Check valve ASTM A217 Grade C5 Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover C.A.=6.0mm	
1	4				P83H-00079	Check valve ASTM A217 Grade C5 Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover C.A.=6.0mm	
1	6				P83H-0007A	Check valve ASTM A217 Grade C5 Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover C.A.=6.0mm	
1	8				P83H-0007B	Check valve ASTM A217 Grade C5 Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover C.A.=6.0mm	
1	10				P83H-00073	Check valve ASTM A217 Grade C5 Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover C.A.=6.0mm	
1	12				P83H-00074	Check valve ASTM A217 Grade C5 Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover C.A.=6.0mm	
1	14				P83H-00075	Check valve ASTM A217 Grade C5 Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover C.A.=6.0mm	
1	16				P83H-00076	Check valve ASTM A217 Grade C5 Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover C.A.=6.0mm	

ORIFICE FLANGE (FO)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2		SCH160		P66G-00087	Orifice flange WN ASTM A182 Grade F5 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	3		SCH160		P66G-00089	Orifice flange WN ASTM A182 Grade F5 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	4		SCH120		P66G-0008A	Orifice flange WN ASTM A182 Grade F5 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	6		XS		P66G-0007P	Orifice flange WN ASTM A182 Grade F5 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	8		XS		P66G-0008B	Orifice flange WN ASTM A182 Grade F5 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	10		SCH80		P66G-00082	Orifice flange WN ASTM A182 Grade F5 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	12		SCH60		P66G-00083	Orifice flange WN ASTM A182 Grade F5 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	14		SCH60		P66G-00084	Orifice flange WN ASTM A182 Grade F5 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	16		SCH60		P66G-00085	Orifice flange WN ASTM A182 Grade F5 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	18		SCH40		P66G-00086	Orifice flange WN ASTM A182 Grade F5 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
1	20		SCH40		P66G-00088	Orifice flange WN ASTM A182 Grade F5 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
200	2		SCH160		P66G-0008K	Orifice flange WN ASTM A182 Grade F5 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	3		SCH160		P66G-0008M	Orifice flange WN ASTM A182 Grade F5 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	4		SCH120		P66G-0008N	Orifice flange WN ASTM A182 Grade F5 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	6		XS		P66G-0007W	Orifice flange WN ASTM A182 Grade F5 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	8		XS		P66G-0008P	Orifice flange WN ASTM A182 Grade F5 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	10		SCH80		P66G-0008E	Orifice flange WN ASTM A182 Grade F5 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	12		SCH60		P66G-0008F	Orifice flange WN ASTM A182 Grade F5 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	14		SCH60		P66G-0008G	Orifice flange WN ASTM A182 Grade F5 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	16		SCH60		P66G-0008H	Orifice flange WN ASTM A182 Grade F5 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	18		SCH40		P66G-0008J	Orifice flange WN ASTM A182 Grade F5 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	20		SCH40		P66G-0008L	Orifice flange WN ASTM A182 Grade F5 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P71G-0002L	Spectacle blank ASTM A182 Grade F5 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71G-0002M	Spectacle blank ASTM A182 Grade F5 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	2				P71G-0002R	Spectacle blank ASTM A182 Grade F5 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	3				P71G-0002S	Spectacle blank ASTM A182 Grade F5 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	4				P71G-0002T	Spectacle blank ASTM A182 Grade F5 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	6				P71G-0002U	Spectacle blank ASTM A182 Grade F5 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	8				P71G-0002V	Spectacle blank ASTM A182 Grade F5 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	10				P71G-0002N	Spectacle blank ASTM A182 Grade F5 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	12				P71G-0002P	Spectacle blank ASTM A182 Grade F5 Class 300 Standard-drawing Flange ASME B16.5 RF	

PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72G-0001N	Paddle blank ASTM A182 Grade F5 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	16				P72G-0001P	Paddle blank ASTM A182 Grade F5 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	18				P72G-0001R	Paddle blank ASTM A182 Grade F5 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	20				P72G-0001S	Paddle blank ASTM A182 Grade F5 Class 300 Standard-drawing Flange ASME B16.5 RF	

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PADDLE BLANK (PB)							
OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	24				P72G-0001T	Paddle blank ASTM A182 Grade F5 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	30				P72G-0001U	Paddle blank ASTM A182 Grade F5 Class 300 Standard-drawing Flange ASME B16.47-B RF	
1	36				P72G-0007R	Paddle blank ASTM A182 Grade F5 Class 300 Standard-drawing Flange ASME B16.47-B RF	
1	42				P72G-0007S	Paddle blank ASTM A182 Grade F5 Class 300 Standard-drawing Flange ASME B16.47-B RF	

PADDLE SPACER (PS)							
OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72G-0001V	Paddle spacer ASTM A182 Grade F5 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	16				P72G-0001W	Paddle spacer ASTM A182 Grade F5 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	18				P72G-0001X	Paddle spacer ASTM A182 Grade F5 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	20				P72G-0001Y	Paddle spacer ASTM A182 Grade F5 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	24				P72G-0001Z	Paddle spacer ASTM A182 Grade F5 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	30				P72G-00020	Paddle spacer ASTM A182 Grade F5 Class 300 Standard-drawing Flange ASME B16.47-B RF	
1	36				P72G-0007T	Paddle spacer ASTM A182 Grade F5 Class 300 Standard-drawing Flange ASME B16.47-B RF	
1	42				P72G-0007U	Paddle spacer ASTM A182 Grade F5 Class 300 Standard-drawing Flange ASME B16.47-B RF	

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BOLT TABLE (B_B4FV , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70			
1	4	0.625	80	P80S-00GLK		
1.5	4	0.750	95	P80S-00FVE		
2	8	0.625	90	P80S-00GLH		
3	8	0.750	110	P80S-00GLD		
4	8	0.750	115	P80S-00GLC		
6	12	0.750	125	P80S-00GLA		
8	12	0.875	140	P80S-00FV5		
10	16	1.000	160	P80S-00FR9		
12	16	1.125	175	P80S-00FH8		
14	20	1.125	180	P80S-00FH7		
16	20	1.250	190	P80S-00F9Y		
18	24	1.250	200	P80S-00F9W		
20	24	1.250	210	P80S-00F9U		
24	24	1.500	235	P80S-00EYL		
30	36	1.375	285	P80S-00F2V		
36	32	1.625	320	P80S-00G0T		
42	36	1.750	355	P80S-00FTM		

BOLT TABLE (B_B4FV_781 , STUD ASME RF, OPTION CODE 781)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	80			
1	4	0.625	95	P80S-00GLG		
1.5	4	0.750	110	P80S-00GLD		
2	8	0.625	110	P80S-00GN0		
3	8	0.750	130	P80S-00GL9		
4	8	0.875	150	P80S-00FV3		
6	12	1.000	175	P80S-00FR6		
8	12	1.125	195	P80S-00FH4		
10	16	1.250	250	P80S-00F9K		
12	20	1.250	255	P80S-00F9J		
14	20	1.375	270	P80S-00F4T		
16	20	1.500	295	P80S-00EY8		
18	20	1.625	320	P80S-00G0T		
20	24	1.625	335	P80S-00G0P		
24	24	1.875	380	P80S-00FKC		
30	28	1.875	435	P80S-00FK1		
36	28	2.250	510	P80S-00F3B		
42	28	2.500	575			

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PIPING CLASS

B4FV

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BRANCH TABLE (T_B4FV)

RUN PIPE SIZE (in) \ BRANCH SIZE (in)	0.5	1	1.5	2	3	4	6	8	10	12	14	16	18	20	24	30	36	42
0.5	TS																	
1		TS																
1.5		TR	TS															
2		TR	TR	TS														
3		L	TR	TR	TS													
4	L	L	L	TR	TR	TS												
6	L	L	L	L	TR	TR	TS											
8		L	L	L	L	TR	TR	TS										
10		L	L	L	L	TR	TR	TR	TS									
12		L	L	L	L	L	TR	TR	TR	TS								
14		L	L	L	L	L	TR	TR	TR	TR	TS							
16		L	L	L	L	L	TR	TR	TR	TR	TR	TS						
18		L	L	L	L	L	L	TR	TR	TR	TR	TR	TS					
20		L	L	L	L	L	L	TR	TR	TR	TR	TR	TR	TS				
24		L	L	L	L	L	L	9PD	TR	TR	TR	TR	TR	TR	TS			
30		L	L	L	L	L	L	9PD	TR	TR	TR	TR	TR	TR	TR	TS		
36		L	L	L	L	L	L	9PD	9PD	9PD	9PD	TR	TR	TR	TR	TR	TS	
42		L	L	L	L	L	L	9PD	9PD	9PD	9PD	TR	TR	TR	TR	TR	TR	TS

L : OUTLET
9PD : REINFORCING PAD 90 DEG
TS : STRAIGHT TEE
TR : REDUCING TEE

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PIPING CLASS

B4GQ REV NO. 2

Material : LTCS
Rating : ASME CLASS 300
Flange Face : RF
C.A.(mm) : 6.00
Gasket : Spiral Wound
Service : PROCESS -WET LOW SEVERE SOUR SERVICE SUBJECT TO NACE STD
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
5	BOLTING CONFIRMING TO B7M / 2HM SHALL BE USED UNDER CONDITIONS (A) DIRECT EXPOSURE TO SOUR ENVIRONMENTS (B) WHEN THE BOLTING WILL BE BURIED OR INSULATED
15	BOLTING CONFIRMING TO L7M / 7M SHALL BE USED UNDER CONDITIONS (A) DIRECT EXPOSURE TO SOUR ENVIRONMENTS (B) WHEN THE BOLTING WILL BE BURIED OR INSULATED
27	PWHT OF CARBON STEEL PIPING IN WET H2S, CAUSTIC AND AMINE SERVICES SHALL BE IN ACCORDANCE WITH SECTION 10.2, 10.3, AND 10.4 OF PROJECT SPECIFICATION 3550-8440-SP-0002 MATERIALS REQUIREMENTS FOR PRESSURISED EQUIPMENT AND PIPING. FOR CAUSTIC AND AMINE SERVICE THE FOLLOWING SHALL APPLY: - PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF ALL SITE PIPING FABRICATION WELDS IS REQUIRED FOR ALL WALL THICKNESSES. FOR MODERATE AND SEVERE WET H2S SERVICE THE FOLLOWING SHALL APPLY: PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF SITE FABRICATION CIRCUMFERENTIAL OR BRANCH WELDS IS NOT REQUIRED IF WELDS ARE MULTIPASS AND IN ACCORDANCE WITH PARA 10.2.12 OF PROJECT SPECIFICATION 3550-8440-SP-0002. FOR SERVICES MEETING THE WET H2S CRITERIA AND CAUSTIC OR AMINE CRITERIA THE MORE STRINGENT PWHT REQUIREMENT SHALL GOVERN.

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
200	WITH JACK SCREW (FO)
541	NPT(F) (CA,F,L)
781	CLASS 600 (B,F,G)
4001	ALTERNATIVE MATERIAL FOR INSTRUMENT CONNECTION (F,P,V)
4405	FLANGE NPT WITH ALTERNATIVE MATERIAL FOR INSTRUMENT CONNECTION (F)
4602	DISSIMILAR TYPE CHECK VALVE (XDP)
4608	VALVE WITH NIPPLES (V)

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PIPING CLASS
B4GQ REV NO. 2

PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		XXS		P01A-003WW	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE	
1	1.5		XXS		P01A-003WX	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE	
1	2		SCH160		P01A-0013F	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	3		SCH160		P01A-0022L	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	4		SCH120		P01A-002D5	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	6		XS		P01A-000Y5	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	8		XS		P01A-000YG	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	10		XS		P01A-0022D	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	12		SCH60		P01A-0037S	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	14		SCH60		P01A-002RB	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	16		XS		P01A-0011L	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
4001	0.5		SCH80S		P01J-002CY	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE Moderate wet H2S service	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		XXS		P02A-002GH	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	1.5		XXS		P02A-002GJ	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	2		SCH160		P02A-000LB	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	3		SCH160		P02A-002GB	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	4		SCH120		P02A-0011D	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	6		XS		P02A-000C1	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	8		XS		P02A-000C4	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	10		XS		P02A-001AX	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	12		SCH60		P02A-001KN	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	14		SCH60		P02A-001AF	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	16		XS		P02A-000FJ	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		XXS		P03A-002E4	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	1.5		XXS		P03A-002E5	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	2		SCH160		P03A-000J9	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	3		SCH160		P03A-002DU	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	4		SCH120		P03A-000XW	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	6		XS		P03A-000AC	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	8		XS		P03A-000AH	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	10		XS		P03A-0016V	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	12		SCH60		P03A-001EW	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	14		SCH60		P03A-0016D	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	16		XS		P03A-000DJ	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		XXS		P21A-003EF	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	1.5		XXS		P21A-003EG	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	2		SCH160		P21A-0024S	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	3		SCH160		P21A-003ET	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	4		SCH120		P21A-002GF	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	6		XS		P21A-001C4	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	8		XS		P21A-001CA	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10		XS		P21A-002RF	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12		SCH60		P21A-002ZD	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14		SCH60		P21A-002R0	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16		XS		P21A-001ZZ	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5	1	XXS	XXS	P24A-00GBX	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	

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REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2	1	SCH160	XXS	P24A-00L5W	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	2	1.5	SCH160	XXS	P24A-00L5X	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	3	1.5	SCH160	XXS	P24A-00L5Y	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	3	2	SCH160	SCH160	P24A-00GCB	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	4	2	SCH120	SCH160	P24A-00GCC	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	4	3	SCH120	SCH160	P24A-00GCD	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	6	3	XS	SCH160	P24A-00L5Z	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	6	4	XS	SCH120	P24A-00L60	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	8	4	XS	SCH120	P24A-00GY8	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	8	6	XS	XS	P24A-001YY	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	4	XS	SCH120	P24A-00R90	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	6	XS	XS	P24A-006ZG	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	8	XS	XS	P24A-006CP	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	6	SCH60	XS	P24A-00HM0	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	8	SCH60	XS	P24A-008C9	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	10	SCH60	XS	P24A-008C8	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	6	SCH60	XS	P24A-00R9N	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	8	SCH60	XS	P24A-00HM1	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	10	SCH60	XS	P24A-006AR	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	12	SCH60	SCH60	P24A-006AS	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	6	XS	XS	P24A-00GN8	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	8	XS	XS	P24A-00R9S	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	10	XS	XS	P24A-00GN7	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	12	XS	SCH60	P24A-00R9P	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	14	XS	SCH60	P24A-00R9R	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5	1	XXS	XXS	P27A-00B9J	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	2	1	SCH160	XXS	P27A-00FDS	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	2	1.5	SCH160	XXS	P27A-00FDT	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	3	1.5	SCH160	XXS	P27A-00FDU	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	3	2	SCH160	SCH160	P27A-00BA6	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	4	1.5	SCH120	XXS	P27A-00FDV	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	4	2	SCH120	SCH160	P27A-00BA8	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	4	3	SCH120	SCH160	P27A-00BA9	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	6	3	XS	SCH160	P27A-00FDW	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	6	4	XS	SCH120	P27A-00FDX	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	8	4	XS	SCH120	P27A-00BN6	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	8	6	XS	XS	P27A-001AG	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	4	XS	SCH120	P27A-00JF9	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	6	XS	XS	P27A-008BW	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	8	XS	XS	P27A-004CZ	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	6	SCH60	XS	P27A-009FS	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	8	SCH60	XS	P27A-009FT	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	10	SCH60	XS	P27A-009FR	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	6	SCH60	XS	P27A-004BJ	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	8	SCH60	XS	P27A-004BK	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	10	SCH60	XS	P27A-004BG	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	12	SCH60	SCH60	P27A-004BH	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	8	XS	XS	P27A-00J71	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	10	XS	XS	P27A-008C2	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	12	XS	SCH60	P27A-00JFP	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	14	XS	SCH60	P27A-00JFR	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5	1	XXS	XXS	P28A-0083J	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	2	1	SCH160	XXS	P28A-00CJP	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	

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ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2	1.5	SCH160	XXS	P28A-00CJR	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	3	1.5	SCH160	XXS	P28A-00CJS	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	3	2	SCH160	SCH160	P28A-00846	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	4	1.5	SCH120	XXS	P28A-00CJT	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	4	2	SCH120	SCH160	P28A-00848	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	4	3	SCH120	SCH160	P28A-00849	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	6	3	XS	SCH160	P28A-00CJU	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	6	4	XS	SCH120	P28A-00CJV	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	8	4	XS	SCH120	P28A-008NF	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	8	6	XS	XS	P28A-001B1	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	4	XS	SCH120	P28A-00FSA	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	6	XS	XS	P28A-00520	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	8	XS	XS	P28A-004CR	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	6	SCH60	XS	P28A-00680	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	8	SCH60	XS	P28A-00681	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	10	SCH60	XS	P28A-0067Z	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	6	SCH60	XS	P28A-004BA	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	8	SCH60	XS	P28A-004BB	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	10	SCH60	XS	P28A-004B8	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	12	SCH60	SCH60	P28A-004B9	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	8	XS	XS	P28A-00FH1	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	10	XS	XS	P28A-00526	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	12	XS	SCH60	P28A-00FSR	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	14	XS	SCH60	P28A-00FSS	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		XXS		P29A-003CE	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service	
1	1.5		XXS		P29A-003CF	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service	
1	2		SCH160		P29A-003CG	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service	
1	3		SCH160		P29A-003CH	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service	
1	4		SCH120		P29A-003CJ	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service	
1	6		XS		P29A-001X1	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service	
1	8		XS		P29A-005L7	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service	
1	10		XS		P29A-001WY	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service	
1	12		SCH60		P29A-005N0	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service	
1	14		SCH60		P29A-005N1	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service	
1	16		XS		P29A-005L0	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service	
541	1				P29B-00017	Cap ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		10.60mm		P41A-001B3	Straight nipple ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		10.60mm		P41A-001B4	Straight nipple ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
541	1.5	1			P31B-004HU	Outlet ASTM A350 Grade LF2 Class 1 Class 6000 MSS SP-97 NPT	
541	2 - 2.5	1			P31B-004HW	Outlet ASTM A350 Grade LF2 Class 1 Class 6000 MSS SP-97 NPT	
541	3 - 10	1			P31B-007CR	Outlet ASTM A350 Grade LF2 Class 1 Class 6000 MSS SP-97 NPT	
541	12 and larger	1			P31B-0136M	Outlet ASTM A350 Grade LF2 Class 1 Class 6000 MSS SP-97 NPT	
1	3	1	SCH160	XXS	P31B-00NH0	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	4	1	SCH120	XXS	P31B-00YFL	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	6	1	XS	XXS	P31B-00YFN	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	8	1	XS	XXS	P31B-0136A	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	10	1	XS	XXS	P31B-0135G	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	12	1	SCH60	XXS	P31B-0136D	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	14	1	SCH60	XXS	P31B-0136H	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	16	1	XS	XXS	P31B-0135U	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	

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OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	4	1.5	SCH120	XXS	P31B-00YFM	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	6	1.5	XS	XXS	P31B-00YFP	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	8	1.5	XS	XXS	P31B-0136B	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	10	1.5	XS	XXS	P31B-0135H	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	12	1.5	SCH60	XXS	P31B-0136E	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	14	1.5	SCH60	XXS	P31B-0136J	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	16	1.5	XS	XXS	P31B-0135V	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	6	2	XS	SCH160	P31B-00M9N	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	8	2	XS	SCH160	P31B-00M7J	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	10	2	XS	SCH160	P31B-00NN8	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	12	2	SCH60	SCH160	P31B-00W5R	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	14	2	SCH60	SCH160	P31B-00W5V	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	16	2	XS	SCH160	P31B-00MDZ	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	8	3	XS	SCH160	P31B-0136C	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	10	3	XS	SCH160	P31B-0135J	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	12	3	SCH60	SCH160	P31B-0136F	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	14	3	SCH60	SCH160	P31B-0136K	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	16	3	XS	SCH160	P31B-0135W	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	12	4	SCH60	SCH120	P31B-0136G	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	14	4	SCH60	SCH120	P31B-0136L	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	16	4	XS	SCH120	P31B-0135X	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P30B-0002X	Plug ASTM A350 Grade LF2 Class 1 ASME B16.11 NPT Round head	
1	1.5				P30B-0002Y	Plug ASTM A350 Grade LF2 Class 1 ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		XXS		P61B-00AD2	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	1.5		XXS		P61B-00AD3	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	2		SCH160		P61B-003SF	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	3		SCH160		P61B-00AD4	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	4		SCH120		P61B-00AD5	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	6		XS		P61B-003SJ	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	8		XS		P61B-00DGM	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	10		XS		P61B-004H8	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	12		SCH60		P61B-00DNK	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	14		SCH60		P61B-00DNL	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	16		XS		P61B-001SP	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
4001	0.5		SCH80S		P61K-005BE	Flange WN ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Moderate wet H2S service	
4405	0.5				P61K-0069S	Flange NPT ASTM A182 Grade F316/F316L dual grade Class 300 ASME B16.5 RF Moderate wet H2S service	
541	1				P61B-0035V	Flange NPT ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
781	1		XXS		P61B-00AD6	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
781	1.5		XXS		P61B-00AD7	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
781	2		SCH160		P61B-003WR	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
781	3		SCH160		P61B-005WF	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
781	4		SCH120		P61B-00AD8	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
781	6		XS		P61B-001M5	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
781	8		XS		P61B-001S5	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
781	10		XS		P61B-003YW	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
781	12		SCH60		P61B-004T3	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
781	14		SCH60		P61B-006CW	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
781	16		XS		P61B-001PY	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P67B-000MW	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5				P67B-000MX	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	2				P67B-000N3	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	3				P67B-000N6	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	4				P67B-000N7	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	6				P67B-000N8	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	8				P67B-000N9	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	10				P67B-000MY	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	12				P67B-000MZ	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	14				P67B-000N0	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	
1	16				P67B-000N1	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000FT	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000G5	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000G6	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	6				P73T-000G7	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	8				P73T-000G8	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	10				P73T-000FX	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	12				P73T-000FY	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	14				P73T-000FZ	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	16				P73T-000G0	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1				P73T-000JA	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1.5				P73T-000JB	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	2				P73T-000JH	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	3				P73T-000JL	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	4				P73T-000JM	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	6				P73T-000JN	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	8				P73T-000JP	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	10				P73T-000JC	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	12				P73T-000JD	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	14				P73T-000JE	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	16				P73T-000JF	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-10				See Attached Bolt Table	Bolt and Nut ASTM A320 Grade L7M / A194 Grade 7M ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	12-16				See Attached Bolt Table	Bolt and Nut ASTM A320 Grade L7M / A194 Grade 7M ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
781	1-6				See Attached Bolt Table	Bolt and Nut ASTM A320 Grade L7M / A194 Grade 7M ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
781	8-16				See Attached Bolt Table	Bolt and Nut ASTM A320 Grade L7M / A194 Grade 7M ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P81B-001GP	Gate valve ASTM A350 Grade LF2 Class 1 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service C.A.=6.0mm	
1	1.5				P81B-001GR	Gate valve ASTM A350 Grade LF2 Class 1 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service C.A.=6.0mm	

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GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2				P81C-00533	Gate valve ASTM A352 Grade LCC Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service C.A.=6.0mm	
1	3				P81C-00534	Gate valve ASTM A352 Grade LCC Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service C.A.=6.0mm	
1	4				P81C-00535	Gate valve ASTM A352 Grade LCC Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service C.A.=6.0mm	
1	6				P81C-00536	Gate valve ASTM A352 Grade LCC Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service C.A.=6.0mm	
1	8				P81C-0092D	Gate valve ASTM A352 Grade LCC Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Moderate wet H2S service C.A.=6.0mm	
1	10				P81C-008P3	Gate valve ASTM A352 Grade LCC Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Moderate wet H2S service C.A.=6.0mm	
1	12				P81C-008P4	Gate valve ASTM A352 Grade LCC Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Moderate wet H2S service C.A.=6.0mm	
1	14				P81C-008P5	Gate valve ASTM A352 Grade LCC Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Moderate wet H2S service C.A.=6.0mm	
1	16				P81C-008P6	Gate valve ASTM A352 Grade LCC Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Moderate wet H2S service C.A.=6.0mm	
4001	0.5				P81K-00117	Gate valve ASTM A182 Grade F316/F316L dual grade Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
4608	1				P81B-002XH	Gate valve ASTM A350 Grade LF2 Class 1 Class 300 API 602 BW both sides w/ nipples BE - NPT ASTM A333-6 T=10.60MM-nipple Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service C.A.=6.0mm	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P82B-00189	Globe valve ASTM A350 Grade LF2 Class 1 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service C.A.=6.0mm	
1	1.5				P82B-0018A	Globe valve ASTM A350 Grade LF2 Class 1 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service C.A.=6.0mm	
1	2				P82C-002G9	Globe valve ASTM A352 Grade LCC Class 300 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service C.A.=6.0mm	
1	3				P82C-002GA	Globe valve ASTM A352 Grade LCC Class 300 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service C.A.=6.0mm	
1	4				P82C-002GB	Globe valve ASTM A352 Grade LCC Class 300 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service C.A.=6.0mm	
1	6				P82C-002GC	Globe valve ASTM A352 Grade LCC Class 300 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service C.A.=6.0mm	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P83B-00104	Check valve ASTM A350 Grade LF2 Class 1 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Moderate wet H2S service C.A.=6.0mm	
1	1.5				P83B-00105	Check valve ASTM A350 Grade LF2 Class 1 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Moderate wet H2S service C.A.=6.0mm	
1	2				P83C-002G2	Check valve ASTM A352 Grade LCC Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Moderate wet H2S service C.A.=6.0mm	
1	3				P83C-002G3	Check valve ASTM A352 Grade LCC Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Moderate wet H2S service C.A.=6.0mm	
1	4				P83C-002G4	Check valve ASTM A352 Grade LCC Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Moderate wet H2S service C.A.=6.0mm	
1	6				P83C-002G5	Check valve ASTM A352 Grade LCC Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Moderate wet H2S service C.A.=6.0mm	
1	8				P83C-003SM	Check valve ASTM A352 Grade LCC Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Moderate wet H2S service C.A.=6.0mm	
1	10				P83C-003SH	Check valve ASTM A352 Grade LCC Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Moderate wet H2S service C.A.=6.0mm	
1	12				P83C-003SJ	Check valve ASTM A352 Grade LCC Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Moderate wet H2S service C.A.=6.0mm	
1	14				P83C-003SK	Check valve ASTM A352 Grade LCC Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Moderate wet H2S service C.A.=6.0mm	
1	16				P83C-003SL	Check valve ASTM A352 Grade LCC Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Moderate wet H2S service C.A.=6.0mm	

DP CHECK VALVE (XDP)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
4602	2				P88C-003C2	Dual plate check valve ASTM A352 Grade LCC Class 300 API 594 Wafer-type ASME B16.5 RF Trim number 12 Internal wetted parts SS316 Spring Inconel Retainerless-type Moderate wet H2S service C.A.=6.0mm	
4602	3				P88C-003C3	Dual plate check valve ASTM A352 Grade LCC Class 300 API 594 Wafer-type ASME B16.5 RF Trim number 12 Internal wetted parts SS316 Spring Inconel Retainerless-type Moderate wet H2S service C.A.=6.0mm	

NEEDLE VALVE (NV)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P82B-001LY	Needle valve ASTM A350 Grade LF2 Class 1 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service C.A.=6.0mm	
1	1.5				P82B-001LZ	Needle valve ASTM A350 Grade LF2 Class 1 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service C.A.=6.0mm	

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ORIFICE FLANGE (FO)							
OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	4		SCH120		P66B-008SR	Orifice flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1	
200	4		SCH120		P66B-008SS	Orifice flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	

SPECT BLANK (SB)							
OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P71B-000BS	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71B-000BT	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	2				P71B-000BW	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	3				P71B-000BX	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	4				P71B-000BY	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	6				P71B-000BZ	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	8				P71B-000C0	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	10				P71B-000BU	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	12				P71B-000BV	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF	

PADDLE BLANK (PB)							
OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000G1	Paddle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	16				P72B-000G2	Paddle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF	

PADDLE SPACER (PS)							
OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72B-000G6	Paddle spacer ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF	
1	16				P72B-000G7	Paddle spacer ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF	

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BOLT TABLE (B_B4GQ , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-009UL		
1	4	0.625	80	P80S-00A02		
1.5	4	0.750	95	P80S-009X9		
2	8	0.625	90	P80S-00A04		
3	8	0.750	110	P80S-00A08		
4	8	0.750	115	P80S-00A09		
6	12	0.750	125	P80S-00A0B		
8	12	0.875	140	P80S-009XJ		
10	16	1.000	160	P80S-00A3C		
12	16	1.125	175	P80S-00A4T		
14	20	1.125	180	P80S-00A4U		
16	20	1.250	190	P80S-00CTM		

BOLT TABLE (B_B4GQ_781 , STUD ASME RF, OPTION CODE 781)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	80			
1	4	0.625	95	P80S-00A05		
1.5	4	0.750	110	P80S-00A08		
2	8	0.625	110	P80S-009UV		
3	8	0.750	130	P80S-00A0C		
4	8	0.875	150	P80S-009XL		
6	12	1.000	175	P80S-009XT		
8	12	1.125	195	P80S-00A4X		
10	16	1.250	250	P80S-00CU0		
12	20	1.250	255	P80S-00CU1		
14	20	1.375	270	P80S-00D0L		
16	20	1.500	295	P80S-00D5B		

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BRANCH TABLE (T_B4GQ)

RUN PIPE SIZE (in) \ BRANCH SIZE (in)	0.5	1	1.5	2	3	4	6	8	10	12	14	16
0.5	TS											
1		TS										
1.5		TR	TS									
2		TR	TR	TS								
3		L	TR	TR	TS							
4	L	L	L	TR	TR	TS						
6	L	L	L	L	TR	TR	TS					
8		L	L	L	L	TR	TR	TS				
10		L	L	L	L	TR	TR	TR	TS			
12		L	L	L	L	L	TR	TR	TR	TS		
14		L	L	L	L	L	TR	TR	TR	TR	TS	
16		L	L	L	L	L	TR	TR	TR	TR	TR	TS

TS : STRAIGHT TEE
L : OUTLET
TR : REDUCING TEE

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PIPING CLASS

B4GR01 REV NO. 2

Material : LTCS
Rating : ASME CLASS 300
Flange Face : RF
C.A.(mm) : 6.00
Gasket : Spiral Wound
Service : PROCESS -WET SEVERE SOUR SERVICE SUBJECT TO NACE + HIC STD.:
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
5	BOLTING CONFIRMING TO B7M / 2HM SHALL BE USED UNDER CONDITIONS (A) DIRECT EXPOSURE TO SOUR ENVIRONMENTS (B) WHEN THE BOLTING WILL BE BURIED OR INSULATED
15	BOLTING CONFIRMING TO L7M / 7M SHALL BE USED UNDER CONDITIONS (A) DIRECT EXPOSURE TO SOUR ENVIRONMENTS (B) WHEN THE BOLTING WILL BE BURIED OR INSULATED
27	PWHT OF CARBON STEEL PIPING IN WET H2S, CAUSTIC AND AMINE SERVICES SHALL BE IN ACCORDANCE WITH SECTION 10.2, 10.3, AND 10.4 OF PROJECT SPECIFICATION 3550-8440-SP-0002 MATERIALS REQUIREMENTS FOR PRESSURISED EQUIPMENT AND PIPING. FOR CAUSTIC AND AMINE SERVICE THE FOLLOWING SHALL APPLY: - PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF ALL SITE PIPING FABRICATION WELDS IS REQUIRED FOR ALL WALL THICKNESSES. FOR MODERATE AND SEVERE WET H2S SERVICE THE FOLLOWING SHALL APPLY: PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF SITE FABRICATION CIRCUMFERENTIAL OR BRANCH WELDS IS NOT REQUIRED IF WELDS ARE MULTIPASS AND IN ACCORDANCE WITH PARA 10.2.12 OF PROJECT SPECIFICATION 3550-8440-SP-0002. FOR SERVICES MEETING THE WET H2S CRITERIA AND CAUSTIC OR AMINE CRITERIA THE MORE STRINGENT PWHT REQUIREMENT SHALL GOVERN.

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
541	NPT(F) (CA,F)
781	CLASS 600 (B,F,G)
4608	VALVE WITH NIPPLES (V)

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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		XXS		P01A-007FE	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE Severe wet H2S service Licensor-1	
1	1.5		XXS		P01A-007FF	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE Severe wet H2S service Licensor-1	
1	2		SCH160		P01A-007FM	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE Severe wet H2S service Licensor-1	
1	3		SCH160		P01A-007FR	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE Severe wet H2S service Licensor-1	
1	4		SCH120		P01A-007FS	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE Severe wet H2S service Licensor-1	
1	6		XS		P01A-007FT	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE Severe wet H2S service Licensor-1	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		XXS		P02A-003XG	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	1.5		XXS		P02A-003XH	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	2		SCH160		P02A-003XP	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	3		SCH160		P02A-003XT	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	4		SCH120		P02A-003XU	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	6		XS		P02A-003XV	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		XXS		P03A-003V5	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	1.5		XXS		P03A-003V6	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	2		SCH160		P03A-003VC	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	3		SCH160		P03A-003VF	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	4		SCH120		P03A-003VG	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	6		XS		P03A-003VH	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		XXS		P21A-004EY	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	1.5		XXS		P21A-004EZ	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	2		SCH160		P21A-004F5	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	3		SCH160		P21A-004F8	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	4		SCH120		P21A-004F9	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	6		XS		P21A-004FA	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5	1	XXS	XXS	P24A-00KNK	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	2	1	SCH160	XXS	P24A-00KNL	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	2	1.5	SCH160	XXS	P24A-00KNM	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	3	1.5	SCH160	XXS	P24A-00KNN	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	3	2	SCH160	SCH160	P24A-00KNP	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	4	2	SCH120	SCH160	P24A-00KNR	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	4	3	SCH120	SCH160	P24A-00KNS	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	6	3	XS	SCH160	P24A-00KNT	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	6	4	XS	SCH120	P24A-00KNU	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5	1	XXS	XXS	P27A-00F4R	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	2	1	SCH160	XXS	P27A-00F4S	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	2	1.5	SCH160	XXS	P27A-00F4T	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	3	1.5	SCH160	XXS	P27A-00F4U	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	

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CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	SCH160	SCH160	P27A-00F4V	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	4	1.5	SCH120	XXS	P27A-00F4W	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	4	2	SCH120	SCH160	P27A-00F4X	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	4	3	SCH120	SCH160	P27A-00F4Y	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	6	3	XS	SCH160	P27A-00F4Z	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	6	4	XS	SCH120	P27A-00F50	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5	1	XXS	XXS	P28A-00C8S	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	2	1	SCH160	XXS	P28A-00C8T	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	2	1.5	SCH160	XXS	P28A-00C8U	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	3	1.5	SCH160	XXS	P28A-00C8V	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	3	2	SCH160	SCH160	P28A-00C8W	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	4	1.5	SCH120	XXS	P28A-00C8X	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	4	2	SCH120	SCH160	P28A-00C8Y	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	4	3	SCH120	SCH160	P28A-00C8Z	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	6	3	XS	SCH160	P28A-00C90	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	6	4	XS	SCH120	P28A-00C91	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		XXS		P29A-0039W	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	1.5		XXS		P29A-0039X	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	2		SCH160		P29A-003A3	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	3		SCH160		P29A-003A6	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	4		SCH120		P29A-003A8	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	6		XS		P29A-003A9	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
541	1				P29B-0006T	Cap ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 NPT Severe wet H2S service Licensor-1	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		10.60mm		P41A-001B1	Straight nipple ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Severe wet H2S service Licensor-1	
1	1.5		10.60mm		P41A-001B2	Straight nipple ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Severe wet H2S service Licensor-1	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	1	SCH160	XXS	P31B-00Y4Y	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	4	1	SCH120	XXS	P31B-00Y4Z	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	6	1	XS	XXS	P31B-00Y51	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	4	1.5	SCH120	XXS	P31B-00Y50	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	6	1.5	XS	XXS	P31B-00Y52	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	6	2	XS	SCH160	P31B-00Y53	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Severe wet H2S service Licensor-1	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P30B-0006U	Plug ASTM A350 Grade LF2 Class 1 ASME B16.11 NPT Round head Severe wet H2S service Licensor-1	
1	1.5				P30B-0006V	Plug ASTM A350 Grade LF2 Class 1 ASME B16.11 NPT Round head Severe wet H2S service Licensor-1	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		XXS		P61B-00A91	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF Severe wet H2S service Licensor-1	
1	1.5		XXS		P61B-00A92	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF Severe wet H2S service Licensor-1	
1	2		SCH160		P61B-00A98	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF Severe wet H2S service Licensor-1	
1	3		SCH160		P61B-00A9B	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF Severe wet H2S service Licensor-1	

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FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	4		SCH120		P61B-00A9C	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF Severe wet H2S service Licensor-1	
1	6		XS		P61B-00A9D	Flange WN ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF Severe wet H2S service Licensor-1	
541	1				P61B-00CYC	Flange NPT ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF Severe wet H2S service Licensor-1	
781	1		XXS		P61B-00BRF	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF Severe wet H2S service Licensor-1	
781	1.5		XXS		P61B-00BRG	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF Severe wet H2S service Licensor-1	
781	2		SCH160		P61B-00BRH	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF Severe wet H2S service Licensor-1	
781	3		SCH160		P61B-00BRJ	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF Severe wet H2S service Licensor-1	
781	4		SCH120		P61B-00BRK	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF Severe wet H2S service Licensor-1	
781	6		XS		P61B-00BRL	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF Severe wet H2S service Licensor-1	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P67B-002KT	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF Severe wet H2S service Licensor-1	
1	1.5				P67B-002KU	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF Severe wet H2S service Licensor-1	
1	2				P67B-002KW	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF Severe wet H2S service Licensor-1	
1	3				P67B-002KX	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF Severe wet H2S service Licensor-1	
1	4				P67B-002KY	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF Severe wet H2S service Licensor-1	
1	6				P67B-002KZ	Blind flange ASTM A350 Grade LF2 Class 1 Class 300 ASME B16.5 RF Severe wet H2S service Licensor-1	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P73T-000FV	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000FW	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000G5	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000G6	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	6				P73T-000G7	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1				P73T-000JA	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1.5				P73T-000JB	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	2				P73T-000JH	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	3				P73T-000JL	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	4				P73T-000JM	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	6				P73T-000JN	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1-6				See Attached Bolt Table	Bolt and Nut ASTM A320 Grade L7M / A194 Grade 7M ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
781	1-6				See Attached Bolt Table	Bolt and Nut ASTM A320 Grade L7M / A194 Grade 7M ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P81B-0020W	Gate valve ASTM A350 Grade LF2 Class 1 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service C.A.=6.0mm Licensor-1	
1	1.5				P81B-0020X	Gate valve ASTM A350 Grade LF2 Class 1 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service C.A.=6.0mm Licensor-1	
1	2				P81C-006LH	Gate valve ASTM A352 Grade LCC Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service C.A.=6.0mm Licensor-1	
1	3				P81C-006LJ	Gate valve ASTM A352 Grade LCC Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service C.A.=6.0mm Licensor-1	
1	4				P81C-006LK	Gate valve ASTM A352 Grade LCC Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service C.A.=6.0mm Licensor-1	
1	6				P81C-006LL	Gate valve ASTM A352 Grade LCC Class 300 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service C.A.=6.0mm Licensor-1	
4608	1				P81B-002XJ	Gate valve ASTM A350 Grade LF2 Class 1 Class 300 API 602 BW both sides w/ nipples BE - NPT ASTM A333-6 T=10.60MM-nipple Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service C.A.=6.0mm Licensor-1	

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GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P82B-001JF	Globe valve ASTM A350 Grade LF2 Class 1 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service C.A.=6.0mm Licensor-1	
1	1.5				P82B-001JG	Globe valve ASTM A350 Grade LF2 Class 1 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service C.A.=6.0mm Licensor-1	
1	2				P82C-0039X	Globe valve ASTM A352 Grade LCC Class 300 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service C.A.=6.0mm Licensor-1	
1	3				P82C-0039Y	Globe valve ASTM A352 Grade LCC Class 300 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service C.A.=6.0mm Licensor-1	
1	4				P82C-0039Z	Globe valve ASTM A352 Grade LCC Class 300 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service C.A.=6.0mm Licensor-1	
1	6				P82C-003A0	Globe valve ASTM A352 Grade LCC Class 300 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service C.A.=6.0mm Licensor-1	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P83B-00181	Check valve ASTM A350 Grade LF2 Class 1 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Severe wet H2S service C.A.=6.0mm Licensor-1	
1	1.5				P83B-00182	Check valve ASTM A350 Grade LF2 Class 1 Class 300 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Severe wet H2S service C.A.=6.0mm Licensor-1	
1	2				P83C-0032L	Check valve ASTM A352 Grade LCC Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service C.A.=6.0mm Licensor-1	
1	3				P83C-0032M	Check valve ASTM A352 Grade LCC Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service C.A.=6.0mm Licensor-1	
1	4				P83C-0032N	Check valve ASTM A352 Grade LCC Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service C.A.=6.0mm Licensor-1	
1	6				P83C-0032P	Check valve ASTM A352 Grade LCC Class 300 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Severe wet H2S service C.A.=6.0mm Licensor-1	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P71B-000DE	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service Licensor-1	
1	1.5				P71B-000DF	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service Licensor-1	
1	2				P71B-000DH	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service Licensor-1	
1	3				P71B-000DJ	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service Licensor-1	
1	4				P71B-000DK	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service Licensor-1	
1	6				P71B-000DL	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 300 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service Licensor-1	

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BOLT TABLE (B_B4GR01 , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
1	4	0.625	80	P80S-00A02		
1.5	4	0.750	95	P80S-009X9		
2	8	0.625	90	P80S-00A04		
3	8	0.750	110	P80S-00A08		
4	8	0.750	115	P80S-00A09		
6	12	0.750	125	P80S-00A0B		

BOLT TABLE (B_B4GR01_781 , STUD ASME RF, OPTION CODE 781)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
1	4	0.625	95	P80S-00A05		
1.5	4	0.750	110	P80S-00A08		
2	8	0.625	110	P80S-009UV		
3	8	0.750	130	P80S-00A0C		
4	8	0.875	150	P80S-009XL		
6	12	1.000	175	P80S-009XT		

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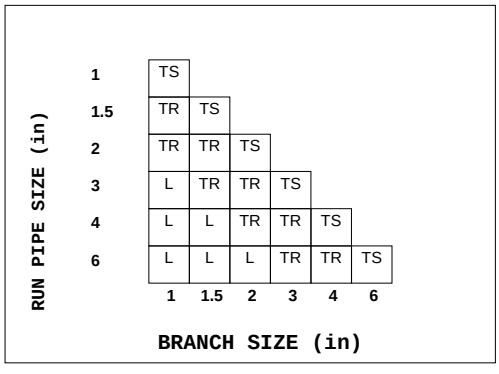
BRANCH TABLE (T_B4GR01)



L : OUTLET
TR : REDUCING TEE
TS : STRAIGHT TEE

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Material : SS304L
Rating : ASME CLASS 600
Flange Face : RF
C.A.(mm) : 0.00
Gasket : Spiral Wound
Service : PROCESS - HYDROGEN OR HYDROGEN RICH HYDROCARBON MIXTURE : / HYDROGEN

Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
16	PIPE CLASS SHALL BE USED WITHIN THE NORMAL OPERATING PRESSURE/TEMPERATURE LIMITS SPECIFIED IN API RP 941. PRESSURE / TEMPERATURE SPECIFIED IN THE PIPE CLASS EXCEEDING API RP 941 LIMITS SHOULD BE REGARDED AS UPSET CONDITIONS RATHER THAN FOR CONTINUOUS SERVICE

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
200	WITH JACK SCREW (FO)
541	NPT(F) (CA,L)
714	SW - NPT(F) (V)
789	CLASS 900 (B,F,G)
797	CLASS 1500 (B,F,G)
851	ALTERNATIVE WALL THICKNESS 1 (4L,9L,CA,F,L,P,RC,RE,TR,TS)
4202	SHORT RADIUS (9L)

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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P01J-000UC	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE	
1	0.75		SCH80S		P01J-000UD	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE	
1	1		SCH80S		P01J-000UE	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE	
1	1.5		SCH80S		P01J-000UF	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE	
1	2		SCH10S		P01J-000RD	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M BE	
1	3		SCH40S		P01J-000RK	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M BE	
1	4		SCH40S		P01J-000UG	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M BE	
1	6		SCH40S		P01J-000RH	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M BE	
1	8		SCH10S		P01J-001F7	Pipe ASTM A358 Grade 304/304L Class 1 dual grade EFW ASME B36.10M/B36.19M BE	
1	10		SCH10S		P01J-000S7	Pipe ASTM A358 Grade 304/304L Class 1 dual grade EFW ASME B36.10M/B36.19M BE	
1	12		SCH40S		P01J-000WJ	Pipe ASTM A358 Grade 304/304L Class 1 dual grade EFW ASME B36.10M/B36.19M BE	
1	14		SCH40S		P01J-001J0	Pipe ASTM A358 Grade 304/304L Class 1 dual grade EFW ASME B36.10M/B36.19M BE	
1	16		SCH40S		P01J-0015F	Pipe ASTM A358 Grade 304/304L Class 1 dual grade EFW ASME B36.10M/B36.19M BE	
1	18		SCH40S		P01J-000VK	Pipe ASTM A358 Grade 304/304L Class 1 dual grade EFW ASME B36.10M/B36.19M BE	
1	20		SCH40S		P01J-000VL	Pipe ASTM A358 Grade 304/304L Class 1 dual grade EFW ASME B36.10M/B36.19M BE	
1	24		SCH40S		P01J-000VM	Pipe ASTM A358 Grade 304/304L Class 1 dual grade EFW ASME B36.10M/B36.19M BE	
1	30		SCH10S		P01J-000SH	Pipe ASTM A358 Grade 304/304L Class 1 dual grade EFW ASME B36.10M/B36.19M BE	
1	36		XS		P01J-000W2	Pipe ASTM A358 Grade 304/304L Class 1 dual grade EFW ASME B36.10M/B36.19M BE	
851	8		SCH40S		P01J-000WC	Pipe ASTM A358 Grade 304/304L Class 1 dual grade EFW ASME B36.10M/B36.19M BE	
851	10		SCH40S		P01J-000W6	Pipe ASTM A358 Grade 304/304L Class 1 dual grade EFW ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P02K-0001K	90 degree elbow ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	0.75				P02K-0001L	90 degree elbow ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	1				P02K-0001M	90 degree elbow ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	1.5				P02K-0001N	90 degree elbow ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	2		SCH10S		P02J-000J0	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	3		SCH40S		P02J-000J9	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	4		SCH40S		P02J-000KZ	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	6		SCH40S		P02J-000J4	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	8		SCH10S		P02J-0017L	90 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius	
1	10		SCH10S		P02J-000JC	90 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius	
1	12		SCH40S		P02J-000J6	90 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius	
1	14		SCH40S		P02J-001JG	90 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius	
1	16		SCH40S		P02J-000W7	90 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius	
1	18		SCH40S		P02J-000M3	90 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius	
1	20		SCH40S		P02J-000M4	90 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius	
1	24		SCH40S		P02J-000M5	90 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius	
1	30		SCH10S		P02J-000JN	90 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius	
1	36		XS		P02J-000MJ	90 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius	
4202	20		SCH40S		P02J-002DV	90 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Short radius	
851	8		SCH40S		P02J-000J7	90 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius	
851	10		SCH40S		P02J-000J5	90 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P03K-0001G	45 degree elbow ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	0.75				P03K-0001H	45 degree elbow ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	1				P03K-0001J	45 degree elbow ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	1.5				P03K-0001K	45 degree elbow ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	2		SCH10S		P03J-000HS	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	

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45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3		SCH40S		P03J-000J1	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	4		SCH40S		P03J-000KL	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	6		SCH40S		P03J-000HW	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	8		SCH10S		P03J-0016G	45 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius	
1	10		SCH10S		P03J-000J4	45 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius	
1	12		SCH40S		P03J-000HY	45 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius	
1	14		SCH40S		P03J-001GU	45 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius	
1	16		SCH40S		P03J-000VN	45 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius	
1	18		SCH40S		P03J-000LR	45 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius	
1	20		SCH40S		P03J-000LS	45 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius	
1	24		SCH40S		P03J-000LT	45 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius	
1	30		SCH10S		P03J-000JE	45 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius	
1	36		XS		P03J-000M6	45 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius	
851	8		SCH40S		P03J-000HZ	45 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius	
851	10		SCH40S		P03J-000HX	45 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P21K-0001G	Straight tee ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	0.75				P21K-0001H	Straight tee ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	1				P21K-0001J	Straight tee ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	1.5				P21K-0001K	Straight tee ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	2		SCH10S		P21J-000HM	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	3		SCH40S		P21J-000HX	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	4		SCH40S		P21J-000KK	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	6		SCH40S		P21J-000HS	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	8		SCH10S		P21J-000ZZ	Straight tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	10		SCH10S		P21J-000J0	Straight tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	12		SCH40S		P21J-000HU	Straight tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	14		SCH40S		P21J-001AL	Straight tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	16		SCH40S		P21J-000VU	Straight tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	18		SCH40S		P21J-000LP	Straight tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	20		SCH40S		P21J-000LR	Straight tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	24		SCH40S		P21J-000LS	Straight tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	30		SCH10S		P21J-000JA	Straight tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	36		XS		P21J-000M6	Straight tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
851	8		SCH40S		P21J-000HV	Straight tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
851	10		SCH40S		P21J-000HT	Straight tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75			P24K-0001X	Reducing tee ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	1.5	0.75			P24K-0001Z	Reducing tee ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	1.5	1			P24K-00020	Reducing tee ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	2	1	SCH10S	SCH80S	P24J-0065A	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	2	1.5	SCH10S	SCH80S	P24J-0065B	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	3	1.5	SCH40S	SCH80S	P24J-002SG	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	3	2	SCH40S	SCH10S	P24J-005PS	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	4	2	SCH40S	SCH10S	P24J-005P3	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	4	3	SCH40S	SCH40S	P24J-002SJ	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	6	3	SCH40S	SCH40S	P24J-002SK	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	6	4	SCH40S	SCH40S	P24J-002SL	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	8	4	SCH10S	SCH40S	P24J-00623	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	8	6	SCH10S	SCH40S	P24J-00624	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	

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REDUCING TEE (TR)							
OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	10	4	SCH10S	SCH40S	P24J-006E9	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	10	6	SCH10S	SCH40S	P24J-002HS	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	10	8	SCH10S	SCH10S	P24J-004T2	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	12	6	SCH40S	SCH40S	P24J-007JM	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	12	8	SCH40S	SCH10S	P24J-007N4	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	12	10	SCH40S	SCH10S	P24J-007N3	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	14	6	SCH40S	SCH40S	P24J-007JK	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	14	8	SCH40S	SCH10S	P24J-007N6	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	14	10	SCH40S	SCH10S	P24J-007N5	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	14	12	SCH40S	SCH40S	P24J-0062K	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	16	6	SCH40S	SCH40S	P24J-007JH	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	16	8	SCH40S	SCH10S	P24J-007N7	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	16	10	SCH40S	SCH10S	P24J-00625	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	16	12	SCH40S	SCH40S	P24J-0062M	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	16	14	SCH40S	SCH40S	P24J-0062N	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	18	8	SCH40S	SCH10S	P24J-007N8	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	18	10	SCH40S	SCH10S	P24J-00627	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	18	12	SCH40S	SCH40S	P24J-0062R	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	18	14	SCH40S	SCH40S	P24J-0062S	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	18	16	SCH40S	SCH40S	P24J-0062A	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	20	8	SCH40S	SCH10S	P24J-007N9	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	20	10	SCH40S	SCH10S	P24J-0062B	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	20	12	SCH40S	SCH40S	P24J-007JD	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	20	14	SCH40S	SCH40S	P24J-007JE	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	20	16	SCH40S	SCH40S	P24J-003TC	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	20	18	SCH40S	SCH40S	P24J-002XJ	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	24	10	SCH40S	SCH10S	P24J-0062D	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	24	12	SCH40S	SCH40S	P24J-007PY	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	24	14	SCH40S	SCH40S	P24J-007PZ	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	24	16	SCH40S	SCH40S	P24J-0062G	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	24	18	SCH40S	SCH40S	P24J-002XK	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	24	20	SCH40S	SCH40S	P24J-002XL	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	30	10	SCH10S	SCH10S	P24J-00755	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	30	12	SCH10S	SCH40S	P24J-007U4	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	30	14	SCH10S	SCH40S	P24J-007U6	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	30	16	SCH10S	SCH40S	P24J-007U7	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	30	18	SCH10S	SCH40S	P24J-007U5	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	30	20	SCH10S	SCH40S	P24J-007U8	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	30	24	SCH10S	SCH40S	P24J-006J6	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	36	16	XS	SCH40S	P24J-007VP	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	36	18	XS	SCH40S	P24J-007VR	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	36	20	XS	SCH40S	P24J-007VS	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	36	24	XS	SCH40S	P24J-006HF	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	36	30	XS	SCH10S	P24J-007VT	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
851	8	4	SCH40S	SCH40S	P24J-005P4	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
851	8	6	SCH40S	SCH40S	P24J-002HF	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
851	10	4	SCH40S	SCH40S	P24J-007JN	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
851	10	6	SCH40S	SCH40S	P24J-002HH	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
851	12	8	SCH40S	SCH40S	P24J-002HL	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
851	12	10	SCH40S	SCH40S	P24J-002HK	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
851	14	8	SCH40S	SCH40S	P24J-007JL	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
851	14	10	SCH40S	SCH40S	P24J-0062J	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
851	16	8	SCH40S	SCH40S	P24J-007JJ	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
851	16	10	SCH40S	SCH40S	P24J-0062L	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
851	18	8	SCH40S	SCH40S	P24J-007JG	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
851	18	10	SCH40S	SCH40S	P24J-0062P	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
851	20	8	SCH40S	SCH40S	P24J-007JF	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
851	20	10	SCH40S	SCH40S	P24J-007JC	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
851	24	10	SCH40S	SCH40S	P24J-008XW	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	

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REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
851	30	10	SCH10S	SCH40S	P24J-008XX	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	SCH40S	SCH10S	P27J-004MX	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	4	2	SCH40S	SCH10S	P27J-004JR	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	4	3	SCH40S	SCH40S	P27J-001X5	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	6	3	SCH40S	SCH40S	P27J-001X6	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	6	4	SCH40S	SCH40S	P27J-001X7	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	8	4	SCH10S	SCH40S	P27J-00526	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	8	6	SCH10S	SCH40S	P27J-00527	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	10	4	SCH10S	SCH40S	P27J-00528	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	10	6	SCH10S	SCH40S	P27J-001RC	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	10	8	SCH10S	SCH10S	P27J-003L5	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	12	6	SCH40S	SCH40S	P27J-001R5	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	12	8	SCH40S	SCH10S	P27J-006F0	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	12	10	SCH40S	SCH10S	P27J-006EZ	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	14	6	SCH40S	SCH40S	P27J-004KV	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	14	8	SCH40S	SCH10S	P27J-006F2	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	14	10	SCH40S	SCH10S	P27J-006F1	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	14	12	SCH40S	SCH40S	P27J-004KU	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	16	8	SCH40S	SCH10S	P27J-0052A	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	16	10	SCH40S	SCH10S	P27J-00529	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	16	12	SCH40S	SCH40S	P27J-004KX	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	16	14	SCH40S	SCH40S	P27J-004KY	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	18	10	SCH40S	SCH10S	P27J-004J2	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	18	12	SCH40S	SCH40S	P27J-004KZ	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	18	14	SCH40S	SCH40S	P27J-004L0	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	18	16	SCH40S	SCH40S	P27J-004JM	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	20	12	SCH40S	SCH40S	P27J-004L1	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	20	14	SCH40S	SCH40S	P27J-004L2	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	20	16	SCH40S	SCH40S	P27J-002U8	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	20	18	SCH40S	SCH40S	P27J-0020U	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	24	16	SCH40S	SCH40S	P27J-004JP	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	24	18	SCH40S	SCH40S	P27J-0020W	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	24	20	SCH40S	SCH40S	P27J-0020X	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	30	20	SCH10S	SCH40S	P27J-006L0	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	30	24	SCH10S	SCH40S	P27J-005G9	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	36	24	XS	SCH40S	P27J-005FS	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	36	30	XS	SCH10S	P27J-006MD	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
851	8	4	SCH40S	SCH40S	P27J-004JS	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
851	8	6	SCH40S	SCH40S	P27J-001R0	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
851	10	4	SCH40S	SCH40S	P27J-004JT	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
851	10	6	SCH40S	SCH40S	P27J-001R2	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
851	10	8	SCH40S	SCH40S	P27J-001R3	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
851	12	8	SCH40S	SCH40S	P27J-001R6	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
851	12	10	SCH40S	SCH40S	P27J-001R4	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
851	14	8	SCH40S	SCH40S	P27J-004KW	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
851	14	10	SCH40S	SCH40S	P27J-004KT	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
851	16	8	SCH40S	SCH40S	P27J-004JK	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
851	16	10	SCH40S	SCH40S	P27J-004JH	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
851	18	10	SCH40S	SCH40S	P27J-004JL	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	SCH40S	SCH10S	P28J-004NE	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	4	2	SCH40S	SCH10S	P28J-004K8	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	4	3	SCH40S	SCH40S	P28J-001WG	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	6	3	SCH40S	SCH40S	P28J-001WH	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	6	4	SCH40S	SCH40S	P28J-001WJ	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	8	4	SCH10S	SCH40S	P28J-00530	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	8	6	SCH10S	SCH40S	P28J-00531	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	10	4	SCH10S	SCH40S	P28J-00532	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	10	6	SCH10S	SCH40S	P28J-001PV	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	10	8	SCH10S	SCH10S	P28J-003LU	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	12	6	SCH40S	SCH40S	P28J-001PM	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	12	8	SCH40S	SCH10S	P28J-006G0	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	12	10	SCH40S	SCH10S	P28J-006FZ	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	14	6	SCH40S	SCH40S	P28J-004LC	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	14	8	SCH40S	SCH10S	P28J-006G2	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	14	10	SCH40S	SCH10S	P28J-006G1	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	14	12	SCH40S	SCH40S	P28J-004LB	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	16	8	SCH40S	SCH10S	P28J-00534	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	16	10	SCH40S	SCH10S	P28J-00533	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	16	12	SCH40S	SCH40S	P28J-004LE	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	16	14	SCH40S	SCH40S	P28J-004LF	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	18	10	SCH40S	SCH10S	P28J-004JK	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	18	12	SCH40S	SCH40S	P28J-004LG	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	18	14	SCH40S	SCH40S	P28J-004LH	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	18	16	SCH40S	SCH40S	P28J-004K5	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	20	12	SCH40S	SCH40S	P28J-004LJ	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	20	14	SCH40S	SCH40S	P28J-004LK	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	20	16	SCH40S	SCH40S	P28J-002SV	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	20	18	SCH40S	SCH40S	P28J-00206	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	24	16	SCH40S	SCH40S	P28J-004K7	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	24	18	SCH40S	SCH40S	P28J-00208	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	24	20	SCH40S	SCH40S	P28J-00209	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	30	20	SCH10S	SCH40S	P28J-006MB	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	30	24	SCH10S	SCH40S	P28J-005H4	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	36	24	XS	SCH40S	P28J-005GL	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	36	30	XS	SCH10S	P28J-006NP	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
851	8	4	SCH40S	SCH40S	P28J-004K9	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
851	8	6	SCH40S	SCH40S	P28J-001PG	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
851	10	4	SCH40S	SCH40S	P28J-004KA	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
851	10	6	SCH40S	SCH40S	P28J-001PJ	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
851	10	8	SCH40S	SCH40S	P28J-001PK	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
851	12	8	SCH40S	SCH40S	P28J-001PN	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
851	12	10	SCH40S	SCH40S	P28J-001PL	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
851	14	8	SCH40S	SCH40S	P28J-004LD	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
851	14	10	SCH40S	SCH40S	P28J-004LA	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
851	16	8	SCH40S	SCH40S	P28J-004K3	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
851	16	10	SCH40S	SCH40S	P28J-004K1	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
851	18	10	SCH40S	SCH40S	P28J-004K4	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P29K-0001V	Cap ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	0.75				P29K-0001W	Cap ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	1				P29K-0001X	Cap ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	1.5				P29K-0001Y	Cap ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	2		SCH10S		P29J-000G1	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	3		SCH40S		P29J-000GA	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	4		SCH40S		P29J-000JB	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	6		SCH40S		P29J-000G5	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	8		SCH10S		P29J-000X3	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	10		SCH10S		P29J-000GB	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	12		SCH40S		P29J-000KN	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	14		SCH40S		P29J-0015L	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	16		SCH40S		P29J-000TZ	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	18		SCH40S		P29J-000JY	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	20		SCH40S		P29J-000JZ	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	24		SCH40S		P29J-000K0	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	30		SCH10S		P29J-000GN	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	36		XS		P29J-000KD	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
541	0.75				P29K-00020	Cap ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 NPT	
851	8		SCH40S		P29J-000LU	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
851	10		SCH40S		P29J-000KM	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P41J-001FS	Straight nipple ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		SCH80S		P41J-001FT	Straight nipple ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		SCH80S		P41J-001FU	Straight nipple ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		SCH80S		P41J-001FV	Straight nipple ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

CON SWAGED NIPPLE (SNC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH80S	SCH80S	P42J-00081	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	SCH80S	SCH80S	P42J-00082	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	SCH80S	SCH80S	P42J-00083	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	SCH80S	SCH80S	P42J-00084	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	SCH80S	SCH80S	P42J-00085	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	SCH80S	SCH80S	P42J-00086	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	SCH10S	SCH80S	P42J-000F9	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	SCH10S	SCH80S	P42J-000F6	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	SCH10S	SCH80S	P42J-000F7	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	SCH10S	SCH80S	P42J-000F8	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	SCH40S	SCH80S	P42J-000GL	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	

ECC SWAGED NIPPLE (SNE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH80S	SCH80S	P43J-0008D	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	SCH80S	SCH80S	P43J-0008E	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	SCH80S	SCH80S	P43J-0008F	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	SCH80S	SCH80S	P43J-0008G	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	SCH80S	SCH80S	P43J-0008H	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	SCH80S	SCH80S	P43J-0008J	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	SCH10S	SCH80S	P43J-000CT	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	SCH10S	SCH80S	P43J-000CU	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	SCH10S	SCH80S	P43J-000CV	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	SCH10S	SCH80S	P43J-000CW	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	SCH40S	SCH80S	P43J-000DL	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	

COUPLING (CPS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P47K-00035	Coupling ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW - SW	
1	0.75				P47K-00036	Coupling ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW - SW	

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COUPLING (CPS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P47K-00037	Coupling ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW - SW	
1	1.5				P47K-00038	Coupling ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW - SW	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2 - 2.5	0.75			P31K-00GFG	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 SW	
1	3 - 5	0.75			P31K-00GFH	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 SW	
1	6 - 12	0.75			P31K-008YY	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 SW	
1	14 - 36	0.75			P31K-008YC	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 SW	
1	3	1			P31K-008ZG	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 SW	
1	4 - 5	1			P31K-00GFL	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 SW	
1	6 - 10	1			P31K-008ZU	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 SW	
1	12 - 36	1			P31K-008Z6	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 SW	
1	4	1.5			P31K-0099M	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 SW	
1	5 - 6	1.5			P31K-00GFS	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 SW	
1	8 - 12	1.5			P31K-0099Z	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 SW	
1	14 - 24	1.5			P31K-00991	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 SW	
1	26 - 36	1.5			P31K-00GFT	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 SW	
541	1	0.75			P31K-00911	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 NPT	
541	1.5	0.75			P31K-00916	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 NPT	
541	2 - 2.5	0.75			P31K-00GFJ	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 NPT	
541	3 - 5	0.75			P31K-00GFK	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 NPT	
541	6 - 12	0.75			P31K-0091X	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 NPT	
541	14 - 36	0.75			P31K-0091B	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 NPT	
1	6	2	SCH40S	SCH10S	P31K-005AW	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	8	2	SCH10S	SCH10S	P31K-007G1	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	10	2	SCH10S	SCH10S	P31K-005JV	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	12	2	SCH40S	SCH10S	P31K-005B1	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	14	2	SCH40S	SCH10S	P31K-0076F	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	16	2	SCH40S	SCH10S	P31K-0077G	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	18	2	SCH40S	SCH10S	P31K-0078J	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	20	2	SCH40S	SCH10S	P31K-005ZF	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	24	2	SCH40S	SCH10S	P31K-005XB	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	30	2	SCH10S	SCH10S	P31K-005BA	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	36	2	XS	SCH10S	P31K-005Y1	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	8	3	SCH10S	SCH40S	P31K-007Y1	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	10	3	SCH10S	SCH40S	P31K-007KU	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	12	3	SCH40S	SCH40S	P31K-007LX	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	14	3	SCH40S	SCH40S	P31K-007MZ	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	16	3	SCH40S	SCH40S	P31K-007P4	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	18	3	SCH40S	SCH40S	P31K-007R5	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	20	3	SCH40S	SCH40S	P31K-007S7	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	24	3	SCH40S	SCH40S	P31K-007T8	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	30	3	SCH10S	SCH40S	P31K-007UX	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	36	3	XS	SCH40S	P31K-00FW7	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	12	4	SCH40S	SCH40S	P31K-0081E	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	14	4	SCH40S	SCH40S	P31K-0082J	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	16	4	SCH40S	SCH40S	P31K-0083T	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	18	4	SCH40S	SCH40S	P31K-0084W	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	20	4	SCH40S	SCH40S	P31K-0085Z	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	24	4	SCH40S	SCH40S	P31K-00871	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	30	4	SCH10S	SCH40S	P31K-0088N	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	36	4	XS	SCH40S	P31K-00FW8	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	18	6	SCH40S	SCH40S	P31K-008FB	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	20	6	SCH40S	SCH40S	P31K-005XS	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	24	6	SCH40S	SCH40S	P31K-005XE	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	30	6	SCH10S	SCH40S	P31K-005BB	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	36	6	XS	SCH40S	P31K-005Y2	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
851	8	2	SCH40S	SCH10S	P31K-005AX	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	

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OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
851	10	2	SCH40S	SCH10S	P31K-005AZ	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
851	8	3	SCH40S	SCH40S	P31K-007Y2	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
851	10	3	SCH40S	SCH40S	P31K-007KW	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30K-0001G	Plug ASTM A182 Grade F304/F304L dual grade ASME B16.11 NPT Round head	
1	0.75				P30K-0001H	Plug ASTM A182 Grade F304/F304L dual grade ASME B16.11 NPT Round head	
1	1				P30K-0001J	Plug ASTM A182 Grade F304/F304L dual grade ASME B16.11 NPT Round head	
1	1.5				P30K-0001K	Plug ASTM A182 Grade F304/F304L dual grade ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P61K-003AT	Flange SW ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 RF	
1	0.75		SCH80S		P61K-003AU	Flange SW ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 RF	
1	1		SCH80S		P61K-003AV	Flange SW ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 RF	
1	1.5		SCH80S		P61K-003AW	Flange SW ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 RF	
1	2		SCH10S		P61K-00290	Flange WN ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 RF	
1	3		SCH40S		P61K-002P2	Flange WN ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 RF	
1	4		SCH40S		P61K-002P3	Flange WN ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 RF	
1	6		SCH40S		P61K-00293	Flange WN ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 RF	
1	8		SCH10S		P61K-004KW	Flange WN ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 RF	
1	10		SCH10S		P61K-002NU	Flange WN ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 RF	
1	12		SCH40S		P61K-002C7	Flange WN ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 RF	
1	14		SCH40S		P61K-00475	Flange WN ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 RF	
1	16		SCH40S		P61K-002MU	Flange WN ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 RF	
1	18		SCH40S		P61K-002A0	Flange WN ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 RF	
1	20		SCH40S		P61K-002A1	Flange WN ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 RF	
1	24		SCH40S		P61K-002A2	Flange WN ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 RF	
1	30		SCH10S		P61K-0061G	Flange WN ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.47 Series B RF	
1	36		XS		P61K-002BC	Flange WN ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.47 Series B RF	
789	3		SCH40S		P61K-004WW	Flange WN ASTM A182 Grade F304/F304L dual grade Class 900 ASME B16.5 RJ	
789	4		SCH40S		P61K-004WX	Flange WN ASTM A182 Grade F304/F304L dual grade Class 900 ASME B16.5 RJ	
789	6		SCH40S		P61K-004WN	Flange WN ASTM A182 Grade F304/F304L dual grade Class 900 ASME B16.5 RJ	
789	8		SCH10S		P61K-0050S	Flange WN ASTM A182 Grade F304/F304L dual grade Class 900 ASME B16.5 RJ	
789	10		SCH10S		P61K-0050K	Flange WN ASTM A182 Grade F304/F304L dual grade Class 900 ASME B16.5 RJ	
789	12		SCH40S		P61K-005X0	Flange WN ASTM A182 Grade F304/F304L dual grade Class 900 ASME B16.5 RJ	
789	14		SCH40S		P61K-005X1	Flange WN ASTM A182 Grade F304/F304L dual grade Class 900 ASME B16.5 RJ	
789	16		SCH40S		P61K-005X2	Flange WN ASTM A182 Grade F304/F304L dual grade Class 900 ASME B16.5 RJ	
789	18		SCH40S		P61K-005X3	Flange WN ASTM A182 Grade F304/F304L dual grade Class 900 ASME B16.5 RJ	
789	20		SCH40S		P61K-005X4	Flange WN ASTM A182 Grade F304/F304L dual grade Class 900 ASME B16.5 RJ	
789	24		SCH40S		P61K-0061H	Flange WN ASTM A182 Grade F304/F304L dual grade Class 900 ASME B16.5 RJ	
789	30		SCH10S		P61K-0061J	Flange WN ASTM A182 Grade F304/F304L dual grade Class 900 ASME B16.47 Series A RJ	
789	36		XS		P61K-0062A	Flange WN ASTM A182 Grade F304/F304L dual grade Class 900 ASME B16.47 Series A RJ	
797	0.5		SCH80S		P61K-003F1	Flange SW ASTM A182 Grade F304/F304L dual grade Class 1500 ASME B16.5 RJ	
797	0.75		SCH80S		P61K-003F2	Flange SW ASTM A182 Grade F304/F304L dual grade Class 1500 ASME B16.5 RJ	
797	1		SCH80S		P61K-003F3	Flange SW ASTM A182 Grade F304/F304L dual grade Class 1500 ASME B16.5 RJ	
797	1.5		SCH80S		P61K-003F4	Flange SW ASTM A182 Grade F304/F304L dual grade Class 1500 ASME B16.5 RJ	
797	2		SCH10S		P61K-004TB	Flange WN ASTM A182 Grade F304/F304L dual grade Class 1500 ASME B16.5 RJ	
851	8		SCH40S		P61K-0046J	Flange WN ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 RF	
851	10		SCH40S		P61K-002C6	Flange WN ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 RF	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67K-000NN	Blind flange ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 RF	
1	0.75				P67K-000NP	Blind flange ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 RF	
1	1				P67K-000NR	Blind flange ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 RF	
1	1.5				P67K-000NS	Blind flange ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 RF	
1	2				P67K-000NT	Blind flange ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 RF	

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BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3				P67K-000NU	Blind flange ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 RF	
1	4				P67K-000NV	Blind flange ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 RF	
1	6				P67K-000NW	Blind flange ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 RF	
1	8				P67K-000PL	Blind flange ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 RF	
1	10				P67K-000PE	Blind flange ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 RF	
1	12				P67K-000PF	Blind flange ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 RF	
1	14				P67K-000PG	Blind flange ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 RF	
1	16				P67K-000PH	Blind flange ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 RF	
1	18				P67K-000PJ	Blind flange ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 RF	
1	20				P67K-000PK	Blind flange ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 RF	
1	24				P67K-000PN	Blind flange ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 RF	
1	30				P67K-000PS	Blind flange ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.47 Series B RF	
1	36				P67K-001H7	Blind flange ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.47 Series B RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000J8	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000J9	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000JA	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000JB	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000JH	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000JL	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000JM	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	6				P73T-000JN	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	8				P73T-000JP	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	10				P73T-000JC	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	12				P73T-000JD	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	14				P73T-000JE	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	16				P73T-000JF	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	18				P73T-000JG	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	20				P73T-000JJ	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	24				P73T-000JK	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	30				P73T-000JT	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	36				P73T-000JW	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
789	3				P75T-000P8	Ring joint gasket SS TP304 Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	4				P75T-000P9	Ring joint gasket SS TP304 Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	6				P75T-000MP	Ring joint gasket SS TP304 Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	8				P75T-000MR	Ring joint gasket SS TP304 Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	10				P75T-000MM	Ring joint gasket SS TP304 Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	12				P75T-000MN	Ring joint gasket SS TP304 Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	14				P75T-0011B	Ring joint gasket SS TP304 Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	16				P75T-000P5	Ring joint gasket SS TP304 Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	18				P75T-000P6	Ring joint gasket SS TP304 Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	20				P75T-000P7	Ring joint gasket SS TP304 Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	24				P75T-0013K	Ring joint gasket SS TP304 Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	30				P75T-0013J	Ring joint gasket SS TP304 Class 900 ASME B16.20 Flange ASME B16.47-A RJ Octagonal type	
789	36				P75T-00147	Ring joint gasket SS TP304 Class 900 ASME B16.20 Flange ASME B16.47-A RJ Octagonal type	
797	0.5				P75T-000LS	Ring joint gasket SS TP304 Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	0.75				P75T-000LT	Ring joint gasket SS TP304 Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	1				P75T-000LU	Ring joint gasket SS TP304 Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	1.5				P75T-000LV	Ring joint gasket SS TP304 Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	2				P75T-000ML	Ring joint gasket SS TP304 Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	

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BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-6				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	8-36				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
789	1-3				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
789	4-36				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
797	0.5-2				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81K-00108	Gate valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	0.75				P81K-00109	Gate valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	1				P81K-0010A	Gate valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	1.5				P81K-0010B	Gate valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	2				P81L-0021S	Gate valve ASTM A351 Grade CF8 Class 600 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	3				P81L-0021T	Gate valve ASTM A351 Grade CF8 Class 600 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	4				P81L-0021U	Gate valve ASTM A351 Grade CF8 Class 600 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	6				P81L-0021V	Gate valve ASTM A351 Grade CF8 Class 600 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	8				P81L-002BB	Gate valve ASTM A351 Grade CF8 Class 600 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated	
1	10				P81L-002RT	Gate valve ASTM A351 Grade CF8 Class 600 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated	
1	12				P81L-002V5	Gate valve ASTM A351 Grade CF8 Class 600 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated	
1	14				P81L-002V6	Gate valve ASTM A351 Grade CF8 Class 600 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated	
1	16				P81L-002V7	Gate valve ASTM A351 Grade CF8 Class 600 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated	
1	18				P81L-002V8	Gate valve ASTM A351 Grade CF8 Class 600 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated	
1	20				P81L-002V9	Gate valve ASTM A351 Grade CF8 Class 600 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated	
1	30				P81L-002Z0	Gate valve ASTM A351 Grade CF8 Class 600 API 600 Flange ASME B16.47-B RF Trim number 12 BB-BG-OS&Y Gear operated	
1	36				P81L-002ZP	Gate valve ASTM A351 Grade CF8 Class 600 API 600 Flange ASME B16.47-B RF Trim number 12 BB-BG-OS&Y Gear operated	
714	0.5				P81K-001LC	Gate valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW - NPT Trim number 12 BB-BG-OS&Y Handwheel operated	
714	0.75				P81K-001FD	Gate valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW - NPT Trim number 12 BB-BG-OS&Y Handwheel operated	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82K-000NR	Globe valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	0.75				P82K-000NS	Globe valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	1				P82K-000NT	Globe valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	1.5				P82K-000NU	Globe valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	2				P82L-0013B	Globe valve ASTM A351 Grade CF8 Class 600 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	

ORIFICE FLANGE (FO)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2		SCH10S		P66K-00339	Orifice flange WN ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.36 RF NPS1/2 SW tap x 1	
1	3		SCH40S		P66K-0033A	Orifice flange WN ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.36 RF NPS1/2 SW tap x 1	
1	4		SCH40S		P66K-0033B	Orifice flange WN ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.36 RF NPS1/2 SW tap x 1	
1	6		SCH40S		P66K-0033C	Orifice flange WN ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.36 RF NPS1/2 SW tap x 1	
1	8		SCH10S		P66K-0033D	Orifice flange WN ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.36 RF NPS1/2 SW tap x 1	
1	10		SCH10S		P66K-00335	Orifice flange WN ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.36 RF NPS1/2 SW tap x 1	
1	12		SCH40S		P66K-00336	Orifice flange WN ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.36 RF NPS1/2 SW tap x 1	
1	14		SCH40S		P66K-00337	Orifice flange WN ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.36 RF NPS1/2 SW tap x 1	

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ORIFICE FLANGE (FO)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	16		SCH40S		P66K-00338	Orifice flange WN ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.36 RF NPS1/2 SW tap x 1	
200	2		SCH10S		P66K-0033L	Orifice flange WN ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	3		SCH40S		P66K-0033M	Orifice flange WN ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	4		SCH40S		P66K-0033N	Orifice flange WN ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	6		SCH40S		P66K-0033P	Orifice flange WN ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	8		SCH10S		P66K-0033R	Orifice flange WN ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	10		SCH10S		P66K-0033G	Orifice flange WN ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	12		SCH40S		P66K-0033H	Orifice flange WN ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	14		SCH40S		P66K-0033J	Orifice flange WN ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	16		SCH40S		P66K-0033K	Orifice flange WN ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71K-00091	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 600 Standard-drawing Flange ASME B16.5 RF	
1	0.75				P71K-00092	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 600 Standard-drawing Flange ASME B16.5 RF	
1	1				P71K-00093	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 600 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71K-00094	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 600 Standard-drawing Flange ASME B16.5 RF	
1	2				P71K-00095	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 600 Standard-drawing Flange ASME B16.5 RF	
1	3				P71K-00096	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 600 Standard-drawing Flange ASME B16.5 RF	
1	4				P71K-00097	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 600 Standard-drawing Flange ASME B16.5 RF	
1	6				P71K-00098	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 600 Standard-drawing Flange ASME B16.5 RF	

PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	8				P72K-00061	Paddle blank ASTM A182 Grade F304/F304L dual grade Class 600 Standard-drawing Flange ASME B16.5 RF	
1	10				P72K-0005V	Paddle blank ASTM A182 Grade F304/F304L dual grade Class 600 Standard-drawing Flange ASME B16.5 RF	
1	12				P72K-0005W	Paddle blank ASTM A182 Grade F304/F304L dual grade Class 600 Standard-drawing Flange ASME B16.5 RF	
1	14				P72K-0005X	Paddle blank ASTM A182 Grade F304/F304L dual grade Class 600 Standard-drawing Flange ASME B16.5 RF	
1	16				P72K-0005Y	Paddle blank ASTM A182 Grade F304/F304L dual grade Class 600 Standard-drawing Flange ASME B16.5 RF	
1	18				P72K-0005Z	Paddle blank ASTM A182 Grade F304/F304L dual grade Class 600 Standard-drawing Flange ASME B16.5 RF	
1	20				P72K-00060	Paddle blank ASTM A182 Grade F304/F304L dual grade Class 600 Standard-drawing Flange ASME B16.5 RF	
1	24				P72K-000HT	Paddle blank ASTM A182 Grade F304/F304L dual grade Class 600 Standard-drawing Flange ASME B16.5 RF	
1	30				P72K-000HU	Paddle blank ASTM A182 Grade F304/F304L dual grade Class 600 Standard-drawing Flange ASME B16.47-B RF	
1	36				P72K-000KG	Paddle blank ASTM A182 Grade F304/F304L dual grade Class 600 Standard-drawing Flange ASME B16.47-B RF	

PADDLE SPACER (PS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	8				P72K-00068	Paddle spacer ASTM A182 Grade F304/F304L dual grade Class 600 Standard-drawing Flange ASME B16.5 RF	
1	10				P72K-00062	Paddle spacer ASTM A182 Grade F304/F304L dual grade Class 600 Standard-drawing Flange ASME B16.5 RF	
1	12				P72K-00063	Paddle spacer ASTM A182 Grade F304/F304L dual grade Class 600 Standard-drawing Flange ASME B16.5 RF	
1	14				P72K-00064	Paddle spacer ASTM A182 Grade F304/F304L dual grade Class 600 Standard-drawing Flange ASME B16.5 RF	
1	16				P72K-00065	Paddle spacer ASTM A182 Grade F304/F304L dual grade Class 600 Standard-drawing Flange ASME B16.5 RF	
1	18				P72K-00066	Paddle spacer ASTM A182 Grade F304/F304L dual grade Class 600 Standard-drawing Flange ASME B16.5 RF	
1	20				P72K-00067	Paddle spacer ASTM A182 Grade F304/F304L dual grade Class 600 Standard-drawing Flange ASME B16.5 RF	
1	24				P72K-000HV	Paddle spacer ASTM A182 Grade F304/F304L dual grade Class 600 Standard-drawing Flange ASME B16.5 RF	
1	30				P72K-000HW	Paddle spacer ASTM A182 Grade F304/F304L dual grade Class 600 Standard-drawing Flange ASME B16.47-B RF	

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PADDLE SPACER (PS)							
OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	36				P72K-000KH	Paddle spacer ASTM A182 Grade F304/F304L dual grade Class 600 Standard-drawing Flange ASME B16.47-B RF	

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BOLT TABLE (B_D0JH , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	80	P80S-003V6		
0.75	4	0.625	90	P80S-003XF		
1	4	0.625	95	P80S-003XG		
1.5	4	0.750	110	P80S-003XK		
2	8	0.625	110	P80S-003VC		
3	8	0.750	130	P80S-003XP		
4	8	0.875	150	P80S-0041F		
6	12	1.000	175	P80S-0043P		
8	12	1.125	195	P80S-0046W		
10	16	1.250	250	P80S-004AY		
12	20	1.250	255	P80S-004AZ		
14	20	1.375	270	P80S-003E7		
16	20	1.500	295	P80S-003FL		
18	20	1.625	320	P80S-005TT		
20	24	1.625	335	P80S-005TW		
24	24	1.875	380	P80S-008P4		
30	28	1.875	435	P80S-008PF		
36	28	2.250	510	P80S-00P4E		

BOLT TABLE (B_D0JH_789 , STUD ASME RJ, OPTION CODE 789)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	110		R12	
0.75	4	0.750	115		R14	
1	4	0.875	130	P80S-0041B	R16	
1.5	4	1.000	140		R20	
2	8	0.875	150	P80S-0041F	R24	
3	8	0.875	150	P80S-0041F	R31	P75T-000P8
4	8	1.125	175	P80S-0046S	R37	P75T-000P9
6	12	1.125	200	P80S-0046X	R45	P75T-000MP
8	12	1.375	260	P80S-003E5	R49	P75T-000MR
10	16	1.375	275	P80S-003E8	R53	P75T-000MM
12	20	1.375	295	P80S-003EC	R57	P75T-000MN
14	20	1.500	325	P80S-008N3	R62	P75T-0011B
16	20	1.625	340	P80S-005TX	R66	P75T-000P5
18	20	1.875	390	P80S-008P6	R70	P75T-000P6
20	20	2.000	415	P80S-005VG	R74	P75T-000P7
24	20	2.500	525	P80S-00P1W	R78	P75T-0013K
30	20	3.000	600	P80S-00PPD	R102	P75T-0013J
36	20	3.500	690	P80S-00RLT	R105	P75T-00147

BOLT TABLE (B_D0JH_797 , STUD ASME RJ, OPTION CODE 797)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	110	P80S-003XK	R12	P75T-000LS
0.75	4	0.750	115	P80S-003XL	R14	P75T-000LT
1	4	0.875	130	P80S-0041B	R16	P75T-000LU
1.5	4	1.000	140	P80S-0043F	R20	P75T-000LV
2	8	0.875	150	P80S-0041F	R24	P75T-000ML
3	8	1.125	180		R35	
4	8	1.250	230		R39	
6	12	1.375	300		R46	
8	12	1.625	345		R50	
10	12	1.875	395		R54	
12	16	2.000	445		R58	
14	16	2.250	490		R63	
16	16	2.500	540		R67	
18	16	2.750	590		R71	
20	16	3.000	650		R75	
24	16	3.500	745		R79	

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BRANCH TABLE (T_D0JH)

RUN PIPE SIZE (in) \ BRANCH SIZE (in)	0.5	0.75	1	1.5	2	3	4	6	8	10	12	14	16	18	20	24	30	36
0.5	TS																	
0.75		TS																
1		TR	TS															
1.5		TR	TR	TS														
2		L	TR	TR	TS													
3		L	L	TR	TR	TS												
4	L	L	L	L	TR	TR	TS											
6	L	L	L	L	L	TR	TR	TS										
8		L	L	L	L	L	TR	TR	TS									
10		L	L	L	L	L	TR	TR	TR	TS								
12		L	L	L	L	L	L	TR	TR	TR	TS							
14		L	L	L	L	L	L	TR	TR	TR	TR	TS						
16		L	L	L	L	L	L	TR	TR	TR	TR	TR	TS					
18		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TS				
20		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TR	TS			
24		L	L	L	L	L	L	L	9PD	TR	TR	TR	TR	TR	TR	TS		
30		L	L	L	L	L	L	L	9PD	TR	TR	TR	TR	TR	TR	TR	TS	
36		L	L	L	L	L	L	L	9PD	9PD	9PD	9PD	TR	TR	TR	TR	TR	TS

TS : STRAIGHT TEE
9PD : REINFORCING PAD 90 DEG
L : OUTLET
TR : REDUCING TEE

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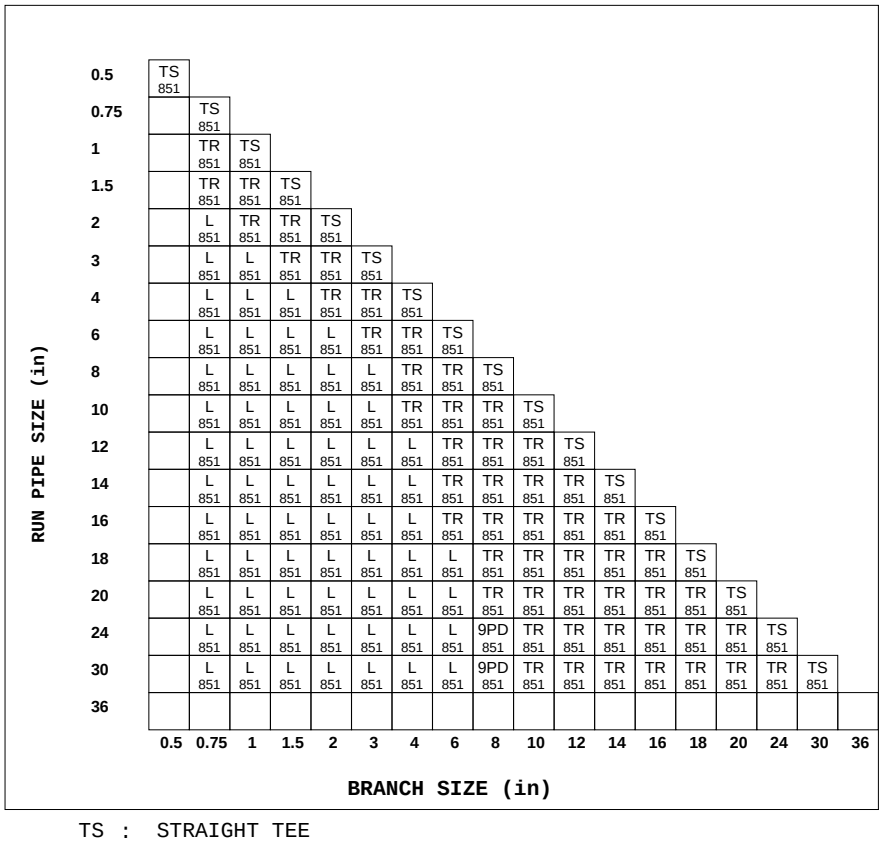
BRANCH TABLE (T_D0JH_4)



TS : STRAIGHT TEE
L : OUTLET
TR : REDUCING TEE
9PD : REINFORCING PAD 90 DEG

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PIPING CLASS

D0JS REV NO. 2

Material : SS304L
Rating : ASME CLASS 600
Flange Face : RF
C.A.(mm) : 0.00
Gasket : Spiral Wound
Service : UTILITY: STEAM, CONDENSATE, BOILER FEED WATER TO ASME B31.3
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
3	STIFFENER RINGS, IF NEEDED, SHALL BE PROVIDED AS PER ASME SEC.VIII, DIV.1 FOR FULL VACUUM CONDITION

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
541	NPT(F) (CA,L)
714	SW - NPT(F) (V)
789	CLASS 900 (B,F,G)
797	CLASS 1500 (B,F,G)

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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P01J-000UC	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE	
1	0.75		SCH80S		P01J-000UD	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE	
1	1		SCH80S		P01J-000UE	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE	
1	1.5		SCH80S		P01J-000UF	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE	
1	2		SCH10S		P01J-000RD	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M BE	
1	3		SCH40S		P01J-000RK	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M BE	
1	4		SCH40S		P01J-000UG	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M BE	
1	6		SCH40S		P01J-000RH	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M BE	
1	8		SCH40S		P01J-000WC	Pipe ASTM A358 Grade 304/304L Class 1 dual grade EFW ASME B36.10M/B36.19M BE	
1	10		SCH40S		P01J-000W6	Pipe ASTM A358 Grade 304/304L Class 1 dual grade EFW ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P02K-0001K	90 degree elbow ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	0.75				P02K-0001L	90 degree elbow ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	1				P02K-0001M	90 degree elbow ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	1.5				P02K-0001N	90 degree elbow ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	2		SCH10S		P02J-000J0	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	3		SCH40S		P02J-000J9	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	4		SCH40S		P02J-000KZ	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	6		SCH40S		P02J-000J4	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	8		SCH40S		P02J-000J7	90 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius	
1	10		SCH40S		P02J-000J5	90 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P03K-0001G	45 degree elbow ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	0.75				P03K-0001H	45 degree elbow ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	1				P03K-0001J	45 degree elbow ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	1.5				P03K-0001K	45 degree elbow ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	2		SCH10S		P03J-000HS	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	3		SCH40S		P03J-000J1	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	4		SCH40S		P03J-000KL	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	6		SCH40S		P03J-000HW	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	8		SCH40S		P03J-000HZ	45 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius	
1	10		SCH40S		P03J-000HX	45 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P21K-0001G	Straight tee ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	0.75				P21K-0001H	Straight tee ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	1				P21K-0001J	Straight tee ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	1.5				P21K-0001K	Straight tee ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	2		SCH10S		P21J-000HM	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	3		SCH40S		P21J-000HX	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	4		SCH40S		P21J-000KK	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	6		SCH40S		P21J-000HS	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	8		SCH40S		P21J-000HV	Straight tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	10		SCH40S		P21J-000HT	Straight tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75			P24K-0001X	Reducing tee ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	1.5	0.75			P24K-0001Z	Reducing tee ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	

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REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5	1			P24K-00020	Reducing tee ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	2	1	SCH10S	SCH80S	P24J-0065A	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	2	1.5	SCH10S	SCH80S	P24J-0065B	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	3	1.5	SCH40S	SCH80S	P24J-002SG	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	3	2	SCH40S	SCH10S	P24J-005PS	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	4	2	SCH40S	SCH10S	P24J-005P3	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	4	3	SCH40S	SCH40S	P24J-002SJ	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	6	3	SCH40S	SCH40S	P24J-002SK	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	6	4	SCH40S	SCH40S	P24J-002SL	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	8	4	SCH40S	SCH40S	P24J-005P4	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	8	6	SCH40S	SCH40S	P24J-002HF	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	10	4	SCH40S	SCH40S	P24J-007JN	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	10	6	SCH40S	SCH40S	P24J-002HH	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	10	8	SCH40S	SCH40S	P24J-002HJ	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	SCH40S	SCH10S	P27J-004MX	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	4	2	SCH40S	SCH10S	P27J-004JR	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	4	3	SCH40S	SCH40S	P27J-001X5	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	6	3	SCH40S	SCH40S	P27J-001X6	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	6	4	SCH40S	SCH40S	P27J-001X7	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	8	4	SCH40S	SCH40S	P27J-004JS	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	8	6	SCH40S	SCH40S	P27J-001R0	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	10	4	SCH40S	SCH40S	P27J-004JT	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	10	6	SCH40S	SCH40S	P27J-001R2	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	10	8	SCH40S	SCH40S	P27J-001R3	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	SCH40S	SCH10S	P28J-004NE	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	4	2	SCH40S	SCH10S	P28J-004K8	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	4	3	SCH40S	SCH40S	P28J-001WG	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	6	3	SCH40S	SCH40S	P28J-001WH	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	6	4	SCH40S	SCH40S	P28J-001WJ	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	8	4	SCH40S	SCH40S	P28J-004K9	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	8	6	SCH40S	SCH40S	P28J-001PG	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	10	4	SCH40S	SCH40S	P28J-004KA	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	10	6	SCH40S	SCH40S	P28J-001PJ	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	10	8	SCH40S	SCH40S	P28J-001PK	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P29K-0001V	Cap ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	0.75				P29K-0001W	Cap ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	1				P29K-0001X	Cap ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	1.5				P29K-0001Y	Cap ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	2		SCH10S		P29J-000G1	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	3		SCH40S		P29J-000GA	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	4		SCH40S		P29J-000JB	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	6		SCH40S		P29J-000G5	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	8		SCH40S		P29J-000LU	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	10		SCH40S		P29J-000KM	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
541	0.75				P29K-00020	Cap ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P41J-001FS	Straight nipple ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

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STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75		SCH80S		P41J-001FT	Straight nipple ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		SCH80S		P41J-001FU	Straight nipple ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		SCH80S		P41J-001FV	Straight nipple ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

CON SWAGED NIPPLE (SNC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH80S	SCH80S	P42J-00081	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	SCH80S	SCH80S	P42J-00082	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	SCH80S	SCH80S	P42J-00083	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	SCH80S	SCH80S	P42J-00084	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	SCH80S	SCH80S	P42J-00085	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	SCH80S	SCH80S	P42J-00086	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	SCH10S	SCH80S	P42J-000F9	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	SCH10S	SCH80S	P42J-000F6	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	SCH10S	SCH80S	P42J-000F7	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	SCH10S	SCH80S	P42J-000F8	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	SCH40S	SCH80S	P42J-000GL	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	

ECC SWAGED NIPPLE (SNE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH80S	SCH80S	P43J-0008D	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	SCH80S	SCH80S	P43J-0008E	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	SCH80S	SCH80S	P43J-0008F	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	SCH80S	SCH80S	P43J-0008G	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	SCH80S	SCH80S	P43J-0008H	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	SCH80S	SCH80S	P43J-0008J	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	SCH10S	SCH80S	P43J-000CT	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	SCH10S	SCH80S	P43J-000CU	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	SCH10S	SCH80S	P43J-000CV	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	SCH10S	SCH80S	P43J-000CW	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	SCH40S	SCH80S	P43J-000DL	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	

COUPLING (CPS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P47K-00035	Coupling ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW - SW	
1	0.75				P47K-00036	Coupling ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW - SW	
1	1				P47K-00037	Coupling ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW - SW	
1	1.5				P47K-00038	Coupling ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW - SW	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2 - 2.5	0.75			P31K-00GFG	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 SW	
1	3 - 5	0.75			P31K-00GFH	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 SW	
1	6 - 12	0.75			P31K-008YY	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 SW	
1	3	1			P31K-008ZG	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 SW	
1	4 - 5	1			P31K-00GFL	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 SW	
1	6 - 10	1			P31K-008ZU	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 SW	
1	4	1.5			P31K-0099M	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 SW	
1	5 - 6	1.5			P31K-00GFS	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 SW	
1	8 - 12	1.5			P31K-0099Z	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 SW	

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OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
541	1	0.75			P31K-00911	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 NPT	
541	1.5	0.75			P31K-00916	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 NPT	
541	2 - 2.5	0.75			P31K-00GFJ	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 NPT	
541	3 - 5	0.75			P31K-00GFK	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 NPT	
541	6 - 12	0.75			P31K-0091X	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 NPT	
1	6	2	SCH40S	SCH10S	P31K-005AW	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	8	2	SCH40S	SCH10S	P31K-005AX	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	10	2	SCH40S	SCH10S	P31K-005AZ	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	8	3	SCH40S	SCH40S	P31K-007Y2	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	10	3	SCH40S	SCH40S	P31K-007KW	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30K-0001G	Plug ASTM A182 Grade F304/F304L dual grade ASME B16.11 NPT Round head	
1	0.75				P30K-0001H	Plug ASTM A182 Grade F304/F304L dual grade ASME B16.11 NPT Round head	
1	1				P30K-0001J	Plug ASTM A182 Grade F304/F304L dual grade ASME B16.11 NPT Round head	
1	1.5				P30K-0001K	Plug ASTM A182 Grade F304/F304L dual grade ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P61K-003AT	Flange SW ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 RF	
1	0.75		SCH80S		P61K-003AU	Flange SW ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 RF	
1	1		SCH80S		P61K-003AV	Flange SW ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 RF	
1	1.5		SCH80S		P61K-003AW	Flange SW ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 RF	
1	2		SCH10S		P61K-00290	Flange WN ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 RF	
1	3		SCH40S		P61K-002P2	Flange WN ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 RF	
1	4		SCH40S		P61K-002P3	Flange WN ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 RF	
1	6		SCH40S		P61K-00293	Flange WN ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 RF	
1	8		SCH40S		P61K-0046J	Flange WN ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 RF	
1	10		SCH40S		P61K-002C6	Flange WN ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 RF	
789	3		SCH40S		P61K-004WW	Flange WN ASTM A182 Grade F304/F304L dual grade Class 900 ASME B16.5 RJ	
789	4		SCH40S		P61K-004WX	Flange WN ASTM A182 Grade F304/F304L dual grade Class 900 ASME B16.5 RJ	
789	6		SCH40S		P61K-004WN	Flange WN ASTM A182 Grade F304/F304L dual grade Class 900 ASME B16.5 RJ	
789	8		SCH40S		P61K-004WP	Flange WN ASTM A182 Grade F304/F304L dual grade Class 900 ASME B16.5 RJ	
789	10		SCH40S		P61K-0060A	Flange WN ASTM A182 Grade F304/F304L dual grade Class 900 ASME B16.5 RJ	
797	0.5		SCH80S		P61K-003F1	Flange SW ASTM A182 Grade F304/F304L dual grade Class 1500 ASME B16.5 RJ	
797	0.75		SCH80S		P61K-003F2	Flange SW ASTM A182 Grade F304/F304L dual grade Class 1500 ASME B16.5 RJ	
797	1		SCH80S		P61K-003F3	Flange SW ASTM A182 Grade F304/F304L dual grade Class 1500 ASME B16.5 RJ	
797	1.5		SCH80S		P61K-003F4	Flange SW ASTM A182 Grade F304/F304L dual grade Class 1500 ASME B16.5 RJ	
797	2		SCH10S		P61K-004TB	Flange WN ASTM A182 Grade F304/F304L dual grade Class 1500 ASME B16.5 RJ	
797	3		SCH40S		P61K-004U0	Flange WN ASTM A182 Grade F304/F304L dual grade Class 1500 ASME B16.5 RJ	
797	4		SCH40S		P61K-004U1	Flange WN ASTM A182 Grade F304/F304L dual grade Class 1500 ASME B16.5 RJ	
797	6		SCH40S		P61K-004U2	Flange WN ASTM A182 Grade F304/F304L dual grade Class 1500 ASME B16.5 RJ	
797	8		SCH40S		P61K-004WT	Flange WN ASTM A182 Grade F304/F304L dual grade Class 1500 ASME B16.5 RJ	
797	10		SCH40S		P61K-004TV	Flange WN ASTM A182 Grade F304/F304L dual grade Class 1500 ASME B16.5 RJ	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67K-000NN	Blind flange ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 RF	
1	0.75				P67K-000NP	Blind flange ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 RF	
1	1				P67K-000NR	Blind flange ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 RF	
1	1.5				P67K-000NS	Blind flange ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 RF	
1	2				P67K-000NT	Blind flange ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 RF	
1	3				P67K-000NU	Blind flange ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 RF	
1	4				P67K-000NV	Blind flange ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 RF	
1	6				P67K-000NW	Blind flange ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 RF	
1	8				P67K-000PL	Blind flange ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 RF	
1	10				P67K-000PE	Blind flange ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 RF	

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GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000J8	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000J9	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000JA	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000JB	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000JH	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000JL	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000JM	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	6				P73T-000JN	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	8				P73T-000JP	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	10				P73T-000JC	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
789	3				P75T-000P8	Ring joint gasket SS TP304 Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	4				P75T-000P9	Ring joint gasket SS TP304 Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	6				P75T-000MP	Ring joint gasket SS TP304 Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	8				P75T-000MR	Ring joint gasket SS TP304 Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	10				P75T-000MM	Ring joint gasket SS TP304 Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	0.5				P75T-000LS	Ring joint gasket SS TP304 Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	0.75				P75T-000LT	Ring joint gasket SS TP304 Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	1				P75T-000LU	Ring joint gasket SS TP304 Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	1.5				P75T-000LV	Ring joint gasket SS TP304 Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	2				P75T-000ML	Ring joint gasket SS TP304 Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	3				P75T-000NZ	Ring joint gasket SS TP304 Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	4				P75T-0010P	Ring joint gasket SS TP304 Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	6				P75T-000LW	Ring joint gasket SS TP304 Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	8				P75T-000MU	Ring joint gasket SS TP304 Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	10				P75T-000MS	Ring joint gasket SS TP304 Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-6				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	8-10				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
789	0.5-3				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
789	4-10				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
797	0.5-2				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
797	3-10				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81K-00108	Gate valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	0.75				P81K-00109	Gate valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	1				P81K-0010A	Gate valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	1.5				P81K-0010B	Gate valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	2				P81L-0021S	Gate valve ASTM A351 Grade CF8 Class 600 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	3				P81L-0021T	Gate valve ASTM A351 Grade CF8 Class 600 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	4				P81L-0021U	Gate valve ASTM A351 Grade CF8 Class 600 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	6				P81L-0021V	Gate valve ASTM A351 Grade CF8 Class 600 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	8				P81L-002BB	Gate valve ASTM A351 Grade CF8 Class 600 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated	
1	10				P81L-002RT	Gate valve ASTM A351 Grade CF8 Class 600 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated	
714	0.5				P81K-001LC	Gate valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW - NPT Trim number 12 BB-BG-OS&Y Handwheel operated	
714	0.75				P81K-001FD	Gate valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW - NPT Trim number 12 BB-BG-OS&Y Handwheel operated	

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GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82K-000NR	Globe valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	0.75				P82K-000NS	Globe valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	1				P82K-000NT	Globe valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	1.5				P82K-000NU	Globe valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	2				P82L-0013B	Globe valve ASTM A351 Grade CF8 Class 600 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	3				P82L-0013C	Globe valve ASTM A351 Grade CF8 Class 600 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	4				P82L-0013D	Globe valve ASTM A351 Grade CF8 Class 600 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	6				P82L-001Y1	Globe valve ASTM A351 Grade CF8 Class 600 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83K-000LM	Check valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 Lift-type Bolted cover	
1	0.75				P83K-000LN	Check valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 Lift-type Bolted cover	
1	1				P83K-000LP	Check valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 Lift-type Bolted cover	
1	1.5				P83K-000LR	Check valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 Lift-type Bolted cover	
1	2				P83L-00139	Check valve ASTM A351 Grade CF8 Class 600 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	3				P83L-0013A	Check valve ASTM A351 Grade CF8 Class 600 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	4				P83L-0013B	Check valve ASTM A351 Grade CF8 Class 600 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	6				P83L-001FF	Check valve ASTM A351 Grade CF8 Class 600 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	8				P83L-001FG	Check valve ASTM A351 Grade CF8 Class 600 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	10				P83L-001FE	Check valve ASTM A351 Grade CF8 Class 600 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71K-00091	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 600 Standard-drawing Flange ASME B16.5 RF	
1	0.75				P71K-00092	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 600 Standard-drawing Flange ASME B16.5 RF	
1	1				P71K-00093	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 600 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71K-00094	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 600 Standard-drawing Flange ASME B16.5 RF	
1	2				P71K-00095	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 600 Standard-drawing Flange ASME B16.5 RF	
1	3				P71K-00096	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 600 Standard-drawing Flange ASME B16.5 RF	
1	4				P71K-00097	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 600 Standard-drawing Flange ASME B16.5 RF	
1	6				P71K-00098	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 600 Standard-drawing Flange ASME B16.5 RF	

PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	8				P72K-00061	Paddle blank ASTM A182 Grade F304/F304L dual grade Class 600 Standard-drawing Flange ASME B16.5 RF	
1	10				P72K-0005V	Paddle blank ASTM A182 Grade F304/F304L dual grade Class 600 Standard-drawing Flange ASME B16.5 RF	

PADDLE SPACER (PS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	8				P72K-00068	Paddle spacer ASTM A182 Grade F304/F304L dual grade Class 600 Standard-drawing Flange ASME B16.5 RF	
1	10				P72K-00062	Paddle spacer ASTM A182 Grade F304/F304L dual grade Class 600 Standard-drawing Flange ASME B16.5 RF	

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BOLT TABLE (B_D0JS , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	80	P80S-003V6		
0.75	4	0.625	90	P80S-003XF		
1	4	0.625	95	P80S-003XG		
1.5	4	0.750	110	P80S-003XK		
2	8	0.625	110	P80S-003VC		
3	8	0.750	130	P80S-003XP		
4	8	0.875	150	P80S-0041F		
6	12	1.000	175	P80S-0043P		
8	12	1.125	195	P80S-0046W		
10	16	1.250	250	P80S-004AY		

BOLT TABLE (B_D0JS_789 , STUD ASME RJ, OPTION CODE 789)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	110	P80S-003XK	R12	
0.75	4	0.750	115	P80S-003XL	R14	
1	4	0.875	130	P80S-0041B	R16	
1.5	4	1.000	140	P80S-0043F	R20	
2	8	0.875	150	P80S-0041F	R24	
3	8	0.875	150	P80S-0041F	R31	P75T-000P8
4	8	1.125	175	P80S-0046S	R37	P75T-000P9
6	12	1.125	200	P80S-0046X	R45	P75T-000MP
8	12	1.375	260	P80S-003E5	R49	P75T-000MR
10	16	1.375	275	P80S-003E8	R53	P75T-000MM

BOLT TABLE (B_D0JS_797 , STUD ASME RJ, OPTION CODE 797)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	110	P80S-003XK	R12	P75T-000LS
0.75	4	0.750	115	P80S-003XL	R14	P75T-000LT
1	4	0.875	130	P80S-0041B	R16	P75T-000LU
1.5	4	1.000	140	P80S-0043F	R20	P75T-000LV
2	8	0.875	150	P80S-0041F	R24	P75T-000ML
3	8	1.125	180	P80S-0046T	R35	P75T-000NZ
4	8	1.250	230	P80S-004AU	R39	P75T-0010P
6	12	1.375	300	P80S-003ED	R46	P75T-000LW
8	12	1.625	345	P80S-005TY	R50	P75T-000MU
10	12	1.875	395	P80S-008P7	R54	P75T-000MS

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BRANCH TABLE (T_D0JS)

RUN PIPE SIZE (in) \ BRANCH SIZE (in)	0.5	0.75	1	1.5	2	3	4	6	8	10
0.5	TS									
0.75		TS								
1		TR	TS							
1.5		TR	TR	TS						
2		L	TR	TR	TS					
3		L	L	TR	TR	TS				
4	L	L	L	L	TR	TR	TS			
6	L	L	L	L	L	TR	TR	TS		
8		L	L	L	L	L	TR	TR	TS	
10		L	L	L	L	L	TR	TR	TR	TS

TS : STRAIGHT TEE
L : OUTLET
TR : REDUCING TEE

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Material : SS304L
Rating : ASME CLASS 600
Flange Face : RF
C.A.(mm) : 0.00
Gasket : Spiral Wound
Service : PROCESS - PHOSPHATE
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
2	USE OF SOFT SEATED BALL, PLUG AND BUTTERFLY VALVES SHALL BE LIMITED TO MAXIMUM OF 204DEGC (400DEGF)

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
541	NPT(F) (F,L)
797	CLASS 1500 (B,F,G)
4608	VALVE WITH NIPPLES (V)

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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P01J-000UC	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE	
1	0.75		SCH80S		P01J-000UD	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE	
1	1		SCH80S		P01J-000UE	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE	
1	1.5		SCH80S		P01J-000UF	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P02J-000VD	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	0.75		SCH80S		P02J-000VE	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	1		SCH80S		P02J-000VF	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	1.5		SCH80S		P02J-000VG	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P03J-000UW	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	0.75		SCH80S		P03J-000UX	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	1		SCH80S		P03J-000UY	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	1.5		SCH80S		P03J-000UZ	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P21J-000V1	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	0.75		SCH80S		P21J-000V2	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	1		SCH80S		P21J-000V3	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	1.5		SCH80S		P21J-000V4	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75	SCH80S	SCH80S	P24J-003NX	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	1.5	0.75	SCH80S	SCH80S	P24J-003NZ	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	1.5	1	SCH80S	SCH80S	P24J-003P0	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH80S	SCH80S	P27J-002R0	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	1	0.5	SCH80S	SCH80S	P27J-002R1	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	1	0.75	SCH80S	SCH80S	P27J-002R2	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	1.5	0.5	SCH80S	SCH80S	P27J-002R3	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	1.5	0.75	SCH80S	SCH80S	P27J-002R4	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	1.5	1	SCH80S	SCH80S	P27J-002R5	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH80S	SCH80S	P28J-002NL	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	1	0.5	SCH80S	SCH80S	P28J-002NM	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	1	0.75	SCH80S	SCH80S	P28J-002NN	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	1.5	0.5	SCH80S	SCH80S	P28J-002NP	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	1.5	0.75	SCH80S	SCH80S	P28J-002NR	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	1.5	1	SCH80S	SCH80S	P28J-002NS	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P29J-000T0	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	0.75		SCH80S		P29J-000T1	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	1		SCH80S		P29J-000T2	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	

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CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5		SCH80S		P29J-000T3	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P41J-001FS	Straight nipple ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		SCH80S		P41J-001FT	Straight nipple ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		SCH80S		P41J-001FU	Straight nipple ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		SCH80S		P41J-001FV	Straight nipple ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
541	1	0.75			P31K-00911	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 NPT	
541	1.5	0.75			P31K-00916	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 NPT	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30K-0001G	Plug ASTM A182 Grade F304/F304L dual grade ASME B16.11 NPT Round head	
1	0.75				P30K-0001H	Plug ASTM A182 Grade F304/F304L dual grade ASME B16.11 NPT Round head	
1	1				P30K-0001J	Plug ASTM A182 Grade F304/F304L dual grade ASME B16.11 NPT Round head	
1	1.5				P30K-0001K	Plug ASTM A182 Grade F304/F304L dual grade ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P61K-002KH	Flange WN ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 RF	
1	0.75		SCH80S		P61K-002KJ	Flange WN ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 RF	
1	1		SCH80S		P61K-002KK	Flange WN ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 RF	
1	1.5		SCH80S		P61K-002KL	Flange WN ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 RF	
541	0.5				P61K-006AA	Flange NPT ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 RF	
541	0.75				P61K-0060B	Flange NPT ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 RF	
797	0.5		SCH80S		P61K-003C7	Flange WN ASTM A182 Grade F304/F304L dual grade Class 1500 ASME B16.5 RJ	
797	0.75		SCH80S		P61K-003C8	Flange WN ASTM A182 Grade F304/F304L dual grade Class 1500 ASME B16.5 RJ	
797	1		SCH80S		P61K-003C9	Flange WN ASTM A182 Grade F304/F304L dual grade Class 1500 ASME B16.5 RJ	
797	1.5		SCH80S		P61K-003CA	Flange WN ASTM A182 Grade F304/F304L dual grade Class 1500 ASME B16.5 RJ	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67K-000NN	Blind flange ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 RF	
1	0.75				P67K-000NP	Blind flange ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 RF	
1	1				P67K-000NR	Blind flange ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 RF	
1	1.5				P67K-000NS	Blind flange ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000J8	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000J9	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000JA	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000JB	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
797	0.5				P75T-000LS	Ring joint gasket SS TP304 Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	0.75				P75T-000LT	Ring joint gasket SS TP304 Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	1				P75T-000LU	Ring joint gasket SS TP304 Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	1.5				P75T-000LV	Ring joint gasket SS TP304 Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	

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BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-1.5				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
797	0.5-1.5				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81K-001D8	Gate valve ASTM A182 Grade F304/F304L dual grade Class 600 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Fluid-1	
1	0.75				P81K-001D9	Gate valve ASTM A182 Grade F304/F304L dual grade Class 600 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Fluid-1	
1	1				P81K-001DA	Gate valve ASTM A182 Grade F304/F304L dual grade Class 600 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Fluid-1	
1	1.5				P81K-001DB	Gate valve ASTM A182 Grade F304/F304L dual grade Class 600 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Fluid-1	
4608	0.75				P81K-001NF	Gate valve ASTM A182 Grade F304/F304L dual grade Class 600 API 602 BW both sides w/ nipples BE - NPT ASTM A312-TP304(L) dual grade Seamless Sch80S-nipple Trim number 12 BB-BG-OS&Y Handwheel operated Fluid-1	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82K-000YR	Globe valve ASTM A182 Grade F304/F304L dual grade Class 600 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Fluid-1	
1	0.75				P82K-000YS	Globe valve ASTM A182 Grade F304/F304L dual grade Class 600 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Fluid-1	
1	1				P82K-000YT	Globe valve ASTM A182 Grade F304/F304L dual grade Class 600 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Fluid-1	
1	1.5				P82K-000YU	Globe valve ASTM A182 Grade F304/F304L dual grade Class 600 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Fluid-1	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83K-000PJ	Check valve ASTM A182 Grade F304/F304L dual grade Class 600 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover	
1	0.75				P83K-000PK	Check valve ASTM A182 Grade F304/F304L dual grade Class 600 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover	
1	1				P83K-000PL	Check valve ASTM A182 Grade F304/F304L dual grade Class 600 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover	
1	1.5				P83K-000PM	Check valve ASTM A182 Grade F304/F304L dual grade Class 600 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71K-00091	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 600 Standard-drawing Flange ASME B16.5 RF	
1	0.75				P71K-00092	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 600 Standard-drawing Flange ASME B16.5 RF	
1	1				P71K-00093	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 600 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71K-00094	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 600 Standard-drawing Flange ASME B16.5 RF	

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BOLT TABLE (B_D0JY , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	80	P80S-003V6		
0.75	4	0.625	90	P80S-003XF		
1	4	0.625	95	P80S-003XG		
1.5	4	0.750	110	P80S-003XK		

BOLT TABLE (B_D0JY_789 , STUD ASME RJ, OPTION CODE 789)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	110		R12	
0.75	4	0.750	115		R14	
1	4	0.875	130		R16	
1.5	4	1.000	140		R20	

BOLT TABLE (B_D0JY_797 , STUD ASME RJ, OPTION CODE 797)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	110	P80S-003XK	R12	P75T-000LS
0.75	4	0.750	115	P80S-003XL	R14	P75T-000LT
1	4	0.875	130	P80S-0041B	R16	P75T-000LU
1.5	4	1.000	140	P80S-0043F	R20	P75T-000LV

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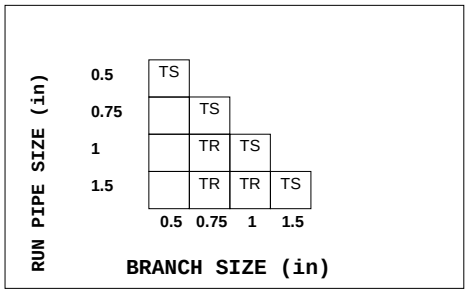
BRANCH TABLE (T_D0JY)



TR : REDUCING TEE
TS : STRAIGHT TEE

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Material : SS304L
Rating : ASME CLASS 600
Flange Face : RF
C.A.(mm) : 0.00
Gasket : Spiral Wound
Service : PROCESS - CHEMICAL DOSING : / CHEMICALS
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
2	USE OF SOFT SEATED BALL, PLUG AND BUTTERFLY VALVES SHALL BE LIMITED TO MAXIMUM OF 204DEGC (400DEGF)

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
541	NPT(F) (CA,F,L)
797	CLASS 1500 (B,F,G)
4608	VALVE WITH NIPPLES (V)

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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P01J-000UC	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE	
1	0.75		SCH80S		P01J-000UD	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE	
1	1		SCH80S		P01J-000UE	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE	
1	1.5		SCH80S		P01J-000UF	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE	
1	2		SCH10S		P01J-000RD	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P02J-000VD	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	0.75		SCH80S		P02J-000VE	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	1		SCH80S		P02J-000VF	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	1.5		SCH80S		P02J-000VG	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	2		SCH10S		P02J-000J0	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P03J-000UW	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	0.75		SCH80S		P03J-000UX	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	1		SCH80S		P03J-000UY	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	1.5		SCH80S		P03J-000UZ	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	2		SCH10S		P03J-000HS	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P21J-000V1	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	0.75		SCH80S		P21J-000V2	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	1		SCH80S		P21J-000V3	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	1.5		SCH80S		P21J-000V4	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	2		SCH10S		P21J-000HM	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75	SCH80S	SCH80S	P24J-003NX	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	1.5	0.75	SCH80S	SCH80S	P24J-003NZ	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	1.5	1	SCH80S	SCH80S	P24J-003P0	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	2	1	SCH10S	SCH80S	P24J-0065A	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	2	1.5	SCH10S	SCH80S	P24J-0065B	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH80S	SCH80S	P27J-002R0	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	1	0.5	SCH80S	SCH80S	P27J-002R1	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	1	0.75	SCH80S	SCH80S	P27J-002R2	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	1.5	0.5	SCH80S	SCH80S	P27J-002R3	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	1.5	0.75	SCH80S	SCH80S	P27J-002R4	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	1.5	1	SCH80S	SCH80S	P27J-002R5	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	2	0.75	SCH10S	SCH80S	P27J-004KS	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	2	1	SCH10S	SCH80S	P27J-004J0	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	2	1.5	SCH10S	SCH80S	P27J-004J1	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH80S	SCH80S	P28J-002NL	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	1	0.5	SCH80S	SCH80S	P28J-002NM	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	

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ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75	SCH80S	SCH80S	P28J-002NN	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	1.5	0.5	SCH80S	SCH80S	P28J-002NP	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	1.5	0.75	SCH80S	SCH80S	P28J-002NR	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	1.5	1	SCH80S	SCH80S	P28J-002NS	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	2	0.75	SCH10S	SCH80S	P28J-004L9	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	2	1	SCH10S	SCH80S	P28J-004JH	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	2	1.5	SCH10S	SCH80S	P28J-004JJ	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P29J-000T0	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	0.75		SCH80S		P29J-000T1	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	1		SCH80S		P29J-000T2	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	1.5		SCH80S		P29J-000T3	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	2		SCH10S		P29J-000G1	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
541	0.75				P29K-00020	Cap ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P41J-001FS	Straight nipple ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		SCH80S		P41J-001FT	Straight nipple ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		SCH80S		P41J-001FU	Straight nipple ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		SCH80S		P41J-001FV	Straight nipple ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
541	1	0.75			P31K-00911	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 NPT	
541	1.5	0.75			P31K-00916	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 NPT	
541	2 - 2.5	0.75			P31K-00GFJ	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 NPT	
1	2	0.75	SCH10S	SCH80S	P31K-00DM8	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30K-0001G	Plug ASTM A182 Grade F304/F304L dual grade ASME B16.11 NPT Round head	
1	0.75				P30K-0001H	Plug ASTM A182 Grade F304/F304L dual grade ASME B16.11 NPT Round head	
1	1				P30K-0001J	Plug ASTM A182 Grade F304/F304L dual grade ASME B16.11 NPT Round head	
1	1.5				P30K-0001K	Plug ASTM A182 Grade F304/F304L dual grade ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P61K-002KH	Flange WN ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 RF	
1	0.75		SCH80S		P61K-002KJ	Flange WN ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 RF	
1	1		SCH80S		P61K-002KK	Flange WN ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 RF	
1	1.5		SCH80S		P61K-002KL	Flange WN ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 RF	
1	2		SCH10S		P61K-00290	Flange WN ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 RF	
541	0.5				P61K-006AA	Flange NPT ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 RF	
541	0.75				P61K-0060B	Flange NPT ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 RF	
797	0.5		SCH80S		P61K-003C7	Flange WN ASTM A182 Grade F304/F304L dual grade Class 1500 ASME B16.5 RJ	
797	0.75		SCH80S		P61K-003C8	Flange WN ASTM A182 Grade F304/F304L dual grade Class 1500 ASME B16.5 RJ	
797	1		SCH80S		P61K-003C9	Flange WN ASTM A182 Grade F304/F304L dual grade Class 1500 ASME B16.5 RJ	
797	1.5		SCH80S		P61K-003CA	Flange WN ASTM A182 Grade F304/F304L dual grade Class 1500 ASME B16.5 RJ	
797	2		SCH10S		P61K-004TB	Flange WN ASTM A182 Grade F304/F304L dual grade Class 1500 ASME B16.5 RJ	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67K-000NN	Blind flange ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 RF	

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BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75				P67K-000NP	Blind flange ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 RF	
1	1				P67K-000NR	Blind flange ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 RF	
1	1.5				P67K-000NS	Blind flange ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 RF	
1	2				P67K-000NT	Blind flange ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000J8	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000J9	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000JA	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000JB	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000JH	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
797	0.5				P75T-000LS	Ring joint gasket SS TP304 Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	0.75				P75T-000LT	Ring joint gasket SS TP304 Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	1				P75T-000LU	Ring joint gasket SS TP304 Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	1.5				P75T-000LV	Ring joint gasket SS TP304 Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	2				P75T-000ML	Ring joint gasket SS TP304 Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-2				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
797	0.5-2				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81K-001D8	Gate valve ASTM A182 Grade F304/F304L dual grade Class 600 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Fluid-1	
1	0.75				P81K-001D9	Gate valve ASTM A182 Grade F304/F304L dual grade Class 600 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Fluid-1	
1	1				P81K-001DA	Gate valve ASTM A182 Grade F304/F304L dual grade Class 600 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Fluid-1	
1	1.5				P81K-001DB	Gate valve ASTM A182 Grade F304/F304L dual grade Class 600 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Fluid-1	
1	2				P81L-002TV	Gate valve ASTM A351 Grade CF8 Class 600 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Fluid-1	
4608	0.75				P81K-001NF	Gate valve ASTM A182 Grade F304/F304L dual grade Class 600 API 602 BW both sides w/ nipples BE - NPT ASTM A312-TP304(L) dual grade Seamless Sch80S-nipple Trim number 12 BB-BG-OS&Y Handwheel operated Fluid-1	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82K-000YR	Globe valve ASTM A182 Grade F304/F304L dual grade Class 600 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Fluid-1	
1	0.75				P82K-000YS	Globe valve ASTM A182 Grade F304/F304L dual grade Class 600 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Fluid-1	
1	1				P82K-000YT	Globe valve ASTM A182 Grade F304/F304L dual grade Class 600 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Fluid-1	
1	1.5				P82K-000YU	Globe valve ASTM A182 Grade F304/F304L dual grade Class 600 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Fluid-1	
1	2				P82L-001JL	Globe valve ASTM A351 Grade CF8 Class 600 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Fluid-1	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83K-000PJ	Check valve ASTM A182 Grade F304/F304L dual grade Class 600 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover	
1	0.75				P83K-000PK	Check valve ASTM A182 Grade F304/F304L dual grade Class 600 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover	
1	1				P83K-000PL	Check valve ASTM A182 Grade F304/F304L dual grade Class 600 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover	
1	1.5				P83K-000PM	Check valve ASTM A182 Grade F304/F304L dual grade Class 600 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover	
1	2				P83L-00139	Check valve ASTM A351 Grade CF8 Class 600 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	

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SPECT BLANK (SB)							
OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71K-00091	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 600 Standard-drawing Flange ASME B16.5 RF	
1	0.75				P71K-00092	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 600 Standard-drawing Flange ASME B16.5 RF	
1	1				P71K-00093	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 600 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71K-00094	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 600 Standard-drawing Flange ASME B16.5 RF	
1	2				P71K-00095	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 600 Standard-drawing Flange ASME B16.5 RF	

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BOLT TABLE (B_D0JY03 , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	80	P80S-003V6		
0.75	4	0.625	90	P80S-003XF		
1	4	0.625	95	P80S-003XG		
1.5	4	0.750	110	P80S-003XK		
2	8	0.625	110	P80S-003VC		

BOLT TABLE (B_D0JY03_789 , STUD ASME RJ, OPTION CODE 789)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	110		R12	
0.75	4	0.750	115		R14	
1	4	0.875	130		R16	
1.5	4	1.000	140		R20	
2	8	0.875	150		R24	

BOLT TABLE (B_D0JY03_797 , STUD ASME RJ, OPTION CODE 797)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	110	P80S-003XK	R12	P75T-000LS
0.75	4	0.750	115	P80S-003XL	R14	P75T-000LT
1	4	0.875	130	P80S-0041B	R16	P75T-000LU
1.5	4	1.000	140	P80S-0043F	R20	P75T-000LV
2	8	0.875	150	P80S-0041F	R24	P75T-000ML

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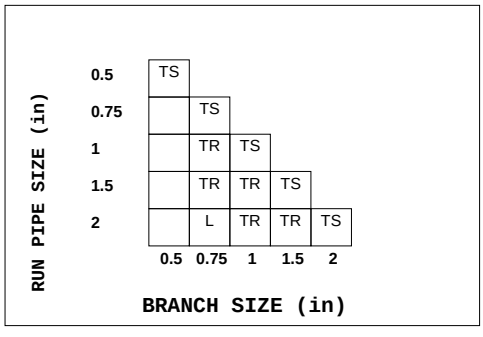
BRANCH TABLE (T_D0JY03)



L : OUTLET
TS : STRAIGHT TEE
TR : REDUCING TEE

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Material : SS304H
Rating : ASME CLASS 600
Flange Face : RF
C.A.(mm) : 0.00
Gasket : Spiral Wound
Service : PROCESS - CATALYST : / CATALYST
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
6	PIPE THICKNESS CALCULATION TO INCLUDE CORROSION AND EROSION ALLOWANCES DUE TO THE PROCESS CATALYST FLOW, AS PER PROCESS LICENSOR SPECIFICATIONS
7	MATERIAL SHALL HAVE 0.04% MIN. CARBON CONTENT
24	FOR ALL RELEVANT PIPING CLASSES WITH LINE DESIGN TEMPERATURE ABOVE 427DEGC, IN SPIRAL WOUND GASKET, SUITABLE GASKET FILLER MATERIAL SUCH AS COMBINATION OF MICA LAYERS AND GRAPHITE FILLERS OR EQUIVALENT SHALL BE REVIEWED AND SELECTED OR AS DEFINED BY THE LICENSOR

DETAIL NOTES :

NO.	DESCRIPTION
39	TO BE USED FOR IA/NIROGEN INJECTION LINE ONLY.

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
24	FULL PORT (V)
521	SW (V,X)
541	NPT(F) (CA,F,L)
789	CLASS 900 (B,F,G)
797	CLASS 1500 (B,F,G)
4608	VALVE WITH NIPPLES (V)

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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		XXS		P01J-002A4	Pipe ASTM A312 Grade TP304H Seamless ASME B36.10M/B36.19M PE	
1	1.5		XXS		P01J-002A5	Pipe ASTM A312 Grade TP304H Seamless ASME B36.10M/B36.19M PE	
1	2		XXS		P01J-002A6	Pipe ASTM A312 Grade TP304H Seamless ASME B36.10M/B36.19M BE	
1	3		XXS		P01J-002A7	Pipe ASTM A312 Grade TP304H Seamless ASME B36.10M/B36.19M BE	
1	4		XXS		P01J-002A8	Pipe ASTM A312 Grade TP304H Seamless ASME B36.10M/B36.19M BE	
1	6		XXS		P01J-002HN	Pipe ASTM A312 Grade TP304H Seamless ASME B36.10M/B36.19M BE	
1	8		XXS		P01J-002HP	Pipe ASTM A358 Grade 304H Class 1 EFW ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		XXS		P02J-001TD	90 degree elbow ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW Long radius	
1	1.5		XXS		P02J-001TE	90 degree elbow ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW Long radius	
1	2		XXS		P02J-001TF	90 degree elbow ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW Long radius	
1	3		XXS		P02J-001TG	90 degree elbow ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW Long radius	
1	4		XXS		P02J-001TH	90 degree elbow ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW Long radius	
1	6		XXS		P02J-0020P	90 degree elbow ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW Long radius	
1	8		XXS		P02J-0020R	90 degree elbow ASTM A403 Grade WP304H Class WX Weld ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		XXS		P03J-001PT	45 degree elbow ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW Long radius	
1	1.5		XXS		P03J-001PU	45 degree elbow ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW Long radius	
1	2		XXS		P03J-001PV	45 degree elbow ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW Long radius	
1	3		XXS		P03J-001PW	45 degree elbow ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW Long radius	
1	4		XXS		P03J-001PX	45 degree elbow ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW Long radius	
1	6		XXS		P03J-0020F	45 degree elbow ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW Long radius	
1	8		XXS		P03J-0020G	45 degree elbow ASTM A403 Grade WP304H Class WX Weld ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		XXS		P21J-001G9	Straight tee ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	1.5		XXS		P21J-001GA	Straight tee ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	2		XXS		P21J-001GB	Straight tee ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	3		XXS		P21J-001GC	Straight tee ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	4		XXS		P21J-001GD	Straight tee ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	6		XXS		P21J-001PM	Straight tee ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	8		XXS		P21J-001PN	Straight tee ASTM A403 Grade WP304H Class WX Weld ASME B16.9 BW	

STRAIGHT LATERAL TEE (TLS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		XXS		P22J-00076	Straight lateral-tee ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW 60 degree	
1	1.5		XXS		P22J-00077	Straight lateral-tee ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW 60 degree	
1	2		XXS		P22J-00078	Straight lateral-tee ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW 60 degree	
1	3		XXS		P22J-00079	Straight lateral-tee ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW 60 degree	
1	4		XXS		P22J-0007A	Straight lateral-tee ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW 60 degree	
1	6		XXS		P22J-0007B	Straight lateral-tee ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW 60 degree	
1	8		XXS		P22J-0007C	Straight lateral-tee ASTM A403 Grade WP304H Class WX Weld ASME B16.9 BW 60 degree	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5	1	XXS	XXS	P24J-0069R	Reducing tee ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	2	1	XXS	XXS	P24J-0069S	Reducing tee ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	2	1.5	XXS	XXS	P24J-0069T	Reducing tee ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	3	1.5	XXS	XXS	P24J-0069U	Reducing tee ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	3	2	XXS	XXS	P24J-0069V	Reducing tee ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	4	2	XXS	XXS	P24J-0069W	Reducing tee ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	4	3	XXS	XXS	P24J-0069X	Reducing tee ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	6	3	XXS	XXS	P24J-0078R	Reducing tee ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	

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REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	6	4	XXS	XXS	P24J-0078S	Reducing tee ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	8	4	XXS	XXS	P24J-0078T	Reducing tee ASTM A403 Grade WP304H Class WX Weld ASME B16.9 BW	
1	8	6	XXS	XXS	P24J-0078U	Reducing tee ASTM A403 Grade WP304H Class WX Weld ASME B16.9 BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5	1	XXS	XXS	P27J-00592	Concentric reducer ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	2	1	XXS	XXS	P27J-00594	Concentric reducer ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	2	1.5	XXS	XXS	P27J-00595	Concentric reducer ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	3	1.5	XXS	XXS	P27J-00596	Concentric reducer ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	3	2	XXS	XXS	P27J-00597	Concentric reducer ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	4	1.5	XXS	XXS	P27J-00598	Concentric reducer ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	4	2	XXS	XXS	P27J-00599	Concentric reducer ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	4	3	XXS	XXS	P27J-0059A	Concentric reducer ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	6	3	XXS	XXS	P27J-0062Z	Concentric reducer ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	6	4	XXS	XXS	P27J-00630	Concentric reducer ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	8	4	XXS	XXS	P27J-00631	Concentric reducer ASTM A403 Grade WP304H Class WX Weld ASME B16.9 BW	
1	8	6	XXS	XXS	P27J-00632	Concentric reducer ASTM A403 Grade WP304H Class WX Weld ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5	1	XXS	XXS	P28J-0059X	Eccentric reducer ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	2	1	XXS	XXS	P28J-0059Z	Eccentric reducer ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	2	1.5	XXS	XXS	P28J-005A0	Eccentric reducer ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	3	1.5	XXS	XXS	P28J-005A1	Eccentric reducer ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	3	2	XXS	XXS	P28J-005A2	Eccentric reducer ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	4	1.5	XXS	XXS	P28J-005A3	Eccentric reducer ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	4	2	XXS	XXS	P28J-005A4	Eccentric reducer ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	4	3	XXS	XXS	P28J-005A5	Eccentric reducer ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	6	3	XXS	XXS	P28J-0063W	Eccentric reducer ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	6	4	XXS	XXS	P28J-0063X	Eccentric reducer ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	8	4	XXS	XXS	P28J-0063Y	Eccentric reducer ASTM A403 Grade WP304H Class WX Weld ASME B16.9 BW	
1	8	6	XXS	XXS	P28J-0063Z	Eccentric reducer ASTM A403 Grade WP304H Class WX Weld ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		XXS		P29J-001AH	Cap ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	1.5		XXS		P29J-001AJ	Cap ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	2		XXS		P29J-001AK	Cap ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	3		XXS		P29J-001AL	Cap ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	4		XXS		P29J-001AM	Cap ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	6		XXS		P29J-003WB	Cap ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	8		XXS		P29J-003WC	Cap ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
541	1				P29K-0004D	Cap ASTM A182 Grade F304H Class 6000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		XXS		P41J-001U1	Straight nipple ASTM A312 Grade TP304H Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		XXS		P41J-001U2	Straight nipple ASTM A312 Grade TP304H Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
541	1.5	1			P31K-00GSM	Outlet ASTM A182 Grade F304H Class 6000 MSS SP-97 NPT	
541	2 - 2.5	1			P31K-00GSN	Outlet ASTM A182 Grade F304H Class 6000 MSS SP-97 NPT	
541	3 - 10	1			P31K-00GSP	Outlet ASTM A182 Grade F304H Class 6000 MSS SP-97 NPT	
1	3	1	XXS	XXS	P31K-00DS0	Outlet ASTM A182 Grade F304H MSS SP-97 BW	
1	4	1	XXS	XXS	P31K-00DS2	Outlet ASTM A182 Grade F304H MSS SP-97 BW	
1	6	1	XXS	XXS	P31K-00F07	Outlet ASTM A182 Grade F304H MSS SP-97 BW	

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OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	8	1	XXS	XXS	P31K-00F0B	Outlet ASTM A182 Grade F304H MSS SP-97 BW	
1	4	1.5	XXS	XXS	P31K-00DS3	Outlet ASTM A182 Grade F304H MSS SP-97 BW	
1	6	1.5	XXS	XXS	P31K-00F08	Outlet ASTM A182 Grade F304H MSS SP-97 BW	
1	8	1.5	XXS	XXS	P31K-00F0C	Outlet ASTM A182 Grade F304H MSS SP-97 BW	
1	6	2	XXS	XXS	P31K-00F09	Outlet ASTM A182 Grade F304H MSS SP-97 BW	
1	8	2	XXS	XXS	P31K-00F0D	Outlet ASTM A182 Grade F304H MSS SP-97 BW	
1	8	3	XXS	XXS	P31K-00F0E	Outlet ASTM A182 Grade F304H MSS SP-97 BW	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P30K-0004P	Plug ASTM A182 Grade F304H ASME B16.11 NPT Round head	
1	1.5				P30K-0004R	Plug ASTM A182 Grade F304H ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		XXS		P61K-004Y6	Flange WN ASTM A182 Grade F304H Class 600 ASME B16.5 RF	
1	1.5		XXS		P61K-004Y7	Flange WN ASTM A182 Grade F304H Class 600 ASME B16.5 RF	
1	2		XXS		P61K-004Y8	Flange WN ASTM A182 Grade F304H Class 600 ASME B16.5 RF	
1	3		XXS		P61K-004Y9	Flange WN ASTM A182 Grade F304H Class 600 ASME B16.5 RF	
1	4		XXS		P61K-004YA	Flange WN ASTM A182 Grade F304H Class 600 ASME B16.5 RF	
1	6		XXS		P61K-005MZ	Flange WN ASTM A182 Grade F304H Class 600 ASME B16.5 RF	
1	8		XXS		P61K-005N0	Flange WN ASTM A182 Grade F304H Class 600 ASME B16.5 RF	
541	1				P61K-006SP	Flange NPT ASTM A182 Grade F304H Class 600 ASME B16.5 RF	
789	3		XXS		P61K-0050T	Flange WN ASTM A182 Grade F304H Class 900 ASME B16.5 RJ	
789	4		XXS		P61K-0050U	Flange WN ASTM A182 Grade F304H Class 900 ASME B16.5 RJ	
789	6		XXS		P61K-005N1	Flange WN ASTM A182 Grade F304H Class 900 ASME B16.5 RJ	
789	8		XXS		P61K-005N2	Flange WN ASTM A182 Grade F304H Class 900 ASME B16.5 RJ	
797	1		XXS		P61K-0050X	Flange WN ASTM A182 Grade F304H Class 1500 ASME B16.5 RJ	
797	1.5		XXS		P61K-0050Y	Flange WN ASTM A182 Grade F304H Class 1500 ASME B16.5 RJ	
797	2		XXS		P61K-0050Z	Flange WN ASTM A182 Grade F304H Class 1500 ASME B16.5 RJ	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P67K-001EU	Blind flange ASTM A182 Grade F304H Class 600 ASME B16.5 RF	
1	1.5				P67K-001EV	Blind flange ASTM A182 Grade F304H Class 600 ASME B16.5 RF	
1	2				P67K-001EW	Blind flange ASTM A182 Grade F304H Class 600 ASME B16.5 RF	
1	3				P67K-001EX	Blind flange ASTM A182 Grade F304H Class 600 ASME B16.5 RF	
1	4				P67K-001EY	Blind flange ASTM A182 Grade F304H Class 600 ASME B16.5 RF	
1	6				P67K-001EZ	Blind flange ASTM A182 Grade F304H Class 600 ASME B16.5 RF	
1	8				P67K-001PY	Blind flange ASTM A182 Grade F304H Class 600 ASME B16.5 RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P73T-003B6	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	1.5				P73T-003B7	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	2				P73T-003BD	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	3				P73T-003BG	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	4				P73T-003BH	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	6				P73T-003BJ	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	8				P73T-003BK	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
789	3				P75T-00111	Ring joint gasket SS TP316 Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	4				P75T-00112	Ring joint gasket SS TP316 Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	6				P75T-00113	Ring joint gasket SS TP316 Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	8				P75T-00114	Ring joint gasket SS TP316 Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	1				P75T-000NP	Ring joint gasket SS TP316 Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	1.5				P75T-000NR	Ring joint gasket SS TP316 Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	

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GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
797	2				P75T-000NS	Ring joint gasket SS TP316 Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1-6				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B8M Class 2 / A194 Grade 8MA ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	8				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B8M Class 2 / A194 Grade 8MA ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
789	1-3				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B8M Class 2 / A194 Grade 8MA ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
789	4-8				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B8M Class 2 / A194 Grade 8MA ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
797	1-2				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B8M Class 2 / A194 Grade 8MA ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P81K-001D6	Gate valve ASTM A182 Grade F304H Class 600 API 602 Flange ASME B16.5 RF Trim SS304H Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Fluid-2 C.A.=6.0mm	
1	1.5				P81K-001D7	Gate valve ASTM A182 Grade F304H Class 600 API 602 Flange ASME B16.5 RF Trim SS304H Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Fluid-2 C.A.=6.0mm	
1	2				P81L-002TP	Gate valve ASTM A351 Grade CF10 Class 600 API 600 Flange ASME B16.5 RF Trim SS304H Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Fluid-2 C.A.=6.0mm	
1	3				P81L-002TR	Gate valve ASTM A351 Grade CF10 Class 600 API 600 Flange ASME B16.5 RF Trim SS304H Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Fluid-2 C.A.=6.0mm	
1	4				P81L-002TS	Gate valve ASTM A351 Grade CF10 Class 600 API 600 Flange ASME B16.5 RF Trim SS304H Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Fluid-2 C.A.=6.0mm	
1	6				P81L-002TT	Gate valve ASTM A351 Grade CF10 Class 600 API 600 Flange ASME B16.5 RF Trim SS304H Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Fluid-2 C.A.=6.0mm	
1	8				P81L-002TU	Gate valve ASTM A351 Grade CF10 Class 600 API 600 Flange ASME B16.5 RF Trim SS304H Body and disc seats Stellite-6 BB-BG-OS&Y Gear operated Fluid-2 C.A.=6.0mm	
24	1				P81K-001TU	Gate valve ASTM A182 Grade F304H Class 600 API 602 Flange ASME B16.5 RF Trim SS304H Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Full bore Fluid-2 C.A.=6.0mm	
4608	1				P81K-001TV	Gate valve ASTM A182 Grade F304H Class 600 API 602 BW both sides w/ nipples BE - NPT ASTM A312-TP304H Seamless XXS-nipple Trim SS304H Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Fluid-2 C.A.=6.0mm	
521	1				P81K-001UA	Gate valve ASTM A182 Grade F304H Class 800 API 602 SW Trim SS304H Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Fluid-2 C.A.=6.0mm	39

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P83K-0010Y	Check valve ASTM A182 Grade F304H Class 600 API 602 Flange ASME B16.5 RF Trim SS304H Body and disc seats Stellite-6 Lift-type Bolted cover C.A.=6.0mm	
1	1.5				P83K-0010Z	Check valve ASTM A182 Grade F304H Class 600 API 602 Flange ASME B16.5 RF Trim SS304H Body and disc seats Stellite-6 Lift-type Bolted cover C.A.=6.0mm	
521	1				P83K-00110	Check valve ASTM A182 Grade F304H Class 800 API 602 SW Trim SS304H Body and disc seats Stellite-6 Lift-type Bolted cover C.A.=6.0mm	39

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P71K-0009B	Spectacle blank ASTM A182 Grade F304H Class 600 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71K-0009C	Spectacle blank ASTM A182 Grade F304H Class 600 Standard-drawing Flange ASME B16.5 RF	
1	2				P71K-0009D	Spectacle blank ASTM A182 Grade F304H Class 600 Standard-drawing Flange ASME B16.5 RF	
1	3				P71K-0009E	Spectacle blank ASTM A182 Grade F304H Class 600 Standard-drawing Flange ASME B16.5 RF	
1	4				P71K-0009F	Spectacle blank ASTM A182 Grade F304H Class 600 Standard-drawing Flange ASME B16.5 RF	
1	6				P71K-0009G	Spectacle blank ASTM A182 Grade F304H Class 600 Standard-drawing Flange ASME B16.5 RF	

PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	8				P72K-000FL	Paddle blank ASTM A182 Grade F304H Class 600 Standard-drawing Flange ASME B16.5 RF	

PADDLE SPACER (PS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	8				P72K-000FM	Paddle spacer ASTM A182 Grade F304H Class 600 Standard-drawing Flange ASME B16.5 RF	

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BOLT TABLE (B_D0KC01 , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
1	4	0.625	95	P80S-00K7J		
1.5	4	0.750	110	P80S-00K7F		
2	8	0.625	110	P80S-00K93		
3	8	0.750	130	P80S-00K6N		
4	8	0.875	150	P80S-00K20		
6	12	1.000	175	P80S-00JY2		
8	12	1.125	195	P80S-00JR1		

BOLT TABLE (B_D0KC01_789 , STUD ASME RJ, OPTION CODE 789)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
1	4	0.875	130	P80S-00K24	R16	
1.5	4	1.000	140	P80S-00JY9	R20	
2	8	0.875	150	P80S-00K20	R24	
3	8	0.875	150	P80S-00K20	R31	P75T-00111
4	8	1.125	175	P80S-00JR5	R37	P75T-00112
6	12	1.125	200	P80S-00JR0	R45	P75T-00113
8	12	1.375	260	P80S-00L5U	R49	P75T-00114

BOLT TABLE (B_D0KC01_797 , STUD ASME RJ, OPTION CODE 797)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
1	4	0.875	130	P80S-00K24	R16	P75T-000NP
1.5	4	1.000	140	P80S-00JY9	R20	P75T-000NR
2	8	0.875	150	P80S-00K20	R24	P75T-000NS
3	8	1.125	180		R35	
4	8	1.250	230		R39	
6	12	1.375	300		R46	
8	12	1.625	345		R50	

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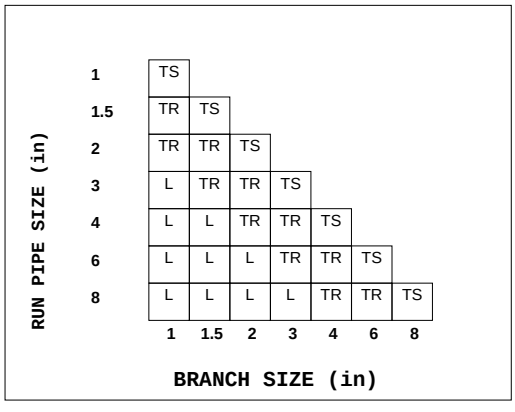
BRANCH TABLE (T_D0KC01)



L : OUTLET
TR : REDUCING TEE
TS : STRAIGHT TEE

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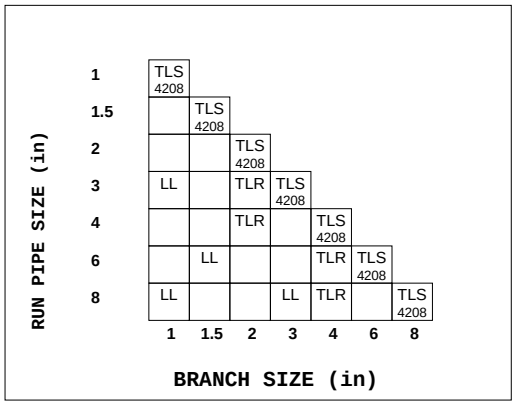
BRANCH TABLE (T_D0KC01_2)



LL : LATROLET
TLR : REDUCING LATERAL TEE
TLS : STRAIGHT LATERAL TEE

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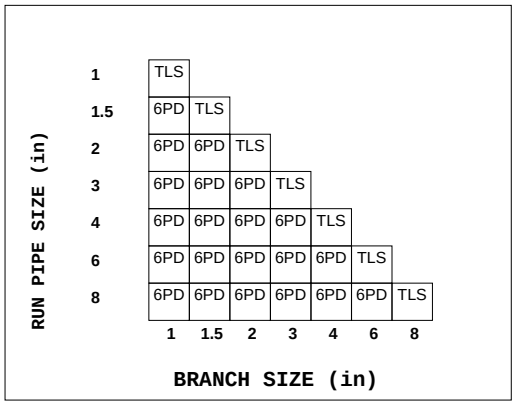
BRANCH TABLE (T_D0KC01_3)



TLS : STRAIGHT LATERAL TEE
6PD : REINFORCING PAD 60 DEG

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PIPING CLASS

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Material : SS304H
Rating : ASME CLASS 600
Flange Face : RF
C.A.(mm) : 0.00
Gasket : Spiral Wound
Service : PROCESS - GENERAL PROCESS, NON SOUR, NON CORROSIVE:
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
7	MATERIAL SHALL HAVE 0.04% MIN. CARBON CONTENT
24	FOR ALL RELEVANT PIPING CLASSES WITH LINE DESIGN TEMPERATURE ABOVE 427DEGC, IN SPIRAL WOUND GASKET, SUITABLE GASKET FILLER MATERIAL SUCH AS COMBINATION OF MICA LAYERS AND GRAPHITE FILLERS OR EQUIVALENT SHALL BE REVIEWED AND SELECTED OR AS DEFINED BY THE LICENSOR

DETAIL NOTES :

NO.	DESCRIPTION
39	TO BE USED FOR IA/NIROGEN INJECTION LINE ONLY.

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
24	FULL PORT (V)
521	SW (V,X)
541	NPT(F) (CA,F,L)
789	CLASS 900 (B,F,G)
797	CLASS 1500 (B,F,G)
4608	VALVE WITH NIPPLES (V)
4614	SW VALVE WITH NIPPLES (V)

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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P01J-0028H	Pipe ASTM A312 Grade TP304H Seamless ASME B36.10M/B36.19M PE	
1	0.75		SCH80S		P01J-0028J	Pipe ASTM A312 Grade TP304H Seamless ASME B36.10M/B36.19M PE	
1	1		SCH80S		P01J-0028K	Pipe ASTM A312 Grade TP304H Seamless ASME B36.10M/B36.19M PE	
1	1.5		SCH80S		P01J-0028L	Pipe ASTM A312 Grade TP304H Seamless ASME B36.10M/B36.19M PE	
1	2		SCH10S		P01J-002A9	Pipe ASTM A312 Grade TP304H Seamless ASME B36.10M/B36.19M BE	
1	3		SCH40S		P01J-0028N	Pipe ASTM A312 Grade TP304H Seamless ASME B36.10M/B36.19M BE	
1	4		SCH40S		P01J-0028P	Pipe ASTM A312 Grade TP304H Seamless ASME B36.10M/B36.19M BE	
1	6		SCH40S		P01J-0028R	Pipe ASTM A312 Grade TP304H Seamless ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P02J-001RV	90 degree elbow ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW Long radius	
1	0.75		SCH80S		P02J-001RW	90 degree elbow ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW Long radius	
1	1		SCH80S		P02J-001RX	90 degree elbow ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW Long radius	
1	1.5		SCH80S		P02J-001RY	90 degree elbow ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW Long radius	
1	2		SCH10S		P02J-001TJ	90 degree elbow ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW Long radius	
1	3		SCH40S		P02J-001S0	90 degree elbow ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW Long radius	
1	4		SCH40S		P02J-001S1	90 degree elbow ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW Long radius	
1	6		SCH40S		P02J-001S2	90 degree elbow ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P03J-001N8	45 degree elbow ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW Long radius	
1	0.75		SCH80S		P03J-001N9	45 degree elbow ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW Long radius	
1	1		SCH80S		P03J-001NA	45 degree elbow ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW Long radius	
1	1.5		SCH80S		P03J-001NB	45 degree elbow ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW Long radius	
1	2		SCH10S		P03J-001PY	45 degree elbow ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW Long radius	
1	3		SCH40S		P03J-001ND	45 degree elbow ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW Long radius	
1	4		SCH40S		P03J-001NE	45 degree elbow ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW Long radius	
1	6		SCH40S		P03J-001NF	45 degree elbow ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P21J-001ER	Straight tee ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	0.75		SCH80S		P21J-001ES	Straight tee ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	1		SCH80S		P21J-001ET	Straight tee ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	1.5		SCH80S		P21J-001EU	Straight tee ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	2		SCH10S		P21J-001GE	Straight tee ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	3		SCH40S		P21J-001EW	Straight tee ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	4		SCH40S		P21J-001EX	Straight tee ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	6		SCH40S		P21J-001EY	Straight tee ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	

STRAIGHT LATERAL TEE (TLS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75		SCH80S		P22J-0006E	Straight lateral-tee ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW 60 degree	
1	1		SCH80S		P22J-0006F	Straight lateral-tee ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW 60 degree	
1	1.5		SCH80S		P22J-0006G	Straight lateral-tee ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW 60 degree	
1	2		SCH10S		P22J-0006H	Straight lateral-tee ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW 60 degree	
1	3		SCH40S		P22J-00071	Straight lateral-tee ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW 60 degree	
1	4		SCH40S		P22J-00072	Straight lateral-tee ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW 60 degree	
1	6		SCH40S		P22J-0006L	Straight lateral-tee ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW 60 degree	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75	SCH80S	SCH80S	P24J-0066G	Reducing tee ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	1.5	0.75	SCH80S	SCH80S	P24J-0066H	Reducing tee ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	1.5	1	SCH80S	SCH80S	P24J-0066J	Reducing tee ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	2	1	SCH10S	SCH80S	P24J-0069Y	Reducing tee ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	

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REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2	1.5	SCH10S	SCH80S	P24J-0069Z	Reducing tee ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	3	1.5	SCH40S	SCH80S	P24J-0066M	Reducing tee ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	3	2	SCH40S	SCH10S	P24J-007N1	Reducing tee ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	4	2	SCH40S	SCH10S	P24J-007N2	Reducing tee ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	4	3	SCH40S	SCH40S	P24J-0066R	Reducing tee ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	6	3	SCH40S	SCH40S	P24J-0066S	Reducing tee ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	6	4	SCH40S	SCH40S	P24J-0066T	Reducing tee ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH80S	SCH80S	P27J-00558	Concentric reducer ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	1	0.5	SCH80S	SCH80S	P27J-00559	Concentric reducer ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	1	0.75	SCH80S	SCH80S	P27J-0055A	Concentric reducer ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	1.5	0.5	SCH80S	SCH80S	P27J-0055B	Concentric reducer ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	1.5	0.75	SCH80S	SCH80S	P27J-0055C	Concentric reducer ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	1.5	1	SCH80S	SCH80S	P27J-0055D	Concentric reducer ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	2	0.75	SCH10S	SCH80S	P27J-0059B	Concentric reducer ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	2	1	SCH10S	SCH80S	P27J-0059C	Concentric reducer ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	2	1.5	SCH10S	SCH80S	P27J-0059D	Concentric reducer ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	3	1.5	SCH40S	SCH80S	P27J-0055H	Concentric reducer ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	3	2	SCH40S	SCH10S	P27J-006EX	Concentric reducer ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	4	1.5	SCH40S	SCH80S	P27J-0055K	Concentric reducer ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	4	2	SCH40S	SCH10S	P27J-006EY	Concentric reducer ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	4	3	SCH40S	SCH40S	P27J-0055M	Concentric reducer ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	6	3	SCH40S	SCH40S	P27J-0055N	Concentric reducer ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	6	4	SCH40S	SCH40S	P27J-0055P	Concentric reducer ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH80S	SCH80S	P28J-00563	Eccentric reducer ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	1	0.5	SCH80S	SCH80S	P28J-00564	Eccentric reducer ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	1	0.75	SCH80S	SCH80S	P28J-00565	Eccentric reducer ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	1.5	0.5	SCH80S	SCH80S	P28J-00566	Eccentric reducer ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	1.5	0.75	SCH80S	SCH80S	P28J-00567	Eccentric reducer ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	1.5	1	SCH80S	SCH80S	P28J-00568	Eccentric reducer ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	2	0.75	SCH10S	SCH80S	P28J-005A6	Eccentric reducer ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	2	1	SCH10S	SCH80S	P28J-005A7	Eccentric reducer ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	2	1.5	SCH10S	SCH80S	P28J-005A8	Eccentric reducer ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	3	1.5	SCH40S	SCH80S	P28J-0056C	Eccentric reducer ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	3	2	SCH40S	SCH10S	P28J-006FX	Eccentric reducer ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	4	1.5	SCH40S	SCH80S	P28J-0056E	Eccentric reducer ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	4	2	SCH40S	SCH10S	P28J-006FY	Eccentric reducer ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	4	3	SCH40S	SCH40S	P28J-0056G	Eccentric reducer ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	6	3	SCH40S	SCH40S	P28J-0056H	Eccentric reducer ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	6	4	SCH40S	SCH40S	P28J-0056J	Eccentric reducer ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P29J-0019H	Cap ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	0.75		SCH80S		P29J-0019J	Cap ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	1		SCH80S		P29J-0019K	Cap ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	1.5		SCH80S		P29J-0019L	Cap ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	2		SCH10S		P29J-001AU	Cap ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	3		SCH40S		P29J-0019N	Cap ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	4		SCH40S		P29J-0019P	Cap ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
1	6		SCH40S		P29J-0019R	Cap ASTM A403 Grade WP304H Class S Seamless ASME B16.9 BW	
541	0.75				P29K-0004C	Cap ASTM A182 Grade F304H Class 3000 ASME B16.11 NPT	

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STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P41J-001U3	Straight nipple ASTM A312 Grade TP304H Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		SCH80S		P41J-001U4	Straight nipple ASTM A312 Grade TP304H Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		SCH80S		P41J-001U5	Straight nipple ASTM A312 Grade TP304H Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		SCH80S		P41J-001U6	Straight nipple ASTM A312 Grade TP304H Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
541	1	0.75			P31K-00FNB	Outlet ASTM A182 Grade F304H Class 3000 MSS SP-97 NPT	
541	1.5	0.75			P31K-00FNA	Outlet ASTM A182 Grade F304H Class 3000 MSS SP-97 NPT	
541	2 - 2.5	0.75			P31K-00GH9	Outlet ASTM A182 Grade F304H Class 3000 MSS SP-97 NPT	
541	3 - 5	0.75			P31K-00GHA	Outlet ASTM A182 Grade F304H Class 3000 MSS SP-97 NPT	
541	6 - 12	0.75			P31K-00GHB	Outlet ASTM A182 Grade F304H Class 3000 MSS SP-97 NPT	
1	2	0.75	SCH10S	SCH80S	P31K-00DS4	Outlet ASTM A182 Grade F304H MSS SP-97 BW	
1	3	0.75	SCH40S	SCH80S	P31K-00DN3	Outlet ASTM A182 Grade F304H MSS SP-97 BW	
1	4	0.75	SCH40S	SCH80S	P31K-00DN5	Outlet ASTM A182 Grade F304H MSS SP-97 BW	
1	6	0.75	SCH40S	SCH80S	P31K-00DN8	Outlet ASTM A182 Grade F304H MSS SP-97 BW	
1	3	1	SCH40S	SCH80S	P31K-00DN4	Outlet ASTM A182 Grade F304H MSS SP-97 BW	
1	4	1	SCH40S	SCH80S	P31K-00DN6	Outlet ASTM A182 Grade F304H MSS SP-97 BW	
1	6	1	SCH40S	SCH80S	P31K-00DN9	Outlet ASTM A182 Grade F304H MSS SP-97 BW	
1	4	1.5	SCH40S	SCH80S	P31K-00DN7	Outlet ASTM A182 Grade F304H MSS SP-97 BW	
1	6	1.5	SCH40S	SCH80S	P31K-00DNA	Outlet ASTM A182 Grade F304H MSS SP-97 BW	
1	6	2	SCH40S	SCH10S	P31K-00DSA	Outlet ASTM A182 Grade F304H MSS SP-97 BW	

LATROLET (LL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2	0.75	SCH10S	SCH80S	P34K-000Z1	Lateral-outlet ASTM A182 Grade F304H MSS SP-97 BW 45 degree	
1	3	0.75	SCH40S	SCH80S	P34K-000ZE	Lateral-outlet ASTM A182 Grade F304H MSS SP-97 BW 45 degree	
1	4	0.75	SCH40S	SCH80S	P34K-000Z6	Lateral-outlet ASTM A182 Grade F304H MSS SP-97 BW 45 degree	
1	6	0.75	SCH40S	SCH80S	P34K-000ZB	Lateral-outlet ASTM A182 Grade F304H MSS SP-97 BW 45 degree	
1	6	1.5	SCH40S	SCH80S	P34K-000ZF	Lateral-outlet ASTM A182 Grade F304H MSS SP-97 BW 45 degree	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30K-0004M	Plug ASTM A182 Grade F304H ASME B16.11 NPT Round head	
1	0.75				P30K-0004N	Plug ASTM A182 Grade F304H ASME B16.11 NPT Round head	
1	1				P30K-0004P	Plug ASTM A182 Grade F304H ASME B16.11 NPT Round head	
1	1.5				P30K-0004R	Plug ASTM A182 Grade F304H ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P61K-004TC	Flange WN ASTM A182 Grade F304H Class 600 ASME B16.5 RF	
1	0.75		SCH80S		P61K-004TD	Flange WN ASTM A182 Grade F304H Class 600 ASME B16.5 RF	
1	1		SCH80S		P61K-004TE	Flange WN ASTM A182 Grade F304H Class 600 ASME B16.5 RF	
1	1.5		SCH80S		P61K-004TF	Flange WN ASTM A182 Grade F304H Class 600 ASME B16.5 RF	
1	2		SCH10S		P61K-004YY	Flange WN ASTM A182 Grade F304H Class 600 ASME B16.5 RF	
1	3		SCH40S		P61K-004TH	Flange WN ASTM A182 Grade F304H Class 600 ASME B16.5 RF	
1	4		SCH40S		P61K-004TJ	Flange WN ASTM A182 Grade F304H Class 600 ASME B16.5 RF	
1	6		SCH40S		P61K-004TK	Flange WN ASTM A182 Grade F304H Class 600 ASME B16.5 RF	
541	0.5				P61K-006AC	Flange NPT ASTM A182 Grade F304H Class 600 ASME B16.5 RF	
541	0.75				P61K-0060C	Flange NPT ASTM A182 Grade F304H Class 600 ASME B16.5 RF	
789	3		SCH40S		P61K-004TL	Flange WN ASTM A182 Grade F304H Class 900 ASME B16.5 RJ	
789	4		SCH40S		P61K-004TM	Flange WN ASTM A182 Grade F304H Class 900 ASME B16.5 RJ	
789	6		SCH40S		P61K-004TN	Flange WN ASTM A182 Grade F304H Class 900 ASME B16.5 RJ	
797	0.5		SCH80S		P61K-004TP	Flange WN ASTM A182 Grade F304H Class 1500 ASME B16.5 RJ	
797	0.75		SCH80S		P61K-004TR	Flange WN ASTM A182 Grade F304H Class 1500 ASME B16.5 RJ	
797	1		SCH80S		P61K-004TS	Flange WN ASTM A182 Grade F304H Class 1500 ASME B16.5 RJ	
797	1.5		SCH80S		P61K-004TT	Flange WN ASTM A182 Grade F304H Class 1500 ASME B16.5 RJ	
797	2		SCH10S		P61K-005WZ	Flange WN ASTM A182 Grade F304H Class 1500 ASME B16.5 RJ	

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BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67K-001ES	Blind flange ASTM A182 Grade F304H Class 600 ASME B16.5 RF	
1	0.75				P67K-001ET	Blind flange ASTM A182 Grade F304H Class 600 ASME B16.5 RF	
1	1				P67K-001EU	Blind flange ASTM A182 Grade F304H Class 600 ASME B16.5 RF	
1	1.5				P67K-001EV	Blind flange ASTM A182 Grade F304H Class 600 ASME B16.5 RF	
1	2				P67K-001EW	Blind flange ASTM A182 Grade F304H Class 600 ASME B16.5 RF	
1	3				P67K-001EX	Blind flange ASTM A182 Grade F304H Class 600 ASME B16.5 RF	
1	4				P67K-001EY	Blind flange ASTM A182 Grade F304H Class 600 ASME B16.5 RF	
1	6				P67K-001EZ	Blind flange ASTM A182 Grade F304H Class 600 ASME B16.5 RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-003B4	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	0.75				P73T-003B5	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	1				P73T-003B6	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	1.5				P73T-003B7	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	2				P73T-003BD	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	3				P73T-003BG	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	4				P73T-003BH	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	6				P73T-003BJ	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
789	3				P75T-00111	Ring joint gasket SS TP316 Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	4				P75T-00112	Ring joint gasket SS TP316 Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	6				P75T-00113	Ring joint gasket SS TP316 Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	0.5				P75T-000NM	Ring joint gasket SS TP316 Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	0.75				P75T-000NN	Ring joint gasket SS TP316 Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	1				P75T-000NP	Ring joint gasket SS TP316 Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	1.5				P75T-000NR	Ring joint gasket SS TP316 Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	2				P75T-000NS	Ring joint gasket SS TP316 Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-6				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B8M Class 2 / A194 Grade 8MA ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
789	1-3				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B8M Class 2 / A194 Grade 8MA ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
789	4-6				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B8M Class 2 / A194 Grade 8MA ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
797	0.5-2				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B8M Class 2 / A194 Grade 8MA ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81K-001D0	Gate valve ASTM A182 Grade F304H Class 600 API 602 Flange ASME B16.5 RF Trim SS304H Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Fluid-2	
1	0.75				P81K-001D1	Gate valve ASTM A182 Grade F304H Class 600 API 602 Flange ASME B16.5 RF Trim SS304H Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Fluid-2	
1	1				P81K-001D2	Gate valve ASTM A182 Grade F304H Class 600 API 602 Flange ASME B16.5 RF Trim SS304H Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Fluid-2	
1	1.5				P81K-001D3	Gate valve ASTM A182 Grade F304H Class 600 API 602 Flange ASME B16.5 RF Trim SS304H Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Fluid-2	
1	2				P81L-002TK	Gate valve ASTM A351 Grade CF10 Class 600 API 600 Flange ASME B16.5 RF Trim SS304H Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Fluid-2	
1	3				P81L-002TL	Gate valve ASTM A351 Grade CF10 Class 600 API 600 Flange ASME B16.5 RF Trim SS304H Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Fluid-2	
1	4				P81L-002TM	Gate valve ASTM A351 Grade CF10 Class 600 API 600 Flange ASME B16.5 RF Trim SS304H Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Fluid-2	
1	6				P81L-002TN	Gate valve ASTM A351 Grade CF10 Class 600 API 600 Flange ASME B16.5 RF Trim SS304H Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Fluid-2	
24	0.75				P81K-001TJ	Gate valve ASTM A182 Grade F304H Class 600 API 602 Flange ASME B16.5 RF Trim SS304H Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Full bore Fluid-2	
4608	0.75				P81K-001P4	Gate valve ASTM A182 Grade F304H Class 600 API 602 BW both sides w/ nipples BE - NPT ASTM A312-TP304H Seamless Sch80S-nipple Trim SS304H Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Fluid-2	
4614	0.75				P81K-001UD	Gate valve ASTM A182 Grade F304H Class 800 API 602 SW both sides w/ nipples PE - NPT ASTM A312-TP304H Seamless Sch80S-nipple Trim SS304H Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Fluid-2	39
521	1.5				P81K-001UC	Gate valve ASTM A182 Grade F304H Class 800 API 602 SW Trim SS304H Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Fluid-2	39

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GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82K-000YL	Globe valve ASTM A182 Grade F304H Class 600 API 602 Flange ASME B16.5 RF Trim SS304H Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Fluid-2	
1	0.75				P82K-000YM	Globe valve ASTM A182 Grade F304H Class 600 API 602 Flange ASME B16.5 RF Trim SS304H Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Fluid-2	
1	1				P82K-000YN	Globe valve ASTM A182 Grade F304H Class 600 API 602 Flange ASME B16.5 RF Trim SS304H Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Fluid-2	
1	1.5				P82K-000YP	Globe valve ASTM A182 Grade F304H Class 600 API 602 Flange ASME B16.5 RF Trim SS304H Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Fluid-2	
1	2				P82L-001JG	Globe valve ASTM A351 Grade CF10 Class 600 BS 1873 Flange ASME B16.5 RF Trim SS304H Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Fluid-2	
1	3				P82L-001JH	Globe valve ASTM A351 Grade CF10 Class 600 BS 1873 Flange ASME B16.5 RF Trim SS304H Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Fluid-2	
1	4				P82L-001JJ	Globe valve ASTM A351 Grade CF10 Class 600 BS 1873 Flange ASME B16.5 RF Trim SS304H Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Fluid-2	
1	6				P82L-001Y2	Globe valve ASTM A351 Grade CF10 Class 600 BS 1873 Flange ASME B16.5 RF Trim SS304H Body and disc seats Stellite-6 BB-BG-OS&Y Gear operated Fluid-2	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83K-000T1	Check valve ASTM A182 Grade F304H Class 600 API 602 Flange ASME B16.5 RF Trim SS304H Body and disc seats Stellite-6 Lift-type Bolted cover	
1	0.75				P83K-000T2	Check valve ASTM A182 Grade F304H Class 600 API 602 Flange ASME B16.5 RF Trim SS304H Body and disc seats Stellite-6 Lift-type Bolted cover	
1	1				P83K-000T3	Check valve ASTM A182 Grade F304H Class 600 API 602 Flange ASME B16.5 RF Trim SS304H Body and disc seats Stellite-6 Lift-type Bolted cover	
1	1.5				P83K-000T4	Check valve ASTM A182 Grade F304H Class 600 API 602 Flange ASME B16.5 RF Trim SS304H Body and disc seats Stellite-6 Lift-type Bolted cover	
1	2				P83L-001BW	Check valve ASTM A351 Grade CF10 Class 600 BS 1868 Flange ASME B16.5 RF Trim SS304H Body and disc seats Stellite-6 Swing-type Bolted cover	
1	3				P83L-001BX	Check valve ASTM A351 Grade CF10 Class 600 BS 1868 Flange ASME B16.5 RF Trim SS304H Body and disc seats Stellite-6 Swing-type Bolted cover	
1	4				P83L-001BY	Check valve ASTM A351 Grade CF10 Class 600 BS 1868 Flange ASME B16.5 RF Trim SS304H Body and disc seats Stellite-6 Swing-type Bolted cover	
521	1.5				P83K-00112	Check valve ASTM A182 Grade F304H Class 800 API 602 SW Trim SS304H Body and disc seats Stellite-6 Lift-type Bolted cover	39

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71K-00099	Spectacle blank ASTM A182 Grade F304H Class 600 Standard-drawing Flange ASME B16.5 RF	
1	0.75				P71K-0009A	Spectacle blank ASTM A182 Grade F304H Class 600 Standard-drawing Flange ASME B16.5 RF	
1	1				P71K-0009B	Spectacle blank ASTM A182 Grade F304H Class 600 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71K-0009C	Spectacle blank ASTM A182 Grade F304H Class 600 Standard-drawing Flange ASME B16.5 RF	
1	2				P71K-0009D	Spectacle blank ASTM A182 Grade F304H Class 600 Standard-drawing Flange ASME B16.5 RF	
1	3				P71K-0009E	Spectacle blank ASTM A182 Grade F304H Class 600 Standard-drawing Flange ASME B16.5 RF	
1	4				P71K-0009F	Spectacle blank ASTM A182 Grade F304H Class 600 Standard-drawing Flange ASME B16.5 RF	
1	6				P71K-0009G	Spectacle blank ASTM A182 Grade F304H Class 600 Standard-drawing Flange ASME B16.5 RF	

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BOLT TABLE (B_D0KP01 , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	80	P80S-00KAP		
0.75	4	0.625	90	P80S-00K7K		
1	4	0.625	95	P80S-00K7J		
1.5	4	0.750	110	P80S-00K7F		
2	8	0.625	110	P80S-00K93		
3	8	0.750	130	P80S-00K6N		
4	8	0.875	150	P80S-00K20		
6	12	1.000	175	P80S-00JY2		

BOLT TABLE (B_D0KP01_789 , STUD ASME RJ, OPTION CODE 789)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	110		R12	
0.75	4	0.750	115		R14	
1	4	0.875	130	P80S-00K24	R16	
1.5	4	1.000	140	P80S-00JY9	R20	
2	8	0.875	150	P80S-00K20	R24	
3	8	0.875	150	P80S-00K20	R31	P75T-00111
4	8	1.125	175	P80S-00JR5	R37	P75T-00112
6	12	1.125	200	P80S-00JR0	R45	P75T-00113

BOLT TABLE (B_D0KP01_797 , STUD ASME RJ, OPTION CODE 797)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	110	P80S-00K7F	R12	P75T-000NM
0.75	4	0.750	115	P80S-00K7E	R14	P75T-000NN
1	4	0.875	130	P80S-00K24	R16	P75T-000NP
1.5	4	1.000	140	P80S-00JY9	R20	P75T-000NR
2	8	0.875	150	P80S-00K20	R24	P75T-000NS
3	8	1.125	180		R35	
4	8	1.250	230		R39	
6	12	1.375	300		R46	

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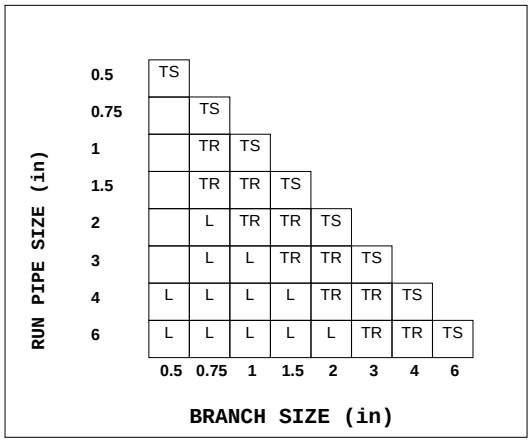
BRANCH TABLE (T_D0KP01)



L : OUTLET
TS : STRAIGHT TEE
TR : REDUCING TEE

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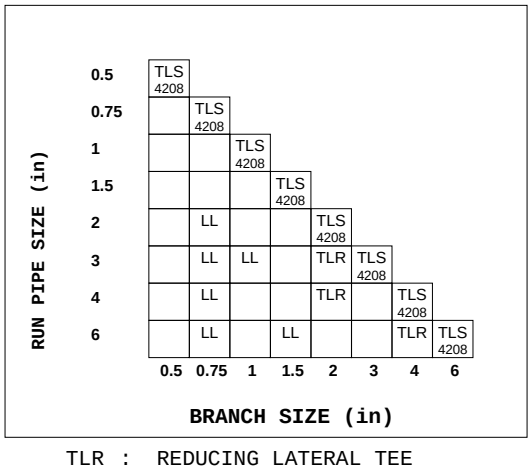
BRANCH TABLE (T_D0KP01_2)



TLR : REDUCING LATERAL TEE
TLS : STRAIGHT LATERAL TEE
LL : LATROLET

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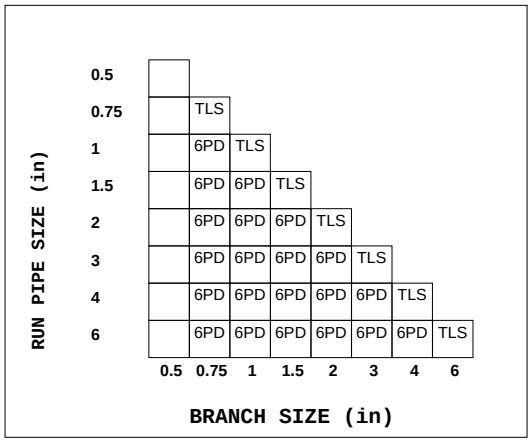
BRANCH TABLE (T_D0KP01_3)



TLS : STRAIGHT LATERAL TEE
6PD : REINFORCING PAD 60 DEG

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PIPING CLASS

D0LG REV NO. 2

Material : SS316L
Rating : ASME CLASS 600
Flange Face : RF
C.A.(mm) : 0.00
Gasket : Spiral Wound
Service : UTILITY - POWER PIPING, CORROSIVE SERVICE : / CHEMICAL (PHOSPHATE DOSING TO HRSG)
Design Code : ASME B31.1
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
541	NPT(F) (CA,L)
714	SW - NPT(F) (V)
797	CLASS 1500 (B,F,G)
4603	WITH ALTERNATIVE GLAND PACKING MATERIAL (V)

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PIPING CLASS
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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P01J-001FS	Pipe ASME SA312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE	
1	0.75		SCH80S		P01J-001FT	Pipe ASME SA312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE	
1	1		SCH80S		P01J-001FU	Pipe ASME SA312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE	
1	1.5		SCH80S		P01J-001FV	Pipe ASME SA312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE	
1	2		SCH10S		P01J-0028D	Pipe ASME SA312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P02K-0002J	90 degree elbow ASME SA182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	0.75				P02K-0002K	90 degree elbow ASME SA182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	1				P02K-0002L	90 degree elbow ASME SA182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	1.5				P02K-0002M	90 degree elbow ASME SA182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	2		SCH10S		P02J-001RJ	90 degree elbow ASME SA403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P03K-0002F	45 degree elbow ASME SA182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	0.75				P03K-0002G	45 degree elbow ASME SA182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	1				P03K-0002H	45 degree elbow ASME SA182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	1.5				P03K-0002J	45 degree elbow ASME SA182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	2		SCH10S		P03J-001MY	45 degree elbow ASME SA403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P21K-0002H	Straight tee ASME SA182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	0.75				P21K-0002J	Straight tee ASME SA182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	1				P21K-0002K	Straight tee ASME SA182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	1.5				P21K-0002L	Straight tee ASME SA182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	2		SCH10S		P21J-001EE	Straight tee ASME SA403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75			P24K-0003E	Reducing tee ASME SA182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	1.5	0.75			P24K-0003F	Reducing tee ASME SA182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	1.5	1			P24K-0003G	Reducing tee ASME SA182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	2	1	SCH10S	SCH80S	P24J-0065E	Reducing tee ASME SA403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	2	1.5	SCH10S	SCH80S	P24J-0065F	Reducing tee ASME SA403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P29K-00030	Cap ASME SA182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	0.75				P29K-00031	Cap ASME SA182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	1				P29K-00032	Cap ASME SA182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	1.5				P29K-00033	Cap ASME SA182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	2		SCH10S		P29J-00197	Cap ASME SA403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
541	0.75				P29K-0003T	Cap ASME SA182 Grade F316/F316L dual grade Class 3000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P41J-001TG	Straight nipple ASME SA312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		SCH80S		P41J-001TH	Straight nipple ASME SA312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		SCH80S		P41J-001TJ	Straight nipple ASME SA312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		SCH80S		P41J-001TK	Straight nipple ASME SA312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

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CON SWAGED NIPPLE (SNC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH80S	SCH80S	P42J-000AP	Concentric swaged nipple ASME SA403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	SCH80S	SCH80S	P42J-000AR	Concentric swaged nipple ASME SA403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	SCH80S	SCH80S	P42J-000AS	Concentric swaged nipple ASME SA403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	SCH80S	SCH80S	P42J-000AT	Concentric swaged nipple ASME SA403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	SCH80S	SCH80S	P42J-000AU	Concentric swaged nipple ASME SA403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	SCH80S	SCH80S	P42J-000AV	Concentric swaged nipple ASME SA403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	SCH10S	SCH80S	P42J-000FL	Concentric swaged nipple ASME SA403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	SCH10S	SCH80S	P42J-000FM	Concentric swaged nipple ASME SA403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	SCH10S	SCH80S	P42J-000FN	Concentric swaged nipple ASME SA403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	SCH10S	SCH80S	P42J-000FP	Concentric swaged nipple ASME SA403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	

ECC SWAGED NIPPLE (SNE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH80S	SCH80S	P43J-00093	Eccentric swaged nipple ASME SA403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	SCH80S	SCH80S	P43J-00094	Eccentric swaged nipple ASME SA403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	SCH80S	SCH80S	P43J-00095	Eccentric swaged nipple ASME SA403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	SCH80S	SCH80S	P43J-00096	Eccentric swaged nipple ASME SA403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	SCH80S	SCH80S	P43J-00097	Eccentric swaged nipple ASME SA403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	SCH80S	SCH80S	P43J-00098	Eccentric swaged nipple ASME SA403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	SCH10S	SCH80S	P43J-000CJ	Eccentric swaged nipple ASME SA403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	SCH10S	SCH80S	P43J-000CK	Eccentric swaged nipple ASME SA403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	SCH10S	SCH80S	P43J-000CL	Eccentric swaged nipple ASME SA403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	SCH10S	SCH80S	P43J-000CM	Eccentric swaged nipple ASME SA403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	

COUPLING (CPS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P47K-0004C	Coupling ASME SA182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW - SW	
1	0.75				P47K-0004D	Coupling ASME SA182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW - SW	
1	1				P47K-0004E	Coupling ASME SA182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW - SW	
1	1.5				P47K-0004F	Coupling ASME SA182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW - SW	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2 - 2.5	0.75			P31K-00GG1	Outlet ASME SA182 Grade F316/F316L dual grade Class 3000 MSS SP-97 SW	
541	1	0.75			P31K-00FMF	Outlet ASME SA182 Grade F316/F316L dual grade Class 3000 MSS SP-97 NPT	
541	1.5	0.75			P31K-00FME	Outlet ASME SA182 Grade F316/F316L dual grade Class 3000 MSS SP-97 NPT	
541	2 - 2.5	0.75			P31K-00GG8	Outlet ASME SA182 Grade F316/F316L dual grade Class 3000 MSS SP-97 NPT	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30K-0002R	Plug ASME SA182 Grade F316/F316L dual grade ASME B16.11 NPT Round head	
1	0.75				P30K-0002S	Plug ASME SA182 Grade F316/F316L dual grade ASME B16.11 NPT Round head	
1	1				P30K-0002T	Plug ASME SA182 Grade F316/F316L dual grade ASME B16.11 NPT Round head	
1	1.5				P30K-0002U	Plug ASME SA182 Grade F316/F316L dual grade ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P61K-004UB	Flange SW ASME SA182 Grade F316/F316L dual grade Class 600 ASME B16.5 RF	
1	0.75		SCH80S		P61K-004UC	Flange SW ASME SA182 Grade F316/F316L dual grade Class 600 ASME B16.5 RF	
1	1		SCH80S		P61K-004UD	Flange SW ASME SA182 Grade F316/F316L dual grade Class 600 ASME B16.5 RF	
1	1.5		SCH80S		P61K-004UE	Flange SW ASME SA182 Grade F316/F316L dual grade Class 600 ASME B16.5 RF	

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FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2		SCH10S		P61K-004UF	Flange WN ASME SA182 Grade F316/F316L dual grade Class 600 ASME B16.5 RF	
797	0.5		SCH80S		P61K-004UG	Flange SW ASME SA182 Grade F316/F316L dual grade Class 1500 ASME B16.5 RJ	
797	0.75		SCH80S		P61K-004UH	Flange SW ASME SA182 Grade F316/F316L dual grade Class 1500 ASME B16.5 RJ	
797	1		SCH80S		P61K-004UJ	Flange SW ASME SA182 Grade F316/F316L dual grade Class 1500 ASME B16.5 RJ	
797	1.5		SCH80S		P61K-004UK	Flange SW ASME SA182 Grade F316/F316L dual grade Class 1500 ASME B16.5 RJ	
797	2		SCH10S		P61K-004UL	Flange WN ASME SA182 Grade F316/F316L dual grade Class 1500 ASME B16.5 RJ	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67K-001F5	Blind flange ASME SA182 Grade F316/F316L dual grade Class 600 ASME B16.5 RF	
1	0.75				P67K-001F6	Blind flange ASME SA182 Grade F316/F316L dual grade Class 600 ASME B16.5 RF	
1	1				P67K-001F7	Blind flange ASME SA182 Grade F316/F316L dual grade Class 600 ASME B16.5 RF	
1	1.5				P67K-001F8	Blind flange ASME SA182 Grade F316/F316L dual grade Class 600 ASME B16.5 RF	
1	2				P67K-001F9	Blind flange ASME SA182 Grade F316/F316L dual grade Class 600 ASME B16.5 RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000J8	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000J9	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000JA	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000JB	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000JH	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
797	0.5				P75T-000NM	Ring joint gasket SS TP316 Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	0.75				P75T-000NN	Ring joint gasket SS TP316 Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	1				P75T-000NP	Ring joint gasket SS TP316 Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	1.5				P75T-000NR	Ring joint gasket SS TP316 Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	2				P75T-000NS	Ring joint gasket SS TP316 Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-2				See Attached Bolt Table	Bolt and Nut ASME SA193 Grade B7 / SA194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
797	0.5-2				See Attached Bolt Table	Bolt and Nut ASME SA193 Grade B7 / SA194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81K-0010L	Gate valve ASME SA182 Grade F316/F316L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	0.75				P81K-0010M	Gate valve ASME SA182 Grade F316/F316L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	1				P81K-0010N	Gate valve ASME SA182 Grade F316/F316L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	1.5				P81K-0010P	Gate valve ASME SA182 Grade F316/F316L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	2				P81L-0021W	Gate valve ASME SA351 Grade CF8M Class 600 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
4603	0.5				P81K-001DL	Gate valve ASME SA182 Grade F316/F316L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated Fluid-1	
4603	0.75				P81K-001DM	Gate valve ASME SA182 Grade F316/F316L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated Fluid-1	
4603	1				P81K-001DN	Gate valve ASME SA182 Grade F316/F316L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated Fluid-1	
4603	1.5				P81K-001DP	Gate valve ASME SA182 Grade F316/F316L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated Fluid-1	
714	0.5				P81K-001LD	Gate valve ASME SA182 Grade F316/F316L dual grade Class 800 API 602 SW - NPT Trim number 12 BB-BG-OS&Y Handwheel operated	
714	0.75				P81K-001G2	Gate valve ASME SA182 Grade F316/F316L dual grade Class 800 API 602 SW - NPT Trim number 12 BB-BG-OS&Y Handwheel operated	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82K-000S5	Globe valve ASME SA182 Grade F316/F316L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	0.75				P82K-000S6	Globe valve ASME SA182 Grade F316/F316L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	

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GLOBE VALVE (W)							
OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P82K-000S7	Globe valve ASME SA182 Grade F316/F316L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	1.5				P82K-000S8	Globe valve ASME SA182 Grade F316/F316L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	2				P82L-0013F	Globe valve ASME SA351 Grade CF8M Class 600 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	

CHECK VALVE (X)							
OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83K-000LW	Check valve ASME SA182 Grade F316/F316L dual grade Class 800 API 602 SW Trim number 12 Lift-type Bolted cover	
1	0.75				P83K-000LX	Check valve ASME SA182 Grade F316/F316L dual grade Class 800 API 602 SW Trim number 12 Lift-type Bolted cover	
1	1				P83K-000LY	Check valve ASME SA182 Grade F316/F316L dual grade Class 800 API 602 SW Trim number 12 Lift-type Bolted cover	
1	1.5				P83K-000LZ	Check valve ASME SA182 Grade F316/F316L dual grade Class 800 API 602 SW Trim number 12 Lift-type Bolted cover	
1	2				P83L-0013C	Check valve ASME SA351 Grade CF8M Class 600 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	

SPECT BLANK (SB)							
OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71K-0009H	Spectacle blank ASME SA182 Grade F316/F316L dual grade Class 600 Standard-drawing Flange ASME B16.5 RF	
1	0.75				P71K-0009J	Spectacle blank ASME SA182 Grade F316/F316L dual grade Class 600 Standard-drawing Flange ASME B16.5 RF	
1	1				P71K-0009K	Spectacle blank ASME SA182 Grade F316/F316L dual grade Class 600 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71K-0009L	Spectacle blank ASME SA182 Grade F316/F316L dual grade Class 600 Standard-drawing Flange ASME B16.5 RF	
1	2				P71K-0009M	Spectacle blank ASME SA182 Grade F316/F316L dual grade Class 600 Standard-drawing Flange ASME B16.5 RF	

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BOLT TABLE (B_D0LG , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	80	P80S-00MEE		
0.75	4	0.625	90	P80S-00MAM		
1	4	0.625	95	P80S-00MAL		
1.5	4	0.750	110	P80S-00MAH		
2	8	0.625	110	P80S-00MC4		

BOLT TABLE (B_D0LG_797 , STUD ASME RJ, OPTION CODE 797)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	110	P80S-00MAH	R12	P75T-000NM
0.75	4	0.750	115	P80S-00M8C	R14	P75T-000NN
1	4	0.875	130	P80S-00M30	R16	P75T-000NP
1.5	4	1.000	140	P80S-00LYE	R20	P75T-000NR
2	8	0.875	150	P80S-00M2W	R24	P75T-000NS

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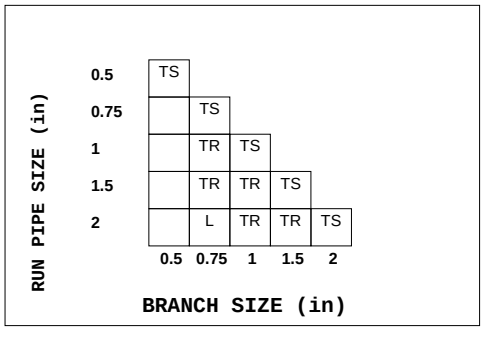
BRANCH TABLE (T_D0LG)



TR : REDUCING TEE
TS : STRAIGHT TEE
L : OUTLET

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Material : SS316L
Rating : ASME CLASS 600
Flange Face : RF
C.A.(mm) : 0.00
Gasket : Spiral Wound
Service : UTILITY - STEAM, CONDENSATE, BOILER FEED WATER TO ASME B31.3
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
3	STIFFENER RINGS, IF NEEDED, SHALL BE PROVIDED AS PER ASME SEC.VIII, DIV.1 FOR FULL VACUUM CONDITION

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
541	NPT(F) (CA,L)
714	SW - NPT(F) (V)
789	CLASS 900 (B,F,G)
797	CLASS 1500 (B,F,G)

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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P01J-0014A	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE	
1	0.75		SCH80S		P01J-0014B	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE	
1	1		SCH80S		P01J-0014C	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE	
1	1.5		SCH80S		P01J-0014D	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE	
1	2		SCH40S		P01J-000CK	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M BE	
1	3		SCH40S		P01J-000D8	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M BE	
1	4		SCH40S		P01J-000DF	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M BE	
1	6		SCH40S		P01J-000DT	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M BE	
1	8		SCH40S		P01J-001GN	Pipe ASTM A358 Grade 316/316L Class 1 dual grade EFW ASME B36.10M/B36.19M BE	
1	10		SCH40S		P01J-001FX	Pipe ASTM A358 Grade 316/316L Class 1 dual grade EFW ASME B36.10M/B36.19M BE	
1	12		SCH40S		P01J-001FY	Pipe ASTM A358 Grade 316/316L Class 1 dual grade EFW ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P02K-0000G	90 degree elbow ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	0.75				P02K-0000H	90 degree elbow ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	1				P02K-0000J	90 degree elbow ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	1.5				P02K-0000K	90 degree elbow ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	2		SCH40S		P02J-0007C	90 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	3		SCH40S		P02J-0007D	90 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	4		SCH40S		P02J-0007E	90 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	6		SCH40S		P02J-0006V	90 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	8		SCH40S		P02J-00190	90 degree elbow ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Long radius	
1	10		SCH40S		P02J-00188	90 degree elbow ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Long radius	
1	12		SCH40S		P02J-000DX	90 degree elbow ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P03K-0000D	45 degree elbow ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	0.75				P03K-0000E	45 degree elbow ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	1				P03K-0000F	45 degree elbow ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	1.5				P03K-0000G	45 degree elbow ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	2		SCH40S		P03J-0007C	45 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	3		SCH40S		P03J-0007D	45 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	4		SCH40S		P03J-0007E	45 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	6		SCH40S		P03J-0006L	45 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	8		SCH40S		P03J-0017W	45 degree elbow ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Long radius	
1	10		SCH40S		P03J-00174	45 degree elbow ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Long radius	
1	12		SCH40S		P03J-000DM	45 degree elbow ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P21K-0000G	Straight tee ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	0.75				P21K-0000H	Straight tee ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	1				P21K-0000J	Straight tee ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	1.5				P21K-0000K	Straight tee ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	2		SCH40S		P21J-0007W	Straight tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	3		SCH40S		P21J-0007X	Straight tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	4		SCH40S		P21J-0007Y	Straight tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	6		SCH40S		P21J-00074	Straight tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	8		SCH40S		P21J-0011C	Straight tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	10		SCH40S		P21J-0010L	Straight tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	12		SCH40S		P21J-000DP	Straight tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	

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REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75			P24K-0000M	Reducing tee ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	1.5	0.75			P24K-0000P	Reducing tee ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	1.5	1			P24K-0000R	Reducing tee ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	2	1	SCH40S	SCH80S	P24J-003MZ	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	2	1.5	SCH40S	SCH80S	P24J-003N0	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	3	1.5	SCH40S	SCH80S	P24J-004TU	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	3	2	SCH40S	SCH40S	P24J-001JD	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	4	2	SCH40S	SCH40S	P24J-001JE	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	4	3	SCH40S	SCH40S	P24J-001JF	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	6	3	SCH40S	SCH40S	P24J-001JG	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	6	4	SCH40S	SCH40S	P24J-001JH	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	8	4	SCH40S	SCH40S	P24J-004UP	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	8	6	SCH40S	SCH40S	P24J-004UR	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	10	4	SCH40S	SCH40S	P24J-004TW	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	10	6	SCH40S	SCH40S	P24J-004TX	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	10	8	SCH40S	SCH40S	P24J-004ZM	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	12	6	SCH40S	SCH40S	P24J-0026X	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	12	8	SCH40S	SCH40S	P24J-004ZN	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	12	10	SCH40S	SCH40S	P24J-004TY	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	SCH40S	SCH40S	P27J-000WG	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	4	2	SCH40S	SCH40S	P27J-000WJ	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	4	3	SCH40S	SCH40S	P27J-000WK	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	6	3	SCH40S	SCH40S	P27J-000WL	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	6	4	SCH40S	SCH40S	P27J-000WM	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	8	4	SCH40S	SCH40S	P27J-003MV	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	8	6	SCH40S	SCH40S	P27J-003MW	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	10	4	SCH40S	SCH40S	P27J-003LW	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	10	6	SCH40S	SCH40S	P27J-003LX	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	10	8	SCH40S	SCH40S	P27J-003UF	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	12	6	SCH40S	SCH40S	P27J-001D0	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	12	8	SCH40S	SCH40S	P27J-003UG	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	12	10	SCH40S	SCH40S	P27J-003LY	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	SCH40S	SCH40S	P28J-000WB	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	4	2	SCH40S	SCH40S	P28J-000WD	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	4	3	SCH40S	SCH40S	P28J-000WE	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	6	3	SCH40S	SCH40S	P28J-000WF	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	6	4	SCH40S	SCH40S	P28J-000WG	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	8	4	SCH40S	SCH40S	P28J-003NH	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	8	6	SCH40S	SCH40S	P28J-003NJ	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	10	4	SCH40S	SCH40S	P28J-003MJ	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	10	6	SCH40S	SCH40S	P28J-003MK	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	10	8	SCH40S	SCH40S	P28J-003W1	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	12	6	SCH40S	SCH40S	P28J-001DU	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	12	8	SCH40S	SCH40S	P28J-003W2	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	12	10	SCH40S	SCH40S	P28J-003ML	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P29K-00021	Cap ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	0.75				P29K-00022	Cap ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	1				P29K-00023	Cap ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	1.5				P29K-00024	Cap ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	2		SCH40S		P29J-0007D	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	

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CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3		SCH40S		P29J-0007G	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	4		SCH40S		P29J-0007J	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	6		SCH40S		P29J-00074	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	8		SCH40S		P29J-000YG	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	10		SCH40S		P29J-000XR	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	12		SCH40S		P29J-000CB	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
541	0.75				P29K-00002	Cap ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P41J-001CE	Straight nipple ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		SCH80S		P41J-001CF	Straight nipple ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		SCH80S		P41J-001CG	Straight nipple ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		SCH80S		P41J-001CH	Straight nipple ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

CON SWAGED NIPPLE (SNC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH80S	SCH80S	P42J-0008N	Concentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	SCH80S	SCH80S	P42J-0008M	Concentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	SCH80S	SCH80S	P42J-0008P	Concentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	SCH80S	SCH80S	P42J-0008R	Concentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	SCH80S	SCH80S	P42J-0008S	Concentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	SCH80S	SCH80S	P42J-0008T	Concentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	SCH40S	SCH80S	P42J-000B0	Concentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	SCH40S	SCH80S	P42J-000B1	Concentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	SCH40S	SCH80S	P42J-000B2	Concentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	SCH40S	SCH80S	P42J-000B3	Concentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	SCH40S	SCH80S	P42J-000B4	Concentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	

ECC SWAGED NIPPLE (SNE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH80S	SCH80S	P43J-0008R	Eccentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	SCH80S	SCH80S	P43J-0008S	Eccentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	SCH80S	SCH80S	P43J-0008T	Eccentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	SCH80S	SCH80S	P43J-0008U	Eccentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	SCH80S	SCH80S	P43J-0008V	Eccentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	SCH80S	SCH80S	P43J-0008W	Eccentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	SCH40S	SCH80S	P43J-0009D	Eccentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	SCH40S	SCH80S	P43J-0009E	Eccentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	SCH40S	SCH80S	P43J-0009F	Eccentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	SCH40S	SCH80S	P43J-0009G	Eccentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	SCH40S	SCH80S	P43J-0009H	Eccentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	

COUPLING (CPS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P47K-0000G	Coupling ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW - SW	
1	0.75				P47K-0000H	Coupling ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW - SW	
1	1				P47K-0000J	Coupling ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW - SW	
1	1.5				P47K-0000K	Coupling ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW - SW	

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OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2 - 2.5	0.75			P31K-00GGG	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 SW	
1	3 - 5	0.75			P31K-00GGH	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 SW	
1	6 - 12	0.75			P31K-003VD	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 SW	
1	3	1			P31K-003UY	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 SW	
1	4 - 5	1			P31K-00GGJ	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 SW	
1	6 - 10	1			P31K-003UU	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 SW	
1	12 - 36	1			P31K-003V1	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 SW	
1	4	1.5			P31K-003UH	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 SW	
1	5 - 6	1.5			P31K-00GGN	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 SW	
1	8 - 12	1.5			P31K-003UB	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 SW	
541	1	0.75			P31K-001XH	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 NPT	
541	1.5	0.75			P31K-001XM	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 NPT	
541	2 - 2.5	0.75			P31K-00GGK	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 NPT	
541	3 - 5	0.75			P31K-00GGL	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 NPT	
541	6 - 12	0.75			P31K-003U1	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 NPT	
1	6	2	SCH40S	SCH40S	P31K-0035H	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW	
1	8	2	SCH40S	SCH40S	P31K-00BWF	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW	
1	10	2	SCH40S	SCH40S	P31K-00BVP	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW	
1	12	2	SCH40S	SCH40S	P31K-00BVS	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW	
1	8	3	SCH40S	SCH40S	P31K-00C60	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW	
1	10	3	SCH40S	SCH40S	P31K-00BVR	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW	
1	12	3	SCH40S	SCH40S	P31K-00BVT	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW	
1	12	4	SCH40S	SCH40S	P31K-00BVU	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30K-0001L	Plug ASTM A182 Grade F316/F316L dual grade ASME B16.11 NPT Round head	
1	0.75				P30K-0001M	Plug ASTM A182 Grade F316/F316L dual grade ASME B16.11 NPT Round head	
1	1				P30K-0001N	Plug ASTM A182 Grade F316/F316L dual grade ASME B16.11 NPT Round head	
1	1.5				P30K-0001P	Plug ASTM A182 Grade F316/F316L dual grade ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P61K-003HT	Flange SW ASTM A182 Grade F316/F316L dual grade Class 600 ASME B16.5 RF	
1	0.75		SCH80S		P61K-003HU	Flange SW ASTM A182 Grade F316/F316L dual grade Class 600 ASME B16.5 RF	
1	1		SCH80S		P61K-0042H	Flange SW ASTM A182 Grade F316/F316L dual grade Class 600 ASME B16.5 RF	
1	1.5		SCH80S		P61K-0042J	Flange SW ASTM A182 Grade F316/F316L dual grade Class 600 ASME B16.5 RF	
1	2		SCH40S		P61K-002M0	Flange WN ASTM A182 Grade F316/F316L dual grade Class 600 ASME B16.5 RF	
1	3		SCH40S		P61K-00346	Flange WN ASTM A182 Grade F316/F316L dual grade Class 600 ASME B16.5 RF	
1	4		SCH40S		P61K-00347	Flange WN ASTM A182 Grade F316/F316L dual grade Class 600 ASME B16.5 RF	
1	6		SCH40S		P61K-0029B	Flange WN ASTM A182 Grade F316/F316L dual grade Class 600 ASME B16.5 RF	
1	8		SCH40S		P61K-003EA	Flange WN ASTM A182 Grade F316/F316L dual grade Class 600 ASME B16.5 RF	
1	10		SCH40S		P61K-004LR	Flange WN ASTM A182 Grade F316/F316L dual grade Class 600 ASME B16.5 RF	
1	12		SCH40S		P61K-004LS	Flange WN ASTM A182 Grade F316/F316L dual grade Class 600 ASME B16.5 RF	
789	3		SCH40S		P61K-001BH	Flange WN ASTM A182 Grade F316/F316L dual grade Class 900 ASME B16.5 RJ	
789	4		SCH40S		P61K-001RH	Flange WN ASTM A182 Grade F316/F316L dual grade Class 900 ASME B16.5 RJ	
789	6		SCH40S		P61K-001VY	Flange WN ASTM A182 Grade F316/F316L dual grade Class 900 ASME B16.5 RJ	
789	8		SCH40S		P61K-005N3	Flange WN ASTM A182 Grade F316/F316L dual grade Class 900 ASME B16.5 RJ	
789	10		SCH40S		P61K-005N9	Flange WN ASTM A182 Grade F316/F316L dual grade Class 900 ASME B16.5 RJ	
789	12		SCH40S		P61K-004VE	Flange WN ASTM A182 Grade F316/F316L dual grade Class 900 ASME B16.5 RJ	
797	0.5		SCH80S		P61K-004VJ	Flange SW ASTM A182 Grade F316/F316L dual grade Class 1500 ASME B16.5 RJ	
797	0.75		SCH80S		P61K-004VK	Flange SW ASTM A182 Grade F316/F316L dual grade Class 1500 ASME B16.5 RJ	
797	1		SCH80S		P61K-004VL	Flange SW ASTM A182 Grade F316/F316L dual grade Class 1500 ASME B16.5 RJ	
797	1.5		SCH80S		P61K-004VM	Flange SW ASTM A182 Grade F316/F316L dual grade Class 1500 ASME B16.5 RJ	
797	2		SCH40S		P61K-001BD	Flange WN ASTM A182 Grade F316/F316L dual grade Class 1500 ASME B16.5 RJ	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67K-000P5	Blind flange ASTM A182 Grade F316/F316L dual grade Class 600 ASME B16.5 RF	

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BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75				P67K-000P6	Blind flange ASTM A182 Grade F316/F316L dual grade Class 600 ASME B16.5 RF	
1	1				P67K-000P7	Blind flange ASTM A182 Grade F316/F316L dual grade Class 600 ASME B16.5 RF	
1	1.5				P67K-000P8	Blind flange ASTM A182 Grade F316/F316L dual grade Class 600 ASME B16.5 RF	
1	2				P67K-000P9	Blind flange ASTM A182 Grade F316/F316L dual grade Class 600 ASME B16.5 RF	
1	3				P67K-000PA	Blind flange ASTM A182 Grade F316/F316L dual grade Class 600 ASME B16.5 RF	
1	4				P67K-000PB	Blind flange ASTM A182 Grade F316/F316L dual grade Class 600 ASME B16.5 RF	
1	6				P67K-000PC	Blind flange ASTM A182 Grade F316/F316L dual grade Class 600 ASME B16.5 RF	
1	8				P67K-000PD	Blind flange ASTM A182 Grade F316/F316L dual grade Class 600 ASME B16.5 RF	
1	10				P67K-000E5	Blind flange ASTM A182 Grade F316/F316L dual grade Class 600 ASME B16.5 RF	
1	12				P67K-000E4	Blind flange ASTM A182 Grade F316/F316L dual grade Class 600 ASME B16.5 RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000J8	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000J9	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000JA	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000JB	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000JH	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000JL	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000JM	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	6				P73T-000JN	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	8				P73T-000JP	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	10				P73T-000JC	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	12				P73T-000JD	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
789	3				P75T-00111	Ring joint gasket SS TP316 Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	4				P75T-00112	Ring joint gasket SS TP316 Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	6				P75T-00113	Ring joint gasket SS TP316 Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	8				P75T-00114	Ring joint gasket SS TP316 Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	10				P75T-0010X	Ring joint gasket SS TP316 Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	12				P75T-0010Y	Ring joint gasket SS TP316 Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	0.5				P75T-000NM	Ring joint gasket SS TP316 Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	0.75				P75T-000NN	Ring joint gasket SS TP316 Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	1				P75T-000NP	Ring joint gasket SS TP316 Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	1.5				P75T-000NR	Ring joint gasket SS TP316 Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	2				P75T-000NS	Ring joint gasket SS TP316 Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-6				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	8-12				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
789	1-3				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
789	4-12				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
797	0.5-2				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81K-0010V	Gate valve ASTM A182 Grade F316/F316L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	0.75				P81K-0010W	Gate valve ASTM A182 Grade F316/F316L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	1				P81K-0010X	Gate valve ASTM A182 Grade F316/F316L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	1.5				P81K-0010Y	Gate valve ASTM A182 Grade F316/F316L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	2				P81L-002AP	Gate valve ASTM A351 Grade CF8M Class 600 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	

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GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3				P81L-002AR	Gate valve ASTM A351 Grade CF8M Class 600 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	4				P81L-002AS	Gate valve ASTM A351 Grade CF8M Class 600 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	6				P81L-002AT	Gate valve ASTM A351 Grade CF8M Class 600 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	8				P81L-002AU	Gate valve ASTM A351 Grade CF8M Class 600 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated	
714	0.5				P81K-001LF	Gate valve ASTM A182 Grade F316/F316L dual grade Class 800 API 602 SW - NPT Trim number 12 BB-BG-OS&Y Handwheel operated	
714	0.75				P81K-001G3	Gate valve ASTM A182 Grade F316/F316L dual grade Class 800 API 602 SW - NPT Trim number 12 BB-BG-OS&Y Handwheel operated	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82K-000P3	Globe valve ASTM A182 Grade F316/F316L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	0.75				P82K-000P4	Globe valve ASTM A182 Grade F316/F316L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	1				P82K-000P5	Globe valve ASTM A182 Grade F316/F316L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	1.5				P82K-000P6	Globe valve ASTM A182 Grade F316/F316L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	2				P82L-0019S	Globe valve ASTM A351 Grade CF8M Class 600 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	3				P82L-0019T	Globe valve ASTM A351 Grade CF8M Class 600 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	4				P82L-0019U	Globe valve ASTM A351 Grade CF8M Class 600 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	6				P82L-001Y3	Globe valve ASTM A351 Grade CF8M Class 600 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated	
1	8				P82L-0019W	Globe valve ASTM A351 Grade CF8M Class 600 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71K-0009X	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 600 Standard-drawing Flange ASME B16.5 RF	
1	0.75				P71K-0009Y	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 600 Standard-drawing Flange ASME B16.5 RF	
1	1				P71K-0009Z	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 600 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71K-000A0	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 600 Standard-drawing Flange ASME B16.5 RF	
1	2				P71K-000A1	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 600 Standard-drawing Flange ASME B16.5 RF	
1	3				P71K-000A2	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 600 Standard-drawing Flange ASME B16.5 RF	
1	4				P71K-000A3	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 600 Standard-drawing Flange ASME B16.5 RF	
1	6				P71K-000A4	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 600 Standard-drawing Flange ASME B16.5 RF	

PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	8				P72K-000FP	Paddle blank ASTM A182 Grade F316/F316L dual grade Class 600 Standard-drawing Flange ASME B16.5 RF	
1	10				P72K-000FN	Paddle blank ASTM A182 Grade F316/F316L dual grade Class 600 Standard-drawing Flange ASME B16.5 RF	
1	12				P72K-0006C	Paddle blank ASTM A182 Grade F316/F316L dual grade Class 600 Standard-drawing Flange ASME B16.5 RF	

PADDLE SPACER (PS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	8				P72K-000FZ	Paddle spacer ASTM A182 Grade F316/F316L dual grade Class 600 Standard-drawing Flange ASME B16.5 RF	
1	10				P72K-000FV	Paddle spacer ASTM A182 Grade F316/F316L dual grade Class 600 Standard-drawing Flange ASME B16.5 RF	
1	12				P72K-00069	Paddle spacer ASTM A182 Grade F316/F316L dual grade Class 600 Standard-drawing Flange ASME B16.5 RF	

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BOLT TABLE (B_D0LS , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	80	P80S-003V6		
0.75	4	0.625	90	P80S-003XF		
1	4	0.625	95	P80S-003XG		
1.5	4	0.750	110	P80S-003XK		
2	8	0.625	110	P80S-003VC		
3	8	0.750	130	P80S-003XP		
4	8	0.875	150	P80S-0041F		
6	12	1.000	175	P80S-0043P		
8	12	1.125	195	P80S-0046W		
10	16	1.250	250	P80S-004AY		
12	20	1.250	255	P80S-004AZ		

BOLT TABLE (B_D0LS_789 , STUD ASME RJ, OPTION CODE 789)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	110		R12	
0.75	4	0.750	115		R14	
1	4	0.875	130	P80S-0041B	R16	
1.5	4	1.000	140	P80S-0043F	R20	
2	8	0.875	150	P80S-0041F	R24	
3	8	0.875	150	P80S-0041F	R31	P75T-00111
4	8	1.125	175	P80S-0046S	R37	P75T-00112
6	12	1.125	200	P80S-0046X	R45	P75T-00113
8	12	1.375	260	P80S-003E5	R49	P75T-00114
10	16	1.375	275	P80S-003E8	R53	P75T-0010X
12	20	1.375	295	P80S-003EC	R57	P75T-0010Y

BOLT TABLE (B_D0LS_797 , STUD ASME RJ, OPTION CODE 797)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	110	P80S-003XK	R12	P75T-000NM
0.75	4	0.750	115	P80S-003XL	R14	P75T-000NN
1	4	0.875	130	P80S-0041B	R16	P75T-000NP
1.5	4	1.000	140	P80S-0043F	R20	P75T-000NR
2	8	0.875	150	P80S-0041F	R24	P75T-000NS
3	8	1.125	180		R35	
4	8	1.250	230		R39	
6	12	1.375	300		R46	
8	12	1.625	345		R50	
10	12	1.875	395		R54	
12	16	2.000	445		R58	

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BRANCH TABLE (T_D0LS)

RUN PIPE SIZE (in) \ BRANCH SIZE (in)	0.5	0.75	1	1.5	2	3	4	6	8	10	12
0.5	TS										
0.75		TS									
1		TR	TS								
1.5		TR	TR	TS							
2		L	TR	TR	TS						
3		L	L	TR	TR	TS					
4	L	L	L	L	TR	TR	TS				
6	L	L	L	L	L	TR	TR	TS			
8		L	L	L	L	L	TR	TR	TS		
10		L	L	L	L	L	TR	TR	TR	TS	
12		L	L	L	L	L	L	TR	TR	TR	TS

TR : REDUCING TEE
L : OUTLET
TS : STRAIGHT TEE

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Material : SS321
Rating : ASME CLASS 600
Flange Face : RF
C.A.(mm) : 1.00
Gasket : Spiral Wound
Service : PROCESS - HYDROGEN OR HYDROGEN RICH HYDROCARBON MIXTURE:
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
16	PIPE CLASS SHALL BE USED WITHIN THE NORMAL OPERATING PRESSURE/TEMPERATURE LIMITS SPECIFIED IN API RP 941. PRESSURE / TEMPERATURE SPECIFIED IN THE PIPE CLASS EXCEEDING API RP 941 LIMITS SHOULD BE REGARDED AS UPSET CONDITIONS RATHER THAN FOR CONTINUOUS SERVICE
24	FOR ALL RELEVANT PIPING CLASSES WITH LINE DESIGN TEMPERATURE ABOVE 427DEGC, IN SPIRAL WOUND GASKET, SUITABLE GASKET FILLER MATERIAL SUCH AS COMBINATION OF MICA LAYERS AND GRAPHITE FILLERS OR EQUIVALENT SHALL BE REVIEWED AND SELECTED OR AS DEFINED BY THE LICENSOR

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
541	NPT(F) (CA,L)
714	SW - NPT(F) (V)
789	CLASS 900 (B,F,G)
797	CLASS 1500 (B,F,G)

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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P01J-001FB	Pipe ASTM A312 Grade TP321 Seamless ASME B36.10M/B36.19M PE	
1	0.75		SCH80S		P01J-001FC	Pipe ASTM A312 Grade TP321 Seamless ASME B36.10M/B36.19M PE	
1	1		SCH80S		P01J-001FD	Pipe ASTM A312 Grade TP321 Seamless ASME B36.10M/B36.19M PE	
1	1.5		SCH80S		P01J-001FE	Pipe ASTM A312 Grade TP321 Seamless ASME B36.10M/B36.19M PE	
1	2		SCH40S		P01J-0027C	Pipe ASTM A312 Grade TP321 Seamless ASME B36.10M/B36.19M BE	
1	3		SCH40S		P01J-0027D	Pipe ASTM A312 Grade TP321 Seamless ASME B36.10M/B36.19M BE	
1	4		SCH40S		P01J-0027E	Pipe ASTM A312 Grade TP321 Seamless ASME B36.10M/B36.19M BE	
1	6		SCH80S		P01J-00290	Pipe ASTM A312 Grade TP321 Seamless ASME B36.10M/B36.19M BE	
1	8		SCH40S		P01J-001HM	Pipe ASTM A358 Grade 321 Class 1 EFW ASME B36.10M/B36.19M BE	
1	10		SCH40S		P01J-001TE	Pipe ASTM A358 Grade 321 Class 1 EFW ASME B36.10M/B36.19M BE	
1	12		SCH40S		P01J-001TF	Pipe ASTM A358 Grade 321 Class 1 EFW ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P02K-0002E	90 degree elbow ASTM A182 Grade F321 Class 3000 ASME B16.11 SW	
1	0.75				P02K-0002F	90 degree elbow ASTM A182 Grade F321 Class 3000 ASME B16.11 SW	
1	1				P02K-0002G	90 degree elbow ASTM A182 Grade F321 Class 3000 ASME B16.11 SW	
1	1.5				P02K-0002H	90 degree elbow ASTM A182 Grade F321 Class 3000 ASME B16.11 SW	
1	2		SCH40S		P02J-001NC	90 degree elbow ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Long radius	
1	3		SCH40S		P02J-001ND	90 degree elbow ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Long radius	
1	4		SCH40S		P02J-001NE	90 degree elbow ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Long radius	
1	6		SCH80S		P02J-001SA	90 degree elbow ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Long radius	
1	8		SCH40S		P02J-001A2	90 degree elbow ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Long radius	
1	10		SCH40S		P02J-001FS	90 degree elbow ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Long radius	
1	12		SCH40S		P02J-001FT	90 degree elbow ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P03K-0002B	45 degree elbow ASTM A182 Grade F321 Class 3000 ASME B16.11 SW	
1	0.75				P03K-0002C	45 degree elbow ASTM A182 Grade F321 Class 3000 ASME B16.11 SW	
1	1				P03K-0002D	45 degree elbow ASTM A182 Grade F321 Class 3000 ASME B16.11 SW	
1	1.5				P03K-0002E	45 degree elbow ASTM A182 Grade F321 Class 3000 ASME B16.11 SW	
1	2		SCH40S		P03J-001LR	45 degree elbow ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Long radius	
1	3		SCH40S		P03J-001LS	45 degree elbow ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Long radius	
1	4		SCH40S		P03J-001LT	45 degree elbow ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Long radius	
1	6		SCH80S		P03J-001NP	45 degree elbow ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Long radius	
1	8		SCH40S		P03J-0018Y	45 degree elbow ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Long radius	
1	10		SCH40S		P03J-001E4	45 degree elbow ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Long radius	
1	12		SCH40S		P03J-001E5	45 degree elbow ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P21K-0002D	Straight tee ASTM A182 Grade F321 Class 3000 ASME B16.11 SW	
1	0.75				P21K-0002E	Straight tee ASTM A182 Grade F321 Class 3000 ASME B16.11 SW	
1	1				P21K-0002F	Straight tee ASTM A182 Grade F321 Class 3000 ASME B16.11 SW	
1	1.5				P21K-0002G	Straight tee ASTM A182 Grade F321 Class 3000 ASME B16.11 SW	
1	2		SCH40S		P21J-001DA	Straight tee ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW	
1	3		SCH40S		P21J-001DB	Straight tee ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW	
1	4		SCH40S		P21J-001DC	Straight tee ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW	
1	6		SCH80S		P21J-001F6	Straight tee ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW	
1	8		SCH40S		P21J-0012E	Straight tee ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW	
1	10		SCH40S		P21J-0017Y	Straight tee ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW	
1	12		SCH40S		P21J-0017Z	Straight tee ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75			P24K-0003B	Reducing tee ASTM A182 Grade F321 Class 3000 ASME B16.11 SW	
1	1.5	0.75			P24K-0003C	Reducing tee ASTM A182 Grade F321 Class 3000 ASME B16.11 SW	

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REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5	1			P24K-0003D	Reducing tee ASTM A182 Grade F321 Class 3000 ASME B16.11 SW	
1	2	1	SCH40S	SCH80S	P24J-006CM	Reducing tee ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW	
1	2	1.5	SCH40S	SCH80S	P24J-006CN	Reducing tee ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW	
1	3	1.5	SCH40S	SCH80S	P24J-0067P	Reducing tee ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW	
1	3	2	SCH40S	SCH40S	P24J-0060V	Reducing tee ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW	
1	4	2	SCH40S	SCH40S	P24J-0060W	Reducing tee ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW	
1	4	3	SCH40S	SCH40S	P24J-0060X	Reducing tee ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW	
1	6	3	SCH80S	SCH40S	P24J-0067U	Reducing tee ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW	
1	6	4	SCH80S	SCH40S	P24J-007EN	Reducing tee ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW	
1	8	4	SCH40S	SCH40S	P24J-006CT	Reducing tee ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW	
1	8	6	SCH40S	SCH80S	P24J-004YS	Reducing tee ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW	
1	10	4	SCH40S	SCH40S	P24J-006CV	Reducing tee ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW	
1	10	6	SCH40S	SCH80S	P24J-005HN	Reducing tee ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW	
1	10	8	SCH40S	SCH40S	P24J-0067H	Reducing tee ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW	
1	12	6	SCH40S	SCH80S	P24J-007EP	Reducing tee ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW	
1	12	8	SCH40S	SCH40S	P24J-0067J	Reducing tee ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW	
1	12	10	SCH40S	SCH40S	P24J-005HM	Reducing tee ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	SCH40S	SCH40S	P27J-0050H	Concentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW	
1	4	2	SCH40S	SCH40S	P27J-0050J	Concentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW	
1	4	3	SCH40S	SCH40S	P27J-0050K	Concentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW	
1	6	3	SCH80S	SCH40S	P27J-0056P	Concentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW	
1	6	4	SCH80S	SCH40S	P27J-0067Z	Concentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW	
1	8	4	SCH40S	SCH40S	P27J-005BY	Concentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW	
1	8	6	SCH40S	SCH80S	P27J-003TF	Concentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW	
1	10	4	SCH40S	SCH40S	P27J-005C0	Concentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW	
1	10	6	SCH40S	SCH80S	P27J-004CR	Concentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW	
1	10	8	SCH40S	SCH40S	P27J-0056B	Concentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW	
1	12	6	SCH40S	SCH80S	P27J-004CV	Concentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW	
1	12	8	SCH40S	SCH40S	P27J-0056C	Concentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW	
1	12	10	SCH40S	SCH40S	P27J-004CS	Concentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	SCH40S	SCH40S	P28J-00519	Eccentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW	
1	4	2	SCH40S	SCH40S	P28J-0051A	Eccentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW	
1	4	3	SCH40S	SCH40S	P28J-0051B	Eccentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW	
1	6	3	SCH80S	SCH40S	P28J-0057J	Eccentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW	
1	6	4	SCH80S	SCH40S	P28J-0069A	Eccentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW	
1	8	4	SCH40S	SCH40S	P28J-005CT	Eccentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW	
1	8	6	SCH40S	SCH80S	P28J-003UZ	Eccentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW	
1	10	4	SCH40S	SCH40S	P28J-005CV	Eccentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW	
1	10	6	SCH40S	SCH80S	P28J-004D9	Eccentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW	
1	10	8	SCH40S	SCH40S	P28J-00576	Eccentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW	
1	12	6	SCH40S	SCH80S	P28J-004D6	Eccentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW	
1	12	8	SCH40S	SCH40S	P28J-00577	Eccentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW	
1	12	10	SCH40S	SCH40S	P28J-004D5	Eccentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P29K-0002W	Cap ASTM A182 Grade F321 Class 3000 ASME B16.11 SW	
1	0.75				P29K-0002X	Cap ASTM A182 Grade F321 Class 3000 ASME B16.11 SW	
1	1				P29K-0002Y	Cap ASTM A182 Grade F321 Class 3000 ASME B16.11 SW	
1	1.5				P29K-0002Z	Cap ASTM A182 Grade F321 Class 3000 ASME B16.11 SW	
1	2		SCH40S		P29J-0018E	Cap ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW	
1	3		SCH40S		P29J-0018H	Cap ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW	
1	4		SCH40S		P29J-0018J	Cap ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW	

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CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	6		SCH80S		P29J-000ZK	Cap ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW	
1	8		SCH40S		P29J-000ZL	Cap ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW	
1	10		SCH40S		P29J-0013R	Cap ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW	
1	12		SCH40S		P29J-0013S	Cap ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW	
541	0.75				P29K-0003U	Cap ASTM A182 Grade F321 Class 3000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P41J-001VR	Straight nipple ASTM A312 Grade TP321 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		SCH160		P41J-001VS	Straight nipple ASTM A312 Grade TP321 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		SCH160		P41J-001V4	Straight nipple ASTM A312 Grade TP321 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		SCH160		P41J-001W5	Straight nipple ASTM A312 Grade TP321 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

CON SWAGED NIPPLE (SNC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH80S	SCH80S	P42J-000AH	Concentric swaged nipple ASTM A403 Grade WP321 Class S Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	SCH80S	SCH80S	P42J-000AJ	Concentric swaged nipple ASTM A403 Grade WP321 Class S Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	SCH80S	SCH80S	P42J-000AK	Concentric swaged nipple ASTM A403 Grade WP321 Class S Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	SCH80S	SCH80S	P42J-000AL	Concentric swaged nipple ASTM A403 Grade WP321 Class S Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	SCH80S	SCH80S	P42J-000AM	Concentric swaged nipple ASTM A403 Grade WP321 Class S Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	SCH80S	SCH80S	P42J-000AN	Concentric swaged nipple ASTM A403 Grade WP321 Class S Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	SCH40S	SCH80S	P42J-000GG	Concentric swaged nipple ASTM A403 Grade WP321 Class S Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	SCH40S	SCH80S	P42J-000GH	Concentric swaged nipple ASTM A403 Grade WP321 Class S Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	SCH40S	SCH80S	P42J-000GJ	Concentric swaged nipple ASTM A403 Grade WP321 Class S Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	SCH40S	SCH80S	P42J-000GK	Concentric swaged nipple ASTM A403 Grade WP321 Class S Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	SCH40S	SCH80S	P42J-000J8	Concentric swaged nipple ASTM A403 Grade WP321 Class S Seamless MSS SP-95 BE(L) - PE(S)	

ECC SWAGED NIPPLE (SNE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH80S	SCH80S	P43J-0008X	Eccentric swaged nipple ASTM A403 Grade WP321 Class S Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	SCH80S	SCH80S	P43J-0008Y	Eccentric swaged nipple ASTM A403 Grade WP321 Class S Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	SCH80S	SCH80S	P43J-0008Z	Eccentric swaged nipple ASTM A403 Grade WP321 Class S Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	SCH80S	SCH80S	P43J-00090	Eccentric swaged nipple ASTM A403 Grade WP321 Class S Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	SCH80S	SCH80S	P43J-00091	Eccentric swaged nipple ASTM A403 Grade WP321 Class S Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	SCH80S	SCH80S	P43J-00092	Eccentric swaged nipple ASTM A403 Grade WP321 Class S Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	SCH40S	SCH80S	P43J-000DG	Eccentric swaged nipple ASTM A403 Grade WP321 Class S Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	SCH40S	SCH80S	P43J-000DH	Eccentric swaged nipple ASTM A403 Grade WP321 Class S Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	SCH40S	SCH80S	P43J-000DJ	Eccentric swaged nipple ASTM A403 Grade WP321 Class S Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	SCH40S	SCH80S	P43J-000DK	Eccentric swaged nipple ASTM A403 Grade WP321 Class S Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	SCH40S	SCH80S	P43J-000DY	Eccentric swaged nipple ASTM A403 Grade WP321 Class S Seamless MSS SP-95 BE(L) - PE(S)	

COUPLING (CPS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P47K-00048	Coupling ASTM A182 Grade F321 Class 3000 ASME B16.11 SW - SW	
1	0.75				P47K-00049	Coupling ASTM A182 Grade F321 Class 3000 ASME B16.11 SW - SW	
1	1				P47K-0004A	Coupling ASTM A182 Grade F321 Class 3000 ASME B16.11 SW - SW	
1	1.5				P47K-0004B	Coupling ASTM A182 Grade F321 Class 3000 ASME B16.11 SW - SW	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2 - 2.5	0.75			P31K-00GGP	Outlet ASTM A182 Grade F321 Class 3000 MSS SP-97 SW	
1	3 - 5	0.75			P31K-00GGR	Outlet ASTM A182 Grade F321 Class 3000 MSS SP-97 SW	
1	6 - 12	0.75			P31K-00GGS	Outlet ASTM A182 Grade F321 Class 3000 MSS SP-97 SW	
1	3	1			P31K-00GGU	Outlet ASTM A182 Grade F321 Class 3000 MSS SP-97 SW	
1	4 - 5	1			P31K-00GGV	Outlet ASTM A182 Grade F321 Class 3000 MSS SP-97 SW	
1	6 - 10	1			P31K-00GGW	Outlet ASTM A182 Grade F321 Class 3000 MSS SP-97 SW	
1	12 - 36	1			P31K-00GGX	Outlet ASTM A182 Grade F321 Class 3000 MSS SP-97 SW	
1	4	1.5			P31K-00DHR	Outlet ASTM A182 Grade F321 Class 3000 MSS SP-97 SW	

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OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	5 - 6	1.5			P31K-00GGY	Outlet ASTM A182 Grade F321 Class 3000 MSS SP-97 SW	
1	8 - 12	1.5			P31K-00GGZ	Outlet ASTM A182 Grade F321 Class 3000 MSS SP-97 SW	
541	1	0.75			P31K-00FN3	Outlet ASTM A182 Grade F321 Class 3000 MSS SP-97 NPT	
541	1.5	0.75			P31K-00FN2	Outlet ASTM A182 Grade F321 Class 3000 MSS SP-97 NPT	
541	2 - 2.5	0.75			P31K-00GH1	Outlet ASTM A182 Grade F321 Class 3000 MSS SP-97 NPT	
541	3 - 5	0.75			P31K-00GH2	Outlet ASTM A182 Grade F321 Class 3000 MSS SP-97 NPT	
541	6 - 12	0.75			P31K-00GH3	Outlet ASTM A182 Grade F321 Class 3000 MSS SP-97 NPT	
1	6	2	SCH80S	SCH40S	P31K-00F2D	Outlet ASTM A182 Grade F321 MSS SP-97 BW	
1	8	2	SCH40S	SCH40S	P31K-00DVD	Outlet ASTM A182 Grade F321 MSS SP-97 BW	
1	10	2	SCH40S	SCH40S	P31K-00DVF	Outlet ASTM A182 Grade F321 MSS SP-97 BW	
1	12	2	SCH40S	SCH40S	P31K-00DVY	Outlet ASTM A182 Grade F321 MSS SP-97 BW	
1	8	3	SCH40S	SCH40S	P31K-00DNZ	Outlet ASTM A182 Grade F321 MSS SP-97 BW	
1	10	3	SCH40S	SCH40S	P31K-00DP4	Outlet ASTM A182 Grade F321 MSS SP-97 BW	
1	12	3	SCH40S	SCH40S	P31K-00DP9	Outlet ASTM A182 Grade F321 MSS SP-97 BW	
1	12	4	SCH40S	SCH40S	P31K-00DVZ	Outlet ASTM A182 Grade F321 MSS SP-97 BW	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30K-0002L	Plug ASTM A182 Grade F321 ASME B16.11 NPT Round head	
1	0.75				P30K-0002M	Plug ASTM A182 Grade F321 ASME B16.11 NPT Round head	
1	1				P30K-0002N	Plug ASTM A182 Grade F321 ASME B16.11 NPT Round head	
1	1.5				P30K-0002P	Plug ASTM A182 Grade F321 ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P61K-003B0	Flange SW ASTM A182 Grade F321 Class 600 ASME B16.5 RF	
1	0.75		SCH80S		P61K-003B1	Flange SW ASTM A182 Grade F321 Class 600 ASME B16.5 RF	
1	1		SCH80S		P61K-003B2	Flange SW ASTM A182 Grade F321 Class 600 ASME B16.5 RF	
1	1.5		SCH80S		P61K-003B3	Flange SW ASTM A182 Grade F321 Class 600 ASME B16.5 RF	
1	2		SCH40S		P61K-0050A	Flange WN ASTM A182 Grade F321 Class 600 ASME B16.5 RF	
1	3		SCH40S		P61K-004VS	Flange WN ASTM A182 Grade F321 Class 600 ASME B16.5 RF	
1	4		SCH40S		P61K-0050C	Flange WN ASTM A182 Grade F321 Class 600 ASME B16.5 RF	
1	6		SCH80S		P61K-004VU	Flange WN ASTM A182 Grade F321 Class 600 ASME B16.5 RF	
1	8		SCH40S		P61K-004UW	Flange WN ASTM A182 Grade F321 Class 600 ASME B16.5 RF	
1	10		SCH40S		P61K-004UP	Flange WN ASTM A182 Grade F321 Class 600 ASME B16.5 RF	
1	12		SCH40S		P61K-004UR	Flange WN ASTM A182 Grade F321 Class 600 ASME B16.5 RF	
789	3		SCH40S		P61K-004VW	Flange WN ASTM A182 Grade F321 Class 900 ASME B16.5 RJ	
789	4		SCH40S		P61K-005SW	Flange WN ASTM A182 Grade F321 Class 900 ASME B16.5 RJ	
789	6		SCH80S		P61K-004VY	Flange WN ASTM A182 Grade F321 Class 900 ASME B16.5 RJ	
789	8		SCH40S		P61K-004V2	Flange WN ASTM A182 Grade F321 Class 900 ASME B16.5 RJ	
789	10		SCH40S		P61K-004UX	Flange WN ASTM A182 Grade F321 Class 900 ASME B16.5 RJ	
789	12		SCH40S		P61K-004UY	Flange WN ASTM A182 Grade F321 Class 900 ASME B16.5 RJ	
797	0.5		SCH80S		P61K-003BC	Flange SW ASTM A182 Grade F321 Class 1500 ASME B16.5 RJ	
797	0.75		SCH80S		P61K-003BD	Flange SW ASTM A182 Grade F321 Class 1500 ASME B16.5 RJ	
797	1		SCH80S		P61K-003BE	Flange SW ASTM A182 Grade F321 Class 1500 ASME B16.5 RJ	
797	1.5		SCH80S		P61K-003BF	Flange SW ASTM A182 Grade F321 Class 1500 ASME B16.5 RJ	
797	2		SCH40S		P61K-005SX	Flange WN ASTM A182 Grade F321 Class 1500 ASME B16.5 RJ	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67K-00127	Blind flange ASTM A182 Grade F321 Class 600 ASME B16.5 RF	
1	0.75				P67K-00128	Blind flange ASTM A182 Grade F321 Class 600 ASME B16.5 RF	
1	1				P67K-00129	Blind flange ASTM A182 Grade F321 Class 600 ASME B16.5 RF	
1	1.5				P67K-0012A	Blind flange ASTM A182 Grade F321 Class 600 ASME B16.5 RF	
1	2				P67K-0013R	Blind flange ASTM A182 Grade F321 Class 600 ASME B16.5 RF	
1	3				P67K-0013S	Blind flange ASTM A182 Grade F321 Class 600 ASME B16.5 RF	
1	4				P67K-001FA	Blind flange ASTM A182 Grade F321 Class 600 ASME B16.5 RF	
1	6				P67K-0012D	Blind flange ASTM A182 Grade F321 Class 600 ASME B16.5 RF	
1	8				P67K-0012E	Blind flange ASTM A182 Grade F321 Class 600 ASME B16.5 RF	

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BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	10				P67K-0012B	Blind flange ASTM A182 Grade F321 Class 600 ASME B16.5 RF	
1	12				P67K-0012C	Blind flange ASTM A182 Grade F321 Class 600 ASME B16.5 RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-003HR	Spiral wound gasket SS321 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS321	
1	0.75				P73T-003HS	Spiral wound gasket SS321 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS321	
1	1				P73T-003HT	Spiral wound gasket SS321 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS321	
1	1.5				P73T-003HU	Spiral wound gasket SS321 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS321	
1	2				P73T-003HY	Spiral wound gasket SS321 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS321	
1	3				P73T-003HZ	Spiral wound gasket SS321 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS321	
1	4				P73T-003J0	Spiral wound gasket SS321 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS321	
1	6				P73T-003J1	Spiral wound gasket SS321 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS321	
1	8				P73T-003J2	Spiral wound gasket SS321 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS321	
1	10				P73T-003HV	Spiral wound gasket SS321 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS321	
1	12				P73T-003HW	Spiral wound gasket SS321 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS321	
789	3				P75T-000N4	Ring joint gasket SS TP347 Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	4				P75T-000N5	Ring joint gasket SS TP347 Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	6				P75T-000JE	Ring joint gasket SS TP347 Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	8				P75T-000JF	Ring joint gasket SS TP347 Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	10				P75T-000JC	Ring joint gasket SS TP347 Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	12				P75T-000JD	Ring joint gasket SS TP347 Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	0.5				P75T-000JG	Ring joint gasket SS TP347 Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	0.75				P75T-000JH	Ring joint gasket SS TP347 Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	1				P75T-000JJ	Ring joint gasket SS TP347 Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	1.5				P75T-000JK	Ring joint gasket SS TP347 Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	2				P75T-000N6	Ring joint gasket SS TP347 Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-6				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	8-12				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
789	1-3				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
789	4-12				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
797	0.5-2				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81K-001KB	Gate valve ASTM A182 Grade F321 Class 800 API 602 SW Trim SS347 BB-BG-OS&Y Handwheel operated Fluid-2	
1	0.75				P81K-001KC	Gate valve ASTM A182 Grade F321 Class 800 API 602 SW Trim SS347 BB-BG-OS&Y Handwheel operated Fluid-2	
1	1				P81K-001KD	Gate valve ASTM A182 Grade F321 Class 800 API 602 SW Trim SS347 BB-BG-OS&Y Handwheel operated Fluid-2	
1	1.5				P81K-001KE	Gate valve ASTM A182 Grade F321 Class 800 API 602 SW Trim SS347 BB-BG-OS&Y Handwheel operated Fluid-2	
1	2				P81L-0034X	Gate valve ASTM A351 Grade CF8C Class 600 API 600 Flange ASME B16.5 RF Trim SS347 BB-BG-OS&Y Handwheel operated Fluid-2	
1	3				P81L-0034Y	Gate valve ASTM A351 Grade CF8C Class 600 API 600 Flange ASME B16.5 RF Trim SS347 BB-BG-OS&Y Handwheel operated Fluid-2	
1	4				P81L-0034Z	Gate valve ASTM A351 Grade CF8C Class 600 API 600 Flange ASME B16.5 RF Trim SS347 BB-BG-OS&Y Handwheel operated Fluid-2	
1	6				P81L-00350	Gate valve ASTM A351 Grade CF8C Class 600 API 600 Flange ASME B16.5 RF Trim SS347 BB-BG-OS&Y Handwheel operated Fluid-2	
714	0.5				P81K-001LH	Gate valve ASTM A182 Grade F321 Class 800 API 602 SW - NPT Trim SS347 BB-BG-OS&Y Handwheel operated Fluid-2	
714	0.75				P81K-001KF	Gate valve ASTM A182 Grade F321 Class 800 API 602 SW - NPT Trim SS347 BB-BG-OS&Y Handwheel operated Fluid-2	

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CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2				P83L-001G5	Check valve ASTM A351 Grade CF8C Class 600 BS 1868 Flange ASME B16.5 RF Trim SS347 Swing-type Bolted cover	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71K-0009N	Spectacle blank ASTM A182 Grade F321 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	0.75				P71K-0009P	Spectacle blank ASTM A182 Grade F321 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	1				P71K-0009R	Spectacle blank ASTM A182 Grade F321 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71K-0009S	Spectacle blank ASTM A182 Grade F321 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	2				P71K-0009U	Spectacle blank ASTM A182 Grade F321 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	3				P71K-0009V	Spectacle blank ASTM A182 Grade F321 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	4				P71K-0009W	Spectacle blank ASTM A182 Grade F321 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	6				P71K-0009T	Spectacle blank ASTM A182 Grade F321 Class 600 Standard-drawing Flange ASME B16.5 RF	

PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	8				P72K-0006J	Paddle blank ASTM A182 Grade F321 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	10				P72K-0006F	Paddle blank ASTM A182 Grade F321 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	12				P72K-0006G	Paddle blank ASTM A182 Grade F321 Class 600 Standard-drawing Flange ASME B16.5 RF	

PADDLE SPACER (PS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	8				P72K-0006N	Paddle spacer ASTM A182 Grade F321 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	10				P72K-0006K	Paddle spacer ASTM A182 Grade F321 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	12				P72K-0006L	Paddle spacer ASTM A182 Grade F321 Class 600 Standard-drawing Flange ASME B16.5 RF	

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BOLT TABLE (B_D0MH01 , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	80	P80S-003V6		
0.75	4	0.625	90	P80S-003XF		
1	4	0.625	95	P80S-003XG		
1.5	4	0.750	110	P80S-003XK		
2	8	0.625	110	P80S-003VC		
3	8	0.750	130	P80S-003XP		
4	8	0.875	150	P80S-0041F		
6	12	1.000	175	P80S-0043P		
8	12	1.125	195	P80S-0046W		
10	16	1.250	250	P80S-004AY		
12	20	1.250	255	P80S-004AZ		

BOLT TABLE (B_D0MH01_789 , STUD ASME RJ, OPTION CODE 789)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	110		R12	
0.75	4	0.750	115		R14	
1	4	0.875	130	P80S-0041B	R16	
1.5	4	1.000	140		R20	
2	8	0.875	150	P80S-0041F	R24	
3	8	0.875	150	P80S-0041F	R31	P75T-000N4
4	8	1.125	175	P80S-0046S	R37	P75T-000N5
6	12	1.125	200	P80S-0046X	R45	P75T-000JE
8	12	1.375	260	P80S-003E5	R49	P75T-000JF
10	16	1.375	275	P80S-003E8	R53	P75T-000JC
12	20	1.375	295	P80S-003EC	R57	P75T-000JD

BOLT TABLE (B_D0MH01_797 , STUD ASME RJ, OPTION CODE 797)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	110	P80S-003XK	R12	P75T-000JG
0.75	4	0.750	115	P80S-003XL	R14	P75T-000JH
1	4	0.875	130	P80S-0041B	R16	P75T-000JJ
1.5	4	1.000	140	P80S-0043F	R20	P75T-000JK
2	8	0.875	150	P80S-0041F	R24	P75T-000N6
3	8	1.125	180		R35	
4	8	1.250	230		R39	
6	12	1.375	300		R46	
8	12	1.625	345		R50	
10	12	1.875	395		R54	
12	16	2.000	445		R58	

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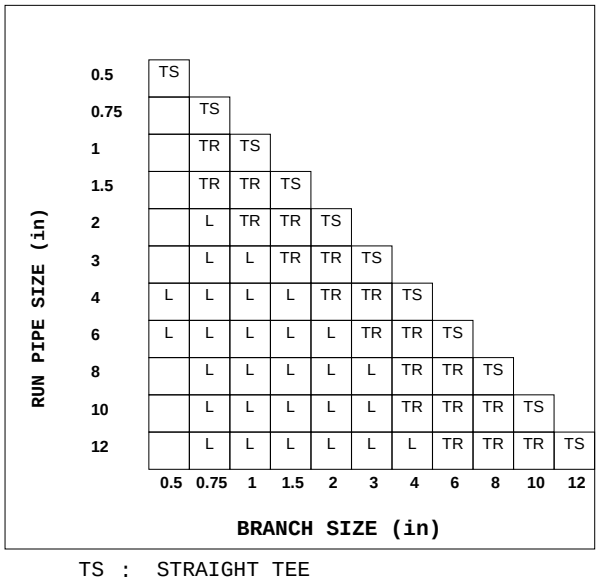
BRANCH TABLE (T_D0MH01)



RUN PIPE SIZE (in) \ BRANCH SIZE (in)	0.5	0.75	1	1.5	2	3	4	6	8	10	12
0.5	TS										
0.75		TS									
1		TR	TS								
1.5		TR	TR	TS							
2		L	TR	TR	TS						
3		L	L	TR	TR	TS					
4	L	L	L	L	TR	TR	TS				
6	L	L	L	L	L	TR	TR	TS			
8		L	L	L	L	L	TR	TR	TS		
10		L	L	L	L	L	TR	TR	TR	TS	
12		L	L	L	L	L	L	TR	TR	TR	TS

TS : STRAIGHT TEE
TR : REDUCING TEE
L : OUTLET

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PIPING CLASS

D0MS **REV NO. 2**

Material : SS347
Rating : ASME CLASS 600
Flange Face : RF
C.A.(mm) : 0.00
Gasket : Spiral Wound
Service : UTILITY - STEAM, CONDENSATE, BOILER FEED WATER TO ASME B31.3
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
19	FOR ALL RELEVANT PIPING CLASSES, FULL VACUUM CONDITIONS AND STEAM OUT CONDITIONS TO BE VERIFIED DURING DETAILED ENGINEERING
24	FOR ALL RELEVANT PIPING CLASSES WITH LINE DESIGN TEMPERATURE ABOVE 427DEGC, IN SPIRAL WOUND GASKET, SUITABLE GASKET FILLER MATERIAL SUCH AS COMBINATION OF MICA LAYERS AND GRAPHITE FILLERS OR EQUIVALENT SHALL BE REVIEWED AND SELECTED OR AS DEFINED BY THE LICENSOR

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
541	NPT(F) (F)

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PIPING CLASS
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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P01J-00337	Pipe ASTM A312 Grade TP347 Seamless ASME B36.10M/B36.19M PE	
1	0.75		SCH80S		P01J-00338	Pipe ASTM A312 Grade TP347 Seamless ASME B36.10M/B36.19M PE	
1	1		SCH80S		P01J-00339	Pipe ASTM A312 Grade TP347 Seamless ASME B36.10M/B36.19M PE	
1	1.5		SCH80S		P01J-0033A	Pipe ASTM A312 Grade TP347 Seamless ASME B36.10M/B36.19M PE	
1	2		SCH40S		P01J-0033B	Pipe ASTM A312 Grade TP347 Seamless ASME B36.10M/B36.19M BE	
1	3		SCH40S		P01J-0033C	Pipe ASTM A312 Grade TP347 Seamless ASME B36.10M/B36.19M BE	
1	4		SCH40S		P01J-0033D	Pipe ASTM A312 Grade TP347 Seamless ASME B36.10M/B36.19M BE	
1	6		SCH80S		P01J-0033E	Pipe ASTM A312 Grade TP347 Seamless ASME B36.10M/B36.19M BE	
1	8		SCH40S		P01J-0033J	Pipe ASTM A358 Grade 347 Class 1 EFW ASME B36.10M/B36.19M BE	
1	10		SCH40S		P01J-0033F	Pipe ASTM A358 Grade 347 Class 1 EFW ASME B36.10M/B36.19M BE	
1	12		SCH40S		P01J-0033G	Pipe ASTM A358 Grade 347 Class 1 EFW ASME B36.10M/B36.19M BE	
1	14		SCH40S		P01J-0033H	Pipe ASTM A358 Grade 347 Class 1 EFW ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P02J-002D2	90 degree elbow ASTM A403 Grade WP347 Class S Seamless ASME B16.9 BW Long radius	
1	0.75		SCH80S		P02J-002D3	90 degree elbow ASTM A403 Grade WP347 Class S Seamless ASME B16.9 BW Long radius	
1	1		SCH80S		P02J-002D4	90 degree elbow ASTM A403 Grade WP347 Class S Seamless ASME B16.9 BW Long radius	
1	1.5		SCH80S		P02J-002D5	90 degree elbow ASTM A403 Grade WP347 Class S Seamless ASME B16.9 BW Long radius	
1	2		SCH40S		P02J-002D6	90 degree elbow ASTM A403 Grade WP347 Class S Seamless ASME B16.9 BW Long radius	
1	3		SCH40S		P02J-002D7	90 degree elbow ASTM A403 Grade WP347 Class S Seamless ASME B16.9 BW Long radius	
1	4		SCH40S		P02J-002D8	90 degree elbow ASTM A403 Grade WP347 Class S Seamless ASME B16.9 BW Long radius	
1	6		SCH80S		P02J-002D9	90 degree elbow ASTM A403 Grade WP347 Class S Seamless ASME B16.9 BW Long radius	
1	8		SCH40S		P02J-002DD	90 degree elbow ASTM A403 Grade WP347 Class WX Weld ASME B16.9 BW Long radius	
1	10		SCH40S		P02J-002DA	90 degree elbow ASTM A403 Grade WP347 Class WX Weld ASME B16.9 BW Long radius	
1	12		SCH40S		P02J-002DB	90 degree elbow ASTM A403 Grade WP347 Class WX Weld ASME B16.9 BW Long radius	
1	14		SCH40S		P02J-002DC	90 degree elbow ASTM A403 Grade WP347 Class WX Weld ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P03J-002CR	45 degree elbow ASTM A403 Grade WP347 Class S Seamless ASME B16.9 BW Long radius	
1	0.75		SCH80S		P03J-002CS	45 degree elbow ASTM A403 Grade WP347 Class S Seamless ASME B16.9 BW Long radius	
1	1		SCH80S		P03J-002CT	45 degree elbow ASTM A403 Grade WP347 Class S Seamless ASME B16.9 BW Long radius	
1	1.5		SCH80S		P03J-002CU	45 degree elbow ASTM A403 Grade WP347 Class S Seamless ASME B16.9 BW Long radius	
1	2		SCH40S		P03J-002CV	45 degree elbow ASTM A403 Grade WP347 Class S Seamless ASME B16.9 BW Long radius	
1	3		SCH40S		P03J-002CW	45 degree elbow ASTM A403 Grade WP347 Class S Seamless ASME B16.9 BW Long radius	
1	4		SCH40S		P03J-002CX	45 degree elbow ASTM A403 Grade WP347 Class S Seamless ASME B16.9 BW Long radius	
1	6		SCH80S		P03J-002CY	45 degree elbow ASTM A403 Grade WP347 Class S Seamless ASME B16.9 BW Long radius	
1	8		SCH40S		P03J-002D2	45 degree elbow ASTM A403 Grade WP347 Class WX Weld ASME B16.9 BW Long radius	
1	10		SCH40S		P03J-002CZ	45 degree elbow ASTM A403 Grade WP347 Class WX Weld ASME B16.9 BW Long radius	
1	12		SCH40S		P03J-002D0	45 degree elbow ASTM A403 Grade WP347 Class WX Weld ASME B16.9 BW Long radius	
1	14		SCH40S		P03J-002D1	45 degree elbow ASTM A403 Grade WP347 Class WX Weld ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P21J-002AE	Straight tee ASTM A403 Grade WP347 Class S Seamless ASME B16.9 BW	
1	0.75		SCH80S		P21J-002AF	Straight tee ASTM A403 Grade WP347 Class S Seamless ASME B16.9 BW	
1	1		SCH80S		P21J-002AG	Straight tee ASTM A403 Grade WP347 Class S Seamless ASME B16.9 BW	
1	1.5		SCH80S		P21J-002AH	Straight tee ASTM A403 Grade WP347 Class S Seamless ASME B16.9 BW	
1	2		SCH40S		P21J-002AJ	Straight tee ASTM A403 Grade WP347 Class S Seamless ASME B16.9 BW	
1	3		SCH40S		P21J-002AK	Straight tee ASTM A403 Grade WP347 Class S Seamless ASME B16.9 BW	
1	4		SCH40S		P21J-002AL	Straight tee ASTM A403 Grade WP347 Class S Seamless ASME B16.9 BW	
1	6		SCH80S		P21J-002AM	Straight tee ASTM A403 Grade WP347 Class S Seamless ASME B16.9 BW	
1	8		SCH40S		P21J-002AS	Straight tee ASTM A403 Grade WP347 Class WX Weld ASME B16.9 BW	
1	10		SCH40S		P21J-002AN	Straight tee ASTM A403 Grade WP347 Class WX Weld ASME B16.9 BW	
1	12		SCH40S		P21J-002AP	Straight tee ASTM A403 Grade WP347 Class WX Weld ASME B16.9 BW	
1	14		SCH40S		P21J-002AR	Straight tee ASTM A403 Grade WP347 Class WX Weld ASME B16.9 BW	

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REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75	SCH80S	SCH80S	P24J-008X6	Reducing tee ASTM A403 Grade WP347 Class S Seamless ASME B16.9 BW	
1	1.5	0.75	SCH80S	SCH80S	P24J-008X7	Reducing tee ASTM A403 Grade WP347 Class S Seamless ASME B16.9 BW	
1	1.5	1	SCH80S	SCH80S	P24J-008X8	Reducing tee ASTM A403 Grade WP347 Class S Seamless ASME B16.9 BW	
1	2	1	SCH40S	SCH80S	P24J-008X9	Reducing tee ASTM A403 Grade WP347 Class S Seamless ASME B16.9 BW	
1	2	1.5	SCH40S	SCH80S	P24J-008XA	Reducing tee ASTM A403 Grade WP347 Class S Seamless ASME B16.9 BW	
1	3	1.5	SCH40S	SCH80S	P24J-008XB	Reducing tee ASTM A403 Grade WP347 Class S Seamless ASME B16.9 BW	
1	3	2	SCH40S	SCH40S	P24J-008XC	Reducing tee ASTM A403 Grade WP347 Class S Seamless ASME B16.9 BW	
1	4	2	SCH40S	SCH40S	P24J-008XD	Reducing tee ASTM A403 Grade WP347 Class S Seamless ASME B16.9 BW	
1	4	3	SCH40S	SCH40S	P24J-008XE	Reducing tee ASTM A403 Grade WP347 Class S Seamless ASME B16.9 BW	
1	6	3	SCH80S	SCH40S	P24J-008XF	Reducing tee ASTM A403 Grade WP347 Class S Seamless ASME B16.9 BW	
1	6	4	SCH80S	SCH40S	P24J-008XG	Reducing tee ASTM A403 Grade WP347 Class S Seamless ASME B16.9 BW	
1	8	4	SCH40S	SCH40S	P24J-008XH	Reducing tee ASTM A403 Grade WP347 Class WX Weld ASME B16.9 BW	
1	8	6	SCH40S	SCH80S	P24J-008XJ	Reducing tee ASTM A403 Grade WP347 Class WX Weld ASME B16.9 BW	
1	10	4	SCH40S	SCH40S	P24J-008XK	Reducing tee ASTM A403 Grade WP347 Class WX Weld ASME B16.9 BW	
1	10	6	SCH40S	SCH80S	P24J-008XL	Reducing tee ASTM A403 Grade WP347 Class WX Weld ASME B16.9 BW	
1	10	8	SCH40S	SCH40S	P24J-008XM	Reducing tee ASTM A403 Grade WP347 Class WX Weld ASME B16.9 BW	
1	12	6	SCH40S	SCH80S	P24J-008XP	Reducing tee ASTM A403 Grade WP347 Class WX Weld ASME B16.9 BW	
1	12	8	SCH40S	SCH40S	P24J-008XR	Reducing tee ASTM A403 Grade WP347 Class WX Weld ASME B16.9 BW	
1	12	10	SCH40S	SCH40S	P24J-008XN	Reducing tee ASTM A403 Grade WP347 Class WX Weld ASME B16.9 BW	
1	14	6	SCH40S	SCH80S	P24J-008XU	Reducing tee ASTM A403 Grade WP347 Class WX Weld ASME B16.9 BW	
1	14	8	SCH40S	SCH40S	P24J-008XV	Reducing tee ASTM A403 Grade WP347 Class WX Weld ASME B16.9 BW	
1	14	10	SCH40S	SCH40S	P24J-008XS	Reducing tee ASTM A403 Grade WP347 Class WX Weld ASME B16.9 BW	
1	14	12	SCH40S	SCH40S	P24J-008XT	Reducing tee ASTM A403 Grade WP347 Class WX Weld ASME B16.9 BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH80S	SCH80S	P27J-007FV	Concentric reducer ASTM A403 Grade WP347 Class S Seamless ASME B16.9 BW	
1	1	0.5	SCH80S	SCH80S	P27J-007FW	Concentric reducer ASTM A403 Grade WP347 Class S Seamless ASME B16.9 BW	
1	1	0.75	SCH80S	SCH80S	P27J-007FX	Concentric reducer ASTM A403 Grade WP347 Class S Seamless ASME B16.9 BW	
1	1.5	0.5	SCH80S	SCH80S	P27J-007FY	Concentric reducer ASTM A403 Grade WP347 Class S Seamless ASME B16.9 BW	
1	1.5	0.75	SCH80S	SCH80S	P27J-007FZ	Concentric reducer ASTM A403 Grade WP347 Class S Seamless ASME B16.9 BW	
1	1.5	1	SCH80S	SCH80S	P27J-007G0	Concentric reducer ASTM A403 Grade WP347 Class S Seamless ASME B16.9 BW	
1	2	0.75	SCH40S	SCH80S	P27J-007G1	Concentric reducer ASTM A403 Grade WP347 Class S Seamless ASME B16.9 BW	
1	2	1	SCH40S	SCH80S	P27J-007G2	Concentric reducer ASTM A403 Grade WP347 Class S Seamless ASME B16.9 BW	
1	2	1.5	SCH40S	SCH80S	P27J-007G3	Concentric reducer ASTM A403 Grade WP347 Class S Seamless ASME B16.9 BW	
1	3	1.5	SCH40S	SCH80S	P27J-007G4	Concentric reducer ASTM A403 Grade WP347 Class S Seamless ASME B16.9 BW	
1	3	2	SCH40S	SCH40S	P27J-007G5	Concentric reducer ASTM A403 Grade WP347 Class S Seamless ASME B16.9 BW	
1	4	1.5	SCH40S	SCH80S	P27J-007G6	Concentric reducer ASTM A403 Grade WP347 Class S Seamless ASME B16.9 BW	
1	4	2	SCH40S	SCH40S	P27J-007G7	Concentric reducer ASTM A403 Grade WP347 Class S Seamless ASME B16.9 BW	
1	4	3	SCH40S	SCH40S	P27J-007G8	Concentric reducer ASTM A403 Grade WP347 Class S Seamless ASME B16.9 BW	
1	6	3	SCH80S	SCH40S	P27J-007G9	Concentric reducer ASTM A403 Grade WP347 Class S Seamless ASME B16.9 BW	
1	6	4	SCH80S	SCH40S	P27J-007GA	Concentric reducer ASTM A403 Grade WP347 Class S Seamless ASME B16.9 BW	
1	8	4	SCH40S	SCH40S	P27J-007GB	Concentric reducer ASTM A403 Grade WP347 Class WX Weld ASME B16.9 BW	
1	8	6	SCH40S	SCH80S	P27J-007GC	Concentric reducer ASTM A403 Grade WP347 Class WX Weld ASME B16.9 BW	
1	10	4	SCH40S	SCH40S	P27J-007GD	Concentric reducer ASTM A403 Grade WP347 Class WX Weld ASME B16.9 BW	
1	10	6	SCH40S	SCH80S	P27J-007GE	Concentric reducer ASTM A403 Grade WP347 Class WX Weld ASME B16.9 BW	
1	10	8	SCH40S	SCH40S	P27J-007GF	Concentric reducer ASTM A403 Grade WP347 Class WX Weld ASME B16.9 BW	
1	12	6	SCH40S	SCH80S	P27J-007GH	Concentric reducer ASTM A403 Grade WP347 Class WX Weld ASME B16.9 BW	
1	12	8	SCH40S	SCH40S	P27J-007GJ	Concentric reducer ASTM A403 Grade WP347 Class WX Weld ASME B16.9 BW	
1	12	10	SCH40S	SCH40S	P27J-007GG	Concentric reducer ASTM A403 Grade WP347 Class WX Weld ASME B16.9 BW	
1	14	6	SCH40S	SCH80S	P27J-007GM	Concentric reducer ASTM A403 Grade WP347 Class WX Weld ASME B16.9 BW	
1	14	8	SCH40S	SCH40S	P27J-007GN	Concentric reducer ASTM A403 Grade WP347 Class WX Weld ASME B16.9 BW	
1	14	10	SCH40S	SCH40S	P27J-007GK	Concentric reducer ASTM A403 Grade WP347 Class WX Weld ASME B16.9 BW	
1	14	12	SCH40S	SCH40S	P27J-007GL	Concentric reducer ASTM A403 Grade WP347 Class WX Weld ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH80S	SCH80S	P28J-007GK	Eccentric reducer ASTM A403 Grade WP347 Class S Seamless ASME B16.9 BW	
1	1	0.5	SCH80S	SCH80S	P28J-007GL	Eccentric reducer ASTM A403 Grade WP347 Class S Seamless ASME B16.9 BW	

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ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75	SCH80S	SCH80S	P28J-007GM	Eccentric reducer ASTM A403 Grade WP347 Class S Seamless ASME B16.9 BW	
1	1.5	0.5	SCH80S	SCH80S	P28J-007GN	Eccentric reducer ASTM A403 Grade WP347 Class S Seamless ASME B16.9 BW	
1	1.5	0.75	SCH80S	SCH80S	P28J-007GP	Eccentric reducer ASTM A403 Grade WP347 Class S Seamless ASME B16.9 BW	
1	1.5	1	SCH80S	SCH80S	P28J-007GR	Eccentric reducer ASTM A403 Grade WP347 Class S Seamless ASME B16.9 BW	
1	2	0.75	SCH40S	SCH80S	P28J-007GS	Eccentric reducer ASTM A403 Grade WP347 Class S Seamless ASME B16.9 BW	
1	2	1	SCH40S	SCH80S	P28J-007GT	Eccentric reducer ASTM A403 Grade WP347 Class S Seamless ASME B16.9 BW	
1	2	1.5	SCH40S	SCH80S	P28J-007GU	Eccentric reducer ASTM A403 Grade WP347 Class S Seamless ASME B16.9 BW	
1	3	1.5	SCH40S	SCH80S	P28J-007GV	Eccentric reducer ASTM A403 Grade WP347 Class S Seamless ASME B16.9 BW	
1	3	2	SCH40S	SCH40S	P28J-007GW	Eccentric reducer ASTM A403 Grade WP347 Class S Seamless ASME B16.9 BW	
1	4	1.5	SCH40S	SCH80S	P28J-007GX	Eccentric reducer ASTM A403 Grade WP347 Class S Seamless ASME B16.9 BW	
1	4	2	SCH40S	SCH40S	P28J-007GY	Eccentric reducer ASTM A403 Grade WP347 Class S Seamless ASME B16.9 BW	
1	4	3	SCH40S	SCH40S	P28J-007GZ	Eccentric reducer ASTM A403 Grade WP347 Class S Seamless ASME B16.9 BW	
1	6	3	SCH80S	SCH40S	P28J-007H0	Eccentric reducer ASTM A403 Grade WP347 Class S Seamless ASME B16.9 BW	
1	6	4	SCH80S	SCH40S	P28J-007H1	Eccentric reducer ASTM A403 Grade WP347 Class S Seamless ASME B16.9 BW	
1	8	4	SCH40S	SCH40S	P28J-007H2	Eccentric reducer ASTM A403 Grade WP347 Class WX Weld ASME B16.9 BW	
1	8	6	SCH40S	SCH80S	P28J-007H3	Eccentric reducer ASTM A403 Grade WP347 Class WX Weld ASME B16.9 BW	
1	10	4	SCH40S	SCH40S	P28J-007H4	Eccentric reducer ASTM A403 Grade WP347 Class WX Weld ASME B16.9 BW	
1	10	6	SCH40S	SCH80S	P28J-007H5	Eccentric reducer ASTM A403 Grade WP347 Class WX Weld ASME B16.9 BW	
1	10	8	SCH40S	SCH40S	P28J-007H6	Eccentric reducer ASTM A403 Grade WP347 Class WX Weld ASME B16.9 BW	
1	12	6	SCH40S	SCH80S	P28J-007H8	Eccentric reducer ASTM A403 Grade WP347 Class WX Weld ASME B16.9 BW	
1	12	8	SCH40S	SCH40S	P28J-007H9	Eccentric reducer ASTM A403 Grade WP347 Class WX Weld ASME B16.9 BW	
1	12	10	SCH40S	SCH40S	P28J-007H7	Eccentric reducer ASTM A403 Grade WP347 Class WX Weld ASME B16.9 BW	
1	14	6	SCH40S	SCH80S	P28J-007HC	Eccentric reducer ASTM A403 Grade WP347 Class WX Weld ASME B16.9 BW	
1	14	8	SCH40S	SCH40S	P28J-007HD	Eccentric reducer ASTM A403 Grade WP347 Class WX Weld ASME B16.9 BW	
1	14	10	SCH40S	SCH40S	P28J-007HA	Eccentric reducer ASTM A403 Grade WP347 Class WX Weld ASME B16.9 BW	
1	14	12	SCH40S	SCH40S	P28J-007HB	Eccentric reducer ASTM A403 Grade WP347 Class WX Weld ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P29J-0045U	Cap ASTM A403 Grade WP347 Class S Seamless ASME B16.9 BW	
1	0.75		SCH80S		P29J-0045V	Cap ASTM A403 Grade WP347 Class S Seamless ASME B16.9 BW	
1	1		SCH80S		P29J-0045W	Cap ASTM A403 Grade WP347 Class S Seamless ASME B16.9 BW	
1	1.5		SCH80S		P29J-0045X	Cap ASTM A403 Grade WP347 Class S Seamless ASME B16.9 BW	
1	2		SCH40S		P29J-00461	Cap ASTM A403 Grade WP347 Class S Seamless ASME B16.9 BW	
1	3		SCH40S		P29J-00462	Cap ASTM A403 Grade WP347 Class S Seamless ASME B16.9 BW	
1	4		SCH40S		P29J-00463	Cap ASTM A403 Grade WP347 Class S Seamless ASME B16.9 BW	
1	6		SCH80S		P29J-00464	Cap ASTM A403 Grade WP347 Class S Seamless ASME B16.9 BW	
1	8		SCH40S		P29J-00465	Cap ASTM A403 Grade WP347 Class S Seamless ASME B16.9 BW	
1	10		SCH40S		P29J-0045Y	Cap ASTM A403 Grade WP347 Class S Seamless ASME B16.9 BW	
1	12		SCH40S		P29J-0045Z	Cap ASTM A403 Grade WP347 Class S Seamless ASME B16.9 BW	
1	14		SCH40S		P29J-00460	Cap ASTM A403 Grade WP347 Class S Seamless ASME B16.9 BW	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P41J-001WA	Straight nipple ASTM A312 Grade TP347 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		SCH160		P41J-001WB	Straight nipple ASTM A312 Grade TP347 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		SCH160		P41J-001WC	Straight nipple ASTM A312 Grade TP347 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		SCH160		P41J-001WD	Straight nipple ASTM A312 Grade TP347 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2	0.75	SCH40S	SCH80S	P31K-00H10	Outlet ASTM A182 Grade F347 MSS SP-97 BW	
1	3	0.75	SCH40S	SCH80S	P31K-00H11	Outlet ASTM A182 Grade F347 MSS SP-97 BW	
1	4	0.75	SCH40S	SCH80S	P31K-00H13	Outlet ASTM A182 Grade F347 MSS SP-97 BW	
1	6	0.75	SCH80S	SCH80S	P31K-00H16	Outlet ASTM A182 Grade F347 MSS SP-97 BW	
1	8	0.75	SCH40S	SCH80S	P31K-00H1A	Outlet ASTM A182 Grade F347 MSS SP-97 BW	
1	10	0.75	SCH40S	SCH80S	P31K-00H1F	Outlet ASTM A182 Grade F347 MSS SP-97 BW	
1	12	0.75	SCH40S	SCH80S	P31K-00H1L	Outlet ASTM A182 Grade F347 MSS SP-97 BW	
1	14	0.75	SCH40S	SCH80S	P31K-00H1T	Outlet ASTM A182 Grade F347 MSS SP-97 BW	

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OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	1	SCH40S	SCH80S	P31K-00H12	Outlet ASTM A182 Grade F347 MSS SP-97 BW	
1	4	1	SCH40S	SCH80S	P31K-00H14	Outlet ASTM A182 Grade F347 MSS SP-97 BW	
1	6	1	SCH80S	SCH80S	P31K-00H17	Outlet ASTM A182 Grade F347 MSS SP-97 BW	
1	8	1	SCH40S	SCH80S	P31K-00H1B	Outlet ASTM A182 Grade F347 MSS SP-97 BW	
1	10	1	SCH40S	SCH80S	P31K-00H1G	Outlet ASTM A182 Grade F347 MSS SP-97 BW	
1	12	1	SCH40S	SCH80S	P31K-00H1M	Outlet ASTM A182 Grade F347 MSS SP-97 BW	
1	14	1	SCH40S	SCH80S	P31K-00H1U	Outlet ASTM A182 Grade F347 MSS SP-97 BW	
1	4	1.5	SCH40S	SCH80S	P31K-00H15	Outlet ASTM A182 Grade F347 MSS SP-97 BW	
1	6	1.5	SCH80S	SCH80S	P31K-00H18	Outlet ASTM A182 Grade F347 MSS SP-97 BW	
1	8	1.5	SCH40S	SCH80S	P31K-00H1C	Outlet ASTM A182 Grade F347 MSS SP-97 BW	
1	10	1.5	SCH40S	SCH80S	P31K-00H1H	Outlet ASTM A182 Grade F347 MSS SP-97 BW	
1	12	1.5	SCH40S	SCH80S	P31K-00H1N	Outlet ASTM A182 Grade F347 MSS SP-97 BW	
1	14	1.5	SCH40S	SCH80S	P31K-00H1V	Outlet ASTM A182 Grade F347 MSS SP-97 BW	
1	6	2	SCH80S	SCH40S	P31K-00H19	Outlet ASTM A182 Grade F347 MSS SP-97 BW	
1	8	2	SCH40S	SCH40S	P31K-00H1D	Outlet ASTM A182 Grade F347 MSS SP-97 BW	
1	10	2	SCH40S	SCH40S	P31K-00H1J	Outlet ASTM A182 Grade F347 MSS SP-97 BW	
1	12	2	SCH40S	SCH40S	P31K-00H1P	Outlet ASTM A182 Grade F347 MSS SP-97 BW	
1	14	2	SCH40S	SCH40S	P31K-00H1W	Outlet ASTM A182 Grade F347 MSS SP-97 BW	
1	8	3	SCH40S	SCH40S	P31K-00H1E	Outlet ASTM A182 Grade F347 MSS SP-97 BW	
1	10	3	SCH40S	SCH40S	P31K-00H1K	Outlet ASTM A182 Grade F347 MSS SP-97 BW	
1	12	3	SCH40S	SCH40S	P31K-00H1R	Outlet ASTM A182 Grade F347 MSS SP-97 BW	
1	14	3	SCH40S	SCH40S	P31K-00H1X	Outlet ASTM A182 Grade F347 MSS SP-97 BW	
1	12	4	SCH40S	SCH40S	P31K-00H1S	Outlet ASTM A182 Grade F347 MSS SP-97 BW	
1	14	4	SCH40S	SCH40S	P31K-00H1Y	Outlet ASTM A182 Grade F347 MSS SP-97 BW	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30K-0005M	Plug ASTM A182 Grade F347 ASME B16.11 NPT Round head	
1	0.75				P30K-0005N	Plug ASTM A182 Grade F347 ASME B16.11 NPT Round head	
1	1				P30K-0005P	Plug ASTM A182 Grade F347 ASME B16.11 NPT Round head	
1	1.5				P30K-0005R	Plug ASTM A182 Grade F347 ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P61K-006UW	Flange WN ASTM A182 Grade F347 Class 600 ASME B16.5 RF	
1	0.75		SCH80S		P61K-006UX	Flange WN ASTM A182 Grade F347 Class 600 ASME B16.5 RF	
1	1		SCH80S		P61K-006UY	Flange WN ASTM A182 Grade F347 Class 600 ASME B16.5 RF	
1	1.5		SCH80S		P61K-006UZ	Flange WN ASTM A182 Grade F347 Class 600 ASME B16.5 RF	
1	2		SCH40S		P61K-006V3	Flange WN ASTM A182 Grade F347 Class 600 ASME B16.5 RF	
1	3		SCH40S		P61K-006V4	Flange WN ASTM A182 Grade F347 Class 600 ASME B16.5 RF	
1	4		SCH40S		P61K-006V5	Flange WN ASTM A182 Grade F347 Class 600 ASME B16.5 RF	
1	6		SCH80S		P61K-006V6	Flange WN ASTM A182 Grade F347 Class 600 ASME B16.5 RF	
1	8		SCH40S		P61K-006V7	Flange WN ASTM A182 Grade F347 Class 600 ASME B16.5 RF	
1	10		SCH40S		P61K-006V0	Flange WN ASTM A182 Grade F347 Class 600 ASME B16.5 RF	
1	12		SCH40S		P61K-006V1	Flange WN ASTM A182 Grade F347 Class 600 ASME B16.5 RF	
1	14		SCH40S		P61K-006V2	Flange WN ASTM A182 Grade F347 Class 600 ASME B16.5 RF	
541	0.5				P61K-006V8	Flange NPT ASTM A182 Grade F347 Class 600 ASME B16.5 RF	
541	0.75				P61K-006V9	Flange NPT ASTM A182 Grade F347 Class 600 ASME B16.5 RF	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67K-0023G	Blind flange ASTM A182 Grade F347 Class 600 ASME B16.5 RF	
1	0.75				P67K-0023H	Blind flange ASTM A182 Grade F347 Class 600 ASME B16.5 RF	
1	1				P67K-0023J	Blind flange ASTM A182 Grade F347 Class 600 ASME B16.5 RF	
1	1.5				P67K-0023K	Blind flange ASTM A182 Grade F347 Class 600 ASME B16.5 RF	
1	2				P67K-0023P	Blind flange ASTM A182 Grade F347 Class 600 ASME B16.5 RF	
1	3				P67K-0023R	Blind flange ASTM A182 Grade F347 Class 600 ASME B16.5 RF	
1	4				P67K-0023S	Blind flange ASTM A182 Grade F347 Class 600 ASME B16.5 RF	
1	6				P67K-0023T	Blind flange ASTM A182 Grade F347 Class 600 ASME B16.5 RF	

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BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	8				P67K-0023U	Blind flange ASTM A182 Grade F347 Class 600 ASME B16.5 RF	
1	10				P67K-0023L	Blind flange ASTM A182 Grade F347 Class 600 ASME B16.5 RF	
1	12				P67K-0023M	Blind flange ASTM A182 Grade F347 Class 600 ASME B16.5 RF	
1	14				P67K-0023N	Blind flange ASTM A182 Grade F347 Class 600 ASME B16.5 RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-0042E	Spiral wound gasket SS347 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS347	
1	0.75				P73T-0042F	Spiral wound gasket SS347 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS347	
1	1				P73T-0042G	Spiral wound gasket SS347 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS347	
1	1.5				P73T-0042H	Spiral wound gasket SS347 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS347	
1	2				P73T-0042M	Spiral wound gasket SS347 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS347	
1	3				P73T-0042N	Spiral wound gasket SS347 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS347	
1	4				P73T-0042P	Spiral wound gasket SS347 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS347	
1	6				P73T-0042R	Spiral wound gasket SS347 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS347	
1	8				P73T-0042S	Spiral wound gasket SS347 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS347	
1	10				P73T-0042J	Spiral wound gasket SS347 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS347	
1	12				P73T-0042K	Spiral wound gasket SS347 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS347	
1	14				P73T-0042L	Spiral wound gasket SS347 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS347	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-6				See Attached Bolt Table	Bolt and Nut ASTM A453 Grade 660 Class C / A453 Grade 660 Class C ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	8-14				See Attached Bolt Table	Bolt and Nut ASTM A453 Grade 660 Class C / A453 Grade 660 Class C ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81K-001TK	Gate valve ASTM A182 Grade F347 Class 600 API 602 Flange ASME B16.5 RF Trim SS347 BB-BG-OS&Y Handwheel operated Fluid-2 Fluid-5	
1	0.75				P81K-001TL	Gate valve ASTM A182 Grade F347 Class 600 API 602 Flange ASME B16.5 RF Trim SS347 BB-BG-OS&Y Handwheel operated Fluid-2 Fluid-5	
1	1				P81K-001TM	Gate valve ASTM A182 Grade F347 Class 600 API 602 Flange ASME B16.5 RF Trim SS347 BB-BG-OS&Y Handwheel operated Fluid-2 Fluid-5	
1	1.5				P81K-001TN	Gate valve ASTM A182 Grade F347 Class 600 API 602 Flange ASME B16.5 RF Trim SS347 BB-BG-OS&Y Handwheel operated Fluid-2 Fluid-5	
1	2				P81L-003GE	Gate valve ASTM A351 Grade CF8C Class 600 API 600 Flange ASME B16.5 RF Trim SS347 BB-BG-OS&Y Handwheel operated Fluid-2 Fluid-5	
1	3				P81L-003GF	Gate valve ASTM A351 Grade CF8C Class 600 API 600 Flange ASME B16.5 RF Trim SS347 BB-BG-OS&Y Handwheel operated Fluid-2 Fluid-5	
1	4				P81L-003GG	Gate valve ASTM A351 Grade CF8C Class 600 API 600 Flange ASME B16.5 RF Trim SS347 BB-BG-OS&Y Handwheel operated Fluid-2 Fluid-5	
1	6				P81L-003GH	Gate valve ASTM A351 Grade CF8C Class 600 API 600 Flange ASME B16.5 RF Trim SS347 BB-BG-OS&Y Handwheel operated Fluid-2 Fluid-5	
1	8				P81L-003GM	Gate valve ASTM A351 Grade CF8C Class 600 API 600 Flange ASME B16.5 RF Trim SS347 BB-BG-OS&Y Gear operated Fluid-2 Fluid-5	
1	10				P81L-003GJ	Gate valve ASTM A351 Grade CF8C Class 600 API 600 Flange ASME B16.5 RF Trim SS347 BB-BG-OS&Y Gear operated Fluid-2 Fluid-5	
1	12				P81L-003GK	Gate valve ASTM A351 Grade CF8C Class 600 API 600 Flange ASME B16.5 RF Trim SS347 BB-BG-OS&Y Gear operated Fluid-2 Fluid-5	
1	14				P81L-003GL	Gate valve ASTM A351 Grade CF8C Class 600 API 600 Flange ASME B16.5 RF Trim SS347 BB-BG-OS&Y Gear operated Fluid-2 Fluid-5	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71K-000HD	Spectacle blank ASTM A182 Grade F347 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	0.75				P71K-000HE	Spectacle blank ASTM A182 Grade F347 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	1				P71K-000HF	Spectacle blank ASTM A182 Grade F347 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71K-000HG	Spectacle blank ASTM A182 Grade F347 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	2				P71K-000HH	Spectacle blank ASTM A182 Grade F347 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	3				P71K-000HJ	Spectacle blank ASTM A182 Grade F347 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	4				P71K-000HK	Spectacle blank ASTM A182 Grade F347 Class 600 Standard-drawing Flange ASME B16.5 RF	

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SPECT BLANK (SB)							
OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	6				P71K-000HL	Spectacle blank ASTM A182 Grade F347 Class 600 Standard-drawing Flange ASME B16.5 RF	

PADDLE BLANK (PB)							
OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	8				P72K-000M1	Paddle blank ASTM A182 Grade F347 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	10				P72K-000LY	Paddle blank ASTM A182 Grade F347 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	12				P72K-000LZ	Paddle blank ASTM A182 Grade F347 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	14				P72K-000M0	Paddle blank ASTM A182 Grade F347 Class 600 Standard-drawing Flange ASME B16.5 RF	

PADDLE SPACER (PS)							
OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	8				P72K-000M5	Paddle spacer ASTM A182 Grade F347 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	10				P72K-000M2	Paddle spacer ASTM A182 Grade F347 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	12				P72K-000M3	Paddle spacer ASTM A182 Grade F347 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	14				P72K-000M4	Paddle spacer ASTM A182 Grade F347 Class 600 Standard-drawing Flange ASME B16.5 RF	

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BOLT TABLE (B_D0MS , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	80	P80S-042X3		
0.75	4	0.625	90	P80S-042YT		
1	4	0.625	95	P80S-042YU		
1.5	4	0.750	110	P80S-03W4B		
2	8	0.625	110	P80S-042X9		
3	8	0.750	130	P80S-03W4F		
4	8	0.875	150	P80S-03W7N		
6	12	1.000	175	P80S-03WA3		
8	12	1.125	195	P80S-03WDJ		
10	16	1.250	250	P80S-03WHD		
12	20	1.250	255	P80S-03WHE		
14	20	1.375	270	P80S-03WLL		

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BRANCH TABLE (T_D0MS)

RUN PIPE SIZE (in) \ BRANCH SIZE (in)	0.5	0.75	1	1.5	2	3	4	6	8	10	12	14
0.5	TS											
0.75		TS										
1		TR	TS									
1.5		TR	TR	TS								
2		L	TR	TR	TS							
3		L	L	TR	TR	TS						
4	L	L	L	L	TR	TR	TS					
6	L	L	L	L	L	TR	TR	TS				
8		L	L	L	L	L	TR	TR	TS			
10		L	L	L	L	L	TR	TR	TR	TS		
12		L	L	L	L	L	L	TR	TR	TR	TS	
14		L	L	L	L	L	L	TR	TR	TR	TR	TS

TS : STRAIGHT TEE
L : OUTLET
TR : REDUCING TEE

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Material	:	Killed CS
Rating	:	ASME CLASS 600
Flange Face	:	RF
C.A.(mm)	:	3.00
Gasket	:	Spiral Wound
Service	:	STEAM CONDENSATE, LP STEAM, HP STEAM
Design Code	:	ASME B31.3
Heat Treatment	:	

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
541	NPT(F) (CA,L)
714	SW - NPT(F) (V,W)

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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75		SCH160		P01A-0010R	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1		SCH160		P01A-0014M	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1.5		SCH160		P01A-0015J	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	2		SCH160		P01A-0019T	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	3		XS		P01A-000Z4	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	4		XS		P01A-000Z9	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	6		XS		P01A-000ZF	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75				P02B-0001K	90 degree elbow ASTM A105 Class 6000 ASME B16.11 SW	
1	1				P02B-0002E	90 degree elbow ASTM A105 Class 6000 ASME B16.11 SW	
1	1.5				P02B-0002F	90 degree elbow ASTM A105 Class 6000 ASME B16.11 SW	
1	2		SCH160		P02A-000KW	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		XS		P02A-000CX	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		XS		P02A-000D3	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		XS		P02A-000DA	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75				P03B-0001G	45 degree elbow ASTM A105 Class 6000 ASME B16.11 SW	
1	1				P03B-0002A	45 degree elbow ASTM A105 Class 6000 ASME B16.11 SW	
1	1.5				P03B-0002B	45 degree elbow ASTM A105 Class 6000 ASME B16.11 SW	
1	2		SCH160		P03A-000HU	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		XS		P03A-000AZ	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		XS		P03A-000B3	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		XS		P03A-000B8	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75				P21B-0001G	Straight tee ASTM A105 Class 6000 ASME B16.11 SW	
1	1				P21B-00026	Straight tee ASTM A105 Class 6000 ASME B16.11 SW	
1	1.5				P21B-00027	Straight tee ASTM A105 Class 6000 ASME B16.11 SW	
1	2		SCH160		P21A-00245	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		XS		P21A-001CR	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		XS		P21A-001CV	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6		XS		P21A-001D4	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75			P24B-00030	Reducing tee ASTM A105 Class 6000 ASME B16.11 SW	
1	1.5	0.75			P24B-00032	Reducing tee ASTM A105 Class 6000 ASME B16.11 SW	
1	1.5	1			P24B-0004J	Reducing tee ASTM A105 Class 6000 ASME B16.11 SW	
1	2	1	SCH160	SCH160	P24A-00AEU	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	SCH160	SCH160	P24A-003AX	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	XS	SCH160	P24A-00GNV	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	XS	SCH160	P24A-00560	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	XS	SCH160	P24A-00561	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	XS	XS	P24A-0024A	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	XS	XS	P24A-0023F	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	XS	XS	P24A-00243	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	XS	SCH160	P27A-0037V	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	XS	SCH160	P27A-0037W	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	XS	XS	P27A-001EP	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	XS	XS	P27A-001DM	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	6	4	XS	XS	P27A-001EB	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	XS	SCH160	P28A-0037B	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	XS	SCH160	P28A-0037C	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	XS	XS	P28A-001F8	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	XS	XS	P28A-001DU	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	XS	XS	P28A-001ER	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75				P29B-0002G	Cap ASTM A105 Class 6000 ASME B16.11 SW	
1	1				P29B-0002D	Cap ASTM A105 Class 6000 ASME B16.11 SW	
1	1.5				P29B-0002E	Cap ASTM A105 Class 6000 ASME B16.11 SW	
1	2		SCH160		P29A-000HR	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		XS		P29A-000AT	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		XS		P29A-000B9	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6		XS		P29A-000BF	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
541	0.75				P29B-0000Y	Cap ASTM A105 Class 6000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75		XXS		P41A-000BA	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		XXS		P41A-000D8	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		XXS		P41A-000D9	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

CON SWAGED NIPPLE (SNC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75	SCH160	SCH160	P42A-0009U	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	SCH160	SCH160	P42A-0009W	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	SCH160	SCH160	P42A-0009X	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.75	SCH160	SCH160	P42A-000J9	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	SCH160	SCH160	P42A-000JA	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	SCH160	SCH160	P42A-000JB	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	XS	SCH160	P42A-000L9	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	

ECC SWAGED NIPPLE (SNE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75	SCH160	SCH160	P43A-000B5	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	SCH160	SCH160	P43A-000B7	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	SCH160	SCH160	P43A-000B8	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.75	SCH160	SCH160	P43A-000BA	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	SCH160	SCH160	P43A-000BB	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	SCH160	SCH160	P43A-000BC	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	XS	SCH160	P43A-000DM	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	

COUPLING (CPS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75				P47B-00012	Coupling ASTM A105 Class 6000 ASME B16.11 SW - SW	
1	1				P47B-0002A	Coupling ASTM A105 Class 6000 ASME B16.11 SW - SW	
1	1.5				P47B-0002B	Coupling ASTM A105 Class 6000 ASME B16.11 SW - SW	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5 - 2.5	0.75			P31B-0137D	Outlet ASTM A105 Class 6000 MSS SP-97 SW	
1	3 - 10	0.75			P31B-007LV	Outlet ASTM A105 Class 6000 MSS SP-97 SW	

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OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3 - 10	1			P31B-007LN	Outlet ASTM A105 Class 6000 MSS SP-97 SW	
1	4 - 5	1.5			P31B-004LE	Outlet ASTM A105 Class 6000 MSS SP-97 SW	
1	6 - 8	1.5			P31B-005T4	Outlet ASTM A105 Class 6000 MSS SP-97 SW	
541	1	0.75			P31B-005HL	Outlet ASTM A105 Class 6000 MSS SP-97 NPT	
541	1.5 - 2.5	0.75			P31B-0137F	Outlet ASTM A105 Class 6000 MSS SP-97 NPT	
541	3 - 10	0.75			P31B-007KP	Outlet ASTM A105 Class 6000 MSS SP-97 NPT	
1	6	2	XS	SCH160	P31B-007SR	Outlet ASTM A105 MSS SP-97 BW	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75				P30B-0002E	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1				P30B-0002F	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1.5				P30B-0002G	Plug ASTM A105 ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75		SCH160		P61B-001DW	Flange SW ASTM A105 Class 600 ASME B16.5 RF	
1	1		SCH160		P61B-005X5	Flange SW ASTM A105 Class 600 ASME B16.5 RF	
1	1.5		SCH160		P61B-005X6	Flange SW ASTM A105 Class 600 ASME B16.5 RF	
1	2		SCH160		P61B-003T7	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
1	3		XS		P61B-001M8	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
1	4		XS		P61B-001SH	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
1	6		XS		P61B-001T1	Flange WN ASTM A105 Class 600 ASME B16.5 RF	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75				P67B-000J8	Blind flange ASTM A105 Class 600 ASME B16.5 RF	
1	1				P67B-000J9	Blind flange ASTM A105 Class 600 ASME B16.5 RF	
1	1.5				P67B-000JA	Blind flange ASTM A105 Class 600 ASME B16.5 RF	
1	2				P67B-000JG	Blind flange ASTM A105 Class 600 ASME B16.5 RF	
1	3				P67B-000JK	Blind flange ASTM A105 Class 600 ASME B16.5 RF	
1	4				P67B-000JL	Blind flange ASTM A105 Class 600 ASME B16.5 RF	
1	6				P67B-000JM	Blind flange ASTM A105 Class 600 ASME B16.5 RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75				P73T-0035F	Spiral wound gasket SS316 winding / Non-asbestos filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-6	
1	1				P73T-0035G	Spiral wound gasket SS316 winding / Non-asbestos filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-6	
1	1.5				P73T-0035H	Spiral wound gasket SS316 winding / Non-asbestos filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-6	
1	2				P73T-0035J	Spiral wound gasket SS316 winding / Non-asbestos filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-6	
1	3				P73T-0035K	Spiral wound gasket SS316 winding / Non-asbestos filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-6	
1	4				P73T-0035L	Spiral wound gasket SS316 winding / Non-asbestos filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-6	
1	6				P73T-0035M	Spiral wound gasket SS316 winding / Non-asbestos filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-6	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75-6				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75				P81B-000P0	Gate valve ASTM A105 Class 800 API 602 SW Trim number 5 BB-BG-OS&Y Handwheel operated	
1	1				P81B-000P1	Gate valve ASTM A105 Class 800 API 602 SW Trim number 5 BB-BG-OS&Y Handwheel operated	
1	1.5				P81B-000P2	Gate valve ASTM A105 Class 800 API 602 SW Trim number 5 BB-BG-OS&Y Handwheel operated	
1	2				P81C-004LC	Gate valve ASTM A216 Grade WCB Class 600 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated	

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GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3				P81C-004LD	Gate valve ASTM A216 Grade WCB Class 600 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated	
1	4				P81C-004LE	Gate valve ASTM A216 Grade WCB Class 600 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated	
1	6				P81C-0087L	Gate valve ASTM A216 Grade WCB Class 600 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Gear operated	
714	0.75				P81B-002FC	Gate valve ASTM A105 Class 800 API 602 SW - NPT Trim number 5 BB-BG-OS&Y Handwheel operated	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75				P82B-000HE	Globe valve ASTM A105 Class 800 API 602 SW Trim number 5 BB-BG-OS&Y Handwheel operated	
1	1				P82B-000HF	Globe valve ASTM A105 Class 800 API 602 SW Trim number 5 BB-BG-OS&Y Handwheel operated	
1	1.5				P82B-000HG	Globe valve ASTM A105 Class 800 API 602 SW Trim number 5 BB-BG-OS&Y Handwheel operated	
1	2				P82C-00297	Globe valve ASTM A216 Grade WCB Class 600 BS 1873 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated	
1	3				P82C-00298	Globe valve ASTM A216 Grade WCB Class 600 BS 1873 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated	
1	4				P82C-00299	Globe valve ASTM A216 Grade WCB Class 600 BS 1873 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated	
1	6				P82C-004DB	Globe valve ASTM A216 Grade WCB Class 600 BS 1873 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Gear operated	
714	0.75				P82B-0020F	Globe valve ASTM A105 Class 800 API 602 SW - NPT Trim number 5 BB-BG-OS&Y Handwheel operated	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75				P83B-000EU	Check valve ASTM A105 Class 800 API 602 SW Trim number 5 Lift-type Bolted cover	
1	1				P83B-000EV	Check valve ASTM A105 Class 800 API 602 SW Trim number 5 Lift-type Bolted cover	
1	1.5				P83B-000EW	Check valve ASTM A105 Class 800 API 602 SW Trim number 5 Lift-type Bolted cover	
1	2				P83C-00266	Check valve ASTM A216 Grade WCB Class 600 BS 1868 Flange ASME B16.5 RF Trim number 5 Swing-type Bolted cover	
1	3				P83C-00267	Check valve ASTM A216 Grade WCB Class 600 BS 1868 Flange ASME B16.5 RF Trim number 5 Swing-type Bolted cover	
1	4				P83C-00268	Check valve ASTM A216 Grade WCB Class 600 BS 1868 Flange ASME B16.5 RF Trim number 5 Swing-type Bolted cover	
1	6				P83C-00269	Check valve ASTM A216 Grade WCB Class 600 BS 1868 Flange ASME B16.5 RF Trim number 5 Swing-type Bolted cover	

BUTTERFLY VALVE (H)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	6				P86C-002A9	Offset design butterfly valve ASTM A216 Grade WCB Class 600 API 609 Category B Lug-type ASME B16.5 RF Disc CS Seat Stellite-6 Trim 13Cr Triple eccentric design BG Gear operated	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75				P71B-000DN	Spectacle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	1				P71B-000DP	Spectacle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71B-000DR	Spectacle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	2				P71B-000DS	Spectacle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	3				P71B-000DT	Spectacle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	4				P71B-000DU	Spectacle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	6				P71B-000DV	Spectacle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	

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BOLT TABLE (B_D11B05 , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.75	4	0.625	90	P80S-003XF		
1	4	0.625	95	P80S-003XG		
1.5	4	0.750	110	P80S-003XK		
2	8	0.625	110	P80S-003VC		
3	8	0.750	130	P80S-003XP		
4	8	0.875	150	P80S-0041F		
6	12	1.000	175	P80S-0043P		

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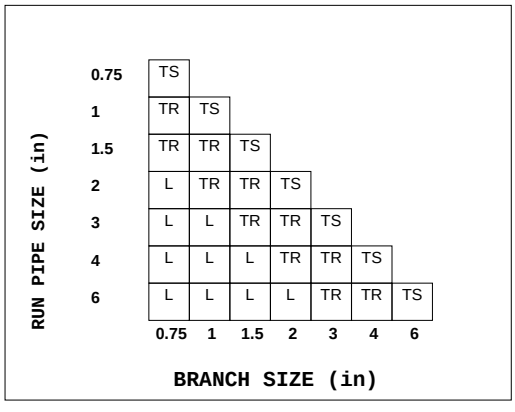
BRANCH TABLE (T_D11B05)



L : OUTLET
TR : REDUCING TEE
TS : STRAIGHT TEE

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Material : LTCS
Rating : ASME CLASS 600
Flange Face : RF
C.A.(mm) : 3.00
Gasket : Spiral Wound
Service : PROPYLENE
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
200	WITH JACK SCREW (FO)
541	NPT(F) (CA,L)
714	SW - NPT(F) (V,W)
4609	FULL BORE WITH SW-NPT(F) ENDS (V)

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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P01A-00167	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE	
1	0.75		SCH160		P01A-0016P	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE	
1	1		SCH160		P01A-0011Z	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE	
1	1.5		SCH160		P01A-00127	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE	
1	2		SCH160		P01A-0013F	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	3		XS		P01A-000XG	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	4		XS		P01A-000XR	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	6		XS		P01A-000Y5	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	8		SCH60		P01A-0042Z	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	10		XS		P01A-0022D	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	12		XS		P01A-00227	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P02B-0001V	90 degree elbow ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW	
1	0.75				P02B-0001W	90 degree elbow ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW	
1	1				P02B-0001X	90 degree elbow ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW	
1	1.5				P02B-0001Y	90 degree elbow ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW	
1	2		SCH160		P02A-000LB	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	3		XS		P02A-000BC	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	4		XS		P02A-000BK	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	6		XS		P02A-000C1	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	8		SCH60		P02A-002HV	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	10		XS		P02A-001AX	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	12		XS		P02A-000UG	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P03B-0001S	45 degree elbow ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW	
1	0.75				P03B-0001T	45 degree elbow ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW	
1	1				P03B-0001U	45 degree elbow ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW	
1	1.5				P03B-0001V	45 degree elbow ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW	
1	2		SCH160		P03A-000J9	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	3		XS		P03A-000A0	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	4		XS		P03A-000A6	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	6		XS		P03A-000AC	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	8		SCH60		P03A-002FC	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	10		XS		P03A-0016V	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	12		XS		P03A-000RG	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P21B-0001S	Straight tee ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW	
1	0.75				P21B-0001T	Straight tee ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW	
1	1				P21B-0001U	Straight tee ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW	
1	1.5				P21B-0001V	Straight tee ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW	
1	2		SCH160		P21A-0024S	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	3		XS		P21A-001BT	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	4		XS		P21A-001BX	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	6		XS		P21A-001C4	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	8		SCH60		P21A-003GF	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10		XS		P21A-002RF	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12		XS		P21A-002AT	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5			P24B-0003K	Reducing tee ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW	
1	1	0.5			P24B-0003L	Reducing tee ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW	

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REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75			P24B-0003M	Reducing tee ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW	
1	1.5	0.5			P24B-0003N	Reducing tee ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW	
1	1.5	0.75			P24B-0003P	Reducing tee ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW	
1	1.5	1			P24B-0003R	Reducing tee ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW	
1	2	1	SCH160	SCH160	P24A-003CU	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	2	1.5	SCH160	SCH160	P24A-003CV	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	3	1.5	XS	SCH160	P24A-00GMW	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	3	2	XS	SCH160	P24A-0066Y	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	4	2	XS	SCH160	P24A-0066Z	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	4	3	XS	XS	P24A-00278	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	6	3	XS	XS	P24A-0026W	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	6	4	XS	XS	P24A-001YM	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	8	4	SCH60	XS	P24A-00GMX	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	8	6	SCH60	XS	P24A-00GMY	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	4	XS	XS	P24A-00GMZ	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	6	XS	XS	P24A-006ZG	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	8	XS	SCH60	P24A-00GN0	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	6	XS	XS	P24A-00GTF	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	8	XS	SCH60	P24A-00GTG	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	10	XS	XS	P24A-006CR	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	XS	SCH160	P27A-0047P	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	4	2	XS	SCH160	P27A-0047S	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	4	3	XS	XS	P27A-0019V	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	6	3	XS	XS	P27A-0018P	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	6	4	XS	XS	P27A-0019B	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	8	4	SCH60	XS	P27A-00BFZ	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	8	6	SCH60	XS	P27A-00BG0	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	4	XS	XS	P27A-004CX	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	6	XS	XS	P27A-008BW	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	8	XS	SCH60	P27A-00BG1	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	6	XS	XS	P27A-008BY	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	8	XS	SCH60	P27A-00BK2	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	10	XS	XS	P27A-004D0	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	XS	SCH160	P28A-0047F	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	4	2	XS	SCH160	P28A-0047H	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	4	3	XS	XS	P28A-001AG	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	6	3	XS	XS	P28A-00195	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	6	4	XS	XS	P28A-0019X	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	8	4	SCH60	XS	P28A-008EM	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	8	6	SCH60	XS	P28A-008EN	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	4	XS	XS	P28A-004CN	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	6	XS	XS	P28A-00520	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	8	XS	SCH60	P28A-008EP	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	6	XS	XS	P28A-00522	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	8	XS	SCH60	P28A-008KC	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	10	XS	XS	P28A-004CS	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P29B-0002J	Cap ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW	
1	0.75				P29B-0002K	Cap ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW	
1	1				P29B-0002L	Cap ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW	
1	1.5				P29B-0002H	Cap ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW	

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CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2		SCH160		P29A-000PJ	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	3		XS		P29A-0009U	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	4		XS		P29A-000AN	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	6		XS		P29A-000AS	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	8		SCH60		P29A-002UL	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10		XS		P29A-00167	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12		XS		P29A-000WY	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
541	0.5				P29B-00016	Cap ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 NPT	
541	0.75				P29B-00015	Cap ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P41A-000DJ	Straight nipple ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		XXS		P41A-000DK	Straight nipple ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		XXS		P41A-000DZ	Straight nipple ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		XXS		P41A-000E0	Straight nipple ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

CON SWAGED NIPPLE (SNC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	SCH160	P42A-000A8	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	SCH160	SCH160	P42A-000A9	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	SCH160	SCH160	P42A-000A1	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	SCH160	SCH160	P42A-000AA	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	SCH160	SCH160	P42A-000A3	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	SCH160	SCH160	P42A-000A4	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	SCH160	SCH160	P42A-000LP	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	SCH160	SCH160	P42A-000LR	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	SCH160	SCH160	P42A-000LS	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	SCH160	SCH160	P42A-000LT	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	XS	SCH160	P42A-000LK	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 BE(L) - PE(S)	

ECC SWAGED NIPPLE (SNE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	SCH160	P43A-000D2	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	SCH160	SCH160	P43A-000D3	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	SCH160	SCH160	P43A-000D4	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	SCH160	SCH160	P43A-000D5	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	SCH160	SCH160	P43A-000D6	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	SCH160	SCH160	P43A-000D7	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	SCH160	SCH160	P43A-000EC	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	SCH160	SCH160	P43A-000ED	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	SCH160	SCH160	P43A-000EE	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	SCH160	SCH160	P43A-000EF	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	XS	SCH160	P43A-000E4	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 BE(L) - PE(S)	

COUPLING (CPS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P47B-0001S	Coupling ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW - SW	
1	0.75				P47B-0001T	Coupling ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW - SW	
1	1				P47B-0001U	Coupling ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW - SW	
1	1.5				P47B-0001V	Coupling ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 SW - SW	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5 - 2	0.5			P31B-007BZ	Outlet ASTM A350 Grade LF2 Class 1 Class 6000 MSS SP-97 SW	
1	3 - 6	0.5			P31B-013A4	Outlet ASTM A350 Grade LF2 Class 1 Class 6000 MSS SP-97 SW	
1	8 and larger	0.5			P31B-013A5	Outlet ASTM A350 Grade LF2 Class 1 Class 6000 MSS SP-97 SW	
1	1.5 - 2.5	0.75			P31B-0138C	Outlet ASTM A350 Grade LF2 Class 1 Class 6000 MSS SP-97 SW	

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OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3 - 10	0.75			P31B-007DK	Outlet ASTM A350 Grade LF2 Class 1 Class 6000 MSS SP-97 SW	
1	12 and larger	0.75			P31B-0138B	Outlet ASTM A350 Grade LF2 Class 1 Class 6000 MSS SP-97 SW	
1	3 - 10	1			P31B-007BL	Outlet ASTM A350 Grade LF2 Class 1 Class 6000 MSS SP-97 SW	
1	12 and larger	1			P31B-0138D	Outlet ASTM A350 Grade LF2 Class 1 Class 6000 MSS SP-97 SW	
1	4 - 5	1.5			P31B-00514	Outlet ASTM A350 Grade LF2 Class 1 Class 6000 MSS SP-97 SW	
1	6 - 8	1.5			P31B-007B0	Outlet ASTM A350 Grade LF2 Class 1 Class 6000 MSS SP-97 SW	
1	10 - 18	1.5			P31B-007BC	Outlet ASTM A350 Grade LF2 Class 1 Class 6000 MSS SP-97 SW	
541	1	0.75			P31B-004HD	Outlet ASTM A350 Grade LF2 Class 1 Class 6000 MSS SP-97 NPT	
541	1.5 - 2.5	0.75			P31B-0138F	Outlet ASTM A350 Grade LF2 Class 1 Class 6000 MSS SP-97 NPT	
541	3 - 10	0.75			P31B-007CY	Outlet ASTM A350 Grade LF2 Class 1 Class 6000 MSS SP-97 NPT	
541	12 and larger	0.75			P31B-0138G	Outlet ASTM A350 Grade LF2 Class 1 Class 6000 MSS SP-97 NPT	
1	6	2	XS	SCH160	P31B-00M9N	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	8	2	SCH60	SCH160	P31B-00TRC	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	10	2	XS	SCH160	P31B-00NN8	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	12	2	XS	SCH160	P31B-00NNA	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	8	3	SCH60	XS	P31B-00TRD	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	10	3	XS	XS	P31B-00NN9	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	12	3	XS	XS	P31B-00NNB	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	12	4	XS	XS	P31B-00M8C	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30B-0002V	Plug ASTM A350 Grade LF2 Class 1 ASME B16.11 NPT Round head	
1	0.75				P30B-0002W	Plug ASTM A350 Grade LF2 Class 1 ASME B16.11 NPT Round head	
1	1				P30B-0002X	Plug ASTM A350 Grade LF2 Class 1 ASME B16.11 NPT Round head	
1	1.5				P30B-0002Y	Plug ASTM A350 Grade LF2 Class 1 ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P61B-001Y2	Flange SW ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
1	0.75		SCH160		P61B-001YD	Flange SW ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
1	1		SCH160		P61B-001YU	Flange SW ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
1	1.5		SCH160		P61B-001XN	Flange SW ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
1	2		SCH160		P61B-003WR	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
1	3		XS		P61B-001K0	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
1	4		XS		P61B-001LA	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
1	6		XS		P61B-001M5	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
1	8		SCH60		P61B-0069J	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
1	10		XS		P61B-003YW	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
1	12		XS		P61B-003YX	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67B-000HJ	Blind flange ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
1	0.75				P67B-000HK	Blind flange ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
1	1				P67B-000HL	Blind flange ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
1	1.5				P67B-000HM	Blind flange ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
1	2				P67B-000HU	Blind flange ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
1	3				P67B-000HX	Blind flange ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
1	4				P67B-000HY	Blind flange ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
1	6				P67B-000HZ	Blind flange ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
1	8				P67B-000J0	Blind flange ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
1	10				P67B-000HN	Blind flange ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
1	12				P67B-000HP	Blind flange ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-0035E	Spiral wound gasket SS316 winding / Non-asbestos filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-6	

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GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75				P73T-0035F	Spiral wound gasket SS316 winding / Non-asbestos filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-6	
1	1				P73T-0035G	Spiral wound gasket SS316 winding / Non-asbestos filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-6	
1	1.5				P73T-0035H	Spiral wound gasket SS316 winding / Non-asbestos filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-6	
1	2				P73T-0035J	Spiral wound gasket SS316 winding / Non-asbestos filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-6	
1	3				P73T-0035K	Spiral wound gasket SS316 winding / Non-asbestos filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-6	
1	4				P73T-0035L	Spiral wound gasket SS316 winding / Non-asbestos filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-6	
1	6				P73T-0035M	Spiral wound gasket SS316 winding / Non-asbestos filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-6	
1	8				P73T-00371	Spiral wound gasket SS316 winding / Non-asbestos filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-6	
1	10				P73T-0036Z	Spiral wound gasket SS316 winding / Non-asbestos filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-6	
1	12				P73T-00370	Spiral wound gasket SS316 winding / Non-asbestos filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-6	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-6				See Attached Bolt Table	Bolt and Nut ASTM A320 Grade L7 / A194 Grade 4 ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	8-12				See Attached Bolt Table	Bolt and Nut ASTM A320 Grade L7 / A194 Grade 4 ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81B-0018C	Gate valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	0.75				P81B-0018D	Gate valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	1				P81B-0018E	Gate valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	1.5				P81B-0018F	Gate valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	2				P81C-004LR	Gate valve ASTM A352 Grade LCC Class 600 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	3				P81C-004LS	Gate valve ASTM A352 Grade LCC Class 600 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	4				P81C-004LT	Gate valve ASTM A352 Grade LCC Class 600 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	6				P81C-0092E	Gate valve ASTM A352 Grade LCC Class 600 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated	
1	8				P81C-004LW	Gate valve ASTM A352 Grade LCC Class 600 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated	
1	10				P81C-0052A	Gate valve ASTM A352 Grade LCC Class 600 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated	
1	12				P81C-0052B	Gate valve ASTM A352 Grade LCC Class 600 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated	
4609	0.5				P81B-00376	Gate valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW - NPT Trim number 12 BB-BG-OS&Y Handwheel operated Full bore	
714	0.5				P81B-002S4	Gate valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW - NPT Trim number 12 BB-BG-OS&Y Handwheel operated	
714	0.75				P81B-002FB	Gate valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW - NPT Trim number 12 BB-BG-OS&Y Handwheel operated	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82B-0011H	Globe valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	0.75				P82B-0011J	Globe valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	1				P82B-0011K	Globe valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	1.5				P82B-0011L	Globe valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	2				P82C-0029C	Globe valve ASTM A352 Grade LCC Class 600 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	3				P82C-0029D	Globe valve ASTM A352 Grade LCC Class 600 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	4				P82C-002NP	Globe valve ASTM A352 Grade LCC Class 600 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	6				P82C-004DC	Globe valve ASTM A352 Grade LCC Class 600 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated	
1	8				P82C-002NS	Globe valve ASTM A352 Grade LCC Class 600 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated	
714	0.5				P82B-0020G	Globe valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW - NPT Trim number 12 BB-BG-OS&Y Handwheel operated	
714	0.75				P82B-0020H	Globe valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW - NPT Trim number 12 BB-BG-OS&Y Handwheel operated	

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CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83B-000TS	Check valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 12 Lift-type Bolted cover	
1	0.75				P83B-000TT	Check valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 12 Lift-type Bolted cover	
1	1				P83B-000TU	Check valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 12 Lift-type Bolted cover	
1	1.5				P83B-000TV	Check valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 12 Lift-type Bolted cover	
1	2				P83C-0026B	Check valve ASTM A352 Grade LCC Class 600 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	3				P83C-0026C	Check valve ASTM A352 Grade LCC Class 600 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	4				P83C-002R0	Check valve ASTM A352 Grade LCC Class 600 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	6				P83C-002R1	Check valve ASTM A352 Grade LCC Class 600 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	8				P83C-002R2	Check valve ASTM A352 Grade LCC Class 600 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	10				P83C-002PY	Check valve ASTM A352 Grade LCC Class 600 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	

BALL VALVE (Q)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P84B-001C7	Ball valve Long-pattern ASTM A350 Grade LF2 Class 1 Class 600 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design	
1	0.75				P84B-001C8	Ball valve Long-pattern ASTM A350 Grade LF2 Class 1 Class 600 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design	
1	1				P84B-001C9	Ball valve Long-pattern ASTM A350 Grade LF2 Class 1 Class 600 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design	
1	1.5				P84B-001CA	Ball valve Long-pattern ASTM A350 Grade LF2 Class 1 Class 600 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design	
1	2				P84C-006JU	Ball valve Long-pattern ASTM A352 Grade LCC Class 600 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Wrench lever operated Reduced bore Fire tested design	
1	3				P84C-006JV	Ball valve Long-pattern ASTM A352 Grade LCC Class 600 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Reduced bore Fire tested design	
1	4				P84C-006JW	Ball valve Long-pattern ASTM A352 Grade LCC Class 600 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Reduced bore Fire tested design	
1	6				P84C-006JX	Ball valve Long-pattern ASTM A352 Grade LCC Class 600 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Reduced bore Fire tested design	

ORIFICE FLANGE (FO)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	8		SCH60		P66B-008EV	Orifice flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.36 RF NPS1/2 SW tap x 1	
200	8		SCH60		P66B-008EU	Orifice flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71B-000ED	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	0.75				P71B-000EE	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	1				P71B-000EF	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71B-000EG	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	2				P71B-000EH	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	3				P71B-000EJ	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	4				P71B-000EK	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	6				P71B-000EL	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 600 Standard-drawing Flange ASME B16.5 RF	

PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	8				P72B-000HW	Paddle blank ASTM A350 Grade LF2 Class 1 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	10				P72B-000HT	Paddle blank ASTM A350 Grade LF2 Class 1 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	12				P72B-000HU	Paddle blank ASTM A350 Grade LF2 Class 1 Class 600 Standard-drawing Flange ASME B16.5 RF	

PADDLE SPACER (PS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	8				P72B-000HS	Paddle spacer ASTM A350 Grade LF2 Class 1 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	10				P72B-000HN	Paddle spacer ASTM A350 Grade LF2 Class 1 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	12				P72B-000HP	Paddle spacer ASTM A350 Grade LF2 Class 1 Class 600 Standard-drawing Flange ASME B16.5 RF	

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BOLT TABLE (B_D11D05 , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	80	P80S-003VN		
0.75	4	0.625	90	P80S-003Z5		
1	4	0.625	95	P80S-003Z6		
1.5	4	0.750	110	P80S-003Z9		
2	8	0.625	110	P80S-003VV		
3	8	0.750	130	P80S-003ZD		
4	8	0.875	150	P80S-00468		
6	12	1.000	175	P80S-004BM		
8	12	1.125	195	P80S-004JB		
10	16	1.250	250	P80S-004LX		
12	20	1.250	255	P80S-004LY		

BOLT TABLE (B_D11D05_789 , STUD ASME RJ, OPTION CODE 789)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	110		R12	
0.75	4	0.750	115		R14	
1	4	0.875	130		R16	
1.5	4	1.000	140		R20	
2	8	0.875	150		R24	
3	8	0.875	150		R31	
4	8	1.125	175		R37	
6	12	1.125	200		R45	
8	12	1.375	260		R49	
10	16	1.375	275		R53	
12	20	1.375	295		R57	

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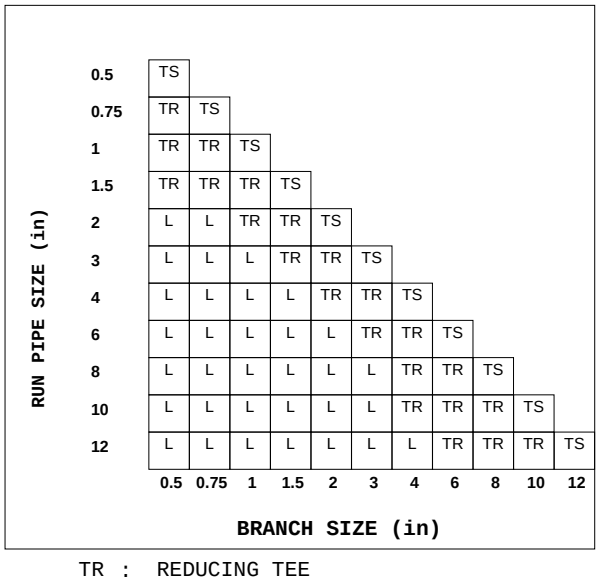
BRANCH TABLE (T_D11D05)



TR : REDUCING TEE
TS : STRAIGHT TEE
L : OUTLET

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Material : SS304L
Rating : ASME CLASS 600
Flange Face : RF
C.A.(mm) : 0.00
Gasket : Spiral Wound
Service : MINERAL OIL, SEAL OIL
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
24	FULL PORT (Q)
541	NPT(F) (CA,L)
714	SW - NPT(F) (V)

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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.25		SCH80S		P01J-002SG	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE	
1	0.5		SCH80S		P01J-000UC	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE	
1	0.75		SCH80S		P01J-000UD	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE	
1	1		SCH80S		P01J-000UE	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE	
1	1.5		SCH80S		P01J-000UF	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE	
1	2		SCH10S		P01J-000RD	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P02K-0001K	90 degree elbow ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	0.75				P02K-0001L	90 degree elbow ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	1				P02K-0001M	90 degree elbow ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	1.5				P02K-0001N	90 degree elbow ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	2		SCH10S		P02J-000J0	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P03K-0001G	45 degree elbow ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	0.75				P03K-0001H	45 degree elbow ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	1				P03K-0001J	45 degree elbow ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	1.5				P03K-0001K	45 degree elbow ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	2		SCH10S		P03J-000HS	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P21K-0001G	Straight tee ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	0.75				P21K-0001H	Straight tee ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	1				P21K-0001J	Straight tee ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	1.5				P21K-0001K	Straight tee ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	2		SCH10S		P21J-000HM	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5			P24K-0001V	Reducing tee ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	1	0.25			P24K-00069	Reducing tee ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	1	0.5			P24K-0001W	Reducing tee ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	1	0.75			P24K-0001X	Reducing tee ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	1.5	0.5			P24K-0001Y	Reducing tee ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	1.5	0.75			P24K-0001Z	Reducing tee ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	1.5	1			P24K-00020	Reducing tee ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	2	1	SCH10S	SCH80S	P24J-0065A	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	2	1.5	SCH10S	SCH80S	P24J-0065B	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P29K-0001V	Cap ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	0.75				P29K-0001W	Cap ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	1				P29K-0001X	Cap ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	1.5				P29K-0001Y	Cap ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	2		SCH10S		P29J-000G1	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
541	0.5				P29K-00045	Cap ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 NPT	
541	0.75				P29K-00020	Cap ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P41J-001FS	Straight nipple ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75		SCH80S		P41J-001FT	Straight nipple ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		SCH80S		P41J-001FU	Straight nipple ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		SCH80S		P41J-001FV	Straight nipple ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

CON SWAGED NIPPLE (SNC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5	0.25	SCH80S	SCH80S	P42J-000JM	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	0.75	0.25	SCH80S	SCH80S	P42J-000JN	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	0.75	0.5	SCH80S	SCH80S	P42J-00081	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.25	SCH80S	SCH80S	P42J-000JP	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	SCH80S	SCH80S	P42J-00082	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	SCH80S	SCH80S	P42J-00083	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.25	SCH80S	SCH80S	P42J-000JR	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	SCH80S	SCH80S	P42J-00084	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	SCH80S	SCH80S	P42J-00085	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	SCH80S	SCH80S	P42J-00086	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.25	SCH10S	SCH80S	P42J-000JS	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.5	SCH10S	SCH80S	P42J-000F9	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	SCH10S	SCH80S	P42J-000F6	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	SCH10S	SCH80S	P42J-000F7	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	SCH10S	SCH80S	P42J-000F8	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	

ECC SWAGED NIPPLE (SNE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5	0.25	SCH80S	SCH80S	P43J-000EC	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	0.75	0.25	SCH80S	SCH80S	P43J-000EB	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	0.75	0.5	SCH80S	SCH80S	P43J-0008D	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.25	SCH80S	SCH80S	P43J-000ED	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	SCH80S	SCH80S	P43J-0008E	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	SCH80S	SCH80S	P43J-0008F	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.25	SCH80S	SCH80S	P43J-000EE	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	SCH80S	SCH80S	P43J-0008G	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	SCH80S	SCH80S	P43J-0008H	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	SCH80S	SCH80S	P43J-0008J	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.25	SCH10S	SCH80S	P43J-000EF	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.5	SCH10S	SCH80S	P43J-000CT	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	SCH10S	SCH80S	P43J-000CU	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	SCH10S	SCH80S	P43J-000CV	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	SCH10S	SCH80S	P43J-000CW	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	

COUPLING (CPS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.25				P47K-0006R	Coupling ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW - SW	
1	0.5				P47K-00035	Coupling ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW - SW	
1	0.75				P47K-00036	Coupling ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW - SW	
1	1				P47K-00037	Coupling ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW - SW	
1	1.5				P47K-00038	Coupling ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW - SW	

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OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2 - 2.5	0.75			P31K-00GFG	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 SW	
541	1	0.75			P31K-00911	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 NPT	
541	1.5	0.75			P31K-00916	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 NPT	
541	2 - 2.5	0.75			P31K-00GFJ	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 NPT	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30K-0001G	Plug ASTM A182 Grade F304/F304L dual grade ASME B16.11 NPT Round head	
1	0.75				P30K-0001H	Plug ASTM A182 Grade F304/F304L dual grade ASME B16.11 NPT Round head	
1	1				P30K-0001J	Plug ASTM A182 Grade F304/F304L dual grade ASME B16.11 NPT Round head	
1	1.5				P30K-0001K	Plug ASTM A182 Grade F304/F304L dual grade ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.25		SCH80S		P61K-0062F	Flange SW ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 RF	
1	0.5		SCH80S		P61K-003AT	Flange SW ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 RF	
1	0.75		SCH80S		P61K-003AU	Flange SW ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 RF	
1	1		SCH80S		P61K-003AV	Flange SW ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 RF	
1	1.5		SCH80S		P61K-003AW	Flange SW ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 RF	
1	2		SCH10S		P61K-00290	Flange WN ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 RF	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67K-000NN	Blind flange ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 RF	
1	0.75				P67K-000NP	Blind flange ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 RF	
1	1				P67K-000NR	Blind flange ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 RF	
1	1.5				P67K-000NS	Blind flange ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 RF	
1	2				P67K-000NT	Blind flange ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 RF	

REDUCING FLANGE (FR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2	0.75		SCH80S	P62K-000CN	Reducing flange SW ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 RF	
1	2	1		SCH80S	P62K-000CP	Reducing flange SW ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 RF	
1	2	1.5		SCH80S	P62K-000CR	Reducing flange SW ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.25				P73T-003MN	Spiral wound gasket SS316 winding / Non-asbestos filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-6	
1	0.5				P73T-0035E	Spiral wound gasket SS316 winding / Non-asbestos filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-6	
1	0.75				P73T-0035F	Spiral wound gasket SS316 winding / Non-asbestos filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-6	
1	1				P73T-0035G	Spiral wound gasket SS316 winding / Non-asbestos filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-6	
1	1.5				P73T-0035H	Spiral wound gasket SS316 winding / Non-asbestos filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-6	
1	2				P73T-0035J	Spiral wound gasket SS316 winding / Non-asbestos filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-6	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-2				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81K-00108	Gate valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	0.75				P81K-00109	Gate valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	1				P81K-0010A	Gate valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	1.5				P81K-0010B	Gate valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	

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GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2				P81L-0021S	Gate valve ASTM A351 Grade CF8 Class 600 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
714	0.5				P81K-001LC	Gate valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW - NPT Trim number 12 BB-BG-OS&Y Handwheel operated	
714	0.75				P81K-001FD	Gate valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW - NPT Trim number 12 BB-BG-OS&Y Handwheel operated	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82K-000NR	Globe valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	0.75				P82K-000NS	Globe valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	1				P82K-000NT	Globe valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	1.5				P82K-000NU	Globe valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	2				P82L-0013B	Globe valve ASTM A351 Grade CF8 Class 600 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83K-000LM	Check valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 Lift-type Bolted cover	
1	0.75				P83K-000LN	Check valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 Lift-type Bolted cover	
1	1				P83K-000LP	Check valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 Lift-type Bolted cover	

BALL VALVE (Q)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P84K-000RN	Ball valve Long-pattern ASTM A182 Grade F304/F304L dual grade Class 600 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design	
1	0.75				P84K-000RP	Ball valve Long-pattern ASTM A182 Grade F304/F304L dual grade Class 600 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design	
1	1				P84K-000RR	Ball valve Long-pattern ASTM A182 Grade F304/F304L dual grade Class 600 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design	
1	1.5				P84K-000RS	Ball valve Long-pattern ASTM A182 Grade F304/F304L dual grade Class 600 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design	
1	2				P84L-00343	Ball valve Long-pattern ASTM A351 Grade CF8 Class 600 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Wrench lever operated Reduced bore Fire tested design	
24	0.5				P84K-000RT	Ball valve Long-pattern ASTM A182 Grade F304/F304L dual grade Class 600 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	
24	0.75				P84K-000RU	Ball valve Long-pattern ASTM A182 Grade F304/F304L dual grade Class 600 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	
24	1				P84K-000RV	Ball valve Long-pattern ASTM A182 Grade F304/F304L dual grade Class 600 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	
24	1.5				P84K-000RW	Ball valve Long-pattern ASTM A182 Grade F304/F304L dual grade Class 600 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	
24	2				P84L-00344	Ball valve Long-pattern ASTM A351 Grade CF8 Class 600 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Wrench lever operated Full bore Fire tested design	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71K-00091	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 600 Standard-drawing Flange ASME B16.5 RF	
1	0.75				P71K-00092	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 600 Standard-drawing Flange ASME B16.5 RF	
1	1				P71K-00093	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 600 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71K-00094	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 600 Standard-drawing Flange ASME B16.5 RF	
1	2				P71K-00095	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 600 Standard-drawing Flange ASME B16.5 RF	

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BOLT TABLE (B_D11F05 , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	80	P80S-003V6		
0.75	4	0.625	90	P80S-003XF		
1	4	0.625	95	P80S-003XG		
1.5	4	0.750	110	P80S-003XK		
2	8	0.625	110	P80S-003VC		

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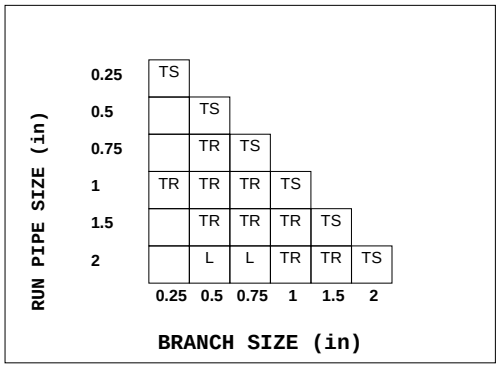
BRANCH TABLE (T_D11F05)



TR : REDUCING TEE
L : OUTLET
TS : STRAIGHT TEE

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PIPING CLASS

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Material : Killed CS
Rating : ASME CLASS 600
Flange Face : RF
C.A.(mm) : 1.50
Gasket : Spiral Wound
Service : UTILITY - INSTRUMENT/PLANT AIR, NITROGEN AND NON-HYDROCARBON

Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
200	WITH JACK SCREW (FO)
541	NPT(F) (CA,L)
714	SW - NPT(F) (V)
789	CLASS 900 (B,F,G)
797	CLASS 1500 (B,F,G)
805	CLASS 2500 (B,F,G)

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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P01A-000XM	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	0.75		XS		P01A-000XN	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1		XS		P01A-000XP	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1.5		XS		P01A-000XV	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	2		XS		P01A-000YX	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	3		STD		P01A-000YM	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	4		STD		P01A-000YU	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	6		STD		P01A-000Z3	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	8		SCH30		P01A-001WL	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P02B-00014	90 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	0.75				P02B-00015	90 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	1				P02B-00016	90 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5				P02B-00017	90 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	2		XS		P02A-000CP	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		STD		P02A-000CU	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		STD		P02A-000CZ	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		STD		P02A-000D6	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		SCH30		P02A-003DK	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P03B-00017	45 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	0.75				P03B-00018	45 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	1				P03B-00019	45 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5				P03B-0001A	45 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	2		XS		P03A-000AS	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		STD		P03A-000AX	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		STD		P03A-000B1	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		STD		P03A-000B9	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		SCH30		P03A-003BE	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P21B-00017	Straight tee ASTM A105 Class 3000 ASME B16.11 SW	
1	0.75				P21B-00018	Straight tee ASTM A105 Class 3000 ASME B16.11 SW	
1	1				P21B-00019	Straight tee ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5				P21B-0001A	Straight tee ASTM A105 Class 3000 ASME B16.11 SW	
1	2		XS		P21A-001CJ	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		STD		P21A-001CU	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		STD		P21A-001CW	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6		STD		P21A-001D2	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8		SCH30		P21A-003WV	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75			P24B-0002L	Reducing tee ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5	0.75			P24B-0002N	Reducing tee ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5	1			P24B-0002P	Reducing tee ASTM A105 Class 3000 ASME B16.11 SW	
1	2	1	XS	XS	P24A-00238	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	XS	XS	P24A-0023H	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	STD	XS	P24A-00214	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	STD	XS	P24A-002HW	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P24A-002HY	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P24A-0021K	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	STD	P24A-0021A	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	6	4	STD	STD	P24A-00229	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH30	STD	P24A-00JVH	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH30	STD	P24A-00JVG	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	STD	XS	P27A-001MZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P27A-001N0	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P27A-00189	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	STD	P27A-001AZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P27A-001GW	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH30	STD	P27A-00ED2	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH30	STD	P27A-00ECY	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	STD	XS	P28A-001N5	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P28A-001N6	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P28A-0018B	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	STD	P28A-001AS	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P28A-00182	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH30	STD	P28A-00BFY	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH30	STD	P28A-00BFZ	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P29B-0001J	Cap ASTM A105 Class 3000 ASME B16.11 SW	
1	0.75				P29B-0001F	Cap ASTM A105 Class 3000 ASME B16.11 SW	
1	1				P29B-0001G	Cap ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5				P29B-0001H	Cap ASTM A105 Class 3000 ASME B16.11 SW	
1	2		XS		P29A-000A1	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		STD		P29A-000BK	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		STD		P29A-000A3	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6		STD		P29A-000A9	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8		SCH30		P29A-000PC	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
541	0.75				P29B-0000C	Cap ASTM A105 Class 3000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P41A-000B5	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		SCH160		P41A-000B6	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		SCH160		P41A-000B7	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		SCH160		P41A-000B8	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

CON SWAGED NIPPLE (SNC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	XS	XS	P42A-00036	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	XS	XS	P42A-00038	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	XS	XS	P42A-0003B	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	XS	XS	P42A-00035	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	XS	XS	P42A-00039	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	XS	XS	P42A-0003C	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	XS	XS	P42A-0008C	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	XS	XS	P42A-0008D	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	XS	XS	P42A-0008E	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	XS	XS	P42A-0008F	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	STD	XS	P42A-0007V	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	

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ECC SWAGED NIPPLE (SNE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	XS	XS	P43A-00036	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	XS	XS	P43A-00037	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	XS	XS	P43A-00038	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	XS	XS	P43A-00039	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	XS	XS	P43A-0003A	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	XS	XS	P43A-0003B	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	XS	XS	P43A-00042	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	XS	XS	P43A-00043	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	XS	XS	P43A-00044	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	XS	XS	P43A-00045	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	STD	XS	P43A-0003J	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	

COUPLING (CPS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P47B-0001D	Coupling ASTM A105 Class 3000 ASME B16.11 SW - SW	
1	0.75				P47B-0001E	Coupling ASTM A105 Class 3000 ASME B16.11 SW - SW	
1	1				P47B-0001F	Coupling ASTM A105 Class 3000 ASME B16.11 SW - SW	
1	1.5				P47B-0001G	Coupling ASTM A105 Class 3000 ASME B16.11 SW - SW	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2 - 2.5	0.75			P31B-0137J	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	3 - 5	0.75			P31B-0137K	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	6 - 12	0.75			P31B-007AB	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	3	1			P31B-007A7	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	4 - 5	1			P31B-0138Z	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	6 - 10	1			P31B-007A4	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	4	1.5			P31B-005SN	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	5 - 6	1.5			P31B-01390	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	8 - 12	1.5			P31B-0079U	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
541	1	0.75			P31B-00551	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
541	1.5	0.75			P31B-00555	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
541	2 - 2.5	0.75			P31B-0137H	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
541	3 - 5	0.75			P31B-01376	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
541	6 - 12	0.75			P31B-007GR	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
1	6	2	STD	XS	P31B-007SH	Outlet ASTM A105 MSS SP-97 BW	
1	8	2	SCH30	XS	P31B-00X36	Outlet ASTM A105 MSS SP-97 BW	
1	8	3	SCH30	STD	P31B-00X37	Outlet ASTM A105 MSS SP-97 BW	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30B-0002D	Plug ASTM A105 ASME B16.11 NPT Round head	
1	0.75				P30B-0002E	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1				P30B-0002F	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1.5				P30B-0002G	Plug ASTM A105 ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P61B-001FF	Flange SW ASTM A105 Class 600 ASME B16.5 RF	
1	0.75		XS		P61B-001FH	Flange SW ASTM A105 Class 600 ASME B16.5 RF	
1	1		XS		P61B-001DR	Flange SW ASTM A105 Class 600 ASME B16.5 RF	
1	1.5		XS		P61B-001DV	Flange SW ASTM A105 Class 600 ASME B16.5 RF	
1	2		XS		P61B-001DH	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
1	3		STD		P61B-001TW	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
1	4		STD		P61B-001VV	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
1	6		STD		P61B-001JW	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
1	8		SCH30		P61B-009GW	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
799	3		STD		P61B-006SP	Flange WN ASTM A105 Class 900 ASME B16.5 RJ	

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FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
789	4		STD		P61B-007A0	Flange WN ASTM A105 Class 900 ASME B16.5 RJ	
789	6		STD		P61B-009W5	Flange WN ASTM A105 Class 900 ASME B16.5 RJ	
789	8		SCH30		P61B-009VX	Flange WN ASTM A105 Class 900 ASME B16.5 RJ	
797	0.5		XS		P61B-009T3	Flange SW ASTM A105 Class 1500 ASME B16.5 RJ	
797	0.75		XS		P61B-009T4	Flange SW ASTM A105 Class 1500 ASME B16.5 RJ	
797	1		XS		P61B-009T5	Flange SW ASTM A105 Class 1500 ASME B16.5 RJ	
797	1.5		XS		P61B-009T6	Flange SW ASTM A105 Class 1500 ASME B16.5 RJ	
797	2		XS		P61B-0065C	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
797	3		STD		P61B-009W7	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
797	4		STD		P61B-009W8	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
797	6		STD		P61B-009W9	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
805	1		XS		P61B-00E1R	Flange WN ASTM A105 Class 2500 ASME B16.5 RJ	
805	1.5		XS		P61B-00E1S	Flange WN ASTM A105 Class 2500 ASME B16.5 RJ	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67B-000J7	Blind flange ASTM A105 Class 600 ASME B16.5 RF	
1	0.75				P67B-000J8	Blind flange ASTM A105 Class 600 ASME B16.5 RF	
1	1				P67B-000J9	Blind flange ASTM A105 Class 600 ASME B16.5 RF	
1	1.5				P67B-000JA	Blind flange ASTM A105 Class 600 ASME B16.5 RF	
1	2				P67B-000JG	Blind flange ASTM A105 Class 600 ASME B16.5 RF	
1	3				P67B-000JK	Blind flange ASTM A105 Class 600 ASME B16.5 RF	
1	4				P67B-000JL	Blind flange ASTM A105 Class 600 ASME B16.5 RF	
1	6				P67B-000JM	Blind flange ASTM A105 Class 600 ASME B16.5 RF	
1	8				P67B-000JN	Blind flange ASTM A105 Class 600 ASME B16.5 RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000J8	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000J9	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000JA	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000JB	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000JH	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000JL	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000JM	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	6				P73T-000JN	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	8				P73T-000JP	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
789	3				P75T-000JN	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	4				P75T-000JP	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	6				P75T-000JR	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	8				P75T-000JS	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	0.5				P75T-000JT	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	0.75				P75T-000JU	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	1				P75T-000JV	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	1.5				P75T-000JW	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	2				P75T-0008A	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	3				P75T-0008E	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	4				P75T-0008D	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	6				P75T-0008C	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	1				P75T-000KV	Ring joint gasket Soft iron Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	1.5				P75T-000KW	Ring joint gasket Soft iron Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-6				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	

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BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	8				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
789	1-3				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
789	4-8				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
797	0.5-2				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
797	3-6				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
805	1				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
805	1.5				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81B-000P4	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	0.75				P81B-000NX	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	1				P81B-000NY	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	1.5				P81B-000NZ	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	2				P81C-004KW	Gate valve ASTM A216 Grade WCB Class 600 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	3				P81C-004L3	Gate valve ASTM A216 Grade WCB Class 600 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	4				P81C-004L4	Gate valve ASTM A216 Grade WCB Class 600 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	6				P81C-0087J	Gate valve ASTM A216 Grade WCB Class 600 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated	
1	8				P81C-004LB	Gate valve ASTM A216 Grade WCB Class 600 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated	
714	0.5				P81B-0015L	Gate valve ASTM A105 Class 800 API 602 SW - NPT Trim number 8 BB-BG-OS&Y Handwheel operated	
714	0.75				P81B-002F4	Gate valve ASTM A105 Class 800 API 602 SW - NPT Trim number 8 BB-BG-OS&Y Handwheel operated	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82B-000K0	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	0.75				P82B-000HB	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	1				P82B-000HC	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	1.5				P82B-000HD	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	2				P82C-0028Z	Globe valve ASTM A216 Grade WCB Class 600 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83B-000FX	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover	
1	0.75				P83B-000ER	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover	
1	1				P83B-000ES	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover	
1	1.5				P83B-000ET	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover	
1	2				P83C-0025Z	Check valve ASTM A216 Grade WCB Class 600 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	3				P83C-00260	Check valve ASTM A216 Grade WCB Class 600 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	4				P83C-00261	Check valve ASTM A216 Grade WCB Class 600 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	6				P83C-00262	Check valve ASTM A216 Grade WCB Class 600 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	8				P83C-00263	Check valve ASTM A216 Grade WCB Class 600 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	

ORIFICE FLANGE (FO)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2		XS		P66B-008EY	Orifice flange WN ASTM A105 Class 600 ASME B16.36 RF NPS1/2 SW tap x 1	
1	3		STD		P66B-008EZ	Orifice flange WN ASTM A105 Class 600 ASME B16.36 RF NPS1/2 SW tap x 1	
1	4		STD		P66B-008F0	Orifice flange WN ASTM A105 Class 600 ASME B16.36 RF NPS1/2 SW tap x 1	
1	6		STD		P66B-008F1	Orifice flange WN ASTM A105 Class 600 ASME B16.36 RF NPS1/2 SW tap x 1	
1	8		SCH30		P66B-008F2	Orifice flange WN ASTM A105 Class 600 ASME B16.36 RF NPS1/2 SW tap x 1	
200	2		XS		P66B-008F5	Orifice flange WN ASTM A105 Class 600 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	3		STD		P66B-008F6	Orifice flange WN ASTM A105 Class 600 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	4		STD		P66B-008F7	Orifice flange WN ASTM A105 Class 600 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	

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ORIFICE FLANGE (FO)							
OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
200	6		STD		P66B-008F8	Orifice flange WN ASTM A105 Class 600 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	8		SCH30		P66B-008F9	Orifice flange WN ASTM A105 Class 600 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	

SPECT BLANK (SB)							
OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71B-000E4	Spectacle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	0.75				P71B-000DN	Spectacle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	1				P71B-000DP	Spectacle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71B-000DR	Spectacle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	2				P71B-000DS	Spectacle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	3				P71B-000DT	Spectacle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	4				P71B-000DU	Spectacle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	6				P71B-000DV	Spectacle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	

PADDLE BLANK (PB)							
OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	8				P72B-000MF	Paddle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	

PADDLE SPACER (PS)							
OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	8				P72B-000MM	Paddle spacer ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	

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BOLT TABLE (B_D1AA , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	80	P80S-003V6		
0.75	4	0.625	90	P80S-003XF		
1	4	0.625	95	P80S-003XG		
1.5	4	0.750	110	P80S-003XK		
2	8	0.625	110	P80S-003VC		
3	8	0.750	130	P80S-003XP		
4	8	0.875	150	P80S-0041F		
6	12	1.000	175	P80S-0043P		
8	12	1.125	195	P80S-0046W		

BOLT TABLE (B_D1AA_789 , STUD ASME RJ, OPTION CODE 789)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	110		R12	
0.75	4	0.750	115		R14	
1	4	0.875	130	P80S-0041B	R16	
1.5	4	1.000	140		R20	
2	8	0.875	150	P80S-0041F	R24	
3	8	0.875	150	P80S-0041F	R31	P75T-000JN
4	8	1.125	175	P80S-0046S	R37	P75T-000JP
6	12	1.125	200	P80S-0046X	R45	P75T-000JR
8	12	1.375	260	P80S-003E5	R49	P75T-000JS

BOLT TABLE (B_D1AA_797 , STUD ASME RJ, OPTION CODE 797)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	110	P80S-003XK	R12	P75T-000JT
0.75	4	0.750	115	P80S-003XL	R14	P75T-000JU
1	4	0.875	130	P80S-0041B	R16	P75T-000JV
1.5	4	1.000	140	P80S-0043F	R20	P75T-000JW
2	8	0.875	150	P80S-0041F	R24	P75T-0008A
3	8	1.125	180	P80S-0046T	R35	P75T-0008E
4	8	1.250	230	P80S-004AU	R39	P75T-0008D
6	12	1.375	300	P80S-003ED	R46	P75T-0008C
8	12	1.625	345		R50	

BOLT TABLE (B_D1AA_805 , STUD ASME RJ, OPTION CODE 805)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	125		R13	
0.75	4	0.750	130		R16	
1	4	0.875	140	P80S-0041D	R18	P75T-000KV
1.5	4	1.125	175	P80S-0046S	R23	P75T-000KW
2	8	1.000	180		R26	
3	8	1.250	260		R32	
4	8	1.500	305		R38	
6	8	2.000	410		R47	
8	12	2.000	450		R51	

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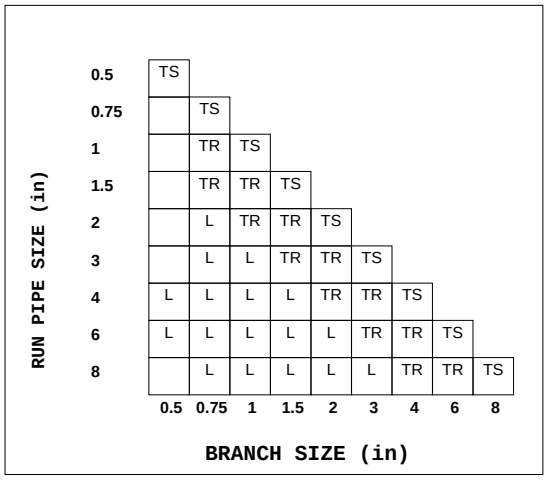
BRANCH TABLE (T_D1AA)



TR : REDUCING TEE
L : OUTLET
TS : STRAIGHT TEE

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Material : CS (ASME)
Rating : ASME CLASS 600
Flange Face : RF
C.A.(mm) : 1.50
Gasket : Spiral Wound
Service : UTILITY - POWER PIPING : / MEDIUM PRESSURE STEAM, BOILER FEED WATER

Design Code : ASME B31.1
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
541	NPT(F) (CA,L)
714	SW - NPT(F) (V)
789	CLASS 900 (B,F,G)
797	CLASS 1500 (B,F,G)

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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P01A-002RW	Pipe ASME SA106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	0.75		XS		P01A-002RX	Pipe ASME SA106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1		XS		P01A-002RY	Pipe ASME SA106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1.5		XS		P01A-002RZ	Pipe ASME SA106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	2		XS		P01A-002S2	Pipe ASME SA106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	3		STD		P01A-0042B	Pipe ASME SA106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	4		XS		P01A-002S4	Pipe ASME SA106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	6		XS		P01A-002S5	Pipe ASME SA106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	8		XS		P01A-002S6	Pipe ASME SA106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	10		SCH80		P01A-0027M	Pipe ASME SA106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	12		SCH80		P01A-0027L	Pipe ASME SA106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	14		SCH80		P01A-0027K	Pipe ASME SA106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	16		SCH80		P01A-0027J	Pipe ASME SA106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	18		SCH80		P01A-0027H	Pipe ASME SA106 Grade B Seamless ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P02B-0002N	90 degree elbow ASME SA105 Class 3000 ASME B16.11 SW	
1	0.75				P02B-0002R	90 degree elbow ASME SA105 Class 3000 ASME B16.11 SW	
1	1				P02B-0002P	90 degree elbow ASME SA105 Class 3000 ASME B16.11 SW	
1	1.5				P02B-0002M	90 degree elbow ASME SA105 Class 3000 ASME B16.11 SW	
1	2		XS		P02A-002HF	90 degree elbow ASME SA234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		STD		P02A-002HG	90 degree elbow ASME SA234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		XS		P02A-002LY	90 degree elbow ASME SA234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		XS		P02A-002JZ	90 degree elbow ASME SA234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		XS		P02A-002LZ	90 degree elbow ASME SA234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	10		SCH80		P02A-000WG	90 degree elbow ASME SA234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	12		SCH80		P02A-000WT	90 degree elbow ASME SA234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	14		SCH80		P02A-000WS	90 degree elbow ASME SA234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	16		SCH80		P02A-000WP	90 degree elbow ASME SA234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	18		SCH80		P02A-004GU	90 degree elbow ASME SA234 Grade WPB Seamless ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P03B-0002L	45 degree elbow ASME SA105 Class 3000 ASME B16.11 SW	
1	0.75				P03B-0002K	45 degree elbow ASME SA105 Class 3000 ASME B16.11 SW	
1	1				P03B-0002J	45 degree elbow ASME SA105 Class 3000 ASME B16.11 SW	
1	1.5				P03B-0002H	45 degree elbow ASME SA105 Class 3000 ASME B16.11 SW	
1	2		XS		P03A-002EZ	45 degree elbow ASME SA234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		STD		P03A-002F0	45 degree elbow ASME SA234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		XS		P03A-002JJ	45 degree elbow ASME SA234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		XS		P03A-002GG	45 degree elbow ASME SA234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		XS		P03A-002JK	45 degree elbow ASME SA234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	10		SCH80		P03A-000TF	45 degree elbow ASME SA234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	12		SCH80		P03A-000T7	45 degree elbow ASME SA234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	14		SCH80		P03A-000TH	45 degree elbow ASME SA234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	16		SCH80		P03A-000TE	45 degree elbow ASME SA234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	18		SCH80		P03A-004E0	45 degree elbow ASME SA234 Grade WPB Seamless ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P21B-0002L	Straight tee ASME SA105 Class 3000 ASME B16.11 SW	
1	0.75				P21B-0002K	Straight tee ASME SA105 Class 3000 ASME B16.11 SW	
1	1				P21B-0002J	Straight tee ASME SA105 Class 3000 ASME B16.11 SW	
1	1.5				P21B-0002H	Straight tee ASME SA105 Class 3000 ASME B16.11 SW	
1	2		XS		P21A-002PV	Straight tee ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	3		STD		P21A-003G4	Straight tee ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	4		XS		P21A-002PX	Straight tee ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	6		XS		P21A-002PY	Straight tee ASME SA234 Grade WPB Seamless ASME B16.9 BW	

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STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	8		XS		P21A-002PZ	Straight tee ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	10		SCH80		P21A-002CP	Straight tee ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	12		SCH80		P21A-002CN	Straight tee ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	14		SCH80		P21A-002CZ	Straight tee ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	16		SCH80		P21A-002CX	Straight tee ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	18		SCH80		P21A-002CR	Straight tee ASME SA234 Grade WPB-W Weld ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75			P24B-00051	Reducing tee ASME SA105 Class 3000 ASME B16.11 SW	
1	1.5	0.75			P24B-0004Z	Reducing tee ASME SA105 Class 3000 ASME B16.11 SW	
1	1.5	1			P24B-0004Y	Reducing tee ASME SA105 Class 3000 ASME B16.11 SW	
1	2	1	XS	XS	P24A-00K0D	Reducing tee ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	XS	XS	P24A-006AC	Reducing tee ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	STD	XS	P24A-00K0E	Reducing tee ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	STD	XS	P24A-00GLY	Reducing tee ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	XS	XS	P24A-006AE	Reducing tee ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	XS	STD	P24A-00NYD	Reducing tee ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	XS	STD	P24A-00NYE	Reducing tee ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	XS	XS	P24A-006AH	Reducing tee ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	XS	XS	P24A-006AJ	Reducing tee ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	XS	XS	P24A-006AK	Reducing tee ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	SCH80	XS	P24A-00NYF	Reducing tee ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	SCH80	XS	P24A-00H2Z	Reducing tee ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	SCH80	XS	P24A-00H30	Reducing tee ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	SCH80	XS	P24A-00H31	Reducing tee ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH80	XS	P24A-00H32	Reducing tee ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH80	SCH80	P24A-004JD	Reducing tee ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	SCH80	XS	P24A-00N42	Reducing tee ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	SCH80	XS	P24A-00NYG	Reducing tee ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	SCH80	SCH80	P24A-004HZ	Reducing tee ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	SCH80	SCH80	P24A-004HF	Reducing tee ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	16	6	SCH80	XS	P24A-00H33	Reducing tee ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	SCH80	XS	P24A-00H34	Reducing tee ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	SCH80	SCH80	P24A-004HJ	Reducing tee ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	SCH80	SCH80	P24A-004JE	Reducing tee ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	SCH80	SCH80	P24A-004J0	Reducing tee ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	18	8	SCH80	XS	P24A-00R9T	Reducing tee ASME SA234 Grade WPB-W Weld ASME B16.9 BW	
1	18	10	SCH80	SCH80	P24A-004HP	Reducing tee ASME SA234 Grade WPB-W Weld ASME B16.9 BW	
1	18	12	SCH80	SCH80	P24A-004JH	Reducing tee ASME SA234 Grade WPB-W Weld ASME B16.9 BW	
1	18	14	SCH80	SCH80	P24A-004J8	Reducing tee ASME SA234 Grade WPB-W Weld ASME B16.9 BW	
1	18	16	SCH80	SCH80	P24A-004HY	Reducing tee ASME SA234 Grade WPB-W Weld ASME B16.9 BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	STD	XS	P27A-00BFE	Concentric reducer ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	XS	XS	P27A-004B4	Concentric reducer ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	XS	STD	P27A-00HDK	Concentric reducer ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	XS	STD	P27A-00HDL	Concentric reducer ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	XS	XS	P27A-004B7	Concentric reducer ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	XS	XS	P27A-004B8	Concentric reducer ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	XS	XS	P27A-004B9	Concentric reducer ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	SCH80	XS	P27A-00BTJ	Concentric reducer ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	SCH80	XS	P27A-00BTK	Concentric reducer ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	SCH80	XS	P27A-00BTL	Concentric reducer ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	SCH80	XS	P27A-00BTM	Concentric reducer ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH80	XS	P27A-00BTN	Concentric reducer ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH80	SCH80	P27A-002WT	Concentric reducer ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	SCH80	XS	P27A-00GX8	Concentric reducer ASME SA234 Grade WPB Seamless ASME B16.9 BW	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14	8	SCH80	XS	P27A-00HDM	Concentric reducer ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	SCH80	SCH80	P27A-002WW	Concentric reducer ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	SCH80	SCH80	P27A-002XL	Concentric reducer ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	SCH80	XS	P27A-00BTP	Concentric reducer ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	SCH80	SCH80	P27A-002WP	Concentric reducer ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	SCH80	SCH80	P27A-002XD	Concentric reducer ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	SCH80	SCH80	P27A-002X4	Concentric reducer ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	18	10	SCH80	SCH80	P27A-002WS	Concentric reducer ASME SA234 Grade WPB-W Weld ASME B16.9 BW	
1	18	12	SCH80	SCH80	P27A-002XE	Concentric reducer ASME SA234 Grade WPB-W Weld ASME B16.9 BW	
1	18	14	SCH80	SCH80	P27A-002X5	Concentric reducer ASME SA234 Grade WPB-W Weld ASME B16.9 BW	
1	18	16	SCH80	SCH80	P27A-002X1	Concentric reducer ASME SA234 Grade WPB-W Weld ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	STD	XS	P28A-008DX	Eccentric reducer ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	XS	XS	P28A-004AW	Eccentric reducer ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	XS	STD	P28A-00EM9	Eccentric reducer ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	XS	STD	P28A-00EMA	Eccentric reducer ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	XS	XS	P28A-004AZ	Eccentric reducer ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	XS	XS	P28A-004B0	Eccentric reducer ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	XS	XS	P28A-004B1	Eccentric reducer ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	SCH80	XS	P28A-008TW	Eccentric reducer ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	SCH80	XS	P28A-008TX	Eccentric reducer ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	SCH80	XS	P28A-008TY	Eccentric reducer ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	SCH80	XS	P28A-008TZ	Eccentric reducer ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH80	XS	P28A-008U0	Eccentric reducer ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH80	SCH80	P28A-002X7	Eccentric reducer ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	SCH80	XS	P28A-00E4Z	Eccentric reducer ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	SCH80	XS	P28A-00EMB	Eccentric reducer ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	SCH80	SCH80	P28A-002XF	Eccentric reducer ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	SCH80	SCH80	P28A-002Y1	Eccentric reducer ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	SCH80	XS	P28A-008U1	Eccentric reducer ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	SCH80	SCH80	P28A-002Y6	Eccentric reducer ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	SCH80	SCH80	P28A-002XT	Eccentric reducer ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	SCH80	SCH80	P28A-002XG	Eccentric reducer ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	18	10	SCH80	SCH80	P28A-002X9	Eccentric reducer ASME SA234 Grade WPB-W Weld ASME B16.9 BW	
1	18	12	SCH80	SCH80	P28A-002XW	Eccentric reducer ASME SA234 Grade WPB-W Weld ASME B16.9 BW	
1	18	14	SCH80	SCH80	P28A-002XH	Eccentric reducer ASME SA234 Grade WPB-W Weld ASME B16.9 BW	
1	18	16	SCH80	SCH80	P28A-002XC	Eccentric reducer ASME SA234 Grade WPB-W Weld ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P29B-00022	Cap ASME SA105 Class 3000 ASME B16.11 SW	
1	0.75				P29B-00021	Cap ASME SA105 Class 3000 ASME B16.11 SW	
1	1				P29B-00020	Cap ASME SA105 Class 3000 ASME B16.11 SW	
1	1.5				P29B-0001Z	Cap ASME SA105 Class 3000 ASME B16.11 SW	
1	2		XS		P29A-0015L	Cap ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	3		STD		P29A-001T5	Cap ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	4		XS		P29A-0015N	Cap ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	6		XS		P29A-0015P	Cap ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	8		XS		P29A-0015R	Cap ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	10		SCH80		P29A-000VB	Cap ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	12		SCH80		P29A-000VM	Cap ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	14		SCH80		P29A-000VK	Cap ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	16		SCH80		P29A-000VG	Cap ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	18		SCH80		P29A-000VF	Cap ASME SA234 Grade WPB Seamless ASME B16.9 BW	
541	1.75				P29B-0001X	Cap ASME SA105 Class 3000 ASME B16.11 NPT	

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STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P41A-000J1	Straight nipple ASME SA106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		SCH160		P41A-000J0	Straight nipple ASME SA106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		SCH160		P41A-000HZ	Straight nipple ASME SA106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		SCH160		P41A-000HY	Straight nipple ASME SA106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

CON SWAGED NIPPLE (SNC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	XS	XS	P42A-000AB	Concentric swaged nipple ASME SA234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	XS	XS	P42A-000AC	Concentric swaged nipple ASME SA234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	XS	XS	P42A-000AD	Concentric swaged nipple ASME SA234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	XS	XS	P42A-000AE	Concentric swaged nipple ASME SA234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	XS	XS	P42A-000AF	Concentric swaged nipple ASME SA234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	XS	XS	P42A-000AG	Concentric swaged nipple ASME SA234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	XS	XS	P42A-000TU	Concentric swaged nipple ASME SA234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	XS	XS	P42A-000TV	Concentric swaged nipple ASME SA234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	XS	XS	P42A-000TW	Concentric swaged nipple ASME SA234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	XS	XS	P42A-000TX	Concentric swaged nipple ASME SA234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	STD	XS	P42A-000TY	Concentric swaged nipple ASME SA234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	

ECC SWAGED NIPPLE (SNE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	XS	XS	P43A-000JS	Eccentric swaged nipple ASME SA234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	XS	XS	P43A-000JT	Eccentric swaged nipple ASME SA234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	XS	XS	P43A-000JU	Eccentric swaged nipple ASME SA234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	XS	XS	P43A-000JV	Eccentric swaged nipple ASME SA234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	XS	XS	P43A-000JW	Eccentric swaged nipple ASME SA234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	XS	XS	P43A-000JX	Eccentric swaged nipple ASME SA234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	XS	XS	P43A-000JY	Eccentric swaged nipple ASME SA234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	XS	XS	P43A-000JZ	Eccentric swaged nipple ASME SA234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	XS	XS	P43A-000K0	Eccentric swaged nipple ASME SA234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	XS	XS	P43A-000K1	Eccentric swaged nipple ASME SA234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	STD	XS	P43A-000K2	Eccentric swaged nipple ASME SA234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	

COUPLING (CPS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P47B-0002Z	Coupling ASME SA105 Class 3000 ASME B16.11 SW - SW	
1	0.75				P47B-0002Y	Coupling ASME SA105 Class 3000 ASME B16.11 SW - SW	
1	1				P47B-0002X	Coupling ASME SA105 Class 3000 ASME B16.11 SW - SW	
1	1.5				P47B-0002W	Coupling ASME SA105 Class 3000 ASME B16.11 SW - SW	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2 - 2.5	0.75			P31B-01392	Outlet ASME SA105 Class 3000 MSS SP-97 SW	
1	3 - 5	0.75			P31B-01393	Outlet ASME SA105 Class 3000 MSS SP-97 SW	
1	6 - 12	0.75			P31B-00DGW	Outlet ASME SA105 Class 3000 MSS SP-97 SW	
1	14 - 36	0.75			P31B-00DH8	Outlet ASME SA105 Class 3000 MSS SP-97 SW	
1	3	1			P31B-00DGE	Outlet ASME SA105 Class 3000 MSS SP-97 SW	
1	4 - 5	1			P31B-01394	Outlet ASME SA105 Class 3000 MSS SP-97 SW	
1	6 - 10	1			P31B-00DG7	Outlet ASME SA105 Class 3000 MSS SP-97 SW	
1	12 - 36	1			P31B-00DGM	Outlet ASME SA105 Class 3000 MSS SP-97 SW	
1	4	1.5			P31B-00DFE	Outlet ASME SA105 Class 3000 MSS SP-97 SW	
1	5 - 6	1.5			P31B-01395	Outlet ASME SA105 Class 3000 MSS SP-97 SW	
1	8 - 12	1.5			P31B-00DF3	Outlet ASME SA105 Class 3000 MSS SP-97 SW	
1	14 - 24	1.5			P31B-00DFV	Outlet ASME SA105 Class 3000 MSS SP-97 SW	
541	1	0.75			P31B-00DR2	Outlet ASME SA105 Class 3000 MSS SP-97 NPT	
541	1.5	0.75			P31B-00DPX	Outlet ASME SA105 Class 3000 MSS SP-97 NPT	
541	2 - 2.5	0.75			P31B-01396	Outlet ASME SA105 Class 3000 MSS SP-97 NPT	
541	3 - 5	0.75			P31B-01397	Outlet ASME SA105 Class 3000 MSS SP-97 NPT	

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OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
541	6 - 12	0.75			P31B-00DPE	Outlet ASME SA105 Class 3000 MSS SP-97 NPT	
541	14 - 36	0.75			P31B-00DPT	Outlet ASME SA105 Class 3000 MSS SP-97 NPT	
1	6	2	XS	XS	P31B-00FCA	Outlet ASME SA105 MSS SP-97 BW	
1	8	2	XS	XS	P31B-00FCB	Outlet ASME SA105 MSS SP-97 BW	
1	10	2	SCH80	XS	P31B-00UCG	Outlet ASME SA105 MSS SP-97 BW	
1	12	2	SCH80	XS	P31B-00UCK	Outlet ASME SA105 MSS SP-97 BW	
1	14	2	SCH80	XS	P31B-010LE	Outlet ASME SA105 MSS SP-97 BW	
1	16	2	SCH80	XS	P31B-00UCN	Outlet ASME SA105 MSS SP-97 BW	
1	18	2	SCH80	XS	P31B-0112R	Outlet ASME SA105 MSS SP-97 BW	
1	8	3	XS	STD	P31B-0112K	Outlet ASME SA105 MSS SP-97 BW	
1	10	3	SCH80	STD	P31B-0112L	Outlet ASME SA105 MSS SP-97 BW	
1	12	3	SCH80	STD	P31B-0112M	Outlet ASME SA105 MSS SP-97 BW	
1	14	3	SCH80	STD	P31B-0112N	Outlet ASME SA105 MSS SP-97 BW	
1	16	3	SCH80	STD	P31B-0112P	Outlet ASME SA105 MSS SP-97 BW	
1	18	3	SCH80	STD	P31B-0112S	Outlet ASME SA105 MSS SP-97 BW	
1	12	4	SCH80	XS	P31B-00UCM	Outlet ASME SA105 MSS SP-97 BW	
1	14	4	SCH80	XS	P31B-010LG	Outlet ASME SA105 MSS SP-97 BW	
1	16	4	SCH80	XS	P31B-00UCR	Outlet ASME SA105 MSS SP-97 BW	
1	18	4	SCH80	XS	P31B-0112T	Outlet ASME SA105 MSS SP-97 BW	
1	18	6	SCH80	XS	P31B-0112U	Outlet ASME SA105 MSS SP-97 BW	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30B-00034	Plug ASME SA105 ASME B16.11 NPT Round head	
1	0.75				P30B-00035	Plug ASME SA105 ASME B16.11 NPT Round head	
1	1				P30B-00036	Plug ASME SA105 ASME B16.11 NPT Round head	
1	1.5				P30B-00037	Plug ASME SA105 ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P61B-00AC0	Flange SW ASME SA105 Class 600 ASME B16.5 RF	
1	0.75		XS		P61B-00AC1	Flange SW ASME SA105 Class 600 ASME B16.5 RF	
1	1		XS		P61B-00AC2	Flange SW ASME SA105 Class 600 ASME B16.5 RF	
1	1.5		XS		P61B-00AC3	Flange SW ASME SA105 Class 600 ASME B16.5 RF	
1	2		XS		P61B-003Y5	Flange WN ASME SA105 Class 600 ASME B16.5 RF	
1	3		STD		P61B-00681	Flange WN ASME SA105 Class 600 ASME B16.5 RF	
1	4		XS		P61B-003Y7	Flange WN ASME SA105 Class 600 ASME B16.5 RF	
1	6		XS		P61B-003Y8	Flange WN ASME SA105 Class 600 ASME B16.5 RF	
1	8		XS		P61B-003Y9	Flange WN ASME SA105 Class 600 ASME B16.5 RF	
1	10		SCH80		P61B-006GH	Flange WN ASME SA105 Class 600 ASME B16.5 RF	
1	12		SCH80		P61B-006GJ	Flange WN ASME SA105 Class 600 ASME B16.5 RF	
1	14		SCH80		P61B-00BK3	Flange WN ASME SA105 Class 600 ASME B16.5 RF	
1	16		SCH80		P61B-006GK	Flange WN ASME SA105 Class 600 ASME B16.5 RF	
1	18		SCH80		P61B-00BVA	Flange WN ASME SA105 Class 600 ASME B16.5 RF	
789	3		STD		P61B-00ACF	Flange WN ASME SA105 Class 900 ASME B16.5 RJ	
789	4		XS		P61B-00BK8	Flange WN ASME SA105 Class 900 ASME B16.5 RJ	
789	6		XS		P61B-0069B	Flange WN ASME SA105 Class 900 ASME B16.5 RJ	
789	8		XS		P61B-00BVE	Flange WN ASME SA105 Class 900 ASME B16.5 RJ	
789	10		SCH80		P61B-00BVB	Flange WN ASME SA105 Class 900 ASME B16.5 RJ	
789	12		SCH80		P61B-00BVC	Flange WN ASME SA105 Class 900 ASME B16.5 RJ	
789	14		SCH80		P61B-00BK5	Flange WN ASME SA105 Class 900 ASME B16.5 RJ	
789	16		SCH80		P61B-00BK6	Flange WN ASME SA105 Class 900 ASME B16.5 RJ	
789	18		SCH80		P61B-00BVD	Flange WN ASME SA105 Class 900 ASME B16.5 RJ	
797	0.5		XS		P61B-00BVF	Flange SW ASME SA105 Class 1500 ASME B16.5 RJ	
797	0.75		XS		P61B-00BVG	Flange SW ASME SA105 Class 1500 ASME B16.5 RJ	
797	1		XS		P61B-00BVH	Flange SW ASME SA105 Class 1500 ASME B16.5 RJ	
797	1.5		XS		P61B-00BVJ	Flange SW ASME SA105 Class 1500 ASME B16.5 RJ	
797	2		XS		P61B-0069E	Flange WN ASME SA105 Class 1500 ASME B16.5 RJ	

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BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67B-0019Y	Blind flange ASME SA105 Class 600 ASME B16.5 RF	
1	0.75				P67B-0019Z	Blind flange ASME SA105 Class 600 ASME B16.5 RF	
1	1				P67B-001A0	Blind flange ASME SA105 Class 600 ASME B16.5 RF	
1	1.5				P67B-001A1	Blind flange ASME SA105 Class 600 ASME B16.5 RF	
1	2				P67B-001A4	Blind flange ASME SA105 Class 600 ASME B16.5 RF	
1	3				P67B-001A5	Blind flange ASME SA105 Class 600 ASME B16.5 RF	
1	4				P67B-001A6	Blind flange ASME SA105 Class 600 ASME B16.5 RF	
1	6				P67B-001A7	Blind flange ASME SA105 Class 600 ASME B16.5 RF	
1	8				P67B-001A8	Blind flange ASME SA105 Class 600 ASME B16.5 RF	
1	10				P67B-001A2	Blind flange ASME SA105 Class 600 ASME B16.5 RF	
1	12				P67B-001A3	Blind flange ASME SA105 Class 600 ASME B16.5 RF	
1	14				P67B-001AM	Blind flange ASME SA105 Class 600 ASME B16.5 RF	
1	16				P67B-001AN	Blind flange ASME SA105 Class 600 ASME B16.5 RF	
1	18				P67B-001AP	Blind flange ASME SA105 Class 600 ASME B16.5 RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000J8	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000J9	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000JA	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000JB	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000JH	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000JL	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000JM	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	6				P73T-000JN	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	8				P73T-000JP	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	10				P73T-000JC	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	12				P73T-000JD	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	14				P73T-000JE	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	16				P73T-000JF	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	18				P73T-000JG	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
789	3				P75T-000JN	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	4				P75T-000JP	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	6				P75T-000JR	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	8				P75T-000JS	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	10				P75T-000JL	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	12				P75T-000JM	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	14				P75T-000MJ	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	16				P75T-000MK	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	18				P75T-000N8	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	0.5				P75T-000JT	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	0.75				P75T-000JU	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	1				P75T-000JV	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	1.5				P75T-000JW	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	2				P75T-0008A	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-6				See Attached Bolt Table	Bolt and Nut ASME SA193 Grade B7 / SA194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	8-18				See Attached Bolt Table	Bolt and Nut ASME SA193 Grade B7 / SA194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
789	1-3				See Attached Bolt Table	Bolt and Nut ASME SA193 Grade B7 / SA194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
789	4-12				See Attached Bolt Table	Bolt and Nut ASME SA193 Grade B7 / SA194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	

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BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
797	0.5-2				See Attached Bolt Table	Bolt and Nut ASME SA193 Grade B7 / SA194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81B-000RB	Gate valve ASME SA105 Class 800 API 602 SW Trim number 5 BB-BG-OS&Y Handwheel operated	
1	0.75				P81B-000RC	Gate valve ASME SA105 Class 800 API 602 SW Trim number 5 BB-BG-OS&Y Handwheel operated	
1	1				P81B-000RD	Gate valve ASME SA105 Class 800 API 602 SW Trim number 5 BB-BG-OS&Y Handwheel operated	
1	1.5				P81B-000RE	Gate valve ASME SA105 Class 800 API 602 SW Trim number 5 BB-BG-OS&Y Handwheel operated	
1	2				P81C-004KM	Gate valve ASME SA216 Grade WCB Class 600 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated	
1	3				P81C-004KN	Gate valve ASME SA216 Grade WCB Class 600 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated	
1	4				P81C-004KP	Gate valve ASME SA216 Grade WCB Class 600 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated	
1	6				P81C-0092F	Gate valve ASME SA216 Grade WCB Class 600 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Gear operated	
1	8				P81C-004KV	Gate valve ASME SA216 Grade WCB Class 600 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Gear operated	
1	10				P81C-004KS	Gate valve ASME SA216 Grade WCB Class 600 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Gear operated	
1	12				P81C-004KT	Gate valve ASME SA216 Grade WCB Class 600 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Gear operated	
1	14				P81C-0063Y	Gate valve ASME SA216 Grade WCB Class 600 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Gear operated	
1	16				P81C-0063Z	Gate valve ASME SA216 Grade WCB Class 600 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Gear operated	
1	18				P81C-004KU	Gate valve ASME SA216 Grade WCB Class 600 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Gear operated	
714	0.5				P81B-0015P	Gate valve ASME SA105 Class 800 API 602 SW - NPT Trim number 5 BB-BG-OS&Y Handwheel operated	
714	0.75				P81B-002F6	Gate valve ASME SA105 Class 800 API 602 SW - NPT Trim number 5 BB-BG-OS&Y Handwheel operated	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82B-000KX	Globe valve ASME SA105 Class 800 API 602 SW Trim number 5 BB-BG-OS&Y Handwheel operated	
1	0.75				P82B-000KY	Globe valve ASME SA105 Class 800 API 602 SW Trim number 5 BB-BG-OS&Y Handwheel operated	
1	1				P82B-000KZ	Globe valve ASME SA105 Class 800 API 602 SW Trim number 5 BB-BG-OS&Y Handwheel operated	
1	1.5				P82B-000L0	Globe valve ASME SA105 Class 800 API 602 SW Trim number 5 BB-BG-OS&Y Handwheel operated	
1	2				P82C-0028U	Globe valve ASME SA216 Grade WCB Class 600 BS 1873 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated	
1	3				P82C-0028V	Globe valve ASME SA216 Grade WCB Class 600 BS 1873 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated	
1	4				P82C-0028W	Globe valve ASME SA216 Grade WCB Class 600 BS 1873 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated	
1	6				P82C-004DD	Globe valve ASME SA216 Grade WCB Class 600 BS 1873 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Gear operated	
1	8				P82C-0028Y	Globe valve ASME SA216 Grade WCB Class 600 BS 1873 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Gear operated	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83B-000GM	Check valve ASME SA105 Class 800 API 602 SW Trim number 5 Lift-type Bolted cover	
1	0.75				P83B-000GN	Check valve ASME SA105 Class 800 API 602 SW Trim number 5 Lift-type Bolted cover	
1	1				P83B-000GP	Check valve ASME SA105 Class 800 API 602 SW Trim number 5 Lift-type Bolted cover	
1	1.5				P83B-000GR	Check valve ASME SA105 Class 800 API 602 SW Trim number 5 Lift-type Bolted cover	
1	2				P83C-0025U	Check valve ASME SA216 Grade WCB Class 600 BS 1868 Flange ASME B16.5 RF Trim number 5 Swing-type Bolted cover	
1	3				P83C-0025V	Check valve ASME SA216 Grade WCB Class 600 BS 1868 Flange ASME B16.5 RF Trim number 5 Swing-type Bolted cover	
1	4				P83C-0025W	Check valve ASME SA216 Grade WCB Class 600 BS 1868 Flange ASME B16.5 RF Trim number 5 Swing-type Bolted cover	
1	6				P83C-0025X	Check valve ASME SA216 Grade WCB Class 600 BS 1868 Flange ASME B16.5 RF Trim number 5 Swing-type Bolted cover	
1	8				P83C-0025Y	Check valve ASME SA216 Grade WCB Class 600 BS 1868 Flange ASME B16.5 RF Trim number 5 Swing-type Bolted cover	
1	10				P83C-0025T	Check valve ASME SA216 Grade WCB Class 600 BS 1868 Flange ASME B16.5 RF Trim number 5 Swing-type Bolted cover	

DP CHECK VALVE (XDP)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	12				P88C-0023G	Dual plate check valve ASME SA216 Grade WCB Class 600 API 594 Wafer-type ASME B16.5 RF Trim number 5 Internal wetted parts 13Cr Spring Inconel Retainerless-type	

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SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71B-000DW	Spectacle blank ASME SA105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	0.75				P71B-000DX	Spectacle blank ASME SA105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	1				P71B-000DY	Spectacle blank ASME SA105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71B-000DZ	Spectacle blank ASME SA105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	2				P71B-000E0	Spectacle blank ASME SA105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	3				P71B-000E1	Spectacle blank ASME SA105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	4				P71B-000E2	Spectacle blank ASME SA105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	6				P71B-000E3	Spectacle blank ASME SA105 Class 600 Standard-drawing Flange ASME B16.5 RF	

PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	8				P72B-000HH	Paddle blank ASME SA105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	10				P72B-000HE	Paddle blank ASME SA105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	12				P72B-000HF	Paddle blank ASME SA105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	14				P72B-000PR	Paddle blank ASME SA105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	16				P72B-000PS	Paddle blank ASME SA105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	18				P72B-000HG	Paddle blank ASME SA105 Class 600 Standard-drawing Flange ASME B16.5 RF	

PADDLE SPACER (PS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	8				P72B-000HM	Paddle spacer ASME SA105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	10				P72B-000HJ	Paddle spacer ASME SA105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	12				P72B-000HK	Paddle spacer ASME SA105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	14				P72B-000PT	Paddle spacer ASME SA105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	16				P72B-000PU	Paddle spacer ASME SA105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	18				P72B-000HL	Paddle spacer ASME SA105 Class 600 Standard-drawing Flange ASME B16.5 RF	

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BOLT TABLE (B_D1AG , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	80	P80S-00MEE		
0.75	4	0.625	90	P80S-00MAM		
1	4	0.625	95	P80S-00MAL		
1.5	4	0.750	110	P80S-00MAH		
2	8	0.625	110	P80S-00MC4		
3	8	0.750	130	P80S-00M89		
4	8	0.875	150	P80S-00M2W		
6	12	1.000	175	P80S-00LY7		
8	12	1.125	195	P80S-00LND		
10	16	1.250	250	P80S-00LC0		
12	20	1.250	255	P80S-00LBZ		
14	20	1.375	270	P80S-00N6J		
16	20	1.500	295	P80S-00N3P		
18	20	1.625	320	P80S-00N03		

BOLT TABLE (B_D1AG_789 , STUD ASME RJ, OPTION CODE 789)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	110		R12	
0.75	4	0.750	115		R14	
1	4	0.875	130	P80S-00M30	R16	
1.5	4	1.000	140		R20	
2	8	0.875	150	P80S-00M2W	R24	
3	8	0.875	150	P80S-00M2W	R31	P75T-000JN
4	8	1.125	175	P80S-00LNH	R37	P75T-000JP
6	12	1.125	200	P80S-00LNC	R45	P75T-000JR
8	12	1.375	260	P80S-00N6L	R49	P75T-000JS
10	16	1.375	275	P80S-00N6H	R53	P75T-000JL
12	20	1.375	295	P80S-00N6D	R57	P75T-000JM
14	20	1.500	325	P80S-00N3H	R62	P75T-000MJ
16	20	1.625	340	P80S-00MZZ	R66	P75T-000MK
18	20	1.875	390	P80S-00MT6	R70	P75T-000N8

BOLT TABLE (B_D1AG_797 , STUD ASME RJ, OPTION CODE 797)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	110	P80S-00MAH	R12	P75T-000JT
0.75	4	0.750	115	P80S-00M8C	R14	P75T-000JU
1	4	0.875	130	P80S-00M30	R16	P75T-000JV
1.5	4	1.000	140	P80S-00LYE	R20	P75T-000JW
2	8	0.875	150	P80S-00M2W	R24	P75T-0008A
3	8	1.125	180		R35	
4	8	1.250	230		R39	
6	12	1.375	300		R46	
8	12	1.625	345		R50	
10	12	1.875	395		R54	
12	16	2.000	445		R58	
14	16	2.250	490		R63	
16	16	2.500	540		R67	
18	16	2.750	590		R71	

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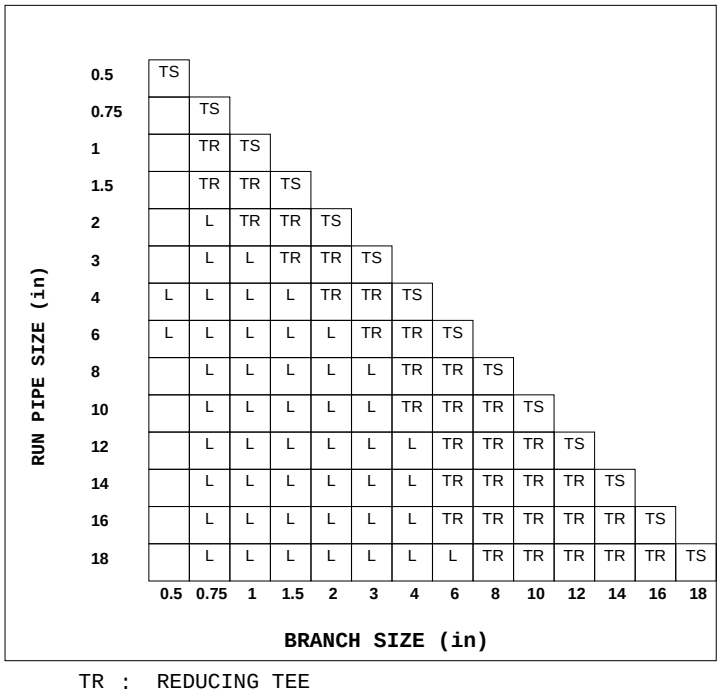
BRANCH TABLE (T_D1AG)



TR : REDUCING TEE
TS : STRAIGHT TEE
L : OUTLET

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Material : Killed CS
Rating : ASME CLASS 600
Flange Face : RF
C.A.(mm) : 1.50
Gasket : Spiral Wound
Service : PROCESS - HYDROGEN OR HYDROGEN RICH HYDROCARBON MIXTURE : / HYDROGEN (DRY) / PROCESS WITH HYDROGEN

Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
16	PIPE CLASS SHALL BE USED WITHIN THE NORMAL OPERATING PRESSURE/TEMPERATURE LIMITS SPECIFIED IN API RP 941. PRESSURE / TEMPERATURE SPECIFIED IN THE PIPE CLASS EXCEEDING API RP 941 LIMITS SHOULD BE REGARDED AS UPSET CONDITIONS RATHER THAN FOR CONTINUOUS SERVICE

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
541	NPT(F) (CA,F,L)
714	SW - NPT(F) (V)
789	CLASS 900 (B,F,G)
797	CLASS 1500 (B,F,G)

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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P01A-000XM	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	0.75		XS		P01A-000XN	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1		XS		P01A-000XP	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1.5		XS		P01A-000XV	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	2		XS		P01A-000YX	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	3		STD		P01A-000YM	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	4		XS		P01A-000Z9	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	6		XS		P01A-000ZF	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	8		SCH60		P01A-001BK	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	10		SCH20		P01A-0014Y	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	12		SCH20		P01A-0016H	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P02B-00014	90 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	0.75				P02B-00015	90 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	1				P02B-00016	90 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5				P02B-00017	90 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	2		XS		P02A-000CP	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		STD		P02A-000CU	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		XS		P02A-000D3	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		XS		P02A-000DA	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		SCH60		P02A-000MC	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	10		SCH20		P02A-000H1	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	12		SCH20		P02A-000H4	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P03B-00017	45 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	0.75				P03B-00018	45 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	1				P03B-00019	45 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5				P03B-0001A	45 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	2		XS		P03A-000AS	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		STD		P03A-000AX	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		XS		P03A-000B3	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		XS		P03A-000B8	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		SCH60		P03A-000K5	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	10		SCH20		P03A-000F0	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	12		SCH20		P03A-000F2	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P21B-00017	Straight tee ASTM A105 Class 3000 ASME B16.11 SW	
1	0.75				P21B-00018	Straight tee ASTM A105 Class 3000 ASME B16.11 SW	
1	1				P21B-00019	Straight tee ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5				P21B-0001A	Straight tee ASTM A105 Class 3000 ASME B16.11 SW	
1	2		XS		P21A-001CJ	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		STD		P21A-001CU	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		XS		P21A-001CV	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6		XS		P21A-001D4	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8		SCH60		P21A-0025S	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10		SCH20		P21A-00219	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12		SCH20		P21A-0021A	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1		0.75			P24B-0002L	Reducing tee ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5	0.75			P24B-0002N	Reducing tee ASTM A105 Class 3000 ASME B16.11 SW	

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REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5	1			P24B-0002P	Reducing tee ASTM A105 Class 3000 ASME B16.11 SW	
1	2	1	XS	XS	P24A-00238	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	XS	XS	P24A-0023H	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	STD	XS	P24A-00214	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	STD	XS	P24A-002HW	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	XS	XS	P24A-0023E	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	XS	STD	P24A-006FZ	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	XS	STD	P24A-006G0	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	XS	XS	P24A-00243	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH60	XS	P24A-00GAV	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH60	XS	P24A-0062G	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	SCH20	XS	P24A-00GX3	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	SCH20	XS	P24A-00GX4	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	SCH20	SCH60	P24A-00L6P	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	SCH20	XS	P24A-00GX6	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH20	SCH60	P24A-00L6R	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH20	SCH20	P24A-002YC	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	STD	XS	P27A-001MZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	XS	XS	P27A-001E4	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	XS	STD	P27A-0048S	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	XS	STD	P27A-0048T	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	XS	XS	P27A-001EB	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH60	XS	P27A-00435	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH60	XS	P27A-00436	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	SCH20	XS	P27A-00BLL	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	SCH20	XS	P27A-00BLM	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	SCH20	SCH60	P27A-00FE8	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	SCH20	XS	P27A-00BLP	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH20	SCH60	P27A-00FE9	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH20	SCH20	P27A-001TH	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	STD	XS	P28A-001N5	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	XS	XS	P28A-001EJ	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	XS	STD	P28A-0048H	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	XS	STD	P28A-0048J	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	XS	XS	P28A-001ER	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH60	XS	P28A-0042X	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH60	XS	P28A-0042Y	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	SCH20	XS	P28A-008LW	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	SCH20	XS	P28A-008LX	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	SCH20	SCH60	P28A-00CK6	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	SCH20	XS	P28A-008LZ	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH20	SCH60	P28A-00CK7	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH20	SCH20	P28A-001TJ	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P29B-0001J	Cap ASTM A105 Class 3000 ASME B16.11 SW	
1	0.75				P29B-0001F	Cap ASTM A105 Class 3000 ASME B16.11 SW	
1	1				P29B-0001G	Cap ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5				P29B-0001H	Cap ASTM A105 Class 3000 ASME B16.11 SW	
1	2		XS		P29A-000A1	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		STD		P29A-000BK	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		XS		P29A-000B9	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	6		XS		P29A-000BF	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8		SCH60		P29A-000PE	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10		SCH20		P29A-000E5	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12		SCH20		P29A-000E8	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
541	0.75				P29B-0000C	Cap ASTM A105 Class 3000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P41A-000B5	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		SCH160		P41A-000B6	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		SCH160		P41A-000B7	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		SCH160		P41A-000B8	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

CON SWAGED NIPPLE (SNC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	XS	XS	P42A-00036	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	XS	XS	P42A-00038	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	XS	XS	P42A-0003B	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	XS	XS	P42A-00035	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	XS	XS	P42A-00039	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	XS	XS	P42A-0003C	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	XS	XS	P42A-0008C	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	XS	XS	P42A-0008D	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	XS	XS	P42A-0008E	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	XS	XS	P42A-0008F	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	STD	XS	P42A-0007V	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	

ECC SWAGED NIPPLE (SNE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	XS	XS	P43A-00036	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	XS	XS	P43A-00037	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	XS	XS	P43A-00038	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	XS	XS	P43A-00039	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	XS	XS	P43A-0003A	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	XS	XS	P43A-0003B	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	XS	XS	P43A-00042	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	XS	XS	P43A-00043	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	XS	XS	P43A-00044	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	XS	XS	P43A-00045	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	STD	XS	P43A-0003J	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	

COUPLING (CPS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P47B-0001D	Coupling ASTM A105 Class 3000 ASME B16.11 SW - SW	
1	0.75				P47B-0001E	Coupling ASTM A105 Class 3000 ASME B16.11 SW - SW	
1	1				P47B-0001F	Coupling ASTM A105 Class 3000 ASME B16.11 SW - SW	
1	1.5				P47B-0001G	Coupling ASTM A105 Class 3000 ASME B16.11 SW - SW	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2 - 2.5	0.75			P31B-0137J	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	3 - 5	0.75			P31B-0137K	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	6 - 12	0.75			P31B-007AB	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	3	1			P31B-007A7	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	4 - 5	1			P31B-0138Z	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	6 - 10	1			P31B-007A4	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	12 - 16	1			P31B-007AA	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	3 - 4	1.5			P31B-005SN	Outlet ASTM A105 Class 3000 MSS SP-97 SW	

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OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	5 - 6	1.5			P31B-01390	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	8 - 12	1.5			P31B-0079U	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
541	1	0.75			P31B-00551	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
541	1.5	0.75			P31B-00555	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
541	2 - 2.5	0.75			P31B-0137H	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
541	3 - 5	0.75			P31B-01376	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
541	6 - 12	0.75			P31B-007GR	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
1	6	2	XS	XS	P31B-007SG	Outlet ASTM A105 MSS SP-97 BW	
1	8	2	SCH60	XS	P31B-00AGZ	Outlet ASTM A105 MSS SP-97 BW	
1	10	2	SCH20	XS	P31B-00TFB	Outlet ASTM A105 MSS SP-97 BW	
1	12	2	SCH20	XS	P31B-00TFA	Outlet ASTM A105 MSS SP-97 BW	
1	8	3	SCH60	STD	P31B-00A2U	Outlet ASTM A105 MSS SP-97 BW	
1	10	3	SCH20	STD	P31B-00UPG	Outlet ASTM A105 MSS SP-97 BW	
1	12	3	SCH20	STD	P31B-00USE	Outlet ASTM A105 MSS SP-97 BW	
1	12	4	SCH20	XS	P31B-00TW6	Outlet ASTM A105 MSS SP-97 BW	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30B-0002D	Plug ASTM A105 ASME B16.11 NPT Round head	
1	0.75				P30B-0002E	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1				P30B-0002F	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1.5				P30B-0002G	Plug ASTM A105 ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P61B-001FF	Flange SW ASTM A105 Class 600 ASME B16.5 RF	
1	0.75		XS		P61B-001FH	Flange SW ASTM A105 Class 600 ASME B16.5 RF	
1	1		XS		P61B-001DR	Flange SW ASTM A105 Class 600 ASME B16.5 RF	
1	1.5		XS		P61B-001DV	Flange SW ASTM A105 Class 600 ASME B16.5 RF	
1	2		XS		P61B-001DH	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
1	3		STD		P61B-001TW	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
1	4		XS		P61B-001SH	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
1	6		XS		P61B-001T1	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
1	8		SCH60		P61B-003TE	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
1	10		SCH20		P61B-00650	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
1	12		SCH20		P61B-00651	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
541	0.5				P61B-006NP	Flange NPT ASTM A105 Class 600 ASME B16.5 RF	
541	0.75				P61B-00CW3	Flange NPT ASTM A105 Class 600 ASME B16.5 RF	
789	3		STD		P61B-006SP	Flange WN ASTM A105 Class 900 ASME B16.5 RJ	
789	4		XS		P61B-00655	Flange WN ASTM A105 Class 900 ASME B16.5 RJ	
789	6		XS		P61B-00656	Flange WN ASTM A105 Class 900 ASME B16.5 RJ	
789	8		SCH60		P61B-0068B	Flange WN ASTM A105 Class 900 ASME B16.5 RJ	
789	10		SCH20		P61B-00652	Flange WN ASTM A105 Class 900 ASME B16.5 RJ	
789	12		SCH20		P61B-00653	Flange WN ASTM A105 Class 900 ASME B16.5 RJ	
797	0.5		XS		P61B-009T3	Flange SW ASTM A105 Class 1500 ASME B16.5 RJ	
797	0.75		XS		P61B-009T4	Flange SW ASTM A105 Class 1500 ASME B16.5 RJ	
797	1		XS		P61B-009T5	Flange SW ASTM A105 Class 1500 ASME B16.5 RJ	
797	1.5		XS		P61B-009T6	Flange SW ASTM A105 Class 1500 ASME B16.5 RJ	
797	2		XS		P61B-0065C	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67B-000J7	Blind flange ASTM A105 Class 600 ASME B16.5 RF	
1	0.75				P67B-000J8	Blind flange ASTM A105 Class 600 ASME B16.5 RF	
1	1				P67B-000J9	Blind flange ASTM A105 Class 600 ASME B16.5 RF	
1	1.5				P67B-000JA	Blind flange ASTM A105 Class 600 ASME B16.5 RF	
1	2				P67B-000JG	Blind flange ASTM A105 Class 600 ASME B16.5 RF	
1	3				P67B-000JK	Blind flange ASTM A105 Class 600 ASME B16.5 RF	
1	4				P67B-000JL	Blind flange ASTM A105 Class 600 ASME B16.5 RF	

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BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	6				P67B-000JM	Blind flange ASTM A105 Class 600 ASME B16.5 RF	
1	8				P67B-000JN	Blind flange ASTM A105 Class 600 ASME B16.5 RF	
1	10				P67B-000JB	Blind flange ASTM A105 Class 600 ASME B16.5 RF	
1	12				P67B-000JC	Blind flange ASTM A105 Class 600 ASME B16.5 RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000J8	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000J9	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000JA	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000JB	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000JH	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000JL	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000JM	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	6				P73T-000JN	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	8				P73T-000JP	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	10				P73T-000JC	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	12				P73T-000JD	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
789	3				P75T-000JN	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	4				P75T-000JP	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	6				P75T-000JR	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	8				P75T-000JS	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	10				P75T-000JL	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	12				P75T-000JM	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	0.5				P75T-000JT	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	0.75				P75T-000JU	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	1				P75T-000JV	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	1.5				P75T-000JW	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	2				P75T-0008A	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-6				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	8-12				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
789	1-3				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
789	4-12				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
797	0.5-2				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81B-000P4	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	0.75				P81B-000NX	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	1				P81B-000NY	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	1.5				P81B-000NZ	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	2				P81C-004KW	Gate valve ASTM A216 Grade WCB Class 600 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	3				P81C-004L3	Gate valve ASTM A216 Grade WCB Class 600 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	4				P81C-004L4	Gate valve ASTM A216 Grade WCB Class 600 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	6				P81C-0087J	Gate valve ASTM A216 Grade WCB Class 600 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated	
1	8				P81C-004LB	Gate valve ASTM A216 Grade WCB Class 600 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated	
1	10				P81C-004L6	Gate valve ASTM A216 Grade WCB Class 600 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated	
1	12				P81C-004L7	Gate valve ASTM A216 Grade WCB Class 600 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated	

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GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
714	0.5				P81B-0015L	Gate valve ASTM A105 Class 800 API 602 SW - NPT Trim number 8 BB-BG-OS&Y Handwheel operated	
714	0.75				P81B-002F4	Gate valve ASTM A105 Class 800 API 602 SW - NPT Trim number 8 BB-BG-OS&Y Handwheel operated	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82B-000K0	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	0.75				P82B-000HB	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	1				P82B-000HC	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	1.5				P82B-000HD	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	2				P82C-0028Z	Globe valve ASTM A216 Grade WCB Class 600 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	3				P82C-00293	Globe valve ASTM A216 Grade WCB Class 600 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	4				P82C-00294	Globe valve ASTM A216 Grade WCB Class 600 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	6				P82C-004DE	Globe valve ASTM A216 Grade WCB Class 600 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83B-000FX	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover	
1	0.75				P83B-000ER	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover	
1	1				P83B-000ES	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover	
1	1.5				P83B-000ET	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover	
1	2				P83C-0025Z	Check valve ASTM A216 Grade WCB Class 600 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	3				P83C-00260	Check valve ASTM A216 Grade WCB Class 600 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	4				P83C-00261	Check valve ASTM A216 Grade WCB Class 600 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	6				P83C-00262	Check valve ASTM A216 Grade WCB Class 600 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	8				P83C-00263	Check valve ASTM A216 Grade WCB Class 600 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	10				P83C-00264	Check valve ASTM A216 Grade WCB Class 600 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71B-000E4	Spectacle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	0.75				P71B-000DN	Spectacle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	1				P71B-000DP	Spectacle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71B-000DR	Spectacle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	2				P71B-000DS	Spectacle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	3				P71B-000DT	Spectacle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	4				P71B-000DU	Spectacle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	6				P71B-000DV	Spectacle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	

PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	8				P72B-000MF	Paddle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	10				P72B-000MA	Paddle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	12				P72B-000M6	Paddle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	

PADDLE SPACER (PS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	8				P72B-000MM	Paddle spacer ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	10				P72B-000MG	Paddle spacer ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	12				P72B-000M7	Paddle spacer ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	

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BOLT TABLE (B_D1AH , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	80	P80S-003V6		
0.75	4	0.625	90	P80S-003XF		
1	4	0.625	95	P80S-003XG		
1.5	4	0.750	110	P80S-003XK		
2	8	0.625	110	P80S-003VC		
3	8	0.750	130	P80S-003XP		
4	8	0.875	150	P80S-0041F		
6	12	1.000	175	P80S-0043P		
8	12	1.125	195	P80S-0046W		
10	16	1.250	250	P80S-004AY		
12	20	1.250	255	P80S-004AZ		

BOLT TABLE (B_D1AH_789 , STUD ASME RJ, OPTION CODE 789)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	110		R12	
0.75	4	0.750	115		R14	
1	4	0.875	130	P80S-0041B	R16	
1.5	4	1.000	140		R20	
2	8	0.875	150	P80S-0041F	R24	
3	8	0.875	150	P80S-0041F	R31	P75T-000JN
4	8	1.125	175	P80S-0046S	R37	P75T-000JP
6	12	1.125	200	P80S-0046X	R45	P75T-000JR
8	12	1.375	260	P80S-003E5	R49	P75T-000JS
10	16	1.375	275	P80S-003E8	R53	P75T-000JL
12	20	1.375	295	P80S-003EC	R57	P75T-000JM

BOLT TABLE (B_D1AH_797 , STUD ASME RJ, OPTION CODE 797)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	110	P80S-003XK	R12	P75T-000JT
0.75	4	0.750	115	P80S-003XL	R14	P75T-000JU
1	4	0.875	130	P80S-0041B	R16	P75T-000JV
1.5	4	1.000	140	P80S-0043F	R20	P75T-000JW
2	8	0.875	150	P80S-0041F	R24	P75T-0008A
3	8	1.125	180		R35	
4	8	1.250	230		R39	
6	12	1.375	300		R46	
8	12	1.625	345		R50	
10	12	1.875	395		R54	
12	16	2.000	445		R58	

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BRANCH TABLE (T_D1AH)

RUN PIPE SIZE (in) \ BRANCH SIZE (in)	0.5	0.75	1	1.5	2	3	4	6	8	10	12
0.5	TS										
0.75		TS									
1		TR	TS								
1.5		TR	TR	TS							
2		L	TR	TR	TS						
3		L	L	TR	TR	TS					
4	L	L	L	L	TR	TR	TS				
6	L	L	L	L	L	TR	TR	TS			
8		L	L	L	L	L	TR	TR	TS		
10		L	L	L	L	L	TR	TR	TR	TS	
12		L	L	L	L	L	L	TR	TR	TR	TS

TS : STRAIGHT TEE
L : OUTLET
TR : REDUCING TEE

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Material : Killed CS
Rating : ASME CLASS 600
Flange Face : RF
C.A.(mm) : 1.50
Gasket : Spiral Wound
Service : PROCESS - HYDROGEN OR HYDROGEN RICH HYDROCARBON MIXTURES
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
16	PIPE CLASS SHALL BE USED WITHIN THE NORMAL OPERATING PRESSURE/TEMPERATURE LIMITS SPECIFIED IN API RP 941. PRESSURE / TEMPERATURE SPECIFIED IN THE PIPE CLASS EXCEEDING API RP 941 LIMITS SHOULD BE REGARDED AS UPSET CONDITIONS RATHER THAN FOR CONTINUOUS SERVICE

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
541	NPT(F) (CA,L)
714	SW - NPT(F) (V)
789	CLASS 900 (B,F,G)
797	CLASS 1500 (B,F,G)

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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P01A-007AZ	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE Licensor-1	
1	0.75		XS		P01A-007B0	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE Licensor-1	
1	1		XS		P01A-007B1	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE Licensor-1	
1	1.5		XS		P01A-007B2	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE Licensor-1	
1	2		XS		P01A-0078Y	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Licensor-1	
1	3		STD		P01A-0078Z	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Licensor-1	
1	4		XS		P01A-00790	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Licensor-1	
1	6		XS		P01A-007A7	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Licensor-1	
1	8		SCH60		P01A-007HR	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Licensor-1	
1	10		SCH20		P01A-007B4	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Licensor-1	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P02B-0007G	90 degree elbow ASTM A105 Class 3000 ASME B16.11 SW Licensor-1	
1	0.75				P02B-0007H	90 degree elbow ASTM A105 Class 3000 ASME B16.11 SW Licensor-1	
1	1				P02B-0007J	90 degree elbow ASTM A105 Class 3000 ASME B16.11 SW Licensor-1	
1	1.5				P02B-0007K	90 degree elbow ASTM A105 Class 3000 ASME B16.11 SW Licensor-1	
1	2		XS		P02A-003R7	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	3		STD		P02A-003R8	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	4		XS		P02A-003R9	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	6		XS		P02A-003SB	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	8		SCH60		P02A-003ZJ	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	10		SCH20		P02A-003T9	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P03B-00074	45 degree elbow ASTM A105 Class 3000 ASME B16.11 SW Licensor-1	
1	0.75				P03B-00075	45 degree elbow ASTM A105 Class 3000 ASME B16.11 SW Licensor-1	
1	1				P03B-00076	45 degree elbow ASTM A105 Class 3000 ASME B16.11 SW Licensor-1	
1	1.5				P03B-00077	45 degree elbow ASTM A105 Class 3000 ASME B16.11 SW Licensor-1	
1	2		XS		P03A-003MW	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	3		STD		P03A-003MX	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	4		XS		P03A-003MY	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	6		XS		P03A-003P0	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	8		SCH60		P03A-003XW	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	10		SCH20		P03A-003PY	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P21B-00074	Straight tee ASTM A105 Class 3000 ASME B16.11 SW Licensor-1	
1	0.75				P21B-00075	Straight tee ASTM A105 Class 3000 ASME B16.11 SW Licensor-1	
1	1				P21B-00076	Straight tee ASTM A105 Class 3000 ASME B16.11 SW Licensor-1	
1	1.5				P21B-00077	Straight tee ASTM A105 Class 3000 ASME B16.11 SW Licensor-1	
1	2		XS		P21A-0048L	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	3		STD		P21A-0048M	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	4		XS		P21A-0048N	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	6		XS		P21A-0049P	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	8		SCH60		P21A-004H9	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	10		SCH20		P21A-004AM	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75			P24B-000BZ	Reducing tee ASTM A105 Class 3000 ASME B16.11 SW Licensor-1	
1	1.5	0.75			P24B-000C0	Reducing tee ASTM A105 Class 3000 ASME B16.11 SW Licensor-1	
1	1.5	1			P24B-000C1	Reducing tee ASTM A105 Class 3000 ASME B16.11 SW Licensor-1	
1	2	1	XS	XS	P24A-00K5U	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	3	1.5	XS	XS	P24A-00K5V	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	3	1.5	STD	XS	P24A-00K5W	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	

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REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	STD	XS	P24A-00K0Y	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	4	2	XS	XS	P24A-00K0Z	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	4	3	XS	STD	P24A-00K10	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	6	3	XS	STD	P24A-00L61	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	6	4	XS	XS	P24A-00L62	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	8	4	SCH60	XS	P24A-00L63	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	8	6	SCH60	XS	P24A-00L64	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	10	4	SCH20	XS	P24A-00MF8	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	10	6	SCH20	XS	P24A-00MF9	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	10	8	SCH20	SCH60	P24A-00MFA	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	STD	XS	P27A-00EL1	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	4	2	XS	XS	P27A-00EL2	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	4	3	XS	STD	P27A-00EL3	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	6	3	XS	STD	P27A-00FDY	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	6	4	XS	XS	P27A-00FDZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	8	4	SCH60	XS	P27A-00FE0	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	8	6	SCH60	XS	P27A-00FE1	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	10	4	SCH20	XS	P27A-00GE4	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	10	6	SCH20	XS	P27A-00GE5	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	10	8	SCH20	SCH60	P27A-00GE6	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	STD	XS	P28A-00BPS	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	4	2	XS	XS	P28A-00BPT	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	4	3	XS	STD	P28A-00BPU	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	6	3	XS	STD	P28A-00CJW	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	6	4	XS	XS	P28A-00CJX	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	8	4	SCH60	XS	P28A-00CJY	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	8	6	SCH60	XS	P28A-00CJZ	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	10	4	SCH20	XS	P28A-00DLA	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	10	6	SCH20	XS	P28A-00DLB	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	10	8	SCH20	SCH60	P28A-00DLC	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P29B-0005L	Cap ASTM A105 Class 3000 ASME B16.11 SW Licensor-1	
1	0.75				P29B-0005M	Cap ASTM A105 Class 3000 ASME B16.11 SW Licensor-1	
1	1				P29B-0005N	Cap ASTM A105 Class 3000 ASME B16.11 SW Licensor-1	
1	1.5				P29B-0005P	Cap ASTM A105 Class 3000 ASME B16.11 SW Licensor-1	
1	2		XS		P29A-00326	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	3		STD		P29A-00327	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	4		XS		P29A-00328	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	6		XS		P29A-0033V	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	8		SCH60		P29A-003CK	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	10		SCH20		P29A-0034S	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
541	0.75				P29B-00067	Cap ASTM A105 Class 3000 ASME B16.11 NPT Licensor-1	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P41A-0017A	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Licensor-1	
1	0.75		SCH160		P41A-0017B	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Licensor-1	
1	1		SCH160		P41A-0017C	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Licensor-1	
1	1.5		SCH160		P41A-0017D	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Licensor-1	

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CON SWAGED NIPPLE (SNC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	XS	XS	P42A-000UN	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S) Licensor-1	
1	1	0.5	XS	XS	P42A-000UP	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S) Licensor-1	
1	1	0.75	XS	XS	P42A-000UR	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S) Licensor-1	
1	1.5	0.5	XS	XS	P42A-000US	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S) Licensor-1	
1	1.5	0.75	XS	XS	P42A-000UT	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S) Licensor-1	
1	1.5	1	XS	XS	P42A-000UU	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S) Licensor-1	
1	2	0.5	XS	XS	P42A-000UV	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S) Licensor-1	
1	2	0.75	XS	XS	P42A-000UW	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S) Licensor-1	
1	2	1	XS	XS	P42A-000UX	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S) Licensor-1	
1	2	1.5	XS	XS	P42A-000UY	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S) Licensor-1	
1	3	1.5	STD	XS	P42A-000UZ	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S) Licensor-1	

ECC SWAGED NIPPLE (SNE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	XS	XS	P43A-000KS	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S) Licensor-1	
1	1	0.5	XS	XS	P43A-000KT	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S) Licensor-1	
1	1	0.75	XS	XS	P43A-000KU	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S) Licensor-1	
1	1.5	0.5	XS	XS	P43A-000KV	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S) Licensor-1	
1	1.5	0.75	XS	XS	P43A-000KW	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S) Licensor-1	
1	1.5	1	XS	XS	P43A-000KX	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S) Licensor-1	
1	2	0.5	XS	XS	P43A-000KY	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S) Licensor-1	
1	2	0.75	XS	XS	P43A-000KZ	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S) Licensor-1	
1	2	1	XS	XS	P43A-000L0	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S) Licensor-1	
1	2	1.5	XS	XS	P43A-000L1	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S) Licensor-1	
1	3	1.5	STD	XS	P43A-000L2	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S) Licensor-1	

COUPLING (CPS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P47B-0007V	Coupling ASTM A105 Class 3000 ASME B16.11 SW - SW Licensor-1	
1	0.75				P47B-0007W	Coupling ASTM A105 Class 3000 ASME B16.11 SW - SW Licensor-1	
1	1				P47B-0007X	Coupling ASTM A105 Class 3000 ASME B16.11 SW - SW Licensor-1	
1	1.5				P47B-0007Y	Coupling ASTM A105 Class 3000 ASME B16.11 SW - SW Licensor-1	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2 - 2.5	0.75			P31B-0138H	Outlet ASTM A105 Class 3000 MSS SP-97 SW Licensor-1	
1	3 - 5	0.75			P31B-0138J	Outlet ASTM A105 Class 3000 MSS SP-97 SW Licensor-1	
1	6 - 12	0.75			P31B-0138K	Outlet ASTM A105 Class 3000 MSS SP-97 SW Licensor-1	
1	3	1			P31B-0138M	Outlet ASTM A105 Class 3000 MSS SP-97 SW Licensor-1	
1	4 - 5	1			P31B-0138N	Outlet ASTM A105 Class 3000 MSS SP-97 SW Licensor-1	
1	6 - 10	1			P31B-0138P	Outlet ASTM A105 Class 3000 MSS SP-97 SW Licensor-1	
1	4	1.5			P31B-010L4	Outlet ASTM A105 Class 3000 MSS SP-97 SW Licensor-1	
1	5 - 6	1.5			P31B-0138S	Outlet ASTM A105 Class 3000 MSS SP-97 SW Licensor-1	
1	8 - 12	1.5			P31B-0138U	Outlet ASTM A105 Class 3000 MSS SP-97 SW Licensor-1	
541	1	0.75			P31B-0118R	Outlet ASTM A105 Class 3000 MSS SP-97 NPT Licensor-1	
541	1.5	0.75			P31B-0118P	Outlet ASTM A105 Class 3000 MSS SP-97 NPT Licensor-1	
541	2 - 2.5	0.75			P31B-0138V	Outlet ASTM A105 Class 3000 MSS SP-97 NPT Licensor-1	
541	3 - 5	0.75			P31B-0138W	Outlet ASTM A105 Class 3000 MSS SP-97 NPT Licensor-1	
541	6 - 12	0.75			P31B-0138X	Outlet ASTM A105 Class 3000 MSS SP-97 NPT Licensor-1	
1	6	2	XS	XS	P31B-00YFR	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	8	2	SCH60	XS	P31B-00YFS	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	10	2	SCH20	XS	P31B-00XMY	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	8	3	SCH60	STD	P31B-00YFT	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	10	3	SCH20	STD	P31B-00XMZ	Outlet ASTM A105 MSS SP-97 BW Licensor-1	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30B-00067	Plug ASTM A105 ASME B16.11 NPT Round head Licensor-1	

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PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75				P30B-00068	Plug ASTM A105 ASME B16.11 NPT Round head Licensor-1	
1	1				P30B-00069	Plug ASTM A105 ASME B16.11 NPT Round head Licensor-1	
1	1.5				P30B-0006A	Plug ASTM A105 ASME B16.11 NPT Round head Licensor-1	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P61B-00AB7	Flange SW ASTM A105 Class 600 ASME B16.5 RF Licensor-1	
1	0.75		XS		P61B-00AB8	Flange SW ASTM A105 Class 600 ASME B16.5 RF Licensor-1	
1	1		XS		P61B-00AB9	Flange SW ASTM A105 Class 600 ASME B16.5 RF Licensor-1	
1	1.5		XS		P61B-00ABA	Flange SW ASTM A105 Class 600 ASME B16.5 RF Licensor-1	
1	2		XS		P61B-009TD	Flange WN ASTM A105 Class 600 ASME B16.5 RF Licensor-1	
1	3		STD		P61B-009TE	Flange WN ASTM A105 Class 600 ASME B16.5 RF Licensor-1	
1	4		XS		P61B-009TF	Flange WN ASTM A105 Class 600 ASME B16.5 RF Licensor-1	
1	6		XS		P61B-009X8	Flange WN ASTM A105 Class 600 ASME B16.5 RF Licensor-1	
1	8		SCH60		P61B-00AD9	Flange WN ASTM A105 Class 600 ASME B16.5 RF Licensor-1	
1	10		SCH20		P61B-00BAV	Flange WN ASTM A105 Class 600 ASME B16.5 RF Licensor-1	
789	3		STD		P61B-009TG	Flange WN ASTM A105 Class 900 ASME B16.5 RJ Licensor-1	
789	4		XS		P61B-009TH	Flange WN ASTM A105 Class 900 ASME B16.5 RJ Licensor-1	
789	6		XS		P61B-00ADA	Flange WN ASTM A105 Class 900 ASME B16.5 RJ Licensor-1	
789	8		SCH60		P61B-00ADB	Flange WN ASTM A105 Class 900 ASME B16.5 RJ Licensor-1	
789	10		SCH20		P61B-00BAW	Flange WN ASTM A105 Class 900 ASME B16.5 RJ Licensor-1	
797	0.5		XS		P61B-00ADC	Flange SW ASTM A105 Class 1500 ASME B16.5 RJ Licensor-1	
797	0.75		XS		P61B-00ADD	Flange SW ASTM A105 Class 1500 ASME B16.5 RJ Licensor-1	
797	1		XS		P61B-00ADE	Flange SW ASTM A105 Class 1500 ASME B16.5 RJ Licensor-1	
797	1.5		XS		P61B-00ADF	Flange SW ASTM A105 Class 1500 ASME B16.5 RJ Licensor-1	
797	2		XS		P61B-009TN	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ Licensor-1	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67B-002DL	Blind flange ASTM A105 Class 600 ASME B16.5 RF Licensor-1	
1	0.75				P67B-002DM	Blind flange ASTM A105 Class 600 ASME B16.5 RF Licensor-1	
1	1				P67B-002DN	Blind flange ASTM A105 Class 600 ASME B16.5 RF Licensor-1	
1	1.5				P67B-002DP	Blind flange ASTM A105 Class 600 ASME B16.5 RF Licensor-1	
1	2				P67B-002DR	Blind flange ASTM A105 Class 600 ASME B16.5 RF Licensor-1	
1	3				P67B-002DS	Blind flange ASTM A105 Class 600 ASME B16.5 RF Licensor-1	
1	4				P67B-002DT	Blind flange ASTM A105 Class 600 ASME B16.5 RF Licensor-1	
1	6				P67B-002LV	Blind flange ASTM A105 Class 600 ASME B16.5 RF Licensor-1	
1	8				P67B-002LW	Blind flange ASTM A105 Class 600 ASME B16.5 RF Licensor-1	
1	10				P67B-002LZ	Blind flange ASTM A105 Class 600 ASME B16.5 RF Licensor-1	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000J8	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000J9	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000JA	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000JB	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000JH	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000JL	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000JM	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	6				P73T-000JN	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	8				P73T-000JP	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	10				P73T-000JC	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
789	3				P75T-000JN	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	4				P75T-000JP	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	6				P75T-000JR	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	

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GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
789	8				P75T-000JS	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	10				P75T-000JL	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	0.5				P75T-000JT	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	0.75				P75T-000JU	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	1				P75T-000JV	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	1.5				P75T-000JW	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	2				P75T-0008A	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-6				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	8-10				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
789	1-3				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
789	4-10				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
797	0.5-2				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81B-001CX	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated Licensor-1	
1	0.75				P81B-001CY	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated Licensor-1	
1	1				P81B-001CZ	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated Licensor-1	
1	1.5				P81B-001D0	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated Licensor-1	
1	2				P81C-004RL	Gate valve ASTM A216 Grade WCB Class 600 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated Licensor-1	
1	3				P81C-004RM	Gate valve ASTM A216 Grade WCB Class 600 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated Licensor-1	
1	4				P81C-004RN	Gate valve ASTM A216 Grade WCB Class 600 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated Licensor-1	
1	6				P81C-0092G	Gate valve ASTM A216 Grade WCB Class 600 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated Licensor-1	
1	8				P81C-0053D	Gate valve ASTM A216 Grade WCB Class 600 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated Licensor-1	
1	10				P81C-0053C	Gate valve ASTM A216 Grade WCB Class 600 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated Licensor-1	
714	0.5				P81B-002S7	Gate valve ASTM A105 Class 800 API 602 SW - NPT Trim number 8 BB-BG-OS&Y Handwheel operated Licensor-1	
714	0.75				P81B-002F5	Gate valve ASTM A105 Class 800 API 602 SW - NPT Trim number 8 BB-BG-OS&Y Handwheel operated Licensor-1	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82B-0014L	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated Licensor-1	
1	0.75				P82B-0014M	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated Licensor-1	
1	1				P82B-0014N	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated Licensor-1	
1	1.5				P82B-0014P	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated Licensor-1	
1	2				P82C-002AN	Globe valve ASTM A216 Grade WCB Class 600 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated Licensor-1	
1	3				P82C-002AP	Globe valve ASTM A216 Grade WCB Class 600 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated Licensor-1	
1	4				P82C-002AR	Globe valve ASTM A216 Grade WCB Class 600 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated Licensor-1	
1	6				P82C-004DF	Globe valve ASTM A216 Grade WCB Class 600 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated Licensor-1	
1	8				P82C-002V1	Globe valve ASTM A216 Grade WCB Class 600 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated Licensor-1	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83B-000WE	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover Licensor-1	
1	0.75				P83B-000WF	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover Licensor-1	
1	1				P83B-000WG	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover Licensor-1	
1	1.5				P83B-000WH	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover Licensor-1	

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CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2				P83C-0027F	Check valve ASTM A216 Grade WCB Class 600 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover Licensor-1	
1	3				P83C-0027G	Check valve ASTM A216 Grade WCB Class 600 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover Licensor-1	
1	4				P83C-0027H	Check valve ASTM A216 Grade WCB Class 600 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover Licensor-1	
1	6				P83C-002G6	Check valve ASTM A216 Grade WCB Class 600 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover Licensor-1	
1	8				P83C-002G7	Check valve ASTM A216 Grade WCB Class 600 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover Licensor-1	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71B-000E5	Spectacle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	0.75				P71B-000E6	Spectacle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	1				P71B-000E7	Spectacle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	1.5				P71B-000E8	Spectacle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	2				P71B-000E9	Spectacle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	3				P71B-000EA	Spectacle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	4				P71B-000EB	Spectacle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	6				P71B-000EC	Spectacle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF Licensor-1	

PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	8				P72B-000M9	Paddle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	10				P72B-000MS	Paddle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF Licensor-1	

PADDLE SPACER (PS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	8				P72B-000M8	Paddle spacer ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	10				P72B-000MR	Paddle spacer ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF Licensor-1	

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BOLT TABLE (B_D1AH01 , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	80	P80S-003V6		
0.75	4	0.625	90	P80S-003XF		
1	4	0.625	95	P80S-003XG		
1.5	4	0.750	110	P80S-003XK		
2	8	0.625	110	P80S-003VC		
3	8	0.750	130	P80S-003XP		
4	8	0.875	150	P80S-0041F		
6	12	1.000	175	P80S-0043P		
8	12	1.125	195	P80S-0046W		
10	16	1.250	250	P80S-004AY		

BOLT TABLE (B_D1AH01_789 , STUD ASME RJ, OPTION CODE 789)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	110		R12	
0.75	4	0.750	115		R14	
1	4	0.875	130	P80S-0041B	R16	
1.5	4	1.000	140		R20	
2	8	0.875	150	P80S-0041F	R24	
3	8	0.875	150	P80S-0041F	R31	P75T-000JN
4	8	1.125	175	P80S-0046S	R37	P75T-000JP
6	12	1.125	200	P80S-0046X	R45	P75T-000JR
8	12	1.375	260	P80S-003E5	R49	P75T-000JS
10	16	1.375	275	P80S-003E8	R53	P75T-000JL

BOLT TABLE (B_D1AH01_797 , STUD ASME RJ, OPTION CODE 797)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	110	P80S-003XK	R12	P75T-000JT
0.75	4	0.750	115	P80S-003XL	R14	P75T-000JU
1	4	0.875	130	P80S-0041B	R16	P75T-000JV
1.5	4	1.000	140	P80S-0043F	R20	P75T-000JW
2	8	0.875	150	P80S-0041F	R24	P75T-0008A
3	8	1.125	180		R35	
4	8	1.250	230		R39	
6	12	1.375	300		R46	
8	12	1.625	345		R50	
10	12	1.875	395		R54	

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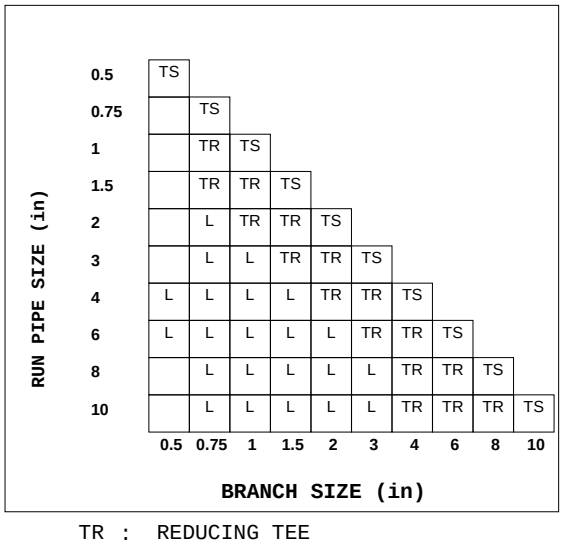
BRANCH TABLE (T_D1AH01)



RUN PIPE SIZE (in) \ BRANCH SIZE (in)	0.5	0.75	1	1.5	2	3	4	6	8	10
0.5	TS									
0.75		TS								
1		TR	TS							
1.5		TR	TR	TS						
2		L	TR	TR	TS					
3		L	L	TR	TR	TS				
4	L	L	L	L	TR	TR	TS			
6	L	L	L	L	L	TR	TR	TS		
8		L	L	L	L	L	TR	TR	TS	
10		L	L	L	L	L	TR	TR	TR	TS

TR : REDUCING TEE
L : OUTLET
TS : STRAIGHT TEE

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PIPING CLASS

D1AH02 REV NO. 2

Material : Killed CS
Rating : ASME CLASS 600
Flange Face : RF
C.A.(mm) : 1.50
Gasket : Spiral Wound
Service : PROCESS - HYDROGEN OR HYDROGEN RICH HYDROCARBON MIXTURE
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
16	PIPE CLASS SHALL BE USED WITHIN THE NORMAL OPERATING PRESSURE/TEMPERATURE LIMITS SPECIFIED IN API RP 941. PRESSURE / TEMPERATURE SPECIFIED IN THE PIPE CLASS EXCEEDING API RP 941 LIMITS SHOULD BE REGARDED AS UPSET CONDITIONS RATHER THAN FOR CONTINUOUS SERVICE

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
541	NPT(F) (CA,F,L)
789	CLASS 900 (B)
797	CLASS 1500 (B,F,G)

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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P01A-000XM	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	0.75		XS		P01A-000XN	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1		XS		P01A-000XP	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1.5		XS		P01A-000XV	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P02B-00014	90 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	0.75				P02B-00015	90 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	1				P02B-00016	90 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5				P02B-00017	90 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P03B-00017	45 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	0.75				P03B-00018	45 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	1				P03B-00019	45 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5				P03B-0001A	45 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P21B-00017	Straight tee ASTM A105 Class 3000 ASME B16.11 SW	
1	0.75				P21B-00018	Straight tee ASTM A105 Class 3000 ASME B16.11 SW	
1	1				P21B-00019	Straight tee ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5				P21B-0001A	Straight tee ASTM A105 Class 3000 ASME B16.11 SW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75			P24B-0002L	Reducing tee ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5	0.75			P24B-0002N	Reducing tee ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5	1			P24B-0002P	Reducing tee ASTM A105 Class 3000 ASME B16.11 SW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P29B-0001J	Cap ASTM A105 Class 3000 ASME B16.11 SW	
1	0.75				P29B-0001F	Cap ASTM A105 Class 3000 ASME B16.11 SW	
1	1				P29B-0001G	Cap ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5				P29B-0001H	Cap ASTM A105 Class 3000 ASME B16.11 SW	
541	0.75				P29B-0000C	Cap ASTM A105 Class 3000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P41A-000B5	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		SCH160		P41A-000B6	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		SCH160		P41A-000B7	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		SCH160		P41A-000B8	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

CON SWAGED NIPPLE (SNC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	XS	XS	P42A-00036	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	XS	XS	P42A-00038	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	XS	XS	P42A-0003B	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	XS	XS	P42A-00035	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	XS	XS	P42A-00039	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	XS	XS	P42A-0003C	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	

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ECC SWAGED NIPPLE (SNE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	XS	XS	P43A-00036	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	XS	XS	P43A-00037	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	XS	XS	P43A-00038	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	XS	XS	P43A-00039	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	XS	XS	P43A-0003A	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	XS	XS	P43A-0003B	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	

COUPLING (CPS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P47B-0001D	Coupling ASTM A105 Class 3000 ASME B16.11 SW - SW	
1	0.75				P47B-0001E	Coupling ASTM A105 Class 3000 ASME B16.11 SW - SW	
1	1				P47B-0001F	Coupling ASTM A105 Class 3000 ASME B16.11 SW - SW	
1	1.5				P47B-0001G	Coupling ASTM A105 Class 3000 ASME B16.11 SW - SW	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
541	1	0.75			P31B-00551	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
541	1.5	0.75			P31B-00555	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30B-0002D	Plug ASTM A105 ASME B16.11 NPT Round head	
1	0.75				P30B-0002E	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1				P30B-0002F	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1.5				P30B-0002G	Plug ASTM A105 ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P61B-001FF	Flange SW ASTM A105 Class 600 ASME B16.5 RF	
1	0.75		XS		P61B-001FH	Flange SW ASTM A105 Class 600 ASME B16.5 RF	
1	1		XS		P61B-001DR	Flange SW ASTM A105 Class 600 ASME B16.5 RF	
1	1.5		XS		P61B-001DV	Flange SW ASTM A105 Class 600 ASME B16.5 RF	
541	0.5				P61B-006NP	Flange NPT ASTM A105 Class 600 ASME B16.5 RF	
541	0.75				P61B-00CW3	Flange NPT ASTM A105 Class 600 ASME B16.5 RF	
797	0.5		XS		P61B-009T3	Flange SW ASTM A105 Class 1500 ASME B16.5 RJ	
797	0.75		XS		P61B-009T4	Flange SW ASTM A105 Class 1500 ASME B16.5 RJ	
797	1		XS		P61B-009T5	Flange SW ASTM A105 Class 1500 ASME B16.5 RJ	
797	1.5		XS		P61B-009T6	Flange SW ASTM A105 Class 1500 ASME B16.5 RJ	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67B-000J7	Blind flange ASTM A105 Class 600 ASME B16.5 RF	
1	0.75				P67B-000J8	Blind flange ASTM A105 Class 600 ASME B16.5 RF	
1	1				P67B-000J9	Blind flange ASTM A105 Class 600 ASME B16.5 RF	
1	1.5				P67B-000JA	Blind flange ASTM A105 Class 600 ASME B16.5 RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000J8	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000J9	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000JA	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000JB	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
797	0.5				P75T-000JT	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	0.75				P75T-000JU	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	1				P75T-000JV	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	1.5				P75T-000JW	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	

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BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-1.5				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
789	1				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
797	0.5-1.5				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81B-002WA	Gate valve ASTM A105 Class 800 API 602 SW Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated	
1	0.75				P81B-002WB	Gate valve ASTM A105 Class 800 API 602 SW Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated	
1	1				P81B-002WC	Gate valve ASTM A105 Class 800 API 602 SW Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated	
1	1.5				P81B-002WD	Gate valve ASTM A105 Class 800 API 602 SW Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82B-0022A	Globe valve ASTM A105 Class 800 API 602 SW Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated	
1	0.75				P82B-0022B	Globe valve ASTM A105 Class 800 API 602 SW Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated	
1	1				P82B-0022C	Globe valve ASTM A105 Class 800 API 602 SW Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated	
1	1.5				P82B-0022D	Globe valve ASTM A105 Class 800 API 602 SW Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83B-001JH	Check valve ASTM A105 Class 800 API 602 SW Trim SS316L Body and disc seats Stellite-6 Lift-type Bolted cover	
1	0.75				P83B-001JJ	Check valve ASTM A105 Class 800 API 602 SW Trim SS316L Body and disc seats Stellite-6 Lift-type Bolted cover	
1	1				P83B-001JK	Check valve ASTM A105 Class 800 API 602 SW Trim SS316L Body and disc seats Stellite-6 Lift-type Bolted cover	
1	1.5				P83B-001JL	Check valve ASTM A105 Class 800 API 602 SW Trim SS316L Body and disc seats Stellite-6 Lift-type Bolted cover	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71B-000E4	Spectacle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	0.75				P71B-000DN	Spectacle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	1				P71B-000DP	Spectacle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71B-000DR	Spectacle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	

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BOLT TABLE (B_D1AH02 , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	80	P80S-003V6		
0.75	4	0.625	90	P80S-003XF		
1	4	0.625	95	P80S-003XG		
1.5	4	0.750	110	P80S-003XK		

BOLT TABLE (B_D1AH02_789 , STUD ASME RJ, OPTION CODE 789)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	110		R12	
0.75	4	0.750	115		R14	
1	4	0.875	130	P80S-0041B	R16	
1.5	4	1.000	140		R20	

BOLT TABLE (B_D1AH02_797 , STUD ASME RJ, OPTION CODE 797)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	110	P80S-003XK	R12	P75T-000JT
0.75	4	0.750	115	P80S-003XL	R14	P75T-000JU
1	4	0.875	130	P80S-0041B	R16	P75T-000JV
1.5	4	1.000	140	P80S-0043F	R20	P75T-000JW

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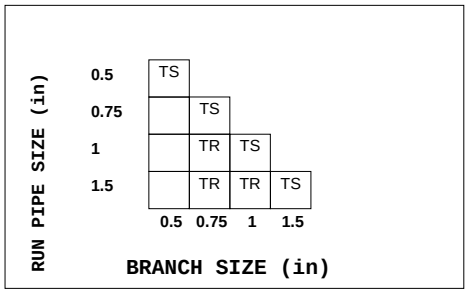
BRANCH TABLE (T_D1AH02)



TS : STRAIGHT TEE
TR : REDUCING TEE

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PIPING CLASS

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Material : Killed CS
Rating : ASME CLASS 600
Flange Face : RF
C.A.(mm) : 1.50
Gasket : Spiral Wound
Service : PROCESS - HYDROGEN OR HYDROGEN RICH HYDROCARBON MIXTURES
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
16	PIPE CLASS SHALL BE USED WITHIN THE NORMAL OPERATING PRESSURE/TEMPERATURE LIMITS SPECIFIED IN API RP 941. PRESSURE / TEMPERATURE SPECIFIED IN THE PIPE CLASS EXCEEDING API RP 941 LIMITS SHOULD BE REGARDED AS UPSET CONDITIONS RATHER THAN FOR CONTINUOUS SERVICE

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
541	NPT(F) (CA,F,L)
714	SW - NPT(F) (V)
789	CLASS 900 (B,F,G)
797	CLASS 1500 (B,F,G)

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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P01A-000XM	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	0.75		XS		P01A-000XN	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1		XS		P01A-000XP	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1.5		XS		P01A-000XV	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	2		XS		P01A-000YX	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	3		STD		P01A-000YM	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	4		XS		P01A-000Z9	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	6		XS		P01A-000ZF	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	8		SCH20		P01A-001AT	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P02B-00014	90 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	0.75				P02B-00015	90 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	1				P02B-00016	90 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5				P02B-00017	90 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	2		XS		P02A-000CP	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		STD		P02A-000CU	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		XS		P02A-000D3	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		XS		P02A-000DA	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		SCH20		P02A-000GZ	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P03B-00017	45 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	0.75				P03B-00018	45 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	1				P03B-00019	45 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5				P03B-0001A	45 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	2		XS		P03A-000AS	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		STD		P03A-000AX	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		XS		P03A-000B3	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		XS		P03A-000B8	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		SCH20		P03A-000EX	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P21B-00017	Straight tee ASTM A105 Class 3000 ASME B16.11 SW	
1	0.75				P21B-00018	Straight tee ASTM A105 Class 3000 ASME B16.11 SW	
1	1				P21B-00019	Straight tee ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5				P21B-0001A	Straight tee ASTM A105 Class 3000 ASME B16.11 SW	
1	2		XS		P21A-001CJ	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		STD		P21A-001CU	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		XS		P21A-001CV	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6		XS		P21A-001D4	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8		SCH20		P21A-00215	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75			P24B-0002L	Reducing tee ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5	0.75			P24B-0002N	Reducing tee ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5	1			P24B-0002P	Reducing tee ASTM A105 Class 3000 ASME B16.11 SW	
1	2	1	XS	XS	P24A-00238	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	XS	XS	P24A-0023H	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	STD	XS	P24A-00214	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	STD	XS	P24A-002HW	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	XS	XS	P24A-0023E	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	XS	STD	P24A-006FZ	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	XS	STD	P24A-006G0	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	6	4	XS	XS	P24A-00243	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH20	XS	P24A-00N83	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH20	XS	P24A-00N84	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	STD	XS	P27A-001MZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	XS	XS	P27A-001E4	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	XS	STD	P27A-0048S	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	XS	STD	P27A-0048T	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	XS	XS	P27A-001EB	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH20	XS	P27A-00GYP	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH20	XS	P27A-00GYR	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	STD	XS	P28A-001N5	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	XS	XS	P28A-001EJ	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	XS	STD	P28A-0048H	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	XS	STD	P28A-0048J	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	XS	XS	P28A-001ER	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH20	XS	P28A-00E5Y	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH20	XS	P28A-00E5Z	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P29B-0001J	Cap ASTM A105 Class 3000 ASME B16.11 SW	
1	0.75				P29B-0001F	Cap ASTM A105 Class 3000 ASME B16.11 SW	
1	1				P29B-0001G	Cap ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5				P29B-0001H	Cap ASTM A105 Class 3000 ASME B16.11 SW	
1	2		XS		P29A-000A1	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		STD		P29A-000BK	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		XS		P29A-000B9	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6		XS		P29A-000BF	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8		SCH20		P29A-000EY	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
541	0.75				P29B-0000C	Cap ASTM A105 Class 3000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P41A-000B5	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		SCH160		P41A-000B6	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		SCH160		P41A-000B7	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		SCH160		P41A-000B8	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

CON SWAGED NIPPLE (SNC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	XS	XS	P42A-00036	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	XS	XS	P42A-00038	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	XS	XS	P42A-0003B	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	XS	XS	P42A-00035	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	XS	XS	P42A-00039	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	XS	XS	P42A-0003C	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	XS	XS	P42A-0008C	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	XS	XS	P42A-0008D	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	XS	XS	P42A-0008E	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	XS	XS	P42A-0008F	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	STD	XS	P42A-0007V	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	

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ECC SWAGED NIPPLE (SNE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	XS	XS	P43A-00036	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	XS	XS	P43A-00037	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	XS	XS	P43A-00038	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	XS	XS	P43A-00039	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	XS	XS	P43A-0003A	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	XS	XS	P43A-0003B	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	XS	XS	P43A-00042	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	XS	XS	P43A-00043	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	XS	XS	P43A-00044	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	XS	XS	P43A-00045	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	STD	XS	P43A-0003J	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	

COUPLING (CPS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P47B-0001D	Coupling ASTM A105 Class 3000 ASME B16.11 SW - SW	
1	0.75				P47B-0001E	Coupling ASTM A105 Class 3000 ASME B16.11 SW - SW	
1	1				P47B-0001F	Coupling ASTM A105 Class 3000 ASME B16.11 SW - SW	
1	1.5				P47B-0001G	Coupling ASTM A105 Class 3000 ASME B16.11 SW - SW	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2 - 2.5	0.75			P31B-0137J	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	3 - 5	0.75			P31B-0137K	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	6 - 12	0.75			P31B-007AB	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	3	1			P31B-007A7	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	4 - 5	1			P31B-0138Z	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	6 - 10	1			P31B-007A4	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	4	1.5			P31B-005SN	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	5 - 6	1.5			P31B-01390	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	8 - 12	1.5			P31B-0079U	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
541	1	0.75			P31B-00551	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
541	1.5	0.75			P31B-00555	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
541	2 - 2.5	0.75			P31B-0137H	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
541	3 - 5	0.75			P31B-01376	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
541	6 - 12	0.75			P31B-007GR	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
1	6	2	XS	XS	P31B-007SG	Outlet ASTM A105 MSS SP-97 BW	
1	8	2	SCH20	XS	P31B-00NY2	Outlet ASTM A105 MSS SP-97 BW	
1	8	3	SCH20	STD	P31B-00P11	Outlet ASTM A105 MSS SP-97 BW	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30B-0002D	Plug ASTM A105 ASME B16.11 NPT Round head	
1	0.75				P30B-0002E	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1				P30B-0002F	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1.5				P30B-0002G	Plug ASTM A105 ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P61B-001FF	Flange SW ASTM A105 Class 600 ASME B16.5 RF	
1	0.75		XS		P61B-001FH	Flange SW ASTM A105 Class 600 ASME B16.5 RF	
1	1		XS		P61B-001DR	Flange SW ASTM A105 Class 600 ASME B16.5 RF	
1	1.5		XS		P61B-001DV	Flange SW ASTM A105 Class 600 ASME B16.5 RF	
1	2		XS		P61B-001DH	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
1	3		STD		P61B-001TW	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
1	4		XS		P61B-001SH	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
1	6		XS		P61B-001T1	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
1	8		SCH20		P61B-003F0	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
541	0.5				P61B-006NP	Flange NPT ASTM A105 Class 600 ASME B16.5 RF	

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FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
541	0.75				P61B-00CW3	Flange NPT ASTM A105 Class 600 ASME B16.5 RF	
789	3		STD		P61B-006SP	Flange WN ASTM A105 Class 900 ASME B16.5 RJ	
789	4		XS		P61B-00655	Flange WN ASTM A105 Class 900 ASME B16.5 RJ	
789	6		XS		P61B-00656	Flange WN ASTM A105 Class 900 ASME B16.5 RJ	
789	8		SCH20		P61B-00BLX	Flange WN ASTM A105 Class 900 ASME B16.5 RJ	
797	0.5		XS		P61B-009T3	Flange SW ASTM A105 Class 1500 ASME B16.5 RJ	
797	0.75		XS		P61B-009T4	Flange SW ASTM A105 Class 1500 ASME B16.5 RJ	
797	1		XS		P61B-009T5	Flange SW ASTM A105 Class 1500 ASME B16.5 RJ	
797	1.5		XS		P61B-009T6	Flange SW ASTM A105 Class 1500 ASME B16.5 RJ	
797	2		XS		P61B-0065C	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
797	3		STD		P61B-009W7	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
797	4		XS		P61B-00BLY	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
797	6		XS		P61B-00BLZ	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
797	8		SCH20		P61B-00BM0	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67B-000J7	Blind flange ASTM A105 Class 600 ASME B16.5 RF	
1	0.75				P67B-000J8	Blind flange ASTM A105 Class 600 ASME B16.5 RF	
1	1				P67B-000J9	Blind flange ASTM A105 Class 600 ASME B16.5 RF	
1	1.5				P67B-000JA	Blind flange ASTM A105 Class 600 ASME B16.5 RF	
1	2				P67B-000JG	Blind flange ASTM A105 Class 600 ASME B16.5 RF	
1	3				P67B-000JK	Blind flange ASTM A105 Class 600 ASME B16.5 RF	
1	4				P67B-000JL	Blind flange ASTM A105 Class 600 ASME B16.5 RF	
1	6				P67B-000JM	Blind flange ASTM A105 Class 600 ASME B16.5 RF	
1	8				P67B-000JN	Blind flange ASTM A105 Class 600 ASME B16.5 RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000J8	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000J9	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000JA	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000JB	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000JH	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000JL	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000JM	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	6				P73T-000JN	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	8				P73T-000JP	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
789	3				P75T-000JN	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	4				P75T-000JP	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	6				P75T-000JR	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	8				P75T-000JS	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	0.5				P75T-000JT	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	0.75				P75T-000JU	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	1				P75T-000JV	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	1.5				P75T-000JW	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	2				P75T-0008A	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	3				P75T-0008E	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	4				P75T-0008D	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	6				P75T-0008C	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	8				P75T-0008B	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-6				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	

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BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	8				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
789	1-3				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
789	4-8				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
797	0.5-2				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
797	3-8				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81B-000P4	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	0.75				P81B-000NX	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	1				P81B-000NY	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	1.5				P81B-000NZ	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	2				P81C-004KW	Gate valve ASTM A216 Grade WCB Class 600 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	3				P81C-004L3	Gate valve ASTM A216 Grade WCB Class 600 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	4				P81C-004L4	Gate valve ASTM A216 Grade WCB Class 600 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	6				P81C-0087J	Gate valve ASTM A216 Grade WCB Class 600 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated	
1	8				P81C-004LB	Gate valve ASTM A216 Grade WCB Class 600 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated	
714	0.5				P81B-0015L	Gate valve ASTM A105 Class 800 API 602 SW - NPT Trim number 8 BB-BG-OS&Y Handwheel operated	
714	0.75				P81B-002F4	Gate valve ASTM A105 Class 800 API 602 SW - NPT Trim number 8 BB-BG-OS&Y Handwheel operated	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82B-000K0	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	0.75				P82B-000HB	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	1				P82B-000HC	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	1.5				P82B-000HD	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	2				P82C-0028Z	Globe valve ASTM A216 Grade WCB Class 600 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	3				P82C-00293	Globe valve ASTM A216 Grade WCB Class 600 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	4				P82C-00294	Globe valve ASTM A216 Grade WCB Class 600 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	6				P82C-004DE	Globe valve ASTM A216 Grade WCB Class 600 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated	
1	8				P82C-00296	Globe valve ASTM A216 Grade WCB Class 600 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83B-000FX	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover	
1	0.75				P83B-000ER	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover	
1	1				P83B-000ES	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover	
1	1.5				P83B-000ET	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover	
1	2				P83C-0025Z	Check valve ASTM A216 Grade WCB Class 600 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	3				P83C-00260	Check valve ASTM A216 Grade WCB Class 600 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	4				P83C-00261	Check valve ASTM A216 Grade WCB Class 600 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	6				P83C-00262	Check valve ASTM A216 Grade WCB Class 600 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	8				P83C-00263	Check valve ASTM A216 Grade WCB Class 600 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71B-000E4	Spectacle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	0.75				P71B-000DN	Spectacle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	1				P71B-000DP	Spectacle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71B-000DR	Spectacle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	2				P71B-000DS	Spectacle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	

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SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3				P71B-000DT	Spectacle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	4				P71B-000DU	Spectacle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	6				P71B-000DV	Spectacle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	

PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	8				P72B-000MF	Paddle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	

PADDLE SPACER (PS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	8				P72B-000MM	Paddle spacer ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	

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BOLT TABLE (B_D1AH04 , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	80	P80S-003V6		
0.75	4	0.625	90	P80S-003XF		
1	4	0.625	95	P80S-003XG		
1.5	4	0.750	110	P80S-003XK		
2	8	0.625	110	P80S-003VC		
3	8	0.750	130	P80S-003XP		
4	8	0.875	150	P80S-0041F		
6	12	1.000	175	P80S-0043P		
8	12	1.125	195	P80S-0046W		

BOLT TABLE (B_D1AH04_789 , STUD ASME RJ, OPTION CODE 789)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	110		R12	
0.75	4	0.750	115		R14	
1	4	0.875	130	P80S-0041B	R16	
1.5	4	1.000	140		R20	
2	8	0.875	150	P80S-0041F	R24	
3	8	0.875	150	P80S-0041F	R31	P75T-000JN
4	8	1.125	175	P80S-0046S	R37	P75T-000JP
6	12	1.125	200	P80S-0046X	R45	P75T-000JR
8	12	1.375	260	P80S-003E5	R49	P75T-000JS

BOLT TABLE (B_D1AH04_797 , STUD ASME RJ, OPTION CODE 797)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	110	P80S-003XK	R12	P75T-000JT
0.75	4	0.750	115	P80S-003XL	R14	P75T-000JU
1	4	0.875	130	P80S-0041B	R16	P75T-000JV
1.5	4	1.000	140	P80S-0043F	R20	P75T-000JW
2	8	0.875	150	P80S-0041F	R24	P75T-0008A
3	8	1.125	180	P80S-0046T	R35	P75T-0008E
4	8	1.250	230	P80S-004AU	R39	P75T-0008D
6	12	1.375	300	P80S-003ED	R46	P75T-0008C
8	12	1.625	345	P80S-005TY	R50	P75T-0008B

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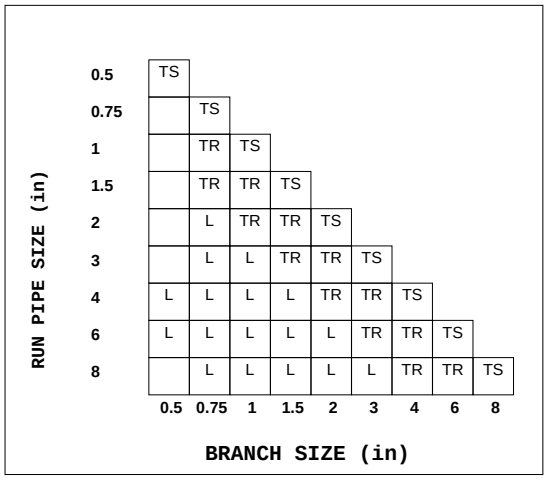
BRANCH TABLE (T_D1AH04)



TS : STRAIGHT TEE
L : OUTLET
TR : REDUCING TEE

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PIPING CLASS

D1AP REV NO. 2

Material : Killed CS
Rating : ASME CLASS 600
Flange Face : RF
C.A.(mm) : 1.50
Gasket : Spiral Wound
Service : PROCESS - NON SOUR: / HYDROCARBONS / HGU PROCESS / CONDENSATE / PROCESS

Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
2	USE OF SOFT SEATED BALL, PLUG AND BUTTERFLY VALVES SHALL BE LIMITED TO MAXIMUM OF 204DEGC (400DEGF)

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
24	FULL PORT (Q)
200	WITH JACK SCREW (FO)
541	NPT(F) (CA,L)
714	SW - NPT(F) (V)
789	CLASS 900 (B,F,G)
797	CLASS 1500 (B,F,G)
4602	DISSIMILAR TYPE CHECK VALVE (XDP)

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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P01A-000XM	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	0.75		XS		P01A-000XN	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1		XS		P01A-000XP	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1.5		XS		P01A-000XV	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	2		XS		P01A-000YX	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	3		STD		P01A-000YM	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	4		XS		P01A-000Z9	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	6		XS		P01A-000ZF	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	8		XS		P01A-000ZJ	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	10		XS		P01A-000Y2	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	12		SCH80		P01A-0010H	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	14		XS		P01A-000YJ	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	16		XS		P01A-000YS	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	18		SCH20		P01A-00438	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE	
1	20		STD		P01A-0042G	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P02B-00014	90 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	0.75				P02B-00015	90 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	1				P02B-00016	90 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5				P02B-00017	90 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	2		XS		P02A-000CP	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		STD		P02A-000CU	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		XS		P02A-000D3	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		XS		P02A-000DA	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		XS		P02A-000DG	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	10		XS		P02A-000BN	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	12		SCH80		P02A-000EN	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	14		XS		P02A-000C7	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	16		XS		P02A-000CE	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	18		SCH20		P02A-000LT	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	20		STD		P02A-0010J	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P03B-00017	45 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	0.75				P03B-00018	45 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	1				P03B-00019	45 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5				P03B-0001A	45 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	2		XS		P03A-000AS	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		STD		P03A-000AX	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		XS		P03A-000B3	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		XS		P03A-000B8	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		XS		P03A-000BC	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	10		XS		P03A-000A3	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	12		SCH80		P03A-000CH	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	14		XS		P03A-000AF	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	16		XS		P03A-000AP	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	18		SCH20		P03A-001DX	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	20		STD		P03A-000X1	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P21B-00017	Straight tee ASTM A105 Class 3000 ASME B16.11 SW	
1	0.75				P21B-00018	Straight tee ASTM A105 Class 3000 ASME B16.11 SW	
1	1				P21B-00019	Straight tee ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5				P21B-0001A	Straight tee ASTM A105 Class 3000 ASME B16.11 SW	
1	2		XS		P21A-001CJ	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3		STD		P21A-001CU	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		XS		P21A-001CV	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6		XS		P21A-001D4	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8		XS		P21A-001D6	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10		XS		P21A-001C0	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12		SCH80		P21A-001K0	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14		XS		P21A-001CB	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16		XS		P21A-001CG	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18		SCH20		P21A-001PJ	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20		STD		P21A-001C7	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75			P24B-0002L	Reducing tee ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5	0.75			P24B-0002N	Reducing tee ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5	1			P24B-0002P	Reducing tee ASTM A105 Class 3000 ASME B16.11 SW	
1	2	1	XS	XS	P24A-00238	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	XS	XS	P24A-0023H	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	STD	XS	P24A-00214	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	STD	XS	P24A-002HW	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	XS	XS	P24A-0023E	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	XS	STD	P24A-006FZ	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	XS	STD	P24A-006G0	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	XS	XS	P24A-00243	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	XS	XS	P24A-0023T	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	XS	XS	P24A-0024M	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	XS	XS	P24A-0023C	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	XS	XS	P24A-00241	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	XS	XS	P24A-0024K	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	SCH80	XS	P24A-002C2	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH80	XS	P24A-002CP	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH80	XS	P24A-00L6T	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	XS	XS	P24A-0024P	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	XS	XS	P24A-00254	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	XS	XS	P24A-0023X	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	XS	SCH80	P24A-00PZB	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	6	XS	XS	P24A-0025G	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	XS	XS	P24A-0025P	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	XS	XS	P24A-00242	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	XS	SCH80	P24A-00GX1	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	XS	XS	P24A-0025A	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	8	SCH20	XS	P24A-00NYC	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	10	SCH20	XS	P24A-00BF8	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	12	SCH20	SCH80	P24A-00NYB	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	14	SCH20	XS	P24A-00BJP	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	16	SCH20	XS	P24A-00BLH	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	8	STD	XS	P24A-00NY6	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	10	STD	XS	P24A-00NY4	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	12	STD	SCH80	P24A-00NY5	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	14	STD	XS	P24A-00PYJ	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	16	STD	XS	P24A-00BY5	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	18	STD	SCH20	P24A-006WD	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	STD	XS	P27A-001MZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	XS	XS	P27A-001E4	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	XS	STD	P27A-0048S	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	XS	STD	P27A-0048T	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	6	4	XS	XS	P27A-001EB	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	XS	XS	P27A-001E3	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	XS	XS	P27A-001EY	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	XS	XS	P27A-001E8	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	XS	XS	P27A-001F2	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	XS	XS	P27A-001FR	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	SCH80	XS	P27A-001KS	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH80	XS	P27A-001L2	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH80	XS	P27A-00FEA	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	XS	XS	P27A-001FT	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	XS	XS	P27A-001GE	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	XS	XS	P27A-001E9	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	XS	SCH80	P27A-00505	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	XS	XS	P27A-001GV	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	XS	XS	P27A-001EN	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	XS	SCH80	P27A-0056C	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	XS	XS	P27A-001GF	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	10	SCH20	XS	P27A-00HDC	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	12	SCH20	SCH80	P27A-00HDJ	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	14	SCH20	XS	P27A-00J8C	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	16	SCH20	XS	P27A-00FKT	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	12	STD	SCH80	P27A-00HDD	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	14	STD	XS	P27A-00J8D	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	16	STD	XS	P27A-00BJ5	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	18	STD	SCH20	P27A-0084N	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	STD	XS	P28A-001N5	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	XS	XS	P28A-001EJ	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	XS	STD	P28A-0048H	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	XS	STD	P28A-0048J	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	XS	XS	P28A-001ER	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	XS	XS	P28A-001EK	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	XS	XS	P28A-001FT	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	XS	XS	P28A-001EM	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	XS	XS	P28A-001FR	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	XS	XS	P28A-001GT	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	SCH80	XS	P28A-001KN	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH80	XS	P28A-001L0	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH80	XS	P28A-00CK8	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	XS	XS	P28A-001GX	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	XS	XS	P28A-001H9	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	XS	XS	P28A-001EN	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	XS	SCH80	P28A-00FJD	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	XS	XS	P28A-0018A	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	XS	XS	P28A-001F9	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	XS	SCH80	P28A-008J5	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	XS	XS	P28A-001H5	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	10	SCH20	XS	P28A-00EM2	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	12	SCH20	SCH80	P28A-00EM8	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	14	SCH20	XS	P28A-00FJE	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	16	SCH20	XS	P28A-00CS6	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	12	STD	SCH80	P28A-00EM3	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	14	STD	XS	P28A-00FJF	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	16	STD	XS	P28A-008HX	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	18	STD	SCH20	P28A-004UN	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	

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CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P29B-0001J	Cap ASTM A105 Class 3000 ASME B16.11 SW	
1	0.75				P29B-0001F	Cap ASTM A105 Class 3000 ASME B16.11 SW	
1	1				P29B-0001G	Cap ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5				P29B-0001H	Cap ASTM A105 Class 3000 ASME B16.11 SW	
1	2		XS		P29A-000A1	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		STD		P29A-000BK	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		XS		P29A-000B9	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6		XS		P29A-000BF	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8		XS		P29A-000BL	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10		XS		P29A-000BD	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12		SCH80		P29A-000C5	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14		XS		P29A-000BS	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16		XS		P29A-0009R	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18		SCH20		P29A-000E0	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20		STD		P29A-000B2	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
541	0.75				P29B-0000C	Cap ASTM A105 Class 3000 ASME B16.11 NPT	
541	1				P29B-0000D	Cap ASTM A105 Class 3000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P41A-000B5	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		SCH160		P41A-000B6	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		SCH160		P41A-000B7	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		SCH160		P41A-000B8	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

CON SWAGED NIPPLE (SNC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	XS	XS	P42A-00036	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	XS	XS	P42A-00038	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	XS	XS	P42A-0003B	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	XS	XS	P42A-00035	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	XS	XS	P42A-00039	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	XS	XS	P42A-0003C	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	XS	XS	P42A-0008C	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	XS	XS	P42A-0008D	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	XS	XS	P42A-0008E	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	XS	XS	P42A-0008F	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	STD	XS	P42A-0007V	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	

ECC SWAGED NIPPLE (SNE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	XS	XS	P43A-00036	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	XS	XS	P43A-00037	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	XS	XS	P43A-00038	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	XS	XS	P43A-00039	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	XS	XS	P43A-0003A	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	XS	XS	P43A-0003B	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	XS	XS	P43A-00042	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	XS	XS	P43A-00043	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	XS	XS	P43A-00044	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	XS	XS	P43A-00045	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	STD	XS	P43A-0003J	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	

COUPLING (CPS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P47B-0001D	Coupling ASTM A105 Class 3000 ASME B16.11 SW - SW	
1	0.75				P47B-0001E	Coupling ASTM A105 Class 3000 ASME B16.11 SW - SW	
1	1				P47B-0001F	Coupling ASTM A105 Class 3000 ASME B16.11 SW - SW	

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COUPLING (CPS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5				P47B-0001G	Coupling ASTM A105 Class 3000 ASME B16.11 SW - SW	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2 - 2.5	0.75			P31B-0137J	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	3 - 5	0.75			P31B-0137K	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	6 - 12	0.75			P31B-007AB	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	14 - 36	0.75			P31B-007AJ	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	3	1			P31B-007A7	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	4 - 5	1			P31B-0138Z	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	6 - 10	1			P31B-007A4	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	12 - 36	1			P31B-007AA	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	4	1.5			P31B-005SN	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	5 - 6	1.5			P31B-01390	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	8 - 12	1.5			P31B-0079U	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	14 - 24	1.5			P31B-007A0	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
541	1	0.75			P31B-00551	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
541	1.5	0.75			P31B-00555	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
541	2 - 2.5	0.75			P31B-0137H	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
541	3 - 5	0.75			P31B-01376	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
541	6 - 12	0.75			P31B-007GR	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
541	14 - 36	0.75			P31B-007GY	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
1	6	2	XS	XS	P31B-007SG	Outlet ASTM A105 MSS SP-97 BW	
1	8	2	XS	XS	P31B-00AGW	Outlet ASTM A105 MSS SP-97 BW	
1	10	2	XS	XS	P31B-00AS9	Outlet ASTM A105 MSS SP-97 BW	
1	12	2	SCH80	XS	P31B-00CBP	Outlet ASTM A105 MSS SP-97 BW	
1	14	2	XS	XS	P31B-00CAD	Outlet ASTM A105 MSS SP-97 BW	
1	16	2	XS	XS	P31B-00C1S	Outlet ASTM A105 MSS SP-97 BW	
1	18	2	SCH20	XS	P31B-00NVX	Outlet ASTM A105 MSS SP-97 BW	
1	20	2	STD	XS	P31B-00994	Outlet ASTM A105 MSS SP-97 BW	
1	8	3	XS	STD	P31B-00A2S	Outlet ASTM A105 MSS SP-97 BW	
1	10	3	XS	STD	P31B-009CL	Outlet ASTM A105 MSS SP-97 BW	
1	12	3	SCH80	STD	P31B-0096P	Outlet ASTM A105 MSS SP-97 BW	
1	14	3	XS	STD	P31B-0090S	Outlet ASTM A105 MSS SP-97 BW	
1	16	3	XS	STD	P31B-008UM	Outlet ASTM A105 MSS SP-97 BW	
1	18	3	SCH20	STD	P31B-00NZ4	Outlet ASTM A105 MSS SP-97 BW	
1	20	3	STD	STD	P31B-008FA	Outlet ASTM A105 MSS SP-97 BW	
1	12	4	SCH80	XS	P31B-008ZS	Outlet ASTM A105 MSS SP-97 BW	
1	14	4	XS	XS	P31B-008TW	Outlet ASTM A105 MSS SP-97 BW	
1	16	4	XS	XS	P31B-008LM	Outlet ASTM A105 MSS SP-97 BW	
1	18	4	SCH20	XS	P31B-00P1W	Outlet ASTM A105 MSS SP-97 BW	
1	20	4	STD	XS	P31B-00P21	Outlet ASTM A105 MSS SP-97 BW	
1	18	6	SCH20	XS	P31B-00P49	Outlet ASTM A105 MSS SP-97 BW	
1	20	6	STD	XS	P31B-00P4D	Outlet ASTM A105 MSS SP-97 BW	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30B-0002D	Plug ASTM A105 ASME B16.11 NPT Round head	
1	0.75				P30B-0002E	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1				P30B-0002F	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1.5				P30B-0002G	Plug ASTM A105 ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P61B-001FF	Flange SW ASTM A105 Class 600 ASME B16.5 RF	
1	0.75		XS		P61B-001FH	Flange SW ASTM A105 Class 600 ASME B16.5 RF	
1	1		XS		P61B-001DR	Flange SW ASTM A105 Class 600 ASME B16.5 RF	
1	1.5		XS		P61B-001DV	Flange SW ASTM A105 Class 600 ASME B16.5 RF	
1	2		XS		P61B-001DH	Flange WN ASTM A105 Class 600 ASME B16.5 RF	

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FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3		STD		P61B-001TW	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
1	4		XS		P61B-001SH	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
1	6		XS		P61B-001T1	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
1	8		XS		P61B-001UC	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
1	10		XS		P61B-001JN	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
1	12		SCH80		P61B-001F8	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
1	14		XS		P61B-001PN	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
1	16		XS		P61B-001R3	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
1	18		SCH20		P61B-003TP	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
1	20		STD		P61B-003GP	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
789	3		STD		P61B-006SP	Flange WN ASTM A105 Class 900 ASME B16.5 RJ	
789	4		XS		P61B-00655	Flange WN ASTM A105 Class 900 ASME B16.5 RJ	
789	6		XS		P61B-00656	Flange WN ASTM A105 Class 900 ASME B16.5 RJ	
789	8		XS		P61B-00657	Flange WN ASTM A105 Class 900 ASME B16.5 RJ	
789	10		XS		P61B-009UV	Flange WN ASTM A105 Class 900 ASME B16.5 RJ	
789	12		SCH80		P61B-0068F	Flange WN ASTM A105 Class 900 ASME B16.5 RJ	
789	14		XS		P61B-009UX	Flange WN ASTM A105 Class 900 ASME B16.5 RJ	
789	16		XS		P61B-0068H	Flange WN ASTM A105 Class 900 ASME B16.5 RJ	
789	18		SCH20		P61B-00AC8	Flange WN ASTM A105 Class 900 ASME B16.5 RJ	
789	20		STD		P61B-00AC9	Flange WN ASTM A105 Class 900 ASME B16.5 RJ	
797	0.5		XS		P61B-009T3	Flange SW ASTM A105 Class 1500 ASME B16.5 RJ	
797	0.75		XS		P61B-009T4	Flange SW ASTM A105 Class 1500 ASME B16.5 RJ	
797	1		XS		P61B-009T5	Flange SW ASTM A105 Class 1500 ASME B16.5 RJ	
797	1.5		XS		P61B-009T6	Flange SW ASTM A105 Class 1500 ASME B16.5 RJ	
797	2		XS		P61B-0065C	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67B-000J7	Blind flange ASTM A105 Class 600 ASME B16.5 RF	
1	0.75				P67B-000J8	Blind flange ASTM A105 Class 600 ASME B16.5 RF	
1	1				P67B-000J9	Blind flange ASTM A105 Class 600 ASME B16.5 RF	
1	1.5				P67B-000JA	Blind flange ASTM A105 Class 600 ASME B16.5 RF	
1	2				P67B-000JG	Blind flange ASTM A105 Class 600 ASME B16.5 RF	
1	3				P67B-000JK	Blind flange ASTM A105 Class 600 ASME B16.5 RF	
1	4				P67B-000JL	Blind flange ASTM A105 Class 600 ASME B16.5 RF	
1	6				P67B-000JM	Blind flange ASTM A105 Class 600 ASME B16.5 RF	
1	8				P67B-000JN	Blind flange ASTM A105 Class 600 ASME B16.5 RF	
1	10				P67B-000JB	Blind flange ASTM A105 Class 600 ASME B16.5 RF	
1	12				P67B-000JC	Blind flange ASTM A105 Class 600 ASME B16.5 RF	
1	14				P67B-000JD	Blind flange ASTM A105 Class 600 ASME B16.5 RF	
1	16				P67B-000JE	Blind flange ASTM A105 Class 600 ASME B16.5 RF	
1	18				P67B-000JF	Blind flange ASTM A105 Class 600 ASME B16.5 RF	
1	20				P67B-000JH	Blind flange ASTM A105 Class 600 ASME B16.5 RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000J8	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000J9	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000JA	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000JB	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000JH	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000JL	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000JM	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	6				P73T-000JN	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	8				P73T-000JP	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

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GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	10				P73T-000JC	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	12				P73T-000JD	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	14				P73T-000JE	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	16				P73T-000JF	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	18				P73T-000JG	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	20				P73T-000JJ	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
789	3				P75T-000JN	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	4				P75T-000JP	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	6				P75T-000JR	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	8				P75T-000JS	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	10				P75T-000JL	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	12				P75T-000JM	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	14				P75T-000MJ	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	16				P75T-000MK	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	18				P75T-000N8	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	20				P75T-000N7	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	0.5				P75T-000JT	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	0.75				P75T-000JU	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	1				P75T-000JV	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	1.5				P75T-000JW	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	2				P75T-0008A	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-6				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	8-20				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
789	1-3				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
789	4-20				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
797	0.5-2				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81B-000P4	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	0.75				P81B-000NX	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	1				P81B-000NY	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	1.5				P81B-000NZ	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	2				P81C-004KW	Gate valve ASTM A216 Grade WCB Class 600 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	3				P81C-004L3	Gate valve ASTM A216 Grade WCB Class 600 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	4				P81C-004L4	Gate valve ASTM A216 Grade WCB Class 600 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	6				P81C-0087J	Gate valve ASTM A216 Grade WCB Class 600 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated	
1	8				P81C-004LB	Gate valve ASTM A216 Grade WCB Class 600 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated	
1	10				P81C-004L6	Gate valve ASTM A216 Grade WCB Class 600 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated	
1	12				P81C-004L7	Gate valve ASTM A216 Grade WCB Class 600 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated	
1	14				P81C-004L8	Gate valve ASTM A216 Grade WCB Class 600 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated	
1	16				P81C-004L9	Gate valve ASTM A216 Grade WCB Class 600 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated	
1	18				P81C-00529	Gate valve ASTM A216 Grade WCB Class 600 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated	
1	20				P81C-004LA	Gate valve ASTM A216 Grade WCB Class 600 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated	
714	0.5				P81B-0015L	Gate valve ASTM A105 Class 800 API 602 SW - NPT Trim number 8 BB-BG-OS&Y Handwheel operated	
714	0.75				P81B-002F4	Gate valve ASTM A105 Class 800 API 602 SW - NPT Trim number 8 BB-BG-OS&Y Handwheel operated	

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GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82B-000K0	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	0.75				P82B-000HB	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	1				P82B-000HC	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	1.5				P82B-000HD	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	2				P82C-0028Z	Globe valve ASTM A216 Grade WCB Class 600 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	3				P82C-00293	Globe valve ASTM A216 Grade WCB Class 600 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	4				P82C-00294	Globe valve ASTM A216 Grade WCB Class 600 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	6				P82C-004DE	Globe valve ASTM A216 Grade WCB Class 600 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated	
1	8				P82C-00296	Globe valve ASTM A216 Grade WCB Class 600 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83B-000FX	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover	
1	0.75				P83B-000ER	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover	
1	1				P83B-000ES	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover	
1	1.5				P83B-000ET	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover	
1	2				P83C-0025Z	Check valve ASTM A216 Grade WCB Class 600 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	3				P83C-00260	Check valve ASTM A216 Grade WCB Class 600 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	4				P83C-00261	Check valve ASTM A216 Grade WCB Class 600 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	6				P83C-00262	Check valve ASTM A216 Grade WCB Class 600 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	8				P83C-00263	Check valve ASTM A216 Grade WCB Class 600 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	10				P83C-00264	Check valve ASTM A216 Grade WCB Class 600 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	

DP CHECK VALVE (XDP)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	12				P88C-0023H	Dual plate check valve ASTM A216 Grade WCB Class 600 API 594 Wafer-type ASME B16.5 RF Trim number 8 Internal wetted parts 13Cr Spring Inconel Retainerless-type	
1	14				P88C-0023J	Dual plate check valve ASTM A216 Grade WCB Class 600 API 594 Wafer-type ASME B16.5 RF Trim number 8 Internal wetted parts 13Cr Spring Inconel Retainerless-type	
1	16				P88C-0023K	Dual plate check valve ASTM A216 Grade WCB Class 600 API 594 Wafer-type ASME B16.5 RF Trim number 8 Internal wetted parts 13Cr Spring Inconel Retainerless-type	
4602	4				P88C-003CG	Dual plate check valve ASTM A216 Grade WCB Class 600 API 594 Wafer-type ASME B16.5 RF Trim number 8 Internal wetted parts 13Cr Spring Inconel Retainerless-type	
4602	6				P88C-003CM	Dual plate check valve ASTM A216 Grade WCB Class 600 API 594 Wafer-type ASME B16.5 RF Trim number 8 Internal wetted parts 13Cr Spring Inconel Retainerless-type	

BALL VALVE (Q)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P84B-00138	Ball valve Long-pattern ASTM A105 Class 600 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design	
1	0.75				P84B-00139	Ball valve Long-pattern ASTM A105 Class 600 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design	
1	1				P84B-0013A	Ball valve Long-pattern ASTM A105 Class 600 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design	
1	1.5				P84B-0013B	Ball valve Long-pattern ASTM A105 Class 600 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design	
1	2				P84C-005VX	Ball valve Long-pattern ASTM A216 Grade WCB Class 600 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Wrench lever operated Reduced bore Fire tested design	
1	3				P84C-005VY	Ball valve Long-pattern ASTM A216 Grade WCB Class 600 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Reduced bore Fire tested design	
1	4				P84C-005VZ	Ball valve Long-pattern ASTM A216 Grade WCB Class 600 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Reduced bore Fire tested design	
1	6				P84C-005W0	Ball valve Long-pattern ASTM A216 Grade WCB Class 600 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Reduced bore Fire tested design	
24	0.5				P84B-0013C	Ball valve Long-pattern ASTM A105 Class 600 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	
24	0.75				P84B-0013D	Ball valve Long-pattern ASTM A105 Class 600 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	
24	1				P84B-0013E	Ball valve Long-pattern ASTM A105 Class 600 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	
24	1.5				P84B-0013F	Ball valve Long-pattern ASTM A105 Class 600 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	
24	2				P84C-005W1	Ball valve Long-pattern ASTM A216 Grade WCB Class 600 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Wrench lever operated Full bore Fire tested design	
24	3				P84C-005W2	Ball valve Long-pattern ASTM A216 Grade WCB Class 600 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design	
24	4				P84C-005W3	Ball valve Long-pattern ASTM A216 Grade WCB Class 600 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design	

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BALL VALVE (Q)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
24	6				P84C-005W4	Ball valve Long-pattern ASTM A216 Grade WCB Class 600 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design	

BUTTERFLY VALVE (H)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	12				P86C-0023U	Offset design butterfly valve ASTM A216 Grade WCB Class 600 API 609 Category B Lug-type ASME B16.5 RF Disc CS Seat Stellite-6 Trim 13Cr Triple eccentric design BG Gear operated	

ORIFICE FLANGE (FO)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2		XS		P66B-008EY	Orifice flange WN ASTM A105 Class 600 ASME B16.36 RF NPS1/2 SW tap x 1	
1	3		STD		P66B-008EZ	Orifice flange WN ASTM A105 Class 600 ASME B16.36 RF NPS1/2 SW tap x 1	
1	4		XS		P66B-008FA	Orifice flange WN ASTM A105 Class 600 ASME B16.36 RF NPS1/2 SW tap x 1	
200	2		XS		P66B-008F5	Orifice flange WN ASTM A105 Class 600 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	3		STD		P66B-008F6	Orifice flange WN ASTM A105 Class 600 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	4		XS		P66B-008FB	Orifice flange WN ASTM A105 Class 600 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71B-000E4	Spectacle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	0.75				P71B-000DN	Spectacle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	1				P71B-000DP	Spectacle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71B-000DR	Spectacle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	2				P71B-000DS	Spectacle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	3				P71B-000DT	Spectacle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	4				P71B-000DU	Spectacle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	6				P71B-000DV	Spectacle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	

PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	8				P72B-000MF	Paddle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	10				P72B-000MA	Paddle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	12				P72B-000M6	Paddle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	14				P72B-000MB	Paddle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	16				P72B-000MC	Paddle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	18				P72B-000MD	Paddle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	20				P72B-000ME	Paddle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	

PADDLE SPACER (PS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	8				P72B-000MM	Paddle spacer ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	10				P72B-000MG	Paddle spacer ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	12				P72B-000M7	Paddle spacer ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	14				P72B-000MH	Paddle spacer ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	16				P72B-000MJ	Paddle spacer ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	18				P72B-000MK	Paddle spacer ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	20				P72B-000ML	Paddle spacer ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	

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BOLT TABLE (B_D1AP , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	80	P80S-003V6		
0.75	4	0.625	90	P80S-003XF		
1	4	0.625	95	P80S-003XG		
1.5	4	0.750	110	P80S-003XK		
2	8	0.625	110	P80S-003VC		
3	8	0.750	130	P80S-003XP		
4	8	0.875	150	P80S-0041F		
6	12	1.000	175	P80S-0043P		
8	12	1.125	195	P80S-0046W		
10	16	1.250	250	P80S-004AY		
12	20	1.250	255	P80S-004AZ		
14	20	1.375	270	P80S-003E7		
16	20	1.500	295	P80S-003FL		
18	20	1.625	320	P80S-005TT		
20	24	1.625	335	P80S-005TW		

BOLT TABLE (B_D1AP_773 , STUD ASME RF, OPTION CODE)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE

BOLT TABLE (B_D1AP_789 , STUD ASME RJ, OPTION CODE 789)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	110		R12	
0.75	4	0.750	115		R14	
1	4	0.875	130	P80S-0041B	R16	
1.5	4	1.000	140		R20	
2	8	0.875	150	P80S-0041F	R24	
3	8	0.875	150	P80S-0041F	R31	P75T-000JN
4	8	1.125	175	P80S-0046S	R37	P75T-000JP
6	12	1.125	200	P80S-0046X	R45	P75T-000JR
8	12	1.375	260	P80S-003E5	R49	P75T-000JS
10	16	1.375	275	P80S-003E8	R53	P75T-000JL
12	20	1.375	295	P80S-003EC	R57	P75T-000JM
14	20	1.500	325	P80S-008N3	R62	P75T-000MJ
16	20	1.625	340	P80S-005TX	R66	P75T-000MK
18	20	1.875	390	P80S-008P6	R70	P75T-000N8
20	20	2.000	415	P80S-005VG	R74	P75T-000N7

BOLT TABLE (B_D1AP_797 , STUD ASME RJ, OPTION CODE 797)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	110	P80S-003XK	R12	P75T-000JT
0.75	4	0.750	115	P80S-003XL	R14	P75T-000JU
1	4	0.875	130	P80S-0041B	R16	P75T-000JV
1.5	4	1.000	140	P80S-0043F	R20	P75T-000JW
2	8	0.875	150	P80S-0041F	R24	P75T-0008A
3	8	1.125	180		R35	
4	8	1.250	230		R39	
6	12	1.375	300		R46	
8	12	1.625	345		R50	
10	12	1.875	395		R54	
12	16	2.000	445		R58	
14	16	2.250	490		R63	
16	16	2.500	540		R67	
18	16	2.750	590		R71	
20	16	3.000	650		R75	

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BRANCH TABLE (T_D1AP)

RUN PIPE SIZE (in) \ BRANCH SIZE (in)	0.5	0.75	1	1.5	2	3	4	6	8	10	12	14	16	18	20
0.5	TS														
0.75		TS													
1		TR	TS												
1.5		TR	TR	TS											
2		L	TR	TR	TS										
3		L	L	TR	TR	TS									
4	L	L	L	L	TR	TR	TS								
6	L	L	L	L	L	TR	TR	TS							
8		L	L	L	L	L	TR	TR	TS						
10		L	L	L	L	L	TR	TR	TR	TS					
12		L	L	L	L	L	L	TR	TR	TR	TS				
14		L	L	L	L	L	L	TR	TR	TR	TR	TS			
16		L	L	L	L	L	L	TR	TR	TR	TR	TR	TS		
18		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TS	
20		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TR	TS

L : OUTLET
TR : REDUCING TEE
TS : STRAIGHT TEE

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PIPING CLASS

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Material : Killed CS
Rating : ASME CLASS 600
Flange Face : RF
C.A.(mm) : 1.50
Gasket : Spiral Wound
Service : PROCESS - GENERAL PROCESS NON SOUR, NON CORROSIVE
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
2	USE OF SOFT SEATED BALL, PLUG AND BUTTERFLY VALVES SHALL BE LIMITED TO MAXIMUM OF 204DEGC (400DEGF)

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
24	FULL PORT (Q)
200	WITH JACK SCREW (FO)
541	NPT(F) (CA,L)
714	SW - NPT(F) (V)
789	CLASS 900 (B,F,G)
797	CLASS 1500 (B,F,G)
4602	DISSIMILAR TYPE CHECK VALVE (X)

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PIPING CLASS
D1AP01 REV NO. 2

PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P01A-007AZ	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE Licensor-1	
1	0.75		XS		P01A-007B0	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE Licensor-1	
1	1		XS		P01A-007B1	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE Licensor-1	
1	1.5		XS		P01A-007B2	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE Licensor-1	
1	2		XS		P01A-0078Y	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Licensor-1	
1	3		STD		P01A-0078Z	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Licensor-1	
1	4		XS		P01A-00790	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Licensor-1	
1	6		XS		P01A-007A7	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Licensor-1	
1	8		STD		P01A-007BU	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Licensor-1	
1	10		XS		P01A-007A0	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Licensor-1	
1	12		XS		P01A-00920	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Licensor-1	
1	14		SCH20		P01A-007B6	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Licensor-1	
1	16		SCH20		P01A-007B7	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Licensor-1	
1	18		SCH20		P01A-007BA	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE Licensor-1	
1	20		STD		P01A-007BB	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE Licensor-1	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P02B-0007G	90 degree elbow ASTM A105 Class 3000 ASME B16.11 SW Licensor-1	
1	0.75				P02B-0007H	90 degree elbow ASTM A105 Class 3000 ASME B16.11 SW Licensor-1	
1	1				P02B-0007J	90 degree elbow ASTM A105 Class 3000 ASME B16.11 SW Licensor-1	
1	1.5				P02B-0007K	90 degree elbow ASTM A105 Class 3000 ASME B16.11 SW Licensor-1	
1	2		XS		P02A-003R7	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	3		STD		P02A-003R8	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	4		XS		P02A-003R9	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	6		XS		P02A-003SB	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	8		STD		P02A-003U6	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	10		XS		P02A-003S3	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	12		XS		P02A-0052A	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	14		SCH20		P02A-003TB	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	16		SCH20		P02A-003TC	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	18		SCH20		P02A-003TD	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	20		STD		P02A-003TE	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P03B-00074	45 degree elbow ASTM A105 Class 3000 ASME B16.11 SW Licensor-1	
1	0.75				P03B-00075	45 degree elbow ASTM A105 Class 3000 ASME B16.11 SW Licensor-1	
1	1				P03B-00076	45 degree elbow ASTM A105 Class 3000 ASME B16.11 SW Licensor-1	
1	1.5				P03B-00077	45 degree elbow ASTM A105 Class 3000 ASME B16.11 SW Licensor-1	
1	2		XS		P03A-003MW	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	3		STD		P03A-003MX	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	4		XS		P03A-003MY	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	6		XS		P03A-003P0	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	8		STD		P03A-003RV	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	10		XS		P03A-003NS	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	12		XS		P03A-004N9	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	14		SCH20		P03A-003R0	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	16		SCH20		P03A-003R1	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	18		SCH20		P03A-003R2	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	20		STD		P03A-003R3	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P21B-00074	Straight tee ASTM A105 Class 3000 ASME B16.11 SW Licensor-1	
1	0.75				P21B-00075	Straight tee ASTM A105 Class 3000 ASME B16.11 SW Licensor-1	
1	1				P21B-00076	Straight tee ASTM A105 Class 3000 ASME B16.11 SW Licensor-1	
1	1.5				P21B-00077	Straight tee ASTM A105 Class 3000 ASME B16.11 SW Licensor-1	
1	2		XS		P21A-0048L	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	

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STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3		STD		P21A-0048M	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	4		XS		P21A-0048N	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	6		XS		P21A-0049P	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	8		STD		P21A-004BF	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	10		XS		P21A-0049G	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	12		XS		P21A-0055E	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	14		SCH20		P21A-004AP	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	16		SCH20		P21A-004AR	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	18		SCH20		P21A-004AU	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	20		STD		P21A-004AV	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75			P24B-000BZ	Reducing tee ASTM A105 Class 3000 ASME B16.11 SW Licensor-1	
1	1.5	0.75			P24B-000C0	Reducing tee ASTM A105 Class 3000 ASME B16.11 SW Licensor-1	
1	1.5	1			P24B-000C1	Reducing tee ASTM A105 Class 3000 ASME B16.11 SW Licensor-1	
1	2	1	XS	XS	P24A-00K5U	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	2	1.5	XS	XS	P24A-00K5V	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	3	1.5	STD	XS	P24A-00K5W	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	3	2	STD	XS	P24A-00K0Y	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	4	2	XS	XS	P24A-00K0Z	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	4	3	XS	STD	P24A-00K10	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	6	3	XS	STD	P24A-00L61	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	6	4	XS	XS	P24A-00L62	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	8	4	STD	XS	P24A-00MUM	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	8	6	STD	XS	P24A-00MUN	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	10	4	XS	XS	P24A-00L7W	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	10	6	XS	XS	P24A-00K3H	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	10	8	XS	STD	P24A-00PYK	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	12	6	XS	XS	P24A-00PYM	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	12	8	XS	STD	P24A-00PYN	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	12	10	XS	XS	P24A-00PYL	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	14	6	SCH20	XS	P24A-00MUV	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	14	8	SCH20	STD	P24A-00MUW	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	14	10	SCH20	XS	P24A-00PYP	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	14	12	SCH20	XS	P24A-00PZE	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	16	6	SCH20	XS	P24A-00MUZ	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	16	8	SCH20	STD	P24A-00MV0	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	16	10	SCH20	XS	P24A-00PYR	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	16	12	SCH20	XS	P24A-00PYS	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	16	14	SCH20	SCH20	P24A-00K6L	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	18	8	SCH20	STD	P24A-00MV3	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	18	10	SCH20	XS	P24A-00PYT	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	18	12	SCH20	XS	P24A-00PYU	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	18	14	SCH20	SCH20	P24A-00K6S	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	18	16	SCH20	SCH20	P24A-00K6T	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	20	8	STD	STD	P24A-00MV6	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	20	10	STD	XS	P24A-00PYV	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	20	12	STD	XS	P24A-00PYW	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	20	14	STD	SCH20	P24A-00K6X	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	20	16	STD	SCH20	P24A-00K6Y	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	20	18	STD	SCH20	P24A-00K6Z	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	STD	XS	P27A-00EL1	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	4	2	XS	XS	P27A-00EL2	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	4	3	XS	STD	P27A-00EL3	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	6	3	XS	STD	P27A-00FDY	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	6	4	XS	XS	P27A-00FDZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	8	4	STD	XS	P27A-00GN1	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	8	6	STD	XS	P27A-00GN2	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	10	4	XS	XS	P27A-00FF1	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	10	6	XS	XS	P27A-00ENS	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	10	8	XS	STD	P27A-00J8E	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	12	6	XS	XS	P27A-00J8G	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	12	8	XS	STD	P27A-00J8H	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	12	10	XS	XS	P27A-00J8F	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	14	6	SCH20	XS	P27A-00GN8	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	14	8	SCH20	STD	P27A-00GN9	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	14	10	SCH20	XS	P27A-00J8J	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	14	12	SCH20	XS	P27A-00J8X	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	16	8	SCH20	STD	P27A-00GNC	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	16	10	SCH20	XS	P27A-00J8K	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	16	12	SCH20	XS	P27A-00J8L	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	16	14	SCH20	SCH20	P27A-00ESS	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	18	10	SCH20	XS	P27A-00J8M	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	18	12	SCH20	XS	P27A-00J8N	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	18	14	SCH20	SCH20	P27A-00ESW	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	18	16	SCH20	SCH20	P27A-00ESX	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	20	12	STD	XS	P27A-00J8P	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	20	14	STD	SCH20	P27A-00ESZ	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	20	16	STD	SCH20	P27A-00ET0	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	20	18	STD	SCH20	P27A-00ET1	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	STD	XS	P28A-00BPS	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	4	2	XS	XS	P28A-00BPT	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	4	3	XS	STD	P28A-00BPU	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	6	3	XS	STD	P28A-00CJW	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	6	4	XS	XS	P28A-00CJX	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	8	4	STD	XS	P28A-00DWA	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	8	6	STD	XS	P28A-00DWB	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	10	4	XS	XS	P28A-00CKZ	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	10	6	XS	XS	P28A-00BTH	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	10	8	XS	STD	P28A-00FJG	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	12	6	XS	XS	P28A-00FJJ	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	12	8	XS	STD	P28A-00FJK	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	12	10	XS	XS	P28A-00FJH	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	14	6	SCH20	XS	P28A-00DWH	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	14	8	SCH20	STD	P28A-00DWJ	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	14	10	SCH20	XS	P28A-00FJL	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	14	12	SCH20	XS	P28A-00FJZ	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	16	8	SCH20	STD	P28A-00DWM	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	16	10	SCH20	XS	P28A-00FJM	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	16	12	SCH20	XS	P28A-00FJN	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	16	14	SCH20	SCH20	P28A-00BWK	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	18	10	SCH20	XS	P28A-00FJP	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	18	12	SCH20	XS	P28A-00FJR	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	18	14	SCH20	SCH20	P28A-00BWP	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	18	16	SCH20	SCH20	P28A-00BWR	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	20	12	STD	XS	P28A-00FJS	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	20	14	STD	SCH20	P28A-00BWT	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	20	16	STD	SCH20	P28A-00BWU	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	
1	20	18	STD	SCH20	P28A-00BWV	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW Licensor-1	

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CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P29B-0005L	Cap ASTM A105 Class 3000 ASME B16.11 SW Licensor-1	
1	0.75				P29B-0005M	Cap ASTM A105 Class 3000 ASME B16.11 SW Licensor-1	
1	1				P29B-0005N	Cap ASTM A105 Class 3000 ASME B16.11 SW Licensor-1	
1	1.5				P29B-0005P	Cap ASTM A105 Class 3000 ASME B16.11 SW Licensor-1	
1	2		XS		P29A-00326	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	3		STD		P29A-00327	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	4		XS		P29A-00328	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	6		XS		P29A-0033V	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	8		STD		P29A-0035T	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	10		XS		P29A-0033L	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	12		XS		P29A-005L9	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	14		SCH20		P29A-0034U	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	16		SCH20		P29A-0034V	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	18		SCH20		P29A-0034W	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	20		STD		P29A-0034X	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
541	0.75				P29B-00067	Cap ASTM A105 Class 3000 ASME B16.11 NPT Licensor-1	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P41A-0017A	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Licensor-1	
1	0.75		SCH160		P41A-0017B	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Licensor-1	
1	1		SCH160		P41A-0017C	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Licensor-1	
1	1.5		SCH160		P41A-0017D	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Licensor-1	

CON SWAGED NIPPLE (SNC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	XS	XS	P42A-000UN	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S) Licensor-1	
1	1	0.5	XS	XS	P42A-000UP	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S) Licensor-1	
1	1	0.75	XS	XS	P42A-000UR	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S) Licensor-1	
1	1.5	0.5	XS	XS	P42A-000US	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S) Licensor-1	
1	1.5	0.75	XS	XS	P42A-000UT	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S) Licensor-1	
1	1.5	1	XS	XS	P42A-000UU	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S) Licensor-1	
1	2	0.5	XS	XS	P42A-000UV	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S) Licensor-1	
1	2	0.75	XS	XS	P42A-000UW	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S) Licensor-1	
1	2	1	XS	XS	P42A-000UX	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S) Licensor-1	
1	2	1.5	XS	XS	P42A-000UY	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S) Licensor-1	
1	3	1.5	STD	XS	P42A-000UZ	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S) Licensor-1	

ECC SWAGED NIPPLE (SNE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	XS	XS	P43A-000KS	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S) Licensor-1	
1	1	0.5	XS	XS	P43A-000KT	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S) Licensor-1	
1	1	0.75	XS	XS	P43A-000KU	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S) Licensor-1	
1	1.5	0.5	XS	XS	P43A-000KV	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S) Licensor-1	
1	1.5	0.75	XS	XS	P43A-000KW	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S) Licensor-1	
1	1.5	1	XS	XS	P43A-000KX	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S) Licensor-1	
1	2	0.5	XS	XS	P43A-000KY	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S) Licensor-1	
1	2	0.75	XS	XS	P43A-000KZ	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S) Licensor-1	
1	2	1	XS	XS	P43A-000L0	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S) Licensor-1	
1	2	1.5	XS	XS	P43A-000L1	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S) Licensor-1	
1	3	1.5	STD	XS	P43A-000L2	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S) Licensor-1	

COUPLING (CPS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P47B-0007V	Coupling ASTM A105 Class 3000 ASME B16.11 SW - SW Licensor-1	
1	0.75				P47B-0007W	Coupling ASTM A105 Class 3000 ASME B16.11 SW - SW Licensor-1	
1					P47B-0007X	Coupling ASTM A105 Class 3000 ASME B16.11 SW - SW Licensor-1	
1	1.5				P47B-0007Y	Coupling ASTM A105 Class 3000 ASME B16.11 SW - SW Licensor-1	

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OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2 - 2.5	0.75			P31B-0138H	Outlet ASTM A105 Class 3000 MSS SP-97 SW Licensor-1	
1	3 - 5	0.75			P31B-0138J	Outlet ASTM A105 Class 3000 MSS SP-97 SW Licensor-1	
1	6 - 12	0.75			P31B-0138K	Outlet ASTM A105 Class 3000 MSS SP-97 SW Licensor-1	
1	14 - 36	0.75			P31B-0138L	Outlet ASTM A105 Class 3000 MSS SP-97 SW Licensor-1	
1	3	1			P31B-0138M	Outlet ASTM A105 Class 3000 MSS SP-97 SW Licensor-1	
1	4 - 5	1			P31B-0138N	Outlet ASTM A105 Class 3000 MSS SP-97 SW Licensor-1	
1	6 - 10	1			P31B-0138P	Outlet ASTM A105 Class 3000 MSS SP-97 SW Licensor-1	
1	12 - 36	1			P31B-0138R	Outlet ASTM A105 Class 3000 MSS SP-97 SW Licensor-1	
1	4	1.5			P31B-010L4	Outlet ASTM A105 Class 3000 MSS SP-97 SW Licensor-1	
1	5 - 6	1.5			P31B-0138S	Outlet ASTM A105 Class 3000 MSS SP-97 SW Licensor-1	
1	8 - 12	1.5			P31B-0138U	Outlet ASTM A105 Class 3000 MSS SP-97 SW Licensor-1	
1	14 - 24	1.5			P31B-0138T	Outlet ASTM A105 Class 3000 MSS SP-97 SW Licensor-1	
541	1	0.75			P31B-0118R	Outlet ASTM A105 Class 3000 MSS SP-97 NPT Licensor-1	
541	1.5	0.75			P31B-0118P	Outlet ASTM A105 Class 3000 MSS SP-97 NPT Licensor-1	
541	2 - 2.5	0.75			P31B-0138V	Outlet ASTM A105 Class 3000 MSS SP-97 NPT Licensor-1	
541	3 - 5	0.75			P31B-0138W	Outlet ASTM A105 Class 3000 MSS SP-97 NPT Licensor-1	
541	6 - 12	0.75			P31B-0138X	Outlet ASTM A105 Class 3000 MSS SP-97 NPT Licensor-1	
541	14 - 36	0.75			P31B-0138Y	Outlet ASTM A105 Class 3000 MSS SP-97 NPT Licensor-1	
1	6	2	XS	XS	P31B-00YFR	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	8	2	STD	XS	P31B-00XPL	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	10	2	XS	XS	P31B-012RH	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	12	2	XS	XS	P31B-012RK	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	14	2	SCH20	XS	P31B-00XN3	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	16	2	SCH20	XS	P31B-00XN6	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	18	2	SCH20	XS	P31B-00XN9	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	20	2	STD	XS	P31B-00XND	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	8	3	STD	STD	P31B-00XPM	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	10	3	XS	STD	P31B-012RJ	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	12	3	XS	STD	P31B-012RL	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	14	3	SCH20	STD	P31B-00XN4	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	16	3	SCH20	STD	P31B-00XN7	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	18	3	SCH20	STD	P31B-00XNA	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	20	3	STD	STD	P31B-00XNE	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	12	4	XS	XS	P31B-012RM	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	14	4	SCH20	XS	P31B-01080	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	16	4	SCH20	XS	P31B-01081	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	18	4	SCH20	XS	P31B-01082	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	20	4	STD	XS	P31B-01084	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	18	6	SCH20	XS	P31B-01083	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	20	6	STD	XS	P31B-01085	Outlet ASTM A105 MSS SP-97 BW Licensor-1	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30B-00067	Plug ASTM A105 ASME B16.11 NPT Round head Licensor-1	
1	0.75				P30B-00068	Plug ASTM A105 ASME B16.11 NPT Round head Licensor-1	
1	1				P30B-00069	Plug ASTM A105 ASME B16.11 NPT Round head Licensor-1	
1	1.5				P30B-0006A	Plug ASTM A105 ASME B16.11 NPT Round head Licensor-1	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P61B-00AB7	Flange SW ASTM A105 Class 600 ASME B16.5 RF Licensor-1	
1	0.75		XS		P61B-00AB8	Flange SW ASTM A105 Class 600 ASME B16.5 RF Licensor-1	
1	1		XS		P61B-00AB9	Flange SW ASTM A105 Class 600 ASME B16.5 RF Licensor-1	
1	1.5		XS		P61B-00ABA	Flange SW ASTM A105 Class 600 ASME B16.5 RF Licensor-1	
1	2		XS		P61B-009TD	Flange WN ASTM A105 Class 600 ASME B16.5 RF Licensor-1	
1	3		STD		P61B-009TE	Flange WN ASTM A105 Class 600 ASME B16.5 RF Licensor-1	
1	4		XS		P61B-009TF	Flange WN ASTM A105 Class 600 ASME B16.5 RF Licensor-1	
1	6		XS		P61B-009X8	Flange WN ASTM A105 Class 600 ASME B16.5 RF Licensor-1	
1	8		STD		P61B-00A12	Flange WN ASTM A105 Class 600 ASME B16.5 RF Licensor-1	

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FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	10		XS		P61B-009X0	Flange WN ASTM A105 Class 600 ASME B16.5 RF Licensor-1	
1	12		XS		P61B-00DJ0	Flange WN ASTM A105 Class 600 ASME B16.5 RF Licensor-1	
1	14		SCH20		P61B-00BDU	Flange WN ASTM A105 Class 600 ASME B16.5 RF Licensor-1	
1	16		SCH20		P61B-00ABL	Flange WN ASTM A105 Class 600 ASME B16.5 RF Licensor-1	
1	18		SCH20		P61B-00ABM	Flange WN ASTM A105 Class 600 ASME B16.5 RF Licensor-1	
1	20		STD		P61B-00ABN	Flange WN ASTM A105 Class 600 ASME B16.5 RF Licensor-1	
789	3		STD		P61B-009TG	Flange WN ASTM A105 Class 900 ASME B16.5 RJ Licensor-1	
789	4		XS		P61B-009TH	Flange WN ASTM A105 Class 900 ASME B16.5 RJ Licensor-1	
789	6		XS		P61B-00ADA	Flange WN ASTM A105 Class 900 ASME B16.5 RJ Licensor-1	
789	8		STD		P61B-00BE1	Flange WN ASTM A105 Class 900 ASME B16.5 RJ Licensor-1	
789	10		XS		P61B-00ADK	Flange WN ASTM A105 Class 900 ASME B16.5 RJ Licensor-1	
789	12		XS		P61B-00DJ1	Flange WN ASTM A105 Class 900 ASME B16.5 RJ Licensor-1	
789	14		SCH20		P61B-00BDX	Flange WN ASTM A105 Class 900 ASME B16.5 RJ Licensor-1	
789	16		SCH20		P61B-00BDY	Flange WN ASTM A105 Class 900 ASME B16.5 RJ Licensor-1	
789	18		SCH20		P61B-00BDZ	Flange WN ASTM A105 Class 900 ASME B16.5 RJ Licensor-1	
789	20		STD		P61B-00BE0	Flange WN ASTM A105 Class 900 ASME B16.5 RJ Licensor-1	
797	0.5		XS		P61B-00ADC	Flange SW ASTM A105 Class 1500 ASME B16.5 RJ Licensor-1	
797	0.75		XS		P61B-00ADD	Flange SW ASTM A105 Class 1500 ASME B16.5 RJ Licensor-1	
797	1		XS		P61B-00ADE	Flange SW ASTM A105 Class 1500 ASME B16.5 RJ Licensor-1	
797	1.5		XS		P61B-00ADF	Flange SW ASTM A105 Class 1500 ASME B16.5 RJ Licensor-1	
797	2		XS		P61B-009TN	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ Licensor-1	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67B-002DL	Blind flange ASTM A105 Class 600 ASME B16.5 RF Licensor-1	
1	0.75				P67B-002DM	Blind flange ASTM A105 Class 600 ASME B16.5 RF Licensor-1	
1	1				P67B-002DN	Blind flange ASTM A105 Class 600 ASME B16.5 RF Licensor-1	
1	1.5				P67B-002DP	Blind flange ASTM A105 Class 600 ASME B16.5 RF Licensor-1	
1	2				P67B-002DR	Blind flange ASTM A105 Class 600 ASME B16.5 RF Licensor-1	
1	3				P67B-002DS	Blind flange ASTM A105 Class 600 ASME B16.5 RF Licensor-1	
1	4				P67B-002DT	Blind flange ASTM A105 Class 600 ASME B16.5 RF Licensor-1	
1	6				P67B-002LV	Blind flange ASTM A105 Class 600 ASME B16.5 RF Licensor-1	
1	8				P67B-002LW	Blind flange ASTM A105 Class 600 ASME B16.5 RF Licensor-1	
1	10				P67B-002LZ	Blind flange ASTM A105 Class 600 ASME B16.5 RF Licensor-1	
1	12				P67B-002SX	Blind flange ASTM A105 Class 600 ASME B16.5 RF Licensor-1	
1	14				P67B-002SY	Blind flange ASTM A105 Class 600 ASME B16.5 RF Licensor-1	
1	16				P67B-002SZ	Blind flange ASTM A105 Class 600 ASME B16.5 RF Licensor-1	
1	18				P67B-002T0	Blind flange ASTM A105 Class 600 ASME B16.5 RF Licensor-1	
1	20				P67B-002T1	Blind flange ASTM A105 Class 600 ASME B16.5 RF Licensor-1	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000J8	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000J9	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000JA	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000JB	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000JH	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000JL	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000JM	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	6				P73T-000JN	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	8				P73T-000JP	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	10				P73T-000JC	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	12				P73T-000JD	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	14				P73T-000JE	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	16				P73T-000JF	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	18				P73T-000JG	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	20				P73T-000JJ	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
789	3				P75T-000JN	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	4				P75T-000JP	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	6				P75T-000JR	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	8				P75T-000JS	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	10				P75T-000JL	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	12				P75T-000JM	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	14				P75T-000MJ	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	16				P75T-000MK	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	18				P75T-000N8	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	20				P75T-000N7	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	0.5				P75T-000JT	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	0.75				P75T-000JU	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	1				P75T-000JV	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	1.5				P75T-000JW	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	2				P75T-0008A	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-6				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	8-20				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
789	1-3				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
789	4-20				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
797	0.5-2				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81B-001CX	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated Licensor-1	
1	0.75				P81B-001CY	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated Licensor-1	
1	1				P81B-001CZ	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated Licensor-1	
1	1.5				P81B-001D0	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated Licensor-1	
1	2				P81C-004RL	Gate valve ASTM A216 Grade WCB Class 600 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated Licensor-1	
1	3				P81C-004RM	Gate valve ASTM A216 Grade WCB Class 600 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated Licensor-1	
1	4				P81C-004RN	Gate valve ASTM A216 Grade WCB Class 600 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated Licensor-1	
1	6				P81C-0092G	Gate valve ASTM A216 Grade WCB Class 600 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated Licensor-1	
1	8				P81C-0053D	Gate valve ASTM A216 Grade WCB Class 600 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated Licensor-1	
1	10				P81C-0053C	Gate valve ASTM A216 Grade WCB Class 600 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated Licensor-1	
1	12				P81C-008DE	Gate valve ASTM A216 Grade WCB Class 600 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated Licensor-1	
714	0.5				P81B-002S7	Gate valve ASTM A105 Class 800 API 602 SW - NPT Trim number 8 BB-BG-OS&Y Handwheel operated Licensor-1	
714	0.75				P81B-002F5	Gate valve ASTM A105 Class 800 API 602 SW - NPT Trim number 8 BB-BG-OS&Y Handwheel operated Licensor-1	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82B-0014L	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated Licensor-1	
1	0.75				P82B-0014M	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated Licensor-1	
1	1				P82B-0014N	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated Licensor-1	
1	1.5				P82B-0014P	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated Licensor-1	
1	2				P82C-002AN	Globe valve ASTM A216 Grade WCB Class 600 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated Licensor-1	

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GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3				P82C-002AP	Globe valve ASTM A216 Grade WCB Class 600 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated Licensor-1	
1	4				P82C-002AR	Globe valve ASTM A216 Grade WCB Class 600 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated Licensor-1	
1	6				P82C-004DF	Globe valve ASTM A216 Grade WCB Class 600 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated Licensor-1	
1	8				P82C-002V1	Globe valve ASTM A216 Grade WCB Class 600 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated Licensor-1	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83B-000WE	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover Licensor-1	
1	0.75				P83B-000WF	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover Licensor-1	
1	1				P83B-000WG	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover Licensor-1	
1	1.5				P83B-000WH	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover Licensor-1	
1	2				P83C-0027F	Check valve ASTM A216 Grade WCB Class 600 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover Licensor-1	
1	3				P83C-0027G	Check valve ASTM A216 Grade WCB Class 600 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover Licensor-1	
1	4				P83C-0027H	Check valve ASTM A216 Grade WCB Class 600 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover Licensor-1	
1	6				P83C-002G6	Check valve ASTM A216 Grade WCB Class 600 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover Licensor-1	
1	8				P83C-002G7	Check valve ASTM A216 Grade WCB Class 600 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover Licensor-1	
1	10				P83C-002WB	Check valve ASTM A216 Grade WCB Class 600 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover Licensor-1	
4602	12				P83C-003TG	Check valve ASTM A216 Grade WCB Class 600 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover Licensor-1	

DP CHECK VALVE (XDP)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	12				P88C-003CH	Dual plate check valve ASTM A216 Grade WCB Class 600 API 594 Wafer-type ASME B16.5 RF Trim number 8 Internal wetted parts 13Cr Spring Inconel Retainerless-type Licensor-1	

BALL VALVE (Q)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P84B-0014D	Ball valve Long-pattern ASTM A105 Class 600 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design Licensor-1	
1	0.75				P84B-0014E	Ball valve Long-pattern ASTM A105 Class 600 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design Licensor-1	
1	1				P84B-0014F	Ball valve Long-pattern ASTM A105 Class 600 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design Licensor-1	
1	1.5				P84B-0014G	Ball valve Long-pattern ASTM A105 Class 600 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design Licensor-1	
1	2				P84C-006NM	Ball valve Long-pattern ASTM A216 Grade WCB Class 600 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Wrench lever operated Reduced bore Fire tested design Licensor-1	
1	3				P84C-005YZ	Ball valve Long-pattern ASTM A216 Grade WCB Class 600 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Reduced bore Fire tested design Licensor-1	
1	4				P84C-005Z0	Ball valve Long-pattern ASTM A216 Grade WCB Class 600 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Reduced bore Fire tested design Licensor-1	
1	6				P84C-006NN	Ball valve Long-pattern ASTM A216 Grade WCB Class 600 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Reduced bore Fire tested design Licensor-1	
24	0.5				P84B-0014H	Ball valve Long-pattern ASTM A105 Class 600 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design Licensor-1	
24	0.75				P84B-0014J	Ball valve Long-pattern ASTM A105 Class 600 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design Licensor-1	
24	1				P84B-0014K	Ball valve Long-pattern ASTM A105 Class 600 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design Licensor-1	
24	1.5				P84B-0014L	Ball valve Long-pattern ASTM A105 Class 600 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design Licensor-1	
24	2				P84C-005Z1	Ball valve Long-pattern ASTM A216 Grade WCB Class 600 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Wrench lever operated Full bore Fire tested design Licensor-1	
24	3				P84C-005Z2	Ball valve Long-pattern ASTM A216 Grade WCB Class 600 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design Licensor-1	
24	4				P84C-005Z3	Ball valve Long-pattern ASTM A216 Grade WCB Class 600 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design Licensor-1	
24	6				P84C-006NP	Ball valve Long-pattern ASTM A216 Grade WCB Class 600 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design Licensor-1	

ORIFICE FLANGE (FO)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2		XS		P66B-008FE	Orifice flange WN ASTM A105 Class 600 ASME B16.36 RF NPS1/2 SW tap x 1 Licensor-1	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3		STD		P66B-008FF	Orifice flange WN ASTM A105 Class 600 ASME B16.36 RF NPS1/2 SW tap x 1 Licensor-1	
200	2		XS		P66B-008FJ	Orifice flange WN ASTM A105 Class 600 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw Licensor-1	
200	3		STD		P66B-008FK	Orifice flange WN ASTM A105 Class 600 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw Licensor-1	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71B-000E5	Spectacle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	0.75				P71B-000E6	Spectacle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	1				P71B-000E7	Spectacle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	1.5				P71B-000E8	Spectacle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	2				P71B-000E9	Spectacle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	3				P71B-000EA	Spectacle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	4				P71B-000EB	Spectacle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	6				P71B-000EC	Spectacle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF Licensor-1	

PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	8				P72B-000M9	Paddle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	10				P72B-000MS	Paddle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	12				P72B-000PE	Paddle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	14				P72B-000PF	Paddle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	16				P72B-000PG	Paddle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	18				P72B-000PH	Paddle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	20				P72B-000PJ	Paddle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF Licensor-1	

PADDLE SPACER (PS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	8				P72B-000M8	Paddle spacer ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	10				P72B-000MR	Paddle spacer ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	12				P72B-000PK	Paddle spacer ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	14				P72B-000PL	Paddle spacer ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	16				P72B-000PM	Paddle spacer ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	18				P72B-000PN	Paddle spacer ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	20				P72B-000PP	Paddle spacer ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF Licensor-1	

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BOLT TABLE (B_D1AP01 , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	80	P80S-003V6		
0.75	4	0.625	90	P80S-003XF		
1	4	0.625	95	P80S-003XG		
1.5	4	0.750	110	P80S-003XK		
2	8	0.625	110	P80S-003VC		
3	8	0.750	130	P80S-003XP		
4	8	0.875	150	P80S-0041F		
6	12	1.000	175	P80S-0043P		
8	12	1.125	195	P80S-0046W		
10	16	1.250	250	P80S-004AY		
12	20	1.250	255	P80S-004AZ		
14	20	1.375	270	P80S-003E7		
16	20	1.500	295	P80S-003FL		
18	20	1.625	320	P80S-005TT		
20	24	1.625	335	P80S-005TW		

BOLT TABLE (B_D1AP01_789 , STUD ASME RJ, OPTION CODE 789)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	110		R12	
0.75	4	0.750	115		R14	
1	4	0.875	130	P80S-0041B	R16	
1.5	4	1.000	140		R20	
2	8	0.875	150	P80S-0041F	R24	
3	8	0.875	150	P80S-0041F	R31	P75T-000JN
4	8	1.125	175	P80S-0046S	R37	P75T-000JP
6	12	1.125	200	P80S-0046X	R45	P75T-000JR
8	12	1.375	260	P80S-003E5	R49	P75T-000JS
10	16	1.375	275	P80S-003E8	R53	P75T-000JL
12	20	1.375	295	P80S-003EC	R57	P75T-000JM
14	20	1.500	325	P80S-008N3	R62	P75T-000MJ
16	20	1.625	340	P80S-005TX	R66	P75T-000MK
18	20	1.875	390	P80S-008P6	R70	P75T-000N8
20	20	2.000	415	P80S-005VG	R74	P75T-000N7

BOLT TABLE (B_D1AP01_797 , STUD ASME RJ, OPTION CODE 797)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	110	P80S-003XK	R12	P75T-000JT
0.75	4	0.750	115	P80S-003XL	R14	P75T-000JU
1	4	0.875	130	P80S-0041B	R16	P75T-000JV
1.5	4	1.000	140	P80S-0043F	R20	P75T-000JW
2	8	0.875	150	P80S-0041F	R24	P75T-0008A
3	8	1.125	180		R35	
4	8	1.250	230		R39	
6	12	1.375	300		R46	
8	12	1.625	345		R50	
10	12	1.875	395		R54	
12	16	2.000	445		R58	
14	16	2.250	490		R63	
16	16	2.500	540		R67	
18	16	2.750	590		R71	
20	16	3.000	650		R75	

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BRANCH TABLE (T_D1AP01)

RUN PIPE SIZE (in) \ BRANCH SIZE (in)	0.5	0.75	1	1.5	2	3	4	6	8	10	12	14	16	18	20
0.5	TS														
0.75		TS													
1		TR	TS												
1.5		TR	TR	TS											
2		L	TR	TR	TS										
3		L	L	TR	TR	TS									
4	L	L	L	L	TR	TR	TS								
6	L	L	L	L	L	TR	TR	TS							
8		L	L	L	L	L	TR	TR	TS						
10		L	L	L	L	L	TR	TR	TR	TS					
12		L	L	L	L	L	L	TR	TR	TR	TS				
14		L	L	L	L	L	L	TR	TR	TR	TR	TS			
16		L	L	L	L	L	L	TR	TR	TR	TR	TR	TS		
18		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TS	
20		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TR	TS

L : OUTLET
TS : STRAIGHT TEE
TR : REDUCING TEE

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PIPING CLASS

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Material : Killed CS
Rating : ASME CLASS 600
Flange Face : RF
C.A.(mm) : 1.50
Gasket : Spiral Wound
Service : PROCESS - GENERAL PROCESS NON SOUR, NON CORROSIVE
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
2	USE OF SOFT SEATED BALL, PLUG AND BUTTERFLY VALVES SHALL BE LIMITED TO MAXIMUM OF 204DEGC (400DEGF)

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
24	FULL PORT (Q)
200	WITH JACK SCREW (FO)
541	NPT(F) (CA,L)
714	SW - NPT(F) (V)
789	CLASS 900 (B,F,G)
797	CLASS 1500 (B,F,G,V)
805	CLASS 2500 (B,F,G)
4406	ORIFICE FLANGE WITH 3/4" SINGLE TAP (FO)
4407	ORIFICE FLANGE WITH JACK SCREW AND 3/4" SINGLE TAP (FO)
4601	Y-PATTERN (W)

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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P01A-000XM	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	0.75		XS		P01A-000XN	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1		XS		P01A-000XP	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1.5		XS		P01A-000XV	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	2		XS		P01A-000YX	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	3		STD		P01A-000YM	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	4		XS		P01A-000Z9	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	6		XS		P01A-000ZF	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	8		SCH60		P01A-001BK	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	10		XS		P01A-000Y2	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	12		XS		P01A-000YB	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	14		SCH20		P01A-0017A	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	16		SCH20		P01A-0018E	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P02B-00014	90 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	0.75				P02B-00015	90 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	1				P02B-00016	90 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5				P02B-00017	90 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	2		XS		P02A-000CP	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		STD		P02A-000CU	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		XS		P02A-000D3	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		XS		P02A-000DA	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		SCH60		P02A-000MC	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	10		XS		P02A-000BN	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	12		XS		P02A-000BX	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	14		SCH20		P02A-000FX	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	16		SCH20		P02A-000GM	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P03B-00017	45 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	0.75				P03B-00018	45 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	1				P03B-00019	45 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5				P03B-0001A	45 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	2		XS		P03A-000AS	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		STD		P03A-000AX	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		XS		P03A-000B3	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		XS		P03A-000B8	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		SCH60		P03A-000K5	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	10		XS		P03A-000A3	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	12		XS		P03A-000A8	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	14		SCH20		P03A-000DW	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	16		SCH20		P03A-000EM	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P21B-00017	Straight tee ASTM A105 Class 3000 ASME B16.11 SW	
1	0.75				P21B-00018	Straight tee ASTM A105 Class 3000 ASME B16.11 SW	
1	1				P21B-00019	Straight tee ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5				P21B-0001A	Straight tee ASTM A105 Class 3000 ASME B16.11 SW	
1	2		XS		P21A-001CJ	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		STD		P21A-001CU	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		XS		P21A-001CV	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6		XS		P21A-001D4	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8		SCH60		P21A-0025S	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10		XS		P21A-001C0	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12		XS		P21A-001C5	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14		SCH20		P21A-00206	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16		SCH20		P21A-0020X	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75			P24B-0002L	Reducing tee ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5	0.75			P24B-0002N	Reducing tee ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5	1			P24B-0002P	Reducing tee ASTM A105 Class 3000 ASME B16.11 SW	
1	2	1	XS	XS	P24A-00238	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	XS	XS	P24A-0023H	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	STD	XS	P24A-00214	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	STD	XS	P24A-002HW	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	XS	XS	P24A-0023E	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	XS	STD	P24A-006FZ	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	XS	STD	P24A-006G0	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	XS	XS	P24A-00243	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH60	XS	P24A-00GAV	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH60	XS	P24A-0062G	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	XS	XS	P24A-0023C	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	XS	XS	P24A-00241	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	XS	SCH60	P24A-0062H	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	XS	XS	P24A-0024J	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	XS	SCH60	P24A-0062J	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	XS	XS	P24A-00240	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	SCH20	XS	P24A-00L6S	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	SCH20	SCH60	P24A-00PZG	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	SCH20	XS	P24A-00NY2	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	SCH20	XS	P24A-00PZF	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	6	SCH20	XS	P24A-00K13	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	SCH20	SCH60	P24A-00PYY	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	SCH20	XS	P24A-00NY3	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	SCH20	XS	P24A-00PYX	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	SCH20	SCH20	P24A-002XF	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	STD	XS	P27A-001MZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	XS	XS	P27A-001E4	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	XS	STD	P27A-0048S	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	XS	STD	P27A-0048T	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	XS	XS	P27A-001EB	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH60	XS	P27A-00435	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH60	XS	P27A-00436	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	XS	XS	P27A-001E8	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	XS	XS	P27A-001F2	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	XS	SCH60	P27A-00437	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	XS	XS	P27A-001F3	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	XS	SCH60	P27A-00438	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	XS	XS	P27A-001EA	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	SCH20	XS	P27A-003NA	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	SCH20	SCH60	P27A-00J8Z	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	SCH20	XS	P27A-0090Y	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	SCH20	XS	P27A-00J8Y	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	SCH20	SCH60	P27A-00J8S	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	SCH20	XS	P27A-0090X	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	SCH20	XS	P27A-00J8R	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	SCH20	SCH20	P27A-001V2	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	STD	XS	P28A-001N5	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	XS	XS	P28A-001EJ	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	XS	STD	P28A-0048H	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	XS	STD	P28A-0048J	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	XS	XS	P28A-001ER	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH60	XS	P28A-0042X	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH60	XS	P28A-0042Y	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	XS	XS	P28A-001EM	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	XS	XS	P28A-001FR	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	XS	SCH60	P28A-0042Z	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	XS	XS	P28A-001GE	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	XS	SCH60	P28A-00430	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	XS	XS	P28A-001EP	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	SCH20	XS	P28A-003N4	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	SCH20	SCH60	P28A-00FK1	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	SCH20	XS	P28A-005SB	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	SCH20	XS	P28A-00FK0	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	SCH20	SCH60	P28A-00FJU	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	SCH20	XS	P28A-005SC	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	SCH20	XS	P28A-00FJT	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	SCH20	SCH20	P28A-001WG	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P29B-0001J	Cap ASTM A105 Class 3000 ASME B16.11 SW	
1	0.75				P29B-0001F	Cap ASTM A105 Class 3000 ASME B16.11 SW	
1	1				P29B-0001G	Cap ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5				P29B-0001H	Cap ASTM A105 Class 3000 ASME B16.11 SW	
1	2		XS		P29A-000A1	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		STD		P29A-000BK	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		XS		P29A-000B9	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6		XS		P29A-000BF	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8		SCH60		P29A-000PE	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10		XS		P29A-000BD	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12		XS		P29A-000BJ	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14		SCH20		P29A-000EA	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16		SCH20		P29A-000F3	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
541	0.75				P29B-0000C	Cap ASTM A105 Class 3000 ASME B16.11 NPT	
541	1				P29B-0000D	Cap ASTM A105 Class 3000 ASME B16.11 NPT	
541	1.5				P29B-0000E	Cap ASTM A105 Class 3000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P41A-000B5	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		SCH160		P41A-000B6	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		SCH160		P41A-000B7	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		SCH160		P41A-000B8	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

CON SWAGED NIPPLE (SNC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	XS	XS	P42A-00036	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	XS	XS	P42A-00038	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	XS	XS	P42A-0003B	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	XS	XS	P42A-00035	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	XS	XS	P42A-00039	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	XS	XS	P42A-0003C	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	XS	XS	P42A-0008C	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	XS	XS	P42A-0008D	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	XS	XS	P42A-0008E	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2	1.5	XS	XS	P42A-0008F	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	STD	XS	P42A-0007V	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	

ECC SWAGED NIPPLE (SNE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	XS	XS	P43A-00036	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	XS	XS	P43A-00037	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	XS	XS	P43A-00038	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	XS	XS	P43A-00039	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	XS	XS	P43A-0003A	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	XS	XS	P43A-0003B	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	XS	XS	P43A-00042	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	XS	XS	P43A-00043	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	XS	XS	P43A-00044	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	XS	XS	P43A-00045	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	STD	XS	P43A-0003J	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	

COUPLING (CPS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P47B-0001D	Coupling ASTM A105 Class 3000 ASME B16.11 SW - SW	
1	0.75				P47B-0001E	Coupling ASTM A105 Class 3000 ASME B16.11 SW - SW	
1	1				P47B-0001F	Coupling ASTM A105 Class 3000 ASME B16.11 SW - SW	
1	1.5				P47B-0001G	Coupling ASTM A105 Class 3000 ASME B16.11 SW - SW	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2 - 2.5	0.75			P31B-0137J	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	3 - 5	0.75			P31B-0137K	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	6 - 12	0.75			P31B-007AB	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	14 - 36	0.75			P31B-007AJ	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	3	1			P31B-007A7	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	4 - 5	1			P31B-0138Z	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	6 - 10	1			P31B-007A4	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	12 - 36	1			P31B-007AA	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	4	1.5			P31B-005SN	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	5 - 6	1.5			P31B-01390	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	8 - 12	1.5			P31B-0079U	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	14 - 24	1.5			P31B-007A0	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
541	1	0.75			P31B-00551	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
541	1.5	0.75			P31B-00555	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
541	2 - 2.5	0.75			P31B-0137H	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
541	3 - 5	0.75			P31B-01376	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
541	6 - 12	0.75			P31B-007GR	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
541	14 - 36	0.75			P31B-007GY	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
1	6	2	XS	XS	P31B-007SG	Outlet ASTM A105 MSS SP-97 BW	
1	8	2	SCH60	XS	P31B-00AGZ	Outlet ASTM A105 MSS SP-97 BW	
1	10	2	XS	XS	P31B-00AS9	Outlet ASTM A105 MSS SP-97 BW	
1	12	2	XS	XS	P31B-00CBM	Outlet ASTM A105 MSS SP-97 BW	
1	14	2	SCH20	XS	P31B-00TF9	Outlet ASTM A105 MSS SP-97 BW	
1	16	2	SCH20	XS	P31B-00TF8	Outlet ASTM A105 MSS SP-97 BW	
1	8	3	SCH60	STD	P31B-00A2U	Outlet ASTM A105 MSS SP-97 BW	
1	10	3	XS	STD	P31B-009CL	Outlet ASTM A105 MSS SP-97 BW	
1	12	3	XS	STD	P31B-0096M	Outlet ASTM A105 MSS SP-97 BW	
1	14	3	SCH20	STD	P31B-00UPH	Outlet ASTM A105 MSS SP-97 BW	
1	16	3	SCH20	STD	P31B-00TU2	Outlet ASTM A105 MSS SP-97 BW	
1	12	4	XS	XS	P31B-008ZP	Outlet ASTM A105 MSS SP-97 BW	
1	14	4	SCH20	XS	P31B-00P1M	Outlet ASTM A105 MSS SP-97 BW	
1	16	4	SCH20	XS	P31B-00P1S	Outlet ASTM A105 MSS SP-97 BW	

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PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30B-0002D	Plug ASTM A105 ASME B16.11 NPT Round head	
1	0.75				P30B-0002E	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1				P30B-0002F	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1.5				P30B-0002G	Plug ASTM A105 ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P61B-001FF	Flange SW ASTM A105 Class 600 ASME B16.5 RF	
1	0.75		XS		P61B-001FH	Flange SW ASTM A105 Class 600 ASME B16.5 RF	
1	1		XS		P61B-001DR	Flange SW ASTM A105 Class 600 ASME B16.5 RF	
1	1.5		XS		P61B-001DV	Flange SW ASTM A105 Class 600 ASME B16.5 RF	
1	2		XS		P61B-001DH	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
1	3		STD		P61B-001TW	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
1	4		XS		P61B-001SH	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
1	6		XS		P61B-001T1	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
1	8		SCH60		P61B-003TE	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
1	10		XS		P61B-001JN	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
1	12		XS		P61B-001PC	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
1	14		SCH20		P61B-0079A	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
1	16		SCH20		P61B-00798	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
789	3		STD		P61B-006SP	Flange WN ASTM A105 Class 900 ASME B16.5 RJ	
789	4		XS		P61B-00655	Flange WN ASTM A105 Class 900 ASME B16.5 RJ	
789	6		XS		P61B-00656	Flange WN ASTM A105 Class 900 ASME B16.5 RJ	
789	8		SCH60		P61B-0068B	Flange WN ASTM A105 Class 900 ASME B16.5 RJ	
789	10		XS		P61B-009UV	Flange WN ASTM A105 Class 900 ASME B16.5 RJ	
789	12		XS		P61B-009UW	Flange WN ASTM A105 Class 900 ASME B16.5 RJ	
789	14		SCH20		P61B-009TS	Flange WN ASTM A105 Class 900 ASME B16.5 RJ	
789	16		SCH20		P61B-009TT	Flange WN ASTM A105 Class 900 ASME B16.5 RJ	
797	0.5		XS		P61B-009T3	Flange SW ASTM A105 Class 1500 ASME B16.5 RJ	
797	0.75		XS		P61B-009T4	Flange SW ASTM A105 Class 1500 ASME B16.5 RJ	
797	1		XS		P61B-009T5	Flange SW ASTM A105 Class 1500 ASME B16.5 RJ	
797	1.5		XS		P61B-009T6	Flange SW ASTM A105 Class 1500 ASME B16.5 RJ	
797	2		XS		P61B-0065C	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
805	0.5		XS		P61B-006KY	Flange SW ASTM A105 Class 2500 ASME B16.5 RJ	
805	0.75		XS		P61B-006KZ	Flange SW ASTM A105 Class 2500 ASME B16.5 RJ	
805	1		XS		P61B-006L0	Flange SW ASTM A105 Class 2500 ASME B16.5 RJ	
805	1.5		XS		P61B-006L1	Flange SW ASTM A105 Class 2500 ASME B16.5 RJ	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67B-000J7	Blind flange ASTM A105 Class 600 ASME B16.5 RF	
1	0.75				P67B-000J8	Blind flange ASTM A105 Class 600 ASME B16.5 RF	
1	1				P67B-000J9	Blind flange ASTM A105 Class 600 ASME B16.5 RF	
1	1.5				P67B-000JA	Blind flange ASTM A105 Class 600 ASME B16.5 RF	
1	2				P67B-000JG	Blind flange ASTM A105 Class 600 ASME B16.5 RF	
1	3				P67B-000JK	Blind flange ASTM A105 Class 600 ASME B16.5 RF	
1	4				P67B-000JL	Blind flange ASTM A105 Class 600 ASME B16.5 RF	
1	6				P67B-000JM	Blind flange ASTM A105 Class 600 ASME B16.5 RF	
1	8				P67B-000JN	Blind flange ASTM A105 Class 600 ASME B16.5 RF	
1	10				P67B-000JB	Blind flange ASTM A105 Class 600 ASME B16.5 RF	
1	12				P67B-000JC	Blind flange ASTM A105 Class 600 ASME B16.5 RF	
1	14				P67B-000JD	Blind flange ASTM A105 Class 600 ASME B16.5 RF	
1	16				P67B-000JE	Blind flange ASTM A105 Class 600 ASME B16.5 RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000J8	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000J9	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

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GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P73T-000JA	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000JB	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000JH	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000JL	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000JM	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	6				P73T-000JN	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	8				P73T-000JP	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	10				P73T-000JC	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	12				P73T-000JD	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	14				P73T-000JE	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	16				P73T-000JF	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
789	3				P75T-000JN	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	4				P75T-000JP	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	6				P75T-000JR	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	8				P75T-000JS	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	10				P75T-000JL	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	12				P75T-000JM	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	14				P75T-000MJ	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	16				P75T-000MK	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	0.5				P75T-000JT	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	0.75				P75T-000JU	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	1				P75T-000JV	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	1.5				P75T-000JW	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	2				P75T-0008A	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	0.5				P75T-000KT	Ring joint gasket Soft iron Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	0.75				P75T-000KU	Ring joint gasket Soft iron Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	1				P75T-000KV	Ring joint gasket Soft iron Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	1.5				P75T-000KW	Ring joint gasket Soft iron Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-6				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	8-16				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
789	1-3				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
789	4-16				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
797	0.5-2				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
805	0.5-1				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
805	1.5				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
805	2				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81B-000P4	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	0.75				P81B-000NX	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	1				P81B-000NY	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	1.5				P81B-000NZ	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	2				P81C-004KW	Gate valve ASTM A216 Grade WCB Class 600 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	3				P81C-004L3	Gate valve ASTM A216 Grade WCB Class 600 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	4				P81C-004L4	Gate valve ASTM A216 Grade WCB Class 600 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	6				P81C-0087J	Gate valve ASTM A216 Grade WCB Class 600 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated	
1	8				P81C-004LB	Gate valve ASTM A216 Grade WCB Class 600 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated	

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GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	10				P81C-004L6	Gate valve ASTM A216 Grade WCB Class 600 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated	
1	12				P81C-004L7	Gate valve ASTM A216 Grade WCB Class 600 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated	
1	14				P81C-004L8	Gate valve ASTM A216 Grade WCB Class 600 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated	
1	16				P81C-004L9	Gate valve ASTM A216 Grade WCB Class 600 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated	
714	0.5				P81B-0015L	Gate valve ASTM A105 Class 800 API 602 SW - NPT Trim number 8 BB-BG-OS&Y Handwheel operated	
714	0.75				P81B-002F4	Gate valve ASTM A105 Class 800 API 602 SW - NPT Trim number 8 BB-BG-OS&Y Handwheel operated	
797	0.75				P81B-0021Y	Gate valve ASTM A105 Class 1500 API 602 BW XS Trim number 8 WB-BG-OS&Y Handwheel operated	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82B-000K0	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	0.75				P82B-000HB	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	1				P82B-000HC	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	1.5				P82B-000HD	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	2				P82C-0028Z	Globe valve ASTM A216 Grade WCB Class 600 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	3				P82C-00293	Globe valve ASTM A216 Grade WCB Class 600 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	4				P82C-00294	Globe valve ASTM A216 Grade WCB Class 600 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	6				P82C-004DE	Globe valve ASTM A216 Grade WCB Class 600 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated	
1	8				P82C-00296	Globe valve ASTM A216 Grade WCB Class 600 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated	
4601	1.5				P82B-0022K	Y-pattern globe valve ASTM A105 Class 600 ASME B16.34 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83B-000FX	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover	
1	0.75				P83B-000ER	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover	
1	1				P83B-000ES	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover	
1	1.5				P83B-000ET	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover	
1	2				P83C-0025Z	Check valve ASTM A216 Grade WCB Class 600 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	3				P83C-00260	Check valve ASTM A216 Grade WCB Class 600 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	4				P83C-00261	Check valve ASTM A216 Grade WCB Class 600 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	6				P83C-00262	Check valve ASTM A216 Grade WCB Class 600 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	8				P83C-00263	Check valve ASTM A216 Grade WCB Class 600 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	10				P83C-00264	Check valve ASTM A216 Grade WCB Class 600 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	

DP CHECK VALVE (XDP)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	12				P88C-0023H	Dual plate check valve ASTM A216 Grade WCB Class 600 API 594 Wafer-type ASME B16.5 RF Trim number 8 Internal wetted parts 13Cr Spring Inconel Retainerless-type	
1	14				P88C-0023J	Dual plate check valve ASTM A216 Grade WCB Class 600 API 594 Wafer-type ASME B16.5 RF Trim number 8 Internal wetted parts 13Cr Spring Inconel Retainerless-type	
1	16				P88C-0023K	Dual plate check valve ASTM A216 Grade WCB Class 600 API 594 Wafer-type ASME B16.5 RF Trim number 8 Internal wetted parts 13Cr Spring Inconel Retainerless-type	

BALL VALVE (Q)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P84B-001LB	Ball valve Long-pattern ASTM A105 Class 600 API 608 Flange ASME B16.5 RF Ball SS316L Seat R-PTFE Trim SS316L Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design	
1	0.75				P84B-001LC	Ball valve Long-pattern ASTM A105 Class 600 API 608 Flange ASME B16.5 RF Ball SS316L Seat R-PTFE Trim SS316L Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design	
1	1				P84B-001LD	Ball valve Long-pattern ASTM A105 Class 600 API 608 Flange ASME B16.5 RF Ball SS316L Seat R-PTFE Trim SS316L Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design	
1	1.5				P84B-001LE	Ball valve Long-pattern ASTM A105 Class 600 API 608 Flange ASME B16.5 RF Ball SS316L Seat R-PTFE Trim SS316L Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design	
1	2				P84C-007AD	Ball valve Long-pattern ASTM A216 Grade WCB Class 600 API 608 Flange ASME B16.5 RF Ball SS316L Seat R-PTFE Trim SS316L Trunnion-type Side-entry Wrench lever operated Reduced bore Fire tested design	
1	3				P84C-007AE	Ball valve Long-pattern ASTM A216 Grade WCB Class 600 API 608 Flange ASME B16.5 RF Ball SS316L Seat R-PTFE Trim SS316L Trunnion-type Side-entry Gear operated Reduced bore Fire tested design	
1	4				P84C-007AF	Ball valve Long-pattern ASTM A216 Grade WCB Class 600 API 608 Flange ASME B16.5 RF Ball SS316L Seat R-PTFE Trim SS316L Trunnion-type Side-entry Gear operated Reduced bore Fire tested design	

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BALL VALVE (Q)

OPTION CODE	SIZE L / RUN	SIZE S / BRN	WALL THICKNESS (L)	WALL THICKNESS (S)	IDENT CODE	DESCRIPTION	NOTE
1	6				P84C-007AG	Ball valve Long-pattern ASTM A216 Grade WCB Class 600 API 608 Flange ASME B16.5 RF Ball SS316L Seat R-PTFE Trim SS316L Trunnion-type Side-entry Gear operated Reduced bore Fire tested design	
24	0.5				P84B-001LF	Ball valve Long-pattern ASTM A105 Class 600 API 608 Flange ASME B16.5 RF Ball SS316L Seat R-PTFE Trim SS316L Floating-type Side-entry Wrench lever operated Full bore Fire tested design	
24	0.75				P84B-001LG	Ball valve Long-pattern ASTM A105 Class 600 API 608 Flange ASME B16.5 RF Ball SS316L Seat R-PTFE Trim SS316L Floating-type Side-entry Wrench lever operated Full bore Fire tested design	
24	1				P84B-001LH	Ball valve Long-pattern ASTM A105 Class 600 API 608 Flange ASME B16.5 RF Ball SS316L Seat R-PTFE Trim SS316L Floating-type Side-entry Wrench lever operated Full bore Fire tested design	
24	1.5				P84B-001LJ	Ball valve Long-pattern ASTM A105 Class 600 API 608 Flange ASME B16.5 RF Ball SS316L Seat R-PTFE Trim SS316L Floating-type Side-entry Wrench lever operated Full bore Fire tested design	
24	2				P84C-007AH	Ball valve Long-pattern ASTM A216 Grade WCB Class 600 API 608 Flange ASME B16.5 RF Ball SS316L Seat R-PTFE Trim SS316L Trunnion-type Side-entry Wrench lever operated Full bore Fire tested design	
24	3				P84C-007AJ	Ball valve Long-pattern ASTM A216 Grade WCB Class 600 API 608 Flange ASME B16.5 RF Ball SS316L Seat R-PTFE Trim SS316L Trunnion-type Side-entry Gear operated Full bore Fire tested design	
24	4				P84C-007AK	Ball valve Long-pattern ASTM A216 Grade WCB Class 600 API 608 Flange ASME B16.5 RF Ball SS316L Seat R-PTFE Trim SS316L Trunnion-type Side-entry Gear operated Full bore Fire tested design	
24	6				P84C-007AL	Ball valve Long-pattern ASTM A216 Grade WCB Class 600 API 608 Flange ASME B16.5 RF Ball SS316L Seat R-PTFE Trim SS316L Trunnion-type Side-entry Gear operated Full bore Fire tested design	

BUTTERFLY VALVE (H)

OPTION CODE	SIZE L / RUN	SIZE S / BRN	WALL THICKNESS (L)	WALL THICKNESS (S)	IDENT CODE	DESCRIPTION	NOTE
1	12				P86C-0023U	Offset design butterfly valve ASTM A216 Grade WCB Class 600 API 609 Category B Lug-type ASME B16.5 RF Disc CS Seat Stellite-6 Trim 13Cr Triple eccentric design BG Gear operated	

NEEDLE VALVE (NV)

OPTION CODE	SIZE L / RUN	SIZE S / BRN	WALL THICKNESS (L)	WALL THICKNESS (S)	IDENT CODE	DESCRIPTION	NOTE
1	0.5				P82B-001JU	Needle valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	0.75				P82B-000YB	Needle valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	1				P82B-000YC	Needle valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	1.5				P82B-000YD	Needle valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	

ORIFICE FLANGE (FO)

OPTION CODE	SIZE L / RUN	SIZE S / BRN	WALL THICKNESS (L)	WALL THICKNESS (S)	IDENT CODE	DESCRIPTION	NOTE
1	2		XS		P66B-008EY	Orifice flange WN ASTM A105 Class 600 ASME B16.36 RF NPS1/2 SW tap x 1	
1	3		STD		P66B-008EZ	Orifice flange WN ASTM A105 Class 600 ASME B16.36 RF NPS1/2 SW tap x 1	
1	4		XS		P66B-008FA	Orifice flange WN ASTM A105 Class 600 ASME B16.36 RF NPS1/2 SW tap x 1	
1	6		XS		P66B-008FN	Orifice flange WN ASTM A105 Class 600 ASME B16.36 RF NPS1/2 SW tap x 1	
1	8		SCH60		P66B-008PK	Orifice flange WN ASTM A105 Class 600 ASME B16.36 RF NPS1/2 SW tap x 1	
1	10		XS		P66B-008FV	Orifice flange WN ASTM A105 Class 600 ASME B16.36 RF NPS1/2 SW tap x 1	
1	12		XS		P66B-008PJ	Orifice flange WN ASTM A105 Class 600 ASME B16.36 RF NPS1/2 SW tap x 1	
200	2		XS		P66B-008F5	Orifice flange WN ASTM A105 Class 600 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	3		STD		P66B-008F6	Orifice flange WN ASTM A105 Class 600 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	4		XS		P66B-008FB	Orifice flange WN ASTM A105 Class 600 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	6		XS		P66B-008FT	Orifice flange WN ASTM A105 Class 600 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	8		SCH60		P66B-008PM	Orifice flange WN ASTM A105 Class 600 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	10		XS		P66B-008FY	Orifice flange WN ASTM A105 Class 600 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	12		XS		P66B-008PL	Orifice flange WN ASTM A105 Class 600 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
4406	6		XS		P66B-008V8	Orifice flange WN ASTM A105 Class 600 ASME B16.36 RF NPS3/4 SW tap x 1	
4407	6		XS		P66B-008V9	Orifice flange WN ASTM A105 Class 600 ASME B16.36 RF NPS3/4 SW tap x 1 with Jack screw	

SPECT BLANK (SB)

OPTION CODE	SIZE L / RUN	SIZE S / BRN	WALL THICKNESS (L)	WALL THICKNESS (S)	IDENT CODE	DESCRIPTION	NOTE
1	0.5				P71B-000E4	Spectacle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	0.75				P71B-000DN	Spectacle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	1				P71B-000DP	Spectacle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71B-000DR	Spectacle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	2				P71B-000DS	Spectacle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	3				P71B-000DT	Spectacle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	4				P71B-000DU	Spectacle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	6				P71B-000DV	Spectacle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	

PADDLE BLANK (PB)

OPTION CODE	SIZE L / RUN	SIZE S / BRN	WALL THICKNESS (L)	WALL THICKNESS (S)	IDENT CODE	DESCRIPTION	NOTE
1	8				P72B-000MF	Paddle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	

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PADDLE BLANK (PB)							
OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	10				P72B-000MA	Paddle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	12				P72B-000M6	Paddle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	14				P72B-000MB	Paddle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	16				P72B-000MC	Paddle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	

PADDLE SPACER (PS)							
OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	8				P72B-000MM	Paddle spacer ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	10				P72B-000MG	Paddle spacer ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	12				P72B-000M7	Paddle spacer ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	14				P72B-000MH	Paddle spacer ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	16				P72B-000MJ	Paddle spacer ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	

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BOLT TABLE (B_D1AP02 , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	80	P80S-003V6		
0.75	4	0.625	90	P80S-003XF		
1	4	0.625	95	P80S-003XG		
1.5	4	0.750	110	P80S-003XK		
2	8	0.625	110	P80S-003VC		
3	8	0.750	130	P80S-003XP		
4	8	0.875	150	P80S-0041F		
6	12	1.000	175	P80S-0043P		
8	12	1.125	195	P80S-0046W		
10	16	1.250	250	P80S-004AY		
12	20	1.250	255	P80S-004AZ		
14	20	1.375	270	P80S-003E7		
16	20	1.500	295	P80S-003FL		

BOLT TABLE (B_D1AP02_789 , STUD ASME RJ, OPTION CODE 789)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	110		R12	
0.75	4	0.750	115		R14	
1	4	0.875	130	P80S-0041B	R16	
1.5	4	1.000	140		R20	
2	8	0.875	150	P80S-0041F	R24	
3	8	0.875	150	P80S-0041F	R31	P75T-000JN
4	8	1.125	175	P80S-0046S	R37	P75T-000JP
6	12	1.125	200	P80S-0046X	R45	P75T-000JR
8	12	1.375	260	P80S-003E5	R49	P75T-000JS
10	16	1.375	275	P80S-003E8	R53	P75T-000JL
12	20	1.375	295	P80S-003EC	R57	P75T-000JM
14	20	1.500	325	P80S-008N3	R62	P75T-000MJ
16	20	1.625	340	P80S-005TX	R66	P75T-000MK

BOLT TABLE (B_D1AP02_797 , STUD ASME RJ, OPTION CODE 797)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	110	P80S-003XK	R12	P75T-000JT
0.75	4	0.750	115	P80S-003XL	R14	P75T-000JU
1	4	0.875	130	P80S-0041B	R16	P75T-000JV
1.5	4	1.000	140	P80S-0043F	R20	P75T-000JW
2	8	0.875	150	P80S-0041F	R24	P75T-0008A
3	8	1.125	180		R35	
4	8	1.250	230		R39	
6	12	1.375	300		R46	
8	12	1.625	345		R50	
10	12	1.875	395		R54	
12	16	2.000	445		R58	
14	16	2.250	490		R63	
16	16	2.500	540		R67	

BOLT TABLE (B_D1AP02_805 , STUD ASME RJ, OPTION CODE 805)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	125	P80S-003XN	R13	P75T-000KT
0.75	4	0.750	130	P80S-003XP	R16	P75T-000KU
1	4	0.875	140	P80S-0041D	R18	P75T-000KV
1.5	4	1.125	175	P80S-0046S	R23	P75T-000KW
2	8	1.000	180	P80S-0043R	R26	
3	8	1.250	260		R32	
4	8	1.500	305		R38	
6	8	2.000	410		R47	
8	12	2.000	450		R51	
10	12	2.500	575		R55	
12	12	2.750	635		R60	
14	14	3.000	695		R64	
16	14	3.000	755		R68	

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BRANCH TABLE (T_D1AP02)

RUN PIPE SIZE (in) \ BRANCH SIZE (in)	0.5	0.75	1	1.5	2	3	4	6	8	10	12	14	16
0.5	TS												
0.75		TS											
1		TR	TS										
1.5		TR	TR	TS									
2		L	TR	TR	TS								
3		L	L	TR	TR	TS							
4	L	L	L	L	TR	TR	TS						
6	L	L	L	L	L	TR	TR	TS					
8		L	L	L	L	L	TR	TR	TS				
10		L	L	L	L	L	TR	TR	TR	TS			
12		L	L	L	L	L	L	TR	TR	TR	TS		
14		L	L	L	L	L	L	TR	TR	TR	TR	TS	
16		L	L	L	L	L	L	TR	TR	TR	TR	TR	TS

TS : STRAIGHT TEE
TR : REDUCING TEE
L : OUTLET

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PIPING CLASS

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Material : Killed CS
Rating : ASME CLASS 600
Flange Face : RF
C.A.(mm) : 1.50
Gasket : Spiral Wound
Service : PROCESS - GENERAL PROCESS NON SOUR, NON CORROSIVE
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED

DETAIL NOTES :

NO.	DESCRIPTION
999	HOLD ITEMS. ORDER PLACEMENT SHALL NOT BE DONE BEFORE RELEASING HOLD.

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
24	FULL PORT (Q)
200	WITH JACK SCREW (FO)
541	NPT(F) (CA,L)
714	SW - NPT(F) (V)
789	CLASS 900 (B,F,G)
797	CLASS 1500 (B,F,G)

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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P01A-000XM	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	0.75		XS		P01A-000XN	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1		XS		P01A-000XP	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1.5		XS		P01A-000XV	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	2		XS		P01A-000YX	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	3		STD		P01A-000YM	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	4		XS		P01A-000Z9	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	6		XS		P01A-000ZF	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	8		XS		P01A-000ZJ	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	10		XS		P01A-000Y2	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	12		SCH80		P01A-0010H	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	14		SCH20		P01A-0017A	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	16		SCH20		P01A-0018E	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P02B-00014	90 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	0.75				P02B-00015	90 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	1				P02B-00016	90 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5				P02B-00017	90 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	2		XS		P02A-000CP	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		STD		P02A-000CU	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		XS		P02A-000D3	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		XS		P02A-000DA	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		XS		P02A-000DG	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	10		XS		P02A-000BN	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	12		SCH80		P02A-000EN	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	14		SCH20		P02A-000FX	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	16		SCH20		P02A-000GM	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P03B-00017	45 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	0.75				P03B-00018	45 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	1				P03B-00019	45 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5				P03B-0001A	45 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	2		XS		P03A-000AS	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		STD		P03A-000AX	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		XS		P03A-000B3	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		XS		P03A-000B8	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		XS		P03A-000BC	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	10		XS		P03A-000A3	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	12		SCH80		P03A-000CH	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	14		SCH20		P03A-000DW	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	16		SCH20		P03A-000EM	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P21B-00017	Straight tee ASTM A105 Class 3000 ASME B16.11 SW	
1	0.75				P21B-00018	Straight tee ASTM A105 Class 3000 ASME B16.11 SW	
1	1				P21B-00019	Straight tee ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5				P21B-0001A	Straight tee ASTM A105 Class 3000 ASME B16.11 SW	
1	2		XS		P21A-001CJ	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		STD		P21A-001CU	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		XS		P21A-001CV	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6		XS		P21A-001D4	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8		XS		P21A-001D6	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10		XS		P21A-001C0	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12		SCH80		P21A-001K0	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14		SCH20		P21A-00206	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16		SCH20		P21A-0020X	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75			P24B-0002L	Reducing tee ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5	0.75			P24B-0002N	Reducing tee ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5	1			P24B-0002P	Reducing tee ASTM A105 Class 3000 ASME B16.11 SW	
1	2	1	XS	XS	P24A-00238	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	XS	XS	P24A-0023H	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	STD	XS	P24A-00214	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	STD	XS	P24A-002HW	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	XS	XS	P24A-0023E	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	XS	STD	P24A-006FZ	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	XS	STD	P24A-006G0	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	XS	XS	P24A-00243	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	XS	XS	P24A-0023T	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	XS	XS	P24A-0024M	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	XS	XS	P24A-0023C	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	XS	XS	P24A-00241	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	XS	XS	P24A-0024K	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	SCH80	XS	P24A-002C2	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH80	XS	P24A-002CP	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH80	XS	P24A-00L6T	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	SCH20	XS	P24A-00L6S	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	SCH20	XS	P24A-00NY8	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	SCH20	XS	P24A-00NY2	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	SCH20	SCH80	P24A-00NY7	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	6	SCH20	XS	P24A-00K13	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	SCH20	XS	P24A-00NYA	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	SCH20	XS	P24A-00NY3	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	SCH20	SCH80	P24A-00NY9	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	SCH20	SCH20	P24A-002XF	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	STD	XS	P27A-001MZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	XS	XS	P27A-001E4	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	XS	STD	P27A-0048S	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	XS	STD	P27A-0048T	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	XS	XS	P27A-001EB	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	XS	XS	P27A-001E3	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	XS	XS	P27A-001EY	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	XS	XS	P27A-001E8	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	XS	XS	P27A-001F2	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	XS	XS	P27A-001FR	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	SCH80	XS	P27A-001KS	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH80	XS	P27A-001L2	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH80	XS	P27A-00FEA	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	SCH20	XS	P27A-003NA	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	SCH20	XS	P27A-00HDF	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	SCH20	XS	P27A-0090Y	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	SCH20	SCH80	P27A-00HDE	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	SCH20	XS	P27A-00HDH	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	SCH20	XS	P27A-0090X	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	SCH20	SCH80	P27A-00HDG	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	SCH20	SCH20	P27A-001V2	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	STD	XS	P28A-001N5	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	XS	XS	P28A-001EJ	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	XS	STD	P28A-0048H	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	XS	STD	P28A-0048J	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	XS	XS	P28A-001ER	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	XS	XS	P28A-001EK	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	XS	XS	P28A-001FT	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	XS	XS	P28A-001EM	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	XS	XS	P28A-001FR	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	XS	XS	P28A-001GT	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	SCH80	XS	P28A-001KN	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH80	XS	P28A-001L0	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH80	XS	P28A-00CK8	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	SCH20	XS	P28A-003N4	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	SCH20	XS	P28A-00EM5	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	SCH20	XS	P28A-005SB	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	SCH20	SCH80	P28A-00EM4	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	SCH20	XS	P28A-00EM7	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	SCH20	XS	P28A-005SC	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	SCH20	SCH80	P28A-00EM6	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	SCH20	SCH20	P28A-001WG	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P29B-0001J	Cap ASTM A105 Class 3000 ASME B16.11 SW	
1	0.75				P29B-0001F	Cap ASTM A105 Class 3000 ASME B16.11 SW	
1	1				P29B-0001G	Cap ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5				P29B-0001H	Cap ASTM A105 Class 3000 ASME B16.11 SW	
1	2		XS		P29A-000A1	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		STD		P29A-000BK	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		XS		P29A-000B9	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6		XS		P29A-000BF	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8		XS		P29A-000BL	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10		XS		P29A-000BD	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12		SCH80		P29A-000C5	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14		SCH20		P29A-000EA	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16		SCH20		P29A-000F3	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
541	0.75				P29B-0000C	Cap ASTM A105 Class 3000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P41A-000B5	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		SCH160		P41A-000B6	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		SCH160		P41A-000B7	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		SCH160		P41A-000B8	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

CON SWAGED NIPPLE (SNC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	XS	XS	P42A-00036	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	XS	XS	P42A-00038	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	XS	XS	P42A-0003B	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	XS	XS	P42A-00035	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	XS	XS	P42A-00039	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	XS	XS	P42A-0003C	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	XS	XS	P42A-0008C	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	XS	XS	P42A-0008D	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	XS	XS	P42A-0008E	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	XS	XS	P42A-0008F	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	STD	XS	P42A-0007V	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	

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ECC SWAGED NIPPLE (SNE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	XS	XS	P43A-00036	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	XS	XS	P43A-00037	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	XS	XS	P43A-00038	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	XS	XS	P43A-00039	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	XS	XS	P43A-0003A	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	XS	XS	P43A-0003B	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	XS	XS	P43A-00042	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	XS	XS	P43A-00043	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	XS	XS	P43A-00044	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	XS	XS	P43A-00045	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	STD	XS	P43A-0003J	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	

COUPLING (CPS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P47B-0001D	Coupling ASTM A105 Class 3000 ASME B16.11 SW - SW	
1	0.75				P47B-0001E	Coupling ASTM A105 Class 3000 ASME B16.11 SW - SW	
1	1				P47B-0001F	Coupling ASTM A105 Class 3000 ASME B16.11 SW - SW	
1	1.5				P47B-0001G	Coupling ASTM A105 Class 3000 ASME B16.11 SW - SW	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2 - 2.5	0.75			P31B-0137J	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	3 - 5	0.75			P31B-0137K	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	6 - 12	0.75			P31B-007AB	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	14 - 36	0.75			P31B-007AJ	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	3	1			P31B-007A7	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	4 - 5	1			P31B-0138Z	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	6 - 10	1			P31B-007A4	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	12 - 36	1			P31B-007AA	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	4	1.5			P31B-005SN	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	5 - 6	1.5			P31B-01390	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	8 - 12	1.5			P31B-0079U	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	14 - 24	1.5			P31B-007A0	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
541	1	0.75			P31B-00551	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
541	1.5	0.75			P31B-00555	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
541	2 - 2.5	0.75			P31B-0137H	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
541	3 - 5	0.75			P31B-01376	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
541	6 - 12	0.75			P31B-007GR	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
541	14 - 36	0.75			P31B-007GY	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
1	6	2	XS	XS	P31B-007SG	Outlet ASTM A105 MSS SP-97 BW	
1	8	2	XS	XS	P31B-00AGW	Outlet ASTM A105 MSS SP-97 BW	
1	10	2	XS	XS	P31B-00AS9	Outlet ASTM A105 MSS SP-97 BW	
1	12	2	SCH80	XS	P31B-00CBP	Outlet ASTM A105 MSS SP-97 BW	
1	14	2	SCH20	XS	P31B-00TF9	Outlet ASTM A105 MSS SP-97 BW	
1	16	2	SCH20	XS	P31B-00TF8	Outlet ASTM A105 MSS SP-97 BW	
1	8	3	XS	STD	P31B-00A2S	Outlet ASTM A105 MSS SP-97 BW	
1	10	3	XS	STD	P31B-009CL	Outlet ASTM A105 MSS SP-97 BW	
1	12	3	SCH80	STD	P31B-0096P	Outlet ASTM A105 MSS SP-97 BW	
1	14	3	SCH20	STD	P31B-00UPH	Outlet ASTM A105 MSS SP-97 BW	
1	16	3	SCH20	STD	P31B-00TU2	Outlet ASTM A105 MSS SP-97 BW	
1	12	4	SCH80	XS	P31B-008ZS	Outlet ASTM A105 MSS SP-97 BW	
1	14	4	SCH20	XS	P31B-00P1M	Outlet ASTM A105 MSS SP-97 BW	
1	16	4	SCH20	XS	P31B-00P1S	Outlet ASTM A105 MSS SP-97 BW	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30B-0002D	Plug ASTM A105 ASME B16.11 NPT Round head	
1	0.75				P30B-0002E	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1				P30B-0002F	Plug ASTM A105 ASME B16.11 NPT Round head	

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PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5				P30B-0002G	Plug ASTM A105 ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P61B-001FF	Flange SW ASTM A105 Class 600 ASME B16.5 RF	
1	0.75		XS		P61B-001FH	Flange SW ASTM A105 Class 600 ASME B16.5 RF	
1	1		XS		P61B-001DR	Flange SW ASTM A105 Class 600 ASME B16.5 RF	
1	1.5		XS		P61B-001DV	Flange SW ASTM A105 Class 600 ASME B16.5 RF	
1	2		XS		P61B-001DH	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
1	3		STD		P61B-001TW	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
1	4		XS		P61B-001SH	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
1	6		XS		P61B-001T1	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
1	8		XS		P61B-001UC	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
1	10		XS		P61B-001JN	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
1	12		SCH80		P61B-001F8	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
1	14		SCH20		P61B-0079A	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
1	16		SCH20		P61B-00798	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
789	3		STD		P61B-006SP	Flange WN ASTM A105 Class 900 ASME B16.5 RJ	
789	4		XS		P61B-00655	Flange WN ASTM A105 Class 900 ASME B16.5 RJ	
789	6		XS		P61B-00656	Flange WN ASTM A105 Class 900 ASME B16.5 RJ	
789	8		XS		P61B-00657	Flange WN ASTM A105 Class 900 ASME B16.5 RJ	
789	10		XS		P61B-009UV	Flange WN ASTM A105 Class 900 ASME B16.5 RJ	
789	12		SCH80		P61B-0068F	Flange WN ASTM A105 Class 900 ASME B16.5 RJ	
789	14		SCH20		P61B-009TS	Flange WN ASTM A105 Class 900 ASME B16.5 RJ	
789	16		SCH20		P61B-009TT	Flange WN ASTM A105 Class 900 ASME B16.5 RJ	
797	0.5		XS		P61B-009T3	Flange SW ASTM A105 Class 1500 ASME B16.5 RJ	
797	0.75		XS		P61B-009T4	Flange SW ASTM A105 Class 1500 ASME B16.5 RJ	
797	1		XS		P61B-009T5	Flange SW ASTM A105 Class 1500 ASME B16.5 RJ	
797	1.5		XS		P61B-009T6	Flange SW ASTM A105 Class 1500 ASME B16.5 RJ	
797	2		XS		P61B-0065C	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67B-000J7	Blind flange ASTM A105 Class 600 ASME B16.5 RF	
1	0.75				P67B-000J8	Blind flange ASTM A105 Class 600 ASME B16.5 RF	
1	1				P67B-000J9	Blind flange ASTM A105 Class 600 ASME B16.5 RF	
1	1.5				P67B-000JA	Blind flange ASTM A105 Class 600 ASME B16.5 RF	
1	2				P67B-000JG	Blind flange ASTM A105 Class 600 ASME B16.5 RF	
1	3				P67B-000JK	Blind flange ASTM A105 Class 600 ASME B16.5 RF	
1	4				P67B-000JL	Blind flange ASTM A105 Class 600 ASME B16.5 RF	
1	6				P67B-000JM	Blind flange ASTM A105 Class 600 ASME B16.5 RF	
1	8				P67B-000JN	Blind flange ASTM A105 Class 600 ASME B16.5 RF	
1	10				P67B-000JB	Blind flange ASTM A105 Class 600 ASME B16.5 RF	
1	12				P67B-000JC	Blind flange ASTM A105 Class 600 ASME B16.5 RF	
1	14				P67B-000JD	Blind flange ASTM A105 Class 600 ASME B16.5 RF	
1	16				P67B-000JE	Blind flange ASTM A105 Class 600 ASME B16.5 RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000J8	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000J9	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000JA	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000JB	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000JH	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000JL	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000JM	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

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GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	6				P73T-000JN	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	8				P73T-000JP	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	10				P73T-000JC	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	12				P73T-000JD	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	14				P73T-000JE	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	16				P73T-000JF	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
789	3				P75T-000JN	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	4				P75T-000JP	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	6				P75T-000JR	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	8				P75T-000JS	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	10				P75T-000JL	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	12				P75T-000JM	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	14				P75T-000MJ	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	16				P75T-000MK	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	0.5				P75T-000JT	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	0.75				P75T-000JU	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	1				P75T-000JV	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	1.5				P75T-000JW	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	2				P75T-0008A	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-6				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	8-16				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
789	1-3				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
789	4-16				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
797	0.5-2				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81B-000P4	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	0.75				P81B-000NX	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	1				P81B-000NY	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	1.5				P81B-000NZ	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	2				P81C-004KW	Gate valve ASTM A216 Grade WCB Class 600 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	3				P81C-004L3	Gate valve ASTM A216 Grade WCB Class 600 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	4				P81C-004L4	Gate valve ASTM A216 Grade WCB Class 600 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	6				P81C-0087J	Gate valve ASTM A216 Grade WCB Class 600 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated	
1	8				P81C-004LB	Gate valve ASTM A216 Grade WCB Class 600 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated	
1	10				P81C-004L6	Gate valve ASTM A216 Grade WCB Class 600 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated	
1	12				P81C-004L7	Gate valve ASTM A216 Grade WCB Class 600 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated	
1	14				P81C-004L8	Gate valve ASTM A216 Grade WCB Class 600 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated	
1	16				P81C-004L9	Gate valve ASTM A216 Grade WCB Class 600 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated	
714	0.5				P81B-0015L	Gate valve ASTM A105 Class 800 API 602 SW - NPT Trim number 8 BB-BG-OS&Y Handwheel operated	
714	0.75				P81B-002F4	Gate valve ASTM A105 Class 800 API 602 SW - NPT Trim number 8 BB-BG-OS&Y Handwheel operated	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82B-000K0	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	0.75				P82B-000HB	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	1				P82B-000HC	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	1.5				P82B-000HD	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	

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GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2				P82C-0028Z	Globe valve ASTM A216 Grade WCB Class 600 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	3				P82C-00293	Globe valve ASTM A216 Grade WCB Class 600 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	4				P82C-00294	Globe valve ASTM A216 Grade WCB Class 600 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	6				P82C-004DE	Globe valve ASTM A216 Grade WCB Class 600 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated	
1	8				P82C-00296	Globe valve ASTM A216 Grade WCB Class 600 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83B-000FX	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover	
1	0.75				P83B-000ER	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover	
1	1				P83B-000ES	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover	
1	1.5				P83B-000ET	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover	
1	2				P83C-0025Z	Check valve ASTM A216 Grade WCB Class 600 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	3				P83C-00260	Check valve ASTM A216 Grade WCB Class 600 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	4				P83C-00261	Check valve ASTM A216 Grade WCB Class 600 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	6				P83C-00262	Check valve ASTM A216 Grade WCB Class 600 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	8				P83C-00263	Check valve ASTM A216 Grade WCB Class 600 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	10				P83C-00264	Check valve ASTM A216 Grade WCB Class 600 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	

DP CHECK VALVE (XDP)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	12				P88C-0023H	Dual plate check valve ASTM A216 Grade WCB Class 600 API 594 Wafer-type ASME B16.5 RF Trim number 8 Internal wetted parts 13Cr Spring Inconel Retainerless-type	
1	14				P88C-0023J	Dual plate check valve ASTM A216 Grade WCB Class 600 API 594 Wafer-type ASME B16.5 RF Trim number 8 Internal wetted parts 13Cr Spring Inconel Retainerless-type	
1	16				P88C-0023K	Dual plate check valve ASTM A216 Grade WCB Class 600 API 594 Wafer-type ASME B16.5 RF Trim number 8 Internal wetted parts 13Cr Spring Inconel Retainerless-type	

BALL VALVE (Q)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P84B-00138	Ball valve Long-pattern ASTM A105 Class 600 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design	
1	0.75				P84B-00139	Ball valve Long-pattern ASTM A105 Class 600 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design	
1	1				P84B-0013A	Ball valve Long-pattern ASTM A105 Class 600 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design	
1	1.5				P84B-0013B	Ball valve Long-pattern ASTM A105 Class 600 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design	
1	2				P84C-005VX	Ball valve Long-pattern ASTM A216 Grade WCB Class 600 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Wrench lever operated Reduced bore Fire tested design	
1	3				P84C-005VY	Ball valve Long-pattern ASTM A216 Grade WCB Class 600 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Reduced bore Fire tested design	
1	4				P84C-005VZ	Ball valve Long-pattern ASTM A216 Grade WCB Class 600 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Reduced bore Fire tested design	
1	6				P84C-005W0	Ball valve Long-pattern ASTM A216 Grade WCB Class 600 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Reduced bore Fire tested design	
24	0.5				P84B-0013C	Ball valve Long-pattern ASTM A105 Class 600 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	
24	0.75				P84B-0013D	Ball valve Long-pattern ASTM A105 Class 600 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	
24	1				P84B-0013E	Ball valve Long-pattern ASTM A105 Class 600 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	
24	1.5				P84B-0013F	Ball valve Long-pattern ASTM A105 Class 600 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	
24	2				P84C-005W1	Ball valve Long-pattern ASTM A216 Grade WCB Class 600 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Wrench lever operated Full bore Fire tested design	
24	3				P84C-005W2	Ball valve Long-pattern ASTM A216 Grade WCB Class 600 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design	
24	4				P84C-005W3	Ball valve Long-pattern ASTM A216 Grade WCB Class 600 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design	
24	6				P84C-005W4	Ball valve Long-pattern ASTM A216 Grade WCB Class 600 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design	

BUTTERFLY VALVE (H)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	12				P86C-0023U	Offset design butterfly valve ASTM A216 Grade WCB Class 600 API 609 Category B Lug-type ASME B16.5 RF Disc CS Seat Stellite-6 Trim 13Cr Triple eccentric design BG Gear operated	

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NEEDLE VALVE (NV)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82B-001JU	Needle valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	0.75				P82B-000YB	Needle valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	1				P82B-000YC	Needle valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	1.5				P82B-000YD	Needle valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	

ORIFICE FLANGE (FO)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2		XS		P66B-008EY	Orifice flange WN ASTM A105 Class 600 ASME B16.36 RF NPS1/2 SW tap x 1	
1	3		STD		P66B-008EZ	Orifice flange WN ASTM A105 Class 600 ASME B16.36 RF NPS1/2 SW tap x 1	
1	4		XS		P66B-008FA	Orifice flange WN ASTM A105 Class 600 ASME B16.36 RF NPS1/2 SW tap x 1	
1	6		XS		P66B-008FN	Orifice flange WN ASTM A105 Class 600 ASME B16.36 RF NPS1/2 SW tap x 1	
1	8		XS		P66B-008FX	Orifice flange WN ASTM A105 Class 600 ASME B16.36 RF NPS1/2 SW tap x 1	
1	10		XS		P66B-008FV	Orifice flange WN ASTM A105 Class 600 ASME B16.36 RF NPS1/2 SW tap x 1	
1	12		SCH80		P66B-008FW	Orifice flange WN ASTM A105 Class 600 ASME B16.36 RF NPS1/2 SW tap x 1	
200	2		XS		P66B-008F5	Orifice flange WN ASTM A105 Class 600 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	3		STD		P66B-008F6	Orifice flange WN ASTM A105 Class 600 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	4		XS		P66B-008FB	Orifice flange WN ASTM A105 Class 600 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	6		XS		P66B-008FT	Orifice flange WN ASTM A105 Class 600 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	8		XS		P66B-008G0	Orifice flange WN ASTM A105 Class 600 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	10		XS		P66B-008FY	Orifice flange WN ASTM A105 Class 600 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	12		SCH80		P66B-008FZ	Orifice flange WN ASTM A105 Class 600 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71B-000E4	Spectacle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	0.75				P71B-000DN	Spectacle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	1				P71B-000DP	Spectacle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71B-000DR	Spectacle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	2				P71B-000DS	Spectacle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	3				P71B-000DT	Spectacle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	4				P71B-000DU	Spectacle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	6				P71B-000DV	Spectacle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	

PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	8				P72B-000MF	Paddle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	10				P72B-000MA	Paddle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	12				P72B-000M6	Paddle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	14				P72B-000MB	Paddle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	16				P72B-000MC	Paddle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	

PADDLE SPACER (PS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	8				P72B-000MM	Paddle spacer ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	10				P72B-000MG	Paddle spacer ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	12				P72B-000M7	Paddle spacer ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	14				P72B-000MH	Paddle spacer ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	16				P72B-000MJ	Paddle spacer ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	

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BOLT TABLE (B_D1AP03 , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	80	P80S-003V6		
0.75	4	0.625	90	P80S-003XF		
1	4	0.625	95	P80S-003XG		
1.5	4	0.750	110	P80S-003XK		
2	8	0.625	110	P80S-003VC		
3	8	0.750	130	P80S-003XP		
4	8	0.875	150	P80S-0041F		
6	12	1.000	175	P80S-0043P		
8	12	1.125	195	P80S-0046W		
10	16	1.250	250	P80S-004AY		
12	20	1.250	255	P80S-004AZ		
14	20	1.375	270	P80S-003E7		
16	20	1.500	295	P80S-003FL		

BOLT TABLE (B_D1AP03_789 , STUD ASME RJ, OPTION CODE 789)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	110		R12	
0.75	4	0.750	115		R14	
1	4	0.875	130	P80S-0041B	R16	
1.5	4	1.000	140		R20	
2	8	0.875	150	P80S-0041F	R24	
3	8	0.875	150	P80S-0041F	R31	P75T-000JN
4	8	1.125	175	P80S-0046S	R37	P75T-000JP
6	12	1.125	200	P80S-0046X	R45	P75T-000JR
8	12	1.375	260	P80S-003E5	R49	P75T-000JS
10	16	1.375	275	P80S-003E8	R53	P75T-000JL
12	20	1.375	295	P80S-003EC	R57	P75T-000JM
14	20	1.500	325	P80S-008N3	R62	P75T-000MJ
16	20	1.625	340	P80S-005TX	R66	P75T-000MK

BOLT TABLE (B_D1AP03_797 , STUD ASME RJ, OPTION CODE 797)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	110	P80S-003XK	R12	P75T-000JT
0.75	4	0.750	115	P80S-003XL	R14	P75T-000JU
1	4	0.875	130	P80S-0041B	R16	P75T-000JV
1.5	4	1.000	140	P80S-0043F	R20	P75T-000JW
2	8	0.875	150	P80S-0041F	R24	P75T-0008A
3	8	1.125	180		R35	
4	8	1.250	230		R39	
6	12	1.375	300		R46	
8	12	1.625	345		R50	
10	12	1.875	395		R54	
12	16	2.000	445		R58	
14	16	2.250	490		R63	
16	16	2.500	540		R67	

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BRANCH TABLE (T_D1AP03)

RUN PIPE SIZE (in) \ BRANCH SIZE (in)	0.5	0.75	1	1.5	2	3	4	6	8	10	12	14	16
0.5	TS												
0.75		TS											
1		TR	TS										
1.5		TR	TR	TS									
2		L	TR	TR	TS								
3		L	L	TR	TR	TS							
4	L	L	L	L	TR	TR	TS						
6	L	L	L	L	L	TR	TR	TS					
8		L	L	L	L	L	TR	TR	TS				
10		L	L	L	L	L	TR	TR	TR	TS			
12		L	L	L	L	L	L	TR	TR	TR	TS		
14		L	L	L	L	L	L	TR	TR	TR	TR	TS	
16		L	L	L	L	L	L	TR	TR	TR	TR	TR	TS

TR : REDUCING TEE
TS : STRAIGHT TEE
L : OUTLET

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PIPING CLASS

D1AP04 REV NO. 2

Material : Killed CS
Rating : ASME CLASS 600
Flange Face : RF
C.A.(mm) : 1.50
Gasket : Spiral Wound
Service : PROCESS - GENERAL PROCESS NON SOUR, NON CORROSIVE
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
2	USE OF SOFT SEATED BALL, PLUG AND BUTTERFLY VALVES SHALL BE LIMITED TO MAXIMUM OF 204DEGC (400DEGF)

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
24	FULL PORT (Q)
200	WITH JACK SCREW (FO)
541	NPT(F) (CA,L)
714	SW - NPT(F) (V)
789	CLASS 900 (B,F,G)
797	CLASS 1500 (B,F,G)

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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P01A-000XM	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	0.75		XS		P01A-000XN	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1		XS		P01A-000XP	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1.5		XS		P01A-000XV	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	2		XS		P01A-000YX	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	3		STD		P01A-000YM	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	4		XS		P01A-000Z9	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	6		XS		P01A-000ZF	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	8		STD		P01A-000ZA	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	10		STD		P01A-000XJ	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	12		SCH40		P01A-0018V	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	14		SCH20		P01A-0017A	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	16		SCH20		P01A-0018E	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	18		SCH20		P01A-00438	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE	
1	20		STD		P01A-0042G	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P02B-00014	90 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	0.75				P02B-00015	90 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	1				P02B-00016	90 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5				P02B-00017	90 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	2		XS		P02A-000CP	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		STD		P02A-000CU	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		XS		P02A-000D3	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		XS		P02A-000DA	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		STD		P02A-000DC	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	10		STD		P02A-000BP	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	12		SCH40		P02A-000JE	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	14		SCH20		P02A-000FX	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	16		SCH20		P02A-000GM	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	18		SCH20		P02A-000LT	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	20		STD		P02A-0010J	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P03B-00017	45 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	0.75				P03B-00018	45 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	1				P03B-00019	45 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5				P03B-0001A	45 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	2		XS		P03A-000AS	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		STD		P03A-000AX	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		XS		P03A-000B3	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		XS		P03A-000B8	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		STD		P03A-000BB	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	10		STD		P03A-000A4	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	12		SCH40		P03A-000GC	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	14		SCH20		P03A-000DW	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	16		SCH20		P03A-000EM	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	18		SCH20		P03A-001DX	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	20		STD		P03A-000X1	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P21B-00017	Straight tee ASTM A105 Class 3000 ASME B16.11 SW	
1	0.75				P21B-00018	Straight tee ASTM A105 Class 3000 ASME B16.11 SW	
1	1				P21B-00019	Straight tee ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5				P21B-0001A	Straight tee ASTM A105 Class 3000 ASME B16.11 SW	
1	2		XS		P21A-001CJ	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3		STD		P21A-001CU	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		XS		P21A-001CV	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6		XS		P21A-001D4	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8		STD		P21A-001D8	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10		STD		P21A-001BV	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12		SCH40		P21A-0022P	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14		SCH20		P21A-00206	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16		SCH20		P21A-0020X	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18		SCH20		P21A-001PJ	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20		STD		P21A-001C7	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75			P24B-0002L	Reducing tee ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5	0.75			P24B-0002N	Reducing tee ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5	1			P24B-0002P	Reducing tee ASTM A105 Class 3000 ASME B16.11 SW	
1	2	1	XS	XS	P24A-00238	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	XS	XS	P24A-0023H	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	STD	XS	P24A-00214	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	STD	XS	P24A-002HW	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	XS	XS	P24A-0023E	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	XS	STD	P24A-006FZ	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	XS	STD	P24A-006G0	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	XS	XS	P24A-00243	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	STD	XS	P24A-00AEV	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	STD	XS	P24A-005KM	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	STD	XS	P24A-00HL4	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	STD	XS	P24A-00562	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	STD	STD	P24A-0022W	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	SCH40	XS	P24A-00AF9	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH40	STD	P24A-00AF8	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH40	STD	P24A-00GSL	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	SCH20	XS	P24A-00L6S	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	SCH20	STD	P24A-00HMD	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	SCH20	STD	P24A-00K11	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	SCH20	SCH40	P24A-00K12	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	6	SCH20	XS	P24A-00K13	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	SCH20	STD	P24A-00GP8	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	SCH20	STD	P24A-00GU3	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	SCH20	SCH40	P24A-00L6A	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	SCH20	SCH20	P24A-002XF	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	8	SCH20	STD	P24A-00BNM	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	10	SCH20	STD	P24A-00GU5	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	12	SCH20	SCH40	P24A-00BH1	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	14	SCH20	SCH20	P24A-002WT	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	16	SCH20	SCH20	P24A-002X5	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	8	STD	STD	P24A-004V2	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	10	STD	STD	P24A-004W5	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	12	STD	SCH40	P24A-00GU8	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	14	STD	SCH20	P24A-00BWB	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	16	STD	SCH20	P24A-006W3	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	18	STD	SCH20	P24A-006WD	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	STD	XS	P27A-001MZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	XS	XS	P27A-001E4	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	XS	STD	P27A-0048S	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	XS	STD	P27A-0048T	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	6	4	XS	XS	P27A-001EB	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	STD	XS	P27A-003N3	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	STD	XS	P27A-003N4	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	STD	XS	P27A-0037X	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	STD	XS	P27A-0037Y	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	STD	STD	P27A-0019J	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	SCH40	XS	P27A-004W2	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH40	STD	P27A-004XB	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH40	STD	P27A-004UG	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	SCH20	XS	P27A-003NA	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	SCH20	STD	P27A-003NB	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	SCH20	STD	P27A-004YK	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	SCH20	SCH40	P27A-00EL4	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	SCH20	STD	P27A-003ND	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	SCH20	STD	P27A-0054A	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	SCH20	SCH40	P27A-00CBP	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	SCH20	SCH20	P27A-001V2	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	10	SCH20	STD	P27A-00BGM	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	12	SCH20	SCH40	P27A-00CPD	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	14	SCH20	SCH20	P27A-001UY	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	16	SCH20	SCH20	P27A-001WN	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	12	STD	SCH40	P27A-00BJ4	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	14	STD	SCH20	P27A-0082L	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	16	STD	SCH20	P27A-0082M	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	18	STD	SCH20	P27A-0084N	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	STD	XS	P28A-001N5	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	XS	XS	P28A-001EJ	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	XS	STD	P28A-0048H	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	XS	STD	P28A-0048J	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	XS	XS	P28A-001ER	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	STD	XS	P28A-003MX	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	STD	XS	P28A-003MY	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	STD	XS	P28A-0037D	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	STD	XS	P28A-0037E	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	STD	STD	P28A-0019J	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	SCH40	XS	P28A-005T8	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH40	STD	P28A-005T9	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH40	STD	P28A-008HT	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	SCH20	XS	P28A-003N4	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	SCH20	STD	P28A-003N5	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	SCH20	STD	P28A-00BPV	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	SCH20	SCH40	P28A-00BPW	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	SCH20	STD	P28A-003N7	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	SCH20	STD	P28A-008FM	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	SCH20	SCH40	P28A-009AX	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	SCH20	SCH20	P28A-001WG	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	10	SCH20	STD	P28A-008FN	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	12	SCH20	SCH40	P28A-009PE	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	14	SCH20	SCH20	P28A-001WD	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	16	SCH20	SCH20	P28A-001T1	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	12	STD	SCH40	P28A-008HW	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	14	STD	SCH20	P28A-004SJ	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	16	STD	SCH20	P28A-004SK	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	18	STD	SCH20	P28A-004UN	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	

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CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P29B-0001J	Cap ASTM A105 Class 3000 ASME B16.11 SW	
1	0.75				P29B-0001F	Cap ASTM A105 Class 3000 ASME B16.11 SW	
1	1				P29B-0001G	Cap ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5				P29B-0001H	Cap ASTM A105 Class 3000 ASME B16.11 SW	
1	2		XS		P29A-000A1	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		STD		P29A-000BK	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		XS		P29A-000B9	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6		XS		P29A-000BF	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8		STD		P29A-000AF	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10		STD		P29A-0009Z	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12		SCH40		P29A-000GB	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14		SCH20		P29A-000EA	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16		SCH20		P29A-000F3	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18		SCH20		P29A-000E0	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20		STD		P29A-000B2	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
541	0.75				P29B-0000C	Cap ASTM A105 Class 3000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P41A-000B5	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		SCH160		P41A-000B6	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		SCH160		P41A-000B7	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		SCH160		P41A-000B8	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

CON SWAGED NIPPLE (SNC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	XS	XS	P42A-00036	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	XS	XS	P42A-00038	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	XS	XS	P42A-0003B	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	XS	XS	P42A-00035	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	XS	XS	P42A-00039	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	XS	XS	P42A-0003C	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	XS	XS	P42A-0008C	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	XS	XS	P42A-0008D	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	XS	XS	P42A-0008E	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	XS	XS	P42A-0008F	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	STD	XS	P42A-0007V	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	

ECC SWAGED NIPPLE (SNE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	XS	XS	P43A-00036	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	XS	XS	P43A-00037	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	XS	XS	P43A-00038	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	XS	XS	P43A-00039	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	XS	XS	P43A-0003A	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	XS	XS	P43A-0003B	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	XS	XS	P43A-00042	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	XS	XS	P43A-00043	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	XS	XS	P43A-00044	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	XS	XS	P43A-00045	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	STD	XS	P43A-0003J	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	

COUPLING (CPS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P47B-0001D	Coupling ASTM A105 Class 3000 ASME B16.11 SW - SW	
1	0.75				P47B-0001E	Coupling ASTM A105 Class 3000 ASME B16.11 SW - SW	
1	1				P47B-0001F	Coupling ASTM A105 Class 3000 ASME B16.11 SW - SW	
1	1.5				P47B-0001G	Coupling ASTM A105 Class 3000 ASME B16.11 SW - SW	

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OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2 - 2.5	0.75			P31B-0137J	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	3 - 5	0.75			P31B-0137K	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	6 - 12	0.75			P31B-007AB	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	14 - 36	0.75			P31B-007AJ	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	3	1			P31B-007A7	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	4 - 5	1			P31B-0138Z	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	6 - 10	1			P31B-007A4	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	12 - 36	1			P31B-007AA	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	4	1.5			P31B-005SN	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	5 - 6	1.5			P31B-01390	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	8 - 12	1.5			P31B-0079U	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	14 - 24	1.5			P31B-007A0	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
541	1	0.75			P31B-00551	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
541	1.5	0.75			P31B-00555	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
541	2 - 2.5	0.75			P31B-0137H	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
541	3 - 5	0.75			P31B-01376	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
541	6 - 12	0.75			P31B-007GR	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
541	14 - 36	0.75			P31B-007GY	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
1	6	2	XS	XS	P31B-007SG	Outlet ASTM A105 MSS SP-97 BW	
1	8	2	STD	XS	P31B-00AGX	Outlet ASTM A105 MSS SP-97 BW	
1	10	2	STD	XS	P31B-00ASA	Outlet ASTM A105 MSS SP-97 BW	
1	12	2	SCH40	XS	P31B-00CBS	Outlet ASTM A105 MSS SP-97 BW	
1	14	2	SCH20	XS	P31B-00TF9	Outlet ASTM A105 MSS SP-97 BW	
1	16	2	SCH20	XS	P31B-00TF8	Outlet ASTM A105 MSS SP-97 BW	
1	18	2	SCH20	XS	P31B-00NVX	Outlet ASTM A105 MSS SP-97 BW	
1	20	2	STD	XS	P31B-00994	Outlet ASTM A105 MSS SP-97 BW	
1	8	3	STD	STD	P31B-00A2T	Outlet ASTM A105 MSS SP-97 BW	
1	10	3	STD	STD	P31B-009CM	Outlet ASTM A105 MSS SP-97 BW	
1	12	3	SCH40	STD	P31B-0096S	Outlet ASTM A105 MSS SP-97 BW	
1	14	3	SCH20	STD	P31B-00UPH	Outlet ASTM A105 MSS SP-97 BW	
1	16	3	SCH20	STD	P31B-00TU2	Outlet ASTM A105 MSS SP-97 BW	
1	18	3	SCH20	STD	P31B-00NZ4	Outlet ASTM A105 MSS SP-97 BW	
1	20	3	STD	STD	P31B-008FA	Outlet ASTM A105 MSS SP-97 BW	
1	12	4	SCH40	XS	P31B-00P1J	Outlet ASTM A105 MSS SP-97 BW	
1	14	4	SCH20	XS	P31B-00P1M	Outlet ASTM A105 MSS SP-97 BW	
1	16	4	SCH20	XS	P31B-00P1S	Outlet ASTM A105 MSS SP-97 BW	
1	18	4	SCH20	XS	P31B-00P1W	Outlet ASTM A105 MSS SP-97 BW	
1	20	4	STD	XS	P31B-00P21	Outlet ASTM A105 MSS SP-97 BW	
1	18	6	SCH20	XS	P31B-00P49	Outlet ASTM A105 MSS SP-97 BW	
1	20	6	STD	XS	P31B-00P4D	Outlet ASTM A105 MSS SP-97 BW	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30B-0002D	Plug ASTM A105 ASME B16.11 NPT Round head	
1	0.75				P30B-0002E	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1				P30B-0002F	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1.5				P30B-0002G	Plug ASTM A105 ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P61B-001FF	Flange SW ASTM A105 Class 600 ASME B16.5 RF	
1	0.75		XS		P61B-001FH	Flange SW ASTM A105 Class 600 ASME B16.5 RF	
1	1		XS		P61B-001DR	Flange SW ASTM A105 Class 600 ASME B16.5 RF	
1	1.5		XS		P61B-001DV	Flange SW ASTM A105 Class 600 ASME B16.5 RF	
1	2		XS		P61B-001DH	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
1	3		STD		P61B-001TW	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
1	4		XS		P61B-001SH	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
1	6		XS		P61B-001T1	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
1	8		STD		P61B-001KK	Flange WN ASTM A105 Class 600 ASME B16.5 RF	

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FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	10		STD		P61B-001JJ	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
1	12		SCH40		P61B-003T5	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
1	14		SCH20		P61B-0079A	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
1	16		SCH20		P61B-00798	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
1	18		SCH20		P61B-003TP	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
1	20		STD		P61B-003GP	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
789	3		STD		P61B-006SP	Flange WN ASTM A105 Class 900 ASME B16.5 RJ	
789	4		XS		P61B-00655	Flange WN ASTM A105 Class 900 ASME B16.5 RJ	
789	6		XS		P61B-00656	Flange WN ASTM A105 Class 900 ASME B16.5 RJ	
789	8		STD		P61B-009TU	Flange WN ASTM A105 Class 900 ASME B16.5 RJ	
789	10		STD		P61B-009TP	Flange WN ASTM A105 Class 900 ASME B16.5 RJ	
789	12		SCH40		P61B-009TR	Flange WN ASTM A105 Class 900 ASME B16.5 RJ	
789	14		SCH20		P61B-009TS	Flange WN ASTM A105 Class 900 ASME B16.5 RJ	
789	16		SCH20		P61B-009TT	Flange WN ASTM A105 Class 900 ASME B16.5 RJ	
789	18		SCH20		P61B-00AC8	Flange WN ASTM A105 Class 900 ASME B16.5 RJ	
789	20		STD		P61B-00AC9	Flange WN ASTM A105 Class 900 ASME B16.5 RJ	
797	0.5		XS		P61B-009T3	Flange SW ASTM A105 Class 1500 ASME B16.5 RJ	
797	0.75		XS		P61B-009T4	Flange SW ASTM A105 Class 1500 ASME B16.5 RJ	
797	1		XS		P61B-009T5	Flange SW ASTM A105 Class 1500 ASME B16.5 RJ	
797	1.5		XS		P61B-009T6	Flange SW ASTM A105 Class 1500 ASME B16.5 RJ	
797	2		XS		P61B-0065C	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67B-000J7	Blind flange ASTM A105 Class 600 ASME B16.5 RF	
1	0.75				P67B-000J8	Blind flange ASTM A105 Class 600 ASME B16.5 RF	
1	1				P67B-000J9	Blind flange ASTM A105 Class 600 ASME B16.5 RF	
1	1.5				P67B-000JA	Blind flange ASTM A105 Class 600 ASME B16.5 RF	
1	2				P67B-000JG	Blind flange ASTM A105 Class 600 ASME B16.5 RF	
1	3				P67B-000JK	Blind flange ASTM A105 Class 600 ASME B16.5 RF	
1	4				P67B-000JL	Blind flange ASTM A105 Class 600 ASME B16.5 RF	
1	6				P67B-000JM	Blind flange ASTM A105 Class 600 ASME B16.5 RF	
1	8				P67B-000JN	Blind flange ASTM A105 Class 600 ASME B16.5 RF	
1	10				P67B-000JB	Blind flange ASTM A105 Class 600 ASME B16.5 RF	
1	12				P67B-000JC	Blind flange ASTM A105 Class 600 ASME B16.5 RF	
1	14				P67B-000JD	Blind flange ASTM A105 Class 600 ASME B16.5 RF	
1	16				P67B-000JE	Blind flange ASTM A105 Class 600 ASME B16.5 RF	
1	18				P67B-000JF	Blind flange ASTM A105 Class 600 ASME B16.5 RF	
1	20				P67B-000JH	Blind flange ASTM A105 Class 600 ASME B16.5 RF	

REDUCING FLANGE (FR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	6	3		STD	P62B-000KC	Reducing flange WN ASTM A105 Class 600 ASME B16.5 RF	
1	6	4		XS	P62B-000KD	Reducing flange WN ASTM A105 Class 600 ASME B16.5 RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000J8	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000J9	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000JA	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000JB	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000JH	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000JL	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000JM	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	6				P73T-000JN	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

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GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	8				P73T-000JP	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	10				P73T-000JC	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	12				P73T-000JD	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	14				P73T-000JE	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	16				P73T-000JF	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	18				P73T-000JG	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	20				P73T-000JJ	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
789	3				P75T-000JN	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	4				P75T-000JP	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	6				P75T-000JR	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	8				P75T-000JS	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	10				P75T-000JL	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	12				P75T-000JM	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	14				P75T-000MJ	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	16				P75T-000MK	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	18				P75T-000N8	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	20				P75T-000N7	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	0.5				P75T-000JT	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	0.75				P75T-000JU	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	1				P75T-000JV	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	1.5				P75T-000JW	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	2				P75T-0008A	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-6				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	8-20				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
789	1-3				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
789	4-20				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
797	0.5-2				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81B-000P4	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	0.75				P81B-000NX	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	1				P81B-000NY	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	1.5				P81B-000NZ	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	2				P81C-004KW	Gate valve ASTM A216 Grade WCB Class 600 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	3				P81C-004L3	Gate valve ASTM A216 Grade WCB Class 600 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	4				P81C-004L4	Gate valve ASTM A216 Grade WCB Class 600 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	6				P81C-0087J	Gate valve ASTM A216 Grade WCB Class 600 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated	
1	8				P81C-004LB	Gate valve ASTM A216 Grade WCB Class 600 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated	
1	10				P81C-004L6	Gate valve ASTM A216 Grade WCB Class 600 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated	
1	12				P81C-004L7	Gate valve ASTM A216 Grade WCB Class 600 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated	
1	14				P81C-004L8	Gate valve ASTM A216 Grade WCB Class 600 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated	
1	16				P81C-004L9	Gate valve ASTM A216 Grade WCB Class 600 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated	
1	18				P81C-00529	Gate valve ASTM A216 Grade WCB Class 600 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated	
1	20				P81C-004LA	Gate valve ASTM A216 Grade WCB Class 600 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated	
714	0.5				P81B-0015L	Gate valve ASTM A105 Class 800 API 602 SW - NPT Trim number 8 BB-BG-OS&Y Handwheel operated	
714	0.75				P81B-002F4	Gate valve ASTM A105 Class 800 API 602 SW - NPT Trim number 8 BB-BG-OS&Y Handwheel operated	

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GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82B-000K0	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	0.75				P82B-000HB	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	1				P82B-000HC	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	1.5				P82B-000HD	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	2				P82C-0028Z	Globe valve ASTM A216 Grade WCB Class 600 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	3				P82C-00293	Globe valve ASTM A216 Grade WCB Class 600 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	4				P82C-00294	Globe valve ASTM A216 Grade WCB Class 600 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	6				P82C-004DE	Globe valve ASTM A216 Grade WCB Class 600 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated	
1	8				P82C-00296	Globe valve ASTM A216 Grade WCB Class 600 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83B-000FX	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover	
1	0.75				P83B-000ER	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover	
1	1				P83B-000ES	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover	
1	1.5				P83B-000ET	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover	
1	2				P83C-0025Z	Check valve ASTM A216 Grade WCB Class 600 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	3				P83C-00260	Check valve ASTM A216 Grade WCB Class 600 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	4				P83C-00261	Check valve ASTM A216 Grade WCB Class 600 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	6				P83C-00262	Check valve ASTM A216 Grade WCB Class 600 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	8				P83C-00263	Check valve ASTM A216 Grade WCB Class 600 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	10				P83C-00264	Check valve ASTM A216 Grade WCB Class 600 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	

DP CHECK VALVE (XDP)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	12				P88C-0023H	Dual plate check valve ASTM A216 Grade WCB Class 600 API 594 Wafer-type ASME B16.5 RF Trim number 8 Internal wetted parts 13Cr Spring Inconel Retainerless-type	
1	14				P88C-0023J	Dual plate check valve ASTM A216 Grade WCB Class 600 API 594 Wafer-type ASME B16.5 RF Trim number 8 Internal wetted parts 13Cr Spring Inconel Retainerless-type	
1	16				P88C-0023K	Dual plate check valve ASTM A216 Grade WCB Class 600 API 594 Wafer-type ASME B16.5 RF Trim number 8 Internal wetted parts 13Cr Spring Inconel Retainerless-type	

BALL VALVE (Q)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P84B-00138	Ball valve Long-pattern ASTM A105 Class 600 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design	
1	0.75				P84B-00139	Ball valve Long-pattern ASTM A105 Class 600 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design	
1	1				P84B-0013A	Ball valve Long-pattern ASTM A105 Class 600 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design	
1	1.5				P84B-0013B	Ball valve Long-pattern ASTM A105 Class 600 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design	
1	2				P84C-005VX	Ball valve Long-pattern ASTM A216 Grade WCB Class 600 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Wrench lever operated Reduced bore Fire tested design	
1	3				P84C-005VY	Ball valve Long-pattern ASTM A216 Grade WCB Class 600 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Reduced bore Fire tested design	
1	4				P84C-005VZ	Ball valve Long-pattern ASTM A216 Grade WCB Class 600 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Reduced bore Fire tested design	
1	6				P84C-005W0	Ball valve Long-pattern ASTM A216 Grade WCB Class 600 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Reduced bore Fire tested design	
24	0.5				P84B-0013C	Ball valve Long-pattern ASTM A105 Class 600 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	
24	0.75				P84B-0013D	Ball valve Long-pattern ASTM A105 Class 600 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	
24	1				P84B-0013E	Ball valve Long-pattern ASTM A105 Class 600 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	
24	1.5				P84B-0013F	Ball valve Long-pattern ASTM A105 Class 600 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	
24	2				P84C-005W1	Ball valve Long-pattern ASTM A216 Grade WCB Class 600 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Wrench lever operated Full bore Fire tested design	
24	3				P84C-005W2	Ball valve Long-pattern ASTM A216 Grade WCB Class 600 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design	
24	4				P84C-005W3	Ball valve Long-pattern ASTM A216 Grade WCB Class 600 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design	
24	6				P84C-005W4	Ball valve Long-pattern ASTM A216 Grade WCB Class 600 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design	

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BUTTERFLY VALVE (H)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	12				P86C-0023U	Offset design butterfly valve ASTM A216 Grade WCB Class 600 API 609 Category B Lug-type ASME B16.5 RF Disc CS Seat Stellite-6 Trim 13Cr Triple eccentric design BG Gear operated	

ORIFICE FLANGE (FO)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2		XS		P66B-008EY	Orifice flange WN ASTM A105 Class 600 ASME B16.36 RF NPS1/2 SW tap x 1	
1	3		STD		P66B-008EZ	Orifice flange WN ASTM A105 Class 600 ASME B16.36 RF NPS1/2 SW tap x 1	
1	4		XS		P66B-008FA	Orifice flange WN ASTM A105 Class 600 ASME B16.36 RF NPS1/2 SW tap x 1	
1	6		XS		P66B-008FN	Orifice flange WN ASTM A105 Class 600 ASME B16.36 RF NPS1/2 SW tap x 1	
1	8		STD		P66B-008FP	Orifice flange WN ASTM A105 Class 600 ASME B16.36 RF NPS1/2 SW tap x 1	
1	10		STD		P66B-008FL	Orifice flange WN ASTM A105 Class 600 ASME B16.36 RF NPS1/2 SW tap x 1	
200	2		XS		P66B-008F5	Orifice flange WN ASTM A105 Class 600 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	3		STD		P66B-008F6	Orifice flange WN ASTM A105 Class 600 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	4		XS		P66B-008FB	Orifice flange WN ASTM A105 Class 600 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	6		XS		P66B-008FT	Orifice flange WN ASTM A105 Class 600 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	8		STD		P66B-008FU	Orifice flange WN ASTM A105 Class 600 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	10		STD		P66B-008FR	Orifice flange WN ASTM A105 Class 600 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71B-000E4	Spectacle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	0.75				P71B-000DN	Spectacle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	1				P71B-000DP	Spectacle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71B-000DR	Spectacle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	2				P71B-000DS	Spectacle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	3				P71B-000DT	Spectacle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	4				P71B-000DU	Spectacle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	6				P71B-000DV	Spectacle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	

PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	8				P72B-000MF	Paddle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	10				P72B-000MA	Paddle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	12				P72B-000M6	Paddle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	14				P72B-000MB	Paddle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	16				P72B-000MC	Paddle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	18				P72B-000MD	Paddle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	20				P72B-000ME	Paddle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	

PADDLE SPACER (PS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	8				P72B-000MM	Paddle spacer ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	10				P72B-000MG	Paddle spacer ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	12				P72B-000M7	Paddle spacer ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	14				P72B-000MH	Paddle spacer ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	16				P72B-000MJ	Paddle spacer ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	18				P72B-000MK	Paddle spacer ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	20				P72B-000ML	Paddle spacer ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	

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BOLT TABLE (B_D1AP04 , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	80	P80S-003V6		
0.75	4	0.625	90	P80S-003XF		
1	4	0.625	95	P80S-003XG		
1.5	4	0.750	110	P80S-003XK		
2	8	0.625	110	P80S-003VC		
3	8	0.750	130	P80S-003XP		
4	8	0.875	150	P80S-0041F		
6	12	1.000	175	P80S-0043P		
8	12	1.125	195	P80S-0046W		
10	16	1.250	250	P80S-004AY		
12	20	1.250	255	P80S-004AZ		
14	20	1.375	270	P80S-003E7		
16	20	1.500	295	P80S-003FL		
18	20	1.625	320	P80S-005TT		
20	24	1.625	335	P80S-005TW		

BOLT TABLE (B_D1AP04_789 , STUD ASME RJ, OPTION CODE 789)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	110		R12	
0.75	4	0.750	115		R14	
1	4	0.875	130	P80S-0041B	R16	
1.5	4	1.000	140		R20	
2	8	0.875	150	P80S-0041F	R24	
3	8	0.875	150	P80S-0041F	R31	P75T-000JN
4	8	1.125	175	P80S-0046S	R37	P75T-000JP
6	12	1.125	200	P80S-0046X	R45	P75T-000JR
8	12	1.375	260	P80S-003E5	R49	P75T-000JS
10	16	1.375	275	P80S-003E8	R53	P75T-000JL
12	20	1.375	295	P80S-003EC	R57	P75T-000JM
14	20	1.500	325	P80S-008N3	R62	P75T-000MJ
16	20	1.625	340	P80S-005TX	R66	P75T-000MK
18	20	1.875	390	P80S-008P6	R70	P75T-000N8
20	20	2.000	415	P80S-005VG	R74	P75T-000N7

BOLT TABLE (B_D1AP04_797 , STUD ASME RJ, OPTION CODE 797)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	110	P80S-003XK	R12	P75T-000JT
0.75	4	0.750	115	P80S-003XL	R14	P75T-000JU
1	4	0.875	130	P80S-0041B	R16	P75T-000JV
1.5	4	1.000	140	P80S-0043F	R20	P75T-000JW
2	8	0.875	150	P80S-0041F	R24	P75T-0008A
3	8	1.125	180		R35	
4	8	1.250	230		R39	
6	12	1.375	300		R46	
8	12	1.625	345		R50	
10	12	1.875	395		R54	
12	16	2.000	445		R58	
14	16	2.250	490		R63	
16	16	2.500	540		R67	
18	16	2.750	590		R71	
20	16	3.000	650		R75	

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BRANCH TABLE (T_D1AP04)

RUN PIPE SIZE (in) \ BRANCH SIZE (in)	0.5	0.75	1	1.5	2	3	4	6	8	10	12	14	16	18	20
0.5	TS														
0.75		TS													
1		TR	TS												
1.5		TR	TR	TS											
2		L	TR	TR	TS										
3		L	L	TR	TR	TS									
4	L	L	L	L	TR	TR	TS								
6	L	L	L	L	L	TR	TR	TS							
8		L	L	L	L	L	TR	TR	TS						
10		L	L	L	L	L	TR	TR	TR	TS					
12		L	L	L	L	L	L	TR	TR	TR	TS				
14		L	L	L	L	L	L	TR	TR	TR	TR	TS			
16		L	L	L	L	L	L	TR	TR	TR	TR	TR	TS		
18		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TS	
20		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TR	TS

TR : REDUCING TEE
TS : STRAIGHT TEE
L : OUTLET

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PIPING CLASS

D1APCL **REV NO. 2**

Material : Killed CS
Rating : ASME CLASS 600
Flange Face : RF
C.A.(mm) : 1.50
Gasket : Spiral Wound
Service : PROCESS - GENERAL PROCESS NON SOUR, NON CORROSIVE
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
200	WITH JACK SCREW (FO)
541	NPT(F) (CA,L)
789	CLASS 900 (B,F,G)
797	CLASS 1500 (B,F,G)
4610	JACKETED VALVE (1.5" X 0.75") (PV)
4611	JACKETED VALVE (3" X 2") (PV)

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PIPING CLASS
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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P01A-000XM	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	0.75		XS		P01A-000XN	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1		XS		P01A-000XP	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1.5		XS		P01A-000XV	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	2		XS		P01A-000YX	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	3		STD		P01A-000YM	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	4		XS		P01A-000Z9	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	6		XS		P01A-000ZF	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	8		XS		P01A-000ZJ	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	10		XS		P01A-000Y2	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	12		SCH80		P01A-0010H	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	14		XS		P01A-000YJ	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	16		XS		P01A-000YS	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P02B-00014	90 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	0.75				P02B-00015	90 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	1				P02B-00016	90 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5				P02B-00017	90 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	2		XS		P02A-000CP	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		STD		P02A-000CU	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		XS		P02A-000D3	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		XS		P02A-000DA	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		XS		P02A-000DG	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	10		XS		P02A-000BN	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	12		SCH80		P02A-000EN	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	14		XS		P02A-000C7	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	16		XS		P02A-000CE	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P03B-00017	45 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	0.75				P03B-00018	45 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	1				P03B-00019	45 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5				P03B-0001A	45 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	2		XS		P03A-000AS	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		STD		P03A-000AX	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		XS		P03A-000B3	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		XS		P03A-000B8	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		XS		P03A-000BC	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	10		XS		P03A-000A3	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	12		SCH80		P03A-000CH	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	14		XS		P03A-000AF	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	16		XS		P03A-000AP	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P21B-00017	Straight tee ASTM A105 Class 3000 ASME B16.11 SW	
1	0.75				P21B-00018	Straight tee ASTM A105 Class 3000 ASME B16.11 SW	
1	1				P21B-00019	Straight tee ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5				P21B-0001A	Straight tee ASTM A105 Class 3000 ASME B16.11 SW	
1	2		XS		P21A-001CJ	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		STD		P21A-001CU	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		XS		P21A-001CV	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6		XS		P21A-001D4	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8		XS		P21A-001D6	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10		XS		P21A-001C0	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12		SCH80		P21A-001K0	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14		XS		P21A-001CB	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16		XS		P21A-001CG	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75			P24B-0002L	Reducing tee ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5	0.75			P24B-0002N	Reducing tee ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5	1			P24B-0002P	Reducing tee ASTM A105 Class 3000 ASME B16.11 SW	
1	2	1	XS	XS	P24A-00238	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	XS	XS	P24A-0023H	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	STD	XS	P24A-00214	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	STD	XS	P24A-002HW	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	XS	XS	P24A-0023E	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	XS	STD	P24A-006FZ	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	XS	STD	P24A-006G0	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	XS	XS	P24A-00243	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	XS	XS	P24A-0023T	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	XS	XS	P24A-0024M	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	XS	XS	P24A-0023C	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	XS	XS	P24A-00241	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	XS	XS	P24A-0024K	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	SCH80	XS	P24A-002C2	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH80	XS	P24A-002CP	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH80	XS	P24A-00L6T	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	XS	XS	P24A-0024P	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	XS	XS	P24A-00254	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	XS	XS	P24A-0023X	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	XS	SCH80	P24A-00PZB	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	6	XS	XS	P24A-0025G	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	XS	XS	P24A-0025P	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	XS	XS	P24A-00242	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	XS	SCH80	P24A-00GX1	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	XS	XS	P24A-0025A	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	STD	XS	P27A-001MZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	XS	XS	P27A-001E4	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	XS	STD	P27A-0048S	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	XS	STD	P27A-0048T	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	XS	XS	P27A-001EB	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	XS	XS	P27A-001E3	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	XS	XS	P27A-001EY	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	XS	XS	P27A-001E8	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	XS	XS	P27A-001F2	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	XS	XS	P27A-001FR	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	SCH80	XS	P27A-001KS	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH80	XS	P27A-001L2	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH80	XS	P27A-00FEA	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	XS	XS	P27A-001FT	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	XS	XS	P27A-001GE	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	XS	XS	P27A-001E9	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	XS	SCH80	P27A-00505	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	XS	XS	P27A-001GV	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	XS	XS	P27A-001EN	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	XS	SCH80	P27A-0056C	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	XS	XS	P27A-001GF	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	STD	XS	P28A-001N5	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	XS	XS	P28A-001EJ	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	XS	STD	P28A-0048H	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	XS	STD	P28A-0048J	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	XS	XS	P28A-001ER	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	XS	XS	P28A-001EK	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	XS	XS	P28A-001FT	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	XS	XS	P28A-001EM	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	XS	XS	P28A-001FR	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	XS	XS	P28A-001GT	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	SCH80	XS	P28A-001KN	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH80	XS	P28A-001L0	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH80	XS	P28A-00CK8	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	XS	XS	P28A-001GX	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	XS	XS	P28A-001H9	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	XS	XS	P28A-001EN	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	XS	SCH80	P28A-00FJD	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	XS	XS	P28A-0018A	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	XS	XS	P28A-001F9	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	XS	SCH80	P28A-008J5	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	XS	XS	P28A-001H5	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P29B-0001J	Cap ASTM A105 Class 3000 ASME B16.11 SW	
1	0.75				P29B-0001F	Cap ASTM A105 Class 3000 ASME B16.11 SW	
1	1				P29B-0001G	Cap ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5				P29B-0001H	Cap ASTM A105 Class 3000 ASME B16.11 SW	
1	2		XS		P29A-000A1	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		STD		P29A-000BK	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		XS		P29A-000B9	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6		XS		P29A-000BF	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8		XS		P29A-000BL	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10		XS		P29A-000BD	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12		SCH80		P29A-000C5	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14		XS		P29A-000BS	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16		XS		P29A-0009R	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
541	0.75				P29B-0000C	Cap ASTM A105 Class 3000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P41A-000B5	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		SCH160		P41A-000B6	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		SCH160		P41A-000B7	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		SCH160		P41A-000B8	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

CON SWAGED NIPPLE (SNC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	XS	XS	P42A-00036	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	XS	XS	P42A-00038	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	XS	XS	P42A-0003B	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	XS	XS	P42A-00035	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	XS	XS	P42A-00039	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	XS	XS	P42A-0003C	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	XS	XS	P42A-0008C	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	XS	XS	P42A-0008D	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	XS	XS	P42A-0008E	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	XS	XS	P42A-0008F	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	STD	XS	P42A-0007V	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	

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ECC SWAGED NIPPLE (SNE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	XS	XS	P43A-00036	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	XS	XS	P43A-00037	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	XS	XS	P43A-00038	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	XS	XS	P43A-00039	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	XS	XS	P43A-0003A	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	XS	XS	P43A-0003B	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	XS	XS	P43A-00042	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	XS	XS	P43A-00043	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	XS	XS	P43A-00044	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	XS	XS	P43A-00045	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	STD	XS	P43A-0003J	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	

COUPLING (CPS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P47B-0001D	Coupling ASTM A105 Class 3000 ASME B16.11 SW - SW	
1	0.75				P47B-0001E	Coupling ASTM A105 Class 3000 ASME B16.11 SW - SW	
1	1				P47B-0001F	Coupling ASTM A105 Class 3000 ASME B16.11 SW - SW	
1	1.5				P47B-0001G	Coupling ASTM A105 Class 3000 ASME B16.11 SW - SW	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2 - 2.5	0.75			P31B-0137J	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	3 - 5	0.75			P31B-0137K	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	6 - 12	0.75			P31B-007AB	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	14 - 36	0.75			P31B-007AJ	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	3	1			P31B-007A7	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	4 - 5	1			P31B-0138Z	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	6 - 10	1			P31B-007A4	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	12 - 36	1			P31B-007AA	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	4	1.5			P31B-005SN	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	5 - 6	1.5			P31B-01390	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	8 - 12	1.5			P31B-0079U	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	14 - 24	1.5			P31B-007A0	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
541	1	0.75			P31B-00551	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
541	1.5	0.75			P31B-00555	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
541	2 - 2.5	0.75			P31B-0137H	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
541	3 - 5	0.75			P31B-01376	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
541	6 - 12	0.75			P31B-007GR	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
541	14 - 36	0.75			P31B-007GY	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
1	6	2	XS	XS	P31B-007SG	Outlet ASTM A105 MSS SP-97 BW	
1	8	2	XS	XS	P31B-00AGW	Outlet ASTM A105 MSS SP-97 BW	
1	10	2	XS	XS	P31B-00AS9	Outlet ASTM A105 MSS SP-97 BW	
1	12	2	SCH80	XS	P31B-00CBP	Outlet ASTM A105 MSS SP-97 BW	
1	14	2	XS	XS	P31B-00CAD	Outlet ASTM A105 MSS SP-97 BW	
1	16	2	XS	XS	P31B-00C1S	Outlet ASTM A105 MSS SP-97 BW	
1	18	2	STD	XS	P31B-009FJ	Outlet ASTM A105 MSS SP-97 BW	
1	20	2	STD	XS	P31B-00994	Outlet ASTM A105 MSS SP-97 BW	
1	8	3	XS	STD	P31B-00A2S	Outlet ASTM A105 MSS SP-97 BW	
1	10	3	XS	STD	P31B-009CL	Outlet ASTM A105 MSS SP-97 BW	
1	12	3	SCH80	STD	P31B-0096P	Outlet ASTM A105 MSS SP-97 BW	
1	14	3	XS	STD	P31B-0090S	Outlet ASTM A105 MSS SP-97 BW	
1	16	3	XS	STD	P31B-008UM	Outlet ASTM A105 MSS SP-97 BW	
1	18	3	STD	STD	P31B-008MK	Outlet ASTM A105 MSS SP-97 BW	
1	20	3	STD	STD	P31B-008FA	Outlet ASTM A105 MSS SP-97 BW	
1	12	4	SCH80	XS	P31B-008ZS	Outlet ASTM A105 MSS SP-97 BW	
1	14	4	XS	XS	P31B-008TW	Outlet ASTM A105 MSS SP-97 BW	
1	16	4	XS	XS	P31B-008LM	Outlet ASTM A105 MSS SP-97 BW	
1	18	4	STD	XS	P31B-00P1X	Outlet ASTM A105 MSS SP-97 BW	
1	20	4	STD	XS	P31B-00P21	Outlet ASTM A105 MSS SP-97 BW	

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PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30B-0002D	Plug ASTM A105 ASME B16.11 NPT Round head	
1	0.75				P30B-0002E	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1				P30B-0002F	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1.5				P30B-0002G	Plug ASTM A105 ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P61B-001FF	Flange SW ASTM A105 Class 600 ASME B16.5 RF	
1	0.75		XS		P61B-001FH	Flange SW ASTM A105 Class 600 ASME B16.5 RF	
1	1		XS		P61B-001DR	Flange SW ASTM A105 Class 600 ASME B16.5 RF	
1	1.5		XS		P61B-001DV	Flange SW ASTM A105 Class 600 ASME B16.5 RF	
1	2		XS		P61B-001DH	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
1	3		STD		P61B-001TW	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
1	4		XS		P61B-001SH	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
1	6		XS		P61B-001T1	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
1	8		XS		P61B-001UC	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
1	10		XS		P61B-001JN	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
1	12		SCH80		P61B-001F8	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
1	14		XS		P61B-001PN	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
1	16		XS		P61B-001R3	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
789	3		STD		P61B-006SP	Flange WN ASTM A105 Class 900 ASME B16.5 RJ	
789	4		XS		P61B-00655	Flange WN ASTM A105 Class 900 ASME B16.5 RJ	
789	6		XS		P61B-00656	Flange WN ASTM A105 Class 900 ASME B16.5 RJ	
789	8		XS		P61B-00657	Flange WN ASTM A105 Class 900 ASME B16.5 RJ	
789	10		XS		P61B-009UV	Flange WN ASTM A105 Class 900 ASME B16.5 RJ	
789	12		SCH80		P61B-0068F	Flange WN ASTM A105 Class 900 ASME B16.5 RJ	
789	14		XS		P61B-009UX	Flange WN ASTM A105 Class 900 ASME B16.5 RJ	
789	16		XS		P61B-0068H	Flange WN ASTM A105 Class 900 ASME B16.5 RJ	
797	0.5		XS		P61B-009T3	Flange SW ASTM A105 Class 1500 ASME B16.5 RJ	
797	0.75		XS		P61B-009T4	Flange SW ASTM A105 Class 1500 ASME B16.5 RJ	
797	1		XS		P61B-009T5	Flange SW ASTM A105 Class 1500 ASME B16.5 RJ	
797	1.5		XS		P61B-009T6	Flange SW ASTM A105 Class 1500 ASME B16.5 RJ	
797	2		XS		P61B-0065C	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67B-000J7	Blind flange ASTM A105 Class 600 ASME B16.5 RF	
1	0.75				P67B-000J8	Blind flange ASTM A105 Class 600 ASME B16.5 RF	
1	1				P67B-000J9	Blind flange ASTM A105 Class 600 ASME B16.5 RF	
1	1.5				P67B-000JA	Blind flange ASTM A105 Class 600 ASME B16.5 RF	
1	2				P67B-000JG	Blind flange ASTM A105 Class 600 ASME B16.5 RF	
1	3				P67B-000JK	Blind flange ASTM A105 Class 600 ASME B16.5 RF	
1	4				P67B-000JL	Blind flange ASTM A105 Class 600 ASME B16.5 RF	
1	6				P67B-000JM	Blind flange ASTM A105 Class 600 ASME B16.5 RF	
1	8				P67B-000JN	Blind flange ASTM A105 Class 600 ASME B16.5 RF	
1	10				P67B-000JB	Blind flange ASTM A105 Class 600 ASME B16.5 RF	
1	12				P67B-000JC	Blind flange ASTM A105 Class 600 ASME B16.5 RF	
1	14				P67B-000JD	Blind flange ASTM A105 Class 600 ASME B16.5 RF	
1	16				P67B-000JE	Blind flange ASTM A105 Class 600 ASME B16.5 RF	

REDUCING FLANGE (FR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5		XS	P62B-000N9	Reducing flange SW ASTM A105 Class 600 ASME B16.5 RF	
1	1.5	0.5		XS	P62B-000NU	Reducing flange SW ASTM A105 Class 600 ASME B16.5 RF	
1	1.5	0.75		XS	P62B-000LM	Reducing flange SW ASTM A105 Class 600 ASME B16.5 RF	
1	2	0.75		XS	P62B-000NV	Reducing flange WN ASTM A105 Class 600 ASME B16.5 RF	
1	2	1		XS	P62B-000LN	Reducing flange WN ASTM A105 Class 600 ASME B16.5 RF	
1	2	1.5		XS	P62B-000LP	Reducing flange WN ASTM A105 Class 600 ASME B16.5 RF	
1	3	1.5		XS	P62B-000LR	Reducing flange WN ASTM A105 Class 600 ASME B16.5 RF	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2		XS	P62B-000LS	Reducing flange WN ASTM A105 Class 600 ASME B16.5 RF	
1	4	2		XS	P62B-000LT	Reducing flange WN ASTM A105 Class 600 ASME B16.5 RF	
1	4	3		STD	P62B-000LU	Reducing flange WN ASTM A105 Class 600 ASME B16.5 RF	
1	6	3		STD	P62B-000KC	Reducing flange WN ASTM A105 Class 600 ASME B16.5 RF	
1	6	4		XS	P62B-000KD	Reducing flange WN ASTM A105 Class 600 ASME B16.5 RF	
1	8	6		XS	P62B-000LV	Reducing flange WN ASTM A105 Class 600 ASME B16.5 RF	
1	10	4		XS	P62B-000LW	Reducing flange WN ASTM A105 Class 600 ASME B16.5 RF	
1	10	8		XS	P62B-000LX	Reducing flange WN ASTM A105 Class 600 ASME B16.5 RF	
1	12	6		XS	P62B-000LZ	Reducing flange WN ASTM A105 Class 600 ASME B16.5 RF	
1	12	10		XS	P62B-000LY	Reducing flange WN ASTM A105 Class 600 ASME B16.5 RF	
1	14	10		XS	P62B-000M0	Reducing flange WN ASTM A105 Class 600 ASME B16.5 RF	
1	16	12		SCH80	P62B-000M1	Reducing flange WN ASTM A105 Class 600 ASME B16.5 RF	
1	16	14		XS	P62B-000PF	Reducing flange WN ASTM A105 Class 600 ASME B16.5 RF	
1	18	14		XS	P62B-000NA	Reducing flange WN ASTM A105 Class 600 ASME B16.5 RF	
1	20	16		XS	P62B-000NB	Reducing flange WN ASTM A105 Class 600 ASME B16.5 RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000J8	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000J9	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000JA	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000JB	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000JH	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000JL	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000JM	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	6				P73T-000JN	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	8				P73T-000JP	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	10				P73T-000JC	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	12				P73T-000JD	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	14				P73T-000JE	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	16				P73T-000JF	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	18				P73T-000JG	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	20				P73T-000JJ	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
789	3				P75T-000JN	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	4				P75T-000JP	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	6				P75T-000JR	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	8				P75T-000JS	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	10				P75T-000JL	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	12				P75T-000JM	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	14				P75T-000MJ	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	16				P75T-000MK	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	0.5				P75T-000JT	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	0.75				P75T-000JU	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	1				P75T-000JV	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	1.5				P75T-000JW	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	2				P75T-0008A	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-6				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	8-16				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
789	1-6				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	

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BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
789	4-16				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
797	0.5-2				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5	0.5			P83B-001HJ	Jacketed check valve ASTM A105 Class 600 API 600-modified Flange ASME B16.5 RF Trim number 8 Lift-type Bolted cover Full jacketed	
1	2	1			P83C-003RT	Jacketed check valve ASTM A216 Grade WCB Class 600 API 600-modified Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover Full jacketed	
1	3	1.5			P83C-003RU	Jacketed check valve ASTM A216 Grade WCB Class 600 API 600-modified Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover Full jacketed	
1	4	3			P83C-003RV	Jacketed check valve ASTM A216 Grade WCB Class 600 API 600-modified Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover Full jacketed	
1	6	4			P83C-003RW	Jacketed check valve ASTM A216 Grade WCB Class 600 API 600-modified Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover Full jacketed	
1	8	6			P83C-003RX	Jacketed check valve ASTM A216 Grade WCB Class 600 API 600-modified Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover Full jacketed	
1	10	8			P83C-003RY	Jacketed check valve ASTM A216 Grade WCB Class 600 API 600-modified Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover Full jacketed	

PLUG VALVE (PV)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5	0.5			P85B-0000P	Jacketed plug valve Regular-pattern ASTM A105 Class 600 API 599 Flange ASME B16.5 RF Plug SS316 Seat PTFE Trim SS316 Nonlubricated taper plug BC-BG Wrench lever operated Regular port Full jacketed	
1	2	1			P85C-0008D	Jacketed plug valve Regular-pattern ASTM A216 Grade WCB Class 600 API 599 Flange ASME B16.5 RF Plug SS316 Seat PTFE Trim SS316 Nonlubricated taper plug BC-BG Wrench lever operated Regular port Full jacketed	
1	3	1.5			P85C-000AX	Jacketed plug valve Regular-pattern ASTM A216 Grade WCB Class 600 API 599 Flange ASME B16.5 RF Plug SS316 Seat PTFE Trim SS316 Nonlubricated taper plug BC-BG Wrench lever operated Regular port Full jacketed	
1	4	3			P85C-0008F	Jacketed plug valve Regular-pattern ASTM A216 Grade WCB Class 600 API 599 Flange ASME B16.5 RF Plug SS316 Seat PTFE Trim SS316 Nonlubricated taper plug BC-BG Gear operated Regular port Full jacketed	
1	6	4			P85C-0008G	Jacketed plug valve Regular-pattern ASTM A216 Grade WCB Class 600 API 599 Flange ASME B16.5 RF Plug SS316 Seat PTFE Trim SS316 Nonlubricated taper plug BC-BG Gear operated Regular port Full jacketed	
1	8	6			P85C-0008H	Jacketed plug valve Regular-pattern ASTM A216 Grade WCB Class 600 API 599 Flange ASME B16.5 RF Plug SS316 Seat PTFE Trim SS316 Nonlubricated taper plug BC-BG Gear operated Regular port Full jacketed	
1	10	8			P85C-0008J	Jacketed plug valve Regular-pattern ASTM A216 Grade WCB Class 600 API 599 Flange ASME B16.5 RF Plug SS316 Seat PTFE Trim SS316 Nonlubricated taper plug BC-BG Gear operated Regular port Full jacketed	
1	12	10			P85C-0008K	Jacketed plug valve Regular-pattern ASTM A216 Grade WCB Class 600 API 599 Flange ASME B16.5 RF Plug SS316 Seat PTFE Trim SS316 Nonlubricated taper plug BC-BG Gear operated Regular port Full jacketed	
1	16	12			P85C-0008L	Jacketed plug valve Regular-pattern ASTM A216 Grade WCB Class 600 API 599 Flange ASME B16.5 RF Plug SS316 Seat PTFE Trim SS316 Nonlubricated taper plug BC-BG Gear operated Regular port Full jacketed	
1	20	16			P85C-0008R	Jacketed plug valve Regular-pattern ASTM A216 Grade WCB Class 600 API 599 Flange ASME B16.5 RF Plug SS316 Seat PTFE Trim SS316 Nonlubricated taper plug BC-BG Gear operated Regular port Full jacketed	
4610	1.5	0.75			P85B-00011	Jacketed plug valve Regular-pattern ASTM A105 Class 600 API 599 Flange ASME B16.5 RF Plug SS316 Seat PTFE Trim SS316 Nonlubricated taper plug BC-BG Wrench lever operated Regular port Full jacketed Type-10	
4611	3	2			P85C-000AY	Jacketed plug valve Regular-pattern ASTM A216 Grade WCB Class 600 API 599 Flange ASME B16.5 RF Plug SS316 Seat PTFE Trim SS316 Nonlubricated taper plug BC-BG Wrench lever operated Regular port Full jacketed Type-10	

ORIFICE FLANGE (FO)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2		XS		P66B-008EY	Orifice flange WN ASTM A105 Class 600 ASME B16.36 RF NPS1/2 SW tap x 1	
1	3		STD		P66B-008EZ	Orifice flange WN ASTM A105 Class 600 ASME B16.36 RF NPS1/2 SW tap x 1	
1	4		XS		P66B-008FA	Orifice flange WN ASTM A105 Class 600 ASME B16.36 RF NPS1/2 SW tap x 1	
1	6		XS		P66B-008FN	Orifice flange WN ASTM A105 Class 600 ASME B16.36 RF NPS1/2 SW tap x 1	
1	8		XS		P66B-008FX	Orifice flange WN ASTM A105 Class 600 ASME B16.36 RF NPS1/2 SW tap x 1	
1	10		XS		P66B-008FV	Orifice flange WN ASTM A105 Class 600 ASME B16.36 RF NPS1/2 SW tap x 1	
1	12		SCH80		P66B-008FW	Orifice flange WN ASTM A105 Class 600 ASME B16.36 RF NPS1/2 SW tap x 1	
200	2		XS		P66B-008F5	Orifice flange WN ASTM A105 Class 600 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	3		STD		P66B-008F6	Orifice flange WN ASTM A105 Class 600 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	4		XS		P66B-008FB	Orifice flange WN ASTM A105 Class 600 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	6		XS		P66B-008FT	Orifice flange WN ASTM A105 Class 600 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	8		XS		P66B-008G0	Orifice flange WN ASTM A105 Class 600 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	10		XS		P66B-008FY	Orifice flange WN ASTM A105 Class 600 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	12		SCH80		P66B-008FZ	Orifice flange WN ASTM A105 Class 600 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	

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PIPING CLASS
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SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71B-000E4	Spectacle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	0.75				P71B-000DN	Spectacle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	1				P71B-000DP	Spectacle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71B-000DR	Spectacle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	2				P71B-000DS	Spectacle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	3				P71B-000DT	Spectacle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	4				P71B-000DU	Spectacle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	6				P71B-000DV	Spectacle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	

PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	8				P72B-000MF	Paddle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	10				P72B-000MA	Paddle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	12				P72B-000M6	Paddle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	14				P72B-000MB	Paddle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	16				P72B-000MC	Paddle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	

PADDLE SPACER (PS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	8				P72B-000MM	Paddle spacer ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	10				P72B-000MG	Paddle spacer ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	12				P72B-000M7	Paddle spacer ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	14				P72B-000MH	Paddle spacer ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	16				P72B-000MJ	Paddle spacer ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	

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BOLT TABLE (B_D1APCL , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	80	P80S-003V6		
0.75	4	0.625	90	P80S-003XF		
1	4	0.625	95	P80S-003XG		
1.5	4	0.750	110	P80S-003XK		
2	8	0.625	110	P80S-003VC		
3	8	0.750	130	P80S-003XP		
4	8	0.875	150	P80S-0041F		
6	12	1.000	175	P80S-0043P		
8	12	1.125	195	P80S-0046W		
10	16	1.250	250	P80S-004AY		
12	20	1.250	255	P80S-004AZ		
14	20	1.375	270	P80S-003E7		
16	20	1.500	295	P80S-003FL		
18	20	1.625	320			
20	24	1.625	335			

BOLT TABLE (B_D1APCL_789 , STUD ASME RJ, OPTION CODE 789)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	110		R12	
0.75	4	0.750	115		R14	
1	4	0.875	130	P80S-0041B	R16	
1.5	4	1.000	140		R20	
2	8	0.875	150	P80S-0041F	R24	
3	8	0.875	150	P80S-0041F	R31	P75T-000JN
4	8	1.125	175	P80S-0046S	R37	P75T-000JP
6	12	1.125	200	P80S-0046X	R45	P75T-000JR
8	12	1.375	260	P80S-003E5	R49	P75T-000JS
10	16	1.375	275	P80S-003E8	R53	P75T-000JL
12	20	1.375	295	P80S-003EC	R57	P75T-000JM
14	20	1.500	325	P80S-008N3	R62	P75T-000MJ
16	20	1.625	340	P80S-005TX	R66	P75T-000MK
18	20	1.875	390		R70	
20	20	2.000	415		R74	

BOLT TABLE (B_D1APCL_797 , STUD ASME RJ, OPTION CODE 797)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	110	P80S-003XK	R12	P75T-000JT
0.75	4	0.750	115	P80S-003XL	R14	P75T-000JU
1	4	0.875	130	P80S-0041B	R16	P75T-000JV
1.5	4	1.000	140	P80S-0043F	R20	P75T-000JW
2	8	0.875	150	P80S-0041F	R24	P75T-0008A
3	8	1.125	180		R35	
4	8	1.250	230		R39	
6	12	1.375	300		R46	
8	12	1.625	345		R50	
10	12	1.875	395		R54	
12	16	2.000	445		R58	
14	16	2.250	490		R63	
16	16	2.500	540		R67	
18	16	2.750	590		R71	
20	16	3.000	650		R75	

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D1APCL

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BRANCH TABLE (T_D1APCL)

RUN PIPE SIZE (in) \ BRANCH SIZE (in)	0.5	0.75	1	1.5	2	3	4	6	8	10	12	14	16	18	20
0.5	TS														
0.75		TS													
1		TR	TS												
1.5		TR	TR	TS											
2		L	TR	TR	TS										
3		L	L	TR	TR	TS									
4	L	L	L	L	TR	TR	TS								
6	L	L	L	L	L	TR	TR	TS							
8		L	L	L	L	L	TR	TR	TS						
10		L	L	L	L	L	TR	TR	TR	TS					
12		L	L	L	L	L	L	TR	TR	TR	TS				
14		L	L	L	L	L	L	TR	TR	TR	TR	TS			
16		L	L	L	L	L	L	TR	TR	TR	TR	TR	TS		
18		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TS	
20		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TR	TS

L : OUTLET
TS : STRAIGHT TEE
TR : REDUCING TEE

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PIPING CLASS

D1APCM **REV NO. 2**

Material : Killed CS
Rating : ASME CLASS 600
Flange Face : RF
C.A.(mm) : 1.50
Gasket : Spiral Wound
Service : PROCESS - GENERAL PROCESS NON SOUR, NON CORROSIVE (CONTRO TRACE)
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
200	WITH JACK SCREW (FO)
541	NPT(F) (CA,L)
789	CLASS 900 (B,F,G)
797	CLASS 1500 (B,F,G)
4610	JACKETED VALVE (1.5" X 0.75") (PV)
4611	JACKETED VALVE (3" X 2") (PV)

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PIPING CLASS
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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P01A-000XM	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	0.75		XS		P01A-000XN	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1		XS		P01A-000XP	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1.5		XS		P01A-000XV	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	2		XS		P01A-000YX	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	3		STD		P01A-000YM	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	4		XS		P01A-000Z9	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	6		XS		P01A-000ZF	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P02B-00014	90 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	0.75				P02B-00015	90 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	1				P02B-00016	90 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5				P02B-00017	90 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	2		XS		P02A-000CP	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		STD		P02A-000CU	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		XS		P02A-000D3	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		XS		P02A-000DA	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P03B-00017	45 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	0.75				P03B-00018	45 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	1				P03B-00019	45 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5				P03B-0001A	45 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	2		XS		P03A-000AS	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		STD		P03A-000AX	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		XS		P03A-000B3	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		XS		P03A-000B8	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P21B-00017	Straight tee ASTM A105 Class 3000 ASME B16.11 SW	
1	0.75				P21B-00018	Straight tee ASTM A105 Class 3000 ASME B16.11 SW	
1	1				P21B-00019	Straight tee ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5				P21B-0001A	Straight tee ASTM A105 Class 3000 ASME B16.11 SW	
1	2		XS		P21A-001CJ	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		STD		P21A-001CU	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		XS		P21A-001CV	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6		XS		P21A-001D4	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75			P24B-0002L	Reducing tee ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5	0.75			P24B-0002N	Reducing tee ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5	1			P24B-0002P	Reducing tee ASTM A105 Class 3000 ASME B16.11 SW	
1	2	1	XS	XS	P24A-00238	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	XS	XS	P24A-0023H	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	STD	XS	P24A-00214	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	STD	XS	P24A-002HW	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	XS	XS	P24A-0023E	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	XS	STD	P24A-006FZ	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	XS	STD	P24A-006G0	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	XS	XS	P24A-00243	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	STD	XS	P27A-001MZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	XS	XS	P27A-001E4	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	XS	STD	P27A-0048S	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	XS	STD	P27A-0048T	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	XS	XS	P27A-001EB	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	STD	XS	P28A-001N5	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	XS	XS	P28A-001EJ	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	XS	STD	P28A-0048H	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	XS	STD	P28A-0048J	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	XS	XS	P28A-001ER	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P29B-0001J	Cap ASTM A105 Class 3000 ASME B16.11 SW	
1	0.75				P29B-0001F	Cap ASTM A105 Class 3000 ASME B16.11 SW	
1	1				P29B-0001G	Cap ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5				P29B-0001H	Cap ASTM A105 Class 3000 ASME B16.11 SW	
1	2		XS		P29A-000A1	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		STD		P29A-000BK	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		XS		P29A-000B9	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6		XS		P29A-000BF	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
541	0.75				P29B-0000C	Cap ASTM A105 Class 3000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P41A-000B5	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		SCH160		P41A-000B6	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		SCH160		P41A-000B7	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		SCH160		P41A-000B8	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

CON SWAGED NIPPLE (SNC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	XS	XS	P42A-00036	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	XS	XS	P42A-00038	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	XS	XS	P42A-0003B	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	XS	XS	P42A-00035	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	XS	XS	P42A-00039	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	XS	XS	P42A-0003C	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	XS	XS	P42A-0008C	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	XS	XS	P42A-0008D	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	XS	XS	P42A-0008E	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	XS	XS	P42A-0008F	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	STD	XS	P42A-0007V	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	

ECC SWAGED NIPPLE (SNE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	XS	XS	P43A-00036	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	XS	XS	P43A-00037	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	XS	XS	P43A-00038	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	XS	XS	P43A-00039	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	XS	XS	P43A-0003A	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	XS	XS	P43A-0003B	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	XS	XS	P43A-00042	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	XS	XS	P43A-00043	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	XS	XS	P43A-00044	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	

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ECC SWAGED NIPPLE (SNE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2	1.5	XS	XS	P43A-00045	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	STD	XS	P43A-0003J	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	

COUPLING (CPS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P47B-0001D	Coupling ASTM A105 Class 3000 ASME B16.11 SW - SW	
1	0.75				P47B-0001E	Coupling ASTM A105 Class 3000 ASME B16.11 SW - SW	
1	1				P47B-0001F	Coupling ASTM A105 Class 3000 ASME B16.11 SW - SW	
1	1.5				P47B-0001G	Coupling ASTM A105 Class 3000 ASME B16.11 SW - SW	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2 - 2.5	0.75			P31B-0137J	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	3 - 5	0.75			P31B-0137K	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	6 - 12	0.75			P31B-007AB	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	3	1			P31B-007A7	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	4 - 5	1			P31B-0138Z	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	6 - 10	1			P31B-007A4	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	4	1.5			P31B-005SN	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	5 - 6	1.5			P31B-01390	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
541	1	0.75			P31B-00551	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
541	1.5	0.75			P31B-00555	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
541	2 - 2.5	0.75			P31B-0137H	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
541	3 - 5	0.75			P31B-01376	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
541	6 - 12	0.75			P31B-007GR	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
1	6	2	XS	XS	P31B-007SG	Outlet ASTM A105 MSS SP-97 BW	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30B-0002D	Plug ASTM A105 ASME B16.11 NPT Round head	
1	0.75				P30B-0002E	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1				P30B-0002F	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1.5				P30B-0002G	Plug ASTM A105 ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P61B-001FF	Flange SW ASTM A105 Class 600 ASME B16.5 RF	
1	0.75		XS		P61B-001FH	Flange SW ASTM A105 Class 600 ASME B16.5 RF	
1	1		XS		P61B-001DR	Flange SW ASTM A105 Class 600 ASME B16.5 RF	
1	1.5		XS		P61B-001DV	Flange SW ASTM A105 Class 600 ASME B16.5 RF	
1	2		XS		P61B-001DH	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
1	3		STD		P61B-001TW	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
1	4		XS		P61B-001SH	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
1	6		XS		P61B-001T1	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
789	3		STD		P61B-006SP	Flange WN ASTM A105 Class 900 ASME B16.5 RJ	
789	4		XS		P61B-00655	Flange WN ASTM A105 Class 900 ASME B16.5 RJ	
789	6		XS		P61B-00656	Flange WN ASTM A105 Class 900 ASME B16.5 RJ	
797	0.5		XS		P61B-009T3	Flange SW ASTM A105 Class 1500 ASME B16.5 RJ	
797	0.75		XS		P61B-009T4	Flange SW ASTM A105 Class 1500 ASME B16.5 RJ	
797	1		XS		P61B-009T5	Flange SW ASTM A105 Class 1500 ASME B16.5 RJ	
797	1.5		XS		P61B-009T6	Flange SW ASTM A105 Class 1500 ASME B16.5 RJ	
797	2		XS		P61B-0065C	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67B-000J7	Blind flange ASTM A105 Class 600 ASME B16.5 RF	
1	0.75				P67B-000J8	Blind flange ASTM A105 Class 600 ASME B16.5 RF	
1	1				P67B-000J9	Blind flange ASTM A105 Class 600 ASME B16.5 RF	

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BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5				P67B-000JA	Blind flange ASTM A105 Class 600 ASME B16.5 RF	
1	2				P67B-000JG	Blind flange ASTM A105 Class 600 ASME B16.5 RF	
1	3				P67B-000JK	Blind flange ASTM A105 Class 600 ASME B16.5 RF	
1	4				P67B-000JL	Blind flange ASTM A105 Class 600 ASME B16.5 RF	
1	6				P67B-000JM	Blind flange ASTM A105 Class 600 ASME B16.5 RF	

REDUCING FLANGE (FR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5		XS	P62B-000N9	Reducing flange SW ASTM A105 Class 600 ASME B16.5 RF	
1	1.5	0.5		XS	P62B-000NU	Reducing flange SW ASTM A105 Class 600 ASME B16.5 RF	
1	1.5	0.75		XS	P62B-000LM	Reducing flange SW ASTM A105 Class 600 ASME B16.5 RF	
1	2	0.75		XS	P62B-000NV	Reducing flange WN ASTM A105 Class 600 ASME B16.5 RF	
1	2	1		XS	P62B-000LN	Reducing flange WN ASTM A105 Class 600 ASME B16.5 RF	
1	2	1.5		XS	P62B-000LP	Reducing flange WN ASTM A105 Class 600 ASME B16.5 RF	
1	3	1.5		XS	P62B-000LR	Reducing flange WN ASTM A105 Class 600 ASME B16.5 RF	
1	3	2		XS	P62B-000LS	Reducing flange WN ASTM A105 Class 600 ASME B16.5 RF	
1	4	2		XS	P62B-000LT	Reducing flange WN ASTM A105 Class 600 ASME B16.5 RF	
1	4	3		STD	P62B-000LU	Reducing flange WN ASTM A105 Class 600 ASME B16.5 RF	
1	6	3		STD	P62B-000KC	Reducing flange WN ASTM A105 Class 600 ASME B16.5 RF	
1	6	4		XS	P62B-000KD	Reducing flange WN ASTM A105 Class 600 ASME B16.5 RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000J8	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000J9	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000JA	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000JB	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000JH	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000JL	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000JM	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	6				P73T-000JN	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
789	3				P75T-000JN	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	4				P75T-000JP	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	6				P75T-000JR	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	0.5				P75T-000JT	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	0.75				P75T-000JU	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	1				P75T-000JV	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	1.5				P75T-000JW	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	2				P75T-0008A	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-6				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
789	1-3				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
789	4-6				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
797	0.5-2				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5	0.5			P83B-001HJ	Jacketed check valve ASTM A105 Class 600 API 600-modified Flange ASME B16.5 RF Trim number 8 Lift-type Bolted cover Full jacketed	
1	2	1			P83C-003RT	Jacketed check valve ASTM A216 Grade WCB Class 600 API 600-modified Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover Full jacketed	
1	2	1.5			P83C-003RU	Jacketed check valve ASTM A216 Grade WCB Class 600 API 600-modified Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover Full jacketed	
1	4	3			P83C-003RV	Jacketed check valve ASTM A216 Grade WCB Class 600 API 600-modified Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover Full jacketed	

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CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	6	4			P83C-003RW	Jacketed check valve ASTM A216 Grade WCB Class 600 API 600-modified Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover Full jacketed	

PLUG VALVE (PV)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5	0.5			P85B-0000P	Jacketed plug valve Regular-pattern ASTM A105 Class 600 API 599 Flange ASME B16.5 RF Plug SS316 Seat PTFE Trim SS316 Nonlubricated taper plug BC-BG Wrench lever operated Regular port Full jacketed	
1	2	1			P85C-0008D	Jacketed plug valve Regular-pattern ASTM A216 Grade WCB Class 600 API 599 Flange ASME B16.5 RF Plug SS316 Seat PTFE Trim SS316 Nonlubricated taper plug BC-BG Wrench lever operated Regular port Full jacketed	
1	3	1.5			P85C-000AX	Jacketed plug valve Regular-pattern ASTM A216 Grade WCB Class 600 API 599 Flange ASME B16.5 RF Plug SS316 Seat PTFE Trim SS316 Nonlubricated taper plug BC-BG Wrench lever operated Regular port Full jacketed	
1	4	3			P85C-0008F	Jacketed plug valve Regular-pattern ASTM A216 Grade WCB Class 600 API 599 Flange ASME B16.5 RF Plug SS316 Seat PTFE Trim SS316 Nonlubricated taper plug BC-BG Gear operated Regular port Full jacketed	
1	6	4			P85C-0008G	Jacketed plug valve Regular-pattern ASTM A216 Grade WCB Class 600 API 599 Flange ASME B16.5 RF Plug SS316 Seat PTFE Trim SS316 Nonlubricated taper plug BC-BG Gear operated Regular port Full jacketed	
4610	1.5	0.75			P85B-00011	Jacketed plug valve Regular-pattern ASTM A105 Class 600 API 599 Flange ASME B16.5 RF Plug SS316 Seat PTFE Trim SS316 Nonlubricated taper plug BC-BG Wrench lever operated Regular port Full jacketed Type-10	
4611	3	2			P85C-000AY	Jacketed plug valve Regular-pattern ASTM A216 Grade WCB Class 600 API 599 Flange ASME B16.5 RF Plug SS316 Seat PTFE Trim SS316 Nonlubricated taper plug BC-BG Wrench lever operated Regular port Full jacketed Type-10	

ORIFICE FLANGE (FO)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2		XS		P66B-008EY	Orifice flange WN ASTM A105 Class 600 ASME B16.36 RF NPS1/2 SW tap x 1	
1	3		STD		P66B-008EZ	Orifice flange WN ASTM A105 Class 600 ASME B16.36 RF NPS1/2 SW tap x 1	
1	4		XS		P66B-008FA	Orifice flange WN ASTM A105 Class 600 ASME B16.36 RF NPS1/2 SW tap x 1	
1	6		XS		P66B-008FN	Orifice flange WN ASTM A105 Class 600 ASME B16.36 RF NPS1/2 SW tap x 1	
200	2		XS		P66B-008F5	Orifice flange WN ASTM A105 Class 600 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	3		STD		P66B-008F6	Orifice flange WN ASTM A105 Class 600 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	4		XS		P66B-008FB	Orifice flange WN ASTM A105 Class 600 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	6		XS		P66B-008FT	Orifice flange WN ASTM A105 Class 600 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71B-000E4	Spectacle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	0.75				P71B-000DN	Spectacle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	1				P71B-000DP	Spectacle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71B-000DR	Spectacle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	2				P71B-000DS	Spectacle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	3				P71B-000DT	Spectacle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	4				P71B-000DU	Spectacle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	6				P71B-000DV	Spectacle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	

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BOLT TABLE (B_D1APCM , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	80	P80S-003V6		
0.75	4	0.625	90	P80S-003XF		
1	4	0.625	95	P80S-003XG		
1.5	4	0.750	110	P80S-003XK		
2	8	0.625	110	P80S-003VC		
3	8	0.750	130	P80S-003XP		
4	8	0.875	150	P80S-0041F		
6	12	1.000	175	P80S-0043P		

BOLT TABLE (B_D1APCM_789 , STUD ASME RJ, OPTION CODE 789)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	110		R12	
0.75	4	0.750	115		R14	
1	4	0.875	130	P80S-0041B	R16	
1.5	4	1.000	140		R20	
2	8	0.875	150	P80S-0041F	R24	
3	8	0.875	150	P80S-0041F	R31	P75T-000JN
4	8	1.125	175	P80S-0046S	R37	P75T-000JP
6	12	1.125	200	P80S-0046X	R45	P75T-000JR

BOLT TABLE (B_D1APCM_797 , STUD ASME RJ, OPTION CODE 797)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	110	P80S-003XK	R12	P75T-000JT
0.75	4	0.750	115	P80S-003XL	R14	P75T-000JU
1	4	0.875	130	P80S-0041B	R16	P75T-000JV
1.5	4	1.000	140	P80S-0043F	R20	P75T-000JW
2	8	0.875	150	P80S-0041F	R24	P75T-0008A
3	8	1.125	180		R35	
4	8	1.250	230		R39	
6	12	1.375	300		R46	

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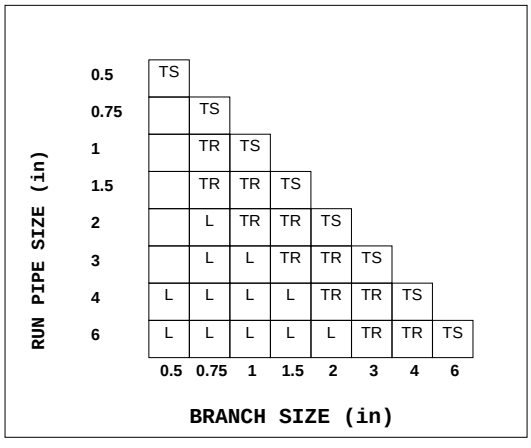
BRANCH TABLE (T_D1APCM)



RUN PIPE SIZE (in) \ BRANCH SIZE (in)	0.5	0.75	1	1.5	2	3	4	6
0.5	TS							
0.75		TS						
1		TR	TS					
1.5		TR	TR	TS				
2		L	TR	TR	TS			
3		L	L	TR	TR	TS		
4	L	L	L	L	TR	TR	TS	
6	L	L	L	L	L	TR	TR	TS

L : OUTLET
TR : REDUCING TEE
TS : STRAIGHT TEE

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PIPING CLASS

D1AS

REV NO. 2

Material : Killed CS
Rating : ASME CLASS 600
Flange Face : RF
C.A.(mm) : 1.50
Gasket : Spiral Wound
Service : UTILITY : / HIGH PRESSURE STEAM / BLOWDOWN STEAM

Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
200	WITH JACK SCREW (FO)
541	NPT(F) (CA,L)
714	SW - NPT(F) (V)
789	CLASS 900 (B,F,G,PB,PS)
797	CLASS 1500 (B,F,G)
4203	SOCKOLET ON CAP (CAP=NPS3) (LC)
4204	SOCKOLET ON CAP (CAP=NPS4) (LC)
4205	SOCKOLET ON CAP (CAP=NPS6) (LC)
4206	SOCKOLET ON CAP (CAP=NPS8) (LC)
4207	SOCKOLETT ON CAP (CAP=NPS10 AND LARGER) (LC)

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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P01A-000XM	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	0.75		XS		P01A-000XN	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1		XS		P01A-000XP	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1.5		XS		P01A-000XV	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	2		XS		P01A-000YX	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	3		XS		P01A-000Z4	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	4		XS		P01A-000Z9	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	6		XS		P01A-000ZF	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	8		XS		P01A-000ZJ	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	10		SCH80		P01A-0010G	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	12		SCH80		P01A-0010H	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	14		SCH80		P01A-0010J	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	16		SCH80		P01A-000ZY	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	18		SCH60		P01A-007HG	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE	
1	20		SCH60		P01A-00441	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE	
1	24		SCH60		P01A-007HS	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P02B-00014	90 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	0.75				P02B-00015	90 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	1				P02B-00016	90 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5				P02B-00017	90 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	2		XS		P02A-000CP	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		XS		P02A-000CX	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		XS		P02A-000D3	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		XS		P02A-000DA	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		XS		P02A-000DG	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	10		SCH80		P02A-000EM	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	12		SCH80		P02A-000EN	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	14		SCH80		P02A-000EP	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	16		SCH80		P02A-000DW	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	18		SCH60		P02A-000UD	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	20		SCH60		P02A-002G7	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	24		SCH60		P02A-002G8	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P03B-00017	45 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	0.75				P03B-00018	45 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	1				P03B-00019	45 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5				P03B-0001A	45 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	2		XS		P03A-000AS	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		XS		P03A-000AZ	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		XS		P03A-000B3	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		XS		P03A-000B8	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		XS		P03A-000BC	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	10		SCH80		P03A-000CG	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	12		SCH80		P03A-000CH	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	14		SCH80		P03A-000CJ	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	16		SCH80		P03A-000BT	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	18		SCH60		P03A-000RY	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	20		SCH60		P03A-002DP	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	24		SCH60		P03A-002DR	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P21B-00017	Straight tee ASTM A105 Class 3000 ASME B16.11 SW	
1	0.75				P21B-00018	Straight tee ASTM A105 Class 3000 ASME B16.11 SW	

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STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P21B-00019	Straight tee ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5				P21B-0001A	Straight tee ASTM A105 Class 3000 ASME B16.11 SW	
1	2		XS		P21A-001CJ	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		XS		P21A-001CR	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		XS		P21A-001CV	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6		XS		P21A-001D4	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8		XS		P21A-001D6	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10		SCH80		P21A-001HC	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12		SCH80		P21A-001K0	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14		SCH80		P21A-001LM	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16		SCH80		P21A-001F5	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18		SCH60		P21A-001PM	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20		SCH60		P21A-001T0	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24		SCH60		P21A-001UJ	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75			P24B-0002L	Reducing tee ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5	0.75			P24B-0002N	Reducing tee ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5	1			P24B-0002P	Reducing tee ASTM A105 Class 3000 ASME B16.11 SW	
1	2	1	XS	XS	P24A-00238	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	XS	XS	P24A-0023H	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	XS	XS	P24A-00239	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	XS	XS	P24A-0023S	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	XS	XS	P24A-0023E	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	XS	XS	P24A-0024A	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	XS	XS	P24A-0023F	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	XS	XS	P24A-00243	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	XS	XS	P24A-0023T	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	XS	XS	P24A-0024M	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	SCH80	XS	P24A-002DV	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	SCH80	XS	P24A-002B4	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	SCH80	XS	P24A-002BS	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	SCH80	XS	P24A-002C2	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH80	XS	P24A-002CP	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH80	SCH80	P24A-002C0	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	SCH80	XS	P24A-002E6	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	SCH80	XS	P24A-002CL	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	SCH80	SCH80	P24A-002B9	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	SCH80	SCH80	P24A-002BZ	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	6	SCH80	XS	P24A-00GSX	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	SCH80	XS	P24A-0029Z	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	SCH80	SCH80	P24A-002EU	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	SCH80	SCH80	P24A-0027Z	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	SCH80	SCH80	P24A-00295	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	8	SCH60	XS	P24A-004X2	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	10	SCH60	SCH80	P24A-0050A	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	12	SCH60	SCH80	P24A-0051M	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	14	SCH60	SCH80	P24A-004Z8	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	16	SCH60	SCH80	P24A-004WW	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	8	SCH60	XS	P24A-004X1	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	10	SCH60	SCH80	P24A-00509	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	12	SCH60	SCH80	P24A-0051R	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	14	SCH60	SCH80	P24A-004ZB	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	16	SCH60	SCH80	P24A-004WX	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	18	SCH60	SCH60	P24A-004X5	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	10	SCH60	SCH80	P24A-0050J	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	12	SCH60	SCH80	P24A-004YC	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	14	SCH60	SCH80	P24A-00519	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	

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REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	24	16	SCH60	SCH80	P24A-004WZ	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	18	SCH60	SCH60	P24A-004WV	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	20	SCH60	SCH60	P24A-004X4	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	XS	XS	P27A-001E5	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	XS	XS	P27A-001E4	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	XS	XS	P27A-001EP	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	XS	XS	P27A-001DM	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	XS	XS	P27A-001EB	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	XS	XS	P27A-001E3	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	XS	XS	P27A-001EY	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	SCH80	XS	P27A-001JW	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	SCH80	XS	P27A-001KL	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	SCH80	XS	P27A-001L0	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	SCH80	XS	P27A-001KS	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH80	XS	P27A-001L2	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH80	SCH80	P27A-001JY	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	SCH80	XS	P27A-001L1	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	SCH80	XS	P27A-001L8	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	SCH80	SCH80	P27A-001JX	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	SCH80	SCH80	P27A-001KK	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	SCH80	XS	P27A-001HW	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	SCH80	SCH80	P27A-001HL	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	SCH80	SCH80	P27A-001J2	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	SCH80	SCH80	P27A-001JA	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	10	SCH60	SCH80	P27A-001LR	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	12	SCH60	SCH80	P27A-001HZ	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	14	SCH60	SCH80	P27A-001J8	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	16	SCH60	SCH80	P27A-001HU	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	12	SCH60	SCH80	P27A-001HM	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	14	SCH60	SCH80	P27A-001J3	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	16	SCH60	SCH80	P27A-001JB	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	18	SCH60	SCH60	P27A-001HV	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	16	SCH60	SCH80	P27A-001HJ	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	18	SCH60	SCH60	P27A-001J0	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	20	SCH60	SCH60	P27A-001J7	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	XS	XS	P28A-001EH	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	XS	XS	P28A-001EJ	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	XS	XS	P28A-001F8	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	XS	XS	P28A-001DU	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	XS	XS	P28A-001ER	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	XS	XS	P28A-001EK	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	XS	XS	P28A-001FT	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	SCH80	XS	P28A-001JR	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	SCH80	XS	P28A-001KM	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	SCH80	XS	P28A-001KU	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	SCH80	XS	P28A-001KN	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH80	XS	P28A-001L0	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH80	SCH80	P28A-001JX	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	SCH80	XS	P28A-001KZ	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	SCH80	XS	P28A-001L1	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	SCH80	SCH80	P28A-001JV	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	SCH80	SCH80	P28A-001KH	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	SCH80	XS	P28A-001J1	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	16	10	SCH80	SCH80	P28A-001HM	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	SCH80	SCH80	P28A-001J6	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	SCH80	SCH80	P28A-001HR	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	10	SCH60	SCH80	P28A-001HE	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	12	SCH60	SCH80	P28A-001J3	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	14	SCH60	SCH80	P28A-001HN	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	16	SCH60	SCH80	P28A-001J0	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	12	SCH60	SCH80	P28A-001HL	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	14	SCH60	SCH80	P28A-001J7	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	16	SCH60	SCH80	P28A-001HS	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	18	SCH60	SCH60	P28A-001HZ	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	16	SCH60	SCH80	P28A-001HJ	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	18	SCH60	SCH60	P28A-001J4	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	20	SCH60	SCH60	P28A-001JB	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P29B-0001J	Cap ASTM A105 Class 3000 ASME B16.11 SW	
1	0.75				P29B-0001F	Cap ASTM A105 Class 3000 ASME B16.11 SW	
1	1				P29B-0001G	Cap ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5				P29B-0001H	Cap ASTM A105 Class 3000 ASME B16.11 SW	
1	2		XS		P29A-000A1	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		XS		P29A-000AT	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		XS		P29A-000B9	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6		XS		P29A-000BF	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8		XS		P29A-000BL	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10		SCH80		P29A-000C3	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12		SCH80		P29A-000C5	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14		SCH80		P29A-000C7	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16		SCH80		P29A-000C1	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18		SCH60		P29A-000C2	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20		SCH60		P29A-000BX	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24		SCH60		P29A-000BY	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
541	0.75				P29B-0000C	Cap ASTM A105 Class 3000 ASME B16.11 NPT	
541	1				P29B-0000D	Cap ASTM A105 Class 3000 ASME B16.11 NPT	
541	1.5				P29B-0000E	Cap ASTM A105 Class 3000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P41A-000B5	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		SCH160		P41A-000B6	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		SCH160		P41A-000B7	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		SCH160		P41A-000B8	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

CON SWAGED NIPPLE (SNC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	XS	XS	P42A-00036	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	XS	XS	P42A-00038	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	XS	XS	P42A-0003B	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	XS	XS	P42A-00035	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	XS	XS	P42A-00039	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	XS	XS	P42A-0003C	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	XS	XS	P42A-0008C	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	XS	XS	P42A-0008D	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	XS	XS	P42A-0008E	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	XS	XS	P42A-0008F	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	XS	XS	P42A-0008G	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	

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ECC SWAGED NIPPLE (SNE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	XS	XS	P43A-00036	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	XS	XS	P43A-00037	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	XS	XS	P43A-00038	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	XS	XS	P43A-00039	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	XS	XS	P43A-0003A	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	XS	XS	P43A-0003B	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	XS	XS	P43A-00042	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	XS	XS	P43A-00043	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	XS	XS	P43A-00044	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	XS	XS	P43A-00045	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	XS	XS	P43A-00046	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	

COUPLING (CPS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P47B-0001D	Coupling ASTM A105 Class 3000 ASME B16.11 SW - SW	
1	0.75				P47B-0001E	Coupling ASTM A105 Class 3000 ASME B16.11 SW - SW	
1	1				P47B-0001F	Coupling ASTM A105 Class 3000 ASME B16.11 SW - SW	
1	1.5				P47B-0001G	Coupling ASTM A105 Class 3000 ASME B16.11 SW - SW	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2 - 2.5	0.75			P31B-0137J	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	3 - 5	0.75			P31B-0137K	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	6 - 12	0.75			P31B-007AB	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	14 - 36	0.75			P31B-007AJ	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	3	1			P31B-007A7	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	4 - 5	1			P31B-0138Z	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	6 - 10	1			P31B-007A4	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	12 - 36	1			P31B-007AA	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	4	1.5			P31B-005SN	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	5 - 6	1.5			P31B-01390	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	8 - 12	1.5			P31B-0079U	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	14 - 24	1.5			P31B-007A0	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
541	1	0.75			P31B-00551	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
541	1.5	0.75			P31B-00555	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
541	2 - 2.5	0.75			P31B-0137H	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
541	3 - 5	0.75			P31B-01376	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
541	6 - 12	0.75			P31B-007GR	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
541	14 - 36	0.75			P31B-007GY	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
1	6	2	XS	XS	P31B-007SG	Outlet ASTM A105 MSS SP-97 BW	
1	8	2	XS	XS	P31B-00AGW	Outlet ASTM A105 MSS SP-97 BW	
1	10	2	SCH80	XS	P31B-00ASB	Outlet ASTM A105 MSS SP-97 BW	
1	12	2	SCH80	XS	P31B-00CBP	Outlet ASTM A105 MSS SP-97 BW	
1	14	2	SCH80	XS	P31B-00CAF	Outlet ASTM A105 MSS SP-97 BW	
1	16	2	SCH80	XS	P31B-00C5G	Outlet ASTM A105 MSS SP-97 BW	
1	18	2	SCH60	XS	P31B-00C0A	Outlet ASTM A105 MSS SP-97 BW	
1	20	2	SCH60	XS	P31B-00996	Outlet ASTM A105 MSS SP-97 BW	
1	24	2	SCH60	XS	P31B-00931	Outlet ASTM A105 MSS SP-97 BW	
1	8	3	XS	XS	P31B-009XZ	Outlet ASTM A105 MSS SP-97 BW	
1	10	3	SCH80	XS	P31B-009CH	Outlet ASTM A105 MSS SP-97 BW	
1	12	3	SCH80	XS	P31B-0096G	Outlet ASTM A105 MSS SP-97 BW	
1	14	3	SCH80	XS	P31B-0090M	Outlet ASTM A105 MSS SP-97 BW	
1	16	3	SCH80	XS	P31B-008UF	Outlet ASTM A105 MSS SP-97 BW	
1	18	3	SCH60	XS	P31B-008ME	Outlet ASTM A105 MSS SP-97 BW	
1	20	3	SCH60	XS	P31B-008F6	Outlet ASTM A105 MSS SP-97 BW	
1	24	3	SCH60	XS	P31B-00891	Outlet ASTM A105 MSS SP-97 BW	
1	12	4	SCH80	XS	P31B-008ZS	Outlet ASTM A105 MSS SP-97 BW	
1	14	4	SCH80	XS	P31B-008YJ	Outlet ASTM A105 MSS SP-97 BW	
1	16	4	SCH80	XS	P31B-008LN	Outlet ASTM A105 MSS SP-97 BW	

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OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	18	4	SCH60	XS	P31B-008K7	Outlet ASTM A105 MSS SP-97 BW	
1	20	4	SCH60	XS	P31B-008D0	Outlet ASTM A105 MSS SP-97 BW	
1	24	4	SCH60	XS	P31B-0086T	Outlet ASTM A105 MSS SP-97 BW	
1	18	6	SCH60	XS	P31B-008RT	Outlet ASTM A105 MSS SP-97 BW	
1	20	6	SCH60	XS	P31B-008PV	Outlet ASTM A105 MSS SP-97 BW	
1	24	6	SCH60	XS	P31B-008J9	Outlet ASTM A105 MSS SP-97 BW	

OLET ON CAP (LC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P36B-000AR	Outlet on cap ASTM A105 Class 3000 MSS SP-97 SW Cap=NPS2	
1	0.75				P36B-0001R	Outlet on cap ASTM A105 Class 3000 MSS SP-97 SW Cap=NPS2	
1	1				P36B-000AS	Outlet on cap ASTM A105 Class 3000 MSS SP-97 SW Cap=NPS2	
1	1.5				P36B-000AT	Outlet on cap ASTM A105 Class 3000 MSS SP-97 SW Cap=NPS2	
4203	0.5				P36B-000B0	Outlet on cap ASTM A105 Class 3000 MSS SP-97 SW Cap=NPS3	
4203	0.75				P36B-0001L	Outlet on cap ASTM A105 Class 3000 MSS SP-97 SW Cap=NPS3	
4203	1				P36B-0008K	Outlet on cap ASTM A105 Class 3000 MSS SP-97 SW Cap=NPS3	
4203	1.5				P36B-000B1	Outlet on cap ASTM A105 Class 3000 MSS SP-97 SW Cap=NPS3	
4204	0.5				P36B-000AU	Outlet on cap ASTM A105 Class 3000 MSS SP-97 SW Cap=NPS4	
4204	0.75				P36B-0001M	Outlet on cap ASTM A105 Class 3000 MSS SP-97 SW Cap=NPS4	
4204	1				P36B-0008D	Outlet on cap ASTM A105 Class 3000 MSS SP-97 SW Cap=NPS4	
4204	1.5				P36B-000AV	Outlet on cap ASTM A105 Class 3000 MSS SP-97 SW Cap=NPS4	
4205	0.5				P36B-000AW	Outlet on cap ASTM A105 Class 3000 MSS SP-97 SW Cap=NPS6	
4205	0.75				P36B-0001N	Outlet on cap ASTM A105 Class 3000 MSS SP-97 SW Cap=NPS6	
4205	1				P36B-0008L	Outlet on cap ASTM A105 Class 3000 MSS SP-97 SW Cap=NPS6	
4205	1.5				P36B-000AX	Outlet on cap ASTM A105 Class 3000 MSS SP-97 SW Cap=NPS6	
4206	0.5				P36B-000AY	Outlet on cap ASTM A105 Class 3000 MSS SP-97 SW Cap=NPS8	
4206	0.75				P36B-0005S	Outlet on cap ASTM A105 Class 3000 MSS SP-97 SW Cap=NPS8	
4206	1				P36B-0008M	Outlet on cap ASTM A105 Class 3000 MSS SP-97 SW Cap=NPS8	
4206	1.5				P36B-0001D	Outlet on cap ASTM A105 Class 3000 MSS SP-97 SW Cap=NPS8	
4207	0.5				P36B-000AZ	Outlet on cap ASTM A105 Class 3000 MSS SP-97 SW Cap=NPS10 and larger	
4207	0.75				P36B-000AP	Outlet on cap ASTM A105 Class 3000 MSS SP-97 SW Cap=NPS10 and larger	
4207	1				P36B-0001H	Outlet on cap ASTM A105 Class 3000 MSS SP-97 SW Cap=NPS10 and larger	
4207	1.5				P36B-00088	Outlet on cap ASTM A105 Class 3000 MSS SP-97 SW Cap=NPS10 and larger	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30B-0002D	Plug ASTM A105 ASME B16.11 NPT Round head	
1	0.75				P30B-0002E	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1				P30B-0002F	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1.5				P30B-0002G	Plug ASTM A105 ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P61B-001FF	Flange SW ASTM A105 Class 600 ASME B16.5 RF	
1	0.75		XS		P61B-001FH	Flange SW ASTM A105 Class 600 ASME B16.5 RF	
1	1		XS		P61B-001DR	Flange SW ASTM A105 Class 600 ASME B16.5 RF	
1	1.5		XS		P61B-001DV	Flange SW ASTM A105 Class 600 ASME B16.5 RF	
1	2		XS		P61B-001DH	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
1	3		XS		P61B-001M8	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
1	4		XS		P61B-001SH	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
1	6		XS		P61B-001T1	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
1	8		XS		P61B-001UC	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
1	10		SCH80		P61B-001DX	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
1	12		SCH80		P61B-001F8	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
1	14		SCH80		P61B-001FP	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
1	16		SCH80		P61B-001KD	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
1	18		SCH60		P61B-001KS	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
1	20		SCH60		P61B-001MM	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
1	24		SCH60		P61B-001NN	Flange WN ASTM A105 Class 600 ASME B16.5 RF	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
789	3		XS		P61B-00654	Flange WN ASTM A105 Class 900 ASME B16.5 RJ	
789	4		XS		P61B-00655	Flange WN ASTM A105 Class 900 ASME B16.5 RJ	
789	6		XS		P61B-00656	Flange WN ASTM A105 Class 900 ASME B16.5 RJ	
789	8		XS		P61B-00657	Flange WN ASTM A105 Class 900 ASME B16.5 RJ	
789	10		SCH80		P61B-00688	Flange WN ASTM A105 Class 900 ASME B16.5 RJ	
789	12		SCH80		P61B-0068F	Flange WN ASTM A105 Class 900 ASME B16.5 RJ	
789	14		SCH80		P61B-00689	Flange WN ASTM A105 Class 900 ASME B16.5 RJ	
789	16		SCH80		P61B-0068M	Flange WN ASTM A105 Class 900 ASME B16.5 RJ	
789	18		SCH60		P61B-00ACA	Flange WN ASTM A105 Class 900 ASME B16.5 RJ	
789	20		SCH60		P61B-0068J	Flange WN ASTM A105 Class 900 ASME B16.5 RJ	
789	24		SCH60		P61B-00ACB	Flange WN ASTM A105 Class 900 ASME B16.5 RJ	
797	0.5		XS		P61B-009T3	Flange SW ASTM A105 Class 1500 ASME B16.5 RJ	
797	0.75		XS		P61B-009T4	Flange SW ASTM A105 Class 1500 ASME B16.5 RJ	
797	1		XS		P61B-009T5	Flange SW ASTM A105 Class 1500 ASME B16.5 RJ	
797	1.5		XS		P61B-009T6	Flange SW ASTM A105 Class 1500 ASME B16.5 RJ	
797	2		XS		P61B-0065C	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67B-000J7	Blind flange ASTM A105 Class 600 ASME B16.5 RF	
1	0.75				P67B-000J8	Blind flange ASTM A105 Class 600 ASME B16.5 RF	
1	1				P67B-000J9	Blind flange ASTM A105 Class 600 ASME B16.5 RF	
1	1.5				P67B-000JA	Blind flange ASTM A105 Class 600 ASME B16.5 RF	
1	2				P67B-000JG	Blind flange ASTM A105 Class 600 ASME B16.5 RF	
1	3				P67B-000JK	Blind flange ASTM A105 Class 600 ASME B16.5 RF	
1	4				P67B-000JL	Blind flange ASTM A105 Class 600 ASME B16.5 RF	
1	6				P67B-000JM	Blind flange ASTM A105 Class 600 ASME B16.5 RF	
1	8				P67B-000JN	Blind flange ASTM A105 Class 600 ASME B16.5 RF	
1	10				P67B-000JB	Blind flange ASTM A105 Class 600 ASME B16.5 RF	
1	12				P67B-000JC	Blind flange ASTM A105 Class 600 ASME B16.5 RF	
1	14				P67B-000JD	Blind flange ASTM A105 Class 600 ASME B16.5 RF	
1	16				P67B-000JE	Blind flange ASTM A105 Class 600 ASME B16.5 RF	
1	18				P67B-000JF	Blind flange ASTM A105 Class 600 ASME B16.5 RF	
1	20				P67B-000JH	Blind flange ASTM A105 Class 600 ASME B16.5 RF	
1	24				P67B-000JJ	Blind flange ASTM A105 Class 600 ASME B16.5 RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000J8	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000J9	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000JA	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000JB	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000JH	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000JL	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000JM	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	6				P73T-000JN	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	8				P73T-000JP	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	10				P73T-000JC	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	12				P73T-000JD	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	14				P73T-000JE	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	16				P73T-000JF	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	18				P73T-000JG	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	20				P73T-000JJ	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

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GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	24				P73T-000JK	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
789	3				P75T-000JN	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	4				P75T-000JP	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	6				P75T-000JR	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	8				P75T-000JS	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	10				P75T-000JL	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	12				P75T-000JM	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	14				P75T-000MJ	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	16				P75T-000MK	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	18				P75T-000N8	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	20				P75T-000N7	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	24				P75T-000N9	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	0.5				P75T-000JT	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	0.75				P75T-000JU	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	1				P75T-000JV	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	1.5				P75T-000JW	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	2				P75T-0008A	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-6				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	8-24				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
789	1-3				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
789	4-24				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
797	0.5-2				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81B-000RA	Gate valve ASTM A105 Class 800 API 602 SW Trim number 5 BB-BG-OS&Y Handwheel operated	
1	0.75				P81B-000P0	Gate valve ASTM A105 Class 800 API 602 SW Trim number 5 BB-BG-OS&Y Handwheel operated	
1	1				P81B-000P1	Gate valve ASTM A105 Class 800 API 602 SW Trim number 5 BB-BG-OS&Y Handwheel operated	
1	1.5				P81B-000P2	Gate valve ASTM A105 Class 800 API 602 SW Trim number 5 BB-BG-OS&Y Handwheel operated	
1	2				P81C-004LC	Gate valve ASTM A216 Grade WCB Class 600 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated	
1	3				P81C-004LD	Gate valve ASTM A216 Grade WCB Class 600 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated	
1	4				P81C-004LE	Gate valve ASTM A216 Grade WCB Class 600 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated	
1	6				P81C-0087L	Gate valve ASTM A216 Grade WCB Class 600 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Gear operated	
1	8				P81C-004LP	Gate valve ASTM A216 Grade WCB Class 600 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Gear operated	
1	10				P81C-004LG	Gate valve ASTM A216 Grade WCB Class 600 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Gear operated	
1	12				P81C-004LH	Gate valve ASTM A216 Grade WCB Class 600 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Gear operated	
1	14				P81C-004LJ	Gate valve ASTM A216 Grade WCB Class 600 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Gear operated	
1	16				P81C-004LK	Gate valve ASTM A216 Grade WCB Class 600 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Gear operated	
1	18				P81C-004LL	Gate valve ASTM A216 Grade WCB Class 600 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Gear operated	
1	20				P81C-004LM	Gate valve ASTM A216 Grade WCB Class 600 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Gear operated	
1	24				P81C-004LN	Gate valve ASTM A216 Grade WCB Class 600 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Gear operated	
714	0.5				P81B-0015N	Gate valve ASTM A105 Class 800 API 602 SW - NPT Trim number 5 BB-BG-OS&Y Handwheel operated	
714	0.75				P81B-002FC	Gate valve ASTM A105 Class 800 API 602 SW - NPT Trim number 5 BB-BG-OS&Y Handwheel operated	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82B-000KW	Globe valve ASTM A105 Class 800 API 602 SW Trim number 5 BB-BG-OS&Y Handwheel operated	
1	0.75				P82B-000HE	Globe valve ASTM A105 Class 800 API 602 SW Trim number 5 BB-BG-OS&Y Handwheel operated	
1	1				P82B-000HF	Globe valve ASTM A105 Class 800 API 602 SW Trim number 5 BB-BG-OS&Y Handwheel operated	

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GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5				P82B-000HG	Globe valve ASTM A105 Class 800 API 602 SW Trim number 5 BB-BG-OS&Y Handwheel operated	
1	2				P82C-00297	Globe valve ASTM A216 Grade WCB Class 600 BS 1873 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated	
1	3				P82C-00298	Globe valve ASTM A216 Grade WCB Class 600 BS 1873 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated	
1	4				P82C-00299	Globe valve ASTM A216 Grade WCB Class 600 BS 1873 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated	
1	6				P82C-004DB	Globe valve ASTM A216 Grade WCB Class 600 BS 1873 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Gear operated	
1	8				P82C-0029B	Globe valve ASTM A216 Grade WCB Class 600 BS 1873 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Gear operated	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83B-000GL	Check valve ASTM A105 Class 800 API 602 SW Trim number 5 Lift-type Bolted cover	
1	0.75				P83B-000EU	Check valve ASTM A105 Class 800 API 602 SW Trim number 5 Lift-type Bolted cover	
1	1				P83B-000EV	Check valve ASTM A105 Class 800 API 602 SW Trim number 5 Lift-type Bolted cover	
1	1.5				P83B-000EW	Check valve ASTM A105 Class 800 API 602 SW Trim number 5 Lift-type Bolted cover	
1	2				P83C-00266	Check valve ASTM A216 Grade WCB Class 600 BS 1868 Flange ASME B16.5 RF Trim number 5 Swing-type Bolted cover	
1	3				P83C-00267	Check valve ASTM A216 Grade WCB Class 600 BS 1868 Flange ASME B16.5 RF Trim number 5 Swing-type Bolted cover	
1	4				P83C-00268	Check valve ASTM A216 Grade WCB Class 600 BS 1868 Flange ASME B16.5 RF Trim number 5 Swing-type Bolted cover	
1	6				P83C-00269	Check valve ASTM A216 Grade WCB Class 600 BS 1868 Flange ASME B16.5 RF Trim number 5 Swing-type Bolted cover	
1	8				P83C-0026A	Check valve ASTM A216 Grade WCB Class 600 BS 1868 Flange ASME B16.5 RF Trim number 5 Swing-type Bolted cover	
1	10				P83C-00265	Check valve ASTM A216 Grade WCB Class 600 BS 1868 Flange ASME B16.5 RF Trim number 5 Swing-type Bolted cover	

DP CHECK VALVE (XDP)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P88C-002JC	Dual plate check valve ASTM A216 Grade WCB Class 600 API 594 Wafer-type ASME B16.5 RF Trim number 5 Internal wetted parts 13Cr Spring Inconel Retainerless-type	
1	16				P88C-002JD	Dual plate check valve ASTM A216 Grade WCB Class 600 API 594 Wafer-type ASME B16.5 RF Trim number 5 Internal wetted parts 13Cr Spring Inconel Retainerless-type	
1	18				P88C-002JE	Dual plate check valve ASTM A216 Grade WCB Class 600 API 594 Wafer-type ASME B16.5 RF Trim number 5 Internal wetted parts 13Cr Spring Inconel Retainerless-type	

BUTTERFLY VALVE (H)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	8				P86C-0023W	Offset design butterfly valve ASTM A216 Grade WCB Class 600 API 609 Category B Lug-type ASME B16.5 RF Disc CS Seat Stellite-6 Trim 13Cr Triple eccentric design BG Gear operated	
1	10				P86C-0023V	Offset design butterfly valve ASTM A216 Grade WCB Class 600 API 609 Category B Lug-type ASME B16.5 RF Disc CS Seat Stellite-6 Trim 13Cr Triple eccentric design BG Gear operated	

ORIFICE FLANGE (FO)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2		XS		P66B-008EY	Orifice flange WN ASTM A105 Class 600 ASME B16.36 RF NPS1/2 SW tap x 1	
1	3		XS		P66B-008G7	Orifice flange WN ASTM A105 Class 600 ASME B16.36 RF NPS1/2 SW tap x 1	
1	4		XS		P66B-008FA	Orifice flange WN ASTM A105 Class 600 ASME B16.36 RF NPS1/2 SW tap x 1	
1	6		XS		P66B-008FN	Orifice flange WN ASTM A105 Class 600 ASME B16.36 RF NPS1/2 SW tap x 1	
1	8		XS		P66B-008FX	Orifice flange WN ASTM A105 Class 600 ASME B16.36 RF NPS1/2 SW tap x 1	
1	10		SCH80		P66B-008G1	Orifice flange WN ASTM A105 Class 600 ASME B16.36 RF NPS1/2 SW tap x 1	
1	12		SCH80		P66B-008FW	Orifice flange WN ASTM A105 Class 600 ASME B16.36 RF NPS1/2 SW tap x 1	
1	14		SCH80		P66B-008G2	Orifice flange WN ASTM A105 Class 600 ASME B16.36 RF NPS1/2 SW tap x 1	
1	16		SCH80		P66B-008G3	Orifice flange WN ASTM A105 Class 600 ASME B16.36 RF NPS1/2 SW tap x 1	
1	18		SCH60		P66B-008G4	Orifice flange WN ASTM A105 Class 600 ASME B16.36 RF NPS1/2 SW tap x 1	
1	20		SCH60		P66B-008G5	Orifice flange WN ASTM A105 Class 600 ASME B16.36 RF NPS1/2 SW tap x 1	
1	24		SCH60		P66B-008G6	Orifice flange WN ASTM A105 Class 600 ASME B16.36 RF NPS1/2 SW tap x 1	
200	2		XS		P66B-008F5	Orifice flange WN ASTM A105 Class 600 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	3		XS		P66B-008GE	Orifice flange WN ASTM A105 Class 600 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	4		XS		P66B-008FB	Orifice flange WN ASTM A105 Class 600 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	6		XS		P66B-008FT	Orifice flange WN ASTM A105 Class 600 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	8		XS		P66B-008G0	Orifice flange WN ASTM A105 Class 600 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	10		SCH80		P66B-008G8	Orifice flange WN ASTM A105 Class 600 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	12		SCH80		P66B-008FZ	Orifice flange WN ASTM A105 Class 600 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	14		SCH80		P66B-008G9	Orifice flange WN ASTM A105 Class 600 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	

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ORIFICE FLANGE (FO)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
200	16		SCH80		P66B-008GA	Orifice flange WN ASTM A105 Class 600 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	18		SCH60		P66B-008GB	Orifice flange WN ASTM A105 Class 600 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	20		SCH60		P66B-008GC	Orifice flange WN ASTM A105 Class 600 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	24		SCH60		P66B-008GD	Orifice flange WN ASTM A105 Class 600 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71B-000E4	Spectacle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	0.75				P71B-000DN	Spectacle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	1				P71B-000DP	Spectacle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71B-000DR	Spectacle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	2				P71B-000DS	Spectacle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	3				P71B-000DT	Spectacle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	4				P71B-000DU	Spectacle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	6				P71B-000DV	Spectacle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	

PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	8				P72B-000MF	Paddle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	10				P72B-000MA	Paddle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	12				P72B-000M6	Paddle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	14				P72B-000MB	Paddle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	16				P72B-000MC	Paddle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	18				P72B-000MD	Paddle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	20				P72B-000ME	Paddle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	24				P72B-000MP	Paddle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	
789	6				P72B-000JL	Paddle blank ASTM A105 Class 900 Standard-drawing Flange ASME B16.5 RJ	

PADDLE SPACER (PS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	8				P72B-000MM	Paddle spacer ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	10				P72B-000MG	Paddle spacer ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	12				P72B-000M7	Paddle spacer ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	14				P72B-000MH	Paddle spacer ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	16				P72B-000MJ	Paddle spacer ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	18				P72B-000MK	Paddle spacer ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	20				P72B-000ML	Paddle spacer ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	24				P72B-000MN	Paddle spacer ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	
789	6				P72B-000JW	Paddle spacer ASTM A105 Class 900 Standard-drawing Flange ASME B16.5 RJ	

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BOLT TABLE (B_D1AS , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	80	P80S-003V6		
0.75	4	0.625	90	P80S-003XF		
1	4	0.625	95	P80S-003XG		
1.5	4	0.750	110	P80S-003XK		
2	8	0.625	110	P80S-003VC		
3	8	0.750	130	P80S-003XP		
4	8	0.875	150	P80S-0041F		
6	12	1.000	175	P80S-0043P		
8	12	1.125	195	P80S-0046W		
10	16	1.250	250	P80S-004AY		
12	20	1.250	255	P80S-004AZ		
14	20	1.375	270	P80S-003E7		
16	20	1.500	295	P80S-003FL		
18	20	1.625	320	P80S-005TT		
20	24	1.625	335	P80S-005TW		
24	24	1.875	380	P80S-008P4		

BOLT TABLE (B_D1AS_789 , STUD ASME RJ, OPTION CODE 789)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	110		R12	
0.75	4	0.750	115		R14	
1	4	0.875	130	P80S-0041B	R16	
1.5	4	1.000	140		R20	
2	8	0.875	150	P80S-0041F	R24	
3	8	0.875	150	P80S-0041F	R31	P75T-000JN
4	8	1.125	175	P80S-0046S	R37	P75T-000JP
6	12	1.125	200	P80S-0046X	R45	P75T-000JR
8	12	1.375	260	P80S-003E5	R49	P75T-000JS
10	16	1.375	275	P80S-003E8	R53	P75T-000JL
12	20	1.375	295	P80S-003EC	R57	P75T-000JM
14	20	1.500	325	P80S-008N3	R62	P75T-000MJ
16	20	1.625	340	P80S-005TX	R66	P75T-000MK
18	20	1.875	390	P80S-008P6	R70	P75T-000N8
20	20	2.000	415	P80S-005VG	R74	P75T-000N7
24	20	2.500	525	P80S-00P1W	R78	P75T-000N9

BOLT TABLE (B_D1AS_797 , STUD ASME RJ, OPTION CODE 797)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	110	P80S-003XK	R12	P75T-000JT
0.75	4	0.750	115	P80S-003XL	R14	P75T-000JU
1	4	0.875	130	P80S-0041B	R16	P75T-000JV
1.5	4	1.000	140	P80S-0043F	R20	P75T-000JW
2	8	0.875	150	P80S-0041F	R24	P75T-0008A
3	8	1.125	180		R35	
4	8	1.250	230		R39	
6	12	1.375	300		R46	
8	12	1.625	345		R50	
10	12	1.875	395		R54	
12	16	2.000	445		R58	
14	16	2.250	490		R63	
16	16	2.500	540		R67	
18	16	2.750	590		R71	
20	16	3.000	650		R75	
24	16	3.500	745		R79	

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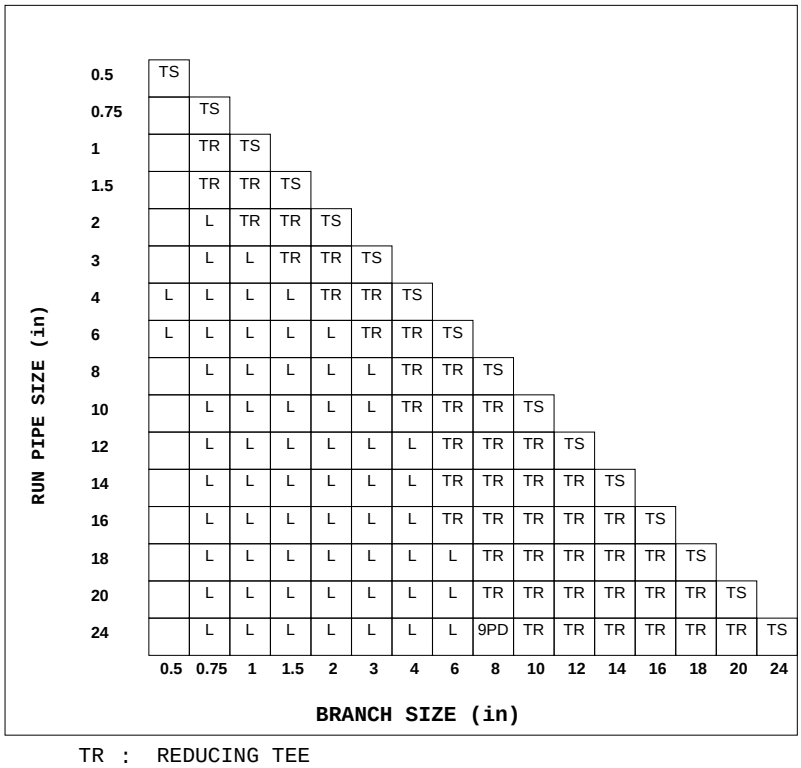
BRANCH TABLE (T_D1AS)



TR : REDUCING TEE
TS : STRAIGHT TEE
L : OUTLET
9PD : REINFORCING PAD 90 DEG

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Material : Killed CS
Rating : ASME CLASS 600
Flange Face : RF
C.A.(mm) : 1.50
Gasket : Spiral Wound
Service : PROCESS - CHEMICAL DOSING : / CHEMICALS
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
2	USE OF SOFT SEATED BALL, PLUG AND BUTTERFLY VALVES SHALL BE LIMITED TO MAXIMUM OF 204DEGC (400DEGF)

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
541	NPT(F) (CA,L)
714	SW - NPT(F) (V)
789	CLASS 900 (B,F,G)
797	CLASS 1500 (B,F,G)

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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P01A-000XM	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	0.75		XS		P01A-000XN	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1		XS		P01A-000XP	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1.5		XS		P01A-000XV	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	2		XS		P01A-000YX	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	3		STD		P01A-000YM	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	4		XS		P01A-000Z9	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P02B-00014	90 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	0.75				P02B-00015	90 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	1				P02B-00016	90 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5				P02B-00017	90 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	2		XS		P02A-000CP	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		STD		P02A-000CU	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		XS		P02A-000D3	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P03B-00017	45 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	0.75				P03B-00018	45 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	1				P03B-00019	45 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5				P03B-0001A	45 degree elbow ASTM A105 Class 3000 ASME B16.11 SW	
1	2		XS		P03A-000AS	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		STD		P03A-000AX	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		XS		P03A-000B3	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P21B-00017	Straight tee ASTM A105 Class 3000 ASME B16.11 SW	
1	0.75				P21B-00018	Straight tee ASTM A105 Class 3000 ASME B16.11 SW	
1	1				P21B-00019	Straight tee ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5				P21B-0001A	Straight tee ASTM A105 Class 3000 ASME B16.11 SW	
1	2		XS		P21A-001CJ	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		STD		P21A-001CU	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		XS		P21A-001CV	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75			P24B-0002L	Reducing tee ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5	0.75			P24B-0002N	Reducing tee ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5	1			P24B-0002P	Reducing tee ASTM A105 Class 3000 ASME B16.11 SW	
1	2	1	XS	XS	P24A-00238	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	XS	XS	P24A-0023H	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	STD	XS	P24A-00214	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	STD	XS	P24A-002HW	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	XS	XS	P24A-0023E	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	XS	STD	P24A-006FZ	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	STD	XS	P27A-001MZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	XS	XS	P27A-001E4	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	XS	STD	P27A-0048S	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	STD	XS	P28A-001N5	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	XS	XS	P28A-001EJ	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	XS	STD	P28A-0048H	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P29B-0001J	Cap ASTM A105 Class 3000 ASME B16.11 SW	
1	0.75				P29B-0001F	Cap ASTM A105 Class 3000 ASME B16.11 SW	
1	1				P29B-0001G	Cap ASTM A105 Class 3000 ASME B16.11 SW	
1	1.5				P29B-0001H	Cap ASTM A105 Class 3000 ASME B16.11 SW	
1	2		XS		P29A-000A1	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		STD		P29A-000BK	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		XS		P29A-000B9	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
541	0.75				P29B-0000C	Cap ASTM A105 Class 3000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P41A-000B5	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		SCH160		P41A-000B6	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		SCH160		P41A-000B7	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		SCH160		P41A-000B8	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

CON SWAGED NIPPLE (SNC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	XS	XS	P42A-00036	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	XS	XS	P42A-00038	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	XS	XS	P42A-0003B	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	XS	XS	P42A-00035	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	XS	XS	P42A-00039	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	XS	XS	P42A-0003C	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	XS	XS	P42A-0008C	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	XS	XS	P42A-0008D	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	XS	XS	P42A-0008E	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	XS	XS	P42A-0008F	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	STD	XS	P42A-0007V	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	

ECC SWAGED NIPPLE (SNE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	XS	XS	P43A-00036	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	XS	XS	P43A-00037	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	XS	XS	P43A-00038	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	XS	XS	P43A-00039	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	XS	XS	P43A-0003A	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	XS	XS	P43A-0003B	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	XS	XS	P43A-00042	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	XS	XS	P43A-00043	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	XS	XS	P43A-00044	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	XS	XS	P43A-00045	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	STD	XS	P43A-0003J	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	

COUPLING (CPS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P47B-0001D	Coupling ASTM A105 Class 3000 ASME B16.11 SW - SW	
1	0.75				P47B-0001E	Coupling ASTM A105 Class 3000 ASME B16.11 SW - SW	
1	1				P47B-0001F	Coupling ASTM A105 Class 3000 ASME B16.11 SW - SW	
1	1.5				P47B-0001G	Coupling ASTM A105 Class 3000 ASME B16.11 SW - SW	

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OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2 - 2.5	0.75			P31B-0137J	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	3 - 5	0.75			P31B-0137K	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	3	1			P31B-007A7	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	4 - 5	1			P31B-0138Z	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
1	4	1.5			P31B-005SN	Outlet ASTM A105 Class 3000 MSS SP-97 SW	
541	1	0.75			P31B-00551	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
541	1.5	0.75			P31B-00555	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
541	2 - 2.5	0.75			P31B-0137H	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
541	3 - 5	0.75			P31B-01376	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30B-0002D	Plug ASTM A105 ASME B16.11 NPT Round head	
1	0.75				P30B-0002E	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1				P30B-0002F	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1.5				P30B-0002G	Plug ASTM A105 ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P61B-001FF	Flange SW ASTM A105 Class 600 ASME B16.5 RF	
1	0.75		XS		P61B-001FH	Flange SW ASTM A105 Class 600 ASME B16.5 RF	
1	1		XS		P61B-001DR	Flange SW ASTM A105 Class 600 ASME B16.5 RF	
1	1.5		XS		P61B-001DV	Flange SW ASTM A105 Class 600 ASME B16.5 RF	
1	2		XS		P61B-001DH	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
1	3		STD		P61B-001TW	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
1	4		XS		P61B-001SH	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
789	3		STD		P61B-006SP	Flange WN ASTM A105 Class 900 ASME B16.5 RJ	
789	4		XS		P61B-00655	Flange WN ASTM A105 Class 900 ASME B16.5 RJ	
797	0.5		XS		P61B-009T3	Flange SW ASTM A105 Class 1500 ASME B16.5 RJ	
797	0.75		XS		P61B-009T4	Flange SW ASTM A105 Class 1500 ASME B16.5 RJ	
797	1		XS		P61B-009T5	Flange SW ASTM A105 Class 1500 ASME B16.5 RJ	
797	1.5		XS		P61B-009T6	Flange SW ASTM A105 Class 1500 ASME B16.5 RJ	
797	2		XS		P61B-0065C	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67B-000J7	Blind flange ASTM A105 Class 600 ASME B16.5 RF	
1	0.75				P67B-000J8	Blind flange ASTM A105 Class 600 ASME B16.5 RF	
1	1				P67B-000J9	Blind flange ASTM A105 Class 600 ASME B16.5 RF	
1	1.5				P67B-000JA	Blind flange ASTM A105 Class 600 ASME B16.5 RF	
1	2				P67B-000JG	Blind flange ASTM A105 Class 600 ASME B16.5 RF	
1	3				P67B-000JK	Blind flange ASTM A105 Class 600 ASME B16.5 RF	
1	4				P67B-000JL	Blind flange ASTM A105 Class 600 ASME B16.5 RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000J8	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000J9	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000JA	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000JB	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000JH	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000JL	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000JM	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
789	3				P75T-000JN	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	4				P75T-000JP	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	0.5				P75T-000JT	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	

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GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
797	0.75				P75T-000JU	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	1				P75T-000JV	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	1.5				P75T-000JW	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	2				P75T-0008A	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-4				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
789	1-3				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
789	4				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
797	0.5-2				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81B-001ZN	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated Fluid-1	
1	0.75				P81B-001ZP	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated Fluid-1	
1	1				P81B-001ZR	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated Fluid-1	
1	1.5				P81B-001ZS	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated Fluid-1	
1	2				P81C-006R6	Gate valve ASTM A216 Grade WCB Class 600 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated Fluid-1	
1	3				P81C-006R7	Gate valve ASTM A216 Grade WCB Class 600 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated Fluid-1	
1	4				P81C-006R8	Gate valve ASTM A216 Grade WCB Class 600 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated Fluid-1	
714	0.5				P81B-002SA	Gate valve ASTM A105 Class 800 API 602 SW - NPT Trim number 8 BB-BG-OS&Y Handwheel operated Fluid-1	
714	0.75				P81B-002FD	Gate valve ASTM A105 Class 800 API 602 SW - NPT Trim number 8 BB-BG-OS&Y Handwheel operated Fluid-1	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82B-001H8	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated Fluid-1	
1	0.75				P82B-001H9	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated Fluid-1	
1	1				P82B-001HA	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated Fluid-1	
1	1.5				P82B-001HB	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated Fluid-1	
1	2				P82C-00395	Globe valve ASTM A216 Grade WCB Class 600 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated Fluid-1	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83B-000FX	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover	
1	0.75				P83B-000ER	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover	
1	1				P83B-000ES	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover	
1	1.5				P83B-000ET	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover	
1	2				P83C-0025Z	Check valve ASTM A216 Grade WCB Class 600 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	3				P83C-00260	Check valve ASTM A216 Grade WCB Class 600 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	4				P83C-00261	Check valve ASTM A216 Grade WCB Class 600 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71B-000E4	Spectacle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	0.75				P71B-000DN	Spectacle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	1				P71B-000DP	Spectacle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71B-000DR	Spectacle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	2				P71B-000DS	Spectacle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	3				P71B-000DT	Spectacle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	4				P71B-000DU	Spectacle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	

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BOLT TABLE (B_D1AY04 , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	80	P80S-003V6		
0.75	4	0.625	90	P80S-003XF		
1	4	0.625	95	P80S-003XG		
1.5	4	0.750	110	P80S-003XK		
2	8	0.625	110	P80S-003VC		
3	8	0.750	130	P80S-003XP		
4	8	0.875	150	P80S-0041F		

BOLT TABLE (B_D1AY04_789 , STUD ASME RJ, OPTION CODE 789)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	110		R12	
0.75	4	0.750	115		R14	
1	4	0.875	130	P80S-0041B	R16	
1.5	4	1.000	140		R20	
2	8	0.875	150	P80S-0041F	R24	
3	8	0.875	150	P80S-0041F	R31	P75T-000JN
4	8	1.125	175	P80S-0046S	R37	P75T-000JP

BOLT TABLE (B_D1AY04_797 , STUD ASME RJ, OPTION CODE 797)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	110	P80S-003XK	R12	P75T-000JT
0.75	4	0.750	115	P80S-003XL	R14	P75T-000JU
1	4	0.875	130	P80S-0041B	R16	P75T-000JV
1.5	4	1.000	140	P80S-0043F	R20	P75T-000JW
2	8	0.875	150	P80S-0041F	R24	P75T-0008A
3	8	1.125	180		R35	
4	8	1.250	230		R39	

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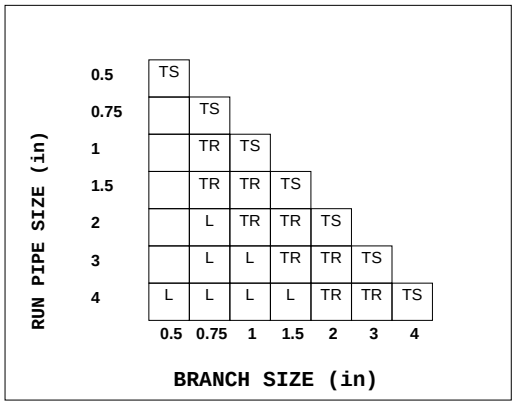
BRANCH TABLE (T_D1AY04)



L : OUTLET
TS : STRAIGHT TEE
TR : REDUCING TEE

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PIPING CLASS

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Material : 1-1/4Cr - 1/2Mo
Rating : ASME CLASS 600
Flange Face : RF
C.A.(mm) : 1.50
Gasket : Spiral Wound
Service : PROCESS - BENZENE SERVICE (5% WT) + HYDROGEN
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
24	FOR ALL RELEVANT PIPING CLASSES WITH LINE DESIGN TEMPERATURE ABOVE 427DEGC, IN SPIRAL WOUND GASKET, SUITABLE GASKET FILLER MATERIAL SUCH AS COMBINATION OF MICA LAYERS AND GRAPHITE FILLERS OR EQUIVALENT SHALL BE REVIEWED AND SELECTED OR AS DEFINED BY THE LICENSOR

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
541	NPT(F) (CA,L)
789	CLASS 900 (B,F,G)
797	CLASS 1500 (B,F,G)
4608	VALVE WITH NIPPLES (V)

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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P01F-000BJ	Pipe ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M PE Licensor-4	
1	0.75		XS		P01F-000BK	Pipe ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M PE Licensor-4	
1	1		XS		P01F-000BL	Pipe ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M PE Licensor-4	
1	1.5		XS		P01F-000BM	Pipe ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M PE Licensor-4	
1	2		XS		P01F-000BT	Pipe ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M BE Licensor-4	
1	3		XS		P01F-000BU	Pipe ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M BE Licensor-4	
1	4		XS		P01F-000BV	Pipe ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M BE Licensor-4	
1	6		XS		P01F-000BW	Pipe ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M BE Licensor-4	
1	8		SCH60		P01F-000BX	Pipe ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M BE Licensor-4	
1	10		XS		P01F-000BN	Pipe ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M BE Licensor-4	
1	12		SCH60		P01F-000BP	Pipe ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M BE Licensor-4	
1	14		SCH60		P01F-000BR	Pipe ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M BE Licensor-4	
1	16		SCH80		P01F-001SB	Pipe ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M BE Licensor-4	
1	18		SCH80		P01F-001SC	Pipe ASTM A691 Grade 1-1/4CR Class 22 EFW ASME B36.10M/B36.19M BE Licensor-4	
1	20		SCH80		P01F-001SD	Pipe ASTM A691 Grade 1-1/4CR Class 22 EFW ASME B36.10M/B36.19M BE Licensor-4	
1	24		SCH80		P01F-001SE	Pipe ASTM A691 Grade 1-1/4CR Class 22 EFW ASME B36.10M/B36.19M BE Licensor-4	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P02G-00013	90 degree elbow ASTM A182 Grade F11 Class 1 Class 3000 ASME B16.11 SW Licensor-4	
1	0.75				P02G-00014	90 degree elbow ASTM A182 Grade F11 Class 1 Class 3000 ASME B16.11 SW Licensor-4	
1	1				P02G-00015	90 degree elbow ASTM A182 Grade F11 Class 1 Class 3000 ASME B16.11 SW Licensor-4	
1	1.5				P02G-00016	90 degree elbow ASTM A182 Grade F11 Class 1 Class 3000 ASME B16.11 SW Licensor-4	
1	2		XS		P02F-000AR	90 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius Licensor-4	
1	3		XS		P02F-000AS	90 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius Licensor-4	
1	4		XS		P02F-000AT	90 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius Licensor-4	
1	6		XS		P02F-000AU	90 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius Licensor-4	
1	8		SCH60		P02F-000AV	90 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius Licensor-4	
1	10		XS		P02F-000AL	90 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius Licensor-4	
1	12		SCH60		P02F-000AM	90 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius Licensor-4	
1	14		SCH60		P02F-000AN	90 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius Licensor-4	
1	16		SCH80		P02F-000MP	90 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius Licensor-4	
1	18		SCH80		P02F-000MR	90 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius Licensor-4	
1	20		SCH80		P02F-000MS	90 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius Licensor-4	
1	24		SCH80		P02F-000MT	90 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius Licensor-4	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P03G-00013	45 degree elbow ASTM A182 Grade F11 Class 1 Class 3000 ASME B16.11 SW Licensor-4	
1	0.75				P03G-00014	45 degree elbow ASTM A182 Grade F11 Class 1 Class 3000 ASME B16.11 SW Licensor-4	
1	1				P03G-00015	45 degree elbow ASTM A182 Grade F11 Class 1 Class 3000 ASME B16.11 SW Licensor-4	
1	1.5				P03G-00016	45 degree elbow ASTM A182 Grade F11 Class 1 Class 3000 ASME B16.11 SW Licensor-4	
1	2		XS		P03F-000AH	45 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius Licensor-4	
1	3		XS		P03F-000AJ	45 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius Licensor-4	
1	4		XS		P03F-000AK	45 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius Licensor-4	
1	6		XS		P03F-000AL	45 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius Licensor-4	
1	8		SCH60		P03F-000AM	45 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius Licensor-4	
1	10		XS		P03F-000AD	45 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius Licensor-4	
1	12		SCH60		P03F-000AE	45 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius Licensor-4	
1	14		SCH60		P03F-000AF	45 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius Licensor-4	
1	16		SCH80		P03F-000M8	45 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius Licensor-4	
1	18		SCH80		P03F-000M9	45 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius Licensor-4	
1	20		SCH80		P03F-000MA	45 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius Licensor-4	
1	24		SCH80		P03F-000MB	45 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius Licensor-4	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P21G-00013	Straight tee ASTM A182 Grade F11 Class 1 Class 3000 ASME B16.11 SW Licensor-4	
1	0.75				P21G-00014	Straight tee ASTM A182 Grade F11 Class 1 Class 3000 ASME B16.11 SW Licensor-4	

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STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P21G-00015	Straight tee ASTM A182 Grade F11 Class 1 Class 3000 ASME B16.11 SW Licensor-4	
1	1.5				P21G-00016	Straight tee ASTM A182 Grade F11 Class 1 Class 3000 ASME B16.11 SW Licensor-4	
1	2		XS		P21F-000AJ	Straight tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	3		XS		P21F-000AK	Straight tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	4		XS		P21F-000AL	Straight tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	6		XS		P21F-000AM	Straight tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	8		SCH60		P21F-000AN	Straight tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	10		XS		P21F-000AE	Straight tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	12		SCH60		P21F-000AF	Straight tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	14		SCH60		P21F-000AG	Straight tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	16		SCH80		P21F-000MF	Straight tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	18		SCH80		P21F-000MG	Straight tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW Licensor-4	
1	20		SCH80		P21F-000MH	Straight tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW Licensor-4	
1	24		SCH80		P21F-000MJ	Straight tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW Licensor-4	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75			P24G-0001A	Reducing tee ASTM A182 Grade F11 Class 1 Class 3000 ASME B16.11 SW Licensor-4	
1	1.5	0.75			P24G-0001B	Reducing tee ASTM A182 Grade F11 Class 1 Class 3000 ASME B16.11 SW Licensor-4	
1	1.5	1			P24G-0001C	Reducing tee ASTM A182 Grade F11 Class 1 Class 3000 ASME B16.11 SW Licensor-4	
1	2	1	XS	XS	P24F-000WW	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	2	1.5	XS	XS	P24F-000WX	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	3	1.5	XS	XS	P24F-000WY	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	3	2	XS	XS	P24F-000WZ	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	4	2	XS	XS	P24F-000X0	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	4	3	XS	XS	P24F-000X1	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	6	3	XS	XS	P24F-000X2	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	6	4	XS	XS	P24F-000X3	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	8	4	SCH60	XS	P24F-000X4	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	8	6	SCH60	XS	P24F-000X5	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	10	4	XS	XS	P24F-000X6	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	10	6	XS	XS	P24F-000X7	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	10	8	XS	SCH60	P24F-000X8	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	12	6	SCH60	XS	P24F-000XA	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	12	8	SCH60	SCH60	P24F-000XB	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	12	10	SCH60	XS	P24F-000X9	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	14	6	SCH60	XS	P24F-000XE	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	14	8	SCH60	SCH60	P24F-000XF	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	14	10	SCH60	XS	P24F-000XC	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	14	12	SCH60	SCH60	P24F-000XD	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	16	6	SCH80	XS	P24F-002F3	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	16	8	SCH80	SCH60	P24F-002FH	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	16	10	SCH80	XS	P24F-002F0	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	16	12	SCH80	SCH60	P24F-002F1	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	16	14	SCH80	SCH60	P24F-002F2	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	18	8	SCH80	SCH60	P24F-002FM	Reducing tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW Licensor-4	
1	18	10	SCH80	XS	P24F-002FJ	Reducing tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW Licensor-4	
1	18	12	SCH80	SCH60	P24F-002FK	Reducing tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW Licensor-4	
1	18	14	SCH80	SCH60	P24F-002FL	Reducing tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW Licensor-4	
1	18	16	SCH80	SCH80	P24F-002F4	Reducing tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW Licensor-4	
1	20	8	SCH80	SCH60	P24F-002FA	Reducing tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW Licensor-4	
1	20	10	SCH80	XS	P24F-002F5	Reducing tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW Licensor-4	
1	20	12	SCH80	SCH60	P24F-002F6	Reducing tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW Licensor-4	
1	20	14	SCH80	SCH60	P24F-002F7	Reducing tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW Licensor-4	
1	20	16	SCH80	SCH80	P24F-002F8	Reducing tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW Licensor-4	
1	20	18	SCH80	SCH80	P24F-002F9	Reducing tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW Licensor-4	
1	24	10	SCH80	XS	P24F-002KY	Reducing tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW Licensor-4	
1	24	12	SCH80	SCH60	P24F-002KZ	Reducing tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW Licensor-4	
1	24	14	SCH80	SCH60	P24F-002L0	Reducing tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW Licensor-4	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	24	16	SCH80	SCH80	P24F-002FB	Reducing tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW Licensor-4	
1	24	18	SCH80	SCH80	P24F-002FC	Reducing tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW Licensor-4	
1	24	20	SCH80	SCH80	P24F-002FD	Reducing tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW Licensor-4	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	XS	XS	P27F-000S1	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	4	2	XS	XS	P27F-000S2	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	4	3	XS	XS	P27F-000S3	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	6	3	XS	XS	P27F-000S4	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	6	4	XS	XS	P27F-000S5	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	8	4	SCH60	XS	P27F-000S6	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	8	6	SCH60	XS	P27F-000S7	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	10	4	XS	XS	P27F-000S8	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	10	6	XS	XS	P27F-000S9	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	10	8	XS	SCH60	P27F-000SA	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	12	6	SCH60	XS	P27F-000SC	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	12	8	SCH60	SCH60	P27F-000SD	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	12	10	SCH60	XS	P27F-000SB	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	14	6	SCH60	XS	P27F-000SG	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	14	8	SCH60	SCH60	P27F-000SH	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	14	10	SCH60	XS	P27F-000SE	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	14	12	SCH60	SCH60	P27F-000SF	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	16	8	SCH80	SCH60	P27F-001VK	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	16	10	SCH80	XS	P27F-001VG	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	16	12	SCH80	SCH60	P27F-001VH	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	16	14	SCH80	SCH60	P27F-001VJ	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	18	10	SCH80	XS	P27F-001VV	Concentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW Licensor-4	
1	18	12	SCH80	SCH60	P27F-001VW	Concentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW Licensor-4	
1	18	14	SCH80	SCH60	P27F-001VX	Concentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW Licensor-4	
1	18	16	SCH80	SCH80	P27F-001VL	Concentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW Licensor-4	
1	20	12	SCH80	SCH60	P27F-001VM	Concentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW Licensor-4	
1	20	14	SCH80	SCH60	P27F-001VN	Concentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW Licensor-4	
1	20	16	SCH80	SCH80	P27F-001VP	Concentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW Licensor-4	
1	20	18	SCH80	SCH80	P27F-001VR	Concentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW Licensor-4	
1	24	16	SCH80	SCH80	P27F-001VS	Concentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW Licensor-4	
1	24	18	SCH80	SCH80	P27F-001VT	Concentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW Licensor-4	
1	24	20	SCH80	SCH80	P27F-001VU	Concentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW Licensor-4	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	XS	XS	P28F-000S1	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	4	2	XS	XS	P28F-000S2	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	4	3	XS	XS	P28F-000S3	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	6	3	XS	XS	P28F-000S4	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	6	4	XS	XS	P28F-000S5	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	8	4	SCH60	XS	P28F-000S6	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	8	6	SCH60	XS	P28F-000S7	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	10	4	XS	XS	P28F-000S8	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	10	6	XS	XS	P28F-000S9	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	10	8	XS	SCH60	P28F-000SA	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	12	6	SCH60	XS	P28F-000SC	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	12	8	SCH60	SCH60	P28F-000SD	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	12	10	SCH60	XS	P28F-000SB	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	14	6	SCH60	XS	P28F-000SG	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	14	8	SCH60	SCH60	P28F-000SH	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	14	10	SCH60	XS	P28F-000SE	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	14	12	SCH60	SCH60	P28F-000SF	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	16	8	SCH80	SCH60	P28F-001W4	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	16	10	SCH80	XS	P28F-001W1	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	16	12	SCH80	SCH60	P28F-001W2	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	16	14	SCH80	SCH60	P28F-001W3	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	18	10	SCH80	XS	P28F-001WD	Eccentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW Licensor-4	
1	18	12	SCH80	SCH60	P28F-001WE	Eccentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW Licensor-4	
1	18	14	SCH80	SCH60	P28F-001WF	Eccentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW Licensor-4	
1	18	16	SCH80	SCH80	P28F-001W5	Eccentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW Licensor-4	
1	20	12	SCH80	SCH60	P28F-001W6	Eccentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW Licensor-4	
1	20	14	SCH80	SCH60	P28F-001W7	Eccentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW Licensor-4	
1	20	16	SCH80	SCH80	P28F-001W8	Eccentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW Licensor-4	
1	20	18	SCH80	SCH80	P28F-001W9	Eccentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW Licensor-4	
1	24	16	SCH80	SCH80	P28F-001WA	Eccentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW Licensor-4	
1	24	18	SCH80	SCH80	P28F-001WB	Eccentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW Licensor-4	
1	24	20	SCH80	SCH80	P28F-001WC	Eccentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW Licensor-4	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P29G-0000Y	Cap ASTM A182 Grade F11 Class 1 Class 3000 ASME B16.11 SW Licensor-4	
1	0.75				P29G-0000Z	Cap ASTM A182 Grade F11 Class 1 Class 3000 ASME B16.11 SW Licensor-4	
1	1				P29G-00010	Cap ASTM A182 Grade F11 Class 1 Class 3000 ASME B16.11 SW Licensor-4	
1	1.5				P29G-00011	Cap ASTM A182 Grade F11 Class 1 Class 3000 ASME B16.11 SW Licensor-4	
1	2		XS		P29F-000A8	Cap ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	3		XS		P29F-000A9	Cap ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	4		XS		P29F-000AA	Cap ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	6		XS		P29F-000AB	Cap ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	8		SCH60		P29F-000AC	Cap ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	10		XS		P29F-000A4	Cap ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	12		SCH60		P29F-000A5	Cap ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	14		SCH60		P29F-000A6	Cap ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	16		SCH80		P29F-000KU	Cap ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	18		SCH80		P29F-000KV	Cap ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	20		SCH80		P29F-000KW	Cap ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	24		SCH80		P29F-000KX	Cap ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
541	0.75				P29G-0001S	Cap ASTM A182 Grade F11 Class 1 Class 3000 ASME B16.11 NPT Licensor-4	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P41F-00034	Straight nipple ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Licensor-4	
1	0.75		SCH160		P41F-00035	Straight nipple ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Licensor-4	
1	1		SCH160		P41F-00036	Straight nipple ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Licensor-4	
1	1.5		SCH160		P41F-00037	Straight nipple ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Licensor-4	

CON SWAGED NIPPLE (SNC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	XS	XS	P42F-00034	Concentric swaged nipple ASTM A234 Grade WP11 Class 1 Seamless MSS SP-95 PE(L) - PE(S) Licensor-4	
1	1	0.5	XS	XS	P42F-00035	Concentric swaged nipple ASTM A234 Grade WP11 Class 1 Seamless MSS SP-95 PE(L) - PE(S) Licensor-4	
1	1	0.75	XS	XS	P42F-00036	Concentric swaged nipple ASTM A234 Grade WP11 Class 1 Seamless MSS SP-95 PE(L) - PE(S) Licensor-4	
1	1.5	0.5	XS	XS	P42F-00037	Concentric swaged nipple ASTM A234 Grade WP11 Class 1 Seamless MSS SP-95 PE(L) - PE(S) Licensor-4	
1	1.5	0.75	XS	XS	P42F-00038	Concentric swaged nipple ASTM A234 Grade WP11 Class 1 Seamless MSS SP-95 PE(L) - PE(S) Licensor-4	
1	1.5	1	XS	XS	P42F-00039	Concentric swaged nipple ASTM A234 Grade WP11 Class 1 Seamless MSS SP-95 PE(L) - PE(S) Licensor-4	
1	2	0.5	XS	XS	P42F-0003A	Concentric swaged nipple ASTM A234 Grade WP11 Class 1 Seamless MSS SP-95 BE(L) - PE(S) Licensor-4	
1	2	0.75	XS	XS	P42F-0003B	Concentric swaged nipple ASTM A234 Grade WP11 Class 1 Seamless MSS SP-95 BE(L) - PE(S) Licensor-4	
1	2	1	XS	XS	P42F-0003C	Concentric swaged nipple ASTM A234 Grade WP11 Class 1 Seamless MSS SP-95 BE(L) - PE(S) Licensor-4	
1	2	1.5	XS	XS	P42F-0003D	Concentric swaged nipple ASTM A234 Grade WP11 Class 1 Seamless MSS SP-95 BE(L) - PE(S) Licensor-4	
1	3	1.5	XS	XS	P42F-0003E	Concentric swaged nipple ASTM A234 Grade WP11 Class 1 Seamless MSS SP-95 BE(L) - PE(S) Licensor-4	

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ECC SWAGED NIPPLE (SNE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	XS	XS	P43F-0002F	Eccentric swaged nipple ASTM A234 Grade WP11 Class 1 Seamless MSS SP-95 PE(L) - PE(S) Licensor-4	
1	1	0.5	XS	XS	P43F-0002G	Eccentric swaged nipple ASTM A234 Grade WP11 Class 1 Seamless MSS SP-95 PE(L) - PE(S) Licensor-4	
1	1	0.75	XS	XS	P43F-0002H	Eccentric swaged nipple ASTM A234 Grade WP11 Class 1 Seamless MSS SP-95 PE(L) - PE(S) Licensor-4	
1	1.5	0.5	XS	XS	P43F-0002J	Eccentric swaged nipple ASTM A234 Grade WP11 Class 1 Seamless MSS SP-95 PE(L) - PE(S) Licensor-4	
1	1.5	0.75	XS	XS	P43F-0002K	Eccentric swaged nipple ASTM A234 Grade WP11 Class 1 Seamless MSS SP-95 PE(L) - PE(S) Licensor-4	
1	1.5	1	XS	XS	P43F-0002L	Eccentric swaged nipple ASTM A234 Grade WP11 Class 1 Seamless MSS SP-95 PE(L) - PE(S) Licensor-4	
1	2	0.5	XS	XS	P43F-0002M	Eccentric swaged nipple ASTM A234 Grade WP11 Class 1 Seamless MSS SP-95 BE(L) - PE(S) Licensor-4	
1	2	0.75	XS	XS	P43F-0002N	Eccentric swaged nipple ASTM A234 Grade WP11 Class 1 Seamless MSS SP-95 BE(L) - PE(S) Licensor-4	
1	2	1	XS	XS	P43F-0002P	Eccentric swaged nipple ASTM A234 Grade WP11 Class 1 Seamless MSS SP-95 BE(L) - PE(S) Licensor-4	
1	2	1.5	XS	XS	P43F-0002R	Eccentric swaged nipple ASTM A234 Grade WP11 Class 1 Seamless MSS SP-95 BE(L) - PE(S) Licensor-4	
1	3	1.5	XS	XS	P43F-0002S	Eccentric swaged nipple ASTM A234 Grade WP11 Class 1 Seamless MSS SP-95 BE(L) - PE(S) Licensor-4	

COUPLING (CPS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P47G-00016	Coupling ASTM A182 Grade F11 Class 1 Class 3000 ASME B16.11 SW - SW Licensor-4	
1	0.75				P47G-00017	Coupling ASTM A182 Grade F11 Class 1 Class 3000 ASME B16.11 SW - SW Licensor-4	
1	1				P47G-00018	Coupling ASTM A182 Grade F11 Class 1 Class 3000 ASME B16.11 SW - SW Licensor-4	
1	1.5				P47G-00019	Coupling ASTM A182 Grade F11 Class 1 Class 3000 ASME B16.11 SW - SW Licensor-4	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2 - 2.5	0.75			P31G-0036D	Outlet ASTM A182 Grade F11 Class 1 Class 3000 MSS SP-97 SW Licensor-4	
1	3 - 5	0.75			P31G-0036E	Outlet ASTM A182 Grade F11 Class 1 Class 3000 MSS SP-97 SW Licensor-4	
1	6 - 12	0.75			P31G-0036C	Outlet ASTM A182 Grade F11 Class 1 Class 3000 MSS SP-97 SW Licensor-4	
1	14 - 36	0.75			P31G-0036B	Outlet ASTM A182 Grade F11 Class 1 Class 3000 MSS SP-97 SW Licensor-4	
1	3	1			P31G-0036G	Outlet ASTM A182 Grade F11 Class 1 Class 3000 MSS SP-97 SW Licensor-4	
1	4 - 5	1			P31G-0036J	Outlet ASTM A182 Grade F11 Class 1 Class 3000 MSS SP-97 SW Licensor-4	
1	6 - 10	1			P31G-0036F	Outlet ASTM A182 Grade F11 Class 1 Class 3000 MSS SP-97 SW Licensor-4	
1	12 - 36	1			P31G-0036H	Outlet ASTM A182 Grade F11 Class 1 Class 3000 MSS SP-97 SW Licensor-4	
1	4	1.5			P31G-001NC	Outlet ASTM A182 Grade F11 Class 1 Class 3000 MSS SP-97 SW Licensor-4	
1	5 - 6	1.5			P31G-0036K	Outlet ASTM A182 Grade F11 Class 1 Class 3000 MSS SP-97 SW Licensor-4	
1	8 - 12	1.5			P31G-0036L	Outlet ASTM A182 Grade F11 Class 1 Class 3000 MSS SP-97 SW Licensor-4	
1	14 - 24	1.5			P31G-0036M	Outlet ASTM A182 Grade F11 Class 1 Class 3000 MSS SP-97 SW Licensor-4	
541	1	0.75			P31G-002ND	Outlet ASTM A182 Grade F11 Class 1 Class 3000 MSS SP-97 NPT Licensor-4	
541	1.5	0.75			P31G-002NC	Outlet ASTM A182 Grade F11 Class 1 Class 3000 MSS SP-97 NPT Licensor-4	
541	2 - 2.5	0.75			P31G-0036P	Outlet ASTM A182 Grade F11 Class 1 Class 3000 MSS SP-97 NPT Licensor-4	
541	3 - 5	0.75			P31G-0036R	Outlet ASTM A182 Grade F11 Class 1 Class 3000 MSS SP-97 NPT Licensor-4	
541	6 - 12	0.75			P31G-0036S	Outlet ASTM A182 Grade F11 Class 1 Class 3000 MSS SP-97 NPT Licensor-4	
541	14 - 36	0.75			P31G-0036T	Outlet ASTM A182 Grade F11 Class 1 Class 3000 MSS SP-97 NPT Licensor-4	
1	6	2	XS	XS	P31G-0019B	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW Licensor-4	
1	8	2	SCH60	XS	P31G-0019C	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW Licensor-4	
1	10	2	XS	XS	P31G-0019E	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW Licensor-4	
1	12	2	SCH60	XS	P31G-0019G	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW Licensor-4	
1	14	2	SCH60	XS	P31G-0019K	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW Licensor-4	
1	16	2	SCH80	XS	P31G-002U8	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW Licensor-4	
1	18	2	SCH80	XS	P31G-002UB	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW Licensor-4	
1	20	2	SCH80	XS	P31G-002UF	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW Licensor-4	
1	24	2	SCH80	XS	P31G-002UK	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW Licensor-4	
1	8	3	SCH60	XS	P31G-0019D	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW Licensor-4	
1	10	3	XS	XS	P31G-0019F	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW Licensor-4	
1	12	3	SCH60	XS	P31G-0019H	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW Licensor-4	
1	14	3	SCH60	XS	P31G-0019L	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW Licensor-4	
1	16	3	SCH80	XS	P31G-002U9	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW Licensor-4	
1	18	3	SCH80	XS	P31G-002UC	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW Licensor-4	
1	20	3	SCH80	XS	P31G-002UG	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW Licensor-4	
1	24	3	SCH80	XS	P31G-002UL	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW Licensor-4	
1	12	4	SCH60	XS	P31G-0019J	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW Licensor-4	
1	14	4	SCH60	XS	P31G-0019M	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW Licensor-4	
1	16	4	SCH80	XS	P31G-002UA	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW Licensor-4	

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OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	18	4	SCH80	XS	P31G-002UD	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW Licensor-4	
1	20	4	SCH80	XS	P31G-002UH	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW Licensor-4	
1	24	4	SCH80	XS	P31G-002UM	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW Licensor-4	
1	18	6	SCH80	XS	P31G-002UE	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW Licensor-4	
1	20	6	SCH80	XS	P31G-002UJ	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW Licensor-4	
1	24	6	SCH80	XS	P31G-002UN	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW Licensor-4	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30G-0001C	Plug ASTM A182 Grade F11 Class 1 ASME B16.11 NPT Round head Licensor-4	
1	0.75				P30G-0001D	Plug ASTM A182 Grade F11 Class 1 ASME B16.11 NPT Round head Licensor-4	
1	1				P30G-0001E	Plug ASTM A182 Grade F11 Class 1 ASME B16.11 NPT Round head Licensor-4	
1	1.5				P30G-0001F	Plug ASTM A182 Grade F11 Class 1 ASME B16.11 NPT Round head Licensor-4	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P61G-000HY	Flange SW ASTM A182 Grade F11 Class 2 Class 600 ASME B16.5 RF Licensor-4	
1	0.75		XS		P61G-000HZ	Flange SW ASTM A182 Grade F11 Class 2 Class 600 ASME B16.5 RF Licensor-4	
1	1		XS		P61G-000J0	Flange SW ASTM A182 Grade F11 Class 2 Class 600 ASME B16.5 RF Licensor-4	
1	1.5		XS		P61G-000J1	Flange SW ASTM A182 Grade F11 Class 2 Class 600 ASME B16.5 RF Licensor-4	
1	2		XS		P61G-000J6	Flange WN ASTM A182 Grade F11 Class 2 Class 600 ASME B16.5 RF Licensor-4	
1	3		XS		P61G-000J7	Flange WN ASTM A182 Grade F11 Class 2 Class 600 ASME B16.5 RF Licensor-4	
1	4		XS		P61G-000J8	Flange WN ASTM A182 Grade F11 Class 2 Class 600 ASME B16.5 RF Licensor-4	
1	6		XS		P61G-000J9	Flange WN ASTM A182 Grade F11 Class 2 Class 600 ASME B16.5 RF Licensor-4	
1	8		SCH60		P61G-000JA	Flange WN ASTM A182 Grade F11 Class 2 Class 600 ASME B16.5 RF Licensor-4	
1	10		XS		P61G-000J2	Flange WN ASTM A182 Grade F11 Class 2 Class 600 ASME B16.5 RF Licensor-4	
1	12		SCH60		P61G-000J3	Flange WN ASTM A182 Grade F11 Class 2 Class 600 ASME B16.5 RF Licensor-4	
1	14		SCH60		P61G-000J4	Flange WN ASTM A182 Grade F11 Class 2 Class 600 ASME B16.5 RF Licensor-4	
1	16		SCH80		P61G-0019Z	Flange WN ASTM A182 Grade F11 Class 2 Class 600 ASME B16.5 RF Licensor-4	
1	18		SCH80		P61G-001A0	Flange WN ASTM A182 Grade F11 Class 2 Class 600 ASME B16.5 RF Licensor-4	
1	20		SCH80		P61G-001A1	Flange WN ASTM A182 Grade F11 Class 2 Class 600 ASME B16.5 RF Licensor-4	
1	24		SCH80		P61G-001A2	Flange WN ASTM A182 Grade F11 Class 2 Class 600 ASME B16.5 RF Licensor-4	
789	3		XS		P61G-000JF	Flange WN ASTM A182 Grade F11 Class 2 Class 900 ASME B16.5 RJ Licensor-4	
789	4		XS		P61G-000JG	Flange WN ASTM A182 Grade F11 Class 2 Class 900 ASME B16.5 RJ Licensor-4	
789	6		XS		P61G-000JH	Flange WN ASTM A182 Grade F11 Class 2 Class 900 ASME B16.5 RJ Licensor-4	
789	8		SCH60		P61G-000JJ	Flange WN ASTM A182 Grade F11 Class 2 Class 900 ASME B16.5 RJ Licensor-4	
789	10		XS		P61G-000JB	Flange WN ASTM A182 Grade F11 Class 2 Class 900 ASME B16.5 RJ Licensor-4	
789	12		SCH60		P61G-000JC	Flange WN ASTM A182 Grade F11 Class 2 Class 900 ASME B16.5 RJ Licensor-4	
789	14		SCH60		P61G-000JD	Flange WN ASTM A182 Grade F11 Class 2 Class 900 ASME B16.5 RJ Licensor-4	
789	16		SCH80		P61G-001A3	Flange WN ASTM A182 Grade F11 Class 2 Class 900 ASME B16.5 RJ Licensor-4	
789	18		SCH80		P61G-001A4	Flange WN ASTM A182 Grade F11 Class 2 Class 900 ASME B16.5 RJ Licensor-4	
789	20		SCH80		P61G-001A5	Flange WN ASTM A182 Grade F11 Class 2 Class 900 ASME B16.5 RJ Licensor-4	
789	24		SCH80		P61G-001A6	Flange WN ASTM A182 Grade F11 Class 2 Class 900 ASME B16.5 RJ Licensor-4	
797	0.5		XS		P61G-000JK	Flange SW ASTM A182 Grade F11 Class 2 Class 1500 ASME B16.5 RJ Licensor-4	
797	0.75		XS		P61G-000JL	Flange SW ASTM A182 Grade F11 Class 2 Class 1500 ASME B16.5 RJ Licensor-4	
797	1		XS		P61G-000JM	Flange SW ASTM A182 Grade F11 Class 2 Class 1500 ASME B16.5 RJ Licensor-4	
797	1.5		XS		P61G-000JN	Flange SW ASTM A182 Grade F11 Class 2 Class 1500 ASME B16.5 RJ Licensor-4	
797	2		XS		P61G-000JP	Flange WN ASTM A182 Grade F11 Class 2 Class 1500 ASME B16.5 RJ Licensor-4	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67G-0009P	Blind flange ASTM A182 Grade F11 Class 2 Class 600 ASME B16.5 RF Licensor-4	
1	0.75				P67G-0009R	Blind flange ASTM A182 Grade F11 Class 2 Class 600 ASME B16.5 RF Licensor-4	
1	1				P67G-0009S	Blind flange ASTM A182 Grade F11 Class 2 Class 600 ASME B16.5 RF Licensor-4	
1	1.5				P67G-0009T	Blind flange ASTM A182 Grade F11 Class 2 Class 600 ASME B16.5 RF Licensor-4	
1	2				P67G-0009U	Blind flange ASTM A182 Grade F11 Class 2 Class 600 ASME B16.5 RF Licensor-4	
1	3				P67G-0009V	Blind flange ASTM A182 Grade F11 Class 2 Class 600 ASME B16.5 RF Licensor-4	
1	4				P67G-0009W	Blind flange ASTM A182 Grade F11 Class 2 Class 600 ASME B16.5 RF Licensor-4	
1	6				P67G-000A1	Blind flange ASTM A182 Grade F11 Class 2 Class 600 ASME B16.5 RF Licensor-4	

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BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	8				P67G-000A2	Blind flange ASTM A182 Grade F11 Class 2 Class 600 ASME B16.5 RF Licensor-4	
1	10				P67G-0009X	Blind flange ASTM A182 Grade F11 Class 2 Class 600 ASME B16.5 RF Licensor-4	
1	12				P67G-0009Y	Blind flange ASTM A182 Grade F11 Class 2 Class 600 ASME B16.5 RF Licensor-4	
1	14				P67G-0009Z	Blind flange ASTM A182 Grade F11 Class 2 Class 600 ASME B16.5 RF Licensor-4	
1	16				P67G-000A0	Blind flange ASTM A182 Grade F11 Class 2 Class 600 ASME B16.5 RF Licensor-4	
1	18				P67G-000CH	Blind flange ASTM A182 Grade F11 Class 2 Class 600 ASME B16.5 RF Licensor-4	
1	20				P67G-000CJ	Blind flange ASTM A182 Grade F11 Class 2 Class 600 ASME B16.5 RF Licensor-4	
1	24				P67G-000CK	Blind flange ASTM A182 Grade F11 Class 2 Class 600 ASME B16.5 RF Licensor-4	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-003B4	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	0.75				P73T-003B5	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	1				P73T-003B6	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	1.5				P73T-003B7	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	2				P73T-003BD	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	3				P73T-003BG	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	4				P73T-003BH	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	6				P73T-003BJ	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	8				P73T-003BK	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	10				P73T-003B8	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	12				P73T-003B9	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	14				P73T-003BA	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	16				P73T-003BB	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	18				P73T-003BC	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	20				P73T-003BE	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	24				P73T-003BF	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
789	3				P75T-000KP	Ring joint gasket 5Cr-1/2Mo Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	4				P75T-000KC	Ring joint gasket 5Cr-1/2Mo Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	6				P75T-000KD	Ring joint gasket 5Cr-1/2Mo Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	8				P75T-000KR	Ring joint gasket 5Cr-1/2Mo Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	10				P75T-000KN	Ring joint gasket 5Cr-1/2Mo Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	12				P75T-0010W	Ring joint gasket 5Cr-1/2Mo Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	14				P75T-000KY	Ring joint gasket 5Cr-1/2Mo Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	16				P75T-000K9	Ring joint gasket 5Cr-1/2Mo Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	18				P75T-000KZ	Ring joint gasket 5Cr-1/2Mo Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	20				P75T-000KA	Ring joint gasket 5Cr-1/2Mo Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	24				P75T-000KB	Ring joint gasket 5Cr-1/2Mo Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	0.5				P75T-000KE	Ring joint gasket 5Cr-1/2Mo Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	0.75				P75T-000KF	Ring joint gasket 5Cr-1/2Mo Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	1				P75T-000KG	Ring joint gasket 5Cr-1/2Mo Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	1.5				P75T-000KH	Ring joint gasket 5Cr-1/2Mo Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	2				P75T-000KS	Ring joint gasket 5Cr-1/2Mo Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-6				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B16 / A194 Grade 4 ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	8-24				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B16 / A194 Grade 4 ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
789	1-3				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B16 / A194 Grade 4 ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
789	4-24				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B16 / A194 Grade 4 ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
797	0.5-2				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B16 / A194 Grade 4 ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	

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PIPING CLASS
D1D904 REV NO. 2

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81G-000D8	Gate valve ASTM A182 Grade F11 Class 2 Class 600 API 602 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2 Licensor-4	
1	0.75				P81G-000D9	Gate valve ASTM A182 Grade F11 Class 2 Class 600 API 602 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2 Licensor-4	
1	1				P81G-000DA	Gate valve ASTM A182 Grade F11 Class 2 Class 600 API 602 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2 Licensor-4	
1	1.5				P81G-000DB	Gate valve ASTM A182 Grade F11 Class 2 Class 600 API 602 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2 Licensor-4	
1	2				P81H-000N3	Gate valve ASTM A217 Grade WC6 Class 600 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2	
1	3				P81H-000NW	Gate valve ASTM A217 Grade WC6 Class 600 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2	
1	4				P81H-000NX	Gate valve ASTM A217 Grade WC6 Class 600 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2	
1	6				P81H-000NY	Gate valve ASTM A217 Grade WC6 Class 600 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2	
1	8				P81H-000P2	Gate valve ASTM A217 Grade WC6 Class 600 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Gear operated Fluid-2	
1	10				P81H-000NZ	Gate valve ASTM A217 Grade WC6 Class 600 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Gear operated Fluid-2	
1	12				P81H-000P0	Gate valve ASTM A217 Grade WC6 Class 600 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Gear operated Fluid-2	
1	14				P81H-000P1	Gate valve ASTM A217 Grade WC6 Class 600 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Gear operated Fluid-2	
1	16				P81H-00136	Gate valve ASTM A217 Grade WC6 Class 600 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Gear operated Fluid-2	
1	18				P81H-00137	Gate valve ASTM A217 Grade WC6 Class 600 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Gear operated Fluid-2	
1	20				P81H-00138	Gate valve ASTM A217 Grade WC6 Class 600 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Gear operated Fluid-2	
1	24				P81H-00139	Gate valve ASTM A217 Grade WC6 Class 600 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Gear operated Fluid-2	
4608	0.75				P81G-000EN	Gate valve ASTM A182 Grade F11 Class 2 Class 800 API 602 SW both sides w/ nipples PE - NPT ASTM A335-P11 Sch160-nipple Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2 Licensor-4	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82G-0007P	Globe valve ASTM A182 Grade F11 Class 2 Class 600 API 602 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2 Licensor-4	
1	0.75				P82G-0007R	Globe valve ASTM A182 Grade F11 Class 2 Class 600 API 602 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2 Licensor-4	
1	1				P82G-0007S	Globe valve ASTM A182 Grade F11 Class 2 Class 600 API 602 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2 Licensor-4	
1	1.5				P82G-0007T	Globe valve ASTM A182 Grade F11 Class 2 Class 600 API 602 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2 Licensor-4	
1	2				P82H-0008E	Globe valve ASTM A217 Grade WC6 Class 600 BS 1873 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2	
1	3				P82H-0008P	Globe valve ASTM A217 Grade WC6 Class 600 BS 1873 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2	
1	4				P82H-000ES	Globe valve ASTM A217 Grade WC6 Class 600 BS 1873 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Gear operated Fluid-2	
1	6				P82H-000ET	Globe valve ASTM A217 Grade WC6 Class 600 BS 1873 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Gear operated Fluid-2	
1	8				P82H-000EL	Globe valve ASTM A217 Grade WC6 Class 600 BS 1873 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Gear operated Fluid-2	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71G-0002W	Spectacle blank ASTM A182 Grade F11 Class 2 Class 600 Standard-drawing Flange ASME B16.5 RF Licensor-4	
1	0.75				P71G-0002X	Spectacle blank ASTM A182 Grade F11 Class 2 Class 600 Standard-drawing Flange ASME B16.5 RF Licensor-4	
1	1				P71G-0002Y	Spectacle blank ASTM A182 Grade F11 Class 2 Class 600 Standard-drawing Flange ASME B16.5 RF Licensor-4	
1	1.5				P71G-0002Z	Spectacle blank ASTM A182 Grade F11 Class 2 Class 600 Standard-drawing Flange ASME B16.5 RF Licensor-4	
1	2				P71G-00030	Spectacle blank ASTM A182 Grade F11 Class 2 Class 600 Standard-drawing Flange ASME B16.5 RF Licensor-4	
1	3				P71G-00031	Spectacle blank ASTM A182 Grade F11 Class 2 Class 600 Standard-drawing Flange ASME B16.5 RF Licensor-4	
1	4				P71G-00032	Spectacle blank ASTM A182 Grade F11 Class 2 Class 600 Standard-drawing Flange ASME B16.5 RF Licensor-4	
1	6				P71G-0003B	Spectacle blank ASTM A182 Grade F11 Class 2 Class 600 Standard-drawing Flange ASME B16.5 RF Licensor-4	

PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	8				P72G-0002T	Paddle blank ASTM A182 Grade F11 Class 2 Class 600 Standard-drawing Flange ASME B16.5 RF Licensor-4	
1	10				P72G-0002N	Paddle blank ASTM A182 Grade F11 Class 2 Class 600 Standard-drawing Flange ASME B16.5 RF Licensor-4	
1	12				P72G-0002P	Paddle blank ASTM A182 Grade F11 Class 2 Class 600 Standard-drawing Flange ASME B16.5 RF Licensor-4	

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PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72G-0002R	Paddle blank ASTM A182 Grade F11 Class 2 Class 600 Standard-drawing Flange ASME B16.5 RF Licensor-4	
1	16				P72G-0002S	Paddle blank ASTM A182 Grade F11 Class 2 Class 600 Standard-drawing Flange ASME B16.5 RF Licensor-4	
1	18				P72G-0006M	Paddle blank ASTM A182 Grade F11 Class 2 Class 600 Standard-drawing Flange ASME B16.5 RF Licensor-4	
1	20				P72G-0006N	Paddle blank ASTM A182 Grade F11 Class 2 Class 600 Standard-drawing Flange ASME B16.5 RF Licensor-4	
1	24				P72G-0006P	Paddle blank ASTM A182 Grade F11 Class 2 Class 600 Standard-drawing Flange ASME B16.5 RF Licensor-4	

PADDLE SPACER (PS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	8				P72G-0002M	Paddle spacer ASTM A182 Grade F11 Class 2 Class 600 Standard-drawing Flange ASME B16.5 RF Licensor-4	
1	10				P72G-0002H	Paddle spacer ASTM A182 Grade F11 Class 2 Class 600 Standard-drawing Flange ASME B16.5 RF Licensor-4	
1	12				P72G-0002J	Paddle spacer ASTM A182 Grade F11 Class 2 Class 600 Standard-drawing Flange ASME B16.5 RF Licensor-4	
1	14				P72G-0002K	Paddle spacer ASTM A182 Grade F11 Class 2 Class 600 Standard-drawing Flange ASME B16.5 RF Licensor-4	
1	16				P72G-0002L	Paddle spacer ASTM A182 Grade F11 Class 2 Class 600 Standard-drawing Flange ASME B16.5 RF Licensor-4	
1	18				P72G-0006R	Paddle spacer ASTM A182 Grade F11 Class 2 Class 600 Standard-drawing Flange ASME B16.5 RF Licensor-4	
1	20				P72G-0006S	Paddle spacer ASTM A182 Grade F11 Class 2 Class 600 Standard-drawing Flange ASME B16.5 RF Licensor-4	
1	24				P72G-0006T	Paddle spacer ASTM A182 Grade F11 Class 2 Class 600 Standard-drawing Flange ASME B16.5 RF Licensor-4	

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D1D904 **REV NO. 2**

BOLT TABLE (B_D1D904 , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	80	P80S-00GN6		
0.75	4	0.625	90	P80S-00GLH		
1	4	0.625	95	P80S-00GLG		
1.5	4	0.750	110	P80S-00GLD		
2	8	0.625	110	P80S-00GN0		
3	8	0.750	130	P80S-00GL9		
4	8	0.875	150	P80S-00FV3		
6	12	1.000	175	P80S-00FR6		
8	12	1.125	195	P80S-00FH4		
10	16	1.250	250	P80S-00F9K		
12	20	1.250	255	P80S-00F9J		
14	20	1.375	270	P80S-00F4T		
16	20	1.500	295	P80S-00EY8		
18	20	1.625	320	P80S-00G0T		
20	24	1.625	335	P80S-00G0P		
24	24	1.875	380	P80S-00FKC		

BOLT TABLE (B_D1D904_789 , STUD ASME RJ, OPTION CODE 789)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	110		R12	
0.75	4	0.750	115		R14	
1	4	0.875	130	P80S-00FV7	R16	
1.5	4	1.000	140		R20	
2	8	0.875	150	P80S-00FV3	R24	
3	8	0.875	150	P80S-00FV3	R31	P75T-000KP
4	8	1.125	175	P80S-00FH8	R37	P75T-000KC
6	12	1.125	200	P80S-00FH3	R45	P75T-000KD
8	12	1.375	260	P80S-00F4V	R49	P75T-000KR
10	16	1.375	275	P80S-00F4S	R53	P75T-000KN
12	20	1.375	295	P80S-00F2T	R57	P75T-0010W
14	20	1.500	325	P80S-00EY2	R62	P75T-000KY
16	20	1.625	340	P80S-00G0N	R66	P75T-000K9
18	20	1.875	390	P80S-00FKA	R70	P75T-000KZ
20	20	2.000	415	P80S-00FBL	R74	P75T-000KA
24	20	2.500	525	P80S-00EWJ	R78	P75T-000KB

BOLT TABLE (B_D1D904_797 , STUD ASME RJ, OPTION CODE 797)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	110	P80S-00GLD	R12	P75T-000KE
0.75	4	0.750	115	P80S-00GLC	R14	P75T-000KF
1	4	0.875	130	P80S-00FV7	R16	P75T-000KG
1.5	4	1.000	140	P80S-00FRD	R20	P75T-000KH
2	8	0.875	150	P80S-00FV3	R24	P75T-000KS
3	8	1.125	180		R35	
4	8	1.250	230		R39	
6	12	1.375	300		R46	
8	12	1.625	345		R50	
10	12	1.875	395		R54	
12	16	2.000	445		R58	
14	16	2.250	490		R63	
16	16	2.500	540		R67	
18	16	2.750	590		R71	
20	16	3.000	650		R75	
24	16	3.500	745		R79	

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BRANCH TABLE (T_D1D904)

RUN PIPE SIZE (in) \ BRANCH SIZE (in)	0.5	0.75	1	1.5	2	3	4	6	8	10	12	14	16	18	20	24
0.5	TS															
0.75		TS														
1		TR	TS													
1.5		TR	TR	TS												
2		L	TR	TR	TS											
3		L	L	TR	TR	TS										
4	L	L	L	L	TR	TR	TS									
6	L	L	L	L	L	TR	TR	TS								
8		L	L	L	L	L	TR	TR	TS							
10		L	L	L	L	L	TR	TR	TR	TS						
12		L	L	L	L	L	L	TR	TR	TR	TS					
14		L	L	L	L	L	L	TR	TR	TR	TR	TS				
16		L	L	L	L	L	L	TR	TR	TR	TR	TR	TS			
18		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TS		
20		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TR	TS	
24		L	L	L	L	L	L	L	9PD	TR	TR	TR	TR	TR	TR	TS

TS : STRAIGHT TEE
L : OUTLET
TR : REDUCING TEE
9PD : REINFORCING PAD 90 DEG

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PIPING CLASS

D1DH04 REV NO. 2

Material : 1-1/4Cr - 1/2Mo
Rating : ASME CLASS 600
Flange Face : RF
C.A.(mm) : 1.50
Gasket : Spiral Wound
Service : PROCESS - HYDROGEN OR HYDROGEN RICH HYDROCARBON MIXTURES
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
16	PIPE CLASS SHALL BE USED WITHIN THE NORMAL OPERATING PRESSURE/TEMPERATURE LIMITS SPECIFIED IN API RP 941. PRESSURE / TEMPERATURE SPECIFIED IN THE PIPE CLASS EXCEEDING API RP 941 LIMITS SHOULD BE REGARDED AS UPSET CONDITIONS RATHER THAN FOR CONTINUOUS SERVICE
24	FOR ALL RELEVANT PIPING CLASSES WITH LINE DESIGN TEMPERATURE ABOVE 427DEGC, IN SPIRAL WOUND GASKET, SUITABLE GASKET FILLER MATERIAL SUCH AS COMBINATION OF MICA LAYERS AND GRAPHITE FILLERS OR EQUIVALENT SHALL BE REVIEWED AND SELECTED OR AS DEFINED BY THE LICENSOR

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
541	NPT(F) (CA,L)
789	CLASS 900 (B,F,G)
797	CLASS 1500 (B,F,FB,G,V)
4608	VALVE WITH NIPPLES (V)

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PIPING CLASS
D1DH04 REV NO. 2

PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P01F-000BJ	Pipe ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M PE Licensor-4	
1	0.75		XS		P01F-000BK	Pipe ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M PE Licensor-4	
1	1		XS		P01F-000BL	Pipe ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M PE Licensor-4	
1	1.5		XS		P01F-000BM	Pipe ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M PE Licensor-4	
1	2		XS		P01F-000BT	Pipe ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M BE Licensor-4	
1	3		XS		P01F-000BU	Pipe ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M BE Licensor-4	
1	4		XS		P01F-000BV	Pipe ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M BE Licensor-4	
1	6		XS		P01F-000BW	Pipe ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M BE Licensor-4	
1	8		SCH60		P01F-000BX	Pipe ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M BE Licensor-4	
1	10		XS		P01F-000BN	Pipe ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M BE Licensor-4	
1	12		SCH60		P01F-000BP	Pipe ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M BE Licensor-4	
1	14		SCH60		P01F-000BR	Pipe ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M BE Licensor-4	
1	16		SCH60		P01F-001SJ	Pipe ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M BE Licensor-4	
1	18		SCH60		P01F-001SF	Pipe ASTM A691 Grade 1-1/4CR Class 22 EFW ASME B36.10M/B36.19M BE Licensor-4	
1	20		SCH60		P01F-001SG	Pipe ASTM A691 Grade 1-1/4CR Class 22 EFW ASME B36.10M/B36.19M BE Licensor-4	
1	24		SCH60		P01F-001SH	Pipe ASTM A691 Grade 1-1/4CR Class 22 EFW ASME B36.10M/B36.19M BE Licensor-4	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P02G-00013	90 degree elbow ASTM A182 Grade F11 Class 1 Class 3000 ASME B16.11 SW Licensor-4	
1	0.75				P02G-00014	90 degree elbow ASTM A182 Grade F11 Class 1 Class 3000 ASME B16.11 SW Licensor-4	
1	1				P02G-00015	90 degree elbow ASTM A182 Grade F11 Class 1 Class 3000 ASME B16.11 SW Licensor-4	
1	1.5				P02G-00016	90 degree elbow ASTM A182 Grade F11 Class 1 Class 3000 ASME B16.11 SW Licensor-4	
1	2		XS		P02F-000AR	90 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius Licensor-4	
1	3		XS		P02F-000AS	90 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius Licensor-4	
1	4		XS		P02F-000AT	90 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius Licensor-4	
1	6		XS		P02F-000AU	90 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius Licensor-4	
1	8		SCH60		P02F-000AV	90 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius Licensor-4	
1	10		XS		P02F-000AL	90 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius Licensor-4	
1	12		SCH60		P02F-000AM	90 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius Licensor-4	
1	14		SCH60		P02F-000AN	90 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius Licensor-4	
1	16		SCH60		P02F-000MU	90 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius Licensor-4	
1	18		SCH60		P02F-000MV	90 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius Licensor-4	
1	20		SCH60		P02F-000MW	90 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius Licensor-4	
1	24		SCH60		P02F-000MX	90 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius Licensor-4	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P03G-00013	45 degree elbow ASTM A182 Grade F11 Class 1 Class 3000 ASME B16.11 SW Licensor-4	
1	0.75				P03G-00014	45 degree elbow ASTM A182 Grade F11 Class 1 Class 3000 ASME B16.11 SW Licensor-4	
1	1				P03G-00015	45 degree elbow ASTM A182 Grade F11 Class 1 Class 3000 ASME B16.11 SW Licensor-4	
1	1.5				P03G-00016	45 degree elbow ASTM A182 Grade F11 Class 1 Class 3000 ASME B16.11 SW Licensor-4	
1	2		XS		P03F-000AH	45 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius Licensor-4	
1	3		XS		P03F-000AJ	45 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius Licensor-4	
1	4		XS		P03F-000AK	45 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius Licensor-4	
1	6		XS		P03F-000AL	45 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius Licensor-4	
1	8		SCH60		P03F-000AM	45 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius Licensor-4	
1	10		XS		P03F-000AD	45 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius Licensor-4	
1	12		SCH60		P03F-000AE	45 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius Licensor-4	
1	14		SCH60		P03F-000AF	45 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius Licensor-4	
1	16		SCH60		P03F-000MC	45 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius Licensor-4	
1	18		SCH60		P03F-000MD	45 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius Licensor-4	
1	20		SCH60		P03F-000ME	45 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius Licensor-4	
1	24		SCH60		P03F-000MF	45 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius Licensor-4	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P21G-00013	Straight tee ASTM A182 Grade F11 Class 1 Class 3000 ASME B16.11 SW Licensor-4	
1	0.75				P21G-00014	Straight tee ASTM A182 Grade F11 Class 1 Class 3000 ASME B16.11 SW Licensor-4	

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STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P21G-00015	Straight tee ASTM A182 Grade F11 Class 1 Class 3000 ASME B16.11 SW Licensor-4	
1	1.5				P21G-00016	Straight tee ASTM A182 Grade F11 Class 1 Class 3000 ASME B16.11 SW Licensor-4	
1	2		XS		P21F-000AJ	Straight tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	3		XS		P21F-000AK	Straight tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	4		XS		P21F-000AL	Straight tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	6		XS		P21F-000AM	Straight tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	8		SCH60		P21F-000AN	Straight tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	10		XS		P21F-000AE	Straight tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	12		SCH60		P21F-000AF	Straight tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	14		SCH60		P21F-000AG	Straight tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	16		SCH60		P21F-000MK	Straight tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	18		SCH60		P21F-000ML	Straight tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW Licensor-4	
1	20		SCH60		P21F-000MM	Straight tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW Licensor-4	
1	24		SCH60		P21F-000MN	Straight tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW Licensor-4	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75			P24G-0001A	Reducing tee ASTM A182 Grade F11 Class 1 Class 3000 ASME B16.11 SW Licensor-4	
1	1.5	0.75			P24G-0001B	Reducing tee ASTM A182 Grade F11 Class 1 Class 3000 ASME B16.11 SW Licensor-4	
1	1.5	1			P24G-0001C	Reducing tee ASTM A182 Grade F11 Class 1 Class 3000 ASME B16.11 SW Licensor-4	
1	2	1	XS	XS	P24F-000WW	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	2	1.5	XS	XS	P24F-000WX	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	3	1.5	XS	XS	P24F-000WY	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	3	2	XS	XS	P24F-000WZ	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	4	2	XS	XS	P24F-000X0	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	4	3	XS	XS	P24F-000X1	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	6	3	XS	XS	P24F-000X2	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	6	4	XS	XS	P24F-000X3	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	8	4	SCH60	XS	P24F-000X4	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	8	6	SCH60	XS	P24F-000X5	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	10	4	XS	XS	P24F-000X6	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	10	6	XS	XS	P24F-000X7	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	10	8	XS	SCH60	P24F-000X8	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	12	6	SCH60	XS	P24F-000XA	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	12	8	SCH60	SCH60	P24F-000XB	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	12	10	SCH60	XS	P24F-000X9	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	14	6	SCH60	XS	P24F-000XE	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	14	8	SCH60	SCH60	P24F-000XF	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	14	10	SCH60	XS	P24F-000XC	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	14	12	SCH60	SCH60	P24F-000XD	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	16	6	SCH60	XS	P24F-002FS	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	16	8	SCH60	SCH60	P24F-002FT	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	16	10	SCH60	XS	P24F-002FN	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	16	12	SCH60	SCH60	P24F-002FP	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	16	14	SCH60	SCH60	P24F-002FR	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	18	8	SCH60	SCH60	P24F-002FY	Reducing tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW Licensor-4	
1	18	10	SCH60	XS	P24F-002FU	Reducing tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW Licensor-4	
1	18	12	SCH60	SCH60	P24F-002FV	Reducing tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW Licensor-4	
1	18	14	SCH60	SCH60	P24F-002FW	Reducing tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW Licensor-4	
1	18	16	SCH60	SCH60	P24F-002FX	Reducing tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW Licensor-4	
1	20	8	SCH60	SCH60	P24F-002G4	Reducing tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW Licensor-4	
1	20	10	SCH60	XS	P24F-002FZ	Reducing tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW Licensor-4	
1	20	12	SCH60	SCH60	P24F-002G0	Reducing tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW Licensor-4	
1	20	14	SCH60	SCH60	P24F-002G1	Reducing tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW Licensor-4	
1	20	16	SCH60	SCH60	P24F-002G2	Reducing tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW Licensor-4	
1	20	18	SCH60	SCH60	P24F-002G3	Reducing tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW Licensor-4	
1	24	10	SCH60	XS	P24F-002G5	Reducing tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW Licensor-4	
1	24	12	SCH60	SCH60	P24F-002G6	Reducing tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW Licensor-4	
1	24	14	SCH60	SCH60	P24F-002G7	Reducing tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW Licensor-4	

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REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	24	16	SCH60	SCH60	P24F-002G8	Reducing tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW Licensor-4	
1	24	18	SCH60	SCH60	P24F-002G9	Reducing tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW Licensor-4	
1	24	20	SCH60	SCH60	P24F-002GA	Reducing tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW Licensor-4	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	XS	XS	P27F-000S1	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	4	2	XS	XS	P27F-000S2	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	4	3	XS	XS	P27F-000S3	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	6	3	XS	XS	P27F-000S4	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	6	4	XS	XS	P27F-000S5	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	8	4	SCH60	XS	P27F-000S6	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	8	6	SCH60	XS	P27F-000S7	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	10	4	XS	XS	P27F-000S8	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	10	6	XS	XS	P27F-000S9	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	10	8	XS	SCH60	P27F-000SA	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	12	6	SCH60	XS	P27F-000SC	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	12	8	SCH60	SCH60	P27F-000SD	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	12	10	SCH60	XS	P27F-000SB	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	14	6	SCH60	XS	P27F-000SG	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	14	8	SCH60	SCH60	P27F-000SH	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	14	10	SCH60	XS	P27F-000SE	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	14	12	SCH60	SCH60	P27F-000SF	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	16	8	SCH60	SCH60	P27F-001W1	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	16	10	SCH60	XS	P27F-001VY	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	16	12	SCH60	SCH60	P27F-001VZ	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	16	14	SCH60	SCH60	P27F-001W0	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	18	10	SCH60	XS	P27F-001W2	Concentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW Licensor-4	
1	18	12	SCH60	SCH60	P27F-001W3	Concentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW Licensor-4	
1	18	14	SCH60	SCH60	P27F-001W4	Concentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW Licensor-4	
1	18	16	SCH60	SCH60	P27F-001W5	Concentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW Licensor-4	
1	20	12	SCH60	SCH60	P27F-001W6	Concentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW Licensor-4	
1	20	14	SCH60	SCH60	P27F-001W7	Concentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW Licensor-4	
1	20	16	SCH60	SCH60	P27F-001W8	Concentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW Licensor-4	
1	20	18	SCH60	SCH60	P27F-001W9	Concentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW Licensor-4	
1	24	16	SCH60	SCH60	P27F-001WA	Concentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW Licensor-4	
1	24	18	SCH60	SCH60	P27F-001WB	Concentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW Licensor-4	
1	24	20	SCH60	SCH60	P27F-001WC	Concentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW Licensor-4	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	XS	XS	P28F-000S1	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	4	2	XS	XS	P28F-000S2	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	4	3	XS	XS	P28F-000S3	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	6	3	XS	XS	P28F-000S4	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	6	4	XS	XS	P28F-000S5	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	8	4	SCH60	XS	P28F-000S6	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	8	6	SCH60	XS	P28F-000S7	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	10	4	XS	XS	P28F-000S8	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	10	6	XS	XS	P28F-000S9	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	10	8	XS	SCH60	P28F-000SA	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	12	6	SCH60	XS	P28F-000SC	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	12	8	SCH60	SCH60	P28F-000SD	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	12	10	SCH60	XS	P28F-000SB	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	14	6	SCH60	XS	P28F-000SG	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	14	8	SCH60	SCH60	P28F-000SH	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	14	10	SCH60	XS	P28F-000SE	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	14	12	SCH60	SCH60	P28F-000SF	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	16	8	SCH60	SCH60	P28F-001WK	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	16	10	SCH60	XS	P28F-001WG	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	16	12	SCH60	SCH60	P28F-001WH	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	16	14	SCH60	SCH60	P28F-001WJ	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	18	10	SCH60	XS	P28F-001WL	Eccentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW Licensor-4	
1	18	12	SCH60	SCH60	P28F-001WM	Eccentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW Licensor-4	
1	18	14	SCH60	SCH60	P28F-001WN	Eccentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW Licensor-4	
1	18	16	SCH60	SCH60	P28F-001WP	Eccentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW Licensor-4	
1	20	12	SCH60	SCH60	P28F-001WR	Eccentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW Licensor-4	
1	20	14	SCH60	SCH60	P28F-001WS	Eccentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW Licensor-4	
1	20	16	SCH60	SCH60	P28F-001WT	Eccentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW Licensor-4	
1	20	18	SCH60	SCH60	P28F-001WU	Eccentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW Licensor-4	
1	24	16	SCH60	SCH60	P28F-001WV	Eccentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW Licensor-4	
1	24	18	SCH60	SCH60	P28F-001WW	Eccentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW Licensor-4	
1	24	20	SCH60	SCH60	P28F-001WX	Eccentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW Licensor-4	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P29G-0000Y	Cap ASTM A182 Grade F11 Class 1 Class 3000 ASME B16.11 SW Licensor-4	
1	0.75				P29G-0000Z	Cap ASTM A182 Grade F11 Class 1 Class 3000 ASME B16.11 SW Licensor-4	
1	1				P29G-00010	Cap ASTM A182 Grade F11 Class 1 Class 3000 ASME B16.11 SW Licensor-4	
1	1.5				P29G-00011	Cap ASTM A182 Grade F11 Class 1 Class 3000 ASME B16.11 SW Licensor-4	
1	2		XS		P29F-000A8	Cap ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	3		XS		P29F-000A9	Cap ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	4		XS		P29F-000AA	Cap ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	6		XS		P29F-000AB	Cap ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	8		SCH60		P29F-000AC	Cap ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	10		XS		P29F-000A4	Cap ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	12		SCH60		P29F-000A5	Cap ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	14		SCH60		P29F-000A6	Cap ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	16		SCH60		P29F-000KY	Cap ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	18		SCH60		P29F-000KZ	Cap ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	20		SCH60		P29F-000L0	Cap ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
1	24		SCH60		P29F-000L1	Cap ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Licensor-4	
541	0.75				P29G-0001S	Cap ASTM A182 Grade F11 Class 1 Class 3000 ASME B16.11 NPT Licensor-4	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P41F-00034	Straight nipple ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Licensor-4	
1	0.75		SCH160		P41F-00035	Straight nipple ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Licensor-4	
1	1		SCH160		P41F-00036	Straight nipple ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Licensor-4	
1	1.5		SCH160		P41F-00037	Straight nipple ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Licensor-4	

CON SWAGED NIPPLE (SNC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	XS	XS	P42F-00034	Concentric swaged nipple ASTM A234 Grade WP11 Class 1 Seamless MSS SP-95 PE(L) - PE(S) Licensor-4	
1	1	0.5	XS	XS	P42F-00035	Concentric swaged nipple ASTM A234 Grade WP11 Class 1 Seamless MSS SP-95 PE(L) - PE(S) Licensor-4	
1	1	0.75	XS	XS	P42F-00036	Concentric swaged nipple ASTM A234 Grade WP11 Class 1 Seamless MSS SP-95 PE(L) - PE(S) Licensor-4	
1	1.5	0.5	XS	XS	P42F-00037	Concentric swaged nipple ASTM A234 Grade WP11 Class 1 Seamless MSS SP-95 PE(L) - PE(S) Licensor-4	
1	1.5	0.75	XS	XS	P42F-00038	Concentric swaged nipple ASTM A234 Grade WP11 Class 1 Seamless MSS SP-95 PE(L) - PE(S) Licensor-4	
1	1.5	1	XS	XS	P42F-00039	Concentric swaged nipple ASTM A234 Grade WP11 Class 1 Seamless MSS SP-95 PE(L) - PE(S) Licensor-4	
1	2	0.5	XS	XS	P42F-0003A	Concentric swaged nipple ASTM A234 Grade WP11 Class 1 Seamless MSS SP-95 BE(L) - PE(S) Licensor-4	
1	2	0.75	XS	XS	P42F-0003B	Concentric swaged nipple ASTM A234 Grade WP11 Class 1 Seamless MSS SP-95 BE(L) - PE(S) Licensor-4	
1	2	1	XS	XS	P42F-0003C	Concentric swaged nipple ASTM A234 Grade WP11 Class 1 Seamless MSS SP-95 BE(L) - PE(S) Licensor-4	
1	2	1.5	XS	XS	P42F-0003D	Concentric swaged nipple ASTM A234 Grade WP11 Class 1 Seamless MSS SP-95 BE(L) - PE(S) Licensor-4	
1	3	1.5	XS	XS	P42F-0003E	Concentric swaged nipple ASTM A234 Grade WP11 Class 1 Seamless MSS SP-95 BE(L) - PE(S) Licensor-4	

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ECC SWAGED NIPPLE (SNE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	XS	XS	P43F-0002F	Eccentric swaged nipple ASTM A234 Grade WP11 Class 1 Seamless MSS SP-95 PE(L) - PE(S) Licensor-4	
1	1	0.5	XS	XS	P43F-0002G	Eccentric swaged nipple ASTM A234 Grade WP11 Class 1 Seamless MSS SP-95 PE(L) - PE(S) Licensor-4	
1	1	0.75	XS	XS	P43F-0002H	Eccentric swaged nipple ASTM A234 Grade WP11 Class 1 Seamless MSS SP-95 PE(L) - PE(S) Licensor-4	
1	1.5	0.5	XS	XS	P43F-0002J	Eccentric swaged nipple ASTM A234 Grade WP11 Class 1 Seamless MSS SP-95 PE(L) - PE(S) Licensor-4	
1	1.5	0.75	XS	XS	P43F-0002K	Eccentric swaged nipple ASTM A234 Grade WP11 Class 1 Seamless MSS SP-95 PE(L) - PE(S) Licensor-4	
1	1.5	1	XS	XS	P43F-0002L	Eccentric swaged nipple ASTM A234 Grade WP11 Class 1 Seamless MSS SP-95 PE(L) - PE(S) Licensor-4	
1	2	0.5	XS	XS	P43F-0002M	Eccentric swaged nipple ASTM A234 Grade WP11 Class 1 Seamless MSS SP-95 BE(L) - PE(S) Licensor-4	
1	2	0.75	XS	XS	P43F-0002N	Eccentric swaged nipple ASTM A234 Grade WP11 Class 1 Seamless MSS SP-95 BE(L) - PE(S) Licensor-4	
1	2	1	XS	XS	P43F-0002P	Eccentric swaged nipple ASTM A234 Grade WP11 Class 1 Seamless MSS SP-95 BE(L) - PE(S) Licensor-4	
1	2	1.5	XS	XS	P43F-0002R	Eccentric swaged nipple ASTM A234 Grade WP11 Class 1 Seamless MSS SP-95 BE(L) - PE(S) Licensor-4	
1	3	1.5	XS	XS	P43F-0002S	Eccentric swaged nipple ASTM A234 Grade WP11 Class 1 Seamless MSS SP-95 BE(L) - PE(S) Licensor-4	

COUPLING (CPS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P47G-00016	Coupling ASTM A182 Grade F11 Class 1 Class 3000 ASME B16.11 SW - SW Licensor-4	
1	0.75				P47G-00017	Coupling ASTM A182 Grade F11 Class 1 Class 3000 ASME B16.11 SW - SW Licensor-4	
1	1				P47G-00018	Coupling ASTM A182 Grade F11 Class 1 Class 3000 ASME B16.11 SW - SW Licensor-4	
1	1.5				P47G-00019	Coupling ASTM A182 Grade F11 Class 1 Class 3000 ASME B16.11 SW - SW Licensor-4	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2 - 2.5	0.75			P31G-0036D	Outlet ASTM A182 Grade F11 Class 1 Class 3000 MSS SP-97 SW Licensor-4	
1	3 - 5	0.75			P31G-0036E	Outlet ASTM A182 Grade F11 Class 1 Class 3000 MSS SP-97 SW Licensor-4	
1	6 - 12	0.75			P31G-0036C	Outlet ASTM A182 Grade F11 Class 1 Class 3000 MSS SP-97 SW Licensor-4	
1	14 - 36	0.75			P31G-0036B	Outlet ASTM A182 Grade F11 Class 1 Class 3000 MSS SP-97 SW Licensor-4	
1	3	1			P31G-0036G	Outlet ASTM A182 Grade F11 Class 1 Class 3000 MSS SP-97 SW Licensor-4	
1	4 - 5	1			P31G-0036J	Outlet ASTM A182 Grade F11 Class 1 Class 3000 MSS SP-97 SW Licensor-4	
1	6 - 10	1			P31G-0036F	Outlet ASTM A182 Grade F11 Class 1 Class 3000 MSS SP-97 SW Licensor-4	
1	12 - 36	1			P31G-0036H	Outlet ASTM A182 Grade F11 Class 1 Class 3000 MSS SP-97 SW Licensor-4	
1	4	1.5			P31G-001NC	Outlet ASTM A182 Grade F11 Class 1 Class 3000 MSS SP-97 SW Licensor-4	
1	5 - 6	1.5			P31G-0036K	Outlet ASTM A182 Grade F11 Class 1 Class 3000 MSS SP-97 SW Licensor-4	
1	8 - 12	1.5			P31G-0036L	Outlet ASTM A182 Grade F11 Class 1 Class 3000 MSS SP-97 SW Licensor-4	
1	14 - 24	1.5			P31G-0036M	Outlet ASTM A182 Grade F11 Class 1 Class 3000 MSS SP-97 SW Licensor-4	
541	1	0.75			P31G-002ND	Outlet ASTM A182 Grade F11 Class 1 Class 3000 MSS SP-97 NPT Licensor-4	
541	1.5	0.75			P31G-002NC	Outlet ASTM A182 Grade F11 Class 1 Class 3000 MSS SP-97 NPT Licensor-4	
541	2 - 2.5	0.75			P31G-0036P	Outlet ASTM A182 Grade F11 Class 1 Class 3000 MSS SP-97 NPT Licensor-4	
541	3 - 5	0.75			P31G-0036R	Outlet ASTM A182 Grade F11 Class 1 Class 3000 MSS SP-97 NPT Licensor-4	
541	6 - 12	0.75			P31G-0036S	Outlet ASTM A182 Grade F11 Class 1 Class 3000 MSS SP-97 NPT Licensor-4	
541	14 - 36	0.75			P31G-0036T	Outlet ASTM A182 Grade F11 Class 1 Class 3000 MSS SP-97 NPT Licensor-4	
1	6	2	XS	XS	P31G-0019B	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW Licensor-4	
1	8	2	SCH60	XS	P31G-0019C	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW Licensor-4	
1	10	2	XS	XS	P31G-0019E	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW Licensor-4	
1	12	2	SCH60	XS	P31G-0019G	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW Licensor-4	
1	14	2	SCH60	XS	P31G-0019K	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW Licensor-4	
1	16	2	SCH60	XS	P31G-002UP	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW Licensor-4	
1	18	2	SCH60	XS	P31G-002UT	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW Licensor-4	
1	20	2	SCH60	XS	P31G-002UX	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW Licensor-4	
1	24	2	SCH60	XS	P31G-002V1	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW Licensor-4	
1	8	3	SCH60	XS	P31G-0019D	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW Licensor-4	
1	10	3	XS	XS	P31G-0019F	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW Licensor-4	
1	12	3	SCH60	XS	P31G-0019H	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW Licensor-4	
1	14	3	SCH60	XS	P31G-0019L	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW Licensor-4	
1	16	3	SCH60	XS	P31G-002UR	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW Licensor-4	
1	18	3	SCH60	XS	P31G-002UU	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW Licensor-4	
1	20	3	SCH60	XS	P31G-002UY	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW Licensor-4	
1	24	3	SCH60	XS	P31G-002V2	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW Licensor-4	
1	12	4	SCH60	XS	P31G-0019J	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW Licensor-4	
1	14	4	SCH60	XS	P31G-0019M	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW Licensor-4	
1	16	4	SCH60	XS	P31G-002US	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW Licensor-4	

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OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	18	4	SCH60	XS	P31G-002UV	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW Licensor-4	
1	20	4	SCH60	XS	P31G-002UZ	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW Licensor-4	
1	24	4	SCH60	XS	P31G-002V3	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW Licensor-4	
1	18	6	SCH60	XS	P31G-002UW	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW Licensor-4	
1	20	6	SCH60	XS	P31G-002V0	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW Licensor-4	
1	24	6	SCH60	XS	P31G-002V4	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW Licensor-4	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30G-0001C	Plug ASTM A182 Grade F11 Class 1 ASME B16.11 NPT Round head Licensor-4	
1	0.75				P30G-0001D	Plug ASTM A182 Grade F11 Class 1 ASME B16.11 NPT Round head Licensor-4	
1	1				P30G-0001E	Plug ASTM A182 Grade F11 Class 1 ASME B16.11 NPT Round head Licensor-4	
1	1.5				P30G-0001F	Plug ASTM A182 Grade F11 Class 1 ASME B16.11 NPT Round head Licensor-4	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P61G-000HY	Flange SW ASTM A182 Grade F11 Class 2 Class 600 ASME B16.5 RF Licensor-4	
1	0.75		XS		P61G-000HZ	Flange SW ASTM A182 Grade F11 Class 2 Class 600 ASME B16.5 RF Licensor-4	
1	1		XS		P61G-000J0	Flange SW ASTM A182 Grade F11 Class 2 Class 600 ASME B16.5 RF Licensor-4	
1	1.5		XS		P61G-000J1	Flange SW ASTM A182 Grade F11 Class 2 Class 600 ASME B16.5 RF Licensor-4	
1	2		XS		P61G-000J6	Flange WN ASTM A182 Grade F11 Class 2 Class 600 ASME B16.5 RF Licensor-4	
1	3		XS		P61G-000J7	Flange WN ASTM A182 Grade F11 Class 2 Class 600 ASME B16.5 RF Licensor-4	
1	4		XS		P61G-000J8	Flange WN ASTM A182 Grade F11 Class 2 Class 600 ASME B16.5 RF Licensor-4	
1	6		XS		P61G-000J9	Flange WN ASTM A182 Grade F11 Class 2 Class 600 ASME B16.5 RF Licensor-4	
1	8		SCH60		P61G-000JA	Flange WN ASTM A182 Grade F11 Class 2 Class 600 ASME B16.5 RF Licensor-4	
1	10		XS		P61G-000J2	Flange WN ASTM A182 Grade F11 Class 2 Class 600 ASME B16.5 RF Licensor-4	
1	12		SCH60		P61G-000J3	Flange WN ASTM A182 Grade F11 Class 2 Class 600 ASME B16.5 RF Licensor-4	
1	14		SCH60		P61G-000J4	Flange WN ASTM A182 Grade F11 Class 2 Class 600 ASME B16.5 RF Licensor-4	
1	16		SCH60		P61G-001A7	Flange WN ASTM A182 Grade F11 Class 2 Class 600 ASME B16.5 RF Licensor-4	
1	18		SCH60		P61G-001A8	Flange WN ASTM A182 Grade F11 Class 2 Class 600 ASME B16.5 RF Licensor-4	
1	20		SCH60		P61G-001A9	Flange WN ASTM A182 Grade F11 Class 2 Class 600 ASME B16.5 RF Licensor-4	
1	24		SCH60		P61G-001AA	Flange WN ASTM A182 Grade F11 Class 2 Class 600 ASME B16.5 RF Licensor-4	
789	3		XS		P61G-000JF	Flange WN ASTM A182 Grade F11 Class 2 Class 900 ASME B16.5 RJ Licensor-4	
789	4		XS		P61G-000JG	Flange WN ASTM A182 Grade F11 Class 2 Class 900 ASME B16.5 RJ Licensor-4	
789	6		XS		P61G-000JH	Flange WN ASTM A182 Grade F11 Class 2 Class 900 ASME B16.5 RJ Licensor-4	
789	8		SCH60		P61G-000JJ	Flange WN ASTM A182 Grade F11 Class 2 Class 900 ASME B16.5 RJ Licensor-4	
789	10		XS		P61G-000JB	Flange WN ASTM A182 Grade F11 Class 2 Class 900 ASME B16.5 RJ Licensor-4	
789	12		SCH60		P61G-000JC	Flange WN ASTM A182 Grade F11 Class 2 Class 900 ASME B16.5 RJ Licensor-4	
789	14		SCH60		P61G-000JD	Flange WN ASTM A182 Grade F11 Class 2 Class 900 ASME B16.5 RJ Licensor-4	
789	16		SCH60		P61G-001AB	Flange WN ASTM A182 Grade F11 Class 2 Class 900 ASME B16.5 RJ Licensor-4	
789	18		SCH60		P61G-001AC	Flange WN ASTM A182 Grade F11 Class 2 Class 900 ASME B16.5 RJ Licensor-4	
789	20		SCH60		P61G-001AD	Flange WN ASTM A182 Grade F11 Class 2 Class 900 ASME B16.5 RJ Licensor-4	
789	24		SCH60		P61G-001AE	Flange WN ASTM A182 Grade F11 Class 2 Class 900 ASME B16.5 RJ Licensor-4	
797	0.5		XS		P61G-000JK	Flange SW ASTM A182 Grade F11 Class 2 Class 1500 ASME B16.5 RJ Licensor-4	
797	0.75		XS		P61G-000JL	Flange SW ASTM A182 Grade F11 Class 2 Class 1500 ASME B16.5 RJ Licensor-4	
797	1		XS		P61G-000JM	Flange SW ASTM A182 Grade F11 Class 2 Class 1500 ASME B16.5 RJ Licensor-4	
797	1.5		XS		P61G-000JN	Flange SW ASTM A182 Grade F11 Class 2 Class 1500 ASME B16.5 RJ Licensor-4	
797	2		XS		P61G-000JP	Flange WN ASTM A182 Grade F11 Class 2 Class 1500 ASME B16.5 RJ Licensor-4	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67G-0009P	Blind flange ASTM A182 Grade F11 Class 2 Class 600 ASME B16.5 RF Licensor-4	
1	0.75				P67G-0009R	Blind flange ASTM A182 Grade F11 Class 2 Class 600 ASME B16.5 RF Licensor-4	
1	1				P67G-0009S	Blind flange ASTM A182 Grade F11 Class 2 Class 600 ASME B16.5 RF Licensor-4	
1	1.5				P67G-0009T	Blind flange ASTM A182 Grade F11 Class 2 Class 600 ASME B16.5 RF Licensor-4	
1	2				P67G-0009U	Blind flange ASTM A182 Grade F11 Class 2 Class 600 ASME B16.5 RF Licensor-4	
1	3				P67G-0009V	Blind flange ASTM A182 Grade F11 Class 2 Class 600 ASME B16.5 RF Licensor-4	
1	4				P67G-0009W	Blind flange ASTM A182 Grade F11 Class 2 Class 600 ASME B16.5 RF Licensor-4	
1	6				P67G-000A1	Blind flange ASTM A182 Grade F11 Class 2 Class 600 ASME B16.5 RF Licensor-4	

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BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	8				P67G-000A2	Blind flange ASTM A182 Grade F11 Class 2 Class 600 ASME B16.5 RF Licensor-4	
1	10				P67G-0009X	Blind flange ASTM A182 Grade F11 Class 2 Class 600 ASME B16.5 RF Licensor-4	
1	12				P67G-0009Y	Blind flange ASTM A182 Grade F11 Class 2 Class 600 ASME B16.5 RF Licensor-4	
1	14				P67G-0009Z	Blind flange ASTM A182 Grade F11 Class 2 Class 600 ASME B16.5 RF Licensor-4	
1	16				P67G-000A0	Blind flange ASTM A182 Grade F11 Class 2 Class 600 ASME B16.5 RF Licensor-4	
1	18				P67G-000CH	Blind flange ASTM A182 Grade F11 Class 2 Class 600 ASME B16.5 RF Licensor-4	
1	20				P67G-000CJ	Blind flange ASTM A182 Grade F11 Class 2 Class 600 ASME B16.5 RF Licensor-4	
1	24				P67G-000CK	Blind flange ASTM A182 Grade F11 Class 2 Class 600 ASME B16.5 RF Licensor-4	
797	2				P67G-000GC	Blind flange ASTM A182 Grade F11 Class 2 Class 1500 ASME B16.5 RJ Licensor-4	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-003B4	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	0.75				P73T-003B5	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	1				P73T-003B6	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	1.5				P73T-003B7	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	2				P73T-003BD	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	3				P73T-003BG	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	4				P73T-003BH	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	6				P73T-003BJ	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	8				P73T-003BK	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	10				P73T-003B8	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	12				P73T-003B9	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	14				P73T-003BA	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	16				P73T-003BB	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	18				P73T-003BC	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	20				P73T-003BE	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	24				P73T-003BF	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
789	3				P75T-000KP	Ring joint gasket 5Cr-1/2Mo Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	4				P75T-000KC	Ring joint gasket 5Cr-1/2Mo Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	6				P75T-000KD	Ring joint gasket 5Cr-1/2Mo Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	8				P75T-000KR	Ring joint gasket 5Cr-1/2Mo Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	10				P75T-000KN	Ring joint gasket 5Cr-1/2Mo Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	12				P75T-0010W	Ring joint gasket 5Cr-1/2Mo Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	14				P75T-000KY	Ring joint gasket 5Cr-1/2Mo Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	16				P75T-000K9	Ring joint gasket 5Cr-1/2Mo Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	18				P75T-000KZ	Ring joint gasket 5Cr-1/2Mo Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	20				P75T-000KA	Ring joint gasket 5Cr-1/2Mo Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	24				P75T-000KB	Ring joint gasket 5Cr-1/2Mo Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	0.5				P75T-000KE	Ring joint gasket 5Cr-1/2Mo Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	0.75				P75T-000KF	Ring joint gasket 5Cr-1/2Mo Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	1				P75T-000KG	Ring joint gasket 5Cr-1/2Mo Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	1.5				P75T-000KH	Ring joint gasket 5Cr-1/2Mo Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	2				P75T-000KS	Ring joint gasket 5Cr-1/2Mo Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-6				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B16 / A194 Grade 4 ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	8-24				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B16 / A194 Grade 4 ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
789	1-3				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B16 / A194 Grade 4 ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
789	4-24				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B16 / A194 Grade 4 ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
797	0.5-2				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B16 / A194 Grade 4 ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	

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GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81G-000D8	Gate valve ASTM A182 Grade F11 Class 2 Class 600 API 602 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2 Licensor-4	
1	0.75				P81G-000D9	Gate valve ASTM A182 Grade F11 Class 2 Class 600 API 602 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2 Licensor-4	
1	1				P81G-000DA	Gate valve ASTM A182 Grade F11 Class 2 Class 600 API 602 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2 Licensor-4	
1	1.5				P81G-000DB	Gate valve ASTM A182 Grade F11 Class 2 Class 600 API 602 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2 Licensor-4	
1	2				P81H-000N3	Gate valve ASTM A217 Grade WC6 Class 600 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2	
1	3				P81H-000NW	Gate valve ASTM A217 Grade WC6 Class 600 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2	
1	4				P81H-000NX	Gate valve ASTM A217 Grade WC6 Class 600 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2	
1	6				P81H-000NY	Gate valve ASTM A217 Grade WC6 Class 600 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2	
1	8				P81H-000P2	Gate valve ASTM A217 Grade WC6 Class 600 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Gear operated Fluid-2	
1	10				P81H-000NZ	Gate valve ASTM A217 Grade WC6 Class 600 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Gear operated Fluid-2	
1	12				P81H-000P0	Gate valve ASTM A217 Grade WC6 Class 600 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Gear operated Fluid-2	
1	14				P81H-000P1	Gate valve ASTM A217 Grade WC6 Class 600 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Gear operated Fluid-2	
1	16				P81H-00136	Gate valve ASTM A217 Grade WC6 Class 600 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Gear operated Fluid-2	
1	18				P81H-00137	Gate valve ASTM A217 Grade WC6 Class 600 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Gear operated Fluid-2	
1	20				P81H-00138	Gate valve ASTM A217 Grade WC6 Class 600 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Gear operated Fluid-2	
1	24				P81H-00139	Gate valve ASTM A217 Grade WC6 Class 600 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Gear operated Fluid-2	
4608	0.75				P81G-000EN	Gate valve ASTM A182 Grade F11 Class 2 Class 800 API 602 SW both sides w/ nipples PE - NPT ASTM A335-P11 Sch160-nipple Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2 Licensor-4	
797	2				P81H-000U0	Gate valve ASTM A217 Grade WC6 Class 1500 API 600 Flange ASME B16.5 RJ Trim number 5 PSB-BG-OS&Y Handwheel operated Fluid-2	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82G-0007P	Globe valve ASTM A182 Grade F11 Class 2 Class 600 API 602 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2 Licensor-4	
1	0.75				P82G-0007R	Globe valve ASTM A182 Grade F11 Class 2 Class 600 API 602 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2 Licensor-4	
1	1				P82G-0007S	Globe valve ASTM A182 Grade F11 Class 2 Class 600 API 602 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2 Licensor-4	
1	1.5				P82G-0007T	Globe valve ASTM A182 Grade F11 Class 2 Class 600 API 602 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2 Licensor-4	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83G-0006B	Check valve ASTM A182 Grade F11 Class 2 Class 600 API 602 Flange ASME B16.5 RF Trim number 5 Lift-type Bolted cover Licensor-4	
1	0.75				P83G-0006C	Check valve ASTM A182 Grade F11 Class 2 Class 600 API 602 Flange ASME B16.5 RF Trim number 5 Lift-type Bolted cover Licensor-4	
1	1				P83G-0006D	Check valve ASTM A182 Grade F11 Class 2 Class 600 API 602 Flange ASME B16.5 RF Trim number 5 Lift-type Bolted cover Licensor-4	
1	1.5				P83G-0006E	Check valve ASTM A182 Grade F11 Class 2 Class 600 API 602 Flange ASME B16.5 RF Trim number 5 Lift-type Bolted cover Licensor-4	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71G-0002W	Spectacle blank ASTM A182 Grade F11 Class 2 Class 600 Standard-drawing Flange ASME B16.5 RF Licensor-4	
1	0.75				P71G-0002X	Spectacle blank ASTM A182 Grade F11 Class 2 Class 600 Standard-drawing Flange ASME B16.5 RF Licensor-4	
1	1				P71G-0002Y	Spectacle blank ASTM A182 Grade F11 Class 2 Class 600 Standard-drawing Flange ASME B16.5 RF Licensor-4	
1	1.5				P71G-0002Z	Spectacle blank ASTM A182 Grade F11 Class 2 Class 600 Standard-drawing Flange ASME B16.5 RF Licensor-4	
1	2				P71G-00030	Spectacle blank ASTM A182 Grade F11 Class 2 Class 600 Standard-drawing Flange ASME B16.5 RF Licensor-4	
1	3				P71G-00031	Spectacle blank ASTM A182 Grade F11 Class 2 Class 600 Standard-drawing Flange ASME B16.5 RF Licensor-4	
1	4				P71G-00032	Spectacle blank ASTM A182 Grade F11 Class 2 Class 600 Standard-drawing Flange ASME B16.5 RF Licensor-4	
1	6				P71G-0003B	Spectacle blank ASTM A182 Grade F11 Class 2 Class 600 Standard-drawing Flange ASME B16.5 RF Licensor-4	

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PADDLE BLANK (PB)							
OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	8				P72G-0002T	Paddle blank ASTM A182 Grade F11 Class 2 Class 600 Standard-drawing Flange ASME B16.5 RF Licensor-4	
1	10				P72G-0002N	Paddle blank ASTM A182 Grade F11 Class 2 Class 600 Standard-drawing Flange ASME B16.5 RF Licensor-4	
1	12				P72G-0002P	Paddle blank ASTM A182 Grade F11 Class 2 Class 600 Standard-drawing Flange ASME B16.5 RF Licensor-4	
1	14				P72G-0002R	Paddle blank ASTM A182 Grade F11 Class 2 Class 600 Standard-drawing Flange ASME B16.5 RF Licensor-4	
1	16				P72G-0002S	Paddle blank ASTM A182 Grade F11 Class 2 Class 600 Standard-drawing Flange ASME B16.5 RF Licensor-4	
1	18				P72G-0006M	Paddle blank ASTM A182 Grade F11 Class 2 Class 600 Standard-drawing Flange ASME B16.5 RF Licensor-4	
1	20				P72G-0006N	Paddle blank ASTM A182 Grade F11 Class 2 Class 600 Standard-drawing Flange ASME B16.5 RF Licensor-4	
1	24				P72G-0006P	Paddle blank ASTM A182 Grade F11 Class 2 Class 600 Standard-drawing Flange ASME B16.5 RF Licensor-4	

PADDLE SPACER (PS)							
OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	8				P72G-0002M	Paddle spacer ASTM A182 Grade F11 Class 2 Class 600 Standard-drawing Flange ASME B16.5 RF Licensor-4	
1	10				P72G-0002H	Paddle spacer ASTM A182 Grade F11 Class 2 Class 600 Standard-drawing Flange ASME B16.5 RF Licensor-4	
1	12				P72G-0002J	Paddle spacer ASTM A182 Grade F11 Class 2 Class 600 Standard-drawing Flange ASME B16.5 RF Licensor-4	
1	14				P72G-0002K	Paddle spacer ASTM A182 Grade F11 Class 2 Class 600 Standard-drawing Flange ASME B16.5 RF Licensor-4	
1	16				P72G-0002L	Paddle spacer ASTM A182 Grade F11 Class 2 Class 600 Standard-drawing Flange ASME B16.5 RF Licensor-4	
1	18				P72G-0006R	Paddle spacer ASTM A182 Grade F11 Class 2 Class 600 Standard-drawing Flange ASME B16.5 RF Licensor-4	
1	20				P72G-0006S	Paddle spacer ASTM A182 Grade F11 Class 2 Class 600 Standard-drawing Flange ASME B16.5 RF Licensor-4	
1	24				P72G-0006T	Paddle spacer ASTM A182 Grade F11 Class 2 Class 600 Standard-drawing Flange ASME B16.5 RF Licensor-4	

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BOLT TABLE (B_D1DH04 , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	80	P80S-00GN6		
0.75	4	0.625	90	P80S-00GLH		
1	4	0.625	95	P80S-00GLG		
1.5	4	0.750	110	P80S-00GLD		
2	8	0.625	110	P80S-00GN0		
3	8	0.750	130	P80S-00GL9		
4	8	0.875	150	P80S-00FV3		
6	12	1.000	175	P80S-00FR6		
8	12	1.125	195	P80S-00FH4		
10	16	1.250	250	P80S-00F9K		
12	20	1.250	255	P80S-00F9J		
14	20	1.375	270	P80S-00F4T		
16	20	1.500	295	P80S-00EY8		
18	20	1.625	320	P80S-00G0T		
20	24	1.625	335	P80S-00G0P		
24	24	1.875	380	P80S-00FKC		

BOLT TABLE (B_D1DH04_789 , STUD ASME RJ, OPTION CODE 789)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	110		R12	
0.75	4	0.750	115		R14	
1	4	0.875	130	P80S-00FV7	R16	
1.5	4	1.000	140		R20	
2	8	0.875	150	P80S-00FV3	R24	
3	8	0.875	150	P80S-00FV3	R31	P75T-000KP
4	8	1.125	175	P80S-00FH8	R37	P75T-000KC
6	12	1.125	200	P80S-00FH3	R45	P75T-000KD
8	12	1.375	260	P80S-00F4V	R49	P75T-000KR
10	16	1.375	275	P80S-00F4S	R53	P75T-000KN
12	20	1.375	295	P80S-00F2T	R57	P75T-0010W
14	20	1.500	325	P80S-00EY2	R62	P75T-000KY
16	20	1.625	340	P80S-00G0N	R66	P75T-000K9
18	20	1.875	390	P80S-00FKA	R70	P75T-000KZ
20	20	2.000	415	P80S-00FBL	R74	P75T-000KA
24	20	2.500	525	P80S-00EWJ	R78	P75T-000KB

BOLT TABLE (B_D1DH04_797 , STUD ASME RJ, OPTION CODE 797)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	110	P80S-00GLD	R12	P75T-000KE
0.75	4	0.750	115	P80S-00GLC	R14	P75T-000KF
1	4	0.875	130	P80S-00FV7	R16	P75T-000KG
1.5	4	1.000	140	P80S-00FRD	R20	P75T-000KH
2	8	0.875	150	P80S-00FV3	R24	P75T-000KS
3	8	1.125	180		R35	
4	8	1.250	230		R39	
6	12	1.375	300		R46	
8	12	1.625	345		R50	
10	12	1.875	395		R54	
12	16	2.000	445		R58	
14	16	2.250	490		R63	
16	16	2.500	540		R67	
18	16	2.750	590		R71	
20	16	3.000	650		R75	
24	16	3.500	745		R79	

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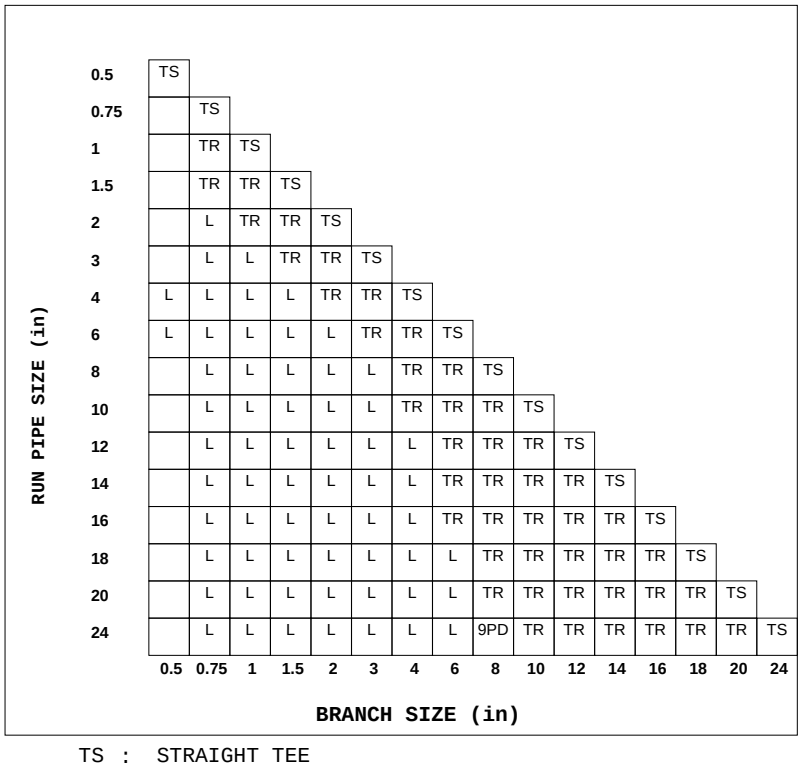
BRANCH TABLE (T_D1DH04)



TS : STRAIGHT TEE
L : OUTLET
9PD : REINFORCING PAD 90 DEG
TR : REDUCING TEE

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Material : 2-1/4Cr-1Mo
Rating : ASME CLASS 600
Flange Face : RF
C.A.(mm) : 1.50
Gasket : Spiral Wound
Service : UTILITY - STEAM, CONDENSATE, BOILER FEED WATER TO ASME B31.1
Design Code : ASME B31.1
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
541	NPT(F) (CA,L)
789	CLASS 900 (B,F,G)
797	CLASS 1500 (B,F,G)

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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P01F-001NB	Pipe ASME SA335 Grade P22 Seamless ASME B36.10M/B36.19M PE	
1	0.75		XS		P01F-001NC	Pipe ASME SA335 Grade P22 Seamless ASME B36.10M/B36.19M PE	
1	1		XS		P01F-001ND	Pipe ASME SA335 Grade P22 Seamless ASME B36.10M/B36.19M PE	
1	1.5		XS		P01F-001NE	Pipe ASME SA335 Grade P22 Seamless ASME B36.10M/B36.19M PE	
1	2		XS		P01F-001NH	Pipe ASME SA335 Grade P22 Seamless ASME B36.10M/B36.19M BE	
1	3		XS		P01F-001NJ	Pipe ASME SA335 Grade P22 Seamless ASME B36.10M/B36.19M BE	
1	4		XS		P01F-001NK	Pipe ASME SA335 Grade P22 Seamless ASME B36.10M/B36.19M BE	
1	6		XS		P01F-001NL	Pipe ASME SA335 Grade P22 Seamless ASME B36.10M/B36.19M BE	
1	8		SCH20		P01F-001NM	Pipe ASME SA335 Grade P22 Seamless ASME B36.10M/B36.19M BE	
1	10		SCH20		P01F-001NF	Pipe ASME SA335 Grade P22 Seamless ASME B36.10M/B36.19M BE	
1	12		SCH20		P01F-001NG	Pipe ASME SA335 Grade P22 Seamless ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P02G-0001Y	90 degree elbow ASME SA182 Grade F22 Class 1 Class 3000 ASME B16.11 SW	
1	0.75				P02G-0001Z	90 degree elbow ASME SA182 Grade F22 Class 1 Class 3000 ASME B16.11 SW	
1	1				P02G-00020	90 degree elbow ASME SA182 Grade F22 Class 1 Class 3000 ASME B16.11 SW	
1	1.5				P02G-00021	90 degree elbow ASME SA182 Grade F22 Class 1 Class 3000 ASME B16.11 SW	
1	2		XS		P02F-000H3	90 degree elbow ASME SA234 Grade WP22 Class 1 Seamless ASME B16.9 BW Long radius	
1	3		XS		P02F-000H4	90 degree elbow ASME SA234 Grade WP22 Class 1 Seamless ASME B16.9 BW Long radius	
1	4		XS		P02F-000H5	90 degree elbow ASME SA234 Grade WP22 Class 1 Seamless ASME B16.9 BW Long radius	
1	6		XS		P02F-000H6	90 degree elbow ASME SA234 Grade WP22 Class 1 Seamless ASME B16.9 BW Long radius	
1	8		SCH20		P02F-000H7	90 degree elbow ASME SA234 Grade WP22 Class 1 Seamless ASME B16.9 BW Long radius	
1	10		SCH20		P02F-000H1	90 degree elbow ASME SA234 Grade WP22 Class 1 Seamless ASME B16.9 BW Long radius	
1	12		SCH20		P02F-000H2	90 degree elbow ASME SA234 Grade WP22 Class 1 Seamless ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P03G-0001U	45 degree elbow ASME SA182 Grade F22 Class 1 Class 3000 ASME B16.11 SW	
1	0.75				P03G-0001V	45 degree elbow ASME SA182 Grade F22 Class 1 Class 3000 ASME B16.11 SW	
1	1				P03G-0001W	45 degree elbow ASME SA182 Grade F22 Class 1 Class 3000 ASME B16.11 SW	
1	1.5				P03G-0001X	45 degree elbow ASME SA182 Grade F22 Class 1 Class 3000 ASME B16.11 SW	
1	2		XS		P03F-000GU	45 degree elbow ASME SA234 Grade WP22 Class 1 Seamless ASME B16.9 BW Long radius	
1	3		XS		P03F-000GV	45 degree elbow ASME SA234 Grade WP22 Class 1 Seamless ASME B16.9 BW Long radius	
1	4		XS		P03F-000GW	45 degree elbow ASME SA234 Grade WP22 Class 1 Seamless ASME B16.9 BW Long radius	
1	6		XS		P03F-000GX	45 degree elbow ASME SA234 Grade WP22 Class 1 Seamless ASME B16.9 BW Long radius	
1	8		SCH20		P03F-000GY	45 degree elbow ASME SA234 Grade WP22 Class 1 Seamless ASME B16.9 BW Long radius	
1	10		SCH20		P03F-000GS	45 degree elbow ASME SA234 Grade WP22 Class 1 Seamless ASME B16.9 BW Long radius	
1	12		SCH20		P03F-000GT	45 degree elbow ASME SA234 Grade WP22 Class 1 Seamless ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P21G-0001Y	Straight tee ASME SA182 Grade F22 Class 1 Class 3000 ASME B16.11 SW	
1	0.75				P21G-0001Z	Straight tee ASME SA182 Grade F22 Class 1 Class 3000 ASME B16.11 SW	
1	1				P21G-00020	Straight tee ASME SA182 Grade F22 Class 1 Class 3000 ASME B16.11 SW	
1	1.5				P21G-00021	Straight tee ASME SA182 Grade F22 Class 1 Class 3000 ASME B16.11 SW	
1	2		XS		P21F-000GY	Straight tee ASME SA234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	3		XS		P21F-000GZ	Straight tee ASME SA234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	4		XS		P21F-000H0	Straight tee ASME SA234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	6		XS		P21F-000H1	Straight tee ASME SA234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	8		SCH20		P21F-000H2	Straight tee ASME SA234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	10		SCH20		P21F-000GW	Straight tee ASME SA234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	12		SCH20		P21F-000GX	Straight tee ASME SA234 Grade WP22 Class 1 Seamless ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75			P24G-0001Y	Reducing tee ASME SA182 Grade F22 Class 1 Class 3000 ASME B16.11 SW	
1	1.5	0.75			P24G-0001Z	Reducing tee ASME SA182 Grade F22 Class 1 Class 3000 ASME B16.11 SW	

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REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5	1			P24G-00020	Reducing tee ASME SA182 Grade F22 Class 1 Class 3000 ASME B16.11 SW	
1	2	1	XS	XS	P24F-001US	Reducing tee ASME SA234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	2	1.5	XS	XS	P24F-001UT	Reducing tee ASME SA234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	3	1.5	XS	XS	P24F-001UU	Reducing tee ASME SA234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	3	2	XS	XS	P24F-001UV	Reducing tee ASME SA234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	4	2	XS	XS	P24F-001UW	Reducing tee ASME SA234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	4	3	XS	XS	P24F-001UX	Reducing tee ASME SA234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	6	3	XS	XS	P24F-001UY	Reducing tee ASME SA234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	6	4	XS	XS	P24F-001UZ	Reducing tee ASME SA234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	8	4	SCH20	XS	P24F-001V0	Reducing tee ASME SA234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	8	6	SCH20	XS	P24F-001V1	Reducing tee ASME SA234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	10	4	SCH20	XS	P24F-001V2	Reducing tee ASME SA234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	10	6	SCH20	XS	P24F-001V3	Reducing tee ASME SA234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	10	8	SCH20	SCH20	P24F-001V4	Reducing tee ASME SA234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	12	6	SCH20	XS	P24F-001V6	Reducing tee ASME SA234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	12	8	SCH20	SCH20	P24F-001V7	Reducing tee ASME SA234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	12	10	SCH20	SCH20	P24F-001V5	Reducing tee ASME SA234 Grade WP22 Class 1 Seamless ASME B16.9 BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	XS	XS	P27F-001DH	Concentric reducer ASME SA234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	4	2	XS	XS	P27F-001DJ	Concentric reducer ASME SA234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	4	3	XS	XS	P27F-001DK	Concentric reducer ASME SA234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	6	3	XS	XS	P27F-001DL	Concentric reducer ASME SA234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	6	4	XS	XS	P27F-001DM	Concentric reducer ASME SA234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	8	4	SCH20	XS	P27F-001DN	Concentric reducer ASME SA234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	8	6	SCH20	XS	P27F-001DP	Concentric reducer ASME SA234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	10	4	SCH20	XS	P27F-001DR	Concentric reducer ASME SA234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	10	6	SCH20	XS	P27F-001DS	Concentric reducer ASME SA234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	10	8	SCH20	SCH20	P27F-001DT	Concentric reducer ASME SA234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	12	6	SCH20	XS	P27F-001DV	Concentric reducer ASME SA234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	12	8	SCH20	SCH20	P27F-001DW	Concentric reducer ASME SA234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	12	10	SCH20	SCH20	P27F-001DU	Concentric reducer ASME SA234 Grade WP22 Class 1 Seamless ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	XS	XS	P28F-001DZ	Eccentric reducer ASME SA234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	4	2	XS	XS	P28F-001E0	Eccentric reducer ASME SA234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	4	3	XS	XS	P28F-001E1	Eccentric reducer ASME SA234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	6	3	XS	XS	P28F-001E2	Eccentric reducer ASME SA234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	6	4	XS	XS	P28F-001E3	Eccentric reducer ASME SA234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	8	4	SCH20	XS	P28F-001E4	Eccentric reducer ASME SA234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	8	6	SCH20	XS	P28F-001E5	Eccentric reducer ASME SA234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	10	4	SCH20	XS	P28F-001E6	Eccentric reducer ASME SA234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	10	6	SCH20	XS	P28F-001E7	Eccentric reducer ASME SA234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	10	8	SCH20	SCH20	P28F-001E8	Eccentric reducer ASME SA234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	12	6	SCH20	XS	P28F-001EA	Eccentric reducer ASME SA234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	12	8	SCH20	SCH20	P28F-001EB	Eccentric reducer ASME SA234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	12	10	SCH20	SCH20	P28F-001E9	Eccentric reducer ASME SA234 Grade WP22 Class 1 Seamless ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P29G-0001W	Cap ASME SA182 Grade F22 Class 1 Class 3000 ASME B16.11 SW	
1	0.75				P29G-0001X	Cap ASME SA182 Grade F22 Class 1 Class 3000 ASME B16.11 SW	
1	1				P29G-0001Y	Cap ASME SA182 Grade F22 Class 1 Class 3000 ASME B16.11 SW	
1	1.5				P29G-0001Z	Cap ASME SA182 Grade F22 Class 1 Class 3000 ASME B16.11 SW	
1	2		XS		P29F-000G7	Cap ASME SA234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	3		XS		P29F-000G8	Cap ASME SA234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	4		XS		P29F-000G9	Cap ASME SA234 Grade WP22 Class 1 Seamless ASME B16.9 BW	

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CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	6		XS		P29F-000GA	Cap ASME SA234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	8		SCH20		P29F-000GB	Cap ASME SA234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	10		SCH20		P29F-000G5	Cap ASME SA234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	12		SCH20		P29F-000G6	Cap ASME SA234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
541	0.75				P29G-0001V	Cap ASME SA182 Grade F22 Class 1 Class 3000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P41F-00030	Straight nipple ASME SA335 Grade P22 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		SCH160		P41F-00031	Straight nipple ASME SA335 Grade P22 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		SCH160		P41F-00032	Straight nipple ASME SA335 Grade P22 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		SCH160		P41F-00033	Straight nipple ASME SA335 Grade P22 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

CON SWAGED NIPPLE (SNC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	XS	XS	P42F-0006J	Concentric swaged nipple ASME SA234 Grade WP22 Class 1 Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	XS	XS	P42F-0006K	Concentric swaged nipple ASME SA234 Grade WP22 Class 1 Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	XS	XS	P42F-0006L	Concentric swaged nipple ASME SA234 Grade WP22 Class 1 Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	XS	XS	P42F-0006M	Concentric swaged nipple ASME SA234 Grade WP22 Class 1 Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	XS	XS	P42F-0006N	Concentric swaged nipple ASME SA234 Grade WP22 Class 1 Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	XS	XS	P42F-0006P	Concentric swaged nipple ASME SA234 Grade WP22 Class 1 Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	XS	XS	P42F-0006R	Concentric swaged nipple ASME SA234 Grade WP22 Class 1 Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	XS	XS	P42F-0006S	Concentric swaged nipple ASME SA234 Grade WP22 Class 1 Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	XS	XS	P42F-0006T	Concentric swaged nipple ASME SA234 Grade WP22 Class 1 Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	XS	XS	P42F-0006U	Concentric swaged nipple ASME SA234 Grade WP22 Class 1 Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	XS	XS	P42F-0006V	Concentric swaged nipple ASME SA234 Grade WP22 Class 1 Seamless MSS SP-95 BE(L) - PE(S)	

ECC SWAGED NIPPLE (SNE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	XS	XS	P43F-0005K	Eccentric swaged nipple ASME SA234 Grade WP22 Class 1 Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	XS	XS	P43F-0005L	Eccentric swaged nipple ASME SA234 Grade WP22 Class 1 Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	XS	XS	P43F-0005M	Eccentric swaged nipple ASME SA234 Grade WP22 Class 1 Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	XS	XS	P43F-0005N	Eccentric swaged nipple ASME SA234 Grade WP22 Class 1 Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	XS	XS	P43F-0005P	Eccentric swaged nipple ASME SA234 Grade WP22 Class 1 Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	XS	XS	P43F-0005R	Eccentric swaged nipple ASME SA234 Grade WP22 Class 1 Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	XS	XS	P43F-0005S	Eccentric swaged nipple ASME SA234 Grade WP22 Class 1 Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	XS	XS	P43F-0005T	Eccentric swaged nipple ASME SA234 Grade WP22 Class 1 Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	XS	XS	P43F-0005U	Eccentric swaged nipple ASME SA234 Grade WP22 Class 1 Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	XS	XS	P43F-0005V	Eccentric swaged nipple ASME SA234 Grade WP22 Class 1 Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	XS	XS	P43F-0005W	Eccentric swaged nipple ASME SA234 Grade WP22 Class 1 Seamless MSS SP-95 BE(L) - PE(S)	

COUPLING (CPS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P47G-00024	Coupling ASME SA182 Grade F22 Class 1 Class 3000 ASME B16.11 SW - SW	
1	0.75				P47G-00025	Coupling ASME SA182 Grade F22 Class 1 Class 3000 ASME B16.11 SW - SW	
1	1				P47G-00026	Coupling ASME SA182 Grade F22 Class 1 Class 3000 ASME B16.11 SW - SW	
1	1.5				P47G-00027	Coupling ASME SA182 Grade F22 Class 1 Class 3000 ASME B16.11 SW - SW	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2 - 2.5	0.75			P31G-0035U	Outlet ASME SA182 Grade F22 Class 1 Class 3000 MSS SP-97 SW	
1	3 - 5	0.75			P31G-0035V	Outlet ASME SA182 Grade F22 Class 1 Class 3000 MSS SP-97 SW	
1	6 - 12	0.75			P31G-002Y6	Outlet ASME SA182 Grade F22 Class 1 Class 3000 MSS SP-97 SW	
1	3	1			P31G-002YP	Outlet ASME SA182 Grade F22 Class 1 Class 3000 MSS SP-97 SW	
1	4 - 5	1			P31G-0035W	Outlet ASME SA182 Grade F22 Class 1 Class 3000 MSS SP-97 SW	
1	6 - 10	1			P31G-002Z2	Outlet ASME SA182 Grade F22 Class 1 Class 3000 MSS SP-97 SW	
1	12 - 36	1			P31G-002YE	Outlet ASME SA182 Grade F22 Class 1 Class 3000 MSS SP-97 SW	
1	4	1.5			P31G-0030H	Outlet ASME SA182 Grade F22 Class 1 Class 3000 MSS SP-97 SW	

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OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	5 - 6	1.5			P31G-0035X	Outlet ASME SA182 Grade F22 Class 1 Class 3000 MSS SP-97 SW	
1	8 - 12	1.5			P31G-0030W	Outlet ASME SA182 Grade F22 Class 1 Class 3000 MSS SP-97 SW	
541	1	0.75			P31G-002NS	Outlet ASME SA182 Grade F22 Class 1 Class 3000 MSS SP-97 NPT	
541	1.5	0.75			P31G-002NR	Outlet ASME SA182 Grade F22 Class 1 Class 3000 MSS SP-97 NPT	
541	2 - 2.5	0.75			P31G-0037Y	Outlet ASME SA182 Grade F22 Class 1 Class 3000 MSS SP-97 NPT	
541	3 - 5	0.75			P31G-0037Z	Outlet ASME SA182 Grade F22 Class 1 Class 3000 MSS SP-97 NPT	
541	6 - 12	0.75			P31G-00380	Outlet ASME SA182 Grade F22 Class 1 Class 3000 MSS SP-97 NPT	
1	6	2	XS	XS	P31G-0027V	Outlet ASME SA182 Grade F22 Class 1 MSS SP-97 BW	
1	8	2	SCH20	XS	P31G-0027W	Outlet ASME SA182 Grade F22 Class 1 MSS SP-97 BW	
1	10	2	SCH20	XS	P31G-0027Y	Outlet ASME SA182 Grade F22 Class 1 MSS SP-97 BW	
1	12	2	SCH20	XS	P31G-00280	Outlet ASME SA182 Grade F22 Class 1 MSS SP-97 BW	
1	8	3	SCH20	XS	P31G-0027X	Outlet ASME SA182 Grade F22 Class 1 MSS SP-97 BW	
1	10	3	SCH20	XS	P31G-0027Z	Outlet ASME SA182 Grade F22 Class 1 MSS SP-97 BW	
1	12	3	SCH20	XS	P31G-00281	Outlet ASME SA182 Grade F22 Class 1 MSS SP-97 BW	
1	12	4	SCH20	XS	P31G-00282	Outlet ASME SA182 Grade F22 Class 1 MSS SP-97 BW	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30G-0001S	Plug ASME SA182 Grade F22 Class 1 ASME B16.11 NPT Round head	
1	0.75				P30G-0001T	Plug ASME SA182 Grade F22 Class 1 ASME B16.11 NPT Round head	
1	1				P30G-0001U	Plug ASME SA182 Grade F22 Class 1 ASME B16.11 NPT Round head	
1	1.5				P30G-0001V	Plug ASME SA182 Grade F22 Class 1 ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P61G-0010R	Flange SW ASME SA182 Grade F22 Class 3 Class 600 ASME B16.5 RF	
1	0.75		XS		P61G-0010S	Flange SW ASME SA182 Grade F22 Class 3 Class 600 ASME B16.5 RF	
1	1		XS		P61G-0010T	Flange SW ASME SA182 Grade F22 Class 3 Class 600 ASME B16.5 RF	
1	1.5		XS		P61G-0010U	Flange SW ASME SA182 Grade F22 Class 3 Class 600 ASME B16.5 RF	
1	2		XS		P61G-0010X	Flange WN ASME SA182 Grade F22 Class 3 Class 600 ASME B16.5 RF	
1	3		XS		P61G-0010Y	Flange WN ASME SA182 Grade F22 Class 3 Class 600 ASME B16.5 RF	
1	4		XS		P61G-0010Z	Flange WN ASME SA182 Grade F22 Class 3 Class 600 ASME B16.5 RF	
1	6		XS		P61G-00110	Flange WN ASME SA182 Grade F22 Class 3 Class 600 ASME B16.5 RF	
1	8		SCH20		P61G-00111	Flange WN ASME SA182 Grade F22 Class 3 Class 600 ASME B16.5 RF	
1	10		SCH20		P61G-0010V	Flange WN ASME SA182 Grade F22 Class 3 Class 600 ASME B16.5 RF	
1	12		SCH20		P61G-0010W	Flange WN ASME SA182 Grade F22 Class 3 Class 600 ASME B16.5 RF	
789	3		XS		P61G-00114	Flange WN ASME SA182 Grade F22 Class 3 Class 900 ASME B16.5 RJ	
789	4		XS		P61G-00115	Flange WN ASME SA182 Grade F22 Class 3 Class 900 ASME B16.5 RJ	
789	6		XS		P61G-00116	Flange WN ASME SA182 Grade F22 Class 3 Class 900 ASME B16.5 RJ	
789	8		SCH20		P61G-00117	Flange WN ASME SA182 Grade F22 Class 3 Class 900 ASME B16.5 RJ	
789	10		SCH20		P61G-00112	Flange WN ASME SA182 Grade F22 Class 3 Class 900 ASME B16.5 RJ	
789	12		SCH20		P61G-00113	Flange WN ASME SA182 Grade F22 Class 3 Class 900 ASME B16.5 RJ	
797	0.5		XS		P61G-00118	Flange SW ASME SA182 Grade F22 Class 3 Class 1500 ASME B16.5 RJ	
797	0.75		XS		P61G-00119	Flange SW ASME SA182 Grade F22 Class 3 Class 1500 ASME B16.5 RJ	
797	1		XS		P61G-0011A	Flange SW ASME SA182 Grade F22 Class 3 Class 1500 ASME B16.5 RJ	
797	1.5		XS		P61G-0011B	Flange SW ASME SA182 Grade F22 Class 3 Class 1500 ASME B16.5 RJ	
797	2		XS		P61G-0011C	Flange WN ASME SA182 Grade F22 Class 3 Class 1500 ASME B16.5 RJ	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67G-000CT	Blind flange ASME SA182 Grade F22 Class 3 Class 600 ASME B16.5 RF	
1	0.75				P67G-000CU	Blind flange ASME SA182 Grade F22 Class 3 Class 600 ASME B16.5 RF	
1	1				P67G-000CV	Blind flange ASME SA182 Grade F22 Class 3 Class 600 ASME B16.5 RF	
1	1.5				P67G-000CW	Blind flange ASME SA182 Grade F22 Class 3 Class 600 ASME B16.5 RF	
1	2				P67G-000CZ	Blind flange ASME SA182 Grade F22 Class 3 Class 600 ASME B16.5 RF	
1	3				P67G-000D0	Blind flange ASME SA182 Grade F22 Class 3 Class 600 ASME B16.5 RF	
1	4				P67G-000D1	Blind flange ASME SA182 Grade F22 Class 3 Class 600 ASME B16.5 RF	
1	6				P67G-000D2	Blind flange ASME SA182 Grade F22 Class 3 Class 600 ASME B16.5 RF	
1	8				P67G-000D3	Blind flange ASME SA182 Grade F22 Class 3 Class 600 ASME B16.5 RF	

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BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	10				P67G-000CX	Blind flange ASME SA182 Grade F22 Class 3 Class 600 ASME B16.5 RF	
1	12				P67G-000CY	Blind flange ASME SA182 Grade F22 Class 3 Class 600 ASME B16.5 RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-003B4	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	0.75				P73T-003B5	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	1				P73T-003B6	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	1.5				P73T-003B7	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	2				P73T-003BD	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	3				P73T-003BG	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	4				P73T-003BH	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	6				P73T-003BJ	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	8				P73T-003BK	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	10				P73T-003B8	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	12				P73T-003B9	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
789	3				P75T-000KP	Ring joint gasket 5Cr-1/2Mo Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	4				P75T-000KC	Ring joint gasket 5Cr-1/2Mo Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	6				P75T-000KD	Ring joint gasket 5Cr-1/2Mo Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	8				P75T-000KR	Ring joint gasket 5Cr-1/2Mo Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	10				P75T-000KN	Ring joint gasket 5Cr-1/2Mo Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	12				P75T-0010W	Ring joint gasket 5Cr-1/2Mo Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	0.5				P75T-000KE	Ring joint gasket 5Cr-1/2Mo Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	0.75				P75T-000KF	Ring joint gasket 5Cr-1/2Mo Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	1				P75T-000KG	Ring joint gasket 5Cr-1/2Mo Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	1.5				P75T-000KH	Ring joint gasket 5Cr-1/2Mo Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	2				P75T-000KS	Ring joint gasket 5Cr-1/2Mo Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-6				See Attached Bolt Table	Bolt and Nut ASME SA193 Grade B16 / SA194 Grade 4 ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	8-12				See Attached Bolt Table	Bolt and Nut ASME SA193 Grade B16 / SA194 Grade 4 ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
789	1-3				See Attached Bolt Table	Bolt and Nut ASME SA193 Grade B16 / SA194 Grade 4 ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
789	4-12				See Attached Bolt Table	Bolt and Nut ASME SA193 Grade B16 / SA194 Grade 4 ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
797	0.5-2				See Attached Bolt Table	Bolt and Nut ASME SA193 Grade B16 / SA194 Grade 4 ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81G-000BL	Gate valve ASME SA182 Grade F22 Class 3 Class 600 API 602 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2	
1	0.75				P81G-000BM	Gate valve ASME SA182 Grade F22 Class 3 Class 600 API 602 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2	
1	1				P81G-000BN	Gate valve ASME SA182 Grade F22 Class 3 Class 600 API 602 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2	
1	1.5				P81G-000BP	Gate valve ASME SA182 Grade F22 Class 3 Class 600 API 602 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2	
1	2				P81H-000LL	Gate valve ASME SA217 Grade WC9 Class 600 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2	
1	3				P81H-000LM	Gate valve ASME SA217 Grade WC9 Class 600 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2	
1	4				P81H-000LN	Gate valve ASME SA217 Grade WC9 Class 600 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2	
1	6				P81H-000LP	Gate valve ASME SA217 Grade WC9 Class 600 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2	
1	8				P81H-000LT	Gate valve ASME SA217 Grade WC9 Class 600 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Gear operated Fluid-2	
1	10				P81H-000LR	Gate valve ASME SA217 Grade WC9 Class 600 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Gear operated Fluid-2	
1	12				P81H-000LS	Gate valve ASME SA217 Grade WC9 Class 600 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Gear operated Fluid-2	

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GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82G-0006C	Globe valve ASME SA182 Grade F22 Class 3 Class 600 API 602 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2	
1	0.75				P82G-0006D	Globe valve ASME SA182 Grade F22 Class 3 Class 600 API 602 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2	
1	1				P82G-0006E	Globe valve ASME SA182 Grade F22 Class 3 Class 600 API 602 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2	
1	1.5				P82G-0006F	Globe valve ASME SA182 Grade F22 Class 3 Class 600 API 602 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2	
1	2				P82H-00080	Globe valve ASME SA217 Grade WC9 Class 600 BS 1873 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2	
1	3				P82H-00081	Globe valve ASME SA217 Grade WC9 Class 600 BS 1873 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2	
1	4				P82H-000EU	Globe valve ASME SA217 Grade WC9 Class 600 BS 1873 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Gear operated Fluid-2	
1	6				P82H-000EV	Globe valve ASME SA217 Grade WC9 Class 600 BS 1873 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Gear operated Fluid-2	
1	8				P82H-00084	Globe valve ASME SA217 Grade WC9 Class 600 BS 1873 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Gear operated Fluid-2	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83G-0006F	Check valve ASME SA182 Grade F22 Class 3 Class 600 API 602 Flange ASME B16.5 RF Trim number 5 Lift-type Bolted cover	
1	0.75				P83G-0006G	Check valve ASME SA182 Grade F22 Class 3 Class 600 API 602 Flange ASME B16.5 RF Trim number 5 Lift-type Bolted cover	
1	1				P83G-0006H	Check valve ASME SA182 Grade F22 Class 3 Class 600 API 602 Flange ASME B16.5 RF Trim number 5 Lift-type Bolted cover	
1	1.5				P83G-0006J	Check valve ASME SA182 Grade F22 Class 3 Class 600 API 602 Flange ASME B16.5 RF Trim number 5 Lift-type Bolted cover	
1	2				P83H-0007S	Check valve ASME SA217 Grade WC9 Class 600 BS 1868 Flange ASME B16.5 RF Trim number 5 Swing-type Bolted cover	
1	3				P83H-0007T	Check valve ASME SA217 Grade WC9 Class 600 BS 1868 Flange ASME B16.5 RF Trim number 5 Swing-type Bolted cover	
1	4				P83H-0007U	Check valve ASME SA217 Grade WC9 Class 600 BS 1868 Flange ASME B16.5 RF Trim number 5 Swing-type Bolted cover	
1	6				P83H-0007V	Check valve ASME SA217 Grade WC9 Class 600 BS 1868 Flange ASME B16.5 RF Trim number 5 Swing-type Bolted cover	
1	8				P83H-0007W	Check valve ASME SA217 Grade WC9 Class 600 BS 1868 Flange ASME B16.5 RF Trim number 5 Swing-type Bolted cover	
1	10				P83H-0007R	Check valve ASME SA217 Grade WC9 Class 600 BS 1868 Flange ASME B16.5 RF Trim number 5 Swing-type Bolted cover	

DP CHECK VALVE (XDP)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	12				P88H-0005T	Dual plate check valve ASME SA217 Grade WC9 Class 600 API 594 Wafer-type ASME B16.5 RF Trim number 5 Internal wetted parts 13Cr Spring Inconel Retainerless-type	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71G-0003M	Spectacle blank ASME SA182 Grade F22 Class 3 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	0.75				P71G-0003N	Spectacle blank ASME SA182 Grade F22 Class 3 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	1				P71G-0003P	Spectacle blank ASME SA182 Grade F22 Class 3 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71G-0003R	Spectacle blank ASME SA182 Grade F22 Class 3 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	2				P71G-0003S	Spectacle blank ASME SA182 Grade F22 Class 3 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	3				P71G-0003T	Spectacle blank ASME SA182 Grade F22 Class 3 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	4				P71G-0003U	Spectacle blank ASME SA182 Grade F22 Class 3 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	6				P71G-0003V	Spectacle blank ASME SA182 Grade F22 Class 3 Class 600 Standard-drawing Flange ASME B16.5 RF	

PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	8				P72G-00078	Paddle blank ASME SA182 Grade F22 Class 3 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	10				P72G-00076	Paddle blank ASME SA182 Grade F22 Class 3 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	12				P72G-00077	Paddle blank ASME SA182 Grade F22 Class 3 Class 600 Standard-drawing Flange ASME B16.5 RF	

PADDLE SPACER (PS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	8				P72G-0007B	Paddle spacer ASME SA182 Grade F22 Class 3 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	10				P72G-00079	Paddle spacer ASME SA182 Grade F22 Class 3 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	12				P72G-0007A	Paddle spacer ASME SA182 Grade F22 Class 3 Class 600 Standard-drawing Flange ASME B16.5 RF	

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BOLT TABLE (B_D1EG , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	80	P80S-035HJ		
0.75	4	0.625	90	P80S-035K7		
1	4	0.625	95	P80S-035K8		
1.5	4	0.750	110	P80S-01RBT		
2	8	0.625	110	P80S-035HR		
3	8	0.750	130	P80S-01RBX		
4	8	0.875	150	P80S-01REU		
6	12	1.000	175	P80S-024WP		
8	12	1.125	195	P80S-01RH3		
10	16	1.250	250	P80S-035L8		
12	20	1.250	255	P80S-035L9		

BOLT TABLE (B_D1EG_789 , STUD ASME RJ, OPTION CODE 789)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	110		R12	
0.75	4	0.750	115		R14	
1	4	0.875	130	P80S-01REP	R16	
1.5	4	1.000	140		R20	
2	8	0.875	150	P80S-01REU	R24	
3	8	0.875	150	P80S-01REU	R31	P75T-000KP
4	8	1.125	175	P80S-01RGZ	R37	P75T-000KC
6	12	1.125	200	P80S-01RH4	R45	P75T-000KD
8	12	1.375	260	P80S-0253N	R49	P75T-000KR
10	16	1.375	275	P80S-0253S	R53	P75T-000KN
12	20	1.375	295	P80S-0253W	R57	P75T-0010W

BOLT TABLE (B_D1EG_797 , STUD ASME RJ, OPTION CODE 797)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	110	P80S-01RBT	R12	P75T-000KE
0.75	4	0.750	115	P80S-01RBU	R14	P75T-000KF
1	4	0.875	130	P80S-01REP	R16	P75T-000KG
1.5	4	1.000	140	P80S-024WG	R20	P75T-000KH
2	8	0.875	150	P80S-01REU	R24	P75T-000KS
3	8	1.125	180		R35	
4	8	1.250	230		R39	
6	12	1.375	300		R46	
8	12	1.625	345		R50	
10	12	1.875	395		R54	
12	16	2.000	445		R58	

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BRANCH TABLE (T_D1EG)

RUN PIPE SIZE (in) \ BRANCH SIZE (in)	0.5	0.75	1	1.5	2	3	4	6	8	10	12
0.5	TS										
0.75		TS									
1		TR	TS								
1.5		TR	TR	TS							
2		L	TR	TR	TS						
3		L	L	TR	TR	TS					
4	L	L	L	L	TR	TR	TS				
6	L	L	L	L	L	TR	TR	TS			
8		L	L	L	L	L	TR	TR	TS		
10		L	L	L	L	L	TR	TR	TR	TS	
12		L	L	L	L	L	L	TR	TR	TR	TS

L : OUTLET
TS : STRAIGHT TEE
TR : REDUCING TEE

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Material : LTCS
Rating : ASME CLASS 600
Flange Face : RF
C.A.(mm) : 1.50
Gasket : Spiral Wound
Service : PROCESS - LOW TEMP. SERVICE: / HYDROCARBONS (LIGHT) / REFRIGERANT / PROCESS

Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
200	WITH JACK SCREW (FO)
541	NPT(F) (CA,L)
714	SW - NPT(F) (V)
789	CLASS 900 (B,F,G)
797	CLASS 1500 (B,F,G)

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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P01A-000XW	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE	
1	0.75		XS		P01A-000XX	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE	
1	1		XS		P01A-000XY	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE	
1	1.5		XS		P01A-000Y4	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE	
1	2		XS		P01A-000XB	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	3		STD		P01A-000YL	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	4		XS		P01A-000XR	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	6		XS		P01A-000Y5	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	8		STD		P01A-000Z8	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	10		STD		P01A-000XH	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	12		SCH20		P01A-0017M	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	14		SCH20		P01A-0018X	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P02B-00019	90 degree elbow ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW	
1	0.75				P02B-0001A	90 degree elbow ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW	
1	1				P02B-0001B	90 degree elbow ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW	
1	1.5				P02B-0001C	90 degree elbow ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW	
1	2		XS		P02A-000B9	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	3		STD		P02A-000E7	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	4		XS		P02A-000BK	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	6		XS		P02A-000C1	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	8		STD		P02A-000EF	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	10		STD		P02A-000EL	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	12		SCH20		P02A-000GB	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	14		SCH20		P02A-000GE	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P03B-0001B	45 degree elbow ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW	
1	0.75				P03B-0001C	45 degree elbow ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW	
1	1				P03B-0001D	45 degree elbow ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW	
1	1.5				P03B-0001E	45 degree elbow ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW	
1	2		XS		P03A-0009Y	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	3		STD		P03A-000C4	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	4		XS		P03A-000A6	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	6		XS		P03A-000AC	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	8		STD		P03A-000CB	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	10		STD		P03A-000BL	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	12		SCH20		P03A-000EA	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	14		SCH20		P03A-000EE	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P21B-0001B	Straight tee ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW	
1	0.75				P21B-0001C	Straight tee ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW	
1	1				P21B-0001D	Straight tee ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW	
1	1.5				P21B-0001E	Straight tee ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW	
1	2		XS		P21A-001BR	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	3		STD		P21A-001FE	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	4		XS		P21A-001BX	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	6		XS		P21A-001C4	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	8		STD		P21A-001FL	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10		STD		P21A-001F0	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12		SCH20		P21A-0020K	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14		SCH20		P21A-0020N	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	

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REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75			P24B-0002T	Reducing tee ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW	
1	1.5	0.75			P24B-0002V	Reducing tee ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW	
1	1.5	1			P24B-0002W	Reducing tee ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW	
1	2	1	XS	XS	P24A-00264	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	2	1.5	XS	XS	P24A-0026U	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	3	1.5	STD	XS	P24A-002AC	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	3	2	STD	XS	P24A-005M3	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	4	2	XS	XS	P24A-0026T	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	4	3	XS	STD	P24A-006KX	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	6	3	XS	STD	P24A-007B8	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	6	4	XS	XS	P24A-001YM	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	8	4	STD	XS	P24A-00670	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	8	6	STD	XS	P24A-00671	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	4	STD	XS	P24A-00NE3	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	6	STD	XS	P24A-00672	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	8	STD	STD	P24A-0028W	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	6	SCH20	XS	P24A-00L70	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	8	SCH20	STD	P24A-00NY1	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	10	SCH20	STD	P24A-00NY0	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	6	SCH20	XS	P24A-00L71	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	8	SCH20	STD	P24A-00HML	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	10	SCH20	STD	P24A-00NXZ	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	12	SCH20	SCH20	P24A-002WD	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	STD	XS	P27A-003PM	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	4	2	XS	XS	P27A-00198	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	4	3	XS	STD	P27A-004CW	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	6	3	XS	STD	P27A-008MP	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	6	4	XS	XS	P27A-0019B	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	8	4	STD	XS	P27A-0047T	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	8	6	STD	XS	P27A-0047U	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	4	STD	XS	P27A-0047V	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	6	STD	XS	P27A-0047W	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	8	STD	STD	P27A-001D6	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	6	SCH20	XS	P27A-00FEG	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	8	SCH20	STD	P27A-00HDB	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	10	SCH20	STD	P27A-00HDA	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	6	SCH20	XS	P27A-00FCW	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	8	SCH20	STD	P27A-008Z2	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	10	SCH20	STD	P27A-00HD9	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	12	SCH20	SCH20	P27A-001VX	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	STD	XS	P28A-003PL	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	4	2	XS	XS	P28A-0019V	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	4	3	XS	STD	P28A-004CM	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	6	3	XS	STD	P28A-005CS	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	6	4	XS	XS	P28A-0019X	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	8	4	STD	XS	P28A-0047J	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	8	6	STD	XS	P28A-0047K	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	4	STD	XS	P28A-0047L	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	6	STD	XS	P28A-0047M	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	8	STD	STD	P28A-001E4	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	6	SCH20	XS	P28A-00CKE	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	8	SCH20	STD	P28A-00EM0	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	10	SCH20	STD	P28A-00ELZ	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14	6	SCH20	XS	P28A-00CHS	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	8	SCH20	STD	P28A-005PJ	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	10	SCH20	STD	P28A-00EM1	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	12	SCH20	SCH20	P28A-001VU	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P29B-00028	Cap ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW	
1	0.75				P29B-00029	Cap ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW	
1	1				P29B-0002A	Cap ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW	
1	1.5				P29B-0002B	Cap ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW	
1	2		XS		P29A-000BG	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	3		STD		P29A-0009Y	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	4		XS		P29A-000AN	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	6		XS		P29A-000AS	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	8		STD		P29A-000DH	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10		STD		P29A-000B0	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12		SCH20		P29A-000EJ	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14		SCH20		P29A-000EM	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
541	0.75				P29B-0000G	Cap ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P41A-000AD	Straight nipple ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		SCH160		P41A-000BB	Straight nipple ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		SCH160		P41A-000AN	Straight nipple ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		SCH160		P41A-000AP	Straight nipple ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

CON SWAGED NIPPLE (SNC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	XS	XS	P42A-00032	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	XS	XS	P42A-00031	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	XS	XS	P42A-00034	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	XS	XS	P42A-00037	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	XS	XS	P42A-0003A	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	XS	XS	P42A-00033	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	XS	XS	P42A-0008M	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	XS	XS	P42A-0008N	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	XS	XS	P42A-0008P	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	XS	XS	P42A-0008R	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	STD	XS	P42A-000VB	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 BE(L) - PE(S)	

ECC SWAGED NIPPLE (SNE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	XS	XS	P43A-0004B	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	XS	XS	P43A-0004C	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	XS	XS	P43A-0004D	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	XS	XS	P43A-0004E	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	XS	XS	P43A-0004F	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	XS	XS	P43A-0004G	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	XS	XS	P43A-0004H	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	XS	XS	P43A-0004J	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	XS	XS	P43A-0004K	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	XS	XS	P43A-0004L	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	STD	XS	P43A-000LE	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 BE(L) - PE(S)	

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COUPLING (CPS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P47B-00019	Coupling ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW - SW	
1	0.75				P47B-0001A	Coupling ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW - SW	
1	1				P47B-0001B	Coupling ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW - SW	
1	1.5				P47B-0001C	Coupling ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW - SW	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2 - 2.5	0.75			P31B-0139D	Outlet ASTM A350 Grade LF2 Class 1 Class 3000 MSS SP-97 SW	
1	3 - 5	0.75			P31B-0139E	Outlet ASTM A350 Grade LF2 Class 1 Class 3000 MSS SP-97 SW	
1	6 - 12	0.75			P31B-007EA	Outlet ASTM A350 Grade LF2 Class 1 Class 3000 MSS SP-97 SW	
1	14 - 36	0.75			P31B-007EH	Outlet ASTM A350 Grade LF2 Class 1 Class 3000 MSS SP-97 SW	
1	3	1			P31B-007E6	Outlet ASTM A350 Grade LF2 Class 1 Class 3000 MSS SP-97 SW	
1	4 - 5	1			P31B-0139F	Outlet ASTM A350 Grade LF2 Class 1 Class 3000 MSS SP-97 SW	
1	6 - 10	1			P31B-007E3	Outlet ASTM A350 Grade LF2 Class 1 Class 3000 MSS SP-97 SW	
1	12 - 36	1			P31B-007E9	Outlet ASTM A350 Grade LF2 Class 1 Class 3000 MSS SP-97 SW	
1	4	1.5			P31B-005TT	Outlet ASTM A350 Grade LF2 Class 1 Class 3000 MSS SP-97 SW	
1	5 - 6	1.5			P31B-0139G	Outlet ASTM A350 Grade LF2 Class 1 Class 3000 MSS SP-97 SW	
1	8 - 12	1.5			P31B-007DT	Outlet ASTM A350 Grade LF2 Class 1 Class 3000 MSS SP-97 SW	
1	14 - 24	1.5			P31B-007DZ	Outlet ASTM A350 Grade LF2 Class 1 Class 3000 MSS SP-97 SW	
541	1	0.75			P31B-004MV	Outlet ASTM A350 Grade LF2 Class 1 Class 3000 MSS SP-97 NPT	
541	1.5	0.75			P31B-004MZ	Outlet ASTM A350 Grade LF2 Class 1 Class 3000 MSS SP-97 NPT	
541	2 - 2.5	0.75			P31B-0139H	Outlet ASTM A350 Grade LF2 Class 1 Class 3000 MSS SP-97 NPT	
541	3 - 5	0.75			P31B-0139J	Outlet ASTM A350 Grade LF2 Class 1 Class 3000 MSS SP-97 NPT	
541	6 - 12	0.75			P31B-007J5	Outlet ASTM A350 Grade LF2 Class 1 Class 3000 MSS SP-97 NPT	
541	14 - 36	0.75			P31B-007JC	Outlet ASTM A350 Grade LF2 Class 1 Class 3000 MSS SP-97 NPT	
1	6	2	XS	XS	P31B-00EBP	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	8	2	STD	XS	P31B-00PAW	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	10	2	STD	XS	P31B-00TPH	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	12	2	SCH20	XS	P31B-00TFY	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	14	2	SCH20	XS	P31B-00TFU	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	8	3	STD	STD	P31B-00E6Y	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	10	3	STD	STD	P31B-00E6V	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	12	3	SCH20	STD	P31B-00YAM	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	14	3	SCH20	STD	P31B-00UPP	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	12	4	SCH20	XS	P31B-00YGG	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	14	4	SCH20	XS	P31B-00MA1	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30B-0002V	Plug ASTM A350 Grade LF2 Class 1 ASME B16.11 NPT Round head	
1	0.75				P30B-0002W	Plug ASTM A350 Grade LF2 Class 1 ASME B16.11 NPT Round head	
1	1				P30B-0002X	Plug ASTM A350 Grade LF2 Class 1 ASME B16.11 NPT Round head	
1	1.5				P30B-0002Y	Plug ASTM A350 Grade LF2 Class 1 ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P61B-001FX	Flange SW ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
1	0.75		XS		P61B-001G8	Flange SW ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
1	1		XS		P61B-001DL	Flange SW ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
1	1.5		XS		P61B-001DP	Flange SW ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
1	2		XS		P61B-001FN	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
1	3		STD		P61B-001TV	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
1	4		XS		P61B-001LA	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
1	6		XS		P61B-001M5	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
1	8		STD		P61B-001KE	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
1	10		STD		P61B-001JH	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
1	12		SCH20		P61B-006NN	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
1	14		SCH20		P61B-008X1	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
789	3		STD		P61B-006SY	Flange WN ASTM A350 Grade LF2 Class 1 Class 900 ASME B16.5 RJ	

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FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
789	4		XS		P61B-0068T	Flange WN ASTM A350 Grade LF2 Class 1 Class 900 ASME B16.5 RJ	
789	6		XS		P61B-0068U	Flange WN ASTM A350 Grade LF2 Class 1 Class 900 ASME B16.5 RJ	
789	8		STD		P61B-0068V	Flange WN ASTM A350 Grade LF2 Class 1 Class 900 ASME B16.5 RJ	
789	10		STD		P61B-00BRB	Flange WN ASTM A350 Grade LF2 Class 1 Class 900 ASME B16.5 RJ	
789	12		SCH20		P61B-00ACC	Flange WN ASTM A350 Grade LF2 Class 1 Class 900 ASME B16.5 RJ	
789	14		SCH20		P61B-00ACD	Flange WN ASTM A350 Grade LF2 Class 1 Class 900 ASME B16.5 RJ	
797	0.5		XS		P61B-00BV6	Flange SW ASTM A350 Grade LF2 Class 1 Class 1500 ASME B16.5 RJ	
797	0.75		XS		P61B-00BV7	Flange SW ASTM A350 Grade LF2 Class 1 Class 1500 ASME B16.5 RJ	
797	1		XS		P61B-00BV8	Flange SW ASTM A350 Grade LF2 Class 1 Class 1500 ASME B16.5 RJ	
797	1.5		XS		P61B-00BV9	Flange SW ASTM A350 Grade LF2 Class 1 Class 1500 ASME B16.5 RJ	
797	2		XS		P61B-0068W	Flange WN ASTM A350 Grade LF2 Class 1 Class 1500 ASME B16.5 RJ	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67B-000HJ	Blind flange ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
1	0.75				P67B-000HK	Blind flange ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
1	1				P67B-000HL	Blind flange ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
1	1.5				P67B-000HM	Blind flange ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
1	2				P67B-000HU	Blind flange ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
1	3				P67B-000HX	Blind flange ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
1	4				P67B-000HY	Blind flange ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
1	6				P67B-000HZ	Blind flange ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
1	8				P67B-000J0	Blind flange ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
1	10				P67B-000HN	Blind flange ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
1	12				P67B-000HP	Blind flange ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
1	14				P67B-000HR	Blind flange ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000J8	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000J9	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000JA	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000JB	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000JH	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000JL	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000JM	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	6				P73T-000JN	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	8				P73T-000JP	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	10				P73T-000JC	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	12				P73T-000JD	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	14				P73T-000JE	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
789	3				P75T-000JN	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	4				P75T-000JP	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	6				P75T-000JR	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	8				P75T-000JS	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	10				P75T-000JL	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	12				P75T-000JM	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	14				P75T-000MJ	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	0.5				P75T-000JT	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	0.75				P75T-000JU	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	1				P75T-000JV	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	1.5				P75T-000JW	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	2				P75T-0008A	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	

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BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-6				See Attached Bolt Table	Bolt and Nut ASTM A320 Grade L7 / A194 Grade 4 ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	8-14				See Attached Bolt Table	Bolt and Nut ASTM A320 Grade L7 / A194 Grade 4 ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
789	1-3				See Attached Bolt Table	Bolt and Nut ASTM A320 Grade L7 / A194 Grade 4 ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
789	4-14				See Attached Bolt Table	Bolt and Nut ASTM A320 Grade L7 / A194 Grade 4 ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
797	0.5-2				See Attached Bolt Table	Bolt and Nut ASTM A320 Grade L7 / A194 Grade 4 ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81B-0018C	Gate valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	0.75				P81B-0018D	Gate valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	1				P81B-0018E	Gate valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	1.5				P81B-0018F	Gate valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	2				P81C-004LR	Gate valve ASTM A352 Grade LCC Class 600 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	3				P81C-004LS	Gate valve ASTM A352 Grade LCC Class 600 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	4				P81C-004LT	Gate valve ASTM A352 Grade LCC Class 600 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	6				P81C-0092E	Gate valve ASTM A352 Grade LCC Class 600 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated	
1	8				P81C-004LW	Gate valve ASTM A352 Grade LCC Class 600 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated	
1	10				P81C-0052A	Gate valve ASTM A352 Grade LCC Class 600 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated	
1	12				P81C-0052B	Gate valve ASTM A352 Grade LCC Class 600 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated	
1	14				P81C-004LV	Gate valve ASTM A352 Grade LCC Class 600 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated	
714	0.5				P81B-002S4	Gate valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW - NPT Trim number 12 BB-BG-OS&Y Handwheel operated	
714	0.75				P81B-002FB	Gate valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW - NPT Trim number 12 BB-BG-OS&Y Handwheel operated	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82B-0011H	Globe valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	0.75				P82B-0011J	Globe valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	1				P82B-0011K	Globe valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	1.5				P82B-0011L	Globe valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	2				P82C-0029C	Globe valve ASTM A352 Grade LCC Class 600 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	3				P82C-0029D	Globe valve ASTM A352 Grade LCC Class 600 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	4				P82C-002NP	Globe valve ASTM A352 Grade LCC Class 600 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83B-000TS	Check valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 12 Lift-type Bolted cover	
1	0.75				P83B-000TT	Check valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 12 Lift-type Bolted cover	
1	1				P83B-000TU	Check valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 12 Lift-type Bolted cover	
1	1.5				P83B-000TV	Check valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 12 Lift-type Bolted cover	
1	2				P83C-0026B	Check valve ASTM A352 Grade LCC Class 600 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	3				P83C-0026C	Check valve ASTM A352 Grade LCC Class 600 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	4				P83C-002R0	Check valve ASTM A352 Grade LCC Class 600 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	6				P83C-002R1	Check valve ASTM A352 Grade LCC Class 600 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	

ORIFICE FLANGE (FO)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2		XS		P66B-008GP	Orifice flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.36 RF NPS1/2 SW tap x 1	
1	3		STD		P66B-008GR	Orifice flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.36 RF NPS1/2 SW tap x 1	

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ORIFICE FLANGE (FO)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	4		XS		P66B-008GS	Orifice flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.36 RF NPS1/2 SW tap x 1	
1	6		XS		P66B-008GT	Orifice flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.36 RF NPS1/2 SW tap x 1	
200	2		XS		P66B-008GH	Orifice flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	3		STD		P66B-008GJ	Orifice flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	4		XS		P66B-008GK	Orifice flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	6		XS		P66B-008GL	Orifice flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71B-000ED	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	0.75				P71B-000EE	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	1				P71B-000EF	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71B-000EG	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	2				P71B-000EH	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	3				P71B-000EJ	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	4				P71B-000EK	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	6				P71B-000EL	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 600 Standard-drawing Flange ASME B16.5 RF	

PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	8				P72B-000HW	Paddle blank ASTM A350 Grade LF2 Class 1 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	10				P72B-000HT	Paddle blank ASTM A350 Grade LF2 Class 1 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	12				P72B-000HU	Paddle blank ASTM A350 Grade LF2 Class 1 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	14				P72B-000HV	Paddle blank ASTM A350 Grade LF2 Class 1 Class 600 Standard-drawing Flange ASME B16.5 RF	

PADDLE SPACER (PS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	8				P72B-000HS	Paddle spacer ASTM A350 Grade LF2 Class 1 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	10				P72B-000HN	Paddle spacer ASTM A350 Grade LF2 Class 1 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	12				P72B-000HP	Paddle spacer ASTM A350 Grade LF2 Class 1 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	14				P72B-000HR	Paddle spacer ASTM A350 Grade LF2 Class 1 Class 600 Standard-drawing Flange ASME B16.5 RF	

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BOLT TABLE (B_D1GP , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	80	P80S-003VN		
0.75	4	0.625	90	P80S-003Z5		
1	4	0.625	95	P80S-003Z6		
1.5	4	0.750	110	P80S-003Z9		
2	8	0.625	110	P80S-003VV		
3	8	0.750	130	P80S-003ZD		
4	8	0.875	150	P80S-00468		
6	12	1.000	175	P80S-004BM		
8	12	1.125	195	P80S-004JB		
10	16	1.250	250	P80S-004LX		
12	20	1.250	255	P80S-004LY		
14	20	1.375	270	P80S-003M5		

BOLT TABLE (B_D1GP_789 , STUD ASME RJ, OPTION CODE 789)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	110		R12	
0.75	4	0.750	115		R14	
1	4	0.875	130	P80S-00464	R16	
1.5	4	1.000	140		R20	
2	8	0.875	150	P80S-00468	R24	
3	8	0.875	150	P80S-00468	R31	P75T-000JN
4	8	1.125	175	P80S-004J7	R37	P75T-000JP
6	12	1.125	200	P80S-004JC	R45	P75T-000JR
8	12	1.375	260	P80S-003M3	R49	P75T-000JS
10	16	1.375	275	P80S-003M6	R53	P75T-000JL
12	20	1.375	295	P80S-0039B	R57	P75T-000JM
14	20	1.500	325	P80S-00965	R62	P75T-000MJ

BOLT TABLE (B_D1GP_797 , STUD ASME RJ, OPTION CODE 797)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	110	P80S-003Z9	R12	P75T-000JT
0.75	4	0.750	115	P80S-003ZA	R14	P75T-000JU
1	4	0.875	130	P80S-00464	R16	P75T-000JV
1.5	4	1.000	140	P80S-004BD	R20	P75T-000JW
2	8	0.875	150	P80S-00468	R24	P75T-0008A
3	8	1.125	180		R35	
4	8	1.250	230		R39	
6	12	1.375	300		R46	
8	12	1.625	345		R50	
10	12	1.875	395		R54	
12	16	2.000	445		R58	
14	16	2.250	490		R63	

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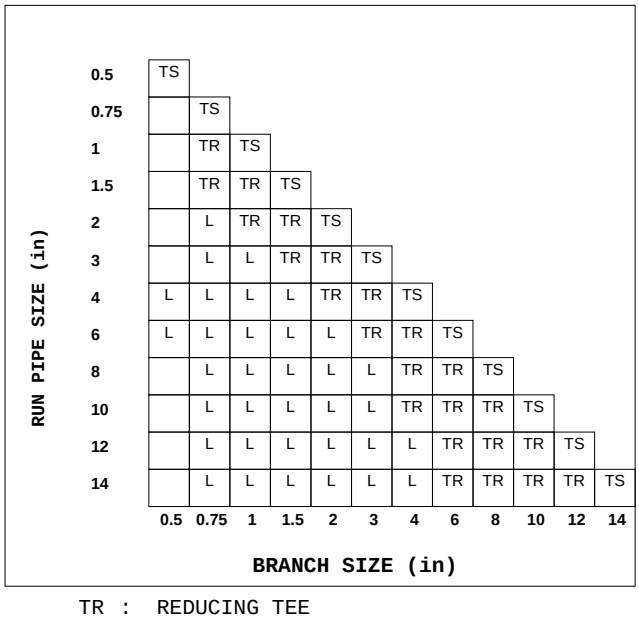
BRANCH TABLE (T_D1GP)



TR : REDUCING TEE
L : OUTLET
TS : STRAIGHT TEE

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Material : LTCS
Rating : ASME CLASS 600
Flange Face : RF
C.A.(mm) : 1.50
Gasket : Spiral Wound
Service : PROCESS - LOW TEMP. SERVICE: / HYDROCARBONS (LIGHT) / REFRIGERANT / PROCESS
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
2	USE OF SOFT SEATED BALL, PLUG AND BUTTERFLY VALVES SHALL BE LIMITED TO MAXIMUM OF 204DEGC (400DEGF)

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
541	NPT(F) (CA,L)
714	SW - NPT(F) (V)
789	CLASS 900 (B,F,G)
797	CLASS 1500 (B,F,G)

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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P01A-007C2	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE Licensor-1	
1	0.75		XS		P01A-007C3	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE Licensor-1	
1	1		XS		P01A-007C4	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE Licensor-1	
1	1.5		XS		P01A-007C5	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE Licensor-1	
1	2		XS		P01A-00799	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE Licensor-1	
1	3		STD		P01A-0079A	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE Licensor-1	
1	4		XS		P01A-0079B	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE Licensor-1	
1	6		XS		P01A-0079C	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE Licensor-1	
1	8		SCH20		P01A-0079D	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE Licensor-1	
1	10		SCH30		P01A-007HL	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE Licensor-1	
1	12		SCH30		P01A-008PG	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE Licensor-1	
1	14		STD		P01A-007HN	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE Licensor-1	
1	16		SCH20		P01A-00798	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE Licensor-1	
1	18		SCH20		P01A-0079E	Pipe ASTM A671 Grade CC60 Class 22 EFW ASME B36.10M/B36.19M BE Licensor-1	
1	20		STD		P01A-0079F	Pipe ASTM A671 Grade CC60 Class 22 EFW ASME B36.10M/B36.19M BE Licensor-1	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P02B-0007L	90 degree elbow ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW Licensor-1	
1	0.75				P02B-0007M	90 degree elbow ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW Licensor-1	
1	1				P02B-0007N	90 degree elbow ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW Licensor-1	
1	1.5				P02B-0007P	90 degree elbow ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW Licensor-1	
1	2		XS		P02A-003RF	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Licensor-1	
1	3		STD		P02A-003RH	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Licensor-1	
1	4		XS		P02A-003RJ	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Licensor-1	
1	6		XS		P02A-003RK	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Licensor-1	
1	8		SCH20		P02A-003RL	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Licensor-1	
1	10		SCH30		P02A-003ZE	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Licensor-1	
1	12		SCH30		P02A-004GT	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Licensor-1	
1	14		STD		P02A-003ZG	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Licensor-1	
1	16		SCH20		P02A-003RD	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Licensor-1	
1	18		SCH20		P02A-003RE	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Licensor-1	
1	20		STD		P02A-003RG	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Licensor-1	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P03B-00078	45 degree elbow ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW Licensor-1	
1	0.75				P03B-00079	45 degree elbow ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW Licensor-1	
1	1				P03B-0007A	45 degree elbow ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW Licensor-1	
1	1.5				P03B-0007B	45 degree elbow ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW Licensor-1	
1	2		XS		P03A-003N4	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Licensor-1	
1	3		STD		P03A-003N6	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Licensor-1	
1	4		XS		P03A-003N7	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Licensor-1	
1	6		XS		P03A-003N8	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Licensor-1	
1	8		SCH20		P03A-003N9	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Licensor-1	
1	10		SCH30		P03A-003XS	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Licensor-1	
1	12		SCH30		P03A-004DZ	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Licensor-1	
1	14		STD		P03A-003XU	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Licensor-1	
1	16		SCH20		P03A-003N2	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Licensor-1	
1	18		SCH20		P03A-003N3	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Licensor-1	
1	20		STD		P03A-003N5	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Licensor-1	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P21B-00078	Straight tee ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW Licensor-1	
1	0.75				P21B-00079	Straight tee ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW Licensor-1	
1	1				P21B-0007A	Straight tee ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW Licensor-1	
1	1.5				P21B-0007B	Straight tee ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW Licensor-1	
1	2		XS		P21A-0048U	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	

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STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3		STD		P21A-0048V	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	4		XS		P21A-0048W	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	6		XS		P21A-0048X	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	8		SCH20		P21A-0048Y	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	10		SCH30		P21A-004GV	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	12		SCH30		P21A-004Z8	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	14		STD		P21A-004GX	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	16		SCH20		P21A-0048T	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	18		SCH20		P21A-0048Z	Straight tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Licensor-1	
1	20		STD		P21A-00490	Straight tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Licensor-1	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75			P24B-000C2	Reducing tee ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW Licensor-1	
1	1.5	0.75			P24B-000C3	Reducing tee ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW Licensor-1	
1	1.5	1			P24B-000C4	Reducing tee ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW Licensor-1	
1	2	1	XS	XS	P24A-00K9R	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	2	1.5	XS	XS	P24A-00K9S	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	3	1.5	STD	XS	P24A-00K9T	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	3	2	STD	XS	P24A-00K18	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	4	2	XS	XS	P24A-00K19	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	4	3	XS	STD	P24A-00K1A	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	6	3	XS	STD	P24A-00K1B	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	6	4	XS	XS	P24A-00K1C	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	8	4	SCH20	XS	P24A-00L80	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	8	6	SCH20	XS	P24A-00L81	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	10	4	SCH30	XS	P24A-00NXL	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	10	6	SCH30	XS	P24A-00NXM	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	10	8	SCH30	SCH20	P24A-00L4Y	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	12	6	SCH30	XS	P24A-00NXP	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	12	8	SCH30	SCH20	P24A-00NXR	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	12	10	SCH30	SCH30	P24A-00NXN	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	14	6	STD	XS	P24A-00NXT	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	14	8	STD	SCH20	P24A-00L55	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	14	10	STD	SCH30	P24A-00L52	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	14	12	STD	SCH30	P24A-00NXS	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	16	6	SCH20	XS	P24A-00K1S	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	16	8	SCH20	SCH20	P24A-00K1T	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	16	10	SCH20	SCH30	P24A-00NXU	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	16	12	SCH20	SCH30	P24A-00NXV	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	16	14	SCH20	STD	P24A-00NXW	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	18	8	SCH20	SCH20	P24A-00K1Y	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Licensor-1	
1	18	10	SCH20	SCH30	P24A-00L5A	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Licensor-1	
1	18	12	SCH20	SCH30	P24A-00NXX	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Licensor-1	
1	18	14	SCH20	STD	P24A-00L5C	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Licensor-1	
1	18	16	SCH20	SCH20	P24A-00K1X	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Licensor-1	
1	20	8	STD	SCH20	P24A-00K24	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Licensor-1	
1	20	10	STD	SCH30	P24A-00L5D	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Licensor-1	
1	20	12	STD	SCH30	P24A-00NXY	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Licensor-1	
1	20	14	STD	STD	P24A-00L5F	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Licensor-1	
1	20	16	STD	SCH20	P24A-00K22	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Licensor-1	
1	20	18	STD	SCH20	P24A-00K23	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Licensor-1	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	STD	XS	P27A-00EL6	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	4	2	XS	XS	P27A-00EL7	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	4	3	XS	STD	P27A-00EL8	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	6	3	XS	STD	P27A-00EL9	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	

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CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	6	4	XS	XS	P27A-00ELA	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	8	4	SCH20	XS	P27A-00FFA	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	8	6	SCH20	XS	P27A-00FFB	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	10	4	SCH30	XS	P27A-00HCX	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	10	6	SCH30	XS	P27A-00HCY	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	10	8	SCH30	SCH20	P27A-00FD4	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	12	6	SCH30	XS	P27A-00HD0	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	12	8	SCH30	SCH20	P27A-00HD1	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	12	10	SCH30	SCH30	P27A-00HCZ	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	14	6	STD	XS	P27A-00HD3	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	14	8	STD	SCH20	P27A-00FDB	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	14	10	STD	SCH30	P27A-00FD8	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	14	12	STD	SCH30	P27A-00HD2	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	16	8	SCH20	SCH20	P27A-00ELR	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	16	10	SCH20	SCH30	P27A-00HD4	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	16	12	SCH20	SCH30	P27A-00HD5	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	16	14	SCH20	STD	P27A-00HD6	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	18	10	SCH20	SCH30	P27A-00FDG	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Licensor-1	
1	18	12	SCH20	SCH30	P27A-00HD7	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Licensor-1	
1	18	14	SCH20	STD	P27A-00FDJ	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Licensor-1	
1	18	16	SCH20	SCH20	P27A-00ELV	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Licensor-1	
1	20	12	STD	SCH30	P27A-00HD8	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Licensor-1	
1	20	14	STD	STD	P27A-00FDL	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Licensor-1	
1	20	16	STD	SCH20	P27A-00ELY	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Licensor-1	
1	20	18	STD	SCH20	P27A-00ELZ	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Licensor-1	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	STD	XS	P28A-00BPY	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	4	2	XS	XS	P28A-00BPZ	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	4	3	XS	STD	P28A-00BR0	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	6	3	XS	STD	P28A-00BR1	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	6	4	XS	XS	P28A-00BR2	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	8	4	SCH20	XS	P28A-00CL8	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	8	6	SCH20	XS	P28A-00CL9	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	10	4	SCH30	XS	P28A-00ELL	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	10	6	SCH30	XS	P28A-00ELM	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	10	8	SCH30	SCH20	P28A-00CJ2	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	12	6	SCH30	XS	P28A-00ELP	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	12	8	SCH30	SCH20	P28A-00ELR	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	12	10	SCH30	SCH30	P28A-00ELN	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	14	6	STD	XS	P28A-00ELT	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	14	8	STD	SCH20	P28A-00CJ9	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	14	10	STD	SCH30	P28A-00CJ6	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	14	12	STD	SCH30	P28A-00ELS	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	16	8	SCH20	SCH20	P28A-00BRG	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	16	10	SCH20	SCH30	P28A-00ELU	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	16	12	SCH20	SCH30	P28A-00ELV	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	16	14	SCH20	STD	P28A-00ELW	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	18	10	SCH20	SCH30	P28A-00CJE	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Licensor-1	
1	18	12	SCH20	SCH30	P28A-00ELX	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Licensor-1	
1	18	14	SCH20	STD	P28A-00CJG	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Licensor-1	
1	18	16	SCH20	SCH20	P28A-00BRL	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Licensor-1	
1	20	12	STD	SCH30	P28A-00ELY	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Licensor-1	
1	20	14	STD	STD	P28A-00CJJ	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Licensor-1	
1	20	16	STD	SCH20	P28A-00BRP	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Licensor-1	
1	20	18	STD	SCH20	P28A-00BRR	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Licensor-1	

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CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P29B-0005R	Cap ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW Licensor-1	
1	0.75				P29B-0005S	Cap ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW Licensor-1	
1	1				P29B-0005T	Cap ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW Licensor-1	
1	1.5				P29B-0005U	Cap ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW Licensor-1	
1	2		XS		P29A-0032L	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	3		STD		P29A-0032N	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	4		XS		P29A-0032P	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	6		XS		P29A-0032R	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	8		SCH20		P29A-0032S	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	10		SCH30		P29A-003CA	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	12		SCH30		P29A-003TT	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	14		STD		P29A-003CC	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	16		SCH20		P29A-0032J	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	18		SCH20		P29A-0032K	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	20		STD		P29A-0032M	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
541	0.75				P29B-00068	Cap ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 NPT Licensor-1	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P41A-00198	Straight nipple ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Licensor-1	
1	0.75		SCH160		P41A-00199	Straight nipple ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Licensor-1	
1	1		SCH160		P41A-0019A	Straight nipple ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Licensor-1	
1	1.5		SCH160		P41A-0019B	Straight nipple ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Licensor-1	

CON SWAGED NIPPLE (SNC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	XS	XS	P42A-000V0	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S) Licensor-1	
1	1	0.5	XS	XS	P42A-000V1	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S) Licensor-1	
1	1	0.75	XS	XS	P42A-000V2	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S) Licensor-1	
1	1.5	0.5	XS	XS	P42A-000V3	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S) Licensor-1	
1	1.5	0.75	XS	XS	P42A-000V4	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S) Licensor-1	
1	1.5	1	XS	XS	P42A-000V5	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S) Licensor-1	
1	2	0.5	XS	XS	P42A-000V6	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 BE(L) - PE(S) Licensor-1	
1	2	0.75	XS	XS	P42A-000V7	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 BE(L) - PE(S) Licensor-1	
1	2	1	XS	XS	P42A-000V8	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 BE(L) - PE(S) Licensor-1	
1	2	1.5	XS	XS	P42A-000V9	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 BE(L) - PE(S) Licensor-1	
1	3	1.5	STD	XS	P42A-000VA	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 BE(L) - PE(S) Licensor-1	

ECC SWAGED NIPPLE (SNE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	XS	XS	P43A-000L3	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S) Licensor-1	
1	1	0.5	XS	XS	P43A-000L4	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S) Licensor-1	
1	1	0.75	XS	XS	P43A-000L5	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S) Licensor-1	
1	1.5	0.5	XS	XS	P43A-000L6	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S) Licensor-1	
1	1.5	0.75	XS	XS	P43A-000L7	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S) Licensor-1	
1	1.5	1	XS	XS	P43A-000L8	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S) Licensor-1	
1	2	0.5	XS	XS	P43A-000L9	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 BE(L) - PE(S) Licensor-1	
1	2	0.75	XS	XS	P43A-000LA	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 BE(L) - PE(S) Licensor-1	
1	2	1	XS	XS	P43A-000LB	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 BE(L) - PE(S) Licensor-1	
1	2	1.5	XS	XS	P43A-000LC	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 BE(L) - PE(S) Licensor-1	
1	3	1.5	STD	XS	P43A-000LD	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 BE(L) - PE(S) Licensor-1	

COUPLING (CPS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P47B-0007Z	Coupling ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW - SW Licensor-1	
1	0.75				P47B-00080	Coupling ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW - SW Licensor-1	
1	1				P47B-00081	Coupling ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW - SW Licensor-1	
1	1.5				P47B-00082	Coupling ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW - SW Licensor-1	

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OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2 - 2.5	0.75			P31B-0139L	Outlet ASTM A350 Grade LF2 Class 1 Class 3000 MSS SP-97 SW Licensor-1	
1	3 - 5	0.75			P31B-0139M	Outlet ASTM A350 Grade LF2 Class 1 Class 3000 MSS SP-97 SW Licensor-1	
1	6 - 12	0.75			P31B-0139N	Outlet ASTM A350 Grade LF2 Class 1 Class 3000 MSS SP-97 SW Licensor-1	
1	14 - 36	0.75			P31B-0139P	Outlet ASTM A350 Grade LF2 Class 1 Class 3000 MSS SP-97 SW Licensor-1	
1	3	1			P31B-0139S	Outlet ASTM A350 Grade LF2 Class 1 Class 3000 MSS SP-97 SW Licensor-1	
1	4 - 5	1			P31B-013B7	Outlet ASTM A350 Grade LF2 Class 1 Class 3000 MSS SP-97 SW Licensor-1	
1	6 - 10	1			P31B-0139R	Outlet ASTM A350 Grade LF2 Class 1 Class 3000 MSS SP-97 SW Licensor-1	
1	12 - 36	1			P31B-0139T	Outlet ASTM A350 Grade LF2 Class 1 Class 3000 MSS SP-97 SW Licensor-1	
1	4	1.5			P31B-010KV	Outlet ASTM A350 Grade LF2 Class 1 Class 3000 MSS SP-97 SW Licensor-1	
1	5 - 6	1.5			P31B-0139V	Outlet ASTM A350 Grade LF2 Class 1 Class 3000 MSS SP-97 SW Licensor-1	
1	8 - 12	1.5			P31B-0139W	Outlet ASTM A350 Grade LF2 Class 1 Class 3000 MSS SP-97 SW Licensor-1	
1	14 - 24	1.5			P31B-0139X	Outlet ASTM A350 Grade LF2 Class 1 Class 3000 MSS SP-97 SW Licensor-1	
541	1	0.75			P31B-011AR	Outlet ASTM A350 Grade LF2 Class 1 Class 3000 MSS SP-97 NPT Licensor-1	
541	1.5	0.75			P31B-011AP	Outlet ASTM A350 Grade LF2 Class 1 Class 3000 MSS SP-97 NPT Licensor-1	
541	2 - 2.5	0.75			P31B-0139Z	Outlet ASTM A350 Grade LF2 Class 1 Class 3000 MSS SP-97 NPT Licensor-1	
541	3 - 5	0.75			P31B-013A0	Outlet ASTM A350 Grade LF2 Class 1 Class 3000 MSS SP-97 NPT Licensor-1	
541	6 - 12	0.75			P31B-013A1	Outlet ASTM A350 Grade LF2 Class 1 Class 3000 MSS SP-97 NPT Licensor-1	
541	14 - 36	0.75			P31B-013A3	Outlet ASTM A350 Grade LF2 Class 1 Class 3000 MSS SP-97 NPT Licensor-1	
1	6	2	XS	XS	P31B-00XGY	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Licensor-1	
1	8	2	SCH20	XS	P31B-00XH3	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Licensor-1	
1	10	2	SCH30	XS	P31B-00YF5	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Licensor-1	
1	12	2	SCH30	XS	P31B-0112E	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Licensor-1	
1	14	2	STD	XS	P31B-00YFA	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Licensor-1	
1	16	2	SCH20	XS	P31B-00XHH	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Licensor-1	
1	18	2	SCH20	XS	P31B-00XHL	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Licensor-1	
1	20	2	STD	XS	P31B-00XHR	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Licensor-1	
1	8	3	SCH20	STD	P31B-00XH4	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Licensor-1	
1	10	3	SCH30	STD	P31B-00YF6	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Licensor-1	
1	12	3	SCH30	STD	P31B-0112F	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Licensor-1	
1	14	3	STD	STD	P31B-00YFB	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Licensor-1	
1	16	3	SCH20	STD	P31B-00XHJ	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Licensor-1	
1	18	3	SCH20	STD	P31B-00XHM	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Licensor-1	
1	20	3	STD	STD	P31B-00XHS	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Licensor-1	
1	12	4	SCH30	XS	P31B-0112G	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Licensor-1	
1	14	4	STD	XS	P31B-0112H	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Licensor-1	
1	16	4	SCH20	XS	P31B-00XHK	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Licensor-1	
1	18	4	SCH20	XS	P31B-00XHN	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Licensor-1	
1	20	4	STD	XS	P31B-00XHT	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Licensor-1	
1	18	6	SCH20	XS	P31B-00XHP	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Licensor-1	
1	20	6	STD	XS	P31B-00XHU	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Licensor-1	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30B-0006B	Plug ASTM A350 Grade LF2 Class 1 ASME B16.11 NPT Round head Licensor-1	
1	0.75				P30B-0006C	Plug ASTM A350 Grade LF2 Class 1 ASME B16.11 NPT Round head Licensor-1	
1	1				P30B-0006D	Plug ASTM A350 Grade LF2 Class 1 ASME B16.11 NPT Round head Licensor-1	
1	1.5				P30B-0006E	Plug ASTM A350 Grade LF2 Class 1 ASME B16.11 NPT Round head Licensor-1	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P61B-00ACN	Flange SW ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF Licensor-1	
1	0.75		XS		P61B-00ACP	Flange SW ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF Licensor-1	
1	1		XS		P61B-00ACR	Flange SW ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF Licensor-1	
1	1.5		XS		P61B-00ACS	Flange SW ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF Licensor-1	
1	2		XS		P61B-009U7	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF Licensor-1	
1	3		STD		P61B-009U9	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF Licensor-1	
1	4		XS		P61B-009UA	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF Licensor-1	
1	6		XS		P61B-009UB	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF Licensor-1	
1	8		SCH20		P61B-009UC	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF Licensor-1	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	10		SCH30		P61B-00ACT	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF Licensor-1	
1	12		SCH30		P61B-00BUY	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF Licensor-1	
1	14		STD		P61B-00ACV	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF Licensor-1	
1	16		SCH20		P61B-009U5	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF Licensor-1	
1	18		SCH20		P61B-009U6	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF Licensor-1	
1	20		STD		P61B-009U8	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF Licensor-1	
789	3		STD		P61B-009UK	Flange WN ASTM A350 Grade LF2 Class 1 Class 900 ASME B16.5 RJ Licensor-1	
789	4		XS		P61B-009UL	Flange WN ASTM A350 Grade LF2 Class 1 Class 900 ASME B16.5 RJ Licensor-1	
789	6		XS		P61B-009UM	Flange WN ASTM A350 Grade LF2 Class 1 Class 900 ASME B16.5 RJ Licensor-1	
789	8		SCH20		P61B-009UN	Flange WN ASTM A350 Grade LF2 Class 1 Class 900 ASME B16.5 RJ Licensor-1	
789	10		SCH30		P61B-00BUZ	Flange WN ASTM A350 Grade LF2 Class 1 Class 900 ASME B16.5 RJ Licensor-1	
789	12		SCH30		P61B-00BV0	Flange WN ASTM A350 Grade LF2 Class 1 Class 900 ASME B16.5 RJ Licensor-1	
789	14		STD		P61B-00BV1	Flange WN ASTM A350 Grade LF2 Class 1 Class 900 ASME B16.5 RJ Licensor-1	
789	16		SCH20		P61B-009UG	Flange WN ASTM A350 Grade LF2 Class 1 Class 900 ASME B16.5 RJ Licensor-1	
789	18		SCH20		P61B-009UH	Flange WN ASTM A350 Grade LF2 Class 1 Class 900 ASME B16.5 RJ Licensor-1	
789	20		STD		P61B-009UJ	Flange WN ASTM A350 Grade LF2 Class 1 Class 900 ASME B16.5 RJ Licensor-1	
797	0.5		XS		P61B-00BV2	Flange SW ASTM A350 Grade LF2 Class 1 Class 1500 ASME B16.5 RJ Licensor-1	
797	0.75		XS		P61B-00BV3	Flange SW ASTM A350 Grade LF2 Class 1 Class 1500 ASME B16.5 RJ Licensor-1	
797	1		XS		P61B-00BV4	Flange SW ASTM A350 Grade LF2 Class 1 Class 1500 ASME B16.5 RJ Licensor-1	
797	1.5		XS		P61B-00BV5	Flange SW ASTM A350 Grade LF2 Class 1 Class 1500 ASME B16.5 RJ Licensor-1	
797	2		XS		P61B-009UU	Flange WN ASTM A350 Grade LF2 Class 1 Class 1500 ASME B16.5 RJ Licensor-1	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67B-002DU	Blind flange ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF Licensor-1	
1	0.75				P67B-002DV	Blind flange ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF Licensor-1	
1	1				P67B-002DW	Blind flange ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF Licensor-1	
1	1.5				P67B-002DX	Blind flange ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF Licensor-1	
1	2				P67B-002E3	Blind flange ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF Licensor-1	
1	3				P67B-002E5	Blind flange ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF Licensor-1	
1	4				P67B-002E6	Blind flange ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF Licensor-1	
1	6				P67B-002E7	Blind flange ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF Licensor-1	
1	8				P67B-002E8	Blind flange ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF Licensor-1	
1	10				P67B-002DY	Blind flange ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF Licensor-1	
1	12				P67B-002DZ	Blind flange ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF Licensor-1	
1	14				P67B-002E0	Blind flange ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF Licensor-1	
1	16				P67B-002E1	Blind flange ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF Licensor-1	
1	18				P67B-002E2	Blind flange ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF Licensor-1	
1	20				P67B-002E4	Blind flange ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF Licensor-1	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000J8	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000J9	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000JA	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000JB	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000JH	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000JL	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000JM	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	6				P73T-000JN	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	8				P73T-000JP	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	10				P73T-000JC	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	12				P73T-000JD	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	14				P73T-000JE	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	16				P73T-000JF	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	18				P73T-000JG	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	20				P73T-000JJ	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
789	3				P75T-000JN	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	4				P75T-000JP	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	6				P75T-000JR	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	8				P75T-000JS	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	10				P75T-000JL	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	12				P75T-000JM	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	14				P75T-000MJ	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	16				P75T-000MK	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	18				P75T-000N8	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	20				P75T-000N7	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	0.5				P75T-000JT	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	0.75				P75T-000JU	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	1				P75T-000JV	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	1.5				P75T-000JW	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	2				P75T-0008A	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-6				See Attached Bolt Table	Bolt and Nut ASTM A320 Grade L7 / A194 Grade 4 ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	8-20				See Attached Bolt Table	Bolt and Nut ASTM A320 Grade L7 / A194 Grade 4 ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
789	1-3				See Attached Bolt Table	Bolt and Nut ASTM A320 Grade L7 / A194 Grade 4 ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
789	4-20				See Attached Bolt Table	Bolt and Nut ASTM A320 Grade L7 / A194 Grade 4 ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
797	0.5-2				See Attached Bolt Table	Bolt and Nut ASTM A320 Grade L7 / A194 Grade 4 ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81B-001D1	Gate valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated Licensor-1	
1	0.75				P81B-001D2	Gate valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated Licensor-1	
1	1				P81B-001D3	Gate valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated Licensor-1	
1	1.5				P81B-001D4	Gate valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated Licensor-1	
1	2				P81C-004LR	Gate valve ASTM A352 Grade LCC Class 600 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	3				P81C-004LS	Gate valve ASTM A352 Grade LCC Class 600 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	4				P81C-004LT	Gate valve ASTM A352 Grade LCC Class 600 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	6				P81C-0092E	Gate valve ASTM A352 Grade LCC Class 600 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated	
1	8				P81C-004LW	Gate valve ASTM A352 Grade LCC Class 600 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated	
1	10				P81C-0052A	Gate valve ASTM A352 Grade LCC Class 600 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated	
1	12				P81C-0052B	Gate valve ASTM A352 Grade LCC Class 600 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated	
1	14				P81C-004LV	Gate valve ASTM A352 Grade LCC Class 600 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated	
1	16				P81C-006H1	Gate valve ASTM A352 Grade LCC Class 600 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated	
1	18				P81C-006H2	Gate valve ASTM A352 Grade LCC Class 600 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated	
1	20				P81C-006H3	Gate valve ASTM A352 Grade LCC Class 600 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated	
714	0.5				P81B-002S5	Gate valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW - NPT Trim number 12 BB-BG-OS&Y Handwheel operated Licensor-1	
714	0.75				P81B-002FF	Gate valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW - NPT Trim number 12 BB-BG-OS&Y Handwheel operated Licensor-1	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82B-0014R	Globe valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated Licensor-1	

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GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75				P82B-0014S	Globe valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated Licensor-1	
1	1				P82B-0014T	Globe valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated Licensor-1	
1	1.5				P82B-0014U	Globe valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated Licensor-1	
1	2				P82C-0029C	Globe valve ASTM A352 Grade LCC Class 600 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	3				P82C-0029D	Globe valve ASTM A352 Grade LCC Class 600 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83B-000WJ	Check valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 12 Lift-type Bolted cover Licensor-1	
1	0.75				P83B-000WK	Check valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 12 Lift-type Bolted cover Licensor-1	
1	1				P83B-000WL	Check valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 12 Lift-type Bolted cover Licensor-1	
1	1.5				P83B-000WM	Check valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 12 Lift-type Bolted cover Licensor-1	
1	2				P83C-0026B	Check valve ASTM A352 Grade LCC Class 600 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	3				P83C-0026C	Check valve ASTM A352 Grade LCC Class 600 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71B-000EM	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 600 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	0.75				P71B-000EN	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 600 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	1				P71B-000EP	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 600 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	1.5				P71B-000ER	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 600 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	2				P71B-000ES	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 600 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	3				P71B-000ET	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 600 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	4				P71B-000EU	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 600 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	6				P71B-000EV	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 600 Standard-drawing Flange ASME B16.5 RF Licensor-1	

PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	8				P72B-000TZ	Paddle blank ASTM A350 Grade LF2 Class 1 Class 600 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	10				P72B-000TY	Paddle blank ASTM A350 Grade LF2 Class 1 Class 600 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	12				P72B-000HX	Paddle blank ASTM A350 Grade LF2 Class 1 Class 600 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	14				P72B-000HY	Paddle blank ASTM A350 Grade LF2 Class 1 Class 600 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	16				P72B-000HZ	Paddle blank ASTM A350 Grade LF2 Class 1 Class 600 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	18				P72B-000J0	Paddle blank ASTM A350 Grade LF2 Class 1 Class 600 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	20				P72B-000J1	Paddle blank ASTM A350 Grade LF2 Class 1 Class 600 Standard-drawing Flange ASME B16.5 RF Licensor-1	

PADDLE SPACER (PS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	8				P72B-000U1	Paddle spacer ASTM A350 Grade LF2 Class 1 Class 600 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	10				P72B-000U0	Paddle spacer ASTM A350 Grade LF2 Class 1 Class 600 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	12				P72B-000J2	Paddle spacer ASTM A350 Grade LF2 Class 1 Class 600 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	14				P72B-000J3	Paddle spacer ASTM A350 Grade LF2 Class 1 Class 600 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	16				P72B-000J4	Paddle spacer ASTM A350 Grade LF2 Class 1 Class 600 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	18				P72B-000J5	Paddle spacer ASTM A350 Grade LF2 Class 1 Class 600 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	20				P72B-000J6	Paddle spacer ASTM A350 Grade LF2 Class 1 Class 600 Standard-drawing Flange ASME B16.5 RF Licensor-1	

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BOLT TABLE (B_D1GP01 , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	80	P80S-003VN		
0.75	4	0.625	90	P80S-003Z5		
1	4	0.625	95	P80S-003Z6		
1.5	4	0.750	110	P80S-003Z9		
2	8	0.625	110	P80S-003VV		
3	8	0.750	130	P80S-003ZD		
4	8	0.875	150	P80S-00468		
6	12	1.000	175	P80S-004BM		
8	12	1.125	195	P80S-004JB		
10	16	1.250	250	P80S-004LX		
12	20	1.250	255	P80S-004LY		
14	20	1.375	270	P80S-003M5		
16	20	1.500	295	P80S-003D1		
18	20	1.625	320	P80S-00CB3		
20	24	1.625	335	P80S-00CB6		

BOLT TABLE (B_D1GP01_789 , STUD ASME RJ, OPTION CODE 789)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	110		R12	
0.75	4	0.750	115		R14	
1	4	0.875	130	P80S-00464	R16	
1.5	4	1.000	140		R20	
2	8	0.875	150	P80S-00468	R24	
3	8	0.875	150	P80S-00468	R31	P75T-000JN
4	8	1.125	175	P80S-004J7	R37	P75T-000JP
6	12	1.125	200	P80S-004JC	R45	P75T-000JR
8	12	1.375	260	P80S-003M3	R49	P75T-000JS
10	16	1.375	275	P80S-003M6	R53	P75T-000JL
12	20	1.375	295	P80S-0039B	R57	P75T-000JM
14	20	1.500	325	P80S-00965	R62	P75T-000MJ
16	20	1.625	340	P80S-00CB7	R66	P75T-000MK
18	20	1.875	390	P80S-00ACL	R70	P75T-000N8
20	20	2.000	415	P80S-00AUF	R74	P75T-000N7

BOLT TABLE (B_D1GP01_797 , STUD ASME RJ, OPTION CODE 797)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	110	P80S-003Z9	R12	P75T-000JT
0.75	4	0.750	115	P80S-003ZA	R14	P75T-000JU
1	4	0.875	130	P80S-00464	R16	P75T-000JV
1.5	4	1.000	140	P80S-004BD	R20	P75T-000JW
2	8	0.875	150	P80S-00468	R24	P75T-0008A
3	8	1.125	180		R35	
4	8	1.250	230		R39	
6	12	1.375	300		R46	
8	12	1.625	345		R50	
10	12	1.875	395		R54	
12	16	2.000	445		R58	
14	16	2.250	490		R63	
16	16	2.500	540		R67	
18	16	2.750	590		R71	
20	16	3.000	650		R75	

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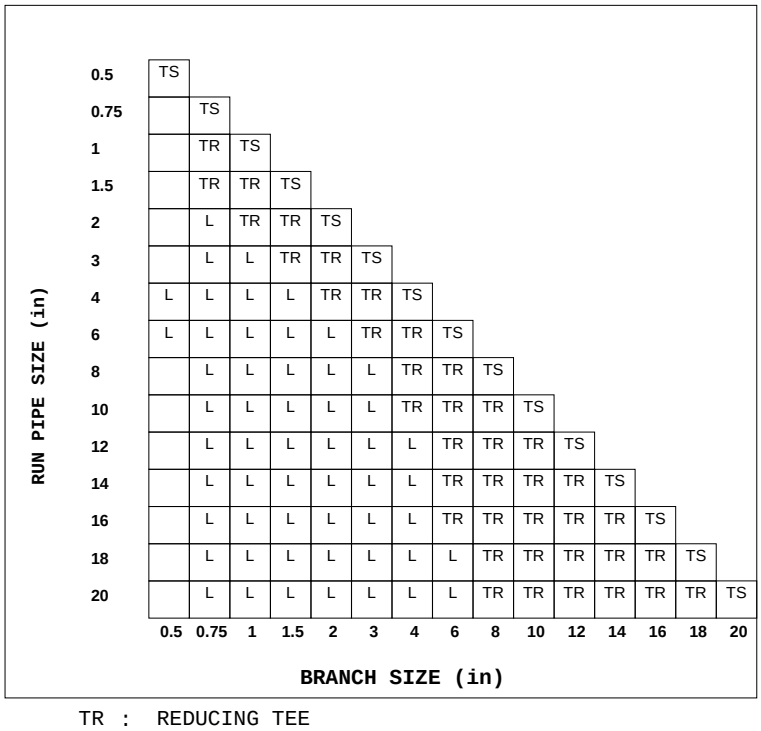
BRANCH TABLE (T_D1GP01)



TR : REDUCING TEE
L : OUTLET
TS : STRAIGHT TEE

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PIPING CLASS

D1GP04 REV NO. 2

Material : LTCS
Rating : ASME CLASS 600
Flange Face : RF
C.A.(mm) : 1.50
Gasket : Spiral Wound
Service : PROCESS - GENERAL PROCESS NON SOUR, NON CORROSIVE
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
200	WITH JACK SCREW (FO)
541	NPT(F) (CA,L)
714	SW - NPT(F) (V)
789	CLASS 900 (B,F,G)
797	CLASS 1500 (G)
4602	DISSIMILAR TYPE CHECK VALVE (X,XDP)

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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P01A-000XW	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE	
1	0.75		XS		P01A-000XX	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE	
1	1		XS		P01A-000XY	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE	
1	1.5		XS		P01A-000Y4	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE	
1	2		XS		P01A-000XB	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	3		STD		P01A-000YL	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	4		XS		P01A-000XR	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	6		XS		P01A-000Y5	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	8		STD		P01A-000Z8	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	10		STD		P01A-000XH	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	12		SCH40		P01A-0018G	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	14		SCH40		P01A-0019M	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	16		XS		P01A-0011L	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	18		SCH40		P01A-008YL	Pipe ASTM A671 Grade CC60 Class 22 EFW ASME B36.10M/B36.19M BE	
1	20		SCH40		P01A-008YM	Pipe ASTM A671 Grade CC60 Class 22 EFW ASME B36.10M/B36.19M BE	
1	24		SCH40		P01A-008YN	Pipe ASTM A671 Grade CC60 Class 22 EFW ASME B36.10M/B36.19M BE	
1	30		22.23mm		P01A-008YP	Pipe ASTM A671 Grade CC60 Class 22 EFW ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P02B-00019	90 degree elbow ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW	
1	0.75				P02B-0001A	90 degree elbow ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW	
1	1				P02B-0001B	90 degree elbow ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW	
1	1.5				P02B-0001C	90 degree elbow ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW	
1	2		XS		P02A-000B9	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	3		STD		P02A-000E7	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	4		XS		P02A-000BK	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	6		XS		P02A-000C1	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	8		STD		P02A-000EF	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	10		STD		P02A-000EL	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	12		SCH40		P02A-000JZ	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	14		SCH40		P02A-000K0	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	16		XS		P02A-000FJ	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	18		SCH40		P02A-0010S	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	20		SCH40		P02A-0010T	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	24		SCH40		P02A-0010U	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	30		22.23mm		P02A-000PD	90 degree elbow ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P03B-0001B	45 degree elbow ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW	
1	0.75				P03B-0001C	45 degree elbow ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW	
1	1				P03B-0001D	45 degree elbow ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW	
1	1.5				P03B-0001E	45 degree elbow ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW	
1	2		XS		P03A-0009Y	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	3		STD		P03A-000C4	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	4		XS		P03A-000A6	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	6		XS		P03A-000AC	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	8		STD		P03A-000CB	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	10		STD		P03A-000BL	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	12		SCH40		P03A-000GX	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	14		SCH40		P03A-000GY	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	16		XS		P03A-000DJ	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	18		SCH40		P03A-000X8	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	20		SCH40		P03A-000X9	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	24		SCH40		P03A-000XA	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	30		22.23mm		P03A-000M3	45 degree elbow ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Long radius	

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STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P21B-0001B	Straight tee ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW	
1	0.75				P21B-0001C	Straight tee ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW	
1	1				P21B-0001D	Straight tee ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW	
1	1.5				P21B-0001E	Straight tee ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW	
1	2		XS		P21A-001BR	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	3		STD		P21A-001FE	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	4		XS		P21A-001BX	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	6		XS		P21A-001C4	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	8		STD		P21A-001FL	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10		STD		P21A-001F0	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12		SCH40		P21A-00239	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14		SCH40		P21A-0023A	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16		XS		P21A-001ZZ	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	18		SCH40		P21A-001DA	Straight tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	20		SCH40		P21A-001BJ	Straight tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	24		SCH40		P21A-001BN	Straight tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	30		22.23mm		P21A-0027L	Straight tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75			P24B-0002T	Reducing tee ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW	
1	1.5	0.75			P24B-0002V	Reducing tee ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW	
1	1.5	1			P24B-0002W	Reducing tee ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW	
1	2	1	XS	XS	P24A-00264	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	2	1.5	XS	XS	P24A-0026U	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	3	1.5	STD	XS	P24A-002AC	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	3	2	STD	XS	P24A-005M3	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	4	2	XS	XS	P24A-0026T	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	4	3	XS	STD	P24A-006KX	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	6	3	XS	STD	P24A-007B8	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	6	4	XS	XS	P24A-001YM	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	8	4	STD	XS	P24A-00670	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	8	6	STD	XS	P24A-00671	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	4	STD	XS	P24A-00NE3	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	6	STD	XS	P24A-00672	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	8	STD	STD	P24A-0028W	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	6	SCH40	XS	P24A-00GN2	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	8	SCH40	STD	P24A-00674	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	10	SCH40	STD	P24A-00673	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	6	SCH40	XS	P24A-00GN5	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	8	SCH40	STD	P24A-00M10	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	10	SCH40	STD	P24A-00675	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	12	SCH40	SCH40	P24A-0036F	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	6	XS	XS	P24A-00GN8	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	8	XS	STD	P24A-002RN	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	10	XS	STD	P24A-002LL	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	12	XS	SCH40	P24A-00676	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	14	XS	SCH40	P24A-00677	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	18	8	SCH40	STD	P24A-00PJU	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	18	10	SCH40	STD	P24A-00PJS	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	18	12	SCH40	SCH40	P24A-0036R	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	18	14	SCH40	SCH40	P24A-0036S	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	18	16	SCH40	XS	P24A-00PJT	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	20	8	SCH40	STD	P24A-00PJX	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	20	10	SCH40	STD	P24A-00PJV	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	20	12	SCH40	SCH40	P24A-0036W	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	20	14	SCH40	SCH40	P24A-0036X	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	20	16	SCH40	XS	P24A-00PJW	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	20	18	SCH40	SCH40	P24A-0023K	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	

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REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	24	10	SCH40	STD	P24A-00PJY	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	24	12	SCH40	SCH40	P24A-0034A	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	24	14	SCH40	SCH40	P24A-0034B	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	24	16	SCH40	XS	P24A-00PJZ	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	24	18	SCH40	SCH40	P24A-0022Y	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	24	20	SCH40	SCH40	P24A-0023M	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	30	10	22.23mm	STD	P24A-00PK3	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	30	12	22.23mm	SCH40	P24A-00PK4	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	30	14	22.23mm	SCH40	P24A-00PK5	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	30	16	22.23mm	XS	P24A-00PK6	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	30	18	22.23mm	SCH40	P24A-00PK0	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	30	20	22.23mm	SCH40	P24A-00PK1	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	30	24	22.23mm	SCH40	P24A-00PK2	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	STD	XS	P27A-003PM	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	4	2	XS	XS	P27A-00198	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	4	3	XS	STD	P27A-004CW	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	6	3	XS	STD	P27A-008MP	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	6	4	XS	XS	P27A-0019B	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	8	4	STD	XS	P27A-0047T	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	8	6	STD	XS	P27A-0047U	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	4	STD	XS	P27A-0047V	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	6	STD	XS	P27A-0047W	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	8	STD	STD	P27A-001D6	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	6	SCH40	XS	P27A-0047Y	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	8	SCH40	STD	P27A-0047Z	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	10	SCH40	STD	P27A-0047X	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	6	SCH40	XS	P27A-00481	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	8	SCH40	STD	P27A-00482	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	10	SCH40	STD	P27A-00480	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	12	SCH40	SCH40	P27A-00224	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	8	XS	STD	P27A-001SR	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	10	XS	STD	P27A-001NX	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	12	XS	SCH40	P27A-00483	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	14	XS	SCH40	P27A-00484	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	18	10	SCH40	STD	P27A-00HWV	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	18	12	SCH40	SCH40	P27A-0022C	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	18	14	SCH40	SCH40	P27A-0022D	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	18	16	SCH40	XS	P27A-00HWW	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	20	12	SCH40	SCH40	P27A-0022F	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	20	14	SCH40	SCH40	P27A-0022G	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	20	16	SCH40	XS	P27A-00HWX	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	20	18	SCH40	SCH40	P27A-001ED	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	24	16	SCH40	XS	P27A-00HWY	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	24	18	SCH40	SCH40	P27A-001AR	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	24	20	SCH40	SCH40	P27A-001D1	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	30	20	22.23mm	SCH40	P27A-00HWZ	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	30	24	22.23mm	SCH40	P27A-00HX0	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	STD	XS	P28A-003PL	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	4	2	XS	XS	P28A-0019V	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	4	3	XS	STD	P28A-004CM	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	6	3	XS	STD	P28A-005CS	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	6	4	XS	XS	P28A-0019X	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	8	4	STD	XS	P28A-0047J	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	8	6	STD	XS	P28A-0047K	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	4	STD	XS	P28A-0047L	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	6	STD	XS	P28A-0047M	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	8	STD	STD	P28A-001E4	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	6	SCH40	XS	P28A-0047P	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	8	SCH40	STD	P28A-0047R	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	10	SCH40	STD	P28A-0047N	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	6	SCH40	XS	P28A-0047T	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	8	SCH40	STD	P28A-0047U	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	10	SCH40	STD	P28A-0047S	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	12	SCH40	SCH40	P28A-0021T	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	8	XS	STD	P28A-001T0	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	10	XS	STD	P28A-001SD	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	12	XS	SCH40	P28A-0047V	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	14	XS	SCH40	P28A-0047W	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	18	10	SCH40	STD	P28A-00F6D	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	18	12	SCH40	SCH40	P28A-0021J	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	18	14	SCH40	SCH40	P28A-0021K	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	18	16	SCH40	XS	P28A-00F6E	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	20	12	SCH40	SCH40	P28A-0021E	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	20	14	SCH40	SCH40	P28A-0021F	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	20	16	SCH40	XS	P28A-00F6F	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	20	18	SCH40	SCH40	P28A-001FA	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	24	16	SCH40	XS	P28A-00F6G	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	24	18	SCH40	SCH40	P28A-001C1	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	24	20	SCH40	SCH40	P28A-001DX	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	30	20	22.23mm	SCH40	P28A-00F6H	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	30	24	22.23mm	SCH40	P28A-00F6J	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P29B-00028	Cap ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW	
1	0.75				P29B-00029	Cap ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW	
1	1				P29B-0002A	Cap ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW	
1	1.5				P29B-0002B	Cap ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW	
1	2		XS		P29A-000BG	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	3		STD		P29A-0009Y	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	4		XS		P29A-000AN	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	6		XS		P29A-000AS	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	8		STD		P29A-000DH	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10		STD		P29A-000B0	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12		SCH40		P29A-000GW	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14		SCH40		P29A-000GX	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16		XS		P29A-000DL	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	18		SCH40		P29A-000BB	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	20		SCH40		P29A-000BM	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	24		SCH40		P29A-000BU	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	30		22.23mm		P29A-000SK	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
541	0.75				P29B-0000G	Cap ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 NPT	
541	1				P29B-0000H	Cap ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P41A-000AD	Straight nipple ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		SCH160		P41A-000BB	Straight nipple ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		SCH160		P41A-000AN	Straight nipple ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		SCH160		P41A-000AP	Straight nipple ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

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CON SWAGED NIPPLE (SNC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	XS	XS	P42A-00032	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	XS	XS	P42A-00031	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	XS	XS	P42A-00034	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	XS	XS	P42A-00037	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	XS	XS	P42A-0003A	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	XS	XS	P42A-00033	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	XS	XS	P42A-0008M	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	XS	XS	P42A-0008N	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	XS	XS	P42A-0008P	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	XS	XS	P42A-0008R	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	STD	XS	P42A-000VB	Concentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 BE(L) - PE(S)	

ECC SWAGED NIPPLE (SNE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	XS	XS	P43A-0004B	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	XS	XS	P43A-0004C	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	XS	XS	P43A-0004D	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	XS	XS	P43A-0004E	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	XS	XS	P43A-0004F	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	XS	XS	P43A-0004G	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	XS	XS	P43A-0004H	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	XS	XS	P43A-0004J	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	XS	XS	P43A-0004K	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	XS	XS	P43A-0004L	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	STD	XS	P43A-000LE	Eccentric swaged nipple ASTM A420 Grade WPL6 Seamless MSS SP-95 BE(L) - PE(S)	

COUPLING (CPS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P47B-00019	Coupling ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW - SW	
1	0.75				P47B-0001A	Coupling ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW - SW	
1	1				P47B-0001B	Coupling ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW - SW	
1	1.5				P47B-0001C	Coupling ASTM A350 Grade LF2 Class 1 Class 3000 ASME B16.11 SW - SW	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2 - 2.5	0.75			P31B-0139D	Outlet ASTM A350 Grade LF2 Class 1 Class 3000 MSS SP-97 SW	
1	3 - 5	0.75			P31B-0139E	Outlet ASTM A350 Grade LF2 Class 1 Class 3000 MSS SP-97 SW	
1	6 - 12	0.75			P31B-007EA	Outlet ASTM A350 Grade LF2 Class 1 Class 3000 MSS SP-97 SW	
1	14 - 36	0.75			P31B-007EH	Outlet ASTM A350 Grade LF2 Class 1 Class 3000 MSS SP-97 SW	
1	3	1			P31B-007E6	Outlet ASTM A350 Grade LF2 Class 1 Class 3000 MSS SP-97 SW	
1	4 - 5	1			P31B-0139F	Outlet ASTM A350 Grade LF2 Class 1 Class 3000 MSS SP-97 SW	
1	6 - 10	1			P31B-007E3	Outlet ASTM A350 Grade LF2 Class 1 Class 3000 MSS SP-97 SW	
1	12 - 36	1			P31B-007E9	Outlet ASTM A350 Grade LF2 Class 1 Class 3000 MSS SP-97 SW	
1	4	1.5			P31B-005TT	Outlet ASTM A350 Grade LF2 Class 1 Class 3000 MSS SP-97 SW	
1	5 - 6	1.5			P31B-0139G	Outlet ASTM A350 Grade LF2 Class 1 Class 3000 MSS SP-97 SW	
1	8 - 12	1.5			P31B-007DT	Outlet ASTM A350 Grade LF2 Class 1 Class 3000 MSS SP-97 SW	
1	14 - 24	1.5			P31B-007DZ	Outlet ASTM A350 Grade LF2 Class 1 Class 3000 MSS SP-97 SW	
1	26 - 36	1.5			P31B-0139K	Outlet ASTM A350 Grade LF2 Class 1 Class 3000 MSS SP-97 SW	
541	1	0.75			P31B-004MV	Outlet ASTM A350 Grade LF2 Class 1 Class 3000 MSS SP-97 NPT	
541	1.5	0.75			P31B-004MZ	Outlet ASTM A350 Grade LF2 Class 1 Class 3000 MSS SP-97 NPT	
541	2 - 2.5	0.75			P31B-0139H	Outlet ASTM A350 Grade LF2 Class 1 Class 3000 MSS SP-97 NPT	
541	3 - 5	0.75			P31B-0139J	Outlet ASTM A350 Grade LF2 Class 1 Class 3000 MSS SP-97 NPT	
541	6 - 12	0.75			P31B-007J5	Outlet ASTM A350 Grade LF2 Class 1 Class 3000 MSS SP-97 NPT	
541	14 - 36	0.75			P31B-007JC	Outlet ASTM A350 Grade LF2 Class 1 Class 3000 MSS SP-97 NPT	
1	6	2	XS	XS	P31B-00EBP	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	8	2	STD	XS	P31B-00PAW	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	10	2	STD	XS	P31B-00TPH	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	12	2	SCH40	XS	P31B-00ZG2	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	14	2	SCH40	XS	P31B-00ZG5	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	

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OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	16	2	XS	XS	P31B-00MG4	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	18	2	SCH40	XS	P31B-00EBC	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	20	2	SCH40	XS	P31B-00EB9	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	24	2	SCH40	XS	P31B-00EB0	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	30	2	22.23mm	XS	P31B-00VWY	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	8	3	STD	STD	P31B-00E6Y	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	10	3	STD	STD	P31B-00E6V	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	12	3	SCH40	STD	P31B-00ZG3	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	14	3	SCH40	STD	P31B-00ZG6	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	16	3	XS	STD	P31B-00E9D	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	18	3	SCH40	STD	P31B-011VN	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	20	3	SCH40	STD	P31B-011VP	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	24	3	SCH40	STD	P31B-011VR	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	30	3	22.23mm	STD	P31B-00VWZ	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	12	4	SCH40	XS	P31B-00MK7	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	14	4	SCH40	XS	P31B-00MK9	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	16	4	XS	XS	P31B-00ME1	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	18	4	SCH40	XS	P31B-00EAG	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	20	4	SCH40	XS	P31B-00EAC	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	24	4	SCH40	XS	P31B-00EAF	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	30	4	22.23mm	XS	P31B-011VS	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	18	6	SCH40	XS	P31B-00EA8	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	20	6	SCH40	XS	P31B-00EAA	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	24	6	SCH40	XS	P31B-00EA7	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	
1	30	6	22.23mm	XS	P31B-00VX1	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30B-0002V	Plug ASTM A350 Grade LF2 Class 1 ASME B16.11 NPT Round head	
1	0.75				P30B-0002W	Plug ASTM A350 Grade LF2 Class 1 ASME B16.11 NPT Round head	
1	1				P30B-0002X	Plug ASTM A350 Grade LF2 Class 1 ASME B16.11 NPT Round head	
1	1.5				P30B-0002Y	Plug ASTM A350 Grade LF2 Class 1 ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P61B-001FX	Flange SW ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
1	0.75		XS		P61B-001G8	Flange SW ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
1	1		XS		P61B-001DL	Flange SW ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
1	1.5		XS		P61B-001DP	Flange SW ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
1	2		XS		P61B-001FN	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
1	3		STD		P61B-001TV	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
1	4		XS		P61B-001LA	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
1	6		XS		P61B-001M5	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
1	8		STD		P61B-001KE	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
1	10		STD		P61B-001JH	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
1	12		SCH40		P61B-003WP	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
1	14		SCH40		P61B-008YZ	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
1	16		XS		P61B-001PY	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
1	18		SCH40		P61B-001FB	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
1	20		SCH40		P61B-001G0	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
1	24		SCH40		P61B-001DF	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
1	30		22.23mm		P61B-00DHL	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.47 Series B RF	
789	3		STD		P61B-006SY	Flange WN ASTM A350 Grade LF2 Class 1 Class 900 ASME B16.5 RJ	
789	4		XS		P61B-0068T	Flange WN ASTM A350 Grade LF2 Class 1 Class 900 ASME B16.5 RJ	
789	6		XS		P61B-0068U	Flange WN ASTM A350 Grade LF2 Class 1 Class 900 ASME B16.5 RJ	
789	8		STD		P61B-0068V	Flange WN ASTM A350 Grade LF2 Class 1 Class 900 ASME B16.5 RJ	
789	10		STD		P61B-00BRB	Flange WN ASTM A350 Grade LF2 Class 1 Class 900 ASME B16.5 RJ	
789	12		SCH40		P61B-00D4V	Flange WN ASTM A350 Grade LF2 Class 1 Class 900 ASME B16.5 RJ	
789	14		SCH40		P61B-00D4W	Flange WN ASTM A350 Grade LF2 Class 1 Class 900 ASME B16.5 RJ	

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FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
789	16		XS		P61B-00D4X	Flange WN ASTM A350 Grade LF2 Class 1 Class 900 ASME B16.5 RJ	
789	18		SCH40		P61B-00D4Y	Flange WN ASTM A350 Grade LF2 Class 1 Class 900 ASME B16.5 RJ	
789	20		SCH40		P61B-00D4Z	Flange WN ASTM A350 Grade LF2 Class 1 Class 900 ASME B16.5 RJ	
789	24		SCH40		P61B-00D50	Flange WN ASTM A350 Grade LF2 Class 1 Class 900 ASME B16.5 RJ	
789	30		22.23mm		P61B-00D51	Flange WN ASTM A350 Grade LF2 Class 1 Class 900 ASME B16.47 Series A RJ	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67B-000HJ	Blind flange ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
1	0.75				P67B-000HK	Blind flange ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
1	1				P67B-000HL	Blind flange ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
1	1.5				P67B-000HM	Blind flange ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
1	2				P67B-000HU	Blind flange ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
1	3				P67B-000HX	Blind flange ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
1	4				P67B-000HY	Blind flange ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
1	6				P67B-000HZ	Blind flange ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
1	8				P67B-000J0	Blind flange ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
1	10				P67B-000HN	Blind flange ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
1	12				P67B-000HP	Blind flange ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
1	14				P67B-000HR	Blind flange ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
1	16				P67B-000HS	Blind flange ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
1	18				P67B-000HT	Blind flange ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
1	20				P67B-000HV	Blind flange ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
1	24				P67B-000HW	Blind flange ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF	
1	30				P67B-000J3	Blind flange ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.47 Series B RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000J8	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000J9	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000JA	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000JB	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000JH	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000JL	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000JM	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	6				P73T-000JN	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	8				P73T-000JP	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	10				P73T-000JC	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	12				P73T-000JD	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	14				P73T-000JE	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	16				P73T-000JF	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	18				P73T-000JG	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	20				P73T-000JJ	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	24				P73T-000JK	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	30				P73T-000JT	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
789	3				P75T-000JN	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	4				P75T-000JP	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	6				P75T-000JR	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	8				P75T-000JS	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	10				P75T-000JL	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	12				P75T-000JM	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	14				P75T-000MJ	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	16				P75T-000MK	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	

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GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
789	18				P75T-000N8	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	20				P75T-000N7	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	24				P75T-000N9	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	30				P75T-0013G	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.47-A RJ Octagonal type	
797	2				P75T-0008A	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-6				See Attached Bolt Table	Bolt and Nut ASTM A320 Grade L7 / A194 Grade 4 ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	8-30				See Attached Bolt Table	Bolt and Nut ASTM A320 Grade L7 / A194 Grade 4 ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
789	0.5-3				See Attached Bolt Table	Bolt and Nut ASTM A320 Grade L7 / A194 Grade 4 ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
789	4-30				See Attached Bolt Table	Bolt and Nut ASTM A320 Grade L7 / A194 Grade 4 ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81B-0018C	Gate valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	0.75				P81B-0018D	Gate valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	1				P81B-0018E	Gate valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	1.5				P81B-0018F	Gate valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	2				P81C-004LR	Gate valve ASTM A352 Grade LCC Class 600 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	3				P81C-004LS	Gate valve ASTM A352 Grade LCC Class 600 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	4				P81C-004LT	Gate valve ASTM A352 Grade LCC Class 600 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	6				P81C-0092E	Gate valve ASTM A352 Grade LCC Class 600 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated	
1	8				P81C-004LW	Gate valve ASTM A352 Grade LCC Class 600 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated	
1	10				P81C-0052A	Gate valve ASTM A352 Grade LCC Class 600 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated	
1	12				P81C-0052B	Gate valve ASTM A352 Grade LCC Class 600 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated	
1	14				P81C-004LV	Gate valve ASTM A352 Grade LCC Class 600 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated	
1	16				P81C-006H1	Gate valve ASTM A352 Grade LCC Class 600 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated	
1	18				P81C-006H2	Gate valve ASTM A352 Grade LCC Class 600 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated	
1	20				P81C-006H3	Gate valve ASTM A352 Grade LCC Class 600 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated	
1	24				P81C-00857	Gate valve ASTM A352 Grade LCC Class 600 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated	
1	30				P81C-00858	Gate valve ASTM A352 Grade LCC Class 600 API 600 Flange ASME B16.47-B RF Trim number 12 BB-BG-OS&Y Gear operated	
714	0.5				P81B-002S4	Gate valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW - NPT Trim number 12 BB-BG-OS&Y Handwheel operated	
714	0.75				P81B-002FB	Gate valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW - NPT Trim number 12 BB-BG-OS&Y Handwheel operated	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82B-0011H	Globe valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	0.75				P82B-0011J	Globe valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	1				P82B-0011K	Globe valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	1.5				P82B-0011L	Globe valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	2				P82C-0029C	Globe valve ASTM A352 Grade LCC Class 600 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	3				P82C-0029D	Globe valve ASTM A352 Grade LCC Class 600 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	4				P82C-002NP	Globe valve ASTM A352 Grade LCC Class 600 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	6				P82C-004DC	Globe valve ASTM A352 Grade LCC Class 600 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated	
1	8				P82C-002NS	Globe valve ASTM A352 Grade LCC Class 600 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated	

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CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83B-000TS	Check valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 12 Lift-type Bolted cover	
1	0.75				P83B-000TT	Check valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 12 Lift-type Bolted cover	
1	1				P83B-000TU	Check valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 12 Lift-type Bolted cover	
1	1.5				P83B-000TV	Check valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 12 Lift-type Bolted cover	
1	2				P83C-0026B	Check valve ASTM A352 Grade LCC Class 600 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	3				P83C-0026C	Check valve ASTM A352 Grade LCC Class 600 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	4				P83C-002R0	Check valve ASTM A352 Grade LCC Class 600 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	6				P83C-002R1	Check valve ASTM A352 Grade LCC Class 600 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	8				P83C-002R2	Check valve ASTM A352 Grade LCC Class 600 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	10				P83C-002PY	Check valve ASTM A352 Grade LCC Class 600 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
4602	0.75				P83B-001LT	Check valve ASTM A350 Grade LF2 Class 1 Class 800 API 602 SW Trim number 12 Swing-type Bolted cover	

DP CHECK VALVE (XDP)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
4602	8				P88C-003JX	Dual plate check valve ASTM A352 Grade LCC Class 600 API 594 Wafer-type ASME B16.5 RF Trim number 12 Internal wetted parts SS316 Spring Inconel Retainerless-type	

ORIFICE FLANGE (FO)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2		XS		P66B-008GP	Orifice flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.36 RF NPS1/2 SW tap x 1	
1	3		STD		P66B-008GR	Orifice flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.36 RF NPS1/2 SW tap x 1	
1	4		XS		P66B-008GS	Orifice flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.36 RF NPS1/2 SW tap x 1	
1	6		XS		P66B-008GT	Orifice flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.36 RF NPS1/2 SW tap x 1	
1	8		STD		P66B-008GV	Orifice flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.36 RF NPS1/2 SW tap x 1	
1	10		STD		P66B-008GU	Orifice flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.36 RF NPS1/2 SW tap x 1	
200	2		XS		P66B-008GH	Orifice flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	3		STD		P66B-008GJ	Orifice flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	4		XS		P66B-008GK	Orifice flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	6		XS		P66B-008GL	Orifice flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	8		STD		P66B-008GX	Orifice flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	10		STD		P66B-008GW	Orifice flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71B-000ED	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	0.75				P71B-000EE	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	1				P71B-000EF	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71B-000EG	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	2				P71B-000EH	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	3				P71B-000EJ	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	4				P71B-000EK	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	6				P71B-000EL	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 600 Standard-drawing Flange ASME B16.5 RF	

PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	8				P72B-000HW	Paddle blank ASTM A350 Grade LF2 Class 1 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	10				P72B-000HT	Paddle blank ASTM A350 Grade LF2 Class 1 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	12				P72B-000HU	Paddle blank ASTM A350 Grade LF2 Class 1 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	14				P72B-000HV	Paddle blank ASTM A350 Grade LF2 Class 1 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	16				P72B-000XB	Paddle blank ASTM A350 Grade LF2 Class 1 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	18				P72B-000XC	Paddle blank ASTM A350 Grade LF2 Class 1 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	20				P72B-000XD	Paddle blank ASTM A350 Grade LF2 Class 1 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	24				P72B-000XE	Paddle blank ASTM A350 Grade LF2 Class 1 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	30				P72B-000AD	Paddle blank ASTM A350 Grade LF2 Class 1 Class 600 Standard-drawing Flange ASME B16.47-B RF	

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PADDLE SPACER (PS)							
OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	8				P72B-000HS	Paddle spacer ASTM A350 Grade LF2 Class 1 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	10				P72B-000HN	Paddle spacer ASTM A350 Grade LF2 Class 1 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	12				P72B-000HP	Paddle spacer ASTM A350 Grade LF2 Class 1 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	14				P72B-000HR	Paddle spacer ASTM A350 Grade LF2 Class 1 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	16				P72B-000XF	Paddle spacer ASTM A350 Grade LF2 Class 1 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	18				P72B-000XG	Paddle spacer ASTM A350 Grade LF2 Class 1 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	20				P72B-000XH	Paddle spacer ASTM A350 Grade LF2 Class 1 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	24				P72B-000XJ	Paddle spacer ASTM A350 Grade LF2 Class 1 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	30				P72B-000AF	Paddle spacer ASTM A350 Grade LF2 Class 1 Class 600 Standard-drawing Flange ASME B16.47-B RF	

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BOLT TABLE (B_D1GP04 , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	80	P80S-003VN		
0.75	4	0.625	90	P80S-003Z5		
1	4	0.625	95	P80S-003Z6		
1.5	4	0.750	110	P80S-003Z9		
2	8	0.625	110	P80S-003VV		
3	8	0.750	130	P80S-003ZD		
4	8	0.875	150	P80S-00468		
6	12	1.000	175	P80S-004BM		
8	12	1.125	195	P80S-004JB		
10	16	1.250	250	P80S-004LX		
12	20	1.250	255	P80S-004LY		
14	20	1.375	270	P80S-003M5		
16	20	1.500	295	P80S-003D1		
18	20	1.625	320	P80S-00CB3		
20	24	1.625	335	P80S-00CB6		
24	24	1.875	380	P80S-00ACJ		
30	28	1.875	435	P80S-00ACW		

BOLT TABLE (B_D1GP04_789 , STUD ASME RJ, OPTION CODE 789)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	110	P80S-003Z9	R12	
0.75	4	0.750	115	P80S-003ZA	R14	
1	4	0.875	130	P80S-00464	R16	
1.5	4	1.000	140	P80S-004BD	R20	
2	8	0.875	150	P80S-00468	R24	
3	8	0.875	150	P80S-00468	R31	P75T-000JN
4	8	1.125	175	P80S-004J7	R37	P75T-000JP
6	12	1.125	200	P80S-004JC	R45	P75T-000JR
8	12	1.375	260	P80S-003M3	R49	P75T-000JS
10	16	1.375	275	P80S-003M6	R53	P75T-000JL
12	20	1.375	295	P80S-0039B	R57	P75T-000JM
14	20	1.500	325	P80S-00965	R62	P75T-000MJ
16	20	1.625	340	P80S-00CB7	R66	P75T-000MK
18	20	1.875	390	P80S-00ACL	R70	P75T-000N8
20	20	2.000	415	P80S-00AUF	R74	P75T-000N7
24	20	2.500	525	P80S-00EC3	R78	P75T-000N9
30	20	3.000	600	P80S-00PUU	R102	P75T-0013G

BOLT TABLE (B_D1GP04_797 , STUD ASME RJ, OPTION CODE 797)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	110		R12	
0.75	4	0.750	115		R14	
1	4	0.875	130		R16	
1.5	4	1.000	140		R20	
2	8	0.875	150		R24	P75T-0008A
3	8	1.125	180		R35	
4	8	1.250	230		R39	
6	12	1.375	300		R46	
8	12	1.625	345		R50	
10	12	1.875	395		R54	
12	16	2.000	445		R58	
14	16	2.250	490		R63	
16	16	2.500	540		R67	
18	16	2.750	590		R71	
20	16	3.000	650		R75	
24	16	3.500	745		R79	

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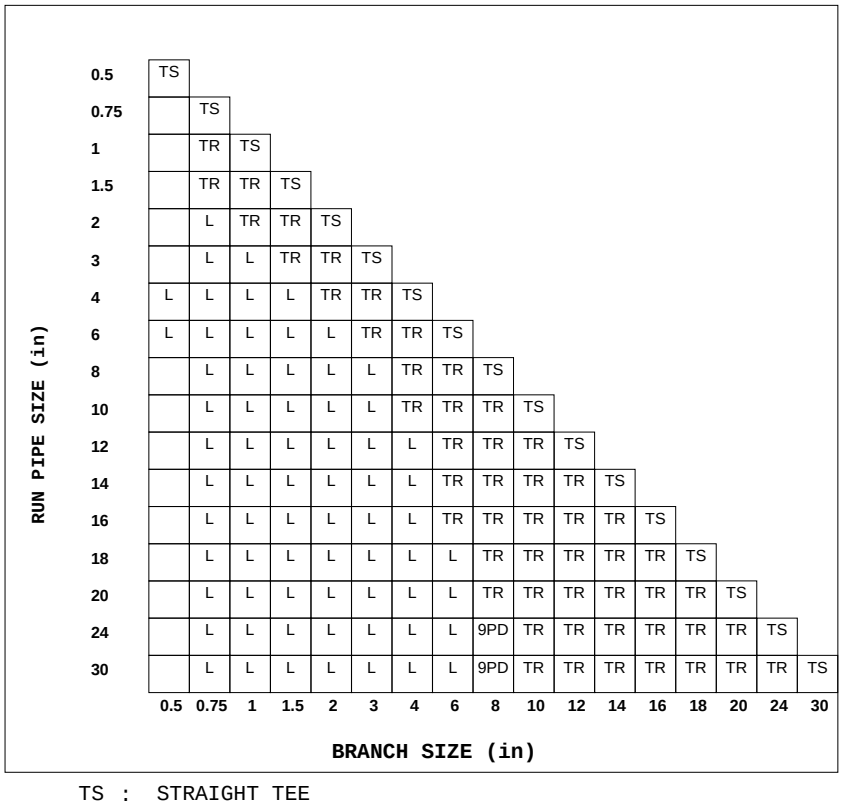
BRANCH TABLE (T_D1GP04)



TS : STRAIGHT TEE
L : OUTLET
9PD : REINFORCING PAD 90 DEG
TR : REDUCING TEE

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PIPING CLASS

D1LH04 REV NO. 2

Material : SS316L
Rating : ASME CLASS 600
Flange Face : RF
C.A.(mm) : 1.50
Gasket : Spiral Wound
Service : PROCESS - HYDROGEN OR HYDROGEN RICH HYDROCARBON MIXTURE : / PROCESS WITH HYDROGEN
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
16	PIPE CLASS SHALL BE USED WITHIN THE NORMAL OPERATING PRESSURE/TEMPERATURE LIMITS SPECIFIED IN API RP 941. PRESSURE / TEMPERATURE SPECIFIED IN THE PIPE CLASS EXCEEDING API RP 941 LIMITS SHOULD BE REGARDED AS UPSET CONDITIONS RATHER THAN FOR CONTINUOUS SERVICE
24	FOR ALL RELEVANT PIPING CLASSES WITH LINE DESIGN TEMPERATURE ABOVE 427DEGC, IN SPIRAL WOUND GASKET, SUITABLE GASKET FILLER MATERIAL SUCH AS COMBINATION OF MICA LAYERS AND GRAPHITE FILLERS OR EQUIVALENT SHALL BE REVIEWED AND SELECTED OR AS DEFINED BY THE LICENSOR

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
541	NPT(F) (CA,L)
714	SW - NPT(F) (V)
789	CLASS 900 (B,F,G)
797	CLASS 1500 (B,F,G)

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PIPING CLASS
D1LH04 REV NO. 2

PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P01J-0014A	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE	
1	0.75		SCH80S		P01J-0014B	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE	
1	1		SCH80S		P01J-0014C	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE	
1	1.5		SCH80S		P01J-0014D	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE	
1	2		SCH80S		P01J-000VR	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M BE	
1	3		SCH40S		P01J-000D8	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M BE	
1	4		SCH80S		P01J-000F8	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M BE	
1	6		SCH80S		P01J-000F9	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M BE	
1	8		SCH40S		P01J-001GN	Pipe ASTM A358 Grade 316/316L Class 1 dual grade EFW ASME B36.10M/B36.19M BE	
1	10		SCH40S		P01J-001FX	Pipe ASTM A358 Grade 316/316L Class 1 dual grade EFW ASME B36.10M/B36.19M BE	
1	12		SCH40S		P01J-001FY	Pipe ASTM A358 Grade 316/316L Class 1 dual grade EFW ASME B36.10M/B36.19M BE	
1	14		SCH40S		P01J-001FZ	Pipe ASTM A358 Grade 316/316L Class 1 dual grade EFW ASME B36.10M/B36.19M BE	
1	16		SCH40S		P01J-001J8	Pipe ASTM A358 Grade 316/316L Class 1 dual grade EFW ASME B36.10M/B36.19M BE	
1	18		SCH40S		P01J-001HW	Pipe ASTM A358 Grade 316/316L Class 1 dual grade EFW ASME B36.10M/B36.19M BE	
1	20		SCH40S		P01J-001HX	Pipe ASTM A358 Grade 316/316L Class 1 dual grade EFW ASME B36.10M/B36.19M BE	
1	24		SCH40S		P01J-001HY	Pipe ASTM A358 Grade 316/316L Class 1 dual grade EFW ASME B36.10M/B36.19M BE	
1	30		STD		P01J-0025J	Pipe ASTM A358 Grade 316/316L Class 1 dual grade EFW ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P02K-0000G	90 degree elbow ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	0.75				P02K-0000H	90 degree elbow ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	1				P02K-0000J	90 degree elbow ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	1.5				P02K-0000K	90 degree elbow ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	2		SCH80S		P02J-000M7	90 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	3		SCH40S		P02J-0007D	90 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	4		SCH80S		P02J-0009F	90 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	6		SCH80S		P02J-0009G	90 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	8		SCH40S		P02J-00190	90 degree elbow ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Long radius	
1	10		SCH40S		P02J-00188	90 degree elbow ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Long radius	
1	12		SCH40S		P02J-000DX	90 degree elbow ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Long radius	
1	14		SCH40S		P02J-00189	90 degree elbow ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Long radius	
1	16		SCH40S		P02J-001AG	90 degree elbow ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Long radius	
1	18		SCH40S		P02J-001AA	90 degree elbow ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Long radius	
1	20		SCH40S		P02J-001AB	90 degree elbow ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Long radius	
1	24		SCH40S		P02J-001AC	90 degree elbow ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Long radius	
1	30		STD		P02J-0020S	90 degree elbow ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P03K-0000D	45 degree elbow ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	0.75				P03K-0000E	45 degree elbow ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	1				P03K-0000F	45 degree elbow ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	1.5				P03K-0000G	45 degree elbow ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	2		SCH80S		P03J-000LV	45 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	3		SCH40S		P03J-0007D	45 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	4		SCH80S		P03J-0009F	45 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	6		SCH80S		P03J-0009G	45 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	8		SCH40S		P03J-0017W	45 degree elbow ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Long radius	
1	10		SCH40S		P03J-00174	45 degree elbow ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Long radius	
1	12		SCH40S		P03J-000DM	45 degree elbow ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Long radius	
1	14		SCH40S		P03J-00175	45 degree elbow ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Long radius	

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45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	16		SCH40S		P03J-0019C	45 degree elbow ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Long radius	
1	18		SCH40S		P03J-00196	45 degree elbow ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Long radius	
1	20		SCH40S		P03J-00197	45 degree elbow ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Long radius	
1	24		SCH40S		P03J-00198	45 degree elbow ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Long radius	
1	30		STD		P03J-0020H	45 degree elbow ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P21K-0000G	Straight tee ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	0.75				P21K-0000H	Straight tee ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	1				P21K-0000J	Straight tee ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	1.5				P21K-0000K	Straight tee ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	2		SCH80S		P21J-000ME	Straight tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	3		SCH40S		P21J-0007X	Straight tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	4		SCH80S		P21J-0009F	Straight tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	6		SCH80S		P21J-0009G	Straight tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	8		SCH40S		P21J-0011C	Straight tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	10		SCH40S		P21J-0010L	Straight tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	12		SCH40S		P21J-000DP	Straight tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	14		SCH40S		P21J-0010M	Straight tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	16		SCH40S		P21J-0012V	Straight tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	18		SCH40S		P21J-0012N	Straight tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	20		SCH40S		P21J-0012P	Straight tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	24		SCH40S		P21J-0012R	Straight tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	30		STD		P21J-001PR	Straight tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75			P24K-0000M	Reducing tee ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	1.5	0.75			P24K-0000P	Reducing tee ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	1.5	1			P24K-0000R	Reducing tee ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	2	1	SCH80S	SCH80S	P24J-0067K	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	2	1.5	SCH80S	SCH80S	P24J-003M0	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	3	1.5	SCH40S	SCH80S	P24J-004TU	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	3	2	SCH40S	SCH80S	P24J-003M1	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	4	2	SCH80S	SCH80S	P24J-0037P	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	4	3	SCH80S	SCH40S	P24J-001T1	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	6	3	SCH80S	SCH40S	P24J-001T2	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	6	4	SCH80S	SCH80S	P24J-001T3	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	8	4	SCH40S	SCH80S	P24J-00791	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	8	6	SCH40S	SCH80S	P24J-00792	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	10	4	SCH40S	SCH80S	P24J-00793	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	10	6	SCH40S	SCH80S	P24J-00794	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	10	8	SCH40S	SCH40S	P24J-004ZM	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	12	6	SCH40S	SCH80S	P24J-006FV	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	12	8	SCH40S	SCH40S	P24J-004ZN	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	12	10	SCH40S	SCH40S	P24J-004TY	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	14	6	SCH40S	SCH80S	P24J-00795	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	14	8	SCH40S	SCH40S	P24J-00796	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	14	10	SCH40S	SCH40S	P24J-004TZ	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	14	12	SCH40S	SCH40S	P24J-004U0	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	16	6	SCH40S	SCH80S	P24J-006FX	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	16	8	SCH40S	SCH40S	P24J-00798	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	16	10	SCH40S	SCH40S	P24J-004ZP	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	16	12	SCH40S	SCH40S	P24J-004ZR	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	18	14	SCH40S	SCH40S	P24J-00797	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	18	8	SCH40S	SCH40S	P24J-0079B	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	

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REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	18	10	SCH40S	SCH40S	P24J-00799	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	18	12	SCH40S	SCH40S	P24J-0077S	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	18	14	SCH40S	SCH40S	P24J-0079A	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	18	16	SCH40S	SCH40S	P24J-005RV	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	20	8	SCH40S	SCH40S	P24J-0079F	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	20	10	SCH40S	SCH40S	P24J-0079C	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	20	12	SCH40S	SCH40S	P24J-0079D	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	20	14	SCH40S	SCH40S	P24J-0079E	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	20	16	SCH40S	SCH40S	P24J-005RW	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	20	18	SCH40S	SCH40S	P24J-004Z9	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	24	10	SCH40S	SCH40S	P24J-0079G	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	24	12	SCH40S	SCH40S	P24J-0079H	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	24	14	SCH40S	SCH40S	P24J-0079J	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	24	16	SCH40S	SCH40S	P24J-0060S	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	24	18	SCH40S	SCH40S	P24J-004ZB	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	24	20	SCH40S	SCH40S	P24J-004ZC	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	30	10	STD	SCH40S	P24J-0079K	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	30	12	STD	SCH40S	P24J-0079L	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	30	14	STD	SCH40S	P24J-0079M	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	30	16	STD	SCH40S	P24J-0079N	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	30	18	STD	SCH40S	P24J-0079P	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	30	20	STD	SCH40S	P24J-0079R	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	30	24	STD	SCH40S	P24J-0079S	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	SCH40S	SCH80S	P27J-002NB	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	4	2	SCH80S	SCH80S	P27J-0021B	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	4	3	SCH80S	SCH40S	P27J-00119	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	6	3	SCH80S	SCH40S	P27J-0011A	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	6	4	SCH80S	SCH80S	P27J-0011B	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	8	4	SCH40S	SCH80S	P27J-00633	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	8	6	SCH40S	SCH80S	P27J-00634	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	10	4	SCH40S	SCH80S	P27J-00635	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	10	6	SCH40S	SCH80S	P27J-00636	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	10	8	SCH40S	SCH40S	P27J-003UF	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	12	6	SCH40S	SCH80S	P27J-0056D	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	12	8	SCH40S	SCH40S	P27J-003UG	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	12	10	SCH40S	SCH40S	P27J-003LY	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	14	6	SCH40S	SCH80S	P27J-00637	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	14	8	SCH40S	SCH40S	P27J-004VH	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	14	10	SCH40S	SCH40S	P27J-003LZ	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	14	12	SCH40S	SCH40S	P27J-003M0	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	16	8	SCH40S	SCH40S	P27J-003UK	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	16	10	SCH40S	SCH40S	P27J-003UH	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	16	12	SCH40S	SCH40S	P27J-003UJ	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	16	14	SCH40S	SCH40S	P27J-004VU	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	18	10	SCH40S	SCH40S	P27J-004VV	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	18	12	SCH40S	SCH40S	P27J-004VW	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	18	14	SCH40S	SCH40S	P27J-004VX	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	18	16	SCH40S	SCH40S	P27J-004VY	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	20	12	SCH40S	SCH40S	P27J-004VZ	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	20	14	SCH40S	SCH40S	P27J-004W0	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	20	16	SCH40S	SCH40S	P27J-004W1	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	20	18	SCH40S	SCH40S	P27J-003TR	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	24	16	SCH40S	SCH40S	P27J-004XT	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	24	18	SCH40S	SCH40S	P27J-003TT	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	24	20	SCH40S	SCH40S	P27J-003TU	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	30	20	STD	SCH40S	P27J-00638	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	

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CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	30	24	STD	SCH40S	P27J-00639	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	SCH40S	SCH80S	P28J-002LY	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	4	2	SCH80S	SCH80S	P28J-0020P	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	4	3	SCH80S	SCH40S	P28J-0011K	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	6	3	SCH80S	SCH40S	P28J-0011L	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	6	4	SCH80S	SCH80S	P28J-0011M	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	8	4	SCH40S	SCH80S	P28J-00643	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	8	6	SCH40S	SCH80S	P28J-00644	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	10	4	SCH40S	SCH80S	P28J-00645	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	10	6	SCH40S	SCH80S	P28J-00646	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	10	8	SCH40S	SCH40S	P28J-003W1	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	12	6	SCH40S	SCH80S	P28J-00578	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	12	8	SCH40S	SCH40S	P28J-003W2	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	12	10	SCH40S	SCH40S	P28J-003ML	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	14	6	SCH40S	SCH80S	P28J-00647	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	14	8	SCH40S	SCH40S	P28J-004W9	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	14	10	SCH40S	SCH40S	P28J-003MM	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	14	12	SCH40S	SCH40S	P28J-003MN	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	16	8	SCH40S	SCH40S	P28J-003W5	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	16	10	SCH40S	SCH40S	P28J-003W3	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	16	12	SCH40S	SCH40S	P28J-003W4	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	16	14	SCH40S	SCH40S	P28J-004WP	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	18	10	SCH40S	SCH40S	P28J-004WK	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	18	12	SCH40S	SCH40S	P28J-004WL	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	18	14	SCH40S	SCH40S	P28J-004WM	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	18	16	SCH40S	SCH40S	P28J-004WN	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	20	12	SCH40S	SCH40S	P28J-004WR	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	20	14	SCH40S	SCH40S	P28J-004WS	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	20	16	SCH40S	SCH40S	P28J-004WT	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	20	18	SCH40S	SCH40S	P28J-003V8	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	24	16	SCH40S	SCH40S	P28J-004YJ	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	24	18	SCH40S	SCH40S	P28J-003VA	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	24	20	SCH40S	SCH40S	P28J-003VB	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	30	20	STD	SCH40S	P28J-00648	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	30	24	STD	SCH40S	P28J-00649	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P29K-00021	Cap ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	0.75				P29K-00022	Cap ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	1				P29K-00023	Cap ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	1.5				P29K-00024	Cap ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	2		SCH80S		P29J-000K2	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	3		SCH40S		P29J-0007G	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	4		SCH80S		P29J-00093	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	6		SCH80S		P29J-00094	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	8		SCH40S		P29J-000YG	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	10		SCH40S		P29J-000XR	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	12		SCH40S		P29J-000CB	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	14		SCH40S		P29J-000XS	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	16		SCH40S		P29J-000ZM	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	18		SCH40S		P29J-000Z8	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	20		SCH40S		P29J-000Z9	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	24		SCH40S		P29J-000ZA	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	30		STD		P29J-003WD	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	0.75				P29K-00002	Cap ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 NPT	

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STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P41J-001UY	Straight nipple ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		SCH160		P41J-001UZ	Straight nipple ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		SCH160		P41J-001V0	Straight nipple ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		SCH160		P41J-001V1	Straight nipple ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

CON SWAGED NIPPLE (SNC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH80S	SCH80S	P42J-0008N	Concentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	SCH80S	SCH80S	P42J-0008M	Concentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	SCH80S	SCH80S	P42J-0008P	Concentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	SCH80S	SCH80S	P42J-0008R	Concentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	SCH80S	SCH80S	P42J-0008S	Concentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	SCH80S	SCH80S	P42J-0008T	Concentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	SCH80S	SCH80S	P42J-000GA	Concentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	SCH80S	SCH80S	P42J-000GB	Concentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	SCH80S	SCH80S	P42J-000GC	Concentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	SCH80S	SCH80S	P42J-000GD	Concentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	SCH40S	SCH80S	P42J-000B4	Concentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	

ECC SWAGED NIPPLE (SNE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH80S	SCH80S	P43J-0008R	Eccentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	SCH80S	SCH80S	P43J-0008S	Eccentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	SCH80S	SCH80S	P43J-0008T	Eccentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	SCH80S	SCH80S	P43J-0008U	Eccentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	SCH80S	SCH80S	P43J-0008V	Eccentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	SCH80S	SCH80S	P43J-0008W	Eccentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	SCH80S	SCH80S	P43J-000DC	Eccentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	SCH80S	SCH80S	P43J-000DD	Eccentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	SCH80S	SCH80S	P43J-000DE	Eccentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	SCH80S	SCH80S	P43J-000DF	Eccentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	SCH40S	SCH80S	P43J-0009H	Eccentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	

COUPLING (CPS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P47K-0000G	Coupling ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW - SW	
1	0.75				P47K-0000H	Coupling ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW - SW	
1	1				P47K-0000J	Coupling ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW - SW	
1	1.5				P47K-0000K	Coupling ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW - SW	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2 - 2.5	0.75			P31K-00GGG	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 SW	
1	3 - 5	0.75			P31K-00GGH	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 SW	
1	6 - 12	0.75			P31K-003VD	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 SW	
1	14 - 36	0.75			P31K-003VL	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 SW	
1	3	1			P31K-003UY	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 SW	
1	4 - 5	1			P31K-00GGJ	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 SW	
1	6 - 10	1			P31K-003UU	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 SW	

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OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	12 - 36	1			P31K-003V1	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 SW	
1	4	1.5			P31K-003UH	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 SW	
1	5 - 6	1.5			P31K-00GGN	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 SW	
1	8 - 12	1.5			P31K-003UB	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 SW	
1	14 - 24	1.5			P31K-003UP	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 SW	
1	26 - 36	1.5			P31K-00GHR	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 SW	
541	1	0.75			P31K-001XH	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 NPT	
541	1.5	0.75			P31K-001XM	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 NPT	
541	2 - 2.5	0.75			P31K-00GGK	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 NPT	
541	3 - 5	0.75			P31K-00GGL	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 NPT	
541	6 - 12	0.75			P31K-003U1	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 NPT	
541	14 - 36	0.75			P31K-003U8	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 NPT	
1	6	2	SCH80S	SCH80S	P31K-00AYK	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW	
1	8	2	SCH40S	SCH80S	P31K-00F0F	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW	
1	10	2	SCH40S	SCH80S	P31K-00F0H	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW	
1	12	2	SCH40S	SCH80S	P31K-00DNG	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW	
1	14	2	SCH40S	SCH80S	P31K-00F0J	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW	
1	16	2	SCH40S	SCH80S	P31K-00DYP	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW	
1	18	2	SCH40S	SCH80S	P31K-00F1E	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW	
1	20	2	SCH40S	SCH80S	P31K-00F1H	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW	
1	24	2	SCH40S	SCH80S	P31K-00F1L	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW	
1	30	2	STD	SCH80S	P31K-00F1P	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW	
1	8	3	SCH40S	SCH40S	P31K-00C60	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW	
1	10	3	SCH40S	SCH40S	P31K-00BVR	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW	
1	12	3	SCH40S	SCH40S	P31K-00BVT	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW	
1	14	3	SCH40S	SCH40S	P31K-00BVW	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW	
1	16	3	SCH40S	SCH40S	P31K-00C63	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW	
1	18	3	SCH40S	SCH40S	P31K-00C55	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW	
1	20	3	SCH40S	SCH40S	P31K-00C58	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW	
1	24	3	SCH40S	SCH40S	P31K-00C5B	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW	
1	30	3	STD	SCH40S	P31K-00F0L	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW	
1	12	4	SCH40S	SCH80S	P31K-00DYL	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW	
1	14	4	SCH40S	SCH80S	P31K-00F0K	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW	
1	16	4	SCH40S	SCH80S	P31K-00DYR	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW	
1	18	4	SCH40S	SCH80S	P31K-00F1F	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW	
1	20	4	SCH40S	SCH80S	P31K-00F1J	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW	
1	24	4	SCH40S	SCH80S	P31K-00F1M	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW	
1	30	4	STD	SCH80S	P31K-00F1R	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW	
1	18	6	SCH40S	SCH80S	P31K-00F1G	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW	
1	20	6	SCH40S	SCH80S	P31K-00F1K	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW	
1	24	6	SCH40S	SCH80S	P31K-00F1N	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW	
1	30	6	STD	SCH80S	P31K-00F1S	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30K-0001L	Plug ASTM A182 Grade F316/F316L dual grade ASME B16.11 NPT Round head	
1	0.75				P30K-0001M	Plug ASTM A182 Grade F316/F316L dual grade ASME B16.11 NPT Round head	
1	1				P30K-0001N	Plug ASTM A182 Grade F316/F316L dual grade ASME B16.11 NPT Round head	
1	1.5				P30K-0001P	Plug ASTM A182 Grade F316/F316L dual grade ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P61K-003HT	Flange SW ASTM A182 Grade F316/F316L dual grade Class 600 ASME B16.5 RF	
1	0.75		SCH80S		P61K-003HU	Flange SW ASTM A182 Grade F316/F316L dual grade Class 600 ASME B16.5 RF	
1	1		SCH80S		P61K-0042H	Flange SW ASTM A182 Grade F316/F316L dual grade Class 600 ASME B16.5 RF	
1	1.5		SCH80S		P61K-0042J	Flange SW ASTM A182 Grade F316/F316L dual grade Class 600 ASME B16.5 RF	
1	2		SCH80S		P61K-004V9	Flange WN ASTM A182 Grade F316/F316L dual grade Class 600 ASME B16.5 RF	
1	3		SCH40S		P61K-00346	Flange WN ASTM A182 Grade F316/F316L dual grade Class 600 ASME B16.5 RF	
1	4		SCH80S		P61K-004VA	Flange WN ASTM A182 Grade F316/F316L dual grade Class 600 ASME B16.5 RF	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	6		SCH80S		P61K-004VB	Flange WN ASTM A182 Grade F316/F316L dual grade Class 600 ASME B16.5 RF	
1	8		SCH40S		P61K-003EA	Flange WN ASTM A182 Grade F316/F316L dual grade Class 600 ASME B16.5 RF	
1	10		SCH40S		P61K-004LR	Flange WN ASTM A182 Grade F316/F316L dual grade Class 600 ASME B16.5 RF	
1	12		SCH40S		P61K-004LS	Flange WN ASTM A182 Grade F316/F316L dual grade Class 600 ASME B16.5 RF	
1	14		SCH40S		P61K-005N4	Flange WN ASTM A182 Grade F316/F316L dual grade Class 600 ASME B16.5 RF	
1	16		SCH40S		P61K-004V8	Flange WN ASTM A182 Grade F316/F316L dual grade Class 600 ASME B16.5 RF	
1	18		SCH40S		P61K-005N5	Flange WN ASTM A182 Grade F316/F316L dual grade Class 600 ASME B16.5 RF	
1	20		SCH40S		P61K-005N6	Flange WN ASTM A182 Grade F316/F316L dual grade Class 600 ASME B16.5 RF	
1	24		SCH40S		P61K-005N7	Flange WN ASTM A182 Grade F316/F316L dual grade Class 600 ASME B16.5 RF	
1	30		STD		P61K-005N8	Flange WN ASTM A182 Grade F316/F316L dual grade Class 600 ASME B16.47 Series B RF	
789	3		SCH40S		P61K-001BH	Flange WN ASTM A182 Grade F316/F316L dual grade Class 900 ASME B16.5 RJ	
789	4		SCH80S		P61K-001F0	Flange WN ASTM A182 Grade F316/F316L dual grade Class 900 ASME B16.5 RJ	
789	6		SCH80S		P61K-001F1	Flange WN ASTM A182 Grade F316/F316L dual grade Class 900 ASME B16.5 RJ	
789	8		SCH40S		P61K-005N3	Flange WN ASTM A182 Grade F316/F316L dual grade Class 900 ASME B16.5 RJ	
789	10		SCH40S		P61K-005N9	Flange WN ASTM A182 Grade F316/F316L dual grade Class 900 ASME B16.5 RJ	
789	12		SCH40S		P61K-004VE	Flange WN ASTM A182 Grade F316/F316L dual grade Class 900 ASME B16.5 RJ	
789	14		SCH40S		P61K-005NA	Flange WN ASTM A182 Grade F316/F316L dual grade Class 900 ASME B16.5 RJ	
789	16		SCH40S		P61K-004VG	Flange WN ASTM A182 Grade F316/F316L dual grade Class 900 ASME B16.5 RJ	
789	18		SCH40S		P61K-005NB	Flange WN ASTM A182 Grade F316/F316L dual grade Class 900 ASME B16.5 RJ	
789	20		SCH40S		P61K-005NC	Flange WN ASTM A182 Grade F316/F316L dual grade Class 900 ASME B16.5 RJ	
789	24		SCH40S		P61K-005ND	Flange WN ASTM A182 Grade F316/F316L dual grade Class 900 ASME B16.5 RJ	
789	30		STD		P61K-0062C	Flange WN ASTM A182 Grade F316/F316L dual grade Class 900 ASME B16.47 Series A RJ	
797	0.5		SCH80S		P61K-004VJ	Flange SW ASTM A182 Grade F316/F316L dual grade Class 1500 ASME B16.5 RJ	
797	0.75		SCH80S		P61K-004VK	Flange SW ASTM A182 Grade F316/F316L dual grade Class 1500 ASME B16.5 RJ	
797	1		SCH80S		P61K-004VL	Flange SW ASTM A182 Grade F316/F316L dual grade Class 1500 ASME B16.5 RJ	
797	1.5		SCH80S		P61K-004VM	Flange SW ASTM A182 Grade F316/F316L dual grade Class 1500 ASME B16.5 RJ	
797	2		SCH80S		P61K-004VN	Flange WN ASTM A182 Grade F316/F316L dual grade Class 1500 ASME B16.5 RJ	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67K-000P5	Blind flange ASTM A182 Grade F316/F316L dual grade Class 600 ASME B16.5 RF	
1	0.75				P67K-000P6	Blind flange ASTM A182 Grade F316/F316L dual grade Class 600 ASME B16.5 RF	
1	1				P67K-000P7	Blind flange ASTM A182 Grade F316/F316L dual grade Class 600 ASME B16.5 RF	
1	1.5				P67K-000P8	Blind flange ASTM A182 Grade F316/F316L dual grade Class 600 ASME B16.5 RF	
1	2				P67K-000P9	Blind flange ASTM A182 Grade F316/F316L dual grade Class 600 ASME B16.5 RF	
1	3				P67K-000PA	Blind flange ASTM A182 Grade F316/F316L dual grade Class 600 ASME B16.5 RF	
1	4				P67K-000PB	Blind flange ASTM A182 Grade F316/F316L dual grade Class 600 ASME B16.5 RF	
1	6				P67K-000PC	Blind flange ASTM A182 Grade F316/F316L dual grade Class 600 ASME B16.5 RF	
1	8				P67K-000PD	Blind flange ASTM A182 Grade F316/F316L dual grade Class 600 ASME B16.5 RF	
1	10				P67K-000E5	Blind flange ASTM A182 Grade F316/F316L dual grade Class 600 ASME B16.5 RF	
1	12				P67K-000E4	Blind flange ASTM A182 Grade F316/F316L dual grade Class 600 ASME B16.5 RF	
1	14				P67K-000E3	Blind flange ASTM A182 Grade F316/F316L dual grade Class 600 ASME B16.5 RF	
1	16				P67K-000E2	Blind flange ASTM A182 Grade F316/F316L dual grade Class 600 ASME B16.5 RF	
1	18				P67K-001DK	Blind flange ASTM A182 Grade F316/F316L dual grade Class 600 ASME B16.5 RF	
1	20				P67K-001DL	Blind flange ASTM A182 Grade F316/F316L dual grade Class 600 ASME B16.5 RF	
1	24				P67K-001DM	Blind flange ASTM A182 Grade F316/F316L dual grade Class 600 ASME B16.5 RF	
1	30				P67K-001R4	Blind flange ASTM A182 Grade F316/F316L dual grade Class 600 ASME B16.47 Series B RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000J8	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000J9	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000JA	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000JB	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000JH	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000JL	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

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GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	4				P73T-000JM	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	6				P73T-000JN	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	8				P73T-000JP	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	10				P73T-000JC	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	12				P73T-000JD	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	14				P73T-000JE	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	16				P73T-000JF	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	18				P73T-000JG	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	20				P73T-000JJ	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	24				P73T-000JK	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	30				P73T-000JT	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring CS Inner-ring SS316	
789	3				P75T-00111	Ring joint gasket SS TP316 Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	4				P75T-00112	Ring joint gasket SS TP316 Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	6				P75T-00113	Ring joint gasket SS TP316 Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	8				P75T-00114	Ring joint gasket SS TP316 Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	10				P75T-0010X	Ring joint gasket SS TP316 Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	12				P75T-0010Y	Ring joint gasket SS TP316 Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	14				P75T-0010Z	Ring joint gasket SS TP316 Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	16				P75T-00110	Ring joint gasket SS TP316 Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	18				P75T-0012E	Ring joint gasket SS TP316 Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	20				P75T-0012F	Ring joint gasket SS TP316 Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	24				P75T-0012G	Ring joint gasket SS TP316 Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	30				P75T-0014K	Ring joint gasket SS TP316 Class 900 ASME B16.20 Flange ASME B16.47-A RJ Octagonal type	
797	0.5				P75T-000NM	Ring joint gasket SS TP316 Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	0.75				P75T-000NN	Ring joint gasket SS TP316 Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	1				P75T-000NP	Ring joint gasket SS TP316 Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	1.5				P75T-000NR	Ring joint gasket SS TP316 Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	2				P75T-000NS	Ring joint gasket SS TP316 Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-6				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	8-30				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
789	1-3				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
789	4-30				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
797	0.5-2				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81K-0010V	Gate valve ASTM A182 Grade F316/F316L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	0.75				P81K-0010W	Gate valve ASTM A182 Grade F316/F316L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	1				P81K-0010X	Gate valve ASTM A182 Grade F316/F316L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	1.5				P81K-0010Y	Gate valve ASTM A182 Grade F316/F316L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	2				P81L-002AP	Gate valve ASTM A351 Grade CF8M Class 600 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	3				P81L-002AR	Gate valve ASTM A351 Grade CF8M Class 600 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	4				P81L-002AS	Gate valve ASTM A351 Grade CF8M Class 600 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	6				P81L-002AT	Gate valve ASTM A351 Grade CF8M Class 600 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	8				P81L-002AU	Gate valve ASTM A351 Grade CF8M Class 600 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated	
1	10				P81L-0037S	Gate valve ASTM A351 Grade CF8M Class 600 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated	
1	12				P81L-0037T	Gate valve ASTM A351 Grade CF8M Class 600 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated	

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GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P81L-0037U	Gate valve ASTM A351 Grade CF8M Class 600 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated	
714	0.5				P81K-001LF	Gate valve ASTM A182 Grade F316/F316L dual grade Class 800 API 602 SW - NPT Trim number 12 BB-BG-OS&Y Handwheel operated	
714	0.75				P81K-001G3	Gate valve ASTM A182 Grade F316/F316L dual grade Class 800 API 602 SW - NPT Trim number 12 BB-BG-OS&Y Handwheel operated	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82K-000P3	Globe valve ASTM A182 Grade F316/F316L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	0.75				P82K-000P4	Globe valve ASTM A182 Grade F316/F316L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	1				P82K-000P5	Globe valve ASTM A182 Grade F316/F316L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	1.5				P82K-000P6	Globe valve ASTM A182 Grade F316/F316L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	2				P82L-0019S	Globe valve ASTM A351 Grade CF8M Class 600 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	3				P82L-0019T	Globe valve ASTM A351 Grade CF8M Class 600 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	4				P82L-0019U	Globe valve ASTM A351 Grade CF8M Class 600 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	6				P82L-001Y3	Globe valve ASTM A351 Grade CF8M Class 600 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83K-000P6	Check valve ASTM A182 Grade F316/F316L dual grade Class 800 API 602 SW Trim number 12 Lift-type Bolted cover	
1	0.75				P83K-000P7	Check valve ASTM A182 Grade F316/F316L dual grade Class 800 API 602 SW Trim number 12 Lift-type Bolted cover	
1	1				P83K-000P8	Check valve ASTM A182 Grade F316/F316L dual grade Class 800 API 602 SW Trim number 12 Lift-type Bolted cover	
1	1.5				P83K-000P9	Check valve ASTM A182 Grade F316/F316L dual grade Class 800 API 602 SW Trim number 12 Lift-type Bolted cover	
1	2				P83L-001PH	Check valve ASTM A351 Grade CF8M Class 600 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	3				P83L-001PJ	Check valve ASTM A351 Grade CF8M Class 600 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71K-0009X	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 600 Standard-drawing Flange ASME B16.5 RF	
1	0.75				P71K-0009Y	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 600 Standard-drawing Flange ASME B16.5 RF	
1	1				P71K-0009Z	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 600 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71K-000A0	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 600 Standard-drawing Flange ASME B16.5 RF	
1	2				P71K-000A1	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 600 Standard-drawing Flange ASME B16.5 RF	
1	3				P71K-000A2	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 600 Standard-drawing Flange ASME B16.5 RF	
1	4				P71K-000A3	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 600 Standard-drawing Flange ASME B16.5 RF	
1	6				P71K-000A4	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 600 Standard-drawing Flange ASME B16.5 RF	

PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	8				P72K-000FP	Paddle blank ASTM A182 Grade F316/F316L dual grade Class 600 Standard-drawing Flange ASME B16.5 RF	
1	10				P72K-000FN	Paddle blank ASTM A182 Grade F316/F316L dual grade Class 600 Standard-drawing Flange ASME B16.5 RF	
1	12				P72K-0006C	Paddle blank ASTM A182 Grade F316/F316L dual grade Class 600 Standard-drawing Flange ASME B16.5 RF	
1	14				P72K-0006D	Paddle blank ASTM A182 Grade F316/F316L dual grade Class 600 Standard-drawing Flange ASME B16.5 RF	
1	16				P72K-0006E	Paddle blank ASTM A182 Grade F316/F316L dual grade Class 600 Standard-drawing Flange ASME B16.5 RF	
1	18				P72K-000FR	Paddle blank ASTM A182 Grade F316/F316L dual grade Class 600 Standard-drawing Flange ASME B16.5 RF	
1	20				P72K-000FS	Paddle blank ASTM A182 Grade F316/F316L dual grade Class 600 Standard-drawing Flange ASME B16.5 RF	
1	24				P72K-000FT	Paddle blank ASTM A182 Grade F316/F316L dual grade Class 600 Standard-drawing Flange ASME B16.5 RF	
1	30				P72K-000FU	Paddle blank ASTM A182 Grade F316/F316L dual grade Class 600 Standard-drawing Flange ASME B16.47-B RF	

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PADDLE SPACER (PS)							
OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	8				P72K-000FZ	Paddle spacer ASTM A182 Grade F316/F316L dual grade Class 600 Standard-drawing Flange ASME B16.5 RF	
1	10				P72K-000FV	Paddle spacer ASTM A182 Grade F316/F316L dual grade Class 600 Standard-drawing Flange ASME B16.5 RF	
1	12				P72K-00069	Paddle spacer ASTM A182 Grade F316/F316L dual grade Class 600 Standard-drawing Flange ASME B16.5 RF	
1	14				P72K-0006A	Paddle spacer ASTM A182 Grade F316/F316L dual grade Class 600 Standard-drawing Flange ASME B16.5 RF	
1	16				P72K-0006B	Paddle spacer ASTM A182 Grade F316/F316L dual grade Class 600 Standard-drawing Flange ASME B16.5 RF	
1	18				P72K-000FW	Paddle spacer ASTM A182 Grade F316/F316L dual grade Class 600 Standard-drawing Flange ASME B16.5 RF	
1	20				P72K-000FX	Paddle spacer ASTM A182 Grade F316/F316L dual grade Class 600 Standard-drawing Flange ASME B16.5 RF	
1	24				P72K-000FY	Paddle spacer ASTM A182 Grade F316/F316L dual grade Class 600 Standard-drawing Flange ASME B16.5 RF	
1	30				P72K-000G0	Paddle spacer ASTM A182 Grade F316/F316L dual grade Class 600 Standard-drawing Flange ASME B16.47-B RF	

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BOLT TABLE (B_D1LH04 , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	80	P80S-003V6		
0.75	4	0.625	90	P80S-003XF		
1	4	0.625	95	P80S-003XG		
1.5	4	0.750	110	P80S-003XK		
2	8	0.625	110	P80S-003VC		
3	8	0.750	130	P80S-003XP		
4	8	0.875	150	P80S-0041F		
6	12	1.000	175	P80S-0043P		
8	12	1.125	195	P80S-0046W		
10	16	1.250	250	P80S-004AY		
12	20	1.250	255	P80S-004AZ		
14	20	1.375	270	P80S-003E7		
16	20	1.500	295	P80S-003FL		
18	20	1.625	320	P80S-005TT		
20	24	1.625	335	P80S-005TW		
24	24	1.875	380	P80S-008P4		
30	28	1.875	435	P80S-008PF		

BOLT TABLE (B_D1LH04_789 , STUD ASME RJ, OPTION CODE 789)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	110		R12	
0.75	4	0.750	115		R14	
1	4	0.875	130	P80S-0041B	R16	
1.5	4	1.000	140	P80S-0043F	R20	
2	8	0.875	150	P80S-0041F	R24	
3	8	0.875	150	P80S-0041F	R31	P75T-00111
4	8	1.125	175	P80S-0046S	R37	P75T-00112
6	12	1.125	200	P80S-0046X	R45	P75T-00113
8	12	1.375	260	P80S-003E5	R49	P75T-00114
10	16	1.375	275	P80S-003E8	R53	P75T-0010X
12	20	1.375	295	P80S-003EC	R57	P75T-0010Y
14	20	1.500	325	P80S-008N3	R62	P75T-0010Z
16	20	1.625	340	P80S-005TX	R66	P75T-00110
18	20	1.875	390	P80S-008P6	R70	P75T-0012E
20	20	2.000	415	P80S-005VG	R74	P75T-0012F
24	20	2.500	525	P80S-00P1W	R78	P75T-0012G
30	20	3.000	600	P80S-00PPD	R102	P75T-0014K

BOLT TABLE (B_D1LH04_797 , STUD ASME RJ, OPTION CODE 797)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	110	P80S-003XK	R12	P75T-000NM
0.75	4	0.750	115	P80S-003XL	R14	P75T-000NN
1	4	0.875	130	P80S-0041B	R16	P75T-000NP
1.5	4	1.000	140	P80S-0043F	R20	P75T-000NR
2	8	0.875	150	P80S-0041F	R24	P75T-000NS
3	8	1.125	180		R35	
4	8	1.250	230		R39	
6	12	1.375	300		R46	
8	12	1.625	345		R50	
10	12	1.875	395		R54	
12	16	2.000	445		R58	
14	16	2.250	490		R63	
16	16	2.500	540		R67	
18	16	2.750	590		R71	
20	16	3.000	650		R75	
24	16	3.500	745		R79	

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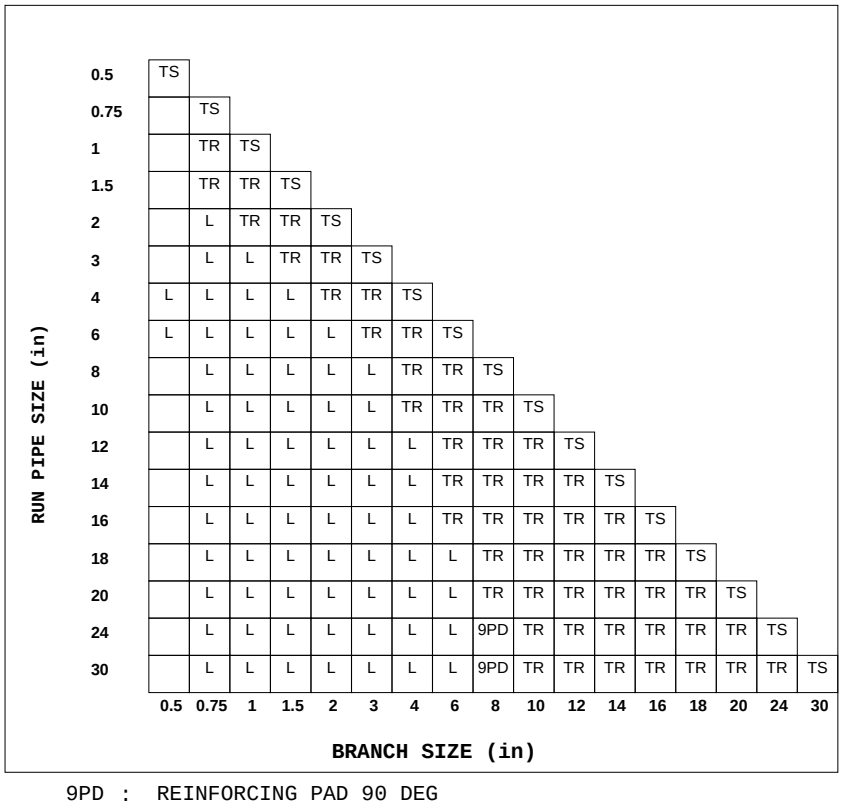
BRANCH TABLE (T_D1LH04)



RUN PIPE SIZE (in)	0.5	0.75	1	1.5	2	3	4	6	8	10	12	14	16	18	20	24	30
0.5	TS																
0.75		TS															
1		TR	TS														
1.5		TR	TR	TS													
2		L	TR	TR	TS												
3		L	L	TR	TR	TS											
4	L	L	L	L	TR	TR	TS										
6	L	L	L	L	L	TR	TR	TS									
8		L	L	L	L	L	TR	TR	TS								
10		L	L	L	L	L	TR	TR	TR	TS							
12		L	L	L	L	L	L	TR	TR	TR	TS						
14		L	L	L	L	L	L	TR	TR	TR	TR	TS					
16		L	L	L	L	L	L	TR	TR	TR	TR	TR	TS				
18		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TS			
20		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TR	TS		
24		L	L	L	L	L	L	L	9PD	TR	TR	TR	TR	TR	TR	TS	
30		L	L	L	L	L	L	L	9PD	TR	TR	TR	TR	TR	TR	TR	TS

9PD : REINFORCING PAD 90 DEG
TS : STRAIGHT TEE
TR : REDUCING TEE
L : OUTLET

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PIPING CLASS

D1LV04 REV NO. 2

Material : SS316L
Rating : ASME CLASS 600
Flange Face : RF
C.A.(mm) : 1.50
Gasket : Spiral Wound
Service : PROCESS - CORROSIVE SERVICE:
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
24	FOR ALL RELEVANT PIPING CLASSES WITH LINE DESIGN TEMPERATURE ABOVE 427DEGC, IN SPIRAL WOUND GASKET, SUITABLE GASKET FILLER MATERIAL SUCH AS COMBINATION OF MICA LAYERS AND GRAPHITE FILLERS OR EQUIVALENT SHALL BE REVIEWED AND SELECTED OR AS DEFINED BY THE LICENSOR

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
541	NPT(F) (CA,L)
714	SW - NPT(F) (V)
789	CLASS 900 (B,F,G)
797	CLASS 1500 (B,F,G)

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PIPING CLASS
D1LV04 REV NO. 2

PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P01J-0014A	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE	
1	0.75		SCH80S		P01J-0014B	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE	
1	1		SCH80S		P01J-0014C	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE	
1	1.5		SCH80S		P01J-0014D	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE	
1	2		SCH80S		P01J-000VR	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M BE	
1	3		SCH40S		P01J-000D8	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M BE	
1	4		SCH80S		P01J-000F8	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M BE	
1	6		SCH80S		P01J-000F9	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M BE	
1	8		SCH40S		P01J-001GN	Pipe ASTM A358 Grade 316/316L Class 1 dual grade EFW ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P02K-0000G	90 degree elbow ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	0.75				P02K-0000H	90 degree elbow ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	1				P02K-0000J	90 degree elbow ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	1.5				P02K-0000K	90 degree elbow ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	2		SCH80S		P02J-000M7	90 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	3		SCH40S		P02J-0007D	90 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	4		SCH80S		P02J-0009F	90 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	6		SCH80S		P02J-0009G	90 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	8		SCH40S		P02J-00190	90 degree elbow ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P03K-0000D	45 degree elbow ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	0.75				P03K-0000E	45 degree elbow ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	1				P03K-0000F	45 degree elbow ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	1.5				P03K-0000G	45 degree elbow ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	2		SCH80S		P03J-000LV	45 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	3		SCH40S		P03J-0007D	45 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	4		SCH80S		P03J-0009F	45 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	6		SCH80S		P03J-0009G	45 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	8		SCH40S		P03J-0017W	45 degree elbow ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P21K-0000G	Straight tee ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	0.75				P21K-0000H	Straight tee ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	1				P21K-0000J	Straight tee ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	1.5				P21K-0000K	Straight tee ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	2		SCH80S		P21J-000ME	Straight tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	3		SCH40S		P21J-0007X	Straight tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	4		SCH80S		P21J-0009F	Straight tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	6		SCH80S		P21J-0009G	Straight tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	8		SCH40S		P21J-0011C	Straight tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75			P24K-0000M	Reducing tee ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	1.5	0.75			P24K-0000P	Reducing tee ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	1.5	1			P24K-0000R	Reducing tee ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	2	1	SCH80S	SCH80S	P24J-0067K	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	2	1.5	SCH80S	SCH80S	P24J-003M0	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	3	1.5	SCH40S	SCH80S	P24J-004TU	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	3	2	SCH40S	SCH80S	P24J-003M1	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	

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REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	4	2	SCH80S	SCH80S	P24J-0037P	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	4	3	SCH80S	SCH40S	P24J-001T1	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	6	3	SCH80S	SCH40S	P24J-001T2	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	6	4	SCH80S	SCH80S	P24J-001T3	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	8	4	SCH40S	SCH80S	P24J-00791	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	8	6	SCH40S	SCH80S	P24J-00792	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	SCH40S	SCH80S	P27J-002NB	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	4	2	SCH80S	SCH80S	P27J-0021B	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	4	3	SCH80S	SCH40S	P27J-00119	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	6	3	SCH80S	SCH40S	P27J-0011A	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	6	4	SCH80S	SCH80S	P27J-0011B	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	8	4	SCH40S	SCH80S	P27J-00633	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	8	6	SCH40S	SCH80S	P27J-00634	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	SCH40S	SCH80S	P28J-002LY	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	4	2	SCH80S	SCH80S	P28J-0020P	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	4	3	SCH80S	SCH40S	P28J-0011K	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	6	3	SCH80S	SCH40S	P28J-0011L	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	6	4	SCH80S	SCH80S	P28J-0011M	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	8	4	SCH40S	SCH80S	P28J-00643	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	
1	8	6	SCH40S	SCH80S	P28J-00644	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P29K-00021	Cap ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	0.75				P29K-00022	Cap ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	1				P29K-00023	Cap ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	1.5				P29K-00024	Cap ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW	
1	2		SCH80S		P29J-000K2	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	3		SCH40S		P29J-0007G	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	4		SCH80S		P29J-00093	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	6		SCH80S		P29J-00094	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	8		SCH40S		P29J-000YG	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
541	0.75				P29K-00002	Cap ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P41J-001UY	Straight nipple ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		SCH160		P41J-001UZ	Straight nipple ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		SCH160		P41J-001V0	Straight nipple ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		SCH160		P41J-001V1	Straight nipple ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

CON SWAGED NIPPLE (SNC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH80S	SCH80S	P42J-0008N	Concentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	SCH80S	SCH80S	P42J-0008M	Concentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	SCH80S	SCH80S	P42J-0008P	Concentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	SCH80S	SCH80S	P42J-0008R	Concentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	SCH80S	SCH80S	P42J-0008S	Concentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	

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CON SWAGED NIPPLE (SNC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5	1	SCH80S	SCH80S	P42J-0008T	Concentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	SCH80S	SCH80S	P42J-000GA	Concentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	SCH80S	SCH80S	P42J-000GB	Concentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	SCH80S	SCH80S	P42J-000GC	Concentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	SCH80S	SCH80S	P42J-000GD	Concentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	SCH40S	SCH80S	P42J-000B4	Concentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	

ECC SWAGED NIPPLE (SNE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH80S	SCH80S	P43J-0008R	Eccentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	SCH80S	SCH80S	P43J-0008S	Eccentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	SCH80S	SCH80S	P43J-0008T	Eccentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	SCH80S	SCH80S	P43J-0008U	Eccentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	SCH80S	SCH80S	P43J-0008V	Eccentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	SCH80S	SCH80S	P43J-0008W	Eccentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	SCH80S	SCH80S	P43J-000DC	Eccentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	SCH80S	SCH80S	P43J-000DD	Eccentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	SCH80S	SCH80S	P43J-000DE	Eccentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	SCH80S	SCH80S	P43J-000DF	Eccentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	SCH40S	SCH80S	P43J-0009H	Eccentric swaged nipple ASTM A403 Grade WP316/WP316L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	

COUPLING (CPS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P47K-0000G	Coupling ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW - SW	
1	0.75				P47K-0000H	Coupling ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW - SW	
1	1				P47K-0000J	Coupling ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW - SW	
1	1.5				P47K-0000K	Coupling ASTM A182 Grade F316/F316L dual grade Class 3000 ASME B16.11 SW - SW	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2 - 2.5	0.75			P31K-00GGG	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 SW	
1	3 - 5	0.75			P31K-00GGH	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 SW	
1	6 - 12	0.75			P31K-003VD	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 SW	
1	3	1			P31K-003UY	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 SW	
1	4 - 5	1			P31K-00GGJ	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 SW	
1	6 - 10	1			P31K-003UU	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 SW	
1	4	1.5			P31K-003UH	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 SW	
1	5 - 6	1.5			P31K-00GGN	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 SW	
1	8 - 12	1.5			P31K-003UB	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 SW	
541	1	0.75			P31K-001XH	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 NPT	
541	1.5	0.75			P31K-001XM	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 NPT	
541	2 - 2.5	0.75			P31K-00GGK	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 NPT	
541	3 - 5	0.75			P31K-00GGL	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 NPT	
541	6 - 12	0.75			P31K-003U1	Outlet ASTM A182 Grade F316/F316L dual grade Class 3000 MSS SP-97 NPT	
1	6	2	SCH80S	SCH80S	P31K-00AYK	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW	
1	8	2	SCH40S	SCH80S	P31K-00F0F	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW	
1	8	3	SCH40S	SCH40S	P31K-00C60	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30K-0001L	Plug ASTM A182 Grade F316/F316L dual grade ASME B16.11 NPT Round head	
1	0.75				P30K-0001M	Plug ASTM A182 Grade F316/F316L dual grade ASME B16.11 NPT Round head	

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PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P30K-0001N	Plug ASTM A182 Grade F316/F316L dual grade ASME B16.11 NPT Round head	
1	1.5				P30K-0001P	Plug ASTM A182 Grade F316/F316L dual grade ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P61K-003HT	Flange SW ASTM A182 Grade F316/F316L dual grade Class 600 ASME B16.5 RF	
1	0.75		SCH80S		P61K-003HU	Flange SW ASTM A182 Grade F316/F316L dual grade Class 600 ASME B16.5 RF	
1	1		SCH80S		P61K-0042H	Flange SW ASTM A182 Grade F316/F316L dual grade Class 600 ASME B16.5 RF	
1	1.5		SCH80S		P61K-0042J	Flange SW ASTM A182 Grade F316/F316L dual grade Class 600 ASME B16.5 RF	
1	2		SCH80S		P61K-004V9	Flange WN ASTM A182 Grade F316/F316L dual grade Class 600 ASME B16.5 RF	
1	3		SCH40S		P61K-00346	Flange WN ASTM A182 Grade F316/F316L dual grade Class 600 ASME B16.5 RF	
1	4		SCH80S		P61K-004VA	Flange WN ASTM A182 Grade F316/F316L dual grade Class 600 ASME B16.5 RF	
1	6		SCH80S		P61K-004VB	Flange WN ASTM A182 Grade F316/F316L dual grade Class 600 ASME B16.5 RF	
1	8		SCH40S		P61K-003EA	Flange WN ASTM A182 Grade F316/F316L dual grade Class 600 ASME B16.5 RF	
789	3		SCH40S		P61K-001BH	Flange WN ASTM A182 Grade F316/F316L dual grade Class 900 ASME B16.5 RJ	
789	4		SCH80S		P61K-001F0	Flange WN ASTM A182 Grade F316/F316L dual grade Class 900 ASME B16.5 RJ	
789	6		SCH80S		P61K-001F1	Flange WN ASTM A182 Grade F316/F316L dual grade Class 900 ASME B16.5 RJ	
789	8		SCH40S		P61K-005N3	Flange WN ASTM A182 Grade F316/F316L dual grade Class 900 ASME B16.5 RJ	
797	0.5		SCH80S		P61K-004VJ	Flange SW ASTM A182 Grade F316/F316L dual grade Class 1500 ASME B16.5 RJ	
797	0.75		SCH80S		P61K-004VK	Flange SW ASTM A182 Grade F316/F316L dual grade Class 1500 ASME B16.5 RJ	
797	1		SCH80S		P61K-004VL	Flange SW ASTM A182 Grade F316/F316L dual grade Class 1500 ASME B16.5 RJ	
797	1.5		SCH80S		P61K-004VM	Flange SW ASTM A182 Grade F316/F316L dual grade Class 1500 ASME B16.5 RJ	
797	2		SCH80S		P61K-004VN	Flange WN ASTM A182 Grade F316/F316L dual grade Class 1500 ASME B16.5 RJ	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67K-000P5	Blind flange ASTM A182 Grade F316/F316L dual grade Class 600 ASME B16.5 RF	
1	0.75				P67K-000P6	Blind flange ASTM A182 Grade F316/F316L dual grade Class 600 ASME B16.5 RF	
1	1				P67K-000P7	Blind flange ASTM A182 Grade F316/F316L dual grade Class 600 ASME B16.5 RF	
1	1.5				P67K-000P8	Blind flange ASTM A182 Grade F316/F316L dual grade Class 600 ASME B16.5 RF	
1	2				P67K-000P9	Blind flange ASTM A182 Grade F316/F316L dual grade Class 600 ASME B16.5 RF	
1	3				P67K-000PA	Blind flange ASTM A182 Grade F316/F316L dual grade Class 600 ASME B16.5 RF	
1	4				P67K-000PB	Blind flange ASTM A182 Grade F316/F316L dual grade Class 600 ASME B16.5 RF	
1	6				P67K-000PC	Blind flange ASTM A182 Grade F316/F316L dual grade Class 600 ASME B16.5 RF	
1	8				P67K-000PD	Blind flange ASTM A182 Grade F316/F316L dual grade Class 600 ASME B16.5 RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000J8	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000J9	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000JA	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000JB	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000JH	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000JL	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000JM	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	6				P73T-000JN	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	8				P73T-000JP	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
789	3				P75T-00111	Ring joint gasket SS TP316 Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	4				P75T-00112	Ring joint gasket SS TP316 Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	6				P75T-00113	Ring joint gasket SS TP316 Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	8				P75T-00114	Ring joint gasket SS TP316 Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	0.5				P75T-000NM	Ring joint gasket SS TP316 Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	0.75				P75T-000NN	Ring joint gasket SS TP316 Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	1				P75T-000NP	Ring joint gasket SS TP316 Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	1.5				P75T-000NR	Ring joint gasket SS TP316 Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	

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GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
797	2				P75T-000NS	Ring joint gasket SS TP316 Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-6				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	8				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
789	1-3				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
789	4-8				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
797	0.5-2				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81K-0010V	Gate valve ASTM A182 Grade F316/F316L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	0.75				P81K-0010W	Gate valve ASTM A182 Grade F316/F316L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	1				P81K-0010X	Gate valve ASTM A182 Grade F316/F316L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	1.5				P81K-0010Y	Gate valve ASTM A182 Grade F316/F316L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	2				P81L-002AP	Gate valve ASTM A351 Grade CF8M Class 600 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	3				P81L-002AR	Gate valve ASTM A351 Grade CF8M Class 600 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	4				P81L-002AS	Gate valve ASTM A351 Grade CF8M Class 600 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	6				P81L-002AT	Gate valve ASTM A351 Grade CF8M Class 600 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	8				P81L-002AU	Gate valve ASTM A351 Grade CF8M Class 600 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated	
714	0.5				P81K-001LF	Gate valve ASTM A182 Grade F316/F316L dual grade Class 800 API 602 SW - NPT Trim number 12 BB-BG-OS&Y Handwheel operated	
714	0.75				P81K-001G3	Gate valve ASTM A182 Grade F316/F316L dual grade Class 800 API 602 SW - NPT Trim number 12 BB-BG-OS&Y Handwheel operated	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82K-000P3	Globe valve ASTM A182 Grade F316/F316L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	0.75				P82K-000P4	Globe valve ASTM A182 Grade F316/F316L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	1				P82K-000P5	Globe valve ASTM A182 Grade F316/F316L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	1.5				P82K-000P6	Globe valve ASTM A182 Grade F316/F316L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	2				P82L-0019S	Globe valve ASTM A351 Grade CF8M Class 600 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	3				P82L-0019T	Globe valve ASTM A351 Grade CF8M Class 600 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	4				P82L-0019U	Globe valve ASTM A351 Grade CF8M Class 600 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	6				P82L-001Y3	Globe valve ASTM A351 Grade CF8M Class 600 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated	
1	8				P82L-0019W	Globe valve ASTM A351 Grade CF8M Class 600 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71K-0009X	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 600 Standard-drawing Flange ASME B16.5 RF	
1	0.75				P71K-0009Y	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 600 Standard-drawing Flange ASME B16.5 RF	
1	1				P71K-0009Z	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 600 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71K-000A0	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 600 Standard-drawing Flange ASME B16.5 RF	
1	2				P71K-000A1	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 600 Standard-drawing Flange ASME B16.5 RF	
1	3				P71K-000A2	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 600 Standard-drawing Flange ASME B16.5 RF	
1	4				P71K-000A3	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 600 Standard-drawing Flange ASME B16.5 RF	
1	6				P71K-000A4	Spectacle blank ASTM A182 Grade F316/F316L dual grade Class 600 Standard-drawing Flange ASME B16.5 RF	

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PADDLE BLANK (PB)							
OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	8				P72K-000FP	Paddle blank ASTM A182 Grade F316/F316L dual grade Class 600 Standard-drawing Flange ASME B16.5 RF	

PADDLE SPACER (PS)							
OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	8				P72K-000FZ	Paddle spacer ASTM A182 Grade F316/F316L dual grade Class 600 Standard-drawing Flange ASME B16.5 RF	

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BOLT TABLE (B_D1LV04 , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	80	P80S-003V6		
0.75	4	0.625	90	P80S-003XF		
1	4	0.625	95	P80S-003XG		
1.5	4	0.750	110	P80S-003XK		
2	8	0.625	110	P80S-003VC		
3	8	0.750	130	P80S-003XP		
4	8	0.875	150	P80S-0041F		
6	12	1.000	175	P80S-0043P		
8	12	1.125	195	P80S-0046W		

BOLT TABLE (B_D1LV04_789 , STUD ASME RJ, OPTION CODE 789)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	110		R12	
0.75	4	0.750	115		R14	
1	4	0.875	130	P80S-0041B	R16	
1.5	4	1.000	140	P80S-0043F	R20	
2	8	0.875	150	P80S-0041F	R24	
3	8	0.875	150	P80S-0041F	R31	P75T-00111
4	8	1.125	175	P80S-0046S	R37	P75T-00112
6	12	1.125	200	P80S-0046X	R45	P75T-00113
8	12	1.375	260	P80S-003E5	R49	P75T-00114

BOLT TABLE (B_D1LV04_797 , STUD ASME RJ, OPTION CODE 797)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	110	P80S-003XK	R12	P75T-000NM
0.75	4	0.750	115	P80S-003XL	R14	P75T-000NN
1	4	0.875	130	P80S-0041B	R16	P75T-000NP
1.5	4	1.000	140	P80S-0043F	R20	P75T-000NR
2	8	0.875	150	P80S-0041F	R24	P75T-000NS
3	8	1.125	180		R35	
4	8	1.250	230		R39	
6	12	1.375	300		R46	
8	12	1.625	345		R50	

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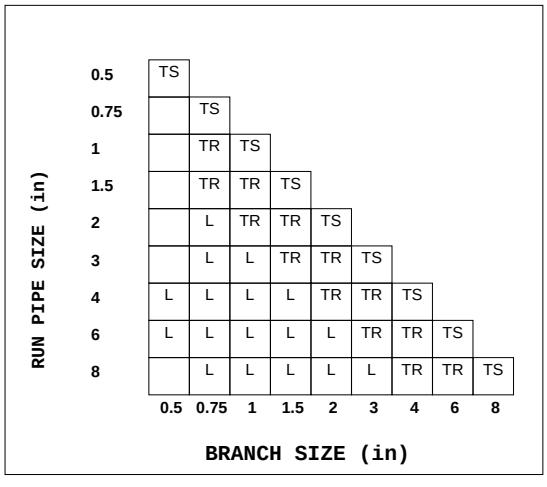
PIPING CLASS

D1LV04 REV NO. 2

BRANCH TABLE (T_D1LV04)



RUN PIPE SIZE (in) \ BRANCH SIZE (in)	0.5	0.75	1	1.5	2	3	4	6	8
0.5	TS								
0.75		TS							
1		TR	TS						
1.5		TR	TR	TS					
2		L	TR	TR	TS				
3		L	L	TR	TR	TS			
4	L	L	L	L	TR	TR	TS		
6	L	L	L	L	L	TR	TR	TS	
8		L	L	L	L	L	TR	TR	TS

TR : REDUCING TEE
TS : STRAIGHT TEE
L : OUTLET

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PIPING CLASS

D1MQ02 REV NO. 2

Material : SS321
Rating : ASME CLASS 600
Flange Face : RF
C.A.(mm) : 1.50
Gasket : Spiral Wound
Service : PROCESS - WET LOW SEVERITY SOUR SERVICE- NACE
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
5	BOLTING CONFIRMING TO B7M / 2HM SHALL BE USED UNDER CONDITIONS (A) DIRECT EXPOSURE TO SOUR ENVIRONMENTS (B) WHEN THE BOLTING WILL BE BURIED OR INSULATED

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
541	NPT(F) (CA,F,L)
789	CLASS 900 (B,F,G)
797	CLASS 1500 (B,F,G)
4004	ALTERNATIVE MATERIAL (INCOLOY 825) FOR DRAIN LINE (9L,F,L,P)
4601	Y-PATTERN (W)
4608	VALVE WITH NIPPLES (V)

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PIPING CLASS
D1MQ02 REV NO. 2

PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P01J-002DK	Pipe ASTM A312 Grade TP321 Seamless ASME B36.10M/B36.19M PE Moderate wet H2S service	
1	0.75		SCH80S		P01J-002DL	Pipe ASTM A312 Grade TP321 Seamless ASME B36.10M/B36.19M PE Moderate wet H2S service	
1	1		SCH80S		P01J-002DM	Pipe ASTM A312 Grade TP321 Seamless ASME B36.10M/B36.19M PE Moderate wet H2S service	
1	1.5		SCH80S		P01J-002DN	Pipe ASTM A312 Grade TP321 Seamless ASME B36.10M/B36.19M PE Moderate wet H2S service	
1	2		SCH80S		P01J-002DP	Pipe ASTM A312 Grade TP321 Seamless ASME B36.10M/B36.19M BE Moderate wet H2S service	
1	3		SCH40S		P01J-002DR	Pipe ASTM A312 Grade TP321 Seamless ASME B36.10M/B36.19M BE Moderate wet H2S service	
1	4		SCH80S		P01J-002DS	Pipe ASTM A312 Grade TP321 Seamless ASME B36.10M/B36.19M BE Moderate wet H2S service	
1	6		SCH80S		P01J-002DT	Pipe ASTM A312 Grade TP321 Seamless ASME B36.10M/B36.19M BE Moderate wet H2S service	
1	8		SCH40S		P01J-002DX	Pipe ASTM A358 Grade 321 Class 1 EFW ASME B36.10M/B36.19M BE Moderate wet H2S service	
1	10		SCH40S		P01J-002DU	Pipe ASTM A358 Grade 321 Class 1 EFW ASME B36.10M/B36.19M BE Moderate wet H2S service	
1	12		SCH40S		P01J-002DV	Pipe ASTM A358 Grade 321 Class 1 EFW ASME B36.10M/B36.19M BE Moderate wet H2S service	
1	14		SCH40S		P01J-002PA	Pipe ASTM A358 Grade 321 Class 1 EFW ASME B36.10M/B36.19M BE Moderate wet H2S service	
4004	1		SCH80S		P01M-000ER	Pipe ASTM B423 UNS N08825 Seamless ASME B36.10M/B36.19M PE Licensor-2	
4004	3		SCH80S		P01M-000EU	Pipe ASTM B423 UNS N08825 Seamless ASME B36.10M/B36.19M BE Licensor-2	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P02J-001WZ	90 degree elbow ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Long radius Moderate wet H2S service	
1	0.75		SCH80S		P02J-001X0	90 degree elbow ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Long radius Moderate wet H2S service	
1	1		SCH80S		P02J-001X1	90 degree elbow ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Long radius Moderate wet H2S service	
1	1.5		SCH80S		P02J-001X2	90 degree elbow ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Long radius Moderate wet H2S service	
1	2		SCH80S		P02J-001X3	90 degree elbow ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Long radius Moderate wet H2S service	
1	3		SCH40S		P02J-001X4	90 degree elbow ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Long radius Moderate wet H2S service	
1	4		SCH80S		P02J-001X5	90 degree elbow ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Long radius Moderate wet H2S service	
1	6		SCH80S		P02J-001X6	90 degree elbow ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Long radius Moderate wet H2S service	
1	8		SCH40S		P02J-0023F	90 degree elbow ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Long radius Moderate wet H2S service	
1	10		SCH40S		P02J-0023C	90 degree elbow ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Long radius Moderate wet H2S service	
1	12		SCH40S		P02J-0023D	90 degree elbow ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Long radius Moderate wet H2S service	
1	14		SCH40S		P02J-0023E	90 degree elbow ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Long radius Moderate wet H2S service	
4004	1		SCH80S		P02M-000DA	90 degree elbow ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Long radius Licensor-2	
4004	3		SCH80S		P02M-000DD	90 degree elbow ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Long radius Licensor-2	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P03J-001UE	45 degree elbow ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Long radius Moderate wet H2S service	
1	0.75		SCH80S		P03J-001UF	45 degree elbow ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Long radius Moderate wet H2S service	
1	1		SCH80S		P03J-001UG	45 degree elbow ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Long radius Moderate wet H2S service	
1	1.5		SCH80S		P03J-001UH	45 degree elbow ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Long radius Moderate wet H2S service	
1	2		SCH80S		P03J-001UJ	45 degree elbow ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Long radius Moderate wet H2S service	
1	3		SCH40S		P03J-001UK	45 degree elbow ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Long radius Moderate wet H2S service	
1	4		SCH80S		P03J-001UL	45 degree elbow ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Long radius Moderate wet H2S service	
1	6		SCH80S		P03J-001UM	45 degree elbow ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Long radius Moderate wet H2S service	
1	8		SCH40S		P03J-00237	45 degree elbow ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Long radius Moderate wet H2S service	
1	10		SCH40S		P03J-00234	45 degree elbow ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Long radius Moderate wet H2S service	
1	12		SCH40S		P03J-00235	45 degree elbow ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Long radius Moderate wet H2S service	
1	14		SCH40S		P03J-00236	45 degree elbow ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Long radius Moderate wet H2S service	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P21J-001KZ	Straight tee ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	

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STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75		SCH80S		P21J-001L0	Straight tee ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	1		SCH80S		P21J-001L1	Straight tee ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	1.5		SCH80S		P21J-001L2	Straight tee ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	2		SCH80S		P21J-001L3	Straight tee ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	3		SCH40S		P21J-001L4	Straight tee ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	4		SCH80S		P21J-001L5	Straight tee ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	6		SCH80S		P21J-001L6	Straight tee ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	8		SCH40S		P21J-001SX	Straight tee ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	10		SCH40S		P21J-001SU	Straight tee ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	12		SCH40S		P21J-001SV	Straight tee ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	14		SCH40S		P21J-001TG	Straight tee ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75	SCH80S	SCH80S	P24J-006YB	Reducing tee ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	1.5	0.75	SCH80S	SCH80S	P24J-006YC	Reducing tee ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	1.5	1	SCH80S	SCH80S	P24J-006YD	Reducing tee ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	2	1	SCH80S	SCH80S	P24J-006YE	Reducing tee ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	2	1.5	SCH80S	SCH80S	P24J-006YF	Reducing tee ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	3	1.5	SCH40S	SCH80S	P24J-006YG	Reducing tee ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	3	2	SCH40S	SCH80S	P24J-006YH	Reducing tee ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	4	2	SCH80S	SCH80S	P24J-006YJ	Reducing tee ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	4	3	SCH80S	SCH40S	P24J-006YK	Reducing tee ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	6	3	SCH80S	SCH40S	P24J-006YL	Reducing tee ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	6	4	SCH80S	SCH80S	P24J-006YM	Reducing tee ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	8	4	SCH40S	SCH80S	P24J-007MS	Reducing tee ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	8	6	SCH40S	SCH80S	P24J-007MT	Reducing tee ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	10	4	SCH40S	SCH80S	P24J-007MU	Reducing tee ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	10	6	SCH40S	SCH80S	P24J-007MV	Reducing tee ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	10	8	SCH40S	SCH40S	P24J-007KT	Reducing tee ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	12	6	SCH40S	SCH80S	P24J-007MW	Reducing tee ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	12	8	SCH40S	SCH40S	P24J-007KP	Reducing tee ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	12	10	SCH40S	SCH40S	P24J-007KM	Reducing tee ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	14	6	SCH40S	SCH80S	P24J-007MZ	Reducing tee ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	14	8	SCH40S	SCH40S	P24J-007N0	Reducing tee ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	14	10	SCH40S	SCH40S	P24J-007MX	Reducing tee ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	14	12	SCH40S	SCH40S	P24J-007MY	Reducing tee ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH80S	SCH80S	P27J-005SW	Concentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	1	0.5	SCH80S	SCH80S	P27J-005SX	Concentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	1	0.75	SCH80S	SCH80S	P27J-005SY	Concentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	1.5	0.5	SCH80S	SCH80S	P27J-005SZ	Concentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	1.5	0.75	SCH80S	SCH80S	P27J-005T0	Concentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	1.5	1	SCH80S	SCH80S	P27J-005T1	Concentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	2	0.75	SCH80S	SCH80S	P27J-005T2	Concentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	2	1	SCH80S	SCH80S	P27J-005T3	Concentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	2	1.5	SCH80S	SCH80S	P27J-005T4	Concentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	3	1.5	SCH40S	SCH80S	P27J-005T5	Concentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	3	2	SCH40S	SCH80S	P27J-005T6	Concentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	4	1.5	SCH80S	SCH80S	P27J-005T7	Concentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	4	2	SCH80S	SCH80S	P27J-005T8	Concentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	4	3	SCH80S	SCH40S	P27J-005T9	Concentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	

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PIPING CLASS
D1MQ02 REV NO. 2

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	6	3	SCH80S	SCH40S	P27J-005TA	Concentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	6	4	SCH80S	SCH80S	P27J-005TB	Concentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	8	4	SCH40S	SCH80S	P27J-006EM	Concentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	8	6	SCH40S	SCH80S	P27J-006EN	Concentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	10	4	SCH40S	SCH80S	P27J-006EP	Concentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	10	6	SCH40S	SCH80S	P27J-006ER	Concentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	10	8	SCH40S	SCH40S	P27J-006CF	Concentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	12	6	SCH40S	SCH80S	P27J-006ES	Concentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	12	8	SCH40S	SCH40S	P27J-006CJ	Concentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	12	10	SCH40S	SCH40S	P27J-006CG	Concentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	14	6	SCH40S	SCH80S	P27J-006EV	Concentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	14	8	SCH40S	SCH40S	P27J-006EW	Concentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	14	10	SCH40S	SCH40S	P27J-006ET	Concentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	14	12	SCH40S	SCH40S	P27J-006EU	Concentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH80S	SCH80S	P28J-005TS	Eccentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	1	0.5	SCH80S	SCH80S	P28J-005TT	Eccentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	1	0.75	SCH80S	SCH80S	P28J-005TU	Eccentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	1.5	0.5	SCH80S	SCH80S	P28J-005TV	Eccentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	1.5	0.75	SCH80S	SCH80S	P28J-005TW	Eccentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	1.5	1	SCH80S	SCH80S	P28J-005TX	Eccentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	2	0.75	SCH80S	SCH80S	P28J-005TY	Eccentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	2	1	SCH80S	SCH80S	P28J-005TZ	Eccentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	2	1.5	SCH80S	SCH80S	P28J-005U0	Eccentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	3	1.5	SCH40S	SCH80S	P28J-005U1	Eccentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	3	2	SCH40S	SCH80S	P28J-005U2	Eccentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	4	1.5	SCH80S	SCH80S	P28J-005U3	Eccentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	4	2	SCH80S	SCH80S	P28J-005U4	Eccentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	4	3	SCH80S	SCH40S	P28J-005U5	Eccentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	6	3	SCH80S	SCH40S	P28J-005U6	Eccentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	6	4	SCH80S	SCH80S	P28J-005U7	Eccentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	8	4	SCH40S	SCH80S	P28J-006FM	Eccentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	8	6	SCH40S	SCH80S	P28J-006FN	Eccentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	10	4	SCH40S	SCH80S	P28J-006FP	Eccentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	10	6	SCH40S	SCH80S	P28J-006FR	Eccentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	10	8	SCH40S	SCH40S	P28J-006DY	Eccentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	12	6	SCH40S	SCH80S	P28J-006FS	Eccentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	12	8	SCH40S	SCH40S	P28J-006DV	Eccentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	12	10	SCH40S	SCH40S	P28J-006DT	Eccentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	14	6	SCH40S	SCH80S	P28J-006FV	Eccentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	14	8	SCH40S	SCH40S	P28J-006FW	Eccentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	14	10	SCH40S	SCH40S	P28J-006FT	Eccentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	14	12	SCH40S	SCH40S	P28J-006FU	Eccentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P29J-002L4	Cap ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	0.75		SCH80S		P29J-002L5	Cap ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	1		SCH80S		P29J-002L6	Cap ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	1.5		SCH80S		P29J-002L7	Cap ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	2		SCH80S		P29J-002LB	Cap ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	3		SCH40S		P29J-002LC	Cap ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	4		SCH80S		P29J-002LD	Cap ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	6		SCH80S		P29J-002LE	Cap ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	8		SCH40S		P29J-002LF	Cap ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	10		SCH40S		P29J-002L8	Cap ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	

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CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	12		SCH40S		P29J-002L9	Cap ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	14		SCH40S		P29J-003WX	Cap ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
541	0.75				P29K-0004A	Cap ASTM A182 Grade F321 Class 3000 ASME B16.11 NPT Moderate wet H2S service	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P41J-001TR	Straight nipple ASTM A312 Grade TP321 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Moderate wet H2S service	
1	0.75		SCH160		P41J-001TS	Straight nipple ASTM A312 Grade TP321 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Moderate wet H2S service	
1	1		SCH160		P41J-001TT	Straight nipple ASTM A312 Grade TP321 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Moderate wet H2S service	
1	1.5		SCH160		P41J-001TU	Straight nipple ASTM A312 Grade TP321 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Moderate wet H2S service	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
541	1	0.75			P31K-00FNZ	Outlet ASTM A182 Grade F321 Class 3000 MSS SP-97 NPT Moderate wet H2S service	
541	1.5	0.75			P31K-00FNY	Outlet ASTM A182 Grade F321 Class 3000 MSS SP-97 NPT Moderate wet H2S service	
541	2 - 2.5	0.75			P31K-00GH6	Outlet ASTM A182 Grade F321 Class 3000 MSS SP-97 NPT Moderate wet H2S service	
541	3 - 5	0.75			P31K-00GH7	Outlet ASTM A182 Grade F321 Class 3000 MSS SP-97 NPT Moderate wet H2S service	
541	6 - 12	0.75			P31K-00GH8	Outlet ASTM A182 Grade F321 Class 3000 MSS SP-97 NPT Moderate wet H2S service	
541	14 - 36	0.75			P31K-00GHS	Outlet ASTM A182 Grade F321 Class 3000 MSS SP-97 NPT Moderate wet H2S service	
1	2	0.75	SCH80S	SCH80S	P31K-00EL0	Outlet ASTM A182 Grade F321 MSS SP-97 BW Moderate wet H2S service	
1	3	0.75	SCH40S	SCH80S	P31K-00EL1	Outlet ASTM A182 Grade F321 MSS SP-97 BW Moderate wet H2S service	
1	4	0.75	SCH80S	SCH80S	P31K-00EL3	Outlet ASTM A182 Grade F321 MSS SP-97 BW Moderate wet H2S service	
1	6	0.75	SCH80S	SCH80S	P31K-00EL6	Outlet ASTM A182 Grade F321 MSS SP-97 BW Moderate wet H2S service	
1	8	0.75	SCH40S	SCH80S	P31K-00ELA	Outlet ASTM A182 Grade F321 MSS SP-97 BW Moderate wet H2S service	
1	10	0.75	SCH40S	SCH80S	P31K-00ELF	Outlet ASTM A182 Grade F321 MSS SP-97 BW Moderate wet H2S service	
1	12	0.75	SCH40S	SCH80S	P31K-00ELL	Outlet ASTM A182 Grade F321 MSS SP-97 BW Moderate wet H2S service	
1	14	0.75	SCH40S	SCH80S	P31K-00F2J	Outlet ASTM A182 Grade F321 MSS SP-97 BW Moderate wet H2S service	
1	3	1	SCH40S	SCH80S	P31K-00EL2	Outlet ASTM A182 Grade F321 MSS SP-97 BW Moderate wet H2S service	
1	4	1	SCH80S	SCH80S	P31K-00EL4	Outlet ASTM A182 Grade F321 MSS SP-97 BW Moderate wet H2S service	
1	6	1	SCH80S	SCH80S	P31K-00EL7	Outlet ASTM A182 Grade F321 MSS SP-97 BW Moderate wet H2S service	
1	8	1	SCH40S	SCH80S	P31K-00ELB	Outlet ASTM A182 Grade F321 MSS SP-97 BW Moderate wet H2S service	
1	10	1	SCH40S	SCH80S	P31K-00ELG	Outlet ASTM A182 Grade F321 MSS SP-97 BW Moderate wet H2S service	
1	12	1	SCH40S	SCH80S	P31K-00ELM	Outlet ASTM A182 Grade F321 MSS SP-97 BW Moderate wet H2S service	
1	14	1	SCH40S	SCH80S	P31K-00F2K	Outlet ASTM A182 Grade F321 MSS SP-97 BW Moderate wet H2S service	
1	4	1.5	SCH80S	SCH80S	P31K-00EL5	Outlet ASTM A182 Grade F321 MSS SP-97 BW Moderate wet H2S service	
1	6	1.5	SCH80S	SCH80S	P31K-00EL8	Outlet ASTM A182 Grade F321 MSS SP-97 BW Moderate wet H2S service	
1	8	1.5	SCH40S	SCH80S	P31K-00ELC	Outlet ASTM A182 Grade F321 MSS SP-97 BW Moderate wet H2S service	
1	10	1.5	SCH40S	SCH80S	P31K-00ELH	Outlet ASTM A182 Grade F321 MSS SP-97 BW Moderate wet H2S service	
1	12	1.5	SCH40S	SCH80S	P31K-00ELN	Outlet ASTM A182 Grade F321 MSS SP-97 BW Moderate wet H2S service	
1	14	1.5	SCH40S	SCH80S	P31K-00F2L	Outlet ASTM A182 Grade F321 MSS SP-97 BW Moderate wet H2S service	
1	6	2	SCH80S	SCH80S	P31K-00EL9	Outlet ASTM A182 Grade F321 MSS SP-97 BW Moderate wet H2S service	
1	8	2	SCH40S	SCH80S	P31K-00ELD	Outlet ASTM A182 Grade F321 MSS SP-97 BW Moderate wet H2S service	
1	10	2	SCH40S	SCH80S	P31K-00ELJ	Outlet ASTM A182 Grade F321 MSS SP-97 BW Moderate wet H2S service	
1	12	2	SCH40S	SCH80S	P31K-00ELP	Outlet ASTM A182 Grade F321 MSS SP-97 BW Moderate wet H2S service	
1	14	2	SCH40S	SCH80S	P31K-00F2M	Outlet ASTM A182 Grade F321 MSS SP-97 BW Moderate wet H2S service	
1	8	3	SCH40S	SCH40S	P31K-00ELE	Outlet ASTM A182 Grade F321 MSS SP-97 BW Moderate wet H2S service	
1	10	3	SCH40S	SCH40S	P31K-00ELK	Outlet ASTM A182 Grade F321 MSS SP-97 BW Moderate wet H2S service	
1	12	3	SCH40S	SCH40S	P31K-00ELR	Outlet ASTM A182 Grade F321 MSS SP-97 BW Moderate wet H2S service	
1	14	3	SCH40S	SCH40S	P31K-00F2N	Outlet ASTM A182 Grade F321 MSS SP-97 BW Moderate wet H2S service	
1	12	4	SCH40S	SCH80S	P31K-00ELS	Outlet ASTM A182 Grade F321 MSS SP-97 BW Moderate wet H2S service	
1	14	4	SCH40S	SCH80S	P31K-00F2P	Outlet ASTM A182 Grade F321 MSS SP-97 BW Moderate wet H2S service	
4004	10	1	SCH40S	SCH80S	P31P-002BG	Outlet ASTM B564 UNS N08825 MSS SP-97 BW Licensor-2	
4004	10	3	SCH40S	SCH80S	P31P-002BH	Outlet ASTM B564 UNS N08825 MSS SP-97 BW Licensor-2	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30K-00059	Plug ASTM A182 Grade F321 ASME B16.11 NPT Round head Moderate wet H2S service	

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PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75				P30K-0005A	Plug ASTM A182 Grade F321 ASME B16.11 NPT Round head Moderate wet H2S service	
1	1				P30K-0005B	Plug ASTM A182 Grade F321 ASME B16.11 NPT Round head Moderate wet H2S service	
1	1.5				P30K-0005C	Plug ASTM A182 Grade F321 ASME B16.11 NPT Round head Moderate wet H2S service	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P61K-005DG	Flange WN ASTM A182 Grade F321 Class 600 ASME B16.5 RF Moderate wet H2S service	
1	0.75		SCH80S		P61K-005DH	Flange WN ASTM A182 Grade F321 Class 600 ASME B16.5 RF Moderate wet H2S service	
1	1		SCH80S		P61K-005DJ	Flange WN ASTM A182 Grade F321 Class 600 ASME B16.5 RF Moderate wet H2S service	
1	1.5		SCH80S		P61K-005DK	Flange WN ASTM A182 Grade F321 Class 600 ASME B16.5 RF Moderate wet H2S service	
1	2		SCH80S		P61K-005DP	Flange WN ASTM A182 Grade F321 Class 600 ASME B16.5 RF Moderate wet H2S service	
1	3		SCH40S		P61K-005DR	Flange WN ASTM A182 Grade F321 Class 600 ASME B16.5 RF Moderate wet H2S service	
1	4		SCH80S		P61K-005DS	Flange WN ASTM A182 Grade F321 Class 600 ASME B16.5 RF Moderate wet H2S service	
1	6		SCH80S		P61K-005DT	Flange WN ASTM A182 Grade F321 Class 600 ASME B16.5 RF Moderate wet H2S service	
1	8		SCH40S		P61K-005DU	Flange WN ASTM A182 Grade F321 Class 600 ASME B16.5 RF Moderate wet H2S service	
1	10		SCH40S		P61K-005DL	Flange WN ASTM A182 Grade F321 Class 600 ASME B16.5 RF Moderate wet H2S service	
1	12		SCH40S		P61K-005DM	Flange WN ASTM A182 Grade F321 Class 600 ASME B16.5 RF Moderate wet H2S service	
1	14		SCH40S		P61K-005SY	Flange WN ASTM A182 Grade F321 Class 600 ASME B16.5 RF Moderate wet H2S service	
4004	1		SCH80S		P61P-0014R	Flange WN ASTM B564 UNS N08825 Class 600 ASME B16.5 RF Licensor-2	
4004	3		SCH80S		P61P-0014S	Flange WN ASTM B564 UNS N08825 Class 600 ASME B16.5 RF Licensor-2	
541	0.5				P61K-0069P	Flange NPT ASTM A182 Grade F321 Class 600 ASME B16.5 RF Moderate wet H2S service	
541	0.75				P61K-0060D	Flange NPT ASTM A182 Grade F321 Class 600 ASME B16.5 RF Moderate wet H2S service	
789	3		SCH40S		P61K-005D7	Flange WN ASTM A182 Grade F321 Class 900 ASME B16.5 RJ Moderate wet H2S service	
789	4		SCH80S		P61K-005D8	Flange WN ASTM A182 Grade F321 Class 900 ASME B16.5 RJ Moderate wet H2S service	
789	6		SCH80S		P61K-005D9	Flange WN ASTM A182 Grade F321 Class 900 ASME B16.5 RJ Moderate wet H2S service	
789	8		SCH40S		P61K-005DA	Flange WN ASTM A182 Grade F321 Class 900 ASME B16.5 RJ Moderate wet H2S service	
789	10		SCH40S		P61K-005D4	Flange WN ASTM A182 Grade F321 Class 900 ASME B16.5 RJ Moderate wet H2S service	
789	12		SCH40S		P61K-005D5	Flange WN ASTM A182 Grade F321 Class 900 ASME B16.5 RJ Moderate wet H2S service	
789	14		SCH40S		P61K-005SZ	Flange WN ASTM A182 Grade F321 Class 900 ASME B16.5 RJ Moderate wet H2S service	
797	0.5		SCH80S		P61K-005DB	Flange WN ASTM A182 Grade F321 Class 1500 ASME B16.5 RJ Moderate wet H2S service	
797	0.75		SCH80S		P61K-005DC	Flange WN ASTM A182 Grade F321 Class 1500 ASME B16.5 RJ Moderate wet H2S service	
797	1		SCH80S		P61K-005DD	Flange WN ASTM A182 Grade F321 Class 1500 ASME B16.5 RJ Moderate wet H2S service	
797	1.5		SCH80S		P61K-005DE	Flange WN ASTM A182 Grade F321 Class 1500 ASME B16.5 RJ Moderate wet H2S service	
797	2		SCH80S		P61K-005DF	Flange WN ASTM A182 Grade F321 Class 1500 ASME B16.5 RJ Moderate wet H2S service	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67K-001KJ	Blind flange ASTM A182 Grade F321 Class 600 ASME B16.5 RF Moderate wet H2S service	
1	0.75				P67K-001KK	Blind flange ASTM A182 Grade F321 Class 600 ASME B16.5 RF Moderate wet H2S service	
1	1				P67K-001KL	Blind flange ASTM A182 Grade F321 Class 600 ASME B16.5 RF Moderate wet H2S service	
1	1.5				P67K-001KM	Blind flange ASTM A182 Grade F321 Class 600 ASME B16.5 RF Moderate wet H2S service	
1	2				P67K-001KS	Blind flange ASTM A182 Grade F321 Class 600 ASME B16.5 RF Moderate wet H2S service	
1	3				P67K-001KT	Blind flange ASTM A182 Grade F321 Class 600 ASME B16.5 RF Moderate wet H2S service	
1	4				P67K-001KU	Blind flange ASTM A182 Grade F321 Class 600 ASME B16.5 RF Moderate wet H2S service	
1	6				P67K-001KV	Blind flange ASTM A182 Grade F321 Class 600 ASME B16.5 RF Moderate wet H2S service	
1	8				P67K-001KW	Blind flange ASTM A182 Grade F321 Class 600 ASME B16.5 RF Moderate wet H2S service	
1	10				P67K-001KN	Blind flange ASTM A182 Grade F321 Class 600 ASME B16.5 RF Moderate wet H2S service	
1	12				P67K-001KP	Blind flange ASTM A182 Grade F321 Class 600 ASME B16.5 RF Moderate wet H2S service	
1	14				P67K-001KR	Blind flange ASTM A182 Grade F321 Class 600 ASME B16.5 RF Moderate wet H2S service	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-003HR	Spiral wound gasket SS321 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS321	
1	0.75				P73T-003HS	Spiral wound gasket SS321 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS321	
1	1				P73T-003HT	Spiral wound gasket SS321 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS321	
1	1.5				P73T-003HU	Spiral wound gasket SS321 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS321	
1	2				P73T-003HY	Spiral wound gasket SS321 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS321	

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GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3				P73T-003HZ	Spiral wound gasket SS321 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS321	
1	4				P73T-003J0	Spiral wound gasket SS321 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS321	
1	6				P73T-003J1	Spiral wound gasket SS321 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS321	
1	8				P73T-003J2	Spiral wound gasket SS321 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS321	
1	10				P73T-003HV	Spiral wound gasket SS321 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS321	
1	12				P73T-003HW	Spiral wound gasket SS321 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS321	
1	14				P73T-003HX	Spiral wound gasket SS321 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS321	
789	3				P75T-000N4	Ring joint gasket SS TP347 Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	4				P75T-000N5	Ring joint gasket SS TP347 Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	6				P75T-000JE	Ring joint gasket SS TP347 Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	8				P75T-000JF	Ring joint gasket SS TP347 Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	10				P75T-000JC	Ring joint gasket SS TP347 Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	12				P75T-000JD	Ring joint gasket SS TP347 Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	14				P75T-00115	Ring joint gasket SS TP347 Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	0.5				P75T-000JG	Ring joint gasket SS TP347 Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	0.75				P75T-000JH	Ring joint gasket SS TP347 Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	1				P75T-000JJ	Ring joint gasket SS TP347 Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	1.5				P75T-000JK	Ring joint gasket SS TP347 Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	2				P75T-000N6	Ring joint gasket SS TP347 Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-6				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	8-14				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
789	1-3				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
789	4-14				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
797	0.5-2				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81K-001KG	Gate valve ASTM A182 Grade F321 Class 600 API 602 Flange ASME B16.5 RF Trim SS347 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Fluid-2	
1	0.75				P81K-001KH	Gate valve ASTM A182 Grade F321 Class 600 API 602 Flange ASME B16.5 RF Trim SS347 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Fluid-2	
1	1				P81K-001KJ	Gate valve ASTM A182 Grade F321 Class 600 API 602 Flange ASME B16.5 RF Trim SS347 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Fluid-2	
1	1.5				P81K-001KK	Gate valve ASTM A182 Grade F321 Class 600 API 602 Flange ASME B16.5 RF Trim SS347 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Fluid-2	
1	2				P81L-00342	Gate valve ASTM A351 Grade CF8C Class 600 API 600 Flange ASME B16.5 RF Trim SS347 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Fluid-2	
1	3				P81L-00343	Gate valve ASTM A351 Grade CF8C Class 600 API 600 Flange ASME B16.5 RF Trim SS347 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Fluid-2	
1	4				P81L-00344	Gate valve ASTM A351 Grade CF8C Class 600 API 600 Flange ASME B16.5 RF Trim SS347 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Fluid-2	
1	6				P81L-00345	Gate valve ASTM A351 Grade CF8C Class 600 API 600 Flange ASME B16.5 RF Trim SS347 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Fluid-2	
1	8				P81L-00347	Gate valve ASTM A351 Grade CF8C Class 600 API 600 Flange ASME B16.5 RF Trim SS347 BB-BG-OS&Y Gear operated Moderate wet H2S service Fluid-2	
1	10				P81L-00346	Gate valve ASTM A351 Grade CF8C Class 600 API 600 Flange ASME B16.5 RF Trim SS347 BB-BG-OS&Y Gear operated Moderate wet H2S service Fluid-2	
4608	0.75				P81K-001NS	Gate valve ASTM A182 Grade F321 Class 600 API 602 BW both sides w/ nipples BE - NPT ASTM A312-TP321 Seamless Sch160-nipple Trim SS347 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Fluid-2	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82K-0012E	Globe valve ASTM A182 Grade F321 Class 600 API 602 Flange ASME B16.5 RF Trim SS347 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Fluid-2	
1	0.75				P82K-0012F	Globe valve ASTM A182 Grade F321 Class 600 API 602 Flange ASME B16.5 RF Trim SS347 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Fluid-2	
1	1				P82K-0012G	Globe valve ASTM A182 Grade F321 Class 600 API 602 Flange ASME B16.5 RF Trim SS347 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Fluid-2	
1	1.5				P82K-0012H	Globe valve ASTM A182 Grade F321 Class 600 API 602 Flange ASME B16.5 RF Trim SS347 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Fluid-2	

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GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2				P82L-001R6	Globe valve ASTM A351 Grade CF8C Class 600 BS 1873 Flange ASME B16.5 RF Trim SS347 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Fluid-2	
1	3				P82L-001R7	Globe valve ASTM A351 Grade CF8C Class 600 BS 1873 Flange ASME B16.5 RF Trim SS347 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Fluid-2	
1	4				P82L-001R8	Globe valve ASTM A351 Grade CF8C Class 600 BS 1873 Flange ASME B16.5 RF Trim SS347 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Fluid-2	
1	6				P82L-001Y4	Globe valve ASTM A351 Grade CF8C Class 600 BS 1873 Flange ASME B16.5 RF Trim SS347 BB-BG-OS&Y Gear operated Moderate wet H2S service Fluid-2	
4601	0.75				P82K-0012J	Y-pattern globe valve ASTM A182 Grade F321 Class 600 ASME B16.34 Flange ASME B16.5 RF Trim SS347 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Fluid-2	
4601	1				P82K-0012K	Y-pattern globe valve ASTM A182 Grade F321 Class 600 ASME B16.34 Flange ASME B16.5 RF Trim SS347 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Fluid-2	
4601	1.5				P82K-0012L	Y-pattern globe valve ASTM A182 Grade F321 Class 600 ASME B16.34 Flange ASME B16.5 RF Trim SS347 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Fluid-2	
4601	2				P82L-001RA	Y-pattern globe valve ASTM A351 Grade CF8C Class 600 ASME B16.34 Flange ASME B16.5 RF Trim SS347 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Fluid-2	
4601	3				P82L-001RB	Y-pattern globe valve ASTM A351 Grade CF8C Class 600 ASME B16.34 Flange ASME B16.5 RF Trim SS347 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Fluid-2	
4601	4				P82L-001RC	Y-pattern globe valve ASTM A351 Grade CF8C Class 600 ASME B16.34 Flange ASME B16.5 RF Trim SS347 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Fluid-2	
4601	8				P82L-001RE	Y-pattern globe valve ASTM A351 Grade CF8C Class 600 ASME B16.34 Flange ASME B16.5 RF Trim SS347 BB-BG-OS&Y Gear operated Moderate wet H2S service Fluid-2	
4601	10				P82L-001RD	Y-pattern globe valve ASTM A351 Grade CF8C Class 600 ASME B16.34 Flange ASME B16.5 RF Trim SS347 BB-BG-OS&Y Gear operated Moderate wet H2S service Fluid-2	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83K-000PT	Check valve ASTM A182 Grade F321 Class 600 API 602 Flange ASME B16.5 RF Trim SS347 Lift-type Bolted cover Moderate wet H2S service	
1	0.75				P83K-000PU	Check valve ASTM A182 Grade F321 Class 600 API 602 Flange ASME B16.5 RF Trim SS347 Lift-type Bolted cover Moderate wet H2S service	
1	1				P83K-000PV	Check valve ASTM A182 Grade F321 Class 600 API 602 Flange ASME B16.5 RF Trim SS347 Lift-type Bolted cover Moderate wet H2S service	
1	1.5				P83K-000PW	Check valve ASTM A182 Grade F321 Class 600 API 602 Flange ASME B16.5 RF Trim SS347 Lift-type Bolted cover Moderate wet H2S service	
1	2				P83L-0013E	Check valve ASTM A351 Grade CF8C Class 600 BS 1868 Flange ASME B16.5 RF Trim SS347 Swing-type Bolted cover Moderate wet H2S service	
1	3				P83L-0013F	Check valve ASTM A351 Grade CF8C Class 600 BS 1868 Flange ASME B16.5 RF Trim SS347 Swing-type Bolted cover Moderate wet H2S service	
1	4				P83L-0013G	Check valve ASTM A351 Grade CF8C Class 600 BS 1868 Flange ASME B16.5 RF Trim SS347 Swing-type Bolted cover Moderate wet H2S service	
1	6				P83L-0013H	Check valve ASTM A351 Grade CF8C Class 600 BS 1868 Flange ASME B16.5 RF Trim SS347 Swing-type Bolted cover Moderate wet H2S service	
1	8				P83L-0013J	Check valve ASTM A351 Grade CF8C Class 600 BS 1868 Flange ASME B16.5 RF Trim SS347 Swing-type Bolted cover Moderate wet H2S service	
1	10				P83L-0013D	Check valve ASTM A351 Grade CF8C Class 600 BS 1868 Flange ASME B16.5 RF Trim SS347 Swing-type Bolted cover Moderate wet H2S service	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71K-000CF	Spectacle blank ASTM A182 Grade F321 Class 600 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service	
1	0.75				P71K-000CG	Spectacle blank ASTM A182 Grade F321 Class 600 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service	
1	1				P71K-000CH	Spectacle blank ASTM A182 Grade F321 Class 600 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service	
1	1.5				P71K-000CJ	Spectacle blank ASTM A182 Grade F321 Class 600 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service	
1	2				P71K-000CK	Spectacle blank ASTM A182 Grade F321 Class 600 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service	
1	3				P71K-000CL	Spectacle blank ASTM A182 Grade F321 Class 600 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service	
1	4				P71K-000CM	Spectacle blank ASTM A182 Grade F321 Class 600 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service	
1	6				P71K-000CN	Spectacle blank ASTM A182 Grade F321 Class 600 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service	

PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	8				P72K-000BK	Paddle blank ASTM A182 Grade F321 Class 600 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service	
1	10				P72K-000BG	Paddle blank ASTM A182 Grade F321 Class 600 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service	
1	12				P72K-000BH	Paddle blank ASTM A182 Grade F321 Class 600 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service	
1	14				P72K-000BJ	Paddle blank ASTM A182 Grade F321 Class 600 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service	

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PADDLE SPACER (PS)							
OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	8				P72K-000BP	Paddle spacer ASTM A182 Grade F321 Class 600 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service	
1	10				P72K-000BL	Paddle spacer ASTM A182 Grade F321 Class 600 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service	
1	12				P72K-000BM	Paddle spacer ASTM A182 Grade F321 Class 600 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service	
1	14				P72K-000BN	Paddle spacer ASTM A182 Grade F321 Class 600 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service	

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BOLT TABLE (B_D1MQ02 , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	80	P80S-008T2		
0.75	4	0.625	90	P80S-0090B		
1	4	0.625	95	P80S-0090C		
1.5	4	0.750	110	P80S-0090F		
2	8	0.625	110	P80S-008T8		
3	8	0.750	130	P80S-0090K		
4	8	0.875	150	P80S-005ZF		
6	12	1.000	175	P80S-0061H		
8	12	1.125	195	P80S-0064W		
10	16	1.250	250	P80S-0068M		
12	20	1.250	255	P80S-0068N		
14	20	1.375	270	P80S-006HV		

BOLT TABLE (B_D1MQ02_789 , STUD ASME RJ, OPTION CODE 789)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	110		R12	
0.75	4	0.750	115		R14	
1	4	0.875	130	P80S-005ZB	R16	
1.5	4	1.000	140		R20	
2	8	0.875	150	P80S-005ZF	R24	
3	8	0.875	150	P80S-005ZF	R31	P75T-000N4
4	8	1.125	175	P80S-0064S	R37	P75T-000N5
6	12	1.125	200	P80S-0064X	R45	P75T-000JE
8	12	1.375	260	P80S-006HT	R49	P75T-000JF
10	16	1.375	275	P80S-006HW	R53	P75T-000JC
12	20	1.375	295	P80S-006J0	R57	P75T-000JD
14	20	1.500	325	P80S-006RK	R62	P75T-00115

BOLT TABLE (B_D1MQ02_797 , STUD ASME RJ, OPTION CODE 797)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	110	P80S-0090F	R12	P75T-000JG
0.75	4	0.750	115	P80S-0090G	R14	P75T-000JH
1	4	0.875	130	P80S-005ZB	R16	P75T-000JJ
1.5	4	1.000	140	P80S-0061A	R20	P75T-000JK
2	8	0.875	150	P80S-005ZF	R24	P75T-000N6
3	8	1.125	180		R35	
4	8	1.250	230		R39	
6	12	1.375	300		R46	
8	12	1.625	345		R50	
10	12	1.875	395		R54	
12	16	2.000	445		R58	
14	16	2.250	490		R63	

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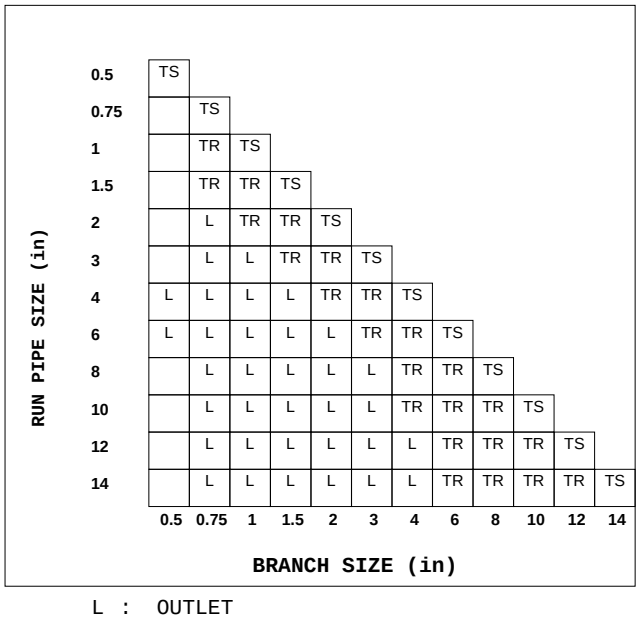
BRANCH TABLE (T_D1MQ02)



L : OUTLET
TR : REDUCING TEE
TS : STRAIGHT TEE

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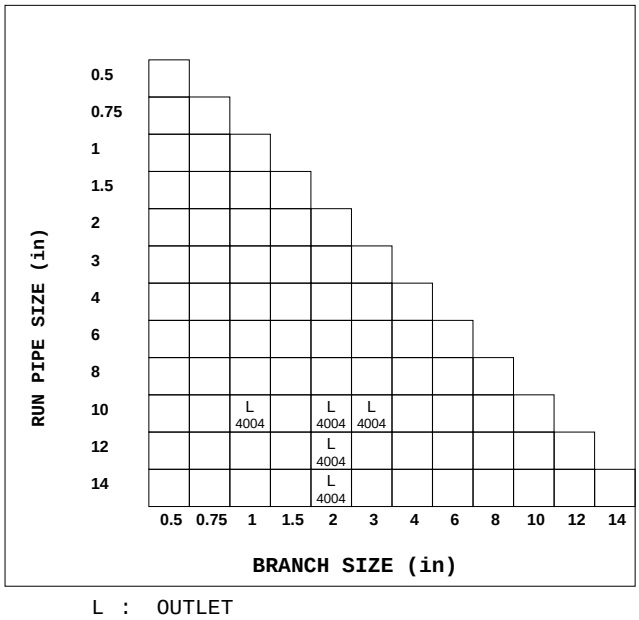
BRANCH TABLE (T_D1MQ02_4)



L : OUTLET

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D21B05 REV NO. 2

Material : Killed CS
Rating : ASME CLASS 600
Flange Face : RF
C.A.(mm) : 3.00
Gasket : Spiral Wound
Service : HYDROGEN
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
200	WITH JACK SCREW (FO)
221	RF (V)
541	NPT(F) (CA,L)
714	SW - NPT(F) (V)

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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P01A-0010P	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	0.75		SCH160		P01A-0010R	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1		SCH160		P01A-0014M	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1.5		SCH160		P01A-0015J	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	2		SCH160		P01A-0019T	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	3		XS		P01A-000Z4	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	4		XS		P01A-000Z9	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P02B-0001J	90 degree elbow ASTM A105 Class 6000 ASME B16.11 SW	
1	0.75				P02B-0001K	90 degree elbow ASTM A105 Class 6000 ASME B16.11 SW	
1	1				P02B-0002E	90 degree elbow ASTM A105 Class 6000 ASME B16.11 SW	
1	1.5				P02B-0002F	90 degree elbow ASTM A105 Class 6000 ASME B16.11 SW	
1	2		SCH160		P02A-000KW	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		XS		P02A-000CX	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		XS		P02A-000D3	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P03B-0001F	45 degree elbow ASTM A105 Class 6000 ASME B16.11 SW	
1	0.75				P03B-0001G	45 degree elbow ASTM A105 Class 6000 ASME B16.11 SW	
1	1				P03B-0002A	45 degree elbow ASTM A105 Class 6000 ASME B16.11 SW	
1	1.5				P03B-0002B	45 degree elbow ASTM A105 Class 6000 ASME B16.11 SW	
1	2		SCH160		P03A-000HU	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		XS		P03A-000AZ	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		XS		P03A-000B3	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P21B-0001F	Straight tee ASTM A105 Class 6000 ASME B16.11 SW	
1	0.75				P21B-0001G	Straight tee ASTM A105 Class 6000 ASME B16.11 SW	
1	1				P21B-00026	Straight tee ASTM A105 Class 6000 ASME B16.11 SW	
1	1.5				P21B-00027	Straight tee ASTM A105 Class 6000 ASME B16.11 SW	
1	2		SCH160		P21A-00245	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		XS		P21A-001CR	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		XS		P21A-001CV	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75			P24B-00030	Reducing tee ASTM A105 Class 6000 ASME B16.11 SW	
1	1.5	0.75			P24B-00032	Reducing tee ASTM A105 Class 6000 ASME B16.11 SW	
1	1.5	1			P24B-0004J	Reducing tee ASTM A105 Class 6000 ASME B16.11 SW	
1	2	1	SCH160	SCH160	P24A-00AEU	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	SCH160	SCH160	P24A-003AX	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	XS	SCH160	P24A-00GNV	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	XS	SCH160	P24A-00560	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	XS	SCH160	P24A-00561	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	XS	XS	P24A-0024A	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	XS	SCH160	P27A-0037V	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	XS	SCH160	P27A-0037W	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	XS	XS	P27A-001EP	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	XS	SCH160	P28A-0037B	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	XS	SCH160	P28A-0037C	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	XS	XS	P28A-001F8	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P29B-0002F	Cap ASTM A105 Class 6000 ASME B16.11 SW	
1	0.75				P29B-0002G	Cap ASTM A105 Class 6000 ASME B16.11 SW	
1	1				P29B-0002D	Cap ASTM A105 Class 6000 ASME B16.11 SW	
1	1.5				P29B-0002E	Cap ASTM A105 Class 6000 ASME B16.11 SW	
1	2		SCH160		P29A-000HR	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		XS		P29A-000AT	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		XS		P29A-000B9	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
541	0.75				P29B-0000Y	Cap ASTM A105 Class 6000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P41A-000B9	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		XXS		P41A-000BA	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		XXS		P41A-000D8	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		XXS		P41A-000D9	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

CON SWAGED NIPPLE (SNC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	SCH160	P42A-00029	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	SCH160	SCH160	P42A-0009T	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	SCH160	SCH160	P42A-0009U	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	SCH160	SCH160	P42A-0009V	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	SCH160	SCH160	P42A-0009W	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	SCH160	SCH160	P42A-0009X	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	SCH160	SCH160	P42A-000J8	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	SCH160	SCH160	P42A-000J9	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	SCH160	SCH160	P42A-000JA	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	SCH160	SCH160	P42A-000JB	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	XS	SCH160	P42A-000L9	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	

ECC SWAGED NIPPLE (SNE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	SCH160	P43A-000AM	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	SCH160	SCH160	P43A-000B4	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	SCH160	SCH160	P43A-000B5	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	SCH160	SCH160	P43A-000B6	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	SCH160	SCH160	P43A-000B7	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	SCH160	SCH160	P43A-000B8	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	SCH160	SCH160	P43A-000B9	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	SCH160	SCH160	P43A-000BA	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	SCH160	SCH160	P43A-000BB	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	SCH160	SCH160	P43A-000BC	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	XS	SCH160	P43A-000DM	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	

COUPLING (CPS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P47B-00013	Coupling ASTM A105 Class 6000 ASME B16.11 SW - SW	
1	0.75				P47B-00012	Coupling ASTM A105 Class 6000 ASME B16.11 SW - SW	
1	1				P47B-0002A	Coupling ASTM A105 Class 6000 ASME B16.11 SW - SW	
1	1.5				P47B-0002B	Coupling ASTM A105 Class 6000 ASME B16.11 SW - SW	

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OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5 - 2.5	0.75			P31B-0137D	Outlet ASTM A105 Class 6000 MSS SP-97 SW	
1	3 - 10	0.75			P31B-007LV	Outlet ASTM A105 Class 6000 MSS SP-97 SW	
1	3 - 10	1			P31B-007LN	Outlet ASTM A105 Class 6000 MSS SP-97 SW	
1	4 - 5	1.5			P31B-004LE	Outlet ASTM A105 Class 6000 MSS SP-97 SW	
541	1	0.75			P31B-005HL	Outlet ASTM A105 Class 6000 MSS SP-97 NPT	
541	1.5 - 2.5	0.75			P31B-0137F	Outlet ASTM A105 Class 6000 MSS SP-97 NPT	
541	3 - 10	0.75			P31B-007KP	Outlet ASTM A105 Class 6000 MSS SP-97 NPT	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30B-0002D	Plug ASTM A105 ASME B16.11 NPT Round head	
1	0.75				P30B-0002E	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1				P30B-0002F	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1.5				P30B-0002G	Plug ASTM A105 ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P61B-001DZ	Flange SW ASTM A105 Class 600 ASME B16.5 RF	
1	0.75		SCH160		P61B-001DW	Flange SW ASTM A105 Class 600 ASME B16.5 RF	
1	1		SCH160		P61B-005X5	Flange SW ASTM A105 Class 600 ASME B16.5 RF	
1	1.5		SCH160		P61B-005X6	Flange SW ASTM A105 Class 600 ASME B16.5 RF	
1	2		SCH160		P61B-003T7	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
1	3		XS		P61B-001M8	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
1	4		XS		P61B-001SH	Flange WN ASTM A105 Class 600 ASME B16.5 RF	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67B-000J7	Blind flange ASTM A105 Class 600 ASME B16.5 RF	
1	0.75				P67B-000J8	Blind flange ASTM A105 Class 600 ASME B16.5 RF	
1	1				P67B-000J9	Blind flange ASTM A105 Class 600 ASME B16.5 RF	
1	1.5				P67B-000JA	Blind flange ASTM A105 Class 600 ASME B16.5 RF	
1	2				P67B-000JG	Blind flange ASTM A105 Class 600 ASME B16.5 RF	
1	3				P67B-000JK	Blind flange ASTM A105 Class 600 ASME B16.5 RF	
1	4				P67B-000JL	Blind flange ASTM A105 Class 600 ASME B16.5 RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-0035E	Spiral wound gasket SS316 winding / Non-asbestos filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-6	
1	0.75				P73T-0035F	Spiral wound gasket SS316 winding / Non-asbestos filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-6	
1	1				P73T-0035G	Spiral wound gasket SS316 winding / Non-asbestos filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-6	
1	1.5				P73T-0035H	Spiral wound gasket SS316 winding / Non-asbestos filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-6	
1	2				P73T-0035J	Spiral wound gasket SS316 winding / Non-asbestos filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-6	
1	3				P73T-0035K	Spiral wound gasket SS316 winding / Non-asbestos filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-6	
1	4				P73T-0035L	Spiral wound gasket SS316 winding / Non-asbestos filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-6	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-4				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81B-000RA	Gate valve ASTM A105 Class 800 API 602 SW Trim number 5 BB-BG-OS&Y Handwheel operated	
1	0.75				P81B-000P0	Gate valve ASTM A105 Class 800 API 602 SW Trim number 5 BB-BG-OS&Y Handwheel operated	
1	1				P81B-000P1	Gate valve ASTM A105 Class 800 API 602 SW Trim number 5 BB-BG-OS&Y Handwheel operated	
1	1.5				P81B-000P2	Gate valve ASTM A105 Class 800 API 602 SW Trim number 5 BB-BG-OS&Y Handwheel operated	

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GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2				P81C-004LC	Gate valve ASTM A216 Grade WCB Class 600 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated	
221	1				P81B-002S6	Gate valve ASTM A105 Class 600 API 602 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated	
714	0.5				P81B-0015N	Gate valve ASTM A105 Class 800 API 602 SW - NPT Trim number 5 BB-BG-OS&Y Handwheel operated	
714	0.75				P81B-002FC	Gate valve ASTM A105 Class 800 API 602 SW - NPT Trim number 5 BB-BG-OS&Y Handwheel operated	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82B-000KW	Globe valve ASTM A105 Class 800 API 602 SW Trim number 5 BB-BG-OS&Y Handwheel operated	
1	0.75				P82B-000HE	Globe valve ASTM A105 Class 800 API 602 SW Trim number 5 BB-BG-OS&Y Handwheel operated	
1	1				P82B-000HF	Globe valve ASTM A105 Class 800 API 602 SW Trim number 5 BB-BG-OS&Y Handwheel operated	
1	1.5				P82B-000HG	Globe valve ASTM A105 Class 800 API 602 SW Trim number 5 BB-BG-OS&Y Handwheel operated	
1	2				P82C-00297	Globe valve ASTM A216 Grade WCB Class 600 BS 1873 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83B-000GL	Check valve ASTM A105 Class 800 API 602 SW Trim number 5 Lift-type Bolted cover	
1	0.75				P83B-000EU	Check valve ASTM A105 Class 800 API 602 SW Trim number 5 Lift-type Bolted cover	
1	1				P83B-000EV	Check valve ASTM A105 Class 800 API 602 SW Trim number 5 Lift-type Bolted cover	
1	1.5				P83B-000EW	Check valve ASTM A105 Class 800 API 602 SW Trim number 5 Lift-type Bolted cover	
1	2				P83C-00266	Check valve ASTM A216 Grade WCB Class 600 BS 1868 Flange ASME B16.5 RF Trim number 5 Swing-type Bolted cover	

ORIFICE FLANGE (FO)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2		SCH160		P66B-008H1	Orifice flange WN ASTM A105 Class 600 ASME B16.36 RF NPS1/2 SW tap x 1	
200	2		SCH160		P66B-008H3	Orifice flange WN ASTM A105 Class 600 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71B-000E4	Spectacle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	0.75				P71B-000DN	Spectacle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	1				P71B-000DP	Spectacle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71B-000DR	Spectacle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	2				P71B-000DS	Spectacle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	3				P71B-000DT	Spectacle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	4				P71B-000DU	Spectacle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	

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BOLT TABLE (B_D21B05 , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	80	P80S-003V6		
0.75	4	0.625	90	P80S-003XF		
1	4	0.625	95	P80S-003XG		
1.5	4	0.750	110	P80S-003XK		
2	8	0.625	110	P80S-003VC		
3	8	0.750	130	P80S-003XP		
4	8	0.875	150	P80S-0041F		

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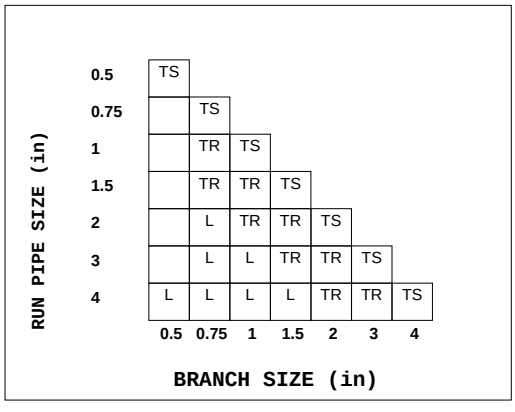
BRANCH TABLE (T_D21B05)



L : OUTLET
TR : REDUCING TEE
TS : STRAIGHT TEE

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Material : SS304L
Rating : ASME CLASS 600
Flange Face : RF
C.A.(mm) : 0.00
Gasket : Spiral Wound
Service : CARBON MONOXIDE + N2, HYDROGEN, LIQUID ADDITIVE
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
24	FULL PORT (Q)
221	RF (V)
541	NPT(F) (CA,L)
714	SW - NPT(F) (V)
4402	LARGE FEMALE FACE (F)

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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.25		SCH80S		P01J-002SG	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE	
1	0.5		SCH80S		P01J-000UC	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE	
1	0.75		SCH80S		P01J-000UD	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE	
1	1		SCH80S		P01J-000UE	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE	
1	1.5		SCH80S		P01J-000UF	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE	
1	2		SCH10S		P01J-000RD	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.25				P02K-0004P	90 degree elbow ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	0.5				P02K-0001K	90 degree elbow ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	0.75				P02K-0001L	90 degree elbow ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	1				P02K-0001M	90 degree elbow ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	1.5				P02K-0001N	90 degree elbow ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	2		SCH10S		P02J-000J0	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P03K-0001G	45 degree elbow ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	0.75				P03K-0001H	45 degree elbow ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	1				P03K-0001J	45 degree elbow ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	1.5				P03K-0001K	45 degree elbow ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	2		SCH10S		P03J-000HS	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.25				P21K-0004F	Straight tee ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	0.5				P21K-0001G	Straight tee ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	0.75				P21K-0001H	Straight tee ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	1				P21K-0001J	Straight tee ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	1.5				P21K-0001K	Straight tee ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	2		SCH10S		P21J-000HM	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5			P24K-0001V	Reducing tee ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	1	0.25			P24K-00069	Reducing tee ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	1	0.5			P24K-0001W	Reducing tee ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	1	0.75			P24K-0001X	Reducing tee ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	1.5	0.5			P24K-0001Y	Reducing tee ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	1.5	0.75			P24K-0001Z	Reducing tee ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	1.5	1			P24K-00020	Reducing tee ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	2	1	SCH10S	SCH80S	P24J-0065A	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	2	1.5	SCH10S	SCH80S	P24J-0065B	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P29K-0001V	Cap ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	0.75				P29K-0001W	Cap ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	1				P29K-0001X	Cap ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	1.5				P29K-0001Y	Cap ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	2		SCH10S		P29J-000G1	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
541	0.5				P29K-00045	Cap ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 NPT	
541	0.75				P29K-00020	Cap ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 NPT	

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STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P41J-001FS	Straight nipple ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		SCH80S		P41J-001FT	Straight nipple ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		SCH80S		P41J-001FU	Straight nipple ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		SCH80S		P41J-001FV	Straight nipple ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

CON SWAGED NIPPLE (SNC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5	0.25	SCH80S	SCH80S	P42J-000JM	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	0.75	0.25	SCH80S	SCH80S	P42J-000JN	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	0.75	0.5	SCH80S	SCH80S	P42J-00081	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.25	SCH80S	SCH80S	P42J-000JP	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	SCH80S	SCH80S	P42J-00082	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	SCH80S	SCH80S	P42J-00083	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.25	SCH80S	SCH80S	P42J-000JR	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	SCH80S	SCH80S	P42J-00084	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	SCH80S	SCH80S	P42J-00085	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	SCH80S	SCH80S	P42J-00086	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.25	SCH10S	SCH80S	P42J-000JS	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.5	SCH10S	SCH80S	P42J-000F9	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	SCH10S	SCH80S	P42J-000F6	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	SCH10S	SCH80S	P42J-000F7	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	SCH10S	SCH80S	P42J-000F8	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	

ECC SWAGED NIPPLE (SNE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5	0.25	SCH80S	SCH80S	P43J-000EC	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	0.75	0.25	SCH80S	SCH80S	P43J-000EB	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	0.75	0.5	SCH80S	SCH80S	P43J-0008D	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.25	SCH80S	SCH80S	P43J-000ED	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	SCH80S	SCH80S	P43J-0008E	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	SCH80S	SCH80S	P43J-0008F	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.25	SCH80S	SCH80S	P43J-000EE	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	SCH80S	SCH80S	P43J-0008G	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	SCH80S	SCH80S	P43J-0008H	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	SCH80S	SCH80S	P43J-0008J	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.25	SCH10S	SCH80S	P43J-000EF	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.5	SCH10S	SCH80S	P43J-000CT	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	SCH10S	SCH80S	P43J-000CU	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	SCH10S	SCH80S	P43J-000CV	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	SCH10S	SCH80S	P43J-000CW	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	

COUPLING (CPS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P47K-00035	Coupling ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW - SW	
1	0.75				P47K-00036	Coupling ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW - SW	
1	1				P47K-00037	Coupling ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW - SW	
1	1.5				P47K-00038	Coupling ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW - SW	

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OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2 - 2.5	0.75			P31K-00GFG	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 SW	
541	1	0.75			P31K-00911	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 NPT	
541	1.5	0.75			P31K-00916	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 NPT	
541	2 - 2.5	0.75			P31K-00GFJ	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 NPT	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30K-0001G	Plug ASTM A182 Grade F304/F304L dual grade ASME B16.11 NPT Round head	
1	0.75				P30K-0001H	Plug ASTM A182 Grade F304/F304L dual grade ASME B16.11 NPT Round head	
1	1				P30K-0001J	Plug ASTM A182 Grade F304/F304L dual grade ASME B16.11 NPT Round head	
1	1.5				P30K-0001K	Plug ASTM A182 Grade F304/F304L dual grade ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.25		SCH80S		P61K-0062F	Flange SW ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 RF	
1	0.5		SCH80S		P61K-003AT	Flange SW ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 RF	
1	0.75		SCH80S		P61K-003AU	Flange SW ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 RF	
1	1		SCH80S		P61K-003AV	Flange SW ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 RF	
1	1.5		SCH80S		P61K-003AW	Flange SW ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 RF	
1	2		SCH10S		P61K-00290	Flange WN ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 RF	
4402	0.5		SCH80S		P61K-005S6	Flange SW ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 Large female face	
4402	0.75		SCH80S		P61K-005S7	Flange SW ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 Large female face	
4402	1		SCH80S		P61K-005S8	Flange SW ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 Large female face	
4402	1.5		SCH80S		P61K-005S9	Flange SW ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 Large female face	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67K-000NN	Blind flange ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 RF	
1	0.75				P67K-000NP	Blind flange ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 RF	
1	1				P67K-000NR	Blind flange ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 RF	
1	1.5				P67K-000NS	Blind flange ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 RF	
1	2				P67K-000NT	Blind flange ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.25				P73T-003MN	Spiral wound gasket SS316 winding / Non-asbestos filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-6	
1	0.5				P73T-0035E	Spiral wound gasket SS316 winding / Non-asbestos filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-6	
1	0.75				P73T-0035F	Spiral wound gasket SS316 winding / Non-asbestos filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-6	
1	1				P73T-0035G	Spiral wound gasket SS316 winding / Non-asbestos filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-6	
1	1.5				P73T-0035H	Spiral wound gasket SS316 winding / Non-asbestos filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-6	
1	2				P73T-0035J	Spiral wound gasket SS316 winding / Non-asbestos filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-6	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-2				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81K-00108	Gate valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	0.75				P81K-00109	Gate valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	1				P81K-0010A	Gate valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	1.5				P81K-0010B	Gate valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	2				P81L-0021S	Gate valve ASTM A351 Grade CF8 Class 600 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	

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GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
221	1				P81K-0014M	Gate valve ASTM A182 Grade F304/F304L dual grade Class 600 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
714	0.5				P81K-001LC	Gate valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW - NPT Trim number 12 BB-BG-OS&Y Handwheel operated	
714	0.75				P81K-001FD	Gate valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW - NPT Trim number 12 BB-BG-OS&Y Handwheel operated	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82K-000NR	Globe valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	0.75				P82K-000NS	Globe valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	1				P82K-000NT	Globe valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	1.5				P82K-000NU	Globe valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	2				P82L-0013B	Globe valve ASTM A351 Grade CF8 Class 600 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83K-000LM	Check valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 Lift-type Bolted cover	
1	0.75				P83K-000LN	Check valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 Lift-type Bolted cover	
1	1				P83K-000LP	Check valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 Lift-type Bolted cover	

BALL VALVE (Q)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P84K-000RN	Ball valve Long-pattern ASTM A182 Grade F304/F304L dual grade Class 600 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design	
1	0.75				P84K-000RP	Ball valve Long-pattern ASTM A182 Grade F304/F304L dual grade Class 600 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design	
1	1				P84K-000RR	Ball valve Long-pattern ASTM A182 Grade F304/F304L dual grade Class 600 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design	
1	1.5				P84K-000RS	Ball valve Long-pattern ASTM A182 Grade F304/F304L dual grade Class 600 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design	
1	2				P84L-00343	Ball valve Long-pattern ASTM A351 Grade CF8 Class 600 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Wrench lever operated Reduced bore Fire tested design	
24	0.5				P84K-000RT	Ball valve Long-pattern ASTM A182 Grade F304/F304L dual grade Class 600 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	
24	0.75				P84K-000RU	Ball valve Long-pattern ASTM A182 Grade F304/F304L dual grade Class 600 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	
24	1				P84K-000RV	Ball valve Long-pattern ASTM A182 Grade F304/F304L dual grade Class 600 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	
24	1.5				P84K-000RW	Ball valve Long-pattern ASTM A182 Grade F304/F304L dual grade Class 600 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	
24	2				P84L-00344	Ball valve Long-pattern ASTM A351 Grade CF8 Class 600 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Wrench lever operated Full bore Fire tested design	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71K-00091	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 600 Standard-drawing Flange ASME B16.5 RF	
1	0.75				P71K-00092	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 600 Standard-drawing Flange ASME B16.5 RF	
1	1				P71K-00093	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 600 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71K-00094	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 600 Standard-drawing Flange ASME B16.5 RF	
1	2				P71K-00095	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 600 Standard-drawing Flange ASME B16.5 RF	

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BOLT TABLE (B_D21F05 , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	80	P80S-003V6		
0.75	4	0.625	90	P80S-003XF		
1	4	0.625	95	P80S-003XG		
1.5	4	0.750	110	P80S-003XK		
2	8	0.625	110	P80S-003VC		

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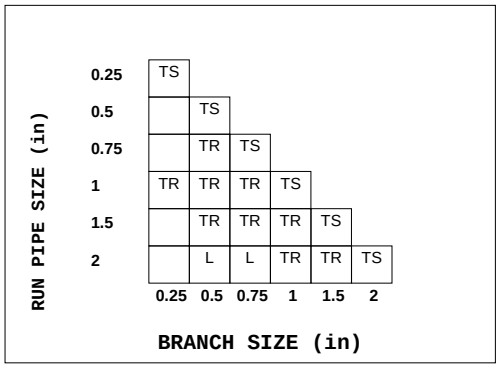
BRANCH TABLE (T_D21F05)



L : OUTLET
TR : REDUCING TEE
TS : STRAIGHT TEE

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PIPING CLASS

D2A604 REV NO. 2

Material : Killed CS
Rating : ASME CLASS 600
Flange Face : RF
C.A.(mm) : 3.00
Gasket : Spiral Wound
Service : PROCESS -WET LOW SEVERITY SOUR SERVICE SUBJECT TO NACE + H2 SERVICE
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
5	BOLTING CONFIRMING TO B7M / 2HM SHALL BE USED UNDER CONDITIONS (A) DIRECT EXPOSURE TO SOUR ENVIRONMENTS (B) WHEN THE BOLTING WILL BE BURIED OR INSULATED
27	PWHT OF CARBON STEEL PIPING IN WET H2S, CAUSTIC AND AMINE SERVICES SHALL BE IN ACCORDANCE WITH SECTION 10.2, 10.3, AND 10.4 OF PROJECT SPECIFICATION 3550-8440-SP-0002 MATERIALS REQUIREMENTS FOR PRESSURISED EQUIPMENT AND PIPING. FOR CAUSTIC AND AMINE SERVICE THE FOLLOWING SHALL APPLY: - PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF ALL SITE PIPING FABRICATION WELDS IS REQUIRED FOR ALL WALL THICKNESSES. FOR MODERATE AND SEVERE WET H2S SERVICE THE FOLLOWING SHALL APPLY: PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF SITE FABRICATION CIRCUMFERENTIAL OR BRANCH WELDS IS NOT REQUIRED IF WELDS ARE MULTIPASS AND IN ACCORDANCE WITH PARA 10.2.12 OF PROJECT SPECIFICATION 3550-8440-SP-0002. FOR SERVICES MEETING THE WET H2S CRITERIA AND CAUSTIC OR AMINE CRITERIA THE MORE STRINGENT PWHT REQUIREMENT SHALL GOVERN.

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
541	NPT(F) (CA,F)
789	CLASS 900 (B,F,G)
797	CLASS 1500 (B,F,G)
4608	VALVE WITH NIPPLES (V)

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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P01A-00143	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	0.75		SCH160		P01A-0010R	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1		SCH160		P01A-0014M	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1.5		SCH160		P01A-0015J	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	2		SCH160		P01A-0019T	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	3		XS		P01A-000Z4	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	4		XS		P01A-000Z9	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	6		XS		P01A-000ZF	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	8		STD		P01A-000ZA	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	10		STD		P01A-000XJ	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	12		STD		P01A-000XT	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	14		SCH40		P01A-0018U	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	16		XS		P01A-000YS	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	18		XS		P01A-00372	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	20		XS		P01A-00373	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P02A-00172	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	0.75		SCH160		P02A-000V8	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1		SCH160		P02A-000V7	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1.5		SCH160		P02A-000V9	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	2		SCH160		P02A-000KW	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		XS		P02A-000CX	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		XS		P02A-000D3	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		XS		P02A-000DA	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		STD		P02A-000DC	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	10		STD		P02A-000BP	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	12		STD		P02A-000BZ	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	14		SCH40		P02A-000JF	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	16		XS		P02A-000CE	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	18		XS		P02A-000M9	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	20		XS		P02A-001JX	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P03A-0012Y	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	0.75		SCH160		P03A-000RS	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1		SCH160		P03A-000RR	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1.5		SCH160		P03A-000RP	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	2		SCH160		P03A-000HU	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		XS		P03A-000AZ	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		XS		P03A-000B3	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		XS		P03A-000B8	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		STD		P03A-000BB	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	10		STD		P03A-000A4	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	12		STD		P03A-000A9	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	14		SCH40		P03A-000GD	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	16		XS		P03A-000AP	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	18		XS		P03A-001DZ	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	20		XS		P03A-001E0	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P21A-002M0	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	0.75		SCH160		P21A-002B8	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1		SCH160		P21A-002B6	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5		SCH160		P21A-002B9	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2		SCH160		P21A-00245	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3		XS		P21A-001CR	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		XS		P21A-001CV	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6		XS		P21A-001D4	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8		STD		P21A-001D8	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10		STD		P21A-001BV	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12		STD		P21A-001C1	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14		SCH40		P21A-0022R	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16		XS		P21A-001CG	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18		XS		P21A-002Y3	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20		XS		P21A-002Y4	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75	SCH160	SCH160	P24A-004B6	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.75	SCH160	SCH160	P24A-004B2	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	1	SCH160	SCH160	P24A-004BA	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	SCH160	SCH160	P24A-00AEU	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	SCH160	SCH160	P24A-003AX	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	XS	SCH160	P24A-00GNV	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	XS	SCH160	P24A-00560	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	XS	SCH160	P24A-00561	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	XS	XS	P24A-0024A	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	XS	XS	P24A-0023F	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	XS	XS	P24A-00243	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	STD	XS	P24A-00AEV	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	STD	XS	P24A-005KM	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	STD	XS	P24A-00HL4	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	STD	XS	P24A-00562	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	STD	STD	P24A-0022W	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	STD	XS	P24A-00563	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	STD	STD	P24A-001YA	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	STD	STD	P24A-0022X	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	SCH40	XS	P24A-00AFC	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	SCH40	STD	P24A-00AFB	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	SCH40	STD	P24A-003GJ	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	SCH40	STD	P24A-003GK	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	6	XS	XS	P24A-0025G	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	XS	STD	P24A-002PY	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	XS	STD	P24A-002T3	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	XS	STD	P24A-002FK	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	XS	SCH40	P24A-0044A	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	8	XS	STD	P24A-00P1N	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	10	XS	STD	P24A-00P1L	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	12	XS	STD	P24A-00P1M	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	14	XS	SCH40	P24A-00GS6	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	16	XS	XS	P24A-0087Y	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	8	XS	STD	P24A-00M52	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	10	XS	STD	P24A-00HL7	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	12	XS	STD	P24A-00P1P	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	14	XS	SCH40	P24A-00GS7	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	16	XS	XS	P24A-0087Z	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	18	XS	XS	P24A-00880	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	XXS	P27A-003ZL	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.5	SCH160	XXS	P27A-003ZM	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.75	SCH160	SCH160	P27A-002T5	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.5	SCH160	XXS	P27A-003ZN	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5	0.75	SCH160	SCH160	P27A-002T7	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	1	SCH160	SCH160	P27A-002T4	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	0.75	SCH160	SCH160	P27A-0025L	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	SCH160	SCH160	P27A-0025K	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	SCH160	SCH160	P27A-0025J	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	XS	SCH160	P27A-003N1	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	XS	SCH160	P27A-0037V	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	1.5	XS	SCH160	P27A-003N2	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	XS	SCH160	P27A-0037W	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	XS	XS	P27A-001EP	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	XS	XS	P27A-001DM	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	XS	XS	P27A-001EB	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	STD	XS	P27A-003N3	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	STD	XS	P27A-003N4	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	STD	XS	P27A-0037X	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	STD	XS	P27A-0037Y	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	STD	STD	P27A-0019J	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	STD	XS	P27A-0037Z	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	STD	STD	P27A-0019N	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	STD	STD	P27A-001C7	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	SCH40	XS	P27A-003ZY	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	SCH40	STD	P27A-003ZT	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	SCH40	STD	P27A-0029L	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	SCH40	STD	P27A-0029N	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	XS	STD	P27A-001SN	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	XS	STD	P27A-001PA	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	XS	STD	P27A-001RB	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	XS	SCH40	P27A-002KZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	10	XS	STD	P27A-005BU	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	12	XS	STD	P27A-005DW	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	14	XS	SCH40	P27A-005FW	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	16	XS	XS	P27A-005J1	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	12	XS	STD	P27A-005M0	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	14	XS	SCH40	P27A-005P2	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	16	XS	XS	P27A-005SB	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	18	XS	XS	P27A-005TZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	XXS	P28A-003ZE	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.5	SCH160	XXS	P28A-003ZF	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.75	SCH160	SCH160	P28A-002TU	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.5	SCH160	XXS	P28A-003ZG	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.75	SCH160	SCH160	P28A-002TW	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	1	SCH160	SCH160	P28A-002TR	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	0.75	SCH160	SCH160	P28A-002SU	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	SCH160	SCH160	P28A-002ST	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	SCH160	SCH160	P28A-002SS	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	XS	SCH160	P28A-003MV	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	XS	SCH160	P28A-0037B	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	1.5	XS	SCH160	P28A-003MW	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	XS	SCH160	P28A-0037C	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	XS	XS	P28A-001F8	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	XS	XS	P28A-001DU	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	XS	XS	P28A-001ER	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	STD	XS	P28A-003MX	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	STD	XS	P28A-003MY	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	STD	XS	P28A-0037D	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	STD	XS	P28A-0037E	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	10	8	STD	STD	P28A-0019J	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	STD	XS	P28A-0037F	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	STD	STD	P28A-001AA	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	STD	STD	P28A-00181	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	SCH40	XS	P28A-003ZS	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	SCH40	STD	P28A-003ZL	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	SCH40	STD	P28A-0028T	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	SCH40	STD	P28A-0028U	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	XS	STD	P28A-001NK	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	XS	STD	P28A-001P7	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	XS	STD	P28A-001RB	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	XS	SCH40	P28A-002LD	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	10	XS	STD	P28A-0028K	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	12	XS	STD	P28A-0028L	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	14	XS	SCH40	P28A-0028M	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	16	XS	XS	P28A-0063K	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	12	XS	STD	P28A-0063L	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	14	XS	SCH40	P28A-008HJ	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	16	XS	XS	P28A-0063N	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20	18	XS	XS	P28A-0063P	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P29A-001UE	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	0.75		SCH160		P29A-001UF	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	1		SCH160		P29A-001TC	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	1.5		SCH160		P29A-001TD	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	2		SCH160		P29A-001TK	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	3		XS		P29A-001X4	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	4		XS		P29A-001TS	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	6		XS		P29A-001TU	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	8		STD		P29A-001VT	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	10		STD		P29A-001VB	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	12		STD		P29A-001VC	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	14		SCH40		P29A-0036R	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	16		XS		P29A-001TH	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	18		XS		P29A-001TJ	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	20		XS		P29A-001TL	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
541	0.75				P29B-0000Y	Cap ASTM A105 Class 6000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P41A-000B9	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		XXS		P41A-000BA	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		XXS		P41A-000D8	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		XXS		P41A-000D9	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2	0.75	SCH160	SCH160	P31B-007NC	Outlet ASTM A105 MSS SP-97 BW	
1	3	0.75	XS	SCH160	P31B-00CMS	Outlet ASTM A105 MSS SP-97 BW	
1	4	0.75	XS	SCH160	P31B-00CLS	Outlet ASTM A105 MSS SP-97 BW	
1	6	0.75	XS	SCH160	P31B-00CKJ	Outlet ASTM A105 MSS SP-97 BW	
1	8	0.75	STD	SCH160	P31B-00C5E	Outlet ASTM A105 MSS SP-97 BW	
1	10	0.75	STD	SCH160	P31B-00CFB	Outlet ASTM A105 MSS SP-97 BW	
1	12	0.75	STD	SCH160	P31B-007NG	Outlet ASTM A105 MSS SP-97 BW	
1	14	0.75	SCH40	SCH160	P31B-00CRP	Outlet ASTM A105 MSS SP-97 BW	
1	16	0.75	XS	SCH160	P31B-00CR6	Outlet ASTM A105 MSS SP-97 BW	
1	18	0.75	XS	SCH160	P31B-007NE	Outlet ASTM A105 MSS SP-97 BW	

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OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	20	0.75	XS	SCH160	P31B-01181	Outlet ASTM A105 MSS SP-97 BW	
1	3	1	XS	SCH160	P31B-00B4H	Outlet ASTM A105 MSS SP-97 BW	
1	4	1	XS	SCH160	P31B-00B3L	Outlet ASTM A105 MSS SP-97 BW	
1	6	1	XS	SCH160	P31B-00AZB	Outlet ASTM A105 MSS SP-97 BW	
1	8	1	STD	SCH160	P31B-00AVF	Outlet ASTM A105 MSS SP-97 BW	
1	10	1	STD	SCH160	P31B-00C06	Outlet ASTM A105 MSS SP-97 BW	
1	12	1	STD	SCH160	P31B-007NN	Outlet ASTM A105 MSS SP-97 BW	
1	14	1	SCH40	SCH160	P31B-00BRP	Outlet ASTM A105 MSS SP-97 BW	
1	16	1	XS	SCH160	P31B-00BR5	Outlet ASTM A105 MSS SP-97 BW	
1	18	1	XS	SCH160	P31B-007N4	Outlet ASTM A105 MSS SP-97 BW	
1	20	1	XS	SCH160	P31B-00TR3	Outlet ASTM A105 MSS SP-97 BW	
1	4	1.5	XS	SCH160	P31B-00BP3	Outlet ASTM A105 MSS SP-97 BW	
1	6	1.5	XS	SCH160	P31B-00BJG	Outlet ASTM A105 MSS SP-97 BW	
1	8	1.5	STD	SCH160	P31B-00BHJ	Outlet ASTM A105 MSS SP-97 BW	
1	10	1.5	STD	SCH160	P31B-00AUM	Outlet ASTM A105 MSS SP-97 BW	
1	12	1.5	STD	SCH160	P31B-007MC	Outlet ASTM A105 MSS SP-97 BW	
1	14	1.5	SCH40	SCH160	P31B-00CDR	Outlet ASTM A105 MSS SP-97 BW	
1	16	1.5	XS	SCH160	P31B-00C98	Outlet ASTM A105 MSS SP-97 BW	
1	18	1.5	XS	SCH160	P31B-007N2	Outlet ASTM A105 MSS SP-97 BW	
1	20	1.5	XS	SCH160	P31B-00TR4	Outlet ASTM A105 MSS SP-97 BW	
1	6	2	XS	SCH160	P31B-007SR	Outlet ASTM A105 MSS SP-97 BW	
1	8	2	STD	SCH160	P31B-00NY1	Outlet ASTM A105 MSS SP-97 BW	
1	10	2	STD	SCH160	P31B-0061H	Outlet ASTM A105 MSS SP-97 BW	
1	12	2	STD	SCH160	P31B-005YS	Outlet ASTM A105 MSS SP-97 BW	
1	14	2	SCH40	SCH160	P31B-006PG	Outlet ASTM A105 MSS SP-97 BW	
1	16	2	XS	SCH160	P31B-00C6D	Outlet ASTM A105 MSS SP-97 BW	
1	18	2	XS	SCH160	P31B-006P6	Outlet ASTM A105 MSS SP-97 BW	
1	20	2	XS	SCH160	P31B-009ET	Outlet ASTM A105 MSS SP-97 BW	
1	8	3	STD	XS	P31B-009Y0	Outlet ASTM A105 MSS SP-97 BW	
1	10	3	STD	XS	P31B-009CG	Outlet ASTM A105 MSS SP-97 BW	
1	12	3	STD	XS	P31B-0096F	Outlet ASTM A105 MSS SP-97 BW	
1	14	3	SCH40	XS	P31B-0090P	Outlet ASTM A105 MSS SP-97 BW	
1	16	3	XS	XS	P31B-008UD	Outlet ASTM A105 MSS SP-97 BW	
1	18	3	XS	XS	P31B-008MB	Outlet ASTM A105 MSS SP-97 BW	
1	20	3	XS	XS	P31B-008F3	Outlet ASTM A105 MSS SP-97 BW	
1	12	4	STD	XS	P31B-008ZR	Outlet ASTM A105 MSS SP-97 BW	
1	14	4	SCH40	XS	P31B-00P1N	Outlet ASTM A105 MSS SP-97 BW	
1	16	4	XS	XS	P31B-008LM	Outlet ASTM A105 MSS SP-97 BW	
1	18	4	XS	XS	P31B-008EG	Outlet ASTM A105 MSS SP-97 BW	
1	20	4	XS	XS	P31B-0088A	Outlet ASTM A105 MSS SP-97 BW	
1	18	6	XS	XS	P31B-008RR	Outlet ASTM A105 MSS SP-97 BW	
1	20	6	XS	XS	P31B-008K4	Outlet ASTM A105 MSS SP-97 BW	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30B-0002D	Plug ASTM A105 ASME B16.11 NPT Round head	
1	0.75				P30B-0002E	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1				P30B-0002F	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1.5				P30B-0002G	Plug ASTM A105 ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P61B-003T1	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
1	0.75		SCH160		P61B-003T2	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
1	1		SCH160		P61B-003T3	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
1	1.5		SCH160		P61B-003T4	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
1	2		SCH160		P61B-003T7	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
1	3		XS		P61B-001M8	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
1	4		XS		P61B-001SH	Flange WN ASTM A105 Class 600 ASME B16.5 RF	

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FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	6		XS		P61B-001T1	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
1	8		STD		P61B-001KK	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
1	10		STD		P61B-001JJ	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
1	12		STD		P61B-001P9	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
1	14		SCH40		P61B-003T6	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
1	16		XS		P61B-001R3	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
1	18		XS		P61B-001RG	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
1	20		XS		P61B-004UW	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
541	0.5				P61B-006NP	Flange NPT ASTM A105 Class 600 ASME B16.5 RF	
541	0.75				P61B-00CW3	Flange NPT ASTM A105 Class 600 ASME B16.5 RF	
789	3		XS		P61B-00654	Flange WN ASTM A105 Class 900 ASME B16.5 RJ	
789	4		XS		P61B-00655	Flange WN ASTM A105 Class 900 ASME B16.5 RJ	
789	6		XS		P61B-00656	Flange WN ASTM A105 Class 900 ASME B16.5 RJ	
789	8		STD		P61B-009TU	Flange WN ASTM A105 Class 900 ASME B16.5 RJ	
789	10		STD		P61B-009TP	Flange WN ASTM A105 Class 900 ASME B16.5 RJ	
789	12		STD		P61B-00BUN	Flange WN ASTM A105 Class 900 ASME B16.5 RJ	
789	14		SCH40		P61B-0068G	Flange WN ASTM A105 Class 900 ASME B16.5 RJ	
789	16		XS		P61B-0068H	Flange WN ASTM A105 Class 900 ASME B16.5 RJ	
789	18		XS		P61B-00CW4	Flange WN ASTM A105 Class 900 ASME B16.5 RJ	
789	20		XS		P61B-00CW5	Flange WN ASTM A105 Class 900 ASME B16.5 RJ	
797	0.5		XXS		P61B-00664	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
797	0.75		SCH160		P61B-0065U	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
797	1		SCH160		P61B-0065V	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
797	1.5		SCH160		P61B-0065W	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
797	2		SCH160		P61B-0066J	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67B-000J7	Blind flange ASTM A105 Class 600 ASME B16.5 RF	
1	0.75				P67B-000J8	Blind flange ASTM A105 Class 600 ASME B16.5 RF	
1	1				P67B-000J9	Blind flange ASTM A105 Class 600 ASME B16.5 RF	
1	1.5				P67B-000JA	Blind flange ASTM A105 Class 600 ASME B16.5 RF	
1	2				P67B-000JG	Blind flange ASTM A105 Class 600 ASME B16.5 RF	
1	3				P67B-000JK	Blind flange ASTM A105 Class 600 ASME B16.5 RF	
1	4				P67B-000JL	Blind flange ASTM A105 Class 600 ASME B16.5 RF	
1	6				P67B-000JM	Blind flange ASTM A105 Class 600 ASME B16.5 RF	
1	8				P67B-000JN	Blind flange ASTM A105 Class 600 ASME B16.5 RF	
1	10				P67B-000JB	Blind flange ASTM A105 Class 600 ASME B16.5 RF	
1	12				P67B-000JC	Blind flange ASTM A105 Class 600 ASME B16.5 RF	
1	14				P67B-000JD	Blind flange ASTM A105 Class 600 ASME B16.5 RF	
1	16				P67B-000JE	Blind flange ASTM A105 Class 600 ASME B16.5 RF	
1	18				P67B-000JF	Blind flange ASTM A105 Class 600 ASME B16.5 RF	
1	20				P67B-000JH	Blind flange ASTM A105 Class 600 ASME B16.5 RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000J8	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000J9	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000JA	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000JB	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000JH	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000JL	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000JM	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	6				P73T-000JN	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	8				P73T-000JP	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

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GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	10				P73T-000JC	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	12				P73T-000JD	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	14				P73T-000JE	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	16				P73T-000JF	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	18				P73T-000JG	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	20				P73T-000JJ	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
789	3				P75T-000JN	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	4				P75T-000JP	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	6				P75T-000JR	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	8				P75T-000JS	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	10				P75T-000JL	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	12				P75T-000JM	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	14				P75T-000MJ	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	16				P75T-000MK	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	18				P75T-000N8	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	20				P75T-000N7	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	0.5				P75T-000JT	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	0.75				P75T-000JU	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	1				P75T-000JV	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	1.5				P75T-000JW	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	2				P75T-0008A	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-6				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	8-20				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
789	1-3				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
789	4-20				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
797	0.5-2				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81B-001D9	Gate valve ASTM A105 Class 600 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	0.75				P81B-001DA	Gate valve ASTM A105 Class 600 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	1				P81B-001DB	Gate valve ASTM A105 Class 600 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	1.5				P81B-001DC	Gate valve ASTM A105 Class 600 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	2				P81C-006R0	Gate valve ASTM A216 Grade WCB Class 600 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Licensor-4	
1	3				P81C-006R1	Gate valve ASTM A216 Grade WCB Class 600 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Licensor-4	
1	4				P81C-006R2	Gate valve ASTM A216 Grade WCB Class 600 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Licensor-4	
1	6				P81C-0092H	Gate valve ASTM A216 Grade WCB Class 600 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Moderate wet H2S service Licensor-4	
1	8				P81C-006R5	Gate valve ASTM A216 Grade WCB Class 600 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Moderate wet H2S service Licensor-4	
1	10				P81C-006R4	Gate valve ASTM A216 Grade WCB Class 600 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Moderate wet H2S service Licensor-4	
1	12				P81C-008RT	Gate valve ASTM A216 Grade WCB Class 600 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Moderate wet H2S service Licensor-4	
1	14				P81C-008RU	Gate valve ASTM A216 Grade WCB Class 600 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Moderate wet H2S service Licensor-4	
1	16				P81C-008RV	Gate valve ASTM A216 Grade WCB Class 600 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Moderate wet H2S service Licensor-4	
1	18				P81C-008RW	Gate valve ASTM A216 Grade WCB Class 600 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Moderate wet H2S service Licensor-4	
1	20				P81C-008RX	Gate valve ASTM A216 Grade WCB Class 600 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Moderate wet H2S service Licensor-4	
4608	0.75				P81B-002XK	Gate valve ASTM A105 Class 600 API 602 BW both sides w/ nipples BE - NPT ASTM A106-B XXS-nipple Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	

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GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82B-0014Z	Globe valve ASTM A105 Class 600 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	0.75				P82B-00150	Globe valve ASTM A105 Class 600 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	1				P82B-00151	Globe valve ASTM A105 Class 600 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	1.5				P82B-00152	Globe valve ASTM A105 Class 600 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	2				P82C-00391	Globe valve ASTM A216 Grade WCB Class 600 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Licensor-4	
1	3				P82C-00392	Globe valve ASTM A216 Grade WCB Class 600 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Licensor-4	
1	4				P82C-00393	Globe valve ASTM A216 Grade WCB Class 600 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Licensor-4	
1	6				P82C-004DG	Globe valve ASTM A216 Grade WCB Class 600 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Moderate wet H2S service Licensor-4	
1	8				P82C-0047H	Globe valve ASTM A216 Grade WCB Class 600 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Moderate wet H2S service Licensor-4	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83B-000WT	Check valve ASTM A105 Class 600 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Moderate wet H2S service	
1	0.75				P83B-000WU	Check valve ASTM A105 Class 600 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Moderate wet H2S service	
1	1				P83B-000WV	Check valve ASTM A105 Class 600 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Moderate wet H2S service	
1	1.5				P83B-000WW	Check valve ASTM A105 Class 600 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Moderate wet H2S service	
1	2				P83C-0034P	Check valve ASTM A216 Grade WCB Class 600 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Moderate wet H2S service Licensor-4	
1	3				P83C-0034R	Check valve ASTM A216 Grade WCB Class 600 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Moderate wet H2S service Licensor-4	
1	4				P83C-0034S	Check valve ASTM A216 Grade WCB Class 600 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Moderate wet H2S service Licensor-4	
1	6				P83C-0034T	Check valve ASTM A216 Grade WCB Class 600 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Moderate wet H2S service Licensor-4	
1	8				P83C-0034U	Check valve ASTM A216 Grade WCB Class 600 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Moderate wet H2S service Licensor-4	
1	10				P83C-0034M	Check valve ASTM A216 Grade WCB Class 600 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Moderate wet H2S service Licensor-4	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71B-000E4	Spectacle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	0.75				P71B-000DN	Spectacle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	1				P71B-000DP	Spectacle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71B-000DR	Spectacle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	2				P71B-000DS	Spectacle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	3				P71B-000DT	Spectacle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	4				P71B-000DU	Spectacle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	6				P71B-000DV	Spectacle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	

PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	8				P72B-000MF	Paddle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	10				P72B-000MA	Paddle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	12				P72B-000M6	Paddle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	14				P72B-000MB	Paddle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	16				P72B-000MC	Paddle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	18				P72B-000MD	Paddle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	20				P72B-000ME	Paddle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	

PADDLE SPACER (PS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	8				P72B-000MM	Paddle spacer ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	10				P72B-000MG	Paddle spacer ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	12				P72B-000M7	Paddle spacer ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	14				P72B-000MH	Paddle spacer ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	16				P72B-000MJ	Paddle spacer ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	18				P72B-000MK	Paddle spacer ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	

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PADDLE SPACER (PS)							
OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	20				P72B-000ML	Paddle spacer ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	

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PIPING CLASS
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BOLT TABLE (B_D2A604 , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	80	P80S-008T2		
0.75	4	0.625	90	P80S-0090B		
1	4	0.625	95	P80S-0090C		
1.5	4	0.750	110	P80S-0090F		
2	8	0.625	110	P80S-008T8		
3	8	0.750	130	P80S-0090K		
4	8	0.875	150	P80S-005ZF		
6	12	1.000	175	P80S-0061H		
8	12	1.125	195	P80S-0064W		
10	16	1.250	250	P80S-0068M		
12	20	1.250	255	P80S-0068N		
14	20	1.375	270	P80S-006HV		
16	20	1.500	295	P80S-006LP		
18	20	1.625	320	P80S-00A5E		
20	24	1.625	335	P80S-00A5H		

BOLT TABLE (B_D2A604_789 , STUD ASME RJ, OPTION CODE 789)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	110		R12	
0.75	4	0.750	115		R14	
1	4	0.875	130	P80S-005ZB	R16	
1.5	4	1.000	140	P80S-0061A	R20	
2	8	0.875	150	P80S-005ZF	R24	
3	8	0.875	150	P80S-005ZF	R31	P75T-000JN
4	8	1.125	175	P80S-0064S	R37	P75T-000JP
6	12	1.125	200	P80S-0064X	R45	P75T-000JR
8	12	1.375	260	P80S-006HT	R49	P75T-000JS
10	16	1.375	275	P80S-006HW	R53	P75T-000JL
12	20	1.375	295	P80S-006J0	R57	P75T-000JM
14	20	1.500	325	P80S-006RK	R62	P75T-000MJ
16	20	1.625	340	P80S-00A5J	R66	P75T-000MK
18	20	1.875	390	P80S-00AW7	R70	P75T-000N8
20	20	2.000	415	P80S-00BBE	R74	P75T-000N7

BOLT TABLE (B_D2A604_797 , STUD ASME RJ, OPTION CODE 797)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	110	P80S-0090F	R12	P75T-000JT
0.75	4	0.750	115	P80S-0090G	R14	P75T-000JU
1	4	0.875	130	P80S-005ZB	R16	P75T-000JV
1.5	4	1.000	140	P80S-0061A	R20	P75T-000JW
2	8	0.875	150	P80S-005ZF	R24	P75T-0008A
3	8	1.125	180		R35	
4	8	1.250	230		R39	
6	12	1.375	300		R46	
8	12	1.625	345		R50	
10	12	1.875	395		R54	
12	16	2.000	445		R58	
14	16	2.250	490		R63	
16	16	2.500	540		R67	
18	16	2.750	590		R71	
20	16	3.000	650		R75	

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BRANCH TABLE (T_D2A604)

RUN PIPE SIZE (in) \ BRANCH SIZE (in)	0.5	0.75	1	1.5	2	3	4	6	8	10	12	14	16	18	20
0.5	TS														
0.75		TS													
1		TR	TS												
1.5		TR	TR	TS											
2		L	TR	TR	TS										
3		L	L	TR	TR	TS									
4	L	L	L	L	TR	TR	TS								
6	L	L	L	L	L	TR	TR	TS							
8		L	L	L	L	L	TR	TR	TS						
10		L	L	L	L	L	TR	TR	TR	TS					
12		L	L	L	L	L	L	TR	TR	TR	TS				
14		L	L	L	L	L	L	TR	TR	TR	TR	TS			
16		L	L	L	L	L	L	TR	TR	TR	TR	TR	TS		
18		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TS	
20		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TR	TS

TR : REDUCING TEE
TS : STRAIGHT TEE
L : OUTLET

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PIPING CLASS

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Material : CS (ASME)
Rating : ASME CLASS 600
Flange Face : RF
C.A.(mm) : 3.00
Gasket : Spiral Wound
Service : UTILITY - POWER PIPING : / HP BOILER FEED WATER

Design Code : ASME B31.1
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
541	NPT(F) (CA,L)
714	SW - NPT(F) (V)
789	CLASS 900 (B,F,G)
797	CLASS 1500 (B,F,G)

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PIPING CLASS
D2AG REV NO. 2

PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P01A-003L3	Pipe ASME SA106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	0.75		SCH160		P01A-003L4	Pipe ASME SA106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1		SCH160		P01A-003L5	Pipe ASME SA106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1.5		SCH160		P01A-003L6	Pipe ASME SA106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	2		XS		P01A-002S2	Pipe ASME SA106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	3		XS		P01A-002S3	Pipe ASME SA106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	4		XS		P01A-002S4	Pipe ASME SA106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	6		XS		P01A-002S5	Pipe ASME SA106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	8		SCH60		P01A-008V3	Pipe ASME SA106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	10		XS		P01A-002S0	Pipe ASME SA106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	12		SCH60		P01A-0084U	Pipe ASME SA106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	14		SCH60		P01A-002TK	Pipe ASME SA106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	16		SCH60		P01A-002TL	Pipe ASME SA106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	18		SCH60		P01A-002TM	Pipe ASME SA106 Grade B Seamless ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P02B-00032	90 degree elbow ASME SA105 Class 6000 ASME B16.11 SW	
1	0.75				P02B-00033	90 degree elbow ASME SA105 Class 6000 ASME B16.11 SW	
1	1				P02B-00034	90 degree elbow ASME SA105 Class 6000 ASME B16.11 SW	
1	1.5				P02B-00035	90 degree elbow ASME SA105 Class 6000 ASME B16.11 SW	
1	2		XS		P02A-002HF	90 degree elbow ASME SA234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		XS		P02A-002JV	90 degree elbow ASME SA234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		XS		P02A-002LY	90 degree elbow ASME SA234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		XS		P02A-002JZ	90 degree elbow ASME SA234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		SCH60		P02A-004YB	90 degree elbow ASME SA234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	10		XS		P02A-004Y8	90 degree elbow ASME SA234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	12		SCH60		P02A-004BP	90 degree elbow ASME SA234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	14		SCH60		P02A-004Y9	90 degree elbow ASME SA234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	16		SCH60		P02A-004YA	90 degree elbow ASME SA234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	18		SCH60		P02A-004BR	90 degree elbow ASME SA234 Grade WPB Seamless ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P03B-0002Y	45 degree elbow ASME SA105 Class 6000 ASME B16.11 SW	
1	0.75				P03B-0002Z	45 degree elbow ASME SA105 Class 6000 ASME B16.11 SW	
1	1				P03B-00030	45 degree elbow ASME SA105 Class 6000 ASME B16.11 SW	
1	1.5				P03B-00031	45 degree elbow ASME SA105 Class 6000 ASME B16.11 SW	
1	2		XS		P03A-002EZ	45 degree elbow ASME SA234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		XS		P03A-002GC	45 degree elbow ASME SA234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		XS		P03A-002JJ	45 degree elbow ASME SA234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		XS		P03A-002GG	45 degree elbow ASME SA234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		SCH60		P03A-004HU	45 degree elbow ASME SA234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	10		XS		P03A-004HR	45 degree elbow ASME SA234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	12		SCH60		P03A-0049B	45 degree elbow ASME SA234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	14		SCH60		P03A-004HS	45 degree elbow ASME SA234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	16		SCH60		P03A-004HT	45 degree elbow ASME SA234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	18		SCH60		P03A-0049C	45 degree elbow ASME SA234 Grade WPB Seamless ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P21B-00030	Straight tee ASME SA105 Class 6000 ASME B16.11 SW	
1	0.75				P21B-00031	Straight tee ASME SA105 Class 6000 ASME B16.11 SW	
1	1				P21B-00032	Straight tee ASME SA105 Class 6000 ASME B16.11 SW	
1	1.5				P21B-00033	Straight tee ASME SA105 Class 6000 ASME B16.11 SW	
1	2		XS		P21A-002PV	Straight tee ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	3		XS		P21A-002PW	Straight tee ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	4		XS		P21A-002PX	Straight tee ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	6		XS		P21A-002PY	Straight tee ASME SA234 Grade WPB Seamless ASME B16.9 BW	

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STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	8		SCH60		P21A-00523	Straight tee ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	10		XS		P21A-002PT	Straight tee ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	12		SCH60		P21A-004V7	Straight tee ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	14		SCH60		P21A-002S6	Straight tee ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	16		SCH60		P21A-002S7	Straight tee ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	18		SCH60		P21A-00579	Straight tee ASME SA234 Grade WPB-W Weld ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75			P24B-0005N	Reducing tee ASME SA105 Class 6000 ASME B16.11 SW	
1	1.5	0.75			P24B-0005R	Reducing tee ASME SA105 Class 6000 ASME B16.11 SW	
1	1.5	1			P24B-0005S	Reducing tee ASME SA105 Class 6000 ASME B16.11 SW	
1	2	1	XS	SCH160	P24A-00GLW	Reducing tee ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	XS	SCH160	P24A-009AF	Reducing tee ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	XS	SCH160	P24A-00GSN	Reducing tee ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	XS	XS	P24A-006AD	Reducing tee ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	XS	XS	P24A-006AE	Reducing tee ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	XS	XS	P24A-006AF	Reducing tee ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	XS	XS	P24A-006AG	Reducing tee ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	XS	XS	P24A-006AH	Reducing tee ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH60	XS	P24A-00PBU	Reducing tee ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH60	XS	P24A-00PBV	Reducing tee ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	XS	XS	P24A-00PBW	Reducing tee ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	XS	XS	P24A-006AL	Reducing tee ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	XS	SCH60	P24A-00PBX	Reducing tee ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	SCH60	XS	P24A-00N3X	Reducing tee ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH60	SCH60	P24A-00PBZ	Reducing tee ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH60	XS	P24A-00PBY	Reducing tee ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	SCH60	XS	P24A-00PC1	Reducing tee ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	SCH60	SCH60	P24A-00PC2	Reducing tee ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	SCH60	XS	P24A-006TW	Reducing tee ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	SCH60	SCH60	P24A-00PC0	Reducing tee ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	16	6	SCH60	XS	P24A-00PC4	Reducing tee ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	SCH60	SCH60	P24A-00PC5	Reducing tee ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	SCH60	XS	P24A-006TY	Reducing tee ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	SCH60	SCH60	P24A-00PC3	Reducing tee ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	SCH60	SCH60	P24A-006U0	Reducing tee ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	18	8	SCH60	SCH60	P24A-00R99	Reducing tee ASME SA234 Grade WPB-W Weld ASME B16.9 BW	
1	18	10	SCH60	XS	P24A-00R95	Reducing tee ASME SA234 Grade WPB-W Weld ASME B16.9 BW	
1	18	12	SCH60	SCH60	P24A-00R96	Reducing tee ASME SA234 Grade WPB-W Weld ASME B16.9 BW	
1	18	14	SCH60	SCH60	P24A-00R97	Reducing tee ASME SA234 Grade WPB-W Weld ASME B16.9 BW	
1	18	16	SCH60	SCH60	P24A-00R98	Reducing tee ASME SA234 Grade WPB-W Weld ASME B16.9 BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	XS	XS	P27A-004B2	Concentric reducer ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	XS	XS	P27A-004B4	Concentric reducer ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	XS	XS	P27A-004B5	Concentric reducer ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	XS	XS	P27A-004B6	Concentric reducer ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	XS	XS	P27A-004B7	Concentric reducer ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH60	XS	P27A-00HR7	Concentric reducer ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH60	XS	P27A-00HR8	Concentric reducer ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	XS	XS	P27A-004BA	Concentric reducer ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	XS	XS	P27A-004BB	Concentric reducer ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	XS	SCH60	P27A-00HR9	Concentric reducer ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	SCH60	XS	P27A-00GX5	Concentric reducer ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH60	SCH60	P27A-00HRB	Concentric reducer ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH60	XS	P27A-00HRA	Concentric reducer ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	SCH60	XS	P27A-004LB	Concentric reducer ASME SA234 Grade WPB Seamless ASME B16.9 BW	

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CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14	8	SCH60	SCH60	P27A-00HRD	Concentric reducer ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	SCH60	XS	P27A-004L9	Concentric reducer ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	SCH60	SCH60	P27A-00HRC	Concentric reducer ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	SCH60	SCH60	P27A-00HRF	Concentric reducer ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	SCH60	XS	P27A-004LD	Concentric reducer ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	SCH60	SCH60	P27A-00HRE	Concentric reducer ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	SCH60	SCH60	P27A-004LF	Concentric reducer ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	18	10	SCH60	XS	P27A-00JFS	Concentric reducer ASME SA234 Grade WPB-W Weld ASME B16.9 BW	
1	18	12	SCH60	SCH60	P27A-00JFT	Concentric reducer ASME SA234 Grade WPB-W Weld ASME B16.9 BW	
1	18	14	SCH60	SCH60	P27A-00JFU	Concentric reducer ASME SA234 Grade WPB-W Weld ASME B16.9 BW	
1	18	16	SCH60	SCH60	P27A-00JFV	Concentric reducer ASME SA234 Grade WPB-W Weld ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	XS	XS	P28A-004AU	Eccentric reducer ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	XS	XS	P28A-004AW	Eccentric reducer ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	XS	XS	P28A-004AX	Eccentric reducer ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	XS	XS	P28A-004AY	Eccentric reducer ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	XS	XS	P28A-004AZ	Eccentric reducer ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH60	XS	P28A-00F0M	Eccentric reducer ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH60	XS	P28A-00F0N	Eccentric reducer ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	XS	XS	P28A-004B2	Eccentric reducer ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	XS	XS	P28A-004B3	Eccentric reducer ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	XS	SCH60	P28A-00F0P	Eccentric reducer ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	SCH60	XS	P28A-00E4R	Eccentric reducer ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH60	SCH60	P28A-00F0S	Eccentric reducer ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH60	XS	P28A-00F0R	Eccentric reducer ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	SCH60	XS	P28A-004LL	Eccentric reducer ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	SCH60	SCH60	P28A-00F0U	Eccentric reducer ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	SCH60	XS	P28A-004LJ	Eccentric reducer ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	SCH60	SCH60	P28A-00F0T	Eccentric reducer ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	SCH60	SCH60	P28A-00F0W	Eccentric reducer ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	SCH60	XS	P28A-004LN	Eccentric reducer ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	SCH60	SCH60	P28A-00F0V	Eccentric reducer ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	SCH60	SCH60	P28A-004LR	Eccentric reducer ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	18	10	SCH60	XS	P28A-00FSD	Eccentric reducer ASME SA234 Grade WPB-W Weld ASME B16.9 BW	
1	18	12	SCH60	SCH60	P28A-00FSE	Eccentric reducer ASME SA234 Grade WPB-W Weld ASME B16.9 BW	
1	18	14	SCH60	SCH60	P28A-00FSF	Eccentric reducer ASME SA234 Grade WPB-W Weld ASME B16.9 BW	
1	18	16	SCH60	SCH60	P28A-00FSG	Eccentric reducer ASME SA234 Grade WPB-W Weld ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P29B-00045	Cap ASME SA105 Class 6000 ASME B16.11 SW	
1	0.75				P29B-00046	Cap ASME SA105 Class 6000 ASME B16.11 SW	
1	1				P29B-00047	Cap ASME SA105 Class 6000 ASME B16.11 SW	
1	1.5				P29B-00048	Cap ASME SA105 Class 6000 ASME B16.11 SW	
1	2		XS		P29A-0015L	Cap ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	3		XS		P29A-0015M	Cap ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	4		XS		P29A-0015N	Cap ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	6		XS		P29A-0015P	Cap ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	8		SCH60		P29A-003YB	Cap ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	10		XS		P29A-0015J	Cap ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	12		SCH60		P29A-003ND	Cap ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	14		SCH60		P29A-0016N	Cap ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	16		SCH60		P29A-0016P	Cap ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	18		SCH60		P29A-0016R	Cap ASME SA234 Grade WPB Seamless ASME B16.9 BW	
541	1.75				P29B-0006A	Cap ASME SA105 Class 6000 ASME B16.11 NPT	

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STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P41A-0017T	Straight nipple ASME SA106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		XXS		P41A-0017U	Straight nipple ASME SA106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		XXS		P41A-0017V	Straight nipple ASME SA106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		XXS		P41A-0017W	Straight nipple ASME SA106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

CON SWAGED NIPPLE (SNC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	SCH160	P42A-000FF	Concentric swaged nipple ASME SA234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	SCH160	SCH160	P42A-000FG	Concentric swaged nipple ASME SA234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	SCH160	SCH160	P42A-000FH	Concentric swaged nipple ASME SA234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	SCH160	SCH160	P42A-000FJ	Concentric swaged nipple ASME SA234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	SCH160	SCH160	P42A-000FK	Concentric swaged nipple ASME SA234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	SCH160	SCH160	P42A-000FL	Concentric swaged nipple ASME SA234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	XS	SCH160	P42A-000KU	Concentric swaged nipple ASME SA234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	XS	SCH160	P42A-000KV	Concentric swaged nipple ASME SA234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	XS	SCH160	P42A-000KW	Concentric swaged nipple ASME SA234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	XS	SCH160	P42A-000KX	Concentric swaged nipple ASME SA234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	XS	SCH160	P42A-000LJ	Concentric swaged nipple ASME SA234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	

ECC SWAGED NIPPLE (SNE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	SCH160	P43A-000CM	Eccentric swaged nipple ASME SA234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	SCH160	SCH160	P43A-000CN	Eccentric swaged nipple ASME SA234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	SCH160	SCH160	P43A-000CP	Eccentric swaged nipple ASME SA234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	SCH160	SCH160	P43A-000CR	Eccentric swaged nipple ASME SA234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	SCH160	SCH160	P43A-000CS	Eccentric swaged nipple ASME SA234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	SCH160	SCH160	P43A-000CT	Eccentric swaged nipple ASME SA234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	XS	SCH160	P43A-000CU	Eccentric swaged nipple ASME SA234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	XS	SCH160	P43A-000CV	Eccentric swaged nipple ASME SA234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	XS	SCH160	P43A-000CW	Eccentric swaged nipple ASME SA234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	XS	SCH160	P43A-000CX	Eccentric swaged nipple ASME SA234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	XS	SCH160	P43A-000E3	Eccentric swaged nipple ASME SA234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	

COUPLING (CPS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P47B-0003B	Coupling ASME SA105 Class 6000 ASME B16.11 SW - SW	
1	0.75				P47B-0003C	Coupling ASME SA105 Class 6000 ASME B16.11 SW - SW	
1	1				P47B-0003D	Coupling ASME SA105 Class 6000 ASME B16.11 SW - SW	
1	1.5				P47B-0003E	Coupling ASME SA105 Class 6000 ASME B16.11 SW - SW	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5 - 2.5	0.75			P31B-013A9	Outlet ASME SA105 Class 6000 MSS SP-97 SW	
1	3 - 10	0.75			P31B-013AA	Outlet ASME SA105 Class 6000 MSS SP-97 SW	
1	12 and larger	0.75			P31B-013B3	Outlet ASME SA105 Class 6000 MSS SP-97 SW	
1	3 - 10	1			P31B-013AB	Outlet ASME SA105 Class 6000 MSS SP-97 SW	
1	12 and larger	1			P31B-013B4	Outlet ASME SA105 Class 6000 MSS SP-97 SW	
1	4 - 5	1.5			P31B-013AC	Outlet ASME SA105 Class 6000 MSS SP-97 SW	
1	6 - 8	1.5			P31B-013AD	Outlet ASME SA105 Class 6000 MSS SP-97 SW	
1	10 - 18	1.5			P31B-013B5	Outlet ASME SA105 Class 6000 MSS SP-97 SW	
541	1	0.75			P31B-01366	Outlet ASME SA105 Class 6000 MSS SP-97 NPT	
541	1.5 - 2.5	0.75			P31B-013AE	Outlet ASME SA105 Class 6000 MSS SP-97 NPT	
541	3 - 10	0.75			P31B-013AF	Outlet ASME SA105 Class 6000 MSS SP-97 NPT	
541	12 and larger	0.75			P31B-013B6	Outlet ASME SA105 Class 6000 MSS SP-97 NPT	
1	6	2	XS	XS	P31B-00FCA	Outlet ASME SA105 MSS SP-97 BW	
1	8	2	SCH60	XS	P31B-011NS	Outlet ASME SA105 MSS SP-97 BW	
1	8	2	XS	XS	P31B-00FCD	Outlet ASME SA105 MSS SP-97 BW	
1	12	2	SCH60	XS	P31B-010LB	Outlet ASME SA105 MSS SP-97 BW	

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OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14	2	SCH60	XS	P31B-011NU	Outlet ASME SA105 MSS SP-97 BW	
1	16	2	SCH60	XS	P31B-011NX	Outlet ASME SA105 MSS SP-97 BW	
1	18	2	SCH60	XS	P31B-010LH	Outlet ASME SA105 MSS SP-97 BW	
1	8	3	SCH60	XS	P31B-011NT	Outlet ASME SA105 MSS SP-97 BW	
1	10	3	XS	XS	P31B-00FCE	Outlet ASME SA105 MSS SP-97 BW	
1	12	3	SCH60	XS	P31B-010LC	Outlet ASME SA105 MSS SP-97 BW	
1	14	3	SCH60	XS	P31B-011NV	Outlet ASME SA105 MSS SP-97 BW	
1	16	3	SCH60	XS	P31B-011NY	Outlet ASME SA105 MSS SP-97 BW	
1	18	3	SCH60	XS	P31B-010LJ	Outlet ASME SA105 MSS SP-97 BW	
1	12	4	SCH60	XS	P31B-010LD	Outlet ASME SA105 MSS SP-97 BW	
1	14	4	SCH60	XS	P31B-011NW	Outlet ASME SA105 MSS SP-97 BW	
1	16	4	SCH60	XS	P31B-011NZ	Outlet ASME SA105 MSS SP-97 BW	
1	18	4	SCH60	XS	P31B-010LK	Outlet ASME SA105 MSS SP-97 BW	
1	18	6	SCH60	XS	P31B-010LL	Outlet ASME SA105 MSS SP-97 BW	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30B-00034	Plug ASME SA105 ASME B16.11 NPT Round head	
1	0.75				P30B-00035	Plug ASME SA105 ASME B16.11 NPT Round head	
1	1				P30B-00036	Plug ASME SA105 ASME B16.11 NPT Round head	
1	1.5				P30B-00037	Plug ASME SA105 ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P61B-0067Z	Flange SW ASME SA105 Class 600 ASME B16.5 RF	
1	0.75		SCH160		P61B-0065E	Flange SW ASME SA105 Class 600 ASME B16.5 RF	
1	1		SCH160		P61B-0065F	Flange SW ASME SA105 Class 600 ASME B16.5 RF	
1	1.5		SCH160		P61B-0065G	Flange SW ASME SA105 Class 600 ASME B16.5 RF	
1	2		XS		P61B-003Y5	Flange WN ASME SA105 Class 600 ASME B16.5 RF	
1	3		XS		P61B-003Y6	Flange WN ASME SA105 Class 600 ASME B16.5 RF	
1	4		XS		P61B-003Y7	Flange WN ASME SA105 Class 600 ASME B16.5 RF	
1	6		XS		P61B-003Y8	Flange WN ASME SA105 Class 600 ASME B16.5 RF	
1	8		SCH60		P61B-00D0R	Flange WN ASME SA105 Class 600 ASME B16.5 RF	
1	10		XS		P61B-003Y3	Flange WN ASME SA105 Class 600 ASME B16.5 RF	
1	12		SCH60		P61B-00BK2	Flange WN ASME SA105 Class 600 ASME B16.5 RF	
1	14		SCH60		P61B-0040Z	Flange WN ASME SA105 Class 600 ASME B16.5 RF	
1	16		SCH60		P61B-00410	Flange WN ASME SA105 Class 600 ASME B16.5 RF	
1	18		SCH60		P61B-00411	Flange WN ASME SA105 Class 600 ASME B16.5 RF	
789	3		XS		P61B-00699	Flange WN ASME SA105 Class 900 ASME B16.5 RJ	
789	4		XS		P61B-00BK8	Flange WN ASME SA105 Class 900 ASME B16.5 RJ	
789	6		XS		P61B-0069B	Flange WN ASME SA105 Class 900 ASME B16.5 RJ	
789	8		SCH60		P61B-00D0V	Flange WN ASME SA105 Class 900 ASME B16.5 RJ	
789	10		XS		P61B-00D0S	Flange WN ASME SA105 Class 900 ASME B16.5 RJ	
789	12		SCH60		P61B-00BK4	Flange WN ASME SA105 Class 900 ASME B16.5 RJ	
789	14		SCH60		P61B-00D0T	Flange WN ASME SA105 Class 900 ASME B16.5 RJ	
789	16		SCH60		P61B-00D0U	Flange WN ASME SA105 Class 900 ASME B16.5 RJ	
789	18		SCH60		P61B-00BK7	Flange WN ASME SA105 Class 900 ASME B16.5 RJ	
797	0.5		SCH160		P61B-0069D	Flange SW ASME SA105 Class 1500 ASME B16.5 RJ	
797	0.75		SCH160		P61B-0065M	Flange SW ASME SA105 Class 1500 ASME B16.5 RJ	
797	1		SCH160		P61B-0065N	Flange SW ASME SA105 Class 1500 ASME B16.5 RJ	
797	1.5		SCH160		P61B-0065P	Flange SW ASME SA105 Class 1500 ASME B16.5 RJ	
797	2		XS		P61B-0069E	Flange WN ASME SA105 Class 1500 ASME B16.5 RJ	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67B-0019Y	Blind flange ASME SA105 Class 600 ASME B16.5 RF	
1	0.75				P67B-0019Z	Blind flange ASME SA105 Class 600 ASME B16.5 RF	
1	1				P67B-001A0	Blind flange ASME SA105 Class 600 ASME B16.5 RF	
1	1.5				P67B-001A1	Blind flange ASME SA105 Class 600 ASME B16.5 RF	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2				P67B-001A4	Blind flange ASME SA105 Class 600 ASME B16.5 RF	
1	3				P67B-001A5	Blind flange ASME SA105 Class 600 ASME B16.5 RF	
1	4				P67B-001A6	Blind flange ASME SA105 Class 600 ASME B16.5 RF	
1	6				P67B-001A7	Blind flange ASME SA105 Class 600 ASME B16.5 RF	
1	8				P67B-001A8	Blind flange ASME SA105 Class 600 ASME B16.5 RF	
1	10				P67B-001A2	Blind flange ASME SA105 Class 600 ASME B16.5 RF	
1	12				P67B-001A3	Blind flange ASME SA105 Class 600 ASME B16.5 RF	
1	14				P67B-001AM	Blind flange ASME SA105 Class 600 ASME B16.5 RF	
1	16				P67B-001AN	Blind flange ASME SA105 Class 600 ASME B16.5 RF	
1	18				P67B-001AP	Blind flange ASME SA105 Class 600 ASME B16.5 RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000J8	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000J9	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000JA	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000JB	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000JH	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000JL	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000JM	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	6				P73T-000JN	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	8				P73T-000JP	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	10				P73T-000JC	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	12				P73T-000JD	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	14				P73T-000JE	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	16				P73T-000JF	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	18				P73T-000JG	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
789	3				P75T-000JN	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	4				P75T-000JP	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	6				P75T-000JR	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	8				P75T-000JS	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	10				P75T-000JL	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	12				P75T-000JM	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	14				P75T-000MJ	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	16				P75T-000MK	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	18				P75T-000N8	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	0.5				P75T-000JT	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	0.75				P75T-000JU	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	1				P75T-000JV	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	1.5				P75T-000JW	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	2				P75T-0008A	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-6				See Attached Bolt Table	Bolt and Nut ASME SA193 Grade B7 / SA194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	8-18				See Attached Bolt Table	Bolt and Nut ASME SA193 Grade B7 / SA194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
789	1-3				See Attached Bolt Table	Bolt and Nut ASME SA193 Grade B7 / SA194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
789	4-18				See Attached Bolt Table	Bolt and Nut ASME SA193 Grade B7 / SA194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
797	0.5-2				See Attached Bolt Table	Bolt and Nut ASME SA193 Grade B7 / SA194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	

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GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81B-000RB	Gate valve ASME SA105 Class 800 API 602 SW Trim number 5 BB-BG-OS&Y Handwheel operated	
1	0.75				P81B-000RC	Gate valve ASME SA105 Class 800 API 602 SW Trim number 5 BB-BG-OS&Y Handwheel operated	
1	1				P81B-000RD	Gate valve ASME SA105 Class 800 API 602 SW Trim number 5 BB-BG-OS&Y Handwheel operated	
1	1.5				P81B-000RE	Gate valve ASME SA105 Class 800 API 602 SW Trim number 5 BB-BG-OS&Y Handwheel operated	
1	2				P81C-004KM	Gate valve ASME SA216 Grade WCB Class 600 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated	
1	3				P81C-004KN	Gate valve ASME SA216 Grade WCB Class 600 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated	
1	4				P81C-004KP	Gate valve ASME SA216 Grade WCB Class 600 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated	
1	6				P81C-0092F	Gate valve ASME SA216 Grade WCB Class 600 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Gear operated	
1	8				P81C-004KV	Gate valve ASME SA216 Grade WCB Class 600 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Gear operated	
1	10				P81C-004KS	Gate valve ASME SA216 Grade WCB Class 600 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Gear operated	
1	12				P81C-004KT	Gate valve ASME SA216 Grade WCB Class 600 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Gear operated	
1	14				P81C-0063Y	Gate valve ASME SA216 Grade WCB Class 600 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Gear operated	
1	16				P81C-0063Z	Gate valve ASME SA216 Grade WCB Class 600 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Gear operated	
1	18				P81C-004KU	Gate valve ASME SA216 Grade WCB Class 600 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Gear operated	
714	0.5				P81B-0015P	Gate valve ASME SA105 Class 800 API 602 SW - NPT Trim number 5 BB-BG-OS&Y Handwheel operated	
714	0.75				P81B-002F6	Gate valve ASME SA105 Class 800 API 602 SW - NPT Trim number 5 BB-BG-OS&Y Handwheel operated	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82B-000KX	Globe valve ASME SA105 Class 800 API 602 SW Trim number 5 BB-BG-OS&Y Handwheel operated	
1	0.75				P82B-000KY	Globe valve ASME SA105 Class 800 API 602 SW Trim number 5 BB-BG-OS&Y Handwheel operated	
1	1				P82B-000KZ	Globe valve ASME SA105 Class 800 API 602 SW Trim number 5 BB-BG-OS&Y Handwheel operated	
1	1.5				P82B-000L0	Globe valve ASME SA105 Class 800 API 602 SW Trim number 5 BB-BG-OS&Y Handwheel operated	
1	2				P82C-0028U	Globe valve ASME SA216 Grade WCB Class 600 BS 1873 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated	
1	3				P82C-0028V	Globe valve ASME SA216 Grade WCB Class 600 BS 1873 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated	
1	4				P82C-0028W	Globe valve ASME SA216 Grade WCB Class 600 BS 1873 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated	
1	6				P82C-004DD	Globe valve ASME SA216 Grade WCB Class 600 BS 1873 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Gear operated	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83B-000GM	Check valve ASME SA105 Class 800 API 602 SW Trim number 5 Lift-type Bolted cover	
1	0.75				P83B-000GN	Check valve ASME SA105 Class 800 API 602 SW Trim number 5 Lift-type Bolted cover	
1	1				P83B-000GP	Check valve ASME SA105 Class 800 API 602 SW Trim number 5 Lift-type Bolted cover	
1	1.5				P83B-000GR	Check valve ASME SA105 Class 800 API 602 SW Trim number 5 Lift-type Bolted cover	
1	2				P83C-0025U	Check valve ASME SA216 Grade WCB Class 600 BS 1868 Flange ASME B16.5 RF Trim number 5 Swing-type Bolted cover	
1	3				P83C-0025V	Check valve ASME SA216 Grade WCB Class 600 BS 1868 Flange ASME B16.5 RF Trim number 5 Swing-type Bolted cover	
1	4				P83C-0025W	Check valve ASME SA216 Grade WCB Class 600 BS 1868 Flange ASME B16.5 RF Trim number 5 Swing-type Bolted cover	
1	6				P83C-0025X	Check valve ASME SA216 Grade WCB Class 600 BS 1868 Flange ASME B16.5 RF Trim number 5 Swing-type Bolted cover	
1	8				P83C-0025Y	Check valve ASME SA216 Grade WCB Class 600 BS 1868 Flange ASME B16.5 RF Trim number 5 Swing-type Bolted cover	
1	10				P83C-0025T	Check valve ASME SA216 Grade WCB Class 600 BS 1868 Flange ASME B16.5 RF Trim number 5 Swing-type Bolted cover	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71B-000DW	Spectacle blank ASME SA105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	0.75				P71B-000DX	Spectacle blank ASME SA105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	1				P71B-000DY	Spectacle blank ASME SA105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71B-000DZ	Spectacle blank ASME SA105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	2				P71B-000E0	Spectacle blank ASME SA105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	3				P71B-000E1	Spectacle blank ASME SA105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	4				P71B-000E2	Spectacle blank ASME SA105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	6				P71B-000E3	Spectacle blank ASME SA105 Class 600 Standard-drawing Flange ASME B16.5 RF	

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PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	8				P72B-000HH	Paddle blank ASME SA105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	10				P72B-000HE	Paddle blank ASME SA105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	12				P72B-000HF	Paddle blank ASME SA105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	14				P72B-000PR	Paddle blank ASME SA105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	16				P72B-000PS	Paddle blank ASME SA105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	18				P72B-000HG	Paddle blank ASME SA105 Class 600 Standard-drawing Flange ASME B16.5 RF	

PADDLE SPACER (PS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	8				P72B-000HM	Paddle spacer ASME SA105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	10				P72B-000HJ	Paddle spacer ASME SA105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	12				P72B-000HK	Paddle spacer ASME SA105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	14				P72B-000PT	Paddle spacer ASME SA105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	16				P72B-000PU	Paddle spacer ASME SA105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	18				P72B-000HL	Paddle spacer ASME SA105 Class 600 Standard-drawing Flange ASME B16.5 RF	

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BOLT TABLE (B_D2AG , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	80	P80S-00MEE		
0.75	4	0.625	90	P80S-00MAM		
1	4	0.625	95	P80S-00MAL		
1.5	4	0.750	110	P80S-00MAH		
2	8	0.625	110	P80S-00MC4		
3	8	0.750	130	P80S-00M89		
4	8	0.875	150	P80S-00M2W		
6	12	1.000	175	P80S-00LY7		
8	12	1.125	195	P80S-00LND		
10	16	1.250	250	P80S-00LC0		
12	20	1.250	255	P80S-00LBZ		
14	20	1.375	270	P80S-00N6J		
16	20	1.500	295	P80S-00N3P		
18	20	1.625	320	P80S-00N03		

BOLT TABLE (B_D2AG_789 , STUD ASME RJ, OPTION CODE 789)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	110		R12	
0.75	4	0.750	115		R14	
1	4	0.875	130	P80S-00M30	R16	
1.5	4	1.000	140		R20	
2	8	0.875	150	P80S-00M2W	R24	
3	8	0.875	150	P80S-00M2W	R31	P75T-000JN
4	8	1.125	175	P80S-00LNH	R37	P75T-000JP
6	12	1.125	200	P80S-00LNC	R45	P75T-000JR
8	12	1.375	260	P80S-00N6L	R49	P75T-000JS
10	16	1.375	275	P80S-00N6H	R53	P75T-000JL
12	20	1.375	295	P80S-00N6D	R57	P75T-000JM
14	20	1.500	325	P80S-00N3H	R62	P75T-000MJ
16	20	1.625	340	P80S-00MZZ	R66	P75T-000MK
18	20	1.875	390	P80S-00MT6	R70	P75T-000N8

BOLT TABLE (B_D2AG_797 , STUD ASME RJ, OPTION CODE 797)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	110	P80S-00MAH	R12	P75T-000JT
0.75	4	0.750	115	P80S-00M8C	R14	P75T-000JU
1	4	0.875	130	P80S-00M30	R16	P75T-000JV
1.5	4	1.000	140	P80S-00LYE	R20	P75T-000JW
2	8	0.875	150	P80S-00M2W	R24	P75T-0008A
3	8	1.125	180		R35	
4	8	1.250	230		R39	
6	12	1.375	300		R46	
8	12	1.625	345		R50	
10	12	1.875	395		R54	
12	16	2.000	445		R58	
14	16	2.250	490		R63	
16	16	2.500	540		R67	
18	16	2.750	590		R71	

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BRANCH TABLE (T_D2AG)

RUN PIPE SIZE (in) \ BRANCH SIZE (in)	0.5	0.75	1	1.5	2	3	4	6	8	10	12	14	16	18
0.5	TS													
0.75		TS												
1		TR	TS											
1.5		TR	TR	TS										
2		L	TR	TR	TS									
3		L	L	TR	TR	TS								
4	L	L	L	L	TR	TR	TS							
6	L	L	L	L	L	TR	TR	TS						
8		L	L	L	L	L	TR	TR	TS					
10		L	L	L	L	L	TR	TR	TR	TS				
12		L	L	L	L	L	L	TR	TR	TR	TS			
14		L	L	L	L	L	L	TR	TR	TR	TR	TS		
16		L	L	L	L	L	L	TR	TR	TR	TR	TR	TS	
18		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TS

TS : STRAIGHT TEE
TR : REDUCING TEE
L : OUTLET

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PIPING CLASS

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Material : Killed CS
Rating : ASME CLASS 600
Flange Face : RF
C.A.(mm) : 3.00
Gasket : Spiral Wound
Service : PROCESS - NON SOUR, NON TO MILD CORROSIVE: / DESALTER WATER / PROCESS

Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
200	WITH JACK SCREW (FO)
541	NPT(F) (CA)
714	SW - NPT(F) (V)
789	CLASS 900 (B,F,G)
797	CLASS 1500 (B,F,G)

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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P01A-0010P	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	0.75		SCH160		P01A-0010R	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1		SCH160		P01A-0014M	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1.5		SCH160		P01A-0015J	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	2		SCH160		P01A-0019T	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	3		XS		P01A-000Z4	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	4		XS		P01A-000Z9	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	6		XS		P01A-000ZF	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	8		XS		P01A-000ZJ	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	10		XS		P01A-000Y2	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P02B-0001J	90 degree elbow ASTM A105 Class 6000 ASME B16.11 SW	
1	0.75				P02B-0001K	90 degree elbow ASTM A105 Class 6000 ASME B16.11 SW	
1	1				P02B-0002E	90 degree elbow ASTM A105 Class 6000 ASME B16.11 SW	
1	1.5				P02B-0002F	90 degree elbow ASTM A105 Class 6000 ASME B16.11 SW	
1	2		SCH160		P02A-000KW	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		XS		P02A-000CX	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		XS		P02A-000D3	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		XS		P02A-000DA	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		XS		P02A-000DG	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	10		XS		P02A-000BN	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P03B-0001F	45 degree elbow ASTM A105 Class 6000 ASME B16.11 SW	
1	0.75				P03B-0001G	45 degree elbow ASTM A105 Class 6000 ASME B16.11 SW	
1	1				P03B-0002A	45 degree elbow ASTM A105 Class 6000 ASME B16.11 SW	
1	1.5				P03B-0002B	45 degree elbow ASTM A105 Class 6000 ASME B16.11 SW	
1	2		SCH160		P03A-000HU	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		XS		P03A-000AZ	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		XS		P03A-000B3	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		XS		P03A-000B8	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		XS		P03A-000BC	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	10		XS		P03A-000A3	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P21B-0001F	Straight tee ASTM A105 Class 6000 ASME B16.11 SW	
1	0.75				P21B-0001G	Straight tee ASTM A105 Class 6000 ASME B16.11 SW	
1	1				P21B-00026	Straight tee ASTM A105 Class 6000 ASME B16.11 SW	
1	1.5				P21B-00027	Straight tee ASTM A105 Class 6000 ASME B16.11 SW	
1	2		SCH160		P21A-00245	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		XS		P21A-001CR	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		XS		P21A-001CV	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6		XS		P21A-001D4	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8		XS		P21A-001D6	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10		XS		P21A-001C0	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75			P24B-00030	Reducing tee ASTM A105 Class 6000 ASME B16.11 SW	
1	1.5	0.75			P24B-00032	Reducing tee ASTM A105 Class 6000 ASME B16.11 SW	
1	1.5	1			P24B-0004J	Reducing tee ASTM A105 Class 6000 ASME B16.11 SW	
1	2	1	SCH160	SCH160	P24A-00AEU	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	SCH160	SCH160	P24A-003AX	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	XS	SCH160	P24A-00GNV	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	XS	SCH160	P24A-00560	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	XS	SCH160	P24A-00561	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	XS	XS	P24A-0024A	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	XS	XS	P24A-0023F	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	XS	XS	P24A-00243	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	XS	XS	P24A-0023T	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	XS	XS	P24A-0024M	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	XS	XS	P24A-0023C	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	XS	XS	P24A-00241	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	XS	XS	P24A-0024K	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	XS	SCH160	P27A-0037V	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	XS	SCH160	P27A-0037W	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	XS	XS	P27A-001EP	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	XS	XS	P27A-001DM	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	XS	XS	P27A-001EB	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	XS	XS	P27A-001E3	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	XS	XS	P27A-001EY	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	XS	XS	P27A-001E8	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	XS	XS	P27A-001F2	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	XS	XS	P27A-001FR	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	XS	SCH160	P28A-0037B	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	XS	SCH160	P28A-0037C	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	XS	XS	P28A-001F8	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	XS	XS	P28A-001DU	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	XS	XS	P28A-001ER	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	XS	XS	P28A-001EK	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	XS	XS	P28A-001FT	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	XS	XS	P28A-001EM	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	XS	XS	P28A-001FR	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	XS	XS	P28A-001GT	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P29B-0002F	Cap ASTM A105 Class 6000 ASME B16.11 SW	
1	0.75				P29B-0002G	Cap ASTM A105 Class 6000 ASME B16.11 SW	
1	1				P29B-0002D	Cap ASTM A105 Class 6000 ASME B16.11 SW	
1	1.5				P29B-0002E	Cap ASTM A105 Class 6000 ASME B16.11 SW	
1	2		SCH160		P29A-000HR	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		XS		P29A-000AT	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		XS		P29A-000B9	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6		XS		P29A-000BF	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8		XS		P29A-000BL	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10		XS		P29A-000BD	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
541	0.75				P29B-0000Y	Cap ASTM A105 Class 6000 ASME B16.11 NPT	
541	1				P29B-0000Z	Cap ASTM A105 Class 6000 ASME B16.11 NPT	
541	1.5				P29B-00010	Cap ASTM A105 Class 6000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P41A-000B9	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		XXS		P41A-000BA	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		XXS		P41A-000D8	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

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STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5		XXS		P41A-000D9	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

CON SWAGED NIPPLE (SNC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	SCH160	P42A-00029	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	SCH160	SCH160	P42A-0009T	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	SCH160	SCH160	P42A-0009U	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	SCH160	SCH160	P42A-0009V	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	SCH160	SCH160	P42A-0009W	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	SCH160	SCH160	P42A-0009X	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	SCH160	SCH160	P42A-000J8	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	SCH160	SCH160	P42A-000J9	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	SCH160	SCH160	P42A-000JA	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	SCH160	SCH160	P42A-000JB	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	XS	SCH160	P42A-000L9	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	

ECC SWAGED NIPPLE (SNE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	SCH160	P43A-000AM	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	SCH160	SCH160	P43A-000B4	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	SCH160	SCH160	P43A-000B5	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	SCH160	SCH160	P43A-000B6	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	SCH160	SCH160	P43A-000B7	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	SCH160	SCH160	P43A-000B8	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	SCH160	SCH160	P43A-000B9	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	SCH160	SCH160	P43A-000BA	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	SCH160	SCH160	P43A-000BB	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	SCH160	SCH160	P43A-000BC	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	XS	SCH160	P43A-000DM	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	

COUPLING (CPS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P47B-00013	Coupling ASTM A105 Class 6000 ASME B16.11 SW - SW	
1	0.75				P47B-00012	Coupling ASTM A105 Class 6000 ASME B16.11 SW - SW	
1	1				P47B-0002A	Coupling ASTM A105 Class 6000 ASME B16.11 SW - SW	
1	1.5				P47B-0002B	Coupling ASTM A105 Class 6000 ASME B16.11 SW - SW	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5 - 2.5	0.75			P31B-0137D	Outlet ASTM A105 Class 6000 MSS SP-97 SW	
1	3 - 10	0.75			P31B-007LV	Outlet ASTM A105 Class 6000 MSS SP-97 SW	
1	3 - 10	1			P31B-007LN	Outlet ASTM A105 Class 6000 MSS SP-97 SW	
1	4 - 5	1.5			P31B-004LE	Outlet ASTM A105 Class 6000 MSS SP-97 SW	
1	6 - 8	1.5			P31B-005T4	Outlet ASTM A105 Class 6000 MSS SP-97 SW	
1	10 - 18	1.5			P31B-007LF	Outlet ASTM A105 Class 6000 MSS SP-97 SW	
1	6	2	XS	SCH160	P31B-007SR	Outlet ASTM A105 MSS SP-97 BW	
1	8	2	XS	SCH160	P31B-00AHC	Outlet ASTM A105 MSS SP-97 BW	
1	10	2	XS	SCH160	P31B-00ASR	Outlet ASTM A105 MSS SP-97 BW	
1	8	3	XS	XS	P31B-009XZ	Outlet ASTM A105 MSS SP-97 BW	
1	10	3	XS	XS	P31B-009CF	Outlet ASTM A105 MSS SP-97 BW	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30B-0002D	Plug ASTM A105 ASME B16.11 NPT Round head	
1	0.75				P30B-0002E	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1				P30B-0002F	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1.5				P30B-0002G	Plug ASTM A105 ASME B16.11 NPT Round head	

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FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P61B-001DZ	Flange SW ASTM A105 Class 600 ASME B16.5 RF	
1	0.75		SCH160		P61B-001DW	Flange SW ASTM A105 Class 600 ASME B16.5 RF	
1	1		SCH160		P61B-005X5	Flange SW ASTM A105 Class 600 ASME B16.5 RF	
1	1.5		SCH160		P61B-005X6	Flange SW ASTM A105 Class 600 ASME B16.5 RF	
1	2		SCH160		P61B-003T7	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
1	3		XS		P61B-001M8	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
1	4		XS		P61B-001SH	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
1	6		XS		P61B-001T1	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
1	8		XS		P61B-001UC	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
1	10		XS		P61B-001JN	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
789	3		XS		P61B-00654	Flange WN ASTM A105 Class 900 ASME B16.5 RJ	
789	4		XS		P61B-00655	Flange WN ASTM A105 Class 900 ASME B16.5 RJ	
789	6		XS		P61B-00656	Flange WN ASTM A105 Class 900 ASME B16.5 RJ	
789	8		XS		P61B-00657	Flange WN ASTM A105 Class 900 ASME B16.5 RJ	
789	10		XS		P61B-009UV	Flange WN ASTM A105 Class 900 ASME B16.5 RJ	
797	0.5		SCH160		P61B-00658	Flange SW ASTM A105 Class 1500 ASME B16.5 RJ	
797	0.75		SCH160		P61B-00659	Flange SW ASTM A105 Class 1500 ASME B16.5 RJ	
797	1		SCH160		P61B-0065A	Flange SW ASTM A105 Class 1500 ASME B16.5 RJ	
797	1.5		SCH160		P61B-0065B	Flange SW ASTM A105 Class 1500 ASME B16.5 RJ	
797	2		SCH160		P61B-0066J	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
797	3		XS		P61B-00660	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67B-000J7	Blind flange ASTM A105 Class 600 ASME B16.5 RF	
1	0.75				P67B-000J8	Blind flange ASTM A105 Class 600 ASME B16.5 RF	
1	1				P67B-000J9	Blind flange ASTM A105 Class 600 ASME B16.5 RF	
1	1.5				P67B-000JA	Blind flange ASTM A105 Class 600 ASME B16.5 RF	
1	2				P67B-000JG	Blind flange ASTM A105 Class 600 ASME B16.5 RF	
1	3				P67B-000JK	Blind flange ASTM A105 Class 600 ASME B16.5 RF	
1	4				P67B-000JL	Blind flange ASTM A105 Class 600 ASME B16.5 RF	
1	6				P67B-000JM	Blind flange ASTM A105 Class 600 ASME B16.5 RF	
1	8				P67B-000JN	Blind flange ASTM A105 Class 600 ASME B16.5 RF	
1	10				P67B-000JB	Blind flange ASTM A105 Class 600 ASME B16.5 RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000J8	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000J9	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000JA	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000JB	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000JH	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000JL	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000JM	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	6				P73T-000JN	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	8				P73T-000JP	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	10				P73T-000JC	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
789	3				P75T-000JN	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	4				P75T-000JP	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	6				P75T-000JR	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	8				P75T-000JS	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	10				P75T-000JL	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	0.5				P75T-000JT	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	0.75				P75T-000JU	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	1				P75T-000JV	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	

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GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
797	1.5				P75T-000JW	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	2				P75T-0008A	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	3				P75T-0008E	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-6				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	8-10				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
789	1-3				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
789	4-10				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
797	0.5-2				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
797	3				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81B-000P4	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	0.75				P81B-000NX	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	1				P81B-000NY	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	1.5				P81B-000NZ	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	2				P81C-004KW	Gate valve ASTM A216 Grade WCB Class 600 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	3				P81C-004L3	Gate valve ASTM A216 Grade WCB Class 600 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	4				P81C-004L4	Gate valve ASTM A216 Grade WCB Class 600 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	6				P81C-0087J	Gate valve ASTM A216 Grade WCB Class 600 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated	
1	8				P81C-004LB	Gate valve ASTM A216 Grade WCB Class 600 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated	
1	10				P81C-004L6	Gate valve ASTM A216 Grade WCB Class 600 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated	
714	0.5				P81B-0015L	Gate valve ASTM A105 Class 800 API 602 SW - NPT Trim number 8 BB-BG-OS&Y Handwheel operated	
714	0.75				P81B-002F4	Gate valve ASTM A105 Class 800 API 602 SW - NPT Trim number 8 BB-BG-OS&Y Handwheel operated	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82B-000K0	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	0.75				P82B-000HB	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	1				P82B-000HC	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	1.5				P82B-000HD	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	2				P82C-0028Z	Globe valve ASTM A216 Grade WCB Class 600 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83B-000FX	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover	
1	0.75				P83B-000ER	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover	
1	1				P83B-000ES	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover	
1	1.5				P83B-000ET	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover	
1	2				P83C-0025Z	Check valve ASTM A216 Grade WCB Class 600 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	3				P83C-00260	Check valve ASTM A216 Grade WCB Class 600 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	4				P83C-00261	Check valve ASTM A216 Grade WCB Class 600 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	6				P83C-00262	Check valve ASTM A216 Grade WCB Class 600 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	

ORIFICE FLANGE (FO)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2		SCH160		P66B-008H1	Orifice flange WN ASTM A105 Class 600 ASME B16.36 RF NPS1/2 SW tap x 1	
1	3		XS		P66B-008G7	Orifice flange WN ASTM A105 Class 600 ASME B16.36 RF NPS1/2 SW tap x 1	
1	4		XS		P66B-008FA	Orifice flange WN ASTM A105 Class 600 ASME B16.36 RF NPS1/2 SW tap x 1	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	6		XS		P66B-008FN	Orifice flange WN ASTM A105 Class 600 ASME B16.36 RF NPS1/2 SW tap x 1	
200	2		SCH160		P66B-008H3	Orifice flange WN ASTM A105 Class 600 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	3		XS		P66B-008GE	Orifice flange WN ASTM A105 Class 600 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	4		XS		P66B-008FB	Orifice flange WN ASTM A105 Class 600 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	6		XS		P66B-008FT	Orifice flange WN ASTM A105 Class 600 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71B-000E4	Spectacle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	0.75				P71B-000DN	Spectacle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	1				P71B-000DP	Spectacle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71B-000DR	Spectacle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	2				P71B-000DS	Spectacle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	3				P71B-000DT	Spectacle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	4				P71B-000DU	Spectacle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	6				P71B-000DV	Spectacle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	

PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	8				P72B-000MF	Paddle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	10				P72B-000MA	Paddle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	

PADDLE SPACER (PS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	8				P72B-000MM	Paddle spacer ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	10				P72B-000MG	Paddle spacer ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	

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BOLT TABLE (B_D2AP , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	80	P80S-003V6		
0.75	4	0.625	90	P80S-003XF		
1	4	0.625	95	P80S-003XG		
1.5	4	0.750	110	P80S-003XK		
2	8	0.625	110	P80S-003VC		
3	8	0.750	130	P80S-003XP		
4	8	0.875	150	P80S-0041F		
6	12	1.000	175	P80S-0043P		
8	12	1.125	195	P80S-0046W		
10	16	1.250	250	P80S-004AY		

BOLT TABLE (B_D2AP_789 , STUD ASME RJ, OPTION CODE 789)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	110		R12	
0.75	4	0.750	115		R14	
1	4	0.875	130	P80S-0041B	R16	
1.5	4	1.000	140		R20	
2	8	0.875	150	P80S-0041F	R24	
3	8	0.875	150	P80S-0041F	R31	P75T-000JN
4	8	1.125	175	P80S-0046S	R37	P75T-000JP
6	12	1.125	200	P80S-0046X	R45	P75T-000JR
8	12	1.375	260	P80S-003E5	R49	P75T-000JS
10	16	1.375	275	P80S-003E8	R53	P75T-000JL

BOLT TABLE (B_D2AP_797 , STUD ASME RJ, OPTION CODE 797)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	110	P80S-003XK	R12	P75T-000JT
0.75	4	0.750	115	P80S-003XL	R14	P75T-000JU
1	4	0.875	130	P80S-0041B	R16	P75T-000JV
1.5	4	1.000	140	P80S-0043F	R20	P75T-000JW
2	8	0.875	150	P80S-0041F	R24	P75T-0008A
3	8	1.125	180	P80S-0046T	R35	P75T-0008E
4	8	1.250	230		R39	
6	12	1.375	300		R46	
8	12	1.625	345		R50	
10	12	1.875	395		R54	

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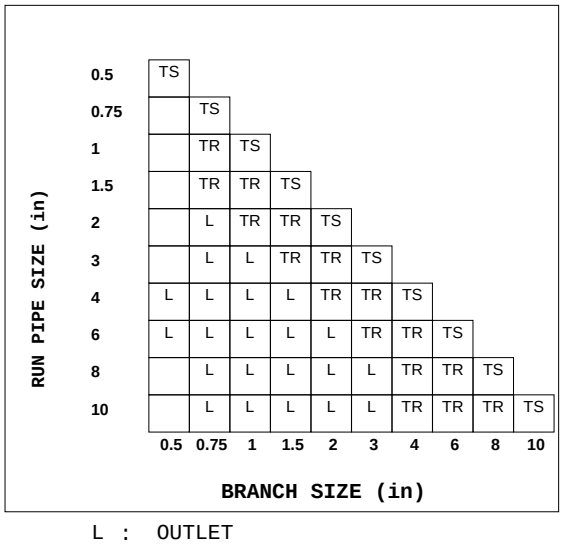
BRANCH TABLE (T_D2AP)



L : OUTLET
TS : STRAIGHT TEE
TR : REDUCING TEE

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Material : Killed CS
Rating : ASME CLASS 600
Flange Face : RF
C.A.(mm) : 3.00
Gasket : Spiral Wound
Service : PROCESS - GENERAL PROCESS NON SOUR, NON CORROSIVE
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
24	FULL PORT (V)
200	WITH JACK SCREW (FO)
541	NPT(F) (CA,L)
714	SW - NPT(F) (V)
789	CLASS 900 (B,F,G)
797	CLASS 1500 (B,F,G)
4208	45 DEGREE LATERAL STRAIGHT TEE (TLS)
4602	DISSIMILAR TYPE CHECK VALVE (XDP)

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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P01A-0078U	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE Licensor-1	
1	0.75		SCH160		P01A-0078V	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE Licensor-1	
1	1		SCH160		P01A-0078W	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE Licensor-1	
1	1.5		SCH160		P01A-0078X	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE Licensor-1	
1	2		SCH160		P01A-007A4	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Licensor-1	
1	3		XS		P01A-007HW	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Licensor-1	
1	4		XS		P01A-00790	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Licensor-1	
1	6		XS		P01A-007A7	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Licensor-1	
1	8		SCH20		P01A-007B9	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Licensor-1	
1	10		SCH20		P01A-007B4	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Licensor-1	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P02B-00078	90 degree elbow ASTM A105 Class 6000 ASME B16.11 SW Licensor-1	
1	0.75				P02B-00079	90 degree elbow ASTM A105 Class 6000 ASME B16.11 SW Licensor-1	
1	1				P02B-0007A	90 degree elbow ASTM A105 Class 6000 ASME B16.11 SW Licensor-1	
1	1.5				P02B-0007B	90 degree elbow ASTM A105 Class 6000 ASME B16.11 SW Licensor-1	
1	2		SCH160		P02A-003S8	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	3		XS		P02A-003ZM	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	4		XS		P02A-003R9	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	6		XS		P02A-003SB	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	8		SCH20		P02A-003TH	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	10		SCH20		P02A-003T9	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P03B-0006W	45 degree elbow ASTM A105 Class 6000 ASME B16.11 SW Licensor-1	
1	0.75				P03B-0006X	45 degree elbow ASTM A105 Class 6000 ASME B16.11 SW Licensor-1	
1	1				P03B-0006Y	45 degree elbow ASTM A105 Class 6000 ASME B16.11 SW Licensor-1	
1	1.5				P03B-0006Z	45 degree elbow ASTM A105 Class 6000 ASME B16.11 SW Licensor-1	
1	2		SCH160		P03A-003NX	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	3		XS		P03A-003XZ	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	4		XS		P03A-003MY	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	6		XS		P03A-003P0	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	8		SCH20		P03A-003R6	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	10		SCH20		P03A-003PY	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P21B-0006T	Straight tee ASTM A105 Class 6000 ASME B16.11 SW Licensor-1	
1	0.75				P21B-0006U	Straight tee ASTM A105 Class 6000 ASME B16.11 SW Licensor-1	
1	1				P21B-0006V	Straight tee ASTM A105 Class 6000 ASME B16.11 SW Licensor-1	
1	1.5				P21B-0006W	Straight tee ASTM A105 Class 6000 ASME B16.11 SW Licensor-1	
1	2		SCH160		P21A-0049L	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	3		XS		P21A-004HD	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	4		XS		P21A-0048N	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	6		XS		P21A-0049P	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	8		SCH20		P21A-004AT	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	10		SCH20		P21A-004AM	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	

STRAIGHT LATERAL TEE (TLS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75				P22B-00002	Straight lateral-tee ASTM A105 Class 6000 ASME B16.11 SW 60 degree Licensor-1	
1	1				P22B-0000G	Straight lateral-tee ASTM A105 Class 6000 ASME B16.11 SW 60 degree Licensor-1	
1	1.5				P22B-0000H	Straight lateral-tee ASTM A105 Class 6000 ASME B16.11 SW 60 degree Licensor-1	
1	2		SCH160		P22A-000EU	Straight lateral-tee ASTM A234 Grade WPB Seamless ASME B16.9 BW 60 degree Licensor-1	
1	3		XS		P22A-000EV	Straight lateral-tee ASTM A234 Grade WPB Seamless ASME B16.9 BW 60 degree Licensor-1	
1	4		XS		P22A-000EW	Straight lateral-tee ASTM A234 Grade WPB Seamless ASME B16.9 BW 60 degree Licensor-1	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	6		XS		P22A-000EX	Straight lateral-tee ASTM A234 Grade WPB Seamless ASME B16.9 BW 60 degree Licensor-1	
1	8		SCH20		P22A-000EY	Straight lateral-tee ASTM A234 Grade WPB Seamless ASME B16.9 BW 60 degree Licensor-1	
1	10		SCH20		P22A-000ET	Straight lateral-tee ASTM A234 Grade WPB Seamless ASME B16.9 BW 60 degree Licensor-1	
4208	0.75				P22B-00001	Straight lateral-tee ASTM A105 Class 6000 ASME B16.11 SW 45 degree Licensor-1	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75			P24B-000BP	Reducing tee ASTM A105 Class 6000 ASME B16.11 SW Licensor-1	
1	1.5	0.75			P24B-000BR	Reducing tee ASTM A105 Class 6000 ASME B16.11 SW Licensor-1	
1	1.5	1			P24B-000BS	Reducing tee ASTM A105 Class 6000 ASME B16.11 SW Licensor-1	
1	2	1	SCH160	SCH160	P24A-00L7N	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	2	1.5	SCH160	SCH160	P24A-00L7P	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	3	1.5	XS	SCH160	P24A-00L7R	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	3	2	XS	SCH160	P24A-00L7S	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	4	2	XS	SCH160	P24A-00L7T	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	4	3	XS	XS	P24A-00L7U	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	6	3	XS	XS	P24A-00L7V	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	6	4	XS	XS	P24A-00L62	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	8	4	SCH20	XS	P24A-00NXJ	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	8	6	SCH20	XS	P24A-00NXK	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	10	4	SCH20	XS	P24A-00MF8	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	10	6	SCH20	XS	P24A-00MF9	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	10	8	SCH20	SCH20	P24A-00K6A	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	XS	SCH160	P27A-00FEX	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	4	2	XS	SCH160	P27A-00FEY	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	4	3	XS	XS	P27A-00FEZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	6	3	XS	XS	P27A-00FF0	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	6	4	XS	XS	P27A-00FDZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	8	4	SCH20	XS	P27A-00HCV	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	8	6	SCH20	XS	P27A-00HCW	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	10	4	SCH20	XS	P27A-00GE4	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	10	6	SCH20	XS	P27A-00GE5	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	10	8	SCH20	SCH20	P27A-00ESF	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	XS	SCH160	P28A-00CKV	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	4	2	XS	SCH160	P28A-00CKW	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	4	3	XS	XS	P28A-00CKX	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	6	3	XS	XS	P28A-00CKY	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	6	4	XS	XS	P28A-00CJX	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	8	4	SCH20	XS	P28A-00ELJ	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	8	6	SCH20	XS	P28A-00ELK	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	10	4	SCH20	XS	P28A-00DLA	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	10	6	SCH20	XS	P28A-00DLB	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	10	8	SCH20	SCH20	P28A-00BW9	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P29B-0005C	Cap ASTM A105 Class 6000 ASME B16.11 SW Licensor-1	
1	0.75				P29B-0005D	Cap ASTM A105 Class 6000 ASME B16.11 SW Licensor-1	
1	1				P29B-0005E	Cap ASTM A105 Class 6000 ASME B16.11 SW Licensor-1	
1	1.5				P29B-0005F	Cap ASTM A105 Class 6000 ASME B16.11 SW Licensor-1	
1	2		SCH160		P29A-0033S	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	3		XS		P29A-003CM	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	

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CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	4		XS		P29A-00328	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	6		XS		P29A-0033V	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	8		SCH20		P29A-00354	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	10		SCH20		P29A-0034S	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
541	0.75				P29B-00069	Cap ASTM A105 Class 6000 ASME B16.11 NPT Licensor-1	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P41A-0017X	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Licensor-1	
1	0.75		XXS		P41A-0017Y	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Licensor-1	
1	1		XXS		P41A-0017Z	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Licensor-1	
1	1.5		XXS		P41A-00180	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Licensor-1	

CON SWAGED NIPPLE (SNC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	SCH160	P42A-000U0	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S) Licensor-1	
1	1	0.5	SCH160	SCH160	P42A-000U1	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S) Licensor-1	
1	1	0.75	SCH160	SCH160	P42A-000U2	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S) Licensor-1	
1	1.5	0.5	SCH160	SCH160	P42A-000U3	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S) Licensor-1	
1	1.5	0.75	SCH160	SCH160	P42A-000U4	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S) Licensor-1	
1	1.5	1	SCH160	SCH160	P42A-000U5	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S) Licensor-1	
1	2	0.5	SCH160	SCH160	P42A-000VF	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S) Licensor-1	
1	2	0.75	SCH160	SCH160	P42A-000VG	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S) Licensor-1	
1	2	1	SCH160	SCH160	P42A-000VH	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S) Licensor-1	
1	2	1.5	SCH160	SCH160	P42A-000VJ	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S) Licensor-1	
1	3	1.5	XS	SCH160	P42A-000VK	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S) Licensor-1	

ECC SWAGED NIPPLE (SNE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	SCH160	P43A-000K3	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S) Licensor-1	
1	1	0.5	SCH160	SCH160	P43A-000K4	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S) Licensor-1	
1	1	0.75	SCH160	SCH160	P43A-000K5	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S) Licensor-1	
1	1.5	0.5	SCH160	SCH160	P43A-000K6	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S) Licensor-1	
1	1.5	0.75	SCH160	SCH160	P43A-000K7	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S) Licensor-1	
1	1.5	1	SCH160	SCH160	P43A-000K8	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S) Licensor-1	
1	2	0.5	SCH160	SCH160	P43A-000LF	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S) Licensor-1	
1	2	0.75	SCH160	SCH160	P43A-000LG	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S) Licensor-1	
1	2	1	SCH160	SCH160	P43A-000LH	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S) Licensor-1	
1	2	1.5	SCH160	SCH160	P43A-000LJ	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S) Licensor-1	
1	3	1.5	XS	SCH160	P43A-000LK	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S) Licensor-1	

COUPLING (CPS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P47B-0007L	Coupling ASTM A105 Class 6000 ASME B16.11 SW - SW Licensor-1	
1	0.75				P47B-0007M	Coupling ASTM A105 Class 6000 ASME B16.11 SW - SW Licensor-1	
1	1				P47B-0007N	Coupling ASTM A105 Class 6000 ASME B16.11 SW - SW Licensor-1	
1	1.5				P47B-0007P	Coupling ASTM A105 Class 6000 ASME B16.11 SW - SW Licensor-1	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5 - 2.5	0.75			P31B-013AG	Outlet ASTM A105 Class 6000 MSS SP-97 SW Licensor-1	
1	3 - 10	0.75			P31B-013AH	Outlet ASTM A105 Class 6000 MSS SP-97 SW Licensor-1	
1	3 - 10	1			P31B-013AK	Outlet ASTM A105 Class 6000 MSS SP-97 SW Licensor-1	
1	4 - 5	1.5			P31B-013AM	Outlet ASTM A105 Class 6000 MSS SP-97 SW Licensor-1	
1	6 - 8	1.5			P31B-013AN	Outlet ASTM A105 Class 6000 MSS SP-97 SW Licensor-1	
1	10 - 18	1.5			P31B-013AP	Outlet ASTM A105 Class 6000 MSS SP-97 SW Licensor-1	
541	1	0.75			P31B-01367	Outlet ASTM A105 Class 6000 MSS SP-97 NPT Licensor-1	
541	1.5 - 2.5	0.75			P31B-013A7	Outlet ASTM A105 Class 6000 MSS SP-97 NPT Licensor-1	

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OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
541	3 - 10	0.75			P31B-013A8	Outlet ASTM A105 Class 6000 MSS SP-97 NPT Licensor-1	
1	6	2	XS	SCH160	P31B-00XK2	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	8	2	SCH20	SCH160	P31B-0112A	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	10	2	SCH20	SCH160	P31B-0112C	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	8	3	SCH20	XS	P31B-0112B	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	10	3	SCH20	XS	P31B-0112D	Outlet ASTM A105 MSS SP-97 BW Licensor-1	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30B-00067	Plug ASTM A105 ASME B16.11 NPT Round head Licensor-1	
1	0.75				P30B-00068	Plug ASTM A105 ASME B16.11 NPT Round head Licensor-1	
1	1				P30B-00069	Plug ASTM A105 ASME B16.11 NPT Round head Licensor-1	
1	1.5				P30B-0006A	Plug ASTM A105 ASME B16.11 NPT Round head Licensor-1	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P61B-009T9	Flange SW ASTM A105 Class 600 ASME B16.5 RF Licensor-1	
1	0.75		SCH160		P61B-009TA	Flange SW ASTM A105 Class 600 ASME B16.5 RF Licensor-1	
1	1		SCH160		P61B-009TB	Flange SW ASTM A105 Class 600 ASME B16.5 RF Licensor-1	
1	1.5		SCH160		P61B-009TC	Flange SW ASTM A105 Class 600 ASME B16.5 RF Licensor-1	
1	2		SCH160		P61B-009X5	Flange WN ASTM A105 Class 600 ASME B16.5 RF Licensor-1	
1	3		XS		P61B-00ADJ	Flange WN ASTM A105 Class 600 ASME B16.5 RF Licensor-1	
1	4		XS		P61B-009TF	Flange WN ASTM A105 Class 600 ASME B16.5 RF Licensor-1	
1	6		XS		P61B-009X8	Flange WN ASTM A105 Class 600 ASME B16.5 RF Licensor-1	
1	8		SCH20		P61B-00ABB	Flange WN ASTM A105 Class 600 ASME B16.5 RF Licensor-1	
1	10		SCH20		P61B-00BAV	Flange WN ASTM A105 Class 600 ASME B16.5 RF Licensor-1	
789	3		XS		P61B-00ADL	Flange WN ASTM A105 Class 900 ASME B16.5 RJ Licensor-1	
789	4		XS		P61B-009TH	Flange WN ASTM A105 Class 900 ASME B16.5 RJ Licensor-1	
789	6		XS		P61B-00ADA	Flange WN ASTM A105 Class 900 ASME B16.5 RJ Licensor-1	
789	8		SCH20		P61B-00BUX	Flange WN ASTM A105 Class 900 ASME B16.5 RJ Licensor-1	
789	10		SCH20		P61B-00BAW	Flange WN ASTM A105 Class 900 ASME B16.5 RJ Licensor-1	
797	0.5		SCH160		P61B-009TJ	Flange SW ASTM A105 Class 1500 ASME B16.5 RJ Licensor-1	
797	0.75		SCH160		P61B-009TK	Flange SW ASTM A105 Class 1500 ASME B16.5 RJ Licensor-1	
797	1		SCH160		P61B-009TL	Flange SW ASTM A105 Class 1500 ASME B16.5 RJ Licensor-1	
797	1.5		SCH160		P61B-009TM	Flange SW ASTM A105 Class 1500 ASME B16.5 RJ Licensor-1	
797	2		SCH160		P61B-00ADM	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ Licensor-1	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67B-002DL	Blind flange ASTM A105 Class 600 ASME B16.5 RF Licensor-1	
1	0.75				P67B-002DM	Blind flange ASTM A105 Class 600 ASME B16.5 RF Licensor-1	
1	1				P67B-002DN	Blind flange ASTM A105 Class 600 ASME B16.5 RF Licensor-1	
1	1.5				P67B-002DP	Blind flange ASTM A105 Class 600 ASME B16.5 RF Licensor-1	
1	2				P67B-002DR	Blind flange ASTM A105 Class 600 ASME B16.5 RF Licensor-1	
1	3				P67B-002DS	Blind flange ASTM A105 Class 600 ASME B16.5 RF Licensor-1	
1	4				P67B-002DT	Blind flange ASTM A105 Class 600 ASME B16.5 RF Licensor-1	
1	6				P67B-002LV	Blind flange ASTM A105 Class 600 ASME B16.5 RF Licensor-1	
1	8				P67B-002LW	Blind flange ASTM A105 Class 600 ASME B16.5 RF Licensor-1	
1	10				P67B-002LZ	Blind flange ASTM A105 Class 600 ASME B16.5 RF Licensor-1	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000J8	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000J9	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000JA	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000JB	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000JH	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

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GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3				P73T-000JL	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000JM	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	6				P73T-000JN	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	8				P73T-000JP	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	10				P73T-000JC	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
789	3				P75T-000JN	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	4				P75T-000JP	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	6				P75T-000JR	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	8				P75T-000JS	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	10				P75T-000JL	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	0.5				P75T-000JT	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	0.75				P75T-000JU	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	1				P75T-000JV	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	1.5				P75T-000JW	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	2				P75T-0008A	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-6				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	8-10				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
789	1-3				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
789	4-10				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
797	0.5-2				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81B-001CX	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated Licensor-1	
1	0.75				P81B-001CY	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated Licensor-1	
1	1				P81B-001CZ	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated Licensor-1	
1	1.5				P81B-001D0	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated Licensor-1	
1	2				P81C-004RL	Gate valve ASTM A216 Grade WCB Class 600 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated Licensor-1	
1	3				P81C-004RM	Gate valve ASTM A216 Grade WCB Class 600 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated Licensor-1	
1	4				P81C-004RN	Gate valve ASTM A216 Grade WCB Class 600 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated Licensor-1	
1	6				P81C-0092G	Gate valve ASTM A216 Grade WCB Class 600 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated Licensor-1	
1	8				P81C-0053D	Gate valve ASTM A216 Grade WCB Class 600 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated Licensor-1	
1	10				P81C-0053C	Gate valve ASTM A216 Grade WCB Class 600 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated Licensor-1	
24	0.75				P81B-002NK	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated Full bore Licensor-1	
714	0.5				P81B-002S7	Gate valve ASTM A105 Class 800 API 602 SW - NPT Trim number 8 BB-BG-OS&Y Handwheel operated Licensor-1	
714	0.75				P81B-002F5	Gate valve ASTM A105 Class 800 API 602 SW - NPT Trim number 8 BB-BG-OS&Y Handwheel operated Licensor-1	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82B-0014L	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated Licensor-1	
1	0.75				P82B-0014M	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated Licensor-1	
1	1				P82B-0014N	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated Licensor-1	
1	1.5				P82B-0014P	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated Licensor-1	
1	2				P82C-002AN	Globe valve ASTM A216 Grade WCB Class 600 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated Licensor-1	

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CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83B-000WE	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover Licensor-1	
1	0.75				P83B-000WF	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover Licensor-1	
1	1				P83B-000WG	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover Licensor-1	
1	1.5				P83B-000WH	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover Licensor-1	
1	2				P83C-0027F	Check valve ASTM A216 Grade WCB Class 600 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover Licensor-1	
1	3				P83C-0027G	Check valve ASTM A216 Grade WCB Class 600 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover Licensor-1	
1	4				P83C-0027H	Check valve ASTM A216 Grade WCB Class 600 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover Licensor-1	
1	6				P83C-002G6	Check valve ASTM A216 Grade WCB Class 600 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover Licensor-1	

DP CHECK VALVE (XDP)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
4602	6				P88C-0035A	Dual plate check valve ASTM A216 Grade WCB Class 600 API 594 Wafer-type ASME B16.5 RF Trim number 8 Internal wetted parts 13Cr Spring Inconel Retainerless-type Licensor-1	

ORIFICE FLANGE (FO)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2		SCH160		P66B-008M3	Orifice flange WN ASTM A105 Class 600 ASME B16.36 RF NPS1/2 SW tap x 1 Licensor-1	
1	3		XS		P66B-008M4	Orifice flange WN ASTM A105 Class 600 ASME B16.36 RF NPS1/2 SW tap x 1 Licensor-1	
1	4		XS		P66B-008M5	Orifice flange WN ASTM A105 Class 600 ASME B16.36 RF NPS1/2 SW tap x 1 Licensor-1	
1	6		XS		P66B-008M6	Orifice flange WN ASTM A105 Class 600 ASME B16.36 RF NPS1/2 SW tap x 1 Licensor-1	
200	2		SCH160		P66B-008M9	Orifice flange WN ASTM A105 Class 600 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw Licensor-1	
200	3		XS		P66B-008MA	Orifice flange WN ASTM A105 Class 600 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw Licensor-1	
200	4		XS		P66B-008MB	Orifice flange WN ASTM A105 Class 600 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw Licensor-1	
200	6		XS		P66B-008MC	Orifice flange WN ASTM A105 Class 600 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw Licensor-1	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71B-000E5	Spectacle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	0.75				P71B-000E6	Spectacle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	1				P71B-000E7	Spectacle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	1.5				P71B-000E8	Spectacle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	2				P71B-000E9	Spectacle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	3				P71B-000EA	Spectacle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	4				P71B-000EB	Spectacle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	6				P71B-000EC	Spectacle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF Licensor-1	

PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	8				P72B-000M9	Paddle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	10				P72B-000MS	Paddle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF Licensor-1	

PADDLE SPACER (PS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	8				P72B-000M8	Paddle spacer ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF Licensor-1	
1	10				P72B-000MR	Paddle spacer ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF Licensor-1	

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BOLT TABLE (B_D2AP01 , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	80	P80S-003V6		
0.75	4	0.625	90	P80S-003XF		
1	4	0.625	95	P80S-003XG		
1.5	4	0.750	110	P80S-003XK		
2	8	0.625	110	P80S-003VC		
3	8	0.750	130	P80S-003XP		
4	8	0.875	150	P80S-0041F		
6	12	1.000	175	P80S-0043P		
8	12	1.125	195	P80S-0046W		
10	16	1.250	250	P80S-004AY		

BOLT TABLE (B_D2AP01_789 , STUD ASME RJ, OPTION CODE 789)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	110		R12	
0.75	4	0.750	115		R14	
1	4	0.875	130	P80S-0041B	R16	
1.5	4	1.000	140		R20	
2	8	0.875	150	P80S-0041F	R24	
3	8	0.875	150	P80S-0041F	R31	P75T-000JN
4	8	1.125	175	P80S-0046S	R37	P75T-000JP
6	12	1.125	200	P80S-0046X	R45	P75T-000JR
8	12	1.375	260	P80S-003E5	R49	P75T-000JS
10	16	1.375	275	P80S-003E8	R53	P75T-000JL

BOLT TABLE (B_D2AP01_797 , STUD ASME RJ, OPTION CODE 797)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	110	P80S-003XK	R12	P75T-000JT
0.75	4	0.750	115	P80S-003XL	R14	P75T-000JU
1	4	0.875	130	P80S-0041B	R16	P75T-000JV
1.5	4	1.000	140	P80S-0043F	R20	P75T-000JW
2	8	0.875	150	P80S-0041F	R24	P75T-0008A
3	8	1.125	180		R35	
4	8	1.250	230		R39	
6	12	1.375	300		R46	
8	12	1.625	345		R50	
10	12	1.875	395		R54	

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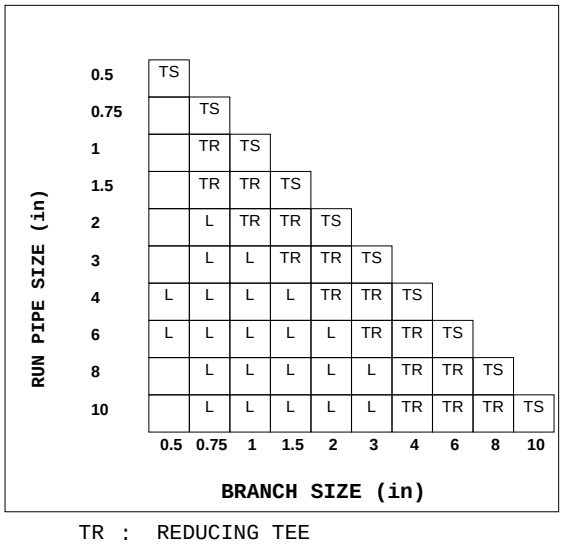
BRANCH TABLE (T_D2AP01)



TR : REDUCING TEE
L : OUTLET
TS : STRAIGHT TEE

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PIPING CLASS
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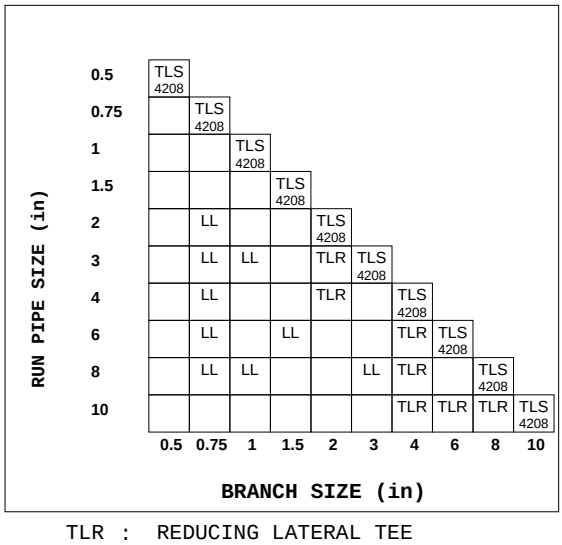
BRANCH TABLE (T_D2AP01_2)



TLR : REDUCING LATERAL TEE
TLS : STRAIGHT LATERAL TEE
LL : LATROLET

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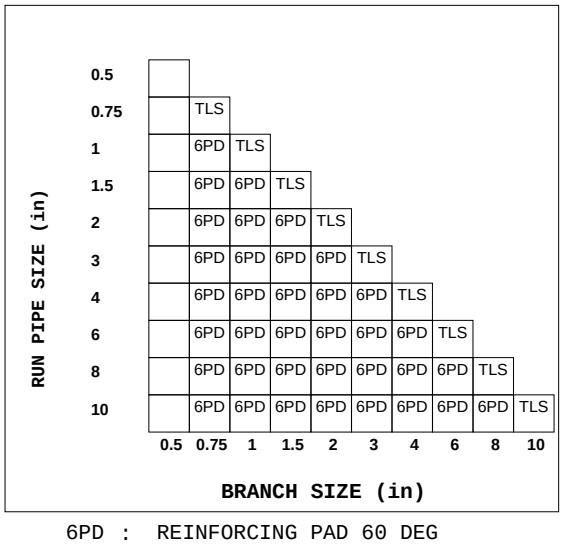
PIPING CLASS

D2AP01 REV NO. 2

BRANCH TABLE (T_D2AP01_3)



6PD : REINFORCING PAD 60 DEG
TLS : STRAIGHT LATERAL TEE

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PIPING CLASS

D2AP02 REV NO. 2

Material : Killed CS
Rating : ASME CLASS 600
Flange Face : RF
C.A.(mm) : 3.00
Gasket : Spiral Wound
Service : PROCESS - GENERAL PROCESS NON SOUR, NON CORROSIVE
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
200	WITH JACK SCREW (FO)
541	NPT(F) (CA,L)
714	SW - NPT(F) (V)
789	CLASS 900 (B,F,G)
797	CLASS 1500 (B,F,G,V)
4406	ORIFICE FLANGE WITH 3/4" SINGLE TAP (FO)
4407	ORIFICE FLANGE WITH JACK SCREW AND 3/4" SINGLE TAP (FO)

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PIPING CLASS
D2AP02 REV NO. 2

PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P01A-0010P	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	0.75		SCH160		P01A-0010R	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1		SCH160		P01A-0014M	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1.5		SCH160		P01A-0015J	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	2		SCH160		P01A-0019T	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	3		XS		P01A-000Z4	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	4		XS		P01A-000Z9	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	6		XS		P01A-000ZF	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	8		XS		P01A-000ZJ	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	10		SCH80		P01A-0010G	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	12		SCH80		P01A-0010H	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	14		SCH80		P01A-0010J	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	16		SCH80		P01A-000ZY	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	18		SCH60		P01A-009V0	Pipe ASTM A672 Grade B60 Class 32 EFW ASME B36.10M/B36.19M BE	
1	20		SCH80		P01A-00440	Pipe ASTM A671 Grade CC60 Class 22 EFW ASME B36.10M/B36.19M BE	
1	24		SCH60		P01A-009V1	Pipe ASTM A672 Grade B60 Class 32 EFW ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P02B-0001J	90 degree elbow ASTM A105 Class 6000 ASME B16.11 SW	
1	0.75				P02B-0001K	90 degree elbow ASTM A105 Class 6000 ASME B16.11 SW	
1	1				P02B-0002E	90 degree elbow ASTM A105 Class 6000 ASME B16.11 SW	
1	1.5				P02B-0002F	90 degree elbow ASTM A105 Class 6000 ASME B16.11 SW	
1	2		SCH160		P02A-000KW	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		XS		P02A-000CX	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		XS		P02A-000D3	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		XS		P02A-000DA	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		XS		P02A-000DG	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	10		SCH80		P02A-000EM	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	12		SCH80		P02A-000EN	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	14		SCH80		P02A-000EP	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	16		SCH80		P02A-000DW	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	18		SCH60		P02A-000UD	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	20		SCH80		P02A-0010Y	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	24		SCH60		P02A-002G8	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P03B-0001F	45 degree elbow ASTM A105 Class 6000 ASME B16.11 SW	
1	0.75				P03B-0001G	45 degree elbow ASTM A105 Class 6000 ASME B16.11 SW	
1	1				P03B-0002A	45 degree elbow ASTM A105 Class 6000 ASME B16.11 SW	
1	1.5				P03B-0002B	45 degree elbow ASTM A105 Class 6000 ASME B16.11 SW	
1	2		SCH160		P03A-000HU	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		XS		P03A-000AZ	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		XS		P03A-000B3	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		XS		P03A-000B8	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		XS		P03A-000BC	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	10		SCH80		P03A-000CG	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	12		SCH80		P03A-000CH	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	14		SCH80		P03A-000CJ	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	16		SCH80		P03A-000BT	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	18		SCH60		P03A-000RY	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	20		SCH80		P03A-000XE	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	24		SCH60		P03A-002DR	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P21B-0001F	Straight tee ASTM A105 Class 6000 ASME B16.11 SW	
1	0.75				P21B-0001G	Straight tee ASTM A105 Class 6000 ASME B16.11 SW	

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STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P21B-00026	Straight tee ASTM A105 Class 6000 ASME B16.11 SW	
1	1.5				P21B-00027	Straight tee ASTM A105 Class 6000 ASME B16.11 SW	
1	2		SCH160		P21A-00245	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		XS		P21A-001CR	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		XS		P21A-001CV	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6		XS		P21A-001D4	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8		XS		P21A-001D6	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10		SCH80		P21A-001HC	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12		SCH80		P21A-001K0	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14		SCH80		P21A-001LM	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16		SCH80		P21A-001F5	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18		SCH60		P21A-001PM	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20		SCH80		P21A-00242	Straight tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	24		SCH60		P21A-001UJ	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75			P24B-00030	Reducing tee ASTM A105 Class 6000 ASME B16.11 SW	
1	1.5	0.75			P24B-00032	Reducing tee ASTM A105 Class 6000 ASME B16.11 SW	
1	1.5	1			P24B-0004J	Reducing tee ASTM A105 Class 6000 ASME B16.11 SW	
1	2	1	SCH160	SCH160	P24A-00AEU	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	SCH160	SCH160	P24A-003AX	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	XS	SCH160	P24A-00GNV	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	XS	SCH160	P24A-00560	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	XS	SCH160	P24A-00561	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	XS	XS	P24A-0024A	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	XS	XS	P24A-0023F	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	XS	XS	P24A-00243	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	XS	XS	P24A-0023T	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	XS	XS	P24A-0024M	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	SCH80	XS	P24A-002DV	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	SCH80	XS	P24A-002B4	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	SCH80	XS	P24A-002BS	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	SCH80	XS	P24A-002C2	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH80	XS	P24A-002CP	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH80	SCH80	P24A-002C0	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	SCH80	XS	P24A-002E6	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	SCH80	XS	P24A-002CL	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	SCH80	SCH80	P24A-002B9	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	SCH80	SCH80	P24A-002BZ	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	6	SCH80	XS	P24A-00GSX	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	SCH80	XS	P24A-0029Z	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	SCH80	SCH80	P24A-002EU	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	SCH80	SCH80	P24A-0027Z	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	SCH80	SCH80	P24A-00295	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	8	SCH60	XS	P24A-004X2	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	10	SCH60	SCH80	P24A-0050A	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	12	SCH60	SCH80	P24A-0051M	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	14	SCH60	SCH80	P24A-004Z8	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	16	SCH60	SCH80	P24A-004WW	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	8	SCH80	XS	P24A-00GSY	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	20	10	SCH80	SCH80	P24A-003AG	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	20	12	SCH80	SCH80	P24A-003AF	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	20	14	SCH80	SCH80	P24A-003AE	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	20	16	SCH80	SCH80	P24A-003AD	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	20	18	SCH80	SCH60	P24A-00RVX	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	24	10	SCH60	SCH80	P24A-0050J	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	12	SCH60	SCH80	P24A-004YC	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	14	SCH60	SCH80	P24A-00519	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	

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PIPING CLASS
D2AP02 REV NO. 2

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	24	16	SCH60	SCH80	P24A-004WZ	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	18	SCH60	SCH60	P24A-004WV	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	20	SCH60	SCH80	P24A-00RVY	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	XS	SCH160	P27A-0037V	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	XS	SCH160	P27A-0037W	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	XS	XS	P27A-001EP	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	XS	XS	P27A-001DM	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	XS	XS	P27A-001EB	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	XS	XS	P27A-001E3	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	XS	XS	P27A-001EY	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	SCH80	XS	P27A-001JW	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	SCH80	XS	P27A-001KL	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	SCH80	XS	P27A-001L0	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	SCH80	XS	P27A-001KS	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH80	XS	P27A-001L2	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH80	SCH80	P27A-001JY	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	SCH80	XS	P27A-001L1	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	SCH80	XS	P27A-001L8	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	SCH80	SCH80	P27A-001JX	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	SCH80	SCH80	P27A-001KK	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	SCH80	XS	P27A-001HW	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	SCH80	SCH80	P27A-001HL	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	SCH80	SCH80	P27A-001J2	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	SCH80	SCH80	P27A-001JA	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	10	SCH60	SCH80	P27A-001LR	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	12	SCH60	SCH80	P27A-001HZ	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	14	SCH60	SCH80	P27A-001J8	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	16	SCH60	SCH80	P27A-001HU	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	12	SCH80	SCH80	P27A-00255	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	20	14	SCH80	SCH80	P27A-00254	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	20	16	SCH80	SCH80	P27A-00253	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	20	18	SCH80	SCH60	P27A-00K3N	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	24	16	SCH60	SCH80	P27A-001HJ	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	18	SCH60	SCH60	P27A-001J0	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	20	SCH60	SCH80	P27A-00K3P	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	XS	SCH160	P28A-0037B	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	XS	SCH160	P28A-0037C	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	XS	XS	P28A-001F8	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	XS	XS	P28A-001DU	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	XS	XS	P28A-001ER	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	XS	XS	P28A-001EK	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	XS	XS	P28A-001FT	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	SCH80	XS	P28A-001JR	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	SCH80	XS	P28A-001KM	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	SCH80	XS	P28A-001KU	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	SCH80	XS	P28A-001KN	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH80	XS	P28A-001L0	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH80	SCH80	P28A-001JX	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	SCH80	XS	P28A-001KZ	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	SCH80	XS	P28A-001L1	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	SCH80	SCH80	P28A-001JV	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	SCH80	SCH80	P28A-001KH	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	SCH80	XS	P28A-001J1	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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PIPING CLASS
D2AP02 REV NO. 2

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	16	10	SCH80	SCH80	P28A-001HM	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	SCH80	SCH80	P28A-001J6	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	SCH80	SCH80	P28A-001HR	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	10	SCH60	SCH80	P28A-001HE	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	12	SCH60	SCH80	P28A-001J3	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	14	SCH60	SCH80	P28A-001HN	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	16	SCH60	SCH80	P28A-001J0	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	12	SCH80	SCH80	P28A-0024K	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	20	14	SCH80	SCH80	P28A-0024J	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	20	16	SCH80	SCH80	P28A-0024H	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	20	18	SCH80	SCH60	P28A-00GD1	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	24	16	SCH60	SCH80	P28A-001HJ	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	18	SCH60	SCH60	P28A-001J4	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	20	SCH60	SCH80	P28A-00GD2	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P29B-0002F	Cap ASTM A105 Class 6000 ASME B16.11 SW	
1	0.75				P29B-0002G	Cap ASTM A105 Class 6000 ASME B16.11 SW	
1	1				P29B-0002D	Cap ASTM A105 Class 6000 ASME B16.11 SW	
1	1.5				P29B-0002E	Cap ASTM A105 Class 6000 ASME B16.11 SW	
1	2		SCH160		P29A-000HR	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		XS		P29A-000AT	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		XS		P29A-000B9	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6		XS		P29A-000BF	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8		XS		P29A-000BL	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10		SCH80		P29A-000C3	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12		SCH80		P29A-000C5	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14		SCH80		P29A-000C7	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16		SCH80		P29A-000C1	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18		SCH60		P29A-000C2	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20		SCH80		P29A-000HM	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	24		SCH60		P29A-000BY	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
541	0.75				P29B-0000Y	Cap ASTM A105 Class 6000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P41A-000B9	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		XXS		P41A-000BA	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		XXS		P41A-000D8	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		XXS		P41A-000D9	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

CON SWAGED NIPPLE (SNC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	SCH160	P42A-00029	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	SCH160	SCH160	P42A-0009T	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	SCH160	SCH160	P42A-0009U	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	SCH160	SCH160	P42A-0009V	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	SCH160	SCH160	P42A-0009W	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	SCH160	SCH160	P42A-0009X	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	SCH160	SCH160	P42A-000J8	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	SCH160	SCH160	P42A-000J9	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	SCH160	SCH160	P42A-000JA	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	SCH160	SCH160	P42A-000JB	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	XS	SCH160	P42A-000L9	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	

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ECC SWAGED NIPPLE (SNE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	SCH160	P43A-000AM	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	SCH160	SCH160	P43A-000B4	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	SCH160	SCH160	P43A-000B5	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	SCH160	SCH160	P43A-000B6	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	SCH160	SCH160	P43A-000B7	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	SCH160	SCH160	P43A-000B8	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	SCH160	SCH160	P43A-000B9	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	SCH160	SCH160	P43A-000BA	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	SCH160	SCH160	P43A-000BB	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	SCH160	SCH160	P43A-000BC	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	XS	SCH160	P43A-000DM	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	

COUPLING (CPS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P47B-00013	Coupling ASTM A105 Class 6000 ASME B16.11 SW - SW	
1	0.75				P47B-00012	Coupling ASTM A105 Class 6000 ASME B16.11 SW - SW	
1	1				P47B-0002A	Coupling ASTM A105 Class 6000 ASME B16.11 SW - SW	
1	1.5				P47B-0002B	Coupling ASTM A105 Class 6000 ASME B16.11 SW - SW	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5 - 2.5	0.75			P31B-0137D	Outlet ASTM A105 Class 6000 MSS SP-97 SW	
1	3 - 10	0.75			P31B-007LV	Outlet ASTM A105 Class 6000 MSS SP-97 SW	
1	12 and larger	0.75			P31B-0136N	Outlet ASTM A105 Class 6000 MSS SP-97 SW	
1	3 - 10	1			P31B-007LN	Outlet ASTM A105 Class 6000 MSS SP-97 SW	
1	12 and larger	1			P31B-0136P	Outlet ASTM A105 Class 6000 MSS SP-97 SW	
1	4 - 5	1.5			P31B-004LE	Outlet ASTM A105 Class 6000 MSS SP-97 SW	
1	6 - 8	1.5			P31B-005T4	Outlet ASTM A105 Class 6000 MSS SP-97 SW	
1	10 - 18	1.5			P31B-007LF	Outlet ASTM A105 Class 6000 MSS SP-97 SW	
1	20 and larger	1.5			P31B-0137E	Outlet ASTM A105 Class 6000 MSS SP-97 SW	
541	1	0.75			P31B-005HL	Outlet ASTM A105 Class 6000 MSS SP-97 NPT	
541	1.5 - 2.5	0.75			P31B-0137F	Outlet ASTM A105 Class 6000 MSS SP-97 NPT	
541	3 - 10	0.75			P31B-007KP	Outlet ASTM A105 Class 6000 MSS SP-97 NPT	
541	12 and larger	0.75			P31B-0138A	Outlet ASTM A105 Class 6000 MSS SP-97 NPT	
1	6	2	XS	SCH160	P31B-007SR	Outlet ASTM A105 MSS SP-97 BW	
1	8	2	XS	SCH160	P31B-00AHC	Outlet ASTM A105 MSS SP-97 BW	
1	10	2	SCH80	SCH160	P31B-006YE	Outlet ASTM A105 MSS SP-97 BW	
1	12	2	SCH80	SCH160	P31B-006YH	Outlet ASTM A105 MSS SP-97 BW	
1	14	2	SCH80	SCH160	P31B-006WX	Outlet ASTM A105 MSS SP-97 BW	
1	16	2	SCH80	SCH160	P31B-006ZZ	Outlet ASTM A105 MSS SP-97 BW	
1	18	2	SCH60	SCH160	P31B-00C16	Outlet ASTM A105 MSS SP-97 BW	
1	20	2	SCH80	SCH160	P31B-009EU	Outlet ASTM A105 MSS SP-97 BW	
1	24	2	SCH60	SCH160	P31B-0098G	Outlet ASTM A105 MSS SP-97 BW	
1	8	3	XS	XS	P31B-009XZ	Outlet ASTM A105 MSS SP-97 BW	
1	10	3	SCH80	XS	P31B-009CH	Outlet ASTM A105 MSS SP-97 BW	
1	12	3	SCH80	XS	P31B-0096G	Outlet ASTM A105 MSS SP-97 BW	
1	14	3	SCH80	XS	P31B-0090M	Outlet ASTM A105 MSS SP-97 BW	
1	16	3	SCH80	XS	P31B-008UF	Outlet ASTM A105 MSS SP-97 BW	
1	18	3	SCH60	XS	P31B-008ME	Outlet ASTM A105 MSS SP-97 BW	
1	20	3	SCH80	XS	P31B-008F5	Outlet ASTM A105 MSS SP-97 BW	
1	24	3	SCH60	XS	P31B-00891	Outlet ASTM A105 MSS SP-97 BW	
1	12	4	SCH80	XS	P31B-008ZS	Outlet ASTM A105 MSS SP-97 BW	
1	14	4	SCH80	XS	P31B-008YJ	Outlet ASTM A105 MSS SP-97 BW	
1	16	4	SCH80	XS	P31B-008LN	Outlet ASTM A105 MSS SP-97 BW	
1	18	4	SCH60	XS	P31B-008K7	Outlet ASTM A105 MSS SP-97 BW	
1	20	4	SCH80	XS	P31B-008CZ	Outlet ASTM A105 MSS SP-97 BW	
1	24	4	SCH60	XS	P31B-0086T	Outlet ASTM A105 MSS SP-97 BW	
1	18	6	SCH60	XS	P31B-008RT	Outlet ASTM A105 MSS SP-97 BW	
1	20	6	SCH80	XS	P31B-008K5	Outlet ASTM A105 MSS SP-97 BW	

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OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	24	6	SCH60	XS	P31B-008J9	Outlet ASTM A105 MSS SP-97 BW	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30B-0002D	Plug ASTM A105 ASME B16.11 NPT Round head	
1	0.75				P30B-0002E	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1				P30B-0002F	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1.5				P30B-0002G	Plug ASTM A105 ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P61B-001DZ	Flange SW ASTM A105 Class 600 ASME B16.5 RF	
1	0.75		SCH160		P61B-001DW	Flange SW ASTM A105 Class 600 ASME B16.5 RF	
1	1		SCH160		P61B-005X5	Flange SW ASTM A105 Class 600 ASME B16.5 RF	
1	1.5		SCH160		P61B-005X6	Flange SW ASTM A105 Class 600 ASME B16.5 RF	
1	2		SCH160		P61B-003T7	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
1	3		XS		P61B-001M8	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
1	4		XS		P61B-001SH	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
1	6		XS		P61B-001T1	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
1	8		XS		P61B-001UC	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
1	10		SCH80		P61B-001DX	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
1	12		SCH80		P61B-001F8	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
1	14		SCH80		P61B-001FP	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
1	16		SCH80		P61B-001KD	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
1	18		SCH60		P61B-001KS	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
1	20		SCH80		P61B-00687	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
1	24		SCH60		P61B-001NN	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
789	3		XS		P61B-00654	Flange WN ASTM A105 Class 900 ASME B16.5 RJ	
789	4		XS		P61B-00655	Flange WN ASTM A105 Class 900 ASME B16.5 RJ	
789	6		XS		P61B-00656	Flange WN ASTM A105 Class 900 ASME B16.5 RJ	
789	8		XS		P61B-00657	Flange WN ASTM A105 Class 900 ASME B16.5 RJ	
789	10		SCH80		P61B-00688	Flange WN ASTM A105 Class 900 ASME B16.5 RJ	
789	12		SCH80		P61B-0068F	Flange WN ASTM A105 Class 900 ASME B16.5 RJ	
789	14		SCH80		P61B-00689	Flange WN ASTM A105 Class 900 ASME B16.5 RJ	
789	16		SCH80		P61B-0068M	Flange WN ASTM A105 Class 900 ASME B16.5 RJ	
789	18		SCH60		P61B-00ACA	Flange WN ASTM A105 Class 900 ASME B16.5 RJ	
789	20		SCH80		P61B-0068A	Flange WN ASTM A105 Class 900 ASME B16.5 RJ	
789	24		SCH60		P61B-00ACB	Flange WN ASTM A105 Class 900 ASME B16.5 RJ	
797	0.5		SCH160		P61B-00658	Flange SW ASTM A105 Class 1500 ASME B16.5 RJ	
797	0.75		SCH160		P61B-00659	Flange SW ASTM A105 Class 1500 ASME B16.5 RJ	
797	1		SCH160		P61B-0065A	Flange SW ASTM A105 Class 1500 ASME B16.5 RJ	
797	1.5		SCH160		P61B-0065B	Flange SW ASTM A105 Class 1500 ASME B16.5 RJ	
797	2		SCH160		P61B-0066J	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67B-000J7	Blind flange ASTM A105 Class 600 ASME B16.5 RF	
1	0.75				P67B-000J8	Blind flange ASTM A105 Class 600 ASME B16.5 RF	
1	1				P67B-000J9	Blind flange ASTM A105 Class 600 ASME B16.5 RF	
1	1.5				P67B-000JA	Blind flange ASTM A105 Class 600 ASME B16.5 RF	
1	2				P67B-000JG	Blind flange ASTM A105 Class 600 ASME B16.5 RF	
1	3				P67B-000JK	Blind flange ASTM A105 Class 600 ASME B16.5 RF	
1	4				P67B-000JL	Blind flange ASTM A105 Class 600 ASME B16.5 RF	
1	6				P67B-000JM	Blind flange ASTM A105 Class 600 ASME B16.5 RF	
1	8				P67B-000JN	Blind flange ASTM A105 Class 600 ASME B16.5 RF	
1	10				P67B-000JB	Blind flange ASTM A105 Class 600 ASME B16.5 RF	
1	12				P67B-000JC	Blind flange ASTM A105 Class 600 ASME B16.5 RF	
1	14				P67B-000JD	Blind flange ASTM A105 Class 600 ASME B16.5 RF	
1	16				P67B-000JE	Blind flange ASTM A105 Class 600 ASME B16.5 RF	

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BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	18				P67B-000JF	Blind flange ASTM A105 Class 600 ASME B16.5 RF	
1	20				P67B-000JH	Blind flange ASTM A105 Class 600 ASME B16.5 RF	
1	24				P67B-000JJ	Blind flange ASTM A105 Class 600 ASME B16.5 RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000J8	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000J9	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000JA	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000JB	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000JH	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000JL	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000JM	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	6				P73T-000JN	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	8				P73T-000JP	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	10				P73T-000JC	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	12				P73T-000JD	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	14				P73T-000JE	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	16				P73T-000JF	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	18				P73T-000JG	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	20				P73T-000JJ	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	24				P73T-000JK	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
789	3				P75T-000JN	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	4				P75T-000JP	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	6				P75T-000JR	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	8				P75T-000JS	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	10				P75T-000JL	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	12				P75T-000JM	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	14				P75T-000MJ	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	16				P75T-000MK	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	18				P75T-000N8	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	20				P75T-000N7	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	24				P75T-000N9	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	0.5				P75T-000JT	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	0.75				P75T-000JU	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	1				P75T-000JV	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	1.5				P75T-000JW	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	2				P75T-0008A	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-6				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	8-24				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
789	1-3				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
789	4-24				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
797	0.5-2				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81B-000P4	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	0.75				P81B-000NX	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	

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GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P81B-000NY	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	1.5				P81B-000NZ	Gate valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	2				P81C-004KW	Gate valve ASTM A216 Grade WCB Class 600 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	3				P81C-004L3	Gate valve ASTM A216 Grade WCB Class 600 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	4				P81C-004L4	Gate valve ASTM A216 Grade WCB Class 600 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	6				P81C-0087J	Gate valve ASTM A216 Grade WCB Class 600 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated	
1	8				P81C-004LB	Gate valve ASTM A216 Grade WCB Class 600 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated	
1	10				P81C-004L6	Gate valve ASTM A216 Grade WCB Class 600 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated	
1	12				P81C-004L7	Gate valve ASTM A216 Grade WCB Class 600 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated	
1	14				P81C-004L8	Gate valve ASTM A216 Grade WCB Class 600 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated	
1	16				P81C-004L9	Gate valve ASTM A216 Grade WCB Class 600 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated	
1	18				P81C-00529	Gate valve ASTM A216 Grade WCB Class 600 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated	
1	20				P81C-004LA	Gate valve ASTM A216 Grade WCB Class 600 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated	
1	24				P81C-005A9	Gate valve ASTM A216 Grade WCB Class 600 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Gear operated	
714	0.5				P81B-0015L	Gate valve ASTM A105 Class 800 API 602 SW - NPT Trim number 8 BB-BG-OS&Y Handwheel operated	
714	0.75				P81B-002F4	Gate valve ASTM A105 Class 800 API 602 SW - NPT Trim number 8 BB-BG-OS&Y Handwheel operated	
797	0.75				P81B-0021P	Gate valve ASTM A105 Class 1500 API 602 BW Sch160 Trim number 8 WB-BG-OS&Y Handwheel operated	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82B-000K0	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	0.75				P82B-000HB	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	1				P82B-000HC	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	1.5				P82B-000HD	Globe valve ASTM A105 Class 800 API 602 SW Trim number 8 BB-BG-OS&Y Handwheel operated	
1	2				P82C-0028Z	Globe valve ASTM A216 Grade WCB Class 600 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	3				P82C-00293	Globe valve ASTM A216 Grade WCB Class 600 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83B-000FX	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover	
1	0.75				P83B-000ER	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover	
1	1				P83B-000ES	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover	
1	1.5				P83B-000ET	Check valve ASTM A105 Class 800 API 602 SW Trim number 8 Lift-type Bolted cover	
1	2				P83C-0025Z	Check valve ASTM A216 Grade WCB Class 600 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	3				P83C-00260	Check valve ASTM A216 Grade WCB Class 600 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	4				P83C-00261	Check valve ASTM A216 Grade WCB Class 600 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	6				P83C-00262	Check valve ASTM A216 Grade WCB Class 600 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	

ORIFICE FLANGE (FO)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2		SCH160		P66B-008H1	Orifice flange WN ASTM A105 Class 600 ASME B16.36 RF NPS1/2 SW tap x 1	
1	3		XS		P66B-008G7	Orifice flange WN ASTM A105 Class 600 ASME B16.36 RF NPS1/2 SW tap x 1	
1	4		XS		P66B-008FA	Orifice flange WN ASTM A105 Class 600 ASME B16.36 RF NPS1/2 SW tap x 1	
1	6		XS		P66B-008FN	Orifice flange WN ASTM A105 Class 600 ASME B16.36 RF NPS1/2 SW tap x 1	
200	2		SCH160		P66B-008H3	Orifice flange WN ASTM A105 Class 600 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	3		XS		P66B-008GE	Orifice flange WN ASTM A105 Class 600 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	4		XS		P66B-008FB	Orifice flange WN ASTM A105 Class 600 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	6		XS		P66B-008FT	Orifice flange WN ASTM A105 Class 600 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
4406	3		XS		P66B-008VA	Orifice flange WN ASTM A105 Class 600 ASME B16.36 RF NPS3/4 SW tap x 1	
4407	3		XS		P66B-008VB	Orifice flange WN ASTM A105 Class 600 ASME B16.36 RF NPS3/4 SW tap x 1 with Jack screw	

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SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71B-000E4	Spectacle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	0.75				P71B-000DN	Spectacle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	1				P71B-000DP	Spectacle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71B-000DR	Spectacle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	2				P71B-000DS	Spectacle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	3				P71B-000DT	Spectacle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	4				P71B-000DU	Spectacle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	6				P71B-000DV	Spectacle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	

PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	8				P72B-000MF	Paddle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	10				P72B-000MA	Paddle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	12				P72B-000M6	Paddle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	14				P72B-000MB	Paddle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	16				P72B-000MC	Paddle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	18				P72B-000MD	Paddle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	20				P72B-000ME	Paddle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	24				P72B-000MP	Paddle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	

PADDLE SPACER (PS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	8				P72B-000MM	Paddle spacer ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	10				P72B-000MG	Paddle spacer ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	12				P72B-000M7	Paddle spacer ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	14				P72B-000MH	Paddle spacer ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	16				P72B-000MJ	Paddle spacer ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	18				P72B-000MK	Paddle spacer ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	20				P72B-000ML	Paddle spacer ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	24				P72B-000MN	Paddle spacer ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	

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BOLT TABLE (B_D2AP02 , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	80	P80S-003V6		
0.75	4	0.625	90	P80S-003XF		
1	4	0.625	95	P80S-003XG		
1.5	4	0.750	110	P80S-003XK		
2	8	0.625	110	P80S-003VC		
3	8	0.750	130	P80S-003XP		
4	8	0.875	150	P80S-0041F		
6	12	1.000	175	P80S-0043P		
8	12	1.125	195	P80S-0046W		
10	16	1.250	250	P80S-004AY		
12	20	1.250	255	P80S-004AZ		
14	20	1.375	270	P80S-003E7		
16	20	1.500	295	P80S-003FL		
18	20	1.625	320	P80S-005TT		
20	24	1.625	335	P80S-005TW		
24	24	1.875	380	P80S-008P4		

BOLT TABLE (B_D2AP02_789 , STUD ASME RJ, OPTION CODE 789)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	110		R12	
0.75	4	0.750	115		R14	
1	4	0.875	130	P80S-0041B	R16	
1.5	4	1.000	140		R20	
2	8	0.875	150	P80S-0041F	R24	
3	8	0.875	150	P80S-0041F	R31	P75T-000JN
4	8	1.125	175	P80S-0046S	R37	P75T-000JP
6	12	1.125	200	P80S-0046X	R45	P75T-000JR
8	12	1.375	260	P80S-003E5	R49	P75T-000JS
10	16	1.375	275	P80S-003E8	R53	P75T-000JL
12	20	1.375	295	P80S-003EC	R57	P75T-000JM
14	20	1.500	325	P80S-008N3	R62	P75T-000MJ
16	20	1.625	340	P80S-005TX	R66	P75T-000MK
18	20	1.875	390	P80S-008P6	R70	P75T-000N8
20	20	2.000	415	P80S-005VG	R74	P75T-000N7
24	20	2.500	525	P80S-00P1W	R78	P75T-000N9

BOLT TABLE (B_D2AP02_797 , STUD ASME RJ, OPTION CODE 797)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	110	P80S-003XK	R12	P75T-000JT
0.75	4	0.750	115	P80S-003XL	R14	P75T-000JU
1	4	0.875	130	P80S-0041B	R16	P75T-000JV
1.5	4	1.000	140	P80S-0043F	R20	P75T-000JW
2	8	0.875	150	P80S-0041F	R24	P75T-0008A
3	8	1.125	180		R35	
4	8	1.250	230		R39	
6	12	1.375	300		R46	
8	12	1.625	345		R50	
10	12	1.875	395		R54	
12	16	2.000	445		R58	
14	16	2.250	490		R63	
16	16	2.500	540		R67	
18	16	2.750	590		R71	
20	16	3.000	650		R75	
24	16	3.500	745		R79	

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BRANCH TABLE (T_D2AP02)

RUN PIPE SIZE (in) \ BRANCH SIZE (in)	0.5	0.75	1	1.5	2	3	4	6	8	10	12	14	16	18	20	24
0.5	TS															
0.75		TS														
1		TR	TS													
1.5		TR	TR	TS												
2		L	TR	TR	TS											
3		L	L	TR	TR	TS										
4	L	L	L	L	TR	TR	TS									
6	L	L	L	L	L	TR	TR	TS								
8		L	L	L	L	L	TR	TR	TS							
10		L	L	L	L	L	TR	TR	TR	TS						
12		L	L	L	L	L	L	TR	TR	TR	TS					
14		L	L	L	L	L	L	TR	TR	TR	TR	TS				
16		L	L	L	L	L	L	TR	TR	TR	TR	TR	TS			
18		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TS		
20		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TR	TS	
24		L	L	L	L	L	L	L	9PD	TR	TR	TR	TR	TR	TR	TS

L : OUTLET
TR : REDUCING TEE
TS : STRAIGHT TEE
9PD : REINFORCING PAD 90 DEG

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PIPING CLASS

D2AQ01 REV NO. 2

Material : Killed CS
Rating : ASME CLASS 600
Flange Face : RF
C.A.(mm) : 3.00
Gasket : Spiral Wound
Service : PROCESS -WET LOW SEVERITY SOUR SERVICE SUBJECT TO NACE
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
5	BOLTING CONFIRMING TO B7M / 2HM SHALL BE USED UNDER CONDITIONS (A) DIRECT EXPOSURE TO SOUR ENVIRONMENTS (B) WHEN THE BOLTING WILL BE BURIED OR INSULATED
27	PWHT OF CARBON STEEL PIPING IN WET H2S, CAUSTIC AND AMINE SERVICES SHALL BE IN ACCORDANCE WITH SECTION 10.2, 10.3, AND 10.4 OF PROJECT SPECIFICATION 3550-8440-SP-0002 MATERIALS REQUIREMENTS FOR PRESSURISED EQUIPMENT AND PIPING. FOR CAUSTIC AND AMINE SERVICE THE FOLLOWING SHALL APPLY: - PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF ALL SITE PIPING FABRICATION WELDS IS REQUIRED FOR ALL WALL THICKNESSES. FOR MODERATE AND SEVERE WET H2S SERVICE THE FOLLOWING SHALL APPLY: PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF SITE FABRICATION CIRCUMFERENTIAL OR BRANCH WELDS IS NOT REQUIRED IF WELDS ARE MULTIPASS AND IN ACCORDANCE WITH PARA 10.2.12 OF PROJECT SPECIFICATION 3550-8440-SP-0002. FOR SERVICES MEETING THE WET H2S CRITERIA AND CAUSTIC OR AMINE CRITERIA THE MORE STRINGENT PWHT REQUIREMENT SHALL GOVERN.

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
200	WITH JACK SCREW (FO)
541	NPT(F) (CA,F)
789	CLASS 900 (B,F,G)
797	CLASS 1500 (B,F,G)
4608	VALVE WITH NIPPLES (V)

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PIPING CLASS
D2AQ01 REV NO. 2

PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P01A-0079G	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE Moderate wet H2S service Licensor-1	
1	0.75		SCH160		P01A-0079H	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE Moderate wet H2S service Licensor-1	
1	1		SCH160		P01A-0079J	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE Moderate wet H2S service Licensor-1	
1	1.5		SCH160		P01A-0079K	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE Moderate wet H2S service Licensor-1	
1	2		SCH160		P01A-0079M	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Moderate wet H2S service Licensor-1	
1	3		XS		P01A-0079N	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Moderate wet H2S service Licensor-1	
1	4		XS		P01A-0079P	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Moderate wet H2S service Licensor-1	
1	6		XS		P01A-0079R	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Moderate wet H2S service Licensor-1	
1	8		STD		P01A-007CR	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Moderate wet H2S service Licensor-1	
1	10		STD		P01A-007CG	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Moderate wet H2S service Licensor-1	
1	12		SCH30		P01A-007CT	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Moderate wet H2S service Licensor-1	
1	14		SCH20		P01A-007CU	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Moderate wet H2S service Licensor-1	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P02A-003RM	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Moderate wet H2S service Licensor-1	
1	0.75		SCH160		P02A-003RN	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Moderate wet H2S service Licensor-1	
1	1		SCH160		P02A-003RP	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Moderate wet H2S service Licensor-1	
1	1.5		SCH160		P02A-003RR	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Moderate wet H2S service Licensor-1	
1	2		SCH160		P02A-003RT	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Moderate wet H2S service Licensor-1	
1	3		XS		P02A-003RU	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Moderate wet H2S service Licensor-1	
1	4		XS		P02A-003RV	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Moderate wet H2S service Licensor-1	
1	6		XS		P02A-003RW	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Moderate wet H2S service Licensor-1	
1	8		STD		P02A-003UT	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Moderate wet H2S service Licensor-1	
1	10		STD		P02A-003UJ	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Moderate wet H2S service Licensor-1	
1	12		SCH30		P02A-003UV	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Moderate wet H2S service Licensor-1	
1	14		SCH20		P02A-003UW	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Moderate wet H2S service Licensor-1	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P03A-003NA	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Moderate wet H2S service Licensor-1	
1	0.75		SCH160		P03A-003NB	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Moderate wet H2S service Licensor-1	
1	1		SCH160		P03A-003NC	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Moderate wet H2S service Licensor-1	
1	1.5		SCH160		P03A-003ND	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Moderate wet H2S service Licensor-1	
1	2		SCH160		P03A-003NF	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Moderate wet H2S service Licensor-1	
1	3		XS		P03A-003NG	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Moderate wet H2S service Licensor-1	
1	4		XS		P03A-003NH	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Moderate wet H2S service Licensor-1	
1	6		XS		P03A-003NJ	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Moderate wet H2S service Licensor-1	
1	8		STD		P03A-003SF	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Moderate wet H2S service Licensor-1	
1	10		STD		P03A-003S7	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Moderate wet H2S service Licensor-1	
1	12		SCH30		P03A-003SH	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Moderate wet H2S service Licensor-1	
1	14		SCH20		P03A-003SJ	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Moderate wet H2S service Licensor-1	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P21A-00491	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	0.75		SCH160		P21A-00492	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	1		SCH160		P21A-00493	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	1.5		SCH160		P21A-00494	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	2		SCH160		P21A-00496	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	

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STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3		XS		P21A-00497	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	4		XS		P21A-00498	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	6		XS		P21A-00499	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	8		STD		P21A-004C8	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	10		STD		P21A-004C0	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	12		SCH30		P21A-004CA	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	14		SCH20		P21A-004CB	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75	SCH160	SCH160	P24A-00K26	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	1.5	0.75	SCH160	SCH160	P24A-00K27	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	1.5	1	SCH160	SCH160	P24A-00K28	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	2	1	SCH160	SCH160	P24A-00K29	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	2	1.5	SCH160	SCH160	P24A-00K2A	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	3	1.5	XS	SCH160	P24A-00K2B	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	3	2	XS	SCH160	P24A-00K2C	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	4	2	XS	SCH160	P24A-00K2D	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	4	3	XS	XS	P24A-00K2E	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	6	3	XS	XS	P24A-00K2F	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	6	4	XS	XS	P24A-00K2G	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	8	4	STD	XS	P24A-00NX9	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	8	6	STD	XS	P24A-00NXA	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	10	4	STD	XS	P24A-00PY2	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	10	6	STD	XS	P24A-00PY3	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	10	8	STD	STD	P24A-00KC4	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	12	6	SCH30	XS	P24A-00NXE	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	12	8	SCH30	STD	P24A-00NXF	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	12	10	SCH30	STD	P24A-00PY4	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	14	6	SCH20	XS	P24A-00NXG	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	14	8	SCH20	STD	P24A-00NXH	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	14	10	SCH20	STD	P24A-00PY5	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	14	12	SCH20	SCH30	P24A-00KCY	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	

REDUCING LATERAL TEE (TLR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	XS	SCH160	P25A-002TH	Reducing lateral-tee ASTM A234 Grade WPB Seamless ASME B16.9 BW 45 degree Moderate wet H2S service Licensor-1	
1	4	2	XS	SCH160	P25A-002TF	Reducing lateral-tee ASTM A234 Grade WPB Seamless ASME B16.9 BW 45 degree Moderate wet H2S service Licensor-1	
1	6	4	XS	XS	P25A-002T4	Reducing lateral-tee ASTM A234 Grade WPB Seamless ASME B16.9 BW 45 degree Moderate wet H2S service Licensor-1	
1	8	4	STD	XS	P25A-002T5	Reducing lateral-tee ASTM A234 Grade WPB Seamless ASME B16.9 BW 45 degree Moderate wet H2S service Licensor-1	
1	10	4	STD	XS	P25A-002TB	Reducing lateral-tee ASTM A234 Grade WPB Seamless ASME B16.9 BW 45 degree Moderate wet H2S service Licensor-1	
1	10	6	STD	XS	P25A-002TN	Reducing lateral-tee ASTM A234 Grade WPB Seamless ASME B16.9 BW 45 degree Moderate wet H2S service Licensor-1	
1	10	8	STD	STD	P25A-002TP	Reducing lateral-tee ASTM A234 Grade WPB Seamless ASME B16.9 BW 45 degree Moderate wet H2S service Licensor-1	
1	12	8	SCH30	STD	P25A-002TC	Reducing lateral-tee ASTM A234 Grade WPB Seamless ASME B16.9 BW 45 degree Moderate wet H2S service Licensor-1	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	SCH160	P27A-00EM0	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	1	0.5	SCH160	SCH160	P27A-00EM1	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	1	0.75	SCH160	SCH160	P27A-00EM2	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	1.5	0.5	SCH160	SCH160	P27A-00EM3	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	1.5	0.75	SCH160	SCH160	P27A-00EM4	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	1.5	1	SCH160	SCH160	P27A-00EM5	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2	0.75	SCH160	SCH160	P27A-00EM6	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	2	1	SCH160	SCH160	P27A-00EM7	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	2	1.5	SCH160	SCH160	P27A-00EM8	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	3	1.5	XS	SCH160	P27A-00EM9	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	3	2	XS	SCH160	P27A-00EMA	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	4	1.5	XS	SCH160	P27A-00EMB	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	4	2	XS	SCH160	P27A-00EMC	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	4	3	XS	XS	P27A-00EMD	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	6	3	XS	XS	P27A-00EME	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	6	4	XS	XS	P27A-00EMF	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	8	4	STD	XS	P27A-00HCK	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	8	6	STD	XS	P27A-00HCL	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	10	4	STD	XS	P27A-00J7V	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	10	6	STD	XS	P27A-00J7W	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	10	8	STD	STD	P27A-00EWM	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	12	6	SCH30	XS	P27A-00HCR	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	12	8	SCH30	STD	P27A-00HCS	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	12	10	SCH30	STD	P27A-00J7X	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	14	6	SCH20	XS	P27A-00HCT	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	14	8	SCH20	STD	P27A-00HCU	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	14	10	SCH20	STD	P27A-00J7Y	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	14	12	SCH20	SCH30	P27A-00EX9	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	SCH160	P28A-00BRS	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	1	0.5	SCH160	SCH160	P28A-00BRT	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	1	0.75	SCH160	SCH160	P28A-00BRU	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	1.5	0.5	SCH160	SCH160	P28A-00BRV	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	1.5	0.75	SCH160	SCH160	P28A-00BRW	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	1.5	1	SCH160	SCH160	P28A-00BRX	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	2	0.75	SCH160	SCH160	P28A-00BRZ	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	2	1	SCH160	SCH160	P28A-00BS0	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	2	1.5	SCH160	SCH160	P28A-00BS1	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	3	1.5	XS	SCH160	P28A-00BS2	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	3	2	XS	SCH160	P28A-00BS3	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	4	1.5	XS	SCH160	P28A-00BS7	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	4	2	XS	SCH160	P28A-00BS8	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	4	3	XS	XS	P28A-00BS9	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	6	3	XS	XS	P28A-00BSB	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	6	4	XS	XS	P28A-00BSC	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	8	4	STD	XS	P28A-00EL9	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	8	6	STD	XS	P28A-00ELA	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	10	4	STD	XS	P28A-00FHW	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	10	6	STD	XS	P28A-00FHX	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	10	8	STD	STD	P28A-00C0G	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	12	6	SCH30	XS	P28A-00ELE	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	12	8	SCH30	STD	P28A-00ELF	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	12	10	SCH30	STD	P28A-00FHY	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	14	6	SCH20	XS	P28A-00ELG	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	14	8	SCH20	STD	P28A-00ELH	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	14	10	SCH20	STD	P28A-00FHZ	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	

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ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14	12	SCH20	SCH30	P28A-00C19	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P29A-0032T	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	0.75		SCH160		P29A-0032U	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	1		SCH160		P29A-0032V	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	1.5		SCH160		P29A-0032W	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	2		SCH160		P29A-0032Y	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	3		XS		P29A-0032Z	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	4		XS		P29A-00330	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	6		XS		P29A-00331	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	8		STD		P29A-0036P	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	10		STD		P29A-0036F	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	12		SCH30		P29A-0036T	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	14		SCH20		P29A-0036U	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
541	0.75				P29B-0006V	Cap ASTM A105 Class 6000 ASME B16.11 NPT Moderate wet H2S service Licensor-1	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P41A-0019F	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Moderate wet H2S service Licensor-1	
1	0.75		XXS		P41A-0019G	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Moderate wet H2S service Licensor-1	
1	1		XXS		P41A-0018D	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Moderate wet H2S service Licensor-1	
1	1.5		XXS		P41A-0018E	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Moderate wet H2S service Licensor-1	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2	0.75	SCH160	SCH160	P31B-00XHV	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	3	0.75	XS	SCH160	P31B-00XHW	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	4	0.75	XS	SCH160	P31B-00XHY	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	6	0.75	XS	SCH160	P31B-00XJ1	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	8	0.75	STD	SCH160	P31B-00XU9	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	10	0.75	STD	SCH160	P31B-00XUE	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	12	0.75	SCH30	SCH160	P31B-00XVC	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	14	0.75	SCH20	SCH160	P31B-00XVJ	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	3	1	XS	SCH160	P31B-00XHX	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	4	1	XS	SCH160	P31B-00XHZ	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	6	1	XS	SCH160	P31B-00XJ2	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	8	1	STD	SCH160	P31B-00XUA	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	10	1	STD	SCH160	P31B-00XUF	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	12	1	SCH30	SCH160	P31B-00XVD	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	14	1	SCH20	SCH160	P31B-00XVK	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	4	1.5	XS	SCH160	P31B-00XJ0	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	6	1.5	XS	SCH160	P31B-00XJ3	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	8	1.5	STD	SCH160	P31B-00XUB	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	10	1.5	STD	SCH160	P31B-00XUG	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	12	1.5	SCH30	SCH160	P31B-00XVE	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	14	1.5	SCH20	SCH160	P31B-00XVL	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	6	2	XS	SCH160	P31B-00XJ4	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	8	2	STD	SCH160	P31B-01122	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	10	2	STD	SCH160	P31B-012RF	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	12	2	SCH30	SCH160	P31B-01126	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	14	2	SCH20	SCH160	P31B-01128	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	8	3	STD	XS	P31B-01123	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	10	3	STD	XS	P31B-012RG	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	12	3	SCH30	XS	P31B-01127	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	14	3	SCH20	XS	P31B-01129	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	

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OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	12	4	SCH30	XS	P31B-0112X	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	14	4	SCH20	XS	P31B-0112Y	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30B-0006F	Plug ASTM A105 ASME B16.11 NPT Round head Moderate wet H2S service Licensor-1	
1	0.75				P30B-0006G	Plug ASTM A105 ASME B16.11 NPT Round head Moderate wet H2S service Licensor-1	
1	1				P30B-0006H	Plug ASTM A105 ASME B16.11 NPT Round head Moderate wet H2S service Licensor-1	
1	1.5				P30B-0006J	Plug ASTM A105 ASME B16.11 NPT Round head Moderate wet H2S service Licensor-1	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P61B-009UZ	Flange WN ASTM A105 Class 600 ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	0.75		SCH160		P61B-009V0	Flange WN ASTM A105 Class 600 ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	1		SCH160		P61B-009V1	Flange WN ASTM A105 Class 600 ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	1.5		SCH160		P61B-009V2	Flange WN ASTM A105 Class 600 ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	2		SCH160		P61B-009V4	Flange WN ASTM A105 Class 600 ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	3		XS		P61B-009V5	Flange WN ASTM A105 Class 600 ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	4		XS		P61B-009V6	Flange WN ASTM A105 Class 600 ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	6		XS		P61B-009V7	Flange WN ASTM A105 Class 600 ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	8		STD		P61B-00A3G	Flange WN ASTM A105 Class 600 ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	10		STD		P61B-00A38	Flange WN ASTM A105 Class 600 ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	12		SCH30		P61B-00BUR	Flange WN ASTM A105 Class 600 ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	14		SCH20		P61B-00BUS	Flange WN ASTM A105 Class 600 ASME B16.5 RF Moderate wet H2S service Licensor-1	
541	0.5				P61B-00DL9	Flange NPT ASTM A105 Class 600 ASME B16.5 RF Moderate wet H2S service Licensor-1	
541	0.75				P61B-00CXW	Flange NPT ASTM A105 Class 600 ASME B16.5 RF Moderate wet H2S service Licensor-1	
789	3		XS		P61B-009VA	Flange WN ASTM A105 Class 900 ASME B16.5 RJ Moderate wet H2S service Licensor-1	
789	4		XS		P61B-009VB	Flange WN ASTM A105 Class 900 ASME B16.5 RJ Moderate wet H2S service Licensor-1	
789	6		XS		P61B-009VC	Flange WN ASTM A105 Class 900 ASME B16.5 RJ Moderate wet H2S service Licensor-1	
789	8		STD		P61B-00BUW	Flange WN ASTM A105 Class 900 ASME B16.5 RJ Moderate wet H2S service Licensor-1	
789	10		STD		P61B-00DJ2	Flange WN ASTM A105 Class 900 ASME B16.5 RJ Moderate wet H2S service Licensor-1	
789	12		SCH30		P61B-00BUU	Flange WN ASTM A105 Class 900 ASME B16.5 RJ Moderate wet H2S service Licensor-1	
789	14		SCH20		P61B-00BUV	Flange WN ASTM A105 Class 900 ASME B16.5 RJ Moderate wet H2S service Licensor-1	
797	0.5		SCH160		P61B-009VE	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ Moderate wet H2S service Licensor-1	
797	0.75		SCH160		P61B-009VF	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ Moderate wet H2S service Licensor-1	
797	1		SCH160		P61B-009VG	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ Moderate wet H2S service Licensor-1	
797	1.5		SCH160		P61B-009VH	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ Moderate wet H2S service Licensor-1	
797	2		SCH160		P61B-009VJ	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ Moderate wet H2S service Licensor-1	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67B-002E9	Blind flange ASTM A105 Class 600 ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	0.75				P67B-002EA	Blind flange ASTM A105 Class 600 ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	1				P67B-002EB	Blind flange ASTM A105 Class 600 ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	1.5				P67B-002EC	Blind flange ASTM A105 Class 600 ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	2				P67B-002EE	Blind flange ASTM A105 Class 600 ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	3				P67B-002EF	Blind flange ASTM A105 Class 600 ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	4				P67B-002EG	Blind flange ASTM A105 Class 600 ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	6				P67B-002EH	Blind flange ASTM A105 Class 600 ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	8				P67B-002EJ	Blind flange ASTM A105 Class 600 ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	10				P67B-002ED	Blind flange ASTM A105 Class 600 ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	12				P67B-002V4	Blind flange ASTM A105 Class 600 ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	14				P67B-002V5	Blind flange ASTM A105 Class 600 ASME B16.5 RF Moderate wet H2S service Licensor-1	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000J8	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000J9	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

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GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P73T-000JA	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000JB	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000JH	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000JL	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000JM	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	6				P73T-000JN	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	8				P73T-000JP	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	10				P73T-000JC	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	12				P73T-000JD	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	14				P73T-000JE	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
789	3				P75T-000JN	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	4				P75T-000JP	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	6				P75T-000JR	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	8				P75T-000JS	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	10				P75T-000JL	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	12				P75T-000JM	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	14				P75T-000MJ	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	0.5				P75T-000JT	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	0.75				P75T-000JU	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	1				P75T-000JV	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	1.5				P75T-000JW	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	2				P75T-0008A	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-6				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	8-14				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
789	1-3				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
789	4-14				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
797	0.5-2				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81B-001D5	Gate valve ASTM A105 Class 600 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Licensor-1	
1	0.75				P81B-001D6	Gate valve ASTM A105 Class 600 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Licensor-1	
1	1				P81B-001D7	Gate valve ASTM A105 Class 600 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Licensor-1	
1	1.5				P81B-001D8	Gate valve ASTM A105 Class 600 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Licensor-1	
1	2				P81C-004S1	Gate valve ASTM A216 Grade WCB Class 600 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Licensor-1	
1	3				P81C-004S2	Gate valve ASTM A216 Grade WCB Class 600 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Licensor-1	
1	4				P81C-004S3	Gate valve ASTM A216 Grade WCB Class 600 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Licensor-1	
1	6				P81C-0092J	Gate valve ASTM A216 Grade WCB Class 600 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Moderate wet H2S service Licensor-1	
1	8				P81C-004S6	Gate valve ASTM A216 Grade WCB Class 600 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Moderate wet H2S service Licensor-1	
1	10				P81C-004S5	Gate valve ASTM A216 Grade WCB Class 600 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Moderate wet H2S service Licensor-1	
1	12				P81C-006H4	Gate valve ASTM A216 Grade WCB Class 600 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Moderate wet H2S service Licensor-1	
1	14				P81C-006H5	Gate valve ASTM A216 Grade WCB Class 600 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Moderate wet H2S service Licensor-1	
4608	0.75				P81B-002XL	Gate valve ASTM A105 Class 600 API 602 BW both sides w/ nipples BE - NPT ASTM A106-B XXS-nipple Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Licensor-1	

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GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82B-0014V	Globe valve ASTM A105 Class 600 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Licensor-1	
1	0.75				P82B-0014W	Globe valve ASTM A105 Class 600 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Licensor-1	
1	1				P82B-0014X	Globe valve ASTM A105 Class 600 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Licensor-1	
1	1.5				P82B-0014Y	Globe valve ASTM A105 Class 600 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Licensor-1	
1	2				P82C-002AU	Globe valve ASTM A216 Grade WCB Class 600 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Licensor-1	
1	3				P82C-002AV	Globe valve ASTM A216 Grade WCB Class 600 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Licensor-1	
1	4				P82C-002AW	Globe valve ASTM A216 Grade WCB Class 600 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Licensor-1	
1	6				P82C-004DH	Globe valve ASTM A216 Grade WCB Class 600 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Moderate wet H2S service Licensor-1	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83B-000WN	Check valve ASTM A105 Class 600 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Moderate wet H2S service Licensor-1	
1	0.75				P83B-000WP	Check valve ASTM A105 Class 600 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Moderate wet H2S service Licensor-1	
1	1				P83B-000WR	Check valve ASTM A105 Class 600 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Moderate wet H2S service Licensor-1	
1	1.5				P83B-000WS	Check valve ASTM A105 Class 600 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Moderate wet H2S service Licensor-1	
1	2				P83C-0027M	Check valve ASTM A216 Grade WCB Class 600 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Moderate wet H2S service Licensor-1	
1	3				P83C-0027N	Check valve ASTM A216 Grade WCB Class 600 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Moderate wet H2S service Licensor-1	
1	4				P83C-0027P	Check valve ASTM A216 Grade WCB Class 600 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Moderate wet H2S service Licensor-1	
1	6				P83C-0027R	Check valve ASTM A216 Grade WCB Class 600 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Moderate wet H2S service Licensor-1	
1	8				P83C-0027S	Check valve ASTM A216 Grade WCB Class 600 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Moderate wet H2S service Licensor-1	
1	10				P83C-0027L	Check valve ASTM A216 Grade WCB Class 600 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Moderate wet H2S service Licensor-1	

DP CHECK VALVE (XDP)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	12				P88C-002JU	Dual plate check valve ASTM A216 Grade WCB Class 600 API 594 Wafer-type ASME B16.5 RF Trim number 12 Internal wetted parts SS316 Spring Inconel Retainerless-type Moderate wet H2S service Licensor-1	
1	14				P88C-002JV	Dual plate check valve ASTM A216 Grade WCB Class 600 API 594 Wafer-type ASME B16.5 RF Trim number 12 Internal wetted parts SS316 Spring Inconel Retainerless-type Moderate wet H2S service Licensor-1	

NEEDLE VALVE (NV)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82B-001WW	Needle valve ASTM A105 Class 600 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Licensor-1	

ORIFICE FLANGE (FO)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	4		XS		P66B-008H4	Orifice flange WN ASTM A105 Class 600 ASME B16.36 RF NPS1/2 SW tap x 1 Moderate wet H2S service Licensor-1	
200	4		XS		P66B-008H5	Orifice flange WN ASTM A105 Class 600 ASME B16.36 RF NPS1/2 SW tap x 1 Moderate wet H2S service with Jack screw Licensor-1	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71B-000EW	Spectacle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	0.75				P71B-000EX	Spectacle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	1				P71B-000EY	Spectacle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	1.5				P71B-000EZ	Spectacle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	2				P71B-000F0	Spectacle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	3				P71B-000F1	Spectacle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	4				P71B-000F2	Spectacle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	6				P71B-000F3	Spectacle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service Licensor-1	

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PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	8				P72B-000J8	Paddle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	10				P72B-000J7	Paddle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	12				P72B-000PV	Paddle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	14				P72B-000PW	Paddle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service Licensor-1	

PADDLE SPACER (PS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	8				P72B-000JA	Paddle spacer ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	10				P72B-000J9	Paddle spacer ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	12				P72B-000PX	Paddle spacer ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	14				P72B-000PY	Paddle spacer ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service Licensor-1	

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BOLT TABLE (B_D2AQ01 , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	80	P80S-008T2		
0.75	4	0.625	90	P80S-0090B		
1	4	0.625	95	P80S-0090C		
1.5	4	0.750	110	P80S-0090F		
2	8	0.625	110	P80S-008T8		
3	8	0.750	130	P80S-0090K		
4	8	0.875	150	P80S-005ZF		
6	12	1.000	175	P80S-0061H		
8	12	1.125	195	P80S-0064W		
10	16	1.250	250	P80S-0068M		
12	20	1.250	255	P80S-0068N		
14	20	1.375	270	P80S-006HV		

BOLT TABLE (B_D2AQ01_789 , STUD ASME RJ, OPTION CODE 789)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	110		R12	
0.75	4	0.750	115		R14	
1	4	0.875	130	P80S-005ZB	R16	
1.5	4	1.000	140	P80S-0061A	R20	
2	8	0.875	150	P80S-005ZF	R24	
3	8	0.875	150	P80S-005ZF	R31	P75T-000JN
4	8	1.125	175	P80S-0064S	R37	P75T-000JP
6	12	1.125	200	P80S-0064X	R45	P75T-000JR
8	12	1.375	260	P80S-006HT	R49	P75T-000JS
10	16	1.375	275	P80S-006HW	R53	P75T-000JL
12	20	1.375	295	P80S-006J0	R57	P75T-000JM
14	20	1.500	325	P80S-006RK	R62	P75T-000MJ

BOLT TABLE (B_D2AQ01_797 , STUD ASME RJ, OPTION CODE 797)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	110	P80S-0090F	R12	P75T-000JT
0.75	4	0.750	115	P80S-0090G	R14	P75T-000JU
1	4	0.875	130	P80S-005ZB	R16	P75T-000JV
1.5	4	1.000	140	P80S-0061A	R20	P75T-000JW
2	8	0.875	150	P80S-005ZF	R24	P75T-0008A
3	8	1.125	180		R35	
4	8	1.250	230		R39	
6	12	1.375	300		R46	
8	12	1.625	345		R50	
10	12	1.875	395		R54	
12	16	2.000	445		R58	
14	16	2.250	490		R63	

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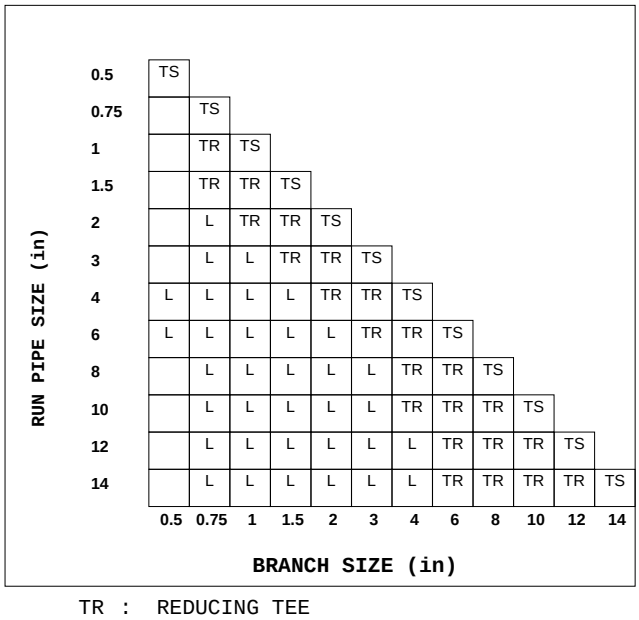
BRANCH TABLE (T_D2AQ01)



TR : REDUCING TEE
L : OUTLET
TS : STRAIGHT TEE

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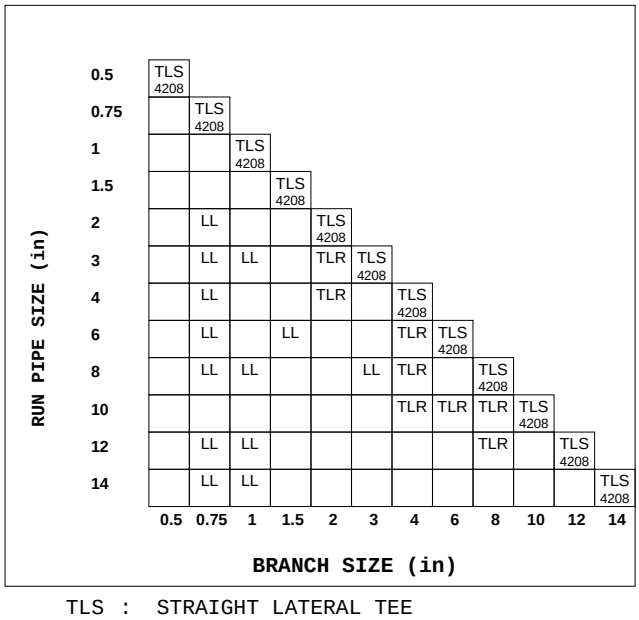
BRANCH TABLE (T_D2AQ01_2)



TLS : STRAIGHT LATERAL TEE
TLR : REDUCING LATERAL TEE
LL : LATROLET

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Material : Killed CS
Rating : ASME CLASS 600
Flange Face : RF
C.A.(mm) : 3.00
Gasket : Spiral Wound
Service : PROCESS -WET LOW SEVERITY SOUR SERVICE SUBJECT TO NACE
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
5	BOLTING CONFIRMING TO B7M / 2HM SHALL BE USED UNDER CONDITIONS (A) DIRECT EXPOSURE TO SOUR ENVIRONMENTS (B) WHEN THE BOLTING WILL BE BURIED OR INSULATED
27	PWHT OF CARBON STEEL PIPING IN WET H2S, CAUSTIC AND AMINE SERVICES SHALL BE IN ACCORDANCE WITH SECTION 10.2, 10.3, AND 10.4 OF PROJECT SPECIFICATION 3550-8440-SP-0002 MATERIALS REQUIREMENTS FOR PRESSURISED EQUIPMENT AND PIPING. FOR CAUSTIC AND AMINE SERVICE THE FOLLOWING SHALL APPLY: - PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF ALL SITE PIPING FABRICATION WELDS IS REQUIRED FOR ALL WALL THICKNESSES. FOR MODERATE AND SEVERE WET H2S SERVICE THE FOLLOWING SHALL APPLY: PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF SITE FABRICATION CIRCUMFERENTIAL OR BRANCH WELDS IS NOT REQUIRED IF WELDS ARE MULTIPASS AND IN ACCORDANCE WITH PARA 10.2.12 OF PROJECT SPECIFICATION 3550-8440-SP-0002. FOR SERVICES MEETING THE WET H2S CRITERIA AND CAUSTIC OR AMINE CRITERIA THE MORE STRINGENT PWHT REQUIREMENT SHALL GOVERN.

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
541	NPT(F) (CA,F)
789	CLASS 900 (B,F,G)
797	CLASS 1500 (B,F,G)
4608	VALVE WITH NIPPLES (V)

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PIPING CLASS
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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P01A-00143	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	0.75		SCH160		P01A-0010R	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1		SCH160		P01A-0014M	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1.5		SCH160		P01A-0015J	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	2		SCH160		P01A-0019T	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	3		XS		P01A-000Z4	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	4		XS		P01A-000Z9	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	6		XS		P01A-000ZF	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	8		SCH30		P01A-001WL	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	10		STD		P01A-000XJ	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	12		STD		P01A-000XT	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P02A-00172	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	0.75		SCH160		P02A-000V8	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1		SCH160		P02A-000V7	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1.5		SCH160		P02A-000V9	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	2		SCH160		P02A-000KW	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		XS		P02A-000CX	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		XS		P02A-000D3	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		XS		P02A-000DA	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		SCH30		P02A-003DK	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	10		STD		P02A-000BP	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	12		STD		P02A-000BZ	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P03A-0012Y	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	0.75		SCH160		P03A-000RS	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1		SCH160		P03A-000RR	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1.5		SCH160		P03A-000RP	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	2		SCH160		P03A-000HU	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		XS		P03A-000AZ	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		XS		P03A-000B3	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		XS		P03A-000B8	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		SCH30		P03A-003BE	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	10		STD		P03A-000A4	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	12		STD		P03A-000A9	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P21A-002M0	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	0.75		SCH160		P21A-002B8	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1		SCH160		P21A-002B6	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5		SCH160		P21A-002B9	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2		SCH160		P21A-00245	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		XS		P21A-001CR	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		XS		P21A-001CV	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6		XS		P21A-001D4	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8		SCH30		P21A-003WV	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10		STD		P21A-001BV	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12		STD		P21A-001C1	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75	SCH160	SCH160	P24A-004B6	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.75	SCH160	SCH160	P24A-004B2	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5	1	SCH160	SCH160	P24A-004BA	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	SCH160	SCH160	P24A-00AEU	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	SCH160	SCH160	P24A-003AX	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	XS	SCH160	P24A-00GNV	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	XS	SCH160	P24A-00560	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	XS	SCH160	P24A-00561	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	XS	XS	P24A-0024A	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	XS	XS	P24A-0023F	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	XS	XS	P24A-00243	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH30	XS	P24A-00L83	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH30	XS	P24A-00L84	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	STD	XS	P24A-00HL4	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	STD	XS	P24A-00562	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	STD	SCH30	P24A-00NX7	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	STD	XS	P24A-00563	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	STD	SCH30	P24A-00NX8	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	STD	STD	P24A-0022X	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	XXS	P27A-003ZL	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.5	SCH160	XXS	P27A-003ZM	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.75	SCH160	SCH160	P27A-002T5	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.5	SCH160	XXS	P27A-003ZN	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.75	SCH160	SCH160	P27A-002T7	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	1	SCH160	SCH160	P27A-002T4	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	0.75	SCH160	SCH160	P27A-0025L	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	SCH160	SCH160	P27A-0025K	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	SCH160	SCH160	P27A-0025J	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	XS	SCH160	P27A-003N1	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	XS	SCH160	P27A-0037V	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	1.5	XS	SCH160	P27A-003N2	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	XS	SCH160	P27A-0037W	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	XS	XS	P27A-001EP	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	XS	XS	P27A-001DM	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	XS	XS	P27A-001EB	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH30	XS	P27A-00FFC	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH30	XS	P27A-00FFE	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	STD	XS	P27A-0037X	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	STD	XS	P27A-0037Y	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	STD	SCH30	P27A-00HCJ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	STD	XS	P27A-0037Z	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	STD	SCH30	P27A-004XL	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	STD	STD	P27A-001C7	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	XXS	P28A-003ZE	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.5	SCH160	XXS	P28A-003ZF	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.75	SCH160	SCH160	P28A-002TU	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.5	SCH160	XXS	P28A-003ZG	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.75	SCH160	SCH160	P28A-002TW	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	1	SCH160	SCH160	P28A-002TR	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	0.75	SCH160	SCH160	P28A-002SU	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	SCH160	SCH160	P28A-002ST	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	SCH160	SCH160	P28A-002SS	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	XS	SCH160	P28A-003MV	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	XS	SCH160	P28A-0037B	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	1.5	XS	SCH160	P28A-003MW	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	4	2	XS	SCH160	P28A-0037C	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	XS	XS	P28A-001F8	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	XS	XS	P28A-001DU	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	XS	XS	P28A-001ER	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH30	XS	P28A-00CLA	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH30	XS	P28A-00CLC	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	STD	XS	P28A-0037D	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	STD	XS	P28A-0037E	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	STD	SCH30	P28A-00EL8	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	STD	XS	P28A-0037F	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	STD	SCH30	P28A-00EMS	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	STD	STD	P28A-00181	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P29A-001UE	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	0.75		SCH160		P29A-001UF	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	1		SCH160		P29A-001TC	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	1.5		SCH160		P29A-001TD	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	2		SCH160		P29A-001TK	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	3		XS		P29A-001X4	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	4		XS		P29A-001TS	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	6		XS		P29A-001TU	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	8		SCH30		P29A-003G6	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	10		STD		P29A-001VB	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	12		STD		P29A-001VC	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
541	0.75				P29B-0000Y	Cap ASTM A105 Class 6000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P41A-000B9	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		XXS		P41A-000BA	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		XXS		P41A-000D8	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		XXS		P41A-000D9	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2	0.75	SCH160	SCH160	P31B-007NC	Outlet ASTM A105 MSS SP-97 BW	
1	3	0.75	XS	SCH160	P31B-00CMS	Outlet ASTM A105 MSS SP-97 BW	
1	4	0.75	XS	SCH160	P31B-00CLS	Outlet ASTM A105 MSS SP-97 BW	
1	6	0.75	XS	SCH160	P31B-00CKJ	Outlet ASTM A105 MSS SP-97 BW	
1	8	0.75	SCH30	SCH160	P31B-00ZH5	Outlet ASTM A105 MSS SP-97 BW	
1	10	0.75	STD	SCH160	P31B-00CFB	Outlet ASTM A105 MSS SP-97 BW	
1	12	0.75	STD	SCH160	P31B-007NG	Outlet ASTM A105 MSS SP-97 BW	
1	3	1	XS	SCH160	P31B-00B4H	Outlet ASTM A105 MSS SP-97 BW	
1	4	1	XS	SCH160	P31B-00B3L	Outlet ASTM A105 MSS SP-97 BW	
1	6	1	XS	SCH160	P31B-00AZB	Outlet ASTM A105 MSS SP-97 BW	
1	8	1	SCH30	SCH160	P31B-00ZH6	Outlet ASTM A105 MSS SP-97 BW	
1	10	1	STD	SCH160	P31B-00C06	Outlet ASTM A105 MSS SP-97 BW	
1	12	1	STD	SCH160	P31B-007NN	Outlet ASTM A105 MSS SP-97 BW	
1	4	1.5	XS	SCH160	P31B-00BP3	Outlet ASTM A105 MSS SP-97 BW	
1	6	1.5	XS	SCH160	P31B-00BJG	Outlet ASTM A105 MSS SP-97 BW	
1	8	1.5	SCH30	SCH160	P31B-00BHM	Outlet ASTM A105 MSS SP-97 BW	
1	10	1.5	STD	SCH160	P31B-00AUM	Outlet ASTM A105 MSS SP-97 BW	
1	12	1.5	STD	SCH160	P31B-007MC	Outlet ASTM A105 MSS SP-97 BW	
1	6	2	XS	SCH160	P31B-007SR	Outlet ASTM A105 MSS SP-97 BW	
1	8	2	SCH30	SCH160	P31B-01121	Outlet ASTM A105 MSS SP-97 BW	
1	10	2	STD	SCH160	P31B-0061H	Outlet ASTM A105 MSS SP-97 BW	
1	12	2	STD	SCH160	P31B-005YS	Outlet ASTM A105 MSS SP-97 BW	

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OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	8	3	SCH30	XS	P31B-00ZH7	Outlet ASTM A105 MSS SP-97 BW	
1	10	3	STD	XS	P31B-009CG	Outlet ASTM A105 MSS SP-97 BW	
1	12	3	STD	XS	P31B-0096F	Outlet ASTM A105 MSS SP-97 BW	
1	12	4	STD	XS	P31B-008ZR	Outlet ASTM A105 MSS SP-97 BW	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30B-0002D	Plug ASTM A105 ASME B16.11 NPT Round head	
1	0.75				P30B-0002E	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1				P30B-0002F	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1.5				P30B-0002G	Plug ASTM A105 ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P61B-003T1	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
1	0.75		SCH160		P61B-003T2	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
1	1		SCH160		P61B-003T3	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
1	1.5		SCH160		P61B-003T4	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
1	2		SCH160		P61B-003T7	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
1	3		XS		P61B-001M8	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
1	4		XS		P61B-001SH	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
1	6		XS		P61B-001T1	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
1	8		SCH30		P61B-009GW	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
1	10		STD		P61B-001JJ	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
1	12		STD		P61B-001P9	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
541	0.5				P61B-006NP	Flange NPT ASTM A105 Class 600 ASME B16.5 RF	
541	0.75				P61B-00CW3	Flange NPT ASTM A105 Class 600 ASME B16.5 RF	
789	3		XS		P61B-00654	Flange WN ASTM A105 Class 900 ASME B16.5 RJ	
789	4		XS		P61B-00655	Flange WN ASTM A105 Class 900 ASME B16.5 RJ	
789	6		XS		P61B-00656	Flange WN ASTM A105 Class 900 ASME B16.5 RJ	
789	8		SCH30		P61B-009VX	Flange WN ASTM A105 Class 900 ASME B16.5 RJ	
789	10		STD		P61B-009TP	Flange WN ASTM A105 Class 900 ASME B16.5 RJ	
789	12		STD		P61B-00BUN	Flange WN ASTM A105 Class 900 ASME B16.5 RJ	
797	0.5		XXS		P61B-00664	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
797	0.75		SCH160		P61B-0065U	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
797	1		SCH160		P61B-0065V	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
797	1.5		SCH160		P61B-0065W	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
797	2		SCH160		P61B-0066J	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67B-000J7	Blind flange ASTM A105 Class 600 ASME B16.5 RF	
1	0.75				P67B-000J8	Blind flange ASTM A105 Class 600 ASME B16.5 RF	
1	1				P67B-000J9	Blind flange ASTM A105 Class 600 ASME B16.5 RF	
1	1.5				P67B-000JA	Blind flange ASTM A105 Class 600 ASME B16.5 RF	
1	2				P67B-000JG	Blind flange ASTM A105 Class 600 ASME B16.5 RF	
1	3				P67B-000JK	Blind flange ASTM A105 Class 600 ASME B16.5 RF	
1	4				P67B-000JL	Blind flange ASTM A105 Class 600 ASME B16.5 RF	
1	6				P67B-000JM	Blind flange ASTM A105 Class 600 ASME B16.5 RF	
1	8				P67B-000JN	Blind flange ASTM A105 Class 600 ASME B16.5 RF	
1	10				P67B-000JB	Blind flange ASTM A105 Class 600 ASME B16.5 RF	
1	12				P67B-000JC	Blind flange ASTM A105 Class 600 ASME B16.5 RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000J8	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000J9	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

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GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P73T-000JA	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000JB	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000JH	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000JL	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000JM	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	6				P73T-000JN	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	8				P73T-000JP	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	10				P73T-000JC	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	12				P73T-000JD	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
789	3				P75T-000JN	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	4				P75T-000JP	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	6				P75T-000JR	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	8				P75T-000JS	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	10				P75T-000JL	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	12				P75T-000JM	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	0.5				P75T-000JT	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	0.75				P75T-000JU	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	1				P75T-000JV	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	1.5				P75T-000JW	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	2				P75T-0008A	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-6				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	8-12				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
789	1-3				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
789	4-12				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
797	0.5-2				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81B-001D9	Gate valve ASTM A105 Class 600 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	0.75				P81B-001DA	Gate valve ASTM A105 Class 600 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	1				P81B-001DB	Gate valve ASTM A105 Class 600 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	1.5				P81B-001DC	Gate valve ASTM A105 Class 600 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	2				P81C-006R0	Gate valve ASTM A216 Grade WCB Class 600 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Licensor-4	
1	3				P81C-006R1	Gate valve ASTM A216 Grade WCB Class 600 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Licensor-4	
1	4				P81C-006R2	Gate valve ASTM A216 Grade WCB Class 600 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Licensor-4	
1	6				P81C-0092H	Gate valve ASTM A216 Grade WCB Class 600 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Moderate wet H2S service Licensor-4	
1	8				P81C-006R5	Gate valve ASTM A216 Grade WCB Class 600 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Moderate wet H2S service Licensor-4	
1	10				P81C-006R4	Gate valve ASTM A216 Grade WCB Class 600 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Moderate wet H2S service Licensor-4	
4608	0.75				P81B-002XK	Gate valve ASTM A105 Class 600 API 602 BW both sides w/ nipples BE - NPT ASTM A106-B XXS-nipple Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82B-0014Z	Globe valve ASTM A105 Class 600 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	0.75				P82B-00150	Globe valve ASTM A105 Class 600 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	1				P82B-00151	Globe valve ASTM A105 Class 600 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	1.5				P82B-00152	Globe valve ASTM A105 Class 600 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service	

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GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2				P82C-00391	Globe valve ASTM A216 Grade WCB Class 600 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Licensor-4	
1	3				P82C-00392	Globe valve ASTM A216 Grade WCB Class 600 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Licensor-4	
1	4				P82C-00393	Globe valve ASTM A216 Grade WCB Class 600 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Licensor-4	
1	6				P82C-004DG	Globe valve ASTM A216 Grade WCB Class 600 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated Moderate wet H2S service Licensor-4	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83B-000WT	Check valve ASTM A105 Class 600 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Moderate wet H2S service	
1	0.75				P83B-000WU	Check valve ASTM A105 Class 600 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Moderate wet H2S service	
1	1				P83B-000WV	Check valve ASTM A105 Class 600 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Moderate wet H2S service	
1	1.5				P83B-000WW	Check valve ASTM A105 Class 600 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Moderate wet H2S service	
1	2				P83C-0034P	Check valve ASTM A216 Grade WCB Class 600 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Moderate wet H2S service Licensor-4	
1	3				P83C-0034R	Check valve ASTM A216 Grade WCB Class 600 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Moderate wet H2S service Licensor-4	
1	4				P83C-0034S	Check valve ASTM A216 Grade WCB Class 600 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Moderate wet H2S service Licensor-4	
1	6				P83C-0034T	Check valve ASTM A216 Grade WCB Class 600 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Moderate wet H2S service Licensor-4	
1	8				P83C-0034U	Check valve ASTM A216 Grade WCB Class 600 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Moderate wet H2S service Licensor-4	
1	10				P83C-0034M	Check valve ASTM A216 Grade WCB Class 600 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover Moderate wet H2S service Licensor-4	

DP CHECK VALVE (XDP)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	12				P88C-002JW	Dual plate check valve ASTM A216 Grade WCB Class 600 API 594 Wafer-type ASME B16.5 RF Trim number 12 Internal wetted parts SS316 Spring Inconel Retainerless-type Moderate wet H2S service Licensor-4	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71B-000E4	Spectacle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	0.75				P71B-000DN	Spectacle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	1				P71B-000DP	Spectacle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71B-000DR	Spectacle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	2				P71B-000DS	Spectacle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	3				P71B-000DT	Spectacle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	4				P71B-000DU	Spectacle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	6				P71B-000DV	Spectacle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	

PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	8				P72B-000MF	Paddle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	10				P72B-000MA	Paddle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	12				P72B-000M6	Paddle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	

PADDLE SPACER (PS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	8				P72B-000MM	Paddle spacer ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	10				P72B-000MG	Paddle spacer ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	12				P72B-000M7	Paddle spacer ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	

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BOLT TABLE (B_D2AQ04 , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	80	P80S-008T2		
0.75	4	0.625	90	P80S-0090B		
1	4	0.625	95	P80S-0090C		
1.5	4	0.750	110	P80S-0090F		
2	8	0.625	110	P80S-008T8		
3	8	0.750	130	P80S-0090K		
4	8	0.875	150	P80S-005ZF		
6	12	1.000	175	P80S-0061H		
8	12	1.125	195	P80S-0064W		
10	16	1.250	250	P80S-0068M		
12	20	1.250	255	P80S-0068N		

BOLT TABLE (B_D2AQ04_789 , STUD ASME RJ, OPTION CODE 789)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	110		R12	
0.75	4	0.750	115		R14	
1	4	0.875	130	P80S-005ZB	R16	
1.5	4	1.000	140	P80S-0061A	R20	
2	8	0.875	150	P80S-005ZF	R24	
3	8	0.875	150	P80S-005ZF	R31	P75T-000JN
4	8	1.125	175	P80S-0064S	R37	P75T-000JP
6	12	1.125	200	P80S-0064X	R45	P75T-000JR
8	12	1.375	260	P80S-006HT	R49	P75T-000JS
10	16	1.375	275	P80S-006HW	R53	P75T-000JL
12	20	1.375	295	P80S-006J0	R57	P75T-000JM

BOLT TABLE (B_D2AQ04_797 , STUD ASME RJ, OPTION CODE 797)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	110	P80S-0090F	R12	P75T-000JT
0.75	4	0.750	115	P80S-0090G	R14	P75T-000JU
1	4	0.875	130	P80S-005ZB	R16	P75T-000JV
1.5	4	1.000	140	P80S-0061A	R20	P75T-000JW
2	8	0.875	150	P80S-005ZF	R24	P75T-0008A
3	8	1.125	180		R35	
4	8	1.250	230		R39	
6	12	1.375	300		R46	
8	12	1.625	345		R50	
10	12	1.875	395		R54	
12	16	2.000	445		R58	

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BRANCH TABLE (T_D2AQ04)

RUN PIPE SIZE (in) \ BRANCH SIZE (in)	0.5	0.75	1	1.5	2	3	4	6	8	10	12
0.5	TS										
0.75		TS									
1		TR	TS								
1.5		TR	TR	TS							
2		L	TR	TR	TS						
3		L	L	TR	TR	TS					
4	L	L	L	L	TR	TR	TS				
6	L	L	L	L	L	TR	TR	TS			
8		L	L	L	L	L	TR	TR	TS		
10		L	L	L	L	L	TR	TR	TR	TS	
12		L	L	L	L	L	L	TR	TR	TR	TS

TR : REDUCING TEE
L : OUTLET
TS : STRAIGHT TEE

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D2AS

REV NO. 2

Material : Killed CS
Rating : ASME CLASS 600
Flange Face : RF
C.A.(mm) : 3.00
Gasket : Spiral Wound
Service : UTILITY : / HP BOILER FEED WATER / HIGH PRESSURE CONDENSATE

Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
200	WITH JACK SCREW (FO)
541	NPT(F) (CA,L)
714	SW - NPT(F) (V)
789	CLASS 900 (B,F,G,PB,PS)
797	CLASS 1500 (B,F,G)
851	ALTERNATIVE WALL THICKNESS 1 (4L,9L,F,L,P,RC,RE,SNC,SNE,TR,TS)

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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P01A-0010P	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	0.75		SCH160		P01A-0010R	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1		SCH160		P01A-0014M	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1.5		SCH160		P01A-0015J	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	2		XS		P01A-000YX	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	3		XS		P01A-000Z4	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	4		XS		P01A-000Z9	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	6		XS		P01A-000ZF	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	8		SCH60		P01A-001BK	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	10		XS		P01A-000Y2	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	12		XS		P01A-000YB	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	14		XS		P01A-000YJ	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	16		SCH60		P01A-001P9	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	18		SCH60		P01A-007HG	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE	
1	20		SCH60		P01A-00441	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE	
1	24		SCH60		P01A-007HS	Pipe ASTM A672 Grade B60 Class 22 EFW ASME B36.10M/B36.19M BE	
851	2		SCH160		P01A-0019T	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
851	8		XS		P01A-000ZJ	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P02B-0001J	90 degree elbow ASTM A105 Class 6000 ASME B16.11 SW	
1	0.75				P02B-0001K	90 degree elbow ASTM A105 Class 6000 ASME B16.11 SW	
1	1				P02B-0002E	90 degree elbow ASTM A105 Class 6000 ASME B16.11 SW	
1	1.5				P02B-0002F	90 degree elbow ASTM A105 Class 6000 ASME B16.11 SW	
1	2		XS		P02A-000CP	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		XS		P02A-000CX	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		XS		P02A-000D3	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		XS		P02A-000DA	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		SCH60		P02A-000MC	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	10		XS		P02A-000BN	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	12		XS		P02A-000BX	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	14		XS		P02A-000C7	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	16		SCH60		P02A-000U2	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	18		SCH60		P02A-000UD	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	20		SCH60		P02A-002G7	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	24		SCH60		P02A-002G8	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
851	2		SCH160		P02A-000KW	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
851	8		XS		P02A-000DG	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P03B-0001F	45 degree elbow ASTM A105 Class 6000 ASME B16.11 SW	
1	0.75				P03B-0001G	45 degree elbow ASTM A105 Class 6000 ASME B16.11 SW	
1	1				P03B-0002A	45 degree elbow ASTM A105 Class 6000 ASME B16.11 SW	
1	1.5				P03B-0002B	45 degree elbow ASTM A105 Class 6000 ASME B16.11 SW	
1	2		XS		P03A-000AS	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		XS		P03A-000AZ	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		XS		P03A-000B3	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		XS		P03A-000B8	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		SCH60		P03A-000K5	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	10		XS		P03A-000A3	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	12		XS		P03A-000A8	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	14		XS		P03A-000AF	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	16		SCH60		P03A-000R9	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	18		SCH60		P03A-000RY	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	20		SCH60		P03A-002DP	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	24		SCH60		P03A-002DR	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
851	2		SCH160		P03A-000HU	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

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45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
851	8		XS		P03A-000BC	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P21B-0001F	Straight tee ASTM A105 Class 6000 ASME B16.11 SW	
1	0.75				P21B-0001G	Straight tee ASTM A105 Class 6000 ASME B16.11 SW	
1	1				P21B-00026	Straight tee ASTM A105 Class 6000 ASME B16.11 SW	
1	1.5				P21B-00027	Straight tee ASTM A105 Class 6000 ASME B16.11 SW	
1	2		XS		P21A-001CJ	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		XS		P21A-001CR	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		XS		P21A-001CV	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6		XS		P21A-001D4	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8		SCH60		P21A-0025S	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10		XS		P21A-001C0	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12		XS		P21A-001C5	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14		XS		P21A-001CB	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16		SCH60		P21A-002AE	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18		SCH60		P21A-001PM	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20		SCH60		P21A-001T0	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24		SCH60		P21A-001UJ	Straight tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
851	2		SCH160		P21A-00245	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75			P24B-00030	Reducing tee ASTM A105 Class 6000 ASME B16.11 SW	
1	1.5	0.75			P24B-00032	Reducing tee ASTM A105 Class 6000 ASME B16.11 SW	
1	1.5	1			P24B-0004J	Reducing tee ASTM A105 Class 6000 ASME B16.11 SW	
1	2	1	XS	SCH160	P24A-00GMB	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	XS	SCH160	P24A-005K9	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	XS	SCH160	P24A-00GNV	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	XS	XS	P24A-0023S	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	XS	XS	P24A-0023E	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	XS	XS	P24A-0024A	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	XS	XS	P24A-0023F	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	XS	XS	P24A-00243	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH60	XS	P24A-00GAV	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH60	XS	P24A-0062G	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	XS	XS	P24A-0023C	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	XS	XS	P24A-00241	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	XS	SCH60	P24A-0062H	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	XS	XS	P24A-0024J	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	XS	SCH60	P24A-0062J	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	XS	XS	P24A-00240	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	XS	XS	P24A-0024P	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	XS	SCH60	P24A-00GNT	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	XS	XS	P24A-0023X	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	XS	XS	P24A-0024E	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	6	SCH60	XS	P24A-00GV7	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	SCH60	SCH60	P24A-00K25	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	SCH60	XS	P24A-0067W	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	SCH60	XS	P24A-00GDL	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	SCH60	XS	P24A-00GDM	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	8	SCH60	SCH60	P24A-00BNU	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	10	SCH60	XS	P24A-00BFJ	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	12	SCH60	XS	P24A-00BHB	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	14	SCH60	XS	P24A-00BK0	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	16	SCH60	SCH60	P24A-00BLS	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	8	SCH60	SCH60	P24A-00L82	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	10	SCH60	XS	P24A-00BT1	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	

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REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	20	12	SCH60	XS	P24A-00BUK	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	14	SCH60	XS	P24A-00BW7	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	16	SCH60	SCH60	P24A-00BY0	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	18	SCH60	SCH60	P24A-004X5	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	10	SCH60	XS	P24A-00C5T	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	12	SCH60	XS	P24A-00C78	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	14	SCH60	XS	P24A-00C8N	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	16	SCH60	SCH60	P24A-00CA8	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	18	SCH60	SCH60	P24A-004WV	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	20	SCH60	SCH60	P24A-004X4	Reducing tee ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
851	2	1.5	SCH160	SCH160	P24A-003AX	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
851	3	2	XS	SCH160	P24A-00560	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
851	4	2	XS	SCH160	P24A-00561	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	XS	XS	P27A-001E5	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	XS	XS	P27A-001E4	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	XS	XS	P27A-001EP	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	XS	XS	P27A-001DM	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	XS	XS	P27A-001EB	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH60	XS	P27A-00435	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH60	XS	P27A-00436	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	XS	XS	P27A-001E8	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	XS	XS	P27A-001F2	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	XS	SCH60	P27A-00437	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	XS	XS	P27A-001F3	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	XS	SCH60	P27A-00438	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	XS	XS	P27A-001EA	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	XS	XS	P27A-001FT	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	XS	SCH60	P27A-00439	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	XS	XS	P27A-001E9	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	XS	XS	P27A-001F1	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	SCH60	SCH60	P27A-0059L	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	SCH60	XS	P27A-00491	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	SCH60	XS	P27A-00565	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	SCH60	XS	P27A-0057M	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	10	SCH60	XS	P27A-00D5S	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	12	SCH60	XS	P27A-00CNT	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	14	SCH60	XS	P27A-00FF3	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	16	SCH60	SCH60	P27A-00DTM	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	12	SCH60	XS	P27A-00FF4	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	14	SCH60	XS	P27A-00FF5	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	16	SCH60	SCH60	P27A-00FF6	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	18	SCH60	SCH60	P27A-001HV	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	16	SCH60	SCH60	P27A-00FF7	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	18	SCH60	SCH60	P27A-001J0	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	20	SCH60	SCH60	P27A-001J7	Concentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
851	3	2	XS	SCH160	P27A-0037V	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
851	4	2	XS	SCH160	P27A-0037W	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
851	8	6	XS	XS	P27A-001EY	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	XS	XS	P28A-001EH	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	XS	XS	P28A-001EJ	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	XS	XS	P28A-001F8	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	XS	XS	P28A-001DU	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	XS	XS	P28A-001ER	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	8	4	SCH60	XS	P28A-0042X	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH60	XS	P28A-0042Y	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	XS	XS	P28A-001EM	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	XS	XS	P28A-001FR	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	XS	SCH60	P28A-0042Z	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	XS	XS	P28A-001GE	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	XS	SCH60	P28A-00430	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	XS	XS	P28A-001EP	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	XS	XS	P28A-001GX	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	XS	SCH60	P28A-00431	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	XS	XS	P28A-001EN	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	XS	XS	P28A-001FY	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	SCH60	SCH60	P28A-00AV9	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	10	SCH60	XS	P28A-0048T	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	12	SCH60	XS	P28A-0085K	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	14	SCH60	XS	P28A-0085L	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18	10	SCH60	XS	P28A-00A65	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	12	SCH60	XS	P28A-009NS	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	14	SCH60	XS	P28A-00CL1	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	18	16	SCH60	SCH60	P28A-00AVD	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	12	SCH60	XS	P28A-00CL2	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	14	SCH60	XS	P28A-00CL3	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	16	SCH60	SCH60	P28A-00CL4	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	20	18	SCH60	SCH60	P28A-001HZ	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	16	SCH60	SCH60	P28A-00CL5	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	18	SCH60	SCH60	P28A-001J4	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
1	24	20	SCH60	SCH60	P28A-001JB	Eccentric reducer ASTM A234 Grade WPB-W Weld ASME B16.9 BW	
851	3	2	XS	SCH160	P28A-0037B	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
851	4	2	XS	SCH160	P28A-0037C	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
851	8	6	XS	XS	P28A-001FT	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P29B-0002F	Cap ASTM A105 Class 6000 ASME B16.11 SW	
1	0.75				P29B-0002G	Cap ASTM A105 Class 6000 ASME B16.11 SW	
1	1				P29B-0002D	Cap ASTM A105 Class 6000 ASME B16.11 SW	
1	1.5				P29B-0002E	Cap ASTM A105 Class 6000 ASME B16.11 SW	
1	2		XS		P29A-000A1	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		XS		P29A-000AT	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		XS		P29A-000B9	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6		XS		P29A-000BF	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8		SCH60		P29A-000PE	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10		XS		P29A-000BD	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12		XS		P29A-000BJ	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14		XS		P29A-000BS	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16		SCH60		P29A-000TR	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	18		SCH60		P29A-000C2	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	20		SCH60		P29A-000BX	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	24		SCH60		P29A-000BY	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
541	0.75				P29B-0000Y	Cap ASTM A105 Class 6000 ASME B16.11 NPT	
541	1				P29B-0000Z	Cap ASTM A105 Class 6000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P41A-000B9	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		XXS		P41A-000BA	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		XXS		P41A-000D8	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		XXS		P41A-000D9	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

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CON SWAGED NIPPLE (SNC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	SCH160	P42A-00029	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	SCH160	SCH160	P42A-0009T	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	SCH160	SCH160	P42A-0009U	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	SCH160	SCH160	P42A-0009V	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	SCH160	SCH160	P42A-0009W	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	SCH160	SCH160	P42A-0009X	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	XS	SCH160	P42A-000J6	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	XS	SCH160	P42A-000J7	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	XS	SCH160	P42A-000F8	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	XS	SCH160	P42A-000KZ	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	XS	SCH160	P42A-000L9	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
851	2	1	SCH160	SCH160	P42A-000JA	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
851	2	1.5	SCH160	SCH160	P42A-000JB	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	

ECC SWAGED NIPPLE (SNE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	SCH160	P43A-000AM	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	SCH160	SCH160	P43A-000B4	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	SCH160	SCH160	P43A-000B5	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	SCH160	SCH160	P43A-000B6	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	SCH160	SCH160	P43A-000B7	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	SCH160	SCH160	P43A-000B8	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	XS	SCH160	P43A-000B2	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	XS	SCH160	P43A-000B3	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	XS	SCH160	P43A-000CZ	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	XS	SCH160	P43A-000D0	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	XS	SCH160	P43A-000DM	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
851	2	1	SCH160	SCH160	P43A-000BB	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	
851	2	1.5	SCH160	SCH160	P43A-000BC	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - PE(S)	

COUPLING (CPS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P47B-00013	Coupling ASTM A105 Class 6000 ASME B16.11 SW - SW	
1	0.75				P47B-00012	Coupling ASTM A105 Class 6000 ASME B16.11 SW - SW	
1	1				P47B-0002A	Coupling ASTM A105 Class 6000 ASME B16.11 SW - SW	
1	1.5				P47B-0002B	Coupling ASTM A105 Class 6000 ASME B16.11 SW - SW	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5 - 2.5	0.75			P31B-0137D	Outlet ASTM A105 Class 6000 MSS SP-97 SW	
1	3 - 10	0.75			P31B-007LV	Outlet ASTM A105 Class 6000 MSS SP-97 SW	
1	12 and larger	0.75			P31B-0136N	Outlet ASTM A105 Class 6000 MSS SP-97 SW	
1	3 - 10	1			P31B-007LN	Outlet ASTM A105 Class 6000 MSS SP-97 SW	
1	12 and larger	1			P31B-0136P	Outlet ASTM A105 Class 6000 MSS SP-97 SW	
1	4 - 5	1.5			P31B-004LE	Outlet ASTM A105 Class 6000 MSS SP-97 SW	
1	6 - 8	1.5			P31B-005T4	Outlet ASTM A105 Class 6000 MSS SP-97 SW	
1	10 - 18	1.5			P31B-007LF	Outlet ASTM A105 Class 6000 MSS SP-97 SW	
1	20 and larger	1.5			P31B-0137E	Outlet ASTM A105 Class 6000 MSS SP-97 SW	
541	1	0.75			P31B-005HL	Outlet ASTM A105 Class 6000 MSS SP-97 NPT	
541	1.5 - 2.5	0.75			P31B-0137F	Outlet ASTM A105 Class 6000 MSS SP-97 NPT	
541	3 - 10	0.75			P31B-007KP	Outlet ASTM A105 Class 6000 MSS SP-97 NPT	
541	12 and larger	0.75			P31B-0138A	Outlet ASTM A105 Class 6000 MSS SP-97 NPT	
851	1.5 - 2.5	0.75			P31B-0137D	Outlet ASTM A105 Class 6000 MSS SP-97 SW	
851	3 - 10	0.75			P31B-007LV	Outlet ASTM A105 Class 6000 MSS SP-97 SW	
1	6	2	XS	XS	P31B-007SG	Outlet ASTM A105 MSS SP-97 BW	
1	8	2	SCH60	XS	P31B-00AGZ	Outlet ASTM A105 MSS SP-97 BW	
1	10	2	XS	XS	P31B-00AS9	Outlet ASTM A105 MSS SP-97 BW	
1	12	2	XS	XS	P31B-00CBM	Outlet ASTM A105 MSS SP-97 BW	
1	14	2	XS	XS	P31B-00CAD	Outlet ASTM A105 MSS SP-97 BW	

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OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	16	2	SCH60	XS	P31B-00C5H	Outlet ASTM A105 MSS SP-97 BW	
1	18	2	SCH60	XS	P31B-00C0A	Outlet ASTM A105 MSS SP-97 BW	
1	20	2	SCH60	XS	P31B-00996	Outlet ASTM A105 MSS SP-97 BW	
1	24	2	SCH60	XS	P31B-00931	Outlet ASTM A105 MSS SP-97 BW	
1	8	3	SCH60	XS	P31B-009Y2	Outlet ASTM A105 MSS SP-97 BW	
1	10	3	XS	XS	P31B-009CF	Outlet ASTM A105 MSS SP-97 BW	
1	12	3	XS	XS	P31B-0096E	Outlet ASTM A105 MSS SP-97 BW	
1	14	3	XS	XS	P31B-0090K	Outlet ASTM A105 MSS SP-97 BW	
1	16	3	SCH60	XS	P31B-008UG	Outlet ASTM A105 MSS SP-97 BW	
1	18	3	SCH60	XS	P31B-008ME	Outlet ASTM A105 MSS SP-97 BW	
1	20	3	SCH60	XS	P31B-008F6	Outlet ASTM A105 MSS SP-97 BW	
1	24	3	SCH60	XS	P31B-00891	Outlet ASTM A105 MSS SP-97 BW	
1	12	4	XS	XS	P31B-008ZP	Outlet ASTM A105 MSS SP-97 BW	
1	14	4	XS	XS	P31B-008TW	Outlet ASTM A105 MSS SP-97 BW	
1	16	4	SCH60	XS	P31B-008LP	Outlet ASTM A105 MSS SP-97 BW	
1	18	4	SCH60	XS	P31B-008K7	Outlet ASTM A105 MSS SP-97 BW	
1	20	4	SCH60	XS	P31B-008D0	Outlet ASTM A105 MSS SP-97 BW	
1	24	4	SCH60	XS	P31B-0086T	Outlet ASTM A105 MSS SP-97 BW	
1	18	6	SCH60	XS	P31B-008RT	Outlet ASTM A105 MSS SP-97 BW	
1	20	6	SCH60	XS	P31B-008PV	Outlet ASTM A105 MSS SP-97 BW	
1	24	6	SCH60	XS	P31B-008J9	Outlet ASTM A105 MSS SP-97 BW	
851	6	2	XS	SCH160	P31B-007SR	Outlet ASTM A105 MSS SP-97 BW	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30B-0002D	Plug ASTM A105 ASME B16.11 NPT Round head	
1	0.75				P30B-0002E	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1				P30B-0002F	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1.5				P30B-0002G	Plug ASTM A105 ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P61B-001DZ	Flange SW ASTM A105 Class 600 ASME B16.5 RF	
1	0.75		SCH160		P61B-001DW	Flange SW ASTM A105 Class 600 ASME B16.5 RF	
1	1		SCH160		P61B-005X5	Flange SW ASTM A105 Class 600 ASME B16.5 RF	
1	1.5		SCH160		P61B-005X6	Flange SW ASTM A105 Class 600 ASME B16.5 RF	
1	2		XS		P61B-001DH	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
1	3		XS		P61B-001M8	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
1	4		XS		P61B-001SH	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
1	6		XS		P61B-001T1	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
1	8		SCH60		P61B-003TE	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
1	10		XS		P61B-001JN	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
1	12		XS		P61B-001PC	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
1	14		XS		P61B-001PN	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
1	16		SCH60		P61B-003XE	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
1	18		SCH60		P61B-001KS	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
1	20		SCH60		P61B-001MM	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
1	24		SCH60		P61B-001NN	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
789	3		XS		P61B-00654	Flange WN ASTM A105 Class 900 ASME B16.5 RJ	
789	4		XS		P61B-00655	Flange WN ASTM A105 Class 900 ASME B16.5 RJ	
789	6		XS		P61B-00656	Flange WN ASTM A105 Class 900 ASME B16.5 RJ	
789	8		SCH60		P61B-0068B	Flange WN ASTM A105 Class 900 ASME B16.5 RJ	
789	10		XS		P61B-009UV	Flange WN ASTM A105 Class 900 ASME B16.5 RJ	
789	12		XS		P61B-009UW	Flange WN ASTM A105 Class 900 ASME B16.5 RJ	
789	14		XS		P61B-009UX	Flange WN ASTM A105 Class 900 ASME B16.5 RJ	
789	16		SCH60		P61B-009UY	Flange WN ASTM A105 Class 900 ASME B16.5 RJ	
789	18		SCH60		P61B-00ACA	Flange WN ASTM A105 Class 900 ASME B16.5 RJ	
789	20		SCH60		P61B-0068J	Flange WN ASTM A105 Class 900 ASME B16.5 RJ	
789	24		SCH60		P61B-00ACB	Flange WN ASTM A105 Class 900 ASME B16.5 RJ	

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FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
797	0.5		SCH160		P61B-00658	Flange SW ASTM A105 Class 1500 ASME B16.5 RJ	
797	0.75		SCH160		P61B-00659	Flange SW ASTM A105 Class 1500 ASME B16.5 RJ	
797	1		SCH160		P61B-0065A	Flange SW ASTM A105 Class 1500 ASME B16.5 RJ	
797	1.5		SCH160		P61B-0065B	Flange SW ASTM A105 Class 1500 ASME B16.5 RJ	
797	2		XS		P61B-0065C	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
851	2		SCH160		P61B-003T7	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
851	8		XS		P61B-001UC	Flange WN ASTM A105 Class 600 ASME B16.5 RF	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67B-000J7	Blind flange ASTM A105 Class 600 ASME B16.5 RF	
1	0.75				P67B-000J8	Blind flange ASTM A105 Class 600 ASME B16.5 RF	
1	1				P67B-000J9	Blind flange ASTM A105 Class 600 ASME B16.5 RF	
1	1.5				P67B-000JA	Blind flange ASTM A105 Class 600 ASME B16.5 RF	
1	2				P67B-000JG	Blind flange ASTM A105 Class 600 ASME B16.5 RF	
1	3				P67B-000JK	Blind flange ASTM A105 Class 600 ASME B16.5 RF	
1	4				P67B-000JL	Blind flange ASTM A105 Class 600 ASME B16.5 RF	
1	6				P67B-000JM	Blind flange ASTM A105 Class 600 ASME B16.5 RF	
1	8				P67B-000JN	Blind flange ASTM A105 Class 600 ASME B16.5 RF	
1	10				P67B-000JB	Blind flange ASTM A105 Class 600 ASME B16.5 RF	
1	12				P67B-000JC	Blind flange ASTM A105 Class 600 ASME B16.5 RF	
1	14				P67B-000JD	Blind flange ASTM A105 Class 600 ASME B16.5 RF	
1	16				P67B-000JE	Blind flange ASTM A105 Class 600 ASME B16.5 RF	
1	18				P67B-000JF	Blind flange ASTM A105 Class 600 ASME B16.5 RF	
1	20				P67B-000JH	Blind flange ASTM A105 Class 600 ASME B16.5 RF	
1	24				P67B-000JJ	Blind flange ASTM A105 Class 600 ASME B16.5 RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000J8	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000J9	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000JA	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000JB	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000JH	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000JL	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000JM	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	6				P73T-000JN	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	8				P73T-000JP	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	10				P73T-000JC	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	12				P73T-000JD	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	14				P73T-000JE	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	16				P73T-000JF	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	18				P73T-000JG	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	20				P73T-000JJ	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	24				P73T-000JK	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
789	3				P75T-000JN	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	4				P75T-000JP	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	6				P75T-000JR	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	8				P75T-000JS	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	10				P75T-000JL	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	12				P75T-000JM	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	14				P75T-000MJ	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	16				P75T-000MK	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	

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GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
789	18				P75T-000N8	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	20				P75T-000N7	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	24				P75T-000N9	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	0.5				P75T-000JT	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	0.75				P75T-000JU	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	1				P75T-000JV	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	1.5				P75T-000JW	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	2				P75T-0008A	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-6				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	8-24				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
789	1-3				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
789	4-24				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
797	0.5-2				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81B-000RA	Gate valve ASTM A105 Class 800 API 602 SW Trim number 5 BB-BG-OS&Y Handwheel operated	
1	0.75				P81B-000P0	Gate valve ASTM A105 Class 800 API 602 SW Trim number 5 BB-BG-OS&Y Handwheel operated	
1	1				P81B-000P1	Gate valve ASTM A105 Class 800 API 602 SW Trim number 5 BB-BG-OS&Y Handwheel operated	
1	1.5				P81B-000P2	Gate valve ASTM A105 Class 800 API 602 SW Trim number 5 BB-BG-OS&Y Handwheel operated	
1	2				P81C-004LC	Gate valve ASTM A216 Grade WCB Class 600 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated	
1	3				P81C-004LD	Gate valve ASTM A216 Grade WCB Class 600 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated	
1	4				P81C-004LE	Gate valve ASTM A216 Grade WCB Class 600 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated	
1	6				P81C-0087L	Gate valve ASTM A216 Grade WCB Class 600 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Gear operated	
1	8				P81C-004LP	Gate valve ASTM A216 Grade WCB Class 600 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Gear operated	
1	10				P81C-004LG	Gate valve ASTM A216 Grade WCB Class 600 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Gear operated	
1	12				P81C-004LH	Gate valve ASTM A216 Grade WCB Class 600 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Gear operated	
1	14				P81C-004LJ	Gate valve ASTM A216 Grade WCB Class 600 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Gear operated	
1	16				P81C-004LK	Gate valve ASTM A216 Grade WCB Class 600 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Gear operated	
1	18				P81C-004LL	Gate valve ASTM A216 Grade WCB Class 600 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Gear operated	
714	0.5				P81B-0015N	Gate valve ASTM A105 Class 800 API 602 SW - NPT Trim number 5 BB-BG-OS&Y Handwheel operated	
714	0.75				P81B-002FC	Gate valve ASTM A105 Class 800 API 602 SW - NPT Trim number 5 BB-BG-OS&Y Handwheel operated	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82B-000KW	Globe valve ASTM A105 Class 800 API 602 SW Trim number 5 BB-BG-OS&Y Handwheel operated	
1	0.75				P82B-000HE	Globe valve ASTM A105 Class 800 API 602 SW Trim number 5 BB-BG-OS&Y Handwheel operated	
1	1				P82B-000HF	Globe valve ASTM A105 Class 800 API 602 SW Trim number 5 BB-BG-OS&Y Handwheel operated	
1	1.5				P82B-000HG	Globe valve ASTM A105 Class 800 API 602 SW Trim number 5 BB-BG-OS&Y Handwheel operated	
1	2				P82C-00297	Globe valve ASTM A216 Grade WCB Class 600 BS 1873 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated	
1	3				P82C-00298	Globe valve ASTM A216 Grade WCB Class 600 BS 1873 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated	
1	4				P82C-00299	Globe valve ASTM A216 Grade WCB Class 600 BS 1873 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated	
1	6				P82C-004DB	Globe valve ASTM A216 Grade WCB Class 600 BS 1873 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Gear operated	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83B-000GL	Check valve ASTM A105 Class 800 API 602 SW Trim number 5 Lift-type Bolted cover	
1	0.75				P83B-000EU	Check valve ASTM A105 Class 800 API 602 SW Trim number 5 Lift-type Bolted cover	
1	1				P83B-000EV	Check valve ASTM A105 Class 800 API 602 SW Trim number 5 Lift-type Bolted cover	

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CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5				P83B-000EW	Check valve ASTM A105 Class 800 API 602 SW Trim number 5 Lift-type Bolted cover	
1	2				P83C-00266	Check valve ASTM A216 Grade WCB Class 600 BS 1868 Flange ASME B16.5 RF Trim number 5 Swing-type Bolted cover	
1	3				P83C-00267	Check valve ASTM A216 Grade WCB Class 600 BS 1868 Flange ASME B16.5 RF Trim number 5 Swing-type Bolted cover	
1	4				P83C-00268	Check valve ASTM A216 Grade WCB Class 600 BS 1868 Flange ASME B16.5 RF Trim number 5 Swing-type Bolted cover	
1	6				P83C-00269	Check valve ASTM A216 Grade WCB Class 600 BS 1868 Flange ASME B16.5 RF Trim number 5 Swing-type Bolted cover	

NEEDLE VALVE (NV)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82B-001K3	Needle valve ASTM A105 Class 800 API 602 SW Trim number 5 BB-BG-OS&Y Handwheel operated	

ORIFICE FLANGE (FO)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2		XS		P66B-008EY	Orifice flange WN ASTM A105 Class 600 ASME B16.36 RF NPS1/2 SW tap x 1	
1	3		XS		P66B-008G7	Orifice flange WN ASTM A105 Class 600 ASME B16.36 RF NPS1/2 SW tap x 1	
1	4		XS		P66B-008FA	Orifice flange WN ASTM A105 Class 600 ASME B16.36 RF NPS1/2 SW tap x 1	
1	6		XS		P66B-008FN	Orifice flange WN ASTM A105 Class 600 ASME B16.36 RF NPS1/2 SW tap x 1	
1	8		SCH60		P66B-008PK	Orifice flange WN ASTM A105 Class 600 ASME B16.36 RF NPS1/2 SW tap x 1	
200	2		XS		P66B-008F5	Orifice flange WN ASTM A105 Class 600 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	3		XS		P66B-008GE	Orifice flange WN ASTM A105 Class 600 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	4		XS		P66B-008FB	Orifice flange WN ASTM A105 Class 600 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	6		XS		P66B-008FT	Orifice flange WN ASTM A105 Class 600 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	8		SCH60		P66B-008PM	Orifice flange WN ASTM A105 Class 600 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71B-000E4	Spectacle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	0.75				P71B-000DN	Spectacle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	1				P71B-000DP	Spectacle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71B-000DR	Spectacle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	2				P71B-000DS	Spectacle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	3				P71B-000DT	Spectacle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	4				P71B-000DU	Spectacle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	6				P71B-000DV	Spectacle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	

PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	8				P72B-000MF	Paddle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	10				P72B-000MA	Paddle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	12				P72B-000M6	Paddle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	14				P72B-000MB	Paddle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	16				P72B-000MC	Paddle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	18				P72B-000MD	Paddle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	20				P72B-000ME	Paddle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	24				P72B-000MP	Paddle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	
789	3				P72B-000JJ	Paddle blank ASTM A105 Class 900 Standard-drawing Flange ASME B16.5 RJ	

PADDLE SPACER (PS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	8				P72B-000MM	Paddle spacer ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	10				P72B-000MG	Paddle spacer ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	12				P72B-000M7	Paddle spacer ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	14				P72B-000MH	Paddle spacer ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	16				P72B-000MJ	Paddle spacer ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	18				P72B-000MK	Paddle spacer ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	20				P72B-000ML	Paddle spacer ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	24				P72B-000MN	Paddle spacer ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	
789	3				P72B-000JU	Paddle spacer ASTM A105 Class 900 Standard-drawing Flange ASME B16.5 RJ	

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BOLT TABLE (B_D2AS , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	80	P80S-003V6		
0.75	4	0.625	90	P80S-003XF		
1	4	0.625	95	P80S-003XG		
1.5	4	0.750	110	P80S-003XK		
2	8	0.625	110	P80S-003VC		
3	8	0.750	130	P80S-003XP		
4	8	0.875	150	P80S-0041F		
6	12	1.000	175	P80S-0043P		
8	12	1.125	195	P80S-0046W		
10	16	1.250	250	P80S-004AY		
12	20	1.250	255	P80S-004AZ		
14	20	1.375	270	P80S-003E7		
16	20	1.500	295	P80S-003FL		
18	20	1.625	320	P80S-005TT		
20	24	1.625	335	P80S-005TW		
24	24	1.875	380	P80S-008P4		

BOLT TABLE (B_D2AS_789 , STUD ASME RJ, OPTION CODE 789)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	110		R12	
0.75	4	0.750	115		R14	
1	4	0.875	130	P80S-0041B	R16	
1.5	4	1.000	140		R20	
2	8	0.875	150	P80S-0041F	R24	
3	8	0.875	150	P80S-0041F	R31	P75T-000JN
4	8	1.125	175	P80S-0046S	R37	P75T-000JP
6	12	1.125	200	P80S-0046X	R45	P75T-000JR
8	12	1.375	260	P80S-003E5	R49	P75T-000JS
10	16	1.375	275	P80S-003E8	R53	P75T-000JL
12	20	1.375	295	P80S-003EC	R57	P75T-000JM
14	20	1.500	325	P80S-008N3	R62	P75T-000MJ
16	20	1.625	340	P80S-005TX	R66	P75T-000MK
18	20	1.875	390	P80S-008P6	R70	P75T-000N8
20	20	2.000	415	P80S-005VG	R74	P75T-000N7
24	20	2.500	525	P80S-00P1W	R78	P75T-000N9

BOLT TABLE (B_D2AS_797 , STUD ASME RJ, OPTION CODE 797)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	110	P80S-003XK	R12	P75T-000JT
0.75	4	0.750	115	P80S-003XL	R14	P75T-000JU
1	4	0.875	130	P80S-0041B	R16	P75T-000JV
1.5	4	1.000	140	P80S-0043F	R20	P75T-000JW
2	8	0.875	150	P80S-0041F	R24	P75T-0008A
3	8	1.125	180		R35	
4	8	1.250	230		R39	
6	12	1.375	300		R46	
8	12	1.625	345		R50	
10	12	1.875	395		R54	
12	16	2.000	445		R58	
14	16	2.250	490		R63	
16	16	2.500	540		R67	
18	16	2.750	590		R71	
20	16	3.000	650		R75	
24	16	3.500	745		R79	

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BRANCH TABLE (T_D2AS)

RUN PIPE SIZE (in) \ BRANCH SIZE (in)	0.5	0.75	1	1.5	2	3	4	6	8	10	12	14	16	18	20	24
0.5	TS															
0.75		TS														
1		TR	TS													
1.5		TR	TR	TS												
2		L	TR	TR	TS											
3		L	L	TR	TR	TS										
4	L	L	L	L	TR	TR	TS									
6	L	L	L	L	L	TR	TR	TS								
8		L	L	L	L	L	TR	TR	TS							
10		L	L	L	L	L	TR	TR	TR	TS						
12		L	L	L	L	L	L	TR	TR	TR	TS					
14		L	L	L	L	L	L	TR	TR	TR	TR	TS				
16		L	L	L	L	L	L	TR	TR	TR	TR	TR	TS			
18		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TS		
20		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TR	TS	
24		L	L	L	L	L	L	L	9PD	TR	TR	TR	TR	TR	TR	TS

TS : STRAIGHT TEE
TR : REDUCING TEE
9PD : REINFORCING PAD 90 DEG
L : OUTLET

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BRANCH TABLE (T_D2AS_4)

RUN PIPE SIZE (in) \ BRANCH SIZE (in)	0.5	0.75	1	1.5	2	3	4	6	8	10	12	14	16	18	20	24
0.5	TS 851															
0.75		TS 851														
1		TR 851	TS 851													
1.5		TR 851	TR 851	TS 851												
2		L 851	TR 851	TR 851	TS 851											
3		L 851	L 851	TR 851	TR 851	TS 851										
4		L 851	L 851	L 851	TR 851	TR 851	TS 851									
6		L 851	L 851	L 851	L 851	TR 851	TR 851	TS 851								
8		L 851	L 851	L 851	L 851	L 851	TR 851	TR 851	TS 851							
10		L 851	L 851	L 851	L 851	L 851	TR 851	TR 851	TR 851	TS 851						
12		L 851	L 851	L 851	L 851	L 851	L 851	TR 851	TR 851	TR 851	TS 851					
14		L 851	L 851	L 851	L 851	L 851	L 851	TR 851	TR 851	TR 851	TR 851	TS 851				
16		L 851	L 851	L 851	L 851	L 851	L 851	TR 851	TR 851	TR 851	TR 851	TR 851	TS 851			
18		L 851	L 851	L 851	L 851	L 851	L 851	L 851	TR 851	TR 851	TR 851	TR 851	TR 851	TS 851		
20		L 851	L 851	L 851	L 851	L 851	L 851	L 851	TR 851	TR 851	TR 851	TR 851	TR 851	TR 851	TS 851	
24		L 851	L 851	L 851	L 851	L 851	L 851	L 851	9PD 851	TR 851	TR 851	TR 851	TR 851	TR 851	TR 851	TS 851

TS : STRAIGHT TEE
9PD : REINFORCING PAD 90 DEG
TR : REDUCING TEE
L : OUTLET

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PIPING CLASS

D2DH REV NO. 2

Material : 1-1/4Cr - 1/2Mo
Rating : ASME CLASS 600
Flange Face : RF
C.A.(mm) : 3.00
Gasket : Spiral Wound
Service : PROCESS - HYDROGEN OR HYDROGEN RICH HYDROCARBON MIXTURE : / PROCESS WITH HYDROGEN

Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
16	PIPE CLASS SHALL BE USED WITHIN THE NORMAL OPERATING PRESSURE/TEMPERATURE LIMITS SPECIFIED IN API RP 941. PRESSURE / TEMPERATURE SPECIFIED IN THE PIPE CLASS EXCEEDING API RP 941 LIMITS SHOULD BE REGARDED AS UPSET CONDITIONS RATHER THAN FOR CONTINUOUS SERVICE
24	FOR ALL RELEVANT PIPING CLASSES WITH LINE DESIGN TEMPERATURE ABOVE 427DEGC, IN SPIRAL WOUND GASKET, SUITABLE GASKET FILLER MATERIAL SUCH AS COMBINATION OF MICA LAYERS AND GRAPHITE FILLERS OR EQUIVALENT SHALL BE REVIEWED AND SELECTED OR AS DEFINED BY THE LICENSOR
36	ASTM A691 CR-MO WELDED PIPES SPECIFIED WITH CLASS 22 CAN BE USED IN LIEU OF CLASS 42 IN NON-LICENSED UNITS ONLY. GRADE SHALL BE AS SPECIFIED IN "PIPE / FLANGE MATERIAL" SECTION IN ATTACHMENT 9.0 OF THIS DOCUMENT

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
200	WITH JACK SCREW (FO)
541	NPT(F) (CA,F,L)
789	CLASS 900 (B,F,G)
797	CLASS 1500 (B,F,G)
4202	SHORT RADIUS (9L)
4608	VALVE WITH NIPPLES (V)

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PIPING CLASS
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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P01F-0001X	Pipe ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M PE	
1	0.75		SCH160		P01F-0001Y	Pipe ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M PE	
1	1		SCH160		P01F-0003X	Pipe ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M PE	
1	1.5		SCH160		P01F-0003Y	Pipe ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M PE	
1	2		SCH160		P01F-0001Z	Pipe ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M BE	
1	3		XS		P01F-0005G	Pipe ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M BE	
1	4		XS		P01F-0001T	Pipe ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M BE	
1	6		XS		P01F-0001U	Pipe ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M BE	
1	8		XS		P01F-00022	Pipe ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M BE	
1	10		SCH80		P01F-0000V	Pipe ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M BE	
1	12		SCH80		P01F-0000U	Pipe ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M BE	
1	14		SCH80		P01F-0000T	Pipe ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M BE	
1	16		XS		P01F-00032	Pipe ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M BE	
1	18		STD		P01F-0002Y	Pipe ASTM A691 Grade 1-1/4CR Class 22 EFW ASME B36.10M/B36.19M BE	
1	20		XS		P01F-000BY	Pipe ASTM A691 Grade 1-1/4CR Class 22 EFW ASME B36.10M/B36.19M BE	
1	24		XS		P01F-00034	Pipe ASTM A691 Grade 1-1/4CR Class 22 EFW ASME B36.10M/B36.19M BE	
1	28		XS		P01F-001T9	Pipe ASTM A691 Grade 1-1/4CR Class 22 EFW ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P02G-00017	90 degree elbow ASTM A182 Grade F11 Class 1 Class 6000 ASME B16.11 SW	
1	0.75				P02G-00018	90 degree elbow ASTM A182 Grade F11 Class 1 Class 6000 ASME B16.11 SW	
1	1				P02G-0001S	90 degree elbow ASTM A182 Grade F11 Class 1 Class 6000 ASME B16.11 SW	
1	1.5				P02G-0001T	90 degree elbow ASTM A182 Grade F11 Class 1 Class 6000 ASME B16.11 SW	
1	2		SCH160		P02F-0007L	90 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	3		XS		P02F-000B1	90 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	4		XS		P02F-000B2	90 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	6		XS		P02F-000B3	90 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	8		XS		P02F-000B4	90 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	10		SCH80		P02F-00001	90 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	12		SCH80		P02F-00002	90 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	14		SCH80		P02F-00003	90 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	16		XS		P02F-000E1	90 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	18		STD		P02F-000D4	90 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	20		XS		P02F-000E2	90 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	24		XS		P02F-000E3	90 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
4202	24		XS		P02F-000PS	90 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Short radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P03G-00017	45 degree elbow ASTM A182 Grade F11 Class 1 Class 6000 ASME B16.11 SW	
1	0.75				P03G-00018	45 degree elbow ASTM A182 Grade F11 Class 1 Class 6000 ASME B16.11 SW	
1	1				P03G-0001M	45 degree elbow ASTM A182 Grade F11 Class 1 Class 6000 ASME B16.11 SW	
1	1.5				P03G-0001N	45 degree elbow ASTM A182 Grade F11 Class 1 Class 6000 ASME B16.11 SW	
1	2		SCH160		P03F-0007D	45 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	3		XS		P03F-000AU	45 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	4		XS		P03F-000AV	45 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	6		XS		P03F-000AW	45 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	8		XS		P03F-000AX	45 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	10		SCH80		P03F-00001	45 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	12		SCH80		P03F-00002	45 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	14		SCH80		P03F-00003	45 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	16		XS		P03F-000DU	45 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	18		STD		P03F-000CY	45 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	20		XS		P03F-000DV	45 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	24		XS		P03F-000DW	45 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	

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STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P21G-00017	Straight tee ASTM A182 Grade F11 Class 1 Class 6000 ASME B16.11 SW	
1	0.75				P21G-00018	Straight tee ASTM A182 Grade F11 Class 1 Class 6000 ASME B16.11 SW	
1	1				P21G-0001S	Straight tee ASTM A182 Grade F11 Class 1 Class 6000 ASME B16.11 SW	
1	1.5				P21G-0001T	Straight tee ASTM A182 Grade F11 Class 1 Class 6000 ASME B16.11 SW	
1	2		SCH160		P21F-0007E	Straight tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	3		XS		P21F-000AS	Straight tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	4		XS		P21F-000AT	Straight tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	6		XS		P21F-000AU	Straight tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	8		XS		P21F-000AV	Straight tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	10		SCH80		P21F-00001	Straight tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	12		SCH80		P21F-00002	Straight tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	14		SCH80		P21F-00003	Straight tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	16		XS		P21F-000DZ	Straight tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	18		STD		P21F-000CZ	Straight tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	
1	20		XS		P21F-000E0	Straight tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	
1	24		XS		P21F-000E1	Straight tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75			P24G-0001S	Reducing tee ASTM A182 Grade F11 Class 1 Class 6000 ASME B16.11 SW	
1	1.5	0.75			P24G-0001T	Reducing tee ASTM A182 Grade F11 Class 1 Class 6000 ASME B16.11 SW	
1	1.5	1			P24G-0001U	Reducing tee ASTM A182 Grade F11 Class 1 Class 6000 ASME B16.11 SW	
1	2	1	SCH160	SCH160	P24F-000XS	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	2	1.5	SCH160	SCH160	P24F-000GY	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	3	1.5	XS	SCH160	P24F-000XT	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	3	2	XS	SCH160	P24F-000XU	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	4	2	XS	SCH160	P24F-000XV	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	4	3	XS	XS	P24F-000XW	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	6	3	XS	XS	P24F-000XX	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	6	4	XS	XS	P24F-000XY	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	8	4	XS	XS	P24F-000XZ	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	8	6	XS	XS	P24F-000Y0	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	10	4	SCH80	XS	P24F-000Y1	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	10	6	SCH80	XS	P24F-000Y2	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	10	8	SCH80	XS	P24F-000Y3	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	12	6	SCH80	XS	P24F-001C8	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	12	8	SCH80	XS	P24F-001C9	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	12	10	SCH80	SCH80	P24F-0000C	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	14	6	SCH80	XS	P24F-001CA	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	14	8	SCH80	XS	P24F-001CB	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	14	10	SCH80	SCH80	P24F-0000F	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	14	12	SCH80	SCH80	P24F-0000G	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	16	6	XS	XS	P24F-0019S	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	16	8	XS	XS	P24F-001CE	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	16	10	XS	SCH80	P24F-001CC	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	16	12	XS	SCH80	P24F-001CD	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	16	14	XS	SCH80	P24F-001CJ	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	18	8	STD	XS	P24F-0021K	Reducing tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	
1	18	10	STD	SCH80	P24F-0021G	Reducing tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	
1	18	12	STD	SCH80	P24F-0021H	Reducing tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	
1	18	14	STD	SCH80	P24F-0021J	Reducing tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	
1	18	16	STD	XS	P24F-0019X	Reducing tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	
1	20	8	XS	XS	P24F-001C7	Reducing tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	
1	20	10	XS	SCH80	P24F-001CM	Reducing tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	
1	20	12	XS	SCH80	P24F-001CN	Reducing tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	
1	20	14	XS	SCH80	P24F-001CP	Reducing tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	
1	20	16	XS	XS	P24F-001A2	Reducing tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	
1	20	18	XS	STD	P24F-001A3	Reducing tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	
1	24	10	XS	SCH80	P24F-001SU	Reducing tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	

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REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	24	12	XS	SCH80	P24F-001SW	Reducing tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	
1	24	14	XS	SCH80	P24F-001SX	Reducing tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	
1	24	16	XS	XS	P24F-001A8	Reducing tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	
1	24	18	XS	STD	P24F-001A9	Reducing tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	
1	24	20	XS	XS	P24F-001AA	Reducing tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	XS	SCH160	P27F-000SP	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	4	2	XS	SCH160	P27F-000SR	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	4	3	XS	XS	P27F-000SS	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	6	3	XS	XS	P27F-000ST	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	6	4	XS	XS	P27F-000SU	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	8	4	XS	XS	P27F-000SV	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	8	6	XS	XS	P27F-000SW	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	10	4	SCH80	XS	P27F-000SX	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	10	6	SCH80	XS	P27F-000SY	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	10	8	SCH80	XS	P27F-000SZ	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	12	6	SCH80	XS	P27F-00143	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	12	8	SCH80	XS	P27F-00144	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	12	10	SCH80	SCH80	P27F-0000G	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	14	6	SCH80	XS	P27F-00145	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	14	8	SCH80	XS	P27F-00146	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	14	10	SCH80	SCH80	P27F-0000K	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	14	12	SCH80	SCH80	P27F-0000L	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	16	8	XS	XS	P27F-0014A	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	16	10	XS	SCH80	P27F-00147	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	16	12	XS	SCH80	P27F-00148	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	16	14	XS	SCH80	P27F-00149	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	18	10	STD	SCH80	P27F-001J3	Concentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	
1	18	12	STD	SCH80	P27F-001J4	Concentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	
1	18	14	STD	SCH80	P27F-001J5	Concentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	
1	18	16	STD	XS	P27F-0012N	Concentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	
1	20	12	XS	SCH80	P27F-0014Z	Concentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	
1	20	14	XS	SCH80	P27F-00150	Concentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	
1	20	16	XS	XS	P27F-0012S	Concentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	
1	20	18	XS	STD	P27F-0012T	Concentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	
1	24	16	XS	XS	P27F-0012U	Concentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	
1	24	18	XS	STD	P27F-0012V	Concentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	
1	24	20	XS	XS	P27F-0012W	Concentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	
1	28	24	XS	XS	P27F-0025J	Concentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	XS	SCH160	P28F-000SP	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	4	2	XS	SCH160	P28F-000SR	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	4	3	XS	XS	P28F-000SS	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	6	3	XS	XS	P28F-000ST	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	6	4	XS	XS	P28F-000SU	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	8	4	XS	XS	P28F-000SV	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	8	6	XS	XS	P28F-000SW	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	10	4	SCH80	XS	P28F-000SX	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	10	6	SCH80	XS	P28F-000SY	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	10	8	SCH80	XS	P28F-000SZ	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	12	6	SCH80	XS	P28F-00145	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	12	8	SCH80	XS	P28F-00146	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	12	10	SCH80	SCH80	P28F-0000G	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	14	6	SCH80	XS	P28F-00147	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	14	8	SCH80	XS	P28F-00148	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	

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ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14	10	SCH80	SCH80	P28F-0000K	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	14	12	SCH80	SCH80	P28F-0000L	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	16	8	XS	XS	P28F-0014C	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	16	10	XS	SCH80	P28F-00149	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	16	12	XS	SCH80	P28F-0014A	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	16	14	XS	SCH80	P28F-0014B	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	18	10	STD	SCH80	P28F-001JL	Eccentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	
1	18	12	STD	SCH80	P28F-001JM	Eccentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	
1	18	14	STD	SCH80	P28F-001JN	Eccentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	
1	18	16	STD	XS	P28F-0012P	Eccentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	
1	20	12	XS	SCH80	P28F-0014V	Eccentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	
1	20	14	XS	SCH80	P28F-0014W	Eccentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	
1	20	16	XS	XS	P28F-0012T	Eccentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	
1	20	18	XS	STD	P28F-0012U	Eccentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	
1	24	16	XS	XS	P28F-0012V	Eccentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	
1	24	18	XS	STD	P28F-0012W	Eccentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	
1	24	20	XS	XS	P28F-0012X	Eccentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P29G-00012	Cap ASTM A182 Grade F11 Class 1 Class 6000 ASME B16.11 SW	
1	0.75				P29G-00013	Cap ASTM A182 Grade F11 Class 1 Class 6000 ASME B16.11 SW	
1	1				P29G-0001G	Cap ASTM A182 Grade F11 Class 1 Class 6000 ASME B16.11 SW	
1	1.5				P29G-0001H	Cap ASTM A182 Grade F11 Class 1 Class 6000 ASME B16.11 SW	
1	2		SCH160		P29F-00075	Cap ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	3		XS		P29F-000AJ	Cap ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	4		XS		P29F-000AK	Cap ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	6		XS		P29F-000AL	Cap ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	8		XS		P29F-000AM	Cap ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	10		SCH80		P29F-00001	Cap ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	12		SCH80		P29F-00002	Cap ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	14		SCH80		P29F-00003	Cap ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	16		XS		P29F-000DP	Cap ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	18		STD		P29F-000CT	Cap ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	20		XS		P29F-000DR	Cap ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	24		XS		P29F-000DS	Cap ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
541	0.75				P29G-0001R	Cap ASTM A182 Grade F11 Class 1 Class 6000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P41F-0002D	Straight nipple ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		XXS		P41F-0002E	Straight nipple ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		XXS		P41F-0002F	Straight nipple ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		XXS		P41F-0002G	Straight nipple ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

CON SWAGED NIPPLE (SNC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	SCH160	P42F-0001N	Concentric swaged nipple ASTM A234 Grade WP11 Class 1 Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	SCH160	SCH160	P42F-0001P	Concentric swaged nipple ASTM A234 Grade WP11 Class 1 Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	SCH160	SCH160	P42F-0001R	Concentric swaged nipple ASTM A234 Grade WP11 Class 1 Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	SCH160	SCH160	P42F-0001S	Concentric swaged nipple ASTM A234 Grade WP11 Class 1 Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	SCH160	SCH160	P42F-0001T	Concentric swaged nipple ASTM A234 Grade WP11 Class 1 Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	SCH160	SCH160	P42F-0001U	Concentric swaged nipple ASTM A234 Grade WP11 Class 1 Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	SCH160	SCH160	P42F-0003P	Concentric swaged nipple ASTM A234 Grade WP11 Class 1 Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	SCH160	SCH160	P42F-0003R	Concentric swaged nipple ASTM A234 Grade WP11 Class 1 Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	SCH160	SCH160	P42F-0003S	Concentric swaged nipple ASTM A234 Grade WP11 Class 1 Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	SCH160	SCH160	P42F-00025	Concentric swaged nipple ASTM A234 Grade WP11 Class 1 Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	XS	SCH160	P42F-0003T	Concentric swaged nipple ASTM A234 Grade WP11 Class 1 Seamless MSS SP-95 BE(L) - PE(S)	

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ECC SWAGED NIPPLE (SNE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	SCH160	P43F-00031	Eccentric swaged nipple ASTM A234 Grade WP11 Class 1 Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	SCH160	SCH160	P43F-00032	Eccentric swaged nipple ASTM A234 Grade WP11 Class 1 Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	SCH160	SCH160	P43F-0001J	Eccentric swaged nipple ASTM A234 Grade WP11 Class 1 Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	SCH160	SCH160	P43F-00033	Eccentric swaged nipple ASTM A234 Grade WP11 Class 1 Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	SCH160	SCH160	P43F-0001L	Eccentric swaged nipple ASTM A234 Grade WP11 Class 1 Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	SCH160	SCH160	P43F-0001M	Eccentric swaged nipple ASTM A234 Grade WP11 Class 1 Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	SCH160	SCH160	P43F-00034	Eccentric swaged nipple ASTM A234 Grade WP11 Class 1 Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	SCH160	SCH160	P43F-00035	Eccentric swaged nipple ASTM A234 Grade WP11 Class 1 Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	SCH160	SCH160	P43F-00036	Eccentric swaged nipple ASTM A234 Grade WP11 Class 1 Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	SCH160	SCH160	P43F-0001N	Eccentric swaged nipple ASTM A234 Grade WP11 Class 1 Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	XS	SCH160	P43F-00037	Eccentric swaged nipple ASTM A234 Grade WP11 Class 1 Seamless MSS SP-95 BE(L) - PE(S)	

COUPLING (CPS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P47G-0001A	Coupling ASTM A182 Grade F11 Class 1 Class 6000 ASME B16.11 SW - SW	
1	0.75				P47G-0001B	Coupling ASTM A182 Grade F11 Class 1 Class 6000 ASME B16.11 SW - SW	
1	1				P47G-0001Y	Coupling ASTM A182 Grade F11 Class 1 Class 6000 ASME B16.11 SW - SW	
1	1.5				P47G-0001Z	Coupling ASTM A182 Grade F11 Class 1 Class 6000 ASME B16.11 SW - SW	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5 - 2.5	0.75			P31G-00360	Outlet ASTM A182 Grade F11 Class 1 Class 6000 MSS SP-97 SW	
1	3 - 10	0.75			P31G-0035Z	Outlet ASTM A182 Grade F11 Class 1 Class 6000 MSS SP-97 SW	
1	12 and larger	0.75			P31G-00361	Outlet ASTM A182 Grade F11 Class 1 Class 6000 MSS SP-97 SW	
1	3 - 10	1			P31G-00363	Outlet ASTM A182 Grade F11 Class 1 Class 6000 MSS SP-97 SW	
1	12 and larger	1			P31G-00362	Outlet ASTM A182 Grade F11 Class 1 Class 6000 MSS SP-97 SW	
1	4 - 5	1.5			P31G-00364	Outlet ASTM A182 Grade F11 Class 1 Class 6000 MSS SP-97 SW	
1	6 - 8	1.5			P31G-00365	Outlet ASTM A182 Grade F11 Class 1 Class 6000 MSS SP-97 SW	
1	10 - 18	1.5			P31G-00366	Outlet ASTM A182 Grade F11 Class 1 Class 6000 MSS SP-97 SW	
1	20 and larger	1.5			P31G-00367	Outlet ASTM A182 Grade F11 Class 1 Class 6000 MSS SP-97 SW	
541	1	0.75			P31G-0035Y	Outlet ASTM A182 Grade F11 Class 1 Class 6000 MSS SP-97 NPT	
541	1.5 - 2.5	0.75			P31G-00369	Outlet ASTM A182 Grade F11 Class 1 Class 6000 MSS SP-97 NPT	
541	3 - 10	0.75			P31G-00368	Outlet ASTM A182 Grade F11 Class 1 Class 6000 MSS SP-97 NPT	
541	12 and larger	0.75			P31G-0036A	Outlet ASTM A182 Grade F11 Class 1 Class 6000 MSS SP-97 NPT	
1	6	2	XS	SCH160	P31G-0019Z	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	8	2	XS	SCH160	P31G-001A0	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	10	2	SCH80	SCH160	P31G-001A2	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	12	2	SCH80	SCH160	P31G-001RA	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	14	2	SCH80	SCH160	P31G-001RD	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	16	2	XS	SCH160	P31G-001RG	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	18	2	STD	SCH160	P31G-002DY	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	20	2	XS	SCH160	P31G-001RP	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	24	2	XS	SCH160	P31G-0024X	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	8	3	XS	XS	P31G-001A1	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	10	3	SCH80	XS	P31G-001A3	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	12	3	SCH80	XS	P31G-001RB	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	14	3	SCH80	XS	P31G-001RE	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	16	3	XS	XS	P31G-001RH	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	18	3	STD	XS	P31G-002DZ	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	20	3	XS	XS	P31G-001RR	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	24	3	XS	XS	P31G-0024Y	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	12	4	SCH80	XS	P31G-001RC	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	14	4	SCH80	XS	P31G-001RF	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	16	4	XS	XS	P31G-001RJ	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	18	4	STD	XS	P31G-002E0	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	20	4	XS	XS	P31G-001RS	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	24	4	XS	XS	P31G-0024Z	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	18	6	STD	XS	P31G-001NY	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	20	6	XS	XS	P31G-001P2	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	

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OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	24	6	XS	XS	P31G-001P6	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30G-0001G	Plug ASTM A182 Grade F11 Class 1 ASME B16.11 NPT Round head	
1	0.75				P30G-0001H	Plug ASTM A182 Grade F11 Class 1 ASME B16.11 NPT Round head	
1	1				P30G-0001J	Plug ASTM A182 Grade F11 Class 1 ASME B16.11 NPT Round head	
1	1.5				P30G-0001K	Plug ASTM A182 Grade F11 Class 1 ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P61G-0004B	Flange SW ASTM A182 Grade F11 Class 2 Class 600 ASME B16.5 RF	
1	0.75		SCH160		P61G-0004C	Flange SW ASTM A182 Grade F11 Class 2 Class 600 ASME B16.5 RF	
1	1		SCH160		P61G-000JR	Flange SW ASTM A182 Grade F11 Class 2 Class 600 ASME B16.5 RF	
1	1.5		SCH160		P61G-000JS	Flange SW ASTM A182 Grade F11 Class 2 Class 600 ASME B16.5 RF	
1	2		SCH160		P61G-0004E	Flange WN ASTM A182 Grade F11 Class 2 Class 600 ASME B16.5 RF	
1	3		XS		P61G-000JX	Flange WN ASTM A182 Grade F11 Class 2 Class 600 ASME B16.5 RF	
1	4		XS		P61G-0003W	Flange WN ASTM A182 Grade F11 Class 2 Class 600 ASME B16.5 RF	
1	6		XS		P61G-0003X	Flange WN ASTM A182 Grade F11 Class 2 Class 600 ASME B16.5 RF	
1	8		XS		P61G-0004J	Flange WN ASTM A182 Grade F11 Class 2 Class 600 ASME B16.5 RF	
1	10		SCH80		P61G-0004D	Flange WN ASTM A182 Grade F11 Class 2 Class 600 ASME B16.5 RF	
1	12		SCH80		P61G-000JT	Flange WN ASTM A182 Grade F11 Class 2 Class 600 ASME B16.5 RF	
1	14		SCH80		P61G-000JU	Flange WN ASTM A182 Grade F11 Class 2 Class 600 ASME B16.5 RF	
1	16		XS		P61G-0007A	Flange WN ASTM A182 Grade F11 Class 2 Class 600 ASME B16.5 RF	
1	18		STD		P61G-0009A	Flange WN ASTM A182 Grade F11 Class 2 Class 600 ASME B16.5 RF	
1	20		XS		P61G-000JW	Flange WN ASTM A182 Grade F11 Class 2 Class 600 ASME B16.5 RF	
1	24		XS		P61G-0007C	Flange WN ASTM A182 Grade F11 Class 2 Class 600 ASME B16.5 RF	
1	28		XS		P61G-001F1	Flange WN ASTM A182 Grade F11 Class 2 Class 600 ASME B16.47 Series B RF	
541	0.5				P61G-001AX	Flange NPT ASTM A182 Grade F11 Class 2 Class 600 ASME B16.5 RF	
541	0.75				P61G-0015Z	Flange NPT ASTM A182 Grade F11 Class 2 Class 600 ASME B16.5 RF	
789	3		XS		P61G-000K3	Flange WN ASTM A182 Grade F11 Class 2 Class 900 ASME B16.5 RJ	
789	4		XS		P61G-00041	Flange WN ASTM A182 Grade F11 Class 2 Class 900 ASME B16.5 RJ	
789	6		XS		P61G-00042	Flange WN ASTM A182 Grade F11 Class 2 Class 900 ASME B16.5 RJ	
789	8		XS		P61G-0004P	Flange WN ASTM A182 Grade F11 Class 2 Class 900 ASME B16.5 RJ	
789	10		SCH80		P61G-0004K	Flange WN ASTM A182 Grade F11 Class 2 Class 900 ASME B16.5 RJ	
789	12		SCH80		P61G-000JY	Flange WN ASTM A182 Grade F11 Class 2 Class 900 ASME B16.5 RJ	
789	14		SCH80		P61G-000JZ	Flange WN ASTM A182 Grade F11 Class 2 Class 900 ASME B16.5 RJ	
789	16		XS		P61G-000K0	Flange WN ASTM A182 Grade F11 Class 2 Class 900 ASME B16.5 RJ	
789	18		STD		P61G-00135	Flange WN ASTM A182 Grade F11 Class 2 Class 900 ASME B16.5 RJ	
789	20		XS		P61G-000K2	Flange WN ASTM A182 Grade F11 Class 2 Class 900 ASME B16.5 RJ	
789	24		XS		P61G-000ZU	Flange WN ASTM A182 Grade F11 Class 2 Class 900 ASME B16.5 RJ	
797	0.5		SCH160		P61G-0004R	Flange SW ASTM A182 Grade F11 Class 2 Class 1500 ASME B16.5 RJ	
797	0.75		SCH160		P61G-0004S	Flange SW ASTM A182 Grade F11 Class 2 Class 1500 ASME B16.5 RJ	
797	1		SCH160		P61G-000K4	Flange SW ASTM A182 Grade F11 Class 2 Class 1500 ASME B16.5 RJ	
797	1.5		SCH160		P61G-000K5	Flange SW ASTM A182 Grade F11 Class 2 Class 1500 ASME B16.5 RJ	
797	2		SCH160		P61G-0004T	Flange WN ASTM A182 Grade F11 Class 2 Class 1500 ASME B16.5 RJ	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67G-00026	Blind flange ASTM A182 Grade F11 Class 2 Class 600 ASME B16.5 RF	
1	0.75				P67G-00027	Blind flange ASTM A182 Grade F11 Class 2 Class 600 ASME B16.5 RF	
1	1				P67G-00028	Blind flange ASTM A182 Grade F11 Class 2 Class 600 ASME B16.5 RF	
1	1.5				P67G-00029	Blind flange ASTM A182 Grade F11 Class 2 Class 600 ASME B16.5 RF	
1	2				P67G-0002L	Blind flange ASTM A182 Grade F11 Class 2 Class 600 ASME B16.5 RF	
1	3				P67G-0002M	Blind flange ASTM A182 Grade F11 Class 2 Class 600 ASME B16.5 RF	
1	4				P67G-0002D	Blind flange ASTM A182 Grade F11 Class 2 Class 600 ASME B16.5 RF	
1	6				P67G-0002E	Blind flange ASTM A182 Grade F11 Class 2 Class 600 ASME B16.5 RF	
1	8				P67G-0002N	Blind flange ASTM A182 Grade F11 Class 2 Class 600 ASME B16.5 RF	
1	10				P67G-0002K	Blind flange ASTM A182 Grade F11 Class 2 Class 600 ASME B16.5 RF	

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BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	12				P67G-0007N	Blind flange ASTM A182 Grade F11 Class 2 Class 600 ASME B16.5 RF	
1	14				P67G-0007P	Blind flange ASTM A182 Grade F11 Class 2 Class 600 ASME B16.5 RF	
1	16				P67G-0002A	Blind flange ASTM A182 Grade F11 Class 2 Class 600 ASME B16.5 RF	
1	18				P67G-0007R	Blind flange ASTM A182 Grade F11 Class 2 Class 600 ASME B16.5 RF	
1	20				P67G-0002B	Blind flange ASTM A182 Grade F11 Class 2 Class 600 ASME B16.5 RF	
1	24				P67G-0002C	Blind flange ASTM A182 Grade F11 Class 2 Class 600 ASME B16.5 RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-003B4	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	0.75				P73T-003B5	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	1				P73T-003B6	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	1.5				P73T-003B7	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	2				P73T-003BD	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	3				P73T-003BG	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	4				P73T-003BH	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	6				P73T-003BJ	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	8				P73T-003BK	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	10				P73T-003B8	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	12				P73T-003B9	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	14				P73T-003BA	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	16				P73T-003BB	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	18				P73T-003BC	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	20				P73T-003BE	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	24				P73T-003BF	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	28				P73T-00435	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.47-B RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
789	3				P75T-000KP	Ring joint gasket 5Cr-1/2Mo Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	4				P75T-000KC	Ring joint gasket 5Cr-1/2Mo Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	6				P75T-000KD	Ring joint gasket 5Cr-1/2Mo Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	8				P75T-000KR	Ring joint gasket 5Cr-1/2Mo Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	10				P75T-000KN	Ring joint gasket 5Cr-1/2Mo Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	12				P75T-0010W	Ring joint gasket 5Cr-1/2Mo Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	14				P75T-000KY	Ring joint gasket 5Cr-1/2Mo Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	16				P75T-000K9	Ring joint gasket 5Cr-1/2Mo Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	18				P75T-000KZ	Ring joint gasket 5Cr-1/2Mo Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	20				P75T-000KA	Ring joint gasket 5Cr-1/2Mo Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	24				P75T-000KB	Ring joint gasket 5Cr-1/2Mo Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	0.5				P75T-000KE	Ring joint gasket 5Cr-1/2Mo Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	0.75				P75T-000KF	Ring joint gasket 5Cr-1/2Mo Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	1				P75T-000KG	Ring joint gasket 5Cr-1/2Mo Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	1.5				P75T-000KH	Ring joint gasket 5Cr-1/2Mo Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	2				P75T-000KS	Ring joint gasket 5Cr-1/2Mo Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-6				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B16 / A194 Grade 4 ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	8-24				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B16 / A194 Grade 4 ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
789	1-3				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B16 / A194 Grade 4 ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
789	4-24				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B16 / A194 Grade 4 ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
797	0.5-2				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B16 / A194 Grade 4 ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	

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GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81G-00087	Gate valve ASTM A182 Grade F11 Class 2 Class 600 API 602 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2	
1	0.75				P81G-00088	Gate valve ASTM A182 Grade F11 Class 2 Class 600 API 602 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2	
1	1				P81G-00089	Gate valve ASTM A182 Grade F11 Class 2 Class 600 API 602 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2	
1	1.5				P81G-0008A	Gate valve ASTM A182 Grade F11 Class 2 Class 600 API 602 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2	
1	2				P81H-000N3	Gate valve ASTM A217 Grade WC6 Class 600 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2	
1	3				P81H-000NW	Gate valve ASTM A217 Grade WC6 Class 600 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2	
1	4				P81H-000NX	Gate valve ASTM A217 Grade WC6 Class 600 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2	
1	6				P81H-000NY	Gate valve ASTM A217 Grade WC6 Class 600 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2	
1	8				P81H-000P2	Gate valve ASTM A217 Grade WC6 Class 600 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Gear operated Fluid-2	
1	10				P81H-000NZ	Gate valve ASTM A217 Grade WC6 Class 600 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Gear operated Fluid-2	
1	12				P81H-000P0	Gate valve ASTM A217 Grade WC6 Class 600 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Gear operated Fluid-2	
1	14				P81H-000P1	Gate valve ASTM A217 Grade WC6 Class 600 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Gear operated Fluid-2	
4608	0.75				P81G-000EK	Gate valve ASTM A182 Grade F11 Class 2 Class 800 API 602 SW both sides w/ nipples PE - NPT ASTM A335-P11 XXS-nipple Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82G-0004B	Globe valve ASTM A182 Grade F11 Class 2 Class 600 API 602 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2	
1	0.75				P82G-0004C	Globe valve ASTM A182 Grade F11 Class 2 Class 600 API 602 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2	
1	1				P82G-0004D	Globe valve ASTM A182 Grade F11 Class 2 Class 600 API 602 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2	
1	1.5				P82G-0004E	Globe valve ASTM A182 Grade F11 Class 2 Class 600 API 602 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2	
1	2				P82H-0008E	Globe valve ASTM A217 Grade WC6 Class 600 BS 1873 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2	
1	3				P82H-0008P	Globe valve ASTM A217 Grade WC6 Class 600 BS 1873 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2	
1	4				P82H-000ES	Globe valve ASTM A217 Grade WC6 Class 600 BS 1873 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Gear operated Fluid-2	
1	6				P82H-000ET	Globe valve ASTM A217 Grade WC6 Class 600 BS 1873 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Gear operated Fluid-2	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83G-00021	Check valve ASTM A182 Grade F11 Class 2 Class 600 API 602 Flange ASME B16.5 RF Trim number 5 Lift-type Bolted cover	
1	0.75				P83G-00022	Check valve ASTM A182 Grade F11 Class 2 Class 600 API 602 Flange ASME B16.5 RF Trim number 5 Lift-type Bolted cover	
1	1				P83G-00023	Check valve ASTM A182 Grade F11 Class 2 Class 600 API 602 Flange ASME B16.5 RF Trim number 5 Lift-type Bolted cover	
1	1.5				P83G-00024	Check valve ASTM A182 Grade F11 Class 2 Class 600 API 602 Flange ASME B16.5 RF Trim number 5 Lift-type Bolted cover	
1	2				P83H-0005G	Check valve ASTM A217 Grade WC6 Class 600 BS 1868 Flange ASME B16.5 RF Trim number 5 Swing-type Bolted cover	
1	3				P83H-0005H	Check valve ASTM A217 Grade WC6 Class 600 BS 1868 Flange ASME B16.5 RF Trim number 5 Swing-type Bolted cover	
1	4				P83H-0005M	Check valve ASTM A217 Grade WC6 Class 600 BS 1868 Flange ASME B16.5 RF Trim number 5 Swing-type Bolted cover	
1	6				P83H-0005J	Check valve ASTM A217 Grade WC6 Class 600 BS 1868 Flange ASME B16.5 RF Trim number 5 Swing-type Bolted cover	
1	8				P83H-0005K	Check valve ASTM A217 Grade WC6 Class 600 BS 1868 Flange ASME B16.5 RF Trim number 5 Swing-type Bolted cover	
1	10				P83H-0008X	Check valve ASTM A217 Grade WC6 Class 600 BS 1868 Flange ASME B16.5 RF Trim number 5 Swing-type Bolted cover	

DP CHECK VALVE (XDP)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	12				P88H-0008G	Dual plate check valve ASTM A217 Grade WC6 Class 600 API 594 Wafer-type ASME B16.5 RF Trim number 5 Internal wetted parts 13Cr Spring Inconel Retainerless-type	
1	14				P88H-0008H	Dual plate check valve ASTM A217 Grade WC6 Class 600 API 594 Wafer-type ASME B16.5 RF Trim number 5 Internal wetted parts 13Cr Spring Inconel Retainerless-type	

BUTTERFLY VALVE (H)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	12				P86H-0001X	Offset design butterfly valve ASTM A217 Grade WC6 Class 600 API 609 Category B Lug-type ASME B16.5 RF Disc 1-1/4Cr-1/2Mo Seat Stellite-6 Trim 13Cr Triple eccentric design BG Gear operated Fluid-2	

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BUTTERFLY VALVE (H)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P86H-0001Y	Offset design butterfly valve ASTM A217 Grade WC6 Class 600 API 609 Category B Lug-type ASME B16.5 RF Disc 1-1/4Cr-1/2Mo Seat Stellite-6 Trim 13Cr Triple eccentric design BG Gear operated Fluid-2	

ORIFICE FLANGE (FO)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2		SCH160		P66G-0009M	Orifice flange WN ASTM A182 Grade F11 Class 2 Class 600 ASME B16.36 RF NPS1/2 SW tap x 1	
1	3		XS		P66G-0008Z	Orifice flange WN ASTM A182 Grade F11 Class 2 Class 600 ASME B16.36 RF NPS1/2 SW tap x 1	
1	4		XS		P66G-00090	Orifice flange WN ASTM A182 Grade F11 Class 2 Class 600 ASME B16.36 RF NPS1/2 SW tap x 1	
1	6		XS		P66G-00091	Orifice flange WN ASTM A182 Grade F11 Class 2 Class 600 ASME B16.36 RF NPS1/2 SW tap x 1	
1	8		XS		P66G-0009N	Orifice flange WN ASTM A182 Grade F11 Class 2 Class 600 ASME B16.36 RF NPS1/2 SW tap x 1	
1	10		SCH80		P66G-0009H	Orifice flange WN ASTM A182 Grade F11 Class 2 Class 600 ASME B16.36 RF NPS1/2 SW tap x 1	
1	12		SCH80		P66G-0009J	Orifice flange WN ASTM A182 Grade F11 Class 2 Class 600 ASME B16.36 RF NPS1/2 SW tap x 1	
1	14		SCH80		P66G-0009K	Orifice flange WN ASTM A182 Grade F11 Class 2 Class 600 ASME B16.36 RF NPS1/2 SW tap x 1	
1	16		XS		P66G-0009L	Orifice flange WN ASTM A182 Grade F11 Class 2 Class 600 ASME B16.36 RF NPS1/2 SW tap x 1	
200	2		SCH160		P66G-0009W	Orifice flange WN ASTM A182 Grade F11 Class 2 Class 600 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	3		XS		P66G-0009B	Orifice flange WN ASTM A182 Grade F11 Class 2 Class 600 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	4		XS		P66G-0009C	Orifice flange WN ASTM A182 Grade F11 Class 2 Class 600 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	6		XS		P66G-0009D	Orifice flange WN ASTM A182 Grade F11 Class 2 Class 600 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	8		XS		P66G-0009X	Orifice flange WN ASTM A182 Grade F11 Class 2 Class 600 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	10		SCH80		P66G-0009S	Orifice flange WN ASTM A182 Grade F11 Class 2 Class 600 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	12		SCH80		P66G-0009T	Orifice flange WN ASTM A182 Grade F11 Class 2 Class 600 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	14		SCH80		P66G-0009U	Orifice flange WN ASTM A182 Grade F11 Class 2 Class 600 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	16		XS		P66G-0009V	Orifice flange WN ASTM A182 Grade F11 Class 2 Class 600 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71G-00033	Spectacle blank ASTM A182 Grade F11 Class 2 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	0.75				P71G-00034	Spectacle blank ASTM A182 Grade F11 Class 2 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	1				P71G-00035	Spectacle blank ASTM A182 Grade F11 Class 2 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71G-00036	Spectacle blank ASTM A182 Grade F11 Class 2 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	2				P71G-00037	Spectacle blank ASTM A182 Grade F11 Class 2 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	3				P71G-00038	Spectacle blank ASTM A182 Grade F11 Class 2 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	4				P71G-00039	Spectacle blank ASTM A182 Grade F11 Class 2 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	6				P71G-0003A	Spectacle blank ASTM A182 Grade F11 Class 2 Class 600 Standard-drawing Flange ASME B16.5 RF	

PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	8				P72G-00028	Paddle blank ASTM A182 Grade F11 Class 2 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	10				P72G-00021	Paddle blank ASTM A182 Grade F11 Class 2 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	12				P72G-00022	Paddle blank ASTM A182 Grade F11 Class 2 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	14				P72G-00023	Paddle blank ASTM A182 Grade F11 Class 2 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	16				P72G-00024	Paddle blank ASTM A182 Grade F11 Class 2 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	18				P72G-00025	Paddle blank ASTM A182 Grade F11 Class 2 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	20				P72G-00026	Paddle blank ASTM A182 Grade F11 Class 2 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	24				P72G-00027	Paddle blank ASTM A182 Grade F11 Class 2 Class 600 Standard-drawing Flange ASME B16.5 RF	

PADDLE SPACER (PS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	8				P72G-0002G	Paddle spacer ASTM A182 Grade F11 Class 2 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	10				P72G-00029	Paddle spacer ASTM A182 Grade F11 Class 2 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	12				P72G-0002A	Paddle spacer ASTM A182 Grade F11 Class 2 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	14				P72G-0002B	Paddle spacer ASTM A182 Grade F11 Class 2 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	16				P72G-0002C	Paddle spacer ASTM A182 Grade F11 Class 2 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	18				P72G-0002D	Paddle spacer ASTM A182 Grade F11 Class 2 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	20				P72G-0002E	Paddle spacer ASTM A182 Grade F11 Class 2 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	24				P72G-0002F	Paddle spacer ASTM A182 Grade F11 Class 2 Class 600 Standard-drawing Flange ASME B16.5 RF	

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BOLT TABLE (B_D2DH , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	80	P80S-00GN6		
0.75	4	0.625	90	P80S-00GLH		
1	4	0.625	95	P80S-00GLG		
1.5	4	0.750	110	P80S-00GLD		
2	8	0.625	110	P80S-00GN0		
3	8	0.750	130	P80S-00GL9		
4	8	0.875	150	P80S-00FV3		
6	12	1.000	175	P80S-00FR6		
8	12	1.125	195	P80S-00FH4		
10	16	1.250	250	P80S-00F9K		
12	20	1.250	255	P80S-00F9J		
14	20	1.375	270	P80S-00F4T		
16	20	1.500	295	P80S-00EY8		
18	20	1.625	320	P80S-00G0T		
20	24	1.625	335	P80S-00G0P		
24	24	1.875	380	P80S-00FKC		
28			0			

BOLT TABLE (B_D2DH_789 , STUD ASME RJ, OPTION CODE 789)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	110		R12	
0.75	4	0.750	115		R14	
1	4	0.875	130	P80S-00FV7	R16	
1.5	4	1.000	140		R20	
2	8	0.875	150	P80S-00FV3	R24	
3	8	0.875	150	P80S-00FV3	R31	P75T-000KP
4	8	1.125	175	P80S-00FH8	R37	P75T-000KC
6	12	1.125	200	P80S-00FH3	R45	P75T-000KD
8	12	1.375	260	P80S-00F4V	R49	P75T-000KR
10	16	1.375	275	P80S-00F4S	R53	P75T-000KN
12	20	1.375	295	P80S-00F2T	R57	P75T-0010W
14	20	1.500	325	P80S-00EY2	R62	P75T-000KY
16	20	1.625	340	P80S-00G0N	R66	P75T-000K9
18	20	1.875	390	P80S-00FKA	R70	P75T-000KZ
20	20	2.000	415	P80S-00FBL	R74	P75T-000KA
24	20	2.500	525	P80S-00EWJ	R78	P75T-000KB
28			0			

BOLT TABLE (B_D2DH_797 , STUD ASME RJ, OPTION CODE 797)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	110	P80S-00GLD	R12	P75T-000KE
0.75	4	0.750	115	P80S-00GLC	R14	P75T-000KF
1	4	0.875	130	P80S-00FV7	R16	P75T-000KG
1.5	4	1.000	140	P80S-00FRD	R20	P75T-000KH
2	8	0.875	150	P80S-00FV3	R24	P75T-000KS
3	8	1.125	180		R35	
4	8	1.250	230		R39	
6	12	1.375	300		R46	
8	12	1.625	345		R50	
10	12	1.875	395		R54	
12	16	2.000	445		R58	
14	16	2.250	490		R63	
16	16	2.500	540		R67	
18	16	2.750	590		R71	
20	16	3.000	650		R75	
24	16	3.500	745		R79	

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BRANCH TABLE (T_D2DH)

RUN PIPE SIZE (in) \ BRANCH SIZE (in)	0.5	0.75	1	1.5	2	3	4	6	8	10	12	14	16	18	20	24	28
0.5	TS																
0.75		TS															
1		TR	TS														
1.5		TR	TR	TS													
2		L	TR	TR	TS												
3		L	L	TR	TR	TS											
4	L	L	L	L	TR	TR	TS										
6	L	L	L	L	L	TR	TR	TS									
8		L	L	L	L	L	TR	TR	TS								
10		L	L	L	L	L	TR	TR	TR	TS							
12		L	L	L	L	L	L	TR	TR	TR	TS						
14		L	L	L	L	L	L	TR	TR	TR	TR	TS					
16		L	L	L	L	L	L	TR	TR	TR	TR	TR	TS				
18		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TS			
20		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TR	TS		
24		L	L	L	L	L	L	L	9PD	TR	TR	TR	TR	TR	TR	TS	
28		L	L	L	L	L	L	L	9PD	9PD	TR	TR	TR	TR	TR	TR	TS

L : OUTLET
9PD : REINFORCING PAD 90 DEG
TR : REDUCING TEE
TS : STRAIGHT TEE

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PIPING CLASS

D2DH01 REV NO. 2

Material : 1-1/4Cr - 1/2Mo
Rating : ASME CLASS 600
Flange Face : RF
C.A.(mm) : 3.00
Gasket : Spiral Wound
Service : PROCESS - HYDROGEN OR HYDROGEN RICH HYDROCARBON MIXTURE : / PROCESS WITH HYDROGEN
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
16	PIPE CLASS SHALL BE USED WITHIN THE NORMAL OPERATING PRESSURE/TEMPERATURE LIMITS SPECIFIED IN API RP 941. PRESSURE / TEMPERATURE SPECIFIED IN THE PIPE CLASS EXCEEDING API RP 941 LIMITS SHOULD BE REGARDED AS UPSET CONDITIONS RATHER THAN FOR CONTINUOUS SERVICE
24	FOR ALL RELEVANT PIPING CLASSES WITH LINE DESIGN TEMPERATURE ABOVE 427DEGC, IN SPIRAL WOUND GASKET, SUITABLE GASKET FILLER MATERIAL SUCH AS COMBINATION OF MICA LAYERS AND GRAPHITE FILLERS OR EQUIVALENT SHALL BE REVIEWED AND SELECTED OR AS DEFINED BY THE LICENSOR
36	ASTM A691 CR-MO WELDED PIPES SPECIFIED WITH CLASS 22 CAN BE USED IN LIEU OF CLASS 42 IN NON-LICENSED UNITS ONLY. GRADE SHALL BE AS SPECIFIED IN "PIPE / FLANGE MATERIAL" SECTION IN ATTACHMENT 9.0 OF THIS DOCUMENT

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
541	NPT(F) (CA,F,L)
789	CLASS 900 (B,F,G)
797	CLASS 1500 (B,F,G)
4608	VALVE WITH NIPPLES (V)

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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P01F-0001X	Pipe ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M PE	
1	0.75		SCH160		P01F-0001Y	Pipe ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M PE	
1	1		SCH160		P01F-0003X	Pipe ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M PE	
1	1.5		SCH160		P01F-0003Y	Pipe ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M PE	
1	2		SCH160		P01F-0001Z	Pipe ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M BE	
1	3		XS		P01F-0005G	Pipe ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M BE	
1	4		XS		P01F-0001T	Pipe ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M BE	
1	6		XS		P01F-0001U	Pipe ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M BE	
1	8		XS		P01F-00022	Pipe ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M BE	
1	10		SCH80		P01F-0000V	Pipe ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P02G-00017	90 degree elbow ASTM A182 Grade F11 Class 1 Class 6000 ASME B16.11 SW	
1	0.75				P02G-00018	90 degree elbow ASTM A182 Grade F11 Class 1 Class 6000 ASME B16.11 SW	
1	1				P02G-0001S	90 degree elbow ASTM A182 Grade F11 Class 1 Class 6000 ASME B16.11 SW	
1	1.5				P02G-0001T	90 degree elbow ASTM A182 Grade F11 Class 1 Class 6000 ASME B16.11 SW	
1	2		SCH160		P02F-0007L	90 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	3		XS		P02F-000B1	90 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	4		XS		P02F-000B2	90 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	6		XS		P02F-000B3	90 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	8		XS		P02F-000B4	90 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	10		SCH80		P02F-00001	90 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P03G-00017	45 degree elbow ASTM A182 Grade F11 Class 1 Class 6000 ASME B16.11 SW	
1	0.75				P03G-00018	45 degree elbow ASTM A182 Grade F11 Class 1 Class 6000 ASME B16.11 SW	
1	1				P03G-0001M	45 degree elbow ASTM A182 Grade F11 Class 1 Class 6000 ASME B16.11 SW	
1	1.5				P03G-0001N	45 degree elbow ASTM A182 Grade F11 Class 1 Class 6000 ASME B16.11 SW	
1	2		SCH160		P03F-0007D	45 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	3		XS		P03F-000AU	45 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	4		XS		P03F-000AV	45 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	6		XS		P03F-000AW	45 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	8		XS		P03F-000AX	45 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	10		SCH80		P03F-00001	45 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P21G-00017	Straight tee ASTM A182 Grade F11 Class 1 Class 6000 ASME B16.11 SW	
1	0.75				P21G-00018	Straight tee ASTM A182 Grade F11 Class 1 Class 6000 ASME B16.11 SW	
1	1				P21G-0001S	Straight tee ASTM A182 Grade F11 Class 1 Class 6000 ASME B16.11 SW	
1	1.5				P21G-0001T	Straight tee ASTM A182 Grade F11 Class 1 Class 6000 ASME B16.11 SW	
1	2		SCH160		P21F-0007E	Straight tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	3		XS		P21F-000AS	Straight tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	4		XS		P21F-000AT	Straight tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	6		XS		P21F-000AU	Straight tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	8		XS		P21F-000AV	Straight tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	10		SCH80		P21F-00001	Straight tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75			P24G-0001S	Reducing tee ASTM A182 Grade F11 Class 1 Class 6000 ASME B16.11 SW	
1	1.5	0.75			P24G-0001T	Reducing tee ASTM A182 Grade F11 Class 1 Class 6000 ASME B16.11 SW	
1	1.5	1			P24G-0001U	Reducing tee ASTM A182 Grade F11 Class 1 Class 6000 ASME B16.11 SW	
1	2	1	SCH160	SCH160	P24F-000XS	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	2	1.5	SCH160	SCH160	P24F-000GY	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	3	1.5	XS	SCH160	P24F-000XT	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	

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REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	XS	SCH160	P24F-000XU	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	4	2	XS	SCH160	P24F-000XV	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	4	3	XS	XS	P24F-000XW	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	6	3	XS	XS	P24F-000XX	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	6	4	XS	XS	P24F-000XY	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	8	4	XS	XS	P24F-000XZ	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	8	6	XS	XS	P24F-000Y0	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	10	4	SCH80	XS	P24F-000Y1	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	10	6	SCH80	XS	P24F-000Y2	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	10	8	SCH80	XS	P24F-000Y3	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	XS	SCH160	P27F-000SP	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	4	2	XS	SCH160	P27F-000SR	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	4	3	XS	XS	P27F-000SS	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	6	3	XS	XS	P27F-000ST	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	6	4	XS	XS	P27F-000SU	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	8	4	XS	XS	P27F-000SV	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	8	6	XS	XS	P27F-000SW	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	10	4	SCH80	XS	P27F-000SX	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	10	6	SCH80	XS	P27F-000SY	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	10	8	SCH80	XS	P27F-000SZ	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	XS	SCH160	P28F-000SP	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	4	2	XS	SCH160	P28F-000SR	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	4	3	XS	XS	P28F-000SS	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	6	3	XS	XS	P28F-000ST	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	6	4	XS	XS	P28F-000SU	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	8	4	XS	XS	P28F-000SV	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	8	6	XS	XS	P28F-000SW	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	10	4	SCH80	XS	P28F-000SX	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	10	6	SCH80	XS	P28F-000SY	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	10	8	SCH80	XS	P28F-000SZ	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P29G-00012	Cap ASTM A182 Grade F11 Class 1 Class 6000 ASME B16.11 SW	
1	0.75				P29G-00013	Cap ASTM A182 Grade F11 Class 1 Class 6000 ASME B16.11 SW	
1	1				P29G-0001G	Cap ASTM A182 Grade F11 Class 1 Class 6000 ASME B16.11 SW	
1	1.5				P29G-0001H	Cap ASTM A182 Grade F11 Class 1 Class 6000 ASME B16.11 SW	
1	2		SCH160		P29F-00075	Cap ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	3		XS		P29F-000AJ	Cap ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	4		XS		P29F-000AK	Cap ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	6		XS		P29F-000AL	Cap ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	8		XS		P29F-000AM	Cap ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	10		SCH80		P29F-00001	Cap ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
541	0.75				P29G-0001R	Cap ASTM A182 Grade F11 Class 1 Class 6000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P41F-0002D	Straight nipple ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		XXS		P41F-0002E	Straight nipple ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		XXS		P41F-0002F	Straight nipple ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		XXS		P41F-0002G	Straight nipple ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

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CON SWAGED NIPPLE (SNC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	SCH160	P42F-0001N	Concentric swaged nipple ASTM A234 Grade WP11 Class 1 Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	SCH160	SCH160	P42F-0001P	Concentric swaged nipple ASTM A234 Grade WP11 Class 1 Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	SCH160	SCH160	P42F-0001R	Concentric swaged nipple ASTM A234 Grade WP11 Class 1 Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	SCH160	SCH160	P42F-0001S	Concentric swaged nipple ASTM A234 Grade WP11 Class 1 Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	SCH160	SCH160	P42F-0001T	Concentric swaged nipple ASTM A234 Grade WP11 Class 1 Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	SCH160	SCH160	P42F-0001U	Concentric swaged nipple ASTM A234 Grade WP11 Class 1 Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	SCH160	SCH160	P42F-0003P	Concentric swaged nipple ASTM A234 Grade WP11 Class 1 Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	SCH160	SCH160	P42F-0003R	Concentric swaged nipple ASTM A234 Grade WP11 Class 1 Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	SCH160	SCH160	P42F-0003S	Concentric swaged nipple ASTM A234 Grade WP11 Class 1 Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	SCH160	SCH160	P42F-00025	Concentric swaged nipple ASTM A234 Grade WP11 Class 1 Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	XS	SCH160	P42F-0003T	Concentric swaged nipple ASTM A234 Grade WP11 Class 1 Seamless MSS SP-95 BE(L) - PE(S)	

ECC SWAGED NIPPLE (SNE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	SCH160	P43F-00031	Eccentric swaged nipple ASTM A234 Grade WP11 Class 1 Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	SCH160	SCH160	P43F-00032	Eccentric swaged nipple ASTM A234 Grade WP11 Class 1 Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	SCH160	SCH160	P43F-0001J	Eccentric swaged nipple ASTM A234 Grade WP11 Class 1 Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	SCH160	SCH160	P43F-00033	Eccentric swaged nipple ASTM A234 Grade WP11 Class 1 Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	SCH160	SCH160	P43F-0001L	Eccentric swaged nipple ASTM A234 Grade WP11 Class 1 Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	SCH160	SCH160	P43F-0001M	Eccentric swaged nipple ASTM A234 Grade WP11 Class 1 Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	SCH160	SCH160	P43F-00034	Eccentric swaged nipple ASTM A234 Grade WP11 Class 1 Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	SCH160	SCH160	P43F-00035	Eccentric swaged nipple ASTM A234 Grade WP11 Class 1 Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	SCH160	SCH160	P43F-00036	Eccentric swaged nipple ASTM A234 Grade WP11 Class 1 Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	SCH160	SCH160	P43F-0001N	Eccentric swaged nipple ASTM A234 Grade WP11 Class 1 Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	XS	SCH160	P43F-00037	Eccentric swaged nipple ASTM A234 Grade WP11 Class 1 Seamless MSS SP-95 BE(L) - PE(S)	

COUPLING (CPS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P47G-0001A	Coupling ASTM A182 Grade F11 Class 1 Class 6000 ASME B16.11 SW - SW	
1	0.75				P47G-0001B	Coupling ASTM A182 Grade F11 Class 1 Class 6000 ASME B16.11 SW - SW	
1	1				P47G-0001Y	Coupling ASTM A182 Grade F11 Class 1 Class 6000 ASME B16.11 SW - SW	
1	1.5				P47G-0001Z	Coupling ASTM A182 Grade F11 Class 1 Class 6000 ASME B16.11 SW - SW	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5 - 2.5	0.75			P31G-00360	Outlet ASTM A182 Grade F11 Class 1 Class 6000 MSS SP-97 SW	
1	3 - 10	0.75			P31G-0035Z	Outlet ASTM A182 Grade F11 Class 1 Class 6000 MSS SP-97 SW	
1	3 - 10	1			P31G-00363	Outlet ASTM A182 Grade F11 Class 1 Class 6000 MSS SP-97 SW	
1	4 - 5	1.5			P31G-00364	Outlet ASTM A182 Grade F11 Class 1 Class 6000 MSS SP-97 SW	
1	6 - 8	1.5			P31G-00365	Outlet ASTM A182 Grade F11 Class 1 Class 6000 MSS SP-97 SW	
1	10 - 18	1.5			P31G-00366	Outlet ASTM A182 Grade F11 Class 1 Class 6000 MSS SP-97 SW	
541	1	0.75			P31G-0035Y	Outlet ASTM A182 Grade F11 Class 1 Class 6000 MSS SP-97 NPT	
541	1.5 - 2.5	0.75			P31G-00369	Outlet ASTM A182 Grade F11 Class 1 Class 6000 MSS SP-97 NPT	
541	3 - 10	0.75			P31G-00368	Outlet ASTM A182 Grade F11 Class 1 Class 6000 MSS SP-97 NPT	
1	6	2	XS	SCH160	P31G-0019Z	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	8	2	XS	SCH160	P31G-001A0	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	10	2	SCH80	SCH160	P31G-001A2	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	8	3	XS	XS	P31G-001A1	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	10	3	SCH80	XS	P31G-001A3	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30G-0001G	Plug ASTM A182 Grade F11 Class 1 ASME B16.11 NPT Round head	
1	0.75				P30G-0001H	Plug ASTM A182 Grade F11 Class 1 ASME B16.11 NPT Round head	
1	1				P30G-0001J	Plug ASTM A182 Grade F11 Class 1 ASME B16.11 NPT Round head	
1	1.5				P30G-0001K	Plug ASTM A182 Grade F11 Class 1 ASME B16.11 NPT Round head	

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FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P61G-0004B	Flange SW ASTM A182 Grade F11 Class 2 Class 600 ASME B16.5 RF	
1	0.75		SCH160		P61G-0004C	Flange SW ASTM A182 Grade F11 Class 2 Class 600 ASME B16.5 RF	
1	1		SCH160		P61G-000JR	Flange SW ASTM A182 Grade F11 Class 2 Class 600 ASME B16.5 RF	
1	1.5		SCH160		P61G-000JS	Flange SW ASTM A182 Grade F11 Class 2 Class 600 ASME B16.5 RF	
1	2		SCH160		P61G-0004E	Flange WN ASTM A182 Grade F11 Class 2 Class 600 ASME B16.5 RF	
1	3		XS		P61G-000JX	Flange WN ASTM A182 Grade F11 Class 2 Class 600 ASME B16.5 RF	
1	4		XS		P61G-0003W	Flange WN ASTM A182 Grade F11 Class 2 Class 600 ASME B16.5 RF	
1	6		XS		P61G-0003X	Flange WN ASTM A182 Grade F11 Class 2 Class 600 ASME B16.5 RF	
1	8		XS		P61G-0004J	Flange WN ASTM A182 Grade F11 Class 2 Class 600 ASME B16.5 RF	
1	10		SCH80		P61G-0004D	Flange WN ASTM A182 Grade F11 Class 2 Class 600 ASME B16.5 RF	
541	0.5				P61G-001AX	Flange NPT ASTM A182 Grade F11 Class 2 Class 600 ASME B16.5 RF	
541	0.75				P61G-0015Z	Flange NPT ASTM A182 Grade F11 Class 2 Class 600 ASME B16.5 RF	
789	3		XS		P61G-000K3	Flange WN ASTM A182 Grade F11 Class 2 Class 900 ASME B16.5 RJ	
789	4		XS		P61G-00041	Flange WN ASTM A182 Grade F11 Class 2 Class 900 ASME B16.5 RJ	
789	6		XS		P61G-00042	Flange WN ASTM A182 Grade F11 Class 2 Class 900 ASME B16.5 RJ	
789	8		XS		P61G-0004P	Flange WN ASTM A182 Grade F11 Class 2 Class 900 ASME B16.5 RJ	
789	10		SCH80		P61G-0004K	Flange WN ASTM A182 Grade F11 Class 2 Class 900 ASME B16.5 RJ	
797	0.5		SCH160		P61G-0004R	Flange SW ASTM A182 Grade F11 Class 2 Class 1500 ASME B16.5 RJ	
797	0.75		SCH160		P61G-0004S	Flange SW ASTM A182 Grade F11 Class 2 Class 1500 ASME B16.5 RJ	
797	1		SCH160		P61G-000K4	Flange SW ASTM A182 Grade F11 Class 2 Class 1500 ASME B16.5 RJ	
797	1.5		SCH160		P61G-000K5	Flange SW ASTM A182 Grade F11 Class 2 Class 1500 ASME B16.5 RJ	
797	2		SCH160		P61G-0004T	Flange WN ASTM A182 Grade F11 Class 2 Class 1500 ASME B16.5 RJ	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67G-00026	Blind flange ASTM A182 Grade F11 Class 2 Class 600 ASME B16.5 RF	
1	0.75				P67G-00027	Blind flange ASTM A182 Grade F11 Class 2 Class 600 ASME B16.5 RF	
1	1				P67G-00028	Blind flange ASTM A182 Grade F11 Class 2 Class 600 ASME B16.5 RF	
1	1.5				P67G-00029	Blind flange ASTM A182 Grade F11 Class 2 Class 600 ASME B16.5 RF	
1	2				P67G-0002L	Blind flange ASTM A182 Grade F11 Class 2 Class 600 ASME B16.5 RF	
1	3				P67G-0002M	Blind flange ASTM A182 Grade F11 Class 2 Class 600 ASME B16.5 RF	
1	4				P67G-0002D	Blind flange ASTM A182 Grade F11 Class 2 Class 600 ASME B16.5 RF	
1	6				P67G-0002E	Blind flange ASTM A182 Grade F11 Class 2 Class 600 ASME B16.5 RF	
1	8				P67G-0002N	Blind flange ASTM A182 Grade F11 Class 2 Class 600 ASME B16.5 RF	
1	10				P67G-0002K	Blind flange ASTM A182 Grade F11 Class 2 Class 600 ASME B16.5 RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-003B4	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	0.75				P73T-003B5	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	1				P73T-003B6	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	1.5				P73T-003B7	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	2				P73T-003BD	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	3				P73T-003BG	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	4				P73T-003BH	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	6				P73T-003BJ	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	8				P73T-003BK	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
1	10				P73T-003B8	Spiral wound gasket SS316 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS316	
789	3				P75T-000KP	Ring joint gasket 5Cr-1/2Mo Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	4				P75T-000KC	Ring joint gasket 5Cr-1/2Mo Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	6				P75T-000KD	Ring joint gasket 5Cr-1/2Mo Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	8				P75T-000KR	Ring joint gasket 5Cr-1/2Mo Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	10				P75T-000KN	Ring joint gasket 5Cr-1/2Mo Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	1.5				P75T-000KE	Ring joint gasket 5Cr-1/2Mo Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	0.75				P75T-000KF	Ring joint gasket 5Cr-1/2Mo Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	

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GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
797	1				P75T-000KG	Ring joint gasket 5Cr-1/2Mo Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	1.5				P75T-000KH	Ring joint gasket 5Cr-1/2Mo Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	2				P75T-000KS	Ring joint gasket 5Cr-1/2Mo Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-6				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B16 / A194 Grade 4 ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	8-10				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B16 / A194 Grade 4 ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
789	1-3				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B16 / A194 Grade 4 ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
789	4-10				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B16 / A194 Grade 4 ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
797	0.5-2				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B16 / A194 Grade 4 ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81G-00087	Gate valve ASTM A182 Grade F11 Class 2 Class 600 API 602 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2	
1	0.75				P81G-00088	Gate valve ASTM A182 Grade F11 Class 2 Class 600 API 602 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2	
1	1				P81G-00089	Gate valve ASTM A182 Grade F11 Class 2 Class 600 API 602 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2	
1	1.5				P81G-0008A	Gate valve ASTM A182 Grade F11 Class 2 Class 600 API 602 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2	
1	2				P81H-000N3	Gate valve ASTM A217 Grade WC6 Class 600 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2	
1	3				P81H-000NW	Gate valve ASTM A217 Grade WC6 Class 600 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2	
1	4				P81H-000NX	Gate valve ASTM A217 Grade WC6 Class 600 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2	
1	6				P81H-000NY	Gate valve ASTM A217 Grade WC6 Class 600 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2	
1	8				P81H-000P2	Gate valve ASTM A217 Grade WC6 Class 600 API 600 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Gear operated Fluid-2	
4608	0.75				P81G-000EK	Gate valve ASTM A182 Grade F11 Class 2 Class 800 API 602 SW both sides w/ nipples PE - NPT ASTM A335-P11 XXS-nipple Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82G-0004B	Globe valve ASTM A182 Grade F11 Class 2 Class 600 API 602 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2	
1	0.75				P82G-0004C	Globe valve ASTM A182 Grade F11 Class 2 Class 600 API 602 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2	
1	1				P82G-0004D	Globe valve ASTM A182 Grade F11 Class 2 Class 600 API 602 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2	
1	1.5				P82G-0004E	Globe valve ASTM A182 Grade F11 Class 2 Class 600 API 602 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2	
1	2				P82H-0008E	Globe valve ASTM A217 Grade WC6 Class 600 BS 1873 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2	
1	3				P82H-0008P	Globe valve ASTM A217 Grade WC6 Class 600 BS 1873 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2	
1	4				P82H-000ES	Globe valve ASTM A217 Grade WC6 Class 600 BS 1873 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Gear operated Fluid-2	
1	6				P82H-000ET	Globe valve ASTM A217 Grade WC6 Class 600 BS 1873 Flange ASME B16.5 RF Trim number 5 BB-BG-OS&Y Gear operated Fluid-2	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83G-00021	Check valve ASTM A182 Grade F11 Class 2 Class 600 API 602 Flange ASME B16.5 RF Trim number 5 Lift-type Bolted cover	
1	0.75				P83G-00022	Check valve ASTM A182 Grade F11 Class 2 Class 600 API 602 Flange ASME B16.5 RF Trim number 5 Lift-type Bolted cover	
1	1				P83G-00023	Check valve ASTM A182 Grade F11 Class 2 Class 600 API 602 Flange ASME B16.5 RF Trim number 5 Lift-type Bolted cover	
1	1.5				P83G-00024	Check valve ASTM A182 Grade F11 Class 2 Class 600 API 602 Flange ASME B16.5 RF Trim number 5 Lift-type Bolted cover	
1	2				P83H-0005G	Check valve ASTM A217 Grade WC6 Class 600 BS 1868 Flange ASME B16.5 RF Trim number 5 Swing-type Bolted cover	
1	3				P83H-0005H	Check valve ASTM A217 Grade WC6 Class 600 BS 1868 Flange ASME B16.5 RF Trim number 5 Swing-type Bolted cover	
1	4				P83H-0005M	Check valve ASTM A217 Grade WC6 Class 600 BS 1868 Flange ASME B16.5 RF Trim number 5 Swing-type Bolted cover	
1	6				P83H-0005J	Check valve ASTM A217 Grade WC6 Class 600 BS 1868 Flange ASME B16.5 RF Trim number 5 Swing-type Bolted cover	
1	8				P83H-0005K	Check valve ASTM A217 Grade WC6 Class 600 BS 1868 Flange ASME B16.5 RF Trim number 5 Swing-type Bolted cover	

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SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71G-00033	Spectacle blank ASTM A182 Grade F11 Class 2 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	0.75				P71G-00034	Spectacle blank ASTM A182 Grade F11 Class 2 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	1				P71G-00035	Spectacle blank ASTM A182 Grade F11 Class 2 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71G-00036	Spectacle blank ASTM A182 Grade F11 Class 2 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	2				P71G-00037	Spectacle blank ASTM A182 Grade F11 Class 2 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	3				P71G-00038	Spectacle blank ASTM A182 Grade F11 Class 2 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	4				P71G-00039	Spectacle blank ASTM A182 Grade F11 Class 2 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	6				P71G-0003A	Spectacle blank ASTM A182 Grade F11 Class 2 Class 600 Standard-drawing Flange ASME B16.5 RF	

PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	8				P72G-00028	Paddle blank ASTM A182 Grade F11 Class 2 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	10				P72G-00021	Paddle blank ASTM A182 Grade F11 Class 2 Class 600 Standard-drawing Flange ASME B16.5 RF	

PADDLE SPACER (PS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	8				P72G-0002G	Paddle spacer ASTM A182 Grade F11 Class 2 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	10				P72G-00029	Paddle spacer ASTM A182 Grade F11 Class 2 Class 600 Standard-drawing Flange ASME B16.5 RF	

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BOLT TABLE (B_D2DH01 , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	80	P80S-00GN6		
0.75	4	0.625	90	P80S-00GLH		
1	4	0.625	95	P80S-00GLG		
1.5	4	0.750	110	P80S-00GLD		
2	8	0.625	110	P80S-00GN0		
3	8	0.750	130	P80S-00GL9		
4	8	0.875	150	P80S-00FV3		
6	12	1.000	175	P80S-00FR6		
8	12	1.125	195	P80S-00FH4		
10	16	1.250	250	P80S-00F9K		

BOLT TABLE (B_D2DH01_789 , STUD ASME RJ, OPTION CODE 789)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	110		R12	
0.75	4	0.750	115		R14	
1	4	0.875	130	P80S-00FV7	R16	
1.5	4	1.000	140		R20	
2	8	0.875	150	P80S-00FV3	R24	
3	8	0.875	150	P80S-00FV3	R31	P75T-000KP
4	8	1.125	175	P80S-00FH8	R37	P75T-000KC
6	12	1.125	200	P80S-00FH3	R45	P75T-000KD
8	12	1.375	260	P80S-00F4V	R49	P75T-000KR
10	16	1.375	275	P80S-00F4S	R53	P75T-000KN

BOLT TABLE (B_D2DH01_797 , STUD ASME RJ, OPTION CODE 797)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	110	P80S-00GLD	R12	P75T-000KE
0.75	4	0.750	115	P80S-00GLC	R14	P75T-000KF
1	4	0.875	130	P80S-00FV7	R16	P75T-000KG
1.5	4	1.000	140	P80S-00FRD	R20	P75T-000KH
2	8	0.875	150	P80S-00FV3	R24	P75T-000KS
3	8	1.125	180		R35	
4	8	1.250	230		R39	
6	12	1.375	300		R46	
8	12	1.625	345		R50	
10	12	1.875	395		R54	

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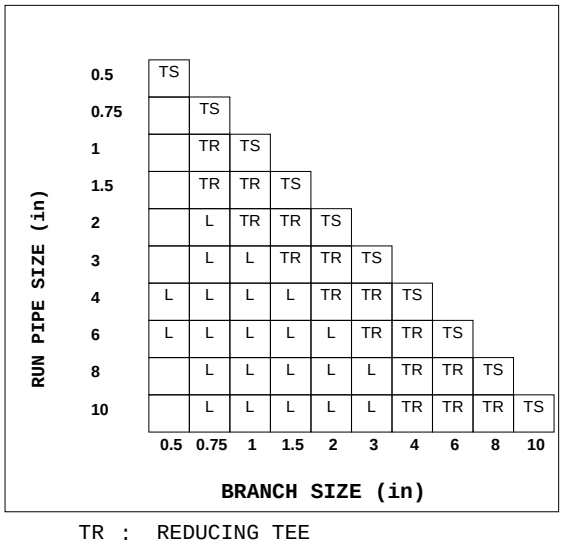
BRANCH TABLE (T_D2DH01)



RUN PIPE SIZE (in) \ BRANCH SIZE (in)	0.5	0.75	1	1.5	2	3	4	6	8	10
0.5	TS									
0.75		TS								
1		TR	TS							
1.5		TR	TR	TS						
2		L	TR	TR	TS					
3		L	L	TR	TR	TS				
4	L	L	L	L	TR	TR	TS			
6	L	L	L	L	L	TR	TR	TS		
8		L	L	L	L	L	TR	TR	TS	
10		L	L	L	L	L	TR	TR	TR	TS

TR : REDUCING TEE
L : OUTLET
TS : STRAIGHT TEE

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PIPING CLASS

D2G501 REV NO. 2

Material : LTCS
Rating : ASME CLASS 600
Flange Face : RF
C.A.(mm) : 3.00
Gasket : Spiral Wound
Service : PROCESS - WET SEVERE SOUR SERVICE SUBJECT TO NACE + HIC STD + AMINES OR CAUSTIC - STRESS RELIEVED
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
5	BOLTING CONFIRMING TO B7M / 2HM SHALL BE USED UNDER CONDITIONS (A) DIRECT EXPOSURE TO SOUR ENVIRONMENTS (B) WHEN THE BOLTING WILL BE BURIED OR INSULATED
15	BOLTING CONFIRMING TO L7M / 7M SHALL BE USED UNDER CONDITIONS (A) DIRECT EXPOSURE TO SOUR ENVIRONMENTS (B) WHEN THE BOLTING WILL BE BURIED OR INSULATED
27	PWHT OF CARBON STEEL PIPING IN WET H2S, CAUSTIC AND AMINE SERVICES SHALL BE IN ACCORDANCE WITH SECTION 10.2, 10.3, AND 10.4 OF PROJECT SPECIFICATION 3550-8440-SP-0002 MATERIALS REQUIREMENTS FOR PRESSURISED EQUIPMENT AND PIPING. FOR CAUSTIC AND AMINE SERVICE THE FOLLOWING SHALL APPLY: - PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF ALL SITE PIPING FABRICATION WELDS IS REQUIRED FOR ALL WALL THICKNESSES. FOR MODERATE AND SEVERE WET H2S SERVICE THE FOLLOWING SHALL APPLY: PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF SITE FABRICATION CIRCUMFERENTIAL OR BRANCH WELDS IS NOT REQUIRED IF WELDS ARE MULTIPASS AND IN ACCORDANCE WITH PARA 10.2.12 OF PROJECT SPECIFICATION 3550-8440-SP-0002. FOR SERVICES MEETING THE WET H2S CRITERIA AND CAUSTIC OR AMINE CRITERIA THE MORE STRINGENT PWHT REQUIREMENT SHALL GOVERN.

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
541	NPT(F) (CA,F)
797	CLASS 1500 (B,F,G)
4608	VALVE WITH NIPPLES (V)

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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P01A-007G4	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE Severe wet H2S service Licensor-1	
1	0.75		SCH160		P01A-007G5	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE Severe wet H2S service Licensor-1	
1	1		SCH160		P01A-007G6	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE Severe wet H2S service Licensor-1	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P02A-003Y6	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	0.75		SCH160		P02A-003Y7	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	1		SCH160		P02A-003Y8	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P03A-003VV	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	0.75		SCH160		P03A-003VW	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	1		SCH160		P03A-003VX	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P21A-004FM	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	0.75		SCH160		P21A-004FN	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	1		SCH160		P21A-004FP	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75	SCH160	SCH160	P24A-00KS0	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	SCH160	P27A-00F6R	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	1	0.5	SCH160	SCH160	P27A-00F6S	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	1	0.75	SCH160	SCH160	P27A-00F6T	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	SCH160	P28A-00CAS	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	1	0.5	SCH160	SCH160	P28A-00CAT	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	1	0.75	SCH160	SCH160	P28A-00CAU	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P29A-003AL	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	0.75		SCH160		P29A-003AM	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	1		SCH160		P29A-003AN	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
541	0.75				P29B-0006X	Cap ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 NPT Severe wet H2S service Licensor-1	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P41A-0019K	Straight nipple ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Severe wet H2S service Licensor-1	
1	0.75		XXS		P41A-0019L	Straight nipple ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Severe wet H2S service Licensor-1	
1	1		XXS		P41A-00196	Straight nipple ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Severe wet H2S service Licensor-1	

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PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30B-0006W	Plug ASTM A350 Grade LF2 Class 1 ASME B16.11 NPT Round head Severe wet H2S service Licensor-1	
1	0.75				P30B-0006X	Plug ASTM A350 Grade LF2 Class 1 ASME B16.11 NPT Round head Severe wet H2S service Licensor-1	
1	1				P30B-0006U	Plug ASTM A350 Grade LF2 Class 1 ASME B16.11 NPT Round head Severe wet H2S service Licensor-1	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P61B-00AAX	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF Severe wet H2S service Licensor-1	
1	0.75		SCH160		P61B-00AAY	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF Severe wet H2S service Licensor-1	
1	1		SCH160		P61B-00AAZ	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF Severe wet H2S service Licensor-1	
541	0.5				P61B-00DLA	Flange NPT ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF Severe wet H2S service Licensor-1	
541	0.75				P61B-00D2U	Flange NPT ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF Severe wet H2S service Licensor-1	
541	1				P61B-00D2V	Flange NPT ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF Severe wet H2S service Licensor-1	
797	0.5		SCH160		P61B-00D2W	Flange WN ASTM A350 Grade LF2 Class 1 Class 1500 ASME B16.5 RJ Severe wet H2S service Licensor-1	
797	0.75		SCH160		P61B-00D2X	Flange WN ASTM A350 Grade LF2 Class 1 Class 1500 ASME B16.5 RJ Severe wet H2S service Licensor-1	
797	1		SCH160		P61B-00D2Y	Flange WN ASTM A350 Grade LF2 Class 1 Class 1500 ASME B16.5 RJ Severe wet H2S service Licensor-1	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67B-002XV	Blind flange ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF Severe wet H2S service Licensor-1	
1	0.75				P67B-002XW	Blind flange ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF Severe wet H2S service Licensor-1	
1	1				P67B-002XX	Blind flange ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF Severe wet H2S service Licensor-1	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000J8	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000J9	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000JA	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
797	0.5				P75T-000JT	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	0.75				P75T-000JU	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	1				P75T-000JV	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-1				See Attached Bolt Table	Bolt and Nut ASTM A320 Grade L7M / A194 Grade 7M ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
797	0.5-1				See Attached Bolt Table	Bolt and Nut ASTM A320 Grade L7M / A194 Grade 7M ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81B-002HN	Gate valve ASTM A350 Grade LF2 Class 1 Class 600 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service Licensor-1	
1	0.75				P81B-002HP	Gate valve ASTM A350 Grade LF2 Class 1 Class 600 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service Licensor-1	
1	1				P81B-002HR	Gate valve ASTM A350 Grade LF2 Class 1 Class 600 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service Licensor-1	
4608	0.75				P81B-002XM	Gate valve ASTM A350 Grade LF2 Class 1 Class 600 API 602 BW both sides w/ nipples BE - NPT ASTM A333-6 XXS-nipple Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service Licensor-1	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82B-001UU	Globe valve ASTM A350 Grade LF2 Class 1 Class 600 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service Licensor-1	
1	0.75				P82B-001UV	Globe valve ASTM A350 Grade LF2 Class 1 Class 600 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service Licensor-1	
1	1				P82B-001UW	Globe valve ASTM A350 Grade LF2 Class 1 Class 600 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service Licensor-1	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83B-001DR	Check valve ASTM A350 Grade LF2 Class 1 Class 600 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Severe wet H2S service Amine service Licensor-1	

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CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75				P83B-001DS	Check valve ASTM A350 Grade LF2 Class 1 Class 600 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Severe wet H2S service Amine service Licensor-1	
1	1				P83B-001DT	Check valve ASTM A350 Grade LF2 Class 1 Class 600 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Severe wet H2S service Amine service Licensor-1	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71B-000HK	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 600 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service Licensor-1	
1	0.75				P71B-000HL	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 600 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service Licensor-1	
1	1				P71B-000HM	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 600 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service Licensor-1	

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BOLT TABLE (B_D2G501 , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	80	P80S-009UN		
0.75	4	0.625	90	P80S-00A04		
1	4	0.625	95	P80S-00A05		

BOLT TABLE (B_D2G501_797 , STUD ASME RJ, OPTION CODE 797)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	110	P80S-00A08	R12	P75T-000JT
0.75	4	0.750	115	P80S-00A09	R14	P75T-000JU
1	4	0.875	130	P80S-009XG	R16	P75T-000JV

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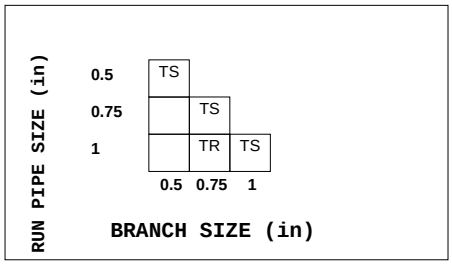
BRANCH TABLE (T_D2G501)



TS : STRAIGHT TEE
TR : REDUCING TEE

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PIPING CLASS

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Material : LTCS
Rating : ASME CLASS 600
Flange Face : RF
C.A.(mm) : 3.00
Gasket : Spiral Wound
Service : PROCESS -WET SOUR SERVICE SUBJECT TO NACE STD. : / DE-ETHANISER REFLUX / PROCESS, HYDROCARBONS
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
2	USE OF SOFT SEATED BALL, PLUG AND BUTTERFLY VALVES SHALL BE LIMITED TO MAXIMUM OF 204DEGC (400DEGF)
5	BOLTING CONFIRMING TO B7M / 2HM SHALL BE USED UNDER CONDITIONS (A) DIRECT EXPOSURE TO SOUR ENVIRONMENTS (B) WHEN THE BOLTING WILL BE BURIED OR INSULATED
15	BOLTING CONFIRMING TO L7M / 7M SHALL BE USED UNDER CONDITIONS (A) DIRECT EXPOSURE TO SOUR ENVIRONMENTS (B) WHEN THE BOLTING WILL BE BURIED OR INSULATED
27	PWHT OF CARBON STEEL PIPING IN WET H2S, CAUSTIC AND AMINE SERVICES SHALL BE IN ACCORDANCE WITH SECTION 10.2, 10.3, AND 10.4 OF PROJECT SPECIFICATION 3550-8440-SP-0002 MATERIALS REQUIREMENTS FOR PRESSURISED EQUIPMENT AND PIPING. FOR CAUSTIC AND AMINE SERVICE THE FOLLOWING SHALL APPLY: - PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF ALL SITE PIPING FABRICATION WELDS IS REQUIRED FOR ALL WALL THICKNESSES. FOR MODERATE AND SEVERE WET H2S SERVICE THE FOLLOWING SHALL APPLY: PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF SITE FABRICATION CIRCUMFERENTIAL OR BRANCH WELDS IS NOT REQUIRED IF WELDS ARE MULTIPASS AND IN ACCORDANCE WITH PARA 10.2.12 OF PROJECT SPECIFICATION 3550-8440-SP-0002. FOR SERVICES MEETING THE WET H2S CRITERIA AND CAUSTIC OR AMINE CRITERIA THE MORE STRINGENT PWHT REQUIREMENT SHALL GOVERN.

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
541	NPT(F) (CA,F)
789	CLASS 900 (B,F,G)
797	CLASS 1500 (B,F,G)
4608	VALVE WITH NIPPLES (V)

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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P01A-007EF	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE Moderate wet H2S service Licensor-1	
1	0.75		SCH160		P01A-007EG	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE Moderate wet H2S service Licensor-1	
1	1		SCH160		P01A-007EH	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE Moderate wet H2S service Licensor-1	
1	1.5		SCH160		P01A-007EJ	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE Moderate wet H2S service Licensor-1	
1	2		SCH160		P01A-00906	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE Moderate wet H2S service Licensor-1	
1	3		XS		P01A-00907	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE Moderate wet H2S service Licensor-1	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P02A-003WH	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Moderate wet H2S service Licensor-1	
1	0.75		SCH160		P02A-003WJ	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Moderate wet H2S service Licensor-1	
1	1		SCH160		P02A-003WK	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Moderate wet H2S service Licensor-1	
1	1.5		SCH160		P02A-003WL	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Moderate wet H2S service Licensor-1	
1	2		SCH160		P02A-0050Z	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Moderate wet H2S service Licensor-1	
1	3		XS		P02A-00510	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Moderate wet H2S service Licensor-1	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P03A-003U6	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Moderate wet H2S service Licensor-1	
1	0.75		SCH160		P03A-003U7	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Moderate wet H2S service Licensor-1	
1	1		SCH160		P03A-003U8	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Moderate wet H2S service Licensor-1	
1	1.5		SCH160		P03A-003U9	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Moderate wet H2S service Licensor-1	
1	2		SCH160		P03A-004LY	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Moderate wet H2S service Licensor-1	
1	3		XS		P03A-004LZ	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Moderate wet H2S service Licensor-1	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P21A-004DZ	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	0.75		SCH160		P21A-004E0	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	1		SCH160		P21A-004E1	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	1.5		SCH160		P21A-004E2	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	2		SCH160		P21A-00544	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	3		XS		P21A-00545	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75	SCH160	SCH160	P24A-00KK3	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	1.5	0.75	SCH160	SCH160	P24A-00KK4	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	1.5	1	SCH160	SCH160	P24A-00KK5	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	2	1	SCH160	SCH160	P24A-00PSE	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	2	1.5	SCH160	SCH160	P24A-00PSF	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	3	1.5	XS	SCH160	P24A-00PSG	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	3	2	XS	SCH160	P24A-00PSH	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	SCH160	P27A-00F1R	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	1	0.5	SCH160	SCH160	P27A-00F1S	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	1	0.75	SCH160	SCH160	P27A-00F1T	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	1.5	0.5	SCH160	SCH160	P27A-00F1U	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	1.5	0.75	SCH160	SCH160	P27A-00F1V	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	1.5	1	SCH160	SCH160	P27A-00F1W	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	

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CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2	0.75	SCH160	SCH160	P27A-00J22	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	2	1	SCH160	SCH160	P27A-00J23	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	2	1.5	SCH160	SCH160	P27A-00J24	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	3	1.5	XS	SCH160	P27A-00J25	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	3	2	XS	SCH160	P27A-00J26	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	SCH160	P28A-00C5S	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	1	0.5	SCH160	SCH160	P28A-00C5T	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	1	0.75	SCH160	SCH160	P28A-00C5U	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	1.5	0.5	SCH160	SCH160	P28A-00C5V	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	1.5	0.75	SCH160	SCH160	P28A-00C5W	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	1.5	1	SCH160	SCH160	P28A-00C5X	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	2	0.75	SCH160	SCH160	P28A-00FBN	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	2	1	SCH160	SCH160	P28A-00FBP	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	2	1.5	SCH160	SCH160	P28A-00FBR	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	3	1.5	XS	SCH160	P28A-00FBS	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	3	2	XS	SCH160	P28A-00FBT	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P29A-0038X	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	0.75		SCH160		P29A-0038Y	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	1		SCH160		P29A-0038Z	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	1.5		SCH160		P29A-00390	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	2		SCH160		P29A-005JZ	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	3		XS		P29A-005K0	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
541	0.75				P29B-0006W	Cap ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 NPT Moderate wet H2S service Licensor-1	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P41A-0019S	Straight nipple ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Moderate wet H2S service Licensor-1	
1	0.75		XXS		P41A-0019T	Straight nipple ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Moderate wet H2S service Licensor-1	
1	1		XXS		P41A-0019U	Straight nipple ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Moderate wet H2S service Licensor-1	
1	1.5		XXS		P41A-0019V	Straight nipple ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Moderate wet H2S service Licensor-1	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2	0.75	SCH160	SCH160	P31B-012JL	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	3	0.75	XS	SCH160	P31B-012JM	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	3	1	XS	SCH160	P31B-012JN	Outlet ASTM A350 Grade LF2 Class 1 MSS SP-97 BW Moderate wet H2S service Licensor-1	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30B-0006P	Plug ASTM A350 Grade LF2 Class 1 ASME B16.11 NPT Round head Moderate wet H2S service Licensor-1	
1	0.75				P30B-0006R	Plug ASTM A350 Grade LF2 Class 1 ASME B16.11 NPT Round head Moderate wet H2S service Licensor-1	
1	1				P30B-0006S	Plug ASTM A350 Grade LF2 Class 1 ASME B16.11 NPT Round head Moderate wet H2S service Licensor-1	
1	1.5				P30B-0006T	Plug ASTM A350 Grade LF2 Class 1 ASME B16.11 NPT Round head Moderate wet H2S service Licensor-1	

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FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P61B-00AA4	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	0.75		SCH160		P61B-00AA5	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	1		SCH160		P61B-00AA6	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	1.5		SCH160		P61B-00AA7	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	2		SCH160		P61B-00DCM	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	3		XS		P61B-00DCN	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF Moderate wet H2S service Licensor-1	
541	0.5				P61B-00DLB	Flange NPT ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF Moderate wet H2S service Licensor-1	
541	0.75				P61B-00DCP	Flange NPT ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF Moderate wet H2S service Licensor-1	
541	1				P61B-00DCR	Flange NPT ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF Moderate wet H2S service Licensor-1	
789	3		XS		P61B-00DCS	Flange WN ASTM A350 Grade LF2 Class 1 Class 900 ASME B16.5 RJ Moderate wet H2S service Licensor-1	
797	0.5		SCH160		P61B-00DCT	Flange WN ASTM A350 Grade LF2 Class 1 Class 1500 ASME B16.5 RJ Moderate wet H2S service Licensor-1	
797	0.75		SCH160		P61B-00DCU	Flange WN ASTM A350 Grade LF2 Class 1 Class 1500 ASME B16.5 RJ Moderate wet H2S service Licensor-1	
797	1		SCH160		P61B-00DCV	Flange WN ASTM A350 Grade LF2 Class 1 Class 1500 ASME B16.5 RJ Moderate wet H2S service Licensor-1	
797	1.5		SCH160		P61B-00DCW	Flange WN ASTM A350 Grade LF2 Class 1 Class 1500 ASME B16.5 RJ Moderate wet H2S service Licensor-1	
797	2		SCH160		P61B-00DCX	Flange WN ASTM A350 Grade LF2 Class 1 Class 1500 ASME B16.5 RJ Moderate wet H2S service Licensor-1	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67B-002ZZ	Blind flange ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	0.75				P67B-00300	Blind flange ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	1				P67B-00301	Blind flange ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	1.5				P67B-00302	Blind flange ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	2				P67B-00303	Blind flange ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	3				P67B-00304	Blind flange ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF Moderate wet H2S service Licensor-1	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000J8	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000J9	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000JA	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000JB	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000JH	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000JL	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
789	3				P75T-000JN	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	0.5				P75T-000JT	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	0.75				P75T-000JU	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	1				P75T-000JV	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	1.5				P75T-000JW	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	2				P75T-0008A	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-3				See Attached Bolt Table	Bolt and Nut ASTM A320 Grade L7M / A194 Grade 7M ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
789	1-3				See Attached Bolt Table	Bolt and Nut ASTM A320 Grade L7M / A194 Grade 7M ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
797	0.5-2				See Attached Bolt Table	Bolt and Nut ASTM A320 Grade L7M / A194 Grade 7M ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	

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GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81B-002ND	Gate valve ASTM A350 Grade LF2 Class 1 Class 600 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Licensor-1	
1	0.75				P81B-002NE	Gate valve ASTM A350 Grade LF2 Class 1 Class 600 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Licensor-1	
1	1				P81B-002NF	Gate valve ASTM A350 Grade LF2 Class 1 Class 600 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Licensor-1	
1	1.5				P81B-002NG	Gate valve ASTM A350 Grade LF2 Class 1 Class 600 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Licensor-1	
1	2				P81C-0089A	Gate valve ASTM A352 Grade LCC Class 600 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Licensor-1	
1	3				P81C-0089B	Gate valve ASTM A352 Grade LCC Class 600 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Licensor-1	
4608	0.75				P81B-002VU	Gate valve ASTM A350 Grade LF2 Class 1 Class 600 API 602 BW both sides w/ nipples BE - NPT ASTM A333-6 XXS-nipple Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Licensor-1	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82B-001WX	Globe valve ASTM A350 Grade LF2 Class 1 Class 600 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Licensor-1	
1	0.75				P82B-001WY	Globe valve ASTM A350 Grade LF2 Class 1 Class 600 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Licensor-1	
1	1				P82B-001WZ	Globe valve ASTM A350 Grade LF2 Class 1 Class 600 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Licensor-1	
1	1.5				P82B-001X0	Globe valve ASTM A350 Grade LF2 Class 1 Class 600 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Licensor-1	
1	2				P82C-0040E	Globe valve ASTM A352 Grade LCC Class 600 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Licensor-1	
1	3				P82C-0040F	Globe valve ASTM A352 Grade LCC Class 600 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Licensor-1	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83B-001F2	Check valve ASTM A350 Grade LF2 Class 1 Class 600 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Moderate wet H2S service Licensor-1	
1	0.75				P83B-001F3	Check valve ASTM A350 Grade LF2 Class 1 Class 600 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Moderate wet H2S service Licensor-1	
1	1				P83B-001F4	Check valve ASTM A350 Grade LF2 Class 1 Class 600 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Moderate wet H2S service Licensor-1	
1	1.5				P83B-001F5	Check valve ASTM A350 Grade LF2 Class 1 Class 600 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Moderate wet H2S service Licensor-1	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71B-000HT	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 600 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	0.75				P71B-000HU	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 600 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	1				P71B-000HV	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 600 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	1.5				P71B-000HW	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 600 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	2				P71B-000HX	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 600 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service Licensor-1	
1	3				P71B-000HY	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 600 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service Licensor-1	

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BOLT TABLE (B_D2GQ01 , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	80	P80S-009UN		
0.75	4	0.625	90	P80S-00A04		
1	4	0.625	95	P80S-00A05		
1.5	4	0.750	110	P80S-00A08		
2	8	0.625	110	P80S-009UV		
3	8	0.750	130	P80S-00A0C		

BOLT TABLE (B_D2GQ01_789 , STUD ASME RJ, OPTION CODE 789)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	110		R12	
0.75	4	0.750	115		R14	
1	4	0.875	130	P80S-009XG	R16	
1.5	4	1.000	140		R20	
2	8	0.875	150	P80S-009XL	R24	
3	8	0.875	150	P80S-009XL	R31	P75T-000JN

BOLT TABLE (B_D2GQ01_797 , STUD ASME RJ, OPTION CODE 797)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	110	P80S-00A08	R12	P75T-000JT
0.75	4	0.750	115	P80S-00A09	R14	P75T-000JU
1	4	0.875	130	P80S-009XG	R16	P75T-000JV
1.5	4	1.000	140	P80S-00A38	R20	P75T-000JW
2	8	0.875	150	P80S-009XL	R24	P75T-0008A
3	8	1.125	180		R35	

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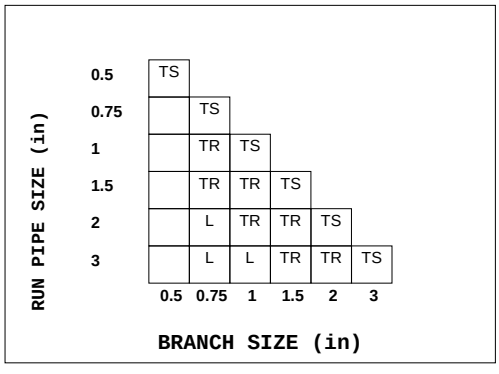
BRANCH TABLE (T_D2GQ01)



TS : STRAIGHT TEE
L : OUTLET
TR : REDUCING TEE

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Material : LTCS
Rating : ASME CLASS 600
Flange Face : RF
C.A.(mm) : 3.00
Gasket : Spiral Wound
Service : PROCESS -WET SEVERE SOUR SERVICE SUBJECT TO NACE + HIC STD.:
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
5	BOLTING CONFIRMING TO B7M / 2HM SHALL BE USED UNDER CONDITIONS (A) DIRECT EXPOSURE TO SOUR ENVIRONMENTS (B) WHEN THE BOLTING WILL BE BURIED OR INSULATED
15	BOLTING CONFIRMING TO L7M / 7M SHALL BE USED UNDER CONDITIONS (A) DIRECT EXPOSURE TO SOUR ENVIRONMENTS (B) WHEN THE BOLTING WILL BE BURIED OR INSULATED
27	PWHT OF CARBON STEEL PIPING IN WET H2S, CAUSTIC AND AMINE SERVICES SHALL BE IN ACCORDANCE WITH SECTION 10.2, 10.3, AND 10.4 OF PROJECT SPECIFICATION 3550-8440-SP-0002 MATERIALS REQUIREMENTS FOR PRESSURISED EQUIPMENT AND PIPING. FOR CAUSTIC AND AMINE SERVICE THE FOLLOWING SHALL APPLY: - PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF ALL SITE PIPING FABRICATION WELDS IS REQUIRED FOR ALL WALL THICKNESSES. FOR MODERATE AND SEVERE WET H2S SERVICE THE FOLLOWING SHALL APPLY: PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF SITE FABRICATION CIRCUMFERENTIAL OR BRANCH WELDS IS NOT REQUIRED IF WELDS ARE MULTIPASS AND IN ACCORDANCE WITH PARA 10.2.12 OF PROJECT SPECIFICATION 3550-8440-SP-0002. FOR SERVICES MEETING THE WET H2S CRITERIA AND CAUSTIC OR AMINE CRITERIA THE MORE STRINGENT PWHT REQUIREMENT SHALL GOVERN.

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
541	NPT(F) (CA,F)
797	CLASS 1500 (B,F,G)
4608	VALVE WITH NIPPLES (V)

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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P01A-007G4	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE Severe wet H2S service Licensor-1	
1	0.75		SCH160		P01A-007G5	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE Severe wet H2S service Licensor-1	
1	1		SCH160		P01A-007G6	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE Severe wet H2S service Licensor-1	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P02A-003Y6	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	0.75		SCH160		P02A-003Y7	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	1		SCH160		P02A-003Y8	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P03A-003VV	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	0.75		SCH160		P03A-003VW	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	1		SCH160		P03A-003VX	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P21A-004FM	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	0.75		SCH160		P21A-004FN	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	1		SCH160		P21A-004FP	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75	SCH160	SCH160	P24A-00KS0	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	SCH160	P27A-00F6R	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	1	0.5	SCH160	SCH160	P27A-00F6S	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	1	0.75	SCH160	SCH160	P27A-00F6T	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	SCH160	P28A-00CAS	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	1	0.5	SCH160	SCH160	P28A-00CAT	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	1	0.75	SCH160	SCH160	P28A-00CAU	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P29A-003AL	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	0.75		SCH160		P29A-003AM	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	1		SCH160		P29A-003AN	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
541	0.75				P29B-0006X	Cap ASTM A350 Grade LF2 Class 1 Class 6000 ASME B16.11 NPT Severe wet H2S service Licensor-1	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P41A-0019K	Straight nipple ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Severe wet H2S service Licensor-1	
1	0.75		XXS		P41A-0019L	Straight nipple ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Severe wet H2S service Licensor-1	
1	1		XXS		P41A-00196	Straight nipple ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Severe wet H2S service Licensor-1	

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PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30B-0006W	Plug ASTM A350 Grade LF2 Class 1 ASME B16.11 NPT Round head Severe wet H2S service Licensor-1	
1	0.75				P30B-0006X	Plug ASTM A350 Grade LF2 Class 1 ASME B16.11 NPT Round head Severe wet H2S service Licensor-1	
1	1				P30B-0006U	Plug ASTM A350 Grade LF2 Class 1 ASME B16.11 NPT Round head Severe wet H2S service Licensor-1	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P61B-00AAX	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF Severe wet H2S service Licensor-1	
1	0.75		SCH160		P61B-00AAY	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF Severe wet H2S service Licensor-1	
1	1		SCH160		P61B-00AAZ	Flange WN ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF Severe wet H2S service Licensor-1	
541	0.5				P61B-00DLA	Flange NPT ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF Severe wet H2S service Licensor-1	
541	0.75				P61B-00D2U	Flange NPT ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF Severe wet H2S service Licensor-1	
541	1				P61B-00D2V	Flange NPT ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF Severe wet H2S service Licensor-1	
797	0.5		SCH160		P61B-00D2W	Flange WN ASTM A350 Grade LF2 Class 1 Class 1500 ASME B16.5 RJ Severe wet H2S service Licensor-1	
797	0.75		SCH160		P61B-00D2X	Flange WN ASTM A350 Grade LF2 Class 1 Class 1500 ASME B16.5 RJ Severe wet H2S service Licensor-1	
797	1		SCH160		P61B-00D2Y	Flange WN ASTM A350 Grade LF2 Class 1 Class 1500 ASME B16.5 RJ Severe wet H2S service Licensor-1	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67B-002XV	Blind flange ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF Severe wet H2S service Licensor-1	
1	0.75				P67B-002XW	Blind flange ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF Severe wet H2S service Licensor-1	
1	1				P67B-002XX	Blind flange ASTM A350 Grade LF2 Class 1 Class 600 ASME B16.5 RF Severe wet H2S service Licensor-1	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000J8	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000J9	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000JA	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
797	0.5				P75T-000JT	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	0.75				P75T-000JU	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	1				P75T-000JV	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-1				See Attached Bolt Table	Bolt and Nut ASTM A320 Grade L7M / A194 Grade 7M ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
797	0.5-1				See Attached Bolt Table	Bolt and Nut ASTM A320 Grade L7M / A194 Grade 7M ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81B-002KM	Gate valve ASTM A350 Grade LF2 Class 1 Class 600 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Licensor-1	
1	0.75				P81B-002KN	Gate valve ASTM A350 Grade LF2 Class 1 Class 600 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Licensor-1	
1	1				P81B-002KP	Gate valve ASTM A350 Grade LF2 Class 1 Class 600 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Licensor-1	
4608	0.75				P81B-002VV	Gate valve ASTM A350 Grade LF2 Class 1 Class 600 API 602 BW both sides w/ nipples BE - NPT ASTM A333-6 XXS-nipple Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Licensor-1	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82B-001VB	Globe valve ASTM A350 Grade LF2 Class 1 Class 600 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Licensor-1	
1	0.75				P82B-001VC	Globe valve ASTM A350 Grade LF2 Class 1 Class 600 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Licensor-1	
1	1				P82B-001VD	Globe valve ASTM A350 Grade LF2 Class 1 Class 600 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated Severe wet H2S service Licensor-1	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83B-001E5	Check valve ASTM A350 Grade LF2 Class 1 Class 600 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Severe wet H2S service Licensor-1	

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CHECK VALVE (X)							
OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75				P83B-001E6	Check valve ASTM A350 Grade LF2 Class 1 Class 600 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Severe wet H2S service Licensor-1	
1	1				P83B-001E7	Check valve ASTM A350 Grade LF2 Class 1 Class 600 API 602 Flange ASME B16.5 RF Trim number 12 Lift-type Bolted cover Severe wet H2S service Licensor-1	

SPECT BLANK (SB)							
OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71B-000HK	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 600 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service Licensor-1	
1	0.75				P71B-000HL	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 600 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service Licensor-1	
1	1				P71B-000HM	Spectacle blank ASTM A350 Grade LF2 Class 1 Class 600 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service Licensor-1	

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BOLT TABLE (B_D2GR01 , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	80	P80S-009UN		
0.75	4	0.625	90	P80S-00A04		
1	4	0.625	95	P80S-00A05		

BOLT TABLE (B_D2GR01_789 , STUD ASME RJ, OPTION CODE 789)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	110		R12	
0.75	4	0.750	115		R14	
1	4	0.875	130		R16	

BOLT TABLE (B_D2GR01_797 , STUD ASME RJ, OPTION CODE 797)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	110	P80S-00A08	R12	P75T-000JT
0.75	4	0.750	115	P80S-00A09	R14	P75T-000JU
1	4	0.875	130	P80S-009XG	R16	P75T-000JV

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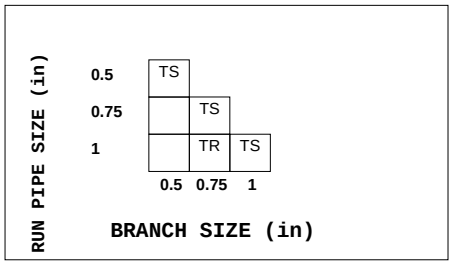
BRANCH TABLE (T_D2GR01)



TS : STRAIGHT TEE
TR : REDUCING TEE

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PIPING CLASS

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Material : SS304L
Rating : ASME CLASS 600
Flange Face : RF
C.A.(mm) : 0.00
Gasket : Spiral Wound
Service : MINERAL OIL, PROPYLENE, SEAL OIL
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED

DETAIL NOTES :

NO.	DESCRIPTION
38	TO BE USED FOR STAND PIPE

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
24	FULL PORT (Q)
200	WITH JACK SCREW (FO)
221	RF (V)
541	NPT(F) (CA,L)
714	SW - NPT(F) (V)
4212	WELDOLET FOR STAND PIPE (L)
4404	CLASS 600 LARGE MALE FACE (B,F,G)
4609	FULL BORE WITH SW-NPT(F) ENDS (V)

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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P01J-000UC	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE	
1	0.75		SCH80S		P01J-000UD	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE	
1	1		SCH80S		P01J-000UE	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE	
1	1.5		SCH80S		P01J-000UF	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE	
1	2		SCH10S		P01J-000RD	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M BE	
1	3		SCH40S		P01J-000RK	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M BE	
1	4		SCH40S		P01J-000UG	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M BE	
1	6		SCH40S		P01J-000RH	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M BE	
1	8		SCH40S		P01J-000WC	Pipe ASTM A358 Grade 304/304L Class 1 dual grade EFW ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P02K-0001K	90 degree elbow ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	0.75				P02K-0001L	90 degree elbow ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	1				P02K-0001M	90 degree elbow ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	1.5				P02K-0001N	90 degree elbow ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	2		SCH10S		P02J-000J0	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	3		SCH40S		P02J-000J9	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	4		SCH40S		P02J-000KZ	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	6		SCH40S		P02J-000J4	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	8		SCH40S		P02J-000J7	90 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P03K-0001G	45 degree elbow ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	0.75				P03K-0001H	45 degree elbow ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	1				P03K-0001J	45 degree elbow ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	1.5				P03K-0001K	45 degree elbow ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	2		SCH10S		P03J-000HS	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	3		SCH40S		P03J-000J1	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	4		SCH40S		P03J-000KL	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	6		SCH40S		P03J-000HW	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	8		SCH40S		P03J-000HZ	45 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P21K-0001G	Straight tee ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	0.75				P21K-0001H	Straight tee ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	1				P21K-0001J	Straight tee ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	1.5				P21K-0001K	Straight tee ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	2		SCH10S		P21J-000HM	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	3		SCH40S		P21J-000HX	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	4		SCH40S		P21J-000KK	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	6		SCH40S		P21J-000HS	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	8		SCH40S		P21J-000HV	Straight tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	

STRAIGHT LATERAL TEE (TLS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75				P22K-00001	Straight lateral-tee ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW 60 degree	
1	1				P22K-00002	Straight lateral-tee ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW 60 degree	
1	1.5				P22K-00003	Straight lateral-tee ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW 60 degree	
1	2		SCH10S		P22J-00053	Straight lateral-tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW 60 degree	
1	3		SCH40S		P22J-0004U	Straight lateral-tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW 60 degree	
1	4		SCH40S		P22J-00054	Straight lateral-tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW 60 degree	

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STRAIGHT LATERAL TEE (TLS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	6		SCH40S		P22J-00052	Straight lateral-tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW 60 degree	
1	8		SCH40S		P22J-00055	Straight lateral-tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW 60 degree	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5			P24K-0001V	Reducing tee ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	1	0.5			P24K-0001W	Reducing tee ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	1	0.75			P24K-0001X	Reducing tee ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	1.5	0.5			P24K-0001Y	Reducing tee ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	1.5	0.75			P24K-0001Z	Reducing tee ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	1.5	1			P24K-00020	Reducing tee ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	2	1	SCH10S	SCH80S	P24J-0065A	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	2	1.5	SCH10S	SCH80S	P24J-0065B	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	3	1.5	SCH40S	SCH80S	P24J-002SG	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	3	2	SCH40S	SCH10S	P24J-005PS	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	4	2	SCH40S	SCH10S	P24J-005P3	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	4	3	SCH40S	SCH40S	P24J-002SJ	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	6	3	SCH40S	SCH40S	P24J-002SK	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	6	4	SCH40S	SCH40S	P24J-002SL	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	8	4	SCH40S	SCH40S	P24J-005P4	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	8	6	SCH40S	SCH40S	P24J-002HF	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	SCH40S	SCH10S	P27J-004MX	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	4	2	SCH40S	SCH10S	P27J-004JR	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	4	3	SCH40S	SCH40S	P27J-001X5	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	6	3	SCH40S	SCH40S	P27J-001X6	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	6	4	SCH40S	SCH40S	P27J-001X7	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	8	4	SCH40S	SCH40S	P27J-004JS	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	8	6	SCH40S	SCH40S	P27J-001R0	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	SCH40S	SCH10S	P28J-004NE	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	4	2	SCH40S	SCH10S	P28J-004K8	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	4	3	SCH40S	SCH40S	P28J-001WG	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	6	3	SCH40S	SCH40S	P28J-001WH	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	6	4	SCH40S	SCH40S	P28J-001WJ	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	8	4	SCH40S	SCH40S	P28J-004K9	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	8	6	SCH40S	SCH40S	P28J-001PG	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P29K-0001V	Cap ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	0.75				P29K-0001W	Cap ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	1				P29K-0001X	Cap ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	1.5				P29K-0001Y	Cap ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	2		SCH10S		P29J-000G1	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	3		SCH40S		P29J-000GA	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	4		SCH40S		P29J-000JB	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	6		SCH40S		P29J-000G5	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	8		SCH40S		P29J-000LU	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
541	0.75				P29K-00020	Cap ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 NPT	

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STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P41J-001FS	Straight nipple ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		SCH80S		P41J-001FT	Straight nipple ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		SCH80S		P41J-001FU	Straight nipple ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		SCH80S		P41J-001FV	Straight nipple ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

CON SWAGED NIPPLE (SNC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH80S	SCH80S	P42J-00081	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	SCH80S	SCH80S	P42J-00082	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	SCH80S	SCH80S	P42J-00083	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	SCH80S	SCH80S	P42J-00084	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	SCH80S	SCH80S	P42J-00085	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	SCH80S	SCH80S	P42J-00086	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	SCH10S	SCH80S	P42J-000F9	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	SCH10S	SCH80S	P42J-000F6	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	SCH10S	SCH80S	P42J-000F7	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	SCH10S	SCH80S	P42J-000F8	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	SCH40S	SCH80S	P42J-000GL	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	

ECC SWAGED NIPPLE (SNE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH80S	SCH80S	P43J-0008D	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	SCH80S	SCH80S	P43J-0008E	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	SCH80S	SCH80S	P43J-0008F	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	SCH80S	SCH80S	P43J-0008G	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	SCH80S	SCH80S	P43J-0008H	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	SCH80S	SCH80S	P43J-0008J	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	SCH10S	SCH80S	P43J-000CT	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	SCH10S	SCH80S	P43J-000CU	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	SCH10S	SCH80S	P43J-000CV	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	SCH10S	SCH80S	P43J-000CW	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	SCH40S	SCH80S	P43J-000DL	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	

COUPLING (CPS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P47K-00035	Coupling ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW - SW	
1	0.75				P47K-00036	Coupling ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW - SW	
1	1				P47K-00037	Coupling ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW - SW	
1	1.5				P47K-00038	Coupling ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW - SW	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2 - 2.5	0.5			P31K-00GH5	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 SW	
1	3 - 8	0.5			P31K-008XR	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 SW	
1	2 - 2.5	0.75			P31K-00GFG	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 SW	
1	3 - 5	0.75			P31K-00GFH	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 SW	
1	6 - 12	0.75			P31K-008YY	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 SW	
1	[illegible]	1			P31K-008ZG	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 SW	
1	4 - 5	1			P31K-00GFL	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 SW	

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OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	6 - 10	1			P31K-008ZU	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 SW	
1	4	1.5			P31K-0099M	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 SW	
1	5 - 6	1.5			P31K-00GFS	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 SW	
1	8 - 12	1.5			P31K-0099Z	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 SW	
541	1	0.75			P31K-00911	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 NPT	
541	1.5	0.75			P31K-00916	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 NPT	
541	2 - 2.5	0.75			P31K-00GFJ	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 NPT	
541	3 - 5	0.75			P31K-00GFK	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 NPT	
541	6 - 12	0.75			P31K-0091X	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 NPT	
1	6	2	SCH40S	SCH10S	P31K-005AW	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	8	2	SCH40S	SCH10S	P31K-005AX	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	8	3	SCH40S	SCH40S	P31K-007Y2	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
4212	3	2	SCH40S	SCH10S	P31K-00CY8	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	38

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30K-0001G	Plug ASTM A182 Grade F304/F304L dual grade ASME B16.11 NPT Round head	
1	0.75				P30K-0001H	Plug ASTM A182 Grade F304/F304L dual grade ASME B16.11 NPT Round head	
1	1				P30K-0001J	Plug ASTM A182 Grade F304/F304L dual grade ASME B16.11 NPT Round head	
1	1.5				P30K-0001K	Plug ASTM A182 Grade F304/F304L dual grade ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P61K-003AT	Flange SW ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 RF	
1	0.75		SCH80S		P61K-003AU	Flange SW ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 RF	
1	1		SCH80S		P61K-003AV	Flange SW ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 RF	
1	1.5		SCH80S		P61K-003AW	Flange SW ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 RF	
1	2		SCH10S		P61K-00290	Flange WN ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 RF	
1	3		SCH40S		P61K-002P2	Flange WN ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 RF	
1	4		SCH40S		P61K-002P3	Flange WN ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 RF	
1	6		SCH40S		P61K-00293	Flange WN ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 RF	
1	8		SCH40S		P61K-0046J	Flange WN ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 RF	
4404	3		SCH40S		P61K-005S3	Flange WN ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 Large male face	
4404	4		SCH40S		P61K-005S4	Flange WN ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 Large male face	
4404	6		SCH40S		P61K-005S5	Flange WN ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 Large male face	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67K-000NN	Blind flange ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 RF	
1	0.75				P67K-000NP	Blind flange ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 RF	
1	1				P67K-000NR	Blind flange ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 RF	
1	1.5				P67K-000NS	Blind flange ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 RF	
1	2				P67K-000NT	Blind flange ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 RF	
1	3				P67K-000NU	Blind flange ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 RF	
1	4				P67K-000NV	Blind flange ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 RF	
1	6				P67K-000NW	Blind flange ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 RF	
1	8				P67K-000PL	Blind flange ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-0035E	Spiral wound gasket SS316 winding / Non-asbestos filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-6	
1	0.75				P73T-0035F	Spiral wound gasket SS316 winding / Non-asbestos filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-6	
1	1				P73T-0035G	Spiral wound gasket SS316 winding / Non-asbestos filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-6	
1	1.5				P73T-0035H	Spiral wound gasket SS316 winding / Non-asbestos filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-6	
1	2				P73T-0035J	Spiral wound gasket SS316 winding / Non-asbestos filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-6	
1	3				P73T-0035K	Spiral wound gasket SS316 winding / Non-asbestos filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-6	

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GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	4				P73T-0035L	Spiral wound gasket SS316 winding / Non-asbestos filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-6	
1	6				P73T-0035M	Spiral wound gasket SS316 winding / Non-asbestos filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-6	
1	8				P73T-00371	Spiral wound gasket SS316 winding / Non-asbestos filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-6	
4404	3				P73T-003AH	Spiral wound gasket SS316 winding / Non-asbestos filler Class 600 Standard-drawing Flange ASME B16.5 Large male and female face 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-8	
4404	4				P73T-003AJ	Spiral wound gasket SS316 winding / Non-asbestos filler Class 600 Standard-drawing Flange ASME B16.5 Large male and female face 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-8	
4404	6				P73T-003AK	Spiral wound gasket SS316 winding / Non-asbestos filler Class 600 Standard-drawing Flange ASME B16.5 Large male and female face 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-8	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-6				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	8				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81K-00108	Gate valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	0.75				P81K-00109	Gate valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	1				P81K-0010A	Gate valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	1.5				P81K-0010B	Gate valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	2				P81L-0021S	Gate valve ASTM A351 Grade CF8 Class 600 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	3				P81L-0021T	Gate valve ASTM A351 Grade CF8 Class 600 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	4				P81L-0021U	Gate valve ASTM A351 Grade CF8 Class 600 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	6				P81L-0021V	Gate valve ASTM A351 Grade CF8 Class 600 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	8				P81L-002BB	Gate valve ASTM A351 Grade CF8 Class 600 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated	
221	0.75				P81K-0014L	Gate valve ASTM A182 Grade F304/F304L dual grade Class 600 API 602 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
4609	0.5				P81K-001TW	Gate valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW - NPT Trim number 12 BB-BG-OS&Y Handwheel operated Full bore	
714	0.5				P81K-001LC	Gate valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW - NPT Trim number 12 BB-BG-OS&Y Handwheel operated	
714	0.75				P81K-001FD	Gate valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW - NPT Trim number 12 BB-BG-OS&Y Handwheel operated	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82K-000NR	Globe valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	0.75				P82K-000NS	Globe valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	1				P82K-000NT	Globe valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	1.5				P82K-000NU	Globe valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	2				P82L-0013B	Globe valve ASTM A351 Grade CF8 Class 600 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	3				P82L-0013C	Globe valve ASTM A351 Grade CF8 Class 600 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	4				P82L-0013D	Globe valve ASTM A351 Grade CF8 Class 600 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	6				P82L-001Y1	Globe valve ASTM A351 Grade CF8 Class 600 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated	
1	8				P82L-001A5	Globe valve ASTM A351 Grade CF8 Class 600 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P83K-000LP	Check valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 Lift-type Bolted cover	
1	1.5				P83K-000LR	Check valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 Lift-type Bolted cover	
1	2				P83L-00139	Check valve ASTM A351 Grade CF8 Class 600 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	3				P83L-0013A	Check valve ASTM A351 Grade CF8 Class 600 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	

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CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	4				P83L-0013B	Check valve ASTM A351 Grade CF8 Class 600 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	6				P83L-001FF	Check valve ASTM A351 Grade CF8 Class 600 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	

BALL VALVE (Q)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P84K-000RN	Ball valve Long-pattern ASTM A182 Grade F304/F304L dual grade Class 600 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design	
1	0.75				P84K-000RP	Ball valve Long-pattern ASTM A182 Grade F304/F304L dual grade Class 600 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design	
1	1				P84K-000RR	Ball valve Long-pattern ASTM A182 Grade F304/F304L dual grade Class 600 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design	
1	1.5				P84K-000RS	Ball valve Long-pattern ASTM A182 Grade F304/F304L dual grade Class 600 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Reduced bore Fire tested design	
1	2				P84L-00343	Ball valve Long-pattern ASTM A351 Grade CF8 Class 600 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Wrench lever operated Reduced bore Fire tested design	
1	3				P84L-00345	Ball valve Long-pattern ASTM A351 Grade CF8 Class 600 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Reduced bore Fire tested design	
1	4				P84L-00346	Ball valve Long-pattern ASTM A351 Grade CF8 Class 600 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Reduced bore Fire tested design	
1	6				P84L-00347	Ball valve Long-pattern ASTM A351 Grade CF8 Class 600 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Reduced bore Fire tested design	
1	8				P84L-00348	Ball valve Long-pattern ASTM A351 Grade CF8 Class 600 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Reduced bore Fire tested design	
24	0.5				P84K-000RT	Ball valve Long-pattern ASTM A182 Grade F304/F304L dual grade Class 600 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	
24	0.75				P84K-000RU	Ball valve Long-pattern ASTM A182 Grade F304/F304L dual grade Class 600 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	
24	1				P84K-000RV	Ball valve Long-pattern ASTM A182 Grade F304/F304L dual grade Class 600 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	
24	1.5				P84K-000RW	Ball valve Long-pattern ASTM A182 Grade F304/F304L dual grade Class 600 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design	
24	2				P84L-00344	Ball valve Long-pattern ASTM A351 Grade CF8 Class 600 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Wrench lever operated Full bore Fire tested design	
24	3				P84L-00349	Ball valve Long-pattern ASTM A351 Grade CF8 Class 600 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design	
24	4				P84L-0034A	Ball valve Long-pattern ASTM A351 Grade CF8 Class 600 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design	
24	6				P84L-0034B	Ball valve Long-pattern ASTM A351 Grade CF8 Class 600 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design	
24	8				P84L-0034C	Ball valve Long-pattern ASTM A351 Grade CF8 Class 600 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design	

ORIFICE FLANGE (FO)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2		SCH10S		P66K-00339	Orifice flange WN ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.36 RF NPS1/2 SW tap x 1	
1	3		SCH40S		P66K-0033A	Orifice flange WN ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.36 RF NPS1/2 SW tap x 1	
200	2		SCH10S		P66K-0033L	Orifice flange WN ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	
200	3		SCH40S		P66K-0033M	Orifice flange WN ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.36 RF NPS1/2 SW tap x 1 with Jack screw	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71K-00091	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 600 Standard-drawing Flange ASME B16.5 RF	
1	0.75				P71K-00092	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 600 Standard-drawing Flange ASME B16.5 RF	
1	1				P71K-00093	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 600 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71K-00094	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 600 Standard-drawing Flange ASME B16.5 RF	
1	2				P71K-00095	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 600 Standard-drawing Flange ASME B16.5 RF	
1	3				P71K-00096	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 600 Standard-drawing Flange ASME B16.5 RF	
1	4				P71K-00097	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 600 Standard-drawing Flange ASME B16.5 RF	
1	6				P71K-00098	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 600 Standard-drawing Flange ASME B16.5 RF	

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PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	8				P72K-00061	Paddle blank ASTM A182 Grade F304/F304L dual grade Class 600 Standard-drawing Flange ASME B16.5 RF	

PADDLE SPACER (PS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	8				P72K-00068	Paddle spacer ASTM A182 Grade F304/F304L dual grade Class 600 Standard-drawing Flange ASME B16.5 RF	

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BOLT TABLE (B_D31F05 , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	80	P80S-003V6		
0.75	4	0.625	90	P80S-003XF		
1	4	0.625	95	P80S-003XG		
1.5	4	0.750	110	P80S-003XK		
2	8	0.625	110	P80S-003VC		
3	8	0.750	130	P80S-003XP		
4	8	0.875	150	P80S-0041F		
6	12	1.000	175	P80S-0043P		
8	12	1.125	195	P80S-0046W		

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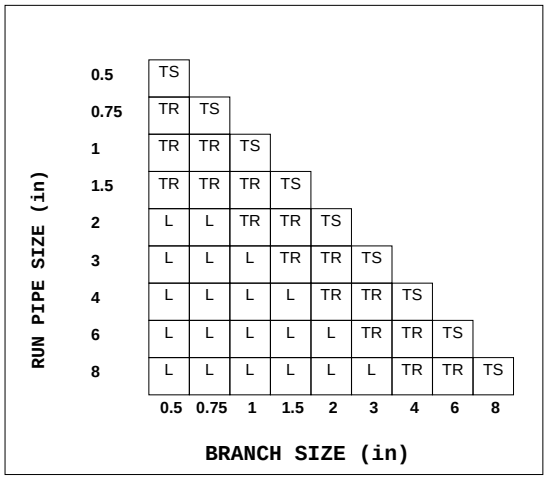
BRANCH TABLE (T_D31F05)



TS : STRAIGHT TEE
L : OUTLET
TR : REDUCING TEE

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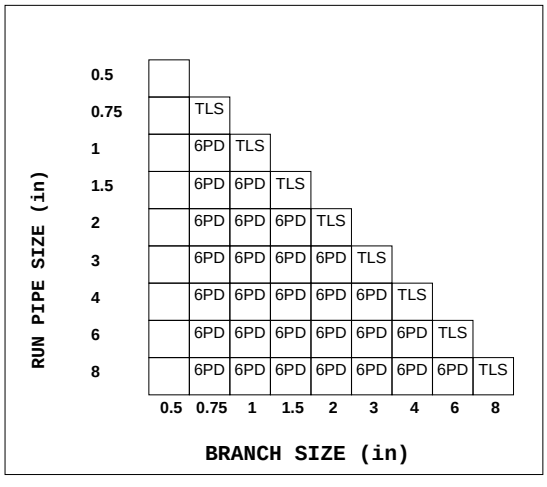
BRANCH TABLE (T_D31F05_3)



6PD : REINFORCING PAD 60 DEG
TLS : STRAIGHT LATERAL TEE

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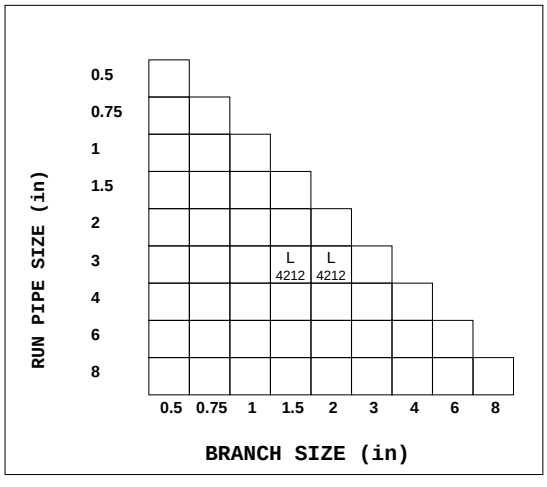
BRANCH TABLE (T_D31F05_4)



L : OUTLET

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PIPING CLASS

D3A702 REV NO. 2

Material : Killed CS
Rating : ASME CLASS 600
Flange Face : RF
C.A.(mm) : 4.50
Gasket : Spiral Wound
Service : PROCESS - WET SEVERE SOUR SERVICE SUBJECT TO NACE + HIC STD + HYDROGEN SERVICE
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
5	BOLTING CONFIRMING TO B7M / 2HM SHALL BE USED UNDER CONDITIONS (A) DIRECT EXPOSURE TO SOUR ENVIRONMENTS (B) WHEN THE BOLTING WILL BE BURIED OR INSULATED
27	PWHT OF CARBON STEEL PIPING IN WET H2S, CAUSTIC AND AMINE SERVICES SHALL BE IN ACCORDANCE WITH SECTION 10.2, 10.3, AND 10.4 OF PROJECT SPECIFICATION 3550-8440-SP-0002 MATERIALS REQUIREMENTS FOR PRESSURISED EQUIPMENT AND PIPING. FOR CAUSTIC AND AMINE SERVICE THE FOLLOWING SHALL APPLY: - PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF ALL SITE PIPING FABRICATION WELDS IS REQUIRED FOR ALL WALL THICKNESSES. FOR MODERATE AND SEVERE WET H2S SERVICE THE FOLLOWING SHALL APPLY: PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF SITE FABRICATION CIRCUMFERENTIAL OR BRANCH WELDS IS NOT REQUIRED IF WELDS ARE MULTIPASS AND IN ACCORDANCE WITH PARA 10.2.12 OF PROJECT SPECIFICATION 3550-8440-SP-0002. FOR SERVICES MEETING THE WET H2S CRITERIA AND CAUSTIC OR AMINE CRITERIA THE MORE STRINGENT PWHT REQUIREMENT SHALL GOVERN.

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
541	NPT(F) (CA,F)
789	CLASS 900 (B,F,G)
797	CLASS 1500 (B,F,G)
4601	Y-PATTERN (W)
4608	VALVE WITH NIPPLES (V)

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PIPING CLASS
D3A702 REV NO. 2

PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P01A-00143	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	0.75		XXS		P01A-0014D	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1		XXS		P01A-0014U	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1.5		SCH160		P01A-0015J	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	2		SCH160		P01A-0019T	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	3		SCH160		P01A-001S5	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	4		SCH120		P01A-001TM	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	6		SCH120		P01A-001VC	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	8		SCH60		P01A-001BK	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	10		XS		P01A-000Y2	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P02A-00172	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	0.75		XXS		P02A-000XH	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1		XXS		P02A-000XJ	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1.5		SCH160		P02A-000V9	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	2		SCH160		P02A-000KW	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		SCH160		P02A-000U4	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		SCH120		P02A-000U5	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		SCH120		P02A-000UB	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		SCH60		P02A-000MC	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	10		XS		P02A-000BN	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P03A-0012Y	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	0.75		XXS		P03A-000U9	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1		XXS		P03A-000U8	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1.5		SCH160		P03A-000RP	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	2		SCH160		P03A-000HU	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		SCH160		P03A-000RB	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		SCH120		P03A-000RC	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		SCH120		P03A-000RD	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		SCH60		P03A-000K5	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	10		XS		P03A-000A3	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P21A-002M0	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	0.75		XXS		P21A-002DR	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1		XXS		P21A-002DP	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5		SCH160		P21A-002B9	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2		SCH160		P21A-00245	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		SCH160		P21A-002AG	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		SCH120		P21A-002AH	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6		SCH120		P21A-002AJ	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8		SCH60		P21A-0025S	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10		XS		P21A-001C0	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75	XXS	XXS	P24A-004LR	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.75	SCH160	XXS	P24A-004LP	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	1	SCH160	XXS	P24A-004LJ	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	SCH160	XXS	P24A-0044B	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	SCH160	SCH160	P24A-003AX	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	SCH160	SCH160	P24A-004LF	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	SCH160	SCH160	P24A-0045H	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	SCH120	SCH160	P24A-0045G	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	SCH120	SCH160	P24A-0045E	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	SCH120	SCH160	P24A-004LL	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	SCH120	SCH120	P24A-0045J	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH60	SCH120	P24A-00L2A	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH60	SCH120	P24A-00P1R	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	XS	SCH120	P24A-00GF8	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	XS	SCH120	P24A-00P65	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	XS	SCH60	P24A-0062H	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	XXS	XXS	P27A-004M7	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.5	XXS	XXS	P27A-004MF	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.75	XXS	XXS	P27A-002ZZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.5	SCH160	XXS	P27A-003ZN	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.75	SCH160	XXS	P27A-002ZY	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	1	SCH160	XXS	P27A-00302	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	0.75	SCH160	XXS	P27A-0029F	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	SCH160	XXS	P27A-0029H	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	SCH160	SCH160	P27A-0025J	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	SCH160	SCH160	P27A-00301	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	SCH160	SCH160	P27A-002NC	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	1.5	SCH120	SCH160	P27A-00300	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	SCH120	SCH160	P27A-002ND	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	SCH120	SCH160	P27A-002NM	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	SCH120	SCH160	P27A-002ZX	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	SCH120	SCH120	P27A-002NS	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH60	SCH120	P27A-007W6	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH60	SCH120	P27A-007XE	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	XS	SCH120	P27A-004PY	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	XS	SCH120	P27A-004S9	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	XS	SCH60	P27A-00437	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	XXS	XXS	P28A-00BNX	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.5	XXS	XXS	P28A-00BNY	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.75	XXS	XXS	P28A-0030M	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.5	SCH160	XXS	P28A-003ZG	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.75	SCH160	XXS	P28A-0030L	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	1	SCH160	XXS	P28A-0030E	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	0.75	SCH160	XXS	P28A-00288	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	SCH160	XXS	P28A-00289	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	SCH160	SCH160	P28A-002SS	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	SCH160	SCH160	P28A-0030P	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	SCH160	SCH160	P28A-002NY	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	1.5	SCH120	SCH160	P28A-0030N	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	SCH120	SCH160	P28A-002NZ	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	SCH120	SCH160	P28A-002P2	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	SCH120	SCH160	P28A-0030D	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	SCH120	SCH120	P28A-002P7	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH60	SCH120	P28A-00AJW	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH60	SCH120	P28A-00EUA	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	XS	SCH120	P28A-0085X	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	XS	SCH120	P28A-00EUB	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	XS	SCH60	P28A-0042Z	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P29A-00336	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	0.75		XXS		P29A-00337	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	1		XXS		P29A-00338	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5		SCH160		P29A-001VX	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	2		SCH160		P29A-001W3	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	3		SCH160		P29A-001W6	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	4		SCH120		P29A-001W9	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	6		SCH120		P29A-0056W	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	8		SCH60		P29A-0035F	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	10		XS		P29A-001VY	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
541	0.75				P29B-0000Y	Cap ASTM A105 Class 6000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		7.95mm		P41A-001B5	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		7.95mm		P41A-001B6	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		XXS		P41A-000D8	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		XXS		P41A-000D9	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2	0.75	SCH160	XXS	P31B-00CP2	Outlet ASTM A105 MSS SP-97 BW	
1	3	0.75	SCH160	XXS	P31B-00CMM	Outlet ASTM A105 MSS SP-97 BW	
1	4	0.75	SCH120	XXS	P31B-00CLL	Outlet ASTM A105 MSS SP-97 BW	
1	6	0.75	SCH120	XXS	P31B-00CKB	Outlet ASTM A105 MSS SP-97 BW	
1	8	0.75	SCH60	XXS	P31B-00C51	Outlet ASTM A105 MSS SP-97 BW	
1	10	0.75	XS	XXS	P31B-00CEY	Outlet ASTM A105 MSS SP-97 BW	
1	3	1	SCH160	XXS	P31B-00B4A	Outlet ASTM A105 MSS SP-97 BW	
1	4	1	SCH120	XXS	P31B-00B08	Outlet ASTM A105 MSS SP-97 BW	
1	6	1	SCH120	XXS	P31B-00AZ2	Outlet ASTM A105 MSS SP-97 BW	
1	8	1	SCH60	XXS	P31B-00YDK	Outlet ASTM A105 MSS SP-97 BW	
1	10	1	XS	XXS	P31B-00BW4	Outlet ASTM A105 MSS SP-97 BW	
1	4	1.5	SCH120	SCH160	P31B-00BP7	Outlet ASTM A105 MSS SP-97 BW	
1	6	1.5	SCH120	SCH160	P31B-00BL1	Outlet ASTM A105 MSS SP-97 BW	
1	8	1.5	SCH60	SCH160	P31B-00BHL	Outlet ASTM A105 MSS SP-97 BW	
1	10	1.5	XS	SCH160	P31B-00TR0	Outlet ASTM A105 MSS SP-97 BW	
1	6	2	SCH120	SCH160	P31B-007ST	Outlet ASTM A105 MSS SP-97 BW	
1	8	2	SCH60	SCH160	P31B-0068W	Outlet ASTM A105 MSS SP-97 BW	
1	10	2	XS	SCH160	P31B-00ASR	Outlet ASTM A105 MSS SP-97 BW	
1	8	3	SCH60	SCH160	P31B-00A35	Outlet ASTM A105 MSS SP-97 BW	
1	10	3	XS	SCH160	P31B-009D0	Outlet ASTM A105 MSS SP-97 BW	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30B-0002D	Plug ASTM A105 ASME B16.11 NPT Round head	
1	0.75				P30B-0002E	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1				P30B-0002F	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1.5				P30B-0002G	Plug ASTM A105 ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P61B-003T1	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
1	0.75		XXS		P61B-003TB	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
1	1		XXS		P61B-003TC	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
1	1.5		SCH160		P61B-003T4	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
1	2		SCH160		P61B-003T7	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
1	3		SCH160		P61B-003JS	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
1	4		SCH120		P61B-005X8	Flange WN ASTM A105 Class 600 ASME B16.5 RF	

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FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	6		SCH120		P61B-005X9	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
1	8		SCH60		P61B-003TE	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
1	10		XS		P61B-001JN	Flange WN ASTM A105 Class 600 ASME B16.5 RF	
541	0.5				P61B-006NP	Flange NPT ASTM A105 Class 600 ASME B16.5 RF	
541	0.75				P61B-00CW3	Flange NPT ASTM A105 Class 600 ASME B16.5 RF	
789	3		SCH160		P61B-0067L	Flange WN ASTM A105 Class 900 ASME B16.5 RJ	
789	4		SCH120		P61B-0065X	Flange WN ASTM A105 Class 900 ASME B16.5 RJ	
789	6		SCH120		P61B-0065Y	Flange WN ASTM A105 Class 900 ASME B16.5 RJ	
789	8		SCH60		P61B-0068B	Flange WN ASTM A105 Class 900 ASME B16.5 RJ	
789	10		XS		P61B-009UV	Flange WN ASTM A105 Class 900 ASME B16.5 RJ	
797	0.5		XXS		P61B-00664	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
797	0.75		XXS		P61B-005V2	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
797	1		XXS		P61B-009W2	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
797	1.5		SCH160		P61B-0065W	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
797	2		SCH160		P61B-0066J	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67B-000J7	Blind flange ASTM A105 Class 600 ASME B16.5 RF	
1	0.75				P67B-000J8	Blind flange ASTM A105 Class 600 ASME B16.5 RF	
1	1				P67B-000J9	Blind flange ASTM A105 Class 600 ASME B16.5 RF	
1	1.5				P67B-000JA	Blind flange ASTM A105 Class 600 ASME B16.5 RF	
1	2				P67B-000JG	Blind flange ASTM A105 Class 600 ASME B16.5 RF	
1	3				P67B-000JK	Blind flange ASTM A105 Class 600 ASME B16.5 RF	
1	4				P67B-000JL	Blind flange ASTM A105 Class 600 ASME B16.5 RF	
1	6				P67B-000JM	Blind flange ASTM A105 Class 600 ASME B16.5 RF	
1	8				P67B-000JN	Blind flange ASTM A105 Class 600 ASME B16.5 RF	
1	10				P67B-000JB	Blind flange ASTM A105 Class 600 ASME B16.5 RF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-000J8	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	0.75				P73T-000J9	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1				P73T-000JA	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	1.5				P73T-000JB	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	2				P73T-000JH	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000JL	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000JM	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	6				P73T-000JN	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	8				P73T-000JP	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	10				P73T-000JC	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
789	3				P75T-000JN	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	4				P75T-000JP	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	6				P75T-000JR	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	8				P75T-000JS	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	10				P75T-000JL	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	0.5				P75T-000JT	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	0.75				P75T-000JU	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	1				P75T-000JV	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	1.5				P75T-000JW	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	2				P75T-0008A	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-6				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	

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BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	8-10				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
789	1-3				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
789	4-10				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
797	0.5-2				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81B-002EP	Gate valve ASTM A105 Class 600 API 602 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Severe wet H2S service C.A.=4.5mm	
1	0.75				P81B-002ER	Gate valve ASTM A105 Class 600 API 602 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Severe wet H2S service C.A.=4.5mm	
1	1				P81B-002ES	Gate valve ASTM A105 Class 600 API 602 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Severe wet H2S service C.A.=4.5mm	
1	1.5				P81B-002ET	Gate valve ASTM A105 Class 600 API 602 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Severe wet H2S service C.A.=4.5mm	
1	2				P81C-007HE	Gate valve ASTM A216 Grade WCB Class 600 API 600 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Severe wet H2S service C.A.=4.5mm	
1	3				P81C-007HF	Gate valve ASTM A216 Grade WCB Class 600 API 600 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Severe wet H2S service C.A.=4.5mm	
1	4				P81C-007HG	Gate valve ASTM A216 Grade WCB Class 600 API 600 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Severe wet H2S service C.A.=4.5mm	
1	6				P81C-0092K	Gate valve ASTM A216 Grade WCB Class 600 API 600 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Gear operated Severe wet H2S service C.A.=4.5mm	
1	8				P81C-007HK	Gate valve ASTM A216 Grade WCB Class 600 API 600 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Gear operated Severe wet H2S service C.A.=4.5mm	
1	10				P81C-007HJ	Gate valve ASTM A216 Grade WCB Class 600 API 600 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Gear operated Severe wet H2S service C.A.=4.5mm	
4608	0.75				P81B-002YD	Gate valve ASTM A105 Class 600 API 602 BW both sides w/ nipples BE - NPT ASTM A106-B T=7.95MM-nipple Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Severe wet H2S service C.A.=4.5mm	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82B-001U5	Globe valve ASTM A105 Class 600 API 602 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Severe wet H2S service C.A.=4.5mm	
1	0.75				P82B-001U6	Globe valve ASTM A105 Class 600 API 602 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Severe wet H2S service C.A.=4.5mm	
1	1				P82B-001U7	Globe valve ASTM A105 Class 600 API 602 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Severe wet H2S service C.A.=4.5mm	
1	1.5				P82B-001U8	Globe valve ASTM A105 Class 600 API 602 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Severe wet H2S service C.A.=4.5mm	
1	2				P82C-003SY	Globe valve ASTM A216 Grade WCB Class 600 BS 1873 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Severe wet H2S service C.A.=4.5mm	
1	3				P82C-003SZ	Globe valve ASTM A216 Grade WCB Class 600 BS 1873 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Severe wet H2S service C.A.=4.5mm	
1	4				P82C-003T0	Globe valve ASTM A216 Grade WCB Class 600 BS 1873 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Severe wet H2S service C.A.=4.5mm	
1	6				P82C-004DJ	Globe valve ASTM A216 Grade WCB Class 600 BS 1873 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Gear operated Severe wet H2S service C.A.=4.5mm	
4601	1				P82B-0021G	Y-pattern globe valve ASTM A105 Class 600 ASME B16.34 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated Severe wet H2S service C.A.=4.5mm	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83B-001CR	Check valve ASTM A105 Class 600 API 602 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 Lift-type Bolted cover Severe wet H2S service C.A.=4.5mm	
1	0.75				P83B-001CS	Check valve ASTM A105 Class 600 API 602 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 Lift-type Bolted cover Severe wet H2S service C.A.=4.5mm	
1	1				P83B-001CT	Check valve ASTM A105 Class 600 API 602 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 Lift-type Bolted cover Severe wet H2S service C.A.=4.5mm	
1	1.5				P83B-001CU	Check valve ASTM A105 Class 600 API 602 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 Lift-type Bolted cover Severe wet H2S service C.A.=4.5mm	
1	2				P83C-00394	Check valve ASTM A216 Grade WCB Class 600 BS 1868 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 Swing-type Bolted cover Severe wet H2S service C.A.=4.5mm	
1	3				P83C-00395	Check valve ASTM A216 Grade WCB Class 600 BS 1868 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 Swing-type Bolted cover Severe wet H2S service C.A.=4.5mm	
1	4				P83C-00396	Check valve ASTM A216 Grade WCB Class 600 BS 1868 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 Swing-type Bolted cover Severe wet H2S service C.A.=4.5mm	
1	6				P83C-00397	Check valve ASTM A216 Grade WCB Class 600 BS 1868 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 Swing-type Bolted cover Severe wet H2S service C.A.=4.5mm	
1	8				P83C-00398	Check valve ASTM A216 Grade WCB Class 600 BS 1868 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 Swing-type Bolted cover Severe wet H2S service C.A.=4.5mm	
1	10				P83C-00393	Check valve ASTM A216 Grade WCB Class 600 BS 1868 Flange ASME B16.5 RF Trim SS316L Body and disc seats Stellite-6 Swing-type Bolted cover Severe wet H2S service C.A.=4.5mm	

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SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71B-000E4	Spectacle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	0.75				P71B-000DN	Spectacle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	1				P71B-000DP	Spectacle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71B-000DR	Spectacle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	2				P71B-000DS	Spectacle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	3				P71B-000DT	Spectacle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	4				P71B-000DU	Spectacle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	6				P71B-000DV	Spectacle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	

PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	8				P72B-000MF	Paddle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	10				P72B-000MA	Paddle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	

PADDLE SPACER (PS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	8				P72B-000MM	Paddle spacer ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	
1	10				P72B-000MG	Paddle spacer ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RF	

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BOLT TABLE (B_D3A702 , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	80	P80S-008T2		
0.75	4	0.625	90	P80S-0090B		
1	4	0.625	95	P80S-0090C		
1.5	4	0.750	110	P80S-0090F		
2	8	0.625	110	P80S-008T8		
3	8	0.750	130	P80S-0090K		
4	8	0.875	150	P80S-005ZF		
6	12	1.000	175	P80S-0061H		
8	12	1.125	195	P80S-0064W		
10	16	1.250	250	P80S-0068M		

BOLT TABLE (B_D3A702_789 , STUD ASME RJ, OPTION CODE 789)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	110		R12	
0.75	4	0.750	115		R14	
1	4	0.875	130	P80S-005ZB	R16	
1.5	4	1.000	140	P80S-0061A	R20	
2	8	0.875	150	P80S-005ZF	R24	
3	8	0.875	150	P80S-005ZF	R31	P75T-000JN
4	8	1.125	175	P80S-0064S	R37	P75T-000JP
6	12	1.125	200	P80S-0064X	R45	P75T-000JR
8	12	1.375	260	P80S-006HT	R49	P75T-000JS
10	16	1.375	275	P80S-006HW	R53	P75T-000JL

BOLT TABLE (B_D3A702_797 , STUD ASME RJ, OPTION CODE 797)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	110	P80S-0090F	R12	P75T-000JT
0.75	4	0.750	115	P80S-0090G	R14	P75T-000JU
1	4	0.875	130	P80S-005ZB	R16	P75T-000JV
1.5	4	1.000	140	P80S-0061A	R20	P75T-000JW
2	8	0.875	150	P80S-005ZF	R24	P75T-0008A
3	8	1.125	180		R35	
4	8	1.250	230		R39	
6	12	1.375	300		R46	
8	12	1.625	345		R50	
10	12	1.875	395		R54	

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BRANCH TABLE (T_D3A702)

RUN PIPE SIZE (in) \ BRANCH SIZE (in)	0.5	0.75	1	1.5	2	3	4	6	8	10
0.5	TS									
0.75		TS								
1		TR	TS							
1.5		TR	TR	TS						
2		L	TR	TR	TS					
3		L	L	TR	TR	TS				
4	L	L	L	L	TR	TR	TS			
6	L	L	L	L	L	TR	TR	TS		
8		L	L	L	L	L	TR	TR	TS	
10		L	L	L	L	L	TR	TR	TR	TS

TS : STRAIGHT TEE
TR : REDUCING TEE
L : OUTLET

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Material : SS304L
Rating : ASME CLASS 600
Flange Face : RF
C.A.(mm) : 0.00
Gasket : Spiral Wound
Service : AT-CATALYST, OF-CATALYST, TK-CATALYST
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
541	NPT(F) (CA,F,L)
4401	LARGE GROOVE FACE (F,FB)
4608	VALVE WITH NIPPLES (V)

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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.25		SCH80S		P01J-002SG	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE	
1	0.5		SCH80S		P01J-000UC	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE	
1	0.75		SCH80S		P01J-000UD	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE	
1	1		SCH80S		P01J-000UE	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE	
1	1.5		SCH80S		P01J-000UF	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE	
1	2		SCH10S		P01J-000RD	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.25		SCH80S		P02J-0025D	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	0.5		SCH80S		P02J-000VD	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	0.75		SCH80S		P02J-000VE	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	1		SCH80S		P02J-000VF	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	1.5		SCH80S		P02J-000VG	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	2		SCH10S		P02J-000J0	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	

90FACTORY-MADE BEND (9FM)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.25		SCH80S		P08J-00071	90 degree factory-made bend ASTM A403 Grade WP304/WP304L Class S dual grade Seamless Standard-drawing BW 5DR Licensor-5	
1	0.5		SCH80S		P08J-00060	90 degree factory-made bend ASTM A403 Grade WP304/WP304L Class S dual grade Seamless Standard-drawing BW 5DR Licensor-5	
1	0.75		SCH80S		P08J-00061	90 degree factory-made bend ASTM A403 Grade WP304/WP304L Class S dual grade Seamless Standard-drawing BW 5DR Licensor-5	
1	1		SCH80S		P08J-00062	90 degree factory-made bend ASTM A403 Grade WP304/WP304L Class S dual grade Seamless Standard-drawing BW 5DR Licensor-5	
1	1.5		SCH80S		P08J-00063	90 degree factory-made bend ASTM A403 Grade WP304/WP304L Class S dual grade Seamless Standard-drawing BW 5DR Licensor-5	
1	2		SCH10S		P08J-00064	90 degree factory-made bend ASTM A403 Grade WP304/WP304L Class S dual grade Seamless Standard-drawing BW 5DR Licensor-5	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P03J-000UW	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	0.75		SCH80S		P03J-000UX	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	1		SCH80S		P03J-000UY	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	1.5		SCH80S		P03J-000UZ	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	2		SCH10S		P03J-000HS	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	

45FACTORY-MADE BEND (4FM)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P09J-0005Y	45 degree factory-made bend ASTM A403 Grade WP304/WP304L Class S dual grade Seamless Standard-drawing BW 5DR Licensor-5	
1	0.75		SCH80S		P09J-0005Z	45 degree factory-made bend ASTM A403 Grade WP304/WP304L Class S dual grade Seamless Standard-drawing BW 5DR Licensor-5	
1	1		SCH80S		P09J-00060	45 degree factory-made bend ASTM A403 Grade WP304/WP304L Class S dual grade Seamless Standard-drawing BW 5DR Licensor-5	
1	1.5		SCH80S		P09J-00061	45 degree factory-made bend ASTM A403 Grade WP304/WP304L Class S dual grade Seamless Standard-drawing BW 5DR Licensor-5	
1	2		SCH10S		P09J-00062	45 degree factory-made bend ASTM A403 Grade WP304/WP304L Class S dual grade Seamless Standard-drawing BW 5DR Licensor-5	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P21J-000V1	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	0.75		SCH80S		P21J-000V2	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	1		SCH80S		P21J-000V3	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	1.5		SCH80S		P21J-000V4	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	2		SCH10S		P21J-000HM	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	

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REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75	SCH80S	SCH80S	P24J-003NX	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	1.5	0.75	SCH80S	SCH80S	P24J-003NZ	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	1.5	1	SCH80S	SCH80S	P24J-003P0	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	2	1	SCH10S	SCH80S	P24J-0065A	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	2	1.5	SCH10S	SCH80S	P24J-0065B	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5	0.25	SCH80S	SCH80S	P27J-006ML	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless Standard-drawing BW Licensor-5	
1	0.75	0.5	SCH80S	SCH80S	P27J-005L7	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless Standard-drawing BW Licensor-5	
1	1	0.5	SCH80S	SCH80S	P27J-005L8	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless Standard-drawing BW Licensor-5	
1	1	0.75	SCH80S	SCH80S	P27J-005L9	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless Standard-drawing BW Licensor-5	
1	1.5	0.5	SCH80S	SCH80S	P27J-005LA	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless Standard-drawing BW Licensor-5	
1	1.5	0.75	SCH80S	SCH80S	P27J-005LB	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless Standard-drawing BW Licensor-5	
1	1.5	1	SCH80S	SCH80S	P27J-005LC	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless Standard-drawing BW Licensor-5	
1	2	0.75	SCH10S	SCH80S	P27J-005LD	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless Standard-drawing BW Licensor-5	
1	2	1	SCH10S	SCH80S	P27J-005LE	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless Standard-drawing BW Licensor-5	
1	2	1.5	SCH10S	SCH80S	P27J-005LF	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless Standard-drawing BW Licensor-5	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5	0.25	SCH80S	SCH80S	P28J-006NX	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless Standard-drawing BW Licensor-5	
1	0.75	0.5	SCH80S	SCH80S	P28J-005M2	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless Standard-drawing BW Licensor-5	
1	1	0.5	SCH80S	SCH80S	P28J-005M3	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless Standard-drawing BW Licensor-5	
1	1	0.75	SCH80S	SCH80S	P28J-005M4	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless Standard-drawing BW Licensor-5	
1	1.5	0.5	SCH80S	SCH80S	P28J-005M5	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless Standard-drawing BW Licensor-5	
1	1.5	0.75	SCH80S	SCH80S	P28J-005M6	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless Standard-drawing BW Licensor-5	
1	1.5	1	SCH80S	SCH80S	P28J-005M7	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless Standard-drawing BW Licensor-5	
1	2	0.75	SCH10S	SCH80S	P28J-005M8	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless Standard-drawing BW Licensor-5	
1	2	1	SCH10S	SCH80S	P28J-005M9	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless Standard-drawing BW Licensor-5	
1	2	1.5	SCH10S	SCH80S	P28J-005MA	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless Standard-drawing BW Licensor-5	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P29J-000T0	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	0.75		SCH80S		P29J-000T1	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	1		SCH80S		P29J-000T2	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	1.5		SCH80S		P29J-000T3	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	2		SCH10S		P29J-000G1	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
541	0.75				P29K-00020	Cap ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 NPT	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
541	1	0.75			P31K-00911	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 NPT	
541	1.5	0.75			P31K-00916	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 NPT	
541	2 - 2.5	0.75			P31K-00GFJ	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 NPT	
1	2	0.75	SCH10S	SCH80S	P31K-00DM8	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30K-0001G	Plug ASTM A182 Grade F304/F304L dual grade ASME B16.11 NPT Round head	

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PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75				P30K-0001H	Plug ASTM A182 Grade F304/F304L dual grade ASME B16.11 NPT Round head	
1	1				P30K-0001J	Plug ASTM A182 Grade F304/F304L dual grade ASME B16.11 NPT Round head	
1	1.5				P30K-0001K	Plug ASTM A182 Grade F304/F304L dual grade ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.25		SCH80S		P61K-0069U	Flange WN ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 Large tongue face	
1	0.5		SCH80S		P61K-005RM	Flange WN ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 Large tongue face	
1	0.75		SCH80S		P61K-005RN	Flange WN ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 Large tongue face	
1	1		SCH80S		P61K-005RP	Flange WN ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 Large tongue face	
1	1.5		SCH80S		P61K-005RR	Flange WN ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 Large tongue face	
1	2		SCH10S		P61K-005RS	Flange WN ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 Large tongue face	
4401	0.5		SCH80S		P61K-005RT	Flange WN ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 Large groove face	
4401	0.75		SCH80S		P61K-005RU	Flange WN ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 Large groove face	
4401	1		SCH80S		P61K-005RV	Flange WN ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 Large groove face	
4401	1.5		SCH80S		P61K-005RW	Flange WN ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 Large groove face	
4401	2		SCH10S		P61K-005RX	Flange WN ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 Large groove face	
541	0.5				P61K-0069V	Flange NPT ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 Large tongue face	
541	0.75				P61K-0060G	Flange NPT ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 Large tongue face	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67K-001S1	Blind flange ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 Large tongue face	
1	0.75				P67K-001S2	Blind flange ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 Large tongue face	
1	1				P67K-001S3	Blind flange ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 Large tongue face	
1	1.5				P67K-001S4	Blind flange ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 Large tongue face	
1	2				P67K-001S5	Blind flange ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 Large tongue face	
4401	0.5				P67K-001S6	Blind flange ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 Large groove face	
4401	0.75				P67K-001S7	Blind flange ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 Large groove face	
4401	1				P67K-001S8	Blind flange ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 Large groove face	
4401	1.5				P67K-001S9	Blind flange ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 Large groove face	
4401	2				P67K-001SA	Blind flange ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 Large groove face	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P76T-0004K	Grooved metal gasket Aluminum Class 600 Standard-drawing Flange ASME B16.5 Large tongue and groove face 3.0mm-T Licensor-5 Type-3	
1	0.75				P76T-0004L	Grooved metal gasket Aluminum Class 600 Standard-drawing Flange ASME B16.5 Large tongue and groove face 3.0mm-T Licensor-5 Type-3	
1	1				P76T-0004M	Grooved metal gasket Aluminum Class 600 Standard-drawing Flange ASME B16.5 Large tongue and groove face 3.0mm-T Licensor-5 Type-3	
1	1.5				P76T-0004N	Grooved metal gasket Aluminum Class 600 Standard-drawing Flange ASME B16.5 Large tongue and groove face 3.0mm-T Licensor-5 Type-3	
1	2				P76T-0004P	Grooved metal gasket Aluminum Class 600 Standard-drawing Flange ASME B16.5 Large tongue and groove face 3.0mm-T Licensor-5 Type-3	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-2				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81K-0018S	Gate valve ASTM A182 Grade F304/F304L dual grade Class 600 API 602 Flange ASME B16.5 Large groove face Trim number 12 BB-BG-OS&Y Handwheel operated Bellow seal	
1	0.75				P81K-0018T	Gate valve ASTM A182 Grade F304/F304L dual grade Class 600 API 602 Flange ASME B16.5 Large groove face Trim number 12 BB-BG-OS&Y Handwheel operated Bellow seal	
1	1				P81K-0018U	Gate valve ASTM A182 Grade F304/F304L dual grade Class 600 API 602 Flange ASME B16.5 Large groove face Trim number 12 BB-BG-OS&Y Handwheel operated Bellow seal	
1	1.5				P81K-0018V	Gate valve ASTM A182 Grade F304/F304L dual grade Class 600 API 602 Flange ASME B16.5 Large groove face Trim number 12 BB-BG-OS&Y Handwheel operated Bellow seal	
1	2				P81L-002KD	Gate valve ASTM A351 Grade CF8 Class 600 API 600 Flange ASME B16.5 Large groove face Trim number 12 BB-BG-OS&Y Handwheel operated Bellow seal	
4008	0.5				P81K-001NR	Gate valve ASTM A182 Grade F304/F304L dual grade Class 600 API 602 BW both sides w/ nipples BE - NPT ASTM A312-TP304(L) dual grade Seamless Sch80S-nipple Trim number 12 BB-BG-OS&Y Handwheel operated Bellow seal	

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GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82K-000V9	Globe valve ASTM A182 Grade F304/F304L dual grade Class 600 API 602 Flange ASME B16.5 Large groove face Trim number 12 BB-BG-OS&Y Handwheel operated Bellow seal	
1	0.75				P82K-000VA	Globe valve ASTM A182 Grade F304/F304L dual grade Class 600 API 602 Flange ASME B16.5 Large groove face Trim number 12 BB-BG-OS&Y Handwheel operated Bellow seal	
1	1				P82K-000VB	Globe valve ASTM A182 Grade F304/F304L dual grade Class 600 API 602 Flange ASME B16.5 Large groove face Trim number 12 BB-BG-OS&Y Handwheel operated Bellow seal	
1	1.5				P82K-000VC	Globe valve ASTM A182 Grade F304/F304L dual grade Class 600 API 602 Flange ASME B16.5 Large groove face Trim number 12 BB-BG-OS&Y Handwheel operated Bellow seal	
1	2				P82L-001DX	Globe valve ASTM A351 Grade CF8 Class 600 BS 1873 Flange ASME B16.5 Large groove face Trim number 12 BB-BG-OS&Y Handwheel operated Bellow seal	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83K-000V4	Check valve ASTM A182 Grade F304/F304L dual grade Class 600 API 602 Flange ASME B16.5 Large groove face Trim number 12 Lift-type Bolted cover	
1	0.75				P83K-000V5	Check valve ASTM A182 Grade F304/F304L dual grade Class 600 API 602 Flange ASME B16.5 Large groove face Trim number 12 Lift-type Bolted cover	
1	1				P83K-000V6	Check valve ASTM A182 Grade F304/F304L dual grade Class 600 API 602 Flange ASME B16.5 Large groove face Trim number 12 Lift-type Bolted cover	
1	1.5				P83K-000V7	Check valve ASTM A182 Grade F304/F304L dual grade Class 600 API 602 Flange ASME B16.5 Large groove face Trim number 12 Lift-type Bolted cover	

BALL VALVE (Q)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P84K-000ST	Ball valve Long-pattern ASTM A182 Grade F304/F304L dual grade Class 600 API 608 Flange ASME B16.5 Large groove face Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design Licensor-5	
1	0.75				P84K-000SU	Ball valve Long-pattern ASTM A182 Grade F304/F304L dual grade Class 600 API 608 Flange ASME B16.5 Large groove face Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design Licensor-5	
1	1				P84K-000SV	Ball valve Long-pattern ASTM A182 Grade F304/F304L dual grade Class 600 API 608 Flange ASME B16.5 Large groove face Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design Licensor-5	
1	1.5				P84K-000SW	Ball valve Long-pattern ASTM A182 Grade F304/F304L dual grade Class 600 API 608 Flange ASME B16.5 Large groove face Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design Licensor-5	
1	2				P84L-00367	Ball valve Long-pattern ASTM A351 Grade CF8 Class 600 API 608 Flange ASME B16.5 Large groove face Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Wrench lever operated Full bore Fire tested design Licensor-5	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71K-000FY	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 600 Standard-drawing Flange ASME B16.5 Large groove face	
1	0.75				P71K-000FZ	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 600 Standard-drawing Flange ASME B16.5 Large groove face	
1	1				P71K-000G0	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 600 Standard-drawing Flange ASME B16.5 Large groove face	
1	1.5				P71K-000G1	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 600 Standard-drawing Flange ASME B16.5 Large groove face	
1	2				P71K-000G2	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 600 Standard-drawing Flange ASME B16.5 Large groove face	

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PIPING CLASS
D41F05 REV NO. 2

BOLT TABLE (B_D41F05 , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	80	P80S-003V6		
0.75	4	0.625	90	P80S-003XF		
1	4	0.625	95	P80S-003XG		
1.5	4	0.750	110	P80S-003XK		
2	8	0.625	110	P80S-003VC		

BOLT TABLE (B_D41F05_789 , STUD ASME RJ, OPTION CODE 789)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	110		R12	
0.75	4	0.750	115		R14	
1	4	0.875	130		R16	
1.5	4	1.000	140		R20	
2	8	0.875	150		R24	

BOLT TABLE (B_D41F05_797 , STUD ASME RJ, OPTION CODE 797)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	110		R12	
0.75	4	0.750	115		R14	
1	4	0.875	130		R16	
1.5	4	1.000	140		R20	
2	8	0.875	150		R24	

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PIPING CLASS
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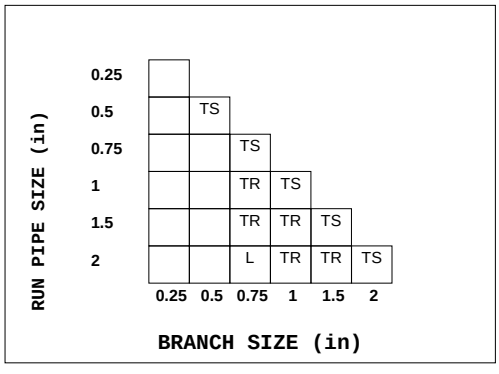
BRANCH TABLE (T_D41F05)



TS : STRAIGHT TEE
L : OUTLET
TR : REDUCING TEE

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PIPING CLASS

D51F05 REV NO. 2

Material : SS304L
Rating : ASME CLASS 600
Flange Face : RF
C.A.(mm) : 0.00
Gasket : Spiral Wound
Service : TK-CATALYST
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
4401	LARGE GROOVE FACE (F,FB)

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PIPING CLASS
D51F05 REV NO. 2

PIPE (P)

OPTION CODE	SIZE L / RUN	SIZE S / BRN	WALL THICKNESS (L)	WALL THICKNESS (S)	IDENT CODE	DESCRIPTION	NOTE
1	0.5		SCH80S		P01J-000UC	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE	

90 ELBOW (9L)

OPTION CODE	SIZE L / RUN	SIZE S / BRN	WALL THICKNESS (L)	WALL THICKNESS (S)	IDENT CODE	DESCRIPTION	NOTE
1	0.5		SCH80S		P02J-000VD	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	

90FACTORY-MADE BEND (9FM)

OPTION CODE	SIZE L / RUN	SIZE S / BRN	WALL THICKNESS (L)	WALL THICKNESS (S)	IDENT CODE	DESCRIPTION	NOTE
1	0.5		SCH80S		P08J-00060	90 degree factory-made bend ASTM A403 Grade WP304/WP304L Class S dual grade Seamless Standard-drawing BW 5DR Licensor-5	

45 ELBOW (4L)

OPTION CODE	SIZE L / RUN	SIZE S / BRN	WALL THICKNESS (L)	WALL THICKNESS (S)	IDENT CODE	DESCRIPTION	NOTE
1	0.5		SCH80S		P03J-000UW	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	

45FACTORY-MADE BEND (4FM)

OPTION CODE	SIZE L / RUN	SIZE S / BRN	WALL THICKNESS (L)	WALL THICKNESS (S)	IDENT CODE	DESCRIPTION	NOTE
1	0.5		SCH80S		P09J-0005Y	45 degree factory-made bend ASTM A403 Grade WP304/WP304L Class S dual grade Seamless Standard-drawing BW 5DR Licensor-5	

STRAIGHT TEE (TS)

OPTION CODE	SIZE L / RUN	SIZE S / BRN	WALL THICKNESS (L)	WALL THICKNESS (S)	IDENT CODE	DESCRIPTION	NOTE
1	0.5		SCH80S		P21J-000V1	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE L / RUN	SIZE S / BRN	WALL THICKNESS (L)	WALL THICKNESS (S)	IDENT CODE	DESCRIPTION	NOTE
1	0.5		SCH80S		P29J-000T0	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	

PLUG (PL)

OPTION CODE	SIZE L / RUN	SIZE S / BRN	WALL THICKNESS (L)	WALL THICKNESS (S)	IDENT CODE	DESCRIPTION	NOTE
1	0.5				P30K-0001G	Plug ASTM A182 Grade F304/F304L dual grade ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE L / RUN	SIZE S / BRN	WALL THICKNESS (L)	WALL THICKNESS (S)	IDENT CODE	DESCRIPTION	NOTE
1	0.5		SCH80S		P61K-005RM	Flange WN ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 Large tongue face	
4401	0.5		SCH80S		P61K-005RT	Flange WN ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 Large groove face	

BLIND FLANGE (FB)

OPTION CODE	SIZE L / RUN	SIZE S / BRN	WALL THICKNESS (L)	WALL THICKNESS (S)	IDENT CODE	DESCRIPTION	NOTE
1	0.5				P67K-001S1	Blind flange ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 Large tongue face	
4401	0.5				P67K-001S6	Blind flange ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 Large groove face	

GASKET (G)

OPTION CODE	SIZE L / RUN	SIZE S / BRN	WALL THICKNESS (L)	WALL THICKNESS (S)	IDENT CODE	DESCRIPTION	NOTE
1	0.5				P76T-0004K	Grooved metal gasket Aluminum Class 600 Standard-drawing Flange ASME B16.5 Large tongue and groove face 3.0mm-T Licensor-5 Type-3	

BOLT AND NUT (B)

OPTION CODE	SIZE L / RUN	SIZE S / BRN	WALL THICKNESS (L)	WALL THICKNESS (S)	IDENT CODE	DESCRIPTION	NOTE
1	0.5				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE L / RUN	SIZE S / BRN	WALL THICKNESS (L)	WALL THICKNESS (S)	IDENT CODE	DESCRIPTION	NOTE
1	0.5				P81K-0018W	Gate valve ASTM A182 Grade F304/F304L dual grade Class 600 API 602 Flange ASME B16.5 Large groove face Trim number 12 BB-BG-OS&Y Handwheel operated	

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GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82K-000VD	Globe valve ASTM A182 Grade F304/F304L dual grade Class 600 API 602 Flange ASME B16.5 Large groove face Trim number 12 BB-BG-OS&Y Handwheel operated	

BALL VALVE (Q)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P84K-000ST	Ball valve Long-pattern ASTM A182 Grade F304/F304L dual grade Class 600 API 608 Flange ASME B16.5 Large groove face Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design Licensor-5	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71K-000FY	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 600 Standard-drawing Flange ASME B16.5 Large groove face	

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PIPING CLASS
D51F05 REV NO. 2

BOLT TABLE (B_D51F05 , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	80	P80S-003V6		

BOLT TABLE (B_D51F05_789 , STUD ASME RJ, OPTION CODE 789)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	110		R12	

BOLT TABLE (B_D51F05_797 , STUD ASME RJ, OPTION CODE 797)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	110		R12	

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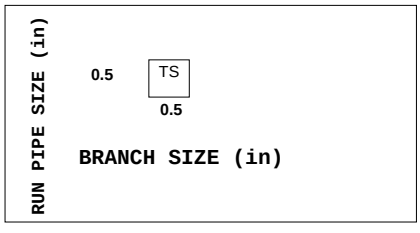
PIPING CLASS
D51F05 REV NO. 2

BRANCH TABLE (T_D51F05)



TS : STRAIGHT TEE

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PIPING CLASS

D61F05 REV NO. 2

Material : SS304L
Rating : ASME CLASS 600
Flange Face : RF
C.A.(mm) : 0.00
Gasket : Spiral Wound
Service : SLURRY
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
541	NPT(F) (CA,L)
714	SW - NPT(F) (V)
4402	LARGE FEMALE FACE (F,FB)
4606	LARGE MALE FACE (Q)

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PIPING CLASS
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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P01J-000UC	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE	
1	0.75		SCH80S		P01J-000UD	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE	
1	1		SCH80S		P01J-000UE	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE	
1	1.5		SCH80S		P01J-000UF	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE	
1	2		SCH10S		P01J-000RD	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M BE	
1	3		SCH40S		P01J-000RK	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M BE	
1	4		SCH40S		P01J-000UG	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M BE	
1	5		SCH40S		P01J-002RV	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M BE	
1	6		SCH40S		P01J-000RH	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P02K-0001K	90 degree elbow ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	0.75				P02K-0001L	90 degree elbow ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	1				P02K-0001M	90 degree elbow ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	1.5				P02K-0001N	90 degree elbow ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	2		SCH10S		P02J-000J0	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	3		SCH40S		P02J-000J9	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	4		SCH40S		P02J-000KZ	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	5		SCH40S		P02J-0024V	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	6		SCH40S		P02J-000J4	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	

90FACTORY-MADE BEND (9FM)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P08J-00060	90 degree factory-made bend ASTM A403 Grade WP304/WP304L Class S dual grade Seamless Standard-drawing BW 5DR Licensor-5	
1	0.75		SCH80S		P08J-00061	90 degree factory-made bend ASTM A403 Grade WP304/WP304L Class S dual grade Seamless Standard-drawing BW 5DR Licensor-5	
1	1		SCH80S		P08J-00062	90 degree factory-made bend ASTM A403 Grade WP304/WP304L Class S dual grade Seamless Standard-drawing BW 5DR Licensor-5	
1	1.5		SCH80S		P08J-00063	90 degree factory-made bend ASTM A403 Grade WP304/WP304L Class S dual grade Seamless Standard-drawing BW 5DR Licensor-5	
1	2		SCH10S		P08J-00064	90 degree factory-made bend ASTM A403 Grade WP304/WP304L Class S dual grade Seamless Standard-drawing BW 5DR Licensor-5	
1	3		SCH40S		P08J-0006Y	90 degree factory-made bend ASTM A403 Grade WP304/WP304L Class S dual grade Seamless Standard-drawing BW 5DR Licensor-5	
1	4		SCH40S		P08J-0006Z	90 degree factory-made bend ASTM A403 Grade WP304/WP304L Class S dual grade Seamless Standard-drawing BW 5DR Licensor-5	
1	5		SCH40S		P08J-00070	90 degree factory-made bend ASTM A403 Grade WP304/WP304L Class S dual grade Seamless Standard-drawing BW 5DR Licensor-5	
1	6		SCH40S		P08J-00067	90 degree factory-made bend ASTM A403 Grade WP304/WP304L Class S dual grade Seamless Standard-drawing BW 5DR Licensor-5	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P03K-0001G	45 degree elbow ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	0.75				P03K-0001H	45 degree elbow ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	1				P03K-0001J	45 degree elbow ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	1.5				P03K-0001K	45 degree elbow ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	2		SCH10S		P03J-000HS	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	3		SCH40S		P03J-000J1	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	4		SCH40S		P03J-000KL	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	5		SCH40S		P03J-0024L	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	6		SCH40S		P03J-000HW	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	

45FACTORY-MADE BEND (4FM)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P09J-0005Y	45 degree factory-made bend ASTM A403 Grade WP304/WP304L Class S dual grade Seamless Standard-drawing BW 5DR Licensor-5	
1	0.75		SCH80S		P09J-0005Z	45 degree factory-made bend ASTM A403 Grade WP304/WP304L Class S dual grade Seamless Standard-drawing BW 5DR Licensor-5	
1	1		SCH80S		P09J-00060	45 degree factory-made bend ASTM A403 Grade WP304/WP304L Class S dual grade Seamless Standard-drawing BW 5DR Licensor-5	

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45FACTORY-MADE BEND (4FM)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5		SCH80S		P09J-00061	45 degree factory-made bend ASTM A403 Grade WP304/WP304L Class S dual grade Seamless Standard-drawing BW 5DR Licensor-5	
1	2		SCH10S		P09J-00062	45 degree factory-made bend ASTM A403 Grade WP304/WP304L Class S dual grade Seamless Standard-drawing BW 5DR Licensor-5	
1	3		SCH40S		P09J-0006W	45 degree factory-made bend ASTM A403 Grade WP304/WP304L Class S dual grade Seamless Standard-drawing BW 5DR Licensor-5	
1	4		SCH40S		P09J-0006X	45 degree factory-made bend ASTM A403 Grade WP304/WP304L Class S dual grade Seamless Standard-drawing BW 5DR Licensor-5	
1	5		SCH40S		P09J-0006Y	45 degree factory-made bend ASTM A403 Grade WP304/WP304L Class S dual grade Seamless Standard-drawing BW 5DR Licensor-5	
1	6		SCH40S		P09J-00065	45 degree factory-made bend ASTM A403 Grade WP304/WP304L Class S dual grade Seamless Standard-drawing BW 5DR Licensor-5	

SP-AGL FCTRY-M BEND (SFM)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		SCH80S		P10J-0005A	Special angle factory-made bend ASTM A403 Grade WP304/WP304L Class S dual grade Seamless Standard-drawing BW 30 degree 5DR Licensor-5	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P21K-0001G	Straight tee ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	0.75				P21K-0001H	Straight tee ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	1				P21K-0001J	Straight tee ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	1.5				P21K-0001K	Straight tee ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	2		SCH10S		P21J-000HM	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	3		SCH40S		P21J-000HX	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	4		SCH40S		P21J-000KK	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	6		SCH40S		P21J-000HS	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	

STRAIGHT LATERAL TEE (TLS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75				P22K-00001	Straight lateral-tee ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW 60 degree	
1	1				P22K-00002	Straight lateral-tee ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW 60 degree	
1	1.5				P22K-00003	Straight lateral-tee ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW 60 degree	
1	2		SCH10S		P22J-00053	Straight lateral-tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW 60 degree	
1	3		SCH40S		P22J-0004U	Straight lateral-tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW 60 degree	
1	4		SCH40S		P22J-00054	Straight lateral-tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW 60 degree	
1	6		SCH40S		P22J-00052	Straight lateral-tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW 60 degree	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75			P24K-0001X	Reducing tee ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	1.5	0.75			P24K-0001Z	Reducing tee ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	1.5	1			P24K-00020	Reducing tee ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	2	1	SCH10S	SCH80S	P24J-0065A	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	2	1.5	SCH10S	SCH80S	P24J-0065B	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	3	1.5	SCH40S	SCH80S	P24J-002SG	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	3	2	SCH40S	SCH10S	P24J-005PS	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	4	2	SCH40S	SCH10S	P24J-005P3	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	4	3	SCH40S	SCH40S	P24J-002SJ	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	6	3	SCH40S	SCH40S	P24J-002SK	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	6	4	SCH40S	SCH40S	P24J-002SL	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	

REDUCING LATERAL TEE (TLR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	SCH40S	SCH10S	P25J-001N1	Reducing lateral-tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW 45 degree	
1	4	2	SCH40S	SCH10S	P25J-001N0	Reducing lateral-tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW 45 degree	
1	6	4	SCH40S	SCH40S	P25J-001MZ	Reducing lateral-tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW 45 degree	

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CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH80S	SCH80S	P27J-005L7	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless Standard-drawing BW Licensor-5	
1	1	0.5	SCH80S	SCH80S	P27J-005L8	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless Standard-drawing BW Licensor-5	
1	1	0.75	SCH80S	SCH80S	P27J-005L9	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless Standard-drawing BW Licensor-5	
1	1.5	0.5	SCH80S	SCH80S	P27J-005LA	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless Standard-drawing BW Licensor-5	
1	1.5	0.75	SCH80S	SCH80S	P27J-005LB	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless Standard-drawing BW Licensor-5	
1	1.5	1	SCH80S	SCH80S	P27J-005LC	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless Standard-drawing BW Licensor-5	
1	2	0.75	SCH10S	SCH80S	P27J-005LD	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless Standard-drawing BW Licensor-5	
1	2	1	SCH10S	SCH80S	P27J-005LE	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless Standard-drawing BW Licensor-5	
1	2	1.5	SCH10S	SCH80S	P27J-005LF	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless Standard-drawing BW Licensor-5	
1	3	1.5	SCH40S	SCH80S	P27J-0070H	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless Standard-drawing BW Licensor-5	
1	3	2	SCH40S	SCH10S	P27J-00675	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless Standard-drawing BW Licensor-5	
1	4	1.5	SCH40S	SCH80S	P27J-0070J	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless Standard-drawing BW Licensor-5	
1	4	2	SCH40S	SCH10S	P27J-00676	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless Standard-drawing BW Licensor-5	
1	4	3	SCH40S	SCH40S	P27J-00677	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless Standard-drawing BW Licensor-5	
1	5	4	SCH40S	SCH40S	P27J-0070K	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless Standard-drawing BW Licensor-5	
1	6	3	SCH40S	SCH40S	P27J-00678	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless Standard-drawing BW Licensor-5	
1	6	4	SCH40S	SCH40S	P27J-00679	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless Standard-drawing BW Licensor-5	
1	6	5	SCH40S	SCH40S	P27J-006L3	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless Standard-drawing BW Licensor-5	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH80S	SCH80S	P28J-005M2	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless Standard-drawing BW Licensor-5	
1	1	0.5	SCH80S	SCH80S	P28J-005M3	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless Standard-drawing BW Licensor-5	
1	1	0.75	SCH80S	SCH80S	P28J-005M4	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless Standard-drawing BW Licensor-5	
1	1.5	0.5	SCH80S	SCH80S	P28J-005M5	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless Standard-drawing BW Licensor-5	
1	1.5	0.75	SCH80S	SCH80S	P28J-005M6	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless Standard-drawing BW Licensor-5	
1	1.5	1	SCH80S	SCH80S	P28J-005M7	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless Standard-drawing BW Licensor-5	
1	2	0.75	SCH10S	SCH80S	P28J-005M8	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless Standard-drawing BW Licensor-5	
1	2	1	SCH10S	SCH80S	P28J-005M9	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless Standard-drawing BW Licensor-5	
1	2	1.5	SCH10S	SCH80S	P28J-005MA	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless Standard-drawing BW Licensor-5	
1	3	1.5	SCH40S	SCH80S	P28J-00720	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless Standard-drawing BW Licensor-5	
1	3	2	SCH40S	SCH10S	P28J-0068G	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless Standard-drawing BW Licensor-5	
1	4	1.5	SCH40S	SCH80S	P28J-00721	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless Standard-drawing BW Licensor-5	
1	4	2	SCH40S	SCH10S	P28J-0068H	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless Standard-drawing BW Licensor-5	
1	4	3	SCH40S	SCH40S	P28J-0068J	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless Standard-drawing BW Licensor-5	
1	5	4	SCH40S	SCH40S	P28J-00722	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless Standard-drawing BW Licensor-5	
1	6	3	SCH40S	SCH40S	P28J-0068K	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless Standard-drawing BW Licensor-5	
1	6	4	SCH40S	SCH40S	P28J-0068L	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless Standard-drawing BW Licensor-5	
1	6	5	SCH40S	SCH40S	P28J-006MD	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless Standard-drawing BW Licensor-5	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P29K-0001V	Cap ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	0.75				P29K-0001W	Cap ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	1				P29K-0001X	Cap ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	1.5				P29K-0001Y	Cap ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	

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CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2		SCH10S		P29J-000G1	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	3		SCH40S		P29J-000GA	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	4		SCH40S		P29J-000JB	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	5		SCH40S		P29J-003Z8	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	6		SCH40S		P29J-000G5	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
541	0.75				P29K-00020	Cap ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P41J-001FS	Straight nipple ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		SCH80S		P41J-001FT	Straight nipple ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		SCH80S		P41J-001FU	Straight nipple ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		SCH80S		P41J-001FV	Straight nipple ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

COUPLING (CPS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P47K-00035	Coupling ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW - SW	
1	0.75				P47K-00036	Coupling ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW - SW	
1	1				P47K-00037	Coupling ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW - SW	
1	1.5				P47K-00038	Coupling ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW - SW	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2 - 2.5	0.75			P31K-00GFG	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 SW	
1	3 - 5	0.75			P31K-00GFH	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 SW	
1	6 - 12	0.75			P31K-008YY	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 SW	
1	3	1			P31K-008ZG	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 SW	
1	4 - 5	1			P31K-00GFL	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 SW	
1	6 - 10	1			P31K-008ZU	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 SW	
1	4	1.5			P31K-0099M	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 SW	
1	5 - 6	1.5			P31K-00GFS	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 SW	
541	1	0.75			P31K-00911	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 NPT	
541	1.5	0.75			P31K-00916	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 NPT	
541	2 - 2.5	0.75			P31K-00GFJ	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 NPT	
541	3 - 5	0.75			P31K-00GFK	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 NPT	
541	6 - 12	0.75			P31K-0091X	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 NPT	
1	5	2	SCH40S	SCH10S	P31K-00FV2	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	6	2	SCH40S	SCH10S	P31K-005AW	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	

LATROLET (LL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2 - 2.5	0.75			P34K-000Z3	Lateral-outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 SW 45 degree	
1	3 - 5	0.75			P34K-000Z7	Lateral-outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 SW 45 degree	
1	6 - 12	0.75			P34K-000Z8	Lateral-outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 SW 45 degree	
1	3	1			P34K-000Z9	Lateral-outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 SW 45 degree	
1	5 - 6	1.5			P34K-000ZG	Lateral-outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 SW 45 degree	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30K-0001G	Plug ASTM A182 Grade F304/F304L dual grade ASME B16.11 NPT Round head	
1	0.75				P30K-0001H	Plug ASTM A182 Grade F304/F304L dual grade ASME B16.11 NPT Round head	
1	1				P30K-0001J	Plug ASTM A182 Grade F304/F304L dual grade ASME B16.11 NPT Round head	
1	1.5				P30K-0001K	Plug ASTM A182 Grade F304/F304L dual grade ASME B16.11 NPT Round head	

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FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P61K-005RY	Flange SW ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 Large male face	
1	0.75		SCH80S		P61K-005RZ	Flange SW ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 Large male face	
1	1		SCH80S		P61K-005S0	Flange SW ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 Large male face	
1	1.5		SCH80S		P61K-005S1	Flange SW ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 Large male face	
1	2		SCH10S		P61K-005S2	Flange WN ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 Large male face	
1	3		SCH40S		P61K-005S3	Flange WN ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 Large male face	
1	4		SCH40S		P61K-005S4	Flange WN ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 Large male face	
1	5		SCH40S		P61K-0061N	Flange WN ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 Large male face	
1	6		SCH40S		P61K-005S5	Flange WN ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 Large male face	
4402	0.5		SCH80S		P61K-005S6	Flange SW ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 Large female face	
4402	0.75		SCH80S		P61K-005S7	Flange SW ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 Large female face	
4402	1		SCH80S		P61K-005S8	Flange SW ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 Large female face	
4402	1.5		SCH80S		P61K-005S9	Flange SW ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 Large female face	
4402	2		SCH10S		P61K-005SA	Flange WN ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 Large female face	
4402	3		SCH40S		P61K-005SB	Flange WN ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 Large female face	
4402	4		SCH40S		P61K-005SC	Flange WN ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 Large female face	
4402	5		SCH40S		P61K-0061P	Flange WN ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 Large female face	
4402	6		SCH40S		P61K-005SD	Flange WN ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 Large female face	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67K-001SB	Blind flange ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 Large male face	
1	0.75				P67K-001SC	Blind flange ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 Large male face	
1	1				P67K-001SD	Blind flange ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 Large male face	
1	1.5				P67K-001SE	Blind flange ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 Large male face	
1	2				P67K-001SF	Blind flange ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 Large male face	
1	3				P67K-001SG	Blind flange ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 Large male face	
1	4				P67K-001SH	Blind flange ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 Large male face	
1	5				P67K-001VE	Blind flange ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 Large male face	
1	6				P67K-001SJ	Blind flange ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 Large male face	
4402	0.5				P67K-001SK	Blind flange ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 Large female face	
4402	0.75				P67K-001SL	Blind flange ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 Large female face	
4402	1				P67K-001SM	Blind flange ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 Large female face	
4402	1.5				P67K-001SN	Blind flange ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 Large female face	
4402	2				P67K-001SP	Blind flange ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 Large female face	
4402	3				P67K-001SR	Blind flange ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 Large female face	
4402	4				P67K-001SS	Blind flange ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 Large female face	
4402	5				P67K-001VF	Blind flange ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 Large female face	
4402	6				P67K-001ST	Blind flange ASTM A182 Grade F304/F304L dual grade Class 600 ASME B16.5 Large female face	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-003U0	Spiral wound gasket SS316 winding / Non-asbestos filler Class 600 Standard-drawing Flange ASME B16.5 Large male and female face 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-8 Special ID	
1	0.75				P73T-003U1	Spiral wound gasket SS316 winding / Non-asbestos filler Class 600 Standard-drawing Flange ASME B16.5 Large male and female face 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-8 Special ID	
1	1				P73T-003U2	Spiral wound gasket SS316 winding / Non-asbestos filler Class 600 Standard-drawing Flange ASME B16.5 Large male and female face 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-8 Special ID	
1	1.5				P73T-003U3	Spiral wound gasket SS316 winding / Non-asbestos filler Class 600 Standard-drawing Flange ASME B16.5 Large male and female face 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-8 Special ID	
1	2				P73T-003U4	Spiral wound gasket SS316 winding / Non-asbestos filler Class 600 Standard-drawing Flange ASME B16.5 Large male and female face 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-8 Special ID	
1	3				P73T-003U5	Spiral wound gasket SS316 winding / Non-asbestos filler Class 600 Standard-drawing Flange ASME B16.5 Large male and female face 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-8 Special ID	
1	4				P73T-003U6	Spiral wound gasket SS316 winding / Non-asbestos filler Class 600 Standard-drawing Flange ASME B16.5 Large male and female face 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-8 Special ID	
1	5				P73T-003U7	Spiral wound gasket SS316 winding / Non-asbestos filler Class 600 Standard-drawing Flange ASME B16.5 Large male and female face 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-8 Special ID	
1	6				P73T-003U8	Spiral wound gasket SS316 winding / Non-asbestos filler Class 600 Standard-drawing Flange ASME B16.5 Large male and female face 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-8 Special ID	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-6				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	

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GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81K-00108	Gate valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	0.75				P81K-00109	Gate valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	1				P81K-0010A	Gate valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	1.5				P81K-0010B	Gate valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	2				P81L-002KE	Gate valve ASTM A351 Grade CF8 Class 600 API 600 Flange ASME B16.5 Large female face Trim number 12 BB-BG-OS&Y Handwheel operated	
1	3				P81L-002KF	Gate valve ASTM A351 Grade CF8 Class 600 API 600 Flange ASME B16.5 Large female face Trim number 12 BB-BG-OS&Y Handwheel operated	
1	4				P81L-002KG	Gate valve ASTM A351 Grade CF8 Class 600 API 600 Flange ASME B16.5 Large female face Trim number 12 BB-BG-OS&Y Handwheel operated	
1	5				P81L-002ZF	Gate valve ASTM A351 Grade CF8 Class 600 API 600 Flange ASME B16.5 Large female face Trim number 12 BB-BG-OS&Y Handwheel operated	
1	6				P81L-002KH	Gate valve ASTM A351 Grade CF8 Class 600 API 600 Flange ASME B16.5 Large female face Trim number 12 BB-BG-OS&Y Handwheel operated	
714	0.5				P81K-001LC	Gate valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW - NPT Trim number 12 BB-BG-OS&Y Handwheel operated	
714	0.75				P81K-001FD	Gate valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW - NPT Trim number 12 BB-BG-OS&Y Handwheel operated	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82K-000NR	Globe valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	0.75				P82K-000NS	Globe valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	1				P82K-000NT	Globe valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	1.5				P82K-000NU	Globe valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	2				P82L-001DY	Globe valve ASTM A351 Grade CF8 Class 600 BS 1873 Flange ASME B16.5 Large female face Trim number 12 BB-BG-OS&Y Handwheel operated	
1	3				P82L-001DZ	Globe valve ASTM A351 Grade CF8 Class 600 BS 1873 Flange ASME B16.5 Large female face Trim number 12 BB-BG-OS&Y Handwheel operated	
1	4				P82L-001E0	Globe valve ASTM A351 Grade CF8 Class 600 BS 1873 Flange ASME B16.5 Large female face Trim number 12 BB-BG-OS&Y Handwheel operated	
1	5				P82L-001MG	Globe valve ASTM A351 Grade CF8 Class 600 BS 1873 Flange ASME B16.5 Large female face Trim number 12 BB-BG-OS&Y Handwheel operated	
1	6				P82L-001Y5	Globe valve ASTM A351 Grade CF8 Class 600 BS 1873 Flange ASME B16.5 Large female face Trim number 12 BB-BG-OS&Y Gear operated	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83K-000LM	Check valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 Lift-type Bolted cover	
1	0.75				P83K-000LN	Check valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 Lift-type Bolted cover	
1	1				P83K-000LP	Check valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 Lift-type Bolted cover	
1	1.5				P83K-000LR	Check valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 Lift-type Bolted cover	
1	2				P83L-001GH	Check valve ASTM A351 Grade CF8 Class 600 BS 1868 Flange ASME B16.5 Large female face Trim number 12 Swing-type Bolted cover	
1	3				P83L-001GJ	Check valve ASTM A351 Grade CF8 Class 600 BS 1868 Flange ASME B16.5 Large female face Trim number 12 Swing-type Bolted cover	

BALL VALVE (Q)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P84K-000SX	Ball valve Long-pattern ASTM A182 Grade F304/F304L dual grade Class 600 API 608 Flange ASME B16.5 Large female face Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design Licensor-5	
1	0.75				P84K-000SY	Ball valve Long-pattern ASTM A182 Grade F304/F304L dual grade Class 600 API 608 Flange ASME B16.5 Large female face Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design Licensor-5	
1	1				P84K-000SZ	Ball valve Long-pattern ASTM A182 Grade F304/F304L dual grade Class 600 API 608 Flange ASME B16.5 Large female face Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design Licensor-5	
1	1.5				P84K-000T0	Ball valve Long-pattern ASTM A182 Grade F304/F304L dual grade Class 600 API 608 Flange ASME B16.5 Large female face Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design Licensor-5	
1	2				P84L-00368	Ball valve Long-pattern ASTM A351 Grade CF8 Class 600 API 608 Flange ASME B16.5 Large female face Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Wrench lever operated Full bore Fire tested design Licensor-5	
1	3				P84L-00369	Ball valve Long-pattern ASTM A351 Grade CF8 Class 600 API 608 Flange ASME B16.5 Large female face Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design Licensor-5	
1	4				P84L-0036A	Ball valve Long-pattern ASTM A351 Grade CF8 Class 600 API 608 Flange ASME B16.5 Large female face Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design Licensor-5	

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BALL VALVE (Q)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	5				P84L-003B0	Ball valve Long-pattern ASTM A351 Grade CF8 Class 600 API 608 Flange ASME B16.5 Large female face Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design Licensor-5	
1	6				P84L-0036B	Ball valve Long-pattern ASTM A351 Grade CF8 Class 600 API 608 Flange ASME B16.5 Large female face Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design Licensor-5	
4606	0.5				P84K-000VW	Ball valve Long-pattern ASTM A182 Grade F304/F304L dual grade Class 600 API 608 Flange ASME B16.5 Large male face Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design Licensor-5	
4606	0.75				P84K-000VX	Ball valve Long-pattern ASTM A182 Grade F304/F304L dual grade Class 600 API 608 Flange ASME B16.5 Large male face Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design Licensor-5	
4606	1				P84K-000VY	Ball valve Long-pattern ASTM A182 Grade F304/F304L dual grade Class 600 API 608 Flange ASME B16.5 Large male face Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design Licensor-5	
4606	1.5				P84K-000VZ	Ball valve Long-pattern ASTM A182 Grade F304/F304L dual grade Class 600 API 608 Flange ASME B16.5 Large male face Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design Licensor-5	
4606	2				P84L-003KT	Ball valve Long-pattern ASTM A351 Grade CF8 Class 600 API 608 Flange ASME B16.5 Large male face Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Wrench lever operated Full bore Fire tested design Licensor-5	
4606	3				P84L-003KU	Ball valve Long-pattern ASTM A351 Grade CF8 Class 600 API 608 Flange ASME B16.5 Large male face Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design Licensor-5	
4606	4				P84L-003KV	Ball valve Long-pattern ASTM A351 Grade CF8 Class 600 API 608 Flange ASME B16.5 Large male face Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design Licensor-5	
4606	5				P84L-003KW	Ball valve Long-pattern ASTM A351 Grade CF8 Class 600 API 608 Flange ASME B16.5 Large male face Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design Licensor-5	
4606	6				P84L-003KX	Ball valve Long-pattern ASTM A351 Grade CF8 Class 600 API 608 Flange ASME B16.5 Large male face Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design Licensor-5	

PLUG VALVE (PV)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P85K-0001Z	Plug valve Regular-pattern ASTM A182 Grade F304/F304L dual grade Class 600 API 599 Flange ASME B16.5 Large female face Plug SS316 Seat PTFE Trim SS316 Nonlubricated taper plug BC-BG Wrench lever operated Regular port	
1	1.5				P85K-00020	Plug valve Regular-pattern ASTM A182 Grade F304/F304L dual grade Class 600 API 599 Flange ASME B16.5 Large female face Plug SS316 Seat PTFE Trim SS316 Nonlubricated taper plug BC-BG Wrench lever operated Regular port	
1	2				P85L-0005Z	Plug valve Regular-pattern ASTM A351 Grade CF8 Class 600 API 599 Flange ASME B16.5 Large female face Plug SS316 Seat PTFE Trim SS316 Nonlubricated taper plug BC-BG Wrench lever operated Regular port	
1	3				P85L-00060	Plug valve Regular-pattern ASTM A351 Grade CF8 Class 600 API 599 Flange ASME B16.5 Large female face Plug SS316 Seat PTFE Trim SS316 Nonlubricated taper plug BC-BG Gear operated Regular port	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71K-000G3	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 600 Standard-drawing Flange ASME B16.5 Large female face	
1	0.75				P71K-000G4	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 600 Standard-drawing Flange ASME B16.5 Large female face	
1	1				P71K-000G5	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 600 Standard-drawing Flange ASME B16.5 Large female face	
1	1.5				P71K-000G6	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 600 Standard-drawing Flange ASME B16.5 Large female face	
1	2				P71K-000G7	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 600 Standard-drawing Flange ASME B16.5 Large female face	
1	3				P71K-000G8	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 600 Standard-drawing Flange ASME B16.5 Large female face	
1	4				P71K-000G9	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 600 Standard-drawing Flange ASME B16.5 Large female face	
1	5				P71K-000GA	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 600 Standard-drawing Flange ASME B16.5 Large female face	
1	6				P71K-000GB	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 600 Standard-drawing Flange ASME B16.5 Large female face	

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BOLT TABLE (B_D61F05 , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	80	P80S-003V6		
0.75	4	0.625	90	P80S-003XF		
1	4	0.625	95	P80S-003XG		
1.5	4	0.750	110	P80S-003XK		
2	8	0.625	110	P80S-003VC		
3	8	0.750	130	P80S-003XP		
4	8	0.875	150	P80S-0041F		
5	8	1.000	165	P80S-0043L		
6	12	1.000	175	P80S-0043P		

BOLT TABLE (B_D61F05_789 , STUD ASME RJ, OPTION CODE 789)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	110		R12	
0.75	4	0.750	115		R14	
1	4	0.875	130		R16	
1.5	4	1.000	140		R20	
2	8	0.875	150		R24	
3	8	0.875	150		R31	
4	8	1.125	175		R37	
5			0			
6	12	1.125	200		R45	

BOLT TABLE (B_D61F05_797 , STUD ASME RJ, OPTION CODE 797)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	110		R12	
0.75	4	0.750	115		R14	
1	4	0.875	130		R16	
1.5	4	1.000	140		R20	
2	8	0.875	150		R24	
3	8	1.125	180		R35	
4	8	1.250	230		R39	
5			0			
6	12	1.375	300		R46	

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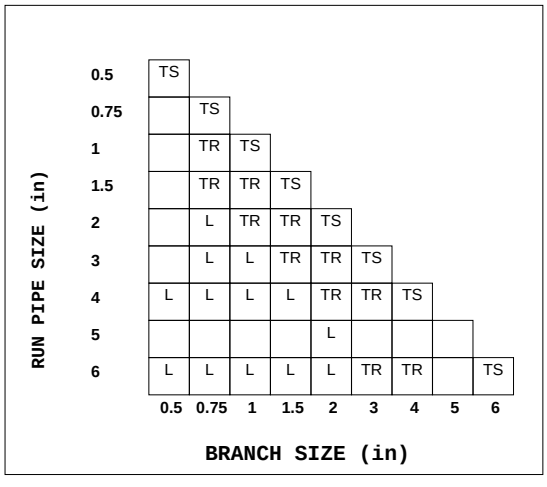
BRANCH TABLE (T_D61F05)



0.5	TS							
0.75		TS						
1		TR	TS					
1.5		TR	TR	TS				
2		L	TR	TR	TS			
3		L	L	TR	TR	TS		
4	L	L	L	L	TR	TR	TS	
5					L			
6	L	L	L	L	L	TR	TR	TS

TS : STRAIGHT TEE
L : OUTLET
TR : REDUCING TEE

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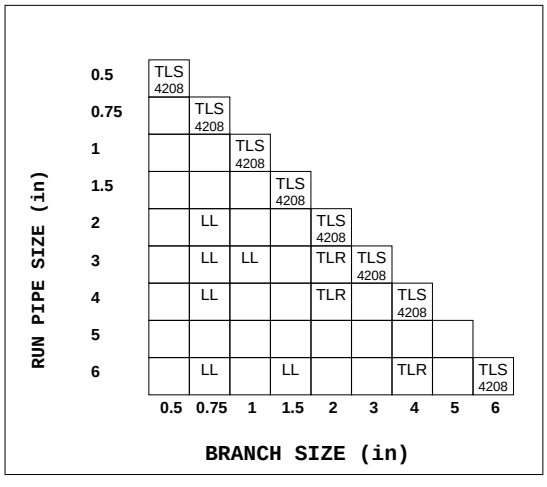
BRANCH TABLE (T_D61F05_2)



TLS : STRAIGHT LATERAL TEE
LL : LATROLET
TLR : REDUCING LATERAL TEE

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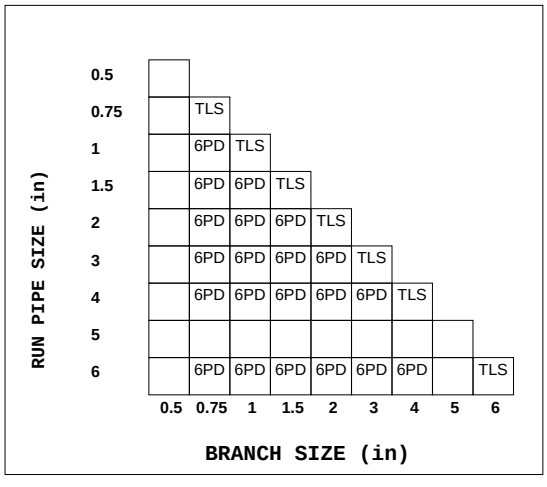
BRANCH TABLE (T_D61F05_3)



6PD : REINFORCING PAD 60 DEG
TLS : STRAIGHT LATERAL TEE

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PIPING CLASS

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Material : SS304L
Rating : ASME CLASS 1500
Flange Face : RJ
C.A.(mm) : 0.00
Gasket : Ring Octagonal
Service : CARBON MONOXIDE + N2
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
541	NPT(F) (F)

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PIPING CLASS
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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P01J-000UC	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE	
1	0.75		SCH80S		P01J-000UD	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P02J-000VD	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	0.75		SCH80S		P02J-000VE	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P03J-000UW	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	0.75		SCH80S		P03J-000UX	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P21J-000V1	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	0.75		SCH80S		P21J-000V2	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH80S	SCH80S	P27J-002R0	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH80S	SCH80S	P28J-002NL	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P29J-000T0	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	0.75		SCH80S		P29J-000T1	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P41J-001FS	Straight nipple ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		SCH80S		P41J-001FT	Straight nipple ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

UNION (UN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P49K-00018	Union ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-83 NPT	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30K-0001G	Plug ASTM A182 Grade F304/F304L dual grade ASME B16.11 NPT Round head	
1	0.75				P30K-0001H	Plug ASTM A182 Grade F304/F304L dual grade ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P61K-003C7	Flange WN ASTM A182 Grade F304/F304L dual grade Class 1500 ASME B16.5 RJ	
1	0.75		SCH80S		P61K-003C8	Flange WN ASTM A182 Grade F304/F304L dual grade Class 1500 ASME B16.5 RJ	
541	0.5				P61K-0069W	Flange NPT ASTM A182 Grade F304/F304L dual grade Class 1500 ASME B16.5 RJ	
541	0.75				P61K-0060H	Flange NPT ASTM A182 Grade F304/F304L dual grade Class 1500 ASME B16.5 RJ	

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BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67K-0012U	Blind flange ASTM A182 Grade F304/F304L dual grade Class 1500 ASME B16.5 RJ	
1	0.75				P67K-0012V	Blind flange ASTM A182 Grade F304/F304L dual grade Class 1500 ASME B16.5 RJ	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P75T-0011K	Ring joint gasket SS TP304 Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type Licensor-5 Type-4	
1	0.75				P75T-0011L	Ring joint gasket SS TP304 Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type Licensor-5 Type-4	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-.75				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81K-0018X	Gate valve ASTM A182 Grade F304/F304L dual grade Class 1500 API 602 Flange ASME B16.5 RJ Trim number 12 WB-BG-OS&Y Handwheel operated	
1	0.75				P81K-0018Y	Gate valve ASTM A182 Grade F304/F304L dual grade Class 1500 API 602 Flange ASME B16.5 RJ Trim number 12 WB-BG-OS&Y Handwheel operated	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82K-000VE	Globe valve ASTM A182 Grade F304/F304L dual grade Class 1500 API 602 Flange ASME B16.5 RJ Trim number 12 WB-BG-OS&Y Handwheel operated	
1	0.75				P82K-000VF	Globe valve ASTM A182 Grade F304/F304L dual grade Class 1500 API 602 Flange ASME B16.5 RJ Trim number 12 WB-BG-OS&Y Handwheel operated	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83K-000TA	Check valve ASTM A182 Grade F304/F304L dual grade Class 1500 API 602 Flange ASME B16.5 RJ Trim number 12 Lift-type Welded cover	
1	0.75				P83K-000TB	Check valve ASTM A182 Grade F304/F304L dual grade Class 1500 API 602 Flange ASME B16.5 RJ Trim number 12 Lift-type Welded cover	

PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P72K-0006P	Paddle blank ASTM A182 Grade F304/F304L dual grade Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	0.75				P72K-0006R	Paddle blank ASTM A182 Grade F304/F304L dual grade Class 1500 Standard-drawing Flange ASME B16.5 RJ	

PADDLE SPACER (PS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P72K-0006S	Paddle spacer ASTM A182 Grade F304/F304L dual grade Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	0.75				P72K-0006T	Paddle spacer ASTM A182 Grade F304/F304L dual grade Class 1500 Standard-drawing Flange ASME B16.5 RJ	

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BOLT TABLE (B_F11F05 , STUD ASME RJ, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	110	P80S-003XK	R12	P75T-0011K
0.75	4	0.750	115	P80S-003XL	R14	P75T-0011L

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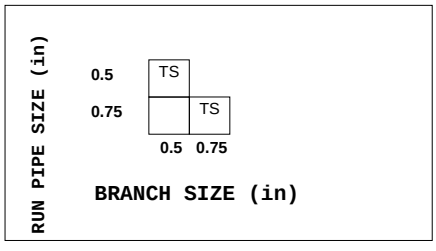
BRANCH TABLE (T_F11F05)



TS : STRAIGHT TEE

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PIPING CLASS

L1AH02 REV NO. 2

Material : Killed CS
Rating : ASME CLASS 600
Flange Face : RJ
C.A.(mm) : 1.50
Gasket : Ring Octagonal
Service : PROCESS - HYDROGEN OR HYDROGEN RICH HYDROCARBON MIXTURE:
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
16	PIPE CLASS SHALL BE USED WITHIN THE NORMAL OPERATING PRESSURE/TEMPERATURE LIMITS SPECIFIED IN API RP 941. PRESSURE / TEMPERATURE SPECIFIED IN THE PIPE CLASS EXCEEDING API RP 941 LIMITS SHOULD BE REGARDED AS UPSET CONDITIONS RATHER THAN FOR CONTINUOUS SERVICE

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
24	FULL PORT (Q)
200	WITH JACK SCREW (FO)
541	NPT(F) (CA,F,L)
789	CLASS 900 (B,F,G)
797	CLASS 1500 (B,F,G)
4601	Y-PATTERN (W)
4608	VALVE WITH NIPPLES (V)

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PIPING CLASS
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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P01A-000XM	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	0.75		XS		P01A-000XN	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1		XS		P01A-000XP	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1.5		XS		P01A-000XV	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	2		XS		P01A-000YX	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	3		STD		P01A-000YM	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	4		XS		P01A-000Z9	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	6		XS		P01A-000ZF	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	8		SCH30		P01A-001WL	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	10		SCH20		P01A-0014Y	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P02A-000UR	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	0.75		XS		P02A-000UN	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1		XS		P02A-000UL	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1.5		XS		P02A-000UJ	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	2		XS		P02A-000CP	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		STD		P02A-000CU	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		XS		P02A-000D3	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		XS		P02A-000DA	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		SCH30		P02A-003DK	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	10		SCH20		P02A-000H1	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P03A-0018K	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	0.75		XS		P03A-0018L	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1		XS		P03A-0018M	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1.5		XS		P03A-0018N	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	2		XS		P03A-000AS	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		STD		P03A-000AX	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		XS		P03A-000B3	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		XS		P03A-000B8	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		SCH30		P03A-003BE	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	10		SCH20		P03A-000F0	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P21A-002TV	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	0.75		XS		P21A-002TW	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1		XS		P21A-002TX	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5		XS		P21A-002TY	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2		XS		P21A-001CJ	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		STD		P21A-001CU	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		XS		P21A-001CV	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6		XS		P21A-001D4	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8		SCH30		P21A-003WV	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10		SCH20		P21A-00219	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75	XS	XS	P24A-006WW	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.75	XS	XS	P24A-006WY	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	1	XS	XS	P24A-006WZ	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	XS	XS	P24A-00238	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	XS	XS	P24A-0023H	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	STD	XS	P24A-00214	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	STD	XS	P24A-002HW	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	XS	XS	P24A-0023E	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	XS	STD	P24A-006FZ	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	XS	STD	P24A-006G0	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	XS	XS	P24A-00243	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH30	XS	P24A-00L83	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH30	XS	P24A-00L84	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	SCH20	XS	P24A-00GX3	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	SCH20	XS	P24A-00GX4	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	SCH20	SCH30	P24A-00L85	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	XS	XS	P27A-004M6	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.5	XS	XS	P27A-004ME	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.75	XS	XS	P27A-004MM	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.5	XS	XS	P27A-004N2	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.75	XS	XS	P27A-004NC	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	1	XS	XS	P27A-004NP	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	0.75	XS	XS	P27A-001CZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	XS	XS	P27A-001DL	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	XS	XS	P27A-001E2	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	STD	XS	P27A-001AU	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	STD	XS	P27A-001MZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	1.5	XS	XS	P27A-001DJ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	XS	XS	P27A-001E4	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	XS	STD	P27A-0048S	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	XS	STD	P27A-0048T	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	XS	XS	P27A-001EB	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH30	XS	P27A-00FFC	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH30	XS	P27A-00FFE	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	SCH20	XS	P27A-00BLL	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	SCH20	XS	P27A-00BLM	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	SCH20	SCH30	P27A-00FFD	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	XS	XS	P28A-004V6	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.5	XS	XS	P28A-004V7	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.75	XS	XS	P28A-004V8	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.5	XS	XS	P28A-004V9	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.75	XS	XS	P28A-004VA	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	1	XS	XS	P28A-004VB	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	0.75	XS	XS	P28A-001CU	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	XS	XS	P28A-001DS	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	XS	XS	P28A-001EE	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	STD	XS	P28A-001A3	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	STD	XS	P28A-001N5	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	1.5	XS	XS	P28A-001CY	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	XS	XS	P28A-001EJ	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	XS	STD	P28A-0048H	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	XS	STD	P28A-0048J	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	XS	XS	P28A-001ER	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH30	XS	P28A-00CLA	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH30	XS	P28A-00CLC	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	SCH20	XS	P28A-008LW	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	SCH20	XS	P28A-008LX	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	SCH20	SCH30	P28A-00CLB	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P29A-002KS	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	0.75		XS		P29A-002KT	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1		XS		P29A-002KU	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5		XS		P29A-002KV	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2		XS		P29A-000A1	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		STD		P29A-000BK	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		XS		P29A-000B9	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6		XS		P29A-000BF	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8		SCH30		P29A-000PC	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10		SCH20		P29A-000E5	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
541	0.75				P29B-0000C	Cap ASTM A105 Class 3000 ASME B16.11 NPT	
541	1				P29B-0000D	Cap ASTM A105 Class 3000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P41A-000B5	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		SCH160		P41A-000B6	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		SCH160		P41A-000B7	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		SCH160		P41A-000B8	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
541	1	0.75			P31B-00551	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
541	1.5	0.75			P31B-00555	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
541	2 - 2.5	0.75			P31B-0137H	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
541	3 - 5	0.75			P31B-01376	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
541	6 - 12	0.75			P31B-007GR	Outlet ASTM A105 Class 3000 MSS SP-97 NPT	
1	2	0.75	XS	XS	P31B-00CP3	Outlet ASTM A105 MSS SP-97 BW	
1	3	0.75	STD	XS	P31B-00CMN	Outlet ASTM A105 MSS SP-97 BW	
1	4	0.75	XS	XS	P31B-00XJG	Outlet ASTM A105 MSS SP-97 BW	
1	6	0.75	XS	XS	P31B-00XJH	Outlet ASTM A105 MSS SP-97 BW	
1	8	0.75	SCH30	XS	P31B-00YGT	Outlet ASTM A105 MSS SP-97 BW	
1	10	0.75	SCH20	XS	P31B-00Y47	Outlet ASTM A105 MSS SP-97 BW	
1	3	1	STD	XS	P31B-00B4D	Outlet ASTM A105 MSS SP-97 BW	
1	4	1	XS	XS	P31B-00B0A	Outlet ASTM A105 MSS SP-97 BW	
1	6	1	XS	XS	P31B-00AZ5	Outlet ASTM A105 MSS SP-97 BW	
1	8	1	SCH30	XS	P31B-00YGU	Outlet ASTM A105 MSS SP-97 BW	
1	10	1	SCH20	XS	P31B-00Y4F	Outlet ASTM A105 MSS SP-97 BW	
1	4	1.5	XS	XS	P31B-00BNY	Outlet ASTM A105 MSS SP-97 BW	
1	6	1.5	XS	XS	P31B-00BJA	Outlet ASTM A105 MSS SP-97 BW	
1	8	1.5	SCH30	XS	P31B-00YGV	Outlet ASTM A105 MSS SP-97 BW	
1	10	1.5	SCH20	XS	P31B-00Y4P	Outlet ASTM A105 MSS SP-97 BW	
1	6	2	XS	XS	P31B-007SG	Outlet ASTM A105 MSS SP-97 BW	
1	8	2	SCH30	XS	P31B-00X36	Outlet ASTM A105 MSS SP-97 BW	
1	10	2	SCH20	XS	P31B-00TFB	Outlet ASTM A105 MSS SP-97 BW	
1	8	3	SCH30	STD	P31B-00X37	Outlet ASTM A105 MSS SP-97 BW	
1	10	3	SCH20	STD	P31B-00UPG	Outlet ASTM A105 MSS SP-97 BW	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30B-0002D	Plug ASTM A105 ASME B16.11 NPT Round head	
1	0.75				P30B-0002E	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1				P30B-0002F	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1.5				P30B-0002G	Plug ASTM A105 ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P61B-009VP	Flange WN ASTM A105 Class 600 ASME B16.5 RJ	

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FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75		XS		P61B-009VR	Flange WN ASTM A105 Class 600 ASME B16.5 RJ	
1	1		XS		P61B-009VS	Flange WN ASTM A105 Class 600 ASME B16.5 RJ	
1	1.5		XS		P61B-009VT	Flange WN ASTM A105 Class 600 ASME B16.5 RJ	
1	2		XS		P61B-0068Y	Flange WN ASTM A105 Class 600 ASME B16.5 RJ	
1	3		STD		P61B-009VV	Flange WN ASTM A105 Class 600 ASME B16.5 RJ	
1	4		XS		P61B-00690	Flange WN ASTM A105 Class 600 ASME B16.5 RJ	
1	6		XS		P61B-00691	Flange WN ASTM A105 Class 600 ASME B16.5 RJ	
1	8		SCH30		P61B-009VW	Flange WN ASTM A105 Class 600 ASME B16.5 RJ	
1	10		SCH20		P61B-009VU	Flange WN ASTM A105 Class 600 ASME B16.5 RJ	
541	0.5				P61B-00AS5	Flange NPT ASTM A105 Class 600 ASME B16.5 RJ	
541	0.75				P61B-00CXX	Flange NPT ASTM A105 Class 600 ASME B16.5 RJ	
789	3		STD		P61B-006SP	Flange WN ASTM A105 Class 900 ASME B16.5 RJ	
789	4		XS		P61B-00655	Flange WN ASTM A105 Class 900 ASME B16.5 RJ	
789	6		XS		P61B-00656	Flange WN ASTM A105 Class 900 ASME B16.5 RJ	
789	8		SCH30		P61B-009VX	Flange WN ASTM A105 Class 900 ASME B16.5 RJ	
789	10		SCH20		P61B-00652	Flange WN ASTM A105 Class 900 ASME B16.5 RJ	
797	0.5		XS		P61B-009VY	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
797	0.75		XS		P61B-009VZ	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
797	1		XS		P61B-009W0	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
797	1.5		XS		P61B-009W1	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
797	2		XS		P61B-0065C	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67B-000XC	Blind flange ASTM A105 Class 600 ASME B16.5 RJ	
1	0.75				P67B-000XD	Blind flange ASTM A105 Class 600 ASME B16.5 RJ	
1	1				P67B-000XE	Blind flange ASTM A105 Class 600 ASME B16.5 RJ	
1	1.5				P67B-000XF	Blind flange ASTM A105 Class 600 ASME B16.5 RJ	
1	2				P67B-000XM	Blind flange ASTM A105 Class 600 ASME B16.5 RJ	
1	3				P67B-000XR	Blind flange ASTM A105 Class 600 ASME B16.5 RJ	
1	4				P67B-000XS	Blind flange ASTM A105 Class 600 ASME B16.5 RJ	
1	6				P67B-000XT	Blind flange ASTM A105 Class 600 ASME B16.5 RJ	
1	8				P67B-000XU	Blind flange ASTM A105 Class 600 ASME B16.5 RJ	
1	10				P67B-000XG	Blind flange ASTM A105 Class 600 ASME B16.5 RJ	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P75T-000NA	Ring joint gasket Soft iron Class 600 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	0.75				P75T-000NB	Ring joint gasket Soft iron Class 600 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	1				P75T-000NC	Ring joint gasket Soft iron Class 600 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	1.5				P75T-000ND	Ring joint gasket Soft iron Class 600 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	2				P75T-000NE	Ring joint gasket Soft iron Class 600 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	3				P75T-000NF	Ring joint gasket Soft iron Class 600 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	4				P75T-000NG	Ring joint gasket Soft iron Class 600 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	6				P75T-000NH	Ring joint gasket Soft iron Class 600 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	8				P75T-000NJ	Ring joint gasket Soft iron Class 600 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	10				P75T-000YD	Ring joint gasket Soft iron Class 600 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	3				P75T-000JN	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	4				P75T-000JP	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	6				P75T-000JR	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	8				P75T-000JS	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	10				P75T-000JL	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	0.5				P75T-000JT	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	0.75				P75T-000JU	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	1				P75T-000JV	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	1.5				P75T-000JW	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	2				P75T-0008A	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	

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BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-6				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	8-10				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
789	1-3				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
789	4-10				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
797	0.5-2				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81B-002VX	Gate valve ASTM A105 Class 600 API 602 Flange ASME B16.5 RJ Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated	
1	0.75				P81B-002VY	Gate valve ASTM A105 Class 600 API 602 Flange ASME B16.5 RJ Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated	
1	1				P81B-002VZ	Gate valve ASTM A105 Class 600 API 602 Flange ASME B16.5 RJ Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated	
1	1.5				P81B-002W0	Gate valve ASTM A105 Class 600 API 602 Flange ASME B16.5 RJ Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated	
1	2				P81C-008PD	Gate valve ASTM A216 Grade WCB Class 600 API 600 Flange ASME B16.5 RJ Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated	
1	3				P81C-008PE	Gate valve ASTM A216 Grade WCB Class 600 API 600 Flange ASME B16.5 RJ Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated	
1	4				P81C-008PF	Gate valve ASTM A216 Grade WCB Class 600 API 600 Flange ASME B16.5 RJ Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated	
4608	0.75				P81B-002W1	Gate valve ASTM A105 Class 600 API 602 BW both sides w/ nipples BE - NPT ASTM A106-B Sch160-nipple Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82B-0021M	Globe valve ASTM A105 Class 600 API 602 Flange ASME B16.5 RJ Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated	
1	0.75				P82B-0021N	Globe valve ASTM A105 Class 600 API 602 Flange ASME B16.5 RJ Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated	
1	1				P82B-0021P	Globe valve ASTM A105 Class 600 API 602 Flange ASME B16.5 RJ Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated	
1	1.5				P82B-0021R	Globe valve ASTM A105 Class 600 API 602 Flange ASME B16.5 RJ Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated	
1	2				P82C-0046P	Globe valve ASTM A216 Grade WCB Class 600 BS 1873 Flange ASME B16.5 RJ Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated	
4601	0.75				P82B-001AY	Y-pattern globe valve ASTM A105 Class 600 ASME B16.34 Flange ASME B16.5 RJ Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated	
4601	1				P82B-001AZ	Y-pattern globe valve ASTM A105 Class 600 ASME B16.34 Flange ASME B16.5 RJ Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated	
4601	1.5				P82B-001B0	Y-pattern globe valve ASTM A105 Class 600 ASME B16.34 Flange ASME B16.5 RJ Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated	
4601	2				P82C-002MN	Y-pattern globe valve ASTM A216 Grade WCB Class 600 ASME B16.34 Flange ASME B16.5 RJ Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83B-001J9	Check valve ASTM A105 Class 600 API 602 Flange ASME B16.5 RJ Trim SS316L Body and disc seats Stellite-6 Lift-type Bolted cover	
1	0.75				P83B-001JA	Check valve ASTM A105 Class 600 API 602 Flange ASME B16.5 RJ Trim SS316L Body and disc seats Stellite-6 Lift-type Bolted cover	
1	1				P83B-001JB	Check valve ASTM A105 Class 600 API 602 Flange ASME B16.5 RJ Trim SS316L Body and disc seats Stellite-6 Lift-type Bolted cover	
1	1.5				P83B-001JC	Check valve ASTM A105 Class 600 API 602 Flange ASME B16.5 RJ Trim SS316L Body and disc seats Stellite-6 Lift-type Bolted cover	
1	2				P83C-003SN	Check valve ASTM A216 Grade WCB Class 600 BS 1868 Flange ASME B16.5 RJ Trim SS316L Body and disc seats Stellite-6 Swing-type Bolted cover	
1	3				P83C-003SP	Check valve ASTM A216 Grade WCB Class 600 BS 1868 Flange ASME B16.5 RJ Trim SS316L Body and disc seats Stellite-6 Swing-type Bolted cover	
1	4				P83C-003SR	Check valve ASTM A216 Grade WCB Class 600 BS 1868 Flange ASME B16.5 RJ Trim SS316L Body and disc seats Stellite-6 Swing-type Bolted cover	

BALL VALVE (Q)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	4				P84C-007AM	Ball valve Long-pattern ASTM A216 Grade WCB Class 600 API 608 Flange ASME B16.5 RJ Ball SS316L Seat R-PTFE Trim SS316L Trunnion-type Side-entry Gear operated Reduced bore Fire tested design	
24	4				P84C-007AN	Ball valve Long-pattern ASTM A216 Grade WCB Class 600 API 608 Flange ASME B16.5 RJ Ball SS316L Seat R-PTFE Trim SS316L Trunnion-type Side-entry Gear operated Full bore Fire tested design	

NEEDLE VALVE (NV)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82B-0021H	Needle valve ASTM A105 Class 600 API 602 Flange ASME B16.5 RJ Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated	

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NEEDLE VALVE (NV)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75				P82B-0021J	Needle valve ASTM A105 Class 600 API 602 Flange ASME B16.5 RJ Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated	
1	1				P82B-0021K	Needle valve ASTM A105 Class 600 API 602 Flange ASME B16.5 RJ Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated	
1	1.5				P82B-0021L	Needle valve ASTM A105 Class 600 API 602 Flange ASME B16.5 RJ Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated	

ORIFICE FLANGE (FO)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2		XS		P66B-008H8	Orifice flange WN ASTM A105 Class 600 ASME B16.36 RJ NPS1/2 SW tap x 1	
1	3		STD		P66B-008H9	Orifice flange WN ASTM A105 Class 600 ASME B16.36 RJ NPS1/2 SW tap x 1	
1	4		XS		P66B-008HA	Orifice flange WN ASTM A105 Class 600 ASME B16.36 RJ NPS1/2 SW tap x 1	
200	2		XS		P66B-008HD	Orifice flange WN ASTM A105 Class 600 ASME B16.36 RJ NPS1/2 SW tap x 1 with Jack screw	
200	3		STD		P66B-008HE	Orifice flange WN ASTM A105 Class 600 ASME B16.36 RJ NPS1/2 SW tap x 1 with Jack screw	
200	4		XS		P66B-008HF	Orifice flange WN ASTM A105 Class 600 ASME B16.36 RJ NPS1/2 SW tap x 1 with Jack screw	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71B-000F4	Spectacle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RJ	
1	0.75				P71B-000F5	Spectacle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RJ	
1	1				P71B-000F6	Spectacle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RJ	
1	1.5				P71B-000F7	Spectacle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RJ	
1	2				P71B-000F8	Spectacle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RJ	
1	3				P71B-000F9	Spectacle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RJ	
1	4				P71B-000FA	Spectacle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RJ	
1	6				P71B-000FB	Spectacle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RJ	

PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	8				P72B-000JC	Paddle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RJ	
1	10				P72B-000MT	Paddle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RJ	

PADDLE SPACER (PS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	8				P72B-000JB	Paddle spacer ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RJ	
1	10				P72B-000MU	Paddle spacer ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RJ	

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BOLT TABLE (B_L1AH02 , STUD ASME RJ, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	80	P80S-003V6	R11	P75T-000NA
0.75	4	0.625	90	P80S-003XF	R13	P75T-000NB
1	4	0.625	95	P80S-003XG	R16	P75T-000NC
1.5	4	0.750	110	P80S-003XK	R20	P75T-000ND
2	8	0.625	115	P80S-003VZ	R23	P75T-000NE
3	8	0.750	135	P80S-003XR	R31	P75T-000NF
4	8	0.875	150	P80S-0041F	R37	P75T-000NG
6	12	1.000	175	P80S-0043P	R45	P75T-000NH
8	12	1.125	200	P80S-0046X	R49	P75T-000NJ
10	16	1.250	255	P80S-004AZ	R53	P75T-000YD

BOLT TABLE (B_L1AH02_789 , STUD ASME RJ, OPTION CODE 789)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	110		R12	
0.75	4	0.750	115		R14	
1	4	0.875	130	P80S-0041B	R16	
1.5	4	1.000	140	P80S-0043F	R20	
2	8	0.875	150	P80S-0041F	R24	
3	8	0.875	150	P80S-0041F	R31	P75T-000JN
4	8	1.125	175	P80S-0046S	R37	P75T-000JP
6	12	1.125	200	P80S-0046X	R45	P75T-000JR
8	12	1.375	260	P80S-003E5	R49	P75T-000JS
10	16	1.375	275	P80S-003E8	R53	P75T-000JL

BOLT TABLE (B_L1AH02_797 , STUD ASME RJ, OPTION CODE 797)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	110	P80S-003XK	R12	P75T-000JT
0.75	4	0.750	115	P80S-003XL	R14	P75T-000JU
1	4	0.875	130	P80S-0041B	R16	P75T-000JV
1.5	4	1.000	140	P80S-0043F	R20	P75T-000JW
2	8	0.875	150	P80S-0041F	R24	P75T-0008A
3	8	1.125	180		R35	
4	8	1.250	230		R39	
6	12	1.375	300		R46	
8	12	1.625	345		R50	
10	12	1.875	395		R54	

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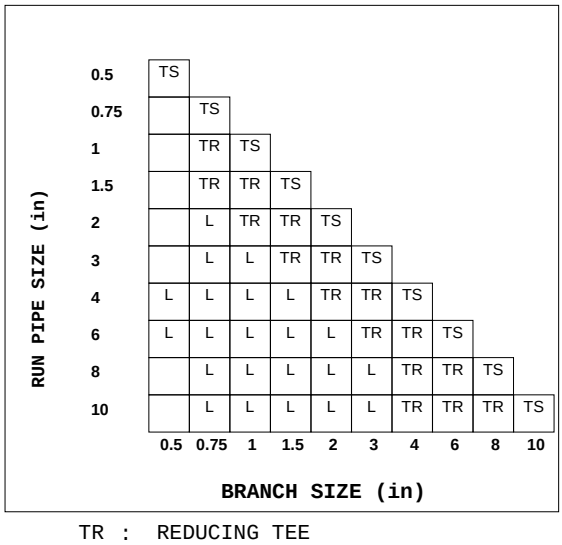
BRANCH TABLE (T_L1AH02)



TR : REDUCING TEE
TS : STRAIGHT TEE
L : OUTLET

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PIPING CLASS

L1M602 REV NO. 2

Material : SS321
Rating : ASME CLASS 600
Flange Face : RJ
C.A.(mm) : 1.50
Gasket : Ring Octagonal
Service : PROCESS -WET LOW SEVERITY SOUR SERVICE SUBJECT TO NACE + HYDROGEN SERVICE
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
5	BOLTING CONFIRMING TO B7M / 2HM SHALL BE USED UNDER CONDITIONS (A) DIRECT EXPOSURE TO SOUR ENVIRONMENTS (B) WHEN THE BOLTING WILL BE BURIED OR INSULATED

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
221	RF (B,F,G,PB,PS)
541	NPT(F) (CA,F,L)
789	CLASS 900 (B,F,G)
797	CLASS 1500 (B,F,G)
805	CLASS 2500 (B,F,G)
4208	45 DEGREE LATERAL STRAIGHT TEE (TLS)
4601	Y-PATTERN (W)
4608	VALVE WITH NIPPLES (V)

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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P01J-002DK	Pipe ASTM A312 Grade TP321 Seamless ASME B36.10M/B36.19M PE Moderate wet H2S service	
1	0.75		SCH80S		P01J-002DL	Pipe ASTM A312 Grade TP321 Seamless ASME B36.10M/B36.19M PE Moderate wet H2S service	
1	1		SCH80S		P01J-002DM	Pipe ASTM A312 Grade TP321 Seamless ASME B36.10M/B36.19M PE Moderate wet H2S service	
1	1.5		SCH80S		P01J-002DN	Pipe ASTM A312 Grade TP321 Seamless ASME B36.10M/B36.19M PE Moderate wet H2S service	
1	2		SCH80S		P01J-002DP	Pipe ASTM A312 Grade TP321 Seamless ASME B36.10M/B36.19M BE Moderate wet H2S service	
1	3		SCH40S		P01J-002DR	Pipe ASTM A312 Grade TP321 Seamless ASME B36.10M/B36.19M BE Moderate wet H2S service	
1	4		SCH80S		P01J-002DS	Pipe ASTM A312 Grade TP321 Seamless ASME B36.10M/B36.19M BE Moderate wet H2S service	
1	6		SCH80S		P01J-002DT	Pipe ASTM A312 Grade TP321 Seamless ASME B36.10M/B36.19M BE Moderate wet H2S service	
1	8		SCH40S		P01J-002DX	Pipe ASTM A358 Grade 321 Class 1 EFW ASME B36.10M/B36.19M BE Moderate wet H2S service	
1	10		SCH40S		P01J-002DU	Pipe ASTM A358 Grade 321 Class 1 EFW ASME B36.10M/B36.19M BE Moderate wet H2S service	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P02J-001WZ	90 degree elbow ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Long radius Moderate wet H2S service	
1	0.75		SCH80S		P02J-001X0	90 degree elbow ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Long radius Moderate wet H2S service	
1	1		SCH80S		P02J-001X1	90 degree elbow ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Long radius Moderate wet H2S service	
1	1.5		SCH80S		P02J-001X2	90 degree elbow ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Long radius Moderate wet H2S service	
1	2		SCH80S		P02J-001X3	90 degree elbow ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Long radius Moderate wet H2S service	
1	3		SCH40S		P02J-001X4	90 degree elbow ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Long radius Moderate wet H2S service	
1	4		SCH80S		P02J-001X5	90 degree elbow ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Long radius Moderate wet H2S service	
1	6		SCH80S		P02J-001X6	90 degree elbow ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Long radius Moderate wet H2S service	
1	8		SCH40S		P02J-0023F	90 degree elbow ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Long radius Moderate wet H2S service	
1	10		SCH40S		P02J-0023C	90 degree elbow ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Long radius Moderate wet H2S service	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P03J-001UE	45 degree elbow ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Long radius Moderate wet H2S service	
1	0.75		SCH80S		P03J-001UF	45 degree elbow ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Long radius Moderate wet H2S service	
1	1		SCH80S		P03J-001UG	45 degree elbow ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Long radius Moderate wet H2S service	
1	1.5		SCH80S		P03J-001UH	45 degree elbow ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Long radius Moderate wet H2S service	
1	2		SCH80S		P03J-001UJ	45 degree elbow ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Long radius Moderate wet H2S service	
1	3		SCH40S		P03J-001UK	45 degree elbow ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Long radius Moderate wet H2S service	
1	4		SCH80S		P03J-001UL	45 degree elbow ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Long radius Moderate wet H2S service	
1	6		SCH80S		P03J-001UM	45 degree elbow ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Long radius Moderate wet H2S service	
1	8		SCH40S		P03J-00237	45 degree elbow ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Long radius Moderate wet H2S service	
1	10		SCH40S		P03J-00234	45 degree elbow ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Long radius Moderate wet H2S service	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P21J-001KZ	Straight tee ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	0.75		SCH80S		P21J-001L0	Straight tee ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	1		SCH80S		P21J-001L1	Straight tee ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	1.5		SCH80S		P21J-001L2	Straight tee ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	2		SCH80S		P21J-001L3	Straight tee ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	3		SCH40S		P21J-001L4	Straight tee ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	4		SCH80S		P21J-001L5	Straight tee ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	6		SCH80S		P21J-001L6	Straight tee ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	8		SCH40S		P21J-001SX	Straight tee ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	10		SCH40S		P21J-001SU	Straight tee ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	

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STRAIGHT LATERAL TEE (TLS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75		SCH80S		P22J-0004V	Straight lateral-tee ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW 60 degree Moderate wet H2S service	
1	1		SCH80S		P22J-00056	Straight lateral-tee ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW 60 degree Moderate wet H2S service	
1	1.5		SCH80S		P22J-00057	Straight lateral-tee ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW 60 degree Moderate wet H2S service	
1	2		SCH80S		P22J-00058	Straight lateral-tee ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW 60 degree Moderate wet H2S service	
1	3		SCH40S		P22J-00059	Straight lateral-tee ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW 60 degree Moderate wet H2S service	
1	4		SCH80S		P22J-0005A	Straight lateral-tee ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW 60 degree Moderate wet H2S service	
1	6		SCH80S		P22J-0005B	Straight lateral-tee ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW 60 degree Moderate wet H2S service	
1	8		SCH40S		P22J-0005D	Straight lateral-tee ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW 60 degree Moderate wet H2S service	
1	10		SCH40S		P22J-0005C	Straight lateral-tee ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW 60 degree Moderate wet H2S service	
4208	8		SCH40S		P22J-0004K	Straight lateral-tee ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW 45 degree Moderate wet H2S service	
4208	10		SCH40S		P22J-0004J	Straight lateral-tee ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW 45 degree Moderate wet H2S service	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75	SCH80S	SCH80S	P24J-006YB	Reducing tee ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	1.5	0.75	SCH80S	SCH80S	P24J-006YC	Reducing tee ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	1.5	1	SCH80S	SCH80S	P24J-006YD	Reducing tee ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	2	1	SCH80S	SCH80S	P24J-006YE	Reducing tee ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	2	1.5	SCH80S	SCH80S	P24J-006YF	Reducing tee ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	3	1.5	SCH40S	SCH80S	P24J-006YG	Reducing tee ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	3	2	SCH40S	SCH80S	P24J-006YH	Reducing tee ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	4	2	SCH80S	SCH80S	P24J-006YJ	Reducing tee ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	4	3	SCH80S	SCH40S	P24J-006YK	Reducing tee ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	6	3	SCH80S	SCH40S	P24J-006YL	Reducing tee ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	6	4	SCH80S	SCH80S	P24J-006YM	Reducing tee ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	8	4	SCH40S	SCH80S	P24J-007MS	Reducing tee ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	8	6	SCH40S	SCH80S	P24J-007MT	Reducing tee ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	10	4	SCH40S	SCH80S	P24J-007MU	Reducing tee ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	10	6	SCH40S	SCH80S	P24J-007MV	Reducing tee ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	10	8	SCH40S	SCH40S	P24J-007KT	Reducing tee ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH80S	SCH80S	P27J-005SW	Concentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	1	0.5	SCH80S	SCH80S	P27J-005SX	Concentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	1	0.75	SCH80S	SCH80S	P27J-005SY	Concentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	1.5	0.5	SCH80S	SCH80S	P27J-005SZ	Concentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	1.5	0.75	SCH80S	SCH80S	P27J-005T0	Concentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	1.5	1	SCH80S	SCH80S	P27J-005T1	Concentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	2	0.75	SCH80S	SCH80S	P27J-005T2	Concentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	2	1	SCH80S	SCH80S	P27J-005T3	Concentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	2	1.5	SCH80S	SCH80S	P27J-005T4	Concentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	3	1.5	SCH40S	SCH80S	P27J-005T5	Concentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	3	2	SCH40S	SCH80S	P27J-005T6	Concentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	4	1.5	SCH80S	SCH80S	P27J-005T7	Concentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	4	2	SCH80S	SCH80S	P27J-005T8	Concentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	4	3	SCH80S	SCH40S	P27J-005T9	Concentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	6	3	SCH80S	SCH40S	P27J-005TA	Concentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	6	4	SCH80S	SCH80S	P27J-005TB	Concentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	8	4	SCH40S	SCH80S	P27J-006EM	Concentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	

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CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	8	6	SCH40S	SCH80S	P27J-006EN	Concentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	10	4	SCH40S	SCH80S	P27J-006EP	Concentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	10	6	SCH40S	SCH80S	P27J-006ER	Concentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	10	8	SCH40S	SCH40S	P27J-006CF	Concentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH80S	SCH80S	P28J-005TS	Eccentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	1	0.5	SCH80S	SCH80S	P28J-005TT	Eccentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	1	0.75	SCH80S	SCH80S	P28J-005TU	Eccentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	1.5	0.5	SCH80S	SCH80S	P28J-005TV	Eccentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	1.5	0.75	SCH80S	SCH80S	P28J-005TW	Eccentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	1.5	1	SCH80S	SCH80S	P28J-005TX	Eccentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	2	0.75	SCH80S	SCH80S	P28J-005TY	Eccentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	2	1	SCH80S	SCH80S	P28J-005TZ	Eccentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	2	1.5	SCH80S	SCH80S	P28J-005U0	Eccentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	3	1.5	SCH40S	SCH80S	P28J-005U1	Eccentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	3	2	SCH40S	SCH80S	P28J-005U2	Eccentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	4	1.5	SCH80S	SCH80S	P28J-005U3	Eccentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	4	2	SCH80S	SCH80S	P28J-005U4	Eccentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	4	3	SCH80S	SCH40S	P28J-005U5	Eccentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	6	3	SCH80S	SCH40S	P28J-005U6	Eccentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	6	4	SCH80S	SCH80S	P28J-005U7	Eccentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	8	4	SCH40S	SCH80S	P28J-006FM	Eccentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	8	6	SCH40S	SCH80S	P28J-006FN	Eccentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	10	4	SCH40S	SCH80S	P28J-006FP	Eccentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	10	6	SCH40S	SCH80S	P28J-006FR	Eccentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	10	8	SCH40S	SCH40S	P28J-006DY	Eccentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P29J-002L4	Cap ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	0.75		SCH80S		P29J-002L5	Cap ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	1		SCH80S		P29J-002L6	Cap ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	1.5		SCH80S		P29J-002L7	Cap ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	2		SCH80S		P29J-002LB	Cap ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	3		SCH40S		P29J-002LC	Cap ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	4		SCH80S		P29J-002LD	Cap ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	6		SCH80S		P29J-002LE	Cap ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	8		SCH40S		P29J-002LF	Cap ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	10		SCH40S		P29J-002L8	Cap ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
541	0.75				P29K-0004A	Cap ASTM A182 Grade F321 Class 3000 ASME B16.11 NPT Moderate wet H2S service	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P41J-001TR	Straight nipple ASTM A312 Grade TP321 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Moderate wet H2S service	
1	0.75		SCH160		P41J-001TS	Straight nipple ASTM A312 Grade TP321 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Moderate wet H2S service	
1	1		SCH160		P41J-001TT	Straight nipple ASTM A312 Grade TP321 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Moderate wet H2S service	
1	1.5		SCH160		P41J-001TU	Straight nipple ASTM A312 Grade TP321 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Moderate wet H2S service	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
541	1	0.75			P31K-00FNZ	Outlet ASTM A182 Grade F321 Class 3000 MSS SP-97 NPT Moderate wet H2S service	
541	1.5	0.75			P31K-00FNY	Outlet ASTM A182 Grade F321 Class 3000 MSS SP-97 NPT Moderate wet H2S service	
541	2 - 2.5	0.75			P31K-00GH6	Outlet ASTM A182 Grade F321 Class 3000 MSS SP-97 NPT Moderate wet H2S service	
541	3 - 6	0.75			P31K-00GH7	Outlet ASTM A182 Grade F321 Class 3000 MSS SP-97 NPT Moderate wet H2S service	
541	8 - 12	0.75			P31K-00GH8	Outlet ASTM A182 Grade F321 Class 3000 MSS SP-97 NPT Moderate wet H2S service	

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OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2	0.75	SCH80S	SCH80S	P31K-00EL0	Outlet ASTM A182 Grade F321 MSS SP-97 BW Moderate wet H2S service	
1	3	0.75	SCH40S	SCH80S	P31K-00EL1	Outlet ASTM A182 Grade F321 MSS SP-97 BW Moderate wet H2S service	
1	4	0.75	SCH80S	SCH80S	P31K-00EL3	Outlet ASTM A182 Grade F321 MSS SP-97 BW Moderate wet H2S service	
1	6	0.75	SCH80S	SCH80S	P31K-00EL6	Outlet ASTM A182 Grade F321 MSS SP-97 BW Moderate wet H2S service	
1	8	0.75	SCH40S	SCH80S	P31K-00ELA	Outlet ASTM A182 Grade F321 MSS SP-97 BW Moderate wet H2S service	
1	10	0.75	SCH40S	SCH80S	P31K-00ELF	Outlet ASTM A182 Grade F321 MSS SP-97 BW Moderate wet H2S service	
1	3	1	SCH40S	SCH80S	P31K-00EL2	Outlet ASTM A182 Grade F321 MSS SP-97 BW Moderate wet H2S service	
1	4	1	SCH80S	SCH80S	P31K-00EL4	Outlet ASTM A182 Grade F321 MSS SP-97 BW Moderate wet H2S service	
1	6	1	SCH80S	SCH80S	P31K-00EL7	Outlet ASTM A182 Grade F321 MSS SP-97 BW Moderate wet H2S service	
1	8	1	SCH40S	SCH80S	P31K-00ELB	Outlet ASTM A182 Grade F321 MSS SP-97 BW Moderate wet H2S service	
1	10	1	SCH40S	SCH80S	P31K-00ELG	Outlet ASTM A182 Grade F321 MSS SP-97 BW Moderate wet H2S service	
1	4	1.5	SCH80S	SCH80S	P31K-00EL5	Outlet ASTM A182 Grade F321 MSS SP-97 BW Moderate wet H2S service	
1	6	1.5	SCH80S	SCH80S	P31K-00EL8	Outlet ASTM A182 Grade F321 MSS SP-97 BW Moderate wet H2S service	
1	8	1.5	SCH40S	SCH80S	P31K-00ELC	Outlet ASTM A182 Grade F321 MSS SP-97 BW Moderate wet H2S service	
1	10	1.5	SCH40S	SCH80S	P31K-00ELH	Outlet ASTM A182 Grade F321 MSS SP-97 BW Moderate wet H2S service	
1	6	2	SCH80S	SCH80S	P31K-00EL9	Outlet ASTM A182 Grade F321 MSS SP-97 BW Moderate wet H2S service	
1	8	2	SCH40S	SCH80S	P31K-00ELD	Outlet ASTM A182 Grade F321 MSS SP-97 BW Moderate wet H2S service	
1	10	2	SCH40S	SCH80S	P31K-00ELJ	Outlet ASTM A182 Grade F321 MSS SP-97 BW Moderate wet H2S service	
1	8	3	SCH40S	SCH40S	P31K-00ELE	Outlet ASTM A182 Grade F321 MSS SP-97 BW Moderate wet H2S service	
1	10	3	SCH40S	SCH40S	P31K-00ELK	Outlet ASTM A182 Grade F321 MSS SP-97 BW Moderate wet H2S service	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30K-00059	Plug ASTM A182 Grade F321 ASME B16.11 NPT Round head Moderate wet H2S service	
1	0.75				P30K-0005A	Plug ASTM A182 Grade F321 ASME B16.11 NPT Round head Moderate wet H2S service	
1	1				P30K-0005B	Plug ASTM A182 Grade F321 ASME B16.11 NPT Round head Moderate wet H2S service	
1	1.5				P30K-0005C	Plug ASTM A182 Grade F321 ASME B16.11 NPT Round head Moderate wet H2S service	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P61K-005YC	Flange WN ASTM A182 Grade F321 Class 600 ASME B16.5 RJ Moderate wet H2S service	
1	0.75		SCH80S		P61K-005YD	Flange WN ASTM A182 Grade F321 Class 600 ASME B16.5 RJ Moderate wet H2S service	
1	1		SCH80S		P61K-005YE	Flange WN ASTM A182 Grade F321 Class 600 ASME B16.5 RJ Moderate wet H2S service	
1	1.5		SCH80S		P61K-005YF	Flange WN ASTM A182 Grade F321 Class 600 ASME B16.5 RJ Moderate wet H2S service	
1	2		SCH80S		P61K-005YH	Flange WN ASTM A182 Grade F321 Class 600 ASME B16.5 RJ Moderate wet H2S service	
1	3		SCH40S		P61K-005YJ	Flange WN ASTM A182 Grade F321 Class 600 ASME B16.5 RJ Moderate wet H2S service	
1	4		SCH80S		P61K-005YK	Flange WN ASTM A182 Grade F321 Class 600 ASME B16.5 RJ Moderate wet H2S service	
1	6		SCH80S		P61K-005YL	Flange WN ASTM A182 Grade F321 Class 600 ASME B16.5 RJ Moderate wet H2S service	
1	8		SCH40S		P61K-005YM	Flange WN ASTM A182 Grade F321 Class 600 ASME B16.5 RJ Moderate wet H2S service	
1	10		SCH40S		P61K-005YG	Flange WN ASTM A182 Grade F321 Class 600 ASME B16.5 RJ Moderate wet H2S service	
221	10		SCH40S		P61K-005DL	Flange WN ASTM A182 Grade F321 Class 600 ASME B16.5 RF Moderate wet H2S service	
541	0.5				P61K-0069X	Flange NPT ASTM A182 Grade F321 Class 600 ASME B16.5 RJ Moderate wet H2S service	
541	0.75				P61K-005YN	Flange NPT ASTM A182 Grade F321 Class 600 ASME B16.5 RJ Moderate wet H2S service	
789	3		SCH40S		P61K-005D7	Flange WN ASTM A182 Grade F321 Class 900 ASME B16.5 RJ Moderate wet H2S service	
789	4		SCH80S		P61K-005D8	Flange WN ASTM A182 Grade F321 Class 900 ASME B16.5 RJ Moderate wet H2S service	
789	6		SCH80S		P61K-005D9	Flange WN ASTM A182 Grade F321 Class 900 ASME B16.5 RJ Moderate wet H2S service	
789	8		SCH40S		P61K-005DA	Flange WN ASTM A182 Grade F321 Class 900 ASME B16.5 RJ Moderate wet H2S service	
789	10		SCH40S		P61K-005D4	Flange WN ASTM A182 Grade F321 Class 900 ASME B16.5 RJ Moderate wet H2S service	
797	0.5		SCH80S		P61K-005DB	Flange WN ASTM A182 Grade F321 Class 1500 ASME B16.5 RJ Moderate wet H2S service	
797	0.75		SCH80S		P61K-005DC	Flange WN ASTM A182 Grade F321 Class 1500 ASME B16.5 RJ Moderate wet H2S service	
797	1		SCH80S		P61K-005DD	Flange WN ASTM A182 Grade F321 Class 1500 ASME B16.5 RJ Moderate wet H2S service	
797	1.5		SCH80S		P61K-005DE	Flange WN ASTM A182 Grade F321 Class 1500 ASME B16.5 RJ Moderate wet H2S service	
797	2		SCH80S		P61K-005DF	Flange WN ASTM A182 Grade F321 Class 1500 ASME B16.5 RJ Moderate wet H2S service	
805	10		SCH40S		P61K-006SL	Flange WN ASTM A182 Grade F321 Class 2500 ASME B16.5 RJ Moderate wet H2S service	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67K-001US	Blind flange ASTM A182 Grade F321 Class 600 ASME B16.5 RJ Moderate wet H2S service	
1	0.75				P67K-001UT	Blind flange ASTM A182 Grade F321 Class 600 ASME B16.5 RJ Moderate wet H2S service	

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BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P67K-001UU	Blind flange ASTM A182 Grade F321 Class 600 ASME B16.5 RJ Moderate wet H2S service	
1	1.5				P67K-001UV	Blind flange ASTM A182 Grade F321 Class 600 ASME B16.5 RJ Moderate wet H2S service	
1	2				P67K-001UX	Blind flange ASTM A182 Grade F321 Class 600 ASME B16.5 RJ Moderate wet H2S service	
1	3				P67K-001UY	Blind flange ASTM A182 Grade F321 Class 600 ASME B16.5 RJ Moderate wet H2S service	
1	4				P67K-001UZ	Blind flange ASTM A182 Grade F321 Class 600 ASME B16.5 RJ Moderate wet H2S service	
1	6				P67K-001V0	Blind flange ASTM A182 Grade F321 Class 600 ASME B16.5 RJ Moderate wet H2S service	
1	8				P67K-001V1	Blind flange ASTM A182 Grade F321 Class 600 ASME B16.5 RJ Moderate wet H2S service	
1	10				P67K-001UW	Blind flange ASTM A182 Grade F321 Class 600 ASME B16.5 RJ Moderate wet H2S service	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P75T-000MV	Ring joint gasket SS TP347 Class 600 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	0.75				P75T-000MW	Ring joint gasket SS TP347 Class 600 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	1				P75T-000MX	Ring joint gasket SS TP347 Class 600 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	1.5				P75T-000MY	Ring joint gasket SS TP347 Class 600 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	2				P75T-000N0	Ring joint gasket SS TP347 Class 600 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	3				P75T-000N1	Ring joint gasket SS TP347 Class 600 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	4				P75T-000N2	Ring joint gasket SS TP347 Class 600 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	6				P75T-000N3	Ring joint gasket SS TP347 Class 600 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	8				P75T-00119	Ring joint gasket SS TP347 Class 600 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	10				P75T-000MZ	Ring joint gasket SS TP347 Class 600 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
221	10				P73T-003HV	Spiral wound gasket SS321 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS321	
789	3				P75T-000N4	Ring joint gasket SS TP347 Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	4				P75T-000N5	Ring joint gasket SS TP347 Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	6				P75T-000JE	Ring joint gasket SS TP347 Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	8				P75T-000JF	Ring joint gasket SS TP347 Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	10				P75T-000JC	Ring joint gasket SS TP347 Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	0.5				P75T-000JG	Ring joint gasket SS TP347 Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	0.75				P75T-000JH	Ring joint gasket SS TP347 Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	1				P75T-000JJ	Ring joint gasket SS TP347 Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	1.5				P75T-000JK	Ring joint gasket SS TP347 Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	2				P75T-000N6	Ring joint gasket SS TP347 Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	10				P75T-000K1	Ring joint gasket SS TP347 Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-6				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	8-10				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
221	10				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
789	1-3				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
789	4-10				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
797	0.5-2				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
805	10				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81K-001KV	Gate valve ASTM A182 Grade F321 Class 600 API 602 Flange ASME B16.5 RJ Trim SS347 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Fluid-2	
1	0.75				P81K-001KW	Gate valve ASTM A182 Grade F321 Class 600 API 602 Flange ASME B16.5 RJ Trim SS347 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Fluid-2	
1	1				P81K-001KX	Gate valve ASTM A182 Grade F321 Class 600 API 602 Flange ASME B16.5 RJ Trim SS347 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Fluid-2	
1	1.5				P81K-001KY	Gate valve ASTM A182 Grade F321 Class 600 API 602 Flange ASME B16.5 RJ Trim SS347 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Fluid-2	
1	2				P81L-0034J	Gate valve ASTM A351 Grade CF8C Class 600 API 600 Flange ASME B16.5 RJ Trim SS347 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Fluid-2	
1	3				P81L-0034K	Gate valve ASTM A351 Grade CF8C Class 600 API 600 Flange ASME B16.5 RJ Trim SS347 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Fluid-2	
1	4				P81L-0034L	Gate valve ASTM A351 Grade CF8C Class 600 API 600 Flange ASME B16.5 RJ Trim SS347 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Fluid-2	

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GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	6				P81L-0034M	Gate valve ASTM A351 Grade CF8C Class 600 API 600 Flange ASME B16.5 RJ Trim SS347 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Fluid-2	
1	8				P81L-0034P	Gate valve ASTM A351 Grade CF8C Class 600 API 600 Flange ASME B16.5 RJ Trim SS347 BB-BG-OS&Y Gear operated Moderate wet H2S service Fluid-2	
1	10				P81L-0034N	Gate valve ASTM A351 Grade CF8C Class 600 API 600 Flange ASME B16.5 RJ Trim SS347 BB-BG-OS&Y Gear operated Moderate wet H2S service Fluid-2	
4608	0.75				P81K-001NS	Gate valve ASTM A182 Grade F321 Class 600 API 602 BW both sides w/ nipples BE - NPT ASTM A312-TP321 Seamless Sch160-nipple Trim SS347 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Fluid-2	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82K-0012W	Globe valve ASTM A182 Grade F321 Class 600 API 602 Flange ASME B16.5 RJ Trim SS347 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Fluid-2	
1	0.75				P82K-0012X	Globe valve ASTM A182 Grade F321 Class 600 API 602 Flange ASME B16.5 RJ Trim SS347 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Fluid-2	
1	1				P82K-0012Y	Globe valve ASTM A182 Grade F321 Class 600 API 602 Flange ASME B16.5 RJ Trim SS347 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Fluid-2	
1	1.5				P82K-0012Z	Globe valve ASTM A182 Grade F321 Class 600 API 602 Flange ASME B16.5 RJ Trim SS347 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Fluid-2	
1	2				P82L-001RL	Globe valve ASTM A351 Grade CF8C Class 600 BS 1873 Flange ASME B16.5 RJ Trim SS347 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Fluid-2	
1	3				P82L-001RM	Globe valve ASTM A351 Grade CF8C Class 600 BS 1873 Flange ASME B16.5 RJ Trim SS347 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Fluid-2	
1	4				P82L-001RN	Globe valve ASTM A351 Grade CF8C Class 600 BS 1873 Flange ASME B16.5 RJ Trim SS347 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Fluid-2	
1	6				P82L-001Y6	Globe valve ASTM A351 Grade CF8C Class 600 BS 1873 Flange ASME B16.5 RJ Trim SS347 BB-BG-OS&Y Gear operated Moderate wet H2S service Fluid-2	
4601	2				P82L-001TE	Y-pattern globe valve ASTM A351 Grade CF8C Class 600 ASME B16.34 Flange ASME B16.5 RJ Trim SS347 BB-BG-OS&Y Handwheel operated Moderate wet H2S service Fluid-2	
4601	10				P82L-001TF	Y-pattern globe valve ASTM A351 Grade CF8C Class 600 ASME B16.34 Flange ASME B16.5 RJ Trim SS347 BB-BG-OS&Y Gear operated Moderate wet H2S service Fluid-2	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83K-000VW	Check valve ASTM A182 Grade F321 Class 600 API 602 Flange ASME B16.5 RJ Trim SS347 Lift-type Bolted cover Moderate wet H2S service	
1	0.75				P83K-000VX	Check valve ASTM A182 Grade F321 Class 600 API 602 Flange ASME B16.5 RJ Trim SS347 Lift-type Bolted cover Moderate wet H2S service	
1	1				P83K-000VY	Check valve ASTM A182 Grade F321 Class 600 API 602 Flange ASME B16.5 RJ Trim SS347 Lift-type Bolted cover Moderate wet H2S service	
1	1.5				P83K-000VZ	Check valve ASTM A182 Grade F321 Class 600 API 602 Flange ASME B16.5 RJ Trim SS347 Lift-type Bolted cover Moderate wet H2S service	
1	2				P83L-001GS	Check valve ASTM A351 Grade CF8C Class 600 BS 1868 Flange ASME B16.5 RJ Trim SS347 Swing-type Bolted cover Moderate wet H2S service	
1	3				P83L-001GT	Check valve ASTM A351 Grade CF8C Class 600 BS 1868 Flange ASME B16.5 RJ Trim SS347 Swing-type Bolted cover Moderate wet H2S service	
1	4				P83L-001GU	Check valve ASTM A351 Grade CF8C Class 600 BS 1868 Flange ASME B16.5 RJ Trim SS347 Swing-type Bolted cover Moderate wet H2S service	
1	6				P83L-001GV	Check valve ASTM A351 Grade CF8C Class 600 BS 1868 Flange ASME B16.5 RJ Trim SS347 Swing-type Bolted cover Moderate wet H2S service	
1	8				P83L-001GW	Check valve ASTM A351 Grade CF8C Class 600 BS 1868 Flange ASME B16.5 RJ Trim SS347 Swing-type Bolted cover Moderate wet H2S service	
1	10				P83L-001GR	Check valve ASTM A351 Grade CF8C Class 600 BS 1868 Flange ASME B16.5 RJ Trim SS347 Swing-type Bolted cover Moderate wet H2S service	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71K-000FF	Spectacle blank ASTM A182 Grade F321 Class 600 Standard-drawing Flange ASME B16.5 RJ Moderate wet H2S service	
1	0.75				P71K-000FG	Spectacle blank ASTM A182 Grade F321 Class 600 Standard-drawing Flange ASME B16.5 RJ Moderate wet H2S service	
1	1				P71K-000FH	Spectacle blank ASTM A182 Grade F321 Class 600 Standard-drawing Flange ASME B16.5 RJ Moderate wet H2S service	
1	1.5				P71K-000FJ	Spectacle blank ASTM A182 Grade F321 Class 600 Standard-drawing Flange ASME B16.5 RJ Moderate wet H2S service	
1	2				P71K-000FK	Spectacle blank ASTM A182 Grade F321 Class 600 Standard-drawing Flange ASME B16.5 RJ Moderate wet H2S service	
1	3				P71K-000FL	Spectacle blank ASTM A182 Grade F321 Class 600 Standard-drawing Flange ASME B16.5 RJ Moderate wet H2S service	
1	4				P71K-000FM	Spectacle blank ASTM A182 Grade F321 Class 600 Standard-drawing Flange ASME B16.5 RJ Moderate wet H2S service	
1	6				P71K-000FN	Spectacle blank ASTM A182 Grade F321 Class 600 Standard-drawing Flange ASME B16.5 RJ Moderate wet H2S service	

PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	8				P72K-000HP	Paddle blank ASTM A182 Grade F321 Class 600 Standard-drawing Flange ASME B16.5 RJ Moderate wet H2S service	
1	10				P72K-000HN	Paddle blank ASTM A182 Grade F321 Class 600 Standard-drawing Flange ASME B16.5 RJ Moderate wet H2S service	

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PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
221	10				P72K-000BG	Paddle blank ASTM A182 Grade F321 Class 600 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service	

PADDLE SPACER (PS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	8				P72K-000HM	Paddle spacer ASTM A182 Grade F321 Class 600 Standard-drawing Flange ASME B16.5 RJ Moderate wet H2S service	
1	10				P72K-000HL	Paddle spacer ASTM A182 Grade F321 Class 600 Standard-drawing Flange ASME B16.5 RJ Moderate wet H2S service	
221	10				P72K-000BL	Paddle spacer ASTM A182 Grade F321 Class 600 Standard-drawing Flange ASME B16.5 RF Moderate wet H2S service	

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BOLT TABLE (B_L1M602 , STUD ASME RJ, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	80	P80S-008T2	R11	P75T-000MV
0.75	4	0.625	90	P80S-0090B	R13	P75T-000MW
1	4	0.625	95	P80S-0090C	R16	P75T-000MX
1.5	4	0.750	110	P80S-0090F	R20	P75T-000MY
2	8	0.625	115	P80S-008T9	R23	P75T-000N0
3	8	0.750	135	P80S-0090L	R31	P75T-000N1
4	8	0.875	150	P80S-005ZF	R37	P75T-000N2
6	12	1.000	175	P80S-0061H	R45	P75T-000N3
8	12	1.125	200	P80S-0064X	R49	P75T-00119
10	16	1.250	255	P80S-0068N	R53	P75T-000MZ

BOLT TABLE (B_L1M602_221 , STUD ASME RF, OPTION CODE 221)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	80			
0.75	4	0.625	90			
1	4	0.625	95			
1.5	4	0.750	110			
2	8	0.625	110			
3	8	0.750	130			
4	8	0.875	150			
6	12	1.000	175			
8	12	1.125	195			
10	16	1.250	250	P80S-0068M		

BOLT TABLE (B_L1M602_789 , STUD ASME RJ, OPTION CODE 789)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	110		R12	
0.75	4	0.750	115		R14	
1	4	0.875	130	P80S-005ZB	R16	
1.5	4	1.000	140		R20	
2	8	0.875	150	P80S-005ZF	R24	
3	8	0.875	150	P80S-005ZF	R31	P75T-000N4
4	8	1.125	175	P80S-0064S	R37	P75T-000N5
6	12	1.125	200	P80S-0064X	R45	P75T-000JE
8	12	1.375	260	P80S-006HT	R49	P75T-000JF
10	16	1.375	275	P80S-006HW	R53	P75T-000JC

BOLT TABLE (B_L1M602_797 , STUD ASME RJ, OPTION CODE 797)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	110	P80S-0090F	R12	P75T-000JG
0.75	4	0.750	115	P80S-0090G	R14	P75T-000JH
1	4	0.875	130	P80S-005ZB	R16	P75T-000JJ
1.5	4	1.000	140	P80S-0061A	R20	P75T-000JK
2	8	0.875	150	P80S-005ZF	R24	P75T-000N6
3	8	1.125	180		R35	
4	8	1.250	230		R39	
6	12	1.375	300		R46	
8	12	1.625	345		R50	
10	12	1.875	395		R54	

BOLT TABLE (B_L1M602_805 , STUD ASME RJ, OPTION CODE 805)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	125		R13	
0.75	4	0.750	130		R16	
1	4	0.875	140		R18	
1.5	4	1.125	175		R23	
2	8	1.000	180		R26	
3	8	1.250	260		R32	
4	8	1.500	305		R38	
6	8	2.000	410		R47	
8	12	2.000	450		R51	
10	12	2.500	575	P80S-00DZV	R55	P75T-000K1

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BRANCH TABLE (T_L1M602)

RUN PIPE SIZE (in) \ BRANCH SIZE (in)	0.5	0.75	1	1.5	2	3	4	6	8	10
0.5	TS									
0.75		TS								
1		TR	TS							
1.5		TR	TR	TS						
2		L	TR	TR	TS					
3		L	L	TR	TR	TS				
4	L	L	L	L	TR	TR	TS			
6	L	L	L	L	L	TR	TR	TS		
8		L	L	L	L	L	TR	TR	TS	
10		L	L	L	L	L	TR	TR	TR	TS

L : OUTLET
TR : REDUCING TEE
TS : STRAIGHT TEE

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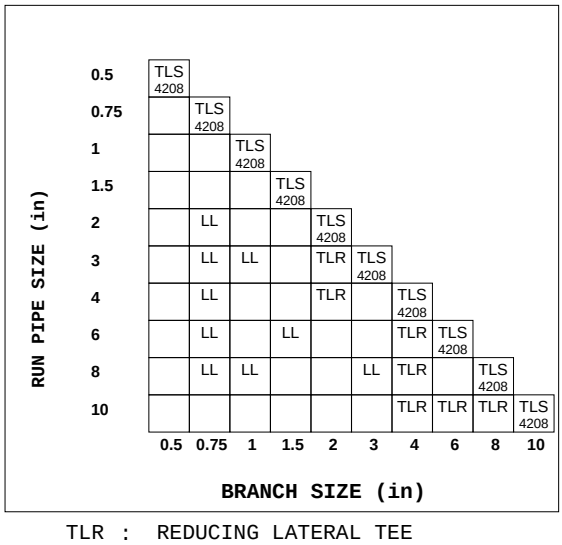
PIPING CLASS

L1M602 REV NO. 2

BRANCH TABLE (T_L1M602_2)



TLR : REDUCING LATERAL TEE
LL : LATROLET
TLS : STRAIGHT LATERAL TEE

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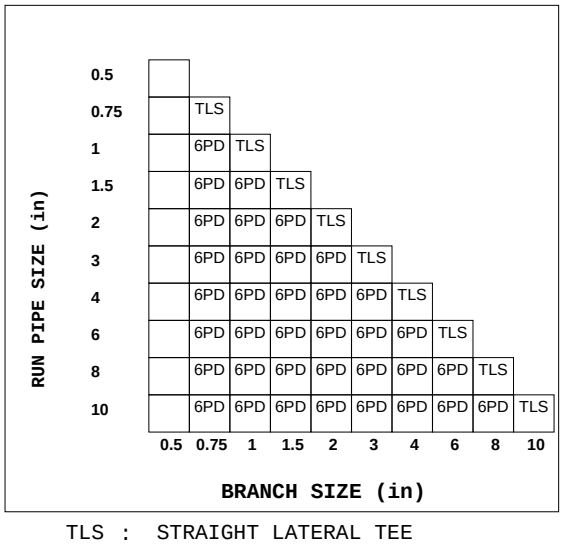
PIPING CLASS

L1M602 REV NO. 2

BRANCH TABLE (T_L1M602_3)



TLS : STRAIGHT LATERAL TEE
6PD : REINFORCING PAD 60 DEG

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PIPING CLASS

L1M702 REV NO. 2

Material : SS321
Rating : ASME CLASS 600
Flange Face : RJ
C.A.(mm) : 1.50
Gasket : Ring Octagonal
Service : PROCESS - WET SEVERE SOUR SERVICE SUBJECT TO NACE + HIC STD + HYDROGEN SERVICE
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
5	BOLTING CONFIRMING TO B7M / 2HM SHALL BE USED UNDER CONDITIONS (A) DIRECT EXPOSURE TO SOUR ENVIRONMENTS (B) WHEN THE BOLTING WILL BE BURIED OR INSULATED

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
221	RF (B,F,G,PB,PS)
541	NPT(F) (CA,F,L)
789	CLASS 900 (B,F,G)
797	CLASS 1500 (B,F,G)
4608	VALVE WITH NIPPLES (V)

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PIPING CLASS
L1M702 REV NO. 2

PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P01J-002DY	Pipe ASTM A312 Grade TP321 Seamless ASME B36.10M/B36.19M PE Severe wet H2S service	
1	0.75		SCH80S		P01J-002DZ	Pipe ASTM A312 Grade TP321 Seamless ASME B36.10M/B36.19M PE Severe wet H2S service	
1	1		SCH80S		P01J-002E0	Pipe ASTM A312 Grade TP321 Seamless ASME B36.10M/B36.19M PE Severe wet H2S service	
1	1.5		SCH80S		P01J-002E1	Pipe ASTM A312 Grade TP321 Seamless ASME B36.10M/B36.19M PE Severe wet H2S service	
1	2		SCH80S		P01J-002EL	Pipe ASTM A312 Grade TP321 Seamless ASME B36.10M/B36.19M BE Severe wet H2S service	
1	3		SCH40S		P01J-002EM	Pipe ASTM A312 Grade TP321 Seamless ASME B36.10M/B36.19M BE Severe wet H2S service	
1	4		SCH80S		P01J-002EN	Pipe ASTM A312 Grade TP321 Seamless ASME B36.10M/B36.19M BE Severe wet H2S service	
1	6		SCH80S		P01J-002EP	Pipe ASTM A312 Grade TP321 Seamless ASME B36.10M/B36.19M BE Severe wet H2S service	
1	8		SCH40S		P01J-002P9	Pipe ASTM A358 Grade 321 Class 1 EFW ASME B36.10M/B36.19M BE Severe wet H2S service	
1	10		SCH40S		P01J-002P6	Pipe ASTM A358 Grade 321 Class 1 EFW ASME B36.10M/B36.19M BE Severe wet H2S service	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P02J-001XB	90 degree elbow ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	0.75		SCH80S		P02J-001XC	90 degree elbow ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	1		SCH80S		P02J-001XD	90 degree elbow ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	1.5		SCH80S		P02J-001XE	90 degree elbow ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	2		SCH80S		P02J-001YH	90 degree elbow ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	3		SCH40S		P02J-001YJ	90 degree elbow ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	4		SCH80S		P02J-001YK	90 degree elbow ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	6		SCH80S		P02J-001YL	90 degree elbow ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	8		SCH40S		P02J-0023B	90 degree elbow ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Long radius Severe wet H2S service	
1	10		SCH40S		P02J-00238	90 degree elbow ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Long radius Severe wet H2S service	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P03J-001UT	45 degree elbow ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	0.75		SCH80S		P03J-001UU	45 degree elbow ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	1		SCH80S		P03J-001UV	45 degree elbow ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	1.5		SCH80S		P03J-001UW	45 degree elbow ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	2		SCH80S		P03J-001VZ	45 degree elbow ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	3		SCH40S		P03J-001W0	45 degree elbow ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	4		SCH80S		P03J-001W1	45 degree elbow ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	6		SCH80S		P03J-001W2	45 degree elbow ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	8		SCH40S		P03J-00233	45 degree elbow ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Long radius Severe wet H2S service	
1	10		SCH40S		P03J-00230	45 degree elbow ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Long radius Severe wet H2S service	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P21J-001LD	Straight tee ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Severe wet H2S service	
1	0.75		SCH80S		P21J-001LE	Straight tee ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Severe wet H2S service	
1	1		SCH80S		P21J-001LF	Straight tee ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5		SCH80S		P21J-001LG	Straight tee ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Severe wet H2S service	
1	2		SCH80S		P21J-001M0	Straight tee ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Severe wet H2S service	
1	3		SCH40S		P21J-001M1	Straight tee ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Severe wet H2S service	
1	4		SCH80S		P21J-001M2	Straight tee ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Severe wet H2S service	
1	6		SCH80S		P21J-001M3	Straight tee ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Severe wet H2S service	
1	8		SCH40S		P21J-001TF	Straight tee ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Severe wet H2S service	
1	10		SCH40S		P21J-001TC	Straight tee ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Severe wet H2S service	

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REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75	SCH80S	SCH80S	P24J-006Z1	Reducing tee ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5	0.75	SCH80S	SCH80S	P24J-006Z2	Reducing tee ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5	1	SCH80S	SCH80S	P24J-006Z3	Reducing tee ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Severe wet H2S service	
1	2	1	SCH80S	SCH80S	P24J-00705	Reducing tee ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Severe wet H2S service	
1	2	1.5	SCH80S	SCH80S	P24J-00706	Reducing tee ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Severe wet H2S service	
1	3	1.5	SCH40S	SCH80S	P24J-00707	Reducing tee ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Severe wet H2S service	
1	3	2	SCH40S	SCH80S	P24J-00708	Reducing tee ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Severe wet H2S service	
1	4	2	SCH80S	SCH80S	P24J-00709	Reducing tee ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Severe wet H2S service	
1	4	3	SCH80S	SCH40S	P24J-0070A	Reducing tee ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Severe wet H2S service	
1	6	3	SCH80S	SCH40S	P24J-0070B	Reducing tee ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Severe wet H2S service	
1	6	4	SCH80S	SCH80S	P24J-0070C	Reducing tee ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Severe wet H2S service	
1	8	4	SCH40S	SCH80S	P24J-007MD	Reducing tee ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Severe wet H2S service	
1	8	6	SCH40S	SCH80S	P24J-007ME	Reducing tee ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Severe wet H2S service	
1	10	4	SCH40S	SCH80S	P24J-007MF	Reducing tee ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Severe wet H2S service	
1	10	6	SCH40S	SCH80S	P24J-007MG	Reducing tee ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Severe wet H2S service	
1	10	8	SCH40S	SCH40S	P24J-007MH	Reducing tee ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Severe wet H2S service	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH80S	SCH80S	P27J-005TR	Concentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Severe wet H2S service	
1	1	0.5	SCH80S	SCH80S	P27J-005TS	Concentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Severe wet H2S service	
1	1	0.75	SCH80S	SCH80S	P27J-005TT	Concentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5	0.5	SCH80S	SCH80S	P27J-005TU	Concentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5	0.75	SCH80S	SCH80S	P27J-005TV	Concentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5	1	SCH80S	SCH80S	P27J-005TW	Concentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Severe wet H2S service	
1	2	0.75	SCH80S	SCH80S	P27J-005WG	Concentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Severe wet H2S service	
1	2	1	SCH80S	SCH80S	P27J-005WH	Concentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Severe wet H2S service	
1	2	1.5	SCH80S	SCH80S	P27J-005WJ	Concentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Severe wet H2S service	
1	3	1.5	SCH40S	SCH80S	P27J-005WK	Concentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Severe wet H2S service	
1	3	2	SCH40S	SCH80S	P27J-005WL	Concentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Severe wet H2S service	
1	4	1.5	SCH80S	SCH80S	P27J-005WM	Concentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Severe wet H2S service	
1	4	2	SCH80S	SCH80S	P27J-005WN	Concentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Severe wet H2S service	
1	4	3	SCH80S	SCH40S	P27J-005WP	Concentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Severe wet H2S service	
1	6	3	SCH80S	SCH40S	P27J-005WR	Concentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Severe wet H2S service	
1	6	4	SCH80S	SCH80S	P27J-005WS	Concentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Severe wet H2S service	
1	8	4	SCH40S	SCH80S	P27J-006E9	Concentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Severe wet H2S service	
1	8	6	SCH40S	SCH80S	P27J-006EA	Concentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Severe wet H2S service	
1	10	4	SCH40S	SCH80S	P27J-006EB	Concentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Severe wet H2S service	
1	10	6	SCH40S	SCH80S	P27J-006EC	Concentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Severe wet H2S service	
1	10	8	SCH40S	SCH40S	P27J-006ED	Concentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Severe wet H2S service	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH80S	SCH80S	P28J-005UL	Eccentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Severe wet H2S service	
1	1	0.5	SCH80S	SCH80S	P28J-005UM	Eccentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Severe wet H2S service	
1	1	0.75	SCH80S	SCH80S	P28J-005UN	Eccentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5	0.5	SCH80S	SCH80S	P28J-005UP	Eccentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5	0.75	SCH80S	SCH80S	P28J-005UR	Eccentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5	1	SCH80S	SCH80S	P28J-005US	Eccentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Severe wet H2S service	
1	2	0.75	SCH80S	SCH80S	P28J-005XD	Eccentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Severe wet H2S service	
1	2	1	SCH80S	SCH80S	P28J-005XE	Eccentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Severe wet H2S service	
1	2	1.5	SCH80S	SCH80S	P28J-005XF	Eccentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Severe wet H2S service	
1	3	1.5	SCH40S	SCH80S	P28J-005XG	Eccentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Severe wet H2S service	
1	3	2	SCH40S	SCH80S	P28J-005XH	Eccentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Severe wet H2S service	
1	4	1.5	SCH80S	SCH80S	P28J-005XJ	Eccentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Severe wet H2S service	
1	4	2	SCH80S	SCH80S	P28J-005XK	Eccentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Severe wet H2S service	
1	4	3	SCH80S	SCH40S	P28J-005XL	Eccentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Severe wet H2S service	
1	6	3	SCH80S	SCH40S	P28J-005XM	Eccentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Severe wet H2S service	
1	6	4	SCH80S	SCH80S	P28J-005XN	Eccentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Severe wet H2S service	

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ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	8	4	SCH40S	SCH80S	P28J-006F9	Eccentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Severe wet H2S service	
1	8	6	SCH40S	SCH80S	P28J-006FA	Eccentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Severe wet H2S service	
1	10	4	SCH40S	SCH80S	P28J-006FB	Eccentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Severe wet H2S service	
1	10	6	SCH40S	SCH80S	P28J-006FC	Eccentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Severe wet H2S service	
1	10	8	SCH40S	SCH40S	P28J-006FD	Eccentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Severe wet H2S service	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P29J-002LG	Cap ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Severe wet H2S service	
1	0.75		SCH80S		P29J-002LH	Cap ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Severe wet H2S service	
1	1		SCH80S		P29J-002LJ	Cap ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5		SCH80S		P29J-002LK	Cap ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Severe wet H2S service	
1	2		SCH80S		P29J-002MP	Cap ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Severe wet H2S service	
1	3		SCH40S		P29J-002MR	Cap ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Severe wet H2S service	
1	4		SCH80S		P29J-002MS	Cap ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Severe wet H2S service	
1	6		SCH80S		P29J-002MT	Cap ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Severe wet H2S service	
1	8		SCH40S		P29J-002M2	Cap ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Severe wet H2S service	
1	10		SCH40S		P29J-002LV	Cap ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Severe wet H2S service	
541	0.75				P29K-0004B	Cap ASTM A182 Grade F321 Class 3000 ASME B16.11 NPT Severe wet H2S service	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P41J-001W1	Straight nipple ASTM A312 Grade TP321 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Severe wet H2S service	
1	0.75		SCH160		P41J-001W2	Straight nipple ASTM A312 Grade TP321 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Severe wet H2S service	
1	1		SCH160		P41J-001W3	Straight nipple ASTM A312 Grade TP321 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Severe wet H2S service	
1	1.5		SCH160		P41J-001W4	Straight nipple ASTM A312 Grade TP321 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Severe wet H2S service	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
541	1	0.75			P31K-00FP3	Outlet ASTM A182 Grade F321 Class 3000 MSS SP-97 NPT Severe wet H2S service	
541	1.5	0.75			P31K-00FP2	Outlet ASTM A182 Grade F321 Class 3000 MSS SP-97 NPT Severe wet H2S service	
1	2	0.75	SCH80S	SCH80S	P31K-00ENJ	Outlet ASTM A182 Grade F321 MSS SP-97 BW Severe wet H2S service	
1	3	0.75	SCH40S	SCH80S	P31K-00ENK	Outlet ASTM A182 Grade F321 MSS SP-97 BW Severe wet H2S service	
1	4	0.75	SCH80S	SCH80S	P31K-00ENN	Outlet ASTM A182 Grade F321 MSS SP-97 BW Severe wet H2S service	
1	6	0.75	SCH80S	SCH80S	P31K-00ENU	Outlet ASTM A182 Grade F321 MSS SP-97 BW Severe wet H2S service	
1	8	0.75	SCH40S	SCH80S	P31K-00ENY	Outlet ASTM A182 Grade F321 MSS SP-97 BW Severe wet H2S service	
1	10	0.75	SCH40S	SCH80S	P31K-00EP6	Outlet ASTM A182 Grade F321 MSS SP-97 BW Severe wet H2S service	
1	3	1	SCH40S	SCH80S	P31K-00ENL	Outlet ASTM A182 Grade F321 MSS SP-97 BW Severe wet H2S service	
1	4	1	SCH80S	SCH80S	P31K-00ENP	Outlet ASTM A182 Grade F321 MSS SP-97 BW Severe wet H2S service	
1	6	1	SCH80S	SCH80S	P31K-00ENV	Outlet ASTM A182 Grade F321 MSS SP-97 BW Severe wet H2S service	
1	8	1	SCH40S	SCH80S	P31K-00ENZ	Outlet ASTM A182 Grade F321 MSS SP-97 BW Severe wet H2S service	
1	10	1	SCH40S	SCH80S	P31K-00EP7	Outlet ASTM A182 Grade F321 MSS SP-97 BW Severe wet H2S service	
1	4	1.5	SCH80S	SCH80S	P31K-00ENR	Outlet ASTM A182 Grade F321 MSS SP-97 BW Severe wet H2S service	
1	6	1.5	SCH80S	SCH80S	P31K-00ENW	Outlet ASTM A182 Grade F321 MSS SP-97 BW Severe wet H2S service	
1	8	1.5	SCH40S	SCH80S	P31K-00EP0	Outlet ASTM A182 Grade F321 MSS SP-97 BW Severe wet H2S service	
1	10	1.5	SCH40S	SCH80S	P31K-00EP8	Outlet ASTM A182 Grade F321 MSS SP-97 BW Severe wet H2S service	
1	6	2	SCH80S	SCH80S	P31K-00ENX	Outlet ASTM A182 Grade F321 MSS SP-97 BW Severe wet H2S service	
1	8	2	SCH40S	SCH80S	P31K-00EP1	Outlet ASTM A182 Grade F321 MSS SP-97 BW Severe wet H2S service	
1	10	2	SCH40S	SCH80S	P31K-00EP9	Outlet ASTM A182 Grade F321 MSS SP-97 BW Severe wet H2S service	
1	8	3	SCH40S	SCH40S	P31K-00EP2	Outlet ASTM A182 Grade F321 MSS SP-97 BW Severe wet H2S service	
1	10	3	SCH40S	SCH40S	P31K-00EPA	Outlet ASTM A182 Grade F321 MSS SP-97 BW Severe wet H2S service	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30K-0005D	Plug ASTM A182 Grade F321 ASME B16.11 NPT Round head Severe wet H2S service	
1	0.75				P30K-0005E	Plug ASTM A182 Grade F321 ASME B16.11 NPT Round head Severe wet H2S service	
1	1				P30K-0005F	Plug ASTM A182 Grade F321 ASME B16.11 NPT Round head Severe wet H2S service	

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PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5				P30K-0005G	Plug ASTM A182 Grade F321 ASME B16.11 NPT Round head Severe wet H2S service	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P61K-005F2	Flange WN ASTM A182 Grade F321 Class 600 ASME B16.5 RJ Severe wet H2S service	
1	0.75		SCH80S		P61K-005F3	Flange WN ASTM A182 Grade F321 Class 600 ASME B16.5 RJ Severe wet H2S service	
1	1		SCH80S		P61K-005F4	Flange WN ASTM A182 Grade F321 Class 600 ASME B16.5 RJ Severe wet H2S service	
1	1.5		SCH80S		P61K-005F5	Flange WN ASTM A182 Grade F321 Class 600 ASME B16.5 RJ Severe wet H2S service	
1	2		SCH80S		P61K-005GH	Flange WN ASTM A182 Grade F321 Class 600 ASME B16.5 RJ Severe wet H2S service	
1	3		SCH40S		P61K-005GJ	Flange WN ASTM A182 Grade F321 Class 600 ASME B16.5 RJ Severe wet H2S service	
1	4		SCH80S		P61K-005GK	Flange WN ASTM A182 Grade F321 Class 600 ASME B16.5 RJ Severe wet H2S service	
1	6		SCH80S		P61K-005GL	Flange WN ASTM A182 Grade F321 Class 600 ASME B16.5 RJ Severe wet H2S service	
1	8		SCH40S		P61K-005GM	Flange WN ASTM A182 Grade F321 Class 600 ASME B16.5 RJ Severe wet H2S service	
1	10		SCH40S		P61K-005GE	Flange WN ASTM A182 Grade F321 Class 600 ASME B16.5 RJ Severe wet H2S service	
221	10		SCH40S		P61K-005EF	Flange WN ASTM A182 Grade F321 Class 600 ASME B16.5 RF Severe wet H2S service	
541	0.5				P61K-0069Y	Flange NPT ASTM A182 Grade F321 Class 600 ASME B16.5 RJ Severe wet H2S service	
541	0.75				P61K-005YP	Flange NPT ASTM A182 Grade F321 Class 600 ASME B16.5 RJ Severe wet H2S service	
789	3		SCH40S		P61K-005GP	Flange WN ASTM A182 Grade F321 Class 900 ASME B16.5 RJ Severe wet H2S service	
789	4		SCH80S		P61K-005GR	Flange WN ASTM A182 Grade F321 Class 900 ASME B16.5 RJ Severe wet H2S service	
789	6		SCH80S		P61K-005GS	Flange WN ASTM A182 Grade F321 Class 900 ASME B16.5 RJ Severe wet H2S service	
789	8		SCH40S		P61K-005EW	Flange WN ASTM A182 Grade F321 Class 900 ASME B16.5 RJ Severe wet H2S service	
789	10		SCH40S		P61K-005EP	Flange WN ASTM A182 Grade F321 Class 900 ASME B16.5 RJ Severe wet H2S service	
797	0.5		SCH80S		P61K-005E6	Flange WN ASTM A182 Grade F321 Class 1500 ASME B16.5 RJ Severe wet H2S service	
797	0.75		SCH80S		P61K-005E7	Flange WN ASTM A182 Grade F321 Class 1500 ASME B16.5 RJ Severe wet H2S service	
797	1		SCH80S		P61K-005E8	Flange WN ASTM A182 Grade F321 Class 1500 ASME B16.5 RJ Severe wet H2S service	
797	1.5		SCH80S		P61K-005E9	Flange WN ASTM A182 Grade F321 Class 1500 ASME B16.5 RJ Severe wet H2S service	
797	2		SCH80S		P61K-005GT	Flange WN ASTM A182 Grade F321 Class 1500 ASME B16.5 RJ Severe wet H2S service	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67K-001L9	Blind flange ASTM A182 Grade F321 Class 600 ASME B16.5 RJ Severe wet H2S service	
1	0.75				P67K-001LA	Blind flange ASTM A182 Grade F321 Class 600 ASME B16.5 RJ Severe wet H2S service	
1	1				P67K-001LB	Blind flange ASTM A182 Grade F321 Class 600 ASME B16.5 RJ Severe wet H2S service	
1	1.5				P67K-001LC	Blind flange ASTM A182 Grade F321 Class 600 ASME B16.5 RJ Severe wet H2S service	
1	2				P67K-001LE	Blind flange ASTM A182 Grade F321 Class 600 ASME B16.5 RJ Severe wet H2S service	
1	3				P67K-001LF	Blind flange ASTM A182 Grade F321 Class 600 ASME B16.5 RJ Severe wet H2S service	
1	4				P67K-001LG	Blind flange ASTM A182 Grade F321 Class 600 ASME B16.5 RJ Severe wet H2S service	
1	6				P67K-001LH	Blind flange ASTM A182 Grade F321 Class 600 ASME B16.5 RJ Severe wet H2S service	
1	8				P67K-001M4	Blind flange ASTM A182 Grade F321 Class 600 ASME B16.5 RJ Severe wet H2S service	
1	10				P67K-001LD	Blind flange ASTM A182 Grade F321 Class 600 ASME B16.5 RJ Severe wet H2S service	

REDUCING FLANGE (FR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2		SCH80S	P62K-000CS	Reducing flange WN ASTM A182 Grade F321 Class 600 ASME B16.5 RJ Severe wet H2S service	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P75T-000MV	Ring joint gasket SS TP347 Class 600 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	0.75				P75T-000MW	Ring joint gasket SS TP347 Class 600 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	1				P75T-000MX	Ring joint gasket SS TP347 Class 600 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	1.5				P75T-000MY	Ring joint gasket SS TP347 Class 600 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	2				P75T-000N0	Ring joint gasket SS TP347 Class 600 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	3				P75T-000N1	Ring joint gasket SS TP347 Class 600 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	4				P75T-000N2	Ring joint gasket SS TP347 Class 600 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	6				P75T-000N3	Ring joint gasket SS TP347 Class 600 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	8				P75T-00119	Ring joint gasket SS TP347 Class 600 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	10				P75T-000MZ	Ring joint gasket SS TP347 Class 600 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
221	10				P73T-003HV	Spiral wound gasket SS321 winding / Graphite-mica filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring SS316 Inner-ring SS321	

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GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
789	3				P75T-000N4	Ring joint gasket SS TP347 Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	4				P75T-000N5	Ring joint gasket SS TP347 Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	6				P75T-000JE	Ring joint gasket SS TP347 Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	8				P75T-000JF	Ring joint gasket SS TP347 Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	10				P75T-000JC	Ring joint gasket SS TP347 Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	0.5				P75T-000JG	Ring joint gasket SS TP347 Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	0.75				P75T-000JH	Ring joint gasket SS TP347 Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	1				P75T-000JJ	Ring joint gasket SS TP347 Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	1.5				P75T-000JK	Ring joint gasket SS TP347 Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	2				P75T-000N6	Ring joint gasket SS TP347 Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-6				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	8-10				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
221	10				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
789	1-3				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
789	4-10				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
797	0.5-2				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81K-001KZ	Gate valve ASTM A182 Grade F321 Class 600 API 602 Flange ASME B16.5 RJ Trim SS347 BB-BG-OS&Y Handwheel operated Severe wet H2S service Fluid-2	
1	0.75				P81K-001L0	Gate valve ASTM A182 Grade F321 Class 600 API 602 Flange ASME B16.5 RJ Trim SS347 BB-BG-OS&Y Handwheel operated Severe wet H2S service Fluid-2	
1	1				P81K-001L1	Gate valve ASTM A182 Grade F321 Class 600 API 602 Flange ASME B16.5 RJ Trim SS347 BB-BG-OS&Y Handwheel operated Severe wet H2S service Fluid-2	
1	1.5				P81K-001L2	Gate valve ASTM A182 Grade F321 Class 600 API 602 Flange ASME B16.5 RJ Trim SS347 BB-BG-OS&Y Handwheel operated Severe wet H2S service Fluid-2	
1	2				P81L-0034R	Gate valve ASTM A351 Grade CF8C Class 600 API 600 Flange ASME B16.5 RJ Trim SS347 BB-BG-OS&Y Handwheel operated Severe wet H2S service Fluid-2	
1	3				P81L-0034S	Gate valve ASTM A351 Grade CF8C Class 600 API 600 Flange ASME B16.5 RJ Trim SS347 BB-BG-OS&Y Handwheel operated Severe wet H2S service Fluid-2	
1	4				P81L-0034T	Gate valve ASTM A351 Grade CF8C Class 600 API 600 Flange ASME B16.5 RJ Trim SS347 BB-BG-OS&Y Handwheel operated Severe wet H2S service Fluid-2	
1	6				P81L-0034U	Gate valve ASTM A351 Grade CF8C Class 600 API 600 Flange ASME B16.5 RJ Trim SS347 BB-BG-OS&Y Handwheel operated Severe wet H2S service Fluid-2	
1	8				P81L-0034W	Gate valve ASTM A351 Grade CF8C Class 600 API 600 Flange ASME B16.5 RJ Trim SS347 BB-BG-OS&Y Gear operated Severe wet H2S service Fluid-2	
1	10				P81L-0034V	Gate valve ASTM A351 Grade CF8C Class 600 API 600 Flange ASME B16.5 RJ Trim SS347 BB-BG-OS&Y Gear operated Severe wet H2S service Fluid-2	
4608	0.75				P81K-001NT	Gate valve ASTM A182 Grade F321 Class 600 API 602 BW both sides w/ nipples BE - NPT ASTM A312-TP321 Seamless Sch160-nipple Trim SS347 BB-BG-OS&Y Handwheel operated Severe wet H2S service Fluid-2	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82K-00130	Globe valve ASTM A182 Grade F321 Class 600 API 602 Flange ASME B16.5 RJ Trim SS347 BB-BG-OS&Y Handwheel operated Severe wet H2S service Fluid-2	
1	0.75				P82K-00131	Globe valve ASTM A182 Grade F321 Class 600 API 602 Flange ASME B16.5 RJ Trim SS347 BB-BG-OS&Y Handwheel operated Severe wet H2S service Fluid-2	
1	1				P82K-00132	Globe valve ASTM A182 Grade F321 Class 600 API 602 Flange ASME B16.5 RJ Trim SS347 BB-BG-OS&Y Handwheel operated Severe wet H2S service Fluid-2	
1	1.5				P82K-00133	Globe valve ASTM A182 Grade F321 Class 600 API 602 Flange ASME B16.5 RJ Trim SS347 BB-BG-OS&Y Handwheel operated Severe wet H2S service Fluid-2	
1	2				P82L-001RR	Globe valve ASTM A351 Grade CF8C Class 600 BS 1873 Flange ASME B16.5 RJ Trim SS347 BB-BG-OS&Y Handwheel operated Severe wet H2S service Fluid-2	
1	3				P82L-001RS	Globe valve ASTM A351 Grade CF8C Class 600 BS 1873 Flange ASME B16.5 RJ Trim SS347 BB-BG-OS&Y Handwheel operated Severe wet H2S service Fluid-2	
1	4				P82L-001RT	Globe valve ASTM A351 Grade CF8C Class 600 BS 1873 Flange ASME B16.5 RJ Trim SS347 BB-BG-OS&Y Handwheel operated Severe wet H2S service Fluid-2	
1	6				P82L-001Y7	Globe valve ASTM A351 Grade CF8C Class 600 BS 1873 Flange ASME B16.5 RJ Trim SS347 BB-BG-OS&Y Gear operated Severe wet H2S service Fluid-2	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83K-000MG	Check valve ASTM A182 Grade F321 Class 600 API 602 Flange ASME B16.5 RJ Trim SS347 Lift-type Bolted cover Severe wet H2S service	

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CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75				P83K-000MH	Check valve ASTM A182 Grade F321 Class 600 API 602 Flange ASME B16.5 RJ Trim SS347 Lift-type Bolted cover Severe wet H2S service	
1	1				P83K-000MJ	Check valve ASTM A182 Grade F321 Class 600 API 602 Flange ASME B16.5 RJ Trim SS347 Lift-type Bolted cover Severe wet H2S service	
1	1.5				P83K-000MK	Check valve ASTM A182 Grade F321 Class 600 API 602 Flange ASME B16.5 RJ Trim SS347 Lift-type Bolted cover Severe wet H2S service	
1	2				P83L-0012H	Check valve ASTM A351 Grade CF8C Class 600 BS 1868 Flange ASME B16.5 RJ Trim SS347 Swing-type Bolted cover Severe wet H2S service	
1	3				P83L-0012J	Check valve ASTM A351 Grade CF8C Class 600 BS 1868 Flange ASME B16.5 RJ Trim SS347 Swing-type Bolted cover Severe wet H2S service	
1	4				P83L-0012K	Check valve ASTM A351 Grade CF8C Class 600 BS 1868 Flange ASME B16.5 RJ Trim SS347 Swing-type Bolted cover Severe wet H2S service	
1	6				P83L-001GY	Check valve ASTM A351 Grade CF8C Class 600 BS 1868 Flange ASME B16.5 RJ Trim SS347 Swing-type Bolted cover Severe wet H2S service	
1	8				P83L-001GZ	Check valve ASTM A351 Grade CF8C Class 600 BS 1868 Flange ASME B16.5 RJ Trim SS347 Swing-type Bolted cover Severe wet H2S service	
1	10				P83L-001GX	Check valve ASTM A351 Grade CF8C Class 600 BS 1868 Flange ASME B16.5 RJ Trim SS347 Swing-type Bolted cover Severe wet H2S service	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71K-000CY	Spectacle blank ASTM A182 Grade F321 Class 600 Standard-drawing Flange ASME B16.5 RJ Severe wet H2S service	
1	0.75				P71K-000CZ	Spectacle blank ASTM A182 Grade F321 Class 600 Standard-drawing Flange ASME B16.5 RJ Severe wet H2S service	
1	1				P71K-000D0	Spectacle blank ASTM A182 Grade F321 Class 600 Standard-drawing Flange ASME B16.5 RJ Severe wet H2S service	
1	1.5				P71K-000D1	Spectacle blank ASTM A182 Grade F321 Class 600 Standard-drawing Flange ASME B16.5 RJ Severe wet H2S service	
1	2				P71K-000D2	Spectacle blank ASTM A182 Grade F321 Class 600 Standard-drawing Flange ASME B16.5 RJ Severe wet H2S service	
1	3				P71K-000D3	Spectacle blank ASTM A182 Grade F321 Class 600 Standard-drawing Flange ASME B16.5 RJ Severe wet H2S service	
1	4				P71K-000D4	Spectacle blank ASTM A182 Grade F321 Class 600 Standard-drawing Flange ASME B16.5 RJ Severe wet H2S service	
1	6				P71K-000D5	Spectacle blank ASTM A182 Grade F321 Class 600 Standard-drawing Flange ASME B16.5 RJ Severe wet H2S service	

PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	8				P72K-000CF	Paddle blank ASTM A182 Grade F321 Class 600 Standard-drawing Flange ASME B16.5 RJ Severe wet H2S service	
1	10				P72K-000BZ	Paddle blank ASTM A182 Grade F321 Class 600 Standard-drawing Flange ASME B16.5 RJ Severe wet H2S service	
221	10				P72K-000BR	Paddle blank ASTM A182 Grade F321 Class 600 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	

PADDLE SPACER (PS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	8				P72K-000CJ	Paddle spacer ASTM A182 Grade F321 Class 600 Standard-drawing Flange ASME B16.5 RJ Severe wet H2S service	
1	10				P72K-000C0	Paddle spacer ASTM A182 Grade F321 Class 600 Standard-drawing Flange ASME B16.5 RJ Severe wet H2S service	
221	10				P72K-000BT	Paddle spacer ASTM A182 Grade F321 Class 600 Standard-drawing Flange ASME B16.5 RF Severe wet H2S service	

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BOLT TABLE (B_L1M702 , STUD ASME RJ, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	80	P80S-008T2	R11	P75T-000MV
0.75	4	0.625	90	P80S-0090B	R13	P75T-000MW
1	4	0.625	95	P80S-0090C	R16	P75T-000MX
1.5	4	0.750	110	P80S-0090F	R20	P75T-000MY
2	8	0.625	115	P80S-008T9	R23	P75T-000N0
3	8	0.750	135	P80S-0090L	R31	P75T-000N1
4	8	0.875	150	P80S-005ZF	R37	P75T-000N2
6	12	1.000	175	P80S-0061H	R45	P75T-000N3
8	12	1.125	200	P80S-0064X	R49	P75T-00119
10	16	1.250	255	P80S-0068N	R53	P75T-000MZ

BOLT TABLE (B_L1M702_221 , STUD ASME RF, OPTION CODE 221)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	80			
0.75	4	0.625	90			
1	4	0.625	95			
1.5	4	0.750	110			
2	8	0.625	110			
3	8	0.750	130			
4	8	0.875	150			
6	12	1.000	175			
8	12	1.125	195			
10	16	1.250	250	P80S-0068M		

BOLT TABLE (B_L1M702_789 , STUD ASME RJ, OPTION CODE 789)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	110		R12	
0.75	4	0.750	115		R14	
1	4	0.875	130	P80S-005ZB	R16	
1.5	4	1.000	140		R20	
2	8	0.875	150	P80S-005ZF	R24	
3	8	0.875	150	P80S-005ZF	R31	P75T-000N4
4	8	1.125	175	P80S-0064S	R37	P75T-000N5
6	12	1.125	200	P80S-0064X	R45	P75T-000JE
8	12	1.375	260	P80S-006HT	R49	P75T-000JF
10	16	1.375	275	P80S-006HW	R53	P75T-000JC

BOLT TABLE (B_L1M702_797 , STUD ASME RJ, OPTION CODE 797)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	110	P80S-0090F	R12	P75T-000JG
0.75	4	0.750	115	P80S-0090G	R14	P75T-000JH
1	4	0.875	130	P80S-005ZB	R16	P75T-000JJ
1.5	4	1.000	140	P80S-0061A	R20	P75T-000JK
2	8	0.875	150	P80S-005ZF	R24	P75T-000N6
3	8	1.125	180		R35	
4	8	1.250	230		R39	
6	12	1.375	300		R46	
8	12	1.625	345		R50	
10	12	1.875	395		R54	

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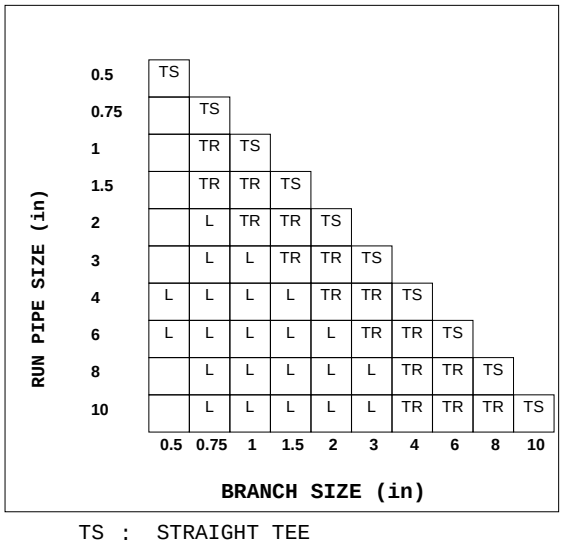
PIPING CLASS

L1M702 REV NO. 2

BRANCH TABLE (T_L1M702)



RUN PIPE SIZE (in) \ BRANCH SIZE (in)	0.5	0.75	1	1.5	2	3	4	6	8	10
0.5	TS									
0.75		TS								
1		TR	TS							
1.5		TR	TR	TS						
2		L	TR	TR	TS					
3		L	L	TR	TR	TS				
4	L	L	L	L	TR	TR	TS			
6	L	L	L	L	L	TR	TR	TS		
8		L	L	L	L	L	TR	TR	TS	
10		L	L	L	L	L	TR	TR	TR	TS

TS : STRAIGHT TEE
TR : REDUCING TEE
L : OUTLET

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PIPING CLASS

L28V02 REV NO. 2

Material : 9Cr - 1MO
Rating : ASME CLASS 600
Flange Face : RJ
C.A.(mm) : 3.00
Gasket : Ring Octagonal
Service : PROCESS - CORROSIVE SERVICE.
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
24	FOR ALL RELEVANT PIPING CLASSES WITH LINE DESIGN TEMPERATURE ABOVE 427DEGC, IN SPIRAL WOUND GASKET, SUITABLE GASKET FILLER MATERIAL SUCH AS COMBINATION OF MICA LAYERS AND GRAPHITE FILLERS OR EQUIVALENT SHALL BE REVIEWED AND SELECTED OR AS DEFINED BY THE LICENSOR
36	ASTM A691 CR-MO WELDED PIPES SPECIFIED WITH CLASS 22 CAN BE USED IN LIEU OF CLASS 42 IN NON-LICENSED UNITS ONLY. GRADE SHALL BE AS SPECIFIED IN "PIPE / FLANGE MATERIAL" SECTION IN ATTACHMENT 9.0 OF THIS DOCUMENT

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
200	WITH JACK SCREW (FO)
541	NPT(F) (CA,F)
789	CLASS 900 (B,F,G)
797	CLASS 1500 (B,F,G,V)
4406	ORIFICE FLANGE WITH 3/4" SINGLE TAP (FO)
4407	ORIFICE FLANGE WITH JACK SCREW AND 3/4" SINGLE TAP (FO)
4608	VALVE WITH NIPPLES (V)

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PIPING CLASS
L28V02 REV NO. 2

PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P01F-00014	Pipe ASTM A335 Grade P9 Seamless ASME B36.10M/B36.19M PE	
1	0.75		SCH160		P01F-00015	Pipe ASTM A335 Grade P9 Seamless ASME B36.10M/B36.19M PE	
1	1		SCH160		P01F-000D1	Pipe ASTM A335 Grade P9 Seamless ASME B36.10M/B36.19M PE	
1	1.5		SCH160		P01F-000D2	Pipe ASTM A335 Grade P9 Seamless ASME B36.10M/B36.19M PE	
1	2		SCH160		P01F-0004J	Pipe ASTM A335 Grade P9 Seamless ASME B36.10M/B36.19M BE	
1	3		XS		P01F-00052	Pipe ASTM A335 Grade P9 Seamless ASME B36.10M/B36.19M BE	
1	4		SCH120		P01F-0005A	Pipe ASTM A335 Grade P9 Seamless ASME B36.10M/B36.19M BE	
1	6		SCH120		P01F-0005M	Pipe ASTM A335 Grade P9 Seamless ASME B36.10M/B36.19M BE	
1	8		XS		P01F-0005B	Pipe ASTM A335 Grade P9 Seamless ASME B36.10M/B36.19M BE	
1	10		SCH80		P01F-00053	Pipe ASTM A335 Grade P9 Seamless ASME B36.10M/B36.19M BE	
1	12		SCH80		P01F-00054	Pipe ASTM A335 Grade P9 Seamless ASME B36.10M/B36.19M BE	
1	14		SCH80		P01F-00055	Pipe ASTM A335 Grade P9 Seamless ASME B36.10M/B36.19M BE	
1	16		SCH80		P01F-001RA	Pipe ASTM A335 Grade P9 Seamless ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P02F-000JV	90 degree elbow ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW Long radius	
1	0.75		SCH160		P02F-000JW	90 degree elbow ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW Long radius	
1	1		SCH160		P02F-000JX	90 degree elbow ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW Long radius	
1	1.5		SCH160		P02F-000JY	90 degree elbow ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW Long radius	
1	2		SCH160		P02F-000K5	90 degree elbow ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW Long radius	
1	3		XS		P02F-000DL	90 degree elbow ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW Long radius	
1	4		SCH120		P02F-000K6	90 degree elbow ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW Long radius	
1	6		SCH120		P02F-000K7	90 degree elbow ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW Long radius	
1	8		XS		P02F-000K8	90 degree elbow ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW Long radius	
1	10		SCH80		P02F-000K1	90 degree elbow ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW Long radius	
1	12		SCH80		P02F-000K2	90 degree elbow ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW Long radius	
1	14		SCH80		P02F-000K3	90 degree elbow ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW Long radius	
1	16		SCH80		P02F-000K4	90 degree elbow ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P03F-000JK	45 degree elbow ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW Long radius	
1	0.75		SCH160		P03F-000JL	45 degree elbow ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW Long radius	
1	1		SCH160		P03F-000JM	45 degree elbow ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW Long radius	
1	1.5		SCH160		P03F-000JN	45 degree elbow ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW Long radius	
1	2		SCH160		P03F-000JW	45 degree elbow ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW Long radius	
1	3		XS		P03F-000DD	45 degree elbow ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW Long radius	
1	4		SCH120		P03F-000JX	45 degree elbow ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW Long radius	
1	6		SCH120		P03F-000JY	45 degree elbow ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW Long radius	
1	8		XS		P03F-000JZ	45 degree elbow ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW Long radius	
1	10		SCH80		P03F-000JS	45 degree elbow ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW Long radius	
1	12		SCH80		P03F-000JT	45 degree elbow ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW Long radius	
1	14		SCH80		P03F-000JU	45 degree elbow ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW Long radius	
1	16		SCH80		P03F-000JV	45 degree elbow ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P21F-000JN	Straight tee ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	0.75		SCH160		P21F-000JP	Straight tee ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	1		SCH160		P21F-000JR	Straight tee ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	1.5		SCH160		P21F-000JS	Straight tee ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	2		SCH160		P21F-000JZ	Straight tee ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	3		XS		P21F-000D9	Straight tee ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	4		SCH120		P21F-000K0	Straight tee ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	6		SCH120		P21F-000K1	Straight tee ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	8		XS		P21F-000K2	Straight tee ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	10		SCH80		P21F-000JV	Straight tee ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	12		SCH80		P21F-000JW	Straight tee ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	

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STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14		SCH80		P21F-000JX	Straight tee ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	16		SCH80		P21F-000JY	Straight tee ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75	SCH160	SCH160	P24F-00245	Reducing tee ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	1.5	0.75	SCH160	SCH160	P24F-00246	Reducing tee ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	1.5	1	SCH160	SCH160	P24F-00247	Reducing tee ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	2	1	SCH160	SCH160	P24F-0024L	Reducing tee ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	2	1.5	SCH160	SCH160	P24F-0024M	Reducing tee ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	3	1.5	XS	SCH160	P24F-00192	Reducing tee ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	3	2	XS	SCH160	P24F-0024N	Reducing tee ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	4	2	SCH120	SCH160	P24F-0024P	Reducing tee ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	4	3	SCH120	XS	P24F-0024R	Reducing tee ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	6	3	SCH120	XS	P24F-0024S	Reducing tee ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	6	4	SCH120	SCH120	P24F-0024T	Reducing tee ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	8	4	XS	SCH120	P24F-0024U	Reducing tee ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	8	6	XS	SCH120	P24F-0024V	Reducing tee ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	10	4	SCH80	SCH120	P24F-0024W	Reducing tee ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	10	6	SCH80	SCH120	P24F-0024X	Reducing tee ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	10	8	SCH80	XS	P24F-0024Y	Reducing tee ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	12	6	SCH80	SCH120	P24F-00250	Reducing tee ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	12	8	SCH80	XS	P24F-00251	Reducing tee ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	12	10	SCH80	SCH80	P24F-0024Z	Reducing tee ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	14	6	SCH80	SCH120	P24F-00254	Reducing tee ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	14	8	SCH80	XS	P24F-00255	Reducing tee ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	14	10	SCH80	SCH80	P24F-00252	Reducing tee ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	14	12	SCH80	SCH80	P24F-00253	Reducing tee ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	16	6	SCH80	SCH120	P24F-00259	Reducing tee ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	16	8	SCH80	XS	P24F-0025A	Reducing tee ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	16	10	SCH80	SCH80	P24F-00256	Reducing tee ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	16	12	SCH80	SCH80	P24F-00257	Reducing tee ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	16	14	SCH80	SCH80	P24F-00258	Reducing tee ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	SCH160	P27F-001KF	Concentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	1	0.5	SCH160	SCH160	P27F-001KG	Concentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	1	0.75	SCH160	SCH160	P27F-001KH	Concentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	1.5	0.5	SCH160	SCH160	P27F-001KJ	Concentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	1.5	0.75	SCH160	SCH160	P27F-001KK	Concentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	1.5	1	SCH160	SCH160	P27F-001KL	Concentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	2	0.75	SCH160	SCH160	P27F-001L4	Concentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	2	1	SCH160	SCH160	P27F-001L5	Concentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	2	1.5	SCH160	SCH160	P27F-001L6	Concentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	3	1.5	XS	SCH160	P27F-001KR	Concentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	3	2	XS	SCH160	P27F-001L7	Concentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	4	1.5	SCH120	SCH160	P27F-001L8	Concentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	4	2	SCH120	SCH160	P27F-001L9	Concentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	4	3	SCH120	XS	P27F-001LA	Concentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	6	3	SCH120	XS	P27F-001LB	Concentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	6	4	SCH120	SCH120	P27F-001LC	Concentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	8	4	XS	SCH120	P27F-001LD	Concentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	8	6	XS	SCH120	P27F-001LE	Concentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	10	4	SCH80	SCH120	P27F-001LF	Concentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	10	6	SCH80	SCH120	P27F-001LG	Concentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	10	8	SCH80	XS	P27F-001LH	Concentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	12	6	SCH80	SCH120	P27F-001LK	Concentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	12	8	SCH80	XS	P27F-001LL	Concentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	

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CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	12	10	SCH80	SCH80	P27F-001LJ	Concentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	14	6	SCH80	SCH120	P27F-001LP	Concentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	14	8	SCH80	XS	P27F-001LR	Concentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	14	10	SCH80	SCH80	P27F-001LM	Concentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	14	12	SCH80	SCH80	P27F-001LN	Concentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	16	8	SCH80	XS	P27F-001LV	Concentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	16	10	SCH80	SCH80	P27F-001LS	Concentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	16	12	SCH80	SCH80	P27F-001LT	Concentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	16	14	SCH80	SCH80	P27F-001LU	Concentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	SCH160	P28F-001KZ	Eccentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	1	0.5	SCH160	SCH160	P28F-001L0	Eccentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	1	0.75	SCH160	SCH160	P28F-001L1	Eccentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	1.5	0.5	SCH160	SCH160	P28F-001L2	Eccentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	1.5	0.75	SCH160	SCH160	P28F-001L3	Eccentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	1.5	1	SCH160	SCH160	P28F-001L4	Eccentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	2	0.75	SCH160	SCH160	P28F-001LM	Eccentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	2	1	SCH160	SCH160	P28F-001LN	Eccentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	2	1.5	SCH160	SCH160	P28F-001LP	Eccentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	3	1.5	XS	SCH160	P28F-001L8	Eccentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	3	2	XS	SCH160	P28F-001LR	Eccentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	4	1.5	SCH120	SCH160	P28F-001LS	Eccentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	4	2	SCH120	SCH160	P28F-001LT	Eccentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	4	3	SCH120	XS	P28F-001LU	Eccentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	6	3	SCH120	XS	P28F-001LV	Eccentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	6	4	SCH120	SCH120	P28F-001LW	Eccentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	8	4	XS	SCH120	P28F-001LX	Eccentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	8	6	XS	SCH120	P28F-001LY	Eccentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	10	4	SCH80	SCH120	P28F-001LZ	Eccentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	10	6	SCH80	SCH120	P28F-001M0	Eccentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	10	8	SCH80	XS	P28F-001M1	Eccentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	12	6	SCH80	SCH120	P28F-001M3	Eccentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	12	8	SCH80	XS	P28F-001M4	Eccentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	12	10	SCH80	SCH80	P28F-001M2	Eccentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	14	6	SCH80	SCH120	P28F-001M7	Eccentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	14	8	SCH80	XS	P28F-001M8	Eccentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	14	10	SCH80	SCH80	P28F-001M5	Eccentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	14	12	SCH80	SCH80	P28F-001M6	Eccentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	16	8	SCH80	XS	P28F-001MC	Eccentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	16	10	SCH80	SCH80	P28F-001M9	Eccentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	16	12	SCH80	SCH80	P28F-001MA	Eccentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	16	14	SCH80	SCH80	P28F-001MB	Eccentric reducer ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P29F-000HY	Cap ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	0.75		SCH160		P29F-000HZ	Cap ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	1		SCH160		P29F-000J0	Cap ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	1.5		SCH160		P29F-000J1	Cap ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	2		SCH160		P29F-000J8	Cap ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	3		XS		P29F-000D9	Cap ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	4		SCH120		P29F-000J9	Cap ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	6		SCH120		P29F-000JA	Cap ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	8		XS		P29F-000JB	Cap ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	10		SCH80		P29F-000J4	Cap ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	12		SCH80		P29F-000J5	Cap ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
1	14		SCH80		P29F-000J6	Cap ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	

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CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	16		SCH80		P29F-000J7	Cap ASTM A234 Grade WP9 Class 1 Seamless ASME B16.9 BW	
541	0.75				P29G-0001P	Cap ASTM A182 Grade F9 Class 6000 ASME B16.11 NPT	
541	1				P29G-00025	Cap ASTM A182 Grade F9 Class 6000 ASME B16.11 NPT	
541	1.5				P29G-00026	Cap ASTM A182 Grade F9 Class 6000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P41F-0003C	Straight nipple ASTM A335 Grade P9 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		XXS		P41F-0003D	Straight nipple ASTM A335 Grade P9 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		XXS		P41F-0003E	Straight nipple ASTM A335 Grade P9 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		XXS		P41F-0003F	Straight nipple ASTM A335 Grade P9 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2	0.75	SCH160	SCH160	P31G-002K7	Outlet ASTM A182 Grade F9 MSS SP-97 BW	
1	3	0.75	XS	SCH160	P31G-002J9	Outlet ASTM A182 Grade F9 MSS SP-97 BW	
1	4	0.75	SCH120	SCH160	P31G-002K8	Outlet ASTM A182 Grade F9 MSS SP-97 BW	
1	6	0.75	SCH120	SCH160	P31G-002KB	Outlet ASTM A182 Grade F9 MSS SP-97 BW	
1	8	0.75	XS	SCH160	P31G-002KF	Outlet ASTM A182 Grade F9 MSS SP-97 BW	
1	10	0.75	SCH80	SCH160	P31G-002KL	Outlet ASTM A182 Grade F9 MSS SP-97 BW	
1	12	0.75	SCH80	SCH160	P31G-002KS	Outlet ASTM A182 Grade F9 MSS SP-97 BW	
1	14	0.75	SCH80	SCH160	P31G-002KY	Outlet ASTM A182 Grade F9 MSS SP-97 BW	
1	16	0.75	SCH80	SCH160	P31G-002L4	Outlet ASTM A182 Grade F9 MSS SP-97 BW	
1	3	1	XS	SCH160	P31G-002JA	Outlet ASTM A182 Grade F9 MSS SP-97 BW	
1	4	1	SCH120	SCH160	P31G-002K9	Outlet ASTM A182 Grade F9 MSS SP-97 BW	
1	6	1	SCH120	SCH160	P31G-002KC	Outlet ASTM A182 Grade F9 MSS SP-97 BW	
1	8	1	XS	SCH160	P31G-002KG	Outlet ASTM A182 Grade F9 MSS SP-97 BW	
1	10	1	SCH80	SCH160	P31G-002KM	Outlet ASTM A182 Grade F9 MSS SP-97 BW	
1	12	1	SCH80	SCH160	P31G-002KT	Outlet ASTM A182 Grade F9 MSS SP-97 BW	
1	14	1	SCH80	SCH160	P31G-002KZ	Outlet ASTM A182 Grade F9 MSS SP-97 BW	
1	16	1	SCH80	SCH160	P31G-002L5	Outlet ASTM A182 Grade F9 MSS SP-97 BW	
1	4	1.5	SCH120	SCH160	P31G-002KA	Outlet ASTM A182 Grade F9 MSS SP-97 BW	
1	6	1.5	SCH120	SCH160	P31G-002KD	Outlet ASTM A182 Grade F9 MSS SP-97 BW	
1	8	1.5	XS	SCH160	P31G-002KH	Outlet ASTM A182 Grade F9 MSS SP-97 BW	
1	10	1.5	SCH80	SCH160	P31G-002KN	Outlet ASTM A182 Grade F9 MSS SP-97 BW	
1	12	1.5	SCH80	SCH160	P31G-002KU	Outlet ASTM A182 Grade F9 MSS SP-97 BW	
1	14	1.5	SCH80	SCH160	P31G-002L0	Outlet ASTM A182 Grade F9 MSS SP-97 BW	
1	16	1.5	SCH80	SCH160	P31G-002L6	Outlet ASTM A182 Grade F9 MSS SP-97 BW	
1	6	2	SCH120	SCH160	P31G-002KE	Outlet ASTM A182 Grade F9 MSS SP-97 BW	
1	8	2	XS	SCH160	P31G-002KJ	Outlet ASTM A182 Grade F9 MSS SP-97 BW	
1	10	2	SCH80	SCH160	P31G-002KP	Outlet ASTM A182 Grade F9 MSS SP-97 BW	
1	12	2	SCH80	SCH160	P31G-002KV	Outlet ASTM A182 Grade F9 MSS SP-97 BW	
1	14	2	SCH80	SCH160	P31G-002L1	Outlet ASTM A182 Grade F9 MSS SP-97 BW	
1	16	2	SCH80	SCH160	P31G-002L7	Outlet ASTM A182 Grade F9 MSS SP-97 BW	
1	8	3	XS	XS	P31G-002KK	Outlet ASTM A182 Grade F9 MSS SP-97 BW	
1	10	3	SCH80	XS	P31G-002KR	Outlet ASTM A182 Grade F9 MSS SP-97 BW	
1	12	3	SCH80	XS	P31G-002KW	Outlet ASTM A182 Grade F9 MSS SP-97 BW	
1	14	3	SCH80	XS	P31G-002L2	Outlet ASTM A182 Grade F9 MSS SP-97 BW	
1	16	3	SCH80	XS	P31G-002L8	Outlet ASTM A182 Grade F9 MSS SP-97 BW	
1	12	4	SCH80	SCH120	P31G-002KX	Outlet ASTM A182 Grade F9 MSS SP-97 BW	
1	14	4	SCH80	SCH120	P31G-002L3	Outlet ASTM A182 Grade F9 MSS SP-97 BW	
1	16	4	SCH80	SCH120	P31G-002L9	Outlet ASTM A182 Grade F9 MSS SP-97 BW	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30G-00009	Plug ASTM A182 Grade F9 ASME B16.11 NPT Round head	
1	0.75				P30G-0000A	Plug ASTM A182 Grade F9 ASME B16.11 NPT Round head	
1	1				P30G-0000B	Plug ASTM A182 Grade F9 ASME B16.11 NPT Round head	
1	1.5				P30G-0000C	Plug ASTM A182 Grade F9 ASME B16.11 NPT Round head	

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FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P61G-0014E	Flange WN ASTM A182 Grade F9 Class 600 ASME B16.5 RJ	
1	0.75		SCH160		P61G-0014F	Flange WN ASTM A182 Grade F9 Class 600 ASME B16.5 RJ	
1	1		SCH160		P61G-0014G	Flange WN ASTM A182 Grade F9 Class 600 ASME B16.5 RJ	
1	1.5		SCH160		P61G-0014H	Flange WN ASTM A182 Grade F9 Class 600 ASME B16.5 RJ	
1	2		SCH160		P61G-0014N	Flange WN ASTM A182 Grade F9 Class 600 ASME B16.5 RJ	
1	3		XS		P61G-0014P	Flange WN ASTM A182 Grade F9 Class 600 ASME B16.5 RJ	
1	4		SCH120		P61G-0014R	Flange WN ASTM A182 Grade F9 Class 600 ASME B16.5 RJ	
1	6		SCH120		P61G-0014S	Flange WN ASTM A182 Grade F9 Class 600 ASME B16.5 RJ	
1	8		XS		P61G-0014T	Flange WN ASTM A182 Grade F9 Class 600 ASME B16.5 RJ	
1	10		SCH80		P61G-0014J	Flange WN ASTM A182 Grade F9 Class 600 ASME B16.5 RJ	
1	12		SCH80		P61G-0014K	Flange WN ASTM A182 Grade F9 Class 600 ASME B16.5 RJ	
1	14		SCH80		P61G-0014L	Flange WN ASTM A182 Grade F9 Class 600 ASME B16.5 RJ	
1	16		SCH80		P61G-0014M	Flange WN ASTM A182 Grade F9 Class 600 ASME B16.5 RJ	
541	0.5				P61G-001AY	Flange NPT ASTM A182 Grade F9 Class 600 ASME B16.5 RJ	
541	0.75				P61G-0014U	Flange NPT ASTM A182 Grade F9 Class 600 ASME B16.5 RJ	
789	3		XS		P61G-0014Z	Flange WN ASTM A182 Grade F9 Class 900 ASME B16.5 RJ	
789	4		SCH120		P61G-00150	Flange WN ASTM A182 Grade F9 Class 900 ASME B16.5 RJ	
789	6		SCH120		P61G-00151	Flange WN ASTM A182 Grade F9 Class 900 ASME B16.5 RJ	
789	8		XS		P61G-00152	Flange WN ASTM A182 Grade F9 Class 900 ASME B16.5 RJ	
789	10		SCH80		P61G-0014V	Flange WN ASTM A182 Grade F9 Class 900 ASME B16.5 RJ	
789	12		SCH80		P61G-0014W	Flange WN ASTM A182 Grade F9 Class 900 ASME B16.5 RJ	
789	14		SCH80		P61G-0014X	Flange WN ASTM A182 Grade F9 Class 900 ASME B16.5 RJ	
789	16		SCH80		P61G-0014Y	Flange WN ASTM A182 Grade F9 Class 900 ASME B16.5 RJ	
797	0.5		SCH160		P61G-00153	Flange WN ASTM A182 Grade F9 Class 1500 ASME B16.5 RJ	
797	0.75		SCH160		P61G-00154	Flange WN ASTM A182 Grade F9 Class 1500 ASME B16.5 RJ	
797	1		SCH160		P61G-00155	Flange WN ASTM A182 Grade F9 Class 1500 ASME B16.5 RJ	
797	1.5		SCH160		P61G-00156	Flange WN ASTM A182 Grade F9 Class 1500 ASME B16.5 RJ	
797	2		SCH160		P61G-00157	Flange WN ASTM A182 Grade F9 Class 1500 ASME B16.5 RJ	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67G-000DC	Blind flange ASTM A182 Grade F9 Class 600 ASME B16.5 RJ	
1	0.75				P67G-000DD	Blind flange ASTM A182 Grade F9 Class 600 ASME B16.5 RJ	
1	1				P67G-000DE	Blind flange ASTM A182 Grade F9 Class 600 ASME B16.5 RJ	
1	1.5				P67G-000DF	Blind flange ASTM A182 Grade F9 Class 600 ASME B16.5 RJ	
1	2				P67G-000DL	Blind flange ASTM A182 Grade F9 Class 600 ASME B16.5 RJ	
1	3				P67G-000DM	Blind flange ASTM A182 Grade F9 Class 600 ASME B16.5 RJ	
1	4				P67G-000DN	Blind flange ASTM A182 Grade F9 Class 600 ASME B16.5 RJ	
1	6				P67G-000DP	Blind flange ASTM A182 Grade F9 Class 600 ASME B16.5 RJ	
1	8				P67G-000DR	Blind flange ASTM A182 Grade F9 Class 600 ASME B16.5 RJ	
1	10				P67G-000DG	Blind flange ASTM A182 Grade F9 Class 600 ASME B16.5 RJ	
1	12				P67G-000DH	Blind flange ASTM A182 Grade F9 Class 600 ASME B16.5 RJ	
1	14				P67G-000DJ	Blind flange ASTM A182 Grade F9 Class 600 ASME B16.5 RJ	
1	16				P67G-000DK	Blind flange ASTM A182 Grade F9 Class 600 ASME B16.5 RJ	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P75T-000XX	Ring joint gasket 5Cr-1/2Mo Class 600 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	0.75				P75T-000XY	Ring joint gasket 5Cr-1/2Mo Class 600 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	1				P75T-000XZ	Ring joint gasket 5Cr-1/2Mo Class 600 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	1.5				P75T-000Y0	Ring joint gasket 5Cr-1/2Mo Class 600 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	2				P75T-000Y6	Ring joint gasket 5Cr-1/2Mo Class 600 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	3				P75T-000Y9	Ring joint gasket 5Cr-1/2Mo Class 600 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	4				P75T-000YA	Ring joint gasket 5Cr-1/2Mo Class 600 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	6				P75T-000YB	Ring joint gasket 5Cr-1/2Mo Class 600 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	8				P75T-000YC	Ring joint gasket 5Cr-1/2Mo Class 600 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	10				P75T-000Y1	Ring joint gasket 5Cr-1/2Mo Class 600 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	12				P75T-000Y2	Ring joint gasket 5Cr-1/2Mo Class 600 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	14				P75T-000Y3	Ring joint gasket 5Cr-1/2Mo Class 600 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	

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GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	16				P75T-000Y4	Ring joint gasket 5Cr-1/2Mo Class 600 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	3				P75T-000KP	Ring joint gasket 5Cr-1/2Mo Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	4				P75T-000KC	Ring joint gasket 5Cr-1/2Mo Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	6				P75T-000KD	Ring joint gasket 5Cr-1/2Mo Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	8				P75T-000KR	Ring joint gasket 5Cr-1/2Mo Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	10				P75T-000KN	Ring joint gasket 5Cr-1/2Mo Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	12				P75T-0010W	Ring joint gasket 5Cr-1/2Mo Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	14				P75T-000KY	Ring joint gasket 5Cr-1/2Mo Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	16				P75T-000K9	Ring joint gasket 5Cr-1/2Mo Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	0.5				P75T-000KE	Ring joint gasket 5Cr-1/2Mo Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	0.75				P75T-000KF	Ring joint gasket 5Cr-1/2Mo Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	1				P75T-000KG	Ring joint gasket 5Cr-1/2Mo Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	1.5				P75T-000KH	Ring joint gasket 5Cr-1/2Mo Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	2				P75T-000KS	Ring joint gasket 5Cr-1/2Mo Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-6				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B16 / A194 Grade 4 ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	8-16				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B16 / A194 Grade 4 ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
789	1-3				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B16 / A194 Grade 4 ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
789	4-16				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B16 / A194 Grade 4 ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
797	0.5-2				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B16 / A194 Grade 4 ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P81G-000C9	Gate valve ASTM A182 Grade F9 Class 600 API 602 Flange ASME B16.5 RJ Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2	
1	1.5				P81G-000CA	Gate valve ASTM A182 Grade F9 Class 600 API 602 Flange ASME B16.5 RJ Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2	
1	2				P81H-000X9	Gate valve ASTM A217 Grade C12 Class 600 API 600 Flange ASME B16.5 RJ Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2	
1	3				P81H-000XA	Gate valve ASTM A217 Grade C12 Class 600 API 600 Flange ASME B16.5 RJ Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2	
1	4				P81H-000XB	Gate valve ASTM A217 Grade C12 Class 600 API 600 Flange ASME B16.5 RJ Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2	
1	6				P81H-000XC	Gate valve ASTM A217 Grade C12 Class 600 API 600 Flange ASME B16.5 RJ Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2	
1	8				P81H-000XH	Gate valve ASTM A217 Grade C12 Class 600 API 600 Flange ASME B16.5 RJ Trim number 5 BB-BG-OS&Y Gear operated Fluid-2	
1	10				P81H-000XD	Gate valve ASTM A217 Grade C12 Class 600 API 600 Flange ASME B16.5 RJ Trim number 5 BB-BG-OS&Y Gear operated Fluid-2	
1	12				P81H-000XE	Gate valve ASTM A217 Grade C12 Class 600 API 600 Flange ASME B16.5 RJ Trim number 5 BB-BG-OS&Y Gear operated Fluid-2	
1	14				P81H-000XF	Gate valve ASTM A217 Grade C12 Class 600 API 600 Flange ASME B16.5 RJ Trim number 5 BB-BG-OS&Y Gear operated Fluid-2	
1	16				P81H-000XG	Gate valve ASTM A217 Grade C12 Class 600 API 600 Flange ASME B16.5 RJ Trim number 5 BB-BG-OS&Y Gear operated Fluid-2	
4608	0.75				P81G-000DH	Gate valve ASTM A182 Grade F9 Class 600 API 602 BW both sides w/ nipples BE - NPT ASTM A335-P9 XXS-nipple Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2	
4608	1				P81G-000F6	Gate valve ASTM A182 Grade F9 Class 600 API 602 BW both sides w/ nipples BE - NPT ASTM A335-P9 XXS-nipple Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2	
4608	1.5				P81G-000F7	Gate valve ASTM A182 Grade F9 Class 600 API 602 BW both sides w/ nipples BE - NPT ASTM A335-P9 XXS-nipple Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2	
797	0.75				P81G-000F3	Gate valve ASTM A182 Grade F9 Class 1500 API 602 BW Sch160 Trim number 5 WB-BG-OS&Y Handwheel operated Fluid-2	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82G-0006V	Globe valve ASTM A182 Grade F9 Class 600 API 602 Flange ASME B16.5 RJ Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2	
1	0.75				P82G-0006W	Globe valve ASTM A182 Grade F9 Class 600 API 602 Flange ASME B16.5 RJ Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2	
1	1				P82G-0006X	Globe valve ASTM A182 Grade F9 Class 600 API 602 Flange ASME B16.5 RJ Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2	
1	1.5				P82G-0006Y	Globe valve ASTM A182 Grade F9 Class 600 API 602 Flange ASME B16.5 RJ Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2	
1	2				P82H-000C1	Globe valve ASTM A217 Grade C12 Class 600 BS 1873 Flange ASME B16.5 RJ Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2	
1	3				P82H-000C2	Globe valve ASTM A217 Grade C12 Class 600 BS 1873 Flange ASME B16.5 RJ Trim number 5 BB-BG-OS&Y Handwheel operated Fluid-2	

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GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	4				P82H-000EW	Globe valve ASTM A217 Grade C12 Class 600 BS 1873 Flange ASME B16.5 RJ Trim number 5 BB-BG-OS&Y Gear operated Fluid-2	
1	6				P82H-000EX	Globe valve ASTM A217 Grade C12 Class 600 BS 1873 Flange ASME B16.5 RJ Trim number 5 BB-BG-OS&Y Gear operated Fluid-2	
1	8				P82H-000C5	Globe valve ASTM A217 Grade C12 Class 600 BS 1873 Flange ASME B16.5 RJ Trim number 5 BB-BG-OS&Y Gear operated Fluid-2	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P83G-0005L	Check valve ASTM A182 Grade F9 Class 600 API 602 Flange ASME B16.5 RJ Trim number 5 Lift-type Bolted cover	
1	1.5				P83G-0005M	Check valve ASTM A182 Grade F9 Class 600 API 602 Flange ASME B16.5 RJ Trim number 5 Lift-type Bolted cover	
1	2				P83H-0008J	Check valve ASTM A217 Grade C12 Class 600 BS 1868 Flange ASME B16.5 RJ Trim number 5 Swing-type Bolted cover	
1	3				P83H-0008K	Check valve ASTM A217 Grade C12 Class 600 BS 1868 Flange ASME B16.5 RJ Trim number 5 Swing-type Bolted cover	
1	4				P83H-0008L	Check valve ASTM A217 Grade C12 Class 600 BS 1868 Flange ASME B16.5 RJ Trim number 5 Swing-type Bolted cover	
1	6				P83H-0008M	Check valve ASTM A217 Grade C12 Class 600 BS 1868 Flange ASME B16.5 RJ Trim number 5 Swing-type Bolted cover	
1	8				P83H-0008N	Check valve ASTM A217 Grade C12 Class 600 BS 1868 Flange ASME B16.5 RJ Trim number 5 Swing-type Bolted cover	
1	10				P83H-0008E	Check valve ASTM A217 Grade C12 Class 600 BS 1868 Flange ASME B16.5 RJ Trim number 5 Swing-type Bolted cover	

DP CHECK VALVE (XDP)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	12				P88H-0008M	Dual plate check valve ASTM A217 Grade C12 Class 600 API 594 Wafer-type ASME B16.5 RJ Trim number 5 Internal wetted parts 13Cr Spring Inconel Retainerless-type	
1	14				P88H-0008N	Dual plate check valve ASTM A217 Grade C12 Class 600 API 594 Wafer-type ASME B16.5 RJ Trim number 5 Internal wetted parts 13Cr Spring Inconel Retainerless-type	
1	16				P88H-0008P	Dual plate check valve ASTM A217 Grade C12 Class 600 API 594 Wafer-type ASME B16.5 RJ Trim number 5 Internal wetted parts 13Cr Spring Inconel Retainerless-type	

ORIFICE FLANGE (FO)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	12		SCH80		P66G-000BT	Orifice flange WN ASTM A182 Grade F9 Class 600 ASME B16.36 RJ NPS1/2 SW tap x 1	
200	12		SCH80		P66G-000BU	Orifice flange WN ASTM A182 Grade F9 Class 600 ASME B16.36 RJ NPS1/2 SW tap x 1 with Jack screw	
4406	12		SCH80		P66G-000BV	Orifice flange WN ASTM A182 Grade F9 Class 600 ASME B16.36 RJ NPS3/4 SW tap x 1	
4407	12		SCH80		P66G-000BW	Orifice flange WN ASTM A182 Grade F9 Class 600 ASME B16.36 RJ NPS3/4 SW tap x 1 with Jack screw	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71G-0003W	Spectacle blank ASTM A182 Grade F9 Class 600 Standard-drawing Flange ASME B16.5 RJ	
1	0.75				P71G-0003X	Spectacle blank ASTM A182 Grade F9 Class 600 Standard-drawing Flange ASME B16.5 RJ	
1	1				P71G-0003Y	Spectacle blank ASTM A182 Grade F9 Class 600 Standard-drawing Flange ASME B16.5 RJ	
1	1.5				P71G-0003Z	Spectacle blank ASTM A182 Grade F9 Class 600 Standard-drawing Flange ASME B16.5 RJ	
1	2				P71G-00040	Spectacle blank ASTM A182 Grade F9 Class 600 Standard-drawing Flange ASME B16.5 RJ	
1	3				P71G-00041	Spectacle blank ASTM A182 Grade F9 Class 600 Standard-drawing Flange ASME B16.5 RJ	
1	4				P71G-00042	Spectacle blank ASTM A182 Grade F9 Class 600 Standard-drawing Flange ASME B16.5 RJ	
1	6				P71G-00043	Spectacle blank ASTM A182 Grade F9 Class 600 Standard-drawing Flange ASME B16.5 RJ	

PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	8				P72G-00084	Paddle blank ASTM A182 Grade F9 Class 600 Standard-drawing Flange ASME B16.5 RJ	
1	10				P72G-00080	Paddle blank ASTM A182 Grade F9 Class 600 Standard-drawing Flange ASME B16.5 RJ	
1	12				P72G-00081	Paddle blank ASTM A182 Grade F9 Class 600 Standard-drawing Flange ASME B16.5 RJ	
1	14				P72G-00082	Paddle blank ASTM A182 Grade F9 Class 600 Standard-drawing Flange ASME B16.5 RJ	
1	16				P72G-00083	Paddle blank ASTM A182 Grade F9 Class 600 Standard-drawing Flange ASME B16.5 RJ	

PADDLE SPACER (PS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	8				P72G-0007Z	Paddle spacer ASTM A182 Grade F9 Class 600 Standard-drawing Flange ASME B16.5 RJ	
1	10				P72G-0007V	Paddle spacer ASTM A182 Grade F9 Class 600 Standard-drawing Flange ASME B16.5 RJ	
1	12				P72G-0007W	Paddle spacer ASTM A182 Grade F9 Class 600 Standard-drawing Flange ASME B16.5 RJ	
1	14				P72G-0007X	Paddle spacer ASTM A182 Grade F9 Class 600 Standard-drawing Flange ASME B16.5 RJ	

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PADDLE SPACER (PS)							
OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	16				P72G-0007Y	Paddle spacer ASTM A182 Grade F9 Class 600 Standard-drawing Flange ASME B16.5 RJ	

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BOLT TABLE (B_L28V02 , STUD ASME RJ, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	80	P80S-00GN6	R11	P75T-000XX
0.75	4	0.625	90	P80S-00GLH	R13	P75T-000XY
1	4	0.625	95	P80S-00GLG	R16	P75T-000XZ
1.5	4	0.750	110	P80S-00GLD	R20	P75T-000Y0
2	8	0.625	115	P80S-00GMZ	R23	P75T-000Y6
3	8	0.750	135	P80S-00GL8	R31	P75T-000Y9
4	8	0.875	150	P80S-00FV3	R37	P75T-000YA
6	12	1.000	175	P80S-00FR6	R45	P75T-000YB
8	12	1.125	200	P80S-00FH3	R49	P75T-000YC
10	16	1.250	255	P80S-00F9J	R53	P75T-000Y1
12	20	1.250	260	P80S-00F9H	R57	P75T-000Y2
14	20	1.375	275	P80S-00F4S	R61	P75T-000Y3
16	20	1.500	300	P80S-00EY7	R65	P75T-000Y4

BOLT TABLE (B_L28V02_789 , STUD ASME RJ, OPTION CODE 789)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	110		R12	
0.75	4	0.750	115		R14	
1	4	0.875	130	P80S-00FV7	R16	
1.5	4	1.000	140	P80S-00FRD	R20	
2	8	0.875	150	P80S-00FV3	R24	
3	8	0.875	150	P80S-00FV3	R31	P75T-000KP
4	8	1.125	175	P80S-00FH8	R37	P75T-000KC
6	12	1.125	200	P80S-00FH3	R45	P75T-000KD
8	12	1.375	260	P80S-00F4V	R49	P75T-000KR
10	16	1.375	275	P80S-00F4S	R53	P75T-000KN
12	20	1.375	295	P80S-00F2T	R57	P75T-0010W
14	20	1.500	325	P80S-00EY2	R62	P75T-000KY
16	20	1.625	340	P80S-00G0N	R66	P75T-000K9

BOLT TABLE (B_L28V02_797 , STUD ASME RJ, OPTION CODE 797)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	110	P80S-00GLD	R12	P75T-000KE
0.75	4	0.750	115	P80S-00GLC	R14	P75T-000KF
1	4	0.875	130	P80S-00FV7	R16	P75T-000KG
1.5	4	1.000	140	P80S-00FRD	R20	P75T-000KH
2	8	0.875	150	P80S-00FV3	R24	P75T-000KS
3	8	1.125	180		R35	
4	8	1.250	230		R39	
6	12	1.375	300		R46	
8	12	1.625	345		R50	
10	12	1.875	395		R54	
12	16	2.000	445		R58	
14	16	2.250	490		R63	
16	16	2.500	540		R67	

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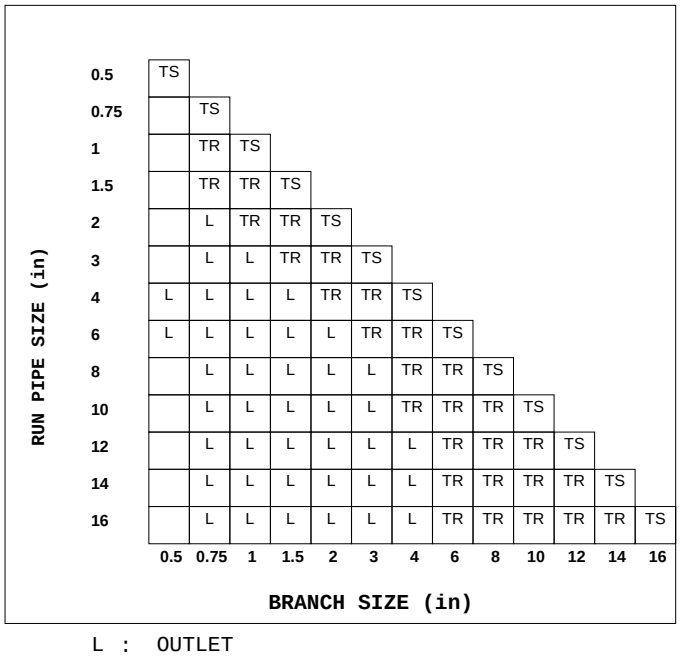
BRANCH TABLE (T_L28V02)



L : OUTLET
TR : REDUCING TEE
TS : STRAIGHT TEE

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Material : Killed CS
Rating : ASME CLASS 600
Flange Face : RJ
C.A.(mm) : 4.50
Gasket : Ring Octagonal
Service : PROCESS - HYDROGEN OR HYDROGEN RICH HYDROCARBON MIXTURE: (CONDENSATE)
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
2	USE OF SOFT SEATED BALL, PLUG AND BUTTERFLY VALVES SHALL BE LIMITED TO MAXIMUM OF 204DEGC (400DEGF)
16	PIPE CLASS SHALL BE USED WITHIN THE NORMAL OPERATING PRESSURE/TEMPERATURE LIMITS SPECIFIED IN API RP 941. PRESSURE / TEMPERATURE SPECIFIED IN THE PIPE CLASS EXCEEDING API RP 941 LIMITS SHOULD BE REGARDED AS UPSET CONDITIONS RATHER THAN FOR CONTINUOUS SERVICE

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
541	NPT(F) (CA,F,L)
789	CLASS 900 (B,F,G)
797	CLASS 1500 (B,F,G)
4601	Y-PATTERN (W)
4608	VALVE WITH NIPPLES (V)

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PIPING CLASS
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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P01A-00143	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	0.75		XXS		P01A-0014D	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1		XXS		P01A-0014U	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1.5		SCH160		P01A-0015J	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	2		SCH160		P01A-0019T	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	3		SCH160		P01A-001S5	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	4		SCH120		P01A-001TM	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P02A-00172	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	0.75		XXS		P02A-000XH	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1		XXS		P02A-000XJ	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1.5		SCH160		P02A-000V9	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	2		SCH160		P02A-000KW	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		SCH160		P02A-000U4	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		SCH120		P02A-000U5	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P03A-0012Y	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	0.75		XXS		P03A-000U9	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1		XXS		P03A-000U8	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1.5		SCH160		P03A-000RP	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	2		SCH160		P03A-000HU	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		SCH160		P03A-000RB	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		SCH120		P03A-000RC	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P21A-002M0	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	0.75		XXS		P21A-002DR	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1		XXS		P21A-002DP	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5		SCH160		P21A-002B9	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2		SCH160		P21A-00245	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		SCH160		P21A-002AG	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		SCH120		P21A-002AH	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75	XXS	XXS	P24A-004LR	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.75	SCH160	XXS	P24A-004LP	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	1	SCH160	XXS	P24A-004LJ	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	SCH160	XXS	P24A-0044B	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	SCH160	SCH160	P24A-003AX	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	SCH160	SCH160	P24A-004LF	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	SCH160	SCH160	P24A-0045H	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	SCH120	SCH160	P24A-0045G	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	SCH120	SCH160	P24A-0045E	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	XXS	XXS	P27A-004M7	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.5	XXS	XXS	P27A-004MF	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.75	XXS	XXS	P27A-002ZZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.5	SCH160	XXS	P27A-003ZN	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.75	SCH160	XXS	P27A-002ZY	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	1	SCH160	XXS	P27A-00302	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2	0.75	SCH160	XXS	P27A-0029F	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	SCH160	XXS	P27A-0029H	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	SCH160	SCH160	P27A-0025J	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	SCH160	SCH160	P27A-00301	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	SCH160	SCH160	P27A-002NC	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	1.5	SCH120	SCH160	P27A-00300	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	SCH120	SCH160	P27A-002ND	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	SCH120	SCH160	P27A-002NM	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	XXS	XXS	P28A-00BNX	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.5	XXS	XXS	P28A-00BNY	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.75	XXS	XXS	P28A-0030M	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.5	SCH160	XXS	P28A-003ZG	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.75	SCH160	XXS	P28A-0030L	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	1	SCH160	XXS	P28A-0030E	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	0.75	SCH160	XXS	P28A-00288	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	SCH160	XXS	P28A-00289	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	SCH160	SCH160	P28A-002SS	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	SCH160	SCH160	P28A-0030P	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	SCH160	SCH160	P28A-002NY	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	1.5	SCH120	SCH160	P28A-0030N	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	SCH120	SCH160	P28A-002NZ	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	SCH120	SCH160	P28A-002P2	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P29A-0013Z	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	0.75		XXS		P29A-000W5	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1		XXS		P29A-000W3	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5		SCH160		P29A-000TZ	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2		SCH160		P29A-000HR	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		SCH160		P29A-000KY	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		SCH120		P29A-000LY	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
541	0.75				P29B-0000Y	Cap ASTM A105 Class 6000 ASME B16.11 NPT	
541	1				P29B-0000Z	Cap ASTM A105 Class 6000 ASME B16.11 NPT	
541	1.5				P29B-00010	Cap ASTM A105 Class 6000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		7.95mm		P41A-001B5	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		7.95mm		P41A-001B6	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		XXS		P41A-000D8	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		XXS		P41A-000D9	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
541	1	0.75			P31B-005HL	Outlet ASTM A105 Class 6000 MSS SP-97 NPT	
541	1.5 - 2.5	0.75			P31B-0137F	Outlet ASTM A105 Class 6000 MSS SP-97 NPT	
541	3 - 10	0.75			P31B-007KP	Outlet ASTM A105 Class 6000 MSS SP-97 NPT	
1	2	0.75	SCH160	XXS	P31B-00CP2	Outlet ASTM A105 MSS SP-97 BW	
1	3	0.75	SCH160	XXS	P31B-00CMM	Outlet ASTM A105 MSS SP-97 BW	
1	4	0.75	SCH120	XXS	P31B-00CLL	Outlet ASTM A105 MSS SP-97 BW	
1	3	1	SCH160	XXS	P31B-00B4A	Outlet ASTM A105 MSS SP-97 BW	
1	4	1	SCH120	XXS	P31B-00B08	Outlet ASTM A105 MSS SP-97 BW	
1		1.5	SCH120	SCH160	P31B-00BP7	Outlet ASTM A105 MSS SP-97 BW	

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PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30B-0002D	Plug ASTM A105 ASME B16.11 NPT Round head	
1	0.75				P30B-0002E	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1				P30B-0002F	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1.5				P30B-0002G	Plug ASTM A105 ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P61B-009W4	Flange WN ASTM A105 Class 600 ASME B16.5 RJ	
1	0.75		XXS		P61B-003CR	Flange WN ASTM A105 Class 600 ASME B16.5 RJ	
1	1		XXS		P61B-003CL	Flange WN ASTM A105 Class 600 ASME B16.5 RJ	
1	1.5		SCH160		P61B-003CK	Flange WN ASTM A105 Class 600 ASME B16.5 RJ	
1	2		SCH160		P61B-002JV	Flange WN ASTM A105 Class 600 ASME B16.5 RJ	
1	3		SCH160		P61B-003CA	Flange WN ASTM A105 Class 600 ASME B16.5 RJ	
1	4		SCH120		P61B-003C9	Flange WN ASTM A105 Class 600 ASME B16.5 RJ	
541	0.5				P61B-00AS5	Flange NPT ASTM A105 Class 600 ASME B16.5 RJ	
541	0.75				P61B-00CXX	Flange NPT ASTM A105 Class 600 ASME B16.5 RJ	
789	3		SCH160		P61B-0067L	Flange WN ASTM A105 Class 900 ASME B16.5 RJ	
789	4		SCH120		P61B-0065X	Flange WN ASTM A105 Class 900 ASME B16.5 RJ	
797	0.5		XXS		P61B-00664	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
797	0.75		XXS		P61B-005V2	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
797	1		XXS		P61B-009W2	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
797	1.5		SCH160		P61B-0065W	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
797	2		SCH160		P61B-0066J	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67B-000XC	Blind flange ASTM A105 Class 600 ASME B16.5 RJ	
1	0.75				P67B-000XD	Blind flange ASTM A105 Class 600 ASME B16.5 RJ	
1	1				P67B-000XE	Blind flange ASTM A105 Class 600 ASME B16.5 RJ	
1	1.5				P67B-000XF	Blind flange ASTM A105 Class 600 ASME B16.5 RJ	
1	2				P67B-000XM	Blind flange ASTM A105 Class 600 ASME B16.5 RJ	
1	3				P67B-000XR	Blind flange ASTM A105 Class 600 ASME B16.5 RJ	
1	4				P67B-000XS	Blind flange ASTM A105 Class 600 ASME B16.5 RJ	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P75T-000NA	Ring joint gasket Soft iron Class 600 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	0.75				P75T-000NB	Ring joint gasket Soft iron Class 600 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	1				P75T-000NC	Ring joint gasket Soft iron Class 600 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	1.5				P75T-000ND	Ring joint gasket Soft iron Class 600 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	2				P75T-000NE	Ring joint gasket Soft iron Class 600 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	3				P75T-000NF	Ring joint gasket Soft iron Class 600 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	4				P75T-000NG	Ring joint gasket Soft iron Class 600 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	3				P75T-000JN	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
789	4				P75T-000JP	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	0.5				P75T-000JT	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	0.75				P75T-000JU	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	1				P75T-000JV	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	1.5				P75T-000JW	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	2				P75T-0008A	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-4				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
789	1-3				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
789	4				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
797	0.5-2				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	

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GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81B-001UL	Gate valve ASTM A105 Class 600 API 602 Flange ASME B16.5 RJ Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated C.A.=4.5mm	
1	0.75				P81B-001UM	Gate valve ASTM A105 Class 600 API 602 Flange ASME B16.5 RJ Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated C.A.=4.5mm	
1	1				P81B-001UN	Gate valve ASTM A105 Class 600 API 602 Flange ASME B16.5 RJ Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated C.A.=4.5mm	
1	1.5				P81B-001UP	Gate valve ASTM A105 Class 600 API 602 Flange ASME B16.5 RJ Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated C.A.=4.5mm	
1	2				P81C-00627	Gate valve ASTM A216 Grade WCB Class 600 API 600 Flange ASME B16.5 RJ Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated C.A.=4.5mm	
1	3				P81C-006T1	Gate valve ASTM A216 Grade WCB Class 600 API 600 Flange ASME B16.5 RJ Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated C.A.=4.5mm	
1	4				P81C-006T2	Gate valve ASTM A216 Grade WCB Class 600 API 600 Flange ASME B16.5 RJ Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated C.A.=4.5mm	
4608	0.75				P81B-002W2	Gate valve ASTM A105 Class 600 API 602 BW both sides w/ nipples BE - NPT ASTM A106-B XXS-nipple Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated C.A.=4.5mm	
4608	1.5				P81B-0038V	Gate valve ASTM A105 Class 600 API 602 BW both sides w/ nipples BE - NPT ASTM A106-B XXS-nipple Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated C.A.=4.5mm	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82B-001FD	Globe valve ASTM A105 Class 600 API 602 Flange ASME B16.5 RJ Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated C.A.=4.5mm	
1	0.75				P82B-001FE	Globe valve ASTM A105 Class 600 API 602 Flange ASME B16.5 RJ Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated C.A.=4.5mm	
1	1				P82B-001FF	Globe valve ASTM A105 Class 600 API 602 Flange ASME B16.5 RJ Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated C.A.=4.5mm	
1	1.5				P82B-001FG	Globe valve ASTM A105 Class 600 API 602 Flange ASME B16.5 RJ Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated C.A.=4.5mm	
1	2				P82C-002Z2	Globe valve ASTM A216 Grade WCB Class 600 BS 1873 Flange ASME B16.5 RJ Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated C.A.=4.5mm	
4601	0.75				P82B-001AL	Y-pattern globe valve ASTM A105 Class 600 ASME B16.34 Flange ASME B16.5 RJ Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated C.A.=4.5mm	
4601	1				P82B-001AM	Y-pattern globe valve ASTM A105 Class 600 ASME B16.34 Flange ASME B16.5 RJ Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated C.A.=4.5mm	
4601	1.5				P82B-001AN	Y-pattern globe valve ASTM A105 Class 600 ASME B16.34 Flange ASME B16.5 RJ Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated C.A.=4.5mm	
4601	2				P82C-002MA	Y-pattern globe valve ASTM A216 Grade WCB Class 600 ASME B16.34 Flange ASME B16.5 RJ Trim SS316L Body and disc seats Stellite-6 BB-BG-OS&Y Handwheel operated C.A.=4.5mm	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83B-00153	Check valve ASTM A105 Class 600 API 602 Flange ASME B16.5 RJ Trim SS316L Body and disc seats Stellite-6 Lift-type Bolted cover C.A.=4.5mm	
1	0.75				P83B-00154	Check valve ASTM A105 Class 600 API 602 Flange ASME B16.5 RJ Trim SS316L Body and disc seats Stellite-6 Lift-type Bolted cover C.A.=4.5mm	
1	1				P83B-00155	Check valve ASTM A105 Class 600 API 602 Flange ASME B16.5 RJ Trim SS316L Body and disc seats Stellite-6 Lift-type Bolted cover C.A.=4.5mm	
1	1.5				P83B-00156	Check valve ASTM A105 Class 600 API 602 Flange ASME B16.5 RJ Trim SS316L Body and disc seats Stellite-6 Lift-type Bolted cover C.A.=4.5mm	
1	2				P83C-002Y0	Check valve ASTM A216 Grade WCB Class 600 BS 1868 Flange ASME B16.5 RJ Trim SS316L Body and disc seats Stellite-6 Swing-type Bolted cover C.A.=4.5mm	
1	3				P83C-002Y1	Check valve ASTM A216 Grade WCB Class 600 BS 1868 Flange ASME B16.5 RJ Trim SS316L Body and disc seats Stellite-6 Swing-type Bolted cover C.A.=4.5mm	
1	4				P83C-002Y2	Check valve ASTM A216 Grade WCB Class 600 BS 1868 Flange ASME B16.5 RJ Trim SS316L Body and disc seats Stellite-6 Swing-type Bolted cover C.A.=4.5mm	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71B-000F4	Spectacle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RJ	
1	0.75				P71B-000F5	Spectacle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RJ	
1	1				P71B-000F6	Spectacle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RJ	
1	1.5				P71B-000F7	Spectacle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RJ	
1	2				P71B-000F8	Spectacle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RJ	
1	3				P71B-000F9	Spectacle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RJ	
1	4				P71B-000FA	Spectacle blank ASTM A105 Class 600 Standard-drawing Flange ASME B16.5 RJ	

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BOLT TABLE (B_L3AH02 , STUD ASME RJ, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	80	P80S-003V6	R11	P75T-000NA
0.75	4	0.625	90	P80S-003XF	R13	P75T-000NB
1	4	0.625	95	P80S-003XG	R16	P75T-000NC
1.5	4	0.750	110	P80S-003XK	R20	P75T-000ND
2	8	0.625	115	P80S-003VZ	R23	P75T-000NE
3	8	0.750	135	P80S-003XR	R31	P75T-000NF
4	8	0.875	150	P80S-0041F	R37	P75T-000NG

BOLT TABLE (B_L3AH02_789 , STUD ASME RJ, OPTION CODE 789)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	110		R12	
0.75	4	0.750	115		R14	
1	4	0.875	130	P80S-0041B	R16	
1.5	4	1.000	140		R20	
2	8	0.875	150	P80S-0041F	R24	
3	8	0.875	150	P80S-0041F	R31	P75T-000JN
4	8	1.125	175	P80S-0046S	R37	P75T-000JP

BOLT TABLE (B_L3AH02_797 , STUD ASME RJ, OPTION CODE 797)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	110	P80S-003XK	R12	P75T-000JT
0.75	4	0.750	115	P80S-003XL	R14	P75T-000JU
1	4	0.875	130	P80S-0041B	R16	P75T-000JV
1.5	4	1.000	140	P80S-0043F	R20	P75T-000JW
2	8	0.875	150	P80S-0041F	R24	P75T-0008A
3	8	1.125	180		R35	
4	8	1.250	230		R39	

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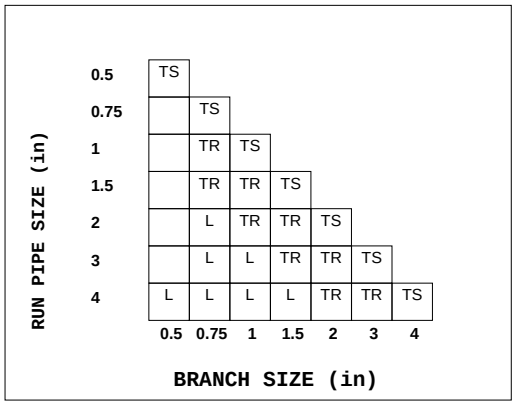
BRANCH TABLE (T_L3AH02)



L : OUTLET
TR : REDUCING TEE
TS : STRAIGHT TEE

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PIPING CLASS

M0JS **REV NO. 2**

Material : SS304L
Rating : ASME CLASS 900
Flange Face : RJ
C.A.(mm) : 0.00
Gasket : Ring Octagonal
Service : UTILITY: STEAM, CONDENSATE, BOILER FEED WATER TO ASME B31.3
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
541	NPT(F) (F)
797	CLASS 1500 (B,F,G)

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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P01J-000UC	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE	
1	0.75		SCH80S		P01J-000UD	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE	
1	1		SCH80S		P01J-000UE	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE	
1	1.5		SCH80S		P01J-000UF	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE	
1	2		SCH10S		P01J-000RD	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M BE	
1	3		SCH40S		P01J-000RK	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M BE	
1	4		SCH40S		P01J-000UG	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M BE	
1	6		SCH40S		P01J-000RH	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M BE	
1	8		SCH40S		P01J-000WC	Pipe ASTM A358 Grade 304/304L Class 1 dual grade EFW ASME B36.10M/B36.19M BE	
1	10		SCH40S		P01J-000W6	Pipe ASTM A358 Grade 304/304L Class 1 dual grade EFW ASME B36.10M/B36.19M BE	
1	12		SCH40S		P01J-000WJ	Pipe ASTM A358 Grade 304/304L Class 1 dual grade EFW ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P02J-000VD	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	0.75		SCH80S		P02J-000VE	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	1		SCH80S		P02J-000VF	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	1.5		SCH80S		P02J-000VG	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	2		SCH10S		P02J-000J0	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	3		SCH40S		P02J-000J9	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	4		SCH40S		P02J-000KZ	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	6		SCH40S		P02J-000J4	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	8		SCH40S		P02J-000J7	90 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius	
1	10		SCH40S		P02J-000J5	90 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius	
1	12		SCH40S		P02J-000J6	90 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P03J-000UW	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	0.75		SCH80S		P03J-000UX	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	1		SCH80S		P03J-000UY	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	1.5		SCH80S		P03J-000UZ	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	2		SCH10S		P03J-000HS	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	3		SCH40S		P03J-000J1	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	4		SCH40S		P03J-000KL	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	6		SCH40S		P03J-000HW	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	8		SCH40S		P03J-000HZ	45 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius	
1	10		SCH40S		P03J-000HX	45 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius	
1	12		SCH40S		P03J-000HY	45 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P21J-000V1	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	0.75		SCH80S		P21J-000V2	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	1		SCH80S		P21J-000V3	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	1.5		SCH80S		P21J-000V4	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	2		SCH10S		P21J-000HM	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	3		SCH40S		P21J-000HX	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	4		SCH40S		P21J-000KK	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	6		SCH40S		P21J-000HS	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	8		SCH40S		P21J-000HV	Straight tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	

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STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	10		SCH40S		P21J-000HT	Straight tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	12		SCH40S		P21J-000HU	Straight tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75	SCH80S	SCH80S	P24J-003NX	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	1.5	0.75	SCH80S	SCH80S	P24J-003NZ	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	1.5	1	SCH80S	SCH80S	P24J-003P0	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	2	1	SCH10S	SCH80S	P24J-0065A	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	2	1.5	SCH10S	SCH80S	P24J-0065B	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	3	1.5	SCH40S	SCH80S	P24J-002SG	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	3	2	SCH40S	SCH10S	P24J-005PS	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	4	2	SCH40S	SCH10S	P24J-005P3	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	4	3	SCH40S	SCH40S	P24J-002SJ	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	6	3	SCH40S	SCH40S	P24J-002SK	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	6	4	SCH40S	SCH40S	P24J-002SL	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	8	4	SCH40S	SCH40S	P24J-005P4	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	8	6	SCH40S	SCH40S	P24J-002HF	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	10	4	SCH40S	SCH40S	P24J-007JN	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	10	6	SCH40S	SCH40S	P24J-002HH	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	10	8	SCH40S	SCH40S	P24J-002HJ	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	12	6	SCH40S	SCH40S	P24J-007JM	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	12	8	SCH40S	SCH40S	P24J-002HL	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	12	10	SCH40S	SCH40S	P24J-002HK	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH80S	SCH80S	P27J-002R0	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	1	0.5	SCH80S	SCH80S	P27J-002R1	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	1	0.75	SCH80S	SCH80S	P27J-002R2	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	1.5	0.5	SCH80S	SCH80S	P27J-002R3	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	1.5	0.75	SCH80S	SCH80S	P27J-002R4	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	1.5	1	SCH80S	SCH80S	P27J-002R5	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	2	0.75	SCH10S	SCH80S	P27J-004KS	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	2	1	SCH10S	SCH80S	P27J-004J0	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	2	1.5	SCH10S	SCH80S	P27J-004J1	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	3	1.5	SCH40S	SCH80S	P27J-001X2	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	3	2	SCH40S	SCH10S	P27J-004MX	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	4	1.5	SCH40S	SCH80S	P27J-001X3	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	4	2	SCH40S	SCH10S	P27J-004JR	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	4	3	SCH40S	SCH40S	P27J-001X5	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	6	3	SCH40S	SCH40S	P27J-001X6	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	6	4	SCH40S	SCH40S	P27J-001X7	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	8	4	SCH40S	SCH40S	P27J-004JS	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	8	6	SCH40S	SCH40S	P27J-001R0	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	10	4	SCH40S	SCH40S	P27J-004JT	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	10	6	SCH40S	SCH40S	P27J-001R2	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	10	8	SCH40S	SCH40S	P27J-001R3	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	12	6	SCH40S	SCH40S	P27J-001R5	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	12	8	SCH40S	SCH40S	P27J-001R6	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	12	10	SCH40S	SCH40S	P27J-001R4	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH80S	SCH80S	P28J-002NL	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	1	0.5	SCH80S	SCH80S	P28J-002NM	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	1	0.75	SCH80S	SCH80S	P28J-002NN	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	1.5	0.5	SCH80S	SCH80S	P28J-002NP	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	1.5	0.75	SCH80S	SCH80S	P28J-002NR	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	

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ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5	1	SCH80S	SCH80S	P28J-002NS	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	2	0.75	SCH10S	SCH80S	P28J-004L9	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	2	1	SCH10S	SCH80S	P28J-004JH	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	2	1.5	SCH10S	SCH80S	P28J-004JJ	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	3	1.5	SCH40S	SCH80S	P28J-001WD	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	3	2	SCH40S	SCH10S	P28J-004NE	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	4	1.5	SCH40S	SCH80S	P28J-001WE	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	4	2	SCH40S	SCH10S	P28J-004K8	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	4	3	SCH40S	SCH40S	P28J-001WG	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	6	3	SCH40S	SCH40S	P28J-001WH	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	6	4	SCH40S	SCH40S	P28J-001WJ	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	8	4	SCH40S	SCH40S	P28J-004K9	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	8	6	SCH40S	SCH40S	P28J-001PG	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	10	4	SCH40S	SCH40S	P28J-004KA	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	10	6	SCH40S	SCH40S	P28J-001PJ	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	10	8	SCH40S	SCH40S	P28J-001PK	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	12	6	SCH40S	SCH40S	P28J-001PM	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	12	8	SCH40S	SCH40S	P28J-001PN	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	12	10	SCH40S	SCH40S	P28J-001PL	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P29J-000T0	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	0.75		SCH80S		P29J-000T1	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	1		SCH80S		P29J-000T2	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	1.5		SCH80S		P29J-000T3	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	2		SCH10S		P29J-000G1	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	3		SCH40S		P29J-000GA	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	4		SCH40S		P29J-000JB	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	6		SCH40S		P29J-000G5	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	8		SCH40S		P29J-000LU	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	10		SCH40S		P29J-000KM	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	12		SCH40S		P29J-000KN	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P41J-001FS	Straight nipple ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		SCH80S		P41J-001FT	Straight nipple ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		SCH80S		P41J-001FU	Straight nipple ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		SCH80S		P41J-001FV	Straight nipple ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2	0.75	SCH10S	SCH80S	P31K-00DM8	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	3	0.75	SCH40S	SCH80S	P31K-0066P	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	4	0.75	SCH40S	SCH80S	P31K-0067F	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	6	0.75	SCH40S	SCH80S	P31K-00684	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	8	0.75	SCH40S	SCH80S	P31K-0068S	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	10	0.75	SCH40S	SCH80S	P31K-00646	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	12	0.75	SCH40S	SCH80S	P31K-0064E	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	3	1	SCH40S	SCH80S	P31K-006CK	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	4	1	SCH40S	SCH80S	P31K-006DE	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	6	1	SCH40S	SCH80S	P31K-006E8	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	8	1	SCH40S	SCH80S	P31K-006F4	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	10	1	SCH40S	SCH80S	P31K-00695	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	12	1	SCH40S	SCH80S	P31K-0069L	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	4	1.5	SCH40S	SCH80S	P31K-006L7	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	

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OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	6	1.5	SCH40S	SCH80S	P31K-006M3	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	8	1.5	SCH40S	SCH80S	P31K-006N1	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	10	1.5	SCH40S	SCH80S	P31K-006FN	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	12	1.5	SCH40S	SCH80S	P31K-006G7	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	6	2	SCH40S	SCH10S	P31K-005AW	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	8	2	SCH40S	SCH10S	P31K-005AX	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	10	2	SCH40S	SCH10S	P31K-005AZ	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	12	2	SCH40S	SCH10S	P31K-005B1	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	8	3	SCH40S	SCH40S	P31K-007Y2	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	10	3	SCH40S	SCH40S	P31K-007KW	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	12	3	SCH40S	SCH40S	P31K-007LX	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	12	4	SCH40S	SCH40S	P31K-0081E	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30K-0001G	Plug ASTM A182 Grade F304/F304L dual grade ASME B16.11 NPT Round head	
1	0.75				P30K-0001H	Plug ASTM A182 Grade F304/F304L dual grade ASME B16.11 NPT Round head	
1	1				P30K-0001J	Plug ASTM A182 Grade F304/F304L dual grade ASME B16.11 NPT Round head	
1	1.5				P30K-0001K	Plug ASTM A182 Grade F304/F304L dual grade ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P61K-003C7	Flange WN ASTM A182 Grade F304/F304L dual grade Class 1500 ASME B16.5 RJ	
1	0.75		SCH80S		P61K-003C8	Flange WN ASTM A182 Grade F304/F304L dual grade Class 1500 ASME B16.5 RJ	
1	1		SCH80S		P61K-003C9	Flange WN ASTM A182 Grade F304/F304L dual grade Class 1500 ASME B16.5 RJ	
1	1.5		SCH80S		P61K-003CA	Flange WN ASTM A182 Grade F304/F304L dual grade Class 1500 ASME B16.5 RJ	
1	2		SCH10S		P61K-004TB	Flange WN ASTM A182 Grade F304/F304L dual grade Class 1500 ASME B16.5 RJ	
1	3		SCH40S		P61K-004WW	Flange WN ASTM A182 Grade F304/F304L dual grade Class 900 ASME B16.5 RJ	
1	4		SCH40S		P61K-004WX	Flange WN ASTM A182 Grade F304/F304L dual grade Class 900 ASME B16.5 RJ	
1	6		SCH40S		P61K-004WN	Flange WN ASTM A182 Grade F304/F304L dual grade Class 900 ASME B16.5 RJ	
1	8		SCH40S		P61K-004WP	Flange WN ASTM A182 Grade F304/F304L dual grade Class 900 ASME B16.5 RJ	
1	10		SCH40S		P61K-0060A	Flange WN ASTM A182 Grade F304/F304L dual grade Class 900 ASME B16.5 RJ	
1	12		SCH40S		P61K-005X0	Flange WN ASTM A182 Grade F304/F304L dual grade Class 900 ASME B16.5 RJ	
541	0.5				P61K-0069W	Flange NPT ASTM A182 Grade F304/F304L dual grade Class 1500 ASME B16.5 RJ	
541	0.75				P61K-0060H	Flange NPT ASTM A182 Grade F304/F304L dual grade Class 1500 ASME B16.5 RJ	
797	3		SCH40S		P61K-004U0	Flange WN ASTM A182 Grade F304/F304L dual grade Class 1500 ASME B16.5 RJ	
797	4		SCH40S		P61K-004U1	Flange WN ASTM A182 Grade F304/F304L dual grade Class 1500 ASME B16.5 RJ	
797	6		SCH40S		P61K-004U2	Flange WN ASTM A182 Grade F304/F304L dual grade Class 1500 ASME B16.5 RJ	
797	8		SCH40S		P61K-004WT	Flange WN ASTM A182 Grade F304/F304L dual grade Class 1500 ASME B16.5 RJ	
797	10		SCH40S		P61K-004TV	Flange WN ASTM A182 Grade F304/F304L dual grade Class 1500 ASME B16.5 RJ	
797	12		SCH40S		P61K-004TW	Flange WN ASTM A182 Grade F304/F304L dual grade Class 1500 ASME B16.5 RJ	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67K-0012U	Blind flange ASTM A182 Grade F304/F304L dual grade Class 1500 ASME B16.5 RJ	
1	0.75				P67K-0012V	Blind flange ASTM A182 Grade F304/F304L dual grade Class 1500 ASME B16.5 RJ	
1	1				P67K-0012W	Blind flange ASTM A182 Grade F304/F304L dual grade Class 1500 ASME B16.5 RJ	
1	1.5				P67K-0012X	Blind flange ASTM A182 Grade F304/F304L dual grade Class 1500 ASME B16.5 RJ	
1	2				P67K-0013A	Blind flange ASTM A182 Grade F304/F304L dual grade Class 1500 ASME B16.5 RJ	
1	3				P67K-001FH	Blind flange ASTM A182 Grade F304/F304L dual grade Class 900 ASME B16.5 RJ	
1	4				P67K-001FJ	Blind flange ASTM A182 Grade F304/F304L dual grade Class 900 ASME B16.5 RJ	
1	6				P67K-0013D	Blind flange ASTM A182 Grade F304/F304L dual grade Class 900 ASME B16.5 RJ	
1	8				P67K-0013E	Blind flange ASTM A182 Grade F304/F304L dual grade Class 900 ASME B16.5 RJ	
1	10				P67K-0013B	Blind flange ASTM A182 Grade F304/F304L dual grade Class 900 ASME B16.5 RJ	
1	12				P67K-0013C	Blind flange ASTM A182 Grade F304/F304L dual grade Class 900 ASME B16.5 RJ	

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GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P75T-000LS	Ring joint gasket SS TP304 Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	0.75				P75T-000LT	Ring joint gasket SS TP304 Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	1				P75T-000LU	Ring joint gasket SS TP304 Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	1.5				P75T-000LV	Ring joint gasket SS TP304 Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	2				P75T-000ML	Ring joint gasket SS TP304 Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	3				P75T-000P8	Ring joint gasket SS TP304 Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	4				P75T-000P9	Ring joint gasket SS TP304 Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	6				P75T-000MP	Ring joint gasket SS TP304 Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	8				P75T-000MR	Ring joint gasket SS TP304 Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	10				P75T-000MM	Ring joint gasket SS TP304 Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	12				P75T-000MN	Ring joint gasket SS TP304 Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	3				P75T-000NZ	Ring joint gasket SS TP304 Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	4				P75T-0010P	Ring joint gasket SS TP304 Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	6				P75T-000LW	Ring joint gasket SS TP304 Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	8				P75T-000MU	Ring joint gasket SS TP304 Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	10				P75T-000MS	Ring joint gasket SS TP304 Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	12				P75T-000MT	Ring joint gasket SS TP304 Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-3				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	4-12				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
797	3-12				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81K-0018X	Gate valve ASTM A182 Grade F304/F304L dual grade Class 1500 API 602 Flange ASME B16.5 RJ Trim number 12 WB-BG-OS&Y Handwheel operated	
1	0.75				P81K-0018Y	Gate valve ASTM A182 Grade F304/F304L dual grade Class 1500 API 602 Flange ASME B16.5 RJ Trim number 12 WB-BG-OS&Y Handwheel operated	
1	1				P81K-0018Z	Gate valve ASTM A182 Grade F304/F304L dual grade Class 1500 API 602 Flange ASME B16.5 RJ Trim number 12 WB-BG-OS&Y Handwheel operated	
1	1.5				P81K-00190	Gate valve ASTM A182 Grade F304/F304L dual grade Class 1500 API 602 Flange ASME B16.5 RJ Trim number 12 WB-BG-OS&Y Handwheel operated	
1	2				P81L-002VH	Gate valve ASTM A351 Grade CF3 Class 1500 API 600 BW Sch10S Trim number 12 PSB-BG-OS&Y Handwheel operated	
1	3				P81L-002TX	Gate valve ASTM A351 Grade CF3 Class 900 API 600 BW Sch40S Trim number 12 PSB-BG-OS&Y Handwheel operated	
1	4				P81L-002TY	Gate valve ASTM A351 Grade CF3 Class 900 API 600 BW Sch40S Trim number 12 PSB-BG-OS&Y Handwheel operated	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82K-000VE	Globe valve ASTM A182 Grade F304/F304L dual grade Class 1500 API 602 Flange ASME B16.5 RJ Trim number 12 WB-BG-OS&Y Handwheel operated	
1	0.75				P82K-000VF	Globe valve ASTM A182 Grade F304/F304L dual grade Class 1500 API 602 Flange ASME B16.5 RJ Trim number 12 WB-BG-OS&Y Handwheel operated	
1	1				P82K-000WZ	Globe valve ASTM A182 Grade F304/F304L dual grade Class 1500 API 602 Flange ASME B16.5 RJ Trim number 12 WB-BG-OS&Y Handwheel operated	
1	1.5				P82K-000X0	Globe valve ASTM A182 Grade F304/F304L dual grade Class 1500 API 602 Flange ASME B16.5 RJ Trim number 12 WB-BG-OS&Y Handwheel operated	
1	2				P82L-001K8	Globe valve ASTM A351 Grade CF3 Class 1500 BS 1873 BW Sch10S Trim number 12 PSB-BG-OS&Y Handwheel operated	
1	3				P82L-001K9	Globe valve ASTM A351 Grade CF3 Class 900 BS 1873 BW Sch40S Trim number 12 PSB-BG-OS&Y Handwheel operated	
1	4				P82L-001Y8	Globe valve ASTM A351 Grade CF3 Class 900 BS 1873 BW Sch40S Trim number 12 PSB-BG-OS&Y Gear operated	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83K-000TA	Check valve ASTM A182 Grade F304/F304L dual grade Class 1500 API 602 Flange ASME B16.5 RJ Trim number 12 Lift-type Welded cover	
1	0.75				P83K-000TB	Check valve ASTM A182 Grade F304/F304L dual grade Class 1500 API 602 Flange ASME B16.5 RJ Trim number 12 Lift-type Welded cover	
1	1				P83K-000TC	Check valve ASTM A182 Grade F304/F304L dual grade Class 1500 API 602 Flange ASME B16.5 RJ Trim number 12 Lift-type Welded cover	
1	1.5				P83K-000TD	Check valve ASTM A182 Grade F304/F304L dual grade Class 1500 API 602 Flange ASME B16.5 RJ Trim number 12 Lift-type Welded cover	
1	2				P83L-001F8	Check valve ASTM A351 Grade CF3 Class 1500 BS 1868 BW Sch10S Trim number 12 Swing-type Pressure seal cap	

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CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3				P83L-001F9	Check valve ASTM A351 Grade CF3 Class 900 BS 1868 BW Sch40S Trim number 12 Swing-type Pressure seal cap	
1	4				P83L-001FA	Check valve ASTM A351 Grade CF3 Class 900 BS 1868 BW Sch40S Trim number 12 Swing-type Pressure seal cap	

PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P72K-0006P	Paddle blank ASTM A182 Grade F304/F304L dual grade Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	0.75				P72K-0006R	Paddle blank ASTM A182 Grade F304/F304L dual grade Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	1				P72K-0006U	Paddle blank ASTM A182 Grade F304/F304L dual grade Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	1.5				P72K-0006V	Paddle blank ASTM A182 Grade F304/F304L dual grade Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	2				P72K-0006W	Paddle blank ASTM A182 Grade F304/F304L dual grade Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	3				P72K-00071	Paddle blank ASTM A182 Grade F304/F304L dual grade Class 900 Standard-drawing Flange ASME B16.5 RJ	
1	4				P72K-00072	Paddle blank ASTM A182 Grade F304/F304L dual grade Class 900 Standard-drawing Flange ASME B16.5 RJ	
1	6				P72K-00073	Paddle blank ASTM A182 Grade F304/F304L dual grade Class 900 Standard-drawing Flange ASME B16.5 RJ	
1	8				P72K-00074	Paddle blank ASTM A182 Grade F304/F304L dual grade Class 900 Standard-drawing Flange ASME B16.5 RJ	
1	10				P72K-0006X	Paddle blank ASTM A182 Grade F304/F304L dual grade Class 900 Standard-drawing Flange ASME B16.5 RJ	
1	12				P72K-0006Y	Paddle blank ASTM A182 Grade F304/F304L dual grade Class 900 Standard-drawing Flange ASME B16.5 RJ	

PADDLE SPACER (PS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P72K-0006S	Paddle spacer ASTM A182 Grade F304/F304L dual grade Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	0.75				P72K-0006T	Paddle spacer ASTM A182 Grade F304/F304L dual grade Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	1				P72K-0007D	Paddle spacer ASTM A182 Grade F304/F304L dual grade Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	1.5				P72K-0007E	Paddle spacer ASTM A182 Grade F304/F304L dual grade Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	2				P72K-0007F	Paddle spacer ASTM A182 Grade F304/F304L dual grade Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	3				P72K-00079	Paddle spacer ASTM A182 Grade F304/F304L dual grade Class 900 Standard-drawing Flange ASME B16.5 RJ	
1	4				P72K-0007A	Paddle spacer ASTM A182 Grade F304/F304L dual grade Class 900 Standard-drawing Flange ASME B16.5 RJ	
1	6				P72K-0007B	Paddle spacer ASTM A182 Grade F304/F304L dual grade Class 900 Standard-drawing Flange ASME B16.5 RJ	
1	8				P72K-0007C	Paddle spacer ASTM A182 Grade F304/F304L dual grade Class 900 Standard-drawing Flange ASME B16.5 RJ	
1	10				P72K-00075	Paddle spacer ASTM A182 Grade F304/F304L dual grade Class 900 Standard-drawing Flange ASME B16.5 RJ	
1	12				P72K-00076	Paddle spacer ASTM A182 Grade F304/F304L dual grade Class 900 Standard-drawing Flange ASME B16.5 RJ	

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BOLT TABLE (B_M0JS , STUD ASME RJ, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	110	P80S-003XK	R12	P75T-000LS
0.75	4	0.750	115	P80S-003XL	R14	P75T-000LT
1	4	0.875	130	P80S-0041B	R16	P75T-000LU
1.5	4	1.000	140	P80S-0043F	R20	P75T-000LV
2	8	0.875	150	P80S-0041F	R24	P75T-000ML
3	8	0.875	150	P80S-0041F	R31	P75T-000P8
4	8	1.125	175	P80S-0046S	R37	P75T-000P9
6	12	1.125	200	P80S-0046X	R45	P75T-000MP
8	12	1.375	260	P80S-003E5	R49	P75T-000MR
10	16	1.375	275	P80S-003E8	R53	P75T-000MM
12	20	1.375	295	P80S-003EC	R57	P75T-000MN

BOLT TABLE (B_M0JS_797 , STUD ASME RJ, OPTION CODE 797)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	110		R12	
0.75	4	0.750	115		R14	
1	4	0.875	130		R16	
1.5	4	1.000	140		R20	
2	8	0.875	150		R24	
3	8	1.125	180	P80S-0046T	R35	P75T-000NZ
4	8	1.250	230	P80S-004AU	R39	P75T-0010P
6	12	1.375	300	P80S-003ED	R46	P75T-000LW
8	12	1.625	345	P80S-005TY	R50	P75T-000MU
10	12	1.875	395	P80S-008P7	R54	P75T-000MS
12	16	2.000	445	P80S-005VN	R58	P75T-000MT

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BRANCH TABLE (T_M0JS)

RUN PIPE SIZE (in) \ BRANCH SIZE (in)	0.5	0.75	1	1.5	2	3	4	6	8	10	12
0.5	TS										
0.75		TS									
1		TR	TS								
1.5		TR	TR	TS							
2		L	TR	TR	TS						
3		L	L	TR	TR	TS					
4	L	L	L	L	TR	TR	TS				
6	L	L	L	L	L	TR	TR	TS			
8		L	L	L	L	L	TR	TR	TS		
10		L	L	L	L	L	TR	TR	TR	TS	
12		L	L	L	L	L	L	TR	TR	TR	TS

TR : REDUCING TEE
TS : STRAIGHT TEE
L : OUTLET

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Material : SS316L
Rating : ASME CLASS 900
Flange Face : RJ
C.A.(mm) : 0.00
Gasket : Ring Octagonal
Service : PROCESS - WET SEVERE SOUR SERVICE SUBJECT TO NACE + HIC STD, HP SCRUBBER BOTTOM
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
5	BOLTING CONFIRMING TO B7M / 2HM SHALL BE USED UNDER CONDITIONS (A) DIRECT EXPOSURE TO SOUR ENVIRONMENTS (B) WHEN THE BOLTING WILL BE BURIED OR INSULATED

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
541	NPT(F) (F)

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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P01J-002ES	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE Severe wet H2S service	
1	0.75		SCH80S		P01J-002ET	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE Severe wet H2S service	
1	1		SCH80S		P01J-002EU	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE Severe wet H2S service	
1	1.5		SCH80S		P01J-002EV	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE Severe wet H2S service	
1	2		SCH40S		P01J-002Y8	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M BE Severe wet H2S service	
1	3		SCH40S		P01J-002Y9	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M BE Severe wet H2S service	
1	4		SCH40S		P01J-002YA	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M BE Severe wet H2S service	
1	6		SCH80S		P01J-002YB	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M BE Severe wet H2S service	
1	8		SCH80S		P01J-002YC	Pipe ASTM A358 Grade 316/316L Class 1 dual grade EFW ASME B36.10M/B36.19M BE Severe wet H2S service	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P02J-001Y0	90 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	0.75		SCH80S		P02J-001Y1	90 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	1		SCH80S		P02J-001Y2	90 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	1.5		SCH80S		P02J-001Y3	90 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	2		SCH40S		P02J-002AB	90 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	3		SCH40S		P02J-002AC	90 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	4		SCH40S		P02J-002AD	90 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	6		SCH80S		P02J-002AE	90 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	8		SCH80S		P02J-002AF	90 degree elbow ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Long radius Severe wet H2S service	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P03J-001VR	45 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	0.75		SCH80S		P03J-001VS	45 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	1		SCH80S		P03J-001VT	45 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	1.5		SCH80S		P03J-001VU	45 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	2		SCH40S		P03J-002A2	45 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	3		SCH40S		P03J-002A3	45 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	4		SCH40S		P03J-002A4	45 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	6		SCH80S		P03J-002A5	45 degree elbow ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	8		SCH80S		P03J-002A6	45 degree elbow ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Long radius Severe wet H2S service	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P21J-001M5	Straight tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	0.75		SCH80S		P21J-001M6	Straight tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1		SCH80S		P21J-001M7	Straight tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5		SCH80S		P21J-001M8	Straight tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	2		SCH40S		P21J-001ZX	Straight tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	3		SCH40S		P21J-001ZY	Straight tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	4		SCH40S		P21J-001ZZ	Straight tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	6		SCH80S		P21J-00200	Straight tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	8		SCH80S		P21J-00201	Straight tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	

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REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75	SCH80S	SCH80S	P24J-0070F	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5	0.75	SCH80S	SCH80S	P24J-0070J	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5	1	SCH80S	SCH80S	P24J-0070K	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	2	1	SCH40S	SCH80S	P24J-008GX	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	2	1.5	SCH40S	SCH80S	P24J-008GY	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	3	1.5	SCH40S	SCH80S	P24J-008GZ	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	3	2	SCH40S	SCH40S	P24J-008H0	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	4	2	SCH40S	SCH40S	P24J-008H1	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	4	3	SCH40S	SCH40S	P24J-008H2	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	6	3	SCH80S	SCH40S	P24J-008H3	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	6	4	SCH80S	SCH40S	P24J-008H4	Reducing tee ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	8	4	SCH80S	SCH40S	P24J-008H5	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	8	6	SCH80S	SCH80S	P24J-008H6	Reducing tee ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH80S	SCH80S	P27J-005XP	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1	0.5	SCH80S	SCH80S	P27J-005V5	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1	0.75	SCH80S	SCH80S	P27J-005V6	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5	0.5	SCH80S	SCH80S	P27J-005V7	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5	0.75	SCH80S	SCH80S	P27J-005V8	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5	1	SCH80S	SCH80S	P27J-005V9	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	2	0.75	SCH40S	SCH80S	P27J-0074X	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	2	1	SCH40S	SCH80S	P27J-0074Y	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	2	1.5	SCH40S	SCH80S	P27J-0074Z	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	3	1.5	SCH40S	SCH80S	P27J-00750	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	3	2	SCH40S	SCH40S	P27J-00751	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	4	1.5	SCH40S	SCH80S	P27J-00752	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	4	2	SCH40S	SCH40S	P27J-00753	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	4	3	SCH40S	SCH40S	P27J-00754	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	6	3	SCH80S	SCH40S	P27J-00755	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	6	4	SCH80S	SCH40S	P27J-00756	Concentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	8	4	SCH80S	SCH40S	P27J-00757	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	8	6	SCH80S	SCH80S	P27J-00758	Concentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH80S	SCH80S	P28J-005YL	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1	0.5	SCH80S	SCH80S	P28J-005W1	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1	0.75	SCH80S	SCH80S	P28J-005W2	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5	0.5	SCH80S	SCH80S	P28J-005W3	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5	0.75	SCH80S	SCH80S	P28J-005W4	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5	1	SCH80S	SCH80S	P28J-005W5	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	2	0.75	SCH40S	SCH80S	P28J-0076D	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	2	1	SCH40S	SCH80S	P28J-0076E	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2	1.5	SCH40S	SCH80S	P28J-0076F	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	3	1.5	SCH40S	SCH80S	P28J-0076G	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	3	2	SCH40S	SCH40S	P28J-0076H	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	4	1.5	SCH40S	SCH80S	P28J-0076J	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	4	2	SCH40S	SCH40S	P28J-0076K	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	4	3	SCH40S	SCH40S	P28J-0076L	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	6	3	SCH80S	SCH40S	P28J-0076M	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	6	4	SCH80S	SCH40S	P28J-0076N	Eccentric reducer ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	8	4	SCH80S	SCH40S	P28J-0076P	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	8	6	SCH80S	SCH80S	P28J-0076R	Eccentric reducer ASTM A403 Grade WP316/WP316L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P29J-002M5	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	0.75		SCH80S		P29J-002M6	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1		SCH80S		P29J-002M7	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5		SCH80S		P29J-002M8	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	2		SCH40S		P29J-002ZF	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	3		SCH40S		P29J-0036H	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	4		SCH40S		P29J-003D6	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	6		SCH80S		P29J-003MP	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	8		SCH80S		P29J-003U6	Cap ASTM A403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P41J-001WR	Straight nipple ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Severe wet H2S service	
1	0.75		SCH160		P41J-001WS	Straight nipple ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Severe wet H2S service	
1	1		SCH160		P41J-001WT	Straight nipple ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Severe wet H2S service	
1	1.5		SCH160		P41J-001WU	Straight nipple ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Severe wet H2S service	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2	0.75	SCH40S	SCH80S	P31K-00GEX	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	3	0.75	SCH40S	SCH80S	P31K-00GEY	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	4	0.75	SCH40S	SCH80S	P31K-00GF0	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	6	0.75	SCH80S	SCH80S	P31K-00GF3	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	8	0.75	SCH80S	SCH80S	P31K-00GF7	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	3	1	SCH40S	SCH80S	P31K-00GEZ	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	4	1	SCH40S	SCH80S	P31K-00GF1	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	6	1	SCH80S	SCH80S	P31K-00GF4	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	8	1	SCH80S	SCH80S	P31K-00GF8	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	4	1.5	SCH40S	SCH80S	P31K-00GF2	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	6	1.5	SCH80S	SCH80S	P31K-00GF5	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	8	1.5	SCH80S	SCH80S	P31K-00GF9	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	6	2	SCH80S	SCH40S	P31K-00GF6	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	8	2	SCH80S	SCH40S	P31K-00GFA	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	
1	8	3	SCH80S	SCH40S	P31K-00GFB	Outlet ASTM A182 Grade F316/F316L dual grade MSS SP-97 BW Severe wet H2S service	

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PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30K-0005H	Plug ASTM A182 Grade F316/F316L dual grade ASME B16.11 NPT Round head Severe wet H2S service	
1	0.75				P30K-0005J	Plug ASTM A182 Grade F316/F316L dual grade ASME B16.11 NPT Round head Severe wet H2S service	
1	1				P30K-0005K	Plug ASTM A182 Grade F316/F316L dual grade ASME B16.11 NPT Round head Severe wet H2S service	
1	1.5				P30K-0005L	Plug ASTM A182 Grade F316/F316L dual grade ASME B16.11 NPT Round head Severe wet H2S service	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P61K-006CZ	Flange WN ASTM A182 Grade F316/F316L dual grade Class 1500 ASME B16.5 RJ Severe wet H2S service	
1	0.75		SCH80S		P61K-006D0	Flange WN ASTM A182 Grade F316/F316L dual grade Class 1500 ASME B16.5 RJ Severe wet H2S service	
1	1		SCH80S		P61K-006D1	Flange WN ASTM A182 Grade F316/F316L dual grade Class 1500 ASME B16.5 RJ Severe wet H2S service	
1	1.5		SCH80S		P61K-006D2	Flange WN ASTM A182 Grade F316/F316L dual grade Class 1500 ASME B16.5 RJ Severe wet H2S service	
1	2		SCH40S		P61K-006D3	Flange WN ASTM A182 Grade F316/F316L dual grade Class 1500 ASME B16.5 RJ Severe wet H2S service	
1	3		SCH40S		P61K-006D4	Flange WN ASTM A182 Grade F316/F316L dual grade Class 900 ASME B16.5 RJ Severe wet H2S service	
1	4		SCH40S		P61K-006D5	Flange WN ASTM A182 Grade F316/F316L dual grade Class 900 ASME B16.5 RJ Severe wet H2S service	
1	6		SCH80S		P61K-006D6	Flange WN ASTM A182 Grade F316/F316L dual grade Class 900 ASME B16.5 RJ Severe wet H2S service	
1	8		SCH80S		P61K-006D7	Flange WN ASTM A182 Grade F316/F316L dual grade Class 900 ASME B16.5 RJ Severe wet H2S service	
541	0.5				P61K-006D8	Flange NPT ASTM A182 Grade F316/F316L dual grade Class 1500 ASME B16.5 RJ Severe wet H2S service	
541	0.75				P61K-006D9	Flange NPT ASTM A182 Grade F316/F316L dual grade Class 1500 ASME B16.5 RJ Severe wet H2S service	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67K-001ZE	Blind flange ASTM A182 Grade F316/F316L dual grade Class 1500 ASME B16.5 RJ Severe wet H2S service	
1	0.75				P67K-001ZF	Blind flange ASTM A182 Grade F316/F316L dual grade Class 1500 ASME B16.5 RJ Severe wet H2S service	
1	1				P67K-001ZG	Blind flange ASTM A182 Grade F316/F316L dual grade Class 1500 ASME B16.5 RJ Severe wet H2S service	
1	1.5				P67K-001ZH	Blind flange ASTM A182 Grade F316/F316L dual grade Class 1500 ASME B16.5 RJ Severe wet H2S service	
1	2				P67K-001ZJ	Blind flange ASTM A182 Grade F316/F316L dual grade Class 1500 ASME B16.5 RJ Severe wet H2S service	
1	3				P67K-001ZK	Blind flange ASTM A182 Grade F316/F316L dual grade Class 900 ASME B16.5 RJ Severe wet H2S service	
1	4				P67K-001ZL	Blind flange ASTM A182 Grade F316/F316L dual grade Class 900 ASME B16.5 RJ Severe wet H2S service	
1	6				P67K-001ZM	Blind flange ASTM A182 Grade F316/F316L dual grade Class 900 ASME B16.5 RJ Severe wet H2S service	
1	8				P67K-001ZN	Blind flange ASTM A182 Grade F316/F316L dual grade Class 900 ASME B16.5 RJ Severe wet H2S service	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P75T-000NM	Ring joint gasket SS TP316 Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	0.75				P75T-000NN	Ring joint gasket SS TP316 Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	1				P75T-000NP	Ring joint gasket SS TP316 Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	1.5				P75T-000NR	Ring joint gasket SS TP316 Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	2				P75T-000NS	Ring joint gasket SS TP316 Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	3				P75T-00111	Ring joint gasket SS TP316 Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	4				P75T-00112	Ring joint gasket SS TP316 Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	6				P75T-00113	Ring joint gasket SS TP316 Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	8				P75T-00114	Ring joint gasket SS TP316 Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-3				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	4-8				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81K-001MR	Gate valve ASTM A182 Grade F316/F316L dual grade Class 1500 API 602 Flange ASME B16.5 RJ Trim number 12 WB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	0.75				P81K-001MS	Gate valve ASTM A182 Grade F316/F316L dual grade Class 1500 API 602 Flange ASME B16.5 RJ Trim number 12 WB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	1				P81K-001MT	Gate valve ASTM A182 Grade F316/F316L dual grade Class 1500 API 602 Flange ASME B16.5 RJ Trim number 12 WB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	1.5				P81K-001MU	Gate valve ASTM A182 Grade F316/F316L dual grade Class 1500 API 602 Flange ASME B16.5 RJ Trim number 12 WB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	2				P81L-00375	Gate valve ASTM A351 Grade CF3M Class 1500 API 600 BW Sch40S Trim number 12 PSB-BG-OS&Y Handwheel operated Severe wet H2S service	

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GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3				P81L-00376	Gate valve ASTM A351 Grade CF3M Class 900 API 600 BW Sch40S Trim number 12 PSB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	4				P81L-00377	Gate valve ASTM A351 Grade CF3M Class 900 API 600 BW Sch40S Trim number 12 PSB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	6				P81L-00378	Gate valve ASTM A351 Grade CF3M Class 900 API 600 BW Sch80S Trim number 12 PSB-BG-OS&Y Gear operated Severe wet H2S service	
1	8				P81L-00379	Gate valve ASTM A351 Grade CF3M Class 900 API 600 BW Sch80S Trim number 12 PSB-BG-OS&Y Gear operated Severe wet H2S service	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82K-0014E	Globe valve ASTM A182 Grade F316/F316L dual grade Class 1500 API 602 Flange ASME B16.5 RJ Trim number 12 WB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	0.75				P82K-0014F	Globe valve ASTM A182 Grade F316/F316L dual grade Class 1500 API 602 Flange ASME B16.5 RJ Trim number 12 WB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	1				P82K-0014G	Globe valve ASTM A182 Grade F316/F316L dual grade Class 1500 API 602 Flange ASME B16.5 RJ Trim number 12 WB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	1.5				P82K-0014H	Globe valve ASTM A182 Grade F316/F316L dual grade Class 1500 API 602 Flange ASME B16.5 RJ Trim number 12 WB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	2				P82L-001T5	Globe valve ASTM A351 Grade CF3M Class 1500 BS 1873 BW Sch40S Trim number 12 PSB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	3				P82L-001T6	Globe valve ASTM A351 Grade CF3M Class 900 BS 1873 BW Sch40S Trim number 12 PSB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	4				P82L-001Y9	Globe valve ASTM A351 Grade CF3M Class 900 BS 1873 BW Sch40S Trim number 12 PSB-BG-OS&Y Gear operated Severe wet H2S service	
1	6				P82L-001T8	Globe valve ASTM A351 Grade CF3M Class 900 BS 1873 BW Sch80S Trim number 12 PSB-BG-OS&Y Gear operated Severe wet H2S service	
1	8				P82L-001T9	Globe valve ASTM A351 Grade CF3M Class 900 BS 1873 BW Sch80S Trim number 12 PSB-BG-OS&Y Gear operated Severe wet H2S service	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83K-000YN	Check valve ASTM A182 Grade F316/F316L dual grade Class 1500 API 602 Flange ASME B16.5 RJ Trim number 12 Lift-type Welded cover Severe wet H2S service	
1	0.75				P83K-000YP	Check valve ASTM A182 Grade F316/F316L dual grade Class 1500 API 602 Flange ASME B16.5 RJ Trim number 12 Lift-type Welded cover Severe wet H2S service	
1	1				P83K-000YR	Check valve ASTM A182 Grade F316/F316L dual grade Class 1500 API 602 Flange ASME B16.5 RJ Trim number 12 Lift-type Welded cover Severe wet H2S service	
1	1.5				P83K-000YS	Check valve ASTM A182 Grade F316/F316L dual grade Class 1500 API 602 Flange ASME B16.5 RJ Trim number 12 Lift-type Welded cover Severe wet H2S service	
1	2				P83L-001PE	Check valve ASTM A351 Grade CF3M Class 1500 BS 1868 BW Sch40S Trim number 12 Swing-type Pressure seal cap Severe wet H2S service	
1	3				P83L-001PF	Check valve ASTM A351 Grade CF3M Class 900 BS 1868 BW Sch40S Trim number 12 Swing-type Pressure seal cap Severe wet H2S service	
1	4				P83L-001PG	Check valve ASTM A351 Grade CF3M Class 900 BS 1868 BW Sch40S Trim number 12 Swing-type Pressure seal cap Severe wet H2S service	

PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P72K-000KZ	Paddle blank ASTM A182 Grade F316/F316L dual grade Class 1500 Standard-drawing Flange ASME B16.5 RJ Severe wet H2S service	
1	0.75				P72K-000L0	Paddle blank ASTM A182 Grade F316/F316L dual grade Class 1500 Standard-drawing Flange ASME B16.5 RJ Severe wet H2S service	
1	1				P72K-000L1	Paddle blank ASTM A182 Grade F316/F316L dual grade Class 1500 Standard-drawing Flange ASME B16.5 RJ Severe wet H2S service	
1	1.5				P72K-000L2	Paddle blank ASTM A182 Grade F316/F316L dual grade Class 1500 Standard-drawing Flange ASME B16.5 RJ Severe wet H2S service	
1	2				P72K-000L3	Paddle blank ASTM A182 Grade F316/F316L dual grade Class 1500 Standard-drawing Flange ASME B16.5 RJ Severe wet H2S service	
1	3				P72K-000L4	Paddle blank ASTM A182 Grade F316/F316L dual grade Class 900 Standard-drawing Flange ASME B16.5 RJ Severe wet H2S service	
1	4				P72K-000L5	Paddle blank ASTM A182 Grade F316/F316L dual grade Class 900 Standard-drawing Flange ASME B16.5 RJ Severe wet H2S service	
1	6				P72K-000L6	Paddle blank ASTM A182 Grade F316/F316L dual grade Class 900 Standard-drawing Flange ASME B16.5 RJ Severe wet H2S service	
1	8				P72K-000L7	Paddle blank ASTM A182 Grade F316/F316L dual grade Class 900 Standard-drawing Flange ASME B16.5 RJ Severe wet H2S service	

PADDLE SPACER (PS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P72K-000L8	Paddle spacer ASTM A182 Grade F316/F316L dual grade Class 1500 Standard-drawing Flange ASME B16.5 RJ Severe wet H2S service	
1	0.75				P72K-000L9	Paddle spacer ASTM A182 Grade F316/F316L dual grade Class 1500 Standard-drawing Flange ASME B16.5 RJ Severe wet H2S service	
1	1				P72K-000LA	Paddle spacer ASTM A182 Grade F316/F316L dual grade Class 1500 Standard-drawing Flange ASME B16.5 RJ Severe wet H2S service	
1	1.5				P72K-000LB	Paddle spacer ASTM A182 Grade F316/F316L dual grade Class 1500 Standard-drawing Flange ASME B16.5 RJ Severe wet H2S service	
1	2				P72K-000LC	Paddle spacer ASTM A182 Grade F316/F316L dual grade Class 1500 Standard-drawing Flange ASME B16.5 RJ Severe wet H2S service	

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PIPING CLASS
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PADDLE SPACER (PS)							
OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3				P72K-000LD	Paddle spacer ASTM A182 Grade F316/F316L dual grade Class 900 Standard-drawing Flange ASME B16.5 RJ Severe wet H2S service	
1	4				P72K-000LE	Paddle spacer ASTM A182 Grade F316/F316L dual grade Class 900 Standard-drawing Flange ASME B16.5 RJ Severe wet H2S service	
1	6				P72K-000LF	Paddle spacer ASTM A182 Grade F316/F316L dual grade Class 900 Standard-drawing Flange ASME B16.5 RJ Severe wet H2S service	
1	8				P72K-000LG	Paddle spacer ASTM A182 Grade F316/F316L dual grade Class 900 Standard-drawing Flange ASME B16.5 RJ Severe wet H2S service	

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PIPING CLASS
M0LR01 REV NO. 2

BOLT TABLE (B_M0LR01 , STUD ASME RJ, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	110	P80S-0090F	R12	P75T-000NM
0.75	4	0.750	115	P80S-0090G	R14	P75T-000NN
1	4	0.875	130	P80S-005ZB	R16	P75T-000NP
1.5	4	1.000	140	P80S-0061A	R20	P75T-000NR
2	8	0.875	150	P80S-005ZF	R24	P75T-000NS
3	8	0.875	150	P80S-005ZF	R31	P75T-00111
4	8	1.125	175	P80S-0064S	R37	P75T-00112
6	12	1.125	200	P80S-0064X	R45	P75T-00113
8	12	1.375	260	P80S-006HT	R49	P75T-00114

BOLT TABLE (B_M0LR01_797 , STUD ASME RJ, OPTION CODE 797)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	110		R12	
0.75	4	0.750	115		R14	
1	4	0.875	130		R16	
1.5	4	1.000	140		R20	
2	8	0.875	150		R24	
3	8	1.125	180		R35	
4	8	1.250	230		R39	
6	12	1.375	300		R46	
8	12	1.625	345		R50	

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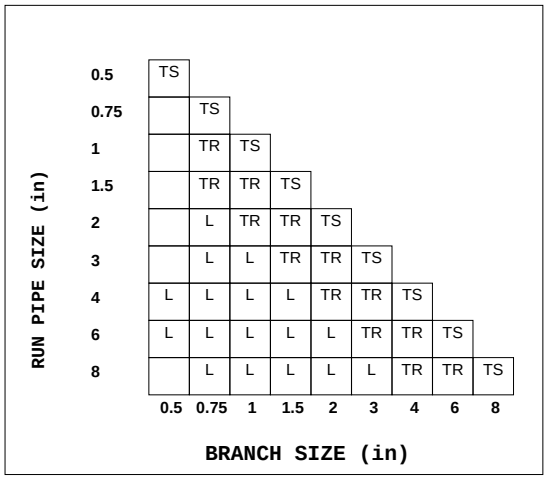
M0LR01 REV NO. 2

BRANCH TABLE (T_M0LR01)



RUN PIPE SIZE (in) \ BRANCH SIZE (in)	0.5	0.75	1	1.5	2	3	4	6	8
0.5	TS								
0.75		TS							
1		TR	TS						
1.5		TR	TR	TS					
2		L	TR	TR	TS				
3		L	L	TR	TR	TS			
4	L	L	L	L	TR	TR	TS		
6	L	L	L	L	L	TR	TR	TS	
8		L	L	L	L	L	TR	TR	TS

TR : REDUCING TEE
TS : STRAIGHT TEE
L : OUTLET

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PIPING CLASS

M1A602 REV NO. 2

Material : Killed CS
Rating : ASME CLASS 900
Flange Face : RJ
C.A.(mm) : 1.50
Gasket : Ring Octagonal
Service : PROCESS -WET LOW SEVERITY SOUR SERVICE SUBJECT TO NACE + HYDROGEN SERVICE
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
5	BOLTING CONFIRMING TO B7M / 2HM SHALL BE USED UNDER CONDITIONS (A) DIRECT EXPOSURE TO SOUR ENVIRONMENTS (B) WHEN THE BOLTING WILL BE BURIED OR INSULATED
27	PWHT OF CARBON STEEL PIPING IN WET H2S, CAUSTIC AND AMINE SERVICES SHALL BE IN ACCORDANCE WITH SECTION 10.2, 10.3, AND 10.4 OF PROJECT SPECIFICATION 3550-8440-SP-0002 MATERIALS REQUIREMENTS FOR PRESSURISED EQUIPMENT AND PIPING. FOR CAUSTIC AND AMINE SERVICE THE FOLLOWING SHALL APPLY: - PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF ALL SITE PIPING FABRICATION WELDS IS REQUIRED FOR ALL WALL THICKNESSES. FOR MODERATE AND SEVERE WET H2S SERVICE THE FOLLOWING SHALL APPLY: PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF SITE FABRICATION CIRCUMFERENTIAL OR BRANCH WELDS IS NOT REQUIRED IF WELDS ARE MULTIPASS AND IN ACCORDANCE WITH PARA 10.2.12 OF PROJECT SPECIFICATION 3550-8440-SP-0002. FOR SERVICES MEETING THE WET H2S CRITERIA AND CAUSTIC OR AMINE CRITERIA THE MORE STRINGENT PWHT REQUIREMENT SHALL GOVERN.

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
541	NPT(F) (F)

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PIPING CLASS
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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P01A-000XM	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	0.75		XS		P01A-000XN	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1		XS		P01A-000XP	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1.5		XS		P01A-000XV	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	2		XS		P01A-000YX	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	3		XS		P01A-000Z4	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	4		XS		P01A-000Z9	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	6		XS		P01A-000ZF	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P02A-000UR	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	0.75		XS		P02A-000UN	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1		XS		P02A-000UL	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1.5		XS		P02A-000UJ	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	2		XS		P02A-000CP	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		XS		P02A-000CX	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		XS		P02A-000D3	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		XS		P02A-000DA	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P03A-0018K	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	0.75		XS		P03A-0018L	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1		XS		P03A-0018M	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1.5		XS		P03A-0018N	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	2		XS		P03A-000AS	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		XS		P03A-000AZ	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		XS		P03A-000B3	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		XS		P03A-000B8	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P21A-002TV	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	0.75		XS		P21A-002TW	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1		XS		P21A-002TX	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5		XS		P21A-002TY	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2		XS		P21A-001CJ	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		XS		P21A-001CR	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		XS		P21A-001CV	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6		XS		P21A-001D4	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75	XS	XS	P24A-006WW	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.75	XS	XS	P24A-006WY	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	1	XS	XS	P24A-006WZ	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	XS	XS	P24A-00238	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	XS	XS	P24A-0023H	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	XS	XS	P24A-00239	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	XS	XS	P24A-0023S	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	XS	XS	P24A-0023E	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	XS	XS	P24A-0024A	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	XS	XS	P24A-0023F	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	XS	XS	P24A-00243	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	XS	XS	P27A-004M6	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.5	XS	XS	P27A-004ME	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.75	XS	XS	P27A-004MM	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.5	XS	XS	P27A-004N2	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.75	XS	XS	P27A-004NC	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	1	XS	XS	P27A-004NP	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	0.75	XS	XS	P27A-001CZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	XS	XS	P27A-001DL	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	XS	XS	P27A-001E2	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	XS	XS	P27A-001DH	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	XS	XS	P27A-001E5	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	1.5	XS	XS	P27A-001DJ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	XS	XS	P27A-001E4	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	XS	XS	P27A-001EP	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	XS	XS	P27A-001DM	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	XS	XS	P27A-001EB	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	XS	XS	P28A-004V6	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.5	XS	XS	P28A-004V7	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.75	XS	XS	P28A-004V8	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.5	XS	XS	P28A-004V9	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.75	XS	XS	P28A-004VA	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	1	XS	XS	P28A-004VB	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	0.75	XS	XS	P28A-001CU	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	XS	XS	P28A-001DS	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	XS	XS	P28A-001EE	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	XS	XS	P28A-001CW	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	XS	XS	P28A-001EH	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	1.5	XS	XS	P28A-001CY	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	XS	XS	P28A-001EJ	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	XS	XS	P28A-001F8	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	XS	XS	P28A-001DU	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	XS	XS	P28A-001ER	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P29A-0035U	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	0.75		XS		P29A-0035V	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	1		XS		P29A-0035W	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	1.5		XS		P29A-0035X	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	2		XS		P29A-001VG	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	3		XS		P29A-001X4	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	4		XS		P29A-001TS	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	6		XS		P29A-001TU	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P41A-000B5	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		SCH160		P41A-000B6	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		SCH160		P41A-000B7	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		SCH160		P41A-000B8	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75	XS	XS	P31B-00CP3	Outlet ASTM A105 MSS SP-97 BW	
1	3	0.75	XS	XS	P31B-012RV	Outlet ASTM A105 MSS SP-97 BW	

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OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	4	0.75	XS	XS	P31B-00XJG	Outlet ASTM A105 MSS SP-97 BW	
1	6	0.75	XS	XS	P31B-00XJH	Outlet ASTM A105 MSS SP-97 BW	
1	3	1	XS	XS	P31B-00B4C	Outlet ASTM A105 MSS SP-97 BW	
1	4	1	XS	XS	P31B-00B0A	Outlet ASTM A105 MSS SP-97 BW	
1	6	1	XS	XS	P31B-00AZ5	Outlet ASTM A105 MSS SP-97 BW	
1	4	1.5	XS	XS	P31B-00BNY	Outlet ASTM A105 MSS SP-97 BW	
1	6	1.5	XS	XS	P31B-00BJA	Outlet ASTM A105 MSS SP-97 BW	
1	6	2	XS	XS	P31B-007SG	Outlet ASTM A105 MSS SP-97 BW	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30B-0002D	Plug ASTM A105 ASME B16.11 NPT Round head	
1	0.75				P30B-0002E	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1				P30B-0002F	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1.5				P30B-0002G	Plug ASTM A105 ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P61B-009VY	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
1	0.75		XS		P61B-009VZ	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
1	1		XS		P61B-009W0	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
1	1.5		XS		P61B-009W1	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
1	2		XS		P61B-0065C	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
1	3		XS		P61B-00654	Flange WN ASTM A105 Class 900 ASME B16.5 RJ	
1	4		XS		P61B-00655	Flange WN ASTM A105 Class 900 ASME B16.5 RJ	
1	6		XS		P61B-00656	Flange WN ASTM A105 Class 900 ASME B16.5 RJ	
541	0.5				P61B-00DLH	Flange NPT ASTM A105 Class 1500 ASME B16.5 RJ	
541	0.75				P61B-00CW7	Flange NPT ASTM A105 Class 1500 ASME B16.5 RJ	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67B-001VE	Blind flange ASTM A105 Class 1500 ASME B16.5 RJ	
1	0.75				P67B-001VF	Blind flange ASTM A105 Class 1500 ASME B16.5 RJ	
1	1				P67B-001VG	Blind flange ASTM A105 Class 1500 ASME B16.5 RJ	
1	1.5				P67B-001VH	Blind flange ASTM A105 Class 1500 ASME B16.5 RJ	
1	2				P67B-0014J	Blind flange ASTM A105 Class 1500 ASME B16.5 RJ	
1	3				P67B-001VJ	Blind flange ASTM A105 Class 900 ASME B16.5 RJ	
1	4				P67B-001VK	Blind flange ASTM A105 Class 900 ASME B16.5 RJ	
1	6				P67B-001VL	Blind flange ASTM A105 Class 900 ASME B16.5 RJ	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P75T-000JT	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	0.75				P75T-000JU	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	1				P75T-000JV	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	1.5				P75T-000JW	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	2				P75T-0008A	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	3				P75T-000JN	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	4				P75T-000JP	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	6				P75T-000JR	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-3				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	4-6				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	

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GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81B-002EY	Gate valve ASTM A105 Class 1500 API 602 BW XS Trim SS316L Body and disc seats Stellite-6 WB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	0.75				P81B-0034P	Gate valve ASTM A105 Class 1500 API 602 BW XS Trim SS316L Body and disc seats Stellite-6 WB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	1				P81B-0034R	Gate valve ASTM A105 Class 1500 API 602 BW XS Trim SS316L Body and disc seats Stellite-6 WB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	1.5				P81B-0034S	Gate valve ASTM A105 Class 1500 API 602 BW XS Trim SS316L Body and disc seats Stellite-6 WB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	2				P81C-009SX	Gate valve ASTM A216 Grade WCB Class 1500 API 600 BW XS Trim SS316L Body and disc seats Stellite-6 PSB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	3				P81C-009SY	Gate valve ASTM A216 Grade WCB Class 900 API 600 BW XS Trim SS316L Body and disc seats Stellite-6 PSB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	4				P81C-009SZ	Gate valve ASTM A216 Grade WCB Class 900 API 600 BW XS Trim SS316L Body and disc seats Stellite-6 PSB-BG-OS&Y Handwheel operated Moderate wet H2S service	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82B-001UD	Globe valve ASTM A105 Class 1500 API 602 BW XS Trim SS316L Body and disc seats Stellite-6 WB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	0.75				P82B-0025S	Globe valve ASTM A105 Class 1500 API 602 BW XS Trim SS316L Body and disc seats Stellite-6 WB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	1				P82B-0025T	Globe valve ASTM A105 Class 1500 API 602 BW XS Trim SS316L Body and disc seats Stellite-6 WB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	1.5				P82B-0025U	Globe valve ASTM A105 Class 1500 API 602 BW XS Trim SS316L Body and disc seats Stellite-6 WB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	2				P82C-004KF	Globe valve ASTM A216 Grade WCB Class 1500 BS 1873 BW XS Trim SS316L Body and disc seats Stellite-6 PSB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	3				P82C-004KG	Globe valve ASTM A216 Grade WCB Class 900 BS 1873 BW XS Trim SS316L Body and disc seats Stellite-6 PSB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	4				P82C-004KH	Globe valve ASTM A216 Grade WCB Class 900 BS 1873 BW XS Trim SS316L Body and disc seats Stellite-6 PSB-BG-OS&Y Gear operated Moderate wet H2S service	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2				P71B-000LT	Spectacle blank ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	

PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P72B-000JD	Paddle blank ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	0.75				P72B-000JE	Paddle blank ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	1				P72B-000JF	Paddle blank ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	1.5				P72B-000JG	Paddle blank ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	2				P72B-000JH	Paddle blank ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	3				P72B-000JJ	Paddle blank ASTM A105 Class 900 Standard-drawing Flange ASME B16.5 RJ	
1	4				P72B-000JK	Paddle blank ASTM A105 Class 900 Standard-drawing Flange ASME B16.5 RJ	
1	6				P72B-000JL	Paddle blank ASTM A105 Class 900 Standard-drawing Flange ASME B16.5 RJ	

PADDLE SPACER (PS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P72B-000JN	Paddle spacer ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	0.75				P72B-000JP	Paddle spacer ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	1				P72B-000JR	Paddle spacer ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	1.5				P72B-000JS	Paddle spacer ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	2				P72B-000JT	Paddle spacer ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	3				P72B-000JU	Paddle spacer ASTM A105 Class 900 Standard-drawing Flange ASME B16.5 RJ	
1	4				P72B-000JV	Paddle spacer ASTM A105 Class 900 Standard-drawing Flange ASME B16.5 RJ	
1	6				P72B-000JW	Paddle spacer ASTM A105 Class 900 Standard-drawing Flange ASME B16.5 RJ	

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BOLT TABLE (B_M1A602 , STUD ASME RJ, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	110	P80S-0090F	R12	P75T-000JT
0.75	4	0.750	115	P80S-0090G	R14	P75T-000JU
1	4	0.875	130	P80S-005ZB	R16	P75T-000JV
1.5	4	1.000	140	P80S-0061A	R20	P75T-000JW
2	8	0.875	150	P80S-005ZF	R24	P75T-0008A
3	8	0.875	150	P80S-005ZF	R31	P75T-000JN
4	8	1.125	175	P80S-0064S	R37	P75T-000JP
6	12	1.125	200	P80S-0064X	R45	P75T-000JR

BOLT TABLE (B_M1A602_805 , STUD ASME RJ, OPTION CODE 805)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	125		R13	
0.75	4	0.750	130		R16	
1	4	0.875	140		R18	
1.5	4	1.125	175		R23	
2	8	1.000	180		R26	
3	8	1.250	260		R32	
4	8	1.500	305		R38	
6	8	2.000	410		R47	

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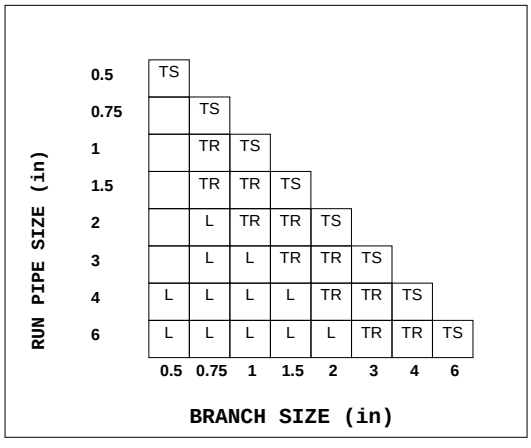
BRANCH TABLE (T_M1A602)



TS : STRAIGHT TEE
TR : REDUCING TEE
L : OUTLET

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PIPING CLASS

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Material : Killed CS
Rating : ASME CLASS 900
Flange Face : RJ
C.A.(mm) : 1.50
Gasket : Ring Octagonal
Service : PROCESS - HYDROGEN OR HYDROGEN RICH HYDROCARBON MIXTURES
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
16	PIPE CLASS SHALL BE USED WITHIN THE NORMAL OPERATING PRESSURE/TEMPERATURE LIMITS SPECIFIED IN API RP 941. PRESSURE / TEMPERATURE SPECIFIED IN THE PIPE CLASS EXCEEDING API RP 941 LIMITS SHOULD BE REGARDED AS UPSET CONDITIONS RATHER THAN FOR CONTINUOUS SERVICE

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
541	NPT(F) (F)
797	CLASS 1500 (B,F,G)

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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P01A-007AZ	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE Licensor-1	
1	0.75		XS		P01A-007B0	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE Licensor-1	
1	1		XS		P01A-007B1	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE Licensor-1	
1	1.5		XS		P01A-007B2	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE Licensor-1	
1	2		XS		P01A-0078Y	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Licensor-1	
1	3		XS		P01A-007HW	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Licensor-1	
1	4		XS		P01A-00790	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Licensor-1	
1	6		XS		P01A-007A7	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Licensor-1	
1	8		STD		P01A-007BU	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Licensor-1	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P02A-003T4	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	0.75		XS		P02A-003T5	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	1		XS		P02A-003T6	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	1.5		XS		P02A-003T7	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	2		XS		P02A-003R7	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	3		XS		P02A-003ZM	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	4		XS		P02A-003R9	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	6		XS		P02A-003SB	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	8		STD		P02A-003U6	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P03A-003PT	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	0.75		XS		P03A-003PU	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	1		XS		P03A-003PV	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	1.5		XS		P03A-003PW	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	2		XS		P03A-003MW	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	3		XS		P03A-003XZ	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	4		XS		P03A-003MY	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	6		XS		P03A-003P0	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	8		STD		P03A-003RV	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P21A-004AG	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	0.75		XS		P21A-004AH	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	1		XS		P21A-004AJ	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	1.5		XS		P21A-004AK	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	2		XS		P21A-0048L	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	3		XS		P21A-004HD	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	4		XS		P21A-0048N	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	6		XS		P21A-0049P	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	8		STD		P21A-004BF	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75	XS	XS	P24A-00K5R	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	1.5	0.75	XS	XS	P24A-00K5S	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	1.5	1	XS	XS	P24A-00K5T	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	2	1	XS	XS	P24A-00K5U	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	2	1.5	XS	XS	P24A-00K5V	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	3	1.5	XS	XS	P24A-00R5K	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	3	2	XS	XS	P24A-00R5L	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	4	2	XS	XS	P24A-00K0Z	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	4	3	XS	XS	P24A-00L7U	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	6	3	XS	XS	P24A-00L7V	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	

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REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	6	4	XS	XS	P24A-00L62	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	8	4	STD	XS	P24A-00MUM	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	8	6	STD	XS	P24A-00MUN	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	XS	XS	P27A-00ERU	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	1	0.5	XS	XS	P27A-00ERV	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	1	0.75	XS	XS	P27A-00ERW	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	1.5	0.5	XS	XS	P27A-00ERX	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	1.5	0.75	XS	XS	P27A-00ERY	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	1.5	1	XS	XS	P27A-00ERZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	2	0.75	XS	XS	P27A-00ES0	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	2	1	XS	XS	P27A-00ES1	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	2	1.5	XS	XS	P27A-00ES2	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	3	1.5	XS	XS	P27A-00JE3	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	3	2	XS	XS	P27A-00JE4	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	4	1.5	XS	XS	P27A-00JE5	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	4	2	XS	XS	P27A-00EL2	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	4	3	XS	XS	P27A-00FEZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	6	3	XS	XS	P27A-00FF0	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	6	4	XS	XS	P27A-00FDZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	8	4	STD	XS	P27A-00GN1	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	8	6	STD	XS	P27A-00GN2	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	XS	XS	P28A-00BVM	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	1	0.5	XS	XS	P28A-00BVN	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	1	0.75	XS	XS	P28A-00BVP	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	1.5	0.5	XS	XS	P28A-00BVR	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	1.5	0.75	XS	XS	P28A-00BVS	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	1.5	1	XS	XS	P28A-00BVT	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	2	0.75	XS	XS	P28A-00BVU	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	2	1	XS	XS	P28A-00BVV	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	2	1.5	XS	XS	P28A-00BVW	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	3	1.5	XS	XS	P28A-00FR5	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	3	2	XS	XS	P28A-00FR6	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	4	1.5	XS	XS	P28A-00FR7	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	4	2	XS	XS	P28A-00BPT	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	4	3	XS	XS	P28A-00CKX	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	6	3	XS	XS	P28A-00CKY	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	6	4	XS	XS	P28A-00CJX	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	8	4	STD	XS	P28A-00DWA	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	8	6	STD	XS	P28A-00DWB	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P29A-0034L	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	0.75		XS		P29A-0034M	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	1		XS		P29A-0034N	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	1.5		XS		P29A-0034P	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	2		XS		P29A-00326	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	3		XS		P29A-003CM	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	4		XS		P29A-00328	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	6		XS		P29A-0033V	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	8		STD		P29A-0035T	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	

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STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P41A-0017A	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Licensor-1	
1	0.75		SCH160		P41A-0017B	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Licensor-1	
1	1		SCH160		P41A-0017C	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Licensor-1	
1	1.5		SCH160		P41A-0017D	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Licensor-1	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2	0.75	XS	XS	P31B-00XML	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	3	0.75	XS	XS	P31B-012TF	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	4	0.75	XS	XS	P31B-012TH	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	6	0.75	XS	XS	P31B-012TL	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	8	0.75	STD	XS	P31B-0115M	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	3	1	XS	XS	P31B-012TG	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	4	1	XS	XS	P31B-012TJ	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	6	1	XS	XS	P31B-012TM	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	8	1	STD	XS	P31B-0115N	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	4	1.5	XS	XS	P31B-012TK	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	6	1.5	XS	XS	P31B-012TN	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	8	1.5	STD	XS	P31B-0115P	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	6	2	XS	XS	P31B-00YFR	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	8	2	STD	XS	P31B-00XPL	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	8	3	STD	XS	P31B-012TP	Outlet ASTM A105 MSS SP-97 BW Licensor-1	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30B-00067	Plug ASTM A105 ASME B16.11 NPT Round head Licensor-1	
1	0.75				P30B-00068	Plug ASTM A105 ASME B16.11 NPT Round head Licensor-1	
1	1				P30B-00069	Plug ASTM A105 ASME B16.11 NPT Round head Licensor-1	
1	1.5				P30B-0006A	Plug ASTM A105 ASME B16.11 NPT Round head Licensor-1	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P61B-00BR2	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ Licensor-1	
1	0.75		XS		P61B-00BR3	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ Licensor-1	
1	1		XS		P61B-00BR4	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ Licensor-1	
1	1.5		XS		P61B-00BR5	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ Licensor-1	
1	2		XS		P61B-009TN	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ Licensor-1	
1	3		XS		P61B-00ADL	Flange WN ASTM A105 Class 900 ASME B16.5 RJ Licensor-1	
1	4		XS		P61B-009TH	Flange WN ASTM A105 Class 900 ASME B16.5 RJ Licensor-1	
1	6		XS		P61B-00ADA	Flange WN ASTM A105 Class 900 ASME B16.5 RJ Licensor-1	
1	8		STD		P61B-00BE1	Flange WN ASTM A105 Class 900 ASME B16.5 RJ Licensor-1	
541	0.5				P61B-00DLD	Flange NPT ASTM A105 Class 1500 ASME B16.5 RJ Licensor-1	
541	0.75				P61B-00CY2	Flange NPT ASTM A105 Class 1500 ASME B16.5 RJ Licensor-1	
797	3		XS		P61B-00DLE	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ Licensor-1	
797	4		XS		P61B-00DLF	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ Licensor-1	
797	6		XS		P61B-00DLG	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ Licensor-1	
797	8		STD		P61B-00BX2	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ Licensor-1	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67B-002WE	Blind flange ASTM A105 Class 1500 ASME B16.5 RJ Licensor-1	
1	0.75				P67B-002WF	Blind flange ASTM A105 Class 1500 ASME B16.5 RJ Licensor-1	
1	1				P67B-002WG	Blind flange ASTM A105 Class 1500 ASME B16.5 RJ Licensor-1	
1	1.5				P67B-002WH	Blind flange ASTM A105 Class 1500 ASME B16.5 RJ Licensor-1	
1	2				P67B-002WJ	Blind flange ASTM A105 Class 1500 ASME B16.5 RJ Licensor-1	
1	3				P67B-002WK	Blind flange ASTM A105 Class 900 ASME B16.5 RJ Licensor-1	
1					P67B-002WL	Blind flange ASTM A105 Class 900 ASME B16.5 RJ Licensor-1	
1	6				P67B-002WM	Blind flange ASTM A105 Class 900 ASME B16.5 RJ Licensor-1	

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BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	8				P67B-002WW	Blind flange ASTM A105 Class 900 ASME B16.5 RJ Licensor-1	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P75T-000JT	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	0.75				P75T-000JU	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	1				P75T-000JV	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	1.5				P75T-000JW	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	2				P75T-0008A	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	3				P75T-000JN	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	4				P75T-000JP	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	6				P75T-000JR	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	8				P75T-000JS	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	3				P75T-0008E	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	4				P75T-0008D	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	6				P75T-0008C	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	8				P75T-0008B	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-3				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	4-8				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
797	3-8				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81B-0020D	Gate valve ASTM A105 Class 1500 API 602 Flange ASME B16.5 RJ Trim number 8 WB-BG-OS&Y Handwheel operated Licensor-1	
1	0.75				P81B-0020E	Gate valve ASTM A105 Class 1500 API 602 Flange ASME B16.5 RJ Trim number 8 WB-BG-OS&Y Handwheel operated Licensor-1	
1	1				P81B-0020F	Gate valve ASTM A105 Class 1500 API 602 Flange ASME B16.5 RJ Trim number 8 WB-BG-OS&Y Handwheel operated Licensor-1	
1	1.5				P81B-0020G	Gate valve ASTM A105 Class 1500 API 602 Flange ASME B16.5 RJ Trim number 8 WB-BG-OS&Y Handwheel operated Licensor-1	
1	2				P81C-006KL	Gate valve ASTM A216 Grade WCB Class 1500 API 600 BW XS Trim number 8 PSB-BG-OS&Y Handwheel operated Licensor-1	
1	3				P81C-008NR	Gate valve ASTM A216 Grade WCB Class 900 API 600 BW XS Trim number 8 PSB-BG-OS&Y Handwheel operated Licensor-1	
1	4				P81C-008NS	Gate valve ASTM A216 Grade WCB Class 900 API 600 BW XS Trim number 8 PSB-BG-OS&Y Handwheel operated Licensor-1	
1	6				P81C-008NT	Gate valve ASTM A216 Grade WCB Class 900 API 600 BW XS Trim number 8 PSB-BG-OS&Y Gear operated Licensor-1	
1	8				P81C-006T3	Gate valve ASTM A216 Grade WCB Class 900 API 600 BW STD Trim number 8 PSB-BG-OS&Y Gear operated Licensor-1	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82B-001HZ	Globe valve ASTM A105 Class 1500 API 602 Flange ASME B16.5 RJ Trim number 8 WB-BG-OS&Y Handwheel operated Licensor-1	
1	0.75				P82B-001J0	Globe valve ASTM A105 Class 1500 API 602 Flange ASME B16.5 RJ Trim number 8 WB-BG-OS&Y Handwheel operated Licensor-1	
1	1				P82B-001J1	Globe valve ASTM A105 Class 1500 API 602 Flange ASME B16.5 RJ Trim number 8 WB-BG-OS&Y Handwheel operated Licensor-1	
1	1.5				P82B-001J2	Globe valve ASTM A105 Class 1500 API 602 Flange ASME B16.5 RJ Trim number 8 WB-BG-OS&Y Handwheel operated Licensor-1	
1	2				P82C-0035S	Globe valve ASTM A216 Grade WCB Class 1500 BS 1873 BW XS Trim number 8 PSB-BG-OS&Y Handwheel operated Licensor-1	
1	3				P82C-00468	Globe valve ASTM A216 Grade WCB Class 900 BS 1873 BW XS Trim number 8 PSB-BG-OS&Y Handwheel operated Licensor-1	
1	4				P82C-00467	Globe valve ASTM A216 Grade WCB Class 900 BS 1873 BW XS Trim number 8 PSB-BG-OS&Y Gear operated Licensor-1	
1	8				P82C-0042T	Globe valve ASTM A216 Grade WCB Class 900 BS 1873 BW STD Trim number 8 PSB-BG-OS&Y Gear operated Licensor-1	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83B-0017J	Check valve ASTM A105 Class 1500 API 602 Flange ASME B16.5 RJ Trim number 8 Lift-type Welded cover Licensor-1	

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CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75				P83B-0017K	Check valve ASTM A105 Class 1500 API 602 Flange ASME B16.5 RJ Trim number 8 Lift-type Welded cover Licensor-1	
1	1				P83B-0017L	Check valve ASTM A105 Class 1500 API 602 Flange ASME B16.5 RJ Trim number 8 Lift-type Welded cover Licensor-1	
1	1.5				P83B-0017M	Check valve ASTM A105 Class 1500 API 602 Flange ASME B16.5 RJ Trim number 8 Lift-type Welded cover Licensor-1	
1	2				P83C-0031Y	Check valve ASTM A216 Grade WCB Class 1500 BS 1868 BW XS Trim number 8 Swing-type Pressure seal cap Licensor-1	
1	3				P83C-003S8	Check valve ASTM A216 Grade WCB Class 900 BS 1868 BW XS Trim number 8 Swing-type Pressure seal cap Licensor-1	
1	4				P83C-003S9	Check valve ASTM A216 Grade WCB Class 900 BS 1868 BW XS Trim number 8 Swing-type Pressure seal cap Licensor-1	
1	6				P83C-003SA	Check valve ASTM A216 Grade WCB Class 900 BS 1868 BW XS Trim number 8 Swing-type Pressure seal cap Licensor-1	
1	8				P83C-0035P	Check valve ASTM A216 Grade WCB Class 900 BS 1868 BW STD Trim number 8 Swing-type Pressure seal cap Licensor-1	

PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P72B-000TE	Paddle blank ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ Licensor-1	
1	0.75				P72B-000TF	Paddle blank ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ Licensor-1	
1	1				P72B-000TG	Paddle blank ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ Licensor-1	
1	1.5				P72B-000TH	Paddle blank ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ Licensor-1	
1	2				P72B-000TJ	Paddle blank ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ Licensor-1	
1	3				P72B-000TN	Paddle blank ASTM A105 Class 900 Standard-drawing Flange ASME B16.5 RJ Licensor-1	
1	4				P72B-000TP	Paddle blank ASTM A105 Class 900 Standard-drawing Flange ASME B16.5 RJ Licensor-1	
1	6				P72B-000TR	Paddle blank ASTM A105 Class 900 Standard-drawing Flange ASME B16.5 RJ Licensor-1	
1	8				P72B-000U6	Paddle blank ASTM A105 Class 900 Standard-drawing Flange ASME B16.5 RJ Licensor-1	

PADDLE SPACER (PS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P72B-000T9	Paddle spacer ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ Licensor-1	
1	0.75				P72B-000TA	Paddle spacer ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ Licensor-1	
1	1				P72B-000TB	Paddle spacer ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ Licensor-1	
1	1.5				P72B-000TC	Paddle spacer ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ Licensor-1	
1	2				P72B-000TD	Paddle spacer ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ Licensor-1	
1	3				P72B-000TK	Paddle spacer ASTM A105 Class 900 Standard-drawing Flange ASME B16.5 RJ Licensor-1	
1	4				P72B-000TL	Paddle spacer ASTM A105 Class 900 Standard-drawing Flange ASME B16.5 RJ Licensor-1	
1	6				P72B-000TM	Paddle spacer ASTM A105 Class 900 Standard-drawing Flange ASME B16.5 RJ Licensor-1	
1	8				P72B-000U7	Paddle spacer ASTM A105 Class 900 Standard-drawing Flange ASME B16.5 RJ Licensor-1	

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BOLT TABLE (B_M1AH01 , STUD ASME RJ, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	110	P80S-003XK	R12	P75T-000JT
0.75	4	0.750	115	P80S-003XL	R14	P75T-000JU
1	4	0.875	130	P80S-0041B	R16	P75T-000JV
1.5	4	1.000	140	P80S-0043F	R20	P75T-000JW
2	8	0.875	150	P80S-0041F	R24	P75T-0008A
3	8	0.875	150	P80S-0041F	R31	P75T-000JN
4	8	1.125	175	P80S-0046S	R37	P75T-000JP
6	12	1.125	200	P80S-0046X	R45	P75T-000JR
8	12	1.375	260	P80S-003E5	R49	P75T-000JS

BOLT TABLE (B_M1AH01_797 , STUD ASME RJ, OPTION CODE 797)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	110		R12	
0.75	4	0.750	115		R14	
1	4	0.875	130		R16	
1.5	4	1.000	140		R20	
2	8	0.875	150		R24	
3	8	1.125	180	P80S-0046T	R35	P75T-0008E
4	8	1.250	230	P80S-004AU	R39	P75T-0008D
6	12	1.375	300	P80S-003ED	R46	P75T-0008C
8	12	1.625	345	P80S-005TY	R50	P75T-0008B

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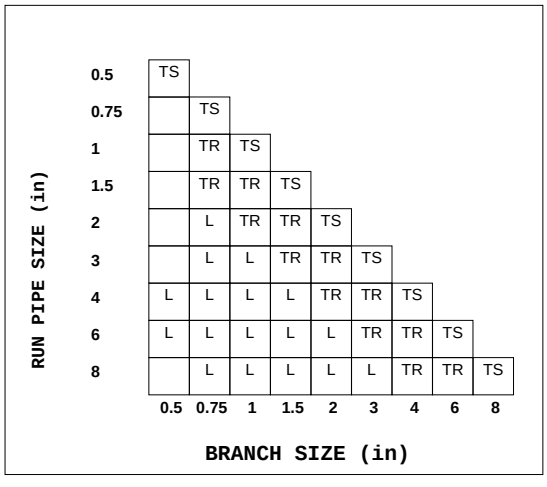
BRANCH TABLE (T_M1AH01)



L : OUTLET
TS : STRAIGHT TEE
TR : REDUCING TEE

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PIPING CLASS

M1AH02 REV NO. 2

Material : Killed CS
Rating : ASME CLASS 900
Flange Face : RJ
C.A.(mm) : 1.50
Gasket : Ring Octagonal
Service : PROCESS - HYDROGEN OR HYDROGEN RICH HYDROCARBON MIXTURES
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
16	PIPE CLASS SHALL BE USED WITHIN THE NORMAL OPERATING PRESSURE/TEMPERATURE LIMITS SPECIFIED IN API RP 941. PRESSURE / TEMPERATURE SPECIFIED IN THE PIPE CLASS EXCEEDING API RP 941 LIMITS SHOULD BE REGARDED AS UPSET CONDITIONS RATHER THAN FOR CONTINUOUS SERVICE

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
200	WITH JACK SCREW (FO)
541	NPT(F) (F)
797	CLASS 1500 (B,F,FR,G)
4601	Y-PATTERN (W)

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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P01A-000XM	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	0.75		XS		P01A-000XN	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1		XS		P01A-000XP	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1.5		XS		P01A-000XV	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	2		XS		P01A-000YX	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	3		XS		P01A-000Z4	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	4		XS		P01A-000Z9	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	6		XS		P01A-000ZF	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	8		XS		P01A-000ZJ	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P02A-000UR	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	0.75		XS		P02A-000UN	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1		XS		P02A-000UL	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1.5		XS		P02A-000UJ	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	2		XS		P02A-000CP	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		XS		P02A-000CX	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		XS		P02A-000D3	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		XS		P02A-000DA	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		XS		P02A-000DG	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P03A-0018K	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	0.75		XS		P03A-0018L	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1		XS		P03A-0018M	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1.5		XS		P03A-0018N	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	2		XS		P03A-000AS	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		XS		P03A-000AZ	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		XS		P03A-000B3	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		XS		P03A-000B8	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		XS		P03A-000BC	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P21A-002TV	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	0.75		XS		P21A-002TW	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1		XS		P21A-002TX	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5		XS		P21A-002TY	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2		XS		P21A-001CJ	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		XS		P21A-001CR	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		XS		P21A-001CV	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6		XS		P21A-001D4	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8		XS		P21A-001D6	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75	XS	XS	P24A-006WW	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.75	XS	XS	P24A-006WY	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	1	XS	XS	P24A-006WZ	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	XS	XS	P24A-00238	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	XS	XS	P24A-0023H	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	XS	XS	P24A-00239	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	XS	XS	P24A-0023S	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	XS	XS	P24A-0023E	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	XS	XS	P24A-0024A	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	XS	XS	P24A-0023F	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	6	4	XS	XS	P24A-00243	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	XS	XS	P24A-0023T	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	XS	XS	P24A-0024M	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	XS	XS	P27A-004M6	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.5	XS	XS	P27A-004ME	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.75	XS	XS	P27A-004MM	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.5	XS	XS	P27A-004N2	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.75	XS	XS	P27A-004NC	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	1	XS	XS	P27A-004NP	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	0.75	XS	XS	P27A-001CZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	XS	XS	P27A-001DL	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	XS	XS	P27A-001E2	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	XS	XS	P27A-001DH	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	XS	XS	P27A-001E5	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	1.5	XS	XS	P27A-001DJ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	XS	XS	P27A-001E4	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	XS	XS	P27A-001EP	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	XS	XS	P27A-001DM	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	XS	XS	P27A-001EB	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	XS	XS	P27A-001E3	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	XS	XS	P27A-001EY	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	XS	XS	P28A-004V6	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.5	XS	XS	P28A-004V7	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.75	XS	XS	P28A-004V8	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.5	XS	XS	P28A-004V9	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.75	XS	XS	P28A-004VA	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	1	XS	XS	P28A-004VB	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	0.75	XS	XS	P28A-001CU	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	XS	XS	P28A-001DS	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	XS	XS	P28A-001EE	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	XS	XS	P28A-001CW	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	XS	XS	P28A-001EH	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	1.5	XS	XS	P28A-001CY	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	XS	XS	P28A-001EJ	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	XS	XS	P28A-001F8	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	XS	XS	P28A-001DU	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	XS	XS	P28A-001ER	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	XS	XS	P28A-001EK	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	XS	XS	P28A-001FT	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P29A-002KS	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	0.75		XS		P29A-002KT	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1		XS		P29A-002KU	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5		XS		P29A-002KV	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2		XS		P29A-000A1	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		XS		P29A-000AT	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		XS		P29A-000B9	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6		XS		P29A-000BF	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8		XS		P29A-000BL	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P41A-000B5	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		SCH160		P41A-000B6	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		SCH160		P41A-000B7	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		SCH160		P41A-000B8	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2	0.75	XS	XS	P31B-00CP3	Outlet ASTM A105 MSS SP-97 BW	
1	3	0.75	XS	XS	P31B-012RV	Outlet ASTM A105 MSS SP-97 BW	
1	4	0.75	XS	XS	P31B-00XJG	Outlet ASTM A105 MSS SP-97 BW	
1	6	0.75	XS	XS	P31B-00XJH	Outlet ASTM A105 MSS SP-97 BW	
1	8	0.75	XS	XS	P31B-012RW	Outlet ASTM A105 MSS SP-97 BW	
1	3	1	XS	XS	P31B-00B4C	Outlet ASTM A105 MSS SP-97 BW	
1	4	1	XS	XS	P31B-00B0A	Outlet ASTM A105 MSS SP-97 BW	
1	6	1	XS	XS	P31B-00AZ5	Outlet ASTM A105 MSS SP-97 BW	
1	8	1	XS	XS	P31B-00AV6	Outlet ASTM A105 MSS SP-97 BW	
1	4	1.5	XS	XS	P31B-00BNY	Outlet ASTM A105 MSS SP-97 BW	
1	6	1.5	XS	XS	P31B-00BJA	Outlet ASTM A105 MSS SP-97 BW	
1	8	1.5	XS	XS	P31B-00BH6	Outlet ASTM A105 MSS SP-97 BW	
1	6	2	XS	XS	P31B-007SG	Outlet ASTM A105 MSS SP-97 BW	
1	8	2	XS	XS	P31B-00AGW	Outlet ASTM A105 MSS SP-97 BW	
1	8	3	XS	XS	P31B-009XZ	Outlet ASTM A105 MSS SP-97 BW	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30B-0002D	Plug ASTM A105 ASME B16.11 NPT Round head	
1	0.75				P30B-0002E	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1				P30B-0002F	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1.5				P30B-0002G	Plug ASTM A105 ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P61B-009VY	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
1	0.75		XS		P61B-009VZ	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
1	1		XS		P61B-009W0	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
1	1.5		XS		P61B-009W1	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
1	2		XS		P61B-0065C	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
1	3		XS		P61B-00654	Flange WN ASTM A105 Class 900 ASME B16.5 RJ	
1	4		XS		P61B-00655	Flange WN ASTM A105 Class 900 ASME B16.5 RJ	
1	6		XS		P61B-00656	Flange WN ASTM A105 Class 900 ASME B16.5 RJ	
1	8		XS		P61B-00657	Flange WN ASTM A105 Class 900 ASME B16.5 RJ	
541	0.5				P61B-00DLH	Flange NPT ASTM A105 Class 1500 ASME B16.5 RJ	
541	0.75				P61B-00CW7	Flange NPT ASTM A105 Class 1500 ASME B16.5 RJ	
797	3		XS		P61B-00660	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
797	4		XS		P61B-00BLY	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
797	6		XS		P61B-00BLZ	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
797	8		XS		P61B-00DHP	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67B-001VE	Blind flange ASTM A105 Class 1500 ASME B16.5 RJ	
1	0.75				P67B-001VF	Blind flange ASTM A105 Class 1500 ASME B16.5 RJ	
1	1				P67B-001VG	Blind flange ASTM A105 Class 1500 ASME B16.5 RJ	
1	1.5				P67B-001VH	Blind flange ASTM A105 Class 1500 ASME B16.5 RJ	
1	2				P67B-0014J	Blind flange ASTM A105 Class 1500 ASME B16.5 RJ	
1	3				P67B-001VJ	Blind flange ASTM A105 Class 900 ASME B16.5 RJ	
1	[illegible]				P67B-001VK	Blind flange ASTM A105 Class 900 ASME B16.5 RJ	
1	6				P67B-001VL	Blind flange ASTM A105 Class 900 ASME B16.5 RJ	

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BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	8				P67B-001VM	Blind flange ASTM A105 Class 900 ASME B16.5 RJ	

REDUCING FLANGE (FR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
797	3	2		XS	P62B-000PU	Reducing flange WN ASTM A105 Class 1500 ASME B16.5 RJ	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P75T-000JT	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	0.75				P75T-000JU	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	1				P75T-000JV	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	1.5				P75T-000JW	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	2				P75T-0008A	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	3				P75T-000JN	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	4				P75T-000JP	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	6				P75T-000JR	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	8				P75T-000JS	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	3				P75T-0008E	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	4				P75T-0008D	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	6				P75T-0008C	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	8				P75T-0008B	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-3				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	4-8				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
797	3-8				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81B-002W3	Gate valve ASTM A105 Class 1500 API 602 BW XS Trim SS316L Body and disc seats Stellite-6 WB-BG-OS&Y Handwheel operated	
1	0.75				P81B-002W4	Gate valve ASTM A105 Class 1500 API 602 BW XS Trim SS316L Body and disc seats Stellite-6 WB-BG-OS&Y Handwheel operated	
1	1				P81B-002W5	Gate valve ASTM A105 Class 1500 API 602 BW XS Trim SS316L Body and disc seats Stellite-6 WB-BG-OS&Y Handwheel operated	
1	1.5				P81B-002W6	Gate valve ASTM A105 Class 1500 API 602 BW XS Trim SS316L Body and disc seats Stellite-6 WB-BG-OS&Y Handwheel operated	
1	2				P81C-008PG	Gate valve ASTM A216 Grade WCB Class 1500 API 600 BW XS Trim SS316L Body and disc seats Stellite-6 PSB-BG-OS&Y Handwheel operated	
1	3				P81C-008PH	Gate valve ASTM A216 Grade WCB Class 900 API 600 BW XS Trim SS316L Body and disc seats Stellite-6 PSB-BG-OS&Y Handwheel operated	
1	4				P81C-008PJ	Gate valve ASTM A216 Grade WCB Class 900 API 600 BW XS Trim SS316L Body and disc seats Stellite-6 PSB-BG-OS&Y Handwheel operated	
1	6				P81C-008PK	Gate valve ASTM A216 Grade WCB Class 900 API 600 BW XS Trim SS316L Body and disc seats Stellite-6 PSB-BG-OS&Y Gear operated	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82B-0021S	Globe valve ASTM A105 Class 1500 API 602 BW XS Trim SS316L Body and disc seats Stellite-6 WB-BG-OS&Y Handwheel operated	
1	0.75				P82B-0021T	Globe valve ASTM A105 Class 1500 API 602 BW XS Trim SS316L Body and disc seats Stellite-6 WB-BG-OS&Y Handwheel operated	
1	1				P82B-0021U	Globe valve ASTM A105 Class 1500 API 602 BW XS Trim SS316L Body and disc seats Stellite-6 WB-BG-OS&Y Handwheel operated	
1	1.5				P82B-0021V	Globe valve ASTM A105 Class 1500 API 602 BW XS Trim SS316L Body and disc seats Stellite-6 WB-BG-OS&Y Handwheel operated	
1	2				P82C-0046R	Globe valve ASTM A216 Grade WCB Class 1500 BS 1873 BW XS Trim SS316L Body and disc seats Stellite-6 PSB-BG-OS&Y Handwheel operated	
1	3				P82C-0046S	Globe valve ASTM A216 Grade WCB Class 900 BS 1873 BW XS Trim SS316L Body and disc seats Stellite-6 PSB-BG-OS&Y Handwheel operated	
1	4				P82C-0046T	Globe valve ASTM A216 Grade WCB Class 900 BS 1873 BW XS Trim SS316L Body and disc seats Stellite-6 PSB-BG-OS&Y Gear operated	
4601	0.75				P82B-0021W	Y-pattern globe valve ASTM A105 Class 1500 ASME B16.34 BW XS Trim SS316L Body and disc seats Stellite-6 WB-BG-OS&Y Handwheel operated	
4601	1				P82B-001LS	Y-pattern globe valve ASTM A105 Class 1500 ASME B16.34 BW XS Trim SS316L Body and disc seats Stellite-6 WB-BG-OS&Y Handwheel operated	
4601	1.5				P82B-001LT	Y-pattern globe valve ASTM A105 Class 1500 ASME B16.34 BW XS Trim SS316L Body and disc seats Stellite-6 WB-BG-OS&Y Handwheel operated	

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GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
4601	2				P82C-0038Z	Y-pattern globe valve ASTM A216 Grade WCB Class 1500 ASME B16.34 BW XS Trim SS316L Body and disc seats Stellite-6 PSB-BG-OS&Y Handwheel operated	
4601	3				P82C-0042W	Y-pattern globe valve ASTM A216 Grade WCB Class 900 ASME B16.34 BW XS Trim SS316L Body and disc seats Stellite-6 PSB-BG-OS&Y Handwheel operated	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83B-001JD	Check valve ASTM A105 Class 1500 API 602 BW XS Trim SS316L Body and disc seats Stellite-6 Lift-type Welded cover	
1	0.75				P83B-001JE	Check valve ASTM A105 Class 1500 API 602 BW XS Trim SS316L Body and disc seats Stellite-6 Lift-type Welded cover	
1	1				P83B-001JF	Check valve ASTM A105 Class 1500 API 602 BW XS Trim SS316L Body and disc seats Stellite-6 Lift-type Welded cover	
1	1.5				P83B-001JG	Check valve ASTM A105 Class 1500 API 602 BW XS Trim SS316L Body and disc seats Stellite-6 Lift-type Welded cover	
1	2				P83C-003SS	Check valve ASTM A216 Grade WCB Class 1500 BS 1868 BW XS Trim SS316L Body and disc seats Stellite-6 Swing-type Pressure seal cap	
1	3				P83C-003ST	Check valve ASTM A216 Grade WCB Class 900 BS 1868 BW XS Trim SS316L Body and disc seats Stellite-6 Swing-type Pressure seal cap	
1	4				P83C-003SU	Check valve ASTM A216 Grade WCB Class 900 BS 1868 BW XS Trim SS316L Body and disc seats Stellite-6 Swing-type Pressure seal cap	
1	6				P83C-003SV	Check valve ASTM A216 Grade WCB Class 900 BS 1868 BW XS Trim SS316L Body and disc seats Stellite-6 Swing-type Pressure seal cap	

ORIFICE FLANGE (FO)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2		XS		P66B-008UT	Orifice flange WN ASTM A105 Class 1500 ASME B16.36 RJ NPS3/4 SW tap x 1	
1	3		XS		P66B-008UP	Orifice flange WN ASTM A105 Class 900 ASME B16.36 RJ NPS3/4 SW tap x 1	
1	4		XS		P66B-008UR	Orifice flange WN ASTM A105 Class 900 ASME B16.36 RJ NPS3/4 SW tap x 1	
200	2		XS		P66B-008US	Orifice flange WN ASTM A105 Class 1500 ASME B16.36 RJ NPS3/4 SW tap x 1 with Jack screw	
200	3		XS		P66B-008UM	Orifice flange WN ASTM A105 Class 900 ASME B16.36 RJ NPS3/4 SW tap x 1 with Jack screw	
200	4		XS		P66B-008UN	Orifice flange WN ASTM A105 Class 900 ASME B16.36 RJ NPS3/4 SW tap x 1 with Jack screw	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2				P71B-000LT	Spectacle blank ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	4				P71B-000LU	Spectacle blank ASTM A105 Class 900 Standard-drawing Flange ASME B16.5 RJ	

PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P72B-000JD	Paddle blank ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	0.75				P72B-000JE	Paddle blank ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	1				P72B-000JF	Paddle blank ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	1.5				P72B-000JG	Paddle blank ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	2				P72B-000JH	Paddle blank ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	3				P72B-000JJ	Paddle blank ASTM A105 Class 900 Standard-drawing Flange ASME B16.5 RJ	
1	4				P72B-000JK	Paddle blank ASTM A105 Class 900 Standard-drawing Flange ASME B16.5 RJ	
1	6				P72B-000JL	Paddle blank ASTM A105 Class 900 Standard-drawing Flange ASME B16.5 RJ	
1	8				P72B-000JM	Paddle blank ASTM A105 Class 900 Standard-drawing Flange ASME B16.5 RJ	

PADDLE SPACER (PS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P72B-000JN	Paddle spacer ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	0.75				P72B-000JP	Paddle spacer ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	1				P72B-000JR	Paddle spacer ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	1.5				P72B-000JS	Paddle spacer ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	2				P72B-000JT	Paddle spacer ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	3				P72B-000JU	Paddle spacer ASTM A105 Class 900 Standard-drawing Flange ASME B16.5 RJ	
1	4				P72B-000JV	Paddle spacer ASTM A105 Class 900 Standard-drawing Flange ASME B16.5 RJ	
1	6				P72B-000JW	Paddle spacer ASTM A105 Class 900 Standard-drawing Flange ASME B16.5 RJ	
1	8				P72B-000JX	Paddle spacer ASTM A105 Class 900 Standard-drawing Flange ASME B16.5 RJ	

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BOLT TABLE (B_M1AH02 , STUD ASME RJ, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	110	P80S-003XK	R12	P75T-000JT
0.75	4	0.750	115	P80S-003XL	R14	P75T-000JU
1	4	0.875	130	P80S-0041B	R16	P75T-000JV
1.5	4	1.000	140	P80S-0043F	R20	P75T-000JW
2	8	0.875	150	P80S-0041F	R24	P75T-0008A
3	8	0.875	150	P80S-0041F	R31	P75T-000JN
4	8	1.125	175	P80S-0046S	R37	P75T-000JP
6	12	1.125	200	P80S-0046X	R45	P75T-000JR
8	12	1.375	260	P80S-003E5	R49	P75T-000JS

BOLT TABLE (B_M1AH02_797 , STUD ASME RJ, OPTION CODE 797)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	110		R12	
0.75	4	0.750	115		R14	
1	4	0.875	130		R16	
1.5	4	1.000	140		R20	
2	8	0.875	150		R24	
3	8	1.125	180	P80S-0046T	R35	P75T-0008E
4	8	1.250	230	P80S-004AU	R39	P75T-0008D
6	12	1.375	300	P80S-003ED	R46	P75T-0008C
8	12	1.625	345	P80S-005TY	R50	P75T-0008B

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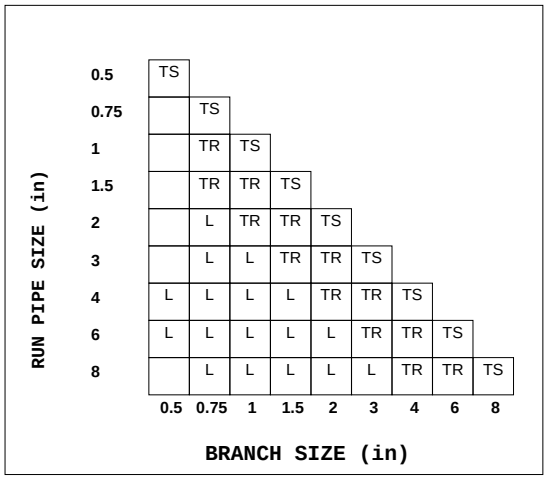
BRANCH TABLE (T_M1AH02)



TS : STRAIGHT TEE
TR : REDUCING TEE
L : OUTLET

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PIPING CLASS

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Material : 1-1/4Cr - 1/2Mo
Rating : ASME CLASS 900
Flange Face : RJ
C.A.(mm) : 1.50
Gasket : Ring Octagonal
Service : UTILITY: STEAM, CONDENSATE, BOILER FEED WATER TO ASME B31.3
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
24	FOR ALL RELEVANT PIPING CLASSES WITH LINE DESIGN TEMPERATURE ABOVE 427DEGC, IN SPIRAL WOUND GASKET, SUITABLE GASKET FILLER MATERIAL SUCH AS COMBINATION OF MICA LAYERS AND GRAPHITE FILLERS OR EQUIVALENT SHALL BE REVIEWED AND SELECTED OR AS DEFINED BY THE LICENSOR

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
541	NPT(F) (F)
797	CLASS 1500 (B,F,G)

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PIPING CLASS
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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P01F-000DF	Pipe ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M PE	
1	0.75		XS		P01F-000DG	Pipe ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M PE	
1	1		XS		P01F-000DH	Pipe ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M PE	
1	1.5		XS		P01F-000DJ	Pipe ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M PE	
1	2		XS		P01F-0002U	Pipe ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M BE	
1	3		XS		P01F-0005G	Pipe ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M BE	
1	4		XS		P01F-0001T	Pipe ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M BE	
1	6		XS		P01F-0001U	Pipe ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M BE	
1	8		SCH100		P01F-001NA	Pipe ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M BE	
1	10		SCH100		P01F-001N8	Pipe ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M BE	
1	12		SCH100		P01F-001N9	Pipe ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M BE	
1	14		SCH100		P01F-00028	Pipe ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M BE	
1	16		SCH100		P01F-00029	Pipe ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P02F-000GS	90 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	0.75		XS		P02F-000GT	90 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	1		XS		P02F-000GU	90 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	1.5		XS		P02F-000GV	90 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	2		XS		P02F-00055	90 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	3		XS		P02F-000B1	90 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	4		XS		P02F-000B2	90 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	6		XS		P02F-000B3	90 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	8		SCH100		P02F-000H0	90 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	10		SCH100		P02F-000GW	90 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	12		SCH100		P02F-000GX	90 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	14		SCH100		P02F-000GY	90 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	16		SCH100		P02F-000GZ	90 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P03F-000GG	45 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	0.75		XS		P03F-000GH	45 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	1		XS		P03F-000GJ	45 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	1.5		XS		P03F-000GK	45 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	2		XS		P03F-00052	45 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	3		XS		P03F-000AU	45 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	4		XS		P03F-000AV	45 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	6		XS		P03F-000AW	45 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	8		SCH100		P03F-000GR	45 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	10		SCH100		P03F-000GL	45 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	12		SCH100		P03F-000GM	45 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	14		SCH100		P03F-000GN	45 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	16		SCH100		P03F-000GP	45 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P21F-000GL	Straight tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	0.75		XS		P21F-000GM	Straight tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	1		XS		P21F-000GN	Straight tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	1.5		XS		P21F-000GP	Straight tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	2		XS		P21F-00053	Straight tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	3		XS		P21F-000AS	Straight tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	4		XS		P21F-000AT	Straight tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	6		XS		P21F-000AU	Straight tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	8		SCH100		P21F-000GV	Straight tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	10		SCH100		P21F-000GR	Straight tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	12		SCH100		P21F-000GS	Straight tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	

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STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14		SCH100		P21F-000GT	Straight tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	16		SCH100		P21F-000GU	Straight tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75	XS	XS	P24F-001U5	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	1.5	0.75	XS	XS	P24F-001U6	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	1.5	1	XS	XS	P24F-001U7	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	2	1	XS	XS	P24F-001BN	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	2	1.5	XS	XS	P24F-001BP	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	3	1.5	XS	XS	P24F-001BR	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	3	2	XS	XS	P24F-001BS	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	4	2	XS	XS	P24F-001BT	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	4	3	XS	XS	P24F-000XW	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	6	3	XS	XS	P24F-000XX	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	6	4	XS	XS	P24F-000XY	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	8	4	SCH100	XS	P24F-001U8	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	8	6	SCH100	XS	P24F-001U9	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	10	4	SCH100	XS	P24F-001UA	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	10	6	SCH100	XS	P24F-001UB	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	10	8	SCH100	SCH100	P24F-001UC	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	12	6	SCH100	XS	P24F-001UE	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	12	8	SCH100	SCH100	P24F-001UF	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	12	10	SCH100	SCH100	P24F-001UD	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	14	6	SCH100	XS	P24F-001UJ	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	14	8	SCH100	SCH100	P24F-001UK	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	14	10	SCH100	SCH100	P24F-001UG	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	14	12	SCH100	SCH100	P24F-001UH	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	16	6	SCH100	XS	P24F-001UP	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	16	8	SCH100	SCH100	P24F-001UR	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	16	10	SCH100	SCH100	P24F-001UL	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	16	12	SCH100	SCH100	P24F-001UM	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	16	14	SCH100	SCH100	P24F-001UN	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	XS	XS	P27F-001CP	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	1	0.5	XS	XS	P27F-001CR	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	1	0.75	XS	XS	P27F-001CS	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	1.5	0.5	XS	XS	P27F-001CT	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	1.5	0.75	XS	XS	P27F-001CU	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	1.5	1	XS	XS	P27F-001CV	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	2	0.75	XS	XS	P27F-001CW	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	2	1	XS	XS	P27F-001CX	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	2	1.5	XS	XS	P27F-001CY	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	3	1.5	XS	XS	P27F-001CZ	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	3	2	XS	XS	P27F-0013N	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	4	1.5	XS	XS	P27F-001D0	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	4	2	XS	XS	P27F-0013P	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	4	3	XS	XS	P27F-000SS	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	6	3	XS	XS	P27F-000ST	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	6	4	XS	XS	P27F-000SU	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	8	4	SCH100	XS	P27F-001D1	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	8	6	SCH100	XS	P27F-001D2	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	10	4	SCH100	XS	P27F-001D3	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	10	6	SCH100	XS	P27F-001D4	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	10	8	SCH100	SCH100	P27F-001D5	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	12	6	SCH100	XS	P27F-001D7	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	12	8	SCH100	SCH100	P27F-001D8	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	

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CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	12	10	SCH100	SCH100	P27F-001D6	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	14	6	SCH100	XS	P27F-001DB	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	14	8	SCH100	SCH100	P27F-001DC	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	14	10	SCH100	SCH100	P27F-001D9	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	14	12	SCH100	SCH100	P27F-001DA	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	16	8	SCH100	SCH100	P27F-001DG	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	16	10	SCH100	SCH100	P27F-001DD	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	16	12	SCH100	SCH100	P27F-001DE	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	16	14	SCH100	SCH100	P27F-001DF	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	XS	XS	P28F-001D5	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	1	0.5	XS	XS	P28F-001D6	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	1	0.75	XS	XS	P28F-001D7	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	1.5	0.5	XS	XS	P28F-001D8	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	1.5	0.75	XS	XS	P28F-001D9	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	1.5	1	XS	XS	P28F-001DA	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	2	0.75	XS	XS	P28F-001DB	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	2	1	XS	XS	P28F-001DC	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	2	1.5	XS	XS	P28F-001DD	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	3	1.5	XS	XS	P28F-001DE	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	3	2	XS	XS	P28F-0013P	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	4	1.5	XS	XS	P28F-001DF	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	4	2	XS	XS	P28F-0013R	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	4	3	XS	XS	P28F-000SS	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	6	3	XS	XS	P28F-000ST	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	6	4	XS	XS	P28F-000SU	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	8	4	SCH100	XS	P28F-001DG	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	8	6	SCH100	XS	P28F-001DH	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	10	4	SCH100	XS	P28F-001DJ	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	10	6	SCH100	XS	P28F-001DK	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	10	8	SCH100	SCH100	P28F-001DL	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	12	6	SCH100	XS	P28F-001DN	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	12	8	SCH100	SCH100	P28F-001DP	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	12	10	SCH100	SCH100	P28F-001DM	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	14	6	SCH100	XS	P28F-001DT	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	14	8	SCH100	SCH100	P28F-001DU	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	14	10	SCH100	SCH100	P28F-001DR	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	14	12	SCH100	SCH100	P28F-001DS	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	16	8	SCH100	SCH100	P28F-001DY	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	16	10	SCH100	SCH100	P28F-001DV	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	16	12	SCH100	SCH100	P28F-001DW	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	16	14	SCH100	SCH100	P28F-001DX	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P29F-000FW	Cap ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	0.75		XS		P29F-000FX	Cap ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	1		XS		P29F-000FY	Cap ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	1.5		XS		P29F-000FZ	Cap ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	2		XS		P29F-00050	Cap ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	3		XS		P29F-000AJ	Cap ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	4		XS		P29F-000AK	Cap ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	6		XS		P29F-000AL	Cap ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	8		SCH100		P29F-000G4	Cap ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	10		SCH100		P29F-000G0	Cap ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	12		SCH100		P29F-000G1	Cap ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	14		SCH100		P29F-000G2	Cap ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	

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CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	16		SCH100		P29F-000G3	Cap ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P41F-00005	Straight nipple ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		SCH160		P41F-00006	Straight nipple ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		SCH160		P41F-00007	Straight nipple ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		SCH160		P41F-00008	Straight nipple ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2	0.75	XS	XS	P31G-0026R	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	3	0.75	XS	XS	P31G-0026S	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	4	0.75	XS	XS	P31G-0026U	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	6	0.75	XS	XS	P31G-0026X	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	8	0.75	SCH100	XS	P31G-00270	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	10	0.75	SCH100	XS	P31G-00275	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	12	0.75	SCH100	XS	P31G-0027A	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	14	0.75	SCH100	XS	P31G-0027G	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	16	0.75	SCH100	XS	P31G-0027N	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	3	1	XS	XS	P31G-0026T	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	4	1	XS	XS	P31G-0026V	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	6	1	XS	XS	P31G-0026Y	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	8	1	SCH100	XS	P31G-00271	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	10	1	SCH100	XS	P31G-00276	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	12	1	SCH100	XS	P31G-0027B	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	14	1	SCH100	XS	P31G-0027H	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	16	1	SCH100	XS	P31G-0027P	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	4	1.5	XS	XS	P31G-0026W	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	6	1.5	XS	XS	P31G-0026Z	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	8	1.5	SCH100	XS	P31G-00272	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	10	1.5	SCH100	XS	P31G-00277	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	12	1.5	SCH100	XS	P31G-0027C	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	14	1.5	SCH100	XS	P31G-0027J	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	16	1.5	SCH100	XS	P31G-0027R	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	6	2	XS	XS	P31G-001D5	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	8	2	SCH100	XS	P31G-00273	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	10	2	SCH100	XS	P31G-00278	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	12	2	SCH100	XS	P31G-0027D	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	14	2	SCH100	XS	P31G-0027K	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	16	2	SCH100	XS	P31G-0027S	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	8	3	SCH100	XS	P31G-00274	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	10	3	SCH100	XS	P31G-00279	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	12	3	SCH100	XS	P31G-0027E	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	14	3	SCH100	XS	P31G-0027L	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	16	3	SCH100	XS	P31G-0027T	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	12	4	SCH100	XS	P31G-0027F	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	14	4	SCH100	XS	P31G-0027M	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	16	4	SCH100	XS	P31G-0027U	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30G-0001G	Plug ASTM A182 Grade F11 Class 1 ASME B16.11 NPT Round head	
1	0.75				P30G-0001H	Plug ASTM A182 Grade F11 Class 1 ASME B16.11 NPT Round head	
1	1				P30G-0001J	Plug ASTM A182 Grade F11 Class 1 ASME B16.11 NPT Round head	
1	1.5				P30G-0001K	Plug ASTM A182 Grade F11 Class 1 ASME B16.11 NPT Round head	

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FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P61G-0010D	Flange WN ASTM A182 Grade F11 Class 2 Class 1500 ASME B16.5 RJ	
1	0.75		XS		P61G-0010E	Flange WN ASTM A182 Grade F11 Class 2 Class 1500 ASME B16.5 RJ	
1	1		XS		P61G-0010F	Flange WN ASTM A182 Grade F11 Class 2 Class 1500 ASME B16.5 RJ	
1	1.5		XS		P61G-0010G	Flange WN ASTM A182 Grade F11 Class 2 Class 1500 ASME B16.5 RJ	
1	2		XS		P61G-000TY	Flange WN ASTM A182 Grade F11 Class 2 Class 1500 ASME B16.5 RJ	
1	3		XS		P61G-000K3	Flange WN ASTM A182 Grade F11 Class 2 Class 900 ASME B16.5 RJ	
1	4		XS		P61G-00041	Flange WN ASTM A182 Grade F11 Class 2 Class 900 ASME B16.5 RJ	
1	6		XS		P61G-00042	Flange WN ASTM A182 Grade F11 Class 2 Class 900 ASME B16.5 RJ	
1	8		SCH100		P61G-0010K	Flange WN ASTM A182 Grade F11 Class 2 Class 900 ASME B16.5 RJ	
1	10		SCH100		P61G-0010H	Flange WN ASTM A182 Grade F11 Class 2 Class 900 ASME B16.5 RJ	
1	12		SCH100		P61G-0010J	Flange WN ASTM A182 Grade F11 Class 2 Class 900 ASME B16.5 RJ	
1	14		SCH100		P61G-0004Y	Flange WN ASTM A182 Grade F11 Class 2 Class 900 ASME B16.5 RJ	
1	16		SCH100		P61G-0004Z	Flange WN ASTM A182 Grade F11 Class 2 Class 900 ASME B16.5 RJ	
541	0.5				P61G-001AZ	Flange NPT ASTM A182 Grade F11 Class 2 Class 1500 ASME B16.5 RJ	
541	0.75				P61G-00158	Flange NPT ASTM A182 Grade F11 Class 2 Class 1500 ASME B16.5 RJ	
797	3		XS		P61G-0010N	Flange WN ASTM A182 Grade F11 Class 2 Class 1500 ASME B16.5 RJ	
797	4		XS		P61G-0010A	Flange WN ASTM A182 Grade F11 Class 2 Class 1500 ASME B16.5 RJ	
797	6		XS		P61G-0010B	Flange WN ASTM A182 Grade F11 Class 2 Class 1500 ASME B16.5 RJ	
797	8		SCH100		P61G-0010P	Flange WN ASTM A182 Grade F11 Class 2 Class 1500 ASME B16.5 RJ	
797	10		SCH100		P61G-0010L	Flange WN ASTM A182 Grade F11 Class 2 Class 1500 ASME B16.5 RJ	
797	12		SCH100		P61G-0010M	Flange WN ASTM A182 Grade F11 Class 2 Class 1500 ASME B16.5 RJ	
797	14		SCH100		P61G-00053	Flange WN ASTM A182 Grade F11 Class 2 Class 1500 ASME B16.5 RJ	
797	16		SCH100		P61G-00054	Flange WN ASTM A182 Grade F11 Class 2 Class 1500 ASME B16.5 RJ	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67G-0002P	Blind flange ASTM A182 Grade F11 Class 2 Class 1500 ASME B16.5 RJ	
1	0.75				P67G-0002R	Blind flange ASTM A182 Grade F11 Class 2 Class 1500 ASME B16.5 RJ	
1	1				P67G-0002S	Blind flange ASTM A182 Grade F11 Class 2 Class 1500 ASME B16.5 RJ	
1	1.5				P67G-0002T	Blind flange ASTM A182 Grade F11 Class 2 Class 1500 ASME B16.5 RJ	
1	2				P67G-000A4	Blind flange ASTM A182 Grade F11 Class 2 Class 1500 ASME B16.5 RJ	
1	3				P67G-0002X	Blind flange ASTM A182 Grade F11 Class 2 Class 900 ASME B16.5 RJ	
1	4				P67G-0002Y	Blind flange ASTM A182 Grade F11 Class 2 Class 900 ASME B16.5 RJ	
1	6				P67G-000AG	Blind flange ASTM A182 Grade F11 Class 2 Class 900 ASME B16.5 RJ	
1	8				P67G-0002Z	Blind flange ASTM A182 Grade F11 Class 2 Class 900 ASME B16.5 RJ	
1	10				P67G-000AE	Blind flange ASTM A182 Grade F11 Class 2 Class 900 ASME B16.5 RJ	
1	12				P67G-000AF	Blind flange ASTM A182 Grade F11 Class 2 Class 900 ASME B16.5 RJ	
1	14				P67G-0002U	Blind flange ASTM A182 Grade F11 Class 2 Class 900 ASME B16.5 RJ	
1	16				P67G-0002V	Blind flange ASTM A182 Grade F11 Class 2 Class 900 ASME B16.5 RJ	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P75T-000KE	Ring joint gasket 5Cr-1/2Mo Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	0.75				P75T-000KF	Ring joint gasket 5Cr-1/2Mo Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	1				P75T-000KG	Ring joint gasket 5Cr-1/2Mo Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	1.5				P75T-000KH	Ring joint gasket 5Cr-1/2Mo Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	2				P75T-000KS	Ring joint gasket 5Cr-1/2Mo Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	3				P75T-000KP	Ring joint gasket 5Cr-1/2Mo Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	4				P75T-000KC	Ring joint gasket 5Cr-1/2Mo Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	6				P75T-000KD	Ring joint gasket 5Cr-1/2Mo Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	8				P75T-000KR	Ring joint gasket 5Cr-1/2Mo Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	10				P75T-000KN	Ring joint gasket 5Cr-1/2Mo Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	12				P75T-0010W	Ring joint gasket 5Cr-1/2Mo Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	14				P75T-000KY	Ring joint gasket 5Cr-1/2Mo Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	16				P75T-000K9	Ring joint gasket 5Cr-1/2Mo Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	3				P75T-000L3	Ring joint gasket 5Cr-1/2Mo Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	4				P75T-000L4	Ring joint gasket 5Cr-1/2Mo Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	6				P75T-00116	Ring joint gasket 5Cr-1/2Mo Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	8				P75T-000L5	Ring joint gasket 5Cr-1/2Mo Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	

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GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
797	10				P75T-000NK	Ring joint gasket 5Cr-1/2Mo Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	12				P75T-000P1	Ring joint gasket 5Cr-1/2Mo Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	14				P75T-000L0	Ring joint gasket 5Cr-1/2Mo Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	16				P75T-000L1	Ring joint gasket 5Cr-1/2Mo Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-3				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B16 / A194 Grade 4 ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	4-16				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B16 / A194 Grade 4 ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
797	3-16				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B16 / A194 Grade 4 ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81G-0007J	Gate valve ASTM A182 Grade F11 Class 2 Class 1500 API 602 Flange ASME B16.5 RJ Trim number 5 WB-BG-OS&Y Handwheel operated Fluid-2	
1	0.75				P81G-0007K	Gate valve ASTM A182 Grade F11 Class 2 Class 1500 API 602 Flange ASME B16.5 RJ Trim number 5 WB-BG-OS&Y Handwheel operated Fluid-2	
1	1				P81G-0007L	Gate valve ASTM A182 Grade F11 Class 2 Class 1500 API 602 Flange ASME B16.5 RJ Trim number 5 WB-BG-OS&Y Handwheel operated Fluid-2	
1	1.5				P81G-0007M	Gate valve ASTM A182 Grade F11 Class 2 Class 1500 API 602 Flange ASME B16.5 RJ Trim number 5 WB-BG-OS&Y Handwheel operated Fluid-2	
1	2				P81H-000U0	Gate valve ASTM A217 Grade WC6 Class 1500 API 600 Flange ASME B16.5 RJ Trim number 5 PSB-BG-OS&Y Handwheel operated Fluid-2	
1	3				P81H-000U1	Gate valve ASTM A217 Grade WC6 Class 900 API 600 Flange ASME B16.5 RJ Trim number 5 PSB-BG-OS&Y Handwheel operated Fluid-2	
1	4				P81H-000U2	Gate valve ASTM A217 Grade WC6 Class 900 API 600 Flange ASME B16.5 RJ Trim number 5 PSB-BG-OS&Y Handwheel operated Fluid-2	
1	6				P81H-000U3	Gate valve ASTM A217 Grade WC6 Class 900 API 600 Flange ASME B16.5 RJ Trim number 5 PSB-BG-OS&Y Gear operated Fluid-2	
1	8				P81H-000U8	Gate valve ASTM A217 Grade WC6 Class 900 API 600 Flange ASME B16.5 RJ Trim number 5 PSB-BG-OS&Y Gear operated Fluid-2	
1	10				P81H-000U4	Gate valve ASTM A217 Grade WC6 Class 900 API 600 Flange ASME B16.5 RJ Trim number 5 PSB-BG-OS&Y Gear operated Fluid-2	
1	12				P81H-000U5	Gate valve ASTM A217 Grade WC6 Class 900 API 600 Flange ASME B16.5 RJ Trim number 5 PSB-BG-OS&Y Gear operated Fluid-2	
1	14				P81H-000U6	Gate valve ASTM A217 Grade WC6 Class 900 API 600 Flange ASME B16.5 RJ Trim number 5 PSB-BG-OS&Y Gear operated Fluid-2	
1	16				P81H-000U7	Gate valve ASTM A217 Grade WC6 Class 900 API 600 Flange ASME B16.5 RJ Trim number 5 PSB-BG-OS&Y Gear operated Fluid-2	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82G-0003R	Globe valve ASTM A182 Grade F11 Class 2 Class 1500 API 602 Flange ASME B16.5 RJ Trim number 5 WB-BG-OS&Y Handwheel operated Fluid-2	
1	0.75				P82G-0003S	Globe valve ASTM A182 Grade F11 Class 2 Class 1500 API 602 Flange ASME B16.5 RJ Trim number 5 WB-BG-OS&Y Handwheel operated Fluid-2	
1	1				P82G-0003T	Globe valve ASTM A182 Grade F11 Class 2 Class 1500 API 602 Flange ASME B16.5 RJ Trim number 5 WB-BG-OS&Y Handwheel operated Fluid-2	
1	1.5				P82G-0003U	Globe valve ASTM A182 Grade F11 Class 2 Class 1500 API 602 Flange ASME B16.5 RJ Trim number 5 WB-BG-OS&Y Handwheel operated Fluid-2	
1	2				P82H-000F9	Globe valve ASTM A217 Grade WC6 Class 1500 BS 1873 Flange ASME B16.5 RJ Trim number 5 PSB-BG-OS&Y Gear operated Fluid-2	
1	3				P82H-000EY	Globe valve ASTM A217 Grade WC6 Class 900 BS 1873 Flange ASME B16.5 RJ Trim number 5 PSB-BG-OS&Y Gear operated Fluid-2	
1	4				P82H-000EZ	Globe valve ASTM A217 Grade WC6 Class 900 BS 1873 Flange ASME B16.5 RJ Trim number 5 PSB-BG-OS&Y Gear operated Fluid-2	
1	6				P82H-000B1	Globe valve ASTM A217 Grade WC6 Class 900 BS 1873 Flange ASME B16.5 RJ Trim number 5 PSB-BG-OS&Y Gear operated Fluid-2	
1	8				P82H-000B2	Globe valve ASTM A217 Grade WC6 Class 900 BS 1873 Flange ASME B16.5 RJ Trim number 5 PSB-BG-OS&Y Gear operated Fluid-2	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83G-0003N	Check valve ASTM A182 Grade F11 Class 2 Class 1500 API 602 Flange ASME B16.5 RJ Trim number 5 Lift-type Welded cover	
1	0.75				P83G-0003P	Check valve ASTM A182 Grade F11 Class 2 Class 1500 API 602 Flange ASME B16.5 RJ Trim number 5 Lift-type Welded cover	
1	1				P83G-0003R	Check valve ASTM A182 Grade F11 Class 2 Class 1500 API 602 Flange ASME B16.5 RJ Trim number 5 Lift-type Welded cover	
1	1.5				P83G-0003S	Check valve ASTM A182 Grade F11 Class 2 Class 1500 API 602 Flange ASME B16.5 RJ Trim number 5 Lift-type Welded cover	
1	2				P83H-0008Y	Check valve ASTM A217 Grade WC6 Class 1500 BS 1868 Flange ASME B16.5 RJ Trim number 5 Swing-type Pressure seal cap	
1	3				P83H-0008Z	Check valve ASTM A217 Grade WC6 Class 900 BS 1868 Flange ASME B16.5 RJ Trim number 5 Swing-type Pressure seal cap	

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CHECK VALVE (X)							
OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	4				P83H-00090	Check valve ASTM A217 Grade WC6 Class 900 BS 1868 Flange ASME B16.5 RJ Trim number 5 Swing-type Pressure seal cap	
1	6				P83H-00091	Check valve ASTM A217 Grade WC6 Class 900 BS 1868 Flange ASME B16.5 RJ Trim number 5 Swing-type Pressure seal cap	
1	8				P83H-00094	Check valve ASTM A217 Grade WC6 Class 900 BS 1868 Flange ASME B16.5 RJ Trim number 5 Swing-type Pressure seal cap	
1	10				P83H-00092	Check valve ASTM A217 Grade WC6 Class 900 BS 1868 Flange ASME B16.5 RJ Trim number 5 Swing-type Pressure seal cap	

DP CHECK VALVE (XDP)							
OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	12				P88H-0008J	Dual plate check valve ASTM A217 Grade WC6 Class 900 API 594 Lug-type ASME B16.5 RJ Trim number 5 Internal wetted parts 13Cr Spring Inconel Retainerless-type	

PADDLE BLANK (PB)							
OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P72G-0003T	Paddle blank ASTM A182 Grade F11 Class 2 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	0.75				P72G-0003U	Paddle blank ASTM A182 Grade F11 Class 2 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	1				P72G-0003V	Paddle blank ASTM A182 Grade F11 Class 2 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	1.5				P72G-0003W	Paddle blank ASTM A182 Grade F11 Class 2 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	2				P72G-00040	Paddle blank ASTM A182 Grade F11 Class 2 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	3				P72G-0005H	Paddle blank ASTM A182 Grade F11 Class 2 Class 900 Standard-drawing Flange ASME B16.5 RJ	
1	4				P72G-0005J	Paddle blank ASTM A182 Grade F11 Class 2 Class 900 Standard-drawing Flange ASME B16.5 RJ	
1	6				P72G-0005K	Paddle blank ASTM A182 Grade F11 Class 2 Class 900 Standard-drawing Flange ASME B16.5 RJ	
1	8				P72G-0005L	Paddle blank ASTM A182 Grade F11 Class 2 Class 900 Standard-drawing Flange ASME B16.5 RJ	
1	10				P72G-0005C	Paddle blank ASTM A182 Grade F11 Class 2 Class 900 Standard-drawing Flange ASME B16.5 RJ	
1	12				P72G-0005D	Paddle blank ASTM A182 Grade F11 Class 2 Class 900 Standard-drawing Flange ASME B16.5 RJ	
1	14				P72G-0005E	Paddle blank ASTM A182 Grade F11 Class 2 Class 900 Standard-drawing Flange ASME B16.5 RJ	
1	16				P72G-0005F	Paddle blank ASTM A182 Grade F11 Class 2 Class 900 Standard-drawing Flange ASME B16.5 RJ	

PADDLE SPACER (PS)							
OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P72G-00045	Paddle spacer ASTM A182 Grade F11 Class 2 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	0.75				P72G-00046	Paddle spacer ASTM A182 Grade F11 Class 2 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	1				P72G-00047	Paddle spacer ASTM A182 Grade F11 Class 2 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	1.5				P72G-00048	Paddle spacer ASTM A182 Grade F11 Class 2 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	2				P72G-0004C	Paddle spacer ASTM A182 Grade F11 Class 2 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	3				P72G-0005T	Paddle spacer ASTM A182 Grade F11 Class 2 Class 900 Standard-drawing Flange ASME B16.5 RJ	
1	4				P72G-0005U	Paddle spacer ASTM A182 Grade F11 Class 2 Class 900 Standard-drawing Flange ASME B16.5 RJ	
1	6				P72G-0005V	Paddle spacer ASTM A182 Grade F11 Class 2 Class 900 Standard-drawing Flange ASME B16.5 RJ	
1	8				P72G-0005W	Paddle spacer ASTM A182 Grade F11 Class 2 Class 900 Standard-drawing Flange ASME B16.5 RJ	
1	10				P72G-0005M	Paddle spacer ASTM A182 Grade F11 Class 2 Class 900 Standard-drawing Flange ASME B16.5 RJ	
1	12				P72G-0005N	Paddle spacer ASTM A182 Grade F11 Class 2 Class 900 Standard-drawing Flange ASME B16.5 RJ	
1	14				P72G-0005P	Paddle spacer ASTM A182 Grade F11 Class 2 Class 900 Standard-drawing Flange ASME B16.5 RJ	
1	16				P72G-0005R	Paddle spacer ASTM A182 Grade F11 Class 2 Class 900 Standard-drawing Flange ASME B16.5 RJ	

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BOLT TABLE (B_M1DS , STUD ASME RJ, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	110	P80S-00GLD	R12	P75T-000KE
0.75	4	0.750	115	P80S-00GLC	R14	P75T-000KF
1	4	0.875	130	P80S-00FV7	R16	P75T-000KG
1.5	4	1.000	140	P80S-00FRD	R20	P75T-000KH
2	8	0.875	150	P80S-00FV3	R24	P75T-000KS
3	8	0.875	150	P80S-00FV3	R31	P75T-000KP
4	8	1.125	175	P80S-00FH8	R37	P75T-000KC
6	12	1.125	200	P80S-00FH3	R45	P75T-000KD
8	12	1.375	260	P80S-00F4V	R49	P75T-000KR
10	16	1.375	275	P80S-00F4S	R53	P75T-000KN
12	20	1.375	295	P80S-00F2T	R57	P75T-0010W
14	20	1.500	325	P80S-00EY2	R62	P75T-000KY
16	20	1.625	340	P80S-00G0N	R66	P75T-000K9

BOLT TABLE (B_M1DS_797 , STUD ASME RJ, OPTION CODE 797)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	110		R12	
0.75	4	0.750	115		R14	
1	4	0.875	130		R16	
1.5	4	1.000	140		R20	
2	8	0.875	150		R24	
3	8	1.125	180	P80S-00FH7	R35	P75T-000L3
4	8	1.250	230	P80S-00F9P	R39	P75T-000L4
6	12	1.375	300	P80S-00F2S	R46	P75T-00116
8	12	1.625	345	P80S-00G0M	R50	P75T-000L5
10	12	1.875	395	P80S-00FK9	R54	P75T-000NK
12	16	2.000	445	P80S-00FBE	R58	P75T-000P1
14	16	2.250	490	P80S-00F3F	R63	P75T-000L0
16	16	2.500	540	P80S-00EWF	R67	P75T-000L1

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BRANCH TABLE (T_M1DS)

RUN PIPE SIZE (in) \ BRANCH SIZE (in)	0.5	0.75	1	1.5	2	3	4	6	8	10	12	14	16
0.5	TS												
0.75		TS											
1		TR	TS										
1.5		TR	TR	TS									
2		L	TR	TR	TS								
3		L	L	TR	TR	TS							
4	L	L	L	L	TR	TR	TS						
6	L	L	L	L	L	TR	TR	TS					
8		L	L	L	L	L	TR	TR	TS				
10		L	L	L	L	L	TR	TR	TR	TS			
12		L	L	L	L	L	L	TR	TR	TR	TS		
14		L	L	L	L	L	L	TR	TR	TR	TR	TS	
16		L	L	L	L	L	L	TR	TR	TR	TR	TR	TS

L : OUTLET
TR : REDUCING TEE
TS : STRAIGHT TEE

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Material : 2-1/4Cr-1Mo
Rating : ASME CLASS 900
Flange Face : RJ
C.A.(mm) : 1.50
Gasket : Ring Octagonal
Service : UTILITY - STEAM, CONDENSATE, BOILER FEED WATER TO ASME B31.1
Design Code : ASME B31.1
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
797	CLASS 1500 (B,F,G)

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PIPING CLASS
M1EG REV NO. 2

PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P01F-001NB	Pipe ASME SA335 Grade P22 Seamless ASME B36.10M/B36.19M PE	
1	0.75		XS		P01F-001NC	Pipe ASME SA335 Grade P22 Seamless ASME B36.10M/B36.19M PE	
1	1		XS		P01F-001ND	Pipe ASME SA335 Grade P22 Seamless ASME B36.10M/B36.19M PE	
1	1.5		XS		P01F-001NE	Pipe ASME SA335 Grade P22 Seamless ASME B36.10M/B36.19M PE	
1	2		XS		P01F-001NH	Pipe ASME SA335 Grade P22 Seamless ASME B36.10M/B36.19M BE	
1	3		XS		P01F-001NJ	Pipe ASME SA335 Grade P22 Seamless ASME B36.10M/B36.19M BE	
1	4		XS		P01F-001NK	Pipe ASME SA335 Grade P22 Seamless ASME B36.10M/B36.19M BE	
1	6		XS		P01F-001NL	Pipe ASME SA335 Grade P22 Seamless ASME B36.10M/B36.19M BE	
1	8		XS		P01F-001RN	Pipe ASME SA335 Grade P22 Seamless ASME B36.10M/B36.19M BE	
1	10		SCH80		P01F-001RM	Pipe ASME SA335 Grade P22 Seamless ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P02F-000LU	90 degree elbow ASME SA234 Grade WP22 Class 1 Seamless ASME B16.9 BW Long radius	
1	0.75		XS		P02F-000LV	90 degree elbow ASME SA234 Grade WP22 Class 1 Seamless ASME B16.9 BW Long radius	
1	1		XS		P02F-000LW	90 degree elbow ASME SA234 Grade WP22 Class 1 Seamless ASME B16.9 BW Long radius	
1	1.5		XS		P02F-000LX	90 degree elbow ASME SA234 Grade WP22 Class 1 Seamless ASME B16.9 BW Long radius	
1	2		XS		P02F-000H3	90 degree elbow ASME SA234 Grade WP22 Class 1 Seamless ASME B16.9 BW Long radius	
1	3		XS		P02F-000H4	90 degree elbow ASME SA234 Grade WP22 Class 1 Seamless ASME B16.9 BW Long radius	
1	4		XS		P02F-000H5	90 degree elbow ASME SA234 Grade WP22 Class 1 Seamless ASME B16.9 BW Long radius	
1	6		XS		P02F-000H6	90 degree elbow ASME SA234 Grade WP22 Class 1 Seamless ASME B16.9 BW Long radius	
1	8		XS		P02F-000LZ	90 degree elbow ASME SA234 Grade WP22 Class 1 Seamless ASME B16.9 BW Long radius	
1	10		SCH80		P02F-000LY	90 degree elbow ASME SA234 Grade WP22 Class 1 Seamless ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P03F-000LC	45 degree elbow ASME SA234 Grade WP22 Class 1 Seamless ASME B16.9 BW Long radius	
1	0.75		XS		P03F-000LD	45 degree elbow ASME SA234 Grade WP22 Class 1 Seamless ASME B16.9 BW Long radius	
1	1		XS		P03F-000LE	45 degree elbow ASME SA234 Grade WP22 Class 1 Seamless ASME B16.9 BW Long radius	
1	1.5		XS		P03F-000LF	45 degree elbow ASME SA234 Grade WP22 Class 1 Seamless ASME B16.9 BW Long radius	
1	2		XS		P03F-000GU	45 degree elbow ASME SA234 Grade WP22 Class 1 Seamless ASME B16.9 BW Long radius	
1	3		XS		P03F-000GV	45 degree elbow ASME SA234 Grade WP22 Class 1 Seamless ASME B16.9 BW Long radius	
1	4		XS		P03F-000GW	45 degree elbow ASME SA234 Grade WP22 Class 1 Seamless ASME B16.9 BW Long radius	
1	6		XS		P03F-000GX	45 degree elbow ASME SA234 Grade WP22 Class 1 Seamless ASME B16.9 BW Long radius	
1	8		XS		P03F-000LH	45 degree elbow ASME SA234 Grade WP22 Class 1 Seamless ASME B16.9 BW Long radius	
1	10		SCH80		P03F-000LG	45 degree elbow ASME SA234 Grade WP22 Class 1 Seamless ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P21F-000LK	Straight tee ASME SA234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	0.75		XS		P21F-000LL	Straight tee ASME SA234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	1		XS		P21F-000LM	Straight tee ASME SA234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	1.5		XS		P21F-000LN	Straight tee ASME SA234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	2		XS		P21F-000GY	Straight tee ASME SA234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	3		XS		P21F-000GZ	Straight tee ASME SA234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	4		XS		P21F-000H0	Straight tee ASME SA234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	6		XS		P21F-000H1	Straight tee ASME SA234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	8		XS		P21F-000LR	Straight tee ASME SA234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	10		SCH80		P21F-000LP	Straight tee ASME SA234 Grade WP22 Class 1 Seamless ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75	XS	XS	P24F-002BR	Reducing tee ASME SA234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	1.5	0.75	XS	XS	P24F-002BS	Reducing tee ASME SA234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	1.5	1	XS	XS	P24F-002BT	Reducing tee ASME SA234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	2	1	XS	XS	P24F-001US	Reducing tee ASME SA234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	2	1.5	XS	XS	P24F-001UT	Reducing tee ASME SA234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	3	1.5	XS	XS	P24F-001UU	Reducing tee ASME SA234 Grade WP22 Class 1 Seamless ASME B16.9 BW	

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REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	XS	XS	P24F-001UV	Reducing tee ASME SA234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	4	2	XS	XS	P24F-001UW	Reducing tee ASME SA234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	4	3	XS	XS	P24F-001UX	Reducing tee ASME SA234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	6	3	XS	XS	P24F-001UY	Reducing tee ASME SA234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	6	4	XS	XS	P24F-001UZ	Reducing tee ASME SA234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	8	4	XS	XS	P24F-002BU	Reducing tee ASME SA234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	8	6	XS	XS	P24F-002BV	Reducing tee ASME SA234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	10	4	SCH80	XS	P24F-002BW	Reducing tee ASME SA234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	10	6	SCH80	XS	P24F-002BX	Reducing tee ASME SA234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	10	8	SCH80	XS	P24F-002BY	Reducing tee ASME SA234 Grade WP22 Class 1 Seamless ASME B16.9 BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	XS	XS	P27F-001UF	Concentric reducer ASME SA234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	1	0.5	XS	XS	P27F-001UG	Concentric reducer ASME SA234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	1	0.75	XS	XS	P27F-001UH	Concentric reducer ASME SA234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	1.5	0.5	XS	XS	P27F-001UJ	Concentric reducer ASME SA234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	1.5	0.75	XS	XS	P27F-001UK	Concentric reducer ASME SA234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	1.5	1	XS	XS	P27F-001UL	Concentric reducer ASME SA234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	2	0.75	XS	XS	P27F-001UM	Concentric reducer ASME SA234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	2	1	XS	XS	P27F-001UN	Concentric reducer ASME SA234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	2	1.5	XS	XS	P27F-001UP	Concentric reducer ASME SA234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	3	1.5	XS	XS	P27F-001UE	Concentric reducer ASME SA234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	3	2	XS	XS	P27F-001DH	Concentric reducer ASME SA234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	4	1.5	XS	XS	P27F-001WD	Concentric reducer ASME SA234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	4	2	XS	XS	P27F-001DJ	Concentric reducer ASME SA234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	4	3	XS	XS	P27F-001DK	Concentric reducer ASME SA234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	6	3	XS	XS	P27F-001DL	Concentric reducer ASME SA234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	6	4	XS	XS	P27F-001DM	Concentric reducer ASME SA234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	8	4	XS	XS	P27F-001SP	Concentric reducer ASME SA234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	8	6	XS	XS	P27F-001SR	Concentric reducer ASME SA234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	10	4	SCH80	XS	P27F-001SS	Concentric reducer ASME SA234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	10	6	SCH80	XS	P27F-001ST	Concentric reducer ASME SA234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	10	8	SCH80	XS	P27F-001SU	Concentric reducer ASME SA234 Grade WP22 Class 1 Seamless ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	XS	XS	P28F-001UY	Eccentric reducer ASME SA234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	1	0.5	XS	XS	P28F-001UZ	Eccentric reducer ASME SA234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	1	0.75	XS	XS	P28F-001V0	Eccentric reducer ASME SA234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	1.5	0.5	XS	XS	P28F-001V1	Eccentric reducer ASME SA234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	1.5	0.75	XS	XS	P28F-001V2	Eccentric reducer ASME SA234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	1.5	1	XS	XS	P28F-001V3	Eccentric reducer ASME SA234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	2	0.75	XS	XS	P28F-001V4	Eccentric reducer ASME SA234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	2	1	XS	XS	P28F-001V5	Eccentric reducer ASME SA234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	2	1.5	XS	XS	P28F-001V6	Eccentric reducer ASME SA234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	3	1.5	XS	XS	P28F-001V8	Eccentric reducer ASME SA234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	3	2	XS	XS	P28F-001DZ	Eccentric reducer ASME SA234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	4	1.5	XS	XS	P28F-001V7	Eccentric reducer ASME SA234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	4	2	XS	XS	P28F-001E0	Eccentric reducer ASME SA234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	4	3	XS	XS	P28F-001E1	Eccentric reducer ASME SA234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	6	3	XS	XS	P28F-001E2	Eccentric reducer ASME SA234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	6	4	XS	XS	P28F-001E3	Eccentric reducer ASME SA234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	8	4	XS	XS	P28F-001T7	Eccentric reducer ASME SA234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	8	6	XS	XS	P28F-001T8	Eccentric reducer ASME SA234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	10	4	SCH80	XS	P28F-001T9	Eccentric reducer ASME SA234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	10	6	SCH80	XS	P28F-001TA	Eccentric reducer ASME SA234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	10	8	SCH80	XS	P28F-001TB	Eccentric reducer ASME SA234 Grade WP22 Class 1 Seamless ASME B16.9 BW	

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CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P29F-000JY	Cap ASME SA234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	0.75		XS		P29F-000JZ	Cap ASME SA234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	1		XS		P29F-000K0	Cap ASME SA234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	1.5		XS		P29F-000K1	Cap ASME SA234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	2		XS		P29F-000G7	Cap ASME SA234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	3		XS		P29F-000G8	Cap ASME SA234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	4		XS		P29F-000G9	Cap ASME SA234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	6		XS		P29F-000GA	Cap ASME SA234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	8		XS		P29F-000K3	Cap ASME SA234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	10		SCH80		P29F-000K2	Cap ASME SA234 Grade WP22 Class 1 Seamless ASME B16.9 BW	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P41F-00030	Straight nipple ASME SA335 Grade P22 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		SCH160		P41F-00031	Straight nipple ASME SA335 Grade P22 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		SCH160		P41F-00032	Straight nipple ASME SA335 Grade P22 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		SCH160		P41F-00033	Straight nipple ASME SA335 Grade P22 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	4	0.5	XS	XS	P31G-002SA	Outlet ASME SA182 Grade F22 Class 1 MSS SP-97 BW	
1	6	0.5	XS	XS	P31G-002R1	Outlet ASME SA182 Grade F22 Class 1 MSS SP-97 BW	
1	2	0.75	XS	XS	P31G-002PJ	Outlet ASME SA182 Grade F22 Class 1 MSS SP-97 BW	
1	3	0.75	XS	XS	P31G-002PK	Outlet ASME SA182 Grade F22 Class 1 MSS SP-97 BW	
1	4	0.75	XS	XS	P31G-002PM	Outlet ASME SA182 Grade F22 Class 1 MSS SP-97 BW	
1	6	0.75	XS	XS	P31G-002PF	Outlet ASME SA182 Grade F22 Class 1 MSS SP-97 BW	
1	8	0.75	XS	XS	P31G-002PR	Outlet ASME SA182 Grade F22 Class 1 MSS SP-97 BW	
1	10	0.75	SCH80	XS	P31G-002PW	Outlet ASME SA182 Grade F22 Class 1 MSS SP-97 BW	
1	3	1	XS	XS	P31G-002PL	Outlet ASME SA182 Grade F22 Class 1 MSS SP-97 BW	
1	4	1	XS	XS	P31G-002PN	Outlet ASME SA182 Grade F22 Class 1 MSS SP-97 BW	
1	6	1	XS	XS	P31G-002PG	Outlet ASME SA182 Grade F22 Class 1 MSS SP-97 BW	
1	8	1	XS	XS	P31G-002PS	Outlet ASME SA182 Grade F22 Class 1 MSS SP-97 BW	
1	10	1	SCH80	XS	P31G-002PX	Outlet ASME SA182 Grade F22 Class 1 MSS SP-97 BW	
1	4	1.5	XS	XS	P31G-002PP	Outlet ASME SA182 Grade F22 Class 1 MSS SP-97 BW	
1	6	1.5	XS	XS	P31G-002PH	Outlet ASME SA182 Grade F22 Class 1 MSS SP-97 BW	
1	8	1.5	XS	XS	P31G-002PT	Outlet ASME SA182 Grade F22 Class 1 MSS SP-97 BW	
1	10	1.5	SCH80	XS	P31G-002PY	Outlet ASME SA182 Grade F22 Class 1 MSS SP-97 BW	
1	6	2	XS	XS	P31G-0027V	Outlet ASME SA182 Grade F22 Class 1 MSS SP-97 BW	
1	8	2	XS	XS	P31G-002PU	Outlet ASME SA182 Grade F22 Class 1 MSS SP-97 BW	
1	10	2	SCH80	XS	P31G-002PZ	Outlet ASME SA182 Grade F22 Class 1 MSS SP-97 BW	
1	8	3	XS	XS	P31G-002PV	Outlet ASME SA182 Grade F22 Class 1 MSS SP-97 BW	
1	10	3	SCH80	XS	P31G-002R0	Outlet ASME SA182 Grade F22 Class 1 MSS SP-97 BW	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30G-0001S	Plug ASME SA182 Grade F22 Class 1 ASME B16.11 NPT Round head	
1	0.75				P30G-0001T	Plug ASME SA182 Grade F22 Class 1 ASME B16.11 NPT Round head	
1	1				P30G-0001U	Plug ASME SA182 Grade F22 Class 1 ASME B16.11 NPT Round head	
1	1.5				P30G-0001V	Plug ASME SA182 Grade F22 Class 1 ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P61G-0017B	Flange WN ASME SA182 Grade F22 Class 3 Class 1500 ASME B16.5 RJ	
1	0.75		XS		P61G-0017C	Flange WN ASME SA182 Grade F22 Class 3 Class 1500 ASME B16.5 RJ	
1	1		XS		P61G-0017D	Flange WN ASME SA182 Grade F22 Class 3 Class 1500 ASME B16.5 RJ	
1	1.5		XS		P61G-0017E	Flange WN ASME SA182 Grade F22 Class 3 Class 1500 ASME B16.5 RJ	
1	2		XS		P61G-0011C	Flange WN ASME SA182 Grade F22 Class 3 Class 1500 ASME B16.5 RJ	
1	3		XS		P61G-00114	Flange WN ASME SA182 Grade F22 Class 3 Class 900 ASME B16.5 RJ	

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FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	4		XS		P61G-00115	Flange WN ASME SA182 Grade F22 Class 3 Class 900 ASME B16.5 RJ	
1	6		XS		P61G-00116	Flange WN ASME SA182 Grade F22 Class 3 Class 900 ASME B16.5 RJ	
1	8		XS		P61G-0017G	Flange WN ASME SA182 Grade F22 Class 3 Class 900 ASME B16.5 RJ	
1	10		SCH80		P61G-0017F	Flange WN ASME SA182 Grade F22 Class 3 Class 900 ASME B16.5 RJ	
797	3		XS		P61G-0017J	Flange WN ASME SA182 Grade F22 Class 3 Class 1500 ASME B16.5 RJ	
797	4		XS		P61G-0017K	Flange WN ASME SA182 Grade F22 Class 3 Class 1500 ASME B16.5 RJ	
797	6		XS		P61G-0017L	Flange WN ASME SA182 Grade F22 Class 3 Class 1500 ASME B16.5 RJ	
797	8		XS		P61G-0017M	Flange WN ASME SA182 Grade F22 Class 3 Class 1500 ASME B16.5 RJ	
797	10		SCH80		P61G-0017H	Flange WN ASME SA182 Grade F22 Class 3 Class 1500 ASME B16.5 RJ	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67G-000EL	Blind flange ASME SA182 Grade F22 Class 3 Class 1500 ASME B16.5 RJ	
1	0.75				P67G-000EM	Blind flange ASME SA182 Grade F22 Class 3 Class 1500 ASME B16.5 RJ	
1	1				P67G-000EN	Blind flange ASME SA182 Grade F22 Class 3 Class 1500 ASME B16.5 RJ	
1	1.5				P67G-000EP	Blind flange ASME SA182 Grade F22 Class 3 Class 1500 ASME B16.5 RJ	
1	2				P67G-000ER	Blind flange ASME SA182 Grade F22 Class 3 Class 1500 ASME B16.5 RJ	
1	3				P67G-000ET	Blind flange ASME SA182 Grade F22 Class 3 Class 900 ASME B16.5 RJ	
1	4				P67G-000EU	Blind flange ASME SA182 Grade F22 Class 3 Class 900 ASME B16.5 RJ	
1	6				P67G-000EV	Blind flange ASME SA182 Grade F22 Class 3 Class 900 ASME B16.5 RJ	
1	8				P67G-000EW	Blind flange ASME SA182 Grade F22 Class 3 Class 900 ASME B16.5 RJ	
1	10				P67G-000ES	Blind flange ASME SA182 Grade F22 Class 3 Class 900 ASME B16.5 RJ	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P75T-000KE	Ring joint gasket 5Cr-1/2Mo Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	0.75				P75T-000KF	Ring joint gasket 5Cr-1/2Mo Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	1				P75T-000KG	Ring joint gasket 5Cr-1/2Mo Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	1.5				P75T-000KH	Ring joint gasket 5Cr-1/2Mo Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	2				P75T-000KS	Ring joint gasket 5Cr-1/2Mo Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	3				P75T-000KP	Ring joint gasket 5Cr-1/2Mo Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	4				P75T-000KC	Ring joint gasket 5Cr-1/2Mo Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	6				P75T-000KD	Ring joint gasket 5Cr-1/2Mo Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	8				P75T-000KR	Ring joint gasket 5Cr-1/2Mo Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	10				P75T-000KN	Ring joint gasket 5Cr-1/2Mo Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	3				P75T-000L3	Ring joint gasket 5Cr-1/2Mo Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	4				P75T-000L4	Ring joint gasket 5Cr-1/2Mo Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	6				P75T-00116	Ring joint gasket 5Cr-1/2Mo Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	8				P75T-000L5	Ring joint gasket 5Cr-1/2Mo Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	10				P75T-000NK	Ring joint gasket 5Cr-1/2Mo Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-3				See Attached Bolt Table	Bolt and Nut ASME SA193 Grade B16 / SA194 Grade 4 ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	4-10				See Attached Bolt Table	Bolt and Nut ASME SA193 Grade B16 / SA194 Grade 4 ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
797	0.5-2				See Attached Bolt Table	Bolt and Nut ASME SA193 Grade B16 / SA194 Grade 4 ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
797	3-10				See Attached Bolt Table	Bolt and Nut ASME SA193 Grade B16 / SA194 Grade 4 ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81G-000BG	Gate valve ASME SA182 Grade F22 Class 3 Class 1500 API 602 Flange ASME B16.5 RJ Trim number 5 WB-BG-OS&Y Handwheel operated Fluid-2	
1	0.75				P81G-000BH	Gate valve ASME SA182 Grade F22 Class 3 Class 1500 API 602 Flange ASME B16.5 RJ Trim number 5 WB-BG-OS&Y Handwheel operated Fluid-2	
1	1				P81G-000BJ	Gate valve ASME SA182 Grade F22 Class 3 Class 1500 API 602 Flange ASME B16.5 RJ Trim number 5 WB-BG-OS&Y Handwheel operated Fluid-2	
1	1.5				P81G-000BK	Gate valve ASME SA182 Grade F22 Class 3 Class 1500 API 602 Flange ASME B16.5 RJ Trim number 5 WB-BG-OS&Y Handwheel operated Fluid-2	
1	2				P81H-00134	Gate valve ASME SA217 Grade WC9 Class 1500 API 600 Flange ASME B16.5 RJ Trim number 5 PSB-BG-OS&Y Handwheel operated Fluid-2	

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GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3				P81H-000VT	Gate valve ASME SA217 Grade WC9 Class 900 API 600 Flange ASME B16.5 RJ Trim number 5 PSB-BG-OS&Y Handwheel operated Fluid-2	
1	4				P81H-000VU	Gate valve ASME SA217 Grade WC9 Class 900 API 600 Flange ASME B16.5 RJ Trim number 5 PSB-BG-OS&Y Handwheel operated Fluid-2	
1	6				P81H-000VW	Gate valve ASME SA217 Grade WC9 Class 900 API 600 Flange ASME B16.5 RJ Trim number 5 PSB-BG-OS&Y Gear operated Fluid-2	
1	8				P81H-000VX	Gate valve ASME SA217 Grade WC9 Class 900 API 600 Flange ASME B16.5 RJ Trim number 5 PSB-BG-OS&Y Gear operated Fluid-2	
1	10				P81H-000VV	Gate valve ASME SA217 Grade WC9 Class 900 API 600 Flange ASME B16.5 RJ Trim number 5 PSB-BG-OS&Y Gear operated Fluid-2	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82G-00068	Globe valve ASME SA182 Grade F22 Class 3 Class 1500 API 602 Flange ASME B16.5 RJ Trim number 5 WB-BG-OS&Y Handwheel operated Fluid-2	
1	0.75				P82G-00069	Globe valve ASME SA182 Grade F22 Class 3 Class 1500 API 602 Flange ASME B16.5 RJ Trim number 5 WB-BG-OS&Y Handwheel operated Fluid-2	
1	1				P82G-0006A	Globe valve ASME SA182 Grade F22 Class 3 Class 1500 API 602 Flange ASME B16.5 RJ Trim number 5 WB-BG-OS&Y Handwheel operated Fluid-2	
1	1.5				P82G-0006B	Globe valve ASME SA182 Grade F22 Class 3 Class 1500 API 602 Flange ASME B16.5 RJ Trim number 5 WB-BG-OS&Y Handwheel operated Fluid-2	
1	2				P82H-000FA	Globe valve ASME SA217 Grade WC9 Class 1500 BS 1873 Flange ASME B16.5 RJ Trim number 5 PSB-BG-OS&Y Gear operated Fluid-2	
1	3				P82H-000F0	Globe valve ASME SA217 Grade WC9 Class 900 BS 1873 Flange ASME B16.5 RJ Trim number 5 PSB-BG-OS&Y Gear operated Fluid-2	
1	4				P82H-000F1	Globe valve ASME SA217 Grade WC9 Class 900 BS 1873 Flange ASME B16.5 RJ Trim number 5 PSB-BG-OS&Y Gear operated Fluid-2	
1	6				P82H-000BG	Globe valve ASME SA217 Grade WC9 Class 900 BS 1873 Flange ASME B16.5 RJ Trim number 5 PSB-BG-OS&Y Gear operated Fluid-2	
1	8				P82H-000BH	Globe valve ASME SA217 Grade WC9 Class 900 BS 1873 Flange ASME B16.5 RJ Trim number 5 PSB-BG-OS&Y Gear operated Fluid-2	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83G-00067	Check valve ASME SA182 Grade F22 Class 3 Class 1500 API 602 Flange ASME B16.5 RJ Trim number 5 Lift-type Welded cover	
1	0.75				P83G-00068	Check valve ASME SA182 Grade F22 Class 3 Class 1500 API 602 Flange ASME B16.5 RJ Trim number 5 Lift-type Welded cover	
1	1				P83G-00069	Check valve ASME SA182 Grade F22 Class 3 Class 1500 API 602 Flange ASME B16.5 RJ Trim number 5 Lift-type Welded cover	
1	1.5				P83G-0006A	Check valve ASME SA182 Grade F22 Class 3 Class 1500 API 602 Flange ASME B16.5 RJ Trim number 5 Lift-type Welded cover	
1	2				P83H-0009B	Check valve ASME SA217 Grade WC9 Class 1500 BS 1868 Flange ASME B16.5 RJ Trim number 5 Swing-type Pressure seal cap	
1	3				P83H-0009C	Check valve ASME SA217 Grade WC9 Class 900 BS 1868 Flange ASME B16.5 RJ Trim number 5 Swing-type Pressure seal cap	
1	4				P83H-0009D	Check valve ASME SA217 Grade WC9 Class 900 BS 1868 Flange ASME B16.5 RJ Trim number 5 Swing-type Pressure seal cap	
1	6				P83H-0009E	Check valve ASME SA217 Grade WC9 Class 900 BS 1868 Flange ASME B16.5 RJ Trim number 5 Swing-type Pressure seal cap	

PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P72G-0008E	Paddle blank ASME SA182 Grade F22 Class 3 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	0.75				P72G-0008F	Paddle blank ASME SA182 Grade F22 Class 3 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	1				P72G-0008G	Paddle blank ASME SA182 Grade F22 Class 3 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	1.5				P72G-0008H	Paddle blank ASME SA182 Grade F22 Class 3 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	2				P72G-0008J	Paddle blank ASME SA182 Grade F22 Class 3 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	3				P72G-0008L	Paddle blank ASME SA182 Grade F22 Class 3 Class 900 Standard-drawing Flange ASME B16.5 RJ	
1	4				P72G-0008M	Paddle blank ASME SA182 Grade F22 Class 3 Class 900 Standard-drawing Flange ASME B16.5 RJ	
1	6				P72G-0008N	Paddle blank ASME SA182 Grade F22 Class 3 Class 900 Standard-drawing Flange ASME B16.5 RJ	
1	8				P72G-0008P	Paddle blank ASME SA182 Grade F22 Class 3 Class 900 Standard-drawing Flange ASME B16.5 RJ	
1	10				P72G-0008K	Paddle blank ASME SA182 Grade F22 Class 3 Class 900 Standard-drawing Flange ASME B16.5 RJ	

PADDLE SPACER (PS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P72G-00089	Paddle spacer ASME SA182 Grade F22 Class 3 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	0.75				P72G-0008A	Paddle spacer ASME SA182 Grade F22 Class 3 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	1				P72G-0008B	Paddle spacer ASME SA182 Grade F22 Class 3 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	1.5				P72G-0008C	Paddle spacer ASME SA182 Grade F22 Class 3 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	2				P72G-0008D	Paddle spacer ASME SA182 Grade F22 Class 3 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	3				P72G-0008S	Paddle spacer ASME SA182 Grade F22 Class 3 Class 900 Standard-drawing Flange ASME B16.5 RJ	
1	4				P72G-0008T	Paddle spacer ASME SA182 Grade F22 Class 3 Class 900 Standard-drawing Flange ASME B16.5 RJ	

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PADDLE SPACER (PS)							
OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	6				P72G-0008U	Paddle spacer ASME SA182 Grade F22 Class 3 Class 900 Standard-drawing Flange ASME B16.5 RJ	
1	8				P72G-0008V	Paddle spacer ASME SA182 Grade F22 Class 3 Class 900 Standard-drawing Flange ASME B16.5 RJ	
1	10				P72G-0008R	Paddle spacer ASME SA182 Grade F22 Class 3 Class 900 Standard-drawing Flange ASME B16.5 RJ	

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BOLT TABLE (B_M1EG , STUD ASME RJ, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	110	P80S-01RBT	R12	P75T-000KE
0.75	4	0.750	115	P80S-01RBU	R14	P75T-000KF
1	4	0.875	130	P80S-01REP	R16	P75T-000KG
1.5	4	1.000	140	P80S-024WG	R20	P75T-000KH
2	8	0.875	150	P80S-01REU	R24	P75T-000KS
3	8	0.875	150	P80S-01REU	R31	P75T-000KP
4	8	1.125	175	P80S-01RGZ	R37	P75T-000KC
6	12	1.125	200	P80S-01RH4	R45	P75T-000KD
8	12	1.375	260	P80S-0253N	R49	P75T-000KR
10	16	1.375	275	P80S-0253S	R53	P75T-000KN

BOLT TABLE (B_M1EG_797 , STUD ASME RJ, OPTION CODE 797)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	110	P80S-01RBT	R12	
0.75	4	0.750	115	P80S-01RBU	R14	
1	4	0.875	130	P80S-01REP	R16	
1.5	4	1.000	140	P80S-024WG	R20	
2	8	0.875	150	P80S-01REU	R24	
3	8	1.125	180	P80S-01RH0	R35	P75T-000L3
4	8	1.250	230	P80S-035L4	R39	P75T-000L4
6	12	1.375	300	P80S-0253X	R46	P75T-00116
8	12	1.625	345	P80S-0250S	R50	P75T-000L5
10	12	1.875	395	P80S-035U8	R54	P75T-000NK

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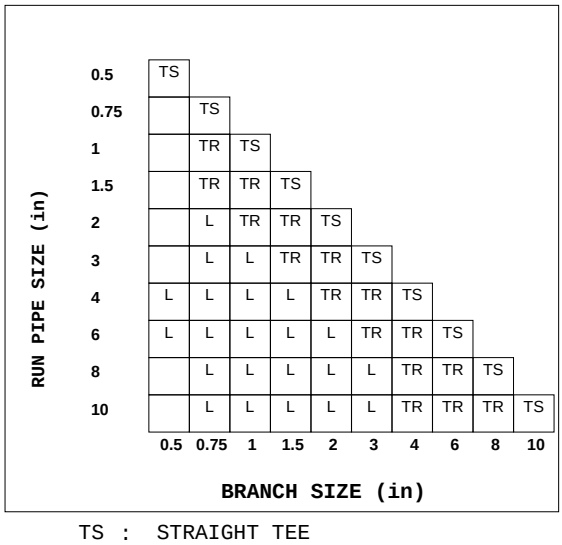
BRANCH TABLE (T_M1EG)



RUN PIPE SIZE (in) \ BRANCH SIZE (in)	0.5	0.75	1	1.5	2	3	4	6	8	10
0.5	TS									
0.75		TS								
1		TR	TS							
1.5		TR	TR	TS						
2		L	TR	TR	TS					
3		L	L	TR	TR	TS				
4	L	L	L	L	TR	TR	TS			
6	L	L	L	L	L	TR	TR	TS		
8		L	L	L	L	L	TR	TR	TS	
10		L	L	L	L	L	TR	TR	TR	TS

TS : STRAIGHT TEE
L : OUTLET
TR : REDUCING TEE

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01-SEP-2014

PIPING CLASS

M1EH REV NO. 2

Material : 2-1/4Cr-1Mo
Rating : ASME CLASS 900
Flange Face : RJ
C.A.(mm) : 1.50
Gasket : Ring Octagonal
Service : PROCESS - HYDROGEN OR HYDROGEN RICH HYDROCARBON MIXTURE : / PROCESS WITH HYDROGEN

Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
16	PIPE CLASS SHALL BE USED WITHIN THE NORMAL OPERATING PRESSURE/TEMPERATURE LIMITS SPECIFIED IN API RP 941. PRESSURE / TEMPERATURE SPECIFIED IN THE PIPE CLASS EXCEEDING API RP 941 LIMITS SHOULD BE REGARDED AS UPSET CONDITIONS RATHER THAN FOR CONTINUOUS SERVICE
36	ASTM A691 CR-MO WELDED PIPES SPECIFIED WITH CLASS 22 CAN BE USED IN LIEU OF CLASS 42 IN NON-LICENSED UNITS ONLY. GRADE SHALL BE AS SPECIFIED IN "PIPE / FLANGE MATERIAL" SECTION IN ATTACHMENT 9.0 OF THIS DOCUMENT

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
200	WITH JACK SCREW (FO)
541	NPT(F) (F)
797	CLASS 1500 (B,F,G)

INDRA
01-SEP-2014

PIPING CLASS
M1EH REV NO. 2

PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P01F-000C7	Pipe ASTM A335 Grade P22 Seamless ASME B36.10M/B36.19M PE	
1	0.75		XS		P01F-000C8	Pipe ASTM A335 Grade P22 Seamless ASME B36.10M/B36.19M PE	
1	1		XS		P01F-000C9	Pipe ASTM A335 Grade P22 Seamless ASME B36.10M/B36.19M PE	
1	1.5		XS		P01F-000CA	Pipe ASTM A335 Grade P22 Seamless ASME B36.10M/B36.19M PE	
1	2		XS		P01F-000CW	Pipe ASTM A335 Grade P22 Seamless ASME B36.10M/B36.19M BE	
1	3		XS		P01F-000CC	Pipe ASTM A335 Grade P22 Seamless ASME B36.10M/B36.19M BE	
1	4		XS		P01F-000CD	Pipe ASTM A335 Grade P22 Seamless ASME B36.10M/B36.19M BE	
1	6		XS		P01F-000CE	Pipe ASTM A335 Grade P22 Seamless ASME B36.10M/B36.19M BE	
1	8		SCH100		P01F-000CF	Pipe ASTM A335 Grade P22 Seamless ASME B36.10M/B36.19M BE	
1	10		SCH100		P01F-0003G	Pipe ASTM A335 Grade P22 Seamless ASME B36.10M/B36.19M BE	
1	12		SCH100		P01F-000CB	Pipe ASTM A335 Grade P22 Seamless ASME B36.10M/B36.19M BE	
1	14		SCH100		P01F-0003H	Pipe ASTM A335 Grade P22 Seamless ASME B36.10M/B36.19M BE	
1	16		SCH100		P01F-000DY	Pipe ASTM A335 Grade P22 Seamless ASME B36.10M/B36.19M BE	
1	18		SCH80		P01F-000CG	Pipe ASTM A691 Grade 2-1/4CR Class 22 EFW ASME B36.10M/B36.19M BE	
1	20		SCH80		P01F-000CH	Pipe ASTM A691 Grade 2-1/4CR Class 22 EFW ASME B36.10M/B36.19M BE	
1	24		SCH80		P01F-000CJ	Pipe ASTM A691 Grade 2-1/4CR Class 22 EFW ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P02F-000EN	90 degree elbow ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW Long radius	
1	0.75		XS		P02F-000EP	90 degree elbow ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW Long radius	
1	1		XS		P02F-000ER	90 degree elbow ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW Long radius	
1	1.5		XS		P02F-000ES	90 degree elbow ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW Long radius	
1	2		XS		P02F-000CP	90 degree elbow ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW Long radius	
1	3		XS		P02F-000F0	90 degree elbow ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW Long radius	
1	4		XS		P02F-000F1	90 degree elbow ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW Long radius	
1	6		XS		P02F-000F2	90 degree elbow ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW Long radius	
1	8		SCH100		P02F-000F3	90 degree elbow ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW Long radius	
1	10		SCH100		P02F-000ET	90 degree elbow ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW Long radius	
1	12		SCH100		P02F-000EU	90 degree elbow ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW Long radius	
1	14		SCH100		P02F-000EV	90 degree elbow ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW Long radius	
1	16		SCH100		P02F-000EW	90 degree elbow ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW Long radius	
1	18		SCH80		P02F-000EX	90 degree elbow ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW Long radius	
1	20		SCH80		P02F-000EY	90 degree elbow ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW Long radius	
1	24		SCH80		P02F-000EZ	90 degree elbow ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P03F-000EF	45 degree elbow ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW Long radius	
1	0.75		XS		P03F-000EG	45 degree elbow ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW Long radius	
1	1		XS		P03F-000EH	45 degree elbow ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW Long radius	
1	1.5		XS		P03F-000EJ	45 degree elbow ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW Long radius	
1	2		XS		P03F-000CG	45 degree elbow ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW Long radius	
1	3		XS		P03F-000ET	45 degree elbow ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW Long radius	
1	4		XS		P03F-000EU	45 degree elbow ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW Long radius	
1	6		XS		P03F-000EV	45 degree elbow ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW Long radius	
1	8		SCH100		P03F-000EW	45 degree elbow ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW Long radius	
1	10		SCH100		P03F-000EK	45 degree elbow ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW Long radius	
1	12		SCH100		P03F-000EL	45 degree elbow ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW Long radius	
1	14		SCH100		P03F-000EM	45 degree elbow ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW Long radius	
1	16		SCH100		P03F-000EN	45 degree elbow ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW Long radius	
1	18		SCH80		P03F-000EP	45 degree elbow ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW Long radius	
1	20		SCH80		P03F-000ER	45 degree elbow ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW Long radius	
1	24		SCH80		P03F-000ES	45 degree elbow ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P21F-000ER	Straight tee ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	0.75		XS		P21F-000ES	Straight tee ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW	

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STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		XS		P21F-000ET	Straight tee ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	1.5		XS		P21F-000EU	Straight tee ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	2		XS		P21F-000CJ	Straight tee ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	3		XS		P21F-000EZ	Straight tee ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	4		XS		P21F-000F0	Straight tee ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	6		XS		P21F-000F1	Straight tee ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	8		SCH100		P21F-000F2	Straight tee ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	10		SCH100		P21F-000EV	Straight tee ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	12		SCH100		P21F-000EW	Straight tee ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	14		SCH100		P21F-000EX	Straight tee ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	16		SCH100		P21F-000EY	Straight tee ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	18		SCH80		P21F-000EM	Straight tee ASTM A234 Grade WP22-W Class 1 Weld ASME B16.9 BW	
1	20		SCH80		P21F-000EN	Straight tee ASTM A234 Grade WP22-W Class 1 Weld ASME B16.9 BW	
1	24		SCH80		P21F-000EP	Straight tee ASTM A234 Grade WP22-W Class 1 Weld ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75	XS	XS	P24F-001DM	Reducing tee ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	1.5	0.75	XS	XS	P24F-001DN	Reducing tee ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	1.5	1	XS	XS	P24F-001DP	Reducing tee ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	2	1	XS	XS	P24F-0014E	Reducing tee ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	2	1.5	XS	XS	P24F-0014F	Reducing tee ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	3	1.5	XS	XS	P24F-001DR	Reducing tee ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	3	2	XS	XS	P24F-001DS	Reducing tee ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	4	2	XS	XS	P24F-001DT	Reducing tee ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	4	3	XS	XS	P24F-001DU	Reducing tee ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	6	3	XS	XS	P24F-001DV	Reducing tee ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	6	4	XS	XS	P24F-001DW	Reducing tee ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	8	4	SCH100	XS	P24F-001DX	Reducing tee ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	8	6	SCH100	XS	P24F-001DY	Reducing tee ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	10	4	SCH100	XS	P24F-001DZ	Reducing tee ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	10	6	SCH100	XS	P24F-001E0	Reducing tee ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	10	8	SCH100	SCH100	P24F-001E1	Reducing tee ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	12	6	SCH100	XS	P24F-001EW	Reducing tee ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	12	8	SCH100	SCH100	P24F-001E3	Reducing tee ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	12	10	SCH100	SCH100	P24F-001E2	Reducing tee ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	14	6	SCH100	XS	P24F-001EV	Reducing tee ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	14	8	SCH100	SCH100	P24F-001E6	Reducing tee ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	14	10	SCH100	SCH100	P24F-001E4	Reducing tee ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	14	12	SCH100	SCH100	P24F-001E5	Reducing tee ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	16	6	SCH100	XS	P24F-001EU	Reducing tee ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	16	8	SCH100	SCH100	P24F-001EA	Reducing tee ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	16	10	SCH100	SCH100	P24F-001E7	Reducing tee ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	16	12	SCH100	SCH100	P24F-001E8	Reducing tee ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	16	14	SCH100	SCH100	P24F-001E9	Reducing tee ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	18	8	SCH80	SCH100	P24F-001EE	Reducing tee ASTM A234 Grade WP22-W Class 1 Weld ASME B16.9 BW	
1	18	10	SCH80	SCH100	P24F-001EB	Reducing tee ASTM A234 Grade WP22-W Class 1 Weld ASME B16.9 BW	
1	18	12	SCH80	SCH100	P24F-001EC	Reducing tee ASTM A234 Grade WP22-W Class 1 Weld ASME B16.9 BW	
1	18	14	SCH80	SCH100	P24F-001ED	Reducing tee ASTM A234 Grade WP22-W Class 1 Weld ASME B16.9 BW	
1	18	16	SCH80	SCH100	P24F-001EX	Reducing tee ASTM A234 Grade WP22-W Class 1 Weld ASME B16.9 BW	
1	20	8	SCH80	SCH100	P24F-001EL	Reducing tee ASTM A234 Grade WP22-W Class 1 Weld ASME B16.9 BW	
1	20	10	SCH80	SCH100	P24F-001EF	Reducing tee ASTM A234 Grade WP22-W Class 1 Weld ASME B16.9 BW	
1	20	12	SCH80	SCH100	P24F-001EG	Reducing tee ASTM A234 Grade WP22-W Class 1 Weld ASME B16.9 BW	
1	20	14	SCH80	SCH100	P24F-001EH	Reducing tee ASTM A234 Grade WP22-W Class 1 Weld ASME B16.9 BW	
1	20	16	SCH80	SCH100	P24F-001EJ	Reducing tee ASTM A234 Grade WP22-W Class 1 Weld ASME B16.9 BW	
1	20	18	SCH80	SCH80	P24F-001EK	Reducing tee ASTM A234 Grade WP22-W Class 1 Weld ASME B16.9 BW	
1	24	10	SCH80	SCH100	P24F-001EM	Reducing tee ASTM A234 Grade WP22-W Class 1 Weld ASME B16.9 BW	
1	24	12	SCH80	SCH100	P24F-001EN	Reducing tee ASTM A234 Grade WP22-W Class 1 Weld ASME B16.9 BW	
1	24	14	SCH80	SCH100	P24F-001EP	Reducing tee ASTM A234 Grade WP22-W Class 1 Weld ASME B16.9 BW	

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REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	24	16	SCH80	SCH100	P24F-001ER	Reducing tee ASTM A234 Grade WP22-W Class 1 Weld ASME B16.9 BW	
1	24	18	SCH80	SCH80	P24F-001ES	Reducing tee ASTM A234 Grade WP22-W Class 1 Weld ASME B16.9 BW	
1	24	20	SCH80	SCH80	P24F-001ET	Reducing tee ASTM A234 Grade WP22-W Class 1 Weld ASME B16.9 BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	XS	XS	P27F-0015E	Concentric reducer ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	1	0.5	XS	XS	P27F-0015F	Concentric reducer ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	1	0.75	XS	XS	P27F-0015G	Concentric reducer ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	1.5	0.5	XS	XS	P27F-0015H	Concentric reducer ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	1.5	0.75	XS	XS	P27F-0015J	Concentric reducer ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	1.5	1	XS	XS	P27F-0015K	Concentric reducer ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	2	0.75	XS	XS	P27F-0015L	Concentric reducer ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	2	1	XS	XS	P27F-0015M	Concentric reducer ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	2	1.5	XS	XS	P27F-0015N	Concentric reducer ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	3	1.5	XS	XS	P27F-0015P	Concentric reducer ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	3	2	XS	XS	P27F-0015R	Concentric reducer ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	4	1.5	XS	XS	P27F-0015S	Concentric reducer ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	4	2	XS	XS	P27F-0015T	Concentric reducer ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	4	3	XS	XS	P27F-0015U	Concentric reducer ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	6	3	XS	XS	P27F-0015V	Concentric reducer ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	6	4	XS	XS	P27F-0015W	Concentric reducer ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	8	4	SCH100	XS	P27F-0015X	Concentric reducer ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	8	6	SCH100	XS	P27F-0015Y	Concentric reducer ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	10	4	SCH100	XS	P27F-0015Z	Concentric reducer ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	10	6	SCH100	XS	P27F-00160	Concentric reducer ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	10	8	SCH100	SCH100	P27F-00161	Concentric reducer ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	12	6	SCH100	XS	P27F-00163	Concentric reducer ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	12	8	SCH100	SCH100	P27F-00164	Concentric reducer ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	12	10	SCH100	SCH100	P27F-00162	Concentric reducer ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	14	6	SCH100	XS	P27F-0016P	Concentric reducer ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	14	8	SCH100	SCH100	P27F-00167	Concentric reducer ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	14	10	SCH100	SCH100	P27F-00165	Concentric reducer ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	14	12	SCH100	SCH100	P27F-00166	Concentric reducer ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	16	8	SCH100	SCH100	P27F-0016B	Concentric reducer ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	16	10	SCH100	SCH100	P27F-00168	Concentric reducer ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	16	12	SCH100	SCH100	P27F-00169	Concentric reducer ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	16	14	SCH100	SCH100	P27F-0016A	Concentric reducer ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	18	10	SCH80	SCH100	P27F-0016C	Concentric reducer ASTM A234 Grade WP22-W Class 1 Weld ASME B16.9 BW	
1	18	12	SCH80	SCH100	P27F-0016D	Concentric reducer ASTM A234 Grade WP22-W Class 1 Weld ASME B16.9 BW	
1	18	14	SCH80	SCH100	P27F-0016E	Concentric reducer ASTM A234 Grade WP22-W Class 1 Weld ASME B16.9 BW	
1	18	16	SCH80	SCH100	P27F-0016N	Concentric reducer ASTM A234 Grade WP22-W Class 1 Weld ASME B16.9 BW	
1	20	12	SCH80	SCH100	P27F-0016F	Concentric reducer ASTM A234 Grade WP22-W Class 1 Weld ASME B16.9 BW	
1	20	14	SCH80	SCH100	P27F-0016G	Concentric reducer ASTM A234 Grade WP22-W Class 1 Weld ASME B16.9 BW	
1	20	16	SCH80	SCH100	P27F-0016H	Concentric reducer ASTM A234 Grade WP22-W Class 1 Weld ASME B16.9 BW	
1	20	18	SCH80	SCH80	P27F-0016J	Concentric reducer ASTM A234 Grade WP22-W Class 1 Weld ASME B16.9 BW	
1	24	16	SCH80	SCH100	P27F-0016K	Concentric reducer ASTM A234 Grade WP22-W Class 1 Weld ASME B16.9 BW	
1	24	18	SCH80	SCH80	P27F-0016L	Concentric reducer ASTM A234 Grade WP22-W Class 1 Weld ASME B16.9 BW	
1	24	20	SCH80	SCH80	P27F-0016M	Concentric reducer ASTM A234 Grade WP22-W Class 1 Weld ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	XS	XS	P28F-0015B	Eccentric reducer ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	1	0.5	XS	XS	P28F-0015C	Eccentric reducer ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	1	0.75	XS	XS	P28F-0015D	Eccentric reducer ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	1.5	0.5	XS	XS	P28F-0015E	Eccentric reducer ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	1.5	0.75	XS	XS	P28F-0015F	Eccentric reducer ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	1.5	1	XS	XS	P28F-0015G	Eccentric reducer ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	2	0.75	XS	XS	P28F-0015H	Eccentric reducer ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW	

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ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2	1	XS	XS	P28F-0015J	Eccentric reducer ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	2	1.5	XS	XS	P28F-0015K	Eccentric reducer ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	3	1.5	XS	XS	P28F-0015L	Eccentric reducer ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	3	2	XS	XS	P28F-0015M	Eccentric reducer ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	4	1.5	XS	XS	P28F-0015N	Eccentric reducer ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	4	2	XS	XS	P28F-0015P	Eccentric reducer ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	4	3	XS	XS	P28F-0015R	Eccentric reducer ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	6	3	XS	XS	P28F-0015S	Eccentric reducer ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	6	4	XS	XS	P28F-0015T	Eccentric reducer ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	8	4	SCH100	XS	P28F-0015U	Eccentric reducer ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	8	6	SCH100	XS	P28F-0015V	Eccentric reducer ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	10	4	SCH100	XS	P28F-0015W	Eccentric reducer ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	10	6	SCH100	XS	P28F-0015X	Eccentric reducer ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	10	8	SCH100	SCH100	P28F-0015Y	Eccentric reducer ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	12	6	SCH100	XS	P28F-00160	Eccentric reducer ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	12	8	SCH100	SCH100	P28F-00161	Eccentric reducer ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	12	10	SCH100	SCH100	P28F-0015Z	Eccentric reducer ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	14	6	SCH100	XS	P28F-0016T	Eccentric reducer ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	14	8	SCH100	SCH100	P28F-00164	Eccentric reducer ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	14	10	SCH100	SCH100	P28F-00162	Eccentric reducer ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	14	12	SCH100	SCH100	P28F-00163	Eccentric reducer ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	16	8	SCH100	SCH100	P28F-00168	Eccentric reducer ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	16	10	SCH100	SCH100	P28F-00165	Eccentric reducer ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	16	12	SCH100	SCH100	P28F-00166	Eccentric reducer ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	16	14	SCH100	SCH100	P28F-00167	Eccentric reducer ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	18	10	SCH80	SCH100	P28F-00169	Eccentric reducer ASTM A234 Grade WP22-W Class 1 Weld ASME B16.9 BW	
1	18	12	SCH80	SCH100	P28F-0016A	Eccentric reducer ASTM A234 Grade WP22-W Class 1 Weld ASME B16.9 BW	
1	18	14	SCH80	SCH100	P28F-0016B	Eccentric reducer ASTM A234 Grade WP22-W Class 1 Weld ASME B16.9 BW	
1	18	16	SCH80	SCH100	P28F-0016C	Eccentric reducer ASTM A234 Grade WP22-W Class 1 Weld ASME B16.9 BW	
1	20	12	SCH80	SCH100	P28F-0016D	Eccentric reducer ASTM A234 Grade WP22-W Class 1 Weld ASME B16.9 BW	
1	20	14	SCH80	SCH100	P28F-0016E	Eccentric reducer ASTM A234 Grade WP22-W Class 1 Weld ASME B16.9 BW	
1	20	16	SCH80	SCH100	P28F-0016F	Eccentric reducer ASTM A234 Grade WP22-W Class 1 Weld ASME B16.9 BW	
1	20	18	SCH80	SCH80	P28F-0016G	Eccentric reducer ASTM A234 Grade WP22-W Class 1 Weld ASME B16.9 BW	
1	24	16	SCH80	SCH100	P28F-0016H	Eccentric reducer ASTM A234 Grade WP22-W Class 1 Weld ASME B16.9 BW	
1	24	18	SCH80	SCH80	P28F-0016J	Eccentric reducer ASTM A234 Grade WP22-W Class 1 Weld ASME B16.9 BW	
1	24	20	SCH80	SCH80	P28F-0016K	Eccentric reducer ASTM A234 Grade WP22-W Class 1 Weld ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P29F-000EB	Cap ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	0.75		XS		P29F-000EC	Cap ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	1		XS		P29F-000ED	Cap ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	1.5		XS		P29F-000EE	Cap ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	2		XS		P29F-000CC	Cap ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	3		XS		P29F-000EN	Cap ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	4		XS		P29F-000EP	Cap ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	6		XS		P29F-000ER	Cap ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	8		SCH100		P29F-000ES	Cap ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	10		SCH100		P29F-000EF	Cap ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	12		SCH100		P29F-000EG	Cap ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	14		SCH100		P29F-000EH	Cap ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	16		SCH100		P29F-000EJ	Cap ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	18		SCH80		P29F-000EK	Cap ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	20		SCH80		P29F-000EL	Cap ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW	
1	24		SCH80		P29F-000EM	Cap ASTM A234 Grade WP22 Class 1 Seamless ASME B16.9 BW	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P41F-00038	Straight nipple ASTM A335 Grade P22 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

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STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75		SCH160		P41F-00039	Straight nipple ASTM A335 Grade P22 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		SCH160		P41F-0003A	Straight nipple ASTM A335 Grade P22 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		SCH160		P41F-0003B	Straight nipple ASTM A335 Grade P22 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2	0.75	XS	XS	P31G-001UP	Outlet ASTM A182 Grade F22 Class 1 MSS SP-97 BW	
1	3	0.75	XS	XS	P31G-001UR	Outlet ASTM A182 Grade F22 Class 1 MSS SP-97 BW	
1	4	0.75	XS	XS	P31G-001U8	Outlet ASTM A182 Grade F22 Class 1 MSS SP-97 BW	
1	6	0.75	XS	XS	P31G-001U4	Outlet ASTM A182 Grade F22 Class 1 MSS SP-97 BW	
1	8	0.75	SCH100	XS	P31G-001TZ	Outlet ASTM A182 Grade F22 Class 1 MSS SP-97 BW	
1	10	0.75	SCH100	XS	P31G-001TU	Outlet ASTM A182 Grade F22 Class 1 MSS SP-97 BW	
1	12	0.75	SCH100	XS	P31G-001UB	Outlet ASTM A182 Grade F22 Class 1 MSS SP-97 BW	
1	14	0.75	SCH100	XS	P31G-001UF	Outlet ASTM A182 Grade F22 Class 1 MSS SP-97 BW	
1	16	0.75	SCH100	XS	P31G-001UK	Outlet ASTM A182 Grade F22 Class 1 MSS SP-97 BW	
1	18	0.75	SCH80	XS	P31G-001TE	Outlet ASTM A182 Grade F22 Class 1 MSS SP-97 BW	
1	20	0.75	SCH80	XS	P31G-001T7	Outlet ASTM A182 Grade F22 Class 1 MSS SP-97 BW	
1	24	0.75	SCH80	XS	P31G-001T0	Outlet ASTM A182 Grade F22 Class 1 MSS SP-97 BW	
1	3	1	XS	XS	P31G-001US	Outlet ASTM A182 Grade F22 Class 1 MSS SP-97 BW	
1	4	1	XS	XS	P31G-001U9	Outlet ASTM A182 Grade F22 Class 1 MSS SP-97 BW	
1	6	1	XS	XS	P31G-001U5	Outlet ASTM A182 Grade F22 Class 1 MSS SP-97 BW	
1	8	1	SCH100	XS	P31G-001U0	Outlet ASTM A182 Grade F22 Class 1 MSS SP-97 BW	
1	10	1	SCH100	XS	P31G-001TV	Outlet ASTM A182 Grade F22 Class 1 MSS SP-97 BW	
1	12	1	SCH100	XS	P31G-001UC	Outlet ASTM A182 Grade F22 Class 1 MSS SP-97 BW	
1	14	1	SCH100	XS	P31G-001UG	Outlet ASTM A182 Grade F22 Class 1 MSS SP-97 BW	
1	16	1	SCH100	XS	P31G-001UL	Outlet ASTM A182 Grade F22 Class 1 MSS SP-97 BW	
1	18	1	SCH80	XS	P31G-001TF	Outlet ASTM A182 Grade F22 Class 1 MSS SP-97 BW	
1	20	1	SCH80	XS	P31G-001T8	Outlet ASTM A182 Grade F22 Class 1 MSS SP-97 BW	
1	24	1	SCH80	XS	P31G-001T1	Outlet ASTM A182 Grade F22 Class 1 MSS SP-97 BW	
1	4	1.5	XS	XS	P31G-001UA	Outlet ASTM A182 Grade F22 Class 1 MSS SP-97 BW	
1	6	1.5	XS	XS	P31G-001U6	Outlet ASTM A182 Grade F22 Class 1 MSS SP-97 BW	
1	8	1.5	SCH100	XS	P31G-001U1	Outlet ASTM A182 Grade F22 Class 1 MSS SP-97 BW	
1	10	1.5	SCH100	XS	P31G-001TW	Outlet ASTM A182 Grade F22 Class 1 MSS SP-97 BW	
1	12	1.5	SCH100	XS	P31G-001UD	Outlet ASTM A182 Grade F22 Class 1 MSS SP-97 BW	
1	14	1.5	SCH100	XS	P31G-001UH	Outlet ASTM A182 Grade F22 Class 1 MSS SP-97 BW	
1	16	1.5	SCH100	XS	P31G-001UM	Outlet ASTM A182 Grade F22 Class 1 MSS SP-97 BW	
1	18	1.5	SCH80	XS	P31G-001TG	Outlet ASTM A182 Grade F22 Class 1 MSS SP-97 BW	
1	20	1.5	SCH80	XS	P31G-001T9	Outlet ASTM A182 Grade F22 Class 1 MSS SP-97 BW	
1	24	1.5	SCH80	XS	P31G-001T2	Outlet ASTM A182 Grade F22 Class 1 MSS SP-97 BW	
1	6	2	XS	XS	P31G-001U7	Outlet ASTM A182 Grade F22 Class 1 MSS SP-97 BW	
1	8	2	SCH100	XS	P31G-001U2	Outlet ASTM A182 Grade F22 Class 1 MSS SP-97 BW	
1	10	2	SCH100	XS	P31G-001TX	Outlet ASTM A182 Grade F22 Class 1 MSS SP-97 BW	
1	12	2	SCH100	XS	P31G-001UE	Outlet ASTM A182 Grade F22 Class 1 MSS SP-97 BW	
1	14	2	SCH100	XS	P31G-001TP	Outlet ASTM A182 Grade F22 Class 1 MSS SP-97 BW	
1	16	2	SCH100	XS	P31G-001UN	Outlet ASTM A182 Grade F22 Class 1 MSS SP-97 BW	
1	18	2	SCH80	XS	P31G-001TH	Outlet ASTM A182 Grade F22 Class 1 MSS SP-97 BW	
1	20	2	SCH80	XS	P31G-001TA	Outlet ASTM A182 Grade F22 Class 1 MSS SP-97 BW	
1	24	2	SCH80	XS	P31G-001T3	Outlet ASTM A182 Grade F22 Class 1 MSS SP-97 BW	
1	8	3	SCH100	XS	P31G-001U3	Outlet ASTM A182 Grade F22 Class 1 MSS SP-97 BW	
1	10	3	SCH100	XS	P31G-001TY	Outlet ASTM A182 Grade F22 Class 1 MSS SP-97 BW	
1	12	3	SCH100	XS	P31G-001TS	Outlet ASTM A182 Grade F22 Class 1 MSS SP-97 BW	
1	14	3	SCH100	XS	P31G-001TR	Outlet ASTM A182 Grade F22 Class 1 MSS SP-97 BW	
1	16	3	SCH100	XS	P31G-001TM	Outlet ASTM A182 Grade F22 Class 1 MSS SP-97 BW	
1	18	3	SCH80	XS	P31G-001TJ	Outlet ASTM A182 Grade F22 Class 1 MSS SP-97 BW	
1	20	3	SCH80	XS	P31G-001TB	Outlet ASTM A182 Grade F22 Class 1 MSS SP-97 BW	
1	24	3	SCH80	XS	P31G-001T4	Outlet ASTM A182 Grade F22 Class 1 MSS SP-97 BW	
1	12	4	SCH100	XS	P31G-001TT	Outlet ASTM A182 Grade F22 Class 1 MSS SP-97 BW	
1	14	4	SCH100	XS	P31G-001UJ	Outlet ASTM A182 Grade F22 Class 1 MSS SP-97 BW	
1	16	4	SCH100	XS	P31G-001TN	Outlet ASTM A182 Grade F22 Class 1 MSS SP-97 BW	

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OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	18	4	SCH80	XS	P31G-001TK	Outlet ASTM A182 Grade F22 Class 1 MSS SP-97 BW	
1	20	4	SCH80	XS	P31G-001TC	Outlet ASTM A182 Grade F22 Class 1 MSS SP-97 BW	
1	24	4	SCH80	XS	P31G-001T5	Outlet ASTM A182 Grade F22 Class 1 MSS SP-97 BW	
1	18	6	SCH80	XS	P31G-001TL	Outlet ASTM A182 Grade F22 Class 1 MSS SP-97 BW	
1	20	6	SCH80	XS	P31G-001TD	Outlet ASTM A182 Grade F22 Class 1 MSS SP-97 BW	
1	24	6	SCH80	XS	P31G-001T6	Outlet ASTM A182 Grade F22 Class 1 MSS SP-97 BW	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30G-0001L	Plug ASTM A182 Grade F22 Class 1 ASME B16.11 NPT Round head	
1	0.75				P30G-0001M	Plug ASTM A182 Grade F22 Class 1 ASME B16.11 NPT Round head	
1	1				P30G-0001N	Plug ASTM A182 Grade F22 Class 1 ASME B16.11 NPT Round head	
1	1.5				P30G-0001P	Plug ASTM A182 Grade F22 Class 1 ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P61G-000KU	Flange WN ASTM A182 Grade F22 Class 3 Class 1500 ASME B16.5 RJ	
1	0.75		XS		P61G-000KV	Flange WN ASTM A182 Grade F22 Class 3 Class 1500 ASME B16.5 RJ	
1	1		XS		P61G-000KW	Flange WN ASTM A182 Grade F22 Class 3 Class 1500 ASME B16.5 RJ	
1	1.5		XS		P61G-000KX	Flange WN ASTM A182 Grade F22 Class 3 Class 1500 ASME B16.5 RJ	
1	2		XS		P61G-000U1	Flange WN ASTM A182 Grade F22 Class 3 Class 1500 ASME B16.5 RJ	
1	3		XS		P61G-000L3	Flange WN ASTM A182 Grade F22 Class 3 Class 900 ASME B16.5 RJ	
1	4		XS		P61G-000L4	Flange WN ASTM A182 Grade F22 Class 3 Class 900 ASME B16.5 RJ	
1	6		XS		P61G-000L5	Flange WN ASTM A182 Grade F22 Class 3 Class 900 ASME B16.5 RJ	
1	8		SCH100		P61G-000L6	Flange WN ASTM A182 Grade F22 Class 3 Class 900 ASME B16.5 RJ	
1	10		SCH100		P61G-0008K	Flange WN ASTM A182 Grade F22 Class 3 Class 900 ASME B16.5 RJ	
1	12		SCH100		P61G-000KY	Flange WN ASTM A182 Grade F22 Class 3 Class 900 ASME B16.5 RJ	
1	14		SCH100		P61G-0008L	Flange WN ASTM A182 Grade F22 Class 3 Class 900 ASME B16.5 RJ	
1	16		SCH100		P61G-000KZ	Flange WN ASTM A182 Grade F22 Class 3 Class 900 ASME B16.5 RJ	
1	18		SCH80		P61G-000L0	Flange WN ASTM A182 Grade F22 Class 3 Class 900 ASME B16.5 RJ	
1	20		SCH80		P61G-000L1	Flange WN ASTM A182 Grade F22 Class 3 Class 900 ASME B16.5 RJ	
1	24		SCH80		P61G-000L2	Flange WN ASTM A182 Grade F22 Class 3 Class 900 ASME B16.5 RJ	
541	0.5				P61G-001B0	Flange NPT ASTM A182 Grade F22 Class 3 Class 1500 ASME B16.5 RJ	
541	0.75				P61G-00160	Flange NPT ASTM A182 Grade F22 Class 3 Class 1500 ASME B16.5 RJ	
797	3		XS		P61G-000LC	Flange WN ASTM A182 Grade F22 Class 3 Class 1500 ASME B16.5 RJ	
797	4		XS		P61G-000LD	Flange WN ASTM A182 Grade F22 Class 3 Class 1500 ASME B16.5 RJ	
797	6		XS		P61G-000LE	Flange WN ASTM A182 Grade F22 Class 3 Class 1500 ASME B16.5 RJ	
797	8		SCH100		P61G-000LF	Flange WN ASTM A182 Grade F22 Class 3 Class 1500 ASME B16.5 RJ	
797	10		SCH100		P61G-0008R	Flange WN ASTM A182 Grade F22 Class 3 Class 1500 ASME B16.5 RJ	
797	12		SCH100		P61G-000L7	Flange WN ASTM A182 Grade F22 Class 3 Class 1500 ASME B16.5 RJ	
797	14		SCH100		P61G-0008S	Flange WN ASTM A182 Grade F22 Class 3 Class 1500 ASME B16.5 RJ	
797	16		SCH100		P61G-000L8	Flange WN ASTM A182 Grade F22 Class 3 Class 1500 ASME B16.5 RJ	
797	18		SCH80		P61G-000L9	Flange WN ASTM A182 Grade F22 Class 3 Class 1500 ASME B16.5 RJ	
797	20		SCH80		P61G-000LA	Flange WN ASTM A182 Grade F22 Class 3 Class 1500 ASME B16.5 RJ	
797	24		SCH80		P61G-000LB	Flange WN ASTM A182 Grade F22 Class 3 Class 1500 ASME B16.5 RJ	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67G-0004R	Blind flange ASTM A182 Grade F22 Class 3 Class 1500 ASME B16.5 RJ	
1	0.75				P67G-0004S	Blind flange ASTM A182 Grade F22 Class 3 Class 1500 ASME B16.5 RJ	
1	1				P67G-0004T	Blind flange ASTM A182 Grade F22 Class 3 Class 1500 ASME B16.5 RJ	
1	1.5				P67G-0004U	Blind flange ASTM A182 Grade F22 Class 3 Class 1500 ASME B16.5 RJ	
1	2				P67G-000C0	Blind flange ASTM A182 Grade F22 Class 3 Class 1500 ASME B16.5 RJ	
1	3				P67G-0004Z	Blind flange ASTM A182 Grade F22 Class 3 Class 900 ASME B16.5 RJ	
1	4				P67G-000AB	Blind flange ASTM A182 Grade F22 Class 3 Class 900 ASME B16.5 RJ	
1	6				P67G-000AC	Blind flange ASTM A182 Grade F22 Class 3 Class 900 ASME B16.5 RJ	
1	8				P67G-000AD	Blind flange ASTM A182 Grade F22 Class 3 Class 900 ASME B16.5 RJ	
1	10				P67G-0004V	Blind flange ASTM A182 Grade F22 Class 3 Class 900 ASME B16.5 RJ	
1	12				P67G-000A8	Blind flange ASTM A182 Grade F22 Class 3 Class 900 ASME B16.5 RJ	

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BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P67G-0004W	Blind flange ASTM A182 Grade F22 Class 3 Class 900 ASME B16.5 RJ	
1	16				P67G-000A9	Blind flange ASTM A182 Grade F22 Class 3 Class 900 ASME B16.5 RJ	
1	18				P67G-0004X	Blind flange ASTM A182 Grade F22 Class 3 Class 900 ASME B16.5 RJ	
1	20				P67G-000AA	Blind flange ASTM A182 Grade F22 Class 3 Class 900 ASME B16.5 RJ	
1	24				P67G-0004Y	Blind flange ASTM A182 Grade F22 Class 3 Class 900 ASME B16.5 RJ	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P75T-000KE	Ring joint gasket 5Cr-1/2Mo Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	0.75				P75T-000KF	Ring joint gasket 5Cr-1/2Mo Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	1				P75T-000KG	Ring joint gasket 5Cr-1/2Mo Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	1.5				P75T-000KH	Ring joint gasket 5Cr-1/2Mo Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	2				P75T-000KS	Ring joint gasket 5Cr-1/2Mo Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	3				P75T-000KP	Ring joint gasket 5Cr-1/2Mo Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	4				P75T-000KC	Ring joint gasket 5Cr-1/2Mo Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	6				P75T-000KD	Ring joint gasket 5Cr-1/2Mo Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	8				P75T-000KR	Ring joint gasket 5Cr-1/2Mo Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	10				P75T-000KN	Ring joint gasket 5Cr-1/2Mo Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	12				P75T-0010W	Ring joint gasket 5Cr-1/2Mo Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	14				P75T-000KY	Ring joint gasket 5Cr-1/2Mo Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	16				P75T-000K9	Ring joint gasket 5Cr-1/2Mo Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	18				P75T-000KZ	Ring joint gasket 5Cr-1/2Mo Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	20				P75T-000KA	Ring joint gasket 5Cr-1/2Mo Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	24				P75T-000KB	Ring joint gasket 5Cr-1/2Mo Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	3				P75T-000L3	Ring joint gasket 5Cr-1/2Mo Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	4				P75T-000L4	Ring joint gasket 5Cr-1/2Mo Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	6				P75T-00116	Ring joint gasket 5Cr-1/2Mo Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	8				P75T-000L5	Ring joint gasket 5Cr-1/2Mo Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	10				P75T-000NK	Ring joint gasket 5Cr-1/2Mo Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	12				P75T-000P1	Ring joint gasket 5Cr-1/2Mo Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	14				P75T-000L0	Ring joint gasket 5Cr-1/2Mo Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	16				P75T-000L1	Ring joint gasket 5Cr-1/2Mo Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	18				P75T-000L2	Ring joint gasket 5Cr-1/2Mo Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	20				P75T-0011A	Ring joint gasket 5Cr-1/2Mo Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	24				P75T-000NL	Ring joint gasket 5Cr-1/2Mo Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-3				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B16 / A194 Grade 4 ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	4-24				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B16 / A194 Grade 4 ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
797	3-24				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B16 / A194 Grade 4 ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81G-0006E	Gate valve ASTM A182 Grade F22 Class 3 Class 1500 API 602 Flange ASME B16.5 RJ Trim number 5 WB-BG-OS&Y Handwheel operated Fluid-2	
1	0.75				P81G-0006F	Gate valve ASTM A182 Grade F22 Class 3 Class 1500 API 602 Flange ASME B16.5 RJ Trim number 5 WB-BG-OS&Y Handwheel operated Fluid-2	
1	1				P81G-0006G	Gate valve ASTM A182 Grade F22 Class 3 Class 1500 API 602 Flange ASME B16.5 RJ Trim number 5 WB-BG-OS&Y Handwheel operated Fluid-2	
1	1.5				P81G-0006H	Gate valve ASTM A182 Grade F22 Class 3 Class 1500 API 602 Flange ASME B16.5 RJ Trim number 5 WB-BG-OS&Y Handwheel operated Fluid-2	
1	2				P81H-000U9	Gate valve ASTM A217 Grade WC9 Class 1500 API 600 Flange ASME B16.5 RJ Trim number 5 PSB-BG-OS&Y Handwheel operated Fluid-2	
1	3				P81H-000UA	Gate valve ASTM A217 Grade WC9 Class 900 API 600 Flange ASME B16.5 RJ Trim number 5 PSB-BG-OS&Y Handwheel operated Fluid-2	
1	4				P81H-000UB	Gate valve ASTM A217 Grade WC9 Class 900 API 600 Flange ASME B16.5 RJ Trim number 5 PSB-BG-OS&Y Handwheel operated Fluid-2	
1	6				P81H-000UC	Gate valve ASTM A217 Grade WC9 Class 900 API 600 Flange ASME B16.5 RJ Trim number 5 PSB-BG-OS&Y Gear operated Fluid-2	
1	8				P81H-000UH	Gate valve ASTM A217 Grade WC9 Class 900 API 600 Flange ASME B16.5 RJ Trim number 5 PSB-BG-OS&Y Gear operated Fluid-2	
1	10				P81H-000UD	Gate valve ASTM A217 Grade WC9 Class 900 API 600 Flange ASME B16.5 RJ Trim number 5 PSB-BG-OS&Y Gear operated Fluid-2	

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GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	12				P81H-000UE	Gate valve ASTM A217 Grade WC9 Class 900 API 600 Flange ASME B16.5 RJ Trim number 5 PSB-BG-OS&Y Gear operated Fluid-2	
1	14				P81H-000UF	Gate valve ASTM A217 Grade WC9 Class 900 API 600 Flange ASME B16.5 RJ Trim number 5 PSB-BG-OS&Y Gear operated Fluid-2	
1	16				P81H-000UG	Gate valve ASTM A217 Grade WC9 Class 900 API 600 Flange ASME B16.5 RJ Trim number 5 PSB-BG-OS&Y Gear operated Fluid-2	
1	18				P81H-000UJ	Gate valve ASTM A217 Grade WC9 Class 900 API 600 Flange ASME B16.5 RJ Trim number 5 PSB-BG-OS&Y Gear operated Fluid-2	
1	20				P81H-000UK	Gate valve ASTM A217 Grade WC9 Class 900 API 600 Flange ASME B16.5 RJ Trim number 5 PSB-BG-OS&Y Gear operated Fluid-2	
1	24				P81H-000W9	Gate valve ASTM A217 Grade WC9 Class 900 API 600 Flange ASME B16.5 RJ Trim number 5 PSB-BG-OS&Y Gear operated Fluid-2	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82G-0003D	Globe valve ASTM A182 Grade F22 Class 3 Class 1500 API 602 Flange ASME B16.5 RJ Trim number 5 WB-BG-OS&Y Handwheel operated Fluid-2	
1	0.75				P82G-0003E	Globe valve ASTM A182 Grade F22 Class 3 Class 1500 API 602 Flange ASME B16.5 RJ Trim number 5 WB-BG-OS&Y Handwheel operated Fluid-2	
1	1				P82G-0003F	Globe valve ASTM A182 Grade F22 Class 3 Class 1500 API 602 Flange ASME B16.5 RJ Trim number 5 WB-BG-OS&Y Handwheel operated Fluid-2	
1	1.5				P82G-0003G	Globe valve ASTM A182 Grade F22 Class 3 Class 1500 API 602 Flange ASME B16.5 RJ Trim number 5 WB-BG-OS&Y Handwheel operated Fluid-2	
1	2				P82H-000F2	Globe valve ASTM A217 Grade WC9 Class 1500 BS 1873 Flange ASME B16.5 RJ Trim number 5 PSB-BG-OS&Y Gear operated Fluid-2	
1	3				P82H-000F3	Globe valve ASTM A217 Grade WC9 Class 900 BS 1873 Flange ASME B16.5 RJ Trim number 5 PSB-BG-OS&Y Gear operated Fluid-2	
1	4				P82H-000F4	Globe valve ASTM A217 Grade WC9 Class 900 BS 1873 Flange ASME B16.5 RJ Trim number 5 PSB-BG-OS&Y Gear operated Fluid-2	
1	6				P82H-000B6	Globe valve ASTM A217 Grade WC9 Class 900 BS 1873 Flange ASME B16.5 RJ Trim number 5 PSB-BG-OS&Y Gear operated Fluid-2	
1	8				P82H-000B7	Globe valve ASTM A217 Grade WC9 Class 900 BS 1873 Flange ASME B16.5 RJ Trim number 5 PSB-BG-OS&Y Gear operated Fluid-2	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83G-0003J	Check valve ASTM A182 Grade F22 Class 3 Class 1500 API 602 Flange ASME B16.5 RJ Trim number 5 Lift-type Welded cover	
1	0.75				P83G-0003K	Check valve ASTM A182 Grade F22 Class 3 Class 1500 API 602 Flange ASME B16.5 RJ Trim number 5 Lift-type Welded cover	
1	1				P83G-0003L	Check valve ASTM A182 Grade F22 Class 3 Class 1500 API 602 Flange ASME B16.5 RJ Trim number 5 Lift-type Welded cover	
1	1.5				P83G-0003M	Check valve ASTM A182 Grade F22 Class 3 Class 1500 API 602 Flange ASME B16.5 RJ Trim number 5 Lift-type Welded cover	
1	2				P83H-00095	Check valve ASTM A217 Grade WC9 Class 1500 BS 1868 Flange ASME B16.5 RJ Trim number 5 Swing-type Pressure seal cap	
1	3				P83H-00096	Check valve ASTM A217 Grade WC9 Class 900 BS 1868 Flange ASME B16.5 RJ Trim number 5 Swing-type Pressure seal cap	
1	4				P83H-00097	Check valve ASTM A217 Grade WC9 Class 900 BS 1868 Flange ASME B16.5 RJ Trim number 5 Swing-type Pressure seal cap	
1	6				P83H-00098	Check valve ASTM A217 Grade WC9 Class 900 BS 1868 Flange ASME B16.5 RJ Trim number 5 Swing-type Pressure seal cap	
1	8				P83H-0009A	Check valve ASTM A217 Grade WC9 Class 900 BS 1868 Flange ASME B16.5 RJ Trim number 5 Swing-type Pressure seal cap	
1	10				P83H-00099	Check valve ASTM A217 Grade WC9 Class 900 BS 1868 Flange ASME B16.5 RJ Trim number 5 Swing-type Pressure seal cap	

DP CHECK VALVE (XDP)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	12				P88H-0008R	Dual plate check valve ASTM A217 Grade WC9 Class 900 API 594 Lug-type ASME B16.5 RJ Trim number 5 Internal wetted parts 13Cr Spring Inconel Retainerless-type	
1	14				P88H-0008S	Dual plate check valve ASTM A217 Grade WC9 Class 900 API 594 Lug-type ASME B16.5 RJ Trim number 5 Internal wetted parts 13Cr Spring Inconel Retainerless-type	
1	16				P88H-0008T	Dual plate check valve ASTM A217 Grade WC9 Class 900 API 594 Lug-type ASME B16.5 RJ Trim number 5 Internal wetted parts 13Cr Spring Inconel Retainerless-type	
1	18				P88H-0005U	Dual plate check valve ASTM A217 Grade WC9 Class 900 API 594 Lug-type ASME B16.5 RJ Trim number 5 Internal wetted parts 13Cr Spring Inconel Retainerless-type	
1	20				P88H-0008K	Dual plate check valve ASTM A217 Grade WC9 Class 900 API 594 Lug-type ASME B16.5 RJ Trim number 5 Internal wetted parts 13Cr Spring Inconel Retainerless-type	
1	24				P88H-0008U	Dual plate check valve ASTM A217 Grade WC9 Class 900 API 594 Lug-type ASME B16.5 RJ Trim number 5 Internal wetted parts 13Cr Spring Inconel Retainerless-type	

BUTTERFLY VALVE (H)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	10				P86H-0001Z	Offset design butterfly valve ASTM A217 Grade WC9 Class 900 ASME B16.34 Lug-type ASME B16.5 RJ Disc 2-1/4Cr-1Mo Seat Stellite-6 Trim 13Cr Triple eccentric design BG Gear operated Fluid-2	
1	12				P86H-00020	Offset design butterfly valve ASTM A217 Grade WC9 Class 900 ASME B16.34 Lug-type ASME B16.5 RJ Disc 2-1/4Cr-1Mo Seat Stellite-6 Trim 13Cr Triple eccentric design BG Gear operated Fluid-2	
1	14				P86H-00021	Offset design butterfly valve ASTM A217 Grade WC9 Class 900 ASME B16.34 Lug-type ASME B16.5 RJ Disc 2-1/4Cr-1Mo Seat Stellite-6 Trim 13Cr Triple eccentric design BG Gear operated Fluid-2	

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ORIFICE FLANGE (FO)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2		XS		P66G-000BL	Orifice flange WN ASTM A182 Grade F22 Class 3 Class 1500 ASME B16.36 RJ NPS1/2 SW tap x 1	
1	3		XS		P66G-000A4	Orifice flange WN ASTM A182 Grade F22 Class 3 Class 900 ASME B16.36 RJ NPS1/2 SW tap x 1	
1	4		XS		P66G-000A5	Orifice flange WN ASTM A182 Grade F22 Class 3 Class 900 ASME B16.36 RJ NPS1/2 SW tap x 1	
1	6		XS		P66G-000A6	Orifice flange WN ASTM A182 Grade F22 Class 3 Class 900 ASME B16.36 RJ NPS1/2 SW tap x 1	
1	8		SCH100		P66G-000A7	Orifice flange WN ASTM A182 Grade F22 Class 3 Class 900 ASME B16.36 RJ NPS1/2 SW tap x 1	
1	10		SCH100		P66G-000A0	Orifice flange WN ASTM A182 Grade F22 Class 3 Class 900 ASME B16.36 RJ NPS1/2 SW tap x 1	
1	12		SCH100		P66G-000A1	Orifice flange WN ASTM A182 Grade F22 Class 3 Class 900 ASME B16.36 RJ NPS1/2 SW tap x 1	
1	14		SCH100		P66G-000A2	Orifice flange WN ASTM A182 Grade F22 Class 3 Class 900 ASME B16.36 RJ NPS1/2 SW tap x 1	
200	2		XS		P66G-000BP	Orifice flange WN ASTM A182 Grade F22 Class 3 Class 1500 ASME B16.36 RJ NPS1/2 SW tap x 1 with Jack screw	
200	3		XS		P66G-000AE	Orifice flange WN ASTM A182 Grade F22 Class 3 Class 900 ASME B16.36 RJ NPS1/2 SW tap x 1 with Jack screw	
200	4		XS		P66G-000AF	Orifice flange WN ASTM A182 Grade F22 Class 3 Class 900 ASME B16.36 RJ NPS1/2 SW tap x 1 with Jack screw	
200	6		XS		P66G-000AG	Orifice flange WN ASTM A182 Grade F22 Class 3 Class 900 ASME B16.36 RJ NPS1/2 SW tap x 1 with Jack screw	
200	8		SCH100		P66G-000AH	Orifice flange WN ASTM A182 Grade F22 Class 3 Class 900 ASME B16.36 RJ NPS1/2 SW tap x 1 with Jack screw	
200	10		SCH100		P66G-000AA	Orifice flange WN ASTM A182 Grade F22 Class 3 Class 900 ASME B16.36 RJ NPS1/2 SW tap x 1 with Jack screw	
200	12		SCH100		P66G-000AB	Orifice flange WN ASTM A182 Grade F22 Class 3 Class 900 ASME B16.36 RJ NPS1/2 SW tap x 1 with Jack screw	
200	14		SCH100		P66G-000AC	Orifice flange WN ASTM A182 Grade F22 Class 3 Class 900 ASME B16.36 RJ NPS1/2 SW tap x 1 with Jack screw	

PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P72G-0002U	Paddle blank ASTM A182 Grade F22 Class 3 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	0.75				P72G-0002V	Paddle blank ASTM A182 Grade F22 Class 3 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	1				P72G-0002W	Paddle blank ASTM A182 Grade F22 Class 3 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	1.5				P72G-0002X	Paddle blank ASTM A182 Grade F22 Class 3 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	2				P72G-0002Y	Paddle blank ASTM A182 Grade F22 Class 3 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	3				P72G-00036	Paddle blank ASTM A182 Grade F22 Class 3 Class 900 Standard-drawing Flange ASME B16.5 RJ	
1	4				P72G-00037	Paddle blank ASTM A182 Grade F22 Class 3 Class 900 Standard-drawing Flange ASME B16.5 RJ	
1	6				P72G-00038	Paddle blank ASTM A182 Grade F22 Class 3 Class 900 Standard-drawing Flange ASME B16.5 RJ	
1	8				P72G-00039	Paddle blank ASTM A182 Grade F22 Class 3 Class 900 Standard-drawing Flange ASME B16.5 RJ	
1	10				P72G-0002Z	Paddle blank ASTM A182 Grade F22 Class 3 Class 900 Standard-drawing Flange ASME B16.5 RJ	
1	12				P72G-00030	Paddle blank ASTM A182 Grade F22 Class 3 Class 900 Standard-drawing Flange ASME B16.5 RJ	
1	14				P72G-00031	Paddle blank ASTM A182 Grade F22 Class 3 Class 900 Standard-drawing Flange ASME B16.5 RJ	
1	16				P72G-00032	Paddle blank ASTM A182 Grade F22 Class 3 Class 900 Standard-drawing Flange ASME B16.5 RJ	
1	18				P72G-00033	Paddle blank ASTM A182 Grade F22 Class 3 Class 900 Standard-drawing Flange ASME B16.5 RJ	
1	20				P72G-00034	Paddle blank ASTM A182 Grade F22 Class 3 Class 900 Standard-drawing Flange ASME B16.5 RJ	
1	24				P72G-00035	Paddle blank ASTM A182 Grade F22 Class 3 Class 900 Standard-drawing Flange ASME B16.5 RJ	

PADDLE SPACER (PS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P72G-0003A	Paddle spacer ASTM A182 Grade F22 Class 3 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	0.75				P72G-0003B	Paddle spacer ASTM A182 Grade F22 Class 3 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	1				P72G-0003C	Paddle spacer ASTM A182 Grade F22 Class 3 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	1.5				P72G-0003D	Paddle spacer ASTM A182 Grade F22 Class 3 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	2				P72G-0003E	Paddle spacer ASTM A182 Grade F22 Class 3 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	3				P72G-0003N	Paddle spacer ASTM A182 Grade F22 Class 3 Class 900 Standard-drawing Flange ASME B16.5 RJ	
1	4				P72G-0003P	Paddle spacer ASTM A182 Grade F22 Class 3 Class 900 Standard-drawing Flange ASME B16.5 RJ	
1	6				P72G-0003R	Paddle spacer ASTM A182 Grade F22 Class 3 Class 900 Standard-drawing Flange ASME B16.5 RJ	
1	8				P72G-0003S	Paddle spacer ASTM A182 Grade F22 Class 3 Class 900 Standard-drawing Flange ASME B16.5 RJ	
1	10				P72G-0003F	Paddle spacer ASTM A182 Grade F22 Class 3 Class 900 Standard-drawing Flange ASME B16.5 RJ	
1	12				P72G-0003G	Paddle spacer ASTM A182 Grade F22 Class 3 Class 900 Standard-drawing Flange ASME B16.5 RJ	
1	14				P72G-0003H	Paddle spacer ASTM A182 Grade F22 Class 3 Class 900 Standard-drawing Flange ASME B16.5 RJ	
1	16				P72G-0003J	Paddle spacer ASTM A182 Grade F22 Class 3 Class 900 Standard-drawing Flange ASME B16.5 RJ	
1	18				P72G-0003K	Paddle spacer ASTM A182 Grade F22 Class 3 Class 900 Standard-drawing Flange ASME B16.5 RJ	
1	20				P72G-0003L	Paddle spacer ASTM A182 Grade F22 Class 3 Class 900 Standard-drawing Flange ASME B16.5 RJ	
1	24				P72G-0003M	Paddle spacer ASTM A182 Grade F22 Class 3 Class 900 Standard-drawing Flange ASME B16.5 RJ	

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BOLT TABLE (B_M1EH , STUD ASME RJ, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	110	P80S-00GLD	R12	P75T-000KE
0.75	4	0.750	115	P80S-00GLC	R14	P75T-000KF
1	4	0.875	130	P80S-00FV7	R16	P75T-000KG
1.5	4	1.000	140	P80S-00FRD	R20	P75T-000KH
2	8	0.875	150	P80S-00FV3	R24	P75T-000KS
3	8	0.875	150	P80S-00FV3	R31	P75T-000KP
4	8	1.125	175	P80S-00FH8	R37	P75T-000KC
6	12	1.125	200	P80S-00FH3	R45	P75T-000KD
8	12	1.375	260	P80S-00F4V	R49	P75T-000KR
10	16	1.375	275	P80S-00F4S	R53	P75T-000KN
12	20	1.375	295	P80S-00F2T	R57	P75T-0010W
14	20	1.500	325	P80S-00EY2	R62	P75T-000KY
16	20	1.625	340	P80S-00G0N	R66	P75T-000K9
18	20	1.875	390	P80S-00FKA	R70	P75T-000KZ
20	20	2.000	415	P80S-00FBL	R74	P75T-000KA
24	20	2.500	525	P80S-00EWJ	R78	P75T-000KB

BOLT TABLE (B_M1EH_797 , STUD ASME RJ, OPTION CODE 797)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	110		R12	
0.75	4	0.750	115		R14	
1	4	0.875	130		R16	
1.5	4	1.000	140		R20	
2	8	0.875	150		R24	
3	8	1.125	180	P80S-00FH7	R35	P75T-000L3
4	8	1.250	230	P80S-00F9P	R39	P75T-000L4
6	12	1.375	300	P80S-00F2S	R46	P75T-00116
8	12	1.625	345	P80S-00G0M	R50	P75T-000L5
10	12	1.875	395	P80S-00FK9	R54	P75T-000NK
12	16	2.000	445	P80S-00FBE	R58	P75T-000P1
14	16	2.250	490	P80S-00F3F	R63	P75T-000L0
16	16	2.500	540	P80S-00EWF	R67	P75T-000L1
18	16	2.750	590	P80S-01RN3	R71	P75T-000L2
20	16	3.000	650	P80S-01RSS	R75	P75T-0011A
24	16	3.500	745	P80S-01S04	R79	P75T-000NL

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BRANCH TABLE (T_M1EH)

RUN PIPE SIZE (in) \ BRANCH SIZE (in)	0.5	0.75	1	1.5	2	3	4	6	8	10	12	14	16	18	20	24
0.5	TS															
0.75		TS														
1		TR	TS													
1.5		TR	TR	TS												
2		L	TR	TR	TS											
3		L	L	TR	TR	TS										
4	L	L	L	L	TR	TR	TS									
6	L	L	L	L	L	TR	TR	TS								
8		L	L	L	L	L	TR	TR	TS							
10		L	L	L	L	L	TR	TR	TR	TS						
12		L	L	L	L	L	L	TR	TR	TR	TS					
14		L	L	L	L	L	L	TR	TR	TR	TR	TS				
16		L	L	L	L	L	L	TR	TR	TR	TR	TR	TS			
18		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TS		
20		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TR	TS	
24		L	L	L	L	L	L	L	9PD	TR	TR	TR	TR	TR	TR	TS

L : OUTLET
TS : STRAIGHT TEE
TR : REDUCING TEE
9PD : REINFORCING PAD 90 DEG

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PIPING CLASS

M2A602 REV NO. 2

Material : Killed CS
Rating : ASME CLASS 900
Flange Face : RJ
C.A.(mm) : 3.00
Gasket : Ring Octagonal
Service : PROCESS -WET LOW SEVERITY SOUR SERVICE SUBJECT TO NACE + HYDROGEN SERVICE
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
5	BOLTING CONFIRMING TO B7M / 2HM SHALL BE USED UNDER CONDITIONS (A) DIRECT EXPOSURE TO SOUR ENVIRONMENTS (B) WHEN THE BOLTING WILL BE BURIED OR INSULATED
27	PWHT OF CARBON STEEL PIPING IN WET H2S, CAUSTIC AND AMINE SERVICES SHALL BE IN ACCORDANCE WITH SECTION 10.2, 10.3, AND 10.4 OF PROJECT SPECIFICATION 3550-8440-SP-0002 MATERIALS REQUIREMENTS FOR PRESSURISED EQUIPMENT AND PIPING. FOR CAUSTIC AND AMINE SERVICE THE FOLLOWING SHALL APPLY: - PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF ALL SITE PIPING FABRICATION WELDS IS REQUIRED FOR ALL WALL THICKNESSES. FOR MODERATE AND SEVERE WET H2S SERVICE THE FOLLOWING SHALL APPLY: PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF SITE FABRICATION CIRCUMFERENTIAL OR BRANCH WELDS IS NOT REQUIRED IF WELDS ARE MULTIPASS AND IN ACCORDANCE WITH PARA 10.2.12 OF PROJECT SPECIFICATION 3550-8440-SP-0002. FOR SERVICES MEETING THE WET H2S CRITERIA AND CAUSTIC OR AMINE CRITERIA THE MORE STRINGENT PWHT REQUIREMENT SHALL GOVERN.

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
541	NPT(F) (F)

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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P01A-00143	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	0.75		SCH160		P01A-0010R	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1		SCH160		P01A-0014M	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1.5		SCH160		P01A-0015J	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	2		SCH160		P01A-0019T	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	3		SCH160		P01A-001S5	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	4		SCH160		P01A-001TN	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P02A-00172	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	0.75		SCH160		P02A-000V8	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1		SCH160		P02A-000V7	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1.5		SCH160		P02A-000V9	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	2		SCH160		P02A-000KW	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		SCH160		P02A-000U4	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		SCH160		P02A-002JE	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P03A-0012Y	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	0.75		SCH160		P03A-000RS	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1		SCH160		P03A-000RR	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1.5		SCH160		P03A-000RP	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	2		SCH160		P03A-000HU	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		SCH160		P03A-000RB	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		SCH160		P03A-002FY	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P21A-002M0	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	0.75		SCH160		P21A-002B8	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1		SCH160		P21A-002B6	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5		SCH160		P21A-002B9	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2		SCH160		P21A-00245	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		SCH160		P21A-002AG	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		SCH160		P21A-003GZ	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75	SCH160	SCH160	P24A-004B6	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.75	SCH160	SCH160	P24A-004B2	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	1	SCH160	SCH160	P24A-004BA	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	SCH160	SCH160	P24A-00AEU	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	SCH160	SCH160	P24A-003AX	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	SCH160	SCH160	P24A-004LF	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	SCH160	SCH160	P24A-0045H	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	SCH160	SCH160	P24A-00GPP	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	SCH160	SCH160	P24A-00GSS	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	XXS	P27A-003ZL	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.5	SCH160	XXS	P27A-003ZM	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.75	SCH160	SCH160	P27A-002T5	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.5	SCH160	XXS	P27A-003ZN	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.75	SCH160	SCH160	P27A-002T7	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	1	SCH160	SCH160	P27A-002T4	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2	0.75	SCH160	SCH160	P27A-0025L	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	SCH160	SCH160	P27A-0025K	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	SCH160	SCH160	P27A-0025J	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	SCH160	SCH160	P27A-00301	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	SCH160	SCH160	P27A-002NC	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	1.5	SCH160	SCH160	P27A-0073L	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	SCH160	SCH160	P27A-00746	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	SCH160	SCH160	P27A-0074N	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	XXS	P28A-003ZE	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.5	SCH160	XXS	P28A-003ZF	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.75	SCH160	SCH160	P28A-002TU	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.5	SCH160	XXS	P28A-003ZG	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.75	SCH160	SCH160	P28A-002TW	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	1	SCH160	SCH160	P28A-002TR	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	0.75	SCH160	SCH160	P28A-002SU	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	SCH160	SCH160	P28A-002ST	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	SCH160	SCH160	P28A-002SS	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	SCH160	SCH160	P28A-0030P	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	SCH160	SCH160	P28A-002NY	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	1.5	SCH160	SCH160	P28A-008GK	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	SCH160	SCH160	P28A-008GL	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	SCH160	SCH160	P28A-008J1	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P29A-001UE	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	0.75		SCH160		P29A-001UF	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	1		SCH160		P29A-001TC	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	1.5		SCH160		P29A-001TD	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	2		SCH160		P29A-001TK	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	3		SCH160		P29A-001TN	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	4		SCH160		P29A-001WH	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P41A-000B9	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		XXS		P41A-000BA	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		XXS		P41A-000D8	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		XXS		P41A-000D9	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2	0.75	SCH160	SCH160	P31B-007NC	Outlet ASTM A105 MSS SP-97 BW	
1	3	0.75	SCH160	SCH160	P31B-00CMV	Outlet ASTM A105 MSS SP-97 BW	
1	4	0.75	SCH160	SCH160	P31B-00CLV	Outlet ASTM A105 MSS SP-97 BW	
1	3	1	SCH160	SCH160	P31B-00B4K	Outlet ASTM A105 MSS SP-97 BW	
1	4	1	SCH160	SCH160	P31B-00B3N	Outlet ASTM A105 MSS SP-97 BW	
1	4	1.5	SCH160	SCH160	P31B-00BP6	Outlet ASTM A105 MSS SP-97 BW	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30B-0002D	Plug ASTM A105 ASME B16.11 NPT Round head	
1	0.75				P30B-0002E	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1				P30B-0002F	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1.5				P30B-0002G	Plug ASTM A105 ASME B16.11 NPT Round head	

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FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P61B-00664	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
1	0.75		SCH160		P61B-0065U	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
1	1		SCH160		P61B-0065V	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
1	1.5		SCH160		P61B-0065W	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
1	2		SCH160		P61B-0066J	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
1	3		SCH160		P61B-0067L	Flange WN ASTM A105 Class 900 ASME B16.5 RJ	
1	4		SCH160		P61B-00DGP	Flange WN ASTM A105 Class 900 ASME B16.5 RJ	
541	0.5				P61B-00DLH	Flange NPT ASTM A105 Class 1500 ASME B16.5 RJ	
541	0.75				P61B-00CW7	Flange NPT ASTM A105 Class 1500 ASME B16.5 RJ	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67B-001VE	Blind flange ASTM A105 Class 1500 ASME B16.5 RJ	
1	0.75				P67B-001VF	Blind flange ASTM A105 Class 1500 ASME B16.5 RJ	
1	1				P67B-001VG	Blind flange ASTM A105 Class 1500 ASME B16.5 RJ	
1	1.5				P67B-001VH	Blind flange ASTM A105 Class 1500 ASME B16.5 RJ	
1	2				P67B-0014J	Blind flange ASTM A105 Class 1500 ASME B16.5 RJ	
1	3				P67B-001VJ	Blind flange ASTM A105 Class 900 ASME B16.5 RJ	
1	4				P67B-001VK	Blind flange ASTM A105 Class 900 ASME B16.5 RJ	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P75T-000JT	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	0.75				P75T-000JU	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	1				P75T-000JV	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	1.5				P75T-000JW	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	2				P75T-0008A	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	3				P75T-000JN	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	4				P75T-000JP	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-3				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	4				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81B-002F3	Gate valve ASTM A105 Class 1500 API 602 BW XXS Trim SS316L Body and disc seats Stellite-6 WB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	0.75				P81B-0021K	Gate valve ASTM A105 Class 1500 API 602 BW Sch160 Trim SS316L Body and disc seats Stellite-6 WB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	1				P81B-0021L	Gate valve ASTM A105 Class 1500 API 602 BW Sch160 Trim SS316L Body and disc seats Stellite-6 WB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	1.5				P81B-0021M	Gate valve ASTM A105 Class 1500 API 602 BW Sch160 Trim SS316L Body and disc seats Stellite-6 WB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	2				P81C-006UU	Gate valve ASTM A216 Grade WCB Class 1500 API 600 BW Sch160 Trim SS316L Body and disc seats Stellite-6 PSB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	3				P81C-00959	Gate valve ASTM A216 Grade WCB Class 900 API 600 BW Sch160 Trim SS316L Body and disc seats Stellite-6 PSB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	4				P81C-0095A	Gate valve ASTM A216 Grade WCB Class 900 API 600 BW Sch160 Trim SS316L Body and disc seats Stellite-6 PSB-BG-OS&Y Handwheel operated Moderate wet H2S service	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82B-001UJ	Globe valve ASTM A105 Class 1500 API 602 BW XXS Trim SS316L Body and disc seats Stellite-6 WB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	0.75				P82B-001L6	Globe valve ASTM A105 Class 1500 API 602 BW Sch160 Trim SS316L Body and disc seats Stellite-6 WB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	1				P82B-001L7	Globe valve ASTM A105 Class 1500 API 602 BW Sch160 Trim SS316L Body and disc seats Stellite-6 WB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	1.5				P82B-001L8	Globe valve ASTM A105 Class 1500 API 602 BW Sch160 Trim SS316L Body and disc seats Stellite-6 WB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	2				P82C-003AW	Globe valve ASTM A216 Grade WCB Class 1500 BS 1873 BW Sch160 Trim SS316L Body and disc seats Stellite-6 PSB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	3				P82C-004F9	Globe valve ASTM A216 Grade WCB Class 900 BS 1873 BW Sch160 Trim SS316L Body and disc seats Stellite-6 PSB-BG-OS&Y Handwheel operated Moderate wet H2S service	

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GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	4				P82C-004FA	Globe valve ASTM A216 Grade WCB Class 900 BS 1873 BW Sch160 Trim SS316L Body and disc seats Stellite-6 PSB-BG-OS&Y Gear operated Moderate wet H2S service	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83B-001D7	Check valve ASTM A105 Class 1500 API 602 BW XXS Trim SS316L Body and disc seats Stellite-6 Lift-type Welded cover Moderate wet H2S service	
1	0.75				P83B-001D0	Check valve ASTM A105 Class 1500 API 602 BW Sch160 Trim SS316L Body and disc seats Stellite-6 Lift-type Welded cover Moderate wet H2S service	
1	1				P83B-001D1	Check valve ASTM A105 Class 1500 API 602 BW Sch160 Trim SS316L Body and disc seats Stellite-6 Lift-type Welded cover Moderate wet H2S service	
1	1.5				P83B-001D2	Check valve ASTM A105 Class 1500 API 602 BW Sch160 Trim SS316L Body and disc seats Stellite-6 Lift-type Welded cover Moderate wet H2S service	
1	2				P83C-00346	Check valve ASTM A216 Grade WCB Class 1500 BS 1868 BW Sch160 Trim SS316L Body and disc seats Stellite-6 Swing-type Pressure seal cap Moderate wet H2S service	
1	3				P83C-0044D	Check valve ASTM A216 Grade WCB Class 900 BS 1868 BW Sch160 Trim SS316L Body and disc seats Stellite-6 Swing-type Pressure seal cap Moderate wet H2S service	
1	4				P83C-0044E	Check valve ASTM A216 Grade WCB Class 900 BS 1868 BW Sch160 Trim SS316L Body and disc seats Stellite-6 Swing-type Pressure seal cap Moderate wet H2S service	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	4				P71B-000LU	Spectacle blank ASTM A105 Class 900 Standard-drawing Flange ASME B16.5 RJ	

PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P72B-000JD	Paddle blank ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	0.75				P72B-000JE	Paddle blank ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	1				P72B-000JF	Paddle blank ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	1.5				P72B-000JG	Paddle blank ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	2				P72B-000JH	Paddle blank ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	3				P72B-000JJ	Paddle blank ASTM A105 Class 900 Standard-drawing Flange ASME B16.5 RJ	
1	4				P72B-000JK	Paddle blank ASTM A105 Class 900 Standard-drawing Flange ASME B16.5 RJ	

PADDLE SPACER (PS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P72B-000JN	Paddle spacer ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	0.75				P72B-000JP	Paddle spacer ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	1				P72B-000JR	Paddle spacer ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	1.5				P72B-000JS	Paddle spacer ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	2				P72B-000JT	Paddle spacer ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	3				P72B-000JU	Paddle spacer ASTM A105 Class 900 Standard-drawing Flange ASME B16.5 RJ	
1	4				P72B-000JV	Paddle spacer ASTM A105 Class 900 Standard-drawing Flange ASME B16.5 RJ	

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M2A602 REV NO. 2

BOLT TABLE (B_M2A602 , STUD ASME RJ, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	110	P80S-0090F	R12	P75T-000JT
0.75	4	0.750	115	P80S-0090G	R14	P75T-000JU
1	4	0.875	130	P80S-005ZB	R16	P75T-000JV
1.5	4	1.000	140	P80S-0061A	R20	P75T-000JW
2	8	0.875	150	P80S-005ZF	R24	P75T-0008A
3	8	0.875	150	P80S-005ZF	R31	P75T-000JN
4	8	1.125	175	P80S-0064S	R37	P75T-000JP

BOLT TABLE (B_M2A602_805 , STUD ASME RJ, OPTION CODE 805)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	125		R13	
0.75	4	0.750	130		R16	
1	4	0.875	140		R18	
1.5	4	1.125	175		R23	
2	8	1.000	180		R26	
3	8	1.250	260		R32	
4	8	1.500	305		R38	

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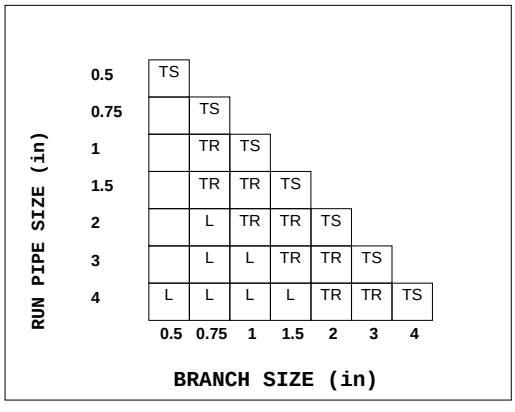
PIPING CLASS

M2A602 REV NO. 2

BRANCH TABLE (T_M2A602)



TS : STRAIGHT TEE
TR : REDUCING TEE
L : OUTLET

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PIPING CLASS

M2AG REV NO. 2

Material : CS (ASME)
Rating : ASME CLASS 900
Flange Face : RJ
C.A.(mm) : 3.00
Gasket : Ring Octagonal
Service : UTILITY - POWER PIPING : / HP BOILER FEED WATER

Design Code : ASME B31.1
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
200	WITH JACK SCREW (FO)
541	NPT(F) (F)
797	CLASS 1500 (B,F,G)

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PIPING CLASS
M2AG REV NO. 2

PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P01A-003L3	Pipe ASME SA106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	0.75		SCH160		P01A-003L4	Pipe ASME SA106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1		SCH160		P01A-003L5	Pipe ASME SA106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1.5		SCH160		P01A-003L6	Pipe ASME SA106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	2		SCH160		P01A-00435	Pipe ASME SA106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	3		SCH160		P01A-00436	Pipe ASME SA106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	4		SCH120		P01A-0079X	Pipe ASME SA106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	6		SCH120		P01A-0079Y	Pipe ASME SA106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	8		SCH120		P01A-0079Z	Pipe ASME SA106 Grade B Seamless ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P02A-003RZ	90 degree elbow ASME SA234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	0.75		SCH160		P02A-002J2	90 degree elbow ASME SA234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1		SCH160		P02A-002J3	90 degree elbow ASME SA234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1.5		SCH160		P02A-002J4	90 degree elbow ASME SA234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	2		SCH160		P02A-002HY	90 degree elbow ASME SA234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		SCH160		P02A-002HZ	90 degree elbow ASME SA234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		SCH120		P02A-003S0	90 degree elbow ASME SA234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		SCH120		P02A-003S1	90 degree elbow ASME SA234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		SCH120		P02A-003S2	90 degree elbow ASME SA234 Grade WPB Seamless ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P03A-003NM	45 degree elbow ASME SA234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	0.75		SCH160		P03A-002FK	45 degree elbow ASME SA234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1		SCH160		P03A-002FL	45 degree elbow ASME SA234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1.5		SCH160		P03A-002FM	45 degree elbow ASME SA234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	2		SCH160		P03A-002FF	45 degree elbow ASME SA234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		SCH160		P03A-002FG	45 degree elbow ASME SA234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		SCH120		P03A-003NN	45 degree elbow ASME SA234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		SCH120		P03A-003NP	45 degree elbow ASME SA234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		SCH120		P03A-003NR	45 degree elbow ASME SA234 Grade WPB Seamless ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P21A-0049C	Straight tee ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	0.75		SCH160		P21A-003GL	Straight tee ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	1		SCH160		P21A-003GM	Straight tee ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	1.5		SCH160		P21A-003GN	Straight tee ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	2		SCH160		P21A-003GG	Straight tee ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	3		SCH160		P21A-003GH	Straight tee ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	4		SCH120		P21A-0049D	Straight tee ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	6		SCH120		P21A-0049E	Straight tee ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	8		SCH120		P21A-0049F	Straight tee ASME SA234 Grade WPB Seamless ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75	SCH160	SCH160	P24A-00GPC	Reducing tee ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.75	SCH160	SCH160	P24A-00GPD	Reducing tee ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	1	SCH160	SCH160	P24A-00GPE	Reducing tee ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	SCH160	SCH160	P24A-00GP3	Reducing tee ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	SCH160	SCH160	P24A-00GP4	Reducing tee ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	SCH160	SCH160	P24A-00GP5	Reducing tee ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	SCH160	SCH160	P24A-00GP6	Reducing tee ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	SCH120	SCH160	P24A-00K2X	Reducing tee ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	SCH120	SCH160	P24A-00K2Y	Reducing tee ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	SCH120	SCH160	P24A-00K2Z	Reducing tee ASME SA234 Grade WPB Seamless ASME B16.9 BW	

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REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	6	4	SCH120	SCH120	P24A-00K30	Reducing tee ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH120	SCH120	P24A-00K31	Reducing tee ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH120	SCH120	P24A-00K32	Reducing tee ASME SA234 Grade WPB Seamless ASME B16.9 BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	SCH160	P27A-00EMX	Concentric reducer ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.5	SCH160	SCH160	P27A-00EMY	Concentric reducer ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.75	SCH160	SCH160	P27A-00BGU	Concentric reducer ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.5	SCH160	SCH160	P27A-00EMZ	Concentric reducer ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.75	SCH160	SCH160	P27A-00BGW	Concentric reducer ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	1	SCH160	SCH160	P27A-00BGX	Concentric reducer ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	2	0.75	SCH160	SCH160	P27A-00BGY	Concentric reducer ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	SCH160	SCH160	P27A-00BGZ	Concentric reducer ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	SCH160	SCH160	P27A-00BH0	Concentric reducer ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	SCH160	SCH160	P27A-00BH1	Concentric reducer ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	SCH160	SCH160	P27A-00BGL	Concentric reducer ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	4	1.5	SCH120	SCH160	P27A-00EN0	Concentric reducer ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	SCH120	SCH160	P27A-00EN1	Concentric reducer ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	SCH120	SCH160	P27A-00EN2	Concentric reducer ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	SCH120	SCH160	P27A-00EN3	Concentric reducer ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	SCH120	SCH120	P27A-00EN4	Concentric reducer ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH120	SCH120	P27A-00EN5	Concentric reducer ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH120	SCH120	P27A-00EN6	Concentric reducer ASME SA234 Grade WPB Seamless ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	SCH160	P28A-00BSN	Eccentric reducer ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.5	SCH160	SCH160	P28A-00BSP	Eccentric reducer ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.75	SCH160	SCH160	P28A-008FY	Eccentric reducer ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.5	SCH160	SCH160	P28A-00BSR	Eccentric reducer ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.75	SCH160	SCH160	P28A-008G0	Eccentric reducer ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	1	SCH160	SCH160	P28A-008G1	Eccentric reducer ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	2	0.75	SCH160	SCH160	P28A-008G2	Eccentric reducer ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	SCH160	SCH160	P28A-008G3	Eccentric reducer ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	SCH160	SCH160	P28A-008G4	Eccentric reducer ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	SCH160	SCH160	P28A-008G5	Eccentric reducer ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	SCH160	SCH160	P28A-008FL	Eccentric reducer ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	4	1.5	SCH120	SCH160	P28A-00BSS	Eccentric reducer ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	SCH120	SCH160	P28A-00BST	Eccentric reducer ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	SCH120	SCH160	P28A-00BSU	Eccentric reducer ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	SCH120	SCH160	P28A-00BSV	Eccentric reducer ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	SCH120	SCH120	P28A-00BSW	Eccentric reducer ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH120	SCH120	P28A-00BSX	Eccentric reducer ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH120	SCH120	P28A-00BSY	Eccentric reducer ASME SA234 Grade WPB Seamless ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P29A-0033D	Cap ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	0.75		SCH160		P29A-001UJ	Cap ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	1		SCH160		P29A-001UK	Cap ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	1.5		SCH160		P29A-001UL	Cap ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	2		SCH160		P29A-001UA	Cap ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	3		SCH160		P29A-001UB	Cap ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	4		SCH120		P29A-0033E	Cap ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	6		SCH120		P29A-0033F	Cap ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	8		SCH120		P29A-0033G	Cap ASME SA234 Grade WPB Seamless ASME B16.9 BW	

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STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P41A-0017T	Straight nipple ASME SA106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		XXS		P41A-0017U	Straight nipple ASME SA106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		XXS		P41A-0017V	Straight nipple ASME SA106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		XXS		P41A-0017W	Straight nipple ASME SA106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2	0.75	SCH160	SCH160	P31B-00TRX	Outlet ASME SA105 MSS SP-97 BW	
1	3	0.75	SCH160	SCH160	P31B-00TRY	Outlet ASME SA105 MSS SP-97 BW	
1	4	0.75	SCH120	SCH160	P31B-00XJJ	Outlet ASME SA105 MSS SP-97 BW	
1	6	0.75	SCH120	SCH160	P31B-00XJM	Outlet ASME SA105 MSS SP-97 BW	
1	8	0.75	SCH120	SCH160	P31B-00XJS	Outlet ASME SA105 MSS SP-97 BW	
1	3	1	SCH160	SCH160	P31B-00TRZ	Outlet ASME SA105 MSS SP-97 BW	
1	4	1	SCH120	SCH160	P31B-00XJK	Outlet ASME SA105 MSS SP-97 BW	
1	6	1	SCH120	SCH160	P31B-00XJN	Outlet ASME SA105 MSS SP-97 BW	
1	8	1	SCH120	SCH160	P31B-00XJT	Outlet ASME SA105 MSS SP-97 BW	
1	4	1.5	SCH120	SCH160	P31B-00XJL	Outlet ASME SA105 MSS SP-97 BW	
1	6	1.5	SCH120	SCH160	P31B-00XJP	Outlet ASME SA105 MSS SP-97 BW	
1	8	1.5	SCH120	SCH160	P31B-00XJU	Outlet ASME SA105 MSS SP-97 BW	
1	6	2	SCH120	SCH160	P31B-00XJR	Outlet ASME SA105 MSS SP-97 BW	
1	8	2	SCH120	SCH160	P31B-00XJV	Outlet ASME SA105 MSS SP-97 BW	
1	8	3	SCH120	SCH160	P31B-00XJW	Outlet ASME SA105 MSS SP-97 BW	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30B-00034	Plug ASME SA105 ASME B16.11 NPT Round head	
1	0.75				P30B-00035	Plug ASME SA105 ASME B16.11 NPT Round head	
1	1				P30B-00036	Plug ASME SA105 ASME B16.11 NPT Round head	
1	1.5				P30B-00037	Plug ASME SA105 ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P61B-00BBM	Flange WN ASME SA105 Class 1500 ASME B16.5 RJ	
1	0.75		SCH160		P61B-00BBN	Flange WN ASME SA105 Class 1500 ASME B16.5 RJ	
1	1		SCH160		P61B-00BBP	Flange WN ASME SA105 Class 1500 ASME B16.5 RJ	
1	1.5		SCH160		P61B-00BBR	Flange WN ASME SA105 Class 1500 ASME B16.5 RJ	
1	2		SCH160		P61B-0065R	Flange WN ASME SA105 Class 1500 ASME B16.5 RJ	
1	3		SCH160		P61B-0065K	Flange WN ASME SA105 Class 900 ASME B16.5 RJ	
1	4		SCH120		P61B-009WC	Flange WN ASME SA105 Class 900 ASME B16.5 RJ	
1	6		SCH120		P61B-009WD	Flange WN ASME SA105 Class 900 ASME B16.5 RJ	
1	8		SCH120		P61B-009WE	Flange WN ASME SA105 Class 900 ASME B16.5 RJ	
541	0.5				P61B-00DLJ	Flange NPT ASME SA105 Class 1500 ASME B16.5 RJ	
541	0.75				P61B-00CY3	Flange NPT ASME SA105 Class 1500 ASME B16.5 RJ	
797	3		SCH160		P61B-0066E	Flange WN ASME SA105 Class 1500 ASME B16.5 RJ	
797	4		SCH120		P61B-009WF	Flange WN ASME SA105 Class 1500 ASME B16.5 RJ	
797	6		SCH120		P61B-009WG	Flange WN ASME SA105 Class 1500 ASME B16.5 RJ	
797	8		SCH120		P61B-009WH	Flange WN ASME SA105 Class 1500 ASME B16.5 RJ	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67B-001VN	Blind flange ASME SA105 Class 1500 ASME B16.5 RJ	
1	0.75				P67B-001VP	Blind flange ASME SA105 Class 1500 ASME B16.5 RJ	
1	1				P67B-001VR	Blind flange ASME SA105 Class 1500 ASME B16.5 RJ	
1	1.5				P67B-001VS	Blind flange ASME SA105 Class 1500 ASME B16.5 RJ	
1	2				P67B-001VT	Blind flange ASME SA105 Class 1500 ASME B16.5 RJ	
1	3				P67B-001VU	Blind flange ASME SA105 Class 900 ASME B16.5 RJ	
1	4				P67B-001VV	Blind flange ASME SA105 Class 900 ASME B16.5 RJ	
1	6				P67B-001VW	Blind flange ASME SA105 Class 900 ASME B16.5 RJ	

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BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	8				P67B-001VX	Blind flange ASME SA105 Class 900 ASME B16.5 RJ	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P75T-000JT	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	0.75				P75T-000JU	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	1				P75T-000JV	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	1.5				P75T-000JW	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	2				P75T-0008A	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	3				P75T-000JN	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	4				P75T-000JP	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	6				P75T-000JR	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	8				P75T-000JS	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	3				P75T-0008E	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	4				P75T-0008D	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	6				P75T-0008C	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	8				P75T-0008B	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-3				See Attached Bolt Table	Bolt and Nut ASME SA193 Grade B7 / SA194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	4-8				See Attached Bolt Table	Bolt and Nut ASME SA193 Grade B7 / SA194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
797	3-8				See Attached Bolt Table	Bolt and Nut ASME SA193 Grade B7 / SA194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81B-001UR	Gate valve ASME SA105 Class 1500 API 602 Flange ASME B16.5 RJ Trim number 5 WB-BG-OS&Y Handwheel operated	
1	0.75				P81B-001US	Gate valve ASME SA105 Class 1500 API 602 Flange ASME B16.5 RJ Trim number 5 WB-BG-OS&Y Handwheel operated	
1	1				P81B-001UT	Gate valve ASME SA105 Class 1500 API 602 Flange ASME B16.5 RJ Trim number 5 WB-BG-OS&Y Handwheel operated	
1	1.5				P81B-001UU	Gate valve ASME SA105 Class 1500 API 602 Flange ASME B16.5 RJ Trim number 5 WB-BG-OS&Y Handwheel operated	
1	2				P81C-0064R	Gate valve ASME SA216 Grade WCB Class 1500 API 600 BW Sch160 Trim number 5 PSB-BG-OS&Y Handwheel operated	
1	3				P81C-0064S	Gate valve ASME SA216 Grade WCB Class 900 API 600 BW Sch160 Trim number 5 PSB-BG-OS&Y Handwheel operated	
1	4				P81C-0064T	Gate valve ASME SA216 Grade WCB Class 900 API 600 BW Sch120 Trim number 5 PSB-BG-OS&Y Handwheel operated	
1	6				P81C-0064U	Gate valve ASME SA216 Grade WCB Class 900 API 600 BW Sch120 Trim number 5 PSB-BG-OS&Y Gear operated	
1	8				P81C-0064V	Gate valve ASME SA216 Grade WCB Class 900 API 600 BW Sch120 Trim number 5 PSB-BG-OS&Y Gear operated	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82B-001FH	Globe valve ASME SA105 Class 1500 API 602 Flange ASME B16.5 RJ Trim number 5 WB-BG-OS&Y Handwheel operated	
1	0.75				P82B-001FJ	Globe valve ASME SA105 Class 1500 API 602 Flange ASME B16.5 RJ Trim number 5 WB-BG-OS&Y Handwheel operated	
1	1				P82B-001FK	Globe valve ASME SA105 Class 1500 API 602 Flange ASME B16.5 RJ Trim number 5 WB-BG-OS&Y Handwheel operated	
1	1.5				P82B-001FL	Globe valve ASME SA105 Class 1500 API 602 Flange ASME B16.5 RJ Trim number 5 WB-BG-OS&Y Handwheel operated	
1	2				P82C-00301	Globe valve ASME SA216 Grade WCB Class 1500 BS 1873 BW Sch160 Trim number 5 PSB-BG-OS&Y Handwheel operated	
1	3				P82C-00302	Globe valve ASME SA216 Grade WCB Class 900 BS 1873 BW Sch160 Trim number 5 PSB-BG-OS&Y Handwheel operated	
1	4				P82C-00433	Globe valve ASME SA216 Grade WCB Class 900 BS 1873 BW Sch120 Trim number 5 PSB-BG-OS&Y Gear operated	
1	6				P82C-00304	Globe valve ASME SA216 Grade WCB Class 900 BS 1873 BW Sch120 Trim number 5 PSB-BG-OS&Y Gear operated	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83B-00157	Check valve ASME SA105 Class 1500 API 602 Flange ASME B16.5 RJ Trim number 5 Lift-type Welded cover	

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CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75				P83B-00158	Check valve ASME SA105 Class 1500 API 602 Flange ASME B16.5 RJ Trim number 5 Lift-type Welded cover	
1	1				P83B-00159	Check valve ASME SA105 Class 1500 API 602 Flange ASME B16.5 RJ Trim number 5 Lift-type Welded cover	
1	1.5				P83B-0015A	Check valve ASME SA105 Class 1500 API 602 Flange ASME B16.5 RJ Trim number 5 Lift-type Welded cover	
1	2				P83C-002ZM	Check valve ASME SA216 Grade WCB Class 1500 BS 1868 BW Sch160 Trim number 5 Swing-type Pressure seal cap	
1	3				P83C-002ZN	Check valve ASME SA216 Grade WCB Class 900 BS 1868 BW Sch160 Trim number 5 Swing-type Pressure seal cap	
1	4				P83C-002ZP	Check valve ASME SA216 Grade WCB Class 900 BS 1868 BW Sch120 Trim number 5 Swing-type Pressure seal cap	
1	6				P83C-002ZR	Check valve ASME SA216 Grade WCB Class 900 BS 1868 BW Sch120 Trim number 5 Swing-type Pressure seal cap	

ORIFICE FLANGE (FO)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2		SCH160		P66B-008R4	Orifice flange WN ASME SA105 Class 1500 ASME B16.36 RJ NPS1/2 SW tap x 1	
1	3		SCH160		P66B-008HW	Orifice flange WN ASME SA105 Class 900 ASME B16.36 RJ NPS1/2 SW tap x 1	
200	2		SCH160		P66B-008R7	Orifice flange WN ASME SA105 Class 1500 ASME B16.36 RJ NPS1/2 SW tap x 1 with Jack screw	
200	3		SCH160		P66B-008J0	Orifice flange WN ASME SA105 Class 900 ASME B16.36 RJ NPS1/2 SW tap x 1 with Jack screw	

PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P72B-000JY	Paddle blank ASME SA105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	0.75				P72B-000JZ	Paddle blank ASME SA105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	1				P72B-000K0	Paddle blank ASME SA105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	1.5				P72B-000K1	Paddle blank ASME SA105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	2				P72B-000K2	Paddle blank ASME SA105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	3				P72B-000K3	Paddle blank ASME SA105 Class 900 Standard-drawing Flange ASME B16.5 RJ	
1	4				P72B-000K4	Paddle blank ASME SA105 Class 900 Standard-drawing Flange ASME B16.5 RJ	
1	6				P72B-000K5	Paddle blank ASME SA105 Class 900 Standard-drawing Flange ASME B16.5 RJ	
1	8				P72B-000K6	Paddle blank ASME SA105 Class 900 Standard-drawing Flange ASME B16.5 RJ	

PADDLE SPACER (PS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P72B-000K7	Paddle spacer ASME SA105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	0.75				P72B-000K8	Paddle spacer ASME SA105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	1				P72B-000K9	Paddle spacer ASME SA105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	1.5				P72B-000KA	Paddle spacer ASME SA105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	2				P72B-000KB	Paddle spacer ASME SA105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	3				P72B-000KC	Paddle spacer ASME SA105 Class 900 Standard-drawing Flange ASME B16.5 RJ	
1	4				P72B-000KD	Paddle spacer ASME SA105 Class 900 Standard-drawing Flange ASME B16.5 RJ	
1	6				P72B-000KE	Paddle spacer ASME SA105 Class 900 Standard-drawing Flange ASME B16.5 RJ	
1	8				P72B-000KF	Paddle spacer ASME SA105 Class 900 Standard-drawing Flange ASME B16.5 RJ	

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BOLT TABLE (B_M2AG , STUD ASME RJ, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	110	P80S-00MAH	R12	P75T-000JT
0.75	4	0.750	115	P80S-00M8C	R14	P75T-000JU
1	4	0.875	130	P80S-00M30	R16	P75T-000JV
1.5	4	1.000	140	P80S-00LYE	R20	P75T-000JW
2	8	0.875	150	P80S-00M2W	R24	P75T-0008A
3	8	0.875	150	P80S-00M2W	R31	P75T-000JN
4	8	1.125	175	P80S-00LNH	R37	P75T-000JP
6	12	1.125	200	P80S-00LNC	R45	P75T-000JR
8	12	1.375	260	P80S-00N6L	R49	P75T-000JS

BOLT TABLE (B_M2AG_797 , STUD ASME RJ, OPTION CODE 797)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	110		R12	
0.75	4	0.750	115		R14	
1	4	0.875	130		R16	
1.5	4	1.000	140		R20	
2	8	0.875	150		R24	
3	8	1.125	180	P80S-00LNG	R35	P75T-0008E
4	8	1.250	230	P80S-00LC4	R39	P75T-0008D
6	12	1.375	300	P80S-00N6C	R46	P75T-0008C
8	12	1.625	345	P80S-00MZY	R50	P75T-0008B

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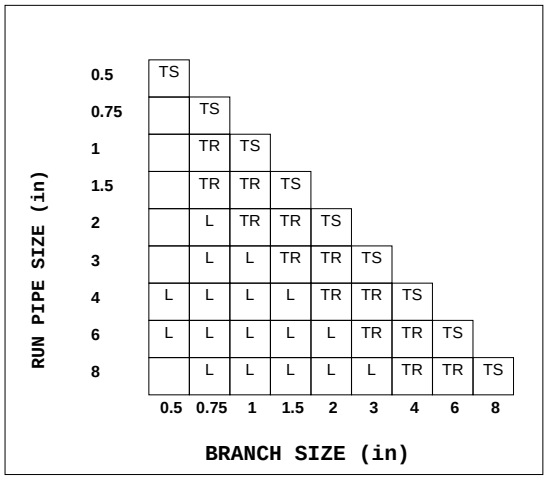
BRANCH TABLE (T_M2AG)



TR : REDUCING TEE
TS : STRAIGHT TEE
L : OUTLET

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PIPING CLASS

M2AQ01 REV NO. 2

Material : Killed CS
Rating : ASME CLASS 900
Flange Face : RJ
C.A.(mm) : 3.00
Gasket : Ring Octagonal
Service : PROCESS -WET LOW SEVERITY SOUR SERVICE SUBJECT TO NACE
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
5	BOLTING CONFIRMING TO B7M / 2HM SHALL BE USED UNDER CONDITIONS (A) DIRECT EXPOSURE TO SOUR ENVIRONMENTS (B) WHEN THE BOLTING WILL BE BURIED OR INSULATED
27	PWHT OF CARBON STEEL PIPING IN WET H2S, CAUSTIC AND AMINE SERVICES SHALL BE IN ACCORDANCE WITH SECTION 10.2, 10.3, AND 10.4 OF PROJECT SPECIFICATION 3550-8440-SP-0002 MATERIALS REQUIREMENTS FOR PRESSURISED EQUIPMENT AND PIPING. FOR CAUSTIC AND AMINE SERVICE THE FOLLOWING SHALL APPLY: - PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF ALL SITE PIPING FABRICATION WELDS IS REQUIRED FOR ALL WALL THICKNESSES. FOR MODERATE AND SEVERE WET H2S SERVICE THE FOLLOWING SHALL APPLY: PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF SITE FABRICATION CIRCUMFERENTIAL OR BRANCH WELDS IS NOT REQUIRED IF WELDS ARE MULTIPASS AND IN ACCORDANCE WITH PARA 10.2.12 OF PROJECT SPECIFICATION 3550-8440-SP-0002. FOR SERVICES MEETING THE WET H2S CRITERIA AND CAUSTIC OR AMINE CRITERIA THE MORE STRINGENT PWHT REQUIREMENT SHALL GOVERN.

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
200	WITH JACK SCREW (FO)
541	NPT(F) (F)
797	CLASS 1500 (B,F,G)
4602	DISSIMILAR TYPE CHECK VALVE (XDP)

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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P01A-0079G	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE Moderate wet H2S service Licensor-1	
1	0.75		SCH160		P01A-0079H	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE Moderate wet H2S service Licensor-1	
1	1		SCH160		P01A-0079J	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE Moderate wet H2S service Licensor-1	
1	1.5		SCH160		P01A-0079K	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE Moderate wet H2S service Licensor-1	
1	2		SCH160		P01A-0079M	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Moderate wet H2S service Licensor-1	
1	3		SCH160		P01A-007AJ	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Moderate wet H2S service Licensor-1	
1	4		SCH160		P01A-008M4	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Moderate wet H2S service Licensor-1	
1	6		SCH160		P01A-008M5	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Moderate wet H2S service Licensor-1	
1	8		SCH140		P01A-008M6	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Moderate wet H2S service Licensor-1	
1	10		XXS		P01A-008S3	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE Moderate wet H2S service Licensor-1	
1	12		XXS		P01A-008TG	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE Moderate wet H2S service Licensor-1	
1	14		SCH100		P01A-008M3	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Moderate wet H2S service Licensor-1	
1	16		SCH100		P01A-008M7	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE Moderate wet H2S service Licensor-1	
1	18		SCH100		P01A-008M8	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE Moderate wet H2S service Licensor-1	
1	20		SCH100		P01A-008M9	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE Moderate wet H2S service Licensor-1	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P02A-003RM	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Moderate wet H2S service Licensor-1	
1	0.75		SCH160		P02A-003RN	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Moderate wet H2S service Licensor-1	
1	1		SCH160		P02A-003RP	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Moderate wet H2S service Licensor-1	
1	1.5		SCH160		P02A-003RR	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Moderate wet H2S service Licensor-1	
1	2		SCH160		P02A-003RT	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Moderate wet H2S service Licensor-1	
1	3		SCH160		P02A-003SN	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Moderate wet H2S service Licensor-1	
1	4		SCH160		P02A-004EW	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Moderate wet H2S service Licensor-1	
1	6		SCH160		P02A-004EX	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Moderate wet H2S service Licensor-1	
1	8		SCH140		P02A-004EY	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Moderate wet H2S service Licensor-1	
1	10		XXS		P02A-004HK	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Moderate wet H2S service Licensor-1	
1	12		XXS		P02A-004WU	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Moderate wet H2S service Licensor-1	
1	14		SCH100		P02A-004EV	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Moderate wet H2S service Licensor-1	
1	16		SCH100		P02A-004EZ	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Moderate wet H2S service Licensor-1	
1	18		SCH100		P02A-004F0	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Moderate wet H2S service Licensor-1	
1	20		SCH100		P02A-004F1	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Moderate wet H2S service Licensor-1	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P03A-003NA	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Moderate wet H2S service Licensor-1	
1	0.75		SCH160		P03A-003NB	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Moderate wet H2S service Licensor-1	
1	1		SCH160		P03A-003NC	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Moderate wet H2S service Licensor-1	
1	1.5		SCH160		P03A-003ND	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Moderate wet H2S service Licensor-1	
1	2		SCH160		P03A-003NF	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Moderate wet H2S service Licensor-1	
1	3		SCH160		P03A-003PB	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Moderate wet H2S service Licensor-1	
1	4		SCH160		P03A-004C2	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Moderate wet H2S service Licensor-1	
1	6		SCH160		P03A-004C3	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Moderate wet H2S service Licensor-1	
1	8		SCH140		P03A-004C4	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Moderate wet H2S service Licensor-1	
1	10		XXS		P03A-004F5	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Moderate wet H2S service Licensor-1	
1	12		XXS		P03A-004GA	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Moderate wet H2S service Licensor-1	
1	14		SCH100		P03A-004C1	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Moderate wet H2S service Licensor-1	
1	16		SCH100		P03A-004C5	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Moderate wet H2S service Licensor-1	

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45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	18		SCH100		P03A-004C6	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Moderate wet H2S service Licensor-1	
1	20		SCH100		P03A-004C7	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Moderate wet H2S service Licensor-1	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P21A-00491	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	0.75		SCH160		P21A-00492	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	1		SCH160		P21A-00493	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	1.5		SCH160		P21A-00494	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	2		SCH160		P21A-00496	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	3		SCH160		P21A-004A1	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	4		SCH160		P21A-004X7	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	6		SCH160		P21A-004X8	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	8		SCH140		P21A-004X9	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	10		XXS		P21A-004ZK	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	12		XXS		P21A-0050N	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	14		SCH100		P21A-004X6	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	16		SCH100		P21A-004XA	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	18		SCH100		P21A-004XB	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	20		SCH100		P21A-004XC	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75	SCH160	SCH160	P24A-00K26	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	1.5	0.75	SCH160	SCH160	P24A-00K27	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	1.5	1	SCH160	SCH160	P24A-00K28	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	2	1	SCH160	SCH160	P24A-00K29	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	2	1.5	SCH160	SCH160	P24A-00K2A	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	3	1.5	SCH160	SCH160	P24A-00ND4	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	3	2	SCH160	SCH160	P24A-00K48	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	4	2	SCH160	SCH160	P24A-00ND5	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	4	3	SCH160	SCH160	P24A-00ND6	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	6	3	SCH160	SCH160	P24A-00ND7	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	6	4	SCH160	SCH160	P24A-00ND8	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	8	4	SCH140	SCH160	P24A-00ND9	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	8	6	SCH140	SCH160	P24A-00NDA	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	10	4	XXS	SCH160	P24A-00P0L	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	10	6	XXS	SCH160	P24A-00P0M	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	10	8	XXS	SCH140	P24A-00P0N	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	12	6	XXS	SCH160	P24A-00P5T	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	12	8	XXS	SCH140	P24A-00P66	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	12	10	XXS	XXS	P24A-00P5S	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	14	6	SCH100	SCH160	P24A-00NX0	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	14	8	SCH100	SCH140	P24A-00NDG	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	14	10	SCH100	XXS	P24A-00NWZ	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	14	12	SCH100	XXS	P24A-00PJ7	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	16	6	SCH100	SCH160	P24A-00NX2	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	16	8	SCH100	SCH140	P24A-00NDK	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	16	10	SCH100	XXS	P24A-00NX1	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	16	12	SCH100	XXS	P24A-00P5V	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	16	14	SCH100	SCH100	P24A-00NDJ	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	18	8	SCH100	SCH140	P24A-00NX4	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	18	10	SCH100	XXS	P24A-00NX3	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	18	12	SCH100	XXS	P24A-00P5W	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	18	14	SCH100	SCH100	P24A-00NDM	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	18	16	SCH100	SCH100	P24A-00NDN	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	20	8	SCH100	SCH140	P24A-00NX6	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	20	10	SCH100	XXS	P24A-00NX5	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	

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REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	20	12	SCH100	XXS	P24A-00P5X	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	20	14	SCH100	SCH100	P24A-00NDR	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	20	16	SCH100	SCH100	P24A-00NDS	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	20	18	SCH100	SCH100	P24A-00NDT	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	SCH160	P27A-00EM0	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	1	0.5	SCH160	SCH160	P27A-00EM1	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	1	0.75	SCH160	SCH160	P27A-00EM2	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	1.5	0.5	SCH160	SCH160	P27A-00EM3	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	1.5	0.75	SCH160	SCH160	P27A-00EM4	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	1.5	1	SCH160	SCH160	P27A-00EM5	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	2	0.75	SCH160	SCH160	P27A-00EM6	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	2	1	SCH160	SCH160	P27A-00EM7	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	2	1.5	SCH160	SCH160	P27A-00EM8	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	3	1.5	SCH160	SCH160	P27A-00H2R	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	3	2	SCH160	SCH160	P27A-00EPD	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	4	1.5	SCH160	SCH160	P27A-00H2S	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	4	2	SCH160	SCH160	P27A-00H2T	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	4	3	SCH160	SCH160	P27A-00H2U	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	6	3	SCH160	SCH160	P27A-00H2V	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	6	4	SCH160	SCH160	P27A-00H2W	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	8	4	SCH140	SCH160	P27A-00H2X	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	8	6	SCH140	SCH160	P27A-00H2Y	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	10	4	XXS	SCH160	P27A-00HHW	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	10	6	XXS	SCH160	P27A-00HHX	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	10	8	XXS	SCH140	P27A-00HHY	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	12	6	XXS	SCH160	P27A-00HNL	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	12	8	XXS	SCH140	P27A-00HNY	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	12	10	XXS	XXS	P27A-00HNK	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	14	6	SCH100	SCH160	P27A-00H34	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	14	8	SCH100	SCH140	P27A-00H35	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	14	10	SCH100	XXS	P27A-00HCF	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	14	12	SCH100	XXS	P27A-00HWC	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	16	8	SCH100	SCH140	P27A-00H38	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	16	10	SCH100	XXS	P27A-00HCG	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	16	12	SCH100	XXS	P27A-00HNN	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	16	14	SCH100	SCH100	P27A-00H37	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	18	10	SCH100	XXS	P27A-00HCH	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	18	12	SCH100	XXS	P27A-00HNP	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	18	14	SCH100	SCH100	P27A-00H3A	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	18	16	SCH100	SCH100	P27A-00H3B	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	20	12	SCH100	XXS	P27A-00HNR	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	20	14	SCH100	SCH100	P27A-00H3D	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	20	16	SCH100	SCH100	P27A-00H3E	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	

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CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	20	18	SCH100	SCH100	P27A-00H3F	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	SCH160	P28A-00BRS	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	1	0.5	SCH160	SCH160	P28A-00BRT	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	1	0.75	SCH160	SCH160	P28A-00BRU	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	1.5	0.5	SCH160	SCH160	P28A-00BRV	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	1.5	0.75	SCH160	SCH160	P28A-00BRW	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	1.5	1	SCH160	SCH160	P28A-00BRX	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	2	0.75	SCH160	SCH160	P28A-00BRZ	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	2	1	SCH160	SCH160	P28A-00BS0	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	2	1.5	SCH160	SCH160	P28A-00BS1	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	3	1.5	SCH160	SCH160	P28A-00E9Y	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	3	2	SCH160	SCH160	P28A-00BU5	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	4	1.5	SCH160	SCH160	P28A-00E9Z	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	4	2	SCH160	SCH160	P28A-00EA0	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	4	3	SCH160	SCH160	P28A-00EA1	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	6	3	SCH160	SCH160	P28A-00EA2	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	6	4	SCH160	SCH160	P28A-00EA3	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	8	4	SCH140	SCH160	P28A-00EA4	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	8	6	SCH140	SCH160	P28A-00EA5	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	10	4	XXS	SCH160	P28A-00ESU	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	10	6	XXS	SCH160	P28A-00ESV	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	10	8	XXS	SCH140	P28A-00ESW	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	12	6	XXS	SCH160	P28A-00EXZ	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	12	8	XXS	SCH140	P28A-00EYA	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	12	10	XXS	XXS	P28A-00EXY	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	14	6	SCH100	SCH160	P28A-00EAB	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	14	8	SCH100	SCH140	P28A-00EAC	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	14	10	SCH100	XXS	P28A-00EL5	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	14	12	SCH100	XXS	P28A-00F5X	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	16	8	SCH100	SCH140	P28A-00EAF	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	16	10	SCH100	XXS	P28A-00EL6	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	16	12	SCH100	XXS	P28A-00EY1	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	16	14	SCH100	SCH100	P28A-00EAE	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	18	10	SCH100	XXS	P28A-00EL7	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	18	12	SCH100	XXS	P28A-00EY2	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	18	14	SCH100	SCH100	P28A-00EAH	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	18	16	SCH100	SCH100	P28A-00EAJ	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	20	12	SCH100	XXS	P28A-00EY3	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	20	14	SCH100	SCH100	P28A-00EAL	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	20	16	SCH100	SCH100	P28A-00EAM	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	20	18	SCH100	SCH100	P28A-00EAN	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P29A-0032T	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	0.75		SCH160		P29A-0032U	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	1		SCH160		P29A-0032V	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	1.5		SCH160		P29A-0032W	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	2		SCH160		P29A-0032Y	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	

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CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3		SCH160		P29A-00345	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	4		SCH160		P29A-003RY	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	6		SCH160		P29A-003RZ	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	8		SCH140		P29A-003S0	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	10		XXS		P29A-003V9	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	12		XXS		P29A-003WX	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	14		SCH100		P29A-003RX	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	16		SCH100		P29A-003S1	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	18		SCH100		P29A-003S2	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	
1	20		SCH100		P29A-003S3	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service Licensor-1	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P41A-0019F	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Moderate wet H2S service Licensor-1	
1	0.75		XXS		P41A-0019G	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Moderate wet H2S service Licensor-1	
1	1		XXS		P41A-0018D	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Moderate wet H2S service Licensor-1	
1	1.5		XXS		P41A-0018E	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Moderate wet H2S service Licensor-1	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2	0.75	SCH160	SCH160	P31B-00XHV	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	3	0.75	SCH160	SCH160	P31B-010RC	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	4	0.75	SCH160	SCH160	P31B-010RE	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	6	0.75	SCH160	SCH160	P31B-010RH	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	8	0.75	SCH140	SCH160	P31B-010RM	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	10	0.75	XXS	SCH160	P31B-010RT	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	12	0.75	XXS	SCH160	P31B-011B6	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	14	0.75	SCH100	SCH160	P31B-010S4	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	16	0.75	SCH100	SCH160	P31B-010SA	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	18	0.75	SCH100	SCH160	P31B-0111W	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	20	0.75	SCH100	SCH160	P31B-0111Y	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	3	1	SCH160	SCH160	P31B-010RD	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	4	1	SCH160	SCH160	P31B-010RF	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	6	1	SCH160	SCH160	P31B-010RJ	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	8	1	SCH140	SCH160	P31B-010RN	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	10	1	XXS	SCH160	P31B-010RU	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	12	1	XXS	SCH160	P31B-011B7	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	14	1	SCH100	SCH160	P31B-010S5	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	16	1	SCH100	SCH160	P31B-010SB	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	18	1	SCH100	SCH160	P31B-0111X	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	20	1	SCH100	SCH160	P31B-0111Z	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	4	1.5	SCH160	SCH160	P31B-010RG	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	6	1.5	SCH160	SCH160	P31B-010RK	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	8	1.5	SCH140	SCH160	P31B-010RP	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	10	1.5	XXS	SCH160	P31B-010RV	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	12	1.5	XXS	SCH160	P31B-011B8	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	14	1.5	SCH100	SCH160	P31B-010S6	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	16	1.5	SCH100	SCH160	P31B-010SC	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	18	1.5	SCH100	SCH160	P31B-010SG	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	20	1.5	SCH100	SCH160	P31B-01120	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	6	2	SCH160	SCH160	P31B-010RL	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	8	2	SCH140	SCH160	P31B-010RR	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	10	2	XXS	SCH160	P31B-010RW	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	12	2	XXS	SCH160	P31B-011B9	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	14	2	SCH100	SCH160	P31B-010S7	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	16	2	SCH100	SCH160	P31B-010SD	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	18	2	SCH100	SCH160	P31B-010SH	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	

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OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	20	2	SCH100	SCH160	P31B-010SM	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	8	3	SCH140	SCH160	P31B-010RS	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	10	3	XXS	SCH160	P31B-010RX	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	12	3	XXS	SCH160	P31B-011BA	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	14	3	SCH100	SCH160	P31B-010S8	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	16	3	SCH100	SCH160	P31B-010SE	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	18	3	SCH100	SCH160	P31B-010SJ	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	20	3	SCH100	SCH160	P31B-010SN	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	12	4	XXS	SCH160	P31B-011BB	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	14	4	SCH100	SCH160	P31B-010S9	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	16	4	SCH100	SCH160	P31B-010SF	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	18	4	SCH100	SCH160	P31B-010SK	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	20	4	SCH100	SCH160	P31B-010SP	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	18	6	SCH100	SCH160	P31B-010SL	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	
1	20	6	SCH100	SCH160	P31B-010SR	Outlet ASTM A105 MSS SP-97 BW Moderate wet H2S service Licensor-1	

LATROLET (LL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	16	2	SCH100	SCH160	P34B-001ST	Lateral-outlet ASTM A105 MSS SP-97 BW 45 degree Moderate wet H2S service Licensor-1	
1	8	3	SCH140	SCH160	P34B-001TB	Lateral-outlet ASTM A105 MSS SP-97 BW 45 degree Moderate wet H2S service Licensor-1	
1	18	4	SCH100	SCH160	P34B-001SU	Lateral-outlet ASTM A105 MSS SP-97 BW 45 degree Moderate wet H2S service Licensor-1	
1	20	4	SCH100	SCH160	P34B-001TM	Lateral-outlet ASTM A105 MSS SP-97 BW 45 degree Moderate wet H2S service Licensor-1	
1	20	6	SCH100	SCH160	P34B-001SV	Lateral-outlet ASTM A105 MSS SP-97 BW 45 degree Moderate wet H2S service Licensor-1	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30B-0006F	Plug ASTM A105 ASME B16.11 NPT Round head Moderate wet H2S service Licensor-1	
1	0.75				P30B-0006G	Plug ASTM A105 ASME B16.11 NPT Round head Moderate wet H2S service Licensor-1	
1	1				P30B-0006H	Plug ASTM A105 ASME B16.11 NPT Round head Moderate wet H2S service Licensor-1	
1	1.5				P30B-0006J	Plug ASTM A105 ASME B16.11 NPT Round head Moderate wet H2S service Licensor-1	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P61B-009VE	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ Moderate wet H2S service Licensor-1	
1	0.75		SCH160		P61B-009VF	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ Moderate wet H2S service Licensor-1	
1	1		SCH160		P61B-009VG	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ Moderate wet H2S service Licensor-1	
1	1.5		SCH160		P61B-009VH	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ Moderate wet H2S service Licensor-1	
1	2		SCH160		P61B-009VJ	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ Moderate wet H2S service Licensor-1	
1	3		SCH160		P61B-00BPH	Flange WN ASTM A105 Class 900 ASME B16.5 RJ Moderate wet H2S service Licensor-1	
1	4		SCH160		P61B-00BPJ	Flange WN ASTM A105 Class 900 ASME B16.5 RJ Moderate wet H2S service Licensor-1	
1	6		SCH160		P61B-00BPK	Flange WN ASTM A105 Class 900 ASME B16.5 RJ Moderate wet H2S service Licensor-1	
1	8		SCH140		P61B-00BPL	Flange WN ASTM A105 Class 900 ASME B16.5 RJ Moderate wet H2S service Licensor-1	
1	10		XXS		P61B-00BPB	Flange WN ASTM A105 Class 900 ASME B16.5 RJ Moderate wet H2S service Licensor-1	
1	12		XXS		P61B-00CY4	Flange WN ASTM A105 Class 900 ASME B16.5 RJ Moderate wet H2S service Licensor-1	
1	14		SCH100		P61B-00BPD	Flange WN ASTM A105 Class 900 ASME B16.5 RJ Moderate wet H2S service Licensor-1	
1	16		SCH100		P61B-00BPE	Flange WN ASTM A105 Class 900 ASME B16.5 RJ Moderate wet H2S service Licensor-1	
1	18		SCH100		P61B-00BPF	Flange WN ASTM A105 Class 900 ASME B16.5 RJ Moderate wet H2S service Licensor-1	
1	20		SCH100		P61B-00BPG	Flange WN ASTM A105 Class 900 ASME B16.5 RJ Moderate wet H2S service Licensor-1	
541	0.5				P61B-00DMB	Flange NPT ASTM A105 Class 1500 ASME B16.5 RJ Moderate wet H2S service Licensor-1	
541	0.75				P61B-00CY5	Flange NPT ASTM A105 Class 1500 ASME B16.5 RJ Moderate wet H2S service Licensor-1	
797	3		SCH160		P61B-00BPU	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ Moderate wet H2S service Licensor-1	
797	4		SCH160		P61B-00BPV	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ Moderate wet H2S service Licensor-1	
797	6		SCH160		P61B-00BPW	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ Moderate wet H2S service Licensor-1	
797	8		SCH140		P61B-00BPX	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ Moderate wet H2S service Licensor-1	
797	10		XXS		P61B-00BPM	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ Moderate wet H2S service Licensor-1	
797	12		XXS		P61B-00CY6	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ Moderate wet H2S service Licensor-1	
797	14		SCH100		P61B-00BPP	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ Moderate wet H2S service Licensor-1	
797	16		SCH100		P61B-00BPR	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ Moderate wet H2S service Licensor-1	
797	18		SCH100		P61B-00BPS	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ Moderate wet H2S service Licensor-1	

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FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
797	20		SCH100		P61B-00BPT	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ Moderate wet H2S service Licensor-1	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67B-002VZ	Blind flange ASTM A105 Class 1500 ASME B16.5 RJ Moderate wet H2S service Licensor-1	
1	0.75				P67B-002W0	Blind flange ASTM A105 Class 1500 ASME B16.5 RJ Moderate wet H2S service Licensor-1	
1	1				P67B-002W1	Blind flange ASTM A105 Class 1500 ASME B16.5 RJ Moderate wet H2S service Licensor-1	
1	1.5				P67B-002W2	Blind flange ASTM A105 Class 1500 ASME B16.5 RJ Moderate wet H2S service Licensor-1	
1	2				P67B-002W3	Blind flange ASTM A105 Class 1500 ASME B16.5 RJ Moderate wet H2S service Licensor-1	
1	3				P67B-002WA	Blind flange ASTM A105 Class 900 ASME B16.5 RJ Moderate wet H2S service Licensor-1	
1	4				P67B-002WB	Blind flange ASTM A105 Class 900 ASME B16.5 RJ Moderate wet H2S service Licensor-1	
1	6				P67B-002WC	Blind flange ASTM A105 Class 900 ASME B16.5 RJ Moderate wet H2S service Licensor-1	
1	8				P67B-002WD	Blind flange ASTM A105 Class 900 ASME B16.5 RJ Moderate wet H2S service Licensor-1	
1	10				P67B-002W4	Blind flange ASTM A105 Class 900 ASME B16.5 RJ Moderate wet H2S service Licensor-1	
1	12				P67B-002W5	Blind flange ASTM A105 Class 900 ASME B16.5 RJ Moderate wet H2S service Licensor-1	
1	14				P67B-002W6	Blind flange ASTM A105 Class 900 ASME B16.5 RJ Moderate wet H2S service Licensor-1	
1	16				P67B-002W7	Blind flange ASTM A105 Class 900 ASME B16.5 RJ Moderate wet H2S service Licensor-1	
1	18				P67B-002W8	Blind flange ASTM A105 Class 900 ASME B16.5 RJ Moderate wet H2S service Licensor-1	
1	20				P67B-002W9	Blind flange ASTM A105 Class 900 ASME B16.5 RJ Moderate wet H2S service Licensor-1	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P75T-000JT	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	0.75				P75T-000JU	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	1				P75T-000JV	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	1.5				P75T-000JW	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	2				P75T-0008A	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	3				P75T-000JN	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	4				P75T-000JP	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	6				P75T-000JR	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	8				P75T-000JS	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	10				P75T-000JL	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	12				P75T-000JM	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	14				P75T-000MJ	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	16				P75T-000MK	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	18				P75T-000N8	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	20				P75T-000N7	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	3				P75T-0008E	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	4				P75T-0008D	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	6				P75T-0008C	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	8				P75T-0008B	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	10				P75T-0008L	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	12				P75T-0008K	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	14				P75T-0008J	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	16				P75T-0008H	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	18				P75T-0008G	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	20				P75T-0008F	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-3				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	4-20				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
797	3-20				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81B-00209	Gate valve ASTM A105 Class 1500 API 602 Flange ASME B16.5 RJ Trim number 12 WB-BG-OS&Y Handwheel operated Moderate wet H2S service Licensor-1	

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GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75				P81B-0020A	Gate valve ASTM A105 Class 1500 API 602 Flange ASME B16.5 RJ Trim number 12 WB-BG-OS&Y Handwheel operated Moderate wet H2S service Licensor-1	
1	1				P81B-0020B	Gate valve ASTM A105 Class 1500 API 602 Flange ASME B16.5 RJ Trim number 12 WB-BG-OS&Y Handwheel operated Moderate wet H2S service Licensor-1	
1	1.5				P81B-0020C	Gate valve ASTM A105 Class 1500 API 602 Flange ASME B16.5 RJ Trim number 12 WB-BG-OS&Y Handwheel operated Moderate wet H2S service Licensor-1	
1	2				P81C-007KA	Gate valve ASTM A216 Grade WCB Class 1500 API 600 Flange ASME B16.5 RJ Trim number 12 PSB-BG-OS&Y Handwheel operated Moderate wet H2S service Licensor-1	
1	3				P81C-007KB	Gate valve ASTM A216 Grade WCB Class 900 API 600 Flange ASME B16.5 RJ Trim number 12 PSB-BG-OS&Y Handwheel operated Moderate wet H2S service Licensor-1	
1	4				P81C-007KC	Gate valve ASTM A216 Grade WCB Class 900 API 600 Flange ASME B16.5 RJ Trim number 12 PSB-BG-OS&Y Handwheel operated Moderate wet H2S service Licensor-1	
1	6				P81C-007KD	Gate valve ASTM A216 Grade WCB Class 900 API 600 Flange ASME B16.5 RJ Trim number 12 PSB-BG-OS&Y Gear operated Moderate wet H2S service Licensor-1	
1	8				P81C-007KE	Gate valve ASTM A216 Grade WCB Class 900 API 600 Flange ASME B16.5 RJ Trim number 12 PSB-BG-OS&Y Gear operated Moderate wet H2S service Licensor-1	
1	10				P81C-007KF	Gate valve ASTM A216 Grade WCB Class 900 API 600 Flange ASME B16.5 RJ Trim number 12 PSB-BG-OS&Y Gear operated Moderate wet H2S service Licensor-1	
1	12				P81C-007KG	Gate valve ASTM A216 Grade WCB Class 900 API 600 Flange ASME B16.5 RJ Trim number 12 PSB-BG-OS&Y Gear operated Moderate wet H2S service Licensor-1	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82B-001HV	Globe valve ASTM A105 Class 1500 API 602 Flange ASME B16.5 RJ Trim number 12 WB-BG-OS&Y Handwheel operated Moderate wet H2S service Licensor-1	
1	0.75				P82B-001HW	Globe valve ASTM A105 Class 1500 API 602 Flange ASME B16.5 RJ Trim number 12 WB-BG-OS&Y Handwheel operated Moderate wet H2S service Licensor-1	
1	1				P82B-001HX	Globe valve ASTM A105 Class 1500 API 602 Flange ASME B16.5 RJ Trim number 12 WB-BG-OS&Y Handwheel operated Moderate wet H2S service Licensor-1	
1	1.5				P82B-001HY	Globe valve ASTM A105 Class 1500 API 602 Flange ASME B16.5 RJ Trim number 12 WB-BG-OS&Y Handwheel operated Moderate wet H2S service Licensor-1	
1	2				P82C-003TR	Globe valve ASTM A216 Grade WCB Class 1500 BS 1873 Flange ASME B16.5 RJ Trim number 12 PSB-BG-OS&Y Handwheel operated Moderate wet H2S service Licensor-1	
1	3				P82C-003TS	Globe valve ASTM A216 Grade WCB Class 900 BS 1873 Flange ASME B16.5 RJ Trim number 12 PSB-BG-OS&Y Handwheel operated Moderate wet H2S service Licensor-1	
1	4				P82C-00434	Globe valve ASTM A216 Grade WCB Class 900 BS 1873 Flange ASME B16.5 RJ Trim number 12 PSB-BG-OS&Y Gear operated Moderate wet H2S service Licensor-1	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83B-0017E	Check valve ASTM A105 Class 1500 API 602 Flange ASME B16.5 RJ Trim number 12 Lift-type Welded cover Moderate wet H2S service Licensor-1	
1	0.75				P83B-0017F	Check valve ASTM A105 Class 1500 API 602 Flange ASME B16.5 RJ Trim number 12 Lift-type Welded cover Moderate wet H2S service Licensor-1	
1	1				P83B-0017G	Check valve ASTM A105 Class 1500 API 602 Flange ASME B16.5 RJ Trim number 12 Lift-type Welded cover Moderate wet H2S service Licensor-1	
1	1.5				P83B-0017H	Check valve ASTM A105 Class 1500 API 602 Flange ASME B16.5 RJ Trim number 12 Lift-type Welded cover Moderate wet H2S service Licensor-1	
1	2				P83C-003A5	Check valve ASTM A216 Grade WCB Class 1500 BS 1868 Flange ASME B16.5 RJ Trim number 12 Swing-type Pressure seal cap Moderate wet H2S service Licensor-1	
1	3				P83C-003A6	Check valve ASTM A216 Grade WCB Class 900 BS 1868 Flange ASME B16.5 RJ Trim number 12 Swing-type Pressure seal cap Moderate wet H2S service Licensor-1	
1	4				P83C-003A7	Check valve ASTM A216 Grade WCB Class 900 BS 1868 Flange ASME B16.5 RJ Trim number 12 Swing-type Pressure seal cap Moderate wet H2S service Licensor-1	
1	6				P83C-003A8	Check valve ASTM A216 Grade WCB Class 900 BS 1868 Flange ASME B16.5 RJ Trim number 12 Swing-type Pressure seal cap Moderate wet H2S service Licensor-1	
1	8				P83C-003A9	Check valve ASTM A216 Grade WCB Class 900 BS 1868 Flange ASME B16.5 RJ Trim number 12 Swing-type Pressure seal cap Moderate wet H2S service Licensor-1	
1	10				P83C-003AA	Check valve ASTM A216 Grade WCB Class 900 BS 1868 Flange ASME B16.5 RJ Trim number 12 Swing-type Pressure seal cap Moderate wet H2S service Licensor-1	

DP CHECK VALVE (XDP)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
4602	3				P88C-00350	Dual plate check valve ASTM A216 Grade WCB Class 900 API 594 Lug-type ASME B16.5 RJ Trim number 12 Internal wetted parts SS316 Spring Inconel Retainerless-type Moderate wet H2S service Licensor-1	
4602	4				P88C-00351	Dual plate check valve ASTM A216 Grade WCB Class 900 API 594 Lug-type ASME B16.5 RJ Trim number 12 Internal wetted parts SS316 Spring Inconel Retainerless-type Moderate wet H2S service Licensor-1	
4602	6				P88C-00352	Dual plate check valve ASTM A216 Grade WCB Class 900 API 594 Lug-type ASME B16.5 RJ Trim number 12 Internal wetted parts SS316 Spring Inconel Retainerless-type Moderate wet H2S service Licensor-1	

ORIFICE FLANGE (FO)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2		SCH160		P66B-008LH	Orifice flange WN ASTM A105 Class 1500 ASME B16.36 RJ NPS1/2 SW tap x 1 Moderate wet H2S service Licensor-1	
1	3		SCH160		P66B-008J1	Orifice flange WN ASTM A105 Class 900 ASME B16.36 RJ NPS1/2 SW tap x 1 Moderate wet H2S service Licensor-1	
1	4		SCH160		P66B-008LJ	Orifice flange WN ASTM A105 Class 900 ASME B16.36 RJ NPS1/2 SW tap x 1 Moderate wet H2S service Licensor-1	
1	6		SCH160		P66B-008LK	Orifice flange WN ASTM A105 Class 900 ASME B16.36 RJ NPS1/2 SW tap x 1 Moderate wet H2S service Licensor-1	

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ORIFICE FLANGE (FO)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
200	2		SCH160		P66B-008LN	Orifice flange WN ASTM A105 Class 1500 ASME B16.36 RJ NPS1/2 SW tap x 1 Moderate wet H2S service with Jack screw Licensor-1	
200	3		SCH160		P66B-008J2	Orifice flange WN ASTM A105 Class 900 ASME B16.36 RJ NPS1/2 SW tap x 1 Moderate wet H2S service with Jack screw Licensor-1	
200	4		SCH160		P66B-008LP	Orifice flange WN ASTM A105 Class 900 ASME B16.36 RJ NPS1/2 SW tap x 1 Moderate wet H2S service with Jack screw Licensor-1	
200	6		SCH160		P66B-008LR	Orifice flange WN ASTM A105 Class 900 ASME B16.36 RJ NPS1/2 SW tap x 1 Moderate wet H2S service with Jack screw Licensor-1	

PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P72B-000SH	Paddle blank ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ Moderate wet H2S service Licensor-1	
1	0.75				P72B-000SJ	Paddle blank ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ Moderate wet H2S service Licensor-1	
1	1				P72B-000SK	Paddle blank ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ Moderate wet H2S service Licensor-1	
1	1.5				P72B-000SL	Paddle blank ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ Moderate wet H2S service Licensor-1	
1	2				P72B-000SM	Paddle blank ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ Moderate wet H2S service Licensor-1	
1	3				P72B-000T5	Paddle blank ASTM A105 Class 900 Standard-drawing Flange ASME B16.5 RJ Moderate wet H2S service Licensor-1	
1	4				P72B-000T6	Paddle blank ASTM A105 Class 900 Standard-drawing Flange ASME B16.5 RJ Moderate wet H2S service Licensor-1	
1	6				P72B-000T7	Paddle blank ASTM A105 Class 900 Standard-drawing Flange ASME B16.5 RJ Moderate wet H2S service Licensor-1	
1	8				P72B-000T8	Paddle blank ASTM A105 Class 900 Standard-drawing Flange ASME B16.5 RJ Moderate wet H2S service Licensor-1	
1	10				P72B-000SZ	Paddle blank ASTM A105 Class 900 Standard-drawing Flange ASME B16.5 RJ Moderate wet H2S service Licensor-1	
1	12				P72B-000T0	Paddle blank ASTM A105 Class 900 Standard-drawing Flange ASME B16.5 RJ Moderate wet H2S service Licensor-1	
1	14				P72B-000T1	Paddle blank ASTM A105 Class 900 Standard-drawing Flange ASME B16.5 RJ Moderate wet H2S service Licensor-1	
1	16				P72B-000T2	Paddle blank ASTM A105 Class 900 Standard-drawing Flange ASME B16.5 RJ Moderate wet H2S service Licensor-1	
1	18				P72B-000T3	Paddle blank ASTM A105 Class 900 Standard-drawing Flange ASME B16.5 RJ Moderate wet H2S service Licensor-1	
1	20				P72B-000T4	Paddle blank ASTM A105 Class 900 Standard-drawing Flange ASME B16.5 RJ Moderate wet H2S service Licensor-1	

PADDLE SPACER (PS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P72B-000SC	Paddle spacer ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ Moderate wet H2S service Licensor-1	
1	0.75				P72B-000SD	Paddle spacer ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ Moderate wet H2S service Licensor-1	
1	1				P72B-000SE	Paddle spacer ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ Moderate wet H2S service Licensor-1	
1	1.5				P72B-000SF	Paddle spacer ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ Moderate wet H2S service Licensor-1	
1	2				P72B-000SG	Paddle spacer ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ Moderate wet H2S service Licensor-1	
1	3				P72B-000SV	Paddle spacer ASTM A105 Class 900 Standard-drawing Flange ASME B16.5 RJ Moderate wet H2S service Licensor-1	
1	4				P72B-000SW	Paddle spacer ASTM A105 Class 900 Standard-drawing Flange ASME B16.5 RJ Moderate wet H2S service Licensor-1	
1	6				P72B-000SX	Paddle spacer ASTM A105 Class 900 Standard-drawing Flange ASME B16.5 RJ Moderate wet H2S service Licensor-1	
1	8				P72B-000SY	Paddle spacer ASTM A105 Class 900 Standard-drawing Flange ASME B16.5 RJ Moderate wet H2S service Licensor-1	
1	10				P72B-000SN	Paddle spacer ASTM A105 Class 900 Standard-drawing Flange ASME B16.5 RJ Moderate wet H2S service Licensor-1	
1	12				P72B-000SP	Paddle spacer ASTM A105 Class 900 Standard-drawing Flange ASME B16.5 RJ Moderate wet H2S service Licensor-1	
1	14				P72B-000SR	Paddle spacer ASTM A105 Class 900 Standard-drawing Flange ASME B16.5 RJ Moderate wet H2S service Licensor-1	
1	16				P72B-000SS	Paddle spacer ASTM A105 Class 900 Standard-drawing Flange ASME B16.5 RJ Moderate wet H2S service Licensor-1	
1	18				P72B-000ST	Paddle spacer ASTM A105 Class 900 Standard-drawing Flange ASME B16.5 RJ Moderate wet H2S service Licensor-1	
1	20				P72B-000SU	Paddle spacer ASTM A105 Class 900 Standard-drawing Flange ASME B16.5 RJ Moderate wet H2S service Licensor-1	

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BOLT TABLE (B_M2AQ01 , STUD ASME RJ, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	110	P80S-0090F	R12	P75T-000JT
0.75	4	0.750	115	P80S-0090G	R14	P75T-000JU
1	4	0.875	130	P80S-005ZB	R16	P75T-000JV
1.5	4	1.000	140	P80S-0061A	R20	P75T-000JW
2	8	0.875	150	P80S-005ZF	R24	P75T-0008A
3	8	0.875	150	P80S-005ZF	R31	P75T-000JN
4	8	1.125	175	P80S-0064S	R37	P75T-000JP
6	12	1.125	200	P80S-0064X	R45	P75T-000JR
8	12	1.375	260	P80S-006HT	R49	P75T-000JS
10	16	1.375	275	P80S-006HW	R53	P75T-000JL
12	20	1.375	295	P80S-006J0	R57	P75T-000JM
14	20	1.500	325	P80S-006RK	R62	P75T-000MJ
16	20	1.625	340	P80S-00A5J	R66	P75T-000MK
18	20	1.875	390	P80S-00AW7	R70	P75T-000N8
20	20	2.000	415	P80S-00BBE	R74	P75T-000N7

BOLT TABLE (B_M2AQ01_797 , STUD ASME RJ, OPTION CODE 797)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	110		R12	
0.75	4	0.750	115		R14	
1	4	0.875	130		R16	
1.5	4	1.000	140		R20	
2	8	0.875	150		R24	
3	8	1.125	180	P80S-0064T	R35	P75T-0008E
4	8	1.250	230	P80S-0068H	R39	P75T-0008D
6	12	1.375	300	P80S-006J1	R46	P75T-0008C
8	12	1.625	345	P80S-00A5K	R50	P75T-0008B
10	12	1.875	395	P80S-00AW8	R54	P75T-0008L
12	16	2.000	445	P80S-00BH5	R58	P75T-0008K
14	16	2.250	490	P80S-00DLE	R63	P75T-0008J
16	16	2.500	540	P80S-00DZM	R67	P75T-0008H
18	16	2.750	590	P80S-01RAH	R71	P75T-0008G
20	16	3.000	650	P80S-01VK6	R75	P75T-0008F

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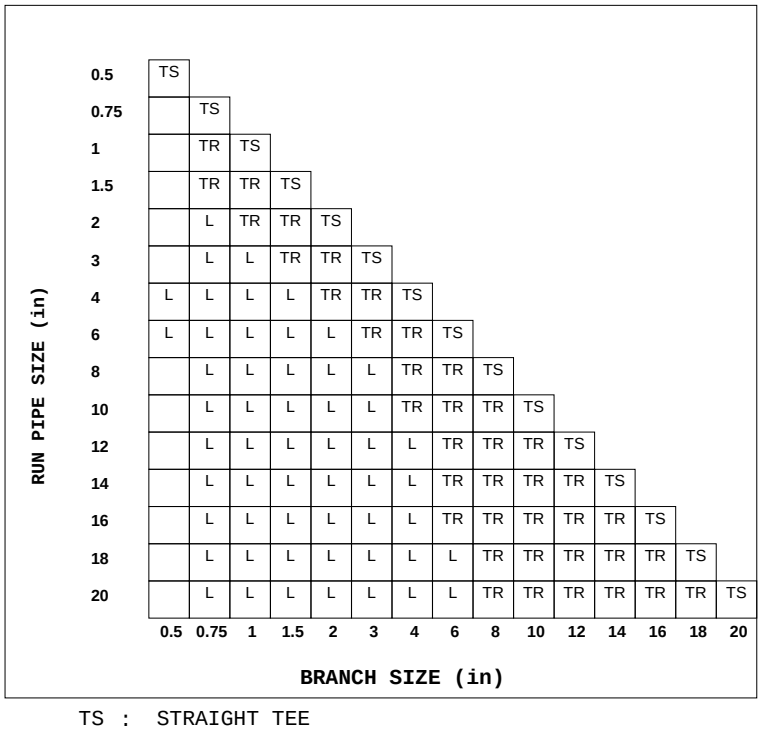
BRANCH TABLE (T_M2AQ01)



TS : STRAIGHT TEE
L : OUTLET
TR : REDUCING TEE

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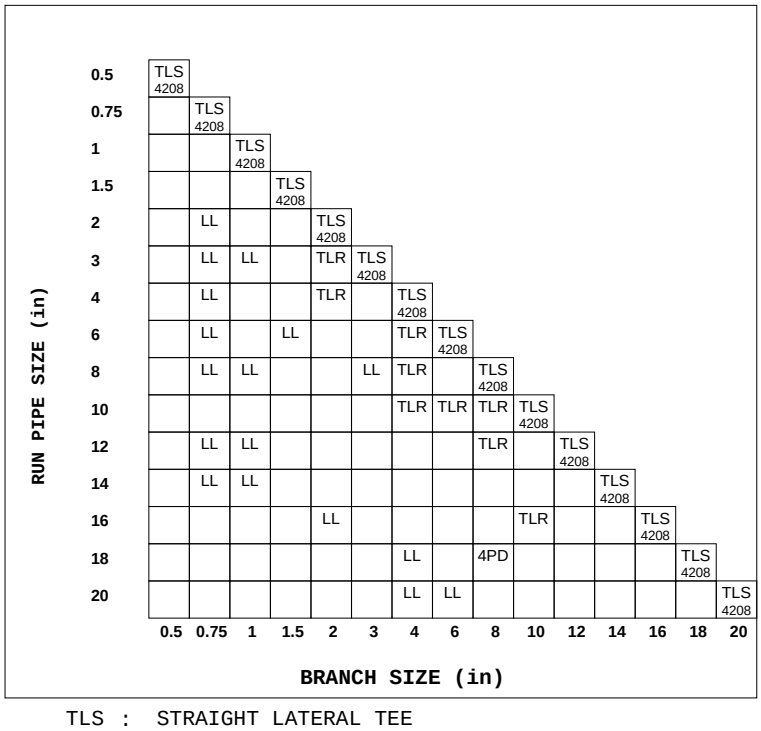
BRANCH TABLE (T_M2AQ01_2)



TLS : STRAIGHT LATERAL TEE
TLR : REDUCING LATERAL TEE
4PD : REINFORCING PAD 45 DEG
LL : LATROLET

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PIPING CLASS

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Material : Killed CS
Rating : ASME CLASS 900
Flange Face : RJ
C.A.(mm) : 3.00
Gasket : Ring Octagonal
Service : PROCESS - WET SEVERE SOUR SERVICE SUBJECT TO NACE + HIC STD.
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
5	BOLTING CONFIRMING TO B7M / 2HM SHALL BE USED UNDER CONDITIONS (A) DIRECT EXPOSURE TO SOUR ENVIRONMENTS (B) WHEN THE BOLTING WILL BE BURIED OR INSULATED
27	PWHT OF CARBON STEEL PIPING IN WET H2S, CAUSTIC AND AMINE SERVICES SHALL BE IN ACCORDANCE WITH SECTION 10.2, 10.3, AND 10.4 OF PROJECT SPECIFICATION 3550-8440-SP-0002 MATERIALS REQUIREMENTS FOR PRESSURISED EQUIPMENT AND PIPING. FOR CAUSTIC AND AMINE SERVICE THE FOLLOWING SHALL APPLY: - PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF ALL SITE PIPING FABRICATION WELDS IS REQUIRED FOR ALL WALL THICKNESSES. FOR MODERATE AND SEVERE WET H2S SERVICE THE FOLLOWING SHALL APPLY: PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF SITE FABRICATION CIRCUMFERENTIAL OR BRANCH WELDS IS NOT REQUIRED IF WELDS ARE MULTIPASS AND IN ACCORDANCE WITH PARA 10.2.12 OF PROJECT SPECIFICATION 3550-8440-SP-0002. FOR SERVICES MEETING THE WET H2S CRITERIA AND CAUSTIC OR AMINE CRITERIA THE MORE STRINGENT PWHT REQUIREMENT SHALL GOVERN.

DETAIL NOTES :

NO.	DESCRIPTION
38	TO BE USED FOR STAND PIPE

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
200	WITH JACK SCREW (FO)
541	NPT(F) (F)
797	CLASS 1500 (B,F,G)
4212	WELDOLET FOR STAND PIPE (L)
4602	DISSIMILAR TYPE CHECK VALVE (XDP)

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PIPING CLASS
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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P01A-007D3	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE Severe wet H2S service Licensor-1	
1	0.75		SCH160		P01A-007D4	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE Severe wet H2S service Licensor-1	
1	1		SCH160		P01A-007D5	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE Severe wet H2S service Licensor-1	
1	1.5		SCH160		P01A-007D6	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE Severe wet H2S service Licensor-1	
1	2		SCH160		P01A-007AU	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Severe wet H2S service Licensor-1	
1	3		SCH160		P01A-007AV	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Severe wet H2S service Licensor-1	
1	4		SCH160		P01A-008LT	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Severe wet H2S service Licensor-1	
1	6		SCH160		P01A-008LU	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Severe wet H2S service Licensor-1	
1	8		SCH140		P01A-008LV	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Severe wet H2S service Licensor-1	
1	10		XXS		P01A-008S6	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE Severe wet H2S service Licensor-1	
1	12		XXS		P01A-008TH	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE Severe wet H2S service Licensor-1	
1	14		SCH100		P01A-008LS	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Severe wet H2S service Licensor-1	
1	16		SCH100		P01A-008LW	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE Severe wet H2S service Licensor-1	
1	18		SCH100		P01A-008LX	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE Severe wet H2S service Licensor-1	
1	20		SCH100		P01A-008LY	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE Severe wet H2S service Licensor-1	
1	24		SCH100		P01A-008LZ	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE Severe wet H2S service Licensor-1	
1	30		47.00mm		P01A-008M0	Pipe ASTM A671 Grade CC60 Class 22 EFW ASME B36.10M/B36.19M BE Severe wet H2S service Licensor-1	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P02A-003V5	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	0.75		SCH160		P02A-003V6	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	1		SCH160		P02A-003V7	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	1.5		SCH160		P02A-003V8	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	2		SCH160		P02A-003SZ	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	3		SCH160		P02A-003T0	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	4		SCH160		P02A-004EJ	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	6		SCH160		P02A-004EK	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	8		SCH140		P02A-004EL	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	10		XXS		P02A-004HN	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	12		XXS		P02A-004WV	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	14		SCH100		P02A-004EH	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	16		SCH100		P02A-004EM	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	18		SCH100		P02A-004EN	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	20		SCH100		P02A-004EP	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	24		SCH100		P02A-004ER	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	30		47.00mm		P02A-004ES	90 degree elbow ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P03A-003SU	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	0.75		SCH160		P03A-003SV	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	1		SCH160		P03A-003SW	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	1.5		SCH160		P03A-003SX	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	2		SCH160		P03A-003PM	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	3		SCH160		P03A-003PN	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	4		SCH160		P03A-004BR	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	6		SCH160		P03A-004BS	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	8		SCH140		P03A-004BT	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	

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45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	10		XXS		P03A-004F8	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	12		XXS		P03A-004GB	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	14		SCH100		P03A-004BP	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	16		SCH100		P03A-004BU	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	18		SCH100		P03A-004BV	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	20		SCH100		P03A-004BW	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	24		SCH100		P03A-004BX	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	
1	30		47.00mm		P03A-004BY	45 degree elbow ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Long radius Severe wet H2S service Licensor-1	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P21A-004CL	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	0.75		SCH160		P21A-004CM	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	1		SCH160		P21A-004CN	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	1.5		SCH160		P21A-004CP	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	2		SCH160		P21A-004AB	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	3		SCH160		P21A-004AC	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	4		SCH160		P21A-004WW	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	6		SCH160		P21A-004WX	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	8		SCH140		P21A-004WY	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	10		XXS		P21A-004ZN	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	12		XXS		P21A-0050P	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	14		SCH100		P21A-004WV	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	16		SCH100		P21A-004WZ	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	18		SCH100		P21A-004X0	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	20		SCH100		P21A-004X1	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	24		SCH100		P21A-004X2	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	30		47.00mm		P21A-004X3	Straight tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Severe wet H2S service Licensor-1	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75	SCH160	SCH160	P24A-00KEA	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	1.5	0.75	SCH160	SCH160	P24A-00KEB	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	1.5	1	SCH160	SCH160	P24A-00KEC	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	2	1	SCH160	SCH160	P24A-00NC7	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	2	1.5	SCH160	SCH160	P24A-00NC8	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	3	1.5	SCH160	SCH160	P24A-00NC9	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	3	2	SCH160	SCH160	P24A-00K4X	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	4	2	SCH160	SCH160	P24A-00NCA	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	4	3	SCH160	SCH160	P24A-00NCB	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	6	3	SCH160	SCH160	P24A-00NCC	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	6	4	SCH160	SCH160	P24A-00NCD	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	8	4	SCH140	SCH160	P24A-00NCE	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	8	6	SCH140	SCH160	P24A-00NCF	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	10	4	XXS	SCH160	P24A-00P0X	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	10	6	XXS	SCH160	P24A-00P0Y	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	10	8	XXS	SCH140	P24A-00P0Z	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	12	6	XXS	SCH160	P24A-00P5Z	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	12	8	XXS	SCH140	P24A-00P67	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	12	10	XXS	XXS	P24A-00P5Y	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	14	6	SCH100	SCH160	P24A-00NWF	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	14	8	SCH100	SCH140	P24A-00NCM	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	14	10	SCH100	XXS	P24A-00NWE	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	14	12	SCH100	XXS	P24A-00P60	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	16	6	SCH100	SCH160	P24A-00NWH	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	16	8	SCH100	SCH140	P24A-00NCR	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	

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REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	16	10	SCH100	XXS	P24A-00NWG	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	16	12	SCH100	XXS	P24A-00P61	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	16	14	SCH100	SCH100	P24A-00NCP	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	18	8	SCH100	SCH140	P24A-00NWK	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	18	10	SCH100	XXS	P24A-00NWJ	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	18	12	SCH100	XXS	P24A-00P62	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	18	14	SCH100	SCH100	P24A-00NCT	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	18	16	SCH100	SCH100	P24A-00NCU	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	20	8	SCH100	SCH140	P24A-00NWM	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	20	10	SCH100	XXS	P24A-00NWL	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	20	12	SCH100	XXS	P24A-00P63	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	20	14	SCH100	SCH100	P24A-00NCW	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	20	16	SCH100	SCH100	P24A-00NCX	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	20	18	SCH100	SCH100	P24A-00NCY	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	24	10	SCH100	XXS	P24A-00NWN	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	24	12	SCH100	XXS	P24A-00P64	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	24	14	SCH100	SCH100	P24A-00ND0	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	24	16	SCH100	SCH100	P24A-00ND1	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	24	18	SCH100	SCH100	P24A-00ND2	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	24	20	SCH100	SCH100	P24A-00ND3	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	30	10	47.00mm	XXS	P24A-00NWP	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Severe wet H2S service Licensor-1	
1	30	12	47.00mm	XXS	P24A-00P68	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Severe wet H2S service Licensor-1	
1	30	14	47.00mm	SCH100	P24A-00NWS	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Severe wet H2S service Licensor-1	
1	30	16	47.00mm	SCH100	P24A-00NWT	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Severe wet H2S service Licensor-1	
1	30	18	47.00mm	SCH100	P24A-00NWU	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Severe wet H2S service Licensor-1	
1	30	20	47.00mm	SCH100	P24A-00NWV	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Severe wet H2S service Licensor-1	
1	30	24	47.00mm	SCH100	P24A-00NWW	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Severe wet H2S service Licensor-1	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	SCH160	P27A-00EY1	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	1	0.5	SCH160	SCH160	P27A-00EY2	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	1	0.75	SCH160	SCH160	P27A-00EY3	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	1.5	0.5	SCH160	SCH160	P27A-00EY4	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	1.5	0.75	SCH160	SCH160	P27A-00EY5	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	1.5	1	SCH160	SCH160	P27A-00EY6	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	2	0.75	SCH160	SCH160	P27A-00H1T	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	2	1	SCH160	SCH160	P27A-00H1U	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	2	1.5	SCH160	SCH160	P27A-00H1V	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	3	1.5	SCH160	SCH160	P27A-00H1W	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	3	2	SCH160	SCH160	P27A-00ER1	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	4	1.5	SCH160	SCH160	P27A-00H1X	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	4	2	SCH160	SCH160	P27A-00H1Y	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	4	3	SCH160	SCH160	P27A-00H1Z	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	6	3	SCH160	SCH160	P27A-00H20	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	6	4	SCH160	SCH160	P27A-00H21	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	8	4	SCH140	SCH160	P27A-00H22	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	8	6	SCH140	SCH160	P27A-00H23	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	10	4	XXS	SCH160	P27A-00HJD	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	10	6	XXS	SCH160	P27A-00HJE	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	10	8	XXS	SCH140	P27A-00HJF	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	12	6	XXS	SCH160	P27A-00HNT	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	12	8	XXS	SCH140	P27A-00HNZ	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	12	10	XXS	XXS	P27A-00HNS	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	14	6	SCH100	SCH160	P27A-00H29	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	14	8	SCH100	SCH140	P27A-00H2A	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	14	10	SCH100	XXS	P27A-00HC8	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	

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CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14	12	SCH100	XXS	P27A-00HNU	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	16	8	SCH100	SCH140	P27A-00H2D	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	16	10	SCH100	XXS	P27A-00HC9	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	16	12	SCH100	XXS	P27A-00HNV	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	16	14	SCH100	SCH100	P27A-00H2C	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	18	10	SCH100	XXS	P27A-00HCA	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	18	12	SCH100	XXS	P27A-00HNW	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	18	14	SCH100	SCH100	P27A-00H2F	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	18	16	SCH100	SCH100	P27A-00H2G	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	20	12	SCH100	XXS	P27A-00HNX	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	20	14	SCH100	SCH100	P27A-00H2J	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	20	16	SCH100	SCH100	P27A-00H2K	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	20	18	SCH100	SCH100	P27A-00H2L	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	24	16	SCH100	SCH100	P27A-00H2M	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	24	18	SCH100	SCH100	P27A-00H2N	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	24	20	SCH100	SCH100	P27A-00H2P	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	30	20	47.00mm	SCH100	P27A-00HCB	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Severe wet H2S service Licensor-1	
1	30	24	47.00mm	SCH100	P27A-00HCC	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Severe wet H2S service Licensor-1	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	SCH160	P28A-00C21	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	1	0.5	SCH160	SCH160	P28A-00C22	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	1	0.75	SCH160	SCH160	P28A-00C23	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	1.5	0.5	SCH160	SCH160	P28A-00C24	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	1.5	0.75	SCH160	SCH160	P28A-00C25	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	1.5	1	SCH160	SCH160	P28A-00C26	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	2	0.75	SCH160	SCH160	P28A-00E90	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	2	1	SCH160	SCH160	P28A-00E91	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	2	1.5	SCH160	SCH160	P28A-00E92	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	3	1.5	SCH160	SCH160	P28A-00E93	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	3	2	SCH160	SCH160	P28A-00BUV	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	4	1.5	SCH160	SCH160	P28A-00E94	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	4	2	SCH160	SCH160	P28A-00E95	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	4	3	SCH160	SCH160	P28A-00E96	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	6	3	SCH160	SCH160	P28A-00E97	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	6	4	SCH160	SCH160	P28A-00E98	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	8	4	SCH140	SCH160	P28A-00E99	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	8	6	SCH140	SCH160	P28A-00E9A	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	10	4	XXS	SCH160	P28A-00ET4	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	10	6	XXS	SCH160	P28A-00ET5	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	10	8	XXS	SCH140	P28A-00ET6	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	12	6	XXS	SCH160	P28A-00EY5	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	12	8	XXS	SCH140	P28A-00EYB	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	12	10	XXS	XXS	P28A-00EY4	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	14	6	SCH100	SCH160	P28A-00E9G	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	14	8	SCH100	SCH140	P28A-00E9H	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	14	10	SCH100	XXS	P28A-00EKY	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	14	12	SCH100	XXS	P28A-00EY6	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	16	8	SCH100	SCH140	P28A-00E9L	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	16	10	SCH100	XXS	P28A-00EKZ	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	16	12	SCH100	XXS	P28A-00EY7	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	16	14	SCH100	SCH100	P28A-00E9K	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	18	10	SCH100	XXS	P28A-00EL0	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	

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ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	18	12	SCH100	XXS	P28A-00EY8	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	18	14	SCH100	SCH100	P28A-00E9N	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	18	16	SCH100	SCH100	P28A-00E9P	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	20	12	SCH100	XXS	P28A-00EY9	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	20	14	SCH100	SCH100	P28A-00E9S	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	20	16	SCH100	SCH100	P28A-00E9T	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	20	18	SCH100	SCH100	P28A-00E9U	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	24	16	SCH100	SCH100	P28A-00E9V	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	24	18	SCH100	SCH100	P28A-00E9W	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	24	20	SCH100	SCH100	P28A-00E9X	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	30	20	47.00mm	SCH100	P28A-00EL1	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Severe wet H2S service Licensor-1	
1	30	24	47.00mm	SCH100	P28A-00EL2	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Severe wet H2S service Licensor-1	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P29A-00374	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	0.75		SCH160		P29A-00375	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	1		SCH160		P29A-00376	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	1.5		SCH160		P29A-00377	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	2		SCH160		P29A-0034F	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	3		SCH160		P29A-0034G	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	4		SCH160		P29A-003RL	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	6		SCH160		P29A-003RM	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	8		SCH140		P29A-003RN	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	10		XXS		P29A-003VC	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	12		XXS		P29A-003WY	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	14		SCH100		P29A-003RK	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	16		SCH100		P29A-003RP	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	18		SCH100		P29A-003RR	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	20		SCH100		P29A-003RS	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	24		SCH100		P29A-003RT	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	
1	30		47.00mm		P29A-005MX	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service Licensor-1	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P41A-0019H	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Severe wet H2S service Licensor-1	
1	0.75		XXS		P41A-0019J	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Severe wet H2S service Licensor-1	
1	1		XXS		P41A-0018F	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Severe wet H2S service Licensor-1	
1	1.5		XXS		P41A-0018G	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Severe wet H2S service Licensor-1	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2	0.75	SCH160	SCH160	P31B-010NU	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	3	0.75	SCH160	SCH160	P31B-010NV	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	4	0.75	SCH160	SCH160	P31B-010NX	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	6	0.75	SCH160	SCH160	P31B-010P0	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	8	0.75	SCH140	SCH160	P31B-010P4	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	10	0.75	XXS	SCH160	P31B-010P9	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	12	0.75	XXS	SCH160	P31B-011BC	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	14	0.75	SCH100	SCH160	P31B-010PL	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	16	0.75	SCH100	SCH160	P31B-010PT	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	18	0.75	SCH100	SCH160	P31B-0111E	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	20	0.75	SCH100	SCH160	P31B-0111G	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	24	0.75	SCH100	SCH160	P31B-0111K	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	30	0.75	47.00mm	SCH160	P31B-0111N	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	3	1	SCH160	SCH160	P31B-010NW	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	4	1	SCH160	SCH160	P31B-010NY	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	

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OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	6	1	SCH160	SCH160	P31B-010P1	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	8	1	SCH140	SCH160	P31B-010P5	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	10	1	XXS	SCH160	P31B-010PA	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	12	1	XXS	SCH160	P31B-011BD	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	14	1	SCH100	SCH160	P31B-010PM	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	16	1	SCH100	SCH160	P31B-010PU	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	18	1	SCH100	SCH160	P31B-0111F	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	20	1	SCH100	SCH160	P31B-0111H	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	24	1	SCH100	SCH160	P31B-0111L	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	30	1	47.00mm	SCH160	P31B-0111P	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	4	1.5	SCH160	SCH160	P31B-010NZ	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	6	1.5	SCH160	SCH160	P31B-010P2	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	8	1.5	SCH140	SCH160	P31B-010P6	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	10	1.5	XXS	SCH160	P31B-010PB	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	12	1.5	XXS	SCH160	P31B-011BE	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	14	1.5	SCH100	SCH160	P31B-010PN	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	16	1.5	SCH100	SCH160	P31B-010PV	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	18	1.5	SCH100	SCH160	P31B-010PZ	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	20	1.5	SCH100	SCH160	P31B-0111J	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	24	1.5	SCH100	SCH160	P31B-0111M	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	30	1.5	47.00mm	SCH160	P31B-0111R	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	6	2	SCH160	SCH160	P31B-010P3	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	8	2	SCH140	SCH160	P31B-010P7	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	10	2	XXS	SCH160	P31B-010PC	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	12	2	XXS	SCH160	P31B-011BF	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	14	2	SCH100	SCH160	P31B-010PP	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	16	2	SCH100	SCH160	P31B-010PW	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	18	2	SCH100	SCH160	P31B-010R0	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	20	2	SCH100	SCH160	P31B-010R4	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	24	2	SCH100	SCH160	P31B-010R8	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	30	2	47.00mm	SCH160	P31B-0111S	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	8	3	SCH140	SCH160	P31B-010P8	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	10	3	XXS	SCH160	P31B-010PD	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	12	3	XXS	SCH160	P31B-011BG	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	14	3	SCH100	SCH160	P31B-010PR	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	16	3	SCH100	SCH160	P31B-010PX	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	18	3	SCH100	SCH160	P31B-010R1	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	20	3	SCH100	SCH160	P31B-010R5	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	24	3	SCH100	SCH160	P31B-010R9	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	30	3	47.00mm	SCH160	P31B-0111T	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	12	4	XXS	SCH160	P31B-011BH	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	14	4	SCH100	SCH160	P31B-010PS	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	16	4	SCH100	SCH160	P31B-010PY	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	18	4	SCH100	SCH160	P31B-010R2	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	20	4	SCH100	SCH160	P31B-010R6	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	24	4	SCH100	SCH160	P31B-010RA	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	30	4	47.00mm	SCH160	P31B-0111U	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	18	6	SCH100	SCH160	P31B-010R3	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	20	6	SCH100	SCH160	P31B-010R7	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	24	6	SCH100	SCH160	P31B-010RB	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
1	30	6	47.00mm	SCH160	P31B-0111V	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	
4212	3	2	SCH160	SCH160	P31B-013BL	Outlet ASTM A105 MSS SP-97 BW Severe wet H2S service Licensor-1	38

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30B-0006M	Plug ASTM A105 ASME B16.11 NPT Round head Severe wet H2S service Licensor-1	
1	0.75				P30B-0006N	Plug ASTM A105 ASME B16.11 NPT Round head Severe wet H2S service Licensor-1	
1	1				P30B-0006K	Plug ASTM A105 ASME B16.11 NPT Round head Severe wet H2S service Licensor-1	
1	1.5				P30B-0006L	Plug ASTM A105 ASME B16.11 NPT Round head Severe wet H2S service Licensor-1	

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FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P61B-00BNG	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ Severe wet H2S service Licensor-1	
1	0.75		SCH160		P61B-00BNH	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ Severe wet H2S service Licensor-1	
1	1		SCH160		P61B-00BNJ	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ Severe wet H2S service Licensor-1	
1	1.5		SCH160		P61B-00BNK	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ Severe wet H2S service Licensor-1	
1	2		SCH160		P61B-00BNL	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ Severe wet H2S service Licensor-1	
1	3		SCH160		P61B-00BNV	Flange WN ASTM A105 Class 900 ASME B16.5 RJ Severe wet H2S service Licensor-1	
1	4		SCH160		P61B-00BNW	Flange WN ASTM A105 Class 900 ASME B16.5 RJ Severe wet H2S service Licensor-1	
1	6		SCH160		P61B-00BNX	Flange WN ASTM A105 Class 900 ASME B16.5 RJ Severe wet H2S service Licensor-1	
1	8		SCH140		P61B-00BNY	Flange WN ASTM A105 Class 900 ASME B16.5 RJ Severe wet H2S service Licensor-1	
1	10		XXS		P61B-00BNM	Flange WN ASTM A105 Class 900 ASME B16.5 RJ Severe wet H2S service Licensor-1	
1	12		XXS		P61B-00CY7	Flange WN ASTM A105 Class 900 ASME B16.5 RJ Severe wet H2S service Licensor-1	
1	14		SCH100		P61B-00BNP	Flange WN ASTM A105 Class 900 ASME B16.5 RJ Severe wet H2S service Licensor-1	
1	16		SCH100		P61B-00BNR	Flange WN ASTM A105 Class 900 ASME B16.5 RJ Severe wet H2S service Licensor-1	
1	18		SCH100		P61B-00BNS	Flange WN ASTM A105 Class 900 ASME B16.5 RJ Severe wet H2S service Licensor-1	
1	20		SCH100		P61B-00BNT	Flange WN ASTM A105 Class 900 ASME B16.5 RJ Severe wet H2S service Licensor-1	
1	24		SCH100		P61B-00BNU	Flange WN ASTM A105 Class 900 ASME B16.5 RJ Severe wet H2S service Licensor-1	
1	30		47.00mm		P61B-00BWW	Flange WN ASTM A105 Class 900 ASME B16.47 Series A RJ Severe wet H2S service Licensor-1	
541	0.5				P61B-00DLK	Flange NPT ASTM A105 Class 1500 ASME B16.5 RJ Severe wet H2S service Licensor-1	
541	0.75				P61B-00CY8	Flange NPT ASTM A105 Class 1500 ASME B16.5 RJ Severe wet H2S service Licensor-1	
797	3		SCH160		P61B-00BP7	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ Severe wet H2S service Licensor-1	
797	4		SCH160		P61B-00BP8	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ Severe wet H2S service Licensor-1	
797	6		SCH160		P61B-00BP9	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ Severe wet H2S service Licensor-1	
797	8		SCH140		P61B-00BPA	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ Severe wet H2S service Licensor-1	
797	10		XXS		P61B-00BP0	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ Severe wet H2S service Licensor-1	
797	12		XXS		P61B-00CY9	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ Severe wet H2S service Licensor-1	
797	14		SCH100		P61B-00BP2	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ Severe wet H2S service Licensor-1	
797	16		SCH100		P61B-00BP3	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ Severe wet H2S service Licensor-1	
797	18		SCH100		P61B-00BP4	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ Severe wet H2S service Licensor-1	
797	20		SCH100		P61B-00BP5	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ Severe wet H2S service Licensor-1	
797	24		SCH100		P61B-00BP6	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ Severe wet H2S service Licensor-1	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67B-002VF	Blind flange ASTM A105 Class 1500 ASME B16.5 RJ Severe wet H2S service Licensor-1	
1	0.75				P67B-002VG	Blind flange ASTM A105 Class 1500 ASME B16.5 RJ Severe wet H2S service Licensor-1	
1	1				P67B-002VH	Blind flange ASTM A105 Class 1500 ASME B16.5 RJ Severe wet H2S service Licensor-1	
1	1.5				P67B-002VJ	Blind flange ASTM A105 Class 1500 ASME B16.5 RJ Severe wet H2S service Licensor-1	
1	2				P67B-002VK	Blind flange ASTM A105 Class 1500 ASME B16.5 RJ Severe wet H2S service Licensor-1	
1	3				P67B-002VU	Blind flange ASTM A105 Class 900 ASME B16.5 RJ Severe wet H2S service Licensor-1	
1	4				P67B-002VV	Blind flange ASTM A105 Class 900 ASME B16.5 RJ Severe wet H2S service Licensor-1	
1	6				P67B-002VW	Blind flange ASTM A105 Class 900 ASME B16.5 RJ Severe wet H2S service Licensor-1	
1	8				P67B-002VX	Blind flange ASTM A105 Class 900 ASME B16.5 RJ Severe wet H2S service Licensor-1	
1	10				P67B-002VL	Blind flange ASTM A105 Class 900 ASME B16.5 RJ Severe wet H2S service Licensor-1	
1	12				P67B-002VM	Blind flange ASTM A105 Class 900 ASME B16.5 RJ Severe wet H2S service Licensor-1	
1	14				P67B-002VN	Blind flange ASTM A105 Class 900 ASME B16.5 RJ Severe wet H2S service Licensor-1	
1	16				P67B-002VP	Blind flange ASTM A105 Class 900 ASME B16.5 RJ Severe wet H2S service Licensor-1	
1	18				P67B-002VR	Blind flange ASTM A105 Class 900 ASME B16.5 RJ Severe wet H2S service Licensor-1	
1	20				P67B-002VS	Blind flange ASTM A105 Class 900 ASME B16.5 RJ Severe wet H2S service Licensor-1	
1	24				P67B-002VT	Blind flange ASTM A105 Class 900 ASME B16.5 RJ Severe wet H2S service Licensor-1	
1	30				P67B-002WV	Blind flange ASTM A105 Class 900 ASME B16.47 Series A RJ Severe wet H2S service Licensor-1	

REDUCING FLANGE (FR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5		SCH160	P62B-000N2	Reducing flange WN ASTM A105 Class 1500 ASME B16.5 RJ Severe wet H2S service Licensor-1	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P75T-000JT	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	0.75				P75T-000JU	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	

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GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P75T-000JV	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	1.5				P75T-000JW	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	2				P75T-0008A	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	3				P75T-000JN	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	4				P75T-000JP	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	6				P75T-000JR	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	8				P75T-000JS	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	10				P75T-000JL	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	12				P75T-000JM	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	14				P75T-000MJ	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	16				P75T-000MK	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	18				P75T-000N8	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	20				P75T-000N7	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	24				P75T-000N9	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	30				P75T-0013G	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.47-A RJ Octagonal type	
797	3				P75T-0008E	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	4				P75T-0008D	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	6				P75T-0008C	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	8				P75T-0008B	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	10				P75T-0008L	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	12				P75T-0008K	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	14				P75T-0008J	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	16				P75T-0008H	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	18				P75T-0008G	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	20				P75T-0008F	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	24				P75T-0012C	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-3				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	4-30				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
797	3-24				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81B-00205	Gate valve ASTM A105 Class 1500 API 602 Flange ASME B16.5 RJ Trim number 12 WB-BG-OS&Y Handwheel operated Severe wet H2S service Licensor-1	
1	0.75				P81B-00206	Gate valve ASTM A105 Class 1500 API 602 Flange ASME B16.5 RJ Trim number 12 WB-BG-OS&Y Handwheel operated Severe wet H2S service Licensor-1	
1	1				P81B-00207	Gate valve ASTM A105 Class 1500 API 602 Flange ASME B16.5 RJ Trim number 12 WB-BG-OS&Y Handwheel operated Severe wet H2S service Licensor-1	
1	1.5				P81B-00208	Gate valve ASTM A105 Class 1500 API 602 Flange ASME B16.5 RJ Trim number 12 WB-BG-OS&Y Handwheel operated Severe wet H2S service Licensor-1	
1	2				P81C-007KH	Gate valve ASTM A216 Grade WCB Class 1500 API 600 Flange ASME B16.5 RJ Trim number 12 PSB-BG-OS&Y Handwheel operated Severe wet H2S service Licensor-1	
1	3				P81C-007KJ	Gate valve ASTM A216 Grade WCB Class 900 API 600 Flange ASME B16.5 RJ Trim number 12 PSB-BG-OS&Y Handwheel operated Severe wet H2S service Licensor-1	
1	4				P81C-007KK	Gate valve ASTM A216 Grade WCB Class 900 API 600 Flange ASME B16.5 RJ Trim number 12 PSB-BG-OS&Y Handwheel operated Severe wet H2S service Licensor-1	
1	6				P81C-007KL	Gate valve ASTM A216 Grade WCB Class 900 API 600 Flange ASME B16.5 RJ Trim number 12 PSB-BG-OS&Y Gear operated Severe wet H2S service Licensor-1	
1	8				P81C-007KM	Gate valve ASTM A216 Grade WCB Class 900 API 600 Flange ASME B16.5 RJ Trim number 12 PSB-BG-OS&Y Gear operated Severe wet H2S service Licensor-1	
1	10				P81C-007KN	Gate valve ASTM A216 Grade WCB Class 900 API 600 Flange ASME B16.5 RJ Trim number 12 PSB-BG-OS&Y Gear operated Severe wet H2S service Licensor-1	
1	12				P81C-007KP	Gate valve ASTM A216 Grade WCB Class 900 API 600 Flange ASME B16.5 RJ Trim number 12 PSB-BG-OS&Y Gear operated Severe wet H2S service Licensor-1	
1	14				P81C-0089C	Gate valve ASTM A216 Grade WCB Class 900 API 600 Flange ASME B16.5 RJ Trim number 12 PSB-BG-OS&Y Gear operated Severe wet H2S service Licensor-1	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82B-001HR	Globe valve ASTM A105 Class 1500 API 602 Flange ASME B16.5 RJ Trim number 12 WB-BG-OS&Y Handwheel operated Severe wet H2S service Licensor-1	
1	0.75				P82B-001HS	Globe valve ASTM A105 Class 1500 API 602 Flange ASME B16.5 RJ Trim number 12 WB-BG-OS&Y Handwheel operated Severe wet H2S service Licensor-1	

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GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P82B-001HT	Globe valve ASTM A105 Class 1500 API 602 Flange ASME B16.5 RJ Trim number 12 WB-BG-OS&Y Handwheel operated Severe wet H2S service Licensor-1	
1	1.5				P82B-001HU	Globe valve ASTM A105 Class 1500 API 602 Flange ASME B16.5 RJ Trim number 12 WB-BG-OS&Y Handwheel operated Severe wet H2S service Licensor-1	
1	2				P82C-003TU	Globe valve ASTM A216 Grade WCB Class 1500 BS 1873 Flange ASME B16.5 RJ Trim number 12 PSB-BG-OS&Y Handwheel operated Severe wet H2S service Licensor-1	
1	3				P82C-003TV	Globe valve ASTM A216 Grade WCB Class 900 BS 1873 Flange ASME B16.5 RJ Trim number 12 PSB-BG-OS&Y Handwheel operated Severe wet H2S service Licensor-1	
1	4				P82C-00435	Globe valve ASTM A216 Grade WCB Class 900 BS 1873 Flange ASME B16.5 RJ Trim number 12 PSB-BG-OS&Y Gear operated Severe wet H2S service Licensor-1	
1	6				P82C-0042X	Globe valve ASTM A216 Grade WCB Class 900 BS 1873 Flange ASME B16.5 RJ Trim number 12 PSB-BG-OS&Y Gear operated Severe wet H2S service Licensor-1	
1	8				P82C-0042Y	Globe valve ASTM A216 Grade WCB Class 900 BS 1873 Flange ASME B16.5 RJ Trim number 12 PSB-BG-OS&Y Gear operated Severe wet H2S service Licensor-1	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83B-0017A	Check valve ASTM A105 Class 1500 API 602 Flange ASME B16.5 RJ Trim number 12 Lift-type Welded cover Severe wet H2S service Licensor-1	
1	0.75				P83B-0017B	Check valve ASTM A105 Class 1500 API 602 Flange ASME B16.5 RJ Trim number 12 Lift-type Welded cover Severe wet H2S service Licensor-1	
1	1				P83B-0017C	Check valve ASTM A105 Class 1500 API 602 Flange ASME B16.5 RJ Trim number 12 Lift-type Welded cover Severe wet H2S service Licensor-1	
1	1.5				P83B-0017D	Check valve ASTM A105 Class 1500 API 602 Flange ASME B16.5 RJ Trim number 12 Lift-type Welded cover Severe wet H2S service Licensor-1	
1	2				P83C-003AB	Check valve ASTM A216 Grade WCB Class 1500 BS 1868 Flange ASME B16.5 RJ Trim number 12 Swing-type Pressure seal cap Severe wet H2S service Licensor-1	
1	3				P83C-003AC	Check valve ASTM A216 Grade WCB Class 900 BS 1868 Flange ASME B16.5 RJ Trim number 12 Swing-type Pressure seal cap Severe wet H2S service Licensor-1	
1	4				P83C-003AD	Check valve ASTM A216 Grade WCB Class 900 BS 1868 Flange ASME B16.5 RJ Trim number 12 Swing-type Pressure seal cap Severe wet H2S service Licensor-1	
1	6				P83C-003AE	Check valve ASTM A216 Grade WCB Class 900 BS 1868 Flange ASME B16.5 RJ Trim number 12 Swing-type Pressure seal cap Severe wet H2S service Licensor-1	
1	8				P83C-003AF	Check valve ASTM A216 Grade WCB Class 900 BS 1868 Flange ASME B16.5 RJ Trim number 12 Swing-type Pressure seal cap Severe wet H2S service Licensor-1	
1	10				P83C-003AG	Check valve ASTM A216 Grade WCB Class 900 BS 1868 Flange ASME B16.5 RJ Trim number 12 Swing-type Pressure seal cap Severe wet H2S service Licensor-1	

DP CHECK VALVE (XDP)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
4602	3				P88C-00353	Dual plate check valve ASTM A216 Grade WCB Class 900 API 594 Lug-type ASME B16.5 RJ Trim number 12 Internal wetted parts SS316 Spring Inconel Retainerless-type Severe wet H2S service Licensor-1	

NEEDLE VALVE (NV)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82B-001X2	Needle valve ASTM A105 Class 1500 API 602 Flange ASME B16.5 RJ Trim number 12 WB-BG-OS&Y Handwheel operated Severe wet H2S service Licensor-1	
1	0.75				P82B-001X3	Needle valve ASTM A105 Class 1500 API 602 Flange ASME B16.5 RJ Trim number 12 WB-BG-OS&Y Handwheel operated Severe wet H2S service Licensor-1	
1	1				P82B-001X4	Needle valve ASTM A105 Class 1500 API 602 Flange ASME B16.5 RJ Trim number 12 WB-BG-OS&Y Handwheel operated Severe wet H2S service Licensor-1	
1	1.5				P82B-001X5	Needle valve ASTM A105 Class 1500 API 602 Flange ASME B16.5 RJ Trim number 12 WB-BG-OS&Y Handwheel operated Severe wet H2S service Licensor-1	

ORIFICE FLANGE (FO)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3		SCH160		P66B-008J3	Orifice flange WN ASTM A105 Class 900 ASME B16.36 RJ NPS1/2 SW tap x 1 Severe wet H2S service Licensor-1	
1	4		SCH160		P66B-008J4	Orifice flange WN ASTM A105 Class 900 ASME B16.36 RJ NPS1/2 SW tap x 1 Severe wet H2S service Licensor-1	
1	6		SCH160		P66B-008J5	Orifice flange WN ASTM A105 Class 900 ASME B16.36 RJ NPS1/2 SW tap x 1 Severe wet H2S service Licensor-1	
1	8		SCH140		P66B-008J6	Orifice flange WN ASTM A105 Class 900 ASME B16.36 RJ NPS1/2 SW tap x 1 Severe wet H2S service Licensor-1	
200	3		SCH160		P66B-008J7	Orifice flange WN ASTM A105 Class 900 ASME B16.36 RJ NPS1/2 SW tap x 1 Severe wet H2S service with Jack screw Licensor-1	
200	4		SCH160		P66B-008J8	Orifice flange WN ASTM A105 Class 900 ASME B16.36 RJ NPS1/2 SW tap x 1 Severe wet H2S service with Jack screw Licensor-1	
200	6		SCH160		P66B-008J9	Orifice flange WN ASTM A105 Class 900 ASME B16.36 RJ NPS1/2 SW tap x 1 Severe wet H2S service with Jack screw Licensor-1	
200	8		SCH140		P66B-008JA	Orifice flange WN ASTM A105 Class 900 ASME B16.36 RJ NPS1/2 SW tap x 1 Severe wet H2S service with Jack screw Licensor-1	

PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5				P72B-000RG	Paddle blank ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ Severe wet H2S service Licensor-1	
1	0.75				P72B-000RH	Paddle blank ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ Severe wet H2S service Licensor-1	

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PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P72B-000RJ	Paddle blank ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ Severe wet H2S service Licensor-1	
1	1.5				P72B-000RK	Paddle blank ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ Severe wet H2S service Licensor-1	
1	2				P72B-000RL	Paddle blank ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ Severe wet H2S service Licensor-1	
1	3				P72B-000S6	Paddle blank ASTM A105 Class 900 Standard-drawing Flange ASME B16.5 RJ Severe wet H2S service Licensor-1	
1	4				P72B-000S7	Paddle blank ASTM A105 Class 900 Standard-drawing Flange ASME B16.5 RJ Severe wet H2S service Licensor-1	
1	6				P72B-000S8	Paddle blank ASTM A105 Class 900 Standard-drawing Flange ASME B16.5 RJ Severe wet H2S service Licensor-1	
1	8				P72B-000S9	Paddle blank ASTM A105 Class 900 Standard-drawing Flange ASME B16.5 RJ Severe wet H2S service Licensor-1	
1	10				P72B-000RZ	Paddle blank ASTM A105 Class 900 Standard-drawing Flange ASME B16.5 RJ Severe wet H2S service Licensor-1	
1	12				P72B-000S0	Paddle blank ASTM A105 Class 900 Standard-drawing Flange ASME B16.5 RJ Severe wet H2S service Licensor-1	
1	14				P72B-000S1	Paddle blank ASTM A105 Class 900 Standard-drawing Flange ASME B16.5 RJ Severe wet H2S service Licensor-1	
1	16				P72B-000S2	Paddle blank ASTM A105 Class 900 Standard-drawing Flange ASME B16.5 RJ Severe wet H2S service Licensor-1	
1	18				P72B-000S3	Paddle blank ASTM A105 Class 900 Standard-drawing Flange ASME B16.5 RJ Severe wet H2S service Licensor-1	
1	20				P72B-000S4	Paddle blank ASTM A105 Class 900 Standard-drawing Flange ASME B16.5 RJ Severe wet H2S service Licensor-1	
1	24				P72B-000S5	Paddle blank ASTM A105 Class 900 Standard-drawing Flange ASME B16.5 RJ Severe wet H2S service Licensor-1	
1	30				P72B-000U8	Paddle blank ASTM A105 Class 900 Standard-drawing Flange ASME B16.47-A RJ Severe wet H2S service Licensor-1	

PADDLE SPACER (PS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P72B-000RB	Paddle spacer ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ Severe wet H2S service Licensor-1	
1	0.75				P72B-000RC	Paddle spacer ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ Severe wet H2S service Licensor-1	
1	1				P72B-000RD	Paddle spacer ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ Severe wet H2S service Licensor-1	
1	1.5				P72B-000RE	Paddle spacer ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ Severe wet H2S service Licensor-1	
1	2				P72B-000RF	Paddle spacer ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ Severe wet H2S service Licensor-1	
1	3				P72B-000RV	Paddle spacer ASTM A105 Class 900 Standard-drawing Flange ASME B16.5 RJ Severe wet H2S service Licensor-1	
1	4				P72B-000RW	Paddle spacer ASTM A105 Class 900 Standard-drawing Flange ASME B16.5 RJ Severe wet H2S service Licensor-1	
1	6				P72B-000RX	Paddle spacer ASTM A105 Class 900 Standard-drawing Flange ASME B16.5 RJ Severe wet H2S service Licensor-1	
1	8				P72B-000RY	Paddle spacer ASTM A105 Class 900 Standard-drawing Flange ASME B16.5 RJ Severe wet H2S service Licensor-1	
1	10				P72B-000RM	Paddle spacer ASTM A105 Class 900 Standard-drawing Flange ASME B16.5 RJ Severe wet H2S service Licensor-1	
1	12				P72B-000RN	Paddle spacer ASTM A105 Class 900 Standard-drawing Flange ASME B16.5 RJ Severe wet H2S service Licensor-1	
1	14				P72B-000RP	Paddle spacer ASTM A105 Class 900 Standard-drawing Flange ASME B16.5 RJ Severe wet H2S service Licensor-1	
1	16				P72B-000RR	Paddle spacer ASTM A105 Class 900 Standard-drawing Flange ASME B16.5 RJ Severe wet H2S service Licensor-1	
1	18				P72B-000RS	Paddle spacer ASTM A105 Class 900 Standard-drawing Flange ASME B16.5 RJ Severe wet H2S service Licensor-1	
1	20				P72B-000RT	Paddle spacer ASTM A105 Class 900 Standard-drawing Flange ASME B16.5 RJ Severe wet H2S service Licensor-1	
1	24				P72B-000RU	Paddle spacer ASTM A105 Class 900 Standard-drawing Flange ASME B16.5 RJ Severe wet H2S service Licensor-1	
1	30				P72B-000U9	Paddle spacer ASTM A105 Class 900 Standard-drawing Flange ASME B16.47-A RJ Severe wet H2S service Licensor-1	

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BOLT TABLE (B_M2AR01 , STUD ASME RJ, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	110	P80S-0090F	R12	P75T-000JT
0.75	4	0.750	115	P80S-0090G	R14	P75T-000JU
1	4	0.875	130	P80S-005ZB	R16	P75T-000JV
1.5	4	1.000	140	P80S-0061A	R20	P75T-000JW
2	8	0.875	150	P80S-005ZF	R24	P75T-0008A
3	8	0.875	150	P80S-005ZF	R31	P75T-000JN
4	8	1.125	175	P80S-0064S	R37	P75T-000JP
6	12	1.125	200	P80S-0064X	R45	P75T-000JR
8	12	1.375	260	P80S-006HT	R49	P75T-000JS
10	16	1.375	275	P80S-006HW	R53	P75T-000JL
12	20	1.375	295	P80S-006J0	R57	P75T-000JM
14	20	1.500	325	P80S-006RK	R62	P75T-000MJ
16	20	1.625	340	P80S-00A5J	R66	P75T-000MK
18	20	1.875	390	P80S-00AW7	R70	P75T-000N8
20	20	2.000	415	P80S-00BBE	R74	P75T-000N7
24	20	2.500	525	P80S-00DZJ	R78	P75T-000N9
30	20	3.000	600	P80S-01VJW	R102	P75T-0013G

BOLT TABLE (B_M2AR01_797 , STUD ASME RJ, OPTION CODE 797)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	110		R12	
0.75	4	0.750	115		R14	
1	4	0.875	130		R16	
1.5	4	1.000	140		R20	
2	8	0.875	150		R24	
3	8	1.125	180	P80S-0064T	R35	P75T-0008E
4	8	1.250	230	P80S-0068H	R39	P75T-0008D
6	12	1.375	300	P80S-006J1	R46	P75T-0008C
8	12	1.625	345	P80S-00A5K	R50	P75T-0008B
10	12	1.875	395	P80S-00AW8	R54	P75T-0008L
12	16	2.000	445	P80S-00BH5	R58	P75T-0008K
14	16	2.250	490	P80S-00DLE	R63	P75T-0008J
16	16	2.500	540	P80S-00DZM	R67	P75T-0008H
18	16	2.750	590	P80S-01RAH	R71	P75T-0008G
20	16	3.000	650	P80S-01VK6	R75	P75T-0008F
24	16	3.500	745	P80S-01VTJ	R79	P75T-0012C

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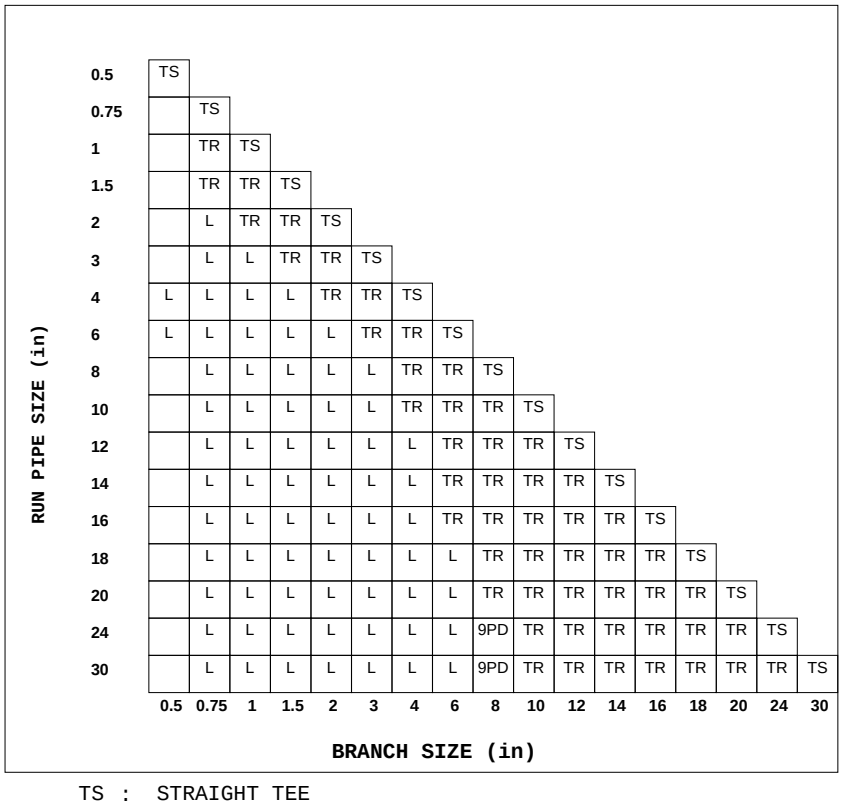
BRANCH TABLE (T_M2AR01)



TS : STRAIGHT TEE
9PD : REINFORCING PAD 90 DEG
L : OUTLET
TR : REDUCING TEE

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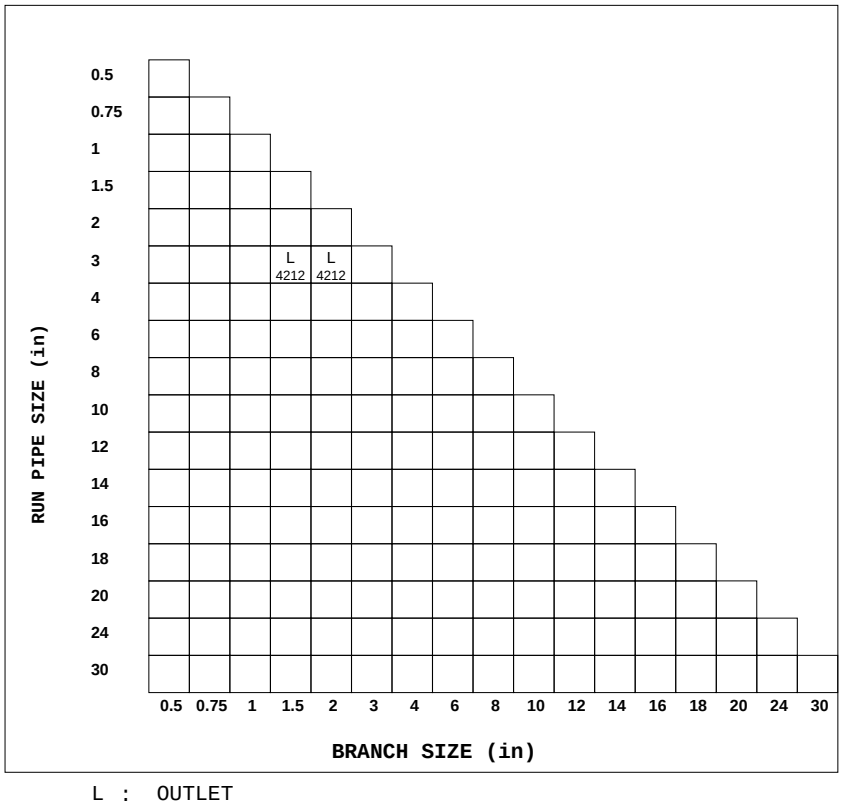
BRANCH TABLE (T_M2AR01_4)



L : OUTLET

INDRA
01-SEP-2014

PIPING CLASS

M2AS

REV NO. 2

Material	:	Killed CS
Rating	:	ASME CLASS 900
Flange Face	:	RJ
C.A.(mm)	:	3.00
Gasket	:	Ring Octagonal
Service	:	UTILITY:

Design Code	:	ASME B31.3
Heat Treatment	:	

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
200	WITH JACK SCREW (FO)
541	NPT(F) (F)
797	CLASS 1500 (B,F,G)

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01-SEP-2014

PIPING CLASS
M2AS REV NO. 2

PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P01A-0010P	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	0.75		SCH160		P01A-0010R	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1		SCH160		P01A-0014M	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1.5		SCH160		P01A-0015J	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	2		SCH160		P01A-0019T	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	3		SCH160		P01A-001S5	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	4		SCH120		P01A-001TM	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	6		SCH120		P01A-001VC	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	8		SCH100		P01A-001WG	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	10		SCH100		P01A-001K4	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	12		SCH100		P01A-001LC	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	14		SCH100		P01A-001MM	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	16		SCH100		P01A-0028B	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	18		SCH100		P01A-009PC	Pipe ASTM A671 Grade CC60 Class 22 EFW ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P02A-001Y8	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	0.75		SCH160		P02A-000V8	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1		SCH160		P02A-000V7	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1.5		SCH160		P02A-000V9	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	2		SCH160		P02A-000KW	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		SCH160		P02A-000U4	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		SCH120		P02A-000U5	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		SCH120		P02A-000UB	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		SCH100		P02A-000XK	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	10		SCH100		P02A-002G9	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	12		SCH100		P02A-003ZW	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	14		SCH100		P02A-003ZX	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	16		SCH100		P02A-000XC	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	18		SCH100		P02A-0011E	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P03A-001TC	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	0.75		SCH160		P03A-000RS	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1		SCH160		P03A-000RR	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1.5		SCH160		P03A-000RP	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	2		SCH160		P03A-000HU	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		SCH160		P03A-000RB	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		SCH120		P03A-000RC	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		SCH120		P03A-000RD	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		SCH100		P03A-000U5	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	10		SCH100		P03A-002DS	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	12		SCH100		P03A-003Y0	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	14		SCH100		P03A-003Y1	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	16		SCH100		P03A-000U2	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	18		SCH100		P03A-000XX	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P21A-003AW	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	0.75		SCH160		P21A-002B8	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1		SCH160		P21A-002B6	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5		SCH160		P21A-002B9	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2		SCH160		P21A-00245	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		SCH160		P21A-002AG	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		SCH120		P21A-002AH	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6		SCH120		P21A-002AJ	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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PIPING CLASS
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STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	8		SCH100		P21A-002DL	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10		SCH100		P21A-003FC	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12		SCH100		P21A-004HE	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14		SCH100		P21A-004HF	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16		SCH100		P21A-002DH	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	18		SCH100		P21A-002DM	Straight tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75	SCH160	SCH160	P24A-004B6	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.75	SCH160	SCH160	P24A-004B2	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	1	SCH160	SCH160	P24A-004BA	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	SCH160	SCH160	P24A-00AEU	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	SCH160	SCH160	P24A-003AX	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	SCH160	SCH160	P24A-004LF	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	SCH160	SCH160	P24A-0045H	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	SCH120	SCH160	P24A-0045G	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	SCH120	SCH160	P24A-0045E	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	SCH120	SCH160	P24A-004LL	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	SCH120	SCH120	P24A-0045J	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH100	SCH120	P24A-004LK	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH100	SCH120	P24A-004LC	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	SCH100	SCH120	P24A-00GDH	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	SCH100	SCH120	P24A-00GDJ	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	SCH100	SCH100	P24A-00GDK	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	SCH100	SCH120	P24A-00L8C	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH100	SCH100	P24A-00L8D	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH100	SCH100	P24A-00L8B	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	SCH100	SCH120	P24A-00L8A	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	SCH100	SCH100	P24A-00LBM	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	SCH100	SCH100	P24A-00LBK	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	SCH100	SCH100	P24A-00LBL	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	6	SCH100	SCH120	P24A-004LT	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	8	SCH100	SCH100	P24A-004LE	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	10	SCH100	SCH100	P24A-004LD	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	12	SCH100	SCH100	P24A-004L7	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	14	SCH100	SCH100	P24A-004L3	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	18	8	SCH100	SCH100	P24A-004M5	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	18	10	SCH100	SCH100	P24A-004M6	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	18	12	SCH100	SCH100	P24A-004LZ	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	18	14	SCH100	SCH100	P24A-004LV	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	18	16	SCH100	SCH100	P24A-004M9	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	SCH160	P27A-004LZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.5	SCH160	SCH160	P27A-004M8	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.75	SCH160	SCH160	P27A-002T5	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.5	SCH160	SCH160	P27A-004MV	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.75	SCH160	SCH160	P27A-002T7	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	1	SCH160	SCH160	P27A-002T4	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	0.75	SCH160	SCH160	P27A-0025L	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	SCH160	SCH160	P27A-0025K	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	SCH160	SCH160	P27A-0025J	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	SCH160	SCH160	P27A-00301	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	SCH160	SCH160	P27A-002NC	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	1.5	SCH120	SCH160	P27A-00300	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	SCH120	SCH160	P27A-002ND	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	SCH120	SCH160	P27A-002NM	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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PIPING CLASS
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CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	6	3	SCH120	SCH160	P27A-002ZX	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	SCH120	SCH120	P27A-002NS	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH100	SCH120	P27A-002ZW	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH100	SCH120	P27A-002ZJ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	SCH100	SCH120	P27A-004PB	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	SCH100	SCH120	P27A-004RN	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	SCH100	SCH100	P27A-004SY	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	SCH100	SCH120	P27A-004VK	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH100	SCH100	P27A-004X0	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH100	SCH100	P27A-004U6	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	SCH100	SCH120	P27A-0050X	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	SCH100	SCH100	P27A-0052A	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	SCH100	SCH100	P27A-004YB	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	SCH100	SCH100	P27A-004ZJ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	SCH100	SCH100	P27A-002ZL	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	10	SCH100	SCH100	P27A-002ZN	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	12	SCH100	SCH100	P27A-002ZB	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	14	SCH100	SCH100	P27A-002ZU	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	18	10	SCH100	SCH100	P27A-002ZP	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	18	12	SCH100	SCH100	P27A-002ZC	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	18	14	SCH100	SCH100	P27A-00304	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	18	16	SCH100	SCH100	P27A-002ZM	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	SCH160	P28A-007KG	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.5	SCH160	SCH160	P28A-007KH	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.75	SCH160	SCH160	P28A-002TU	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.5	SCH160	SCH160	P28A-007KJ	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.75	SCH160	SCH160	P28A-002TW	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	1	SCH160	SCH160	P28A-002TR	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	0.75	SCH160	SCH160	P28A-002SU	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	SCH160	SCH160	P28A-002ST	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	SCH160	SCH160	P28A-002SS	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	SCH160	SCH160	P28A-0030P	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	SCH160	SCH160	P28A-002NY	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	1.5	SCH120	SCH160	P28A-0030N	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	SCH120	SCH160	P28A-002NZ	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	SCH120	SCH160	P28A-002P2	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	SCH120	SCH160	P28A-0030D	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	SCH120	SCH120	P28A-002P7	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH100	SCH120	P28A-0030B	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH100	SCH120	P28A-00301	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	SCH100	SCH120	P28A-0085G	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	SCH100	SCH120	P28A-0085H	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	SCH100	SCH100	P28A-0085J	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	SCH100	SCH120	P28A-00CLM	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	8	SCH100	SCH100	P28A-00CLN	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	10	SCH100	SCH100	P28A-00CLL	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	6	SCH100	SCH120	P28A-00CLJ	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	8	SCH100	SCH100	P28A-00CLK	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	10	SCH100	SCH100	P28A-00CLG	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14	12	SCH100	SCH100	P28A-00CLH	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16	8	SCH100	SCH100	P28A-002ZZ	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	10	SCH100	SCH100	P28A-00303	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	12	SCH100	SCH100	P28A-0030T	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	14	SCH100	SCH100	P28A-00306	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	18	10	SCH100	SCH100	P28A-00307	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	18	12	SCH100	SCH100	P28A-0030U	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	

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PIPING CLASS
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ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	18	14	SCH100	SCH100	P28A-0030G	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	18	16	SCH100	SCH100	P28A-00304	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P29A-001UD	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	0.75		SCH160		P29A-000TX	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1		SCH160		P29A-000TY	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5		SCH160		P29A-000TZ	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2		SCH160		P29A-000HR	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		SCH160		P29A-000KY	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		SCH120		P29A-000LY	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6		SCH120		P29A-000N4	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8		SCH100		P29A-000P8	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10		SCH100		P29A-000K3	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12		SCH100		P29A-003CN	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	14		SCH100		P29A-003CP	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	16		SCH100		P29A-000W4	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	18		SCH100		P29A-000W1	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P41A-000B9	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		XXS		P41A-000BA	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		XXS		P41A-000D8	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		XXS		P41A-000D9	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2	0.75	SCH160	SCH160	P31B-007NC	Outlet ASTM A105 MSS SP-97 BW	
1	3	0.75	SCH160	SCH160	P31B-00CMV	Outlet ASTM A105 MSS SP-97 BW	
1	4	0.75	SCH120	SCH160	P31B-00CLW	Outlet ASTM A105 MSS SP-97 BW	
1	6	0.75	SCH120	SCH160	P31B-00NJF	Outlet ASTM A105 MSS SP-97 BW	
1	8	0.75	SCH100	SCH160	P31B-00C9X	Outlet ASTM A105 MSS SP-97 BW	
1	10	0.75	SCH100	SCH160	P31B-00CFG	Outlet ASTM A105 MSS SP-97 BW	
1	12	0.75	SCH100	SCH160	P31B-00CPT	Outlet ASTM A105 MSS SP-97 BW	
1	14	0.75	SCH100	SCH160	P31B-00XMT	Outlet ASTM A105 MSS SP-97 BW	
1	16	0.75	SCH100	SCH160	P31B-00CRA	Outlet ASTM A105 MSS SP-97 BW	
1	18	0.75	SCH100	SCH160	P31B-013C8	Outlet ASTM A105 MSS SP-97 BW	
1	3	1	SCH160	SCH160	P31B-00B4K	Outlet ASTM A105 MSS SP-97 BW	
1	4	1	SCH120	SCH160	P31B-00B3P	Outlet ASTM A105 MSS SP-97 BW	
1	6	1	SCH120	SCH160	P31B-00NJG	Outlet ASTM A105 MSS SP-97 BW	
1	8	1	SCH100	SCH160	P31B-00AVK	Outlet ASTM A105 MSS SP-97 BW	
1	10	1	SCH100	SCH160	P31B-00C4W	Outlet ASTM A105 MSS SP-97 BW	
1	12	1	SCH100	SCH160	P31B-00BWN	Outlet ASTM A105 MSS SP-97 BW	
1	14	1	SCH100	SCH160	P31B-00XMU	Outlet ASTM A105 MSS SP-97 BW	
1	16	1	SCH100	SCH160	P31B-00BR8	Outlet ASTM A105 MSS SP-97 BW	
1	18	1	SCH100	SCH160	P31B-013C9	Outlet ASTM A105 MSS SP-97 BW	
1	4	1.5	SCH120	SCH160	P31B-00BP7	Outlet ASTM A105 MSS SP-97 BW	
1	6	1.5	SCH120	SCH160	P31B-00BL1	Outlet ASTM A105 MSS SP-97 BW	
1	8	1.5	SCH100	SCH160	P31B-00BHS	Outlet ASTM A105 MSS SP-97 BW	
1	10	1.5	SCH100	SCH160	P31B-00AUV	Outlet ASTM A105 MSS SP-97 BW	
1	12	1.5	SCH100	SCH160	P31B-00CEN	Outlet ASTM A105 MSS SP-97 BW	
1	14	1.5	SCH100	SCH160	P31B-00CDV	Outlet ASTM A105 MSS SP-97 BW	
1	16	1.5	SCH100	SCH160	P31B-00C9F	Outlet ASTM A105 MSS SP-97 BW	
1	18	1.5	SCH100	SCH160	P31B-00C8M	Outlet ASTM A105 MSS SP-97 BW	
1	6	2	SCH120	SCH160	P31B-007ST	Outlet ASTM A105 MSS SP-97 BW	
1	8	2	SCH100	SCH160	P31B-00AHH	Outlet ASTM A105 MSS SP-97 BW	
1	10	2	SCH100	SCH160	P31B-00AW0	Outlet ASTM A105 MSS SP-97 BW	

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OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	12	2	SCH100	SCH160	P31B-00ARU	Outlet ASTM A105 MSS SP-97 BW	
1	14	2	SCH100	SCH160	P31B-00CBD	Outlet ASTM A105 MSS SP-97 BW	
1	16	2	SCH100	SCH160	P31B-00C6K	Outlet ASTM A105 MSS SP-97 BW	
1	18	2	SCH100	SCH160	P31B-00C1C	Outlet ASTM A105 MSS SP-97 BW	
1	8	3	SCH100	SCH160	P31B-00A3A	Outlet ASTM A105 MSS SP-97 BW	
1	10	3	SCH100	SCH160	P31B-009D7	Outlet ASTM A105 MSS SP-97 BW	
1	12	3	SCH100	SCH160	P31B-0097F	Outlet ASTM A105 MSS SP-97 BW	
1	14	3	SCH100	SCH160	P31B-00969	Outlet ASTM A105 MSS SP-97 BW	
1	16	3	SCH100	SCH160	P31B-0090B	Outlet ASTM A105 MSS SP-97 BW	
1	18	3	SCH100	SCH160	P31B-008U6	Outlet ASTM A105 MSS SP-97 BW	
1	12	4	SCH100	SCH120	P31B-0095A	Outlet ASTM A105 MSS SP-97 BW	
1	14	4	SCH100	SCH120	P31B-008ZG	Outlet ASTM A105 MSS SP-97 BW	
1	16	4	SCH100	SCH120	P31B-008TM	Outlet ASTM A105 MSS SP-97 BW	
1	18	4	SCH100	SCH120	P31B-008LC	Outlet ASTM A105 MSS SP-97 BW	
1	18	6	SCH100	SCH120	P31B-008X1	Outlet ASTM A105 MSS SP-97 BW	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30B-0002D	Plug ASTM A105 ASME B16.11 NPT Round head	
1	0.75				P30B-0002E	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1				P30B-0002F	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1.5				P30B-0002G	Plug ASTM A105 ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P61B-0065T	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
1	0.75		SCH160		P61B-0065U	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
1	1		SCH160		P61B-0065V	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
1	1.5		SCH160		P61B-0065W	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
1	2		SCH160		P61B-0066J	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
1	3		SCH160		P61B-0067L	Flange WN ASTM A105 Class 900 ASME B16.5 RJ	
1	4		SCH120		P61B-0065X	Flange WN ASTM A105 Class 900 ASME B16.5 RJ	
1	6		SCH120		P61B-0065Y	Flange WN ASTM A105 Class 900 ASME B16.5 RJ	
1	8		SCH100		P61B-0065Z	Flange WN ASTM A105 Class 900 ASME B16.5 RJ	
1	10		SCH100		P61B-009YZ	Flange WN ASTM A105 Class 900 ASME B16.5 RJ	
1	12		SCH100		P61B-009Z0	Flange WN ASTM A105 Class 900 ASME B16.5 RJ	
1	14		SCH100		P61B-009Z1	Flange WN ASTM A105 Class 900 ASME B16.5 RJ	
1	16		SCH100		P61B-0067K	Flange WN ASTM A105 Class 900 ASME B16.5 RJ	
1	18		SCH100		P61B-00DPP	Flange WN ASTM A105 Class 900 ASME B16.5 RJ	
541	0.5				P61B-00DLH	Flange NPT ASTM A105 Class 1500 ASME B16.5 RJ	
541	0.75				P61B-00CW7	Flange NPT ASTM A105 Class 1500 ASME B16.5 RJ	
797	3		SCH160		P61B-0067T	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
797	4		SCH120		P61B-00661	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
797	6		SCH120		P61B-00662	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
797	8		SCH100		P61B-00663	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
797	10		SCH100		P61B-009T7	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
797	12		SCH100		P61B-009Z2	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
797	14		SCH100		P61B-009Z3	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
797	16		SCH100		P61B-0067S	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
797	18		SCH100		P61B-00DPR	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67B-001VE	Blind flange ASTM A105 Class 1500 ASME B16.5 RJ	
1	0.75				P67B-001VF	Blind flange ASTM A105 Class 1500 ASME B16.5 RJ	
1	1				P67B-001VG	Blind flange ASTM A105 Class 1500 ASME B16.5 RJ	
1	1.5				P67B-001VH	Blind flange ASTM A105 Class 1500 ASME B16.5 RJ	
1	2				P67B-0014J	Blind flange ASTM A105 Class 1500 ASME B16.5 RJ	
1	3				P67B-001VJ	Blind flange ASTM A105 Class 900 ASME B16.5 RJ	

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BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	4				P67B-001VK	Blind flange ASTM A105 Class 900 ASME B16.5 RJ	
1	6				P67B-001VL	Blind flange ASTM A105 Class 900 ASME B16.5 RJ	
1	8				P67B-001VM	Blind flange ASTM A105 Class 900 ASME B16.5 RJ	
1	10				P67B-001W8	Blind flange ASTM A105 Class 900 ASME B16.5 RJ	
1	12				P67B-001W9	Blind flange ASTM A105 Class 900 ASME B16.5 RJ	
1	14				P67B-001WA	Blind flange ASTM A105 Class 900 ASME B16.5 RJ	
1	16				P67B-001WB	Blind flange ASTM A105 Class 900 ASME B16.5 RJ	
1	18				P67B-001WM	Blind flange ASTM A105 Class 900 ASME B16.5 RJ	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P75T-000JT	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	0.75				P75T-000JU	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	1				P75T-000JV	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	1.5				P75T-000JW	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	2				P75T-0008A	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	3				P75T-000JN	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	4				P75T-000JP	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	6				P75T-000JR	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	8				P75T-000JS	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	10				P75T-000JL	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	12				P75T-000JM	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	14				P75T-000MJ	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	16				P75T-000MK	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	18				P75T-000N8	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	3				P75T-0008E	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	4				P75T-0008D	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	6				P75T-0008C	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	8				P75T-0008B	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	10				P75T-0008L	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	12				P75T-0008K	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	14				P75T-0008J	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	16				P75T-0008H	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	18				P75T-0008G	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-3				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	4-18				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
797	3-18				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81B-001UV	Gate valve ASTM A105 Class 1500 API 602 Flange ASME B16.5 RJ Trim number 5 WB-BG-OS&Y Handwheel operated	
1	0.75				P81B-001UW	Gate valve ASTM A105 Class 1500 API 602 Flange ASME B16.5 RJ Trim number 5 WB-BG-OS&Y Handwheel operated	
1	1				P81B-001UX	Gate valve ASTM A105 Class 1500 API 602 Flange ASME B16.5 RJ Trim number 5 WB-BG-OS&Y Handwheel operated	
1	1.5				P81B-001UY	Gate valve ASTM A105 Class 1500 API 602 Flange ASME B16.5 RJ Trim number 5 WB-BG-OS&Y Handwheel operated	
1	2				P81C-0064F	Gate valve ASTM A216 Grade WCB Class 1500 API 600 BW Sch160 Trim number 5 PSB-BG-OS&Y Handwheel operated	
1	3				P81C-0064G	Gate valve ASTM A216 Grade WCB Class 900 API 600 BW Sch160 Trim number 5 PSB-BG-OS&Y Handwheel operated	
1	4				P81C-0064H	Gate valve ASTM A216 Grade WCB Class 900 API 600 BW Sch120 Trim number 5 PSB-BG-OS&Y Handwheel operated	
1	6				P81C-0064J	Gate valve ASTM A216 Grade WCB Class 900 API 600 BW Sch120 Trim number 5 PSB-BG-OS&Y Gear operated	
1	8				P81C-0064P	Gate valve ASTM A216 Grade WCB Class 900 API 600 BW Sch100 Trim number 5 PSB-BG-OS&Y Gear operated	
1	10				P81C-0064K	Gate valve ASTM A216 Grade WCB Class 900 API 600 BW Sch100 Trim number 5 PSB-BG-OS&Y Gear operated	
1	12				P81C-0064L	Gate valve ASTM A216 Grade WCB Class 900 API 600 BW Sch100 Trim number 5 PSB-BG-OS&Y Gear operated	

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GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P81C-0064M	Gate valve ASTM A216 Grade WCB Class 900 API 600 BW Sch100 Trim number 5 PSB-BG-OS&Y Gear operated	
1	16				P81C-0064N	Gate valve ASTM A216 Grade WCB Class 900 API 600 BW Sch100 Trim number 5 PSB-BG-OS&Y Gear operated	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82B-001FM	Globe valve ASTM A105 Class 1500 API 602 Flange ASME B16.5 RJ Trim number 5 WB-BG-OS&Y Handwheel operated	
1	0.75				P82B-001FN	Globe valve ASTM A105 Class 1500 API 602 Flange ASME B16.5 RJ Trim number 5 WB-BG-OS&Y Handwheel operated	
1	1				P82B-001FP	Globe valve ASTM A105 Class 1500 API 602 Flange ASME B16.5 RJ Trim number 5 WB-BG-OS&Y Handwheel operated	
1	1.5				P82B-001FR	Globe valve ASTM A105 Class 1500 API 602 Flange ASME B16.5 RJ Trim number 5 WB-BG-OS&Y Handwheel operated	
1	2				P82C-002ZY	Globe valve ASTM A216 Grade WCB Class 1500 BS 1873 BW Sch160 Trim number 5 PSB-BG-OS&Y Handwheel operated	
1	3				P82C-002ZZ	Globe valve ASTM A216 Grade WCB Class 900 BS 1873 BW Sch160 Trim number 5 PSB-BG-OS&Y Handwheel operated	
1	4				P82C-00436	Globe valve ASTM A216 Grade WCB Class 900 BS 1873 BW Sch120 Trim number 5 PSB-BG-OS&Y Gear operated	
1	6				P82C-004FB	Globe valve ASTM A216 Grade WCB Class 900 BS 1873 BW Sch120 Trim number 5 PSB-BG-OS&Y Gear operated	
1	8				P82C-0046U	Globe valve ASTM A216 Grade WCB Class 900 BS 1873 BW Sch100 Trim number 5 PSB-BG-OS&Y Gear operated	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83B-0015B	Check valve ASTM A105 Class 1500 API 602 Flange ASME B16.5 RJ Trim number 5 Lift-type Welded cover	
1	0.75				P83B-0015C	Check valve ASTM A105 Class 1500 API 602 Flange ASME B16.5 RJ Trim number 5 Lift-type Welded cover	
1	1				P83B-0015D	Check valve ASTM A105 Class 1500 API 602 Flange ASME B16.5 RJ Trim number 5 Lift-type Welded cover	
1	1.5				P83B-0015E	Check valve ASTM A105 Class 1500 API 602 Flange ASME B16.5 RJ Trim number 5 Lift-type Welded cover	
1	2				P83C-002ZG	Check valve ASTM A216 Grade WCB Class 1500 BS 1868 BW Sch160 Trim number 5 Swing-type Pressure seal cap	
1	3				P83C-002ZH	Check valve ASTM A216 Grade WCB Class 900 BS 1868 BW Sch160 Trim number 5 Swing-type Pressure seal cap	
1	4				P83C-002ZJ	Check valve ASTM A216 Grade WCB Class 900 BS 1868 BW Sch120 Trim number 5 Swing-type Pressure seal cap	
1	6				P83C-002ZK	Check valve ASTM A216 Grade WCB Class 900 BS 1868 BW Sch120 Trim number 5 Swing-type Pressure seal cap	
1	8				P83C-002ZL	Check valve ASTM A216 Grade WCB Class 900 BS 1868 BW Sch100 Trim number 5 Swing-type Pressure seal cap	

NEEDLE VALVE (NV)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2				P82C-0038V	Needle valve ASTM A216 Grade WCB Class 1500 BS 1873 BW Sch160 Trim number 5 PSB-BG-OS&Y Handwheel operated	

ORIFICE FLANGE (FO)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2		SCH160		P66B-008R8	Orifice flange WN ASTM A105 Class 1500 ASME B16.36 RJ NPS1/2 SW tap x 1	
1	3		SCH160		P66B-008JG	Orifice flange WN ASTM A105 Class 900 ASME B16.36 RJ NPS1/2 SW tap x 1	
1	4		SCH120		P66B-008JH	Orifice flange WN ASTM A105 Class 900 ASME B16.36 RJ NPS1/2 SW tap x 1	
1	6		SCH120		P66B-008JJ	Orifice flange WN ASTM A105 Class 900 ASME B16.36 RJ NPS1/2 SW tap x 1	
1	8		SCH100		P66B-008JK	Orifice flange WN ASTM A105 Class 900 ASME B16.36 RJ NPS1/2 SW tap x 1	
1	10		SCH100		P66B-008JD	Orifice flange WN ASTM A105 Class 900 ASME B16.36 RJ NPS1/2 SW tap x 1	
1	12		SCH100		P66B-008JE	Orifice flange WN ASTM A105 Class 900 ASME B16.36 RJ NPS1/2 SW tap x 1	
1	14		SCH100		P66B-008WX	Orifice flange WN ASTM A105 Class 900 ASME B16.36 RJ NPS1/2 SW tap x 1	
200	2		SCH160		P66B-008R9	Orifice flange WN ASTM A105 Class 1500 ASME B16.36 RJ NPS1/2 SW tap x 1 with Jack screw	
200	3		SCH160		P66B-008JS	Orifice flange WN ASTM A105 Class 900 ASME B16.36 RJ NPS1/2 SW tap x 1 with Jack screw	
200	4		SCH120		P66B-008JT	Orifice flange WN ASTM A105 Class 900 ASME B16.36 RJ NPS1/2 SW tap x 1 with Jack screw	
200	6		SCH120		P66B-008JU	Orifice flange WN ASTM A105 Class 900 ASME B16.36 RJ NPS1/2 SW tap x 1 with Jack screw	
200	8		SCH100		P66B-008JV	Orifice flange WN ASTM A105 Class 900 ASME B16.36 RJ NPS1/2 SW tap x 1 with Jack screw	
200	10		SCH100		P66B-008JN	Orifice flange WN ASTM A105 Class 900 ASME B16.36 RJ NPS1/2 SW tap x 1 with Jack screw	
200	12		SCH100		P66B-008JP	Orifice flange WN ASTM A105 Class 900 ASME B16.36 RJ NPS1/2 SW tap x 1 with Jack screw	
200	14		SCH100		P66B-008WY	Orifice flange WN ASTM A105 Class 900 ASME B16.36 RJ NPS1/2 SW tap x 1 with Jack screw	

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PIPING CLASS
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SPECT BLANK (SB)							
OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	6				P71B-000LV	Spectacle blank ASTM A105 Class 900 Standard-drawing Flange ASME B16.5 RJ	

PADDLE BLANK (PB)							
OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P72B-000JD	Paddle blank ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	0.75				P72B-000JE	Paddle blank ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	1				P72B-000JF	Paddle blank ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	1.5				P72B-000JG	Paddle blank ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	2				P72B-000JH	Paddle blank ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	3				P72B-000JJ	Paddle blank ASTM A105 Class 900 Standard-drawing Flange ASME B16.5 RJ	
1	4				P72B-000JK	Paddle blank ASTM A105 Class 900 Standard-drawing Flange ASME B16.5 RJ	
1	6				P72B-000JL	Paddle blank ASTM A105 Class 900 Standard-drawing Flange ASME B16.5 RJ	
1	8				P72B-000JM	Paddle blank ASTM A105 Class 900 Standard-drawing Flange ASME B16.5 RJ	
1	10				P72B-000MV	Paddle blank ASTM A105 Class 900 Standard-drawing Flange ASME B16.5 RJ	
1	12				P72B-000MX	Paddle blank ASTM A105 Class 900 Standard-drawing Flange ASME B16.5 RJ	
1	14				P72B-000N3	Paddle blank ASTM A105 Class 900 Standard-drawing Flange ASME B16.5 RJ	
1	16				P72B-000N4	Paddle blank ASTM A105 Class 900 Standard-drawing Flange ASME B16.5 RJ	
1	18				P72B-000MY	Paddle blank ASTM A105 Class 900 Standard-drawing Flange ASME B16.5 RJ	

PADDLE SPACER (PS)							
OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P72B-000JN	Paddle spacer ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	0.75				P72B-000JP	Paddle spacer ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	1				P72B-000JR	Paddle spacer ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	1.5				P72B-000JS	Paddle spacer ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	2				P72B-000JT	Paddle spacer ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	3				P72B-000JU	Paddle spacer ASTM A105 Class 900 Standard-drawing Flange ASME B16.5 RJ	
1	4				P72B-000JV	Paddle spacer ASTM A105 Class 900 Standard-drawing Flange ASME B16.5 RJ	
1	6				P72B-000JW	Paddle spacer ASTM A105 Class 900 Standard-drawing Flange ASME B16.5 RJ	
1	8				P72B-000JX	Paddle spacer ASTM A105 Class 900 Standard-drawing Flange ASME B16.5 RJ	
1	10				P72B-000MW	Paddle spacer ASTM A105 Class 900 Standard-drawing Flange ASME B16.5 RJ	
1	12				P72B-000MZ	Paddle spacer ASTM A105 Class 900 Standard-drawing Flange ASME B16.5 RJ	
1	14				P72B-000N1	Paddle spacer ASTM A105 Class 900 Standard-drawing Flange ASME B16.5 RJ	
1	16				P72B-000N2	Paddle spacer ASTM A105 Class 900 Standard-drawing Flange ASME B16.5 RJ	
1	18				P72B-000N0	Paddle spacer ASTM A105 Class 900 Standard-drawing Flange ASME B16.5 RJ	

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PIPING CLASS
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BOLT TABLE (B_M2AS , STUD ASME RJ, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	110	P80S-003XK	R12	P75T-000JT
0.75	4	0.750	115	P80S-003XL	R14	P75T-000JU
1	4	0.875	130	P80S-0041B	R16	P75T-000JV
1.5	4	1.000	140	P80S-0043F	R20	P75T-000JW
2	8	0.875	150	P80S-0041F	R24	P75T-0008A
3	8	0.875	150	P80S-0041F	R31	P75T-000JN
4	8	1.125	175	P80S-0046S	R37	P75T-000JP
6	12	1.125	200	P80S-0046X	R45	P75T-000JR
8	12	1.375	260	P80S-003E5	R49	P75T-000JS
10	16	1.375	275	P80S-003E8	R53	P75T-000JL
12	20	1.375	295	P80S-003EC	R57	P75T-000JM
14	20	1.500	325	P80S-008N3	R62	P75T-000MJ
16	20	1.625	340	P80S-005TX	R66	P75T-000MK
18	20	1.875	390	P80S-008P6	R70	P75T-000N8

BOLT TABLE (B_M2AS_797 , STUD ASME RJ, OPTION CODE 797)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	110		R12	
0.75	4	0.750	115		R14	
1	4	0.875	130		R16	
1.5	4	1.000	140		R20	
2	8	0.875	150		R24	
3	8	1.125	180	P80S-0046T	R35	P75T-0008E
4	8	1.250	230	P80S-004AU	R39	P75T-0008D
6	12	1.375	300	P80S-003ED	R46	P75T-0008C
8	12	1.625	345	P80S-005TY	R50	P75T-0008B
10	12	1.875	395	P80S-008P7	R54	P75T-0008L
12	16	2.000	445	P80S-005VN	R58	P75T-0008K
14	16	2.250	490	P80S-00P4J	R63	P75T-0008J
16	16	2.500	540	P80S-00P1T	R67	P75T-0008H
18	16	2.750	590	P80S-00PX5	R71	P75T-0008G

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PIPING CLASS

M2AS

REV NO. 2

BRANCH TABLE (T_M2AS)

RUN PIPE SIZE (in) \ BRANCH SIZE (in)	0.5	0.75	1	1.5	2	3	4	6	8	10	12	14	16	18
0.5	TS													
0.75		TS												
1		TR	TS											
1.5		TR	TR	TS										
2		L	TR	TR	TS									
3		L	L	TR	TR	TS								
4	L	L	L	L	TR	TR	TS							
6	L	L	L	L	L	TR	TR	TS						
8		L	L	L	L	L	TR	TR	TS					
10		L	L	L	L	L	TR	TR	TR	TS				
12		L	L	L	L	L	L	TR	TR	TR	TS			
14		L	L	L	L	L	L	TR	TR	TR	TR	TS		
16		L	L	L	L	L	L	TR	TR	TR	TR	TR	TS	
18		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TS

TS : STRAIGHT TEE
L : OUTLET
TR : REDUCING TEE

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PIPING CLASS

M2DH REV NO. 2

Material : 1-1/4Cr - 1/2Mo
Rating : ASME CLASS 900
Flange Face : RJ
C.A.(mm) : 3.00
Gasket : Ring Octagonal
Service : PROCESS - HYDROGEN OR HYDROGEN RICH HYDROCARBON MIXTURE : / RECYCLE GAS

Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
16	PIPE CLASS SHALL BE USED WITHIN THE NORMAL OPERATING PRESSURE/TEMPERATURE LIMITS SPECIFIED IN API RP 941. PRESSURE / TEMPERATURE SPECIFIED IN THE PIPE CLASS EXCEEDING API RP 941 LIMITS SHOULD BE REGARDED AS UPSET CONDITIONS RATHER THAN FOR CONTINUOUS SERVICE
36	ASTM A691 CR-MO WELDED PIPES SPECIFIED WITH CLASS 22 CAN BE USED IN LIEU OF CLASS 42 IN NON-LICENSED UNITS ONLY. GRADE SHALL BE AS SPECIFIED IN "PIPE / FLANGE MATERIAL" SECTION IN ATTACHMENT 9.0 OF THIS DOCUMENT

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
541	NPT(F) (F)
797	CLASS 1500 (B,F,G)

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PIPING CLASS
M2DH REV NO. 2

PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P01F-0001X	Pipe ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M PE	
1	0.75		SCH160		P01F-0001Y	Pipe ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M PE	
1	1		SCH160		P01F-0003X	Pipe ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M PE	
1	1.5		SCH160		P01F-0003Y	Pipe ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M PE	
1	2		XS		P01F-0002U	Pipe ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M BE	
1	3		STD		P01F-0002V	Pipe ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M BE	
1	4		XS		P01F-0001T	Pipe ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M BE	
1	6		XS		P01F-0001U	Pipe ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M BE	
1	8		XS		P01F-00022	Pipe ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M BE	
1	10		SCH80		P01F-0000V	Pipe ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M BE	
1	12		SCH80		P01F-0000U	Pipe ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M BE	
1	14		SCH80		P01F-0000T	Pipe ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M BE	
1	16		SCH80		P01F-0000S	Pipe ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M BE	
1	18		SCH60		P01F-001N7	Pipe ASTM A691 Grade 1-1/4CR Class 22 EFW ASME B36.10M/B36.19M BE	
1	20		SCH60		P01F-00023	Pipe ASTM A691 Grade 1-1/4CR Class 22 EFW ASME B36.10M/B36.19M BE	
1	24		SCH60		P01F-001RL	Pipe ASTM A691 Grade 1-1/4CR Class 22 EFW ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P02F-00068	90 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	0.75		SCH160		P02F-00069	90 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	1		SCH160		P02F-0005B	90 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	1.5		SCH160		P02F-0005C	90 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	2		XS		P02F-00055	90 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	3		STD		P02F-00056	90 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	4		XS		P02F-000B2	90 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	6		XS		P02F-000B3	90 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	8		XS		P02F-000B4	90 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	10		SCH80		P02F-00001	90 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	12		SCH80		P02F-00002	90 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	14		SCH80		P02F-00003	90 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	16		SCH80		P02F-00004	90 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	18		SCH60		P02F-000GR	90 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	20		SCH60		P02F-0008U	90 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	24		SCH60		P02F-000LT	90 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P03F-00065	45 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	0.75		SCH160		P03F-00066	45 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	1		SCH160		P03F-00058	45 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	1.5		SCH160		P03F-00059	45 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	2		XS		P03F-00052	45 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	3		STD		P03F-00053	45 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	4		XS		P03F-000AV	45 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	6		XS		P03F-000AW	45 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	8		XS		P03F-000AX	45 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	10		SCH80		P03F-00001	45 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	12		SCH80		P03F-00002	45 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	14		SCH80		P03F-00003	45 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	16		SCH80		P03F-00004	45 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	18		SCH60		P03F-000GF	45 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	20		SCH60		P03F-0008L	45 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	24		SCH60		P03F-000LB	45 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P21F-00066	Straight tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	0.75		SCH160		P21F-00067	Straight tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	

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STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		SCH160		P21F-00059	Straight tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	1.5		SCH160		P21F-0005A	Straight tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	2		XS		P21F-00053	Straight tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	3		STD		P21F-00054	Straight tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	4		XS		P21F-000AT	Straight tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	6		XS		P21F-000AU	Straight tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	8		XS		P21F-000AV	Straight tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	10		SCH80		P21F-00001	Straight tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	12		SCH80		P21F-00002	Straight tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	14		SCH80		P21F-00003	Straight tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	16		SCH80		P21F-00004	Straight tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	18		SCH60		P21F-000GK	Straight tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	
1	20		SCH60		P21F-0000F	Straight tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	
1	24		SCH60		P21F-0000G	Straight tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75	SCH160	SCH160	P24F-000FA	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	1.5	0.75	SCH160	SCH160	P24F-000F7	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	1.5	1	SCH160	SCH160	P24F-000D6	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	2	1	XS	SCH160	P24F-000CM	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	2	1.5	XS	SCH160	P24F-000CN	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	3	1.5	STD	SCH160	P24F-000CP	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	3	2	STD	XS	P24F-000CR	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	4	2	XS	XS	P24F-001BT	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	4	3	XS	STD	P24F-001TX	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	6	3	XS	STD	P24F-0010R	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	6	4	XS	XS	P24F-000XY	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	8	4	XS	XS	P24F-000XZ	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	8	6	XS	XS	P24F-000Y0	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	10	4	SCH80	XS	P24F-000Y1	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	10	6	SCH80	XS	P24F-000Y2	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	10	8	SCH80	XS	P24F-000Y3	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	12	6	SCH80	XS	P24F-001C8	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	12	8	SCH80	XS	P24F-001C9	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	12	10	SCH80	SCH80	P24F-0000C	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	14	6	SCH80	XS	P24F-001CA	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	14	8	SCH80	XS	P24F-001CB	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	14	10	SCH80	SCH80	P24F-0000F	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	14	12	SCH80	SCH80	P24F-0000G	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	16	6	SCH80	XS	P24F-001TY	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	16	8	SCH80	XS	P24F-001TZ	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	16	10	SCH80	SCH80	P24F-0000K	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	16	12	SCH80	SCH80	P24F-0000L	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	16	14	SCH80	SCH80	P24F-0000M	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	18	8	SCH60	XS	P24F-001U4	Reducing tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	
1	18	10	SCH60	SCH80	P24F-001U0	Reducing tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	
1	18	12	SCH60	SCH80	P24F-001U1	Reducing tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	
1	18	14	SCH60	SCH80	P24F-001U2	Reducing tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	
1	18	16	SCH60	SCH80	P24F-001U3	Reducing tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	
1	20	8	SCH60	XS	P24F-002BN	Reducing tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	
1	20	10	SCH60	SCH80	P24F-0001P	Reducing tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	
1	20	12	SCH60	SCH80	P24F-0001V	Reducing tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	
1	20	14	SCH60	SCH80	P24F-0001Z	Reducing tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	
1	20	16	SCH60	SCH80	P24F-00024	Reducing tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	
1	20	18	SCH60	SCH60	P24F-002BM	Reducing tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	
1	24	10	SCH60	SCH80	P24F-0001N	Reducing tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	
1	24	12	SCH60	SCH80	P24F-0001T	Reducing tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	
1	24	14	SCH60	SCH80	P24F-0001W	Reducing tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	

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REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	24	16	SCH60	SCH80	P24F-00020	Reducing tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	
1	24	18	SCH60	SCH60	P24F-002BP	Reducing tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	
1	24	20	SCH60	SCH60	P24F-0001J	Reducing tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	SCH160	P27F-000DT	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	1	0.5	SCH160	SCH160	P27F-000DU	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	1	0.75	SCH160	SCH160	P27F-000DV	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	1.5	0.5	SCH160	SCH160	P27F-000DR	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	1.5	0.75	SCH160	SCH160	P27F-000DS	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	1.5	1	SCH160	SCH160	P27F-000BS	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	2	0.75	XS	SCH160	P27F-000B1	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	2	1	XS	SCH160	P27F-000B2	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	2	1.5	XS	SCH160	P27F-000B3	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	3	1.5	STD	SCH160	P27F-000B4	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	3	2	STD	XS	P27F-000B5	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	4	1.5	XS	SCH160	P27F-001CG	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	4	2	XS	XS	P27F-0013P	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	4	3	XS	STD	P27F-001CH	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	6	3	XS	STD	P27F-000V6	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	6	4	XS	XS	P27F-000SU	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	8	4	XS	XS	P27F-000SV	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	8	6	XS	XS	P27F-000SW	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	10	4	SCH80	XS	P27F-000SX	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	10	6	SCH80	XS	P27F-000SY	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	10	8	SCH80	XS	P27F-000SZ	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	12	6	SCH80	XS	P27F-00143	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	12	8	SCH80	XS	P27F-00144	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	12	10	SCH80	SCH80	P27F-0000G	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	14	6	SCH80	XS	P27F-00145	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	14	8	SCH80	XS	P27F-00146	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	14	10	SCH80	SCH80	P27F-0000K	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	14	12	SCH80	SCH80	P27F-0000L	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	16	8	SCH80	XS	P27F-001CJ	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	16	10	SCH80	SCH80	P27F-0000P	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	16	12	SCH80	SCH80	P27F-0000R	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	16	14	SCH80	SCH80	P27F-0000S	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	18	10	SCH60	SCH80	P27F-001CK	Concentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	
1	18	12	SCH60	SCH80	P27F-001CL	Concentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	
1	18	14	SCH60	SCH80	P27F-001CM	Concentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	
1	18	16	SCH60	SCH80	P27F-001CN	Concentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	
1	20	12	SCH60	SCH80	P27F-0001C	Concentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	
1	20	14	SCH60	SCH80	P27F-0001F	Concentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	
1	20	16	SCH60	SCH80	P27F-00016	Concentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	
1	20	18	SCH60	SCH60	P27F-001SM	Concentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	
1	24	16	SCH60	SCH80	P27F-0001B	Concentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	
1	24	18	SCH60	SCH60	P27F-001SN	Concentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	
1	24	20	SCH60	SCH60	P27F-0001G	Concentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	SCH160	P28F-000DT	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	1	0.5	SCH160	SCH160	P28F-000DU	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	1	0.75	SCH160	SCH160	P28F-000DV	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	1.5	0.5	SCH160	SCH160	P28F-000DR	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	1.5	0.75	SCH160	SCH160	P28F-000DS	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	1.5	1	SCH160	SCH160	P28F-000BS	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	2	0.75	XS	SCH160	P28F-000B1	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2	1	XS	SCH160	P28F-000B2	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	2	1.5	XS	SCH160	P28F-000B3	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	3	1.5	STD	SCH160	P28F-000B4	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	3	2	STD	XS	P28F-000B5	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	4	1.5	XS	SCH160	P28F-001CY	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	4	2	XS	XS	P28F-0013R	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	4	3	XS	STD	P28F-001CZ	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	6	3	XS	STD	P28F-000V6	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	6	4	XS	XS	P28F-000SU	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	8	4	XS	XS	P28F-000SV	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	8	6	XS	XS	P28F-000SW	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	10	4	SCH80	XS	P28F-000SX	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	10	6	SCH80	XS	P28F-000SY	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	10	8	SCH80	XS	P28F-000SZ	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	12	6	SCH80	XS	P28F-00145	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	12	8	SCH80	XS	P28F-00146	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	12	10	SCH80	SCH80	P28F-0000G	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	14	6	SCH80	XS	P28F-00147	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	14	8	SCH80	XS	P28F-00148	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	14	10	SCH80	SCH80	P28F-0000K	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	14	12	SCH80	SCH80	P28F-0000L	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	16	8	SCH80	XS	P28F-001D0	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	16	10	SCH80	SCH80	P28F-0000P	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	16	12	SCH80	SCH80	P28F-0000R	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	16	14	SCH80	SCH80	P28F-0000S	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	18	10	SCH60	SCH80	P28F-001D1	Eccentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	
1	18	12	SCH60	SCH80	P28F-001D2	Eccentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	
1	18	14	SCH60	SCH80	P28F-001D3	Eccentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	
1	18	16	SCH60	SCH80	P28F-001D4	Eccentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	
1	20	12	SCH60	SCH80	P28F-0001C	Eccentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	
1	20	14	SCH60	SCH80	P28F-0001F	Eccentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	
1	20	16	SCH60	SCH80	P28F-00016	Eccentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	
1	20	18	SCH60	SCH60	P28F-001T5	Eccentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	
1	24	16	SCH60	SCH80	P28F-0001B	Eccentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	
1	24	18	SCH60	SCH60	P28F-001T6	Eccentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	
1	24	20	SCH60	SCH60	P28F-0001G	Eccentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P29F-000BP	Cap ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	0.75		SCH160		P29F-000BR	Cap ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	1		SCH160		P29F-000BS	Cap ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	1.5		SCH160		P29F-000BT	Cap ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	2		XS		P29F-00050	Cap ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	3		STD		P29F-00051	Cap ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	4		XS		P29F-000AK	Cap ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	6		XS		P29F-000AL	Cap ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	8		XS		P29F-000AM	Cap ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	10		SCH80		P29F-00001	Cap ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	12		SCH80		P29F-00002	Cap ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	14		SCH80		P29F-00003	Cap ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	16		SCH80		P29F-00004	Cap ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	18		SCH60		P29F-000FV	Cap ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	20		SCH60		P29F-0000D	Cap ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	24		SCH60		P29F-0000E	Cap ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P41F-0002D	Straight nipple ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

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STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75		XXS		P41F-0002E	Straight nipple ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		XXS		P41F-0002F	Straight nipple ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		XXS		P41F-0002G	Straight nipple ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2	0.75	XS	SCH160	P31G-001CW	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	3	0.75	STD	SCH160	P31G-001CX	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	4	0.75	XS	SCH160	P31G-0025M	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	6	0.75	XS	SCH160	P31G-001D2	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	8	0.75	XS	SCH160	P31G-0025R	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	10	0.75	SCH80	SCH160	P31G-0025W	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	12	0.75	SCH80	SCH160	P31G-00261	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	14	0.75	SCH80	SCH160	P31G-00266	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	16	0.75	SCH80	SCH160	P31G-0026B	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	18	0.75	SCH60	SCH160	P31G-0026H	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	20	0.75	SCH60	SCH160	P31G-002P1	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	24	0.75	SCH60	SCH160	P31G-002P8	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	3	1	STD	SCH160	P31G-001CY	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	4	1	XS	SCH160	P31G-0025N	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	6	1	XS	SCH160	P31G-001D3	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	8	1	XS	SCH160	P31G-0025S	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	10	1	SCH80	SCH160	P31G-0025X	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	12	1	SCH80	SCH160	P31G-00262	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	14	1	SCH80	SCH160	P31G-00267	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	16	1	SCH80	SCH160	P31G-0026C	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	18	1	SCH60	SCH160	P31G-0026J	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	20	1	SCH60	SCH160	P31G-002P2	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	24	1	SCH60	SCH160	P31G-002P9	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	4	1.5	XS	SCH160	P31G-0025P	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	6	1.5	XS	SCH160	P31G-001D4	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	8	1.5	XS	SCH160	P31G-0025T	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	10	1.5	SCH80	SCH160	P31G-0025Y	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	12	1.5	SCH80	SCH160	P31G-00263	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	14	1.5	SCH80	SCH160	P31G-00268	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	16	1.5	SCH80	SCH160	P31G-0026D	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	18	1.5	SCH60	SCH160	P31G-0026K	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	20	1.5	SCH60	SCH160	P31G-002P3	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	24	1.5	SCH60	SCH160	P31G-002PA	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	6	2	XS	XS	P31G-001D5	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	8	2	XS	XS	P31G-0025U	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	10	2	SCH80	XS	P31G-0025Z	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	12	2	SCH80	XS	P31G-00264	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	14	2	SCH80	XS	P31G-00269	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	16	2	SCH80	XS	P31G-0026E	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	18	2	SCH60	XS	P31G-0026L	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	20	2	SCH60	XS	P31G-002P4	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	24	2	SCH60	XS	P31G-002PB	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	8	3	XS	STD	P31G-0025V	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	10	3	SCH80	STD	P31G-00260	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	12	3	SCH80	STD	P31G-00265	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	14	3	SCH80	STD	P31G-0026A	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	16	3	SCH80	STD	P31G-0026F	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	18	3	SCH60	STD	P31G-0026M	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	20	3	SCH60	STD	P31G-002P5	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	24	3	SCH60	STD	P31G-002PC	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	12	4	SCH80	XS	P31G-001RC	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	14	4	SCH80	XS	P31G-001RF	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	16	4	SCH80	XS	P31G-0026G	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	

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OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	18	4	SCH60	XS	P31G-0026N	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	20	4	SCH60	XS	P31G-002P6	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	24	4	SCH60	XS	P31G-002PD	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	18	6	SCH60	XS	P31G-0026P	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	20	6	SCH60	XS	P31G-002P7	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	24	6	SCH60	XS	P31G-002PE	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30G-0001G	Plug ASTM A182 Grade F11 Class 1 ASME B16.11 NPT Round head	
1	0.75				P30G-0001H	Plug ASTM A182 Grade F11 Class 1 ASME B16.11 NPT Round head	
1	1				P30G-0001J	Plug ASTM A182 Grade F11 Class 1 ASME B16.11 NPT Round head	
1	1.5				P30G-0001K	Plug ASTM A182 Grade F11 Class 1 ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P61G-0004U	Flange WN ASTM A182 Grade F11 Class 2 Class 1500 ASME B16.5 RJ	
1	0.75		SCH160		P61G-0008W	Flange WN ASTM A182 Grade F11 Class 2 Class 1500 ASME B16.5 RJ	
1	1		SCH160		P61G-000LG	Flange WN ASTM A182 Grade F11 Class 2 Class 1500 ASME B16.5 RJ	
1	1.5		SCH160		P61G-000LH	Flange WN ASTM A182 Grade F11 Class 2 Class 1500 ASME B16.5 RJ	
1	2		XS		P61G-000TY	Flange WN ASTM A182 Grade F11 Class 2 Class 1500 ASME B16.5 RJ	
1	3		STD		P61G-000LN	Flange WN ASTM A182 Grade F11 Class 2 Class 900 ASME B16.5 RJ	
1	4		XS		P61G-00041	Flange WN ASTM A182 Grade F11 Class 2 Class 900 ASME B16.5 RJ	
1	6		XS		P61G-00042	Flange WN ASTM A182 Grade F11 Class 2 Class 900 ASME B16.5 RJ	
1	8		XS		P61G-0004P	Flange WN ASTM A182 Grade F11 Class 2 Class 900 ASME B16.5 RJ	
1	10		SCH80		P61G-0004K	Flange WN ASTM A182 Grade F11 Class 2 Class 900 ASME B16.5 RJ	
1	12		SCH80		P61G-000JY	Flange WN ASTM A182 Grade F11 Class 2 Class 900 ASME B16.5 RJ	
1	14		SCH80		P61G-000JZ	Flange WN ASTM A182 Grade F11 Class 2 Class 900 ASME B16.5 RJ	
1	16		SCH80		P61G-00103	Flange WN ASTM A182 Grade F11 Class 2 Class 900 ASME B16.5 RJ	
1	18		SCH60		P61G-00104	Flange WN ASTM A182 Grade F11 Class 2 Class 900 ASME B16.5 RJ	
1	20		SCH60		P61G-0004L	Flange WN ASTM A182 Grade F11 Class 2 Class 900 ASME B16.5 RJ	
1	24		SCH60		P61G-00178	Flange WN ASTM A182 Grade F11 Class 2 Class 900 ASME B16.5 RJ	
541	0.5				P61G-001AZ	Flange NPT ASTM A182 Grade F11 Class 2 Class 1500 ASME B16.5 RJ	
541	0.75				P61G-00158	Flange NPT ASTM A182 Grade F11 Class 2 Class 1500 ASME B16.5 RJ	
797	3		STD		P61G-000LW	Flange WN ASTM A182 Grade F11 Class 2 Class 1500 ASME B16.5 RJ	
797	4		XS		P61G-0010A	Flange WN ASTM A182 Grade F11 Class 2 Class 1500 ASME B16.5 RJ	
797	6		XS		P61G-0010B	Flange WN ASTM A182 Grade F11 Class 2 Class 1500 ASME B16.5 RJ	
797	8		XS		P61G-0010C	Flange WN ASTM A182 Grade F11 Class 2 Class 1500 ASME B16.5 RJ	
797	10		SCH80		P61G-00105	Flange WN ASTM A182 Grade F11 Class 2 Class 1500 ASME B16.5 RJ	
797	12		SCH80		P61G-00106	Flange WN ASTM A182 Grade F11 Class 2 Class 1500 ASME B16.5 RJ	
797	14		SCH80		P61G-00107	Flange WN ASTM A182 Grade F11 Class 2 Class 1500 ASME B16.5 RJ	
797	16		SCH80		P61G-00108	Flange WN ASTM A182 Grade F11 Class 2 Class 1500 ASME B16.5 RJ	
797	18		SCH60		P61G-00109	Flange WN ASTM A182 Grade F11 Class 2 Class 1500 ASME B16.5 RJ	
797	20		SCH60		P61G-00179	Flange WN ASTM A182 Grade F11 Class 2 Class 1500 ASME B16.5 RJ	
797	24		SCH60		P61G-0017A	Flange WN ASTM A182 Grade F11 Class 2 Class 1500 ASME B16.5 RJ	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67G-0002P	Blind flange ASTM A182 Grade F11 Class 2 Class 1500 ASME B16.5 RJ	
1	0.75				P67G-0002R	Blind flange ASTM A182 Grade F11 Class 2 Class 1500 ASME B16.5 RJ	
1	1				P67G-0002S	Blind flange ASTM A182 Grade F11 Class 2 Class 1500 ASME B16.5 RJ	
1	1.5				P67G-0002T	Blind flange ASTM A182 Grade F11 Class 2 Class 1500 ASME B16.5 RJ	
1	2				P67G-000A4	Blind flange ASTM A182 Grade F11 Class 2 Class 1500 ASME B16.5 RJ	
1	3				P67G-0002X	Blind flange ASTM A182 Grade F11 Class 2 Class 900 ASME B16.5 RJ	
1	4				P67G-0002Y	Blind flange ASTM A182 Grade F11 Class 2 Class 900 ASME B16.5 RJ	
1	6				P67G-000AG	Blind flange ASTM A182 Grade F11 Class 2 Class 900 ASME B16.5 RJ	
1	8				P67G-0002Z	Blind flange ASTM A182 Grade F11 Class 2 Class 900 ASME B16.5 RJ	
1	10				P67G-000AE	Blind flange ASTM A182 Grade F11 Class 2 Class 900 ASME B16.5 RJ	
1	12				P67G-000AF	Blind flange ASTM A182 Grade F11 Class 2 Class 900 ASME B16.5 RJ	

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BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P67G-0002U	Blind flange ASTM A182 Grade F11 Class 2 Class 900 ASME B16.5 RJ	
1	16				P67G-0002V	Blind flange ASTM A182 Grade F11 Class 2 Class 900 ASME B16.5 RJ	
1	18				P67G-0002W	Blind flange ASTM A182 Grade F11 Class 2 Class 900 ASME B16.5 RJ	
1	20				P67G-000EJ	Blind flange ASTM A182 Grade F11 Class 2 Class 900 ASME B16.5 RJ	
1	24				P67G-000EK	Blind flange ASTM A182 Grade F11 Class 2 Class 900 ASME B16.5 RJ	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P75T-000KE	Ring joint gasket 5Cr-1/2Mo Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	0.75				P75T-000KF	Ring joint gasket 5Cr-1/2Mo Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	1				P75T-000KG	Ring joint gasket 5Cr-1/2Mo Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	1.5				P75T-000KH	Ring joint gasket 5Cr-1/2Mo Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	2				P75T-000KS	Ring joint gasket 5Cr-1/2Mo Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	3				P75T-000KP	Ring joint gasket 5Cr-1/2Mo Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	4				P75T-000KC	Ring joint gasket 5Cr-1/2Mo Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	6				P75T-000KD	Ring joint gasket 5Cr-1/2Mo Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	8				P75T-000KR	Ring joint gasket 5Cr-1/2Mo Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	10				P75T-000KN	Ring joint gasket 5Cr-1/2Mo Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	12				P75T-0010W	Ring joint gasket 5Cr-1/2Mo Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	14				P75T-000KY	Ring joint gasket 5Cr-1/2Mo Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	16				P75T-000K9	Ring joint gasket 5Cr-1/2Mo Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	18				P75T-000KZ	Ring joint gasket 5Cr-1/2Mo Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	20				P75T-000KA	Ring joint gasket 5Cr-1/2Mo Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	24				P75T-000KB	Ring joint gasket 5Cr-1/2Mo Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	3				P75T-000L3	Ring joint gasket 5Cr-1/2Mo Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	4				P75T-000L4	Ring joint gasket 5Cr-1/2Mo Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	6				P75T-00116	Ring joint gasket 5Cr-1/2Mo Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	8				P75T-000L5	Ring joint gasket 5Cr-1/2Mo Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	10				P75T-000NK	Ring joint gasket 5Cr-1/2Mo Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	12				P75T-000P1	Ring joint gasket 5Cr-1/2Mo Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	14				P75T-000L0	Ring joint gasket 5Cr-1/2Mo Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	16				P75T-000L1	Ring joint gasket 5Cr-1/2Mo Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	18				P75T-000L2	Ring joint gasket 5Cr-1/2Mo Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	20				P75T-0011A	Ring joint gasket 5Cr-1/2Mo Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	24				P75T-000NL	Ring joint gasket 5Cr-1/2Mo Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-3				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B16 / A194 Grade 4 ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	4-24				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B16 / A194 Grade 4 ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
797	3-24				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B16 / A194 Grade 4 ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81G-0007J	Gate valve ASTM A182 Grade F11 Class 2 Class 1500 API 602 Flange ASME B16.5 RJ Trim number 5 WB-BG-OS&Y Handwheel operated Fluid-2	
1	0.75				P81G-0007K	Gate valve ASTM A182 Grade F11 Class 2 Class 1500 API 602 Flange ASME B16.5 RJ Trim number 5 WB-BG-OS&Y Handwheel operated Fluid-2	
1	1				P81G-0007L	Gate valve ASTM A182 Grade F11 Class 2 Class 1500 API 602 Flange ASME B16.5 RJ Trim number 5 WB-BG-OS&Y Handwheel operated Fluid-2	
1	1.5				P81G-0007M	Gate valve ASTM A182 Grade F11 Class 2 Class 1500 API 602 Flange ASME B16.5 RJ Trim number 5 WB-BG-OS&Y Handwheel operated Fluid-2	
1	2				P81H-000U0	Gate valve ASTM A217 Grade WC6 Class 1500 API 600 Flange ASME B16.5 RJ Trim number 5 PSB-BG-OS&Y Handwheel operated Fluid-2	
1	3				P81H-000U1	Gate valve ASTM A217 Grade WC6 Class 900 API 600 Flange ASME B16.5 RJ Trim number 5 PSB-BG-OS&Y Handwheel operated Fluid-2	
1	4				P81H-000U2	Gate valve ASTM A217 Grade WC6 Class 900 API 600 Flange ASME B16.5 RJ Trim number 5 PSB-BG-OS&Y Handwheel operated Fluid-2	
1	6				P81H-000U3	Gate valve ASTM A217 Grade WC6 Class 900 API 600 Flange ASME B16.5 RJ Trim number 5 PSB-BG-OS&Y Gear operated Fluid-2	
1	8				P81H-000U8	Gate valve ASTM A217 Grade WC6 Class 900 API 600 Flange ASME B16.5 RJ Trim number 5 PSB-BG-OS&Y Gear operated Fluid-2	
1	10				P81H-000U4	Gate valve ASTM A217 Grade WC6 Class 900 API 600 Flange ASME B16.5 RJ Trim number 5 PSB-BG-OS&Y Gear operated Fluid-2	

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GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	12				P81H-000U5	Gate valve ASTM A217 Grade WC6 Class 900 API 600 Flange ASME B16.5 RJ Trim number 5 PSB-BG-OS&Y Gear operated Fluid-2	
1	14				P81H-000U6	Gate valve ASTM A217 Grade WC6 Class 900 API 600 Flange ASME B16.5 RJ Trim number 5 PSB-BG-OS&Y Gear operated Fluid-2	
1	16				P81H-000U7	Gate valve ASTM A217 Grade WC6 Class 900 API 600 Flange ASME B16.5 RJ Trim number 5 PSB-BG-OS&Y Gear operated Fluid-2	
1	18				P81H-000UL	Gate valve ASTM A217 Grade WC6 Class 900 API 600 Flange ASME B16.5 RJ Trim number 5 PSB-BG-OS&Y Gear operated Fluid-2	
1	20				P81H-000VP	Gate valve ASTM A217 Grade WC6 Class 900 API 600 Flange ASME B16.5 RJ Trim number 5 PSB-BG-OS&Y Gear operated Fluid-2	
1	24				P81H-000VR	Gate valve ASTM A217 Grade WC6 Class 900 API 600 Flange ASME B16.5 RJ Trim number 5 PSB-BG-OS&Y Gear operated Fluid-2	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83G-0003N	Check valve ASTM A182 Grade F11 Class 2 Class 1500 API 602 Flange ASME B16.5 RJ Trim number 5 Lift-type Welded cover	
1	0.75				P83G-0003P	Check valve ASTM A182 Grade F11 Class 2 Class 1500 API 602 Flange ASME B16.5 RJ Trim number 5 Lift-type Welded cover	
1	1				P83G-0003R	Check valve ASTM A182 Grade F11 Class 2 Class 1500 API 602 Flange ASME B16.5 RJ Trim number 5 Lift-type Welded cover	
1	1.5				P83G-0003S	Check valve ASTM A182 Grade F11 Class 2 Class 1500 API 602 Flange ASME B16.5 RJ Trim number 5 Lift-type Welded cover	
1	2				P83H-0008Y	Check valve ASTM A217 Grade WC6 Class 1500 BS 1868 Flange ASME B16.5 RJ Trim number 5 Swing-type Pressure seal cap	
1	3				P83H-0008Z	Check valve ASTM A217 Grade WC6 Class 900 BS 1868 Flange ASME B16.5 RJ Trim number 5 Swing-type Pressure seal cap	
1	4				P83H-00090	Check valve ASTM A217 Grade WC6 Class 900 BS 1868 Flange ASME B16.5 RJ Trim number 5 Swing-type Pressure seal cap	
1	6				P83H-00091	Check valve ASTM A217 Grade WC6 Class 900 BS 1868 Flange ASME B16.5 RJ Trim number 5 Swing-type Pressure seal cap	
1	8				P83H-00094	Check valve ASTM A217 Grade WC6 Class 900 BS 1868 Flange ASME B16.5 RJ Trim number 5 Swing-type Pressure seal cap	

BUTTERFLY VALVE (H)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	10				P86H-00022	Offset design butterfly valve ASTM A217 Grade WC6 Class 900 ASME B16.34 Lug-type ASME B16.5 RJ Disc 1-1/4Cr-1/2Mo Seat Stellite-6 Trim 13Cr Triple eccentric design BG Gear operated Fluid-2	

PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P72G-0003T	Paddle blank ASTM A182 Grade F11 Class 2 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	0.75				P72G-0003U	Paddle blank ASTM A182 Grade F11 Class 2 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	1				P72G-0003V	Paddle blank ASTM A182 Grade F11 Class 2 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	1.5				P72G-0003W	Paddle blank ASTM A182 Grade F11 Class 2 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	2				P72G-00040	Paddle blank ASTM A182 Grade F11 Class 2 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	3				P72G-0005H	Paddle blank ASTM A182 Grade F11 Class 2 Class 900 Standard-drawing Flange ASME B16.5 RJ	
1	4				P72G-0005J	Paddle blank ASTM A182 Grade F11 Class 2 Class 900 Standard-drawing Flange ASME B16.5 RJ	
1	6				P72G-0005K	Paddle blank ASTM A182 Grade F11 Class 2 Class 900 Standard-drawing Flange ASME B16.5 RJ	
1	8				P72G-0005L	Paddle blank ASTM A182 Grade F11 Class 2 Class 900 Standard-drawing Flange ASME B16.5 RJ	
1	10				P72G-0005C	Paddle blank ASTM A182 Grade F11 Class 2 Class 900 Standard-drawing Flange ASME B16.5 RJ	
1	12				P72G-0005D	Paddle blank ASTM A182 Grade F11 Class 2 Class 900 Standard-drawing Flange ASME B16.5 RJ	
1	14				P72G-0005E	Paddle blank ASTM A182 Grade F11 Class 2 Class 900 Standard-drawing Flange ASME B16.5 RJ	
1	16				P72G-0005F	Paddle blank ASTM A182 Grade F11 Class 2 Class 900 Standard-drawing Flange ASME B16.5 RJ	
1	18				P72G-0005G	Paddle blank ASTM A182 Grade F11 Class 2 Class 900 Standard-drawing Flange ASME B16.5 RJ	
1	20				P72G-00085	Paddle blank ASTM A182 Grade F11 Class 2 Class 900 Standard-drawing Flange ASME B16.5 RJ	
1	24				P72G-00086	Paddle blank ASTM A182 Grade F11 Class 2 Class 900 Standard-drawing Flange ASME B16.5 RJ	

PADDLE SPACER (PS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P72G-00045	Paddle spacer ASTM A182 Grade F11 Class 2 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	0.75				P72G-00046	Paddle spacer ASTM A182 Grade F11 Class 2 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	1				P72G-00047	Paddle spacer ASTM A182 Grade F11 Class 2 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	1.5				P72G-00048	Paddle spacer ASTM A182 Grade F11 Class 2 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	2				P72G-0004C	Paddle spacer ASTM A182 Grade F11 Class 2 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	3				P72G-0005T	Paddle spacer ASTM A182 Grade F11 Class 2 Class 900 Standard-drawing Flange ASME B16.5 RJ	
1	4				P72G-0005U	Paddle spacer ASTM A182 Grade F11 Class 2 Class 900 Standard-drawing Flange ASME B16.5 RJ	
1	6				P72G-0005V	Paddle spacer ASTM A182 Grade F11 Class 2 Class 900 Standard-drawing Flange ASME B16.5 RJ	
1	8				P72G-0005W	Paddle spacer ASTM A182 Grade F11 Class 2 Class 900 Standard-drawing Flange ASME B16.5 RJ	

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PADDLE SPACER (PS)							
OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	10				P72G-0005M	Paddle spacer ASTM A182 Grade F11 Class 2 Class 900 Standard-drawing Flange ASME B16.5 RJ	
1	12				P72G-0005N	Paddle spacer ASTM A182 Grade F11 Class 2 Class 900 Standard-drawing Flange ASME B16.5 RJ	
1	14				P72G-0005P	Paddle spacer ASTM A182 Grade F11 Class 2 Class 900 Standard-drawing Flange ASME B16.5 RJ	
1	16				P72G-0005R	Paddle spacer ASTM A182 Grade F11 Class 2 Class 900 Standard-drawing Flange ASME B16.5 RJ	
1	18				P72G-0005S	Paddle spacer ASTM A182 Grade F11 Class 2 Class 900 Standard-drawing Flange ASME B16.5 RJ	
1	20				P72G-00087	Paddle spacer ASTM A182 Grade F11 Class 2 Class 900 Standard-drawing Flange ASME B16.5 RJ	
1	24				P72G-00088	Paddle spacer ASTM A182 Grade F11 Class 2 Class 900 Standard-drawing Flange ASME B16.5 RJ	

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BOLT TABLE (B_M2DH , STUD ASME RJ, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	110	P80S-00GLD	R12	P75T-000KE
0.75	4	0.750	115	P80S-00GLC	R14	P75T-000KF
1	4	0.875	130	P80S-00FV7	R16	P75T-000KG
1.5	4	1.000	140	P80S-00FRD	R20	P75T-000KH
2	8	0.875	150	P80S-00FV3	R24	P75T-000KS
3	8	0.875	150	P80S-00FV3	R31	P75T-000KP
4	8	1.125	175	P80S-00FH8	R37	P75T-000KC
6	12	1.125	200	P80S-00FH3	R45	P75T-000KD
8	12	1.375	260	P80S-00F4V	R49	P75T-000KR
10	16	1.375	275	P80S-00F4S	R53	P75T-000KN
12	20	1.375	295	P80S-00F2T	R57	P75T-0010W
14	20	1.500	325	P80S-00EY2	R62	P75T-000KY
16	20	1.625	340	P80S-00G0N	R66	P75T-000K9
18	20	1.875	390	P80S-00FKA	R70	P75T-000KZ
20	20	2.000	415	P80S-00FBL	R74	P75T-000KA
24	20	2.500	525	P80S-00EWJ	R78	P75T-000KB

BOLT TABLE (B_M2DH_797 , STUD ASME RJ, OPTION CODE 797)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	110		R12	
0.75	4	0.750	115		R14	
1	4	0.875	130		R16	
1.5	4	1.000	140		R20	
2	8	0.875	150		R24	
3	8	1.125	180	P80S-00FH7	R35	P75T-000L3
4	8	1.250	230	P80S-00F9P	R39	P75T-000L4
6	12	1.375	300	P80S-00F2S	R46	P75T-00116
8	12	1.625	345	P80S-00G0M	R50	P75T-000L5
10	12	1.875	395	P80S-00FK9	R54	P75T-000NK
12	16	2.000	445	P80S-00FBE	R58	P75T-000P1
14	16	2.250	490	P80S-00F3F	R63	P75T-000L0
16	16	2.500	540	P80S-00EWF	R67	P75T-000L1
18	16	2.750	590	P80S-01RN3	R71	P75T-000L2
20	16	3.000	650	P80S-01RSS	R75	P75T-0011A
24	16	3.500	745	P80S-01S04	R79	P75T-000NL

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BRANCH TABLE (T_M2DH)

RUN PIPE SIZE (in) \ BRANCH SIZE (in)	0.5	0.75	1	1.5	2	3	4	6	8	10	12	14	16	18	20	24
0.5	TS															
0.75		TS														
1		TR	TS													
1.5		TR	TR	TS												
2		L	TR	TR	TS											
3		L	L	TR	TR	TS										
4	L	L	L	L	TR	TR	TS									
6	L	L	L	L	L	TR	TR	TS								
8		L	L	L	L	L	TR	TR	TS							
10		L	L	L	L	L	TR	TR	TR	TS						
12		L	L	L	L	L	L	TR	TR	TR	TS					
14		L	L	L	L	L	L	TR	TR	TR	TR	TS				
16		L	L	L	L	L	L	TR	TR	TR	TR	TR	TS			
18		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TS		
20		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TR	TS	
24		L	L	L	L	L	L	L	9PD	TR	TR	TR	TR	TR	TR	TS

TR : REDUCING TEE
9PD : REINFORCING PAD 90 DEG
L : OUTLET
TS : STRAIGHT TEE

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PIPING CLASS

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Material : 1-1/4Cr - 1/2Mo
Rating : ASME CLASS 900
Flange Face : RJ
C.A.(mm) : 3.00
Gasket : Ring Octagonal
Service : PROCESS - HYDROGEN OR HYDROGEN RICH HYDROCARBON MIXTURE : / RECYCLE GAS
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
24	FOR ALL RELEVANT PIPING CLASSES WITH LINE DESIGN TEMPERATURE ABOVE 427DEGC, IN SPIRAL WOUND GASKET, SUITABLE GASKET FILLER MATERIAL SUCH AS COMBINATION OF MICA LAYERS AND GRAPHITE FILLERS OR EQUIVALENT SHALL BE REVIEWED AND SELECTED OR AS DEFINED BY THE LICENSOR
36	ASTM A691 CR-MO WELDED PIPES SPECIFIED WITH CLASS 22 CAN BE USED IN LIEU OF CLASS 42 IN NON-LICENSED UNITS ONLY. GRADE SHALL BE AS SPECIFIED IN "PIPE / FLANGE MATERIAL" SECTION IN ATTACHMENT 9.0 OF THIS DOCUMENT

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
541	NPT(F) (F)
797	CLASS 1500 (B,F,G)

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PIPING CLASS
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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P01F-0001X	Pipe ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M PE	
1	0.75		SCH160		P01F-0001Y	Pipe ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M PE	
1	1		SCH160		P01F-0003X	Pipe ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M PE	
1	1.5		SCH160		P01F-0003Y	Pipe ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M PE	
1	2		SCH160		P01F-0001Z	Pipe ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M BE	
1	3		SCH160		P01F-00020	Pipe ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M BE	
1	4		SCH120		P01F-001S9	Pipe ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M BE	
1	6		SCH120		P01F-00021	Pipe ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M BE	
1	8		SCH120		P01F-001SA	Pipe ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M BE	
1	10		SCH120		P01F-001S6	Pipe ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M BE	
1	12		XXS		P01F-0003N	Pipe ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M BE	
1	14		SCH120		P01F-001S7	Pipe ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M BE	
1	16		SCH120		P01F-001S8	Pipe ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M BE	
1	18		SCH100		P01F-001SK	Pipe ASTM A691 Grade 1-1/4CR Class 22 EFW ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P02F-00068	90 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	0.75		SCH160		P02F-00069	90 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	1		SCH160		P02F-0005B	90 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	1.5		SCH160		P02F-0005C	90 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	2		SCH160		P02F-0007L	90 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	3		SCH160		P02F-000JA	90 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	4		SCH120		P02F-000ML	90 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	6		SCH120		P02F-000MM	90 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	8		SCH120		P02F-000MN	90 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	10		SCH120		P02F-000MG	90 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	12		XXS		P02F-000EM	90 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	14		SCH120		P02F-000MH	90 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	16		SCH120		P02F-000MJ	90 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	18		SCH100		P02F-000MY	90 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P03F-00065	45 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	0.75		SCH160		P03F-00066	45 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	1		SCH160		P03F-00058	45 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	1.5		SCH160		P03F-00059	45 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	2		SCH160		P03F-0007D	45 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	3		SCH160		P03F-000J1	45 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	4		SCH120		P03F-000M5	45 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	6		SCH120		P03F-000M6	45 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	8		SCH120		P03F-000M7	45 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	10		SCH120		P03F-000M1	45 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	12		XXS		P03F-000EE	45 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	14		SCH120		P03F-000M2	45 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	16		SCH120		P03F-000M3	45 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	18		SCH100		P03F-000MG	45 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P21F-00066	Straight tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	0.75		SCH160		P21F-00067	Straight tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	1		SCH160		P21F-00059	Straight tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	1.5		SCH160		P21F-0005A	Straight tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	2		SCH160		P21F-0007E	Straight tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	3		SCH160		P21F-000J5	Straight tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	4		SCH120		P21F-000MB	Straight tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	6		SCH120		P21F-000MC	Straight tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	

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STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	8		SCH120		P21F-000MD	Straight tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	10		SCH120		P21F-000M8	Straight tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	12		XXS		P21F-000EL	Straight tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	14		SCH120		P21F-000M9	Straight tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	16		SCH120		P21F-000MA	Straight tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	18		SCH100		P21F-000MP	Straight tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75	SCH160	SCH160	P24F-000FA	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	1.5	0.75	SCH160	SCH160	P24F-000F7	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	1.5	1	SCH160	SCH160	P24F-000D6	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	2	1	SCH160	SCH160	P24F-000XS	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	2	1.5	SCH160	SCH160	P24F-000GY	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	3	1.5	SCH160	SCH160	P24F-0020Z	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	3	2	SCH160	SCH160	P24F-00210	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	4	2	SCH120	SCH160	P24F-002E7	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	4	3	SCH120	SCH160	P24F-002E8	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	6	3	SCH120	SCH160	P24F-002E9	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	6	4	SCH120	SCH120	P24F-002EA	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	8	4	SCH120	SCH120	P24F-002EB	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	8	6	SCH120	SCH120	P24F-002EC	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	10	4	SCH120	SCH120	P24F-002ED	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	10	6	SCH120	SCH120	P24F-002EE	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	10	8	SCH120	SCH120	P24F-002EF	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	12	6	XXS	SCH120	P24F-002EH	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	12	8	XXS	SCH120	P24F-002EJ	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	12	10	XXS	SCH120	P24F-002EG	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	14	6	SCH120	SCH120	P24F-002EM	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	14	8	SCH120	SCH120	P24F-002EN	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	14	10	SCH120	SCH120	P24F-002EK	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	14	12	SCH120	XXS	P24F-002EL	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	16	6	SCH120	SCH120	P24F-002ET	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	16	8	SCH120	SCH120	P24F-002EU	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	16	10	SCH120	SCH120	P24F-002EP	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	16	12	SCH120	XXS	P24F-002ER	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	16	14	SCH120	SCH120	P24F-002ES	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	18	8	SCH100	SCH120	P24F-002L1	Reducing tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	
1	18	10	SCH100	SCH120	P24F-002GB	Reducing tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	
1	18	12	SCH100	XXS	P24F-002GC	Reducing tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	
1	18	14	SCH100	SCH120	P24F-002GD	Reducing tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	
1	18	16	SCH100	SCH120	P24F-002GE	Reducing tee ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	SCH160	P27F-000DT	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	1	0.5	SCH160	SCH160	P27F-000DU	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	1	0.75	SCH160	SCH160	P27F-000DV	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	1.5	0.5	SCH160	SCH160	P27F-000DR	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	1.5	0.75	SCH160	SCH160	P27F-000DS	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	1.5	1	SCH160	SCH160	P27F-000BS	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	2	0.75	SCH160	SCH160	P27F-001HF	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	2	1	SCH160	SCH160	P27F-001HG	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	2	1.5	SCH160	SCH160	P27F-001HH	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	3	1.5	SCH160	SCH160	P27F-001HJ	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	3	2	SCH160	SCH160	P27F-001HK	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	4	1.5	SCH120	SCH160	P27F-001UR	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	4	2	SCH120	SCH160	P27F-001US	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	4	3	SCH120	SCH160	P27F-001UT	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	

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CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	6	3	SCH120	SCH160	P27F-001UU	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	6	4	SCH120	SCH120	P27F-001UV	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	8	4	SCH120	SCH120	P27F-001UW	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	8	6	SCH120	SCH120	P27F-001UX	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	10	4	SCH120	SCH120	P27F-001UY	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	10	6	SCH120	SCH120	P27F-001UZ	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	10	8	SCH120	SCH120	P27F-001V0	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	12	6	XXS	SCH120	P27F-001V2	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	12	8	XXS	SCH120	P27F-001V3	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	12	10	XXS	SCH120	P27F-001V1	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	14	6	SCH120	SCH120	P27F-001V6	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	14	8	SCH120	SCH120	P27F-001V7	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	14	10	SCH120	SCH120	P27F-001V4	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	14	12	SCH120	XXS	P27F-001V5	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	16	8	SCH120	SCH120	P27F-001VB	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	16	10	SCH120	SCH120	P27F-001V8	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	16	12	SCH120	XXS	P27F-001V9	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	16	14	SCH120	SCH120	P27F-001VA	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	18	10	SCH100	SCH120	P27F-001WE	Concentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	
1	18	12	SCH100	XXS	P27F-001WF	Concentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	
1	18	14	SCH100	SCH120	P27F-001XU	Concentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	
1	18	16	SCH100	SCH120	P27F-001WG	Concentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	SCH160	P28F-000DT	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	1	0.5	SCH160	SCH160	P28F-000DU	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	1	0.75	SCH160	SCH160	P28F-000DV	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	1.5	0.5	SCH160	SCH160	P28F-000DR	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	1.5	0.75	SCH160	SCH160	P28F-000DS	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	1.5	1	SCH160	SCH160	P28F-000BS	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	2	0.75	SCH160	SCH160	P28F-001HZ	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	2	1	SCH160	SCH160	P28F-001J0	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	2	1.5	SCH160	SCH160	P28F-001J1	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	3	1.5	SCH160	SCH160	P28F-001J2	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	3	2	SCH160	SCH160	P28F-001J3	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	4	1.5	SCH120	SCH160	P28F-001V9	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	4	2	SCH120	SCH160	P28F-001VA	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	4	3	SCH120	SCH160	P28F-001VB	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	6	3	SCH120	SCH160	P28F-001VC	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	6	4	SCH120	SCH120	P28F-001VD	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	8	4	SCH120	SCH120	P28F-001VE	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	8	6	SCH120	SCH120	P28F-001VF	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	10	4	SCH120	SCH120	P28F-001VG	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	10	6	SCH120	SCH120	P28F-001VH	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	10	8	SCH120	SCH120	P28F-001VJ	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	12	6	XXS	SCH120	P28F-001VL	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	12	8	XXS	SCH120	P28F-001VM	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	12	10	XXS	SCH120	P28F-001VK	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	14	6	SCH120	SCH120	P28F-001VR	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	14	8	SCH120	SCH120	P28F-001VS	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	14	10	SCH120	SCH120	P28F-001VN	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	14	12	SCH120	XXS	P28F-001VP	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	16	8	SCH120	SCH120	P28F-001VW	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	16	10	SCH120	SCH120	P28F-001VT	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	16	12	SCH120	XXS	P28F-001VU	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	16	14	SCH120	SCH120	P28F-001VV	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	18	10	SCH100	SCH120	P28F-001WY	Eccentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	
1	18	12	SCH100	XXS	P28F-001WZ	Eccentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	

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ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	18	14	SCH100	SCH120	P28F-001Y9	Eccentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	
1	18	16	SCH100	SCH120	P28F-001X0	Eccentric reducer ASTM A234 Grade WP11-W Class 1 Weld ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P29F-000BP	Cap ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	0.75		SCH160		P29F-000BR	Cap ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	1		SCH160		P29F-000BS	Cap ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	1.5		SCH160		P29F-000BT	Cap ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	2		SCH160		P29F-00075	Cap ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	3		SCH160		P29F-000HE	Cap ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	4		SCH120		P29F-000KR	Cap ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	6		SCH120		P29F-000KS	Cap ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	8		SCH120		P29F-000KT	Cap ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	10		SCH120		P29F-000KL	Cap ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	12		XXS		P29F-000EA	Cap ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	14		SCH120		P29F-000KM	Cap ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	16		SCH120		P29F-000KN	Cap ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	18		SCH100		P29F-000L2	Cap ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P41F-0002D	Straight nipple ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		XXS		P41F-0002E	Straight nipple ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		XXS		P41F-0002F	Straight nipple ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		XXS		P41F-0002G	Straight nipple ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2	0.75	SCH160	SCH160	P31G-002D0	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	3	0.75	SCH160	SCH160	P31G-002D1	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	4	0.75	SCH120	SCH160	P31G-002T0	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	6	0.75	SCH120	SCH160	P31G-002T3	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	8	0.75	SCH120	SCH160	P31G-002T7	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	10	0.75	SCH120	SCH160	P31G-002TC	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	12	0.75	XXS	SCH160	P31G-001SP	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	14	0.75	SCH120	SCH160	P31G-002TN	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	16	0.75	SCH120	SCH160	P31G-002TV	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	18	0.75	SCH100	SCH160	P31G-002V5	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	3	1	SCH160	SCH160	P31G-002D2	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	4	1	SCH120	SCH160	P31G-002T1	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	6	1	SCH120	SCH160	P31G-002T4	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	8	1	SCH120	SCH160	P31G-002T8	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	10	1	SCH120	SCH160	P31G-002TD	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	12	1	XXS	SCH160	P31G-002TH	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	14	1	SCH120	SCH160	P31G-002TP	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	16	1	SCH120	SCH160	P31G-002TW	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	18	1	SCH100	SCH160	P31G-002V6	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	4	1.5	SCH120	SCH160	P31G-002T2	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	6	1.5	SCH120	SCH160	P31G-002T5	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	8	1.5	SCH120	SCH160	P31G-002T9	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	10	1.5	SCH120	SCH160	P31G-002TE	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	12	1.5	XXS	SCH160	P31G-002TJ	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	14	1.5	SCH120	SCH160	P31G-002TR	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	16	1.5	SCH120	SCH160	P31G-002TX	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	18	1.5	SCH100	SCH160	P31G-002V7	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	6	2	SCH120	SCH160	P31G-002T6	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	8	2	SCH120	SCH160	P31G-002TA	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	10	2	SCH120	SCH160	P31G-002TF	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	

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OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	12	2	XXS	SCH160	P31G-002TK	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	14	2	SCH120	SCH160	P31G-002TS	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	16	2	SCH120	SCH160	P31G-002TY	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	18	2	SCH100	SCH160	P31G-002V8	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	8	3	SCH120	SCH160	P31G-002TB	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	10	3	SCH120	SCH160	P31G-002TG	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	12	3	XXS	SCH160	P31G-002TL	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	14	3	SCH120	SCH160	P31G-002TT	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	16	3	SCH120	SCH160	P31G-002TZ	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	18	3	SCH100	SCH160	P31G-002V9	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	12	4	XXS	SCH120	P31G-002TM	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	14	4	SCH120	SCH120	P31G-002TU	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	16	4	SCH120	SCH120	P31G-002U0	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	18	4	SCH100	SCH120	P31G-002VA	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	18	6	SCH100	SCH120	P31G-002VB	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30G-0001G	Plug ASTM A182 Grade F11 Class 1 ASME B16.11 NPT Round head	
1	0.75				P30G-0001H	Plug ASTM A182 Grade F11 Class 1 ASME B16.11 NPT Round head	
1	1				P30G-0001J	Plug ASTM A182 Grade F11 Class 1 ASME B16.11 NPT Round head	
1	1.5				P30G-0001K	Plug ASTM A182 Grade F11 Class 1 ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P61G-0004U	Flange WN ASTM A182 Grade F11 Class 2 Class 1500 ASME B16.5 RJ	
1	0.75		SCH160		P61G-0008W	Flange WN ASTM A182 Grade F11 Class 2 Class 1500 ASME B16.5 RJ	
1	1		SCH160		P61G-000LG	Flange WN ASTM A182 Grade F11 Class 2 Class 1500 ASME B16.5 RJ	
1	1.5		SCH160		P61G-000LH	Flange WN ASTM A182 Grade F11 Class 2 Class 1500 ASME B16.5 RJ	
1	2		SCH160		P61G-0004T	Flange WN ASTM A182 Grade F11 Class 2 Class 1500 ASME B16.5 RJ	
1	3		SCH160		P61G-0004M	Flange WN ASTM A182 Grade F11 Class 2 Class 900 ASME B16.5 RJ	
1	4		SCH120		P61G-0019R	Flange WN ASTM A182 Grade F11 Class 2 Class 900 ASME B16.5 RJ	
1	6		SCH120		P61G-0004N	Flange WN ASTM A182 Grade F11 Class 2 Class 900 ASME B16.5 RJ	
1	8		SCH120		P61G-0019S	Flange WN ASTM A182 Grade F11 Class 2 Class 900 ASME B16.5 RJ	
1	10		SCH120		P61G-0019L	Flange WN ASTM A182 Grade F11 Class 2 Class 900 ASME B16.5 RJ	
1	12		XXS		P61G-0019M	Flange WN ASTM A182 Grade F11 Class 2 Class 900 ASME B16.5 RJ	
1	14		SCH120		P61G-0019N	Flange WN ASTM A182 Grade F11 Class 2 Class 900 ASME B16.5 RJ	
1	16		SCH120		P61G-0019P	Flange WN ASTM A182 Grade F11 Class 2 Class 900 ASME B16.5 RJ	
1	18		SCH100		P61G-001AF	Flange WN ASTM A182 Grade F11 Class 2 Class 900 ASME B16.5 RJ	
541	0.5				P61G-001AZ	Flange NPT ASTM A182 Grade F11 Class 2 Class 1500 ASME B16.5 RJ	
541	0.75				P61G-00158	Flange NPT ASTM A182 Grade F11 Class 2 Class 1500 ASME B16.5 RJ	
797	3		SCH160		P61G-00056	Flange WN ASTM A182 Grade F11 Class 2 Class 1500 ASME B16.5 RJ	
797	4		SCH120		P61G-0019W	Flange WN ASTM A182 Grade F11 Class 2 Class 1500 ASME B16.5 RJ	
797	6		SCH120		P61G-0019X	Flange WN ASTM A182 Grade F11 Class 2 Class 1500 ASME B16.5 RJ	
797	8		SCH120		P61G-0019Y	Flange WN ASTM A182 Grade F11 Class 2 Class 1500 ASME B16.5 RJ	
797	10		SCH120		P61G-0019T	Flange WN ASTM A182 Grade F11 Class 2 Class 1500 ASME B16.5 RJ	
797	12		XXS		P61G-0008Y	Flange WN ASTM A182 Grade F11 Class 2 Class 1500 ASME B16.5 RJ	
797	14		SCH120		P61G-0019U	Flange WN ASTM A182 Grade F11 Class 2 Class 1500 ASME B16.5 RJ	
797	16		SCH120		P61G-0019V	Flange WN ASTM A182 Grade F11 Class 2 Class 1500 ASME B16.5 RJ	
797	18		SCH100		P61G-001AG	Flange WN ASTM A182 Grade F11 Class 2 Class 1500 ASME B16.5 RJ	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67G-0002P	Blind flange ASTM A182 Grade F11 Class 2 Class 1500 ASME B16.5 RJ	
1	0.75				P67G-0002R	Blind flange ASTM A182 Grade F11 Class 2 Class 1500 ASME B16.5 RJ	
1	1				P67G-0002S	Blind flange ASTM A182 Grade F11 Class 2 Class 1500 ASME B16.5 RJ	
1	1.5				P67G-0002T	Blind flange ASTM A182 Grade F11 Class 2 Class 1500 ASME B16.5 RJ	
1	2				P67G-000A4	Blind flange ASTM A182 Grade F11 Class 2 Class 1500 ASME B16.5 RJ	
1	3				P67G-0002X	Blind flange ASTM A182 Grade F11 Class 2 Class 900 ASME B16.5 RJ	

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BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	4				P67G-0002Y	Blind flange ASTM A182 Grade F11 Class 2 Class 900 ASME B16.5 RJ	
1	6				P67G-000AG	Blind flange ASTM A182 Grade F11 Class 2 Class 900 ASME B16.5 RJ	
1	8				P67G-0002Z	Blind flange ASTM A182 Grade F11 Class 2 Class 900 ASME B16.5 RJ	
1	10				P67G-000AE	Blind flange ASTM A182 Grade F11 Class 2 Class 900 ASME B16.5 RJ	
1	12				P67G-000AF	Blind flange ASTM A182 Grade F11 Class 2 Class 900 ASME B16.5 RJ	
1	14				P67G-0002U	Blind flange ASTM A182 Grade F11 Class 2 Class 900 ASME B16.5 RJ	
1	16				P67G-0002V	Blind flange ASTM A182 Grade F11 Class 2 Class 900 ASME B16.5 RJ	
1	18				P67G-0002W	Blind flange ASTM A182 Grade F11 Class 2 Class 900 ASME B16.5 RJ	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P75T-000KE	Ring joint gasket 5Cr-1/2Mo Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	0.75				P75T-000KF	Ring joint gasket 5Cr-1/2Mo Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	1				P75T-000KG	Ring joint gasket 5Cr-1/2Mo Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	1.5				P75T-000KH	Ring joint gasket 5Cr-1/2Mo Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	2				P75T-000KS	Ring joint gasket 5Cr-1/2Mo Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	3				P75T-000KP	Ring joint gasket 5Cr-1/2Mo Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	4				P75T-000KC	Ring joint gasket 5Cr-1/2Mo Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	6				P75T-000KD	Ring joint gasket 5Cr-1/2Mo Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	8				P75T-000KR	Ring joint gasket 5Cr-1/2Mo Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	10				P75T-000KN	Ring joint gasket 5Cr-1/2Mo Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	12				P75T-0010W	Ring joint gasket 5Cr-1/2Mo Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	14				P75T-000KY	Ring joint gasket 5Cr-1/2Mo Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	16				P75T-000K9	Ring joint gasket 5Cr-1/2Mo Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	18				P75T-000KZ	Ring joint gasket 5Cr-1/2Mo Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	3				P75T-000L3	Ring joint gasket 5Cr-1/2Mo Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	4				P75T-000L4	Ring joint gasket 5Cr-1/2Mo Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	6				P75T-00116	Ring joint gasket 5Cr-1/2Mo Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	8				P75T-000L5	Ring joint gasket 5Cr-1/2Mo Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	10				P75T-000NK	Ring joint gasket 5Cr-1/2Mo Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	12				P75T-000P1	Ring joint gasket 5Cr-1/2Mo Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	14				P75T-000L0	Ring joint gasket 5Cr-1/2Mo Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	16				P75T-000L1	Ring joint gasket 5Cr-1/2Mo Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	18				P75T-000L2	Ring joint gasket 5Cr-1/2Mo Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-3				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B16 / A194 Grade 4 ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	4-18				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B16 / A194 Grade 4 ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
797	3-18				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B16 / A194 Grade 4 ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81G-0007J	Gate valve ASTM A182 Grade F11 Class 2 Class 1500 API 602 Flange ASME B16.5 RJ Trim number 5 WB-BG-OS&Y Handwheel operated Fluid-2	
1	0.75				P81G-0007K	Gate valve ASTM A182 Grade F11 Class 2 Class 1500 API 602 Flange ASME B16.5 RJ Trim number 5 WB-BG-OS&Y Handwheel operated Fluid-2	
1	1				P81G-0007L	Gate valve ASTM A182 Grade F11 Class 2 Class 1500 API 602 Flange ASME B16.5 RJ Trim number 5 WB-BG-OS&Y Handwheel operated Fluid-2	
1	1.5				P81G-0007M	Gate valve ASTM A182 Grade F11 Class 2 Class 1500 API 602 Flange ASME B16.5 RJ Trim number 5 WB-BG-OS&Y Handwheel operated Fluid-2	
1	2				P81H-000U0	Gate valve ASTM A217 Grade WC6 Class 1500 API 600 Flange ASME B16.5 RJ Trim number 5 PSB-BG-OS&Y Handwheel operated Fluid-2	
1	3				P81H-000U1	Gate valve ASTM A217 Grade WC6 Class 900 API 600 Flange ASME B16.5 RJ Trim number 5 PSB-BG-OS&Y Handwheel operated Fluid-2	
1	4				P81H-000U2	Gate valve ASTM A217 Grade WC6 Class 900 API 600 Flange ASME B16.5 RJ Trim number 5 PSB-BG-OS&Y Handwheel operated Fluid-2	
1	6				P81H-000U3	Gate valve ASTM A217 Grade WC6 Class 900 API 600 Flange ASME B16.5 RJ Trim number 5 PSB-BG-OS&Y Gear operated Fluid-2	
1	8				P81H-000U8	Gate valve ASTM A217 Grade WC6 Class 900 API 600 Flange ASME B16.5 RJ Trim number 5 PSB-BG-OS&Y Gear operated Fluid-2	
1	10				P81H-000U4	Gate valve ASTM A217 Grade WC6 Class 900 API 600 Flange ASME B16.5 RJ Trim number 5 PSB-BG-OS&Y Gear operated Fluid-2	
1	12				P81H-000U5	Gate valve ASTM A217 Grade WC6 Class 900 API 600 Flange ASME B16.5 RJ Trim number 5 PSB-BG-OS&Y Gear operated Fluid-2	

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GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P81H-000U6	Gate valve ASTM A217 Grade WC6 Class 900 API 600 Flange ASME B16.5 RJ Trim number 5 PSB-BG-OS&Y Gear operated Fluid-2	
1	16				P81H-000U7	Gate valve ASTM A217 Grade WC6 Class 900 API 600 Flange ASME B16.5 RJ Trim number 5 PSB-BG-OS&Y Gear operated Fluid-2	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83G-0003N	Check valve ASTM A182 Grade F11 Class 2 Class 1500 API 602 Flange ASME B16.5 RJ Trim number 5 Lift-type Welded cover	
1	0.75				P83G-0003P	Check valve ASTM A182 Grade F11 Class 2 Class 1500 API 602 Flange ASME B16.5 RJ Trim number 5 Lift-type Welded cover	
1	1				P83G-0003R	Check valve ASTM A182 Grade F11 Class 2 Class 1500 API 602 Flange ASME B16.5 RJ Trim number 5 Lift-type Welded cover	
1	1.5				P83G-0003S	Check valve ASTM A182 Grade F11 Class 2 Class 1500 API 602 Flange ASME B16.5 RJ Trim number 5 Lift-type Welded cover	
1	2				P83H-0008Y	Check valve ASTM A217 Grade WC6 Class 1500 BS 1868 Flange ASME B16.5 RJ Trim number 5 Swing-type Pressure seal cap	
1	3				P83H-0008Z	Check valve ASTM A217 Grade WC6 Class 900 BS 1868 Flange ASME B16.5 RJ Trim number 5 Swing-type Pressure seal cap	
1	4				P83H-00090	Check valve ASTM A217 Grade WC6 Class 900 BS 1868 Flange ASME B16.5 RJ Trim number 5 Swing-type Pressure seal cap	
1	6				P83H-00091	Check valve ASTM A217 Grade WC6 Class 900 BS 1868 Flange ASME B16.5 RJ Trim number 5 Swing-type Pressure seal cap	
1	8				P83H-00094	Check valve ASTM A217 Grade WC6 Class 900 BS 1868 Flange ASME B16.5 RJ Trim number 5 Swing-type Pressure seal cap	

PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P72G-0003T	Paddle blank ASTM A182 Grade F11 Class 2 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	0.75				P72G-0003U	Paddle blank ASTM A182 Grade F11 Class 2 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	1				P72G-0003V	Paddle blank ASTM A182 Grade F11 Class 2 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	1.5				P72G-0003W	Paddle blank ASTM A182 Grade F11 Class 2 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	2				P72G-00040	Paddle blank ASTM A182 Grade F11 Class 2 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	3				P72G-0005H	Paddle blank ASTM A182 Grade F11 Class 2 Class 900 Standard-drawing Flange ASME B16.5 RJ	
1	4				P72G-0005J	Paddle blank ASTM A182 Grade F11 Class 2 Class 900 Standard-drawing Flange ASME B16.5 RJ	
1	6				P72G-0005K	Paddle blank ASTM A182 Grade F11 Class 2 Class 900 Standard-drawing Flange ASME B16.5 RJ	
1	8				P72G-0005L	Paddle blank ASTM A182 Grade F11 Class 2 Class 900 Standard-drawing Flange ASME B16.5 RJ	
1	10				P72G-0005C	Paddle blank ASTM A182 Grade F11 Class 2 Class 900 Standard-drawing Flange ASME B16.5 RJ	
1	12				P72G-0005D	Paddle blank ASTM A182 Grade F11 Class 2 Class 900 Standard-drawing Flange ASME B16.5 RJ	
1	14				P72G-0005E	Paddle blank ASTM A182 Grade F11 Class 2 Class 900 Standard-drawing Flange ASME B16.5 RJ	
1	16				P72G-0005F	Paddle blank ASTM A182 Grade F11 Class 2 Class 900 Standard-drawing Flange ASME B16.5 RJ	
1	18				P72G-0005G	Paddle blank ASTM A182 Grade F11 Class 2 Class 900 Standard-drawing Flange ASME B16.5 RJ	

PADDLE SPACER (PS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P72G-00045	Paddle spacer ASTM A182 Grade F11 Class 2 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	0.75				P72G-00046	Paddle spacer ASTM A182 Grade F11 Class 2 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	1				P72G-00047	Paddle spacer ASTM A182 Grade F11 Class 2 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	1.5				P72G-00048	Paddle spacer ASTM A182 Grade F11 Class 2 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	2				P72G-0004C	Paddle spacer ASTM A182 Grade F11 Class 2 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	3				P72G-0005T	Paddle spacer ASTM A182 Grade F11 Class 2 Class 900 Standard-drawing Flange ASME B16.5 RJ	
1	4				P72G-0005U	Paddle spacer ASTM A182 Grade F11 Class 2 Class 900 Standard-drawing Flange ASME B16.5 RJ	
1	6				P72G-0005V	Paddle spacer ASTM A182 Grade F11 Class 2 Class 900 Standard-drawing Flange ASME B16.5 RJ	
1	8				P72G-0005W	Paddle spacer ASTM A182 Grade F11 Class 2 Class 900 Standard-drawing Flange ASME B16.5 RJ	
1	10				P72G-0005M	Paddle spacer ASTM A182 Grade F11 Class 2 Class 900 Standard-drawing Flange ASME B16.5 RJ	
1	12				P72G-0005N	Paddle spacer ASTM A182 Grade F11 Class 2 Class 900 Standard-drawing Flange ASME B16.5 RJ	
1	14				P72G-0005P	Paddle spacer ASTM A182 Grade F11 Class 2 Class 900 Standard-drawing Flange ASME B16.5 RJ	
1	16				P72G-0005R	Paddle spacer ASTM A182 Grade F11 Class 2 Class 900 Standard-drawing Flange ASME B16.5 RJ	
1	18				P72G-0005S	Paddle spacer ASTM A182 Grade F11 Class 2 Class 900 Standard-drawing Flange ASME B16.5 RJ	

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BOLT TABLE (B_M2DH01 , STUD ASME RJ, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	110	P80S-00GLD	R12	P75T-000KE
0.75	4	0.750	115	P80S-00GLC	R14	P75T-000KF
1	4	0.875	130	P80S-00FV7	R16	P75T-000KG
1.5	4	1.000	140	P80S-00FRD	R20	P75T-000KH
2	8	0.875	150	P80S-00FV3	R24	P75T-000KS
3	8	0.875	150	P80S-00FV3	R31	P75T-000KP
4	8	1.125	175	P80S-00FH8	R37	P75T-000KC
6	12	1.125	200	P80S-00FH3	R45	P75T-000KD
8	12	1.375	260	P80S-00F4V	R49	P75T-000KR
10	16	1.375	275	P80S-00F4S	R53	P75T-000KN
12	20	1.375	295	P80S-00F2T	R57	P75T-0010W
14	20	1.500	325	P80S-00EY2	R62	P75T-000KY
16	20	1.625	340	P80S-00G0N	R66	P75T-000K9
18	20	1.875	390	P80S-00FKA	R70	P75T-000KZ

BOLT TABLE (B_M2DH01_797 , STUD ASME RJ, OPTION CODE 797)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	110		R12	
0.75	4	0.750	115		R14	
1	4	0.875	130		R16	
1.5	4	1.000	140		R20	
2	8	0.875	150		R24	
3	8	1.125	180	P80S-00FH7	R35	P75T-000L3
4	8	1.250	230	P80S-00F9P	R39	P75T-000L4
6	12	1.375	300	P80S-00F2S	R46	P75T-00116
8	12	1.625	345	P80S-00G0M	R50	P75T-000L5
10	12	1.875	395	P80S-00FK9	R54	P75T-000NK
12	16	2.000	445	P80S-00FBE	R58	P75T-000P1
14	16	2.250	490	P80S-00F3F	R63	P75T-000L0
16	16	2.500	540	P80S-00EWF	R67	P75T-000L1
18	16	2.750	590	P80S-01RN3	R71	P75T-000L2

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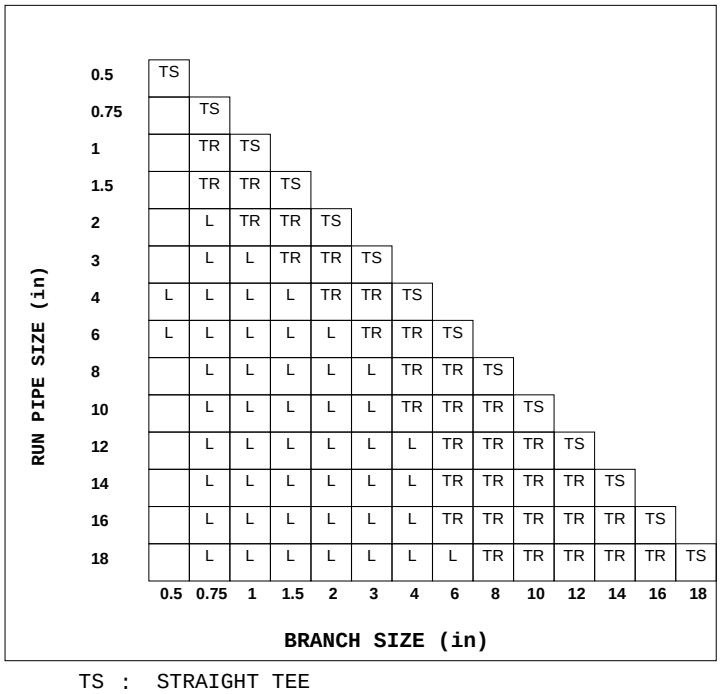
BRANCH TABLE (T_M2DH01)



TS : STRAIGHT TEE
L : OUTLET
TR : REDUCING TEE

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PIPING CLASS

M3AH02 REV NO. 2

Material : Killed CS
Rating : ASME CLASS 900
Flange Face : RJ
C.A.(mm) : 4.50
Gasket : Ring Octagonal
Service : PROCESS - HYDROGEN OR HYDROGEN RICH HYDROCARBON MIXTURE: (CONDENSATE)
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
16	PIPE CLASS SHALL BE USED WITHIN THE NORMAL OPERATING PRESSURE/TEMPERATURE LIMITS SPECIFIED IN API RP 941. PRESSURE / TEMPERATURE SPECIFIED IN THE PIPE CLASS EXCEEDING API RP 941 LIMITS SHOULD BE REGARDED AS UPSET CONDITIONS RATHER THAN FOR CONTINUOUS SERVICE

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
541	NPT(F) (F)
797	CLASS 1500 (B,F,G)
4601	Y-PATTERN (W)

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PIPING CLASS
M3AH02 REV NO. 2

PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P01A-00143	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	0.75		XXS		P01A-0014D	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1		XXS		P01A-0014U	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1.5		XXS		P01A-00162	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	2		SCH160		P01A-0019T	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	3		SCH160		P01A-001S5	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	4		SCH120		P01A-001TM	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P02A-00172	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	0.75		XXS		P02A-000XH	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1		XXS		P02A-000XJ	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1.5		XXS		P02A-002N4	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	2		SCH160		P02A-000KW	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		SCH160		P02A-000U4	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		SCH120		P02A-000U5	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P03A-0012Y	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	0.75		XXS		P03A-000U9	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1		XXS		P03A-000U8	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1.5		XXS		P03A-002KD	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	2		SCH160		P03A-000HU	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		SCH160		P03A-000RB	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		SCH120		P03A-000RC	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P21A-002M0	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	0.75		XXS		P21A-002DR	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1		XXS		P21A-002DP	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5		XXS		P21A-003KU	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2		SCH160		P21A-00245	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		SCH160		P21A-002AG	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		SCH120		P21A-002AH	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75	XXS	XXS	P24A-004LR	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.75	XXS	XXS	P24A-00K06	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	1	XXS	XXS	P24A-00H61	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	SCH160	XXS	P24A-0044B	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	SCH160	XXS	P24A-003GG	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	SCH160	XXS	P24A-0045F	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	SCH160	SCH160	P24A-0045H	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	SCH120	SCH160	P24A-0045G	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	SCH120	SCH160	P24A-0045E	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	XXS	XXS	P27A-004M7	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.5	XXS	XXS	P27A-004MF	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.75	XXS	XXS	P27A-002ZZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.5	XXS	XXS	P27A-004N3	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.75	XXS	XXS	P27A-004ND	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	1	XXS	XXS	P27A-004NR	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2	0.75	SCH160	XXS	P27A-0029F	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	SCH160	XXS	P27A-0029H	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	SCH160	XXS	P27A-0029K	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	SCH160	XXS	P27A-002NG	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	SCH160	SCH160	P27A-002NC	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	1.5	SCH120	XXS	P27A-002NH	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	SCH120	SCH160	P27A-002ND	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	SCH120	SCH160	P27A-002NM	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	XXS	XXS	P28A-00BNX	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.5	XXS	XXS	P28A-00BNY	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.75	XXS	XXS	P28A-0030M	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.5	XXS	XXS	P28A-00BNZ	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.75	XXS	XXS	P28A-00BP0	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	1	XXS	XXS	P28A-008W0	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	0.75	SCH160	XXS	P28A-00288	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	SCH160	XXS	P28A-00289	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	SCH160	XXS	P28A-0028A	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	SCH160	XXS	P28A-002P1	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	SCH160	SCH160	P28A-002NY	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	1.5	SCH120	XXS	P28A-002P0	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	SCH120	SCH160	P28A-002NZ	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	SCH120	SCH160	P28A-002P2	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P29A-0013Z	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	0.75		XXS		P29A-000W5	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1		XXS		P29A-000W3	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5		XXS		P29A-0031N	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2		SCH160		P29A-000HR	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		SCH160		P29A-000KY	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		SCH120		P29A-000LY	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P41A-000B9	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		XXS		P41A-000BA	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		XXS		P41A-000D8	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		XXS		P41A-000D9	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2	0.75	SCH160	XXS	P31B-00CP2	Outlet ASTM A105 MSS SP-97 BW	
1	3	0.75	SCH160	XXS	P31B-00CMM	Outlet ASTM A105 MSS SP-97 BW	
1	4	0.75	SCH120	XXS	P31B-00CLL	Outlet ASTM A105 MSS SP-97 BW	
1	3	1	SCH160	XXS	P31B-00B4A	Outlet ASTM A105 MSS SP-97 BW	
1	4	1	SCH120	XXS	P31B-00B08	Outlet ASTM A105 MSS SP-97 BW	
1	4	1.5	SCH120	XXS	P31B-00BNX	Outlet ASTM A105 MSS SP-97 BW	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30B-0002D	Plug ASTM A105 ASME B16.11 NPT Round head	
1	0.75				P30B-0002E	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1				P30B-0002F	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1.5				P30B-0002G	Plug ASTM A105 ASME B16.11 NPT Round head	

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FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P61B-00664	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
1	0.75		XXS		P61B-005V2	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
1	1		XXS		P61B-009W2	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
1	1.5		XXS		P61B-009WB	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
1	2		SCH160		P61B-0066J	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
1	3		SCH160		P61B-0067L	Flange WN ASTM A105 Class 900 ASME B16.5 RJ	
1	4		SCH120		P61B-0065X	Flange WN ASTM A105 Class 900 ASME B16.5 RJ	
541	0.5				P61B-00DLH	Flange NPT ASTM A105 Class 1500 ASME B16.5 RJ	
541	0.75				P61B-00CW7	Flange NPT ASTM A105 Class 1500 ASME B16.5 RJ	
797	3		SCH160		P61B-0067T	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
797	4		SCH120		P61B-00661	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67B-001VE	Blind flange ASTM A105 Class 1500 ASME B16.5 RJ	
1	0.75				P67B-001VF	Blind flange ASTM A105 Class 1500 ASME B16.5 RJ	
1	1				P67B-001VG	Blind flange ASTM A105 Class 1500 ASME B16.5 RJ	
1	1.5				P67B-001VH	Blind flange ASTM A105 Class 1500 ASME B16.5 RJ	
1	2				P67B-0014J	Blind flange ASTM A105 Class 1500 ASME B16.5 RJ	
1	3				P67B-001VJ	Blind flange ASTM A105 Class 900 ASME B16.5 RJ	
1	4				P67B-001VK	Blind flange ASTM A105 Class 900 ASME B16.5 RJ	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P75T-000JT	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	0.75				P75T-000JU	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	1				P75T-000JV	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	1.5				P75T-000JW	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	2				P75T-0008A	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	3				P75T-000JN	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	4				P75T-000JP	Ring joint gasket Soft iron Class 900 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	3				P75T-0008E	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
797	4				P75T-0008D	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-3				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	4				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
797	3-4				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81B-0021T	Gate valve ASTM A105 Class 1500 API 602 BW XXS Trim SS316L Body and disc seats Stellite-6 WB-BG-OS&Y Handwheel operated C.A.=4.5mm	
1	0.75				P81B-0021U	Gate valve ASTM A105 Class 1500 API 602 BW XXS Trim SS316L Body and disc seats Stellite-6 WB-BG-OS&Y Handwheel operated C.A.=4.5mm	
1	1				P81B-0021V	Gate valve ASTM A105 Class 1500 API 602 BW XXS Trim SS316L Body and disc seats Stellite-6 WB-BG-OS&Y Handwheel operated C.A.=4.5mm	
1	1.5				P81B-00377	Gate valve ASTM A105 Class 1500 API 602 BW XXS Trim SS316L Body and disc seats Stellite-6 WB-BG-OS&Y Handwheel operated C.A.=4.5mm	
1	2				P81C-006U3	Gate valve ASTM A216 Grade WCB Class 1500 API 600 BW Sch160 Trim SS316L Body and disc seats Stellite-6 PSB-BG-OS&Y Handwheel operated C.A.=4.5mm	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82B-001LF	Globe valve ASTM A105 Class 1500 API 602 BW XXS Trim SS316L Body and disc seats Stellite-6 WB-BG-OS&Y Handwheel operated C.A.=4.5mm	
1	0.75				P82B-001LG	Globe valve ASTM A105 Class 1500 API 602 BW XXS Trim SS316L Body and disc seats Stellite-6 WB-BG-OS&Y Handwheel operated C.A.=4.5mm	
1	1				P82B-001LH	Globe valve ASTM A105 Class 1500 API 602 BW XXS Trim SS316L Body and disc seats Stellite-6 WB-BG-OS&Y Handwheel operated C.A.=4.5mm	
1	1.5				P82B-0026P	Globe valve ASTM A105 Class 1500 API 602 BW XXS Trim SS316L Body and disc seats Stellite-6 WB-BG-OS&Y Handwheel operated C.A.=4.5mm	

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GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2				P82C-003AE	Globe valve ASTM A216 Grade WCB Class 1500 BS 1873 BW Sch160 Trim SS316L Body and disc seats Stellite-6 PSB-BG-OS&Y Handwheel operated C.A.=4.5mm	
4601	1				P82B-001LK	Y-pattern globe valve ASTM A105 Class 1500 ASME B16.34 BW XXS Trim SS316L Body and disc seats Stellite-6 WB-BG-OS&Y Handwheel operated C.A.=4.5mm	
4601	1.5				P82B-0026R	Y-pattern globe valve ASTM A105 Class 1500 ASME B16.34 BW XXS Trim SS316L Body and disc seats Stellite-6 WB-BG-OS&Y Handwheel operated C.A.=4.5mm	
4601	2				P82C-003AF	Y-pattern globe valve ASTM A216 Grade WCB Class 1500 ASME B16.34 BW Sch160 Trim SS316L Body and disc seats Stellite-6 PSB-BG-OS&Y Handwheel operated C.A.=4.5mm	
4601	3				P82C-003AG	Y-pattern globe valve ASTM A216 Grade WCB Class 900 ASME B16.34 BW Sch160 Trim SS316L Body and disc seats Stellite-6 PSB-BG-OS&Y Handwheel operated C.A.=4.5mm	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83B-0018V	Check valve ASTM A105 Class 1500 API 602 BW XXS Trim SS316L Body and disc seats Stellite-6 Lift-type Welded cover C.A.=4.5mm	
1	0.75				P83B-0018W	Check valve ASTM A105 Class 1500 API 602 BW XXS Trim SS316L Body and disc seats Stellite-6 Lift-type Welded cover C.A.=4.5mm	
1	1				P83B-0018X	Check valve ASTM A105 Class 1500 API 602 BW XXS Trim SS316L Body and disc seats Stellite-6 Lift-type Welded cover C.A.=4.5mm	
1	1.5				P83B-001MJ	Check valve ASTM A105 Class 1500 API 602 BW XXS Trim SS316L Body and disc seats Stellite-6 Lift-type Welded cover C.A.=4.5mm	
1	2				P83C-0034G	Check valve ASTM A216 Grade WCB Class 1500 BS 1868 BW Sch160 Trim SS316L Body and disc seats Stellite-6 Swing-type Pressure seal cap C.A.=4.5mm	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5				P71B-000LW	Spectacle blank ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	2				P71B-000LT	Spectacle blank ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	

PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P72B-000JD	Paddle blank ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	0.75				P72B-000JE	Paddle blank ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	1				P72B-000JF	Paddle blank ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	1.5				P72B-000JG	Paddle blank ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	2				P72B-000JH	Paddle blank ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	3				P72B-000JJ	Paddle blank ASTM A105 Class 900 Standard-drawing Flange ASME B16.5 RJ	
1	4				P72B-000JK	Paddle blank ASTM A105 Class 900 Standard-drawing Flange ASME B16.5 RJ	

PADDLE SPACER (PS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P72B-000JN	Paddle spacer ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	0.75				P72B-000JP	Paddle spacer ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	1				P72B-000JR	Paddle spacer ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	1.5				P72B-000JS	Paddle spacer ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	2				P72B-000JT	Paddle spacer ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	3				P72B-000JU	Paddle spacer ASTM A105 Class 900 Standard-drawing Flange ASME B16.5 RJ	
1	4				P72B-000JV	Paddle spacer ASTM A105 Class 900 Standard-drawing Flange ASME B16.5 RJ	

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BOLT TABLE (B_M3AH02 , STUD ASME RJ, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	110	P80S-003XK	R12	P75T-000JT
0.75	4	0.750	115	P80S-003XL	R14	P75T-000JU
1	4	0.875	130	P80S-0041B	R16	P75T-000JV
1.5	4	1.000	140	P80S-0043F	R20	P75T-000JW
2	8	0.875	150	P80S-0041F	R24	P75T-0008A
3	8	0.875	150	P80S-0041F	R31	P75T-000JN
4	8	1.125	175	P80S-0046S	R37	P75T-000JP

BOLT TABLE (B_M3AH02_797 , STUD ASME RJ, OPTION CODE 797)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	110		R12	
0.75	4	0.750	115		R14	
1	4	0.875	130		R16	
1.5	4	1.000	140		R20	
2	8	0.875	150		R24	
3	8	1.125	180	P80S-0046T	R35	P75T-0008E
4	8	1.250	230	P80S-004AU	R39	P75T-0008D

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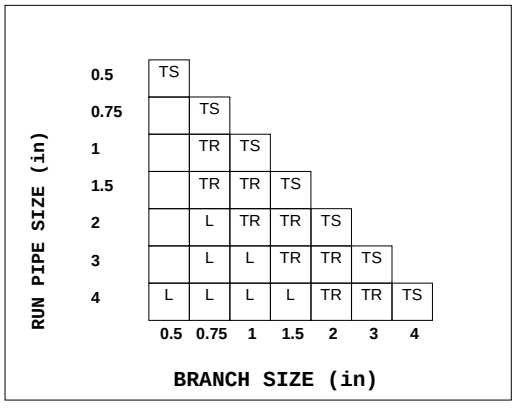
BRANCH TABLE (T_M3AH02)



TR : REDUCING TEE
TS : STRAIGHT TEE
L : OUTLET

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PIPING CLASS

N0JP REV NO. 2

Material : SS304L
Rating : ASME CLASS 1500
Flange Face : RJ
C.A.(mm) : 0.00
Gasket : Ring Octagonal
Service : JACKING OIL
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
541	NPT(F) (F)

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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P01J-000UC	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE	
1	0.75		SCH80S		P01J-000UD	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE	
1	1		SCH80S		P01J-000UE	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P02J-000VD	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	0.75		SCH80S		P02J-000VE	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	1		SCH80S		P02J-000VF	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P03J-000UW	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	0.75		SCH80S		P03J-000UX	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	1		SCH80S		P03J-000UY	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P21J-000V1	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	0.75		SCH80S		P21J-000V2	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	1		SCH80S		P21J-000V3	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75	SCH80S	SCH80S	P24J-003NX	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH80S	SCH80S	P27J-002R0	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	1	0.5	SCH80S	SCH80S	P27J-002R1	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	1	0.75	SCH80S	SCH80S	P27J-002R2	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH80S	SCH80S	P28J-002NL	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	1	0.5	SCH80S	SCH80S	P28J-002NM	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	1	0.75	SCH80S	SCH80S	P28J-002NN	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P29J-000T0	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	0.75		SCH80S		P29J-000T1	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	1		SCH80S		P29J-000T2	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P41J-001FS	Straight nipple ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		SCH80S		P41J-001FT	Straight nipple ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		SCH80S		P41J-001FU	Straight nipple ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30K-0001G	Plug ASTM A182 Grade F304/F304L dual grade ASME B16.11 NPT Round head	
1	0.75				P30K-0001H	Plug ASTM A182 Grade F304/F304L dual grade ASME B16.11 NPT Round head	

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PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P30K-0001J	Plug ASTM A182 Grade F304/F304L dual grade ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P61K-003C7	Flange WN ASTM A182 Grade F304/F304L dual grade Class 1500 ASME B16.5 RJ	
1	0.75		SCH80S		P61K-003C8	Flange WN ASTM A182 Grade F304/F304L dual grade Class 1500 ASME B16.5 RJ	
1	1		SCH80S		P61K-003C9	Flange WN ASTM A182 Grade F304/F304L dual grade Class 1500 ASME B16.5 RJ	
541	0.5				P61K-0069W	Flange NPT ASTM A182 Grade F304/F304L dual grade Class 1500 ASME B16.5 RJ	
541	0.75				P61K-0060H	Flange NPT ASTM A182 Grade F304/F304L dual grade Class 1500 ASME B16.5 RJ	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67K-0012U	Blind flange ASTM A182 Grade F304/F304L dual grade Class 1500 ASME B16.5 RJ	
1	0.75				P67K-0012V	Blind flange ASTM A182 Grade F304/F304L dual grade Class 1500 ASME B16.5 RJ	
1	1				P67K-0012W	Blind flange ASTM A182 Grade F304/F304L dual grade Class 1500 ASME B16.5 RJ	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P75T-000LS	Ring joint gasket SS TP304 Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	0.75				P75T-000LT	Ring joint gasket SS TP304 Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	1				P75T-000LU	Ring joint gasket SS TP304 Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-1				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81K-0018X	Gate valve ASTM A182 Grade F304/F304L dual grade Class 1500 API 602 Flange ASME B16.5 RJ Trim number 12 WB-BG-OS&Y Handwheel operated	
1	0.75				P81K-0018Y	Gate valve ASTM A182 Grade F304/F304L dual grade Class 1500 API 602 Flange ASME B16.5 RJ Trim number 12 WB-BG-OS&Y Handwheel operated	
1	1				P81K-0018Z	Gate valve ASTM A182 Grade F304/F304L dual grade Class 1500 API 602 Flange ASME B16.5 RJ Trim number 12 WB-BG-OS&Y Handwheel operated	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82K-000VE	Globe valve ASTM A182 Grade F304/F304L dual grade Class 1500 API 602 Flange ASME B16.5 RJ Trim number 12 WB-BG-OS&Y Handwheel operated	
1	0.75				P82K-000VF	Globe valve ASTM A182 Grade F304/F304L dual grade Class 1500 API 602 Flange ASME B16.5 RJ Trim number 12 WB-BG-OS&Y Handwheel operated	
1	1				P82K-000WZ	Globe valve ASTM A182 Grade F304/F304L dual grade Class 1500 API 602 Flange ASME B16.5 RJ Trim number 12 WB-BG-OS&Y Handwheel operated	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83K-000TA	Check valve ASTM A182 Grade F304/F304L dual grade Class 1500 API 602 Flange ASME B16.5 RJ Trim number 12 Lift-type Welded cover	
1	0.75				P83K-000TB	Check valve ASTM A182 Grade F304/F304L dual grade Class 1500 API 602 Flange ASME B16.5 RJ Trim number 12 Lift-type Welded cover	
1	1				P83K-000TC	Check valve ASTM A182 Grade F304/F304L dual grade Class 1500 API 602 Flange ASME B16.5 RJ Trim number 12 Lift-type Welded cover	

PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P72K-0006P	Paddle blank ASTM A182 Grade F304/F304L dual grade Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	0.75				P72K-0006R	Paddle blank ASTM A182 Grade F304/F304L dual grade Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	1				P72K-0006U	Paddle blank ASTM A182 Grade F304/F304L dual grade Class 1500 Standard-drawing Flange ASME B16.5 RJ	

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PADDLE SPACER (PS)							
OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P72K-0006S	Paddle spacer ASTM A182 Grade F304/F304L dual grade Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	0.75				P72K-0006T	Paddle spacer ASTM A182 Grade F304/F304L dual grade Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	1				P72K-0007D	Paddle spacer ASTM A182 Grade F304/F304L dual grade Class 1500 Standard-drawing Flange ASME B16.5 RJ	

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PIPING CLASS
N0JP **REV NO. 2**

BOLT TABLE (B_N0JP , STUD ASME RJ, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	110	P80S-003XK	R12	P75T-000LS
0.75	4	0.750	115	P80S-003XL	R14	P75T-000LT
1	4	0.875	130	P80S-0041B	R16	P75T-000LU

BOLT TABLE (B_N0JP_797 , STUD ASME RJ, OPTION CODE)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE

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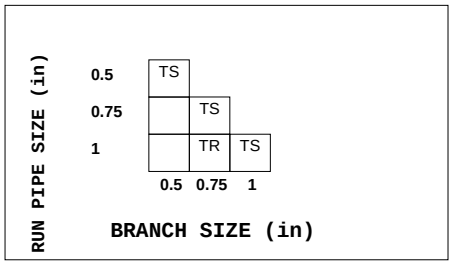
BRANCH TABLE (T_N0JP)



TR : REDUCING TEE
TS : STRAIGHT TEE

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PIPING CLASS

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Material : SS316L
Rating : ASME CLASS 1500
Flange Face : RJ
C.A.(mm) : 0.00
Gasket : Ring Octagonal
Service : UTILITY - POWER PIPING, CORROSIVE SERVICE : / CHEMICAL (PHOSPHATE DOSING TO UTILITY BOILERS)

Design Code : ASME B31.1
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
805	CLASS 2500 (B,F,G)

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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P01J-001FS	Pipe ASME SA312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE	
1	0.75		SCH80S		P01J-001FT	Pipe ASME SA312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE	
1	1		SCH80S		P01J-001FU	Pipe ASME SA312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE	
1	1.5		SCH80S		P01J-001FV	Pipe ASME SA312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE	
1	2		SCH160		P01J-001GR	Pipe ASME SA312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M BE	
1	3		SCH40S		P01J-0033W	Pipe ASME SA312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P02J-00191	90 degree elbow ASME SA403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	0.75		SCH80S		P02J-00192	90 degree elbow ASME SA403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	1		SCH80S		P02J-00193	90 degree elbow ASME SA403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	1.5		SCH80S		P02J-001SR	90 degree elbow ASME SA403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	2		SCH160		P02J-00195	90 degree elbow ASME SA403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	3		SCH40S		P02J-002DL	90 degree elbow ASME SA403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P03J-0017X	45 degree elbow ASME SA403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	0.75		SCH80S		P03J-0017Y	45 degree elbow ASME SA403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	1		SCH80S		P03J-0017Z	45 degree elbow ASME SA403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	1.5		SCH80S		P03J-001P4	45 degree elbow ASME SA403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	2		SCH160		P03J-00181	45 degree elbow ASME SA403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	3		SCH40S		P03J-002D9	45 degree elbow ASME SA403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P21J-0011D	Straight tee ASME SA403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	0.75		SCH80S		P21J-0011E	Straight tee ASME SA403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	1		SCH80S		P21J-0011F	Straight tee ASME SA403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	1.5		SCH80S		P21J-001FL	Straight tee ASME SA403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	2		SCH160		P21J-0011H	Straight tee ASME SA403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	3		SCH40S		P21J-002AT	Straight tee ASME SA403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75	SCH80S	SCH80S	P24J-004US	Reducing tee ASME SA403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	1.5	0.75	SCH80S	SCH80S	P24J-0068U	Reducing tee ASME SA403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	1.5	1	SCH80S	SCH80S	P24J-0068V	Reducing tee ASME SA403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	2	1	SCH160	SCH80S	P24J-004UT	Reducing tee ASME SA403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	2	1.5	SCH160	SCH80S	P24J-008AA	Reducing tee ASME SA403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	3	1.5	SCH40S	SCH80S	P24J-008XZ	Reducing tee ASME SA403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	3	2	SCH40S	SCH160	P24J-008Y0	Reducing tee ASME SA403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH80S	SCH80S	P27J-003MX	Concentric reducer ASME SA403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	1	0.5	SCH80S	SCH80S	P27J-003MY	Concentric reducer ASME SA403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	1	0.75	SCH80S	SCH80S	P27J-003MZ	Concentric reducer ASME SA403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	1.5	0.5	SCH80S	SCH80S	P27J-0067A	Concentric reducer ASME SA403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	1.5	0.75	SCH80S	SCH80S	P27J-0067B	Concentric reducer ASME SA403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	1.5	1	SCH80S	SCH80S	P27J-0067C	Concentric reducer ASME SA403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	2	0.75	SCH160	SCH80S	P27J-003N3	Concentric reducer ASME SA403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	2	1	SCH160	SCH80S	P27J-003N4	Concentric reducer ASME SA403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	

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CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2	1.5	SCH160	SCH80S	P27J-0070L	Concentric reducer ASME SA403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	3	1.5	SCH40S	SCH80S	P27J-007GP	Concentric reducer ASME SA403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	3	2	SCH40S	SCH160	P27J-007GR	Concentric reducer ASME SA403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH80S	SCH80S	P28J-003NK	Eccentric reducer ASME SA403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	1	0.5	SCH80S	SCH80S	P28J-003NL	Eccentric reducer ASME SA403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	1	0.75	SCH80S	SCH80S	P28J-003NM	Eccentric reducer ASME SA403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	1.5	0.5	SCH80S	SCH80S	P28J-00691	Eccentric reducer ASME SA403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	1.5	0.75	SCH80S	SCH80S	P28J-00692	Eccentric reducer ASME SA403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	1.5	1	SCH80S	SCH80S	P28J-00693	Eccentric reducer ASME SA403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	2	0.75	SCH160	SCH80S	P28J-003NS	Eccentric reducer ASME SA403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	2	1	SCH160	SCH80S	P28J-003NT	Eccentric reducer ASME SA403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	2	1.5	SCH160	SCH80S	P28J-00723	Eccentric reducer ASME SA403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	3	1.5	SCH40S	SCH80S	P28J-007HE	Eccentric reducer ASME SA403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	3	2	SCH40S	SCH160	P28J-007HF	Eccentric reducer ASME SA403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P29J-000YH	Cap ASME SA403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	0.75		SCH80S		P29J-000YJ	Cap ASME SA403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	1		SCH80S		P29J-000YK	Cap ASME SA403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	1.5		SCH80S		P29J-0019Y	Cap ASME SA403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	2		SCH160		P29J-000YM	Cap ASME SA403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	3		SCH40S		P29J-00466	Cap ASME SA403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2	0.75	SCH160	SCH80S	P31K-00BYU	Outlet ASME SA182 Grade F316/F316L dual grade MSS SP-97 BW	
1	3	0.75	SCH40S	SCH80S	P31K-00H28	Outlet ASME SA182 Grade F316/F316L dual grade MSS SP-97 BW	
1	3	1	SCH40S	SCH80S	P31K-00H29	Outlet ASME SA182 Grade F316/F316L dual grade MSS SP-97 BW	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30K-0002R	Plug ASME SA182 Grade F316/F316L dual grade ASME B16.11 NPT Round head	
1	0.75				P30K-0002S	Plug ASME SA182 Grade F316/F316L dual grade ASME B16.11 NPT Round head	
1	1				P30K-0002T	Plug ASME SA182 Grade F316/F316L dual grade ASME B16.11 NPT Round head	
1	1.5				P30K-0002U	Plug ASME SA182 Grade F316/F316L dual grade ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P61K-003EB	Flange WN ASME SA182 Grade F316/F316L dual grade Class 1500 ASME B16.5 RJ	
1	0.75		SCH80S		P61K-003EC	Flange WN ASME SA182 Grade F316/F316L dual grade Class 1500 ASME B16.5 RJ	
1	1		SCH80S		P61K-003ED	Flange WN ASME SA182 Grade F316/F316L dual grade Class 1500 ASME B16.5 RJ	
1	1.5		SCH80S		P61K-006A0	Flange WN ASME SA182 Grade F316/F316L dual grade Class 1500 ASME B16.5 RJ	
1	2		SCH160		P61K-003EF	Flange WN ASME SA182 Grade F316/F316L dual grade Class 1500 ASME B16.5 RJ	
1	3		SCH40S		P61K-006VA	Flange WN ASME SA182 Grade F316/F316L dual grade Class 1500 ASME B16.5 RJ	
805	0.5		SCH80S		P61K-003EG	Flange WN ASME SA182 Grade F316/F316L dual grade Class 2500 ASME B16.5 RJ	
805	0.75		SCH80S		P61K-003EH	Flange WN ASME SA182 Grade F316/F316L dual grade Class 2500 ASME B16.5 RJ	
805	1		SCH80S		P61K-003EJ	Flange WN ASME SA182 Grade F316/F316L dual grade Class 2500 ASME B16.5 RJ	
805	1.5		SCH80S		P61K-004X0	Flange WN ASME SA182 Grade F316/F316L dual grade Class 2500 ASME B16.5 RJ	
805	2		SCH160		P61K-003EL	Flange WN ASME SA182 Grade F316/F316L dual grade Class 2500 ASME B16.5 RJ	
805	3		SCH40S		P61K-006VB	Flange WN ASME SA182 Grade F316/F316L dual grade Class 2500 ASME B16.5 RJ	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67K-0013T	Blind flange ASME SA182 Grade F316/F316L dual grade Class 1500 ASME B16.5 RJ	

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BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75				P67K-0013U	Blind flange ASME SA182 Grade F316/F316L dual grade Class 1500 ASME B16.5 RJ	
1	1				P67K-0013V	Blind flange ASME SA182 Grade F316/F316L dual grade Class 1500 ASME B16.5 RJ	
1	1.5				P67K-0013W	Blind flange ASME SA182 Grade F316/F316L dual grade Class 1500 ASME B16.5 RJ	
1	2				P67K-0013X	Blind flange ASME SA182 Grade F316/F316L dual grade Class 1500 ASME B16.5 RJ	
1	3				P67K-0023V	Blind flange ASME SA182 Grade F316/F316L dual grade Class 1500 ASME B16.5 RJ	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P75T-000NM	Ring joint gasket SS TP316 Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	0.75				P75T-000NN	Ring joint gasket SS TP316 Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	1				P75T-000NP	Ring joint gasket SS TP316 Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	1.5				P75T-000NR	Ring joint gasket SS TP316 Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	2				P75T-000NS	Ring joint gasket SS TP316 Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	3				P75T-0014Y	Ring joint gasket SS TP316 Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	0.5				P75T-000NT	Ring joint gasket SS TP316 Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	0.75				P75T-000NU	Ring joint gasket SS TP316 Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	1				P75T-000NV	Ring joint gasket SS TP316 Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	1.5				P75T-000NW	Ring joint gasket SS TP316 Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	2				P75T-000NX	Ring joint gasket SS TP316 Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	3				P75T-0011E	Ring joint gasket SS TP316 Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-2				See Attached Bolt Table	Bolt and Nut ASME SA193 Grade B7 / SA194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	3				See Attached Bolt Table	Bolt and Nut ASME SA193 Grade B7 / SA194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
805	0.5-1				See Attached Bolt Table	Bolt and Nut ASME SA193 Grade B7 / SA194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
805	1.5				See Attached Bolt Table	Bolt and Nut ASME SA193 Grade B7 / SA194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
805	2				See Attached Bolt Table	Bolt and Nut ASME SA193 Grade B7 / SA194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
805	3				See Attached Bolt Table	Bolt and Nut ASME SA193 Grade B7 / SA194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81K-001LJ	Gate valve ASME SA182 Grade F316/F316L dual grade Class 1500 API 602 Flange ASME B16.5 RJ Trim number 12 WB-BG-OS&Y Handwheel operated	
1	0.75				P81K-001LK	Gate valve ASME SA182 Grade F316/F316L dual grade Class 1500 API 602 Flange ASME B16.5 RJ Trim number 12 WB-BG-OS&Y Handwheel operated	
1	1				P81K-001LL	Gate valve ASME SA182 Grade F316/F316L dual grade Class 1500 API 602 Flange ASME B16.5 RJ Trim number 12 WB-BG-OS&Y Handwheel operated	
1	1.5				P81K-001LM	Gate valve ASME SA182 Grade F316/F316L dual grade Class 1500 API 602 Flange ASME B16.5 RJ Trim number 12 WB-BG-OS&Y Handwheel operated	
1	2				P81L-003H7	Gate valve ASME SA351 Grade CF3M Class 1500 API 600 BW Sch160 Trim number 12 PSB-BG-OS&Y Handwheel operated	
1	3				P81L-003H9	Gate valve ASME SA351 Grade CF3M Class 1500 API 600 BW Sch40S Trim number 12 PSB-BG-OS&Y Handwheel operated	

PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P72K-0007M	Paddle blank ASME SA182 Grade F316/F316L dual grade Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	0.75				P72K-0007N	Paddle blank ASME SA182 Grade F316/F316L dual grade Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	1				P72K-0007P	Paddle blank ASME SA182 Grade F316/F316L dual grade Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	1.5				P72K-0007R	Paddle blank ASME SA182 Grade F316/F316L dual grade Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	2				P72K-0007S	Paddle blank ASME SA182 Grade F316/F316L dual grade Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	3				P72K-000M6	Paddle blank ASME SA182 Grade F316/F316L dual grade Class 1500 Standard-drawing Flange ASME B16.5 RJ	

PADDLE SPACER (PS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P72K-0007G	Paddle spacer ASME SA182 Grade F316/F316L dual grade Class 1500 Standard-drawing Flange ASME B16.5 RJ	

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PADDLE SPACER (PS)							
OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75				P72K-0007H	Paddle spacer ASME SA182 Grade F316/F316L dual grade Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	1				P72K-0007J	Paddle spacer ASME SA182 Grade F316/F316L dual grade Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	1.5				P72K-0007K	Paddle spacer ASME SA182 Grade F316/F316L dual grade Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	2				P72K-0007L	Paddle spacer ASME SA182 Grade F316/F316L dual grade Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	3				P72K-000M7	Paddle spacer ASME SA182 Grade F316/F316L dual grade Class 1500 Standard-drawing Flange ASME B16.5 RJ	

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BOLT TABLE (B_N0LG , STUD ASME RJ, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	110	P80S-00MAH	R12	P75T-000NM
0.75	4	0.750	115	P80S-00M8C	R14	P75T-000NN
1	4	0.875	130	P80S-00M30	R16	P75T-000NP
1.5	4	1.000	140	P80S-00LYE	R20	P75T-000NR
2	8	0.875	150	P80S-00M2W	R24	P75T-000NS
3	8	1.125	180	P80S-00LNG	R35	P75T-0014Y

BOLT TABLE (B_N0LG_805 , STUD ASME RJ, OPTION CODE 805)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	125	P80S-00M8A	R13	P75T-000NT
0.75	4	0.750	130	P80S-00M89	R16	P75T-000NU
1	4	0.875	140	P80S-00M2Y	R18	P75T-000NV
1.5	4	1.125	175	P80S-00LNH	R23	P75T-000NW
2	8	1.000	180	P80S-00LY6	R26	P75T-000NX
3	8	1.250	260	P80S-00LBY	R32	P75T-0011E

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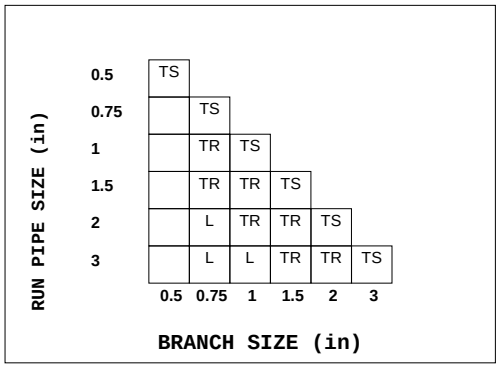
BRANCH TABLE (T_N0LG)



TS : STRAIGHT TEE
TR : REDUCING TEE
L : OUTLET

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PIPING CLASS

N1A402 REV NO. 2

Material : Killed CS
Rating : ASME CLASS 1500
Flange Face : RJ
C.A.(mm) : 1.50
Gasket : Ring Octagonal
Service : PROCESS -WET LOW SEVERITY SOUR SERVICE SUBJECT TO NACE + AMINES OR CAUSTIC - STRESS RELIEVED
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
5	BOLTING CONFIRMING TO B7M / 2HM SHALL BE USED UNDER CONDITIONS (A) DIRECT EXPOSURE TO SOUR ENVIRONMENTS (B) WHEN THE BOLTING WILL BE BURIED OR INSULATED
27	PWHT OF CARBON STEEL PIPING IN WET H2S, CAUSTIC AND AMINE SERVICES SHALL BE IN ACCORDANCE WITH SECTION 10.2, 10.3, AND 10.4 OF PROJECT SPECIFICATION 3550-8440-SP-0002 MATERIALS REQUIREMENTS FOR PRESSURISED EQUIPMENT AND PIPING. FOR CAUSTIC AND AMINE SERVICE THE FOLLOWING SHALL APPLY: - PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF ALL SITE PIPING FABRICATION WELDS IS REQUIRED FOR ALL WALL THICKNESSES. FOR MODERATE AND SEVERE WET H2S SERVICE THE FOLLOWING SHALL APPLY: PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF SITE FABRICATION CIRCUMFERENTIAL OR BRANCH WELDS IS NOT REQUIRED IF WELDS ARE MULTIPASS AND IN ACCORDANCE WITH PARA 10.2.12 OF PROJECT SPECIFICATION 3550-8440-SP-0002. FOR SERVICES MEETING THE WET H2S CRITERIA AND CAUSTIC OR AMINE CRITERIA THE MORE STRINGENT PWHT REQUIREMENT SHALL GOVERN.

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
541	NPT(F) (F)
805	CLASS 2500 (B,F,G)
4601	Y-PATTERN (W)

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PIPING CLASS
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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P01A-000XM	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	0.75		SCH160		P01A-0010R	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1		SCH160		P01A-0014M	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1.5		SCH160		P01A-0015J	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	2		SCH160		P01A-0019T	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	3		SCH160		P01A-001S5	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	4		SCH160		P01A-001TN	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	6		SCH160		P01A-001VD	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	8		XXS		P01A-001WR	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	10		XXS		P01A-0079W	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	12		SCH160		P01A-0043E	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P02A-000UR	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	0.75		SCH160		P02A-000V8	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1		SCH160		P02A-000V7	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1.5		SCH160		P02A-000V9	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	2		SCH160		P02A-000KW	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		SCH160		P02A-000U4	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		SCH160		P02A-002JE	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		SCH160		P02A-002J9	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		XXS		P02A-003SR	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	10		XXS		P02A-003RY	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	12		SCH160		P02A-002JC	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P03A-0018K	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	0.75		SCH160		P03A-000RS	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1		SCH160		P03A-000RR	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1.5		SCH160		P03A-000RP	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	2		SCH160		P03A-000HU	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		SCH160		P03A-000RB	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		SCH160		P03A-002FY	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		SCH160		P03A-002FT	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		XXS		P03A-003PD	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	10		XXS		P03A-003NL	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	12		SCH160		P03A-002FW	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P21A-002TV	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	0.75		SCH160		P21A-002B8	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1		SCH160		P21A-002B6	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5		SCH160		P21A-002B9	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2		SCH160		P21A-00245	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		SCH160		P21A-002AG	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		SCH160		P21A-003GZ	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6		SCH160		P21A-003GU	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8		XXS		P21A-004A3	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10		XXS		P21A-0049B	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12		SCH160		P21A-003GX	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75	SCH160	SCH160	P24A-004B6	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.75	SCH160	SCH160	P24A-004B2	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5	1	SCH160	SCH160	P24A-004BA	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	SCH160	SCH160	P24A-00AEU	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	SCH160	SCH160	P24A-003AX	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	SCH160	SCH160	P24A-004LF	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	SCH160	SCH160	P24A-0045H	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	SCH160	SCH160	P24A-00GPP	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	SCH160	SCH160	P24A-00GSS	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	SCH160	SCH160	P24A-00H9L	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	SCH160	SCH160	P24A-00GPR	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	XXS	SCH160	P24A-00P1S	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	XXS	SCH160	P24A-00P1T	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	XXS	SCH160	P24A-00LBE	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	6	XXS	SCH160	P24A-00K2V	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	8	XXS	XXS	P24A-00K4R	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	6	SCH160	SCH160	P24A-00LAE	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	8	SCH160	XXS	P24A-00L6W	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	10	SCH160	XXS	P24A-00L6V	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	XS	P27A-00HP0	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.5	SCH160	XS	P27A-00HP1	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.75	SCH160	SCH160	P27A-002T5	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.5	SCH160	XS	P27A-00HP2	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.75	SCH160	SCH160	P27A-002T7	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	1	SCH160	SCH160	P27A-002T4	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	0.75	SCH160	SCH160	P27A-0025L	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	SCH160	SCH160	P27A-0025K	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	SCH160	SCH160	P27A-0025J	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	SCH160	SCH160	P27A-00301	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	SCH160	SCH160	P27A-002NC	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	1.5	SCH160	SCH160	P27A-0073L	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	SCH160	SCH160	P27A-00746	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	SCH160	SCH160	P27A-0074N	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	SCH160	SCH160	P27A-007NZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	SCH160	SCH160	P27A-007PP	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	XXS	SCH160	P27A-007WH	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	XXS	SCH160	P27A-007XP	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	XXS	SCH160	P27A-00EMU	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	6	XXS	SCH160	P27A-00EMV	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	8	XXS	XXS	P27A-00EPV	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	6	SCH160	SCH160	P27A-00EMP	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	8	SCH160	XXS	P27A-00FEC	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	10	SCH160	XXS	P27A-00FEB	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	XS	P28A-00EYC	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.5	SCH160	XS	P28A-00EYD	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.75	SCH160	SCH160	P28A-002TU	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.5	SCH160	XS	P28A-00EYE	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.75	SCH160	SCH160	P28A-002TW	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	1	SCH160	SCH160	P28A-002TR	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	0.75	SCH160	SCH160	P28A-002SU	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	SCH160	SCH160	P28A-002ST	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	SCH160	SCH160	P28A-002SS	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	SCH160	SCH160	P28A-0030P	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	SCH160	SCH160	P28A-002NY	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	1.5	SCH160	SCH160	P28A-008GK	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	4	2	SCH160	SCH160	P28A-008GL	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	SCH160	SCH160	P28A-008J1	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	SCH160	SCH160	P28A-008ZE	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	SCH160	SCH160	P28A-008GM	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	XXS	SCH160	P28A-00EUC	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	XXS	SCH160	P28A-00EUD	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	XXS	SCH160	P28A-00BSK	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	6	XXS	SCH160	P28A-00BSL	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	8	XXS	XXS	P28A-00BUN	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	6	SCH160	SCH160	P28A-00BS6	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	8	SCH160	XXS	P28A-00CKA	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	10	SCH160	XXS	P28A-00CK9	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P29A-0035U	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	0.75		SCH160		P29A-001UF	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	1		SCH160		P29A-001TC	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	1.5		SCH160		P29A-001TD	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	2		SCH160		P29A-001TK	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	3		SCH160		P29A-001TN	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	4		SCH160		P29A-001WH	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	6		SCH160		P29A-0032B	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	8		XXS		P29A-005G9	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	10		XXS		P29A-00335	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service	
1	12		SCH160		P29A-003VW	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P41A-000B9	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		XXS		P41A-000BA	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		XXS		P41A-000D8	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		XXS		P41A-000D9	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2	0.75	SCH160	SCH160	P31B-007NC	Outlet ASTM A105 MSS SP-97 BW	
1	3	0.75	SCH160	SCH160	P31B-00CMV	Outlet ASTM A105 MSS SP-97 BW	
1	4	0.75	SCH160	SCH160	P31B-00CLV	Outlet ASTM A105 MSS SP-97 BW	
1	6	0.75	SCH160	SCH160	P31B-00CKM	Outlet ASTM A105 MSS SP-97 BW	
1	8	0.75	XXS	SCH160	P31B-00C5C	Outlet ASTM A105 MSS SP-97 BW	
1	10	0.75	XXS	SCH160	P31B-00XJF	Outlet ASTM A105 MSS SP-97 BW	
1	12	0.75	SCH160	SCH160	P31B-00TWV	Outlet ASTM A105 MSS SP-97 BW	
1	3	1	SCH160	SCH160	P31B-00B4K	Outlet ASTM A105 MSS SP-97 BW	
1	4	1	SCH160	SCH160	P31B-00B3N	Outlet ASTM A105 MSS SP-97 BW	
1	6	1	SCH160	SCH160	P31B-00AZE	Outlet ASTM A105 MSS SP-97 BW	
1	8	1	XXS	SCH160	P31B-00AVD	Outlet ASTM A105 MSS SP-97 BW	
1	10	1	XXS	SCH160	P31B-00YKR	Outlet ASTM A105 MSS SP-97 BW	
1	12	1	SCH160	SCH160	P31B-00TWW	Outlet ASTM A105 MSS SP-97 BW	
1	4	1.5	SCH160	SCH160	P31B-00BP6	Outlet ASTM A105 MSS SP-97 BW	
1	6	1.5	SCH160	SCH160	P31B-00BJK	Outlet ASTM A105 MSS SP-97 BW	
1	8	1.5	XXS	SCH160	P31B-00BHG	Outlet ASTM A105 MSS SP-97 BW	
1	10	1.5	XXS	SCH160	P31B-00YKS	Outlet ASTM A105 MSS SP-97 BW	
1	12	1.5	SCH160	SCH160	P31B-00CEK	Outlet ASTM A105 MSS SP-97 BW	
1	6	2	SCH160	SCH160	P31B-007SS	Outlet ASTM A105 MSS SP-97 BW	
1	8	2	XXS	SCH160	P31B-00AHB	Outlet ASTM A105 MSS SP-97 BW	
1	10	2	XXS	SCH160	P31B-00ASP	Outlet ASTM A105 MSS SP-97 BW	
1	12	2	SCH160	SCH160	P31B-00ARR	Outlet ASTM A105 MSS SP-97 BW	
1	8	3	XXS	SCH160	P31B-00A32	Outlet ASTM A105 MSS SP-97 BW	

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OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	10	3	XXS	SCH160	P31B-009CZ	Outlet ASTM A105 MSS SP-97 BW	
1	12	3	SCH160	SCH160	P31B-0097C	Outlet ASTM A105 MSS SP-97 BW	
1	12	4	SCH160	SCH160	P31B-00952	Outlet ASTM A105 MSS SP-97 BW	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30B-0002D	Plug ASTM A105 ASME B16.11 NPT Round head	
1	0.75				P30B-0002E	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1				P30B-0002F	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1.5				P30B-0002G	Plug ASTM A105 ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P61B-009VY	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
1	0.75		SCH160		P61B-0065U	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
1	1		SCH160		P61B-0065V	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
1	1.5		SCH160		P61B-0065W	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
1	2		SCH160		P61B-0066J	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
1	3		SCH160		P61B-0067T	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
1	4		SCH160		P61B-00671	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
1	6		SCH160		P61B-0066K	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
1	8		XXS		P61B-00CW6	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
1	10		XXS		P61B-009VK	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
1	12		SCH160		P61B-0066S	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
541	0.5				P61B-00DLH	Flange NPT ASTM A105 Class 1500 ASME B16.5 RJ	
541	0.75				P61B-00CW7	Flange NPT ASTM A105 Class 1500 ASME B16.5 RJ	
805	0.5		XS		P61B-00CW8	Flange WN ASTM A105 Class 2500 ASME B16.5 RJ	
805	0.75		SCH160		P61B-00667	Flange WN ASTM A105 Class 2500 ASME B16.5 RJ	
805	1		SCH160		P61B-00668	Flange WN ASTM A105 Class 2500 ASME B16.5 RJ	
805	1.5		SCH160		P61B-00669	Flange WN ASTM A105 Class 2500 ASME B16.5 RJ	
805	2		SCH160		P61B-0066M	Flange WN ASTM A105 Class 2500 ASME B16.5 RJ	
805	3		SCH160		P61B-006JE	Flange WN ASTM A105 Class 2500 ASME B16.5 RJ	
805	4		SCH160		P61B-00672	Flange WN ASTM A105 Class 2500 ASME B16.5 RJ	
805	6		SCH160		P61B-0066N	Flange WN ASTM A105 Class 2500 ASME B16.5 RJ	
805	8		XXS		P61B-009XT	Flange WN ASTM A105 Class 2500 ASME B16.5 RJ	
805	10		XXS		P61B-009VM	Flange WN ASTM A105 Class 2500 ASME B16.5 RJ	
805	12		SCH160		P61B-0066X	Flange WN ASTM A105 Class 2500 ASME B16.5 RJ	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67B-001VE	Blind flange ASTM A105 Class 1500 ASME B16.5 RJ	
1	0.75				P67B-001VF	Blind flange ASTM A105 Class 1500 ASME B16.5 RJ	
1	1				P67B-001VG	Blind flange ASTM A105 Class 1500 ASME B16.5 RJ	
1	1.5				P67B-001VH	Blind flange ASTM A105 Class 1500 ASME B16.5 RJ	
1	2				P67B-0014J	Blind flange ASTM A105 Class 1500 ASME B16.5 RJ	
1	3				P67B-0014G	Blind flange ASTM A105 Class 1500 ASME B16.5 RJ	
1	4				P67B-0014F	Blind flange ASTM A105 Class 1500 ASME B16.5 RJ	
1	6				P67B-0014E	Blind flange ASTM A105 Class 1500 ASME B16.5 RJ	
1	8				P67B-0014D	Blind flange ASTM A105 Class 1500 ASME B16.5 RJ	
1	10				P67B-0014P	Blind flange ASTM A105 Class 1500 ASME B16.5 RJ	
1	12				P67B-0014N	Blind flange ASTM A105 Class 1500 ASME B16.5 RJ	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P75T-000JT	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	0.75				P75T-000JU	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	1				P75T-000JV	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	1.5				P75T-000JW	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	

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GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2				P75T-0008A	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	3				P75T-0008E	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	4				P75T-0008D	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	6				P75T-0008C	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	8				P75T-0008B	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	10				P75T-0008L	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	12				P75T-0008K	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	0.5				P75T-000KT	Ring joint gasket Soft iron Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	0.75				P75T-000KU	Ring joint gasket Soft iron Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	1				P75T-000KV	Ring joint gasket Soft iron Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	1.5				P75T-000KW	Ring joint gasket Soft iron Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	2				P75T-000L6	Ring joint gasket Soft iron Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	3				P75T-000MC	Ring joint gasket Soft iron Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	4				P75T-000ME	Ring joint gasket Soft iron Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	6				P75T-000L7	Ring joint gasket Soft iron Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	8				P75T-000MD	Ring joint gasket Soft iron Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	10				P75T-000KX	Ring joint gasket Soft iron Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	12				P75T-000MB	Ring joint gasket Soft iron Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-2				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	3-12				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
805	0.5-1				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
805	1.5				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
805	2				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
805	3-12				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75				P81B-002EV	Gate valve ASTM A105 Class 1500 API 602 BW Sch160 Trim SS316L Body and disc seats Stellite-6 WB-BG-OS&Y Handwheel operated Amine service Moderate wet H2S service	
1	1				P81B-002EW	Gate valve ASTM A105 Class 1500 API 602 BW Sch160 Trim SS316L Body and disc seats Stellite-6 WB-BG-OS&Y Handwheel operated Amine service Moderate wet H2S service	
1	1.5				P81B-002EX	Gate valve ASTM A105 Class 1500 API 602 BW Sch160 Trim SS316L Body and disc seats Stellite-6 WB-BG-OS&Y Handwheel operated Amine service Moderate wet H2S service	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
4601	0.75				P82B-0021X	Y-pattern globe valve ASTM A105 Class 1500 ASME B16.34 BW Sch160 Trim SS316L Body and disc seats Stellite-6 WB-BG-OS&Y Handwheel operated Amine service Moderate wet H2S service	
4601	1				P82B-0021Y	Y-pattern globe valve ASTM A105 Class 1500 ASME B16.34 BW Sch160 Trim SS316L Body and disc seats Stellite-6 WB-BG-OS&Y Handwheel operated Amine service Moderate wet H2S service	
4601	1.5				P82B-0022T	Y-pattern globe valve ASTM A105 Class 1500 ASME B16.34 BW Sch160 Trim SS316L Body and disc seats Stellite-6 WB-BG-OS&Y Handwheel operated Amine service Moderate wet H2S service	
4601	6				P82C-00481	Y-pattern globe valve ASTM A216 Grade WCB Class 1500 ASME B16.34 BW Sch160 Trim SS316L Body and disc seats Stellite-6 PSB-BG-OS&Y Gear operated Amine service Moderate wet H2S service	
4601	12				P82C-0046V	Y-pattern globe valve ASTM A216 Grade WCB Class 1500 ASME B16.34 BW Sch160 Trim SS316L Body and disc seats Stellite-6 PSB-BG-OS&Y Gear operated Amine service Moderate wet H2S service	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	6				P83C-0039C	Check valve ASTM A216 Grade WCB Class 1500 BS 1868 BW Sch160 Trim SS316L Body and disc seats Stellite-6 Swing-type Pressure seal cap Amine service Moderate wet H2S service	

DP CHECK VALVE (XDP)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	12				P88C-002XU	Dual plate check valve ASTM A216 Grade WCB Class 1500 API 594 Lug-type ASME B16.5 RJ Trim SS316L and Stellite-6 Internal wetted parts SS316L Spring Inconel Retainerless-type Amine service Moderate wet H2S service	

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PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P72B-000JD	Paddle blank ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	0.75				P72B-000JE	Paddle blank ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	1				P72B-000JF	Paddle blank ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	1.5				P72B-000JG	Paddle blank ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	2				P72B-000JH	Paddle blank ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	3				P72B-000KG	Paddle blank ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	4				P72B-000KH	Paddle blank ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	6				P72B-000KJ	Paddle blank ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	8				P72B-000KK	Paddle blank ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	10				P72B-000KR	Paddle blank ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	12				P72B-000KT	Paddle blank ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	

PADDLE SPACER (PS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P72B-000JN	Paddle spacer ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	0.75				P72B-000JP	Paddle spacer ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	1				P72B-000JR	Paddle spacer ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	1.5				P72B-000JS	Paddle spacer ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	2				P72B-000JT	Paddle spacer ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	3				P72B-000KL	Paddle spacer ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	4				P72B-000KM	Paddle spacer ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	6				P72B-000KN	Paddle spacer ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	8				P72B-000KP	Paddle spacer ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	10				P72B-000KS	Paddle spacer ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	12				P72B-000KW	Paddle spacer ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	

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BOLT TABLE (B_N1A402 , STUD ASME RJ, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	110	P80S-0090F	R12	P75T-000JT
0.75	4	0.750	115	P80S-0090G	R14	P75T-000JU
1	4	0.875	130	P80S-005ZB	R16	P75T-000JV
1.5	4	1.000	140	P80S-0061A	R20	P75T-000JW
2	8	0.875	150	P80S-005ZF	R24	P75T-0008A
3	8	1.125	180	P80S-0064T	R35	P75T-0008E
4	8	1.250	230	P80S-0068H	R39	P75T-0008D
6	12	1.375	300	P80S-006J1	R46	P75T-0008C
8	12	1.625	345	P80S-00A5K	R50	P75T-0008B
10	12	1.875	395	P80S-00AW8	R54	P75T-0008L
12	16	2.000	445	P80S-00BH5	R58	P75T-0008K

BOLT TABLE (B_N1A402_805 , STUD ASME RJ, OPTION CODE 805)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	125	P80S-0090J	R13	P75T-000KT
0.75	4	0.750	130	P80S-0090K	R16	P75T-000KU
1	4	0.875	140	P80S-005ZD	R18	P75T-000KV
1.5	4	1.125	175	P80S-0064S	R23	P75T-000KW
2	8	1.000	180	P80S-0061J	R26	P75T-000L6
3	8	1.250	260	P80S-0068P	R32	P75T-000MC
4	8	1.500	305	P80S-006LS	R38	P75T-000ME
6	8	2.000	410	P80S-00BBD	R47	P75T-000L7
8	12	2.000	450	P80S-00BH6	R51	P75T-000MD
10	12	2.500	575	P80S-00DZV	R55	P75T-000KX
12	12	2.750	635	P80S-01RAT	R60	P75T-000MB

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BRANCH TABLE (T_N1A402)

RUN PIPE SIZE (in) \ BRANCH SIZE (in)	0.5	0.75	1	1.5	2	3	4	6	8	10	12
0.5	TS										
0.75		TS									
1		TR	TS								
1.5		TR	TR	TS							
2		L	TR	TR	TS						
3		L	L	TR	TR	TS					
4	L	L	L	L	TR	TR	TS				
6	L	L	L	L	L	TR	TR	TS			
8		L	L	L	L	L	TR	TR	TS		
10		L	L	L	L	L	TR	TR	TR	TS	
12		L	L	L	L	L	L	TR	TR	TR	TS

TR : REDUCING TEE
TS : STRAIGHT TEE
L : OUTLET

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PIPING CLASS

N1A602 REV NO. 2

Material : Killed CS
Rating : ASME CLASS 1500
Flange Face : RJ
C.A.(mm) : 1.50
Gasket : Ring Octagonal
Service : PROCESS -WET LOW SEVERITY SOUR SERVICE SUBJECT TO NACE + HYDROGEN SERVICE
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
5	BOLTING CONFIRMING TO B7M / 2HM SHALL BE USED UNDER CONDITIONS (A) DIRECT EXPOSURE TO SOUR ENVIRONMENTS (B) WHEN THE BOLTING WILL BE BURIED OR INSULATED
27	PWHT OF CARBON STEEL PIPING IN WET H2S, CAUSTIC AND AMINE SERVICES SHALL BE IN ACCORDANCE WITH SECTION 10.2, 10.3, AND 10.4 OF PROJECT SPECIFICATION 3550-8440-SP-0002 MATERIALS REQUIREMENTS FOR PRESSURISED EQUIPMENT AND PIPING. FOR CAUSTIC AND AMINE SERVICE THE FOLLOWING SHALL APPLY: - PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF ALL SITE PIPING FABRICATION WELDS IS REQUIRED FOR ALL WALL THICKNESSES. FOR MODERATE AND SEVERE WET H2S SERVICE THE FOLLOWING SHALL APPLY: PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF SITE FABRICATION CIRCUMFERENTIAL OR BRANCH WELDS IS NOT REQUIRED IF WELDS ARE MULTIPASS AND IN ACCORDANCE WITH PARA 10.2.12 OF PROJECT SPECIFICATION 3550-8440-SP-0002. FOR SERVICES MEETING THE WET H2S CRITERIA AND CAUSTIC OR AMINE CRITERIA THE MORE STRINGENT PWHT REQUIREMENT SHALL GOVERN.

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
200	WITH JACK SCREW (FO)
541	NPT(F) (F)
805	CLASS 2500 (B,F,G)
4601	Y-PATTERN (W)

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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P01A-000XM	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	0.75		SCH160		P01A-0010R	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1		SCH160		P01A-0014M	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1.5		SCH160		P01A-0015J	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	2		SCH160		P01A-0019T	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	3		SCH160		P01A-001S5	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	4		SCH160		P01A-001TN	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	6		SCH160		P01A-001VD	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	8		SCH140		P01A-001WJ	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	10		XXS		P01A-0079W	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	12		SCH160		P01A-0043E	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	14		SCH160		P01A-0043F	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	16		SCH160		P01A-008SY	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	18		SCH160		P01A-008SZ	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	20		SCH160		P01A-008T0	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	24		SCH160		P01A-008T1	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P02A-000UR	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	0.75		SCH160		P02A-000V8	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1		SCH160		P02A-000V7	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1.5		SCH160		P02A-000V9	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	2		SCH160		P02A-000KW	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		SCH160		P02A-000U4	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		SCH160		P02A-002JE	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		SCH160		P02A-002J9	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		SCH140		P02A-003F9	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	10		XXS		P02A-003RY	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	12		SCH160		P02A-002JC	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	14		SCH160		P02A-002JD	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	16		SCH160		P02A-004J0	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	18		SCH160		P02A-003SH	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	20		SCH160		P02A-004J1	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	24		SCH160		P02A-004J2	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P03A-0018K	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	0.75		SCH160		P03A-000RS	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1		SCH160		P03A-000RR	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1.5		SCH160		P03A-000RP	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	2		SCH160		P03A-000HU	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		SCH160		P03A-000RB	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		SCH160		P03A-002FY	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		SCH160		P03A-002FT	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		SCH140		P03A-003D4	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	10		XXS		P03A-003NL	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	12		SCH160		P03A-002FW	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	14		SCH160		P03A-002FX	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	16		SCH160		P03A-004FK	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	18		SCH160		P03A-003P6	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	20		SCH160		P03A-004FL	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	24		SCH160		P03A-004FM	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P21A-002TV	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	0.75		SCH160		P21A-002B8	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		SCH160		P21A-002B6	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5		SCH160		P21A-002B9	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2		SCH160		P21A-00245	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		SCH160		P21A-002AG	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		SCH160		P21A-003GZ	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6		SCH160		P21A-003GU	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8		SCH140		P21A-003Z0	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10		XXS		P21A-0049B	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12		SCH160		P21A-003GX	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14		SCH160		P21A-003GY	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16		SCH160		P21A-004ZX	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	18		SCH160		P21A-004ZY	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	20		SCH160		P21A-004ZZ	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	24		SCH160		P21A-00500	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75	SCH160	SCH160	P24A-004B6	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.75	SCH160	SCH160	P24A-004B2	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	1	SCH160	SCH160	P24A-004BA	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	SCH160	SCH160	P24A-00AEU	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	SCH160	SCH160	P24A-003AX	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	SCH160	SCH160	P24A-004LF	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	SCH160	SCH160	P24A-0045H	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	SCH160	SCH160	P24A-00GPP	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	SCH160	SCH160	P24A-00GSS	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	SCH160	SCH160	P24A-00H9L	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	SCH160	SCH160	P24A-00GPR	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH140	SCH160	P24A-00K2T	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH140	SCH160	P24A-00K2U	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	XXS	SCH160	P24A-00LBE	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	6	XXS	SCH160	P24A-00K2V	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	8	XXS	SCH140	P24A-00K2W	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	6	SCH160	SCH160	P24A-00LAE	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	8	SCH160	SCH140	P24A-00P69	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	10	SCH160	XXS	P24A-00L6V	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	6	SCH160	SCH160	P24A-00LAF	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	8	SCH160	SCH140	P24A-00P6A	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	10	SCH160	XXS	P24A-00P1Y	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	12	SCH160	SCH160	P24A-00GXN	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	6	SCH160	SCH160	P24A-00P6D	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	8	SCH160	SCH140	P24A-00P6F	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	10	SCH160	XXS	P24A-00P6B	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	12	SCH160	SCH160	P24A-00P1Z	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	14	SCH160	SCH160	P24A-00P6C	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	18	8	SCH160	SCH140	P24A-00P24	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	18	10	SCH160	XXS	P24A-00P20	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	18	12	SCH160	SCH160	P24A-00P21	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	18	14	SCH160	SCH160	P24A-00P22	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	18	16	SCH160	SCH160	P24A-00P23	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	20	8	SCH160	SCH140	P24A-00P6E	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	20	10	SCH160	XXS	P24A-00P25	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	20	12	SCH160	SCH160	P24A-00P26	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	20	14	SCH160	SCH160	P24A-00P27	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	20	16	SCH160	SCH160	P24A-00P28	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	20	18	SCH160	SCH160	P24A-00P29	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	24	10	SCH160	XXS	P24A-00P2A	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	24	12	SCH160	SCH160	P24A-00P2B	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	24	14	SCH160	SCH160	P24A-00P2C	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	

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REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	24	16	SCH160	SCH160	P24A-00P2D	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	24	18	SCH160	SCH160	P24A-00P2E	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	24	20	SCH160	SCH160	P24A-00P2F	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	XS	P27A-00HP0	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.5	SCH160	XS	P27A-00HP1	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.75	SCH160	SCH160	P27A-002T5	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.5	SCH160	XS	P27A-00HP2	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.75	SCH160	SCH160	P27A-002T7	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	1	SCH160	SCH160	P27A-002T4	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	0.75	SCH160	SCH160	P27A-0025L	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	SCH160	SCH160	P27A-0025K	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	SCH160	SCH160	P27A-0025J	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	SCH160	SCH160	P27A-00301	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	SCH160	SCH160	P27A-002NC	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	1.5	SCH160	SCH160	P27A-0073L	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	SCH160	SCH160	P27A-00746	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	SCH160	SCH160	P27A-0074N	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	SCH160	SCH160	P27A-007NZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	SCH160	SCH160	P27A-007PP	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH140	SCH160	P27A-007VZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH140	SCH160	P27A-007X7	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	XXS	SCH160	P27A-00EMU	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	6	XXS	SCH160	P27A-00EMV	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	8	XXS	SCH140	P27A-00EMW	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	6	SCH160	SCH160	P27A-00EMP	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	8	SCH160	SCH140	P27A-00HK7	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	10	SCH160	XXS	P27A-00FEB	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	6	SCH160	SCH160	P27A-00EMT	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	8	SCH160	SCH140	P27A-00HK9	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	10	SCH160	XXS	P27A-00HK8	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	12	SCH160	SCH160	P27A-00EMS	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	8	SCH160	SCH140	P27A-00HKC	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	10	SCH160	XXS	P27A-00HP3	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	12	SCH160	SCH160	P27A-00HKA	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	14	SCH160	SCH160	P27A-00HKB	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	18	10	SCH160	XXS	P27A-00HKD	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	18	12	SCH160	SCH160	P27A-00HKE	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	18	14	SCH160	SCH160	P27A-00HKF	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	18	16	SCH160	SCH160	P27A-00HKG	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	20	12	SCH160	SCH160	P27A-00HKH	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	20	14	SCH160	SCH160	P27A-00HKJ	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	20	16	SCH160	SCH160	P27A-00HKK	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	20	18	SCH160	SCH160	P27A-00HKL	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	24	16	SCH160	SCH160	P27A-00HKM	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	24	18	SCH160	SCH160	P27A-00HKN	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	24	20	SCH160	SCH160	P27A-00HKP	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	XS	P28A-00EYC	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.5	SCH160	XS	P28A-00EYD	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.75	SCH160	SCH160	P28A-002TU	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.5	SCH160	XS	P28A-00EYE	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.75	SCH160	SCH160	P28A-002TW	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	1	SCH160	SCH160	P28A-002TR	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	0.75	SCH160	SCH160	P28A-002SU	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2	1	SCH160	SCH160	P28A-002ST	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	SCH160	SCH160	P28A-002SS	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	SCH160	SCH160	P28A-0030P	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	SCH160	SCH160	P28A-002NY	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	1.5	SCH160	SCH160	P28A-008GK	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	SCH160	SCH160	P28A-008GL	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	SCH160	SCH160	P28A-008J1	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	SCH160	SCH160	P28A-008ZE	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	SCH160	SCH160	P28A-008GM	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH140	SCH160	P28A-00BSJ	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH140	SCH160	P28A-00AH9	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	XXS	SCH160	P28A-00BSK	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	6	XXS	SCH160	P28A-00BSL	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	8	XXS	SCH140	P28A-00BSM	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	6	SCH160	SCH160	P28A-00BS6	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	8	SCH160	SCH140	P28A-00EUJ	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	10	SCH160	XXS	P28A-00CK9	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	6	SCH160	SCH160	P28A-00BSA	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	8	SCH160	SCH140	P28A-00EUL	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	10	SCH160	XXS	P28A-00EUK	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	12	SCH160	SCH160	P28A-008GG	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	8	SCH160	SCH140	P28A-00EUP	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	10	SCH160	XXS	P28A-00EYF	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	12	SCH160	SCH160	P28A-00EUM	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	14	SCH160	SCH160	P28A-00EUN	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	18	10	SCH160	XXS	P28A-00EUR	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	18	12	SCH160	SCH160	P28A-00EUS	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	18	14	SCH160	SCH160	P28A-00EUT	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	18	16	SCH160	SCH160	P28A-00EUU	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	20	12	SCH160	SCH160	P28A-00EUV	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	20	14	SCH160	SCH160	P28A-00EUW	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	20	16	SCH160	SCH160	P28A-00EUX	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	20	18	SCH160	SCH160	P28A-00EUY	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	24	16	SCH160	SCH160	P28A-00EUZ	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	24	18	SCH160	SCH160	P28A-00EV0	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	24	20	SCH160	SCH160	P28A-00EV1	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P29A-0035U	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	0.75		SCH160		P29A-001UF	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	1		SCH160		P29A-001TC	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	1.5		SCH160		P29A-001TD	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	2		SCH160		P29A-001TK	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	3		SCH160		P29A-001TN	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	4		SCH160		P29A-001WH	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	6		SCH160		P29A-0032B	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	8		SCH140		P29A-00334	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	10		XXS		P29A-00335	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service	
1	12		SCH160		P29A-003VW	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service	
1	14		SCH160		P29A-003VX	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service	
1	16		SCH160		P29A-003VY	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service	
1	18		SCH160		P29A-003VZ	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service	
1	20		SCH160		P29A-003W0	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service	
1	24		SCH160		P29A-003W1	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P41A-000B9	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

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STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75		XXS		P41A-000BA	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		XXS		P41A-000D8	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		XXS		P41A-000D9	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2	0.75	SCH160	SCH160	P31B-007NC	Outlet ASTM A105 MSS SP-97 BW	
1	3	0.75	SCH160	SCH160	P31B-00CMV	Outlet ASTM A105 MSS SP-97 BW	
1	4	0.75	SCH160	SCH160	P31B-00CLV	Outlet ASTM A105 MSS SP-97 BW	
1	6	0.75	SCH160	SCH160	P31B-00CKM	Outlet ASTM A105 MSS SP-97 BW	
1	8	0.75	SCH140	SCH160	P31B-00C9W	Outlet ASTM A105 MSS SP-97 BW	
1	10	0.75	XXS	SCH160	P31B-00XJF	Outlet ASTM A105 MSS SP-97 BW	
1	12	0.75	SCH160	SCH160	P31B-00TWV	Outlet ASTM A105 MSS SP-97 BW	
1	14	0.75	SCH160	SCH160	P31B-00TWP	Outlet ASTM A105 MSS SP-97 BW	
1	16	0.75	SCH160	SCH160	P31B-011BR	Outlet ASTM A105 MSS SP-97 BW	
1	18	0.75	SCH160	SCH160	P31B-01186	Outlet ASTM A105 MSS SP-97 BW	
1	20	0.75	SCH160	SCH160	P31B-01188	Outlet ASTM A105 MSS SP-97 BW	
1	24	0.75	SCH160	SCH160	P31B-0118A	Outlet ASTM A105 MSS SP-97 BW	
1	3	1	SCH160	SCH160	P31B-00B4K	Outlet ASTM A105 MSS SP-97 BW	
1	4	1	SCH160	SCH160	P31B-00B3N	Outlet ASTM A105 MSS SP-97 BW	
1	6	1	SCH160	SCH160	P31B-00AZE	Outlet ASTM A105 MSS SP-97 BW	
1	8	1	SCH140	SCH160	P31B-00AVJ	Outlet ASTM A105 MSS SP-97 BW	
1	10	1	XXS	SCH160	P31B-00YKR	Outlet ASTM A105 MSS SP-97 BW	
1	12	1	SCH160	SCH160	P31B-00TWW	Outlet ASTM A105 MSS SP-97 BW	
1	14	1	SCH160	SCH160	P31B-00TWR	Outlet ASTM A105 MSS SP-97 BW	
1	16	1	SCH160	SCH160	P31B-011BS	Outlet ASTM A105 MSS SP-97 BW	
1	18	1	SCH160	SCH160	P31B-01187	Outlet ASTM A105 MSS SP-97 BW	
1	20	1	SCH160	SCH160	P31B-01189	Outlet ASTM A105 MSS SP-97 BW	
1	24	1	SCH160	SCH160	P31B-0118B	Outlet ASTM A105 MSS SP-97 BW	
1	4	1.5	SCH160	SCH160	P31B-00BP6	Outlet ASTM A105 MSS SP-97 BW	
1	6	1.5	SCH160	SCH160	P31B-00BJK	Outlet ASTM A105 MSS SP-97 BW	
1	8	1.5	SCH140	SCH160	P31B-00BHP	Outlet ASTM A105 MSS SP-97 BW	
1	10	1.5	XXS	SCH160	P31B-00YKS	Outlet ASTM A105 MSS SP-97 BW	
1	12	1.5	SCH160	SCH160	P31B-00CEK	Outlet ASTM A105 MSS SP-97 BW	
1	14	1.5	SCH160	SCH160	P31B-00CDT	Outlet ASTM A105 MSS SP-97 BW	
1	16	1.5	SCH160	SCH160	P31B-00C9C	Outlet ASTM A105 MSS SP-97 BW	
1	18	1.5	SCH160	SCH160	P31B-00C8K	Outlet ASTM A105 MSS SP-97 BW	
1	20	1.5	SCH160	SCH160	P31B-00C43	Outlet ASTM A105 MSS SP-97 BW	
1	24	1.5	SCH160	SCH160	P31B-00C3D	Outlet ASTM A105 MSS SP-97 BW	
1	6	2	SCH160	SCH160	P31B-007SS	Outlet ASTM A105 MSS SP-97 BW	
1	8	2	SCH140	SCH160	P31B-00AHF	Outlet ASTM A105 MSS SP-97 BW	
1	10	2	XXS	SCH160	P31B-00ASP	Outlet ASTM A105 MSS SP-97 BW	
1	12	2	SCH160	SCH160	P31B-00ARR	Outlet ASTM A105 MSS SP-97 BW	
1	14	2	SCH160	SCH160	P31B-00CBA	Outlet ASTM A105 MSS SP-97 BW	
1	16	2	SCH160	SCH160	P31B-00C6G	Outlet ASTM A105 MSS SP-97 BW	
1	18	2	SCH160	SCH160	P31B-00C1A	Outlet ASTM A105 MSS SP-97 BW	
1	20	2	SCH160	SCH160	P31B-009EY	Outlet ASTM A105 MSS SP-97 BW	
1	24	2	SCH160	SCH160	P31B-0098L	Outlet ASTM A105 MSS SP-97 BW	
1	8	3	SCH140	SCH160	P31B-00A38	Outlet ASTM A105 MSS SP-97 BW	
1	10	3	XXS	SCH160	P31B-009CZ	Outlet ASTM A105 MSS SP-97 BW	
1	12	3	SCH160	SCH160	P31B-0097C	Outlet ASTM A105 MSS SP-97 BW	
1	14	3	SCH160	SCH160	P31B-0091J	Outlet ASTM A105 MSS SP-97 BW	
1	16	3	SCH160	SCH160	P31B-00908	Outlet ASTM A105 MSS SP-97 BW	
1	18	3	SCH160	SCH160	P31B-008U4	Outlet ASTM A105 MSS SP-97 BW	
1	20	3	SCH160	SCH160	P31B-008M0	Outlet ASTM A105 MSS SP-97 BW	
1	24	3	SCH160	SCH160	P31B-008EP	Outlet ASTM A105 MSS SP-97 BW	
1	12	4	SCH160	SCH160	P31B-00952	Outlet ASTM A105 MSS SP-97 BW	
1	14	4	SCH160	SCH160	P31B-008Z8	Outlet ASTM A105 MSS SP-97 BW	
1	16	4	SCH160	SCH160	P31B-008TD	Outlet ASTM A105 MSS SP-97 BW	

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OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	18	4	SCH160	SCH160	P31B-008L7	Outlet ASTM A105 MSS SP-97 BW	
1	20	4	SCH160	SCH160	P31B-008E0	Outlet ASTM A105 MSS SP-97 BW	
1	24	4	SCH160	SCH160	P31B-0087S	Outlet ASTM A105 MSS SP-97 BW	
1	18	6	SCH160	SCH160	P31B-008SA	Outlet ASTM A105 MSS SP-97 BW	
1	20	6	SCH160	SCH160	P31B-008RD	Outlet ASTM A105 MSS SP-97 BW	
1	24	6	SCH160	SCH160	P31B-008JT	Outlet ASTM A105 MSS SP-97 BW	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30B-0002D	Plug ASTM A105 ASME B16.11 NPT Round head	
1	0.75				P30B-0002E	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1				P30B-0002F	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1.5				P30B-0002G	Plug ASTM A105 ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P61B-009VY	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
1	0.75		SCH160		P61B-0065U	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
1	1		SCH160		P61B-0065V	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
1	1.5		SCH160		P61B-0065W	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
1	2		SCH160		P61B-0066J	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
1	3		SCH160		P61B-0067T	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
1	4		SCH160		P61B-00671	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
1	6		SCH160		P61B-0066K	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
1	8		SCH140		P61B-009VL	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
1	10		XXS		P61B-009VK	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
1	12		SCH160		P61B-0066S	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
1	14		SCH160		P61B-0066T	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
1	16		SCH160		P61B-00CW9	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
1	18		SCH160		P61B-00CWA	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
1	20		SCH160		P61B-00CWB	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
1	24		SCH160		P61B-00CWC	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
541	0.5				P61B-00DLH	Flange NPT ASTM A105 Class 1500 ASME B16.5 RJ	
541	0.75				P61B-00CW7	Flange NPT ASTM A105 Class 1500 ASME B16.5 RJ	
805	0.5		XS		P61B-00CW8	Flange WN ASTM A105 Class 2500 ASME B16.5 RJ	
805	0.75		SCH160		P61B-00667	Flange WN ASTM A105 Class 2500 ASME B16.5 RJ	
805	1		SCH160		P61B-00668	Flange WN ASTM A105 Class 2500 ASME B16.5 RJ	
805	1.5		SCH160		P61B-00669	Flange WN ASTM A105 Class 2500 ASME B16.5 RJ	
805	2		SCH160		P61B-0066M	Flange WN ASTM A105 Class 2500 ASME B16.5 RJ	
805	3		SCH160		P61B-006JE	Flange WN ASTM A105 Class 2500 ASME B16.5 RJ	
805	4		SCH160		P61B-00672	Flange WN ASTM A105 Class 2500 ASME B16.5 RJ	
805	6		SCH160		P61B-0066N	Flange WN ASTM A105 Class 2500 ASME B16.5 RJ	
805	8		SCH140		P61B-009VN	Flange WN ASTM A105 Class 2500 ASME B16.5 RJ	
805	10		XXS		P61B-009VM	Flange WN ASTM A105 Class 2500 ASME B16.5 RJ	
805	12		SCH160		P61B-0066X	Flange WN ASTM A105 Class 2500 ASME B16.5 RJ	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67B-001VE	Blind flange ASTM A105 Class 1500 ASME B16.5 RJ	
1	0.75				P67B-001VF	Blind flange ASTM A105 Class 1500 ASME B16.5 RJ	
1	1				P67B-001VG	Blind flange ASTM A105 Class 1500 ASME B16.5 RJ	
1	1.5				P67B-001VH	Blind flange ASTM A105 Class 1500 ASME B16.5 RJ	
1	2				P67B-0014J	Blind flange ASTM A105 Class 1500 ASME B16.5 RJ	
1	3				P67B-0014G	Blind flange ASTM A105 Class 1500 ASME B16.5 RJ	
1	4				P67B-0014F	Blind flange ASTM A105 Class 1500 ASME B16.5 RJ	
1	6				P67B-0014E	Blind flange ASTM A105 Class 1500 ASME B16.5 RJ	
1	8				P67B-0014D	Blind flange ASTM A105 Class 1500 ASME B16.5 RJ	
1	10				P67B-0014P	Blind flange ASTM A105 Class 1500 ASME B16.5 RJ	
1	12				P67B-0014N	Blind flange ASTM A105 Class 1500 ASME B16.5 RJ	

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BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P67B-0014M	Blind flange ASTM A105 Class 1500 ASME B16.5 RJ	
1	16				P67B-0014L	Blind flange ASTM A105 Class 1500 ASME B16.5 RJ	
1	18				P67B-0014K	Blind flange ASTM A105 Class 1500 ASME B16.5 RJ	
1	20				P67B-0014H	Blind flange ASTM A105 Class 1500 ASME B16.5 RJ	
1	24				P67B-002NK	Blind flange ASTM A105 Class 1500 ASME B16.5 RJ	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P75T-000JT	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	0.75				P75T-000JU	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	1				P75T-000JV	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	1.5				P75T-000JW	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	2				P75T-0008A	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	3				P75T-0008E	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	4				P75T-0008D	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	6				P75T-0008C	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	8				P75T-0008B	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	10				P75T-0008L	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	12				P75T-0008K	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	14				P75T-0008J	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	16				P75T-0008H	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	18				P75T-0008G	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	20				P75T-0008F	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	24				P75T-0012C	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	0.5				P75T-000KT	Ring joint gasket Soft iron Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	0.75				P75T-000KU	Ring joint gasket Soft iron Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	1				P75T-000KV	Ring joint gasket Soft iron Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	1.5				P75T-000KW	Ring joint gasket Soft iron Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	2				P75T-000L6	Ring joint gasket Soft iron Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	3				P75T-000MC	Ring joint gasket Soft iron Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	4				P75T-000ME	Ring joint gasket Soft iron Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	6				P75T-000L7	Ring joint gasket Soft iron Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	8				P75T-000MD	Ring joint gasket Soft iron Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	10				P75T-000KX	Ring joint gasket Soft iron Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	12				P75T-000MB	Ring joint gasket Soft iron Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-2				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	3-24				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
805	0.5-1				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
805	1.5				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
805	2				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
805	3-12				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81B-002EY	Gate valve ASTM A105 Class 1500 API 602 BW XS Trim SS316L Body and disc seats Stellite-6 WB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	0.75				P81B-0021K	Gate valve ASTM A105 Class 1500 API 602 BW Sch160 Trim SS316L Body and disc seats Stellite-6 WB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	1				P81B-0021L	Gate valve ASTM A105 Class 1500 API 602 BW Sch160 Trim SS316L Body and disc seats Stellite-6 WB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	1.5				P81B-0021M	Gate valve ASTM A105 Class 1500 API 602 BW Sch160 Trim SS316L Body and disc seats Stellite-6 WB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	2				P81C-006UU	Gate valve ASTM A216 Grade WCB Class 1500 API 600 BW Sch160 Trim SS316L Body and disc seats Stellite-6 PSB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	3				P81C-006UV	Gate valve ASTM A216 Grade WCB Class 1500 API 600 BW Sch160 Trim SS316L Body and disc seats Stellite-6 PSB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	4				P81C-006P4	Gate valve ASTM A216 Grade WCB Class 1500 API 600 BW Sch160 Trim SS316L Body and disc seats Stellite-6 PSB-BG-OS&Y Gear operated Moderate wet H2S service	

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GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	6				P81C-006P9	Gate valve ASTM A216 Grade WCB Class 1500 API 600 BW Sch160 Trim SS316L Body and disc seats Stellite-6 PSB-BG-OS&Y Gear operated Moderate wet H2S service	
1	8				P81C-007HU	Gate valve ASTM A216 Grade WCB Class 1500 API 600 BW Sch140 Trim SS316L Body and disc seats Stellite-6 PSB-BG-OS&Y Gear operated Moderate wet H2S service	
1	10				P81C-007HV	Gate valve ASTM A216 Grade WCB Class 1500 API 600 BW XXS Trim SS316L Body and disc seats Stellite-6 PSB-BG-OS&Y Gear operated Moderate wet H2S service	
1	12				P81C-007HW	Gate valve ASTM A216 Grade WCB Class 1500 API 600 BW Sch160 Trim SS316L Body and disc seats Stellite-6 PSB-BG-OS&Y Gear operated Moderate wet H2S service	
1	24				P81C-008NU	Gate valve ASTM A216 Grade WCB Class 1500 API 600 BW Sch160 Trim SS316L Body and disc seats Stellite-6 PSB-BG-OS&Y Gear operated Moderate wet H2S service	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82B-001UD	Globe valve ASTM A105 Class 1500 API 602 BW XS Trim SS316L Body and disc seats Stellite-6 WB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	0.75				P82B-001L6	Globe valve ASTM A105 Class 1500 API 602 BW Sch160 Trim SS316L Body and disc seats Stellite-6 WB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	1				P82B-001L7	Globe valve ASTM A105 Class 1500 API 602 BW Sch160 Trim SS316L Body and disc seats Stellite-6 WB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	1.5				P82B-001L8	Globe valve ASTM A105 Class 1500 API 602 BW Sch160 Trim SS316L Body and disc seats Stellite-6 WB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	2				P82C-003AW	Globe valve ASTM A216 Grade WCB Class 1500 BS 1873 BW Sch160 Trim SS316L Body and disc seats Stellite-6 PSB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	3				P82C-00437	Globe valve ASTM A216 Grade WCB Class 1500 BS 1873 BW Sch160 Trim SS316L Body and disc seats Stellite-6 PSB-BG-OS&Y Gear operated Moderate wet H2S service	
4601	0.75				P82B-0022R	Y-pattern globe valve ASTM A105 Class 1500 ASME B16.34 BW Sch160 Trim SS316L Body and disc seats Stellite-6 WB-BG-OS&Y Handwheel operated Moderate wet H2S service	
4601	1				P82B-0022S	Y-pattern globe valve ASTM A105 Class 1500 ASME B16.34 BW Sch160 Trim SS316L Body and disc seats Stellite-6 WB-BG-OS&Y Handwheel operated Moderate wet H2S service	
4601	1.5				P82B-0022U	Y-pattern globe valve ASTM A105 Class 1500 ASME B16.34 BW Sch160 Trim SS316L Body and disc seats Stellite-6 WB-BG-OS&Y Handwheel operated Moderate wet H2S service	
4601	2				P82C-0047K	Y-pattern globe valve ASTM A216 Grade WCB Class 1500 ASME B16.34 BW Sch160 Trim SS316L Body and disc seats Stellite-6 PSB-BG-OS&Y Handwheel operated Moderate wet H2S service	
4601	3				P82C-00485	Y-pattern globe valve ASTM A216 Grade WCB Class 1500 ASME B16.34 BW Sch160 Trim SS316L Body and disc seats Stellite-6 PSB-BG-OS&Y Gear operated Moderate wet H2S service	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83B-001CZ	Check valve ASTM A105 Class 1500 API 602 BW XS Trim SS316L Body and disc seats Stellite-6 Lift-type Welded cover Moderate wet H2S service	
1	0.75				P83B-001D0	Check valve ASTM A105 Class 1500 API 602 BW Sch160 Trim SS316L Body and disc seats Stellite-6 Lift-type Welded cover Moderate wet H2S service	
1	1				P83B-001D1	Check valve ASTM A105 Class 1500 API 602 BW Sch160 Trim SS316L Body and disc seats Stellite-6 Lift-type Welded cover Moderate wet H2S service	
1	1.5				P83B-001D2	Check valve ASTM A105 Class 1500 API 602 BW Sch160 Trim SS316L Body and disc seats Stellite-6 Lift-type Welded cover Moderate wet H2S service	
1	2				P83C-00346	Check valve ASTM A216 Grade WCB Class 1500 BS 1868 BW Sch160 Trim SS316L Body and disc seats Stellite-6 Swing-type Pressure seal cap Moderate wet H2S service	
1	3				P83C-00347	Check valve ASTM A216 Grade WCB Class 1500 BS 1868 BW Sch160 Trim SS316L Body and disc seats Stellite-6 Swing-type Pressure seal cap Moderate wet H2S service	
1	4				P83C-00341	Check valve ASTM A216 Grade WCB Class 1500 BS 1868 BW Sch160 Trim SS316L Body and disc seats Stellite-6 Swing-type Pressure seal cap Moderate wet H2S service	
1	6				P83C-00348	Check valve ASTM A216 Grade WCB Class 1500 BS 1868 BW Sch160 Trim SS316L Body and disc seats Stellite-6 Swing-type Pressure seal cap Moderate wet H2S service	

DP CHECK VALVE (XDP)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	8				P88C-002JH	Dual plate check valve ASTM A216 Grade WCB Class 1500 API 594 Lug-type ASME B16.5 RJ Trim SS316L and Stellite-6 Internal wetted parts SS316L Spring Inconel Retainerless-type Moderate wet H2S service	
1	10				P88C-002JG	Dual plate check valve ASTM A216 Grade WCB Class 1500 API 594 Lug-type ASME B16.5 RJ Trim SS316L and Stellite-6 Internal wetted parts SS316L Spring Inconel Retainerless-type Moderate wet H2S service	

ORIFICE FLANGE (FO)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3		SCH160		P66B-008UY	Orifice flange WN ASTM A105 Class 1500 ASME B16.36 RJ NPS3/4 SW tap x 1	
1	4		SCH160		P66B-008UZ	Orifice flange WN ASTM A105 Class 1500 ASME B16.36 RJ NPS3/4 SW tap x 1	
1	6		SCH160		P66B-008V0	Orifice flange WN ASTM A105 Class 1500 ASME B16.36 RJ NPS3/4 SW tap x 1	
1	8		SCH140		P66B-008V1	Orifice flange WN ASTM A105 Class 1500 ASME B16.36 RJ NPS3/4 SW tap x 1	
200	3		SCH160		P66B-008UU	Orifice flange WN ASTM A105 Class 1500 ASME B16.36 RJ NPS3/4 SW tap x 1 with Jack screw	
200	4		SCH160		P66B-008UV	Orifice flange WN ASTM A105 Class 1500 ASME B16.36 RJ NPS3/4 SW tap x 1 with Jack screw	
200	6		SCH160		P66B-008UW	Orifice flange WN ASTM A105 Class 1500 ASME B16.36 RJ NPS3/4 SW tap x 1 with Jack screw	
200	8		SCH140		P66B-008UX	Orifice flange WN ASTM A105 Class 1500 ASME B16.36 RJ NPS3/4 SW tap x 1 with Jack screw	

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SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P71B-000LX	Spectacle blank ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	1.5				P71B-000LW	Spectacle blank ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	2				P71B-000LT	Spectacle blank ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	3				P71B-000LY	Spectacle blank ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	4				P71B-000LZ	Spectacle blank ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	

PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P72B-000JD	Paddle blank ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	0.75				P72B-000JE	Paddle blank ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	1				P72B-000JF	Paddle blank ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	1.5				P72B-000JG	Paddle blank ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	2				P72B-000JH	Paddle blank ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	3				P72B-000KG	Paddle blank ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	4				P72B-000KH	Paddle blank ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	6				P72B-000KJ	Paddle blank ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	8				P72B-000KK	Paddle blank ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	10				P72B-000KR	Paddle blank ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	12				P72B-000KT	Paddle blank ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	14				P72B-000KU	Paddle blank ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	16				P72B-000KV	Paddle blank ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	18				P72B-000ND	Paddle blank ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	20				P72B-000NE	Paddle blank ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	24				P72B-000NF	Paddle blank ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	

PADDLE SPACER (PS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P72B-000JN	Paddle spacer ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	0.75				P72B-000JP	Paddle spacer ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	1				P72B-000JR	Paddle spacer ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	1.5				P72B-000JS	Paddle spacer ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	2				P72B-000JT	Paddle spacer ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	3				P72B-000KL	Paddle spacer ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	4				P72B-000KM	Paddle spacer ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	6				P72B-000KN	Paddle spacer ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	8				P72B-000KP	Paddle spacer ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	10				P72B-000KS	Paddle spacer ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	12				P72B-000KW	Paddle spacer ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	14				P72B-000KX	Paddle spacer ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	16				P72B-000KY	Paddle spacer ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	18				P72B-000NG	Paddle spacer ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	20				P72B-000NH	Paddle spacer ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	24				P72B-000NJ	Paddle spacer ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	

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BOLT TABLE (B_N1A602 , STUD ASME RJ, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	110	P80S-0090F	R12	P75T-000JT
0.75	4	0.750	115	P80S-0090G	R14	P75T-000JU
1	4	0.875	130	P80S-005ZB	R16	P75T-000JV
1.5	4	1.000	140	P80S-0061A	R20	P75T-000JW
2	8	0.875	150	P80S-005ZF	R24	P75T-0008A
3	8	1.125	180	P80S-0064T	R35	P75T-0008E
4	8	1.250	230	P80S-0068H	R39	P75T-0008D
6	12	1.375	300	P80S-006J1	R46	P75T-0008C
8	12	1.625	345	P80S-00A5K	R50	P75T-0008B
10	12	1.875	395	P80S-00AW8	R54	P75T-0008L
12	16	2.000	445	P80S-00BH5	R58	P75T-0008K
14	16	2.250	490	P80S-00DLE	R63	P75T-0008J
16	16	2.500	540	P80S-00DZM	R67	P75T-0008H
18	16	2.750	590	P80S-01RAH	R71	P75T-0008G
20	16	3.000	650	P80S-01VK6	R75	P75T-0008F
24	16	3.500	745	P80S-01VTJ	R79	P75T-0012C

BOLT TABLE (B_N1A602_805 , STUD ASME RJ, OPTION CODE 805)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	125	P80S-0090J	R13	P75T-000KT
0.75	4	0.750	130	P80S-0090K	R16	P75T-000KU
1	4	0.875	140	P80S-005ZD	R18	P75T-000KV
1.5	4	1.125	175	P80S-0064S	R23	P75T-000KW
2	8	1.000	180	P80S-0061J	R26	P75T-000L6
3	8	1.250	260	P80S-0068P	R32	P75T-000MC
4	8	1.500	305	P80S-006LS	R38	P75T-000ME
6	8	2.000	410	P80S-00BBD	R47	P75T-000L7
8	12	2.000	450	P80S-00BH6	R51	P75T-000MD
10	12	2.500	575	P80S-00DZV	R55	P75T-000KX
12	12	2.750	635	P80S-01RAT	R60	P75T-000MB
14	14	3.000	695		R64	
16	14	3.000	755		R68	
18	16	3.000	815		R72	
20	16	3.000	875		R76	
24	18	3.000	950		R81	

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PIPING CLASS

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BRANCH TABLE (T_N1A602)

RUN PIPE SIZE (in) \ BRANCH SIZE (in)	0.5	0.75	1	1.5	2	3	4	6	8	10	12	14	16	18	20	24
0.5	TS															
0.75		TS														
1		TR	TS													
1.5		TR	TR	TS												
2		L	TR	TR	TS											
3		L	L	TR	TR	TS										
4	L	L	L	L	TR	TR	TS									
6	L	L	L	L	L	TR	TR	TS								
8		L	L	L	L	L	TR	TR	TS							
10		L	L	L	L	L	TR	TR	TR	TS						
12		L	L	L	L	L	L	TR	TR	TR	TS					
14		L	L	L	L	L	L	TR	TR	TR	TR	TS				
16		L	L	L	L	L	L	TR	TR	TR	TR	TR	TS			
18		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TS		
20		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TR	TS	
24		L	L	L	L	L	L	L	9PD	TR	TR	TR	TR	TR	TR	TS

TS : STRAIGHT TEE
L : OUTLET
9PD : REINFORCING PAD 90 DEG
TR : REDUCING TEE

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PIPING CLASS

N1AH REV NO. 2

Material : Killed CS
Rating : ASME CLASS 1500
Flange Face : RJ
C.A.(mm) : 1.50
Gasket : Ring Octagonal
Service : PROCESS - HYDROGEN OR HYDROGEN RICH HYDROCARBON MIXTURE : / PROCESS WITH HYDROGEN

Design Code : ASME B31.1
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
16	PIPE CLASS SHALL BE USED WITHIN THE NORMAL OPERATING PRESSURE/TEMPERATURE LIMITS SPECIFIED IN API RP 941. PRESSURE / TEMPERATURE SPECIFIED IN THE PIPE CLASS EXCEEDING API RP 941 LIMITS SHOULD BE REGARDED AS UPSET CONDITIONS RATHER THAN FOR CONTINUOUS SERVICE

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
541	NPT(F) (F)
805	CLASS 2500 (B,F,G)

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PIPING CLASS
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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P01A-0010P	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	0.75		SCH160		P01A-0010R	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1		SCH160		P01A-0014M	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1.5		SCH160		P01A-0015J	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	2		SCH160		P01A-0019T	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	3		SCH160		P01A-001S5	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	4		SCH160		P01A-001TN	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	6		SCH160		P01A-001VD	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	8		SCH140		P01A-001WJ	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P02A-001Y8	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	0.75		SCH160		P02A-000V8	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1		SCH160		P02A-000V7	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1.5		SCH160		P02A-000V9	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	2		SCH160		P02A-000KW	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		SCH160		P02A-000U4	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		SCH160		P02A-002JE	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		SCH160		P02A-002J9	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		SCH140		P02A-003F9	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P03A-001TC	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	0.75		SCH160		P03A-000RS	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1		SCH160		P03A-000RR	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1.5		SCH160		P03A-000RP	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	2		SCH160		P03A-000HU	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		SCH160		P03A-000RB	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		SCH160		P03A-002FY	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		SCH160		P03A-002FT	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		SCH140		P03A-003D4	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P21A-003AW	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	0.75		SCH160		P21A-002B8	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1		SCH160		P21A-002B6	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5		SCH160		P21A-002B9	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2		SCH160		P21A-00245	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		SCH160		P21A-002AG	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		SCH160		P21A-003GZ	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6		SCH160		P21A-003GU	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8		SCH140		P21A-003Z0	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75	SCH160	SCH160	P24A-004B6	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.75	SCH160	SCH160	P24A-004B2	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	1	SCH160	SCH160	P24A-004BA	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	SCH160	SCH160	P24A-00AEU	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	SCH160	SCH160	P24A-003AX	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	SCH160	SCH160	P24A-004LF	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	SCH160	SCH160	P24A-0045H	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	SCH160	SCH160	P24A-00GPP	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	SCH160	SCH160	P24A-00GSS	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	SCH160	SCH160	P24A-00H9L	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	6	4	SCH160	SCH160	P24A-00GPR	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH140	SCH160	P24A-00K2T	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH140	SCH160	P24A-00K2U	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	SCH160	P27A-004LZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.5	SCH160	SCH160	P27A-004M8	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.75	SCH160	SCH160	P27A-002T5	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.5	SCH160	SCH160	P27A-004MV	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.75	SCH160	SCH160	P27A-002T7	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	1	SCH160	SCH160	P27A-002T4	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	0.75	SCH160	SCH160	P27A-0025L	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	SCH160	SCH160	P27A-0025K	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	SCH160	SCH160	P27A-0025J	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	SCH160	SCH160	P27A-00301	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	SCH160	SCH160	P27A-002NC	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	1.5	SCH160	SCH160	P27A-0073L	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	SCH160	SCH160	P27A-00746	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	SCH160	SCH160	P27A-0074N	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	SCH160	SCH160	P27A-007NZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	SCH160	SCH160	P27A-007PP	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH140	SCH160	P27A-007VZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH140	SCH160	P27A-007X7	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	SCH160	P28A-007KG	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.5	SCH160	SCH160	P28A-007KH	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.75	SCH160	SCH160	P28A-002TU	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.5	SCH160	SCH160	P28A-007KJ	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.75	SCH160	SCH160	P28A-002TW	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	1	SCH160	SCH160	P28A-002TR	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	0.75	SCH160	SCH160	P28A-002SU	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	SCH160	SCH160	P28A-002ST	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	SCH160	SCH160	P28A-002SS	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	SCH160	SCH160	P28A-0030P	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	SCH160	SCH160	P28A-002NY	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	1.5	SCH160	SCH160	P28A-008GK	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	SCH160	SCH160	P28A-008GL	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	SCH160	SCH160	P28A-008J1	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	SCH160	SCH160	P28A-008ZE	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	SCH160	SCH160	P28A-008GM	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH140	SCH160	P28A-00BSJ	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH140	SCH160	P28A-00AH9	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P29A-001UD	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	0.75		SCH160		P29A-000TX	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1		SCH160		P29A-000TY	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5		SCH160		P29A-000TZ	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2		SCH160		P29A-000HR	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		SCH160		P29A-000KY	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		SCH160		P29A-000LZ	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6		SCH160		P29A-000N5	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8		SCH140		P29A-000PA	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P41A-000B9	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		XXS		P41A-000BA	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		XXS		P41A-000D8	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		XXS		P41A-000D9	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2	0.75	SCH160	SCH160	P31B-007NC	Outlet ASTM A105 MSS SP-97 BW	
1	3	0.75	SCH160	SCH160	P31B-00CMV	Outlet ASTM A105 MSS SP-97 BW	
1	4	0.75	SCH160	SCH160	P31B-00CLV	Outlet ASTM A105 MSS SP-97 BW	
1	6	0.75	SCH160	SCH160	P31B-00CKM	Outlet ASTM A105 MSS SP-97 BW	
1	8	0.75	SCH140	SCH160	P31B-00C9W	Outlet ASTM A105 MSS SP-97 BW	
1	3	1	SCH160	SCH160	P31B-00B4K	Outlet ASTM A105 MSS SP-97 BW	
1	4	1	SCH160	SCH160	P31B-00B3N	Outlet ASTM A105 MSS SP-97 BW	
1	6	1	SCH160	SCH160	P31B-00AZE	Outlet ASTM A105 MSS SP-97 BW	
1	8	1	SCH140	SCH160	P31B-00AVJ	Outlet ASTM A105 MSS SP-97 BW	
1	4	1.5	SCH160	SCH160	P31B-00BP6	Outlet ASTM A105 MSS SP-97 BW	
1	6	1.5	SCH160	SCH160	P31B-00BJK	Outlet ASTM A105 MSS SP-97 BW	
1	8	1.5	SCH140	SCH160	P31B-00BHP	Outlet ASTM A105 MSS SP-97 BW	
1	6	2	SCH160	SCH160	P31B-007SS	Outlet ASTM A105 MSS SP-97 BW	
1	8	2	SCH140	SCH160	P31B-00AHF	Outlet ASTM A105 MSS SP-97 BW	
1	8	3	SCH140	SCH160	P31B-00A38	Outlet ASTM A105 MSS SP-97 BW	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30B-0002D	Plug ASTM A105 ASME B16.11 NPT Round head	
1	0.75				P30B-0002E	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1				P30B-0002F	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1.5				P30B-0002G	Plug ASTM A105 ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P61B-0065T	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
1	0.75		SCH160		P61B-0065U	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
1	1		SCH160		P61B-0065V	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
1	1.5		SCH160		P61B-0065W	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
1	2		SCH160		P61B-0066J	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
1	3		SCH160		P61B-0067T	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
1	4		SCH160		P61B-00671	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
1	6		SCH160		P61B-0066K	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
1	8		SCH140		P61B-009VL	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
541	0.5				P61B-00DLH	Flange NPT ASTM A105 Class 1500 ASME B16.5 RJ	
541	0.75				P61B-00CW7	Flange NPT ASTM A105 Class 1500 ASME B16.5 RJ	
805	0.5		SCH160		P61B-0066L	Flange WN ASTM A105 Class 2500 ASME B16.5 RJ	
805	0.75		SCH160		P61B-00667	Flange WN ASTM A105 Class 2500 ASME B16.5 RJ	
805	1		SCH160		P61B-00668	Flange WN ASTM A105 Class 2500 ASME B16.5 RJ	
805	1.5		SCH160		P61B-00669	Flange WN ASTM A105 Class 2500 ASME B16.5 RJ	
805	2		SCH160		P61B-0066M	Flange WN ASTM A105 Class 2500 ASME B16.5 RJ	
805	3		SCH160		P61B-006JE	Flange WN ASTM A105 Class 2500 ASME B16.5 RJ	
805	4		SCH160		P61B-00672	Flange WN ASTM A105 Class 2500 ASME B16.5 RJ	
805	6		SCH160		P61B-0066N	Flange WN ASTM A105 Class 2500 ASME B16.5 RJ	
805	8		SCH140		P61B-009VN	Flange WN ASTM A105 Class 2500 ASME B16.5 RJ	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67B-001VE	Blind flange ASTM A105 Class 1500 ASME B16.5 RJ	
1	0.75				P67B-001VF	Blind flange ASTM A105 Class 1500 ASME B16.5 RJ	
1	1				P67B-001VG	Blind flange ASTM A105 Class 1500 ASME B16.5 RJ	

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BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5				P67B-001VH	Blind flange ASTM A105 Class 1500 ASME B16.5 RJ	
1	2				P67B-0014J	Blind flange ASTM A105 Class 1500 ASME B16.5 RJ	
1	3				P67B-0014G	Blind flange ASTM A105 Class 1500 ASME B16.5 RJ	
1	4				P67B-0014F	Blind flange ASTM A105 Class 1500 ASME B16.5 RJ	
1	6				P67B-0014E	Blind flange ASTM A105 Class 1500 ASME B16.5 RJ	
1	8				P67B-0014D	Blind flange ASTM A105 Class 1500 ASME B16.5 RJ	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P75T-000JT	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	0.75				P75T-000JU	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	1				P75T-000JV	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	1.5				P75T-000JW	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	2				P75T-0008A	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	3				P75T-0008E	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	4				P75T-0008D	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	6				P75T-0008C	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	8				P75T-0008B	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	0.5				P75T-000KT	Ring joint gasket Soft iron Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	0.75				P75T-000KU	Ring joint gasket Soft iron Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	1				P75T-000KV	Ring joint gasket Soft iron Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	1.5				P75T-000KW	Ring joint gasket Soft iron Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	2				P75T-000L6	Ring joint gasket Soft iron Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	3				P75T-000MC	Ring joint gasket Soft iron Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	4				P75T-000ME	Ring joint gasket Soft iron Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	6				P75T-000L7	Ring joint gasket Soft iron Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	8				P75T-000MD	Ring joint gasket Soft iron Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-2				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	3-8				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
805	0.5-1				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
805	1.5				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
805	2				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
805	3-8				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81B-001UZ	Gate valve ASTM A105 Class 1500 API 602 Flange ASME B16.5 RJ Trim number 8 WB-BG-OS&Y Handwheel operated	
1	0.75				P81B-001V0	Gate valve ASTM A105 Class 1500 API 602 Flange ASME B16.5 RJ Trim number 8 WB-BG-OS&Y Handwheel operated	
1	1				P81B-001V1	Gate valve ASTM A105 Class 1500 API 602 Flange ASME B16.5 RJ Trim number 8 WB-BG-OS&Y Handwheel operated	
1	1.5				P81B-001V2	Gate valve ASTM A105 Class 1500 API 602 Flange ASME B16.5 RJ Trim number 8 WB-BG-OS&Y Handwheel operated	
1	2				P81C-006PU	Gate valve ASTM A216 Grade WCB Class 1500 API 600 BW Sch160 Trim number 8 PSB-BG-OS&Y Handwheel operated	

PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P72B-000JD	Paddle blank ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	0.75				P72B-000JE	Paddle blank ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	1				P72B-000JF	Paddle blank ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	1.5				P72B-000JG	Paddle blank ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	2				P72B-000JH	Paddle blank ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	3				P72B-000KG	Paddle blank ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	4				P72B-000KH	Paddle blank ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	

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PADDLE BLANK (PB)							
OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	6				P72B-000KJ	Paddle blank ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	8				P72B-000KK	Paddle blank ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	

PADDLE SPACER (PS)							
OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P72B-000JN	Paddle spacer ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	0.75				P72B-000JP	Paddle spacer ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	1				P72B-000JR	Paddle spacer ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	1.5				P72B-000JS	Paddle spacer ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	2				P72B-000JT	Paddle spacer ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	3				P72B-000KL	Paddle spacer ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	4				P72B-000KM	Paddle spacer ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	6				P72B-000KN	Paddle spacer ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	8				P72B-000KP	Paddle spacer ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	

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BOLT TABLE (B_N1AH , STUD ASME RJ, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	110	P80S-003XK	R12	P75T-000JT
0.75	4	0.750	115	P80S-003XL	R14	P75T-000JU
1	4	0.875	130	P80S-0041B	R16	P75T-000JV
1.5	4	1.000	140	P80S-0043F	R20	P75T-000JW
2	8	0.875	150	P80S-0041F	R24	P75T-0008A
3	8	1.125	180	P80S-0046T	R35	P75T-0008E
4	8	1.250	230	P80S-004AU	R39	P75T-0008D
6	12	1.375	300	P80S-003ED	R46	P75T-0008C
8	12	1.625	345	P80S-005TY	R50	P75T-0008B

BOLT TABLE (B_N1AH_805 , STUD ASME RJ, OPTION CODE 805)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	125	P80S-003XN	R13	P75T-000KT
0.75	4	0.750	130	P80S-003XP	R16	P75T-000KU
1	4	0.875	140	P80S-0041D	R18	P75T-000KV
1.5	4	1.125	175	P80S-0046S	R23	P75T-000KW
2	8	1.000	180	P80S-0043R	R26	P75T-000L6
3	8	1.250	260	P80S-004B0	R32	P75T-000MC
4	8	1.500	305	P80S-008MZ	R38	P75T-000ME
6	8	2.000	410	P80S-005VF	R47	P75T-000L7
8	12	2.000	450	P80S-005VP	R51	P75T-000MD

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PIPING CLASS

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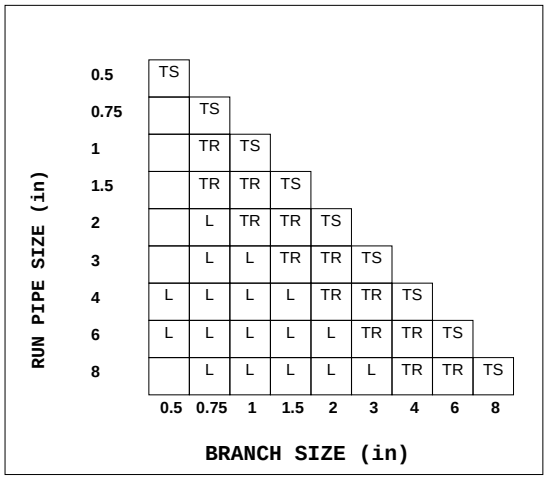
REV NO. 2

BRANCH TABLE (T_N1AH)



RUN PIPE SIZE (in) \ BRANCH SIZE (in)	0.5	0.75	1	1.5	2	3	4	6	8
0.5	TS								
0.75		TS							
1		TR	TS						
1.5		TR	TR	TS					
2		L	TR	TR	TS				
3		L	L	TR	TR	TS			
4	L	L	L	L	TR	TR	TS		
6	L	L	L	L	L	TR	TR	TS	
8		L	L	L	L	L	TR	TR	TS

TR : REDUCING TEE
L : OUTLET
TS : STRAIGHT TEE

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PIPING CLASS

N1AH02 REV NO. 2

Material : Killed CS
Rating : ASME CLASS 1500
Flange Face : RJ
C.A.(mm) : 1.50
Gasket : Ring Octagonal
Service : PROCESS - HYDROGEN OR HYDROGEN RICH HYDROCARBON MIXTURES
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
16	PIPE CLASS SHALL BE USED WITHIN THE NORMAL OPERATING PRESSURE/TEMPERATURE LIMITS SPECIFIED IN API RP 941. PRESSURE / TEMPERATURE SPECIFIED IN THE PIPE CLASS EXCEEDING API RP 941 LIMITS SHOULD BE REGARDED AS UPSET CONDITIONS RATHER THAN FOR CONTINUOUS SERVICE

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
200	WITH JACK SCREW (FO)
541	NPT(F) (F)
805	CLASS 2500 (B,F,G,SB)
4601	Y-PATTERN (W)

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PIPING CLASS
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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P01A-0010P	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	0.75		SCH160		P01A-0010R	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1		SCH160		P01A-0014M	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1.5		SCH160		P01A-0015J	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	2		SCH160		P01A-0019T	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	3		SCH160		P01A-001S5	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	4		SCH160		P01A-001TN	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	6		SCH160		P01A-001VD	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	8		SCH140		P01A-001WJ	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	10		XXS		P01A-0079W	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	12		SCH160		P01A-0043E	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P02A-001Y8	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	0.75		SCH160		P02A-000V8	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1		SCH160		P02A-000V7	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1.5		SCH160		P02A-000V9	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	2		SCH160		P02A-000KW	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		SCH160		P02A-000U4	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		SCH160		P02A-002JE	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		SCH160		P02A-002J9	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		SCH140		P02A-003F9	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	10		XXS		P02A-003RY	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	12		SCH160		P02A-002JC	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P03A-001TC	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	0.75		SCH160		P03A-000RS	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1		SCH160		P03A-000RR	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1.5		SCH160		P03A-000RP	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	2		SCH160		P03A-000HU	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		SCH160		P03A-000RB	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		SCH160		P03A-002FY	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		SCH160		P03A-002FT	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		SCH140		P03A-003D4	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	10		XXS		P03A-003NL	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	12		SCH160		P03A-002FW	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P21A-003AW	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	0.75		SCH160		P21A-002B8	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1		SCH160		P21A-002B6	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5		SCH160		P21A-002B9	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2		SCH160		P21A-00245	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		SCH160		P21A-002AG	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		SCH160		P21A-003GZ	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6		SCH160		P21A-003GU	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8		SCH140		P21A-003Z0	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10		XXS		P21A-0049B	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12		SCH160		P21A-003GX	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75	SCH160	SCH160	P24A-004B6	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.75	SCH160	SCH160	P24A-004B2	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5	1	SCH160	SCH160	P24A-004BA	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	SCH160	SCH160	P24A-00AEU	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	SCH160	SCH160	P24A-003AX	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	SCH160	SCH160	P24A-004LF	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	SCH160	SCH160	P24A-0045H	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	SCH160	SCH160	P24A-00GPP	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	SCH160	SCH160	P24A-00GSS	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	SCH160	SCH160	P24A-00H9L	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	SCH160	SCH160	P24A-00GPR	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH140	SCH160	P24A-00K2T	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH140	SCH160	P24A-00K2U	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	XXS	SCH160	P24A-00LBE	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	6	XXS	SCH160	P24A-00K2V	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	8	XXS	SCH140	P24A-00K2W	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	6	SCH160	SCH160	P24A-00LAE	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	8	SCH160	SCH140	P24A-00P69	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	10	SCH160	XXS	P24A-00L6V	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	SCH160	P27A-004LZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.5	SCH160	SCH160	P27A-004M8	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.75	SCH160	SCH160	P27A-002T5	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.5	SCH160	SCH160	P27A-004MV	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.75	SCH160	SCH160	P27A-002T7	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	1	SCH160	SCH160	P27A-002T4	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	0.75	SCH160	SCH160	P27A-0025L	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	SCH160	SCH160	P27A-0025K	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	SCH160	SCH160	P27A-0025J	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	SCH160	SCH160	P27A-00301	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	SCH160	SCH160	P27A-002NC	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	1.5	SCH160	SCH160	P27A-0073L	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	SCH160	SCH160	P27A-00746	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	SCH160	SCH160	P27A-0074N	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	SCH160	SCH160	P27A-007NZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	SCH160	SCH160	P27A-007PP	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH140	SCH160	P27A-007VZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH140	SCH160	P27A-007X7	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	XXS	SCH160	P27A-00EMU	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	6	XXS	SCH160	P27A-00EMV	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	8	XXS	SCH140	P27A-00EMW	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	6	SCH160	SCH160	P27A-00EMP	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	8	SCH160	SCH140	P27A-00HK7	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	10	SCH160	XXS	P27A-00FEB	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	SCH160	P28A-007KG	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.5	SCH160	SCH160	P28A-007KH	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.75	SCH160	SCH160	P28A-002TU	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.5	SCH160	SCH160	P28A-007KJ	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.75	SCH160	SCH160	P28A-002TW	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	1	SCH160	SCH160	P28A-002TR	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	0.75	SCH160	SCH160	P28A-002SU	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	SCH160	SCH160	P28A-002ST	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	SCH160	SCH160	P28A-002SS	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	SCH160	SCH160	P28A-0030P	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	SCH160	SCH160	P28A-002NY	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	1.5	SCH160	SCH160	P28A-008GK	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	4	2	SCH160	SCH160	P28A-008GL	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	SCH160	SCH160	P28A-008J1	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	SCH160	SCH160	P28A-008ZE	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	SCH160	SCH160	P28A-008GM	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH140	SCH160	P28A-00BSJ	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH140	SCH160	P28A-00AH9	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	XXS	SCH160	P28A-00BSK	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	6	XXS	SCH160	P28A-00BSL	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	8	XXS	SCH140	P28A-00BSM	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	6	SCH160	SCH160	P28A-00BS6	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	8	SCH160	SCH140	P28A-00EUJ	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	10	SCH160	XXS	P28A-00CK9	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P29A-001UD	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	0.75		SCH160		P29A-000TX	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1		SCH160		P29A-000TY	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5		SCH160		P29A-000TZ	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2		SCH160		P29A-000HR	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		SCH160		P29A-000KY	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		SCH160		P29A-000LZ	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6		SCH160		P29A-000N5	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8		SCH140		P29A-000PA	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10		XXS		P29A-00347	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12		SCH160		P29A-001US	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P41A-000B9	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		XXS		P41A-000BA	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		XXS		P41A-000D8	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		XXS		P41A-000D9	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2	0.75	SCH160	SCH160	P31B-007NC	Outlet ASTM A105 MSS SP-97 BW	
1	3	0.75	SCH160	SCH160	P31B-00CMV	Outlet ASTM A105 MSS SP-97 BW	
1	4	0.75	SCH160	SCH160	P31B-00CLV	Outlet ASTM A105 MSS SP-97 BW	
1	6	0.75	SCH160	SCH160	P31B-00CKM	Outlet ASTM A105 MSS SP-97 BW	
1	8	0.75	SCH140	SCH160	P31B-00C9W	Outlet ASTM A105 MSS SP-97 BW	
1	10	0.75	XXS	SCH160	P31B-00XJF	Outlet ASTM A105 MSS SP-97 BW	
1	12	0.75	SCH160	SCH160	P31B-00TWV	Outlet ASTM A105 MSS SP-97 BW	
1	3	1	SCH160	SCH160	P31B-00B4K	Outlet ASTM A105 MSS SP-97 BW	
1	4	1	SCH160	SCH160	P31B-00B3N	Outlet ASTM A105 MSS SP-97 BW	
1	6	1	SCH160	SCH160	P31B-00AZE	Outlet ASTM A105 MSS SP-97 BW	
1	8	1	SCH140	SCH160	P31B-00AVJ	Outlet ASTM A105 MSS SP-97 BW	
1	10	1	XXS	SCH160	P31B-00YKR	Outlet ASTM A105 MSS SP-97 BW	
1	12	1	SCH160	SCH160	P31B-00TWW	Outlet ASTM A105 MSS SP-97 BW	
1	4	1.5	SCH160	SCH160	P31B-00BP6	Outlet ASTM A105 MSS SP-97 BW	
1	6	1.5	SCH160	SCH160	P31B-00BJK	Outlet ASTM A105 MSS SP-97 BW	
1	8	1.5	SCH140	SCH160	P31B-00BHP	Outlet ASTM A105 MSS SP-97 BW	
1	10	1.5	XXS	SCH160	P31B-00YKS	Outlet ASTM A105 MSS SP-97 BW	
1	12	1.5	SCH160	SCH160	P31B-00CEK	Outlet ASTM A105 MSS SP-97 BW	
1	6	2	SCH160	SCH160	P31B-007SS	Outlet ASTM A105 MSS SP-97 BW	
1	8	2	SCH140	SCH160	P31B-00AHF	Outlet ASTM A105 MSS SP-97 BW	
1	10	2	XXS	SCH160	P31B-00ASP	Outlet ASTM A105 MSS SP-97 BW	
1	12	2	SCH160	SCH160	P31B-00ARR	Outlet ASTM A105 MSS SP-97 BW	
1	8	3	SCH140	SCH160	P31B-00A38	Outlet ASTM A105 MSS SP-97 BW	

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OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	10	3	XXS	SCH160	P31B-009CZ	Outlet ASTM A105 MSS SP-97 BW	
1	12	3	SCH160	SCH160	P31B-0097C	Outlet ASTM A105 MSS SP-97 BW	
1	12	4	SCH160	SCH160	P31B-00952	Outlet ASTM A105 MSS SP-97 BW	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30B-0002D	Plug ASTM A105 ASME B16.11 NPT Round head	
1	0.75				P30B-0002E	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1				P30B-0002F	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1.5				P30B-0002G	Plug ASTM A105 ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P61B-0065T	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
1	0.75		SCH160		P61B-0065U	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
1	1		SCH160		P61B-0065V	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
1	1.5		SCH160		P61B-0065W	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
1	2		SCH160		P61B-0066J	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
1	3		SCH160		P61B-0067T	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
1	4		SCH160		P61B-00671	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
1	6		SCH160		P61B-0066K	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
1	8		SCH140		P61B-009VL	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
1	10		XXS		P61B-009VK	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
1	12		SCH160		P61B-0066S	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
541	0.5				P61B-00DLH	Flange NPT ASTM A105 Class 1500 ASME B16.5 RJ	
541	0.75				P61B-00CW7	Flange NPT ASTM A105 Class 1500 ASME B16.5 RJ	
805	0.5		SCH160		P61B-0066L	Flange WN ASTM A105 Class 2500 ASME B16.5 RJ	
805	0.75		SCH160		P61B-00667	Flange WN ASTM A105 Class 2500 ASME B16.5 RJ	
805	1		SCH160		P61B-00668	Flange WN ASTM A105 Class 2500 ASME B16.5 RJ	
805	1.5		SCH160		P61B-00669	Flange WN ASTM A105 Class 2500 ASME B16.5 RJ	
805	2		SCH160		P61B-0066M	Flange WN ASTM A105 Class 2500 ASME B16.5 RJ	
805	3		SCH160		P61B-006JE	Flange WN ASTM A105 Class 2500 ASME B16.5 RJ	
805	4		SCH160		P61B-00672	Flange WN ASTM A105 Class 2500 ASME B16.5 RJ	
805	6		SCH160		P61B-0066N	Flange WN ASTM A105 Class 2500 ASME B16.5 RJ	
805	8		SCH140		P61B-009VN	Flange WN ASTM A105 Class 2500 ASME B16.5 RJ	
805	10		XXS		P61B-009VM	Flange WN ASTM A105 Class 2500 ASME B16.5 RJ	
805	12		SCH160		P61B-0066X	Flange WN ASTM A105 Class 2500 ASME B16.5 RJ	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67B-001VE	Blind flange ASTM A105 Class 1500 ASME B16.5 RJ	
1	0.75				P67B-001VF	Blind flange ASTM A105 Class 1500 ASME B16.5 RJ	
1	1				P67B-001VG	Blind flange ASTM A105 Class 1500 ASME B16.5 RJ	
1	1.5				P67B-001VH	Blind flange ASTM A105 Class 1500 ASME B16.5 RJ	
1	2				P67B-0014J	Blind flange ASTM A105 Class 1500 ASME B16.5 RJ	
1	3				P67B-0014G	Blind flange ASTM A105 Class 1500 ASME B16.5 RJ	
1	4				P67B-0014F	Blind flange ASTM A105 Class 1500 ASME B16.5 RJ	
1	6				P67B-0014E	Blind flange ASTM A105 Class 1500 ASME B16.5 RJ	
1	8				P67B-0014D	Blind flange ASTM A105 Class 1500 ASME B16.5 RJ	
1	10				P67B-0014P	Blind flange ASTM A105 Class 1500 ASME B16.5 RJ	
1	12				P67B-0014N	Blind flange ASTM A105 Class 1500 ASME B16.5 RJ	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P75T-000JT	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	0.75				P75T-000JU	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	1				P75T-000JV	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	1.5				P75T-000JW	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	

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GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2				P75T-0008A	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	3				P75T-0008E	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	4				P75T-0008D	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	6				P75T-0008C	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	8				P75T-0008B	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	10				P75T-0008L	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	12				P75T-0008K	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	0.5				P75T-000KT	Ring joint gasket Soft iron Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	0.75				P75T-000KU	Ring joint gasket Soft iron Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	1				P75T-000KV	Ring joint gasket Soft iron Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	1.5				P75T-000KW	Ring joint gasket Soft iron Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	2				P75T-000L6	Ring joint gasket Soft iron Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	3				P75T-000MC	Ring joint gasket Soft iron Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	4				P75T-000ME	Ring joint gasket Soft iron Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	6				P75T-000L7	Ring joint gasket Soft iron Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	8				P75T-000MD	Ring joint gasket Soft iron Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	10				P75T-000KX	Ring joint gasket Soft iron Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	12				P75T-000MB	Ring joint gasket Soft iron Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-2				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	3-12				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
805	0.5-1				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
805	1.5				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
805	2				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
805	3-12				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81B-0034T	Gate valve ASTM A105 Class 1500 API 602 BW Sch160 Trim SS316L Body and disc seats Stellite-6 WB-BG-OS&Y Handwheel operated	
1	0.75				P81B-0034U	Gate valve ASTM A105 Class 1500 API 602 BW Sch160 Trim SS316L Body and disc seats Stellite-6 WB-BG-OS&Y Handwheel operated	
1	1				P81B-0034V	Gate valve ASTM A105 Class 1500 API 602 BW Sch160 Trim SS316L Body and disc seats Stellite-6 WB-BG-OS&Y Handwheel operated	
1	1.5				P81B-0034W	Gate valve ASTM A105 Class 1500 API 602 BW Sch160 Trim SS316L Body and disc seats Stellite-6 WB-BG-OS&Y Handwheel operated	
1	2				P81C-009T0	Gate valve ASTM A216 Grade WCB Class 1500 API 600 BW Sch160 Trim SS316L Body and disc seats Stellite-6 PSB-BG-OS&Y Handwheel operated	
1	3				P81C-009T1	Gate valve ASTM A216 Grade WCB Class 1500 API 600 BW Sch160 Trim SS316L Body and disc seats Stellite-6 PSB-BG-OS&Y Handwheel operated	
1	4				P81C-009T2	Gate valve ASTM A216 Grade WCB Class 1500 API 600 BW Sch160 Trim SS316L Body and disc seats Stellite-6 PSB-BG-OS&Y Gear operated	
1	6				P81C-009T3	Gate valve ASTM A216 Grade WCB Class 1500 API 600 BW Sch160 Trim SS316L Body and disc seats Stellite-6 PSB-BG-OS&Y Gear operated	
1	8				P81C-009T4	Gate valve ASTM A216 Grade WCB Class 1500 API 600 BW Sch140 Trim SS316L Body and disc seats Stellite-6 PSB-BG-OS&Y Gear operated	
1	10				P81C-009VY	Gate valve ASTM A216 Grade WCB Class 1500 API 600 BW XXS Trim SS316L Body and disc seats Stellite-6 PSB-BG-OS&Y Gear operated	
1	12				P81C-009VX	Gate valve ASTM A216 Grade WCB Class 1500 API 600 BW Sch160 Trim SS316L Body and disc seats Stellite-6 PSB-BG-OS&Y Gear operated	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82B-0025Z	Globe valve ASTM A105 Class 1500 API 602 BW Sch160 Trim SS316L Body and disc seats Stellite-6 WB-BG-OS&Y Handwheel operated	
1	0.75				P82B-00260	Globe valve ASTM A105 Class 1500 API 602 BW Sch160 Trim SS316L Body and disc seats Stellite-6 WB-BG-OS&Y Handwheel operated	
1	1				P82B-00261	Globe valve ASTM A105 Class 1500 API 602 BW Sch160 Trim SS316L Body and disc seats Stellite-6 WB-BG-OS&Y Handwheel operated	
1	1.5				P82B-00262	Globe valve ASTM A105 Class 1500 API 602 BW Sch160 Trim SS316L Body and disc seats Stellite-6 WB-BG-OS&Y Handwheel operated	
1	2				P82C-004KJ	Globe valve ASTM A216 Grade WCB Class 1500 BS 1873 BW Sch160 Trim SS316L Body and disc seats Stellite-6 PSB-BG-OS&Y Handwheel operated	
46 1	0.75				P82B-001LE	Y-pattern globe valve ASTM A105 Class 1500 ASME B16.34 BW Sch160 Trim SS316L Body and disc seats Stellite-6 WB-BG-OS&Y Handwheel operated	

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GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
4601	2				P82C-0038J	Y-pattern globe valve ASTM A216 Grade WCB Class 1500 ASME B16.34 BW Sch160 Trim SS316L Body and disc seats Stellite-6 PSB-BG-OS&Y Handwheel operated	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83B-001LN	Check valve ASTM A105 Class 1500 API 602 BW Sch160 Trim SS316L Body and disc seats Stellite-6 Lift-type Welded cover	
1	0.75				P83B-001LP	Check valve ASTM A105 Class 1500 API 602 BW Sch160 Trim SS316L Body and disc seats Stellite-6 Lift-type Welded cover	
1	1				P83B-001LR	Check valve ASTM A105 Class 1500 API 602 BW Sch160 Trim SS316L Body and disc seats Stellite-6 Lift-type Welded cover	
1	1.5				P83B-001LS	Check valve ASTM A105 Class 1500 API 602 BW Sch160 Trim SS316L Body and disc seats Stellite-6 Lift-type Welded cover	
1	2				P83C-004CV	Check valve ASTM A216 Grade WCB Class 1500 BS 1868 BW Sch160 Trim SS316L Body and disc seats Stellite-6 Swing-type Pressure seal cap	
1	3				P83C-004CW	Check valve ASTM A216 Grade WCB Class 1500 BS 1868 BW Sch160 Trim SS316L Body and disc seats Stellite-6 Swing-type Pressure seal cap	
1	4				P83C-004CX	Check valve ASTM A216 Grade WCB Class 1500 BS 1868 BW Sch160 Trim SS316L Body and disc seats Stellite-6 Swing-type Pressure seal cap	
1	6				P83C-004CY	Check valve ASTM A216 Grade WCB Class 1500 BS 1868 BW Sch160 Trim SS316L Body and disc seats Stellite-6 Swing-type Pressure seal cap	

ORIFICE FLANGE (FO)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	6		SCH160		P66B-008V0	Orifice flange WN ASTM A105 Class 1500 ASME B16.36 RJ NPS3/4 SW tap x 1	
200	6		SCH160		P66B-008UW	Orifice flange WN ASTM A105 Class 1500 ASME B16.36 RJ NPS3/4 SW tap x 1 with Jack screw	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75				P71B-000M0	Spectacle blank ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	4				P71B-000LZ	Spectacle blank ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	6				P71B-000M1	Spectacle blank ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
805	0.75				P71B-000M2	Spectacle blank ASTM A105 Class 2500 Standard-drawing Flange ASME B16.5 RJ	

PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P72B-000JD	Paddle blank ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	0.75				P72B-000JE	Paddle blank ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	1				P72B-000JF	Paddle blank ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	1.5				P72B-000JG	Paddle blank ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	2				P72B-000JH	Paddle blank ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	3				P72B-000KG	Paddle blank ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	4				P72B-000KH	Paddle blank ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	6				P72B-000KJ	Paddle blank ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	8				P72B-000KK	Paddle blank ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	10				P72B-000KR	Paddle blank ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	12				P72B-000KT	Paddle blank ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	

PADDLE SPACER (PS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P72B-000JN	Paddle spacer ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	0.75				P72B-000JP	Paddle spacer ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	1				P72B-000JR	Paddle spacer ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	1.5				P72B-000JS	Paddle spacer ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	2				P72B-000JT	Paddle spacer ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	3				P72B-000KL	Paddle spacer ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	4				P72B-000KM	Paddle spacer ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	6				P72B-000KN	Paddle spacer ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	8				P72B-000KP	Paddle spacer ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	10				P72B-000KS	Paddle spacer ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	12				P72B-000KW	Paddle spacer ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	

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BOLT TABLE (B_N1AH02 , STUD ASME RJ, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	110	P80S-003XK	R12	P75T-000JT
0.75	4	0.750	115	P80S-003XL	R14	P75T-000JU
1	4	0.875	130	P80S-0041B	R16	P75T-000JV
1.5	4	1.000	140	P80S-0043F	R20	P75T-000JW
2	8	0.875	150	P80S-0041F	R24	P75T-0008A
3	8	1.125	180	P80S-0046T	R35	P75T-0008E
4	8	1.250	230	P80S-004AU	R39	P75T-0008D
6	12	1.375	300	P80S-003ED	R46	P75T-0008C
8	12	1.625	345	P80S-005TY	R50	P75T-0008B
10	12	1.875	395	P80S-008P7	R54	P75T-0008L
12	16	2.000	445	P80S-005VN	R58	P75T-0008K

BOLT TABLE (B_N1AH02_805 , STUD ASME RJ, OPTION CODE 805)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	125	P80S-003XN	R13	P75T-000KT
0.75	4	0.750	130	P80S-003XP	R16	P75T-000KU
1	4	0.875	140	P80S-0041D	R18	P75T-000KV
1.5	4	1.125	175	P80S-0046S	R23	P75T-000KW
2	8	1.000	180	P80S-0043R	R26	P75T-000L6
3	8	1.250	260	P80S-004B0	R32	P75T-000MC
4	8	1.500	305	P80S-008MZ	R38	P75T-000ME
6	8	2.000	410	P80S-005VF	R47	P75T-000L7
8	12	2.000	450	P80S-005VP	R51	P75T-000MD
10	12	2.500	575	P80S-00P1K	R55	P75T-000KX
12	12	2.750	635	P80S-00PWW	R60	P75T-000MB

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BRANCH TABLE (T_N1AH02)

RUN PIPE SIZE (in) \ BRANCH SIZE (in)	0.5	0.75	1	1.5	2	3	4	6	8	10	12
0.5	TS										
0.75		TS									
1		TR	TS								
1.5		TR	TR	TS							
2		L	TR	TR	TS						
3		L	L	TR	TR	TS					
4	L	L	L	L	TR	TR	TS				
6	L	L	L	L	L	TR	TR	TS			
8		L	L	L	L	L	TR	TR	TS		
10		L	L	L	L	L	TR	TR	TR	TS	
12		L	L	L	L	L	L	TR	TR	TR	TS

L : OUTLET
TR : REDUCING TEE
TS : STRAIGHT TEE

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Material : Killed CS
Rating : ASME CLASS 1500
Flange Face : RJ
C.A.(mm) : 1.50
Gasket : Ring Octagonal
Service : PROCESS - LEAN AMINE SERVICE (STRESS RELIEVED)
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
27	PWHT OF CARBON STEEL PIPING IN WET H2S, CAUSTIC AND AMINE SERVICES SHALL BE IN ACCORDANCE WITH SECTION 10.2, 10.3, AND 10.4 OF PROJECT SPECIFICATION 3550-8440-SP-0002 MATERIALS REQUIREMENTS FOR PRESSURISED EQUIPMENT AND PIPING. FOR CAUSTIC AND AMINE SERVICE THE FOLLOWING SHALL APPLY: - PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF ALL SITE PIPING FABRICATION WELDS IS REQUIRED FOR ALL WALL THICKNESSES. FOR MODERATE AND SEVERE WET H2S SERVICE THE FOLLOWING SHALL APPLY: PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF SITE FABRICATION CIRCUMFERENTIAL OR BRANCH WELDS IS NOT REQUIRED IF WELDS ARE MULTIPASS AND IN ACCORDANCE WITH PARA 10.2.12 OF PROJECT SPECIFICATION 3550-8440-SP-0002. FOR SERVICES MEETING THE WET H2S CRITERIA AND CAUSTIC OR AMINE CRITERIA THE MORE STRINGENT PWHT REQUIREMENT SHALL GOVERN.

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
541	NPT(F) (F)
805	CLASS 2500 (B,F,G)
4601	Y-PATTERN (W)

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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P01A-0010P	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	0.75		SCH160		P01A-0010R	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1		SCH160		P01A-0014M	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1.5		SCH160		P01A-0015J	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	2		SCH160		P01A-0019T	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	3		SCH160		P01A-001S5	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	4		SCH160		P01A-001TN	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	6		SCH160		P01A-001VD	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	8		SCH120		P01A-001WH	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	10		SCH100		P01A-001K4	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	12		XXS		P01A-0043S	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	14		SCH120		P01A-002CW	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	16		SCH120		P01A-002CX	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	18		SCH120		P01A-0084R	Pipe ASTM A671 Grade CC60 Class 22 EFW ASME B36.10M/B36.19M BE Amine service	
1	20		SCH120		P01A-0084S	Pipe ASTM A671 Grade CC60 Class 22 EFW ASME B36.10M/B36.19M BE Amine service	
1	24		SCH120		P01A-0084T	Pipe ASTM A671 Grade CC60 Class 22 EFW ASME B36.10M/B36.19M BE Amine service	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P02A-001Y8	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	0.75		SCH160		P02A-000V8	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1		SCH160		P02A-000V7	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1.5		SCH160		P02A-000V9	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	2		SCH160		P02A-000KW	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		SCH160		P02A-000U4	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		SCH160		P02A-002JE	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		SCH160		P02A-002J9	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		SCH120		P02A-002JN	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	10		SCH100		P02A-002G9	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	12		XXS		P02A-002JP	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	14		SCH120		P02A-00114	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	16		SCH120		P02A-00115	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	18		SCH120		P02A-00116	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	20		SCH120		P02A-00117	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	24		SCH120		P02A-00118	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P03A-001TC	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	0.75		SCH160		P03A-000RS	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1		SCH160		P03A-000RR	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1.5		SCH160		P03A-000RP	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	2		SCH160		P03A-000HU	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		SCH160		P03A-000RB	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		SCH160		P03A-002FY	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		SCH160		P03A-002FT	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		SCH120		P03A-002G6	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	10		SCH100		P03A-002DS	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	12		XXS		P03A-002G7	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	14		SCH120		P03A-000XL	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	16		SCH120		P03A-000XM	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	18		SCH120		P03A-000XN	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	20		SCH120		P03A-000XP	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	24		SCH120		P03A-000XR	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P21A-003AW	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	0.75		SCH160		P21A-002B8	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		SCH160		P21A-002B6	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5		SCH160		P21A-002B9	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2		SCH160		P21A-00245	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		SCH160		P21A-002AG	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		SCH160		P21A-003GZ	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6		SCH160		P21A-003GU	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8		SCH120		P21A-003H8	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10		SCH100		P21A-003FC	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12		XXS		P21A-003H9	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14		SCH120		P21A-002G6	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16		SCH120		P21A-002G7	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	18		SCH120		P21A-004V2	Straight tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Amine service	
1	20		SCH120		P21A-004V3	Straight tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Amine service	
1	24		SCH120		P21A-004V4	Straight tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Amine service	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75	SCH160	SCH160	P24A-004B6	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.75	SCH160	SCH160	P24A-004B2	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	1	SCH160	SCH160	P24A-004BA	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	SCH160	SCH160	P24A-00AEU	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	SCH160	SCH160	P24A-003AX	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	SCH160	SCH160	P24A-004LF	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	SCH160	SCH160	P24A-0045H	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	SCH160	SCH160	P24A-00GPP	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	SCH160	SCH160	P24A-00GSS	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	SCH160	SCH160	P24A-00H9L	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	SCH160	SCH160	P24A-00GPR	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH120	SCH160	P24A-00K0P	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH120	SCH160	P24A-00K0R	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	SCH100	SCH160	P24A-00K0S	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	SCH100	SCH160	P24A-00K0T	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	SCH100	SCH120	P24A-00K0U	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	XXS	SCH160	P24A-00M5U	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	8	XXS	SCH120	P24A-00GS4	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	10	XXS	SCH100	P24A-00M5T	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	6	SCH120	SCH160	P24A-00L9K	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	8	SCH120	SCH120	P24A-00576	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	10	SCH120	SCH100	P24A-00L9J	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	12	SCH120	XXS	P24A-00GXP	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	6	SCH120	SCH160	P24A-00L9H	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	8	SCH120	SCH120	P24A-00578	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	10	SCH120	SCH100	P24A-00L9G	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	12	SCH120	XXS	P24A-00M5V	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	14	SCH120	SCH120	P24A-0056U	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	18	8	SCH120	SCH120	P24A-00N2Z	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Amine service	
1	18	10	SCH120	SCH100	P24A-00N2V	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Amine service	
1	18	12	SCH120	XXS	P24A-00N2W	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Amine service	
1	18	14	SCH120	SCH120	P24A-00N2X	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Amine service	
1	18	16	SCH120	SCH120	P24A-00N2Y	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Amine service	
1	20	8	SCH120	SCH120	P24A-00N35	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Amine service	
1	20	10	SCH120	SCH100	P24A-00N30	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Amine service	
1	20	12	SCH120	XXS	P24A-00N31	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Amine service	
1	20	14	SCH120	SCH120	P24A-00N32	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Amine service	
1	20	16	SCH120	SCH120	P24A-00N33	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Amine service	
1	20	18	SCH120	SCH120	P24A-00N34	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Amine service	
1	24	10	SCH120	SCH100	P24A-00N36	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Amine service	
1	24	12	SCH120	XXS	P24A-00N37	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Amine service	
1	24	14	SCH120	SCH120	P24A-00N38	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Amine service	

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REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	24	16	SCH120	SCH120	P24A-00N39	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Amine service	
1	24	18	SCH120	SCH120	P24A-00N3A	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Amine service	
1	24	20	SCH120	SCH120	P24A-00N3B	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Amine service	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	SCH160	P27A-004LZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.5	SCH160	SCH160	P27A-004M8	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.75	SCH160	SCH160	P27A-002T5	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.5	SCH160	SCH160	P27A-004MV	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.75	SCH160	SCH160	P27A-002T7	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	1	SCH160	SCH160	P27A-002T4	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	0.75	SCH160	SCH160	P27A-0025L	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	SCH160	SCH160	P27A-0025K	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	SCH160	SCH160	P27A-0025J	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	SCH160	SCH160	P27A-00301	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	SCH160	SCH160	P27A-002NC	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	1.5	SCH160	SCH160	P27A-0073L	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	SCH160	SCH160	P27A-00746	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	SCH160	SCH160	P27A-0074N	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	SCH160	SCH160	P27A-007NZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	SCH160	SCH160	P27A-007PP	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH120	SCH160	P27A-007VX	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH120	SCH160	P27A-007X5	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	SCH100	SCH160	P27A-004PC	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	SCH100	SCH160	P27A-004RP	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	SCH100	SCH120	P27A-004SZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	XXS	SCH160	P27A-00G4T	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	8	XXS	SCH120	P27A-00BHX	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	10	XXS	SCH100	P27A-00G4S	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	6	SCH120	SCH160	P27A-00EL5	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	8	SCH120	SCH120	P27A-00396	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	10	SCH120	SCH100	P27A-00FFY	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	12	SCH120	XXS	P27A-00BM4	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	8	SCH120	SCH120	P27A-0039A	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	10	SCH120	SCH100	P27A-00FFZ	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	12	SCH120	XXS	P27A-00G4U	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	14	SCH120	SCH120	P27A-00399	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	18	10	SCH120	SCH100	P27A-00GWL	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Amine service	
1	18	12	SCH120	XXS	P27A-00GWM	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Amine service	
1	18	14	SCH120	SCH120	P27A-00GWN	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Amine service	
1	18	16	SCH120	SCH120	P27A-00GWP	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Amine service	
1	20	12	SCH120	XXS	P27A-00GWR	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Amine service	
1	20	14	SCH120	SCH120	P27A-00GWS	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Amine service	
1	20	16	SCH120	SCH120	P27A-00GWT	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Amine service	
1	20	18	SCH120	SCH120	P27A-00GWU	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Amine service	
1	24	16	SCH120	SCH120	P27A-00GWV	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Amine service	
1	24	18	SCH120	SCH120	P27A-00GWW	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Amine service	
1	24	20	SCH120	SCH120	P27A-00GWX	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Amine service	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	SCH160	P28A-007KG	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.5	SCH160	SCH160	P28A-007KH	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.75	SCH160	SCH160	P28A-002TU	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.5	SCH160	SCH160	P28A-007KJ	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.75	SCH160	SCH160	P28A-002TW	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	1	SCH160	SCH160	P28A-002TR	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	0.75	SCH160	SCH160	P28A-002SU	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2	1	SCH160	SCH160	P28A-002ST	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	SCH160	SCH160	P28A-002SS	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	SCH160	SCH160	P28A-0030P	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	SCH160	SCH160	P28A-002NY	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	1.5	SCH160	SCH160	P28A-008GK	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	SCH160	SCH160	P28A-008GL	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	SCH160	SCH160	P28A-008J1	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	SCH160	SCH160	P28A-008ZE	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	SCH160	SCH160	P28A-008GM	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH120	SCH160	P28A-00BPL	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH120	SCH160	P28A-00BPM	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	SCH100	SCH160	P28A-00BPN	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	SCH100	SCH160	P28A-00BPP	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	SCH100	SCH120	P28A-00BPR	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	XXS	SCH160	P28A-00DBS	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	8	XXS	SCH120	P28A-008H8	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	10	XXS	SCH100	P28A-00DBR	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	6	SCH120	SCH160	P28A-00BPX	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	8	SCH120	SCH120	P28A-0038N	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	10	SCH120	SCH100	P28A-00CM7	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	12	SCH120	XXS	P28A-008MD	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	8	SCH120	SCH120	P28A-0038T	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	10	SCH120	SCH100	P28A-00CM8	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	12	SCH120	XXS	P28A-00DBT	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	14	SCH120	SCH120	P28A-0038S	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	18	10	SCH120	SCH100	P28A-00E3Z	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Amine service	
1	18	12	SCH120	XXS	P28A-00E40	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Amine service	
1	18	14	SCH120	SCH120	P28A-00E41	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Amine service	
1	18	16	SCH120	SCH120	P28A-00E42	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Amine service	
1	20	12	SCH120	XXS	P28A-00E43	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Amine service	
1	20	14	SCH120	SCH120	P28A-00E44	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Amine service	
1	20	16	SCH120	SCH120	P28A-00E45	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Amine service	
1	20	18	SCH120	SCH120	P28A-00E46	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Amine service	
1	24	16	SCH120	SCH120	P28A-00E47	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Amine service	
1	24	18	SCH120	SCH120	P28A-00E48	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Amine service	
1	24	20	SCH120	SCH120	P28A-00E49	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW Amine service	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P29A-001UD	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	0.75		SCH160		P29A-000TX	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1		SCH160		P29A-000TY	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5		SCH160		P29A-000TZ	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2		SCH160		P29A-000HR	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		SCH160		P29A-000KY	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		SCH160		P29A-000LZ	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6		SCH160		P29A-000N5	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8		SCH120		P29A-000P9	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10		SCH100		P29A-000K3	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12		XXS		P29A-001VA	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14		SCH120		P29A-000YT	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16		SCH120		P29A-000YU	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	18		SCH120		P29A-000YV	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	20		SCH120		P29A-000YW	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	24		SCH120		P29A-000YX	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P41A-000B5	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

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STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75		SCH160		P41A-000B6	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		SCH160		P41A-000B7	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		SCH160		P41A-000B8	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2	0.75	SCH160	SCH160	P31B-007NC	Outlet ASTM A105 MSS SP-97 BW	
1	3	0.75	SCH160	SCH160	P31B-00CMV	Outlet ASTM A105 MSS SP-97 BW	
1	4	0.75	SCH160	SCH160	P31B-00CLV	Outlet ASTM A105 MSS SP-97 BW	
1	6	0.75	SCH160	SCH160	P31B-00CKM	Outlet ASTM A105 MSS SP-97 BW	
1	8	0.75	SCH120	SCH160	P31B-00NJJ	Outlet ASTM A105 MSS SP-97 BW	
1	10	0.75	SCH100	SCH160	P31B-00CFG	Outlet ASTM A105 MSS SP-97 BW	
1	12	0.75	XXS	SCH160	P31B-00TW8	Outlet ASTM A105 MSS SP-97 BW	
1	14	0.75	SCH120	SCH160	P31B-00TXK	Outlet ASTM A105 MSS SP-97 BW	
1	16	0.75	SCH120	SCH160	P31B-00YJH	Outlet ASTM A105 MSS SP-97 BW	
1	18	0.75	SCH120	SCH160	P31B-00TWB	Outlet ASTM A105 MSS SP-97 BW	
1	20	0.75	SCH120	SCH160	P31B-00YJD	Outlet ASTM A105 MSS SP-97 BW	
1	24	0.75	SCH120	SCH160	P31B-00YJA	Outlet ASTM A105 MSS SP-97 BW	
1	3	1	SCH160	SCH160	P31B-00B4K	Outlet ASTM A105 MSS SP-97 BW	
1	4	1	SCH160	SCH160	P31B-00B3N	Outlet ASTM A105 MSS SP-97 BW	
1	6	1	SCH160	SCH160	P31B-00AZE	Outlet ASTM A105 MSS SP-97 BW	
1	8	1	SCH120	SCH160	P31B-00NJK	Outlet ASTM A105 MSS SP-97 BW	
1	10	1	SCH100	SCH160	P31B-00C4W	Outlet ASTM A105 MSS SP-97 BW	
1	12	1	XXS	SCH160	P31B-00TW9	Outlet ASTM A105 MSS SP-97 BW	
1	14	1	SCH120	SCH160	P31B-00TXL	Outlet ASTM A105 MSS SP-97 BW	
1	16	1	SCH120	SCH160	P31B-00YJJ	Outlet ASTM A105 MSS SP-97 BW	
1	18	1	SCH120	SCH160	P31B-00TWC	Outlet ASTM A105 MSS SP-97 BW	
1	20	1	SCH120	SCH160	P31B-00YJE	Outlet ASTM A105 MSS SP-97 BW	
1	24	1	SCH120	SCH160	P31B-00YJB	Outlet ASTM A105 MSS SP-97 BW	
1	4	1.5	SCH160	SCH160	P31B-00BP6	Outlet ASTM A105 MSS SP-97 BW	
1	6	1.5	SCH160	SCH160	P31B-00BJK	Outlet ASTM A105 MSS SP-97 BW	
1	8	1.5	SCH120	SCH160	P31B-00BHR	Outlet ASTM A105 MSS SP-97 BW	
1	10	1.5	SCH100	SCH160	P31B-00AUV	Outlet ASTM A105 MSS SP-97 BW	
1	12	1.5	XXS	SCH160	P31B-00TWA	Outlet ASTM A105 MSS SP-97 BW	
1	14	1.5	SCH120	SCH160	P31B-00CDU	Outlet ASTM A105 MSS SP-97 BW	
1	16	1.5	SCH120	SCH160	P31B-00C9E	Outlet ASTM A105 MSS SP-97 BW	
1	18	1.5	SCH120	SCH160	P31B-00C8L	Outlet ASTM A105 MSS SP-97 BW	
1	20	1.5	SCH120	SCH160	P31B-00C44	Outlet ASTM A105 MSS SP-97 BW	
1	24	1.5	SCH120	SCH160	P31B-00C3E	Outlet ASTM A105 MSS SP-97 BW	
1	6	2	SCH160	SCH160	P31B-007SS	Outlet ASTM A105 MSS SP-97 BW	
1	8	2	SCH120	SCH160	P31B-00AHG	Outlet ASTM A105 MSS SP-97 BW	
1	10	2	SCH100	SCH160	P31B-00AW0	Outlet ASTM A105 MSS SP-97 BW	
1	12	2	XXS	SCH160	P31B-00NVJ	Outlet ASTM A105 MSS SP-97 BW	
1	14	2	SCH120	SCH160	P31B-00CBC	Outlet ASTM A105 MSS SP-97 BW	
1	16	2	SCH120	SCH160	P31B-00C6J	Outlet ASTM A105 MSS SP-97 BW	
1	18	2	SCH120	SCH160	P31B-00C1B	Outlet ASTM A105 MSS SP-97 BW	
1	20	2	SCH120	SCH160	P31B-009EZ	Outlet ASTM A105 MSS SP-97 BW	
1	24	2	SCH120	SCH160	P31B-0098M	Outlet ASTM A105 MSS SP-97 BW	
1	8	3	SCH120	SCH160	P31B-00A39	Outlet ASTM A105 MSS SP-97 BW	
1	10	3	SCH100	SCH160	P31B-009D7	Outlet ASTM A105 MSS SP-97 BW	
1	12	3	XXS	SCH160	P31B-00NYP	Outlet ASTM A105 MSS SP-97 BW	
1	14	3	SCH120	SCH160	P31B-00968	Outlet ASTM A105 MSS SP-97 BW	
1	16	3	SCH120	SCH160	P31B-0090A	Outlet ASTM A105 MSS SP-97 BW	
1	18	3	SCH120	SCH160	P31B-008U5	Outlet ASTM A105 MSS SP-97 BW	
1	20	3	SCH120	SCH160	P31B-008M1	Outlet ASTM A105 MSS SP-97 BW	
1	24	3	SCH120	SCH160	P31B-008ER	Outlet ASTM A105 MSS SP-97 BW	
1	12	4	XXS	SCH160	P31B-00ZH9	Outlet ASTM A105 MSS SP-97 BW	
1	14	4	SCH120	SCH160	P31B-008ZA	Outlet ASTM A105 MSS SP-97 BW	
1	16	4	SCH120	SCH160	P31B-008TF	Outlet ASTM A105 MSS SP-97 BW	

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OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	18	4	SCH120	SCH160	P31B-008L8	Outlet ASTM A105 MSS SP-97 BW	
1	20	4	SCH120	SCH160	P31B-008E1	Outlet ASTM A105 MSS SP-97 BW	
1	24	4	SCH120	SCH160	P31B-0087T	Outlet ASTM A105 MSS SP-97 BW	
1	18	6	SCH120	SCH160	P31B-00YJG	Outlet ASTM A105 MSS SP-97 BW	
1	20	6	SCH120	SCH160	P31B-00YJF	Outlet ASTM A105 MSS SP-97 BW	
1	24	6	SCH120	SCH160	P31B-00YJC	Outlet ASTM A105 MSS SP-97 BW	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30B-0002D	Plug ASTM A105 ASME B16.11 NPT Round head	
1	0.75				P30B-0002E	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1				P30B-0002F	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1.5				P30B-0002G	Plug ASTM A105 ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P61B-0065T	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
1	0.75		SCH160		P61B-0065U	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
1	1		SCH160		P61B-0065V	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
1	1.5		SCH160		P61B-0065W	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
1	2		SCH160		P61B-0066J	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
1	3		SCH160		P61B-0067T	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
1	4		SCH160		P61B-00671	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
1	6		SCH160		P61B-0066K	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
1	8		SCH120		P61B-0067U	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
1	10		SCH100		P61B-009T7	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
1	12		XXS		P61B-0067P	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
1	14		SCH120		P61B-0067R	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
1	16		SCH120		P61B-009TW	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
1	18		SCH120		P61B-00694	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
1	20		SCH120		P61B-00B1K	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
1	24		SCH120		P61B-00B1L	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
541	0.5				P61B-00DLH	Flange NPT ASTM A105 Class 1500 ASME B16.5 RJ	
541	0.75				P61B-00CW7	Flange NPT ASTM A105 Class 1500 ASME B16.5 RJ	
805	0.5		SCH160		P61B-0066L	Flange WN ASTM A105 Class 2500 ASME B16.5 RJ	
805	0.75		SCH160		P61B-00667	Flange WN ASTM A105 Class 2500 ASME B16.5 RJ	
805	1		SCH160		P61B-00668	Flange WN ASTM A105 Class 2500 ASME B16.5 RJ	
805	1.5		SCH160		P61B-00669	Flange WN ASTM A105 Class 2500 ASME B16.5 RJ	
805	2		SCH160		P61B-0066M	Flange WN ASTM A105 Class 2500 ASME B16.5 RJ	
805	3		SCH160		P61B-006JE	Flange WN ASTM A105 Class 2500 ASME B16.5 RJ	
805	4		SCH160		P61B-00672	Flange WN ASTM A105 Class 2500 ASME B16.5 RJ	
805	6		SCH160		P61B-0066N	Flange WN ASTM A105 Class 2500 ASME B16.5 RJ	
805	8		SCH120		P61B-009T2	Flange WN ASTM A105 Class 2500 ASME B16.5 RJ	
805	10		SCH100		P61B-009T8	Flange WN ASTM A105 Class 2500 ASME B16.5 RJ	
805	12		XXS		P61B-00B1M	Flange WN ASTM A105 Class 2500 ASME B16.5 RJ	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67B-001VE	Blind flange ASTM A105 Class 1500 ASME B16.5 RJ	
1	0.75				P67B-001VF	Blind flange ASTM A105 Class 1500 ASME B16.5 RJ	
1	1				P67B-001VG	Blind flange ASTM A105 Class 1500 ASME B16.5 RJ	
1	1.5				P67B-001VH	Blind flange ASTM A105 Class 1500 ASME B16.5 RJ	
1	2				P67B-0014J	Blind flange ASTM A105 Class 1500 ASME B16.5 RJ	
1	3				P67B-0014G	Blind flange ASTM A105 Class 1500 ASME B16.5 RJ	
1	4				P67B-0014F	Blind flange ASTM A105 Class 1500 ASME B16.5 RJ	
1	6				P67B-0014E	Blind flange ASTM A105 Class 1500 ASME B16.5 RJ	
1	8				P67B-0014D	Blind flange ASTM A105 Class 1500 ASME B16.5 RJ	
1	10				P67B-0014P	Blind flange ASTM A105 Class 1500 ASME B16.5 RJ	
1	12				P67B-0014N	Blind flange ASTM A105 Class 1500 ASME B16.5 RJ	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P67B-0014M	Blind flange ASTM A105 Class 1500 ASME B16.5 RJ	
1	16				P67B-0014L	Blind flange ASTM A105 Class 1500 ASME B16.5 RJ	
1	18				P67B-0014K	Blind flange ASTM A105 Class 1500 ASME B16.5 RJ	
1	20				P67B-0014H	Blind flange ASTM A105 Class 1500 ASME B16.5 RJ	
1	24				P67B-002NK	Blind flange ASTM A105 Class 1500 ASME B16.5 RJ	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P75T-000JT	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	0.75				P75T-000JU	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	1				P75T-000JV	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	1.5				P75T-000JW	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	2				P75T-0008A	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	3				P75T-0008E	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	4				P75T-0008D	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	6				P75T-0008C	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	8				P75T-0008B	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	10				P75T-0008L	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	12				P75T-0008K	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	14				P75T-0008J	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	16				P75T-0008H	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	18				P75T-0008G	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	20				P75T-0008F	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	24				P75T-0012C	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	0.5				P75T-000KT	Ring joint gasket Soft iron Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	0.75				P75T-000KU	Ring joint gasket Soft iron Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	1				P75T-000KV	Ring joint gasket Soft iron Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	1.5				P75T-000KW	Ring joint gasket Soft iron Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	2				P75T-000L6	Ring joint gasket Soft iron Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	3				P75T-000MC	Ring joint gasket Soft iron Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	4				P75T-000ME	Ring joint gasket Soft iron Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	6				P75T-000L7	Ring joint gasket Soft iron Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	8				P75T-000MD	Ring joint gasket Soft iron Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	10				P75T-000KX	Ring joint gasket Soft iron Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	12				P75T-000MB	Ring joint gasket Soft iron Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-2				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	3-24				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
805	0.5-1				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
805	1.5				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
805	2				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
805	3-12				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
4601	0.75				P82B-001MW	Y-pattern globe valve ASTM A105 Class 1500 ASME B16.34 BW Sch160 Trim SS316L Body and disc seats Stellite-6 WB-BG-OS&Y Handwheel operated Amine service	
4601	1				P82B-001MX	Y-pattern globe valve ASTM A105 Class 1500 ASME B16.34 BW Sch160 Trim SS316L Body and disc seats Stellite-6 WB-BG-OS&Y Handwheel operated Amine service	
4601	2				P82C-003AS	Y-pattern globe valve ASTM A216 Grade WCB Class 1500 ASME B16.34 BW Sch160 Trim SS316L Body and disc seats Stellite-6 PSB-BG-OS&Y Handwheel operated Amine service	
4601	3				P82C-00438	Y-pattern globe valve ASTM A216 Grade WCB Class 1500 ASME B16.34 BW Sch160 Trim SS316L Body and disc seats Stellite-6 PSB-BG-OS&Y Gear operated Amine service	
4601	6				P82C-003AU	Y-pattern globe valve ASTM A216 Grade WCB Class 1500 ASME B16.34 BW Sch160 Trim SS316L Body and disc seats Stellite-6 PSB-BG-OS&Y Gear operated Amine service	
4601	8				P82C-003AV	Y-pattern globe valve ASTM A216 Grade WCB Class 1500 ASME B16.34 BW Sch120 Trim SS316L Body and disc seats Stellite-6 PSB-BG-OS&Y Gear operated Amine service	
4601	10				P82C-003AJ	Y-pattern globe valve ASTM A216 Grade WCB Class 1500 ASME B16.34 BW Sch100 Trim SS316L Body and disc seats Stellite-6 PSB-BG-OS&Y Gear operated Amine service	

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PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P72B-000JD	Paddle blank ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	0.75				P72B-000JE	Paddle blank ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	1				P72B-000JF	Paddle blank ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	1.5				P72B-000JG	Paddle blank ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	2				P72B-000JH	Paddle blank ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	3				P72B-000KG	Paddle blank ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	4				P72B-000KH	Paddle blank ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	6				P72B-000KJ	Paddle blank ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	8				P72B-000KK	Paddle blank ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	10				P72B-000KR	Paddle blank ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	12				P72B-000KT	Paddle blank ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	14				P72B-000KU	Paddle blank ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	16				P72B-000KV	Paddle blank ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	18				P72B-000ND	Paddle blank ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	20				P72B-000NE	Paddle blank ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	24				P72B-000NF	Paddle blank ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	

PADDLE SPACER (PS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P72B-000JN	Paddle spacer ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	0.75				P72B-000JP	Paddle spacer ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	1				P72B-000JR	Paddle spacer ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	1.5				P72B-000JS	Paddle spacer ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	2				P72B-000JT	Paddle spacer ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	3				P72B-000KL	Paddle spacer ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	4				P72B-000KM	Paddle spacer ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	6				P72B-000KN	Paddle spacer ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	8				P72B-000KP	Paddle spacer ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	10				P72B-000KS	Paddle spacer ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	12				P72B-000KW	Paddle spacer ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	14				P72B-000KX	Paddle spacer ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	16				P72B-000KY	Paddle spacer ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	18				P72B-000NG	Paddle spacer ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	20				P72B-000NH	Paddle spacer ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	24				P72B-000NJ	Paddle spacer ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	

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BOLT TABLE (B_N1AL02 , STUD ASME RJ, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	110	P80S-003XK	R12	P75T-000JT
0.75	4	0.750	115	P80S-003XL	R14	P75T-000JU
1	4	0.875	130	P80S-0041B	R16	P75T-000JV
1.5	4	1.000	140	P80S-0043F	R20	P75T-000JW
2	8	0.875	150	P80S-0041F	R24	P75T-0008A
3	8	1.125	180	P80S-0046T	R35	P75T-0008E
4	8	1.250	230	P80S-004AU	R39	P75T-0008D
6	12	1.375	300	P80S-003ED	R46	P75T-0008C
8	12	1.625	345	P80S-005TY	R50	P75T-0008B
10	12	1.875	395	P80S-008P7	R54	P75T-0008L
12	16	2.000	445	P80S-005VN	R58	P75T-0008K
14	16	2.250	490	P80S-00P4J	R63	P75T-0008J
16	16	2.500	540	P80S-00P1T	R67	P75T-0008H
18	16	2.750	590	P80S-00PX5	R71	P75T-0008G
20	16	3.000	650	P80S-00PP3	R75	P75T-0008F
24	16	3.500	745	P80S-00RLF	R79	P75T-0012C

BOLT TABLE (B_N1AL02_805 , STUD ASME RJ, OPTION CODE 805)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	125	P80S-003XN	R13	P75T-000KT
0.75	4	0.750	130	P80S-003XP	R16	P75T-000KU
1	4	0.875	140	P80S-0041D	R18	P75T-000KV
1.5	4	1.125	175	P80S-0046S	R23	P75T-000KW
2	8	1.000	180	P80S-0043R	R26	P75T-000L6
3	8	1.250	260	P80S-004B0	R32	P75T-000MC
4	8	1.500	305	P80S-008MZ	R38	P75T-000ME
6	8	2.000	410	P80S-005VF	R47	P75T-000L7
8	12	2.000	450	P80S-005VP	R51	P75T-000MD
10	12	2.500	575	P80S-00P1K	R55	P75T-000KX
12	12	2.750	635	P80S-00PWW	R60	P75T-000MB
14	14	3.000	695		R64	
16	14	3.000	755		R68	
18	16	3.000	815		R72	
20	16	3.000	875		R76	
24	18	3.000	950		R81	

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PIPING CLASS

N1AL02 REV NO. 2

BRANCH TABLE (T_N1AL02)

RUN PIPE SIZE (in) \ BRANCH SIZE (in)	0.5	0.75	1	1.5	2	3	4	6	8	10	12	14	16	18	20	24
0.5	TS															
0.75		TS														
1		TR	TS													
1.5		TR	TR	TS												
2		L	TR	TR	TS											
3		L	L	TR	TR	TS										
4	L	L	L	L	TR	TR	TS									
6	L	L	L	L	L	TR	TR	TS								
8		L	L	L	L	L	TR	TR	TS							
10		L	L	L	L	L	TR	TR	TR	TS						
12		L	L	L	L	L	L	TR	TR	TR	TS					
14		L	L	L	L	L	L	TR	TR	TR	TR	TS				
16		L	L	L	L	L	L	TR	TR	TR	TR	TR	TS			
18		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TS		
20		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TR	TS	
24		L	L	L	L	L	L	L	9PD	TR	TR	TR	TR	TR	TR	TS

TR : REDUCING TEE
TS : STRAIGHT TEE
9PD : REINFORCING PAD 90 DEG
L : OUTLET

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PIPING CLASS

N1AQ

REV NO. 2

Material : Killed CS
Rating : ASME CLASS 1500
Flange Face : RJ
C.A.(mm) : 1.50
Gasket : Ring Octagonal
Service : PROCESS -WET SOUR SERVICE SUBJECT TO NACE STD.:
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
5	BOLTING CONFIRMING TO B7M / 2HM SHALL BE USED UNDER CONDITIONS (A) DIRECT EXPOSURE TO SOUR ENVIRONMENTS (B) WHEN THE BOLTING WILL BE BURIED OR INSULATED
27	PWHT OF CARBON STEEL PIPING IN WET H2S, CAUSTIC AND AMINE SERVICES SHALL BE IN ACCORDANCE WITH SECTION 10.2, 10.3, AND 10.4 OF PROJECT SPECIFICATION 3550-8440-SP-0002 MATERIALS REQUIREMENTS FOR PRESSURISED EQUIPMENT AND PIPING. FOR CAUSTIC AND AMINE SERVICE THE FOLLOWING SHALL APPLY: - PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF ALL SITE PIPING FABRICATION WELDS IS REQUIRED FOR ALL WALL THICKNESSES. FOR MODERATE AND SEVERE WET H2S SERVICE THE FOLLOWING SHALL APPLY: PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF SITE FABRICATION CIRCUMFERENTIAL OR BRANCH WELDS IS NOT REQUIRED IF WELDS ARE MULTIPASS AND IN ACCORDANCE WITH PARA 10.2.12 OF PROJECT SPECIFICATION 3550-8440-SP-0002. FOR SERVICES MEETING THE WET H2S CRITERIA AND CAUSTIC OR AMINE CRITERIA THE MORE STRINGENT PWHT REQUIREMENT SHALL GOVERN.

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
541	NPT(F) (F)
805	CLASS 2500 (B,F,G)

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PIPING CLASS
N1AQ REV NO. 2

PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P01A-0010P	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	0.75		SCH160		P01A-0010R	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1		SCH160		P01A-0014M	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1.5		SCH160		P01A-0015J	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	2		SCH160		P01A-0019T	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	3		SCH160		P01A-001S5	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	4		SCH160		P01A-001TN	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	6		SCH160		P01A-001VD	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	8		SCH120		P01A-001WH	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	10		SCH100		P01A-001K4	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	12		XXS		P01A-0043S	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	14		SCH120		P01A-002CW	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	16		SCH120		P01A-002CX	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P02A-001Y8	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	0.75		SCH160		P02A-000V8	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1		SCH160		P02A-000V7	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1.5		SCH160		P02A-000V9	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	2		SCH160		P02A-000KW	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		SCH160		P02A-000U4	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		SCH160		P02A-002JE	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		SCH160		P02A-002J9	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		SCH120		P02A-002JN	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	10		SCH100		P02A-002G9	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	12		XXS		P02A-002JP	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	14		SCH120		P02A-00114	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	16		SCH120		P02A-00115	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P03A-001TC	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	0.75		SCH160		P03A-000RS	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1		SCH160		P03A-000RR	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1.5		SCH160		P03A-000RP	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	2		SCH160		P03A-000HU	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		SCH160		P03A-000RB	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		SCH160		P03A-002FY	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		SCH160		P03A-002FT	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		SCH120		P03A-002G6	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	10		SCH100		P03A-002DS	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	12		XXS		P03A-002G7	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	14		SCH120		P03A-000XL	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	16		SCH120		P03A-000XM	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P21A-003AW	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	0.75		SCH160		P21A-002B8	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1		SCH160		P21A-002B6	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5		SCH160		P21A-002B9	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2		SCH160		P21A-00245	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		SCH160		P21A-002AG	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		SCH160		P21A-003GZ	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6		SCH160		P21A-003GU	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8		SCH120		P21A-003H8	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10		SCH100		P21A-003FC	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12		XXS		P21A-003H9	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	

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STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14		SCH120		P21A-002G6	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16		SCH120		P21A-002G7	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75	SCH160	SCH160	P24A-004B6	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.75	SCH160	SCH160	P24A-004B2	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	1	SCH160	SCH160	P24A-004BA	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	SCH160	SCH160	P24A-00AEU	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	SCH160	SCH160	P24A-003AX	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	SCH160	SCH160	P24A-004LF	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	SCH160	SCH160	P24A-0045H	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	SCH160	SCH160	P24A-00GPP	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	SCH160	SCH160	P24A-00GSS	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	SCH160	SCH160	P24A-00H9L	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	SCH160	SCH160	P24A-00GPR	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH120	SCH160	P24A-00K0P	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH120	SCH160	P24A-00K0R	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	SCH100	SCH160	P24A-00K0S	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	SCH100	SCH160	P24A-00K0T	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	SCH100	SCH120	P24A-00K0U	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	XXS	SCH160	P24A-00M5U	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	8	XXS	SCH120	P24A-00GS4	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	10	XXS	SCH100	P24A-00M5T	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	6	SCH120	SCH160	P24A-00L9K	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	8	SCH120	SCH120	P24A-00576	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	10	SCH120	SCH100	P24A-00L9J	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	12	SCH120	XXS	P24A-00GXP	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	6	SCH120	SCH160	P24A-00L9H	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	8	SCH120	SCH120	P24A-00578	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	10	SCH120	SCH100	P24A-00L9G	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	12	SCH120	XXS	P24A-00M5V	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	14	SCH120	SCH120	P24A-0056U	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	SCH160	P27A-004LZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.5	SCH160	SCH160	P27A-004M8	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.75	SCH160	SCH160	P27A-002T5	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.5	SCH160	SCH160	P27A-004MV	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.75	SCH160	SCH160	P27A-002T7	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	1	SCH160	SCH160	P27A-002T4	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	0.75	SCH160	SCH160	P27A-0025L	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	SCH160	SCH160	P27A-0025K	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	SCH160	SCH160	P27A-0025J	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	SCH160	SCH160	P27A-00301	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	SCH160	SCH160	P27A-002NC	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	1.5	SCH160	SCH160	P27A-0073L	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	SCH160	SCH160	P27A-00746	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	SCH160	SCH160	P27A-0074N	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	SCH160	SCH160	P27A-007NZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	SCH160	SCH160	P27A-007PP	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH120	SCH160	P27A-007VX	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH120	SCH160	P27A-007X5	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	SCH100	SCH160	P27A-004PC	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	SCH100	SCH160	P27A-004RP	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	SCH100	SCH120	P27A-004SZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	XXS	SCH160	P27A-00G4T	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	8	XXS	SCH120	P27A-00BHX	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	

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CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	12	10	XXS	SCH100	P27A-00G4S	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	6	SCH120	SCH160	P27A-00EL5	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	8	SCH120	SCH120	P27A-00396	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	10	SCH120	SCH100	P27A-00FFY	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	12	SCH120	XXS	P27A-00BM4	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	8	SCH120	SCH120	P27A-0039A	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	10	SCH120	SCH100	P27A-00FFZ	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	12	SCH120	XXS	P27A-00G4U	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	14	SCH120	SCH120	P27A-00399	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	SCH160	P28A-007KG	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.5	SCH160	SCH160	P28A-007KH	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.75	SCH160	SCH160	P28A-002TU	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.5	SCH160	SCH160	P28A-007KJ	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.75	SCH160	SCH160	P28A-002TW	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	1	SCH160	SCH160	P28A-002TR	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	0.75	SCH160	SCH160	P28A-002SU	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	SCH160	SCH160	P28A-002ST	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	SCH160	SCH160	P28A-002SS	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	SCH160	SCH160	P28A-0030P	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	SCH160	SCH160	P28A-002NY	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	1.5	SCH160	SCH160	P28A-008GK	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	SCH160	SCH160	P28A-008GL	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	SCH160	SCH160	P28A-008J1	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	SCH160	SCH160	P28A-008ZE	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	SCH160	SCH160	P28A-008GM	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH120	SCH160	P28A-00BPL	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH120	SCH160	P28A-00BPM	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	SCH100	SCH160	P28A-00BPN	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	SCH100	SCH160	P28A-00BPP	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	SCH100	SCH120	P28A-00BPR	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	12	6	XXS	SCH160	P28A-00DBS	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	8	XXS	SCH120	P28A-008H8	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	10	XXS	SCH100	P28A-00DBR	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	6	SCH120	SCH160	P28A-00BPX	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	8	SCH120	SCH120	P28A-0038N	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	10	SCH120	SCH100	P28A-00CM7	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	12	SCH120	XXS	P28A-008MD	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	8	SCH120	SCH120	P28A-0038T	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	10	SCH120	SCH100	P28A-00CM8	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	12	SCH120	XXS	P28A-00DBT	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	14	SCH120	SCH120	P28A-0038S	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P29A-00329	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	0.75		SCH160		P29A-001UF	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	1		SCH160		P29A-001TC	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	1.5		SCH160		P29A-001TD	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	2		SCH160		P29A-001TK	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	3		SCH160		P29A-001TN	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	4		SCH160		P29A-001WH	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	6		SCH160		P29A-0032B	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	8		SCH120		P29A-001WP	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	10		SCH100		P29A-0032A	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	12		XXS		P29A-001WR	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service	
1	14		SCH120		P29A-0032D	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service	

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CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	16		SCH120		P29A-0032E	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P41A-000B5	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		SCH160		P41A-000B6	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		SCH160		P41A-000B7	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		SCH160		P41A-000B8	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2	0.75	SCH160	SCH160	P31B-007NC	Outlet ASTM A105 MSS SP-97 BW	
1	3	0.75	SCH160	SCH160	P31B-00CMV	Outlet ASTM A105 MSS SP-97 BW	
1	4	0.75	SCH160	SCH160	P31B-00CLV	Outlet ASTM A105 MSS SP-97 BW	
1	6	0.75	SCH160	SCH160	P31B-00CKM	Outlet ASTM A105 MSS SP-97 BW	
1	8	0.75	SCH120	SCH160	P31B-00NJJ	Outlet ASTM A105 MSS SP-97 BW	
1	10	0.75	SCH100	SCH160	P31B-00CFG	Outlet ASTM A105 MSS SP-97 BW	
1	12	0.75	XXS	SCH160	P31B-00TW8	Outlet ASTM A105 MSS SP-97 BW	
1	14	0.75	SCH120	SCH160	P31B-00TXK	Outlet ASTM A105 MSS SP-97 BW	
1	16	0.75	SCH120	SCH160	P31B-00YJH	Outlet ASTM A105 MSS SP-97 BW	
1	3	1	SCH160	SCH160	P31B-00B4K	Outlet ASTM A105 MSS SP-97 BW	
1	4	1	SCH160	SCH160	P31B-00B3N	Outlet ASTM A105 MSS SP-97 BW	
1	6	1	SCH160	SCH160	P31B-00AZE	Outlet ASTM A105 MSS SP-97 BW	
1	8	1	SCH120	SCH160	P31B-00NJK	Outlet ASTM A105 MSS SP-97 BW	
1	10	1	SCH100	SCH160	P31B-00C4W	Outlet ASTM A105 MSS SP-97 BW	
1	12	1	XXS	SCH160	P31B-00TW9	Outlet ASTM A105 MSS SP-97 BW	
1	14	1	SCH120	SCH160	P31B-00TXL	Outlet ASTM A105 MSS SP-97 BW	
1	16	1	SCH120	SCH160	P31B-00YJJ	Outlet ASTM A105 MSS SP-97 BW	
1	4	1.5	SCH160	SCH160	P31B-00BP6	Outlet ASTM A105 MSS SP-97 BW	
1	6	1.5	SCH160	SCH160	P31B-00BJK	Outlet ASTM A105 MSS SP-97 BW	
1	8	1.5	SCH120	SCH160	P31B-00BHR	Outlet ASTM A105 MSS SP-97 BW	
1	10	1.5	SCH100	SCH160	P31B-00AUV	Outlet ASTM A105 MSS SP-97 BW	
1	12	1.5	XXS	SCH160	P31B-00TWA	Outlet ASTM A105 MSS SP-97 BW	
1	14	1.5	SCH120	SCH160	P31B-00CDU	Outlet ASTM A105 MSS SP-97 BW	
1	16	1.5	SCH120	SCH160	P31B-00C9E	Outlet ASTM A105 MSS SP-97 BW	
1	6	2	SCH160	SCH160	P31B-007SS	Outlet ASTM A105 MSS SP-97 BW	
1	8	2	SCH120	SCH160	P31B-00AHG	Outlet ASTM A105 MSS SP-97 BW	
1	10	2	SCH100	SCH160	P31B-00AW0	Outlet ASTM A105 MSS SP-97 BW	
1	12	2	XXS	SCH160	P31B-00NVJ	Outlet ASTM A105 MSS SP-97 BW	
1	14	2	SCH120	SCH160	P31B-00CBC	Outlet ASTM A105 MSS SP-97 BW	
1	16	2	SCH120	SCH160	P31B-00C6J	Outlet ASTM A105 MSS SP-97 BW	
1	8	3	SCH120	SCH160	P31B-00A39	Outlet ASTM A105 MSS SP-97 BW	
1	10	3	SCH100	SCH160	P31B-009D7	Outlet ASTM A105 MSS SP-97 BW	
1	12	3	XXS	SCH160	P31B-00NYP	Outlet ASTM A105 MSS SP-97 BW	
1	14	3	SCH120	SCH160	P31B-00968	Outlet ASTM A105 MSS SP-97 BW	
1	16	3	SCH120	SCH160	P31B-0090A	Outlet ASTM A105 MSS SP-97 BW	
1	12	4	XXS	SCH160	P31B-00ZH9	Outlet ASTM A105 MSS SP-97 BW	
1	14	4	SCH120	SCH160	P31B-008ZA	Outlet ASTM A105 MSS SP-97 BW	
1	16	4	SCH120	SCH160	P31B-008TF	Outlet ASTM A105 MSS SP-97 BW	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30B-0002D	Plug ASTM A105 ASME B16.11 NPT Round head	
1	0.75				P30B-0002E	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1				P30B-0002F	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1.5				P30B-0002G	Plug ASTM A105 ASME B16.11 NPT Round head	

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FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P61B-0065T	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
1	0.75		SCH160		P61B-0065U	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
1	1		SCH160		P61B-0065V	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
1	1.5		SCH160		P61B-0065W	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
1	2		SCH160		P61B-0066J	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
1	3		SCH160		P61B-0067T	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
1	4		SCH160		P61B-00671	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
1	6		SCH160		P61B-0066K	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
1	8		SCH120		P61B-0067U	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
1	10		SCH100		P61B-009T7	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
1	12		XXS		P61B-0067P	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
1	14		SCH120		P61B-0067R	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
1	16		SCH120		P61B-009TW	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
541	0.5				P61B-00DLH	Flange NPT ASTM A105 Class 1500 ASME B16.5 RJ	
541	0.75				P61B-00CW7	Flange NPT ASTM A105 Class 1500 ASME B16.5 RJ	
805	0.5		SCH160		P61B-0066L	Flange WN ASTM A105 Class 2500 ASME B16.5 RJ	
805	0.75		SCH160		P61B-00667	Flange WN ASTM A105 Class 2500 ASME B16.5 RJ	
805	1		SCH160		P61B-00668	Flange WN ASTM A105 Class 2500 ASME B16.5 RJ	
805	1.5		SCH160		P61B-00669	Flange WN ASTM A105 Class 2500 ASME B16.5 RJ	
805	2		SCH160		P61B-0066M	Flange WN ASTM A105 Class 2500 ASME B16.5 RJ	
805	3		SCH160		P61B-006JE	Flange WN ASTM A105 Class 2500 ASME B16.5 RJ	
805	4		SCH160		P61B-00672	Flange WN ASTM A105 Class 2500 ASME B16.5 RJ	
805	6		SCH160		P61B-0066N	Flange WN ASTM A105 Class 2500 ASME B16.5 RJ	
805	8		SCH120		P61B-009T2	Flange WN ASTM A105 Class 2500 ASME B16.5 RJ	
805	10		SCH100		P61B-009T8	Flange WN ASTM A105 Class 2500 ASME B16.5 RJ	
805	12		XXS		P61B-00B1M	Flange WN ASTM A105 Class 2500 ASME B16.5 RJ	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67B-001VE	Blind flange ASTM A105 Class 1500 ASME B16.5 RJ	
1	0.75				P67B-001VF	Blind flange ASTM A105 Class 1500 ASME B16.5 RJ	
1	1				P67B-001VG	Blind flange ASTM A105 Class 1500 ASME B16.5 RJ	
1	1.5				P67B-001VH	Blind flange ASTM A105 Class 1500 ASME B16.5 RJ	
1	2				P67B-0014J	Blind flange ASTM A105 Class 1500 ASME B16.5 RJ	
1	3				P67B-0014G	Blind flange ASTM A105 Class 1500 ASME B16.5 RJ	
1	4				P67B-0014F	Blind flange ASTM A105 Class 1500 ASME B16.5 RJ	
1	6				P67B-0014E	Blind flange ASTM A105 Class 1500 ASME B16.5 RJ	
1	8				P67B-0014D	Blind flange ASTM A105 Class 1500 ASME B16.5 RJ	
1	10				P67B-0014P	Blind flange ASTM A105 Class 1500 ASME B16.5 RJ	
1	12				P67B-0014N	Blind flange ASTM A105 Class 1500 ASME B16.5 RJ	
1	14				P67B-0014M	Blind flange ASTM A105 Class 1500 ASME B16.5 RJ	
1	16				P67B-0014L	Blind flange ASTM A105 Class 1500 ASME B16.5 RJ	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P75T-000JT	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	0.75				P75T-000JU	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	1				P75T-000JV	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	1.5				P75T-000JW	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	2				P75T-0008A	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	3				P75T-0008E	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	4				P75T-0008D	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	6				P75T-0008C	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	8				P75T-0008B	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	10				P75T-0008L	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	12				P75T-0008K	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	14				P75T-0008J	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	16				P75T-0008H	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	0.5				P75T-000KT	Ring joint gasket Soft iron Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	

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GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
805	0.75				P75T-000KU	Ring joint gasket Soft iron Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	1				P75T-000KV	Ring joint gasket Soft iron Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	1.5				P75T-000KW	Ring joint gasket Soft iron Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	2				P75T-000L6	Ring joint gasket Soft iron Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	3				P75T-000MC	Ring joint gasket Soft iron Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	4				P75T-000ME	Ring joint gasket Soft iron Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	6				P75T-000L7	Ring joint gasket Soft iron Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	8				P75T-000MD	Ring joint gasket Soft iron Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	10				P75T-000KX	Ring joint gasket Soft iron Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	12				P75T-000MB	Ring joint gasket Soft iron Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-2				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	3-16				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
805	0.5-1				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
805	1.5				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
805	2				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
805	3-12				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81B-001V5	Gate valve ASTM A105 Class 1500 API 602 Flange ASME B16.5 RJ Trim number 12 WB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	0.75				P81B-001V6	Gate valve ASTM A105 Class 1500 API 602 Flange ASME B16.5 RJ Trim number 12 WB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	1				P81B-001V7	Gate valve ASTM A105 Class 1500 API 602 Flange ASME B16.5 RJ Trim number 12 WB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	1.5				P81B-001V8	Gate valve ASTM A105 Class 1500 API 602 Flange ASME B16.5 RJ Trim number 12 WB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	2				P81C-007KY	Gate valve ASTM A216 Grade WCB Class 1500 API 600 Flange ASME B16.5 RJ Trim number 12 PSB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	3				P81C-007KZ	Gate valve ASTM A216 Grade WCB Class 1500 API 600 Flange ASME B16.5 RJ Trim number 12 PSB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	4				P81C-007KV	Gate valve ASTM A216 Grade WCB Class 1500 API 600 Flange ASME B16.5 RJ Trim number 12 PSB-BG-OS&Y Gear operated Moderate wet H2S service	
1	6				P81C-007KW	Gate valve ASTM A216 Grade WCB Class 1500 API 600 Flange ASME B16.5 RJ Trim number 12 PSB-BG-OS&Y Gear operated Moderate wet H2S service	
1	8				P81C-007KX	Gate valve ASTM A216 Grade WCB Class 1500 API 600 Flange ASME B16.5 RJ Trim number 12 PSB-BG-OS&Y Gear operated Moderate wet H2S service	
1	10				P81C-007KT	Gate valve ASTM A216 Grade WCB Class 1500 API 600 Flange ASME B16.5 RJ Trim number 12 PSB-BG-OS&Y Gear operated Moderate wet H2S service	
1	12				P81C-007KU	Gate valve ASTM A216 Grade WCB Class 1500 API 600 Flange ASME B16.5 RJ Trim number 12 PSB-BG-OS&Y Gear operated Moderate wet H2S service	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82B-001FT	Globe valve ASTM A105 Class 1500 API 602 Flange ASME B16.5 RJ Trim number 12 WB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	0.75				P82B-001FU	Globe valve ASTM A105 Class 1500 API 602 Flange ASME B16.5 RJ Trim number 12 WB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	1				P82B-001FV	Globe valve ASTM A105 Class 1500 API 602 Flange ASME B16.5 RJ Trim number 12 WB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	1.5				P82B-001FW	Globe valve ASTM A105 Class 1500 API 602 Flange ASME B16.5 RJ Trim number 12 WB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	2				P82C-003TX	Globe valve ASTM A216 Grade WCB Class 1500 BS 1873 Flange ASME B16.5 RJ Trim number 12 PSB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	3				P82C-00439	Globe valve ASTM A216 Grade WCB Class 1500 BS 1873 Flange ASME B16.5 RJ Trim number 12 PSB-BG-OS&Y Gear operated Moderate wet H2S service	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83B-0015F	Check valve ASTM A105 Class 1500 API 602 Flange ASME B16.5 RJ Trim number 12 Lift-type Welded cover Moderate wet H2S service	
1	0.75				P83B-0015G	Check valve ASTM A105 Class 1500 API 602 Flange ASME B16.5 RJ Trim number 12 Lift-type Welded cover Moderate wet H2S service	
1	1				P83B-0015H	Check valve ASTM A105 Class 1500 API 602 Flange ASME B16.5 RJ Trim number 12 Lift-type Welded cover Moderate wet H2S service	
1	1.5				P83B-0015J	Check valve ASTM A105 Class 1500 API 602 Flange ASME B16.5 RJ Trim number 12 Lift-type Welded cover Moderate wet H2S service	

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CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2				P83C-003AH	Check valve ASTM A216 Grade WCB Class 1500 BS 1868 Flange ASME B16.5 RJ Trim number 12 Swing-type Pressure seal cap Moderate wet H2S service	
1	3				P83C-003AJ	Check valve ASTM A216 Grade WCB Class 1500 BS 1868 Flange ASME B16.5 RJ Trim number 12 Swing-type Pressure seal cap Moderate wet H2S service	
1	4				P83C-003AK	Check valve ASTM A216 Grade WCB Class 1500 BS 1868 Flange ASME B16.5 RJ Trim number 12 Swing-type Pressure seal cap Moderate wet H2S service	
1	6				P83C-003AL	Check valve ASTM A216 Grade WCB Class 1500 BS 1868 Flange ASME B16.5 RJ Trim number 12 Swing-type Pressure seal cap Moderate wet H2S service	

DP CHECK VALVE (XDP)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	8				P88C-002J8	Dual plate check valve ASTM A216 Grade WCB Class 1500 API 594 Lug-type ASME B16.5 RJ Trim number 12 Internal wetted parts SS316 Spring Inconel Retainerless-type Moderate wet H2S service	
1	10				P88C-002J7	Dual plate check valve ASTM A216 Grade WCB Class 1500 API 594 Lug-type ASME B16.5 RJ Trim number 12 Internal wetted parts SS316 Spring Inconel Retainerless-type Moderate wet H2S service	

PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P72B-000JD	Paddle blank ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	0.75				P72B-000JE	Paddle blank ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	1				P72B-000JF	Paddle blank ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	1.5				P72B-000JG	Paddle blank ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	2				P72B-000JH	Paddle blank ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	3				P72B-000KG	Paddle blank ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	4				P72B-000KH	Paddle blank ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	6				P72B-000KJ	Paddle blank ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	8				P72B-000KK	Paddle blank ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	10				P72B-000KR	Paddle blank ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	12				P72B-000KT	Paddle blank ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	14				P72B-000KU	Paddle blank ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	16				P72B-000KV	Paddle blank ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	

PADDLE SPACER (PS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P72B-000JN	Paddle spacer ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	0.75				P72B-000JP	Paddle spacer ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	1				P72B-000JR	Paddle spacer ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	1.5				P72B-000JS	Paddle spacer ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	2				P72B-000JT	Paddle spacer ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	3				P72B-000KL	Paddle spacer ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	4				P72B-000KM	Paddle spacer ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	6				P72B-000KN	Paddle spacer ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	8				P72B-000KP	Paddle spacer ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	10				P72B-000KS	Paddle spacer ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	12				P72B-000KW	Paddle spacer ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	14				P72B-000KX	Paddle spacer ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	16				P72B-000KY	Paddle spacer ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	

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BOLT TABLE (B_N1AQ , STUD ASME RJ, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	110	P80S-0090F	R12	P75T-000JT
0.75	4	0.750	115	P80S-0090G	R14	P75T-000JU
1	4	0.875	130	P80S-005ZB	R16	P75T-000JV
1.5	4	1.000	140	P80S-0061A	R20	P75T-000JW
2	8	0.875	150	P80S-005ZF	R24	P75T-0008A
3	8	1.125	180	P80S-0064T	R35	P75T-0008E
4	8	1.250	230	P80S-0068H	R39	P75T-0008D
6	12	1.375	300	P80S-006J1	R46	P75T-0008C
8	12	1.625	345	P80S-00A5K	R50	P75T-0008B
10	12	1.875	395	P80S-00AW8	R54	P75T-0008L
12	16	2.000	445	P80S-00BH5	R58	P75T-0008K
14	16	2.250	490	P80S-00DLE	R63	P75T-0008J
16	16	2.500	540	P80S-00DZM	R67	P75T-0008H

BOLT TABLE (B_N1AQ_805 , STUD ASME RJ, OPTION CODE 805)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	125	P80S-0090J	R13	P75T-000KT
0.75	4	0.750	130	P80S-0090K	R16	P75T-000KU
1	4	0.875	140	P80S-005ZD	R18	P75T-000KV
1.5	4	1.125	175	P80S-0064S	R23	P75T-000KW
2	8	1.000	180	P80S-0061J	R26	P75T-000L6
3	8	1.250	260	P80S-0068P	R32	P75T-000MC
4	8	1.500	305	P80S-006LS	R38	P75T-000ME
6	8	2.000	410	P80S-00BBD	R47	P75T-000L7
8	12	2.000	450	P80S-00BH6	R51	P75T-000MD
10	12	2.500	575	P80S-00DZV	R55	P75T-000KX
12	12	2.750	635	P80S-01RAT	R60	P75T-000MB
14	14	3.000	695		R64	
16	14	3.000	755		R68	

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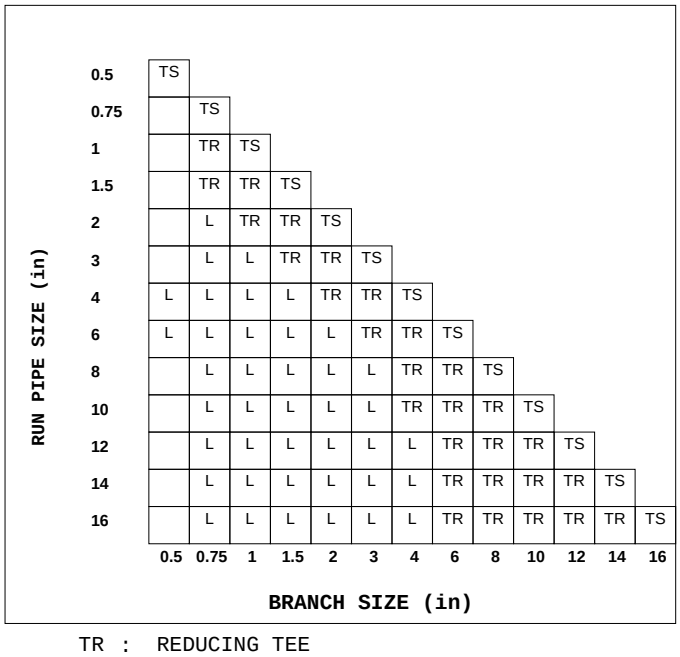
BRANCH TABLE (T_N1AQ)



TR : REDUCING TEE
L : OUTLET
TS : STRAIGHT TEE

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PIPING CLASS

N1AS

REV NO. 2

Material : Killed CS
Rating : ASME CLASS 1500
Flange Face : RJ
C.A.(mm) : 1.50
Gasket : Ring Octagonal
Service : Utility – Steam, Condensate, Boiler Feed Water to ASME B31.3 HHP Steam Header
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
541	NPT(F) (F)
805	CLASS 2500 (B,F,G)

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PIPING CLASS
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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P01A-0010P	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	0.75		SCH160		P01A-0010R	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1		SCH160		P01A-0014M	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1.5		SCH160		P01A-0015J	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	2		SCH160		P01A-0019T	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	3		SCH160		P01A-001S5	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	4		SCH160		P01A-001TN	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	6		SCH160		P01A-001VD	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	8		SCH120		P01A-001WH	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P02A-001Y8	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	0.75		SCH160		P02A-000V8	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1		SCH160		P02A-000V7	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1.5		SCH160		P02A-000V9	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	2		SCH160		P02A-000KW	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		SCH160		P02A-000U4	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		SCH160		P02A-002JE	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		SCH160		P02A-002J9	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		SCH120		P02A-002JN	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P03A-001TC	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	0.75		SCH160		P03A-000RS	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1		SCH160		P03A-000RR	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1.5		SCH160		P03A-000RP	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	2		SCH160		P03A-000HU	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		SCH160		P03A-000RB	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		SCH160		P03A-002FY	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		SCH160		P03A-002FT	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		SCH120		P03A-002G6	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P21A-003AW	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	0.75		SCH160		P21A-002B8	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1		SCH160		P21A-002B6	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5		SCH160		P21A-002B9	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2		SCH160		P21A-00245	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		SCH160		P21A-002AG	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		SCH160		P21A-003GZ	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6		SCH160		P21A-003GU	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8		SCH120		P21A-003H8	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75	SCH160	SCH160	P24A-004B6	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.75	SCH160	SCH160	P24A-004B2	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	1	SCH160	SCH160	P24A-004BA	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	SCH160	SCH160	P24A-00AEU	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	SCH160	SCH160	P24A-003AX	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	SCH160	SCH160	P24A-004LF	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	SCH160	SCH160	P24A-0045H	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	SCH160	SCH160	P24A-00GPP	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	SCH160	SCH160	P24A-00GSS	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	SCH160	SCH160	P24A-00H9L	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	6	4	SCH160	SCH160	P24A-00GPR	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH120	SCH160	P24A-00K0P	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH120	SCH160	P24A-00K0R	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	SCH160	P27A-004LZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.5	SCH160	SCH160	P27A-004M8	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.75	SCH160	SCH160	P27A-002T5	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.5	SCH160	SCH160	P27A-004MV	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.75	SCH160	SCH160	P27A-002T7	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	1	SCH160	SCH160	P27A-002T4	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	0.75	SCH160	SCH160	P27A-0025L	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	SCH160	SCH160	P27A-0025K	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	SCH160	SCH160	P27A-0025J	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	SCH160	SCH160	P27A-00301	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	SCH160	SCH160	P27A-002NC	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	1.5	SCH160	SCH160	P27A-0073L	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	SCH160	SCH160	P27A-00746	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	SCH160	SCH160	P27A-0074N	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	SCH160	SCH160	P27A-007NZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	SCH160	SCH160	P27A-007PP	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH120	SCH160	P27A-007VX	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH120	SCH160	P27A-007X5	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	SCH160	P28A-007KG	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.5	SCH160	SCH160	P28A-007KH	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.75	SCH160	SCH160	P28A-002TU	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.5	SCH160	SCH160	P28A-007KJ	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.75	SCH160	SCH160	P28A-002TW	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	1	SCH160	SCH160	P28A-002TR	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	0.75	SCH160	SCH160	P28A-002SU	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	SCH160	SCH160	P28A-002ST	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	SCH160	SCH160	P28A-002SS	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	SCH160	SCH160	P28A-0030P	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	SCH160	SCH160	P28A-002NY	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	1.5	SCH160	SCH160	P28A-008GK	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	SCH160	SCH160	P28A-008GL	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	SCH160	SCH160	P28A-008J1	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	SCH160	SCH160	P28A-008ZE	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	SCH160	SCH160	P28A-008GM	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH120	SCH160	P28A-00BPL	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH120	SCH160	P28A-00BPM	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P29A-001UD	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	0.75		SCH160		P29A-000TX	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1		SCH160		P29A-000TY	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5		SCH160		P29A-000TZ	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2		SCH160		P29A-000HR	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		SCH160		P29A-000KY	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		SCH160		P29A-000LZ	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6		SCH160		P29A-000N5	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8		SCH120		P29A-000P9	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P41A-000B5	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		SCH160		P41A-000B6	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		SCH160		P41A-000B7	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		SCH160		P41A-000B8	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2	0.75	SCH160	SCH160	P31B-007NC	Outlet ASTM A105 MSS SP-97 BW	
1	3	0.75	SCH160	SCH160	P31B-00CMV	Outlet ASTM A105 MSS SP-97 BW	
1	4	0.75	SCH160	SCH160	P31B-00CLV	Outlet ASTM A105 MSS SP-97 BW	
1	6	0.75	SCH160	SCH160	P31B-00CKM	Outlet ASTM A105 MSS SP-97 BW	
1	8	0.75	SCH120	SCH160	P31B-00NJJ	Outlet ASTM A105 MSS SP-97 BW	
1	3	1	SCH160	SCH160	P31B-00B4K	Outlet ASTM A105 MSS SP-97 BW	
1	4	1	SCH160	SCH160	P31B-00B3N	Outlet ASTM A105 MSS SP-97 BW	
1	6	1	SCH160	SCH160	P31B-00AZE	Outlet ASTM A105 MSS SP-97 BW	
1	8	1	SCH120	SCH160	P31B-00NJK	Outlet ASTM A105 MSS SP-97 BW	
1	4	1.5	SCH160	SCH160	P31B-00BP6	Outlet ASTM A105 MSS SP-97 BW	
1	6	1.5	SCH160	SCH160	P31B-00BJK	Outlet ASTM A105 MSS SP-97 BW	
1	8	1.5	SCH120	SCH160	P31B-00BHR	Outlet ASTM A105 MSS SP-97 BW	
1	6	2	SCH160	SCH160	P31B-007SS	Outlet ASTM A105 MSS SP-97 BW	
1	8	2	SCH120	SCH160	P31B-00AHG	Outlet ASTM A105 MSS SP-97 BW	
1	8	3	SCH120	SCH160	P31B-00A39	Outlet ASTM A105 MSS SP-97 BW	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30B-0002D	Plug ASTM A105 ASME B16.11 NPT Round head	
1	0.75				P30B-0002E	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1				P30B-0002F	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1.5				P30B-0002G	Plug ASTM A105 ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P61B-0065T	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
1	0.75		SCH160		P61B-0065U	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
1	1		SCH160		P61B-0065V	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
1	1.5		SCH160		P61B-0065W	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
1	2		SCH160		P61B-0066J	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
1	3		SCH160		P61B-0067T	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
1	4		SCH160		P61B-00671	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
1	6		SCH160		P61B-0066K	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
1	8		SCH120		P61B-0067U	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
541	0.5				P61B-00DLH	Flange NPT ASTM A105 Class 1500 ASME B16.5 RJ	
541	0.75				P61B-00CW7	Flange NPT ASTM A105 Class 1500 ASME B16.5 RJ	
805	0.5		SCH160		P61B-0066L	Flange WN ASTM A105 Class 2500 ASME B16.5 RJ	
805	0.75		SCH160		P61B-00667	Flange WN ASTM A105 Class 2500 ASME B16.5 RJ	
805	1		SCH160		P61B-00668	Flange WN ASTM A105 Class 2500 ASME B16.5 RJ	
805	1.5		SCH160		P61B-00669	Flange WN ASTM A105 Class 2500 ASME B16.5 RJ	
805	2		SCH160		P61B-0066M	Flange WN ASTM A105 Class 2500 ASME B16.5 RJ	
805	3		SCH160		P61B-006JE	Flange WN ASTM A105 Class 2500 ASME B16.5 RJ	
805	4		SCH160		P61B-00672	Flange WN ASTM A105 Class 2500 ASME B16.5 RJ	
805	6		SCH160		P61B-0066N	Flange WN ASTM A105 Class 2500 ASME B16.5 RJ	
805	8		SCH120		P61B-009T2	Flange WN ASTM A105 Class 2500 ASME B16.5 RJ	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67B-001VE	Blind flange ASTM A105 Class 1500 ASME B16.5 RJ	
1	0.75				P67B-001VF	Blind flange ASTM A105 Class 1500 ASME B16.5 RJ	
1	1				P67B-001VG	Blind flange ASTM A105 Class 1500 ASME B16.5 RJ	

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BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5				P67B-001VH	Blind flange ASTM A105 Class 1500 ASME B16.5 RJ	
1	2				P67B-0014J	Blind flange ASTM A105 Class 1500 ASME B16.5 RJ	
1	3				P67B-0014G	Blind flange ASTM A105 Class 1500 ASME B16.5 RJ	
1	4				P67B-0014F	Blind flange ASTM A105 Class 1500 ASME B16.5 RJ	
1	6				P67B-0014E	Blind flange ASTM A105 Class 1500 ASME B16.5 RJ	
1	8				P67B-0014D	Blind flange ASTM A105 Class 1500 ASME B16.5 RJ	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P75T-000JT	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	0.75				P75T-000JU	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	1				P75T-000JV	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	1.5				P75T-000JW	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	2				P75T-0008A	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	3				P75T-0008E	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	4				P75T-0008D	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	6				P75T-0008C	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	8				P75T-0008B	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	0.5				P75T-000KT	Ring joint gasket Soft iron Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	0.75				P75T-000KU	Ring joint gasket Soft iron Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	1				P75T-000KV	Ring joint gasket Soft iron Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	1.5				P75T-000KW	Ring joint gasket Soft iron Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	2				P75T-000L6	Ring joint gasket Soft iron Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	3				P75T-000MC	Ring joint gasket Soft iron Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	4				P75T-000ME	Ring joint gasket Soft iron Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	6				P75T-000L7	Ring joint gasket Soft iron Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	8				P75T-000MD	Ring joint gasket Soft iron Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-2				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	3-8				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
805	0.5-1				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
805	1.5				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
805	2				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
805	3-8				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81B-001UV	Gate valve ASTM A105 Class 1500 API 602 Flange ASME B16.5 RJ Trim number 5 WB-BG-OS&Y Handwheel operated	
1	0.75				P81B-001UW	Gate valve ASTM A105 Class 1500 API 602 Flange ASME B16.5 RJ Trim number 5 WB-BG-OS&Y Handwheel operated	
1	1				P81B-001UX	Gate valve ASTM A105 Class 1500 API 602 Flange ASME B16.5 RJ Trim number 5 WB-BG-OS&Y Handwheel operated	
1	1.5				P81B-001UY	Gate valve ASTM A105 Class 1500 API 602 Flange ASME B16.5 RJ Trim number 5 WB-BG-OS&Y Handwheel operated	
1	2				P81C-0064F	Gate valve ASTM A216 Grade WCB Class 1500 API 600 BW Sch160 Trim number 5 PSB-BG-OS&Y Handwheel operated	
1	3				P81C-009ZA	Gate valve ASTM A216 Grade WCB Class 1500 API 600 BW Sch160 Trim number 5 PSB-BG-OS&Y Handwheel operated	
1	4				P81C-009ZB	Gate valve ASTM A216 Grade WCB Class 1500 API 600 BW Sch160 Trim number 5 PSB-BG-OS&Y Gear operated	
1	6				P81C-009ZC	Gate valve ASTM A216 Grade WCB Class 1500 API 600 BW Sch160 Trim number 5 PSB-BG-OS&Y Gear operated	
1	8				P81C-009ZD	Gate valve ASTM A216 Grade WCB Class 1500 API 600 BW Sch120 Trim number 5 PSB-BG-OS&Y Gear operated	

PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P72B-000JD	Paddle blank ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	0.75				P72B-000JE	Paddle blank ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	

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PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P72B-000JF	Paddle blank ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	1.5				P72B-000JG	Paddle blank ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	2				P72B-000JH	Paddle blank ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	3				P72B-000KG	Paddle blank ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	4				P72B-000KH	Paddle blank ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	6				P72B-000KJ	Paddle blank ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	8				P72B-000KK	Paddle blank ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	

PADDLE SPACER (PS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P72B-000JN	Paddle spacer ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	0.75				P72B-000JP	Paddle spacer ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	1				P72B-000JR	Paddle spacer ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	1.5				P72B-000JS	Paddle spacer ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	2				P72B-000JT	Paddle spacer ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	3				P72B-000KL	Paddle spacer ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	4				P72B-000KM	Paddle spacer ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	6				P72B-000KN	Paddle spacer ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	8				P72B-000KP	Paddle spacer ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	

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BOLT TABLE (B_N1AS , STUD ASME RJ, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	110	P80S-003XK	R12	P75T-000JT
0.75	4	0.750	115	P80S-003XL	R14	P75T-000JU
1	4	0.875	130	P80S-0041B	R16	P75T-000JV
1.5	4	1.000	140	P80S-0043F	R20	P75T-000JW
2	8	0.875	150	P80S-0041F	R24	P75T-0008A
3	8	1.125	180	P80S-0046T	R35	P75T-0008E
4	8	1.250	230	P80S-004AU	R39	P75T-0008D
6	12	1.375	300	P80S-003ED	R46	P75T-0008C
8	12	1.625	345	P80S-005TY	R50	P75T-0008B

BOLT TABLE (B_N1AS_805 , STUD ASME RJ, OPTION CODE 805)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	125	P80S-003XN	R13	P75T-000KT
0.75	4	0.750	130	P80S-003XP	R16	P75T-000KU
1	4	0.875	140	P80S-0041D	R18	P75T-000KV
1.5	4	1.125	175	P80S-0046S	R23	P75T-000KW
2	8	1.000	180	P80S-0043R	R26	P75T-000L6
3	8	1.250	260	P80S-004B0	R32	P75T-000MC
4	8	1.500	305	P80S-008MZ	R38	P75T-000ME
6	8	2.000	410	P80S-005VF	R47	P75T-000L7
8	12	2.000	450	P80S-005VP	R51	P75T-000MD

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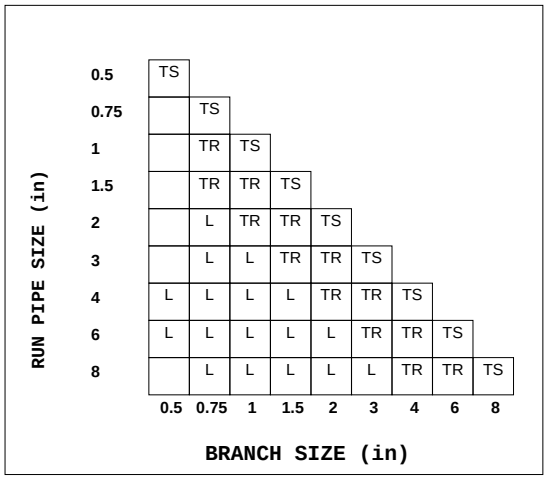
BRANCH TABLE (T_N1AS)



TR : REDUCING TEE
TS : STRAIGHT TEE
L : OUTLET

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PIPING CLASS

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Material : SS304L
Rating : ASME CLASS 1500
Flange Face : RJ
C.A.(mm) : 1.50
Gasket : Ring Octagonal
Service : PROCESS - WET SEVERE SOUR SERVICE SUBJECT TO NACE + HIC STD + AMINES OR CAUSTIC - STRESS RELIEVED
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
5	BOLTING CONFIRMING TO B7M / 2HM SHALL BE USED UNDER CONDITIONS (A) DIRECT EXPOSURE TO SOUR ENVIRONMENTS (B) WHEN THE BOLTING WILL BE BURIED OR INSULATED

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
541	NPT(F) (F)
805	CLASS 2500 (B,F,G)
4601	Y-PATTERN (W)

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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P01J-002CF	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE Severe wet H2S service	
1	0.75		SCH80S		P01J-002CG	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE Severe wet H2S service	
1	1		SCH80S		P01J-002CH	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE Severe wet H2S service	
1	1.5		SCH160		P01J-002PM	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE Severe wet H2S service	
1	2		SCH160		P01J-002PN	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M BE Severe wet H2S service	
1	3		SCH160		P01J-002PP	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M BE Severe wet H2S service	
1	4		SCH120		P01J-002PR	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M BE Severe wet H2S service	
1	6		SCH120		P01J-002PS	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M BE Severe wet H2S service	
1	8		SCH120		P01J-002PW	Pipe ASTM A358 Grade 304/304L Class 1 dual grade EFW ASME B36.10M/B36.19M BE Severe wet H2S service	
1	10		SCH120		P01J-002PT	Pipe ASTM A358 Grade 304/304L Class 1 dual grade EFW ASME B36.10M/B36.19M BE Severe wet H2S service	
1	12		XXS		P01J-002SF	Pipe ASTM A358 Grade 304/304L Class 1 dual grade EFW ASME B36.10M/B36.19M BE Severe wet H2S service	
1	14		SCH100		P01J-002PV	Pipe ASTM A358 Grade 304/304L Class 1 dual grade EFW ASME B36.10M/B36.19M BE Severe wet H2S service	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P02J-001VV	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	0.75		SCH80S		P02J-001VW	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	1		SCH80S		P02J-001VX	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	1.5		SCH160		P02J-0023R	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	2		SCH160		P02J-0023S	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	3		SCH160		P02J-0023T	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	4		SCH120		P02J-0023U	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	6		SCH120		P02J-0023V	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	8		SCH120		P02J-0023Z	90 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius Severe wet H2S service	
1	10		SCH120		P02J-0023W	90 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius Severe wet H2S service	
1	12		XXS		P02J-0025C	90 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius Severe wet H2S service	
1	14		SCH100		P02J-0023Y	90 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius Severe wet H2S service	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P03J-001TA	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	0.75		SCH80S		P03J-001TB	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	1		SCH80S		P03J-001TC	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	1.5		SCH160		P03J-0023G	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	2		SCH160		P03J-0023H	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	3		SCH160		P03J-0023J	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	4		SCH120		P03J-0023K	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	6		SCH120		P03J-0023L	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	8		SCH120		P03J-0023R	45 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius Severe wet H2S service	
1	10		SCH120		P03J-0023M	45 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius Severe wet H2S service	
1	12		XXS		P03J-00254	45 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius Severe wet H2S service	
1	14		SCH100		P03J-0023P	45 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius Severe wet H2S service	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P21J-001JN	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	

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STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75		SCH80S		P21J-001JP	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1		SCH80S		P21J-001JR	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5		SCH160		P21J-001TR	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	2		SCH160		P21J-001TS	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	3		SCH160		P21J-001TT	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	4		SCH120		P21J-001TU	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	6		SCH120		P21J-001TV	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	8		SCH120		P21J-001TZ	Straight tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	10		SCH120		P21J-001TW	Straight tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	12		XXS		P21J-001VB	Straight tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	14		SCH100		P21J-001TY	Straight tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75	SCH80S	SCH80S	P24J-006UM	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5	0.75	SCH160	SCH80S	P24J-007RY	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5	1	SCH160	SCH80S	P24J-007RZ	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	2	1	SCH160	SCH80S	P24J-007S0	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	2	1.5	SCH160	SCH160	P24J-007S1	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	3	1.5	SCH160	SCH160	P24J-007S2	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	3	2	SCH160	SCH160	P24J-007S3	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	4	2	SCH120	SCH160	P24J-007S4	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	4	3	SCH120	SCH160	P24J-007S5	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	6	3	SCH120	SCH160	P24J-007S6	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	6	4	SCH120	SCH120	P24J-007S7	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	8	4	SCH120	SCH120	P24J-007S8	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	8	6	SCH120	SCH120	P24J-007S9	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	10	4	SCH120	SCH120	P24J-007T3	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	10	6	SCH120	SCH120	P24J-007SA	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	10	8	SCH120	SCH120	P24J-007SB	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	12	6	XXS	SCH120	P24J-007VW	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	12	8	XXS	SCH120	P24J-007VV	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	12	10	XXS	SCH120	P24J-007VU	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	14	6	SCH100	SCH120	P24J-007SE	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	14	8	SCH100	SCH120	P24J-007SF	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	14	10	SCH100	SCH120	P24J-007T5	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	14	12	SCH100	XXS	P24J-007VX	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH80S	SCH80S	P27J-005NC	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1	0.5	SCH80S	SCH80S	P27J-005ND	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1	0.75	SCH80S	SCH80S	P27J-005NE	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5	0.5	SCH160	SCH80S	P27J-006GW	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5	0.75	SCH160	SCH80S	P27J-006GX	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5	1	SCH160	SCH80S	P27J-006GY	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	2	0.75	SCH160	SCH80S	P27J-006GZ	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	2	1	SCH160	SCH80S	P27J-006H0	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	2	1.5	SCH160	SCH160	P27J-006H1	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	3	1.5	SCH160	SCH160	P27J-006H2	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	3	2	SCH160	SCH160	P27J-006H3	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	4	1.5	SCH120	SCH160	P27J-006H4	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	4	2	SCH120	SCH160	P27J-006H5	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	4	3	SCH120	SCH160	P27J-006H6	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	6	3	SCH120	SCH160	P27J-006H7	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	6	4	SCH120	SCH120	P27J-006H8	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	8	4	SCH120	SCH120	P27J-006H9	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	8	6	SCH120	SCH120	P27J-006HA	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	10	4	SCH120	SCH120	P27J-006JA	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	10	6	SCH120	SCH120	P27J-006HB	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	10	8	SCH120	SCH120	P27J-006HC	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	12	6	XXS	SCH120	P27J-006MK	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	12	8	XXS	SCH120	P27J-006MH	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	12	10	XXS	SCH120	P27J-006MG	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	14	6	SCH100	SCH120	P27J-006HG	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	14	8	SCH100	SCH120	P27J-006HH	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	14	10	SCH100	SCH120	P27J-006JB	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	14	12	SCH100	XXS	P27J-006MJ	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH80S	SCH80S	P28J-005P7	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1	0.5	SCH80S	SCH80S	P28J-005P8	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1	0.75	SCH80S	SCH80S	P28J-005P9	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5	0.5	SCH160	SCH80S	P28J-006J7	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5	0.75	SCH160	SCH80S	P28J-006J8	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5	1	SCH160	SCH80S	P28J-006J9	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	2	0.75	SCH160	SCH80S	P28J-006JA	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	2	1	SCH160	SCH80S	P28J-006JB	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	2	1.5	SCH160	SCH160	P28J-006JC	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	3	1.5	SCH160	SCH160	P28J-006JD	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	3	2	SCH160	SCH160	P28J-006JE	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	4	1.5	SCH120	SCH160	P28J-006JF	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	4	2	SCH120	SCH160	P28J-006JG	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	4	3	SCH120	SCH160	P28J-006JH	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	6	3	SCH120	SCH160	P28J-006JJ	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	6	4	SCH120	SCH120	P28J-006JK	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	8	4	SCH120	SCH120	P28J-006JL	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	8	6	SCH120	SCH120	P28J-006JM	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	10	4	SCH120	SCH120	P28J-006KM	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	

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ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	10	6	SCH120	SCH120	P28J-006JN	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	10	8	SCH120	SCH120	P28J-006JP	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	12	6	XXS	SCH120	P28J-006NU	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	12	8	XXS	SCH120	P28J-006NV	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	12	10	XXS	SCH120	P28J-006NT	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	14	6	SCH100	SCH120	P28J-006JU	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	14	8	SCH100	SCH120	P28J-006JV	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	14	10	SCH100	SCH120	P28J-006KN	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	14	12	SCH100	XXS	P28J-006NW	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P29J-001CY	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	0.75		SCH80S		P29J-001CZ	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1		SCH80S		P29J-001D0	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5		SCH160		P29J-001FD	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	2		SCH160		P29J-001PN	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	3		SCH160		P29J-001XU	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	4		SCH120		P29J-0024G	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	6		SCH120		P29J-002CY	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	8		SCH120		P29J-002JB	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	10		SCH120		P29J-001GT	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	12		XXS		P29J-001JU	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	14		SCH100		P29J-001KS	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P41J-001W6	Straight nipple ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Severe wet H2S service	
1	0.75		XXS		P41J-001W7	Straight nipple ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Severe wet H2S service	
1	1		XXS		P41J-001W8	Straight nipple ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Severe wet H2S service	
1	1.5		XXS		P41J-001W9	Straight nipple ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Severe wet H2S service	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2	0.75	SCH160	SCH80S	P31K-00FL1	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	3	0.75	SCH160	SCH80S	P31K-00FL2	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	4	0.75	SCH120	SCH80S	P31K-00FL4	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	6	0.75	SCH120	SCH80S	P31K-00FL6	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	8	0.75	SCH120	SCH80S	P31K-00FP7	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	10	0.75	SCH120	SCH80S	P31K-00FP9	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	12	0.75	XXS	SCH80S	P31K-00FX2	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	14	0.75	SCH100	SCH80S	P31K-00FLJ	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	3	1	SCH160	SCH80S	P31K-00FL3	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	4	1	SCH120	SCH80S	P31K-00FL5	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	6	1	SCH120	SCH80S	P31K-00FL7	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	8	1	SCH120	SCH80S	P31K-00FLA	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	10	1	SCH120	SCH80S	P31K-00FLD	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	12	1	XXS	SCH80S	P31K-00FWZ	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	14	1	SCH100	SCH80S	P31K-00FLK	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	4	1.5	SCH120	SCH160	P31K-00FP6	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	

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OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	6	1.5	SCH120	SCH160	P31K-00FL8	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	8	1.5	SCH120	SCH160	P31K-00FP8	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	10	1.5	SCH120	SCH160	P31K-00FPA	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	12	1.5	XXS	SCH160	P31K-00FX3	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	14	1.5	SCH100	SCH160	P31K-00FLL	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	6	2	SCH120	SCH160	P31K-00FL9	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	8	2	SCH120	SCH160	P31K-00FLB	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	10	2	SCH120	SCH160	P31K-00FLE	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	12	2	XXS	SCH160	P31K-00FX0	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	14	2	SCH100	SCH160	P31K-00FLM	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	8	3	SCH120	SCH160	P31K-00FLC	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	10	3	SCH120	SCH160	P31K-00FLF	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	12	3	XXS	SCH160	P31K-00FX1	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	14	3	SCH100	SCH160	P31K-00FLN	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	12	4	XXS	SCH120	P31K-00FX4	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	14	4	SCH100	SCH120	P31K-00FLP	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30K-00051	Plug ASTM A182 Grade F304/F304L dual grade ASME B16.11 NPT Round head Severe wet H2S service	
1	0.75				P30K-00052	Plug ASTM A182 Grade F304/F304L dual grade ASME B16.11 NPT Round head Severe wet H2S service	
1	1				P30K-00053	Plug ASTM A182 Grade F304/F304L dual grade ASME B16.11 NPT Round head Severe wet H2S service	
1	1.5				P30K-00054	Plug ASTM A182 Grade F304/F304L dual grade ASME B16.11 NPT Round head Severe wet H2S service	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P61K-005H1	Flange WN ASTM A182 Grade F304/F304L dual grade Class 1500 ASME B16.5 RJ Severe wet H2S service	
1	0.75		SCH80S		P61K-005H2	Flange WN ASTM A182 Grade F304/F304L dual grade Class 1500 ASME B16.5 RJ Severe wet H2S service	
1	1		SCH80S		P61K-005H3	Flange WN ASTM A182 Grade F304/F304L dual grade Class 1500 ASME B16.5 RJ Severe wet H2S service	
1	1.5		SCH160		P61K-005YR	Flange WN ASTM A182 Grade F304/F304L dual grade Class 1500 ASME B16.5 RJ Severe wet H2S service	
1	2		SCH160		P61K-005YV	Flange WN ASTM A182 Grade F304/F304L dual grade Class 1500 ASME B16.5 RJ Severe wet H2S service	
1	3		SCH160		P61K-005YW	Flange WN ASTM A182 Grade F304/F304L dual grade Class 1500 ASME B16.5 RJ Severe wet H2S service	
1	4		SCH120		P61K-005YX	Flange WN ASTM A182 Grade F304/F304L dual grade Class 1500 ASME B16.5 RJ Severe wet H2S service	
1	6		SCH120		P61K-005YY	Flange WN ASTM A182 Grade F304/F304L dual grade Class 1500 ASME B16.5 RJ Severe wet H2S service	
1	8		SCH120		P61K-005YZ	Flange WN ASTM A182 Grade F304/F304L dual grade Class 1500 ASME B16.5 RJ Severe wet H2S service	
1	10		SCH120		P61K-005YS	Flange WN ASTM A182 Grade F304/F304L dual grade Class 1500 ASME B16.5 RJ Severe wet H2S service	
1	12		XXS		P61K-0062D	Flange WN ASTM A182 Grade F304/F304L dual grade Class 1500 ASME B16.5 RJ Severe wet H2S service	
1	14		SCH100		P61K-005YU	Flange WN ASTM A182 Grade F304/F304L dual grade Class 1500 ASME B16.5 RJ Severe wet H2S service	
541	0.5				P61K-006A1	Flange NPT ASTM A182 Grade F304/F304L dual grade Class 1500 ASME B16.5 RJ Severe wet H2S service	
541	0.75				P61K-005Z0	Flange NPT ASTM A182 Grade F304/F304L dual grade Class 1500 ASME B16.5 RJ Severe wet H2S service	
805	0.5		SCH80S		P61K-005H6	Flange WN ASTM A182 Grade F304/F304L dual grade Class 2500 ASME B16.5 RJ Severe wet H2S service	
805	0.75		SCH80S		P61K-005H7	Flange WN ASTM A182 Grade F304/F304L dual grade Class 2500 ASME B16.5 RJ Severe wet H2S service	
805	1		SCH80S		P61K-005H8	Flange WN ASTM A182 Grade F304/F304L dual grade Class 2500 ASME B16.5 RJ Severe wet H2S service	
805	1.5		SCH160		P61K-005Z1	Flange WN ASTM A182 Grade F304/F304L dual grade Class 2500 ASME B16.5 RJ Severe wet H2S service	
805	2		SCH160		P61K-005Z4	Flange WN ASTM A182 Grade F304/F304L dual grade Class 2500 ASME B16.5 RJ Severe wet H2S service	
805	3		SCH160		P61K-005Z5	Flange WN ASTM A182 Grade F304/F304L dual grade Class 2500 ASME B16.5 RJ Severe wet H2S service	
805	4		SCH120		P61K-005Z6	Flange WN ASTM A182 Grade F304/F304L dual grade Class 2500 ASME B16.5 RJ Severe wet H2S service	
805	6		SCH120		P61K-005Z7	Flange WN ASTM A182 Grade F304/F304L dual grade Class 2500 ASME B16.5 RJ Severe wet H2S service	
805	8		SCH120		P61K-005Z8	Flange WN ASTM A182 Grade F304/F304L dual grade Class 2500 ASME B16.5 RJ Severe wet H2S service	
805	10		SCH120		P61K-005Z2	Flange WN ASTM A182 Grade F304/F304L dual grade Class 2500 ASME B16.5 RJ Severe wet H2S service	
805	12		XXS		P61K-0062E	Flange WN ASTM A182 Grade F304/F304L dual grade Class 2500 ASME B16.5 RJ Severe wet H2S service	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67K-001MB	Blind flange ASTM A182 Grade F304/F304L dual grade Class 1500 ASME B16.5 RJ Severe wet H2S service	
1	0.75				P67K-001MC	Blind flange ASTM A182 Grade F304/F304L dual grade Class 1500 ASME B16.5 RJ Severe wet H2S service	
1	1				P67K-001MD	Blind flange ASTM A182 Grade F304/F304L dual grade Class 1500 ASME B16.5 RJ Severe wet H2S service	
1	1.5				P67K-001ME	Blind flange ASTM A182 Grade F304/F304L dual grade Class 1500 ASME B16.5 RJ Severe wet H2S service	
1	2				P67K-001MX	Blind flange ASTM A182 Grade F304/F304L dual grade Class 1500 ASME B16.5 RJ Severe wet H2S service	

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BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3				P67K-001MY	Blind flange ASTM A182 Grade F304/F304L dual grade Class 1500 ASME B16.5 RJ Severe wet H2S service	
1	4				P67K-001MZ	Blind flange ASTM A182 Grade F304/F304L dual grade Class 1500 ASME B16.5 RJ Severe wet H2S service	
1	6				P67K-001MF	Blind flange ASTM A182 Grade F304/F304L dual grade Class 1500 ASME B16.5 RJ Severe wet H2S service	
1	8				P67K-001R2	Blind flange ASTM A182 Grade F304/F304L dual grade Class 1500 ASME B16.5 RJ Severe wet H2S service	
1	10				P67K-001PZ	Blind flange ASTM A182 Grade F304/F304L dual grade Class 1500 ASME B16.5 RJ Severe wet H2S service	
1	12				P67K-001R0	Blind flange ASTM A182 Grade F304/F304L dual grade Class 1500 ASME B16.5 RJ Severe wet H2S service	
1	14				P67K-001R1	Blind flange ASTM A182 Grade F304/F304L dual grade Class 1500 ASME B16.5 RJ Severe wet H2S service	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P75T-000LS	Ring joint gasket SS TP304 Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	0.75				P75T-000LT	Ring joint gasket SS TP304 Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	1				P75T-000LU	Ring joint gasket SS TP304 Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	1.5				P75T-000LV	Ring joint gasket SS TP304 Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	2				P75T-000ML	Ring joint gasket SS TP304 Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	3				P75T-000NZ	Ring joint gasket SS TP304 Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	4				P75T-0010P	Ring joint gasket SS TP304 Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	6				P75T-000LW	Ring joint gasket SS TP304 Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	8				P75T-000MU	Ring joint gasket SS TP304 Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	10				P75T-000MS	Ring joint gasket SS TP304 Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	12				P75T-000MT	Ring joint gasket SS TP304 Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	14				P75T-000NY	Ring joint gasket SS TP304 Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	0.5				P75T-000LX	Ring joint gasket SS TP304 Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	0.75				P75T-000LY	Ring joint gasket SS TP304 Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	1				P75T-000LZ	Ring joint gasket SS TP304 Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	1.5				P75T-000M0	Ring joint gasket SS TP304 Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	2				P75T-0010T	Ring joint gasket SS TP304 Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	3				P75T-000P0	Ring joint gasket SS TP304 Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	4				P75T-0010U	Ring joint gasket SS TP304 Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	6				P75T-000M1	Ring joint gasket SS TP304 Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	8				P75T-0010V	Ring joint gasket SS TP304 Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	10				P75T-0010R	Ring joint gasket SS TP304 Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	12				P75T-0010S	Ring joint gasket SS TP304 Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-2				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	3-14				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
805	0.5-1				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
805	1.5				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
805	2				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
805	3-12				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
4601	1				P82K-00158	Y-pattern globe valve ASTM A182 Grade F304/F304L dual grade Class 1500 ASME B16.34 BW Sch80S Trim SS316L Body and disc seats Stellite-6 WB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service	
4601	1.5				P82K-00159	Y-pattern globe valve ASTM A182 Grade F304/F304L dual grade Class 1500 ASME B16.34 BW Sch160 Trim SS316L Body and disc seats Stellite-6 WB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service	
4601	2				P82L-001TL	Y-pattern globe valve ASTM A351 Grade CF3 Class 1500 ASME B16.34 BW Sch160 Trim SS316L Body and disc seats Stellite-6 PSB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service	
4601	3				P82L-001TM	Y-pattern globe valve ASTM A351 Grade CF3 Class 1500 ASME B16.34 BW Sch160 Trim SS316L Body and disc seats Stellite-6 PSB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service	
4601	14				P82L-001TN	Y-pattern globe valve ASTM A351 Grade CF3 Class 1500 ASME B16.34 BW Sch100 Trim SS316L Body and disc seats Stellite-6 PSB-BG-OS&Y Gear operated Severe wet H2S service Amine service	

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PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P72K-000CY	Paddle blank ASTM A182 Grade F304/F304L dual grade Class 1500 Standard-drawing Flange ASME B16.5 RJ Severe wet H2S service	
1	0.75				P72K-000CZ	Paddle blank ASTM A182 Grade F304/F304L dual grade Class 1500 Standard-drawing Flange ASME B16.5 RJ Severe wet H2S service	
1	1				P72K-000D0	Paddle blank ASTM A182 Grade F304/F304L dual grade Class 1500 Standard-drawing Flange ASME B16.5 RJ Severe wet H2S service	
1	1.5				P72K-000D1	Paddle blank ASTM A182 Grade F304/F304L dual grade Class 1500 Standard-drawing Flange ASME B16.5 RJ Severe wet H2S service	
1	2				P72K-000E3	Paddle blank ASTM A182 Grade F304/F304L dual grade Class 1500 Standard-drawing Flange ASME B16.5 RJ Severe wet H2S service	
1	3				P72K-000E4	Paddle blank ASTM A182 Grade F304/F304L dual grade Class 1500 Standard-drawing Flange ASME B16.5 RJ Severe wet H2S service	
1	4				P72K-000E5	Paddle blank ASTM A182 Grade F304/F304L dual grade Class 1500 Standard-drawing Flange ASME B16.5 RJ Severe wet H2S service	
1	6				P72K-000D2	Paddle blank ASTM A182 Grade F304/F304L dual grade Class 1500 Standard-drawing Flange ASME B16.5 RJ Severe wet H2S service	
1	8				P72K-000G4	Paddle blank ASTM A182 Grade F304/F304L dual grade Class 1500 Standard-drawing Flange ASME B16.5 RJ Severe wet H2S service	
1	10				P72K-000G1	Paddle blank ASTM A182 Grade F304/F304L dual grade Class 1500 Standard-drawing Flange ASME B16.5 RJ Severe wet H2S service	
1	12				P72K-000G2	Paddle blank ASTM A182 Grade F304/F304L dual grade Class 1500 Standard-drawing Flange ASME B16.5 RJ Severe wet H2S service	
1	14				P72K-000G3	Paddle blank ASTM A182 Grade F304/F304L dual grade Class 1500 Standard-drawing Flange ASME B16.5 RJ Severe wet H2S service	

PADDLE SPACER (PS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P72K-000D3	Paddle spacer ASTM A182 Grade F304/F304L dual grade Class 1500 Standard-drawing Flange ASME B16.5 RJ Severe wet H2S service	
1	0.75				P72K-000D4	Paddle spacer ASTM A182 Grade F304/F304L dual grade Class 1500 Standard-drawing Flange ASME B16.5 RJ Severe wet H2S service	
1	1				P72K-000D5	Paddle spacer ASTM A182 Grade F304/F304L dual grade Class 1500 Standard-drawing Flange ASME B16.5 RJ Severe wet H2S service	
1	1.5				P72K-000D6	Paddle spacer ASTM A182 Grade F304/F304L dual grade Class 1500 Standard-drawing Flange ASME B16.5 RJ Severe wet H2S service	
1	2				P72K-000E6	Paddle spacer ASTM A182 Grade F304/F304L dual grade Class 1500 Standard-drawing Flange ASME B16.5 RJ Severe wet H2S service	
1	3				P72K-000E7	Paddle spacer ASTM A182 Grade F304/F304L dual grade Class 1500 Standard-drawing Flange ASME B16.5 RJ Severe wet H2S service	
1	4				P72K-000E8	Paddle spacer ASTM A182 Grade F304/F304L dual grade Class 1500 Standard-drawing Flange ASME B16.5 RJ Severe wet H2S service	
1	6				P72K-000D7	Paddle spacer ASTM A182 Grade F304/F304L dual grade Class 1500 Standard-drawing Flange ASME B16.5 RJ Severe wet H2S service	
1	8				P72K-000G8	Paddle spacer ASTM A182 Grade F304/F304L dual grade Class 1500 Standard-drawing Flange ASME B16.5 RJ Severe wet H2S service	
1	10				P72K-000G5	Paddle spacer ASTM A182 Grade F304/F304L dual grade Class 1500 Standard-drawing Flange ASME B16.5 RJ Severe wet H2S service	
1	12				P72K-000G6	Paddle spacer ASTM A182 Grade F304/F304L dual grade Class 1500 Standard-drawing Flange ASME B16.5 RJ Severe wet H2S service	
1	14				P72K-000G7	Paddle spacer ASTM A182 Grade F304/F304L dual grade Class 1500 Standard-drawing Flange ASME B16.5 RJ Severe wet H2S service	

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BOLT TABLE (B_N1J502 , STUD ASME RJ, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	110	P80S-0090F	R12	P75T-000LS
0.75	4	0.750	115	P80S-0090G	R14	P75T-000LT
1	4	0.875	130	P80S-005ZB	R16	P75T-000LU
1.5	4	1.000	140	P80S-0061A	R20	P75T-000LV
2	8	0.875	150	P80S-005ZF	R24	P75T-000ML
3	8	1.125	180	P80S-0064T	R35	P75T-000NZ
4	8	1.250	230	P80S-0068H	R39	P75T-0010P
6	12	1.375	300	P80S-006J1	R46	P75T-000LW
8	12	1.625	345	P80S-00A5K	R50	P75T-000MU
10	12	1.875	395	P80S-00AW8	R54	P75T-000MS
12	16	2.000	445	P80S-00BH5	R58	P75T-000MT
14	16	2.250	490	P80S-00DLE	R63	P75T-000NY

BOLT TABLE (B_N1J502_805 , STUD ASME RJ, OPTION CODE 805)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	125	P80S-0090J	R13	P75T-000LX
0.75	4	0.750	130	P80S-0090K	R16	P75T-000LY
1	4	0.875	140	P80S-005ZD	R18	P75T-000LZ
1.5	4	1.125	175	P80S-0064S	R23	P75T-000M0
2	8	1.000	180	P80S-0061J	R26	P75T-0010T
3	8	1.250	260	P80S-0068P	R32	P75T-000P0
4	8	1.500	305	P80S-006LS	R38	P75T-0010U
6	8	2.000	410	P80S-00BBD	R47	P75T-000M1
8	12	2.000	450	P80S-00BH6	R51	P75T-0010V
10	12	2.500	575	P80S-00DZV	R55	P75T-0010R
12	12	2.750	635	P80S-01RAT	R60	P75T-0010S
14	14	3.000	695		R64	

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PIPING CLASS

N1J502 REV NO. 2

BRANCH TABLE (T_N1J502)

RUN PIPE SIZE (in) \ BRANCH SIZE (in)	0.5	0.75	1	1.5	2	3	4	6	8	10	12	14
0.5	TS											
0.75		TS										
1		TR	TS									
1.5		TR	TR	TS								
2		L	TR	TR	TS							
3		L	L	TR	TR	TS						
4	L	L	L	L	TR	TR	TS					
6	L	L	L	L	L	TR	TR	TS				
8		L	L	L	L	L	TR	TR	TS			
10		L	L	L	L	L	TR	TR	TR	TS		
12		L	L	L	L	L	L	TR	TR	TR	TS	
14		L	L	L	L	L	L	TR	TR	TR	TR	TS

L : OUTLET
TS : STRAIGHT TEE
TR : REDUCING TEE

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PIPING CLASS

N1J702 REV NO. 2

Material : SS304L
Rating : ASME CLASS 1500
Flange Face : RJ
C.A.(mm) : 1.50
Gasket : Ring Octagonal
Service : PROCESS - WET SEVERE SOUR SERVICE SUBJECT TO NACE + HIC STD + HYDROGEN SERVICE
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
5	BOLTING CONFIRMING TO B7M / 2HM SHALL BE USED UNDER CONDITIONS (A) DIRECT EXPOSURE TO SOUR ENVIRONMENTS (B) WHEN THE BOLTING WILL BE BURIED OR INSULATED

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
805	CLASS 2500 (B,F,G)

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PIPING CLASS
N1J702 REV NO. 2

PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P01J-002CF	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE Severe wet H2S service	
1	0.75		SCH80S		P01J-002CG	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE Severe wet H2S service	
1	1		SCH80S		P01J-002CH	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE Severe wet H2S service	
1	1.5		SCH160		P01J-002PM	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE Severe wet H2S service	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P03J-001TA	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	0.75		SCH80S		P03J-001TB	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	1		SCH80S		P03J-001TC	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	1.5		SCH160		P03J-0023G	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P21J-001JN	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	0.75		SCH80S		P21J-001JP	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1		SCH80S		P21J-001JR	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5		SCH160		P21J-001TR	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75	SCH80S	SCH80S	P24J-006UM	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5	0.75	SCH160	SCH80S	P24J-007RY	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5	1	SCH160	SCH80S	P24J-007RZ	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH80S	SCH80S	P27J-005NC	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1	0.5	SCH80S	SCH80S	P27J-005ND	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1	0.75	SCH80S	SCH80S	P27J-005NE	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5	0.5	SCH160	SCH80S	P27J-006GW	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5	0.75	SCH160	SCH80S	P27J-006GX	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5	1	SCH160	SCH80S	P27J-006GY	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH80S	SCH80S	P28J-005P7	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1	0.5	SCH80S	SCH80S	P28J-005P8	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1	0.75	SCH80S	SCH80S	P28J-005P9	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5	0.5	SCH160	SCH80S	P28J-006J7	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5	0.75	SCH160	SCH80S	P28J-006J8	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5	1	SCH160	SCH80S	P28J-006J9	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P29J-001CY	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	0.75		SCH80S		P29J-001CZ	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	

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CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		SCH80S		P29J-001D0	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5		SCH160		P29J-001FD	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P61K-005H1	Flange WN ASTM A182 Grade F304/F304L dual grade Class 1500 ASME B16.5 RJ Severe wet H2S service	
1	0.75		SCH80S		P61K-005H2	Flange WN ASTM A182 Grade F304/F304L dual grade Class 1500 ASME B16.5 RJ Severe wet H2S service	
1	1		SCH80S		P61K-005H3	Flange WN ASTM A182 Grade F304/F304L dual grade Class 1500 ASME B16.5 RJ Severe wet H2S service	
1	1.5		SCH160		P61K-005YR	Flange WN ASTM A182 Grade F304/F304L dual grade Class 1500 ASME B16.5 RJ Severe wet H2S service	
805	0.5		SCH80S		P61K-005H6	Flange WN ASTM A182 Grade F304/F304L dual grade Class 2500 ASME B16.5 RJ Severe wet H2S service	
805	0.75		SCH80S		P61K-005H7	Flange WN ASTM A182 Grade F304/F304L dual grade Class 2500 ASME B16.5 RJ Severe wet H2S service	
805	1		SCH80S		P61K-005H8	Flange WN ASTM A182 Grade F304/F304L dual grade Class 2500 ASME B16.5 RJ Severe wet H2S service	
805	1.5		SCH160		P61K-005Z1	Flange WN ASTM A182 Grade F304/F304L dual grade Class 2500 ASME B16.5 RJ Severe wet H2S service	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67K-001MB	Blind flange ASTM A182 Grade F304/F304L dual grade Class 1500 ASME B16.5 RJ Severe wet H2S service	
1	0.75				P67K-001MC	Blind flange ASTM A182 Grade F304/F304L dual grade Class 1500 ASME B16.5 RJ Severe wet H2S service	
1	1				P67K-001MD	Blind flange ASTM A182 Grade F304/F304L dual grade Class 1500 ASME B16.5 RJ Severe wet H2S service	
1	1.5				P67K-001ME	Blind flange ASTM A182 Grade F304/F304L dual grade Class 1500 ASME B16.5 RJ Severe wet H2S service	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P75T-000LS	Ring joint gasket SS TP304 Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	0.75				P75T-000LT	Ring joint gasket SS TP304 Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	1				P75T-000LU	Ring joint gasket SS TP304 Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	1.5				P75T-000LV	Ring joint gasket SS TP304 Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	0.5				P75T-000LX	Ring joint gasket SS TP304 Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	0.75				P75T-000LY	Ring joint gasket SS TP304 Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	1				P75T-000LZ	Ring joint gasket SS TP304 Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	1.5				P75T-000M0	Ring joint gasket SS TP304 Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-1.5				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
805	0.5-1				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
805	1.5				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81K-001CM	Gate valve ASTM A182 Grade F304/F304L dual grade Class 1500 API 602 BW Sch80S Trim SS316L Body and disc seats Stellite-6 WB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	0.75				P81K-001CN	Gate valve ASTM A182 Grade F304/F304L dual grade Class 1500 API 602 BW Sch80S Trim SS316L Body and disc seats Stellite-6 WB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	1				P81K-001CP	Gate valve ASTM A182 Grade F304/F304L dual grade Class 1500 API 602 BW Sch80S Trim SS316L Body and disc seats Stellite-6 WB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	1.5				P81K-001L5	Gate valve ASTM A182 Grade F304/F304L dual grade Class 1500 API 602 BW Sch160 Trim SS316L Body and disc seats Stellite-6 WB-BG-OS&Y Handwheel operated Severe wet H2S service	

PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P72K-000CY	Paddle blank ASTM A182 Grade F304/F304L dual grade Class 1500 Standard-drawing Flange ASME B16.5 RJ Severe wet H2S service	
1	0.75				P72K-000CZ	Paddle blank ASTM A182 Grade F304/F304L dual grade Class 1500 Standard-drawing Flange ASME B16.5 RJ Severe wet H2S service	
1	1				P72K-000D0	Paddle blank ASTM A182 Grade F304/F304L dual grade Class 1500 Standard-drawing Flange ASME B16.5 RJ Severe wet H2S service	
1	1.5				P72K-000D1	Paddle blank ASTM A182 Grade F304/F304L dual grade Class 1500 Standard-drawing Flange ASME B16.5 RJ Severe wet H2S service	

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PADDLE SPACER (PS)							
OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P72K-000D3	Paddle spacer ASTM A182 Grade F304/F304L dual grade Class 1500 Standard-drawing Flange ASME B16.5 RJ Severe wet H2S service	
1	0.75				P72K-000D4	Paddle spacer ASTM A182 Grade F304/F304L dual grade Class 1500 Standard-drawing Flange ASME B16.5 RJ Severe wet H2S service	
1	1				P72K-000D5	Paddle spacer ASTM A182 Grade F304/F304L dual grade Class 1500 Standard-drawing Flange ASME B16.5 RJ Severe wet H2S service	
1	1.5				P72K-000D6	Paddle spacer ASTM A182 Grade F304/F304L dual grade Class 1500 Standard-drawing Flange ASME B16.5 RJ Severe wet H2S service	

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BOLT TABLE (B_N1J702 , STUD ASME RJ, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	110	P80S-0090F	R12	P75T-000LS
0.75	4	0.750	115	P80S-0090G	R14	P75T-000LT
1	4	0.875	130	P80S-005ZB	R16	P75T-000LU
1.5	4	1.000	140	P80S-0061A	R20	P75T-000LV

BOLT TABLE (B_N1J702_805 , STUD ASME RJ, OPTION CODE 805)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	125	P80S-0090J	R13	P75T-000LX
0.75	4	0.750	130	P80S-0090K	R16	P75T-000LY
1	4	0.875	140	P80S-005ZD	R18	P75T-000LZ
1.5	4	1.125	175	P80S-0064S	R23	P75T-000M0

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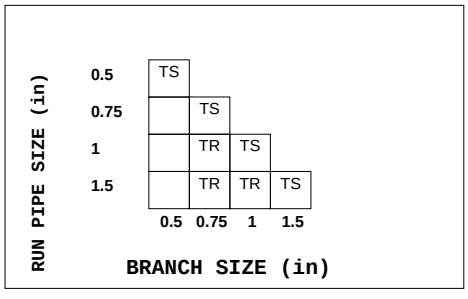
BRANCH TABLE (T_N1J702)



TS : STRAIGHT TEE
TR : REDUCING TEE

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PIPING CLASS

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Material : SS304L
Rating : ASME CLASS 1500
Flange Face : RJ
C.A.(mm) : 1.50
Gasket : Ring Octagonal
Service : PROCESS - WET SEVERE SOUR SERVICE SUBJECT TO NACE + HIC STD.
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
5	BOLTING CONFIRMING TO B7M / 2HM SHALL BE USED UNDER CONDITIONS (A) DIRECT EXPOSURE TO SOUR ENVIRONMENTS (B) WHEN THE BOLTING WILL BE BURIED OR INSULATED

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
541	NPT(F) (F)
805	CLASS 2500 (B,F,G)
4208	45 DEGREE LATERAL STRAIGHT TEE (TLS)
4601	Y-PATTERN (W)

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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P01J-002CF	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE Severe wet H2S service	
1	0.75		SCH80S		P01J-002CG	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE Severe wet H2S service	
1	1		SCH80S		P01J-002CH	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE Severe wet H2S service	
1	1.5		SCH160		P01J-002PM	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE Severe wet H2S service	
1	2		SCH160		P01J-002PN	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M BE Severe wet H2S service	
1	3		SCH160		P01J-002PP	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M BE Severe wet H2S service	
1	4		SCH120		P01J-002PR	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M BE Severe wet H2S service	
1	6		SCH120		P01J-002PS	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M BE Severe wet H2S service	
1	8		SCH80S		P01J-002P5	Pipe ASTM A358 Grade 304/304L Class 1 dual grade EFW ASME B36.10M/B36.19M BE Severe wet H2S service	
1	10		SCH80S		P01J-002P2	Pipe ASTM A358 Grade 304/304L Class 1 dual grade EFW ASME B36.10M/B36.19M BE Severe wet H2S service	
1	12		SCH80S		P01J-002P3	Pipe ASTM A358 Grade 304/304L Class 1 dual grade EFW ASME B36.10M/B36.19M BE Severe wet H2S service	
1	14		SCH80S		P01J-002P4	Pipe ASTM A358 Grade 304/304L Class 1 dual grade EFW ASME B36.10M/B36.19M BE Severe wet H2S service	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P02J-001VV	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	0.75		SCH80S		P02J-001VW	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	1		SCH80S		P02J-001VX	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	1.5		SCH160		P02J-0023R	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	2		SCH160		P02J-0023S	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	3		SCH160		P02J-0023T	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	4		SCH120		P02J-0023U	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	6		SCH120		P02J-0023V	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	8		SCH80S		P02J-00237	90 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius Severe wet H2S service	
1	10		SCH80S		P02J-00234	90 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius Severe wet H2S service	
1	12		SCH80S		P02J-00235	90 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius Severe wet H2S service	
1	14		SCH80S		P02J-00236	90 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius Severe wet H2S service	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P03J-001TA	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	0.75		SCH80S		P03J-001TB	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	1		SCH80S		P03J-001TC	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	1.5		SCH160		P03J-0023G	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	2		SCH160		P03J-0023H	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	3		SCH160		P03J-0023J	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	4		SCH120		P03J-0023K	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	6		SCH120		P03J-0023L	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius Severe wet H2S service	
1	8		SCH80S		P03J-0022Z	45 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius Severe wet H2S service	
1	10		SCH80S		P03J-0022W	45 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius Severe wet H2S service	
1	12		SCH80S		P03J-0022X	45 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius Severe wet H2S service	
1	14		SCH80S		P03J-0022Y	45 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius Severe wet H2S service	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P21J-001JN	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	

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STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75		SCH80S		P21J-001JP	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1		SCH80S		P21J-001JR	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5		SCH160		P21J-001TR	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	2		SCH160		P21J-001TS	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	3		SCH160		P21J-001TT	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	4		SCH120		P21J-001TU	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	6		SCH120		P21J-001TV	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	8		SCH80S		P21J-001TB	Straight tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	10		SCH80S		P21J-001T8	Straight tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	12		SCH80S		P21J-001T9	Straight tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	14		SCH80S		P21J-001TA	Straight tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	

STRAIGHT LATERAL TEE (TLS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75		SCH80S		P22J-0004Y	Straight lateral-tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW 60 degree Severe wet H2S service	
1	1		SCH80S		P22J-0005E	Straight lateral-tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW 60 degree Severe wet H2S service	
1	1.5		SCH160		P22J-0005F	Straight lateral-tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW 60 degree Severe wet H2S service	
1	2		SCH160		P22J-0005G	Straight lateral-tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW 60 degree Severe wet H2S service	
1	3		SCH160		P22J-0005H	Straight lateral-tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW 60 degree Severe wet H2S service	
1	4		SCH120		P22J-0005J	Straight lateral-tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW 60 degree Severe wet H2S service	
1	6		SCH120		P22J-0005K	Straight lateral-tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW 60 degree Severe wet H2S service	
1	8		SCH80S		P22J-0005P	Straight lateral-tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW 60 degree Severe wet H2S service	
1	10		SCH80S		P22J-0005L	Straight lateral-tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW 60 degree Severe wet H2S service	
1	12		SCH80S		P22J-0005M	Straight lateral-tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW 60 degree Severe wet H2S service	
1	14		SCH80S		P22J-0005N	Straight lateral-tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW 60 degree Severe wet H2S service	
4208	2		SCH160		P22J-0004L	Straight lateral-tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW 45 degree Severe wet H2S service	
4208	3		SCH160		P22J-0004M	Straight lateral-tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW 45 degree Severe wet H2S service	
4208	4		SCH120		P22J-0004N	Straight lateral-tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW 45 degree Severe wet H2S service	
4208	6		SCH120		P22J-0004P	Straight lateral-tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW 45 degree Severe wet H2S service	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75	SCH80S	SCH80S	P24J-006UM	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5	0.75	SCH160	SCH80S	P24J-007RY	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5	1	SCH160	SCH80S	P24J-007RZ	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	2	1	SCH160	SCH80S	P24J-007S0	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	2	1.5	SCH160	SCH160	P24J-007S1	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	3	1.5	SCH160	SCH160	P24J-007S2	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	3	2	SCH160	SCH160	P24J-007S3	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	4	2	SCH120	SCH160	P24J-007S4	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	4	3	SCH120	SCH160	P24J-007S5	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	6	3	SCH120	SCH160	P24J-007S6	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	6	4	SCH120	SCH120	P24J-007S7	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	8	4	SCH80S	SCH120	P24J-00889	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	8	6	SCH80S	SCH120	P24J-0089G	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	

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REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	10	4	SCH80S	SCH120	P24J-0089H	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	10	6	SCH80S	SCH120	P24J-0089J	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	10	8	SCH80S	SCH80S	P24J-007LX	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	12	6	SCH80S	SCH120	P24J-0089K	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	12	8	SCH80S	SCH80S	P24J-007M0	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	12	10	SCH80S	SCH80S	P24J-007LY	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	14	6	SCH80S	SCH120	P24J-0088A	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	14	8	SCH80S	SCH80S	P24J-007M4	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	14	10	SCH80S	SCH80S	P24J-007M1	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	14	12	SCH80S	SCH80S	P24J-007M2	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH80S	SCH80S	P27J-005NC	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1	0.5	SCH80S	SCH80S	P27J-005ND	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1	0.75	SCH80S	SCH80S	P27J-005NE	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5	0.5	SCH160	SCH80S	P27J-006GW	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5	0.75	SCH160	SCH80S	P27J-006GX	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5	1	SCH160	SCH80S	P27J-006GY	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	2	0.75	SCH160	SCH80S	P27J-006GZ	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	2	1	SCH160	SCH80S	P27J-006H0	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	2	1.5	SCH160	SCH160	P27J-006H1	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	3	1.5	SCH160	SCH160	P27J-006H2	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	3	2	SCH160	SCH160	P27J-006H3	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	4	1.5	SCH120	SCH160	P27J-006H4	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	4	2	SCH120	SCH160	P27J-006H5	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	4	3	SCH120	SCH160	P27J-006H6	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	6	3	SCH120	SCH160	P27J-006H7	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	6	4	SCH120	SCH120	P27J-006H8	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	8	4	SCH80S	SCH120	P27J-006YW	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	8	6	SCH80S	SCH120	P27J-006YY	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	10	4	SCH80S	SCH120	P27J-006YX	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	10	6	SCH80S	SCH120	P27J-006YZ	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	10	8	SCH80S	SCH80S	P27J-006DX	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	12	6	SCH80S	SCH120	P27J-006Z0	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	12	8	SCH80S	SCH80S	P27J-006E0	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	12	10	SCH80S	SCH80S	P27J-006DY	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	14	6	SCH80S	SCH120	P27J-006Z1	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	14	8	SCH80S	SCH80S	P27J-006E4	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	14	10	SCH80S	SCH80S	P27J-006E1	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	14	12	SCH80S	SCH80S	P27J-006E2	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH80S	SCH80S	P28J-005P7	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	

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ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.5	SCH80S	SCH80S	P28J-005P8	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1	0.75	SCH80S	SCH80S	P28J-005P9	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5	0.5	SCH160	SCH80S	P28J-006J7	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5	0.75	SCH160	SCH80S	P28J-006J8	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5	1	SCH160	SCH80S	P28J-006J9	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	2	0.75	SCH160	SCH80S	P28J-006JA	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	2	1	SCH160	SCH80S	P28J-006JB	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	2	1.5	SCH160	SCH160	P28J-006JC	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	3	1.5	SCH160	SCH160	P28J-006JD	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	3	2	SCH160	SCH160	P28J-006JE	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	4	1.5	SCH120	SCH160	P28J-006JF	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	4	2	SCH120	SCH160	P28J-006JG	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	4	3	SCH120	SCH160	P28J-006JH	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	6	3	SCH120	SCH160	P28J-006JJ	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	6	4	SCH120	SCH120	P28J-006JK	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	8	4	SCH80S	SCH120	P28J-0070C	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	8	6	SCH80S	SCH120	P28J-0070D	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	10	4	SCH80S	SCH120	P28J-0070E	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	10	6	SCH80S	SCH120	P28J-0070F	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	10	8	SCH80S	SCH80S	P28J-006EX	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	12	6	SCH80S	SCH120	P28J-0070G	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	12	8	SCH80S	SCH80S	P28J-006F0	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	12	10	SCH80S	SCH80S	P28J-006EY	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	14	6	SCH80S	SCH120	P28J-0070H	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	14	8	SCH80S	SCH80S	P28J-006F4	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	14	10	SCH80S	SCH80S	P28J-006F1	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	
1	14	12	SCH80S	SCH80S	P28J-006F2	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Severe wet H2S service	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P29J-001CY	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	0.75		SCH80S		P29J-001CZ	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1		SCH80S		P29J-001D0	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5		SCH160		P29J-001FD	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	2		SCH160		P29J-001PN	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	3		SCH160		P29J-001XU	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	4		SCH120		P29J-0024G	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	6		SCH120		P29J-002CY	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	8		SCH80S		P29J-002JN	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	10		SCH80S		P29J-001H4	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	12		SCH80S		P29J-001JR	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	
1	14		SCH80S		P29J-001L5	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Severe wet H2S service	

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STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P41J-001W6	Straight nipple ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Severe wet H2S service	
1	0.75		SCH160		P41J-001VB	Straight nipple ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Severe wet H2S service	
1	1		SCH160		P41J-001VC	Straight nipple ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Severe wet H2S service	
1	1.5		SCH160		P41J-001VD	Straight nipple ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Severe wet H2S service	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2	0.75	SCH160	SCH80S	P31K-00FL1	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	3	0.75	SCH160	SCH80S	P31K-00FL2	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	4	0.75	SCH120	SCH80S	P31K-00FL4	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	6	0.75	SCH120	SCH80S	P31K-00FL6	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	8	0.75	SCH80S	SCH80S	P31K-00F0Y	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	10	0.75	SCH80S	SCH80S	P31K-00F13	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	12	0.75	SCH80S	SCH80S	P31K-00F18	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	14	0.75	SCH80S	SCH80S	P31K-00F1B	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	3	1	SCH160	SCH80S	P31K-00FL3	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	4	1	SCH120	SCH80S	P31K-00FL5	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	6	1	SCH120	SCH80S	P31K-00FL7	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	8	1	SCH80S	SCH80S	P31K-00F0Z	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	10	1	SCH80S	SCH80S	P31K-00F14	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	12	1	SCH80S	SCH80S	P31K-00F19	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	14	1	SCH80S	SCH80S	P31K-00F1C	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	4	1.5	SCH120	SCH160	P31K-00FP6	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	6	1.5	SCH120	SCH160	P31K-00FL8	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	8	1.5	SCH80S	SCH160	P31K-00G61	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	10	1.5	SCH80S	SCH160	P31K-00G62	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	12	1.5	SCH80S	SCH160	P31K-00G86	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	14	1.5	SCH80S	SCH160	P31K-00G66	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	6	2	SCH120	SCH160	P31K-00FL9	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	8	2	SCH80S	SCH160	P31K-00G5X	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	10	2	SCH80S	SCH160	P31K-00G5Z	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	12	2	SCH80S	SCH160	P31K-00G63	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	14	2	SCH80S	SCH160	P31K-00G67	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	8	3	SCH80S	SCH160	P31K-00G5Y	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	10	3	SCH80S	SCH160	P31K-00G60	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	12	3	SCH80S	SCH160	P31K-00G64	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	14	3	SCH80S	SCH160	P31K-00G68	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	12	4	SCH80S	SCH120	P31K-00G65	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	
1	14	4	SCH80S	SCH120	P31K-00G69	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW Severe wet H2S service	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30K-00051	Plug ASTM A182 Grade F304/F304L dual grade ASME B16.11 NPT Round head Severe wet H2S service	
1	0.75				P30K-00052	Plug ASTM A182 Grade F304/F304L dual grade ASME B16.11 NPT Round head Severe wet H2S service	
1	1				P30K-00053	Plug ASTM A182 Grade F304/F304L dual grade ASME B16.11 NPT Round head Severe wet H2S service	
1	1.5				P30K-00054	Plug ASTM A182 Grade F304/F304L dual grade ASME B16.11 NPT Round head Severe wet H2S service	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P61K-005H1	Flange WN ASTM A182 Grade F304/F304L dual grade Class 1500 ASME B16.5 RJ Severe wet H2S service	
1	0.75		SCH80S		P61K-005H2	Flange WN ASTM A182 Grade F304/F304L dual grade Class 1500 ASME B16.5 RJ Severe wet H2S service	
1	1		SCH80S		P61K-005H3	Flange WN ASTM A182 Grade F304/F304L dual grade Class 1500 ASME B16.5 RJ Severe wet H2S service	
1	1.5		SCH160		P61K-005YR	Flange WN ASTM A182 Grade F304/F304L dual grade Class 1500 ASME B16.5 RJ Severe wet H2S service	
1	2		SCH160		P61K-005YV	Flange WN ASTM A182 Grade F304/F304L dual grade Class 1500 ASME B16.5 RJ Severe wet H2S service	
1	3		SCH160		P61K-005YW	Flange WN ASTM A182 Grade F304/F304L dual grade Class 1500 ASME B16.5 RJ Severe wet H2S service	
1	4		SCH120		P61K-005YX	Flange WN ASTM A182 Grade F304/F304L dual grade Class 1500 ASME B16.5 RJ Severe wet H2S service	
1	6		SCH120		P61K-005YY	Flange WN ASTM A182 Grade F304/F304L dual grade Class 1500 ASME B16.5 RJ Severe wet H2S service	

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FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	8		SCH80S		P61K-005NN	Flange WN ASTM A182 Grade F304/F304L dual grade Class 1500 ASME B16.5 RJ Severe wet H2S service	
1	10		SCH80S		P61K-005NF	Flange WN ASTM A182 Grade F304/F304L dual grade Class 1500 ASME B16.5 RJ Severe wet H2S service	
1	12		SCH80S		P61K-005NG	Flange WN ASTM A182 Grade F304/F304L dual grade Class 1500 ASME B16.5 RJ Severe wet H2S service	
1	14		SCH80S		P61K-005NH	Flange WN ASTM A182 Grade F304/F304L dual grade Class 1500 ASME B16.5 RJ Severe wet H2S service	
541	0.5				P61K-006A1	Flange NPT ASTM A182 Grade F304/F304L dual grade Class 1500 ASME B16.5 RJ Severe wet H2S service	
541	0.75				P61K-005Z0	Flange NPT ASTM A182 Grade F304/F304L dual grade Class 1500 ASME B16.5 RJ Severe wet H2S service	
805	0.5		SCH80S		P61K-005H6	Flange WN ASTM A182 Grade F304/F304L dual grade Class 2500 ASME B16.5 RJ Severe wet H2S service	
805	0.75		SCH80S		P61K-005H7	Flange WN ASTM A182 Grade F304/F304L dual grade Class 2500 ASME B16.5 RJ Severe wet H2S service	
805	1		SCH80S		P61K-005H8	Flange WN ASTM A182 Grade F304/F304L dual grade Class 2500 ASME B16.5 RJ Severe wet H2S service	
805	1.5		SCH160		P61K-005Z1	Flange WN ASTM A182 Grade F304/F304L dual grade Class 2500 ASME B16.5 RJ Severe wet H2S service	
805	2		SCH160		P61K-005Z4	Flange WN ASTM A182 Grade F304/F304L dual grade Class 2500 ASME B16.5 RJ Severe wet H2S service	
805	3		SCH160		P61K-005Z5	Flange WN ASTM A182 Grade F304/F304L dual grade Class 2500 ASME B16.5 RJ Severe wet H2S service	
805	4		SCH120		P61K-005Z6	Flange WN ASTM A182 Grade F304/F304L dual grade Class 2500 ASME B16.5 RJ Severe wet H2S service	
805	6		SCH120		P61K-005Z7	Flange WN ASTM A182 Grade F304/F304L dual grade Class 2500 ASME B16.5 RJ Severe wet H2S service	
805	8		SCH80S		P61K-005NW	Flange WN ASTM A182 Grade F304/F304L dual grade Class 2500 ASME B16.5 RJ Severe wet H2S service	
805	10		SCH80S		P61K-005NP	Flange WN ASTM A182 Grade F304/F304L dual grade Class 2500 ASME B16.5 RJ Severe wet H2S service	
805	12		SCH80S		P61K-005NR	Flange WN ASTM A182 Grade F304/F304L dual grade Class 2500 ASME B16.5 RJ Severe wet H2S service	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67K-001MB	Blind flange ASTM A182 Grade F304/F304L dual grade Class 1500 ASME B16.5 RJ Severe wet H2S service	
1	0.75				P67K-001MC	Blind flange ASTM A182 Grade F304/F304L dual grade Class 1500 ASME B16.5 RJ Severe wet H2S service	
1	1				P67K-001MD	Blind flange ASTM A182 Grade F304/F304L dual grade Class 1500 ASME B16.5 RJ Severe wet H2S service	
1	1.5				P67K-001ME	Blind flange ASTM A182 Grade F304/F304L dual grade Class 1500 ASME B16.5 RJ Severe wet H2S service	
1	2				P67K-001MX	Blind flange ASTM A182 Grade F304/F304L dual grade Class 1500 ASME B16.5 RJ Severe wet H2S service	
1	3				P67K-001MY	Blind flange ASTM A182 Grade F304/F304L dual grade Class 1500 ASME B16.5 RJ Severe wet H2S service	
1	4				P67K-001MZ	Blind flange ASTM A182 Grade F304/F304L dual grade Class 1500 ASME B16.5 RJ Severe wet H2S service	
1	6				P67K-001MF	Blind flange ASTM A182 Grade F304/F304L dual grade Class 1500 ASME B16.5 RJ Severe wet H2S service	
1	8				P67K-001R2	Blind flange ASTM A182 Grade F304/F304L dual grade Class 1500 ASME B16.5 RJ Severe wet H2S service	
1	10				P67K-001PZ	Blind flange ASTM A182 Grade F304/F304L dual grade Class 1500 ASME B16.5 RJ Severe wet H2S service	
1	12				P67K-001R0	Blind flange ASTM A182 Grade F304/F304L dual grade Class 1500 ASME B16.5 RJ Severe wet H2S service	
1	14				P67K-001R1	Blind flange ASTM A182 Grade F304/F304L dual grade Class 1500 ASME B16.5 RJ Severe wet H2S service	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P75T-000LS	Ring joint gasket SS TP304 Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	0.75				P75T-000LT	Ring joint gasket SS TP304 Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	1				P75T-000LU	Ring joint gasket SS TP304 Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	1.5				P75T-000LV	Ring joint gasket SS TP304 Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	2				P75T-000ML	Ring joint gasket SS TP304 Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	3				P75T-000NZ	Ring joint gasket SS TP304 Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	4				P75T-0010P	Ring joint gasket SS TP304 Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	6				P75T-000LW	Ring joint gasket SS TP304 Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	8				P75T-000MU	Ring joint gasket SS TP304 Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	10				P75T-000MS	Ring joint gasket SS TP304 Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	12				P75T-000MT	Ring joint gasket SS TP304 Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	14				P75T-000NY	Ring joint gasket SS TP304 Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	0.5				P75T-000LX	Ring joint gasket SS TP304 Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	0.75				P75T-000LY	Ring joint gasket SS TP304 Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	1				P75T-000LZ	Ring joint gasket SS TP304 Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	1.5				P75T-000M0	Ring joint gasket SS TP304 Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	2				P75T-0010T	Ring joint gasket SS TP304 Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	3				P75T-000P0	Ring joint gasket SS TP304 Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	4				P75T-0010U	Ring joint gasket SS TP304 Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	6				P75T-000M1	Ring joint gasket SS TP304 Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	8				P75T-0010V	Ring joint gasket SS TP304 Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	10				P75T-0010R	Ring joint gasket SS TP304 Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	12				P75T-0010S	Ring joint gasket SS TP304 Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	

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BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-2				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	3-14				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
805	0.5-1				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
805	1.5				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
805	2				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
805	3-12				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81K-001CM	Gate valve ASTM A182 Grade F304/F304L dual grade Class 1500 API 602 BW Sch80S Trim SS316L Body and disc seats Stellite-6 WB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	0.75				P81K-001CN	Gate valve ASTM A182 Grade F304/F304L dual grade Class 1500 API 602 BW Sch80S Trim SS316L Body and disc seats Stellite-6 WB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	1				P81K-001CP	Gate valve ASTM A182 Grade F304/F304L dual grade Class 1500 API 602 BW Sch80S Trim SS316L Body and disc seats Stellite-6 WB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	1.5				P81K-001L5	Gate valve ASTM A182 Grade F304/F304L dual grade Class 1500 API 602 BW Sch160 Trim SS316L Body and disc seats Stellite-6 WB-BG-OS&Y Handwheel operated Severe wet H2S service	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	6				P82L-001S0	Globe valve ASTM A351 Grade CF3 Class 1500 BS 1873 BW Sch120 Trim SS316L Body and disc seats Stellite-6 PSB-BG-OS&Y Gear operated Severe wet H2S service	
1	8				P82L-001J4	Globe valve ASTM A351 Grade CF3 Class 1500 BS 1873 BW Sch80S Trim SS316L Body and disc seats Stellite-6 PSB-BG-OS&Y Gear operated Severe wet H2S service	
1	10				P82L-001J0	Globe valve ASTM A351 Grade CF3 Class 1500 BS 1873 BW Sch80S Trim SS316L Body and disc seats Stellite-6 PSB-BG-OS&Y Gear operated Severe wet H2S service	
1	12				P82L-001J1	Globe valve ASTM A351 Grade CF3 Class 1500 BS 1873 BW Sch80S Trim SS316L Body and disc seats Stellite-6 PSB-BG-OS&Y Gear operated Severe wet H2S service	
1	14				P82L-001J2	Globe valve ASTM A351 Grade CF3 Class 1500 BS 1873 BW Sch80S Trim SS316L Body and disc seats Stellite-6 PSB-BG-OS&Y Gear operated Severe wet H2S service	
4601	0.75				P82K-00155	Y-pattern globe valve ASTM A182 Grade F304/F304L dual grade Class 1500 ASME B16.34 BW Sch80S Trim SS316L Body and disc seats Stellite-6 WB-BG-OS&Y Handwheel operated Severe wet H2S service	
4601	1				P82K-00156	Y-pattern globe valve ASTM A182 Grade F304/F304L dual grade Class 1500 ASME B16.34 BW Sch80S Trim SS316L Body and disc seats Stellite-6 WB-BG-OS&Y Handwheel operated Severe wet H2S service	
4601	1.5				P82K-0013D	Y-pattern globe valve ASTM A182 Grade F304/F304L dual grade Class 1500 ASME B16.34 BW Sch160 Trim SS316L Body and disc seats Stellite-6 WB-BG-OS&Y Handwheel operated Severe wet H2S service	
4601	3				P82L-001S1	Y-pattern globe valve ASTM A351 Grade CF3 Class 1500 ASME B16.34 BW Sch160 Trim SS316L Body and disc seats Stellite-6 PSB-BG-OS&Y Handwheel operated Severe wet H2S service	
4601	6				P82L-001S2	Y-pattern globe valve ASTM A351 Grade CF3 Class 1500 ASME B16.34 BW Sch120 Trim SS316L Body and disc seats Stellite-6 PSB-BG-OS&Y Gear operated Severe wet H2S service	
4601	8				P82L-001JA	Y-pattern globe valve ASTM A351 Grade CF3 Class 1500 ASME B16.34 BW Sch80S Trim SS316L Body and disc seats Stellite-6 PSB-BG-OS&Y Gear operated Severe wet H2S service	
4601	10				P82L-001J6	Y-pattern globe valve ASTM A351 Grade CF3 Class 1500 ASME B16.34 BW Sch80S Trim SS316L Body and disc seats Stellite-6 PSB-BG-OS&Y Gear operated Severe wet H2S service	
4601	12				P82L-001J7	Y-pattern globe valve ASTM A351 Grade CF3 Class 1500 ASME B16.34 BW Sch80S Trim SS316L Body and disc seats Stellite-6 PSB-BG-OS&Y Gear operated Severe wet H2S service	
4601	14				P82L-001J8	Y-pattern globe valve ASTM A351 Grade CF3 Class 1500 ASME B16.34 BW Sch80S Trim SS316L Body and disc seats Stellite-6 PSB-BG-OS&Y Gear operated Severe wet H2S service	

NEEDLE VALVE (NV)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82K-000Y7	Needle valve ASTM A182 Grade F304/F304L dual grade Class 1500 API 602 BW Sch80S Trim SS316L Body and disc seats Stellite-6 WB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	0.75				P82K-000Y8	Needle valve ASTM A182 Grade F304/F304L dual grade Class 1500 API 602 BW Sch80S Trim SS316L Body and disc seats Stellite-6 WB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	1				P82K-000Y9	Needle valve ASTM A182 Grade F304/F304L dual grade Class 1500 API 602 BW Sch80S Trim SS316L Body and disc seats Stellite-6 WB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	1.5				P82K-0013C	Needle valve ASTM A182 Grade F304/F304L dual grade Class 1500 API 602 BW Sch160 Trim SS316L Body and disc seats Stellite-6 WB-BG-OS&Y Handwheel operated Severe wet H2S service	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	6				P71K-000HM	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 1500 Standard-drawing Flange ASME B16.5 RJ Severe wet H2S service	

PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P72K-000CY	Paddle blank ASTM A182 Grade F304/F304L dual grade Class 1500 Standard-drawing Flange ASME B16.5 RJ Severe wet H2S service	
1	0.75				P72K-000CZ	Paddle blank ASTM A182 Grade F304/F304L dual grade Class 1500 Standard-drawing Flange ASME B16.5 RJ Severe wet H2S service	
1	1				P72K-000D0	Paddle blank ASTM A182 Grade F304/F304L dual grade Class 1500 Standard-drawing Flange ASME B16.5 RJ Severe wet H2S service	

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PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5				P72K-000D1	Paddle blank ASTM A182 Grade F304/F304L dual grade Class 1500 Standard-drawing Flange ASME B16.5 RJ Severe wet H2S service	
1	2				P72K-000E3	Paddle blank ASTM A182 Grade F304/F304L dual grade Class 1500 Standard-drawing Flange ASME B16.5 RJ Severe wet H2S service	
1	3				P72K-000E4	Paddle blank ASTM A182 Grade F304/F304L dual grade Class 1500 Standard-drawing Flange ASME B16.5 RJ Severe wet H2S service	
1	4				P72K-000E5	Paddle blank ASTM A182 Grade F304/F304L dual grade Class 1500 Standard-drawing Flange ASME B16.5 RJ Severe wet H2S service	
1	6				P72K-000D2	Paddle blank ASTM A182 Grade F304/F304L dual grade Class 1500 Standard-drawing Flange ASME B16.5 RJ Severe wet H2S service	
1	8				P72K-000G4	Paddle blank ASTM A182 Grade F304/F304L dual grade Class 1500 Standard-drawing Flange ASME B16.5 RJ Severe wet H2S service	
1	10				P72K-000G1	Paddle blank ASTM A182 Grade F304/F304L dual grade Class 1500 Standard-drawing Flange ASME B16.5 RJ Severe wet H2S service	
1	12				P72K-000G2	Paddle blank ASTM A182 Grade F304/F304L dual grade Class 1500 Standard-drawing Flange ASME B16.5 RJ Severe wet H2S service	
1	14				P72K-000G3	Paddle blank ASTM A182 Grade F304/F304L dual grade Class 1500 Standard-drawing Flange ASME B16.5 RJ Severe wet H2S service	

PADDLE SPACER (PS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P72K-000D3	Paddle spacer ASTM A182 Grade F304/F304L dual grade Class 1500 Standard-drawing Flange ASME B16.5 RJ Severe wet H2S service	
1	0.75				P72K-000D4	Paddle spacer ASTM A182 Grade F304/F304L dual grade Class 1500 Standard-drawing Flange ASME B16.5 RJ Severe wet H2S service	
1	1				P72K-000D5	Paddle spacer ASTM A182 Grade F304/F304L dual grade Class 1500 Standard-drawing Flange ASME B16.5 RJ Severe wet H2S service	
1	1.5				P72K-000D6	Paddle spacer ASTM A182 Grade F304/F304L dual grade Class 1500 Standard-drawing Flange ASME B16.5 RJ Severe wet H2S service	
1	2				P72K-000E6	Paddle spacer ASTM A182 Grade F304/F304L dual grade Class 1500 Standard-drawing Flange ASME B16.5 RJ Severe wet H2S service	
1	3				P72K-000E7	Paddle spacer ASTM A182 Grade F304/F304L dual grade Class 1500 Standard-drawing Flange ASME B16.5 RJ Severe wet H2S service	
1	4				P72K-000E8	Paddle spacer ASTM A182 Grade F304/F304L dual grade Class 1500 Standard-drawing Flange ASME B16.5 RJ Severe wet H2S service	
1	6				P72K-000D7	Paddle spacer ASTM A182 Grade F304/F304L dual grade Class 1500 Standard-drawing Flange ASME B16.5 RJ Severe wet H2S service	
1	8				P72K-000G8	Paddle spacer ASTM A182 Grade F304/F304L dual grade Class 1500 Standard-drawing Flange ASME B16.5 RJ Severe wet H2S service	
1	10				P72K-000G5	Paddle spacer ASTM A182 Grade F304/F304L dual grade Class 1500 Standard-drawing Flange ASME B16.5 RJ Severe wet H2S service	
1	12				P72K-000G6	Paddle spacer ASTM A182 Grade F304/F304L dual grade Class 1500 Standard-drawing Flange ASME B16.5 RJ Severe wet H2S service	
1	14				P72K-000G7	Paddle spacer ASTM A182 Grade F304/F304L dual grade Class 1500 Standard-drawing Flange ASME B16.5 RJ Severe wet H2S service	

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BOLT TABLE (B_N1JR02 , STUD ASME RJ, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	110	P80S-0090F	R12	P75T-000LS
0.75	4	0.750	115	P80S-0090G	R14	P75T-000LT
1	4	0.875	130	P80S-005ZB	R16	P75T-000LU
1.5	4	1.000	140	P80S-0061A	R20	P75T-000LV
2	8	0.875	150	P80S-005ZF	R24	P75T-000ML
3	8	1.125	180	P80S-0064T	R35	P75T-000NZ
4	8	1.250	230	P80S-0068H	R39	P75T-0010P
6	12	1.375	300	P80S-006J1	R46	P75T-000LW
8	12	1.625	345	P80S-00A5K	R50	P75T-000MU
10	12	1.875	395	P80S-00AW8	R54	P75T-000MS
12	16	2.000	445	P80S-00BH5	R58	P75T-000MT
14	16	2.250	490	P80S-00DLE	R63	P75T-000NY

BOLT TABLE (B_N1JR02_805 , STUD ASME RJ, OPTION CODE 805)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	125	P80S-0090J	R13	P75T-000LX
0.75	4	0.750	130	P80S-0090K	R16	P75T-000LY
1	4	0.875	140	P80S-005ZD	R18	P75T-000LZ
1.5	4	1.125	175	P80S-0064S	R23	P75T-000M0
2	8	1.000	180	P80S-0061J	R26	P75T-0010T
3	8	1.250	260	P80S-0068P	R32	P75T-000P0
4	8	1.500	305	P80S-006LS	R38	P75T-0010U
6	8	2.000	410	P80S-00BBD	R47	P75T-000M1
8	12	2.000	450	P80S-00BH6	R51	P75T-0010V
10	12	2.500	575	P80S-00DZV	R55	P75T-0010R
12	12	2.750	635	P80S-01RAT	R60	P75T-0010S
14	14	3.000	695		R64	

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BRANCH TABLE (T_N1JR02)

RUN PIPE SIZE (in) \ BRANCH SIZE (in)	0.5	0.75	1	1.5	2	3	4	6	8	10	12	14
0.5	TS											
0.75		TS										
1		TR	TS									
1.5		TR	TR	TS								
2		L	TR	TR	TS							
3		L	L	TR	TR	TS						
4	L	L	L	L	TR	TR	TS					
6	L	L	L	L	L	TR	TR	TS				
8		L	L	L	L	L	TR	TR	TS			
10		L	L	L	L	L	TR	TR	TR	TS		
12		L	L	L	L	L	L	TR	TR	TR	TS	
14		L	L	L	L	L	L	TR	TR	TR	TR	TS

TS : STRAIGHT TEE
TR : REDUCING TEE
L : OUTLET

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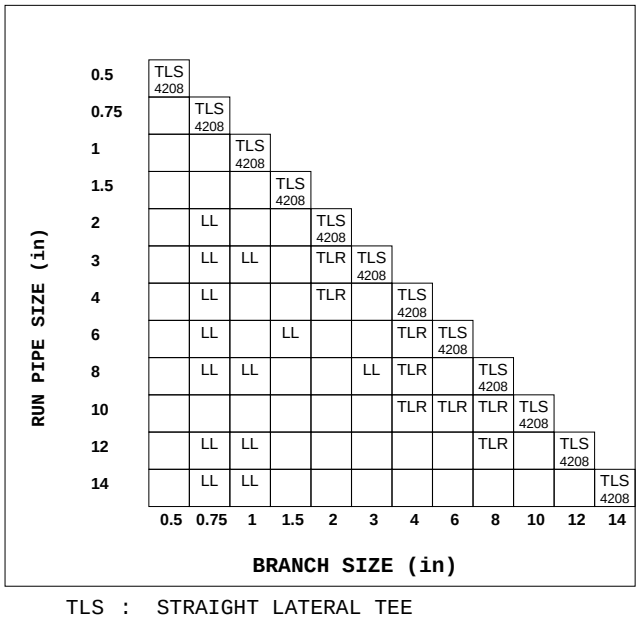
PIPING CLASS

N1JR02 REV NO. 2

BRANCH TABLE (T_N1JR02_2)



TLS : STRAIGHT LATERAL TEE
LL : LATROLET
TLR : REDUCING LATERAL TEE

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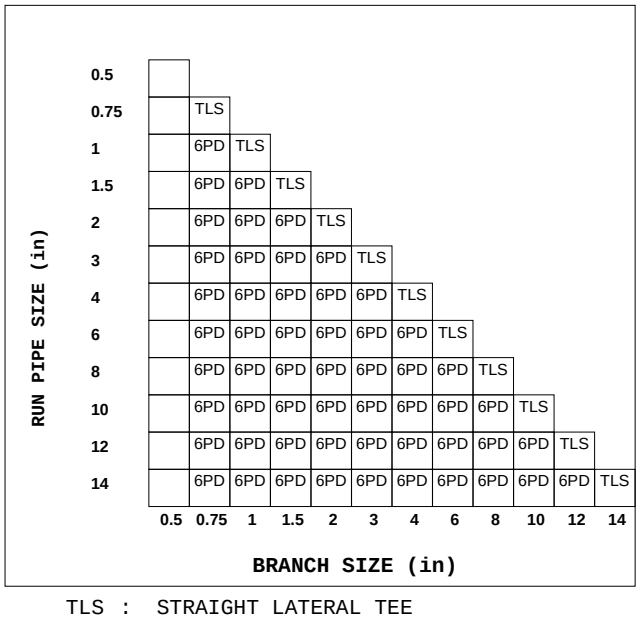
PIPING CLASS

N1JR02 REV NO. 2

BRANCH TABLE (T_N1JR02_3)



RUN PIPE SIZE (in) \ BRANCH SIZE (in)	0.5	0.75	1	1.5	2	3	4	6	8	10	12	14
0.5												
0.75		TLS										
1		6PD	TLS									
1.5		6PD	6PD	TLS								
2		6PD	6PD	6PD	TLS							
3		6PD	6PD	6PD	6PD	TLS						
4		6PD	6PD	6PD	6PD	6PD	TLS					
6		6PD	6PD	6PD	6PD	6PD	6PD	TLS				
8		6PD	6PD	6PD	6PD	6PD	6PD	6PD	TLS			
10		6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	TLS		
12		6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	TLS	
14		6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	TLS

TLS : STRAIGHT LATERAL TEE
6PD : REINFORCING PAD 60 DEG

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PIPING CLASS

N1MH01 REV NO. 2

Material : SS321
Rating : ASME CLASS 1500
Flange Face : RJ
C.A.(mm) : 1.50
Gasket : Ring Octagonal
Service : PROCESS - HYDROGEN OR HYDROGEN RICH HYDROCARBON MIXTURE:
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
541	NPT(F) (F)
805	CLASS 2500 (B,F,G)
4602	DISSIMILAR TYPE CHECK VALVE (XDP)

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PIPING CLASS
N1MH01 REV NO. 2

PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P01J-001FB	Pipe ASTM A312 Grade TP321 Seamless ASME B36.10M/B36.19M PE	
1	0.75		SCH80S		P01J-001FC	Pipe ASTM A312 Grade TP321 Seamless ASME B36.10M/B36.19M PE	
1	1		SCH80S		P01J-001FD	Pipe ASTM A312 Grade TP321 Seamless ASME B36.10M/B36.19M PE	
1	1.5		SCH80S		P01J-001FE	Pipe ASTM A312 Grade TP321 Seamless ASME B36.10M/B36.19M PE	
1	2		SCH80S		P01J-001TM	Pipe ASTM A312 Grade TP321 Seamless ASME B36.10M/B36.19M BE	
1	3		SCH80S		P01J-001HJ	Pipe ASTM A312 Grade TP321 Seamless ASME B36.10M/B36.19M BE	
1	4		SCH120		P01J-001KR	Pipe ASTM A312 Grade TP321 Seamless ASME B36.10M/B36.19M BE	
1	6		SCH120		P01J-002W9	Pipe ASTM A312 Grade TP321 Seamless ASME B36.10M/B36.19M BE	
1	8		SCH100		P01J-002WH	Pipe ASTM A358 Grade 321 Class 1 EFW ASME B36.10M/B36.19M BE	
1	10		SCH100		P01J-002WA	Pipe ASTM A358 Grade 321 Class 1 EFW ASME B36.10M/B36.19M BE	
1	12		SCH100		P01J-002WB	Pipe ASTM A358 Grade 321 Class 1 EFW ASME B36.10M/B36.19M BE	
1	14		SCH100		P01J-002WC	Pipe ASTM A358 Grade 321 Class 1 EFW ASME B36.10M/B36.19M BE	
1	16		SCH100		P01J-002WD	Pipe ASTM A358 Grade 321 Class 1 EFW ASME B36.10M/B36.19M BE	
1	18		SCH100		P01J-002WE	Pipe ASTM A358 Grade 321 Class 1 EFW ASME B36.10M/B36.19M BE	
1	20		SCH100		P01J-002WF	Pipe ASTM A358 Grade 321 Class 1 EFW ASME B36.10M/B36.19M BE	
1	24		SCH80		P01J-002WG	Pipe ASTM A358 Grade 321 Class 1 EFW ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P02J-0017V	90 degree elbow ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Long radius	
1	0.75		SCH80S		P02J-0017W	90 degree elbow ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Long radius	
1	1		SCH80S		P02J-0017X	90 degree elbow ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Long radius	
1	1.5		SCH80S		P02J-0018U	90 degree elbow ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Long radius	
1	2		SCH80S		P02J-001FZ	90 degree elbow ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Long radius	
1	3		SCH80S		P02J-0019Z	90 degree elbow ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Long radius	
1	4		SCH120		P02J-001BM	90 degree elbow ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Long radius	
1	6		SCH120		P02J-0028L	90 degree elbow ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Long radius	
1	8		SCH100		P02J-0028V	90 degree elbow ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Long radius	
1	10		SCH100		P02J-0028M	90 degree elbow ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Long radius	
1	12		SCH100		P02J-0028N	90 degree elbow ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Long radius	
1	14		SCH100		P02J-0028P	90 degree elbow ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Long radius	
1	16		SCH100		P02J-0028R	90 degree elbow ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Long radius	
1	18		SCH100		P02J-0028S	90 degree elbow ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Long radius	
1	20		SCH100		P02J-0028T	90 degree elbow ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Long radius	
1	24		SCH80		P02J-0028U	90 degree elbow ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P03J-0016R	45 degree elbow ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Long radius	
1	0.75		SCH80S		P03J-0016S	45 degree elbow ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Long radius	
1	1		SCH80S		P03J-0016T	45 degree elbow ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Long radius	
1	1.5		SCH80S		P03J-0017P	45 degree elbow ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Long radius	
1	2		SCH80S		P03J-001EB	45 degree elbow ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Long radius	
1	3		SCH80S		P03J-0018V	45 degree elbow ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Long radius	
1	4		SCH120		P03J-001A8	45 degree elbow ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Long radius	
1	6		SCH120		P03J-0028B	45 degree elbow ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Long radius	
1	8		SCH100		P03J-0028K	45 degree elbow ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Long radius	
1	10		SCH100		P03J-0028C	45 degree elbow ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Long radius	
1	12		SCH100		P03J-0028D	45 degree elbow ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Long radius	
1	14		SCH100		P03J-0028E	45 degree elbow ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Long radius	
1	16		SCH100		P03J-0028F	45 degree elbow ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Long radius	
1	18		SCH100		P03J-0028G	45 degree elbow ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Long radius	
1	20		SCH100		P03J-0028H	45 degree elbow ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Long radius	
1	24		SCH80		P03J-0028J	45 degree elbow ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P21J-00107	Straight tee ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW	
1	0.75		SCH80S		P21J-00108	Straight tee ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW	

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STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		SCH80S		P21J-00109	Straight tee ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW	
1	1.5		SCH80S		P21J-00116	Straight tee ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW	
1	2		SCH80S		P21J-00185	Straight tee ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW	
1	3		SCH80S		P21J-0012B	Straight tee ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW	
1	4		SCH120		P21J-00140	Straight tee ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW	
1	6		SCH120		P21J-001YJ	Straight tee ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW	
1	8		SCH100		P21J-001YT	Straight tee ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW	
1	10		SCH100		P21J-001YK	Straight tee ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW	
1	12		SCH100		P21J-001YL	Straight tee ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW	
1	14		SCH100		P21J-001YM	Straight tee ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW	
1	16		SCH100		P21J-001YN	Straight tee ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW	
1	18		SCH100		P21J-001YP	Straight tee ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW	
1	20		SCH100		P21J-001YR	Straight tee ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW	
1	24		SCH80		P21J-001YS	Straight tee ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75	SCH80S	SCH80S	P24J-004TB	Reducing tee ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW	
1	1.5	0.75	SCH80S	SCH80S	P24J-004UC	Reducing tee ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW	
1	1.5	1	SCH80S	SCH80S	P24J-004UD	Reducing tee ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW	
1	2	1	SCH80S	SCH80S	P24J-005J8	Reducing tee ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW	
1	2	1.5	SCH80S	SCH80S	P24J-005J9	Reducing tee ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW	
1	3	1.5	SCH80S	SCH80S	P24J-005JA	Reducing tee ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW	
1	3	2	SCH80S	SCH80S	P24J-005JB	Reducing tee ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW	
1	4	2	SCH120	SCH80S	P24J-0088D	Reducing tee ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW	
1	4	3	SCH120	SCH80S	P24J-0088E	Reducing tee ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW	
1	6	3	SCH120	SCH80S	P24J-0088B	Reducing tee ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW	
1	6	4	SCH120	SCH120	P24J-0088C	Reducing tee ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW	
1	8	4	SCH100	SCH120	P24J-0088F	Reducing tee ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW	
1	8	6	SCH100	SCH120	P24J-0088G	Reducing tee ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW	
1	10	4	SCH100	SCH120	P24J-0088H	Reducing tee ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW	
1	10	6	SCH100	SCH120	P24J-0088J	Reducing tee ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW	
1	10	8	SCH100	SCH100	P24J-0088K	Reducing tee ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW	
1	12	6	SCH100	SCH120	P24J-0088M	Reducing tee ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW	
1	12	8	SCH100	SCH100	P24J-0088N	Reducing tee ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW	
1	12	10	SCH100	SCH100	P24J-0088L	Reducing tee ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW	
1	14	6	SCH100	SCH120	P24J-0088S	Reducing tee ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW	
1	14	8	SCH100	SCH100	P24J-0088T	Reducing tee ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW	
1	14	10	SCH100	SCH100	P24J-0088P	Reducing tee ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW	
1	14	12	SCH100	SCH100	P24J-0088R	Reducing tee ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW	
1	16	6	SCH100	SCH120	P24J-0088X	Reducing tee ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW	
1	16	8	SCH100	SCH100	P24J-0088Y	Reducing tee ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW	
1	16	10	SCH100	SCH100	P24J-0088U	Reducing tee ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW	
1	16	12	SCH100	SCH100	P24J-0088V	Reducing tee ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW	
1	16	14	SCH100	SCH100	P24J-0088W	Reducing tee ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW	
1	18	8	SCH100	SCH100	P24J-00893	Reducing tee ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW	
1	18	10	SCH100	SCH100	P24J-0088Z	Reducing tee ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW	
1	18	12	SCH100	SCH100	P24J-00890	Reducing tee ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW	
1	18	14	SCH100	SCH100	P24J-00891	Reducing tee ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW	
1	18	16	SCH100	SCH100	P24J-00892	Reducing tee ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW	
1	20	8	SCH100	SCH100	P24J-00899	Reducing tee ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW	
1	20	10	SCH100	SCH100	P24J-00894	Reducing tee ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW	
1	20	12	SCH100	SCH100	P24J-00895	Reducing tee ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW	
1	20	14	SCH100	SCH100	P24J-00896	Reducing tee ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW	
1	20	16	SCH100	SCH100	P24J-00897	Reducing tee ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW	
1	20	18	SCH100	SCH100	P24J-00898	Reducing tee ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW	
1	24	10	SCH80	SCH100	P24J-0089A	Reducing tee ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW	
1	24	12	SCH80	SCH100	P24J-0089B	Reducing tee ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW	
1	24	14	SCH80	SCH100	P24J-0089C	Reducing tee ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW	

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REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	24	16	SCH80	SCH100	P24J-0089D	Reducing tee ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW	
1	24	18	SCH80	SCH100	P24J-0089E	Reducing tee ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW	
1	24	20	SCH80	SCH100	P24J-0089F	Reducing tee ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH80S	SCH80S	P27J-003LD	Concentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW	
1	1	0.5	SCH80S	SCH80S	P27J-003LE	Concentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW	
1	1	0.75	SCH80S	SCH80S	P27J-003LF	Concentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW	
1	1.5	0.5	SCH80S	SCH80S	P27J-003MJ	Concentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW	
1	1.5	0.75	SCH80S	SCH80S	P27J-003MK	Concentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW	
1	1.5	1	SCH80S	SCH80S	P27J-003ML	Concentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW	
1	2	0.75	SCH80S	SCH80S	P27J-0056H	Concentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW	
1	2	1	SCH80S	SCH80S	P27J-004DG	Concentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW	
1	2	1.5	SCH80S	SCH80S	P27J-004DH	Concentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW	
1	3	1.5	SCH80S	SCH80S	P27J-004DJ	Concentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW	
1	3	2	SCH80S	SCH80S	P27J-004DK	Concentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW	
1	4	1.5	SCH120	SCH80S	P27J-006Z2	Concentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW	
1	4	2	SCH120	SCH80S	P27J-006Z3	Concentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW	
1	4	3	SCH120	SCH80S	P27J-006Z4	Concentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW	
1	6	3	SCH120	SCH80S	P27J-006Z5	Concentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW	
1	6	4	SCH120	SCH120	P27J-006Z6	Concentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW	
1	8	4	SCH100	SCH120	P27J-006Z7	Concentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW	
1	8	6	SCH100	SCH120	P27J-006Z8	Concentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW	
1	10	4	SCH100	SCH120	P27J-006Z9	Concentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW	
1	10	6	SCH100	SCH120	P27J-006ZA	Concentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW	
1	10	8	SCH100	SCH100	P27J-006ZB	Concentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW	
1	12	6	SCH100	SCH120	P27J-006ZD	Concentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW	
1	12	8	SCH100	SCH100	P27J-006ZE	Concentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW	
1	12	10	SCH100	SCH100	P27J-006ZC	Concentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW	
1	14	6	SCH100	SCH120	P27J-006ZH	Concentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW	
1	14	8	SCH100	SCH100	P27J-006ZJ	Concentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW	
1	14	10	SCH100	SCH100	P27J-006ZF	Concentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW	
1	14	12	SCH100	SCH100	P27J-006ZG	Concentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW	
1	16	8	SCH100	SCH100	P27J-006ZN	Concentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW	
1	16	10	SCH100	SCH100	P27J-006ZK	Concentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW	
1	16	12	SCH100	SCH100	P27J-006ZL	Concentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW	
1	16	14	SCH100	SCH100	P27J-006ZM	Concentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW	
1	18	10	SCH100	SCH100	P27J-006ZP	Concentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW	
1	18	12	SCH100	SCH100	P27J-006ZR	Concentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW	
1	18	14	SCH100	SCH100	P27J-006ZS	Concentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW	
1	18	16	SCH100	SCH100	P27J-006ZT	Concentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW	
1	20	12	SCH100	SCH100	P27J-006ZU	Concentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW	
1	20	14	SCH100	SCH100	P27J-006ZV	Concentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW	
1	20	16	SCH100	SCH100	P27J-006ZW	Concentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW	
1	20	18	SCH100	SCH100	P27J-006ZX	Concentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW	
1	24	16	SCH80	SCH100	P27J-006ZY	Concentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW	
1	24	18	SCH80	SCH100	P27J-006ZZ	Concentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW	
1	24	20	SCH80	SCH100	P27J-00700	Concentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH80S	SCH80S	P28J-003M2	Eccentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW	
1	1	0.5	SCH80S	SCH80S	P28J-003M3	Eccentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW	
1	1	0.75	SCH80S	SCH80S	P28J-003M4	Eccentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW	
1	1.5	0.5	SCH80S	SCH80S	P28J-003N7	Eccentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW	
1	1.5	0.75	SCH80S	SCH80S	P28J-003N8	Eccentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW	
1	1.5	1	SCH80S	SCH80S	P28J-003N9	Eccentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW	
1	2	0.75	SCH80S	SCH80S	P28J-0057C	Eccentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2	1	SCH80S	SCH80S	P28J-004DW	Eccentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW	
1	2	1.5	SCH80S	SCH80S	P28J-004DX	Eccentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW	
1	3	1.5	SCH80S	SCH80S	P28J-004DY	Eccentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW	
1	3	2	SCH80S	SCH80S	P28J-004DZ	Eccentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW	
1	4	1.5	SCH120	SCH80S	P28J-0070J	Eccentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW	
1	4	2	SCH120	SCH80S	P28J-0070K	Eccentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW	
1	4	3	SCH120	SCH80S	P28J-0070L	Eccentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW	
1	6	3	SCH120	SCH80S	P28J-0070M	Eccentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW	
1	6	4	SCH120	SCH120	P28J-0070N	Eccentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW	
1	8	4	SCH100	SCH120	P28J-0070P	Eccentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW	
1	8	6	SCH100	SCH120	P28J-0070R	Eccentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW	
1	10	4	SCH100	SCH120	P28J-0070S	Eccentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW	
1	10	6	SCH100	SCH120	P28J-0070T	Eccentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW	
1	10	8	SCH100	SCH100	P28J-0070U	Eccentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW	
1	12	6	SCH100	SCH120	P28J-0070W	Eccentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW	
1	12	8	SCH100	SCH100	P28J-0070X	Eccentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW	
1	12	10	SCH100	SCH100	P28J-0070V	Eccentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW	
1	14	6	SCH100	SCH120	P28J-00710	Eccentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW	
1	14	8	SCH100	SCH100	P28J-00711	Eccentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW	
1	14	10	SCH100	SCH100	P28J-0070Y	Eccentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW	
1	14	12	SCH100	SCH100	P28J-0070Z	Eccentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW	
1	16	8	SCH100	SCH100	P28J-00715	Eccentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW	
1	16	10	SCH100	SCH100	P28J-00712	Eccentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW	
1	16	12	SCH100	SCH100	P28J-00713	Eccentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW	
1	16	14	SCH100	SCH100	P28J-00714	Eccentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW	
1	18	10	SCH100	SCH100	P28J-00716	Eccentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW	
1	18	12	SCH100	SCH100	P28J-00717	Eccentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW	
1	18	14	SCH100	SCH100	P28J-00718	Eccentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW	
1	18	16	SCH100	SCH100	P28J-00719	Eccentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW	
1	20	12	SCH100	SCH100	P28J-0071A	Eccentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW	
1	20	14	SCH100	SCH100	P28J-0071B	Eccentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW	
1	20	16	SCH100	SCH100	P28J-0071C	Eccentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW	
1	20	18	SCH100	SCH100	P28J-0071D	Eccentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW	
1	24	16	SCH80	SCH100	P28J-0071E	Eccentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW	
1	24	18	SCH80	SCH100	P28J-0071F	Eccentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW	
1	24	20	SCH80	SCH100	P28J-0071G	Eccentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P29J-000XB	Cap ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW	
1	0.75		SCH80S		P29J-000XC	Cap ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW	
1	1		SCH80S		P29J-000XD	Cap ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW	
1	1.5		SCH80S		P29J-000YA	Cap ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW	
1	2		SCH80S		P29J-0013Y	Cap ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW	
1	3		SCH80S		P29J-000ZH	Cap ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW	
1	4		SCH120		P29J-0010E	Cap ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW	
1	6		SCH120		P29J-0042D	Cap ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW	
1	8		SCH100		P29J-0042E	Cap ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW	
1	10		SCH100		P29J-00426	Cap ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW	
1	12		SCH100		P29J-00427	Cap ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW	
1	14		SCH100		P29J-00428	Cap ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW	
1	16		SCH100		P29J-00429	Cap ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW	
1	18		SCH100		P29J-0042A	Cap ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW	
1	20		SCH100		P29J-0042B	Cap ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW	
1	24		SCH80		P29J-0042C	Cap ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P41J-001VR	Straight nipple ASTM A312 Grade TP321 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

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STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75		SCH160		P41J-001VS	Straight nipple ASTM A312 Grade TP321 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		SCH160		P41J-001V4	Straight nipple ASTM A312 Grade TP321 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		SCH160		P41J-001W5	Straight nipple ASTM A312 Grade TP321 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2	0.75	SCH80S	SCH80S	P31K-00DNJ	Outlet ASTM A182 Grade F321 MSS SP-97 BW	
1	3	0.75	SCH80S	SCH80S	P31K-00F86	Outlet ASTM A182 Grade F321 MSS SP-97 BW	
1	4	0.75	SCH120	SCH80S	P31K-00G6A	Outlet ASTM A182 Grade F321 MSS SP-97 BW	
1	6	0.75	SCH120	SCH80S	P31K-00G6D	Outlet ASTM A182 Grade F321 MSS SP-97 BW	
1	8	0.75	SCH100	SCH80S	P31K-00G6H	Outlet ASTM A182 Grade F321 MSS SP-97 BW	
1	10	0.75	SCH100	SCH80S	P31K-00G6N	Outlet ASTM A182 Grade F321 MSS SP-97 BW	
1	12	0.75	SCH100	SCH80S	P31K-00G6U	Outlet ASTM A182 Grade F321 MSS SP-97 BW	
1	14	0.75	SCH100	SCH80S	P31K-00G70	Outlet ASTM A182 Grade F321 MSS SP-97 BW	
1	16	0.75	SCH100	SCH80S	P31K-00G76	Outlet ASTM A182 Grade F321 MSS SP-97 BW	
1	18	0.75	SCH100	SCH80S	P31K-00G7X	Outlet ASTM A182 Grade F321 MSS SP-97 BW	
1	20	0.75	SCH100	SCH80S	P31K-00G7U	Outlet ASTM A182 Grade F321 MSS SP-97 BW	
1	24	0.75	SCH80	SCH80S	P31K-00G7L	Outlet ASTM A182 Grade F321 MSS SP-97 BW	
1	3	1	SCH80S	SCH80S	P31K-00CPR	Outlet ASTM A182 Grade F321 MSS SP-97 BW	
1	4	1	SCH120	SCH80S	P31K-00G6B	Outlet ASTM A182 Grade F321 MSS SP-97 BW	
1	6	1	SCH120	SCH80S	P31K-00G6E	Outlet ASTM A182 Grade F321 MSS SP-97 BW	
1	8	1	SCH100	SCH80S	P31K-00G6J	Outlet ASTM A182 Grade F321 MSS SP-97 BW	
1	10	1	SCH100	SCH80S	P31K-00G6P	Outlet ASTM A182 Grade F321 MSS SP-97 BW	
1	12	1	SCH100	SCH80S	P31K-00G6V	Outlet ASTM A182 Grade F321 MSS SP-97 BW	
1	14	1	SCH100	SCH80S	P31K-00G71	Outlet ASTM A182 Grade F321 MSS SP-97 BW	
1	16	1	SCH100	SCH80S	P31K-00G77	Outlet ASTM A182 Grade F321 MSS SP-97 BW	
1	18	1	SCH100	SCH80S	P31K-00G7Y	Outlet ASTM A182 Grade F321 MSS SP-97 BW	
1	20	1	SCH100	SCH80S	P31K-00G7V	Outlet ASTM A182 Grade F321 MSS SP-97 BW	
1	24	1	SCH80	SCH80S	P31K-00G7M	Outlet ASTM A182 Grade F321 MSS SP-97 BW	
1	4	1.5	SCH120	SCH80S	P31K-00G6C	Outlet ASTM A182 Grade F321 MSS SP-97 BW	
1	6	1.5	SCH120	SCH80S	P31K-00G6F	Outlet ASTM A182 Grade F321 MSS SP-97 BW	
1	8	1.5	SCH100	SCH80S	P31K-00G6K	Outlet ASTM A182 Grade F321 MSS SP-97 BW	
1	10	1.5	SCH100	SCH80S	P31K-00G6R	Outlet ASTM A182 Grade F321 MSS SP-97 BW	
1	12	1.5	SCH100	SCH80S	P31K-00G6W	Outlet ASTM A182 Grade F321 MSS SP-97 BW	
1	14	1.5	SCH100	SCH80S	P31K-00G72	Outlet ASTM A182 Grade F321 MSS SP-97 BW	
1	16	1.5	SCH100	SCH80S	P31K-00G78	Outlet ASTM A182 Grade F321 MSS SP-97 BW	
1	18	1.5	SCH100	SCH80S	P31K-00G7Z	Outlet ASTM A182 Grade F321 MSS SP-97 BW	
1	20	1.5	SCH100	SCH80S	P31K-00G7W	Outlet ASTM A182 Grade F321 MSS SP-97 BW	
1	24	1.5	SCH80	SCH80S	P31K-00G7N	Outlet ASTM A182 Grade F321 MSS SP-97 BW	
1	6	2	SCH120	SCH80S	P31K-00G6G	Outlet ASTM A182 Grade F321 MSS SP-97 BW	
1	8	2	SCH100	SCH80S	P31K-00G6L	Outlet ASTM A182 Grade F321 MSS SP-97 BW	
1	10	2	SCH100	SCH80S	P31K-00G6S	Outlet ASTM A182 Grade F321 MSS SP-97 BW	
1	12	2	SCH100	SCH80S	P31K-00G6X	Outlet ASTM A182 Grade F321 MSS SP-97 BW	
1	14	2	SCH100	SCH80S	P31K-00G73	Outlet ASTM A182 Grade F321 MSS SP-97 BW	
1	16	2	SCH100	SCH80S	P31K-00G79	Outlet ASTM A182 Grade F321 MSS SP-97 BW	
1	18	2	SCH100	SCH80S	P31K-00G7C	Outlet ASTM A182 Grade F321 MSS SP-97 BW	
1	20	2	SCH100	SCH80S	P31K-00G7G	Outlet ASTM A182 Grade F321 MSS SP-97 BW	
1	24	2	SCH80	SCH80S	P31K-00G7P	Outlet ASTM A182 Grade F321 MSS SP-97 BW	
1	8	3	SCH100	SCH80S	P31K-00G6M	Outlet ASTM A182 Grade F321 MSS SP-97 BW	
1	10	3	SCH100	SCH80S	P31K-00G6T	Outlet ASTM A182 Grade F321 MSS SP-97 BW	
1	12	3	SCH100	SCH80S	P31K-00G6Y	Outlet ASTM A182 Grade F321 MSS SP-97 BW	
1	14	3	SCH100	SCH80S	P31K-00G74	Outlet ASTM A182 Grade F321 MSS SP-97 BW	
1	16	3	SCH100	SCH80S	P31K-00G7A	Outlet ASTM A182 Grade F321 MSS SP-97 BW	
1	18	3	SCH100	SCH80S	P31K-00G7D	Outlet ASTM A182 Grade F321 MSS SP-97 BW	
1	20	3	SCH100	SCH80S	P31K-00G7H	Outlet ASTM A182 Grade F321 MSS SP-97 BW	
1	24	3	SCH80	SCH80S	P31K-00G7R	Outlet ASTM A182 Grade F321 MSS SP-97 BW	
1	12	4	SCH100	SCH120	P31K-00G6Z	Outlet ASTM A182 Grade F321 MSS SP-97 BW	
1	14	4	SCH100	SCH120	P31K-00G75	Outlet ASTM A182 Grade F321 MSS SP-97 BW	
1	16	4	SCH100	SCH120	P31K-00G7B	Outlet ASTM A182 Grade F321 MSS SP-97 BW	

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OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	18	4	SCH100	SCH120	P31K-00G7E	Outlet ASTM A182 Grade F321 MSS SP-97 BW	
1	20	4	SCH100	SCH120	P31K-00G7J	Outlet ASTM A182 Grade F321 MSS SP-97 BW	
1	24	4	SCH80	SCH120	P31K-00G7S	Outlet ASTM A182 Grade F321 MSS SP-97 BW	
1	18	6	SCH100	SCH120	P31K-00G7F	Outlet ASTM A182 Grade F321 MSS SP-97 BW	
1	20	6	SCH100	SCH120	P31K-00G7K	Outlet ASTM A182 Grade F321 MSS SP-97 BW	
1	24	6	SCH80	SCH120	P31K-00G7T	Outlet ASTM A182 Grade F321 MSS SP-97 BW	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30K-0002L	Plug ASTM A182 Grade F321 ASME B16.11 NPT Round head	
1	0.75				P30K-0002M	Plug ASTM A182 Grade F321 ASME B16.11 NPT Round head	
1	1				P30K-0002N	Plug ASTM A182 Grade F321 ASME B16.11 NPT Round head	
1	1.5				P30K-0002P	Plug ASTM A182 Grade F321 ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P61K-003DS	Flange WN ASTM A182 Grade F321 Class 1500 ASME B16.5 RJ	
1	0.75		SCH80S		P61K-003DT	Flange WN ASTM A182 Grade F321 Class 1500 ASME B16.5 RJ	
1	1		SCH80S		P61K-003DU	Flange WN ASTM A182 Grade F321 Class 1500 ASME B16.5 RJ	
1	1.5		SCH80S		P61K-003DV	Flange WN ASTM A182 Grade F321 Class 1500 ASME B16.5 RJ	
1	2		SCH80S		P61K-004VZ	Flange WN ASTM A182 Grade F321 Class 1500 ASME B16.5 RJ	
1	3		SCH80S		P61K-005XC	Flange WN ASTM A182 Grade F321 Class 1500 ASME B16.5 RJ	
1	4		SCH120		P61K-0068Z	Flange WN ASTM A182 Grade F321 Class 1500 ASME B16.5 RJ	
1	6		SCH120		P61K-00690	Flange WN ASTM A182 Grade F321 Class 1500 ASME B16.5 RJ	
1	8		SCH100		P61K-00691	Flange WN ASTM A182 Grade F321 Class 1500 ASME B16.5 RJ	
1	10		SCH100		P61K-0068S	Flange WN ASTM A182 Grade F321 Class 1500 ASME B16.5 RJ	
1	12		SCH100		P61K-0068T	Flange WN ASTM A182 Grade F321 Class 1500 ASME B16.5 RJ	
1	14		SCH100		P61K-0068U	Flange WN ASTM A182 Grade F321 Class 1500 ASME B16.5 RJ	
1	16		SCH100		P61K-0068V	Flange WN ASTM A182 Grade F321 Class 1500 ASME B16.5 RJ	
1	18		SCH100		P61K-0068W	Flange WN ASTM A182 Grade F321 Class 1500 ASME B16.5 RJ	
1	20		SCH100		P61K-0068X	Flange WN ASTM A182 Grade F321 Class 1500 ASME B16.5 RJ	
1	24		SCH80		P61K-0068Y	Flange WN ASTM A182 Grade F321 Class 1500 ASME B16.5 RJ	
541	0.5				P61K-006A2	Flange NPT ASTM A182 Grade F321 Class 1500 ASME B16.5 RJ	
541	0.75				P61K-005ZC	Flange NPT ASTM A182 Grade F321 Class 1500 ASME B16.5 RJ	
805	0.5		SCH80S		P61K-003BG	Flange WN ASTM A182 Grade F321 Class 2500 ASME B16.5 RJ	
805	0.75		SCH80S		P61K-003BH	Flange WN ASTM A182 Grade F321 Class 2500 ASME B16.5 RJ	
805	1		SCH80S		P61K-003BJ	Flange WN ASTM A182 Grade F321 Class 2500 ASME B16.5 RJ	
805	1.5		SCH80S		P61K-005XG	Flange WN ASTM A182 Grade F321 Class 2500 ASME B16.5 RJ	
805	2		SCH80S		P61K-005XK	Flange WN ASTM A182 Grade F321 Class 2500 ASME B16.5 RJ	
805	3		SCH80S		P61K-005XL	Flange WN ASTM A182 Grade F321 Class 2500 ASME B16.5 RJ	
805	4		SCH120		P61K-00694	Flange WN ASTM A182 Grade F321 Class 2500 ASME B16.5 RJ	
805	6		SCH120		P61K-00695	Flange WN ASTM A182 Grade F321 Class 2500 ASME B16.5 RJ	
805	8		SCH100		P61K-00696	Flange WN ASTM A182 Grade F321 Class 2500 ASME B16.5 RJ	
805	10		SCH100		P61K-00692	Flange WN ASTM A182 Grade F321 Class 2500 ASME B16.5 RJ	
805	12		SCH100		P61K-00693	Flange WN ASTM A182 Grade F321 Class 2500 ASME B16.5 RJ	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67K-001U1	Blind flange ASTM A182 Grade F321 Class 1500 ASME B16.5 RJ	
1	0.75				P67K-001U2	Blind flange ASTM A182 Grade F321 Class 1500 ASME B16.5 RJ	
1	1				P67K-001U3	Blind flange ASTM A182 Grade F321 Class 1500 ASME B16.5 RJ	
1	1.5				P67K-001U4	Blind flange ASTM A182 Grade F321 Class 1500 ASME B16.5 RJ	
1	2				P67K-001UA	Blind flange ASTM A182 Grade F321 Class 1500 ASME B16.5 RJ	
1	3				P67K-001UD	Blind flange ASTM A182 Grade F321 Class 1500 ASME B16.5 RJ	
1	4				P67K-001UE	Blind flange ASTM A182 Grade F321 Class 1500 ASME B16.5 RJ	
1	6				P67K-001UF	Blind flange ASTM A182 Grade F321 Class 1500 ASME B16.5 RJ	
1	8				P67K-001UG	Blind flange ASTM A182 Grade F321 Class 1500 ASME B16.5 RJ	
1	10				P67K-001U5	Blind flange ASTM A182 Grade F321 Class 1500 ASME B16.5 RJ	
1	12				P67K-001U6	Blind flange ASTM A182 Grade F321 Class 1500 ASME B16.5 RJ	

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BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P67K-001U7	Blind flange ASTM A182 Grade F321 Class 1500 ASME B16.5 RJ	
1	16				P67K-001U8	Blind flange ASTM A182 Grade F321 Class 1500 ASME B16.5 RJ	
1	18				P67K-001U9	Blind flange ASTM A182 Grade F321 Class 1500 ASME B16.5 RJ	
1	20				P67K-001UB	Blind flange ASTM A182 Grade F321 Class 1500 ASME B16.5 RJ	
1	24				P67K-001UC	Blind flange ASTM A182 Grade F321 Class 1500 ASME B16.5 RJ	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P75T-000JG	Ring joint gasket SS TP347 Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	0.75				P75T-000JH	Ring joint gasket SS TP347 Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	1				P75T-000JJ	Ring joint gasket SS TP347 Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	1.5				P75T-000JK	Ring joint gasket SS TP347 Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	2				P75T-000N6	Ring joint gasket SS TP347 Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	3				P75T-0013E	Ring joint gasket SS TP347 Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	4				P75T-0013F	Ring joint gasket SS TP347 Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	6				P75T-000M7	Ring joint gasket SS TP347 Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	8				P75T-000M8	Ring joint gasket SS TP347 Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	10				P75T-000M2	Ring joint gasket SS TP347 Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	12				P75T-000M3	Ring joint gasket SS TP347 Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	14				P75T-0013C	Ring joint gasket SS TP347 Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	16				P75T-0013D	Ring joint gasket SS TP347 Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	18				P75T-000M4	Ring joint gasket SS TP347 Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	20				P75T-000M5	Ring joint gasket SS TP347 Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	24				P75T-000M6	Ring joint gasket SS TP347 Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	0.5				P75T-000JX	Ring joint gasket SS TP347 Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	0.75				P75T-000JY	Ring joint gasket SS TP347 Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	1				P75T-000JZ	Ring joint gasket SS TP347 Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	1.5				P75T-000K0	Ring joint gasket SS TP347 Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	2				P75T-000P3	Ring joint gasket SS TP347 Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	3				P75T-000P4	Ring joint gasket SS TP347 Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	4				P75T-0011J	Ring joint gasket SS TP347 Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	6				P75T-000M9	Ring joint gasket SS TP347 Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	8				P75T-000MA	Ring joint gasket SS TP347 Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	10				P75T-000K1	Ring joint gasket SS TP347 Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	12				P75T-000K2	Ring joint gasket SS TP347 Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-2				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	3-24				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
805	0.5-1				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
805	1.5				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
805	2				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
805	3-12				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81K-001L6	Gate valve ASTM A182 Grade F321 Class 1500 API 602 Flange ASME B16.5 RJ Trim SS347 WB-BG-OS&Y Handwheel operated Fluid-2	
1	0.75				P81K-001L7	Gate valve ASTM A182 Grade F321 Class 1500 API 602 Flange ASME B16.5 RJ Trim SS347 WB-BG-OS&Y Handwheel operated Fluid-2	
1	1				P81K-001L8	Gate valve ASTM A182 Grade F321 Class 1500 API 602 Flange ASME B16.5 RJ Trim SS347 WB-BG-OS&Y Handwheel operated Fluid-2	
1	1.5				P81K-001L9	Gate valve ASTM A182 Grade F321 Class 1500 API 602 Flange ASME B16.5 RJ Trim SS347 WB-BG-OS&Y Handwheel operated Fluid-2	
1	2				P81L-00351	Gate valve ASTM A351 Grade CF8C Class 1500 API 600 BW Sch80S Trim SS347 PSB-BG-OS&Y Handwheel operated Fluid-2	
1	3				P81L-00352	Gate valve ASTM A351 Grade CF8C Class 1500 API 600 BW Sch80S Trim SS347 PSB-BG-OS&Y Handwheel operated Fluid-2	
1	4				P81L-00353	Gate valve ASTM A351 Grade CF8C Class 1500 API 600 BW Sch120 Trim SS347 PSB-BG-OS&Y Gear operated Fluid-2	

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GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	6				P81L-00354	Gate valve ASTM A351 Grade CF8C Class 1500 API 600 BW Sch120 Trim SS347 PSB-BG-OS&Y Gear operated Fluid-2	
1	8				P81L-00355	Gate valve ASTM A351 Grade CF8C Class 1500 API 600 BW Sch100 Trim SS347 PSB-BG-OS&Y Gear operated Fluid-2	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82K-0013E	Globe valve ASTM A182 Grade F321 Class 1500 API 602 Flange ASME B16.5 RJ Trim SS347 WB-BG-OS&Y Handwheel operated Fluid-2	
1	0.75				P82K-0013F	Globe valve ASTM A182 Grade F321 Class 1500 API 602 Flange ASME B16.5 RJ Trim SS347 WB-BG-OS&Y Handwheel operated Fluid-2	
1	1				P82K-0013G	Globe valve ASTM A182 Grade F321 Class 1500 API 602 Flange ASME B16.5 RJ Trim SS347 WB-BG-OS&Y Handwheel operated Fluid-2	
1	1.5				P82K-0013H	Globe valve ASTM A182 Grade F321 Class 1500 API 602 Flange ASME B16.5 RJ Trim SS347 WB-BG-OS&Y Handwheel operated Fluid-2	
1	2				P82L-001S3	Globe valve ASTM A351 Grade CF8C Class 1500 BS 1873 BW Sch80S Trim SS347 PSB-BG-OS&Y Handwheel operated Fluid-2	
1	3				P82L-001YA	Globe valve ASTM A351 Grade CF8C Class 1500 BS 1873 BW Sch80S Trim SS347 PSB-BG-OS&Y Gear operated Fluid-2	
1	4				P82L-001S5	Globe valve ASTM A351 Grade CF8C Class 1500 BS 1873 BW Sch120 Trim SS347 PSB-BG-OS&Y Gear operated Fluid-2	
1	6				P82L-001S6	Globe valve ASTM A351 Grade CF8C Class 1500 BS 1873 BW Sch120 Trim SS347 PSB-BG-OS&Y Gear operated Fluid-2	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83K-000V8	Check valve ASTM A182 Grade F321 Class 1500 API 602 Flange ASME B16.5 RJ Trim SS347 Lift-type Welded cover	
1	0.75				P83K-000V9	Check valve ASTM A182 Grade F321 Class 1500 API 602 Flange ASME B16.5 RJ Trim SS347 Lift-type Welded cover	
1	1				P83K-000VA	Check valve ASTM A182 Grade F321 Class 1500 API 602 Flange ASME B16.5 RJ Trim SS347 Lift-type Welded cover	
1	1.5				P83K-000VB	Check valve ASTM A182 Grade F321 Class 1500 API 602 Flange ASME B16.5 RJ Trim SS347 Lift-type Welded cover	
1	2				P83L-001GB	Check valve ASTM A351 Grade CF8C Class 1500 BS 1868 BW Sch80S Trim SS347 Swing-type Pressure seal cap	
1	3				P83L-001GC	Check valve ASTM A351 Grade CF8C Class 1500 BS 1868 BW Sch80S Trim SS347 Swing-type Pressure seal cap	
1	4				P83L-001NA	Check valve ASTM A351 Grade CF8C Class 1500 BS 1868 BW Sch120 Trim SS347 Swing-type Pressure seal cap	
1	6				P83L-001NB	Check valve ASTM A351 Grade CF8C Class 1500 BS 1868 BW Sch120 Trim SS347 Swing-type Pressure seal cap	

DP CHECK VALVE (XDP)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
4602	3				P88L-0013T	Dual plate check valve ASTM A351 Grade CF8C Class 1500 API 594 Lug-type ASME B16.5 RJ Trim SS347 Internal wetted parts SS347 Spring Inconel Retainerless-type	

PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P72K-000GK	Paddle blank ASTM A182 Grade F321 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	0.75				P72K-000GL	Paddle blank ASTM A182 Grade F321 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	1				P72K-000GM	Paddle blank ASTM A182 Grade F321 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	1.5				P72K-000GN	Paddle blank ASTM A182 Grade F321 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	2				P72K-000GV	Paddle blank ASTM A182 Grade F321 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	3				P72K-000GY	Paddle blank ASTM A182 Grade F321 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	4				P72K-000GZ	Paddle blank ASTM A182 Grade F321 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	6				P72K-000H0	Paddle blank ASTM A182 Grade F321 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	8				P72K-000H1	Paddle blank ASTM A182 Grade F321 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	10				P72K-000GP	Paddle blank ASTM A182 Grade F321 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	12				P72K-000GR	Paddle blank ASTM A182 Grade F321 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	14				P72K-000GS	Paddle blank ASTM A182 Grade F321 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	16				P72K-000GT	Paddle blank ASTM A182 Grade F321 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	18				P72K-000GU	Paddle blank ASTM A182 Grade F321 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	20				P72K-000GW	Paddle blank ASTM A182 Grade F321 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	24				P72K-000GX	Paddle blank ASTM A182 Grade F321 Class 1500 Standard-drawing Flange ASME B16.5 RJ	

PADDLE SPACER (PS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P72K-000H2	Paddle spacer ASTM A182 Grade F321 Class 1500 Standard-drawing Flange ASME B16.5 RJ	

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PADDLE SPACER (PS)							
OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75				P72K-000H3	Paddle spacer ASTM A182 Grade F321 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	1				P72K-000H4	Paddle spacer ASTM A182 Grade F321 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	1.5				P72K-000H5	Paddle spacer ASTM A182 Grade F321 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	2				P72K-000HB	Paddle spacer ASTM A182 Grade F321 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	3				P72K-000HE	Paddle spacer ASTM A182 Grade F321 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	4				P72K-000HF	Paddle spacer ASTM A182 Grade F321 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	6				P72K-000HG	Paddle spacer ASTM A182 Grade F321 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	8				P72K-000HH	Paddle spacer ASTM A182 Grade F321 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	10				P72K-000H6	Paddle spacer ASTM A182 Grade F321 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	12				P72K-000H7	Paddle spacer ASTM A182 Grade F321 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	14				P72K-000H8	Paddle spacer ASTM A182 Grade F321 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	16				P72K-000H9	Paddle spacer ASTM A182 Grade F321 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	18				P72K-000HA	Paddle spacer ASTM A182 Grade F321 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	20				P72K-000HC	Paddle spacer ASTM A182 Grade F321 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	24				P72K-000HD	Paddle spacer ASTM A182 Grade F321 Class 1500 Standard-drawing Flange ASME B16.5 RJ	

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BOLT TABLE (B_N1MH01 , STUD ASME RJ, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	110	P80S-003XK	R12	P75T-000JG
0.75	4	0.750	115	P80S-003XL	R14	P75T-000JH
1	4	0.875	130	P80S-0041B	R16	P75T-000JJ
1.5	4	1.000	140	P80S-0043F	R20	P75T-000JK
2	8	0.875	150	P80S-0041F	R24	P75T-000N6
3	8	1.125	180	P80S-0046T	R35	P75T-0013E
4	8	1.250	230	P80S-004AU	R39	P75T-0013F
6	12	1.375	300	P80S-003ED	R46	P75T-000M7
8	12	1.625	345	P80S-005TY	R50	P75T-000M8
10	12	1.875	395	P80S-008P7	R54	P75T-000M2
12	16	2.000	445	P80S-005VN	R58	P75T-000M3
14	16	2.250	490	P80S-00P4J	R63	P75T-0013C
16	16	2.500	540	P80S-00P1T	R67	P75T-0013D
18	16	2.750	590	P80S-00PX5	R71	P75T-000M4
20	16	3.000	650	P80S-00PP3	R75	P75T-000M5
24	16	3.500	745	P80S-00RLF	R79	P75T-000M6

BOLT TABLE (B_N1MH01_805 , STUD ASME RJ, OPTION CODE 805)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	125	P80S-003XN	R13	P75T-000JX
0.75	4	0.750	130	P80S-003XP	R16	P75T-000JY
1	4	0.875	140	P80S-0041D	R18	P75T-000JZ
1.5	4	1.125	175	P80S-0046S	R23	P75T-000K0
2	8	1.000	180	P80S-0043R	R26	P75T-000P3
3	8	1.250	260	P80S-004B0	R32	P75T-000P4
4	8	1.500	305	P80S-008MZ	R38	P75T-0011J
6	8	2.000	410	P80S-005VF	R47	P75T-000M9
8	12	2.000	450	P80S-005VP	R51	P75T-000MA
10	12	2.500	575	P80S-00P1K	R55	P75T-000K1
12	12	2.750	635	P80S-00PWW	R60	P75T-000K2
14	14	3.000	695		R64	
16	14	3.000	755		R68	
18	16	3.000	815		R72	
20	16	3.000	875		R76	
24	18	3.000	950		R81	

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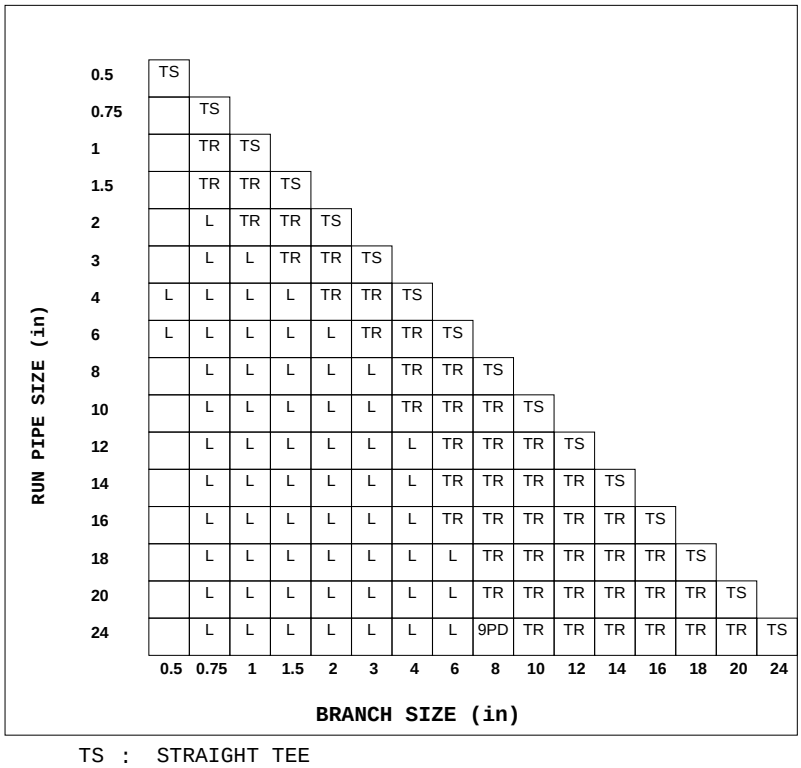
BRANCH TABLE (T_N1MH01)



TS : STRAIGHT TEE
TR : REDUCING TEE
L : OUTLET
9PD : REINFORCING PAD 90 DEG

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PIPING CLASS

N1Y602 REV NO. 2

Material : Incoloy 825
Rating : ASME CLASS 1500
Flange Face : RJ
C.A.(mm) : 1.50
Gasket : Ring Octagonal
Service : PROCESS -WET LOW SEVERITY SOUR SERVICE SUBJECT TO NACE + HYDROGEN SERVICE
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
5	BOLTING CONFIRMING TO B7M / 2HM SHALL BE USED UNDER CONDITIONS (A) DIRECT EXPOSURE TO SOUR ENVIRONMENTS (B) WHEN THE BOLTING WILL BE BURIED OR INSULATED

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
24	FULL PORT (Q)
541	NPT(F) (F)
805	CLASS 2500 (B,F,G)
4601	Y-PATTERN (W)

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PIPING CLASS
N1Y602 REV NO. 2

PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P01M-000EN	Pipe ASTM B423 UNS N08825 Seamless ASME B36.10M/B36.19M PE Licensor-2	
1	0.75		SCH80S		P01M-000EP	Pipe ASTM B423 UNS N08825 Seamless ASME B36.10M/B36.19M PE Licensor-2	
1	1		SCH80S		P01M-000ER	Pipe ASTM B423 UNS N08825 Seamless ASME B36.10M/B36.19M PE Licensor-2	
1	1.5		SCH80S		P01M-000ES	Pipe ASTM B423 UNS N08825 Seamless ASME B36.10M/B36.19M PE Licensor-2	
1	2		SCH80S		P01M-000ET	Pipe ASTM B423 UNS N08825 Seamless ASME B36.10M/B36.19M BE Licensor-2	
1	3		SCH80S		P01M-000EU	Pipe ASTM B423 UNS N08825 Seamless ASME B36.10M/B36.19M BE Licensor-2	
1	4		SCH120		P01M-000EV	Pipe ASTM B423 UNS N08825 Seamless ASME B36.10M/B36.19M BE Licensor-2	
1	6		SCH120		P01M-000EW	Pipe ASTM B423 UNS N08825 Seamless ASME B36.10M/B36.19M BE Licensor-2	
1	8		SCH100		P01M-000F1	Pipe ASTM B705 UNS N08825 Class 1 Weld ASME B36.10M/B36.19M BE Licensor-2	
1	10		SCH100		P01M-000EX	Pipe ASTM B705 UNS N08825 Class 1 Weld ASME B36.10M/B36.19M BE Licensor-2	
1	12		SCH100		P01M-000EY	Pipe ASTM B705 UNS N08825 Class 1 Weld ASME B36.10M/B36.19M BE Licensor-2	
1	14		SCH100		P01M-000EZ	Pipe ASTM B705 UNS N08825 Class 1 Weld ASME B36.10M/B36.19M BE Licensor-2	
1	16		SCH100		P01M-000F0	Pipe ASTM B705 UNS N08825 Class 1 Weld ASME B36.10M/B36.19M BE Licensor-2	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P02M-000D8	90 degree elbow ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Long radius Licensor-2	
1	0.75		SCH80S		P02M-000D9	90 degree elbow ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Long radius Licensor-2	
1	1		SCH80S		P02M-000DA	90 degree elbow ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Long radius Licensor-2	
1	1.5		SCH80S		P02M-000DB	90 degree elbow ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Long radius Licensor-2	
1	2		SCH80S		P02M-000DC	90 degree elbow ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Long radius Licensor-2	
1	3		SCH80S		P02M-000DD	90 degree elbow ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Long radius Licensor-2	
1	4		SCH120		P02M-000DE	90 degree elbow ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Long radius Licensor-2	
1	6		SCH120		P02M-000DF	90 degree elbow ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Long radius Licensor-2	
1	8		SCH100		P02M-000DL	90 degree elbow ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Long radius Licensor-2	
1	10		SCH100		P02M-000DG	90 degree elbow ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Long radius Licensor-2	
1	12		SCH100		P02M-000DH	90 degree elbow ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Long radius Licensor-2	
1	14		SCH100		P02M-000DJ	90 degree elbow ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Long radius Licensor-2	
1	16		SCH100		P02M-000DK	90 degree elbow ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Long radius Licensor-2	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P03M-001E4	45 degree elbow ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Long radius Licensor-2	
1	0.75		SCH80S		P03M-001E5	45 degree elbow ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Long radius Licensor-2	
1	1		SCH80S		P03M-001E6	45 degree elbow ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Long radius Licensor-2	
1	1.5		SCH80S		P03M-001E7	45 degree elbow ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Long radius Licensor-2	
1	2		SCH80S		P03M-001E8	45 degree elbow ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Long radius Licensor-2	
1	3		SCH80S		P03M-001E9	45 degree elbow ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Long radius Licensor-2	
1	4		SCH120		P03M-001EA	45 degree elbow ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Long radius Licensor-2	
1	6		SCH120		P03M-001EB	45 degree elbow ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Long radius Licensor-2	
1	8		SCH100		P03M-001EG	45 degree elbow ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Long radius Licensor-2	
1	10		SCH100		P03M-001EC	45 degree elbow ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Long radius Licensor-2	
1	12		SCH100		P03M-001ED	45 degree elbow ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Long radius Licensor-2	
1	14		SCH100		P03M-001EE	45 degree elbow ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Long radius Licensor-2	
1	16		SCH100		P03M-001EF	45 degree elbow ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Long radius Licensor-2	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P21M-000BS	Straight tee ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	0.75		SCH80S		P21M-000BT	Straight tee ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	1		SCH80S		P21M-000BU	Straight tee ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	1.5		SCH80S		P21M-000BV	Straight tee ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	2		SCH80S		P21M-000BW	Straight tee ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	3		SCH80S		P21M-000BX	Straight tee ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	4		SCH120		P21M-000BY	Straight tee ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	6		SCH120		P21M-000BZ	Straight tee ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	8		SCH100		P21M-000BR	Straight tee ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	
1	10		SCH100		P21M-000BL	Straight tee ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	
1	12		SCH100		P21M-000BM	Straight tee ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	

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STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14		SCH100		P21M-000BN	Straight tee ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	
1	16		SCH100		P21M-000BP	Straight tee ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75	SCH80S	SCH80S	P24M-000XC	Reducing tee ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	1.5	0.75	SCH80S	SCH80S	P24M-000XD	Reducing tee ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	1.5	1	SCH80S	SCH80S	P24M-000XE	Reducing tee ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	2	1	SCH80S	SCH80S	P24M-000XF	Reducing tee ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	2	1.5	SCH80S	SCH80S	P24M-000XG	Reducing tee ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	3	1.5	SCH80S	SCH80S	P24M-000XH	Reducing tee ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	3	2	SCH80S	SCH80S	P24M-000XJ	Reducing tee ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	4	2	SCH120	SCH80S	P24M-000XK	Reducing tee ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	4	3	SCH120	SCH80S	P24M-000XL	Reducing tee ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	6	3	SCH120	SCH80S	P24M-000XM	Reducing tee ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	6	4	SCH120	SCH120	P24M-000XN	Reducing tee ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	8	4	SCH100	SCH120	P24M-000XP	Reducing tee ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	
1	8	6	SCH100	SCH120	P24M-000XR	Reducing tee ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	
1	10	4	SCH100	SCH120	P24M-000XS	Reducing tee ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	
1	10	6	SCH100	SCH120	P24M-000XT	Reducing tee ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	
1	10	8	SCH100	SCH100	P24M-000XU	Reducing tee ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	
1	12	6	SCH100	SCH120	P24M-000XW	Reducing tee ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	
1	12	8	SCH100	SCH100	P24M-000XX	Reducing tee ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	
1	12	10	SCH100	SCH100	P24M-000XV	Reducing tee ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	
1	14	6	SCH100	SCH120	P24M-000Y0	Reducing tee ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	
1	14	8	SCH100	SCH100	P24M-000Y1	Reducing tee ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	
1	14	10	SCH100	SCH100	P24M-000XY	Reducing tee ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	
1	14	12	SCH100	SCH100	P24M-000XZ	Reducing tee ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	
1	16	6	SCH100	SCH120	P24M-000Y5	Reducing tee ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	
1	16	8	SCH100	SCH100	P24M-000Y6	Reducing tee ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	
1	16	10	SCH100	SCH100	P24M-000Y2	Reducing tee ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	
1	16	12	SCH100	SCH100	P24M-000Y3	Reducing tee ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	
1	16	14	SCH100	SCH100	P24M-000Y4	Reducing tee ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH80S	SCH80S	P27M-000VZ	Concentric reducer ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	1	0.5	SCH80S	SCH80S	P27M-000W0	Concentric reducer ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	1	0.75	SCH80S	SCH80S	P27M-000W1	Concentric reducer ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	1.5	0.5	SCH80S	SCH80S	P27M-000W2	Concentric reducer ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	1.5	0.75	SCH80S	SCH80S	P27M-000W3	Concentric reducer ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	1.5	1	SCH80S	SCH80S	P27M-000W4	Concentric reducer ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	2	0.75	SCH80S	SCH80S	P27M-000W5	Concentric reducer ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	2	1	SCH80S	SCH80S	P27M-000W6	Concentric reducer ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	2	1.5	SCH80S	SCH80S	P27M-000W7	Concentric reducer ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	3	1.5	SCH80S	SCH80S	P27M-000W8	Concentric reducer ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	3	2	SCH80S	SCH80S	P27M-000W9	Concentric reducer ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	4	1.5	SCH120	SCH80S	P27M-000WA	Concentric reducer ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	4	2	SCH120	SCH80S	P27M-000WB	Concentric reducer ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	4	3	SCH120	SCH80S	P27M-000WC	Concentric reducer ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	6	3	SCH120	SCH80S	P27M-000WD	Concentric reducer ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	6	4	SCH120	SCH120	P27M-000WE	Concentric reducer ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	8	4	SCH100	SCH120	P27M-000WF	Concentric reducer ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	
1	8	6	SCH100	SCH120	P27M-000WG	Concentric reducer ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	
1	10	4	SCH100	SCH120	P27M-000WH	Concentric reducer ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	
1	10	6	SCH100	SCH120	P27M-000WJ	Concentric reducer ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	
1	10	8	SCH100	SCH100	P27M-000WK	Concentric reducer ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	
1	12	6	SCH100	SCH120	P27M-000WM	Concentric reducer ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	
1	12	8	SCH100	SCH100	P27M-000WN	Concentric reducer ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	

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CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	12	10	SCH100	SCH100	P27M-000WL	Concentric reducer ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	
1	14	6	SCH100	SCH120	P27M-000WS	Concentric reducer ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	
1	14	8	SCH100	SCH100	P27M-000WT	Concentric reducer ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	
1	14	10	SCH100	SCH100	P27M-000WP	Concentric reducer ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	
1	14	12	SCH100	SCH100	P27M-000WR	Concentric reducer ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	
1	16	8	SCH100	SCH100	P27M-000WX	Concentric reducer ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	
1	16	10	SCH100	SCH100	P27M-000WU	Concentric reducer ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	
1	16	12	SCH100	SCH100	P27M-000WV	Concentric reducer ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	
1	16	14	SCH100	SCH100	P27M-000WW	Concentric reducer ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH80S	SCH80S	P28M-000XX	Eccentric reducer ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	1	0.5	SCH80S	SCH80S	P28M-000XY	Eccentric reducer ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	1	0.75	SCH80S	SCH80S	P28M-000XZ	Eccentric reducer ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	1.5	0.5	SCH80S	SCH80S	P28M-000Y0	Eccentric reducer ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	1.5	0.75	SCH80S	SCH80S	P28M-000Y1	Eccentric reducer ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	1.5	1	SCH80S	SCH80S	P28M-000Y2	Eccentric reducer ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	2	0.75	SCH80S	SCH80S	P28M-000Y3	Eccentric reducer ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	2	1	SCH80S	SCH80S	P28M-000Y4	Eccentric reducer ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	2	1.5	SCH80S	SCH80S	P28M-000Y5	Eccentric reducer ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	3	1.5	SCH80S	SCH80S	P28M-000Y6	Eccentric reducer ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	3	2	SCH80S	SCH80S	P28M-000Y7	Eccentric reducer ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	4	1.5	SCH120	SCH80S	P28M-000Y8	Eccentric reducer ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	4	2	SCH120	SCH80S	P28M-000Y9	Eccentric reducer ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	4	3	SCH120	SCH80S	P28M-000YA	Eccentric reducer ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	6	3	SCH120	SCH80S	P28M-000YB	Eccentric reducer ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	6	4	SCH120	SCH120	P28M-000YC	Eccentric reducer ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	8	4	SCH100	SCH120	P28M-000YD	Eccentric reducer ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	
1	8	6	SCH100	SCH120	P28M-000YE	Eccentric reducer ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	
1	10	4	SCH100	SCH120	P28M-000YF	Eccentric reducer ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	
1	10	6	SCH100	SCH120	P28M-000YG	Eccentric reducer ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	
1	10	8	SCH100	SCH100	P28M-000YH	Eccentric reducer ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	
1	12	6	SCH100	SCH120	P28M-000YK	Eccentric reducer ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	
1	12	8	SCH100	SCH100	P28M-000YL	Eccentric reducer ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	
1	12	10	SCH100	SCH100	P28M-000YJ	Eccentric reducer ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	
1	14	6	SCH100	SCH120	P28M-000YP	Eccentric reducer ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	
1	14	8	SCH100	SCH100	P28M-000YR	Eccentric reducer ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	
1	14	10	SCH100	SCH100	P28M-000YM	Eccentric reducer ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	
1	14	12	SCH100	SCH100	P28M-000YN	Eccentric reducer ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	
1	16	8	SCH100	SCH100	P28M-000YV	Eccentric reducer ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	
1	16	10	SCH100	SCH100	P28M-000YS	Eccentric reducer ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	
1	16	12	SCH100	SCH100	P28M-000YT	Eccentric reducer ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	
1	16	14	SCH100	SCH100	P28M-000YU	Eccentric reducer ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P29M-0009H	Cap ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	0.75		SCH80S		P29M-0009J	Cap ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	1		SCH80S		P29M-0009K	Cap ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	1.5		SCH80S		P29M-0009L	Cap ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	2		SCH80S		P29M-0009S	Cap ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	3		SCH80S		P29M-0009T	Cap ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	4		SCH120		P29M-0009U	Cap ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	6		SCH120		P29M-0009V	Cap ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	8		SCH100		P29M-0009W	Cap ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	10		SCH100		P29M-0009M	Cap ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	12		SCH100		P29M-0009N	Cap ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	14		SCH100		P29M-0009P	Cap ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	

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CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	16		SCH100		P29M-0009R	Cap ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P41M-000A4	Straight nipple ASTM B423 UNS N08825 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Licensor-2	
1	0.75		XXS		P41M-000A5	Straight nipple ASTM B423 UNS N08825 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Licensor-2	
1	1		XXS		P41M-000A6	Straight nipple ASTM B423 UNS N08825 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Licensor-2	
1	1.5		XXS		P41M-000A7	Straight nipple ASTM B423 UNS N08825 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Licensor-2	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2	0.75	SCH80S	SCH80S	P31P-0028K	Outlet ASTM B564 UNS N08825 MSS SP-97 BW Licensor-2	
1	3	0.75	SCH80S	SCH80S	P31P-0028L	Outlet ASTM B564 UNS N08825 MSS SP-97 BW Licensor-2	
1	4	0.75	SCH120	SCH80S	P31P-0028N	Outlet ASTM B564 UNS N08825 MSS SP-97 BW Licensor-2	
1	6	0.75	SCH120	SCH80S	P31P-0028S	Outlet ASTM B564 UNS N08825 MSS SP-97 BW Licensor-2	
1	8	0.75	SCH100	SCH80S	P31P-0028W	Outlet ASTM B564 UNS N08825 MSS SP-97 BW Licensor-2	
1	10	0.75	SCH100	SCH80S	P31P-00291	Outlet ASTM B564 UNS N08825 MSS SP-97 BW Licensor-2	
1	12	0.75	SCH100	SCH80S	P31P-00296	Outlet ASTM B564 UNS N08825 MSS SP-97 BW Licensor-2	
1	14	0.75	SCH100	SCH80S	P31P-0029C	Outlet ASTM B564 UNS N08825 MSS SP-97 BW Licensor-2	
1	16	0.75	SCH100	SCH80S	P31P-002B3	Outlet ASTM B564 UNS N08825 MSS SP-97 BW Licensor-2	
1	3	1	SCH80S	SCH80S	P31P-0028M	Outlet ASTM B564 UNS N08825 MSS SP-97 BW Licensor-2	
1	4	1	SCH120	SCH80S	P31P-0028P	Outlet ASTM B564 UNS N08825 MSS SP-97 BW Licensor-2	
1	6	1	SCH120	SCH80S	P31P-0028T	Outlet ASTM B564 UNS N08825 MSS SP-97 BW Licensor-2	
1	8	1	SCH100	SCH80S	P31P-0028X	Outlet ASTM B564 UNS N08825 MSS SP-97 BW Licensor-2	
1	10	1	SCH100	SCH80S	P31P-00292	Outlet ASTM B564 UNS N08825 MSS SP-97 BW Licensor-2	
1	12	1	SCH100	SCH80S	P31P-00297	Outlet ASTM B564 UNS N08825 MSS SP-97 BW Licensor-2	
1	14	1	SCH100	SCH80S	P31P-0029D	Outlet ASTM B564 UNS N08825 MSS SP-97 BW Licensor-2	
1	16	1	SCH100	SCH80S	P31P-002B4	Outlet ASTM B564 UNS N08825 MSS SP-97 BW Licensor-2	
1	4	1.5	SCH120	SCH80S	P31P-0028R	Outlet ASTM B564 UNS N08825 MSS SP-97 BW Licensor-2	
1	6	1.5	SCH120	SCH80S	P31P-0028U	Outlet ASTM B564 UNS N08825 MSS SP-97 BW Licensor-2	
1	8	1.5	SCH100	SCH80S	P31P-0028Y	Outlet ASTM B564 UNS N08825 MSS SP-97 BW Licensor-2	
1	10	1.5	SCH100	SCH80S	P31P-00293	Outlet ASTM B564 UNS N08825 MSS SP-97 BW Licensor-2	
1	12	1.5	SCH100	SCH80S	P31P-00298	Outlet ASTM B564 UNS N08825 MSS SP-97 BW Licensor-2	
1	14	1.5	SCH100	SCH80S	P31P-0029E	Outlet ASTM B564 UNS N08825 MSS SP-97 BW Licensor-2	
1	16	1.5	SCH100	SCH80S	P31P-002B9	Outlet ASTM B564 UNS N08825 MSS SP-97 BW Licensor-2	
1	6	2	SCH120	SCH80S	P31P-0028V	Outlet ASTM B564 UNS N08825 MSS SP-97 BW Licensor-2	
1	8	2	SCH100	SCH80S	P31P-0028Z	Outlet ASTM B564 UNS N08825 MSS SP-97 BW Licensor-2	
1	10	2	SCH100	SCH80S	P31P-00294	Outlet ASTM B564 UNS N08825 MSS SP-97 BW Licensor-2	
1	12	2	SCH100	SCH80S	P31P-00299	Outlet ASTM B564 UNS N08825 MSS SP-97 BW Licensor-2	
1	14	2	SCH100	SCH80S	P31P-0029F	Outlet ASTM B564 UNS N08825 MSS SP-97 BW Licensor-2	
1	16	2	SCH100	SCH80S	P31P-002B6	Outlet ASTM B564 UNS N08825 MSS SP-97 BW Licensor-2	
1	8	3	SCH100	SCH80S	P31P-00290	Outlet ASTM B564 UNS N08825 MSS SP-97 BW Licensor-2	
1	10	3	SCH100	SCH80S	P31P-00295	Outlet ASTM B564 UNS N08825 MSS SP-97 BW Licensor-2	
1	12	3	SCH100	SCH80S	P31P-0029A	Outlet ASTM B564 UNS N08825 MSS SP-97 BW Licensor-2	
1	14	3	SCH100	SCH80S	P31P-0029G	Outlet ASTM B564 UNS N08825 MSS SP-97 BW Licensor-2	
1	16	3	SCH100	SCH80S	P31P-002B7	Outlet ASTM B564 UNS N08825 MSS SP-97 BW Licensor-2	
1	12	4	SCH100	SCH120	P31P-0029B	Outlet ASTM B564 UNS N08825 MSS SP-97 BW Licensor-2	
1	14	4	SCH100	SCH120	P31P-0029H	Outlet ASTM B564 UNS N08825 MSS SP-97 BW Licensor-2	
1	16	4	SCH100	SCH120	P31P-002B8	Outlet ASTM B564 UNS N08825 MSS SP-97 BW Licensor-2	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30P-0001C	Plug ASTM B564 UNS N08825 ASME B16.11 NPT Round head Licensor-2	
1	0.75				P30P-0001D	Plug ASTM B564 UNS N08825 ASME B16.11 NPT Round head Licensor-2	
1	1				P30P-0001E	Plug ASTM B564 UNS N08825 ASME B16.11 NPT Round head Licensor-2	
1	1.5				P30P-0001F	Plug ASTM B564 UNS N08825 ASME B16.11 NPT Round head Licensor-2	

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FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P61P-00134	Flange WN ASTM B564 UNS N08825 Class 1500 ASME B16.5 RJ Licensor-2	
1	0.75		SCH80S		P61P-00135	Flange WN ASTM B564 UNS N08825 Class 1500 ASME B16.5 RJ Licensor-2	
1	1		SCH80S		P61P-00136	Flange WN ASTM B564 UNS N08825 Class 1500 ASME B16.5 RJ Licensor-2	
1	1.5		SCH80S		P61P-00137	Flange WN ASTM B564 UNS N08825 Class 1500 ASME B16.5 RJ Licensor-2	
1	2		SCH80S		P61P-0013B	Flange WN ASTM B564 UNS N08825 Class 1500 ASME B16.5 RJ Licensor-2	
1	3		SCH80S		P61P-0013C	Flange WN ASTM B564 UNS N08825 Class 1500 ASME B16.5 RJ Licensor-2	
1	4		SCH120		P61P-0013D	Flange WN ASTM B564 UNS N08825 Class 1500 ASME B16.5 RJ Licensor-2	
1	6		SCH120		P61P-0013E	Flange WN ASTM B564 UNS N08825 Class 1500 ASME B16.5 RJ Licensor-2	
1	8		SCH100		P61P-0013F	Flange WN ASTM B564 UNS N08825 Class 1500 ASME B16.5 RJ Licensor-2	
1	10		SCH100		P61P-00138	Flange WN ASTM B564 UNS N08825 Class 1500 ASME B16.5 RJ Licensor-2	
1	12		SCH100		P61P-00139	Flange WN ASTM B564 UNS N08825 Class 1500 ASME B16.5 RJ Licensor-2	
1	14		SCH100		P61P-0013A	Flange WN ASTM B564 UNS N08825 Class 1500 ASME B16.5 RJ Licensor-2	
1	16		SCH100		P61P-0014E	Flange WN ASTM B564 UNS N08825 Class 1500 ASME B16.5 RJ Licensor-2	
541	0.5				P61P-0013G	Flange NPT ASTM B564 UNS N08825 Class 1500 ASME B16.5 RJ Licensor-2	
541	0.75				P61P-0013H	Flange NPT ASTM B564 UNS N08825 Class 1500 ASME B16.5 RJ Licensor-2	
805	0.5		SCH80S		P61P-0013J	Flange WN ASTM B564 UNS N08825 Class 2500 ASME B16.5 RJ Licensor-2	
805	0.75		SCH80S		P61P-0013K	Flange WN ASTM B564 UNS N08825 Class 2500 ASME B16.5 RJ Licensor-2	
805	1		SCH80S		P61P-0013L	Flange WN ASTM B564 UNS N08825 Class 2500 ASME B16.5 RJ Licensor-2	
805	1.5		SCH80S		P61P-0013M	Flange WN ASTM B564 UNS N08825 Class 2500 ASME B16.5 RJ Licensor-2	
805	2		SCH80S		P61P-0013R	Flange WN ASTM B564 UNS N08825 Class 2500 ASME B16.5 RJ Licensor-2	
805	3		SCH80S		P61P-0013S	Flange WN ASTM B564 UNS N08825 Class 2500 ASME B16.5 RJ Licensor-2	
805	4		SCH120		P61P-0013T	Flange WN ASTM B564 UNS N08825 Class 2500 ASME B16.5 RJ Licensor-2	
805	6		SCH120		P61P-0013U	Flange WN ASTM B564 UNS N08825 Class 2500 ASME B16.5 RJ Licensor-2	
805	8		SCH100		P61P-0013V	Flange WN ASTM B564 UNS N08825 Class 2500 ASME B16.5 RJ Licensor-2	
805	10		SCH100		P61P-0013N	Flange WN ASTM B564 UNS N08825 Class 2500 ASME B16.5 RJ Licensor-2	
805	12		SCH100		P61P-0013P	Flange WN ASTM B564 UNS N08825 Class 2500 ASME B16.5 RJ Licensor-2	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67P-000BG	Blind flange ASTM B564 UNS N08825 Class 1500 ASME B16.5 RJ Licensor-2	
1	0.75				P67P-000BH	Blind flange ASTM B564 UNS N08825 Class 1500 ASME B16.5 RJ Licensor-2	
1	1				P67P-000BJ	Blind flange ASTM B564 UNS N08825 Class 1500 ASME B16.5 RJ Licensor-2	
1	1.5				P67P-000BK	Blind flange ASTM B564 UNS N08825 Class 1500 ASME B16.5 RJ Licensor-2	
1	2				P67P-000BP	Blind flange ASTM B564 UNS N08825 Class 1500 ASME B16.5 RJ Licensor-2	
1	3				P67P-000BR	Blind flange ASTM B564 UNS N08825 Class 1500 ASME B16.5 RJ Licensor-2	
1	4				P67P-000BS	Blind flange ASTM B564 UNS N08825 Class 1500 ASME B16.5 RJ Licensor-2	
1	6				P67P-000BT	Blind flange ASTM B564 UNS N08825 Class 1500 ASME B16.5 RJ Licensor-2	
1	8				P67P-000BU	Blind flange ASTM B564 UNS N08825 Class 1500 ASME B16.5 RJ Licensor-2	
1	10				P67P-000BL	Blind flange ASTM B564 UNS N08825 Class 1500 ASME B16.5 RJ Licensor-2	
1	12				P67P-000BM	Blind flange ASTM B564 UNS N08825 Class 1500 ASME B16.5 RJ Licensor-2	
1	14				P67P-000BN	Blind flange ASTM B564 UNS N08825 Class 1500 ASME B16.5 RJ Licensor-2	
1	16				P67P-000BV	Blind flange ASTM B564 UNS N08825 Class 1500 ASME B16.5 RJ Licensor-2	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P75T-000L8	Ring joint gasket UNS N08825 Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	0.75				P75T-000L9	Ring joint gasket UNS N08825 Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	1				P75T-000LA	Ring joint gasket UNS N08825 Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	1.5				P75T-000LB	Ring joint gasket UNS N08825 Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	2				P75T-000LF	Ring joint gasket UNS N08825 Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	3				P75T-000LG	Ring joint gasket UNS N08825 Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	4				P75T-000LH	Ring joint gasket UNS N08825 Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	6				P75T-000LJ	Ring joint gasket UNS N08825 Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	8				P75T-000LK	Ring joint gasket UNS N08825 Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	10				P75T-000LC	Ring joint gasket UNS N08825 Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	12				P75T-000LD	Ring joint gasket UNS N08825 Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	14				P75T-000LE	Ring joint gasket UNS N08825 Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	16				P75T-0012D	Ring joint gasket UNS N08825 Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	0.5				P75T-000K3	Ring joint gasket UNS N08825 Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	

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GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
805	0.75				P75T-000K4	Ring joint gasket UNS N08825 Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	1				P75T-000K5	Ring joint gasket UNS N08825 Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	1.5				P75T-000K6	Ring joint gasket UNS N08825 Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	2				P75T-000LN	Ring joint gasket UNS N08825 Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	3				P75T-000K7	Ring joint gasket UNS N08825 Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	4				P75T-000LP	Ring joint gasket UNS N08825 Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	6				P75T-000K8	Ring joint gasket UNS N08825 Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	8				P75T-000LR	Ring joint gasket UNS N08825 Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	10				P75T-000LL	Ring joint gasket UNS N08825 Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	12				P75T-000LM	Ring joint gasket UNS N08825 Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-2				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	3-16				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
805	0.5-1				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
805	1.5				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
805	2				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
805	3-12				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81P-0004B	Gate valve ASTM B564 UNS N08825 Class 1500 API 602 BW Sch80S Trim UNS N08825 WB-BG-OS&Y Handwheel operated Moderate wet H2S service Licensor-2	
1	0.75				P81P-0004C	Gate valve ASTM B564 UNS N08825 Class 1500 API 602 BW Sch80S Trim UNS N08825 WB-BG-OS&Y Handwheel operated Moderate wet H2S service Licensor-2	
1	1				P81P-0004D	Gate valve ASTM B564 UNS N08825 Class 1500 API 602 BW Sch80S Trim UNS N08825 WB-BG-OS&Y Handwheel operated Moderate wet H2S service Licensor-2	
1	1.5				P81P-0004E	Gate valve ASTM B564 UNS N08825 Class 1500 API 602 BW Sch80S Trim UNS N08825 WB-BG-OS&Y Handwheel operated Moderate wet H2S service Licensor-2	
1	2				P81R-000EC	Gate valve ASTM A494 Grade CU5MCuC Class 1500 API 600 BW Sch80S Trim UNS N08825 PSB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	3				P81R-000G5	Gate valve ASTM A494 Grade CU5MCuC Class 1500 API 600 BW Sch80S Trim UNS N08825 PSB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	4				P81R-000EG	Gate valve ASTM A494 Grade CU5MCuC Class 1500 API 600 BW Sch120 Trim UNS N08825 PSB-BG-OS&Y Gear operated Moderate wet H2S service	
1	6				P81R-000EH	Gate valve ASTM A494 Grade CU5MCuC Class 1500 API 600 BW Sch120 Trim UNS N08825 PSB-BG-OS&Y Gear operated Moderate wet H2S service	
1	8				P81R-000EM	Gate valve ASTM A494 Grade CU5MCuC Class 1500 API 600 BW Sch100 Trim UNS N08825 PSB-BG-OS&Y Gear operated Moderate wet H2S service	
1	10				P81R-000EJ	Gate valve ASTM A494 Grade CU5MCuC Class 1500 API 600 BW Sch100 Trim UNS N08825 PSB-BG-OS&Y Gear operated Moderate wet H2S service	
1	12				P81R-000EK	Gate valve ASTM A494 Grade CU5MCuC Class 1500 API 600 BW Sch100 Trim UNS N08825 PSB-BG-OS&Y Gear operated Moderate wet H2S service	
1	14				P81R-000EL	Gate valve ASTM A494 Grade CU5MCuC Class 1500 API 600 BW Sch100 Trim UNS N08825 PSB-BG-OS&Y Gear operated Moderate wet H2S service	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82P-00043	Globe valve ASTM B564 UNS N08825 Class 1500 API 602 BW Sch80S Trim UNS N08825 WB-BG-OS&Y Handwheel operated Moderate wet H2S service Licensor-2	
1	0.75				P82P-00044	Globe valve ASTM B564 UNS N08825 Class 1500 API 602 BW Sch80S Trim UNS N08825 WB-BG-OS&Y Handwheel operated Moderate wet H2S service Licensor-2	
1	1				P82P-00045	Globe valve ASTM B564 UNS N08825 Class 1500 API 602 BW Sch80S Trim UNS N08825 WB-BG-OS&Y Handwheel operated Moderate wet H2S service Licensor-2	
1	1.5				P82P-00046	Globe valve ASTM B564 UNS N08825 Class 1500 API 602 BW Sch80S Trim UNS N08825 WB-BG-OS&Y Handwheel operated Moderate wet H2S service Licensor-2	
1	2				P82R-00091	Globe valve ASTM A494 Grade CU5MCuC Class 1500 BS 1873 BW Sch80S Trim UNS N08825 PSB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	3				P82R-000A3	Globe valve ASTM A494 Grade CU5MCuC Class 1500 BS 1873 BW Sch80S Trim UNS N08825 PSB-BG-OS&Y Gear operated Moderate wet H2S service	
1	4				P82R-00095	Globe valve ASTM A494 Grade CU5MCuC Class 1500 BS 1873 BW Sch120 Trim UNS N08825 PSB-BG-OS&Y Gear operated Moderate wet H2S service	
1	6				P82R-0008W	Globe valve ASTM A494 Grade CU5MCuC Class 1500 BS 1873 BW Sch120 Trim UNS N08825 PSB-BG-OS&Y Gear operated Moderate wet H2S service	
4601	1.5				P82P-0004S	Y-pattern globe valve ASTM B564 UNS N08825 Class 1500 ASME B16.34 BW Sch80S Trim UNS N08825 WB-BG-OS&Y Handwheel operated Moderate wet H2S service Licensor-2	
4601	2				P82R-0008Z	Y-pattern globe valve ASTM A494 Grade CU5MCuC Class 1500 ASME B16.34 BW Sch80S Trim UNS N08825 PSB-BG-OS&Y Handwheel operated Moderate wet H2S service	

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CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83P-0004A	Check valve ASTM B564 UNS N08825 Class 1500 API 602 BW Sch80S Trim UNS N08825 Lift-type Welded cover Moderate wet H2S service Licensor-2	
1	0.75				P83P-0004B	Check valve ASTM B564 UNS N08825 Class 1500 API 602 BW Sch80S Trim UNS N08825 Lift-type Welded cover Moderate wet H2S service Licensor-2	
1	1				P83P-0004C	Check valve ASTM B564 UNS N08825 Class 1500 API 602 BW Sch80S Trim UNS N08825 Lift-type Welded cover Moderate wet H2S service Licensor-2	
1	1.5				P83P-0004D	Check valve ASTM B564 UNS N08825 Class 1500 API 602 BW Sch80S Trim UNS N08825 Lift-type Welded cover Moderate wet H2S service Licensor-2	
1	2				P83R-000B7	Check valve ASTM A494 Grade CU5MCuC Class 1500 BS 1868 BW Sch80S Trim UNS N08825 Swing-type Pressure seal cap Moderate wet H2S service	
1	3				P83R-000B8	Check valve ASTM A494 Grade CU5MCuC Class 1500 BS 1868 BW Sch80S Trim UNS N08825 Swing-type Pressure seal cap Moderate wet H2S service	
1	4				P83R-000AD	Check valve ASTM A494 Grade CU5MCuC Class 1500 BS 1868 BW Sch120 Trim UNS N08825 Swing-type Pressure seal cap Moderate wet H2S service	
1	6				P83R-000AE	Check valve ASTM A494 Grade CU5MCuC Class 1500 BS 1868 BW Sch120 Trim UNS N08825 Swing-type Pressure seal cap Moderate wet H2S service	

BALL VALVE (Q)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	4				P84R-000GB	Ball valve Long-pattern ASTM A494 Grade CU5MCuC Class 1500 ASME B16.34 BW Sch120 Ball UNS N08825 Seat R-PTFE Trim UNS N08825 Trunnion-type Side-entry Gear operated Reduced bore Fire tested design Moderate wet H2S service	
24	4				P84R-000GC	Ball valve Long-pattern ASTM A494 Grade CU5MCuC Class 1500 ASME B16.34 BW Sch120 Ball UNS N08825 Seat R-PTFE Trim UNS N08825 Trunnion-type Side-entry Gear operated Full bore Fire tested design Moderate wet H2S service	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2				P71P-00026	Spectacle blank ASTM B564 UNS N08825 Class 1500 Standard-drawing Flange ASME B16.5 RJ Licensor-2	

PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P72P-0002H	Paddle blank ASTM B564 UNS N08825 Class 1500 Standard-drawing Flange ASME B16.5 RJ Licensor-2	
1	0.75				P72P-0002J	Paddle blank ASTM B564 UNS N08825 Class 1500 Standard-drawing Flange ASME B16.5 RJ Licensor-2	
1	1				P72P-0002K	Paddle blank ASTM B564 UNS N08825 Class 1500 Standard-drawing Flange ASME B16.5 RJ Licensor-2	
1	1.5				P72P-0002L	Paddle blank ASTM B564 UNS N08825 Class 1500 Standard-drawing Flange ASME B16.5 RJ Licensor-2	
1	2				P72P-0002R	Paddle blank ASTM B564 UNS N08825 Class 1500 Standard-drawing Flange ASME B16.5 RJ Licensor-2	
1	3				P72P-0002S	Paddle blank ASTM B564 UNS N08825 Class 1500 Standard-drawing Flange ASME B16.5 RJ Licensor-2	
1	4				P72P-0002T	Paddle blank ASTM B564 UNS N08825 Class 1500 Standard-drawing Flange ASME B16.5 RJ Licensor-2	
1	6				P72P-0002U	Paddle blank ASTM B564 UNS N08825 Class 1500 Standard-drawing Flange ASME B16.5 RJ Licensor-2	
1	8				P72P-0002V	Paddle blank ASTM B564 UNS N08825 Class 1500 Standard-drawing Flange ASME B16.5 RJ Licensor-2	
1	10				P72P-0002M	Paddle blank ASTM B564 UNS N08825 Class 1500 Standard-drawing Flange ASME B16.5 RJ Licensor-2	
1	12				P72P-0002N	Paddle blank ASTM B564 UNS N08825 Class 1500 Standard-drawing Flange ASME B16.5 RJ Licensor-2	
1	14				P72P-0002P	Paddle blank ASTM B564 UNS N08825 Class 1500 Standard-drawing Flange ASME B16.5 RJ Licensor-2	
1	16				P72P-00038	Paddle blank ASTM B564 UNS N08825 Class 1500 Standard-drawing Flange ASME B16.5 RJ Licensor-2	

PADDLE SPACER (PS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P72P-0002W	Paddle spacer ASTM B564 UNS N08825 Class 1500 Standard-drawing Flange ASME B16.5 RJ Licensor-2	
1	0.75				P72P-0002X	Paddle spacer ASTM B564 UNS N08825 Class 1500 Standard-drawing Flange ASME B16.5 RJ Licensor-2	
1	1				P72P-0002Y	Paddle spacer ASTM B564 UNS N08825 Class 1500 Standard-drawing Flange ASME B16.5 RJ Licensor-2	
1	1.5				P72P-0002Z	Paddle spacer ASTM B564 UNS N08825 Class 1500 Standard-drawing Flange ASME B16.5 RJ Licensor-2	
1	2				P72P-00033	Paddle spacer ASTM B564 UNS N08825 Class 1500 Standard-drawing Flange ASME B16.5 RJ Licensor-2	
1	3				P72P-00034	Paddle spacer ASTM B564 UNS N08825 Class 1500 Standard-drawing Flange ASME B16.5 RJ Licensor-2	
1	4				P72P-00035	Paddle spacer ASTM B564 UNS N08825 Class 1500 Standard-drawing Flange ASME B16.5 RJ Licensor-2	
1	6				P72P-00036	Paddle spacer ASTM B564 UNS N08825 Class 1500 Standard-drawing Flange ASME B16.5 RJ Licensor-2	
1	8				P72P-00037	Paddle spacer ASTM B564 UNS N08825 Class 1500 Standard-drawing Flange ASME B16.5 RJ Licensor-2	
1	10				P72P-00030	Paddle spacer ASTM B564 UNS N08825 Class 1500 Standard-drawing Flange ASME B16.5 RJ Licensor-2	
1	12				P72P-00031	Paddle spacer ASTM B564 UNS N08825 Class 1500 Standard-drawing Flange ASME B16.5 RJ Licensor-2	
1	14				P72P-00032	Paddle spacer ASTM B564 UNS N08825 Class 1500 Standard-drawing Flange ASME B16.5 RJ Licensor-2	
1	16				P72P-00039	Paddle spacer ASTM B564 UNS N08825 Class 1500 Standard-drawing Flange ASME B16.5 RJ Licensor-2	

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PIPING CLASS
N1Y602 REV NO. 2

BOLT TABLE (B_N1Y602 , STUD ASME RJ, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	110	P80S-0090F	R12	P75T-000L8
0.75	4	0.750	115	P80S-0090G	R14	P75T-000L9
1	4	0.875	130	P80S-005ZB	R16	P75T-000LA
1.5	4	1.000	140	P80S-0061A	R20	P75T-000LB
2	8	0.875	150	P80S-005ZF	R24	P75T-000LF
3	8	1.125	180	P80S-0064T	R35	P75T-000LG
4	8	1.250	230	P80S-0068H	R39	P75T-000LH
6	12	1.375	300	P80S-006J1	R46	P75T-000LJ
8	12	1.625	345	P80S-00A5K	R50	P75T-000LK
10	12	1.875	395	P80S-00AW8	R54	P75T-000LC
12	16	2.000	445	P80S-00BH5	R58	P75T-000LD
14	16	2.250	490	P80S-00DLE	R63	P75T-000LE
16	16	2.500	540	P80S-00DZM	R67	P75T-0012D

BOLT TABLE (B_N1Y602_805 , STUD ASME RJ, OPTION CODE 805)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	125	P80S-0090J	R13	P75T-000K3
0.75	4	0.750	130	P80S-0090K	R16	P75T-000K4
1	4	0.875	140	P80S-005ZD	R18	P75T-000K5
1.5	4	1.125	175	P80S-0064S	R23	P75T-000K6
2	8	1.000	180	P80S-0061J	R26	P75T-000LN
3	8	1.250	260	P80S-0068P	R32	P75T-000K7
4	8	1.500	305	P80S-006LS	R38	P75T-000LP
6	8	2.000	410	P80S-00BBD	R47	P75T-000K8
8	12	2.000	450	P80S-00BH6	R51	P75T-000LR
10	12	2.500	575	P80S-00DZV	R55	P75T-000LL
12	12	2.750	635	P80S-01RAT	R60	P75T-000LM
14	14	3.000	695		R64	
16	14	3.000	755		R68	

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BRANCH TABLE (T_N1Y602)

RUN PIPE SIZE (in) \ BRANCH SIZE (in)	0.5	0.75	1	1.5	2	3	4	6	8	10	12	14	16
0.5	TS												
0.75		TS											
1		TR	TS										
1.5		TR	TR	TS									
2		L	TR	TR	TS								
3		L	L	TR	TR	TS							
4	L	L	L	L	TR	TR	TS						
6	L	L	L	L	L	TR	TR	TS					
8		L	L	L	L	L	TR	TR	TS				
10		L	L	L	L	L	TR	TR	TR	TS			
12		L	L	L	L	L	L	TR	TR	TR	TS		
14		L	L	L	L	L	L	TR	TR	TR	TR	TS	
16		L	L	L	L	L	L	TR	TR	TR	TR	TR	TS

TS : STRAIGHT TEE
L : OUTLET
TR : REDUCING TEE

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PIPING CLASS

N1Y702 REV NO. 2

Material : Incoloy 825
Rating : ASME CLASS 1500
Flange Face : RJ
C.A.(mm) : 1.50
Gasket : Ring Octagonal
Service : PROCESS - WET SEVERE SOUR SERVICE SUBJECT TO NACE + HIC STD + HYDROGEN SERVICE
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
5	BOLTING CONFIRMING TO B7M / 2HM SHALL BE USED UNDER CONDITIONS (A) DIRECT EXPOSURE TO SOUR ENVIRONMENTS (B) WHEN THE BOLTING WILL BE BURIED OR INSULATED

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
200	WITH JACK SCREW (FO)
541	NPT(F) (F)
805	CLASS 2500 (B,F,G)
4601	Y-PATTERN (W)

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PIPING CLASS
N1Y702 REV NO. 2

PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P01M-000EN	Pipe ASTM B423 UNS N08825 Seamless ASME B36.10M/B36.19M PE Licensor-2	
1	0.75		SCH80S		P01M-000EP	Pipe ASTM B423 UNS N08825 Seamless ASME B36.10M/B36.19M PE Licensor-2	
1	1		SCH80S		P01M-000ER	Pipe ASTM B423 UNS N08825 Seamless ASME B36.10M/B36.19M PE Licensor-2	
1	1.5		SCH160		P01M-000F2	Pipe ASTM B423 UNS N08825 Seamless ASME B36.10M/B36.19M PE Licensor-2	
1	2		SCH160		P01M-000GC	Pipe ASTM B423 UNS N08825 Seamless ASME B36.10M/B36.19M BE Licensor-2	
1	3		SCH160		P01M-000GD	Pipe ASTM B423 UNS N08825 Seamless ASME B36.10M/B36.19M BE Licensor-2	
1	4		SCH120		P01M-000EV	Pipe ASTM B423 UNS N08825 Seamless ASME B36.10M/B36.19M BE Licensor-2	
1	6		SCH160		P01M-000GV	Pipe ASTM B423 UNS N08825 Seamless ASME B36.10M/B36.19M BE Licensor-2	
1	8		SCH120		P01M-000H0	Pipe ASTM B705 UNS N08825 Class 1 Weld ASME B36.10M/B36.19M BE Licensor-2	
1	10		SCH120		P01M-000GW	Pipe ASTM B705 UNS N08825 Class 1 Weld ASME B36.10M/B36.19M BE Licensor-2	
1	12		SCH120		P01M-000GX	Pipe ASTM B705 UNS N08825 Class 1 Weld ASME B36.10M/B36.19M BE Licensor-2	
1	14		SCH120		P01M-000GY	Pipe ASTM B705 UNS N08825 Class 1 Weld ASME B36.10M/B36.19M BE Licensor-2	
1	16		SCH120		P01M-000GZ	Pipe ASTM B705 UNS N08825 Class 1 Weld ASME B36.10M/B36.19M BE Licensor-2	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P02M-000D8	90 degree elbow ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Long radius Licensor-2	
1	0.75		SCH80S		P02M-000D9	90 degree elbow ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Long radius Licensor-2	
1	1		SCH80S		P02M-000DA	90 degree elbow ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Long radius Licensor-2	
1	1.5		SCH160		P02M-000DM	90 degree elbow ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Long radius Licensor-2	
1	2		SCH160		P02M-000F4	90 degree elbow ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Long radius Licensor-2	
1	3		SCH160		P02M-000F5	90 degree elbow ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Long radius Licensor-2	
1	4		SCH120		P02M-000DE	90 degree elbow ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Long radius Licensor-2	
1	6		SCH160		P02M-000FA	90 degree elbow ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Long radius Licensor-2	
1	8		SCH120		P02M-000FF	90 degree elbow ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Long radius Licensor-2	
1	10		SCH120		P02M-000FB	90 degree elbow ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Long radius Licensor-2	
1	12		SCH120		P02M-000FC	90 degree elbow ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Long radius Licensor-2	
1	14		SCH120		P02M-000FD	90 degree elbow ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Long radius Licensor-2	
1	16		SCH120		P02M-000FE	90 degree elbow ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Long radius Licensor-2	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P03M-001E4	45 degree elbow ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Long radius Licensor-2	
1	0.75		SCH80S		P03M-001E5	45 degree elbow ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Long radius Licensor-2	
1	1		SCH80S		P03M-001E6	45 degree elbow ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Long radius Licensor-2	
1	1.5		SCH160		P03M-001EH	45 degree elbow ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Long radius Licensor-2	
1	2		SCH160		P03M-001G1	45 degree elbow ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Long radius Licensor-2	
1	3		SCH160		P03M-001G2	45 degree elbow ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Long radius Licensor-2	
1	4		SCH120		P03M-001EA	45 degree elbow ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Long radius Licensor-2	
1	6		SCH160		P03M-001G7	45 degree elbow ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Long radius Licensor-2	
1	8		SCH120		P03M-001GC	45 degree elbow ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Long radius Licensor-2	
1	10		SCH120		P03M-001G8	45 degree elbow ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Long radius Licensor-2	
1	12		SCH120		P03M-001G9	45 degree elbow ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Long radius Licensor-2	
1	14		SCH120		P03M-001GA	45 degree elbow ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Long radius Licensor-2	
1	16		SCH120		P03M-001GB	45 degree elbow ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Long radius Licensor-2	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P21M-000BS	Straight tee ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	0.75		SCH80S		P21M-000BT	Straight tee ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	1		SCH80S		P21M-000BU	Straight tee ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	1.5		SCH160		P21M-000C0	Straight tee ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	2		SCH160		P21M-000DB	Straight tee ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	3		SCH160		P21M-000DC	Straight tee ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	4		SCH120		P21M-000BY	Straight tee ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	6		SCH160		P21M-000DH	Straight tee ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	8		SCH120		P21M-000DN	Straight tee ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	
1	10		SCH120		P21M-000DJ	Straight tee ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	
1	12		SCH120		P21M-000DK	Straight tee ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	

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STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14		SCH120		P21M-000DL	Straight tee ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	
1	16		SCH120		P21M-000DM	Straight tee ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75	SCH80S	SCH80S	P24M-000XC	Reducing tee ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	1.5	0.75	SCH160	SCH80S	P24M-000Y7	Reducing tee ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	1.5	1	SCH160	SCH80S	P24M-000Y8	Reducing tee ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	2	1	SCH160	SCH80S	P24M-00107	Reducing tee ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	2	1.5	SCH160	SCH160	P24M-00108	Reducing tee ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	3	1.5	SCH160	SCH160	P24M-00109	Reducing tee ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	3	2	SCH160	SCH160	P24M-0010A	Reducing tee ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	4	2	SCH120	SCH160	P24M-0010B	Reducing tee ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	4	3	SCH120	SCH160	P24M-0010C	Reducing tee ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	6	3	SCH160	SCH160	P24M-0010E	Reducing tee ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	6	4	SCH160	SCH120	P24M-0010H	Reducing tee ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	8	4	SCH120	SCH120	P24M-0010F	Reducing tee ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	
1	8	6	SCH120	SCH160	P24M-0010G	Reducing tee ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	
1	10	4	SCH120	SCH120	P24M-0010J	Reducing tee ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	
1	10	6	SCH120	SCH160	P24M-0010K	Reducing tee ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	
1	10	8	SCH120	SCH120	P24M-0010L	Reducing tee ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	
1	12	6	SCH120	SCH160	P24M-0010P	Reducing tee ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	
1	12	8	SCH120	SCH120	P24M-0010N	Reducing tee ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	
1	12	10	SCH120	SCH120	P24M-0010M	Reducing tee ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	
1	14	6	SCH120	SCH160	P24M-0010T	Reducing tee ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	
1	14	8	SCH120	SCH120	P24M-0010U	Reducing tee ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	
1	14	10	SCH120	SCH120	P24M-0010R	Reducing tee ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	
1	14	12	SCH120	SCH120	P24M-0010S	Reducing tee ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	
1	16	6	SCH120	SCH160	P24M-0010Y	Reducing tee ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	
1	16	8	SCH120	SCH120	P24M-0010Z	Reducing tee ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	
1	16	10	SCH120	SCH120	P24M-0010V	Reducing tee ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	
1	16	12	SCH120	SCH120	P24M-0010W	Reducing tee ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	
1	16	14	SCH120	SCH120	P24M-0010X	Reducing tee ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH80S	SCH80S	P27M-000VZ	Concentric reducer ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	1	0.5	SCH80S	SCH80S	P27M-000W0	Concentric reducer ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	1	0.75	SCH80S	SCH80S	P27M-000W1	Concentric reducer ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	1.5	0.5	SCH160	SCH80S	P27M-000WY	Concentric reducer ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	1.5	0.75	SCH160	SCH80S	P27M-000WZ	Concentric reducer ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	1.5	1	SCH160	SCH80S	P27M-000X0	Concentric reducer ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	2	0.75	SCH160	SCH80S	P27M-000ZY	Concentric reducer ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	2	1	SCH160	SCH80S	P27M-000ZZ	Concentric reducer ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	2	1.5	SCH160	SCH160	P27M-00100	Concentric reducer ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	3	1.5	SCH160	SCH160	P27M-00101	Concentric reducer ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	3	2	SCH160	SCH160	P27M-00102	Concentric reducer ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	4	1.5	SCH120	SCH160	P27M-00103	Concentric reducer ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	4	2	SCH120	SCH160	P27M-00104	Concentric reducer ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	4	3	SCH120	SCH160	P27M-00105	Concentric reducer ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	6	3	SCH160	SCH160	P27M-00107	Concentric reducer ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	6	4	SCH160	SCH120	P27M-0010R	Concentric reducer ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	8	4	SCH120	SCH120	P27M-00108	Concentric reducer ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	
1	8	6	SCH120	SCH160	P27M-00109	Concentric reducer ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	
1	10	4	SCH120	SCH120	P27M-0010A	Concentric reducer ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	
1	10	6	SCH120	SCH160	P27M-0010B	Concentric reducer ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	
1	10	8	SCH120	SCH120	P27M-0010C	Concentric reducer ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	
1	12	6	SCH120	SCH160	P27M-0010E	Concentric reducer ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	
1	12	8	SCH120	SCH120	P27M-0010F	Concentric reducer ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	

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CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	12	10	SCH120	SCH120	P27M-0010D	Concentric reducer ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	
1	14	6	SCH120	SCH160	P27M-0010J	Concentric reducer ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	
1	14	8	SCH120	SCH120	P27M-0010K	Concentric reducer ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	
1	14	10	SCH120	SCH120	P27M-0010G	Concentric reducer ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	
1	14	12	SCH120	SCH120	P27M-0010H	Concentric reducer ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	
1	16	8	SCH120	SCH120	P27M-0010P	Concentric reducer ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	
1	16	10	SCH120	SCH120	P27M-0010L	Concentric reducer ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	
1	16	12	SCH120	SCH120	P27M-0010M	Concentric reducer ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	
1	16	14	SCH120	SCH120	P27M-0010N	Concentric reducer ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH80S	SCH80S	P28M-000XX	Eccentric reducer ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	1	0.5	SCH80S	SCH80S	P28M-000XY	Eccentric reducer ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	1	0.75	SCH80S	SCH80S	P28M-000XZ	Eccentric reducer ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	1.5	0.5	SCH160	SCH80S	P28M-000YW	Eccentric reducer ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	1.5	0.75	SCH160	SCH80S	P28M-000YX	Eccentric reducer ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	1.5	1	SCH160	SCH80S	P28M-000YY	Eccentric reducer ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	2	0.75	SCH160	SCH80S	P28M-0011Y	Eccentric reducer ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	2	1	SCH160	SCH80S	P28M-0011Z	Eccentric reducer ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	2	1.5	SCH160	SCH160	P28M-00120	Eccentric reducer ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	3	1.5	SCH160	SCH160	P28M-00121	Eccentric reducer ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	3	2	SCH160	SCH160	P28M-00122	Eccentric reducer ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	4	1.5	SCH120	SCH160	P28M-00123	Eccentric reducer ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	4	2	SCH120	SCH160	P28M-00124	Eccentric reducer ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	4	3	SCH120	SCH160	P28M-00125	Eccentric reducer ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	6	3	SCH160	SCH160	P28M-00127	Eccentric reducer ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	6	4	SCH160	SCH120	P28M-0012R	Eccentric reducer ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	8	4	SCH120	SCH120	P28M-00128	Eccentric reducer ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	
1	8	6	SCH120	SCH160	P28M-00129	Eccentric reducer ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	
1	10	4	SCH120	SCH120	P28M-0012A	Eccentric reducer ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	
1	10	6	SCH120	SCH160	P28M-0012B	Eccentric reducer ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	
1	10	8	SCH120	SCH120	P28M-0012C	Eccentric reducer ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	
1	12	6	SCH120	SCH160	P28M-0012E	Eccentric reducer ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	
1	12	8	SCH120	SCH120	P28M-0012F	Eccentric reducer ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	
1	12	10	SCH120	SCH120	P28M-0012D	Eccentric reducer ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	
1	14	6	SCH120	SCH160	P28M-0012J	Eccentric reducer ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	
1	14	8	SCH120	SCH120	P28M-0012K	Eccentric reducer ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	
1	14	10	SCH120	SCH120	P28M-0012G	Eccentric reducer ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	
1	14	12	SCH120	SCH120	P28M-0012H	Eccentric reducer ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	
1	16	8	SCH120	SCH120	P28M-0012P	Eccentric reducer ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	
1	16	10	SCH120	SCH120	P28M-0012L	Eccentric reducer ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	
1	16	12	SCH120	SCH120	P28M-0012M	Eccentric reducer ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	
1	16	14	SCH120	SCH120	P28M-0012N	Eccentric reducer ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P29M-0009H	Cap ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	0.75		SCH80S		P29M-0009J	Cap ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	1		SCH80S		P29M-0009K	Cap ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	1.5		SCH160		P29M-0009X	Cap ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	2		SCH160		P29M-000AW	Cap ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	3		SCH160		P29M-000AX	Cap ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	4		SCH120		P29M-0009U	Cap ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	6		SCH160		P29M-000B6	Cap ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	8		SCH120		P29M-000B7	Cap ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	10		SCH120		P29M-000B2	Cap ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	12		SCH120		P29M-000B3	Cap ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	14		SCH120		P29M-000B4	Cap ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	

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CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	16		SCH120		P29M-000B5	Cap ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P41M-000A4	Straight nipple ASTM B423 UNS N08825 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Licensor-2	
1	0.75		XXS		P41M-000A5	Straight nipple ASTM B423 UNS N08825 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Licensor-2	
1	1		XXS		P41M-000A6	Straight nipple ASTM B423 UNS N08825 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Licensor-2	
1	1.5		XXS		P41M-000A7	Straight nipple ASTM B423 UNS N08825 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Licensor-2	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2	0.75	SCH160	SCH80S	P31P-0029J	Outlet ASTM B564 UNS N08825 MSS SP-97 BW Licensor-2	
1	3	0.75	SCH160	SCH80S	P31P-0029K	Outlet ASTM B564 UNS N08825 MSS SP-97 BW Licensor-2	
1	4	0.75	SCH120	SCH80S	P31P-0028N	Outlet ASTM B564 UNS N08825 MSS SP-97 BW Licensor-2	
1	6	0.75	SCH160	SCH80S	P31P-0029N	Outlet ASTM B564 UNS N08825 MSS SP-97 BW Licensor-2	
1	8	0.75	SCH120	SCH80S	P31P-0029T	Outlet ASTM B564 UNS N08825 MSS SP-97 BW Licensor-2	
1	10	0.75	SCH120	SCH80S	P31P-0029Y	Outlet ASTM B564 UNS N08825 MSS SP-97 BW Licensor-2	
1	12	0.75	SCH120	SCH80S	P31P-002A3	Outlet ASTM B564 UNS N08825 MSS SP-97 BW Licensor-2	
1	14	0.75	SCH120	SCH80S	P31P-002A9	Outlet ASTM B564 UNS N08825 MSS SP-97 BW Licensor-2	
1	16	0.75	SCH120	SCH80S	P31P-002AF	Outlet ASTM B564 UNS N08825 MSS SP-97 BW Licensor-2	
1	3	1	SCH160	SCH80S	P31P-0029L	Outlet ASTM B564 UNS N08825 MSS SP-97 BW Licensor-2	
1	4	1	SCH120	SCH80S	P31P-0028P	Outlet ASTM B564 UNS N08825 MSS SP-97 BW Licensor-2	
1	6	1	SCH160	SCH80S	P31P-0029P	Outlet ASTM B564 UNS N08825 MSS SP-97 BW Licensor-2	
1	8	1	SCH120	SCH80S	P31P-0029U	Outlet ASTM B564 UNS N08825 MSS SP-97 BW Licensor-2	
1	10	1	SCH120	SCH80S	P31P-0029Z	Outlet ASTM B564 UNS N08825 MSS SP-97 BW Licensor-2	
1	12	1	SCH120	SCH80S	P31P-002A4	Outlet ASTM B564 UNS N08825 MSS SP-97 BW Licensor-2	
1	14	1	SCH120	SCH80S	P31P-002AA	Outlet ASTM B564 UNS N08825 MSS SP-97 BW Licensor-2	
1	16	1	SCH120	SCH80S	P31P-002AG	Outlet ASTM B564 UNS N08825 MSS SP-97 BW Licensor-2	
1	4	1.5	SCH120	SCH160	P31P-0029M	Outlet ASTM B564 UNS N08825 MSS SP-97 BW Licensor-2	
1	6	1.5	SCH160	SCH160	P31P-0029R	Outlet ASTM B564 UNS N08825 MSS SP-97 BW Licensor-2	
1	8	1.5	SCH120	SCH160	P31P-0029V	Outlet ASTM B564 UNS N08825 MSS SP-97 BW Licensor-2	
1	10	1.5	SCH120	SCH160	P31P-002A0	Outlet ASTM B564 UNS N08825 MSS SP-97 BW Licensor-2	
1	12	1.5	SCH120	SCH160	P31P-002A5	Outlet ASTM B564 UNS N08825 MSS SP-97 BW Licensor-2	
1	14	1.5	SCH120	SCH160	P31P-002AB	Outlet ASTM B564 UNS N08825 MSS SP-97 BW Licensor-2	
1	16	1.5	SCH120	SCH160	P31P-002AH	Outlet ASTM B564 UNS N08825 MSS SP-97 BW Licensor-2	
1	6	2	SCH160	SCH160	P31P-0029S	Outlet ASTM B564 UNS N08825 MSS SP-97 BW Licensor-2	
1	8	2	SCH120	SCH160	P31P-0029W	Outlet ASTM B564 UNS N08825 MSS SP-97 BW Licensor-2	
1	10	2	SCH120	SCH160	P31P-002A1	Outlet ASTM B564 UNS N08825 MSS SP-97 BW Licensor-2	
1	12	2	SCH120	SCH160	P31P-002A6	Outlet ASTM B564 UNS N08825 MSS SP-97 BW Licensor-2	
1	14	2	SCH120	SCH160	P31P-002AC	Outlet ASTM B564 UNS N08825 MSS SP-97 BW Licensor-2	
1	16	2	SCH120	SCH160	P31P-002AJ	Outlet ASTM B564 UNS N08825 MSS SP-97 BW Licensor-2	
1	8	3	SCH120	SCH160	P31P-0029X	Outlet ASTM B564 UNS N08825 MSS SP-97 BW Licensor-2	
1	10	3	SCH120	SCH160	P31P-002A2	Outlet ASTM B564 UNS N08825 MSS SP-97 BW Licensor-2	
1	12	3	SCH120	SCH160	P31P-002A7	Outlet ASTM B564 UNS N08825 MSS SP-97 BW Licensor-2	
1	14	3	SCH120	SCH160	P31P-002AD	Outlet ASTM B564 UNS N08825 MSS SP-97 BW Licensor-2	
1	16	3	SCH120	SCH160	P31P-002AK	Outlet ASTM B564 UNS N08825 MSS SP-97 BW Licensor-2	
1	12	4	SCH120	SCH120	P31P-002A8	Outlet ASTM B564 UNS N08825 MSS SP-97 BW Licensor-2	
1	14	4	SCH120	SCH120	P31P-002AE	Outlet ASTM B564 UNS N08825 MSS SP-97 BW Licensor-2	
1	16	4	SCH120	SCH120	P31P-002AL	Outlet ASTM B564 UNS N08825 MSS SP-97 BW Licensor-2	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30P-0001C	Plug ASTM B564 UNS N08825 ASME B16.11 NPT Round head Licensor-2	
1	0.75				P30P-0001D	Plug ASTM B564 UNS N08825 ASME B16.11 NPT Round head Licensor-2	
1	1				P30P-0001E	Plug ASTM B564 UNS N08825 ASME B16.11 NPT Round head Licensor-2	
1	1.5				P30P-0001F	Plug ASTM B564 UNS N08825 ASME B16.11 NPT Round head Licensor-2	

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FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P61P-00134	Flange WN ASTM B564 UNS N08825 Class 1500 ASME B16.5 RJ Licensor-2	
1	0.75		SCH80S		P61P-00135	Flange WN ASTM B564 UNS N08825 Class 1500 ASME B16.5 RJ Licensor-2	
1	1		SCH80S		P61P-00136	Flange WN ASTM B564 UNS N08825 Class 1500 ASME B16.5 RJ Licensor-2	
1	1.5		SCH160		P61P-0013W	Flange WN ASTM B564 UNS N08825 Class 1500 ASME B16.5 RJ Licensor-2	
1	2		SCH160		P61P-00141	Flange WN ASTM B564 UNS N08825 Class 1500 ASME B16.5 RJ Licensor-2	
1	3		SCH160		P61P-00142	Flange WN ASTM B564 UNS N08825 Class 1500 ASME B16.5 RJ Licensor-2	
1	4		SCH120		P61P-0013D	Flange WN ASTM B564 UNS N08825 Class 1500 ASME B16.5 RJ Licensor-2	
1	6		SCH160		P61P-00143	Flange WN ASTM B564 UNS N08825 Class 1500 ASME B16.5 RJ Licensor-2	
1	8		SCH120		P61P-00144	Flange WN ASTM B564 UNS N08825 Class 1500 ASME B16.5 RJ Licensor-2	
1	10		SCH120		P61P-0013X	Flange WN ASTM B564 UNS N08825 Class 1500 ASME B16.5 RJ Licensor-2	
1	12		SCH120		P61P-0013Y	Flange WN ASTM B564 UNS N08825 Class 1500 ASME B16.5 RJ Licensor-2	
1	14		SCH120		P61P-0013Z	Flange WN ASTM B564 UNS N08825 Class 1500 ASME B16.5 RJ Licensor-2	
1	16		SCH120		P61P-00140	Flange WN ASTM B564 UNS N08825 Class 1500 ASME B16.5 RJ Licensor-2	
541	0.5				P61P-0013G	Flange NPT ASTM B564 UNS N08825 Class 1500 ASME B16.5 RJ Licensor-2	
541	0.75				P61P-0013H	Flange NPT ASTM B564 UNS N08825 Class 1500 ASME B16.5 RJ Licensor-2	
805	0.5		SCH80S		P61P-0013J	Flange WN ASTM B564 UNS N08825 Class 2500 ASME B16.5 RJ Licensor-2	
805	0.75		SCH80S		P61P-0013K	Flange WN ASTM B564 UNS N08825 Class 2500 ASME B16.5 RJ Licensor-2	
805	1		SCH80S		P61P-0013L	Flange WN ASTM B564 UNS N08825 Class 2500 ASME B16.5 RJ Licensor-2	
805	1.5		SCH160		P61P-00145	Flange WN ASTM B564 UNS N08825 Class 2500 ASME B16.5 RJ Licensor-2	
805	2		SCH160		P61P-00148	Flange WN ASTM B564 UNS N08825 Class 2500 ASME B16.5 RJ Licensor-2	
805	3		SCH160		P61P-00149	Flange WN ASTM B564 UNS N08825 Class 2500 ASME B16.5 RJ Licensor-2	
805	4		SCH120		P61P-0013T	Flange WN ASTM B564 UNS N08825 Class 2500 ASME B16.5 RJ Licensor-2	
805	6		SCH160		P61P-0014A	Flange WN ASTM B564 UNS N08825 Class 2500 ASME B16.5 RJ Licensor-2	
805	8		SCH120		P61P-0014B	Flange WN ASTM B564 UNS N08825 Class 2500 ASME B16.5 RJ Licensor-2	
805	10		SCH120		P61P-00146	Flange WN ASTM B564 UNS N08825 Class 2500 ASME B16.5 RJ Licensor-2	
805	12		SCH120		P61P-00147	Flange WN ASTM B564 UNS N08825 Class 2500 ASME B16.5 RJ Licensor-2	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67P-000BG	Blind flange ASTM B564 UNS N08825 Class 1500 ASME B16.5 RJ Licensor-2	
1	0.75				P67P-000BH	Blind flange ASTM B564 UNS N08825 Class 1500 ASME B16.5 RJ Licensor-2	
1	1				P67P-000BJ	Blind flange ASTM B564 UNS N08825 Class 1500 ASME B16.5 RJ Licensor-2	
1	1.5				P67P-000BK	Blind flange ASTM B564 UNS N08825 Class 1500 ASME B16.5 RJ Licensor-2	
1	2				P67P-000BP	Blind flange ASTM B564 UNS N08825 Class 1500 ASME B16.5 RJ Licensor-2	
1	3				P67P-000BR	Blind flange ASTM B564 UNS N08825 Class 1500 ASME B16.5 RJ Licensor-2	
1	4				P67P-000BS	Blind flange ASTM B564 UNS N08825 Class 1500 ASME B16.5 RJ Licensor-2	
1	6				P67P-000BT	Blind flange ASTM B564 UNS N08825 Class 1500 ASME B16.5 RJ Licensor-2	
1	8				P67P-000BU	Blind flange ASTM B564 UNS N08825 Class 1500 ASME B16.5 RJ Licensor-2	
1	10				P67P-000BL	Blind flange ASTM B564 UNS N08825 Class 1500 ASME B16.5 RJ Licensor-2	
1	12				P67P-000BM	Blind flange ASTM B564 UNS N08825 Class 1500 ASME B16.5 RJ Licensor-2	
1	14				P67P-000BN	Blind flange ASTM B564 UNS N08825 Class 1500 ASME B16.5 RJ Licensor-2	
1	16				P67P-000BV	Blind flange ASTM B564 UNS N08825 Class 1500 ASME B16.5 RJ Licensor-2	

REDUCING FLANGE (FR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	1.5		SCH160	P62P-00044	Reducing flange WN ASTM B564 UNS N08825 Class 1500 ASME B16.5 RJ Licensor-2	
1	3	2		SCH160	P62P-00045	Reducing flange WN ASTM B564 UNS N08825 Class 1500 ASME B16.5 RJ Licensor-2	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P75T-000L8	Ring joint gasket UNS N08825 Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	0.75				P75T-000L9	Ring joint gasket UNS N08825 Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	1				P75T-000LA	Ring joint gasket UNS N08825 Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	1.5				P75T-000LB	Ring joint gasket UNS N08825 Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	2				P75T-000LF	Ring joint gasket UNS N08825 Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	3				P75T-000LG	Ring joint gasket UNS N08825 Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	4				P75T-000LH	Ring joint gasket UNS N08825 Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	6				P75T-000LJ	Ring joint gasket UNS N08825 Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	8				P75T-000LK	Ring joint gasket UNS N08825 Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	

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GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	10				P75T-000LC	Ring joint gasket UNS N08825 Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	12				P75T-000LD	Ring joint gasket UNS N08825 Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	14				P75T-000LE	Ring joint gasket UNS N08825 Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	16				P75T-0012D	Ring joint gasket UNS N08825 Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	0.5				P75T-000K3	Ring joint gasket UNS N08825 Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	0.75				P75T-000K4	Ring joint gasket UNS N08825 Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	1				P75T-000K5	Ring joint gasket UNS N08825 Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	1.5				P75T-000K6	Ring joint gasket UNS N08825 Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	2				P75T-000LN	Ring joint gasket UNS N08825 Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	3				P75T-000K7	Ring joint gasket UNS N08825 Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	4				P75T-000LP	Ring joint gasket UNS N08825 Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	6				P75T-000K8	Ring joint gasket UNS N08825 Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	8				P75T-000LR	Ring joint gasket UNS N08825 Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	10				P75T-000LL	Ring joint gasket UNS N08825 Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	12				P75T-000LM	Ring joint gasket UNS N08825 Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-2				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	3-16				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
805	0.5-1				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
805	1.5				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
805	2				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
805	3-12				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81P-0004V	Gate valve ASTM B564 UNS N08825 Class 1500 API 602 BW Sch80S Trim UNS N08825 Body and disc seats Stellite-6 WB-BG-OS&Y Handwheel operated Severe wet H2S service Licensor-2	
1	0.75				P81P-0004W	Gate valve ASTM B564 UNS N08825 Class 1500 API 602 BW Sch80S Trim UNS N08825 Body and disc seats Stellite-6 WB-BG-OS&Y Handwheel operated Severe wet H2S service Licensor-2	
1	1				P81P-0004X	Gate valve ASTM B564 UNS N08825 Class 1500 API 602 BW Sch80S Trim UNS N08825 Body and disc seats Stellite-6 WB-BG-OS&Y Handwheel operated Severe wet H2S service Licensor-2	
1	1.5				P81P-0004Y	Gate valve ASTM B564 UNS N08825 Class 1500 API 602 BW Sch160 Trim UNS N08825 Body and disc seats Stellite-6 WB-BG-OS&Y Handwheel operated Severe wet H2S service Licensor-2	
1	2				P81R-000GG	Gate valve ASTM A494 Grade CU5MCuC Class 1500 API 600 BW Sch160 Trim UNS N08825 Body and disc seats Stellite-6 PSB-BG-OS&Y Handwheel operated Severe wet H2S service	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82P-0004L	Globe valve ASTM B564 UNS N08825 Class 1500 API 602 BW Sch80S Trim UNS N08825 Body and disc seats Stellite-6 WB-BG-OS&Y Handwheel operated Severe wet H2S service Licensor-2	
1	0.75				P82P-0004M	Globe valve ASTM B564 UNS N08825 Class 1500 API 602 BW Sch80S Trim UNS N08825 Body and disc seats Stellite-6 WB-BG-OS&Y Handwheel operated Severe wet H2S service Licensor-2	
1	1				P82P-0004N	Globe valve ASTM B564 UNS N08825 Class 1500 API 602 BW Sch80S Trim UNS N08825 Body and disc seats Stellite-6 WB-BG-OS&Y Handwheel operated Severe wet H2S service Licensor-2	
1	1.5				P82P-0004P	Globe valve ASTM B564 UNS N08825 Class 1500 API 602 BW Sch160 Trim UNS N08825 Body and disc seats Stellite-6 WB-BG-OS&Y Handwheel operated Severe wet H2S service Licensor-2	
4601	0.75				P82P-0004D	Y-pattern globe valve ASTM B564 UNS N08825 Class 1500 ASME B16.34 BW Sch80S Trim UNS N08825 Body and disc seats Stellite-6 WB-BG-OS&Y Handwheel operated Severe wet H2S service Licensor-2	
4601	1				P82P-0004E	Y-pattern globe valve ASTM B564 UNS N08825 Class 1500 ASME B16.34 BW Sch80S Trim UNS N08825 Body and disc seats Stellite-6 WB-BG-OS&Y Handwheel operated Severe wet H2S service Licensor-2	
4601	1.5				P82P-0004K	Y-pattern globe valve ASTM B564 UNS N08825 Class 1500 ASME B16.34 BW Sch160 Trim UNS N08825 Body and disc seats Stellite-6 WB-BG-OS&Y Handwheel operated Severe wet H2S service Licensor-2	
4601	2				P82R-0009Y	Y-pattern globe valve ASTM A494 Grade CU5MCuC Class 1500 ASME B16.34 BW Sch160 Trim UNS N08825 Body and disc seats Stellite-6 PSB-BG-OS&Y Handwheel operated Severe wet H2S service	
4601	3				P82R-000A1	Y-pattern globe valve ASTM A494 Grade CU5MCuC Class 1500 ASME B16.34 BW Sch160 Trim UNS N08825 Body and disc seats Stellite-6 PSB-BG-OS&Y Handwheel operated Severe wet H2S service	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83P-0004N	Check valve ASTM B564 UNS N08825 Class 1500 API 602 BW Sch80S Trim UNS N08825 Body and disc seats Stellite-6 Lift-type Welded cover Severe wet H2S service Licensor-2	
1	0.75				P83P-0004P	Check valve ASTM B564 UNS N08825 Class 1500 API 602 BW Sch80S Trim UNS N08825 Body and disc seats Stellite-6 Lift-type Welded cover Severe wet H2S service Licensor-2	
1	1				P83P-0004R	Check valve ASTM B564 UNS N08825 Class 1500 API 602 BW Sch80S Trim UNS N08825 Body and disc seats Stellite-6 Lift-type Welded cover Severe wet H2S service Licensor-2	

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CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5				P83P-0004S	Check valve ASTM B564 UNS N08825 Class 1500 API 602 BW Sch160 Trim UNS N08825 Body and disc seats Stellite-6 Lift-type Welded cover Severe wet H2S service Licensor-2	
1	2				P83R-000BV	Check valve ASTM A494 Grade CU5MCuC Class 1500 BS 1868 BW Sch160 Trim UNS N08825 Body and disc seats Stellite-6 Swing-type Pressure seal cap Severe wet H2S service	
1	3				P83R-000BW	Check valve ASTM A494 Grade CU5MCuC Class 1500 BS 1868 BW Sch160 Trim UNS N08825 Body and disc seats Stellite-6 Swing-type Pressure seal cap Severe wet H2S service	
1	4				P83R-000BX	Check valve ASTM A494 Grade CU5MCuC Class 1500 BS 1868 BW Sch120 Trim UNS N08825 Body and disc seats Stellite-6 Swing-type Pressure seal cap Severe wet H2S service	
1	6				P83R-000BY	Check valve ASTM A494 Grade CU5MCuC Class 1500 BS 1868 BW Sch160 Trim UNS N08825 Body and disc seats Stellite-6 Swing-type Pressure seal cap Severe wet H2S service	

DP CHECK VALVE (XDP)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	8				P88R-0006A	Dual plate check valve ASTM A494 Grade CU5MCuC Class 1500 API 594 Lug-type ASME B16.5 RJ Trim UNS N08825 and Stellite-6 Internal wetted parts UNS N08825 Spring Inconel Retainerless-type Severe wet H2S service	

ORIFICE FLANGE (FO)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2		SCH160		P66P-00034	Orifice flange WN ASTM B564 UNS N08825 Class 1500 ASME B16.36 RJ NPS3/4 SW tap x 1 Licensor-2	
200	2		SCH160		P66P-00035	Orifice flange WN ASTM B564 UNS N08825 Class 1500 ASME B16.36 RJ NPS3/4 SW tap x 1 with Jack screw Licensor-2	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	4				P71P-00027	Spectacle blank ASTM B564 UNS N08825 Class 1500 Standard-drawing Flange ASME B16.5 RJ Licensor-2	

PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P72P-0002H	Paddle blank ASTM B564 UNS N08825 Class 1500 Standard-drawing Flange ASME B16.5 RJ Licensor-2	
1	0.75				P72P-0002J	Paddle blank ASTM B564 UNS N08825 Class 1500 Standard-drawing Flange ASME B16.5 RJ Licensor-2	
1	1				P72P-0002K	Paddle blank ASTM B564 UNS N08825 Class 1500 Standard-drawing Flange ASME B16.5 RJ Licensor-2	
1	1.5				P72P-0002L	Paddle blank ASTM B564 UNS N08825 Class 1500 Standard-drawing Flange ASME B16.5 RJ Licensor-2	
1	2				P72P-0002R	Paddle blank ASTM B564 UNS N08825 Class 1500 Standard-drawing Flange ASME B16.5 RJ Licensor-2	
1	3				P72P-0002S	Paddle blank ASTM B564 UNS N08825 Class 1500 Standard-drawing Flange ASME B16.5 RJ Licensor-2	
1	4				P72P-0002T	Paddle blank ASTM B564 UNS N08825 Class 1500 Standard-drawing Flange ASME B16.5 RJ Licensor-2	
1	6				P72P-0002U	Paddle blank ASTM B564 UNS N08825 Class 1500 Standard-drawing Flange ASME B16.5 RJ Licensor-2	
1	8				P72P-0002V	Paddle blank ASTM B564 UNS N08825 Class 1500 Standard-drawing Flange ASME B16.5 RJ Licensor-2	
1	10				P72P-0002M	Paddle blank ASTM B564 UNS N08825 Class 1500 Standard-drawing Flange ASME B16.5 RJ Licensor-2	
1	12				P72P-0002N	Paddle blank ASTM B564 UNS N08825 Class 1500 Standard-drawing Flange ASME B16.5 RJ Licensor-2	
1	14				P72P-0002P	Paddle blank ASTM B564 UNS N08825 Class 1500 Standard-drawing Flange ASME B16.5 RJ Licensor-2	
1	16				P72P-00038	Paddle blank ASTM B564 UNS N08825 Class 1500 Standard-drawing Flange ASME B16.5 RJ Licensor-2	

PADDLE SPACER (PS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P72P-0002W	Paddle spacer ASTM B564 UNS N08825 Class 1500 Standard-drawing Flange ASME B16.5 RJ Licensor-2	
1	0.75				P72P-0002X	Paddle spacer ASTM B564 UNS N08825 Class 1500 Standard-drawing Flange ASME B16.5 RJ Licensor-2	
1	1				P72P-0002Y	Paddle spacer ASTM B564 UNS N08825 Class 1500 Standard-drawing Flange ASME B16.5 RJ Licensor-2	
1	1.5				P72P-0002Z	Paddle spacer ASTM B564 UNS N08825 Class 1500 Standard-drawing Flange ASME B16.5 RJ Licensor-2	
1	2				P72P-00033	Paddle spacer ASTM B564 UNS N08825 Class 1500 Standard-drawing Flange ASME B16.5 RJ Licensor-2	
1	3				P72P-00034	Paddle spacer ASTM B564 UNS N08825 Class 1500 Standard-drawing Flange ASME B16.5 RJ Licensor-2	
1	4				P72P-00035	Paddle spacer ASTM B564 UNS N08825 Class 1500 Standard-drawing Flange ASME B16.5 RJ Licensor-2	
1	6				P72P-00036	Paddle spacer ASTM B564 UNS N08825 Class 1500 Standard-drawing Flange ASME B16.5 RJ Licensor-2	
1	8				P72P-00037	Paddle spacer ASTM B564 UNS N08825 Class 1500 Standard-drawing Flange ASME B16.5 RJ Licensor-2	
1	10				P72P-00030	Paddle spacer ASTM B564 UNS N08825 Class 1500 Standard-drawing Flange ASME B16.5 RJ Licensor-2	
1	12				P72P-00031	Paddle spacer ASTM B564 UNS N08825 Class 1500 Standard-drawing Flange ASME B16.5 RJ Licensor-2	
1	14				P72P-00032	Paddle spacer ASTM B564 UNS N08825 Class 1500 Standard-drawing Flange ASME B16.5 RJ Licensor-2	
1	16				P72P-00039	Paddle spacer ASTM B564 UNS N08825 Class 1500 Standard-drawing Flange ASME B16.5 RJ Licensor-2	

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BOLT TABLE (B_N1Y702 , STUD ASME RJ, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	110	P80S-0090F	R12	P75T-000L8
0.75	4	0.750	115	P80S-0090G	R14	P75T-000L9
1	4	0.875	130	P80S-005ZB	R16	P75T-000LA
1.5	4	1.000	140	P80S-0061A	R20	P75T-000LB
2	8	0.875	150	P80S-005ZF	R24	P75T-000LF
3	8	1.125	180	P80S-0064T	R35	P75T-000LG
4	8	1.250	230	P80S-0068H	R39	P75T-000LH
6	12	1.375	300	P80S-006J1	R46	P75T-000LJ
8	12	1.625	345	P80S-00A5K	R50	P75T-000LK
10	12	1.875	395	P80S-00AW8	R54	P75T-000LC
12	16	2.000	445	P80S-00BH5	R58	P75T-000LD
14	16	2.250	490	P80S-00DLE	R63	P75T-000LE
16	16	2.500	540	P80S-00DZM	R67	P75T-0012D

BOLT TABLE (B_N1Y702_805 , STUD ASME RJ, OPTION CODE 805)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	125	P80S-0090J	R13	P75T-000K3
0.75	4	0.750	130	P80S-0090K	R16	P75T-000K4
1	4	0.875	140	P80S-005ZD	R18	P75T-000K5
1.5	4	1.125	175	P80S-0064S	R23	P75T-000K6
2	8	1.000	180	P80S-0061J	R26	P75T-000LN
3	8	1.250	260	P80S-0068P	R32	P75T-000K7
4	8	1.500	305	P80S-006LS	R38	P75T-000LP
6	8	2.000	410	P80S-00BBD	R47	P75T-000K8
8	12	2.000	450	P80S-00BH6	R51	P75T-000LR
10	12	2.500	575	P80S-00DZV	R55	P75T-000LL
12	12	2.750	635	P80S-01RAT	R60	P75T-000LM
14	14	3.000	695		R64	
16	14	3.000	755		R68	

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BRANCH TABLE (T_N1Y702)

RUN PIPE SIZE (in) \ BRANCH SIZE (in)	0.5	0.75	1	1.5	2	3	4	6	8	10	12	14	16
0.5	TS												
0.75		TS											
1		TR	TS										
1.5		TR	TR	TS									
2		L	TR	TR	TS								
3		L	L	TR	TR	TS							
4	L	L	L	L	TR	TR	TS						
6	L	L	L	L	L	TR	TR	TS					
8		L	L	L	L	L	TR	TR	TS				
10		L	L	L	L	L	TR	TR	TR	TS			
12		L	L	L	L	L	L	TR	TR	TR	TS		
14		L	L	L	L	L	L	TR	TR	TR	TR	TS	
16		L	L	L	L	L	L	TR	TR	TR	TR	TR	TS

L : OUTLET
TS : STRAIGHT TEE
TR : REDUCING TEE

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PIPING CLASS

N1YQ02 REV NO. 2

Material : Incoloy 825
Rating : ASME CLASS 1500
Flange Face : RJ
C.A.(mm) : 1.50
Gasket : Ring Octagonal
Service : PROCESS - WET LOW SEVERITY SOUR SERVICE- NACE
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
5	BOLTING CONFIRMING TO B7M / 2HM SHALL BE USED UNDER CONDITIONS (A) DIRECT EXPOSURE TO SOUR ENVIRONMENTS (B) WHEN THE BOLTING WILL BE BURIED OR INSULATED

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
24	FULL PORT (Q)
541	NPT(F) (F)
805	CLASS 2500 (B,F,G)
4601	Y-PATTERN (W)

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PIPING CLASS
N1YQ02 REV NO. 2

PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P01M-000EN	Pipe ASTM B423 UNS N08825 Seamless ASME B36.10M/B36.19M PE Licensor-2	
1	0.75		SCH80S		P01M-000EP	Pipe ASTM B423 UNS N08825 Seamless ASME B36.10M/B36.19M PE Licensor-2	
1	1		SCH80S		P01M-000ER	Pipe ASTM B423 UNS N08825 Seamless ASME B36.10M/B36.19M PE Licensor-2	
1	1.5		SCH80S		P01M-000ES	Pipe ASTM B423 UNS N08825 Seamless ASME B36.10M/B36.19M PE Licensor-2	
1	2		SCH80S		P01M-000ET	Pipe ASTM B423 UNS N08825 Seamless ASME B36.10M/B36.19M BE Licensor-2	
1	3		SCH80S		P01M-000EU	Pipe ASTM B423 UNS N08825 Seamless ASME B36.10M/B36.19M BE Licensor-2	
1	4		SCH80S		P01M-000F3	Pipe ASTM B423 UNS N08825 Seamless ASME B36.10M/B36.19M BE Licensor-2	
1	6		SCH120		P01M-000EW	Pipe ASTM B423 UNS N08825 Seamless ASME B36.10M/B36.19M BE Licensor-2	
1	8		SCH100		P01M-000F1	Pipe ASTM B705 UNS N08825 Class 1 Weld ASME B36.10M/B36.19M BE Licensor-2	
1	10		SCH100		P01M-000EX	Pipe ASTM B705 UNS N08825 Class 1 Weld ASME B36.10M/B36.19M BE Licensor-2	
1	12		SCH100		P01M-000EY	Pipe ASTM B705 UNS N08825 Class 1 Weld ASME B36.10M/B36.19M BE Licensor-2	
1	14		SCH100		P01M-000EZ	Pipe ASTM B705 UNS N08825 Class 1 Weld ASME B36.10M/B36.19M BE Licensor-2	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P02M-000D8	90 degree elbow ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Long radius Licensor-2	
1	0.75		SCH80S		P02M-000D9	90 degree elbow ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Long radius Licensor-2	
1	1		SCH80S		P02M-000DA	90 degree elbow ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Long radius Licensor-2	
1	1.5		SCH80S		P02M-000DB	90 degree elbow ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Long radius Licensor-2	
1	2		SCH80S		P02M-000DC	90 degree elbow ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Long radius Licensor-2	
1	3		SCH80S		P02M-000DD	90 degree elbow ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Long radius Licensor-2	
1	4		SCH80S		P02M-000DN	90 degree elbow ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Long radius Licensor-2	
1	6		SCH120		P02M-000DF	90 degree elbow ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Long radius Licensor-2	
1	8		SCH100		P02M-000DL	90 degree elbow ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Long radius Licensor-2	
1	10		SCH100		P02M-000DG	90 degree elbow ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Long radius Licensor-2	
1	12		SCH100		P02M-000DH	90 degree elbow ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Long radius Licensor-2	
1	14		SCH100		P02M-000DJ	90 degree elbow ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Long radius Licensor-2	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P03M-001E4	45 degree elbow ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Long radius Licensor-2	
1	0.75		SCH80S		P03M-001E5	45 degree elbow ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Long radius Licensor-2	
1	1		SCH80S		P03M-001E6	45 degree elbow ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Long radius Licensor-2	
1	1.5		SCH80S		P03M-001E7	45 degree elbow ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Long radius Licensor-2	
1	2		SCH80S		P03M-001E8	45 degree elbow ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Long radius Licensor-2	
1	3		SCH80S		P03M-001E9	45 degree elbow ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Long radius Licensor-2	
1	4		SCH80S		P03M-001EJ	45 degree elbow ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Long radius Licensor-2	
1	6		SCH120		P03M-001EB	45 degree elbow ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Long radius Licensor-2	
1	8		SCH100		P03M-001EG	45 degree elbow ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Long radius Licensor-2	
1	10		SCH100		P03M-001EC	45 degree elbow ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Long radius Licensor-2	
1	12		SCH100		P03M-001ED	45 degree elbow ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Long radius Licensor-2	
1	14		SCH100		P03M-001EE	45 degree elbow ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Long radius Licensor-2	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P21M-000BS	Straight tee ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	0.75		SCH80S		P21M-000BT	Straight tee ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	1		SCH80S		P21M-000BU	Straight tee ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	1.5		SCH80S		P21M-000BV	Straight tee ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	2		SCH80S		P21M-000BW	Straight tee ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	3		SCH80S		P21M-000BX	Straight tee ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	4		SCH80S		P21M-000C1	Straight tee ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	6		SCH120		P21M-000BZ	Straight tee ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	8		SCH100		P21M-000BR	Straight tee ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	
1	10		SCH100		P21M-000BL	Straight tee ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	
1	12		SCH100		P21M-000BM	Straight tee ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	
1	14		SCH100		P21M-000BN	Straight tee ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	

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REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75	SCH80S	SCH80S	P24M-000XC	Reducing tee ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	1.5	0.75	SCH80S	SCH80S	P24M-000XD	Reducing tee ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	1.5	1	SCH80S	SCH80S	P24M-000XE	Reducing tee ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	2	1	SCH80S	SCH80S	P24M-000XF	Reducing tee ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	2	1.5	SCH80S	SCH80S	P24M-000XG	Reducing tee ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	3	1.5	SCH80S	SCH80S	P24M-000XH	Reducing tee ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	3	2	SCH80S	SCH80S	P24M-000XJ	Reducing tee ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	4	2	SCH80S	SCH80S	P24M-000YB	Reducing tee ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	4	3	SCH80S	SCH80S	P24M-000YC	Reducing tee ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	6	3	SCH120	SCH80S	P24M-000XM	Reducing tee ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	6	4	SCH120	SCH80S	P24M-000YD	Reducing tee ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	8	4	SCH100	SCH80S	P24M-000YE	Reducing tee ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	
1	8	6	SCH100	SCH120	P24M-000XR	Reducing tee ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	
1	10	4	SCH100	SCH80S	P24M-000YF	Reducing tee ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	
1	10	6	SCH100	SCH120	P24M-000XT	Reducing tee ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	
1	10	8	SCH100	SCH100	P24M-000XU	Reducing tee ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	
1	12	6	SCH100	SCH120	P24M-000XW	Reducing tee ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	
1	12	8	SCH100	SCH100	P24M-000XX	Reducing tee ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	
1	12	10	SCH100	SCH100	P24M-000XV	Reducing tee ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	
1	14	6	SCH100	SCH120	P24M-000Y0	Reducing tee ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	
1	14	8	SCH100	SCH100	P24M-000Y1	Reducing tee ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	
1	14	10	SCH100	SCH100	P24M-000XY	Reducing tee ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	
1	14	12	SCH100	SCH100	P24M-000XZ	Reducing tee ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH80S	SCH80S	P27M-000VZ	Concentric reducer ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	1	0.5	SCH80S	SCH80S	P27M-000W0	Concentric reducer ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	1	0.75	SCH80S	SCH80S	P27M-000W1	Concentric reducer ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	1.5	0.5	SCH80S	SCH80S	P27M-000W2	Concentric reducer ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	1.5	0.75	SCH80S	SCH80S	P27M-000W3	Concentric reducer ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	1.5	1	SCH80S	SCH80S	P27M-000W4	Concentric reducer ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	2	0.75	SCH80S	SCH80S	P27M-000W5	Concentric reducer ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	2	1	SCH80S	SCH80S	P27M-000W6	Concentric reducer ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	2	1.5	SCH80S	SCH80S	P27M-000W7	Concentric reducer ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	3	1.5	SCH80S	SCH80S	P27M-000W8	Concentric reducer ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	3	2	SCH80S	SCH80S	P27M-000W9	Concentric reducer ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	4	1.5	SCH80S	SCH80S	P27M-000X9	Concentric reducer ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	4	2	SCH80S	SCH80S	P27M-000X4	Concentric reducer ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	4	3	SCH80S	SCH80S	P27M-000X5	Concentric reducer ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	6	3	SCH120	SCH80S	P27M-000WD	Concentric reducer ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	6	4	SCH120	SCH80S	P27M-000X6	Concentric reducer ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	8	4	SCH100	SCH80S	P27M-000X7	Concentric reducer ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	
1	8	6	SCH100	SCH120	P27M-000WG	Concentric reducer ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	
1	10	4	SCH100	SCH80S	P27M-000X8	Concentric reducer ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	
1	10	6	SCH100	SCH120	P27M-000WJ	Concentric reducer ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	
1	10	8	SCH100	SCH100	P27M-000WK	Concentric reducer ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	
1	12	6	SCH100	SCH120	P27M-000WM	Concentric reducer ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	
1	12	8	SCH100	SCH100	P27M-000WN	Concentric reducer ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	
1	12	10	SCH100	SCH100	P27M-000WL	Concentric reducer ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	
1	14	6	SCH100	SCH120	P27M-000WS	Concentric reducer ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	
1	14	8	SCH100	SCH100	P27M-000WT	Concentric reducer ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	
1	14	10	SCH100	SCH100	P27M-000WP	Concentric reducer ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	
1	14	12	SCH100	SCH100	P27M-000WR	Concentric reducer ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH80S	SCH80S	P28M-000XX	Eccentric reducer ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	1	0.5	SCH80S	SCH80S	P28M-000XY	Eccentric reducer ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	

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ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75	SCH80S	SCH80S	P28M-000XZ	Eccentric reducer ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	1.5	0.5	SCH80S	SCH80S	P28M-000Y0	Eccentric reducer ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	1.5	0.75	SCH80S	SCH80S	P28M-000Y1	Eccentric reducer ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	1.5	1	SCH80S	SCH80S	P28M-000Y2	Eccentric reducer ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	2	0.75	SCH80S	SCH80S	P28M-000Y3	Eccentric reducer ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	2	1	SCH80S	SCH80S	P28M-000Y4	Eccentric reducer ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	2	1.5	SCH80S	SCH80S	P28M-000Y5	Eccentric reducer ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	3	1.5	SCH80S	SCH80S	P28M-000Y6	Eccentric reducer ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	3	2	SCH80S	SCH80S	P28M-000Y7	Eccentric reducer ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	4	1.5	SCH80S	SCH80S	P28M-000Z7	Eccentric reducer ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	4	2	SCH80S	SCH80S	P28M-000Z2	Eccentric reducer ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	4	3	SCH80S	SCH80S	P28M-000Z3	Eccentric reducer ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	6	3	SCH120	SCH80S	P28M-000YB	Eccentric reducer ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	6	4	SCH120	SCH80S	P28M-000Z4	Eccentric reducer ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	8	4	SCH100	SCH80S	P28M-000Z5	Eccentric reducer ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	
1	8	6	SCH100	SCH120	P28M-000YE	Eccentric reducer ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	
1	10	4	SCH100	SCH80S	P28M-000Z6	Eccentric reducer ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	
1	10	6	SCH100	SCH120	P28M-000YG	Eccentric reducer ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	
1	10	8	SCH100	SCH100	P28M-000YH	Eccentric reducer ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	
1	12	6	SCH100	SCH120	P28M-000YK	Eccentric reducer ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	
1	12	8	SCH100	SCH100	P28M-000YL	Eccentric reducer ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	
1	12	10	SCH100	SCH100	P28M-000YJ	Eccentric reducer ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	
1	14	6	SCH100	SCH120	P28M-000YP	Eccentric reducer ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	
1	14	8	SCH100	SCH100	P28M-000YR	Eccentric reducer ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	
1	14	10	SCH100	SCH100	P28M-000YM	Eccentric reducer ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	
1	14	12	SCH100	SCH100	P28M-000YN	Eccentric reducer ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P29M-0009H	Cap ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	0.75		SCH80S		P29M-0009J	Cap ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	1		SCH80S		P29M-0009K	Cap ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	1.5		SCH80S		P29M-0009L	Cap ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	2		SCH80S		P29M-0009S	Cap ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	3		SCH80S		P29M-0009T	Cap ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	4		SCH80S		P29M-0009Y	Cap ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	6		SCH120		P29M-0009V	Cap ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	8		SCH100		P29M-0009W	Cap ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	10		SCH100		P29M-0009M	Cap ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	12		SCH100		P29M-0009N	Cap ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	14		SCH100		P29M-0009P	Cap ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P41M-0009Z	Straight nipple ASTM B423 UNS N08825 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Licensor-2	
1	0.75		SCH160		P41M-000A0	Straight nipple ASTM B423 UNS N08825 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Licensor-2	
1	1		SCH160		P41M-000A1	Straight nipple ASTM B423 UNS N08825 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Licensor-2	
1	1.5		SCH160		P41M-000A2	Straight nipple ASTM B423 UNS N08825 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Licensor-2	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2	0.75	SCH80S	SCH80S	P31P-0028K	Outlet ASTM B564 UNS N08825 MSS SP-97 BW Licensor-2	
1	3	0.75	SCH80S	SCH80S	P31P-0028L	Outlet ASTM B564 UNS N08825 MSS SP-97 BW Licensor-2	
1	4	0.75	SCH80S	SCH80S	P31P-002AM	Outlet ASTM B564 UNS N08825 MSS SP-97 BW Licensor-2	
1	6	0.75	SCH120	SCH80S	P31P-0028S	Outlet ASTM B564 UNS N08825 MSS SP-97 BW Licensor-2	
1	8	0.75	SCH100	SCH80S	P31P-0028W	Outlet ASTM B564 UNS N08825 MSS SP-97 BW Licensor-2	
1	10	0.75	SCH100	SCH80S	P31P-00291	Outlet ASTM B564 UNS N08825 MSS SP-97 BW Licensor-2	

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OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	12	0.75	SCH100	SCH80S	P31P-00296	Outlet ASTM B564 UNS N08825 MSS SP-97 BW Licensor-2	
1	14	0.75	SCH100	SCH80S	P31P-0029C	Outlet ASTM B564 UNS N08825 MSS SP-97 BW Licensor-2	
1	3	1	SCH80S	SCH80S	P31P-0028M	Outlet ASTM B564 UNS N08825 MSS SP-97 BW Licensor-2	
1	4	1	SCH80S	SCH80S	P31P-002AN	Outlet ASTM B564 UNS N08825 MSS SP-97 BW Licensor-2	
1	6	1	SCH120	SCH80S	P31P-0028T	Outlet ASTM B564 UNS N08825 MSS SP-97 BW Licensor-2	
1	8	1	SCH100	SCH80S	P31P-0028X	Outlet ASTM B564 UNS N08825 MSS SP-97 BW Licensor-2	
1	10	1	SCH100	SCH80S	P31P-00292	Outlet ASTM B564 UNS N08825 MSS SP-97 BW Licensor-2	
1	12	1	SCH100	SCH80S	P31P-00297	Outlet ASTM B564 UNS N08825 MSS SP-97 BW Licensor-2	
1	14	1	SCH100	SCH80S	P31P-0029D	Outlet ASTM B564 UNS N08825 MSS SP-97 BW Licensor-2	
1	4	1.5	SCH80S	SCH80S	P31P-002AP	Outlet ASTM B564 UNS N08825 MSS SP-97 BW Licensor-2	
1	6	1.5	SCH120	SCH80S	P31P-0028U	Outlet ASTM B564 UNS N08825 MSS SP-97 BW Licensor-2	
1	8	1.5	SCH100	SCH80S	P31P-0028Y	Outlet ASTM B564 UNS N08825 MSS SP-97 BW Licensor-2	
1	10	1.5	SCH100	SCH80S	P31P-00293	Outlet ASTM B564 UNS N08825 MSS SP-97 BW Licensor-2	
1	12	1.5	SCH100	SCH80S	P31P-00298	Outlet ASTM B564 UNS N08825 MSS SP-97 BW Licensor-2	
1	14	1.5	SCH100	SCH80S	P31P-0029E	Outlet ASTM B564 UNS N08825 MSS SP-97 BW Licensor-2	
1	6	2	SCH120	SCH80S	P31P-0028V	Outlet ASTM B564 UNS N08825 MSS SP-97 BW Licensor-2	
1	8	2	SCH100	SCH80S	P31P-0028Z	Outlet ASTM B564 UNS N08825 MSS SP-97 BW Licensor-2	
1	10	2	SCH100	SCH80S	P31P-00294	Outlet ASTM B564 UNS N08825 MSS SP-97 BW Licensor-2	
1	12	2	SCH100	SCH80S	P31P-00299	Outlet ASTM B564 UNS N08825 MSS SP-97 BW Licensor-2	
1	14	2	SCH100	SCH80S	P31P-0029F	Outlet ASTM B564 UNS N08825 MSS SP-97 BW Licensor-2	
1	8	3	SCH100	SCH80S	P31P-00290	Outlet ASTM B564 UNS N08825 MSS SP-97 BW Licensor-2	
1	10	3	SCH100	SCH80S	P31P-00295	Outlet ASTM B564 UNS N08825 MSS SP-97 BW Licensor-2	
1	12	3	SCH100	SCH80S	P31P-0029A	Outlet ASTM B564 UNS N08825 MSS SP-97 BW Licensor-2	
1	14	3	SCH100	SCH80S	P31P-0029G	Outlet ASTM B564 UNS N08825 MSS SP-97 BW Licensor-2	
1	12	4	SCH100	SCH80S	P31P-002AR	Outlet ASTM B564 UNS N08825 MSS SP-97 BW Licensor-2	
1	14	4	SCH100	SCH80S	P31P-002AS	Outlet ASTM B564 UNS N08825 MSS SP-97 BW Licensor-2	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30P-0001C	Plug ASTM B564 UNS N08825 ASME B16.11 NPT Round head Licensor-2	
1	0.75				P30P-0001D	Plug ASTM B564 UNS N08825 ASME B16.11 NPT Round head Licensor-2	
1	1				P30P-0001E	Plug ASTM B564 UNS N08825 ASME B16.11 NPT Round head Licensor-2	
1	1.5				P30P-0001F	Plug ASTM B564 UNS N08825 ASME B16.11 NPT Round head Licensor-2	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P61P-00134	Flange WN ASTM B564 UNS N08825 Class 1500 ASME B16.5 RJ Licensor-2	
1	0.75		SCH80S		P61P-00135	Flange WN ASTM B564 UNS N08825 Class 1500 ASME B16.5 RJ Licensor-2	
1	1		SCH80S		P61P-00136	Flange WN ASTM B564 UNS N08825 Class 1500 ASME B16.5 RJ Licensor-2	
1	1.5		SCH80S		P61P-00137	Flange WN ASTM B564 UNS N08825 Class 1500 ASME B16.5 RJ Licensor-2	
1	2		SCH80S		P61P-0013B	Flange WN ASTM B564 UNS N08825 Class 1500 ASME B16.5 RJ Licensor-2	
1	3		SCH80S		P61P-0013C	Flange WN ASTM B564 UNS N08825 Class 1500 ASME B16.5 RJ Licensor-2	
1	4		SCH80S		P61P-0014C	Flange WN ASTM B564 UNS N08825 Class 1500 ASME B16.5 RJ Licensor-2	
1	6		SCH120		P61P-0013E	Flange WN ASTM B564 UNS N08825 Class 1500 ASME B16.5 RJ Licensor-2	
1	8		SCH100		P61P-0013F	Flange WN ASTM B564 UNS N08825 Class 1500 ASME B16.5 RJ Licensor-2	
1	10		SCH100		P61P-00138	Flange WN ASTM B564 UNS N08825 Class 1500 ASME B16.5 RJ Licensor-2	
1	12		SCH100		P61P-00139	Flange WN ASTM B564 UNS N08825 Class 1500 ASME B16.5 RJ Licensor-2	
1	14		SCH100		P61P-0013A	Flange WN ASTM B564 UNS N08825 Class 1500 ASME B16.5 RJ Licensor-2	
541	0.5				P61P-0013G	Flange NPT ASTM B564 UNS N08825 Class 1500 ASME B16.5 RJ Licensor-2	
541	0.75				P61P-0013H	Flange NPT ASTM B564 UNS N08825 Class 1500 ASME B16.5 RJ Licensor-2	
805	0.5		SCH80S		P61P-0013J	Flange WN ASTM B564 UNS N08825 Class 2500 ASME B16.5 RJ Licensor-2	
805	0.75		SCH80S		P61P-0013K	Flange WN ASTM B564 UNS N08825 Class 2500 ASME B16.5 RJ Licensor-2	
805	1		SCH80S		P61P-0013L	Flange WN ASTM B564 UNS N08825 Class 2500 ASME B16.5 RJ Licensor-2	
805	1.5		SCH80S		P61P-0013M	Flange WN ASTM B564 UNS N08825 Class 2500 ASME B16.5 RJ Licensor-2	
805	2		SCH80S		P61P-0013R	Flange WN ASTM B564 UNS N08825 Class 2500 ASME B16.5 RJ Licensor-2	
805	3		SCH80S		P61P-0013S	Flange WN ASTM B564 UNS N08825 Class 2500 ASME B16.5 RJ Licensor-2	
805	4		SCH80S		P61P-0014D	Flange WN ASTM B564 UNS N08825 Class 2500 ASME B16.5 RJ Licensor-2	
805	6		SCH120		P61P-0013U	Flange WN ASTM B564 UNS N08825 Class 2500 ASME B16.5 RJ Licensor-2	
805	8		SCH100		P61P-0013V	Flange WN ASTM B564 UNS N08825 Class 2500 ASME B16.5 RJ Licensor-2	

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FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
805	10		SCH100		P61P-0013N	Flange WN ASTM B564 UNS N08825 Class 2500 ASME B16.5 RJ Licensor-2	
805	12		SCH100		P61P-0013P	Flange WN ASTM B564 UNS N08825 Class 2500 ASME B16.5 RJ Licensor-2	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67P-000BG	Blind flange ASTM B564 UNS N08825 Class 1500 ASME B16.5 RJ Licensor-2	
1	0.75				P67P-000BH	Blind flange ASTM B564 UNS N08825 Class 1500 ASME B16.5 RJ Licensor-2	
1	1				P67P-000BJ	Blind flange ASTM B564 UNS N08825 Class 1500 ASME B16.5 RJ Licensor-2	
1	1.5				P67P-000BK	Blind flange ASTM B564 UNS N08825 Class 1500 ASME B16.5 RJ Licensor-2	
1	2				P67P-000BP	Blind flange ASTM B564 UNS N08825 Class 1500 ASME B16.5 RJ Licensor-2	
1	3				P67P-000BR	Blind flange ASTM B564 UNS N08825 Class 1500 ASME B16.5 RJ Licensor-2	
1	4				P67P-000BS	Blind flange ASTM B564 UNS N08825 Class 1500 ASME B16.5 RJ Licensor-2	
1	6				P67P-000BT	Blind flange ASTM B564 UNS N08825 Class 1500 ASME B16.5 RJ Licensor-2	
1	8				P67P-000BU	Blind flange ASTM B564 UNS N08825 Class 1500 ASME B16.5 RJ Licensor-2	
1	10				P67P-000BL	Blind flange ASTM B564 UNS N08825 Class 1500 ASME B16.5 RJ Licensor-2	
1	12				P67P-000BM	Blind flange ASTM B564 UNS N08825 Class 1500 ASME B16.5 RJ Licensor-2	
1	14				P67P-000BN	Blind flange ASTM B564 UNS N08825 Class 1500 ASME B16.5 RJ Licensor-2	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P75T-000L8	Ring joint gasket UNS N08825 Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	0.75				P75T-000L9	Ring joint gasket UNS N08825 Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	1				P75T-000LA	Ring joint gasket UNS N08825 Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	1.5				P75T-000LB	Ring joint gasket UNS N08825 Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	2				P75T-000LF	Ring joint gasket UNS N08825 Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	3				P75T-000LG	Ring joint gasket UNS N08825 Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	4				P75T-000LH	Ring joint gasket UNS N08825 Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	6				P75T-000LJ	Ring joint gasket UNS N08825 Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	8				P75T-000LK	Ring joint gasket UNS N08825 Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	10				P75T-000LC	Ring joint gasket UNS N08825 Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	12				P75T-000LD	Ring joint gasket UNS N08825 Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	14				P75T-000LE	Ring joint gasket UNS N08825 Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	0.5				P75T-000K3	Ring joint gasket UNS N08825 Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	0.75				P75T-000K4	Ring joint gasket UNS N08825 Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	1				P75T-000K5	Ring joint gasket UNS N08825 Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	1.5				P75T-000K6	Ring joint gasket UNS N08825 Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	2				P75T-000LN	Ring joint gasket UNS N08825 Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	3				P75T-000K7	Ring joint gasket UNS N08825 Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	4				P75T-000LP	Ring joint gasket UNS N08825 Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	6				P75T-000K8	Ring joint gasket UNS N08825 Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	8				P75T-000LR	Ring joint gasket UNS N08825 Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	10				P75T-000LL	Ring joint gasket UNS N08825 Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	12				P75T-000LM	Ring joint gasket UNS N08825 Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-2				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	3-14				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
805	0.5-1				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
805	1.5				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
805	2				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
805	3-12				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81P-0004B	Gate valve ASTM B564 UNS N08825 Class 1500 API 602 BW Sch80S Trim UNS N08825 WB-BG-OS&Y Handwheel operated Moderate wet H2S service Licensor-2	

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GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75				P81P-0004C	Gate valve ASTM B564 UNS N08825 Class 1500 API 602 BW Sch80S Trim UNS N08825 WB-BG-OS&Y Handwheel operated Moderate wet H2S service Licensor-2	
1	1				P81P-0004D	Gate valve ASTM B564 UNS N08825 Class 1500 API 602 BW Sch80S Trim UNS N08825 WB-BG-OS&Y Handwheel operated Moderate wet H2S service Licensor-2	
1	1.5				P81P-0004E	Gate valve ASTM B564 UNS N08825 Class 1500 API 602 BW Sch80S Trim UNS N08825 WB-BG-OS&Y Handwheel operated Moderate wet H2S service Licensor-2	
1	2				P81R-000EC	Gate valve ASTM A494 Grade CU5MCuC Class 1500 API 600 BW Sch80S Trim UNS N08825 PSB-BG-OS&Y Handwheel operated Moderate wet H2S service	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82P-00043	Globe valve ASTM B564 UNS N08825 Class 1500 API 602 BW Sch80S Trim UNS N08825 WB-BG-OS&Y Handwheel operated Moderate wet H2S service Licensor-2	
1	0.75				P82P-00044	Globe valve ASTM B564 UNS N08825 Class 1500 API 602 BW Sch80S Trim UNS N08825 WB-BG-OS&Y Handwheel operated Moderate wet H2S service Licensor-2	
1	1				P82P-00045	Globe valve ASTM B564 UNS N08825 Class 1500 API 602 BW Sch80S Trim UNS N08825 WB-BG-OS&Y Handwheel operated Moderate wet H2S service Licensor-2	
1	1.5				P82P-00046	Globe valve ASTM B564 UNS N08825 Class 1500 API 602 BW Sch80S Trim UNS N08825 WB-BG-OS&Y Handwheel operated Moderate wet H2S service Licensor-2	
1	2				P82R-00091	Globe valve ASTM A494 Grade CU5MCuC Class 1500 BS 1873 BW Sch80S Trim UNS N08825 PSB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	3				P82R-000A3	Globe valve ASTM A494 Grade CU5MCuC Class 1500 BS 1873 BW Sch80S Trim UNS N08825 PSB-BG-OS&Y Gear operated Moderate wet H2S service	
1	4				P82R-0008V	Globe valve ASTM A494 Grade CU5MCuC Class 1500 BS 1873 BW Sch80S Trim UNS N08825 PSB-BG-OS&Y Gear operated Moderate wet H2S service	
1	6				P82R-0008W	Globe valve ASTM A494 Grade CU5MCuC Class 1500 BS 1873 BW Sch120 Trim UNS N08825 PSB-BG-OS&Y Gear operated Moderate wet H2S service	
4601	0.75				P82P-0004B	Y-pattern globe valve ASTM B564 UNS N08825 Class 1500 ASME B16.34 BW Sch80S Trim UNS N08825 WB-BG-OS&Y Handwheel operated Moderate wet H2S service Licensor-2	
4601	1				P82P-0004C	Y-pattern globe valve ASTM B564 UNS N08825 Class 1500 ASME B16.34 BW Sch80S Trim UNS N08825 WB-BG-OS&Y Handwheel operated Moderate wet H2S service Licensor-2	
4601	2				P82R-0008Z	Y-pattern globe valve ASTM A494 Grade CU5MCuC Class 1500 ASME B16.34 BW Sch80S Trim UNS N08825 PSB-BG-OS&Y Handwheel operated Moderate wet H2S service	
4601	3				P82R-00090	Y-pattern globe valve ASTM A494 Grade CU5MCuC Class 1500 ASME B16.34 BW Sch80S Trim UNS N08825 PSB-BG-OS&Y Handwheel operated Moderate wet H2S service	

BALL VALVE (Q)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3				P84R-000FX	Ball valve Long-pattern ASTM A494 Grade CU5MCuC Class 1500 ASME B16.34 BW Sch80S Ball UNS N08825 Seat R-PTFE Trim UNS N08825 Trunnion-type Side-entry Gear operated Reduced bore Fire tested design Moderate wet H2S service	
24	3				P84R-000FY	Ball valve Long-pattern ASTM A494 Grade CU5MCuC Class 1500 ASME B16.34 BW Sch80S Ball UNS N08825 Seat R-PTFE Trim UNS N08825 Trunnion-type Side-entry Gear operated Full bore Fire tested design Moderate wet H2S service	

PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P72P-0002H	Paddle blank ASTM B564 UNS N08825 Class 1500 Standard-drawing Flange ASME B16.5 RJ Licensor-2	
1	0.75				P72P-0002J	Paddle blank ASTM B564 UNS N08825 Class 1500 Standard-drawing Flange ASME B16.5 RJ Licensor-2	
1	1				P72P-0002K	Paddle blank ASTM B564 UNS N08825 Class 1500 Standard-drawing Flange ASME B16.5 RJ Licensor-2	
1	1.5				P72P-0002L	Paddle blank ASTM B564 UNS N08825 Class 1500 Standard-drawing Flange ASME B16.5 RJ Licensor-2	
1	2				P72P-0002R	Paddle blank ASTM B564 UNS N08825 Class 1500 Standard-drawing Flange ASME B16.5 RJ Licensor-2	
1	3				P72P-0002S	Paddle blank ASTM B564 UNS N08825 Class 1500 Standard-drawing Flange ASME B16.5 RJ Licensor-2	
1	4				P72P-0002T	Paddle blank ASTM B564 UNS N08825 Class 1500 Standard-drawing Flange ASME B16.5 RJ Licensor-2	
1	6				P72P-0002U	Paddle blank ASTM B564 UNS N08825 Class 1500 Standard-drawing Flange ASME B16.5 RJ Licensor-2	
1	8				P72P-0002V	Paddle blank ASTM B564 UNS N08825 Class 1500 Standard-drawing Flange ASME B16.5 RJ Licensor-2	
1	10				P72P-0002M	Paddle blank ASTM B564 UNS N08825 Class 1500 Standard-drawing Flange ASME B16.5 RJ Licensor-2	
1	12				P72P-0002N	Paddle blank ASTM B564 UNS N08825 Class 1500 Standard-drawing Flange ASME B16.5 RJ Licensor-2	
1	14				P72P-0002P	Paddle blank ASTM B564 UNS N08825 Class 1500 Standard-drawing Flange ASME B16.5 RJ Licensor-2	

PADDLE SPACER (PS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P72P-0002W	Paddle spacer ASTM B564 UNS N08825 Class 1500 Standard-drawing Flange ASME B16.5 RJ Licensor-2	
1	0.75				P72P-0002X	Paddle spacer ASTM B564 UNS N08825 Class 1500 Standard-drawing Flange ASME B16.5 RJ Licensor-2	
1	1				P72P-0002Y	Paddle spacer ASTM B564 UNS N08825 Class 1500 Standard-drawing Flange ASME B16.5 RJ Licensor-2	
1	1.5				P72P-0002Z	Paddle spacer ASTM B564 UNS N08825 Class 1500 Standard-drawing Flange ASME B16.5 RJ Licensor-2	
1	2				P72P-00033	Paddle spacer ASTM B564 UNS N08825 Class 1500 Standard-drawing Flange ASME B16.5 RJ Licensor-2	
1	3				P72P-00034	Paddle spacer ASTM B564 UNS N08825 Class 1500 Standard-drawing Flange ASME B16.5 RJ Licensor-2	
1	4				P72P-00035	Paddle spacer ASTM B564 UNS N08825 Class 1500 Standard-drawing Flange ASME B16.5 RJ Licensor-2	
1	6				P72P-00036	Paddle spacer ASTM B564 UNS N08825 Class 1500 Standard-drawing Flange ASME B16.5 RJ Licensor-2	
1	8				P72P-00037	Paddle spacer ASTM B564 UNS N08825 Class 1500 Standard-drawing Flange ASME B16.5 RJ Licensor-2	

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PADDLE SPACER (PS)							
OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	10				P72P-00030	Paddle spacer ASTM B564 UNS N08825 Class 1500 Standard-drawing Flange ASME B16.5 RJ Licensor-2	
1	12				P72P-00031	Paddle spacer ASTM B564 UNS N08825 Class 1500 Standard-drawing Flange ASME B16.5 RJ Licensor-2	
1	14				P72P-00032	Paddle spacer ASTM B564 UNS N08825 Class 1500 Standard-drawing Flange ASME B16.5 RJ Licensor-2	

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BOLT TABLE (B_N1YQ02 , STUD ASME RJ, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	110	P80S-0090F	R12	P75T-000L8
0.75	4	0.750	115	P80S-0090G	R14	P75T-000L9
1	4	0.875	130	P80S-005ZB	R16	P75T-000LA
1.5	4	1.000	140	P80S-0061A	R20	P75T-000LB
2	8	0.875	150	P80S-005ZF	R24	P75T-000LF
3	8	1.125	180	P80S-0064T	R35	P75T-000LG
4	8	1.250	230	P80S-0068H	R39	P75T-000LH
6	12	1.375	300	P80S-006J1	R46	P75T-000LJ
8	12	1.625	345	P80S-00A5K	R50	P75T-000LK
10	12	1.875	395	P80S-00AW8	R54	P75T-000LC
12	16	2.000	445	P80S-00BH5	R58	P75T-000LD
14	16	2.250	490	P80S-00DLE	R63	P75T-000LE

BOLT TABLE (B_N1YQ02_805 , STUD ASME RJ, OPTION CODE 805)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	125	P80S-0090J	R13	P75T-000K3
0.75	4	0.750	130	P80S-0090K	R16	P75T-000K4
1	4	0.875	140	P80S-005ZD	R18	P75T-000K5
1.5	4	1.125	175	P80S-0064S	R23	P75T-000K6
2	8	1.000	180	P80S-0061J	R26	P75T-000LN
3	8	1.250	260	P80S-0068P	R32	P75T-000K7
4	8	1.500	305	P80S-006LS	R38	P75T-000LP
6	8	2.000	410	P80S-00BBD	R47	P75T-000K8
8	12	2.000	450	P80S-00BH6	R51	P75T-000LR
10	12	2.500	575	P80S-00DZV	R55	P75T-000LL
12	12	2.750	635	P80S-01RAT	R60	P75T-000LM
14	14	3.000	695		R64	

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BRANCH TABLE (T_N1YQ02)

RUN PIPE SIZE (in) \ BRANCH SIZE (in)	0.5	0.75	1	1.5	2	3	4	6	8	10	12	14
0.5	TS											
0.75		TS										
1		TR	TS									
1.5		TR	TR	TS								
2		L	TR	TR	TS							
3		L	L	TR	TR	TS						
4	L	L	L	L	TR	TR	TS					
6	L	L	L	L	L	TR	TR	TS				
8		L	L	L	L	L	TR	TR	TS			
10		L	L	L	L	L	TR	TR	TR	TS		
12		L	L	L	L	L	L	TR	TR	TR	TS	
14		L	L	L	L	L	L	TR	TR	TR	TR	TS

TR : REDUCING TEE
TS : STRAIGHT TEE
L : OUTLET

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Material : Incoloy 825
Rating : ASME CLASS 1500
Flange Face : RJ
C.A.(mm) : 1.50
Gasket : Ring Octagonal
Service : PROCESS - WET SEVERE SOUR SERVICE SUBJECT TO NACE + HIC STD.
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
5	BOLTING CONFIRMING TO B7M / 2HM SHALL BE USED UNDER CONDITIONS (A) DIRECT EXPOSURE TO SOUR ENVIRONMENTS (B) WHEN THE BOLTING WILL BE BURIED OR INSULATED

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
200	WITH JACK SCREW (FO)
541	NPT(F) (F)
805	CLASS 2500 (B,F,G)
4601	Y-PATTERN (W)

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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P01M-000EN	Pipe ASTM B423 UNS N08825 Seamless ASME B36.10M/B36.19M PE Licensor-2	
1	0.75		SCH80S		P01M-000EP	Pipe ASTM B423 UNS N08825 Seamless ASME B36.10M/B36.19M PE Licensor-2	
1	1		SCH80S		P01M-000ER	Pipe ASTM B423 UNS N08825 Seamless ASME B36.10M/B36.19M PE Licensor-2	
1	1.5		SCH160		P01M-000F2	Pipe ASTM B423 UNS N08825 Seamless ASME B36.10M/B36.19M PE Licensor-2	
1	2		SCH80S		P01M-000ET	Pipe ASTM B423 UNS N08825 Seamless ASME B36.10M/B36.19M BE Licensor-2	
1	3		SCH80S		P01M-000EU	Pipe ASTM B423 UNS N08825 Seamless ASME B36.10M/B36.19M BE Licensor-2	
1	4		SCH120		P01M-000EV	Pipe ASTM B423 UNS N08825 Seamless ASME B36.10M/B36.19M BE Licensor-2	
1	6		SCH120		P01M-000EW	Pipe ASTM B423 UNS N08825 Seamless ASME B36.10M/B36.19M BE Licensor-2	
1	8		SCH100		P01M-000F1	Pipe ASTM B705 UNS N08825 Class 1 Weld ASME B36.10M/B36.19M BE Licensor-2	
1	10		SCH100		P01M-000EX	Pipe ASTM B705 UNS N08825 Class 1 Weld ASME B36.10M/B36.19M BE Licensor-2	
1	12		SCH100		P01M-000EY	Pipe ASTM B705 UNS N08825 Class 1 Weld ASME B36.10M/B36.19M BE Licensor-2	
1	14		SCH100		P01M-000EZ	Pipe ASTM B705 UNS N08825 Class 1 Weld ASME B36.10M/B36.19M BE Licensor-2	
1	16		SCH100		P01M-000F0	Pipe ASTM B705 UNS N08825 Class 1 Weld ASME B36.10M/B36.19M BE Licensor-2	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P02M-000D8	90 degree elbow ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Long radius Licensor-2	
1	0.75		SCH80S		P02M-000D9	90 degree elbow ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Long radius Licensor-2	
1	1		SCH80S		P02M-000DA	90 degree elbow ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Long radius Licensor-2	
1	1.5		SCH160		P02M-000DM	90 degree elbow ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Long radius Licensor-2	
1	2		SCH80S		P02M-000DC	90 degree elbow ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Long radius Licensor-2	
1	3		SCH80S		P02M-000DD	90 degree elbow ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Long radius Licensor-2	
1	4		SCH120		P02M-000DE	90 degree elbow ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Long radius Licensor-2	
1	6		SCH120		P02M-000DF	90 degree elbow ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Long radius Licensor-2	
1	8		SCH100		P02M-000DL	90 degree elbow ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Long radius Licensor-2	
1	10		SCH100		P02M-000DG	90 degree elbow ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Long radius Licensor-2	
1	12		SCH100		P02M-000DH	90 degree elbow ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Long radius Licensor-2	
1	14		SCH100		P02M-000DJ	90 degree elbow ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Long radius Licensor-2	
1	16		SCH100		P02M-000DK	90 degree elbow ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Long radius Licensor-2	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P03M-001E4	45 degree elbow ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Long radius Licensor-2	
1	0.75		SCH80S		P03M-001E5	45 degree elbow ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Long radius Licensor-2	
1	1		SCH80S		P03M-001E6	45 degree elbow ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Long radius Licensor-2	
1	1.5		SCH160		P03M-001EH	45 degree elbow ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Long radius Licensor-2	
1	2		SCH80S		P03M-001E8	45 degree elbow ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Long radius Licensor-2	
1	3		SCH80S		P03M-001E9	45 degree elbow ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Long radius Licensor-2	
1	4		SCH120		P03M-001EA	45 degree elbow ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Long radius Licensor-2	
1	6		SCH120		P03M-001EB	45 degree elbow ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Long radius Licensor-2	
1	8		SCH100		P03M-001EG	45 degree elbow ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Long radius Licensor-2	
1	10		SCH100		P03M-001EC	45 degree elbow ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Long radius Licensor-2	
1	12		SCH100		P03M-001ED	45 degree elbow ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Long radius Licensor-2	
1	14		SCH100		P03M-001EE	45 degree elbow ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Long radius Licensor-2	
1	16		SCH100		P03M-001EF	45 degree elbow ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Long radius Licensor-2	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P21M-000BS	Straight tee ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	0.75		SCH80S		P21M-000BT	Straight tee ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	1		SCH80S		P21M-000BU	Straight tee ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	1.5		SCH160		P21M-000C0	Straight tee ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	2		SCH80S		P21M-000BW	Straight tee ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	3		SCH80S		P21M-000BX	Straight tee ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	4		SCH120		P21M-000BY	Straight tee ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	6		SCH120		P21M-000BZ	Straight tee ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	8		SCH100		P21M-000BR	Straight tee ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	
1	10		SCH100		P21M-000BL	Straight tee ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	
1	12		SCH100		P21M-000BM	Straight tee ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	

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STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14		SCH100		P21M-000BN	Straight tee ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	
1	16		SCH100		P21M-000BP	Straight tee ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75	SCH80S	SCH80S	P24M-000XC	Reducing tee ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	1.5	0.75	SCH160	SCH80S	P24M-000Y7	Reducing tee ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	1.5	1	SCH160	SCH80S	P24M-000Y8	Reducing tee ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	2	1	SCH80S	SCH80S	P24M-000XF	Reducing tee ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	2	1.5	SCH80S	SCH160	P24M-000Y9	Reducing tee ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	3	1.5	SCH80S	SCH160	P24M-000YA	Reducing tee ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	3	2	SCH80S	SCH80S	P24M-000XJ	Reducing tee ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	4	2	SCH120	SCH80S	P24M-000XK	Reducing tee ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	4	3	SCH120	SCH80S	P24M-000XL	Reducing tee ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	6	3	SCH120	SCH80S	P24M-000XM	Reducing tee ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	6	4	SCH120	SCH120	P24M-000XN	Reducing tee ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	8	4	SCH100	SCH120	P24M-000XP	Reducing tee ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	
1	8	6	SCH100	SCH120	P24M-000XR	Reducing tee ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	
1	10	4	SCH100	SCH120	P24M-000XS	Reducing tee ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	
1	10	6	SCH100	SCH120	P24M-000XT	Reducing tee ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	
1	10	8	SCH100	SCH100	P24M-000XU	Reducing tee ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	
1	12	6	SCH100	SCH120	P24M-000XW	Reducing tee ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	
1	12	8	SCH100	SCH100	P24M-000XX	Reducing tee ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	
1	12	10	SCH100	SCH100	P24M-000XV	Reducing tee ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	
1	14	6	SCH100	SCH120	P24M-000Y0	Reducing tee ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	
1	14	8	SCH100	SCH100	P24M-000Y1	Reducing tee ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	
1	14	10	SCH100	SCH100	P24M-000XY	Reducing tee ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	
1	14	12	SCH100	SCH100	P24M-000XZ	Reducing tee ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	
1	16	6	SCH100	SCH120	P24M-000Y5	Reducing tee ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	
1	16	8	SCH100	SCH100	P24M-000Y6	Reducing tee ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	
1	16	10	SCH100	SCH100	P24M-000Y2	Reducing tee ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	
1	16	12	SCH100	SCH100	P24M-000Y3	Reducing tee ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	
1	16	14	SCH100	SCH100	P24M-000Y4	Reducing tee ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH80S	SCH80S	P27M-000VZ	Concentric reducer ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	1	0.5	SCH80S	SCH80S	P27M-000W0	Concentric reducer ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	1	0.75	SCH80S	SCH80S	P27M-000W1	Concentric reducer ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	1.5	0.5	SCH160	SCH80S	P27M-000WY	Concentric reducer ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	1.5	0.75	SCH160	SCH80S	P27M-000WZ	Concentric reducer ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	1.5	1	SCH160	SCH80S	P27M-000X0	Concentric reducer ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	2	0.75	SCH80S	SCH80S	P27M-000W5	Concentric reducer ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	2	1	SCH80S	SCH80S	P27M-000W6	Concentric reducer ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	2	1.5	SCH80S	SCH160	P27M-000X1	Concentric reducer ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	3	1.5	SCH80S	SCH160	P27M-000X2	Concentric reducer ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	3	2	SCH80S	SCH80S	P27M-000W9	Concentric reducer ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	4	1.5	SCH120	SCH160	P27M-00103	Concentric reducer ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	4	2	SCH120	SCH80S	P27M-000WB	Concentric reducer ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	4	3	SCH120	SCH80S	P27M-000WC	Concentric reducer ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	6	3	SCH120	SCH80S	P27M-000WD	Concentric reducer ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	6	4	SCH120	SCH120	P27M-000WE	Concentric reducer ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	8	4	SCH100	SCH120	P27M-000WF	Concentric reducer ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	
1	8	6	SCH100	SCH120	P27M-000WG	Concentric reducer ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	
1	10	4	SCH100	SCH120	P27M-000WH	Concentric reducer ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	
1	10	6	SCH100	SCH120	P27M-000WJ	Concentric reducer ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	
1	10	8	SCH100	SCH100	P27M-000WK	Concentric reducer ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	
1	12	6	SCH100	SCH120	P27M-000WM	Concentric reducer ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	
1	12	8	SCH100	SCH100	P27M-000WN	Concentric reducer ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	

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CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	12	10	SCH100	SCH100	P27M-000WL	Concentric reducer ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	
1	14	6	SCH100	SCH120	P27M-000WS	Concentric reducer ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	
1	14	8	SCH100	SCH100	P27M-000WT	Concentric reducer ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	
1	14	10	SCH100	SCH100	P27M-000WP	Concentric reducer ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	
1	14	12	SCH100	SCH100	P27M-000WR	Concentric reducer ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	
1	16	8	SCH100	SCH100	P27M-000WX	Concentric reducer ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	
1	16	10	SCH100	SCH100	P27M-000WU	Concentric reducer ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	
1	16	12	SCH100	SCH100	P27M-000WV	Concentric reducer ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	
1	16	14	SCH100	SCH100	P27M-000WW	Concentric reducer ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH80S	SCH80S	P28M-000XX	Eccentric reducer ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	1	0.5	SCH80S	SCH80S	P28M-000XY	Eccentric reducer ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	1	0.75	SCH80S	SCH80S	P28M-000XZ	Eccentric reducer ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	1.5	0.5	SCH160	SCH80S	P28M-000YW	Eccentric reducer ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	1.5	0.75	SCH160	SCH80S	P28M-000YX	Eccentric reducer ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	1.5	1	SCH160	SCH80S	P28M-000YY	Eccentric reducer ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	2	0.75	SCH80S	SCH80S	P28M-000Y3	Eccentric reducer ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	2	1	SCH80S	SCH80S	P28M-000Y4	Eccentric reducer ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	2	1.5	SCH80S	SCH160	P28M-000YZ	Eccentric reducer ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	3	1.5	SCH80S	SCH160	P28M-000Z0	Eccentric reducer ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	3	2	SCH80S	SCH80S	P28M-000Y7	Eccentric reducer ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	4	1.5	SCH120	SCH160	P28M-00123	Eccentric reducer ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	4	2	SCH120	SCH80S	P28M-000Y9	Eccentric reducer ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	4	3	SCH120	SCH80S	P28M-000YA	Eccentric reducer ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	6	3	SCH120	SCH80S	P28M-000YB	Eccentric reducer ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	6	4	SCH120	SCH120	P28M-000YC	Eccentric reducer ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	8	4	SCH100	SCH120	P28M-000YD	Eccentric reducer ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	
1	8	6	SCH100	SCH120	P28M-000YE	Eccentric reducer ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	
1	10	4	SCH100	SCH120	P28M-000YF	Eccentric reducer ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	
1	10	6	SCH100	SCH120	P28M-000YG	Eccentric reducer ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	
1	10	8	SCH100	SCH100	P28M-000YH	Eccentric reducer ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	
1	12	6	SCH100	SCH120	P28M-000YK	Eccentric reducer ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	
1	12	8	SCH100	SCH100	P28M-000YL	Eccentric reducer ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	
1	12	10	SCH100	SCH100	P28M-000YJ	Eccentric reducer ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	
1	14	6	SCH100	SCH120	P28M-000YP	Eccentric reducer ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	
1	14	8	SCH100	SCH100	P28M-000YR	Eccentric reducer ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	
1	14	10	SCH100	SCH100	P28M-000YM	Eccentric reducer ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	
1	14	12	SCH100	SCH100	P28M-000YN	Eccentric reducer ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	
1	16	8	SCH100	SCH100	P28M-000YV	Eccentric reducer ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	
1	16	10	SCH100	SCH100	P28M-000YS	Eccentric reducer ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	
1	16	12	SCH100	SCH100	P28M-000YT	Eccentric reducer ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	
1	16	14	SCH100	SCH100	P28M-000YU	Eccentric reducer ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P29M-0009H	Cap ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	0.75		SCH80S		P29M-0009J	Cap ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	1		SCH80S		P29M-0009K	Cap ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	1.5		SCH160		P29M-0009X	Cap ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	2		SCH80S		P29M-0009S	Cap ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	3		SCH80S		P29M-0009T	Cap ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	4		SCH120		P29M-0009U	Cap ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	6		SCH120		P29M-0009V	Cap ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	8		SCH100		P29M-0009W	Cap ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	10		SCH100		P29M-0009M	Cap ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	12		SCH100		P29M-0009N	Cap ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	14		SCH100		P29M-0009P	Cap ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	

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CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	16		SCH100		P29M-0009R	Cap ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P41M-0009Z	Straight nipple ASTM B423 UNS N08825 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Licensor-2	
1	0.75		SCH160		P41M-000A0	Straight nipple ASTM B423 UNS N08825 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Licensor-2	
1	1		SCH160		P41M-000A1	Straight nipple ASTM B423 UNS N08825 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Licensor-2	
1	1.5		SCH160		P41M-000A2	Straight nipple ASTM B423 UNS N08825 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Licensor-2	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2	0.75	SCH80S	SCH80S	P31P-0028K	Outlet ASTM B564 UNS N08825 MSS SP-97 BW Licensor-2	
1	3	0.75	SCH80S	SCH80S	P31P-0028L	Outlet ASTM B564 UNS N08825 MSS SP-97 BW Licensor-2	
1	4	0.75	SCH120	SCH80S	P31P-0028N	Outlet ASTM B564 UNS N08825 MSS SP-97 BW Licensor-2	
1	6	0.75	SCH120	SCH80S	P31P-0028S	Outlet ASTM B564 UNS N08825 MSS SP-97 BW Licensor-2	
1	8	0.75	SCH100	SCH80S	P31P-0028W	Outlet ASTM B564 UNS N08825 MSS SP-97 BW Licensor-2	
1	10	0.75	SCH100	SCH80S	P31P-00291	Outlet ASTM B564 UNS N08825 MSS SP-97 BW Licensor-2	
1	12	0.75	SCH100	SCH80S	P31P-00296	Outlet ASTM B564 UNS N08825 MSS SP-97 BW Licensor-2	
1	14	0.75	SCH100	SCH80S	P31P-0029C	Outlet ASTM B564 UNS N08825 MSS SP-97 BW Licensor-2	
1	16	0.75	SCH100	SCH80S	P31P-002B3	Outlet ASTM B564 UNS N08825 MSS SP-97 BW Licensor-2	
1	3	1	SCH80S	SCH80S	P31P-0028M	Outlet ASTM B564 UNS N08825 MSS SP-97 BW Licensor-2	
1	4	1	SCH120	SCH80S	P31P-0028P	Outlet ASTM B564 UNS N08825 MSS SP-97 BW Licensor-2	
1	6	1	SCH120	SCH80S	P31P-0028T	Outlet ASTM B564 UNS N08825 MSS SP-97 BW Licensor-2	
1	8	1	SCH100	SCH80S	P31P-0028X	Outlet ASTM B564 UNS N08825 MSS SP-97 BW Licensor-2	
1	10	1	SCH100	SCH80S	P31P-00292	Outlet ASTM B564 UNS N08825 MSS SP-97 BW Licensor-2	
1	12	1	SCH100	SCH80S	P31P-00297	Outlet ASTM B564 UNS N08825 MSS SP-97 BW Licensor-2	
1	14	1	SCH100	SCH80S	P31P-0029D	Outlet ASTM B564 UNS N08825 MSS SP-97 BW Licensor-2	
1	16	1	SCH100	SCH80S	P31P-002B4	Outlet ASTM B564 UNS N08825 MSS SP-97 BW Licensor-2	
1	4	1.5	SCH120	SCH160	P31P-0029M	Outlet ASTM B564 UNS N08825 MSS SP-97 BW Licensor-2	
1	6	1.5	SCH120	SCH160	P31P-002AT	Outlet ASTM B564 UNS N08825 MSS SP-97 BW Licensor-2	
1	8	1.5	SCH100	SCH160	P31P-002AU	Outlet ASTM B564 UNS N08825 MSS SP-97 BW Licensor-2	
1	10	1.5	SCH100	SCH160	P31P-002AV	Outlet ASTM B564 UNS N08825 MSS SP-97 BW Licensor-2	
1	12	1.5	SCH100	SCH160	P31P-002AW	Outlet ASTM B564 UNS N08825 MSS SP-97 BW Licensor-2	
1	14	1.5	SCH100	SCH160	P31P-002AX	Outlet ASTM B564 UNS N08825 MSS SP-97 BW Licensor-2	
1	16	1.5	SCH100	SCH160	P31P-002B5	Outlet ASTM B564 UNS N08825 MSS SP-97 BW Licensor-2	
1	6	2	SCH120	SCH80S	P31P-0028V	Outlet ASTM B564 UNS N08825 MSS SP-97 BW Licensor-2	
1	8	2	SCH100	SCH80S	P31P-0028Z	Outlet ASTM B564 UNS N08825 MSS SP-97 BW Licensor-2	
1	10	2	SCH100	SCH80S	P31P-00294	Outlet ASTM B564 UNS N08825 MSS SP-97 BW Licensor-2	
1	12	2	SCH100	SCH80S	P31P-00299	Outlet ASTM B564 UNS N08825 MSS SP-97 BW Licensor-2	
1	14	2	SCH100	SCH80S	P31P-0029F	Outlet ASTM B564 UNS N08825 MSS SP-97 BW Licensor-2	
1	16	2	SCH100	SCH80S	P31P-002B6	Outlet ASTM B564 UNS N08825 MSS SP-97 BW Licensor-2	
1	8	3	SCH100	SCH80S	P31P-00290	Outlet ASTM B564 UNS N08825 MSS SP-97 BW Licensor-2	
1	10	3	SCH100	SCH80S	P31P-00295	Outlet ASTM B564 UNS N08825 MSS SP-97 BW Licensor-2	
1	12	3	SCH100	SCH80S	P31P-0029A	Outlet ASTM B564 UNS N08825 MSS SP-97 BW Licensor-2	
1	14	3	SCH100	SCH80S	P31P-0029G	Outlet ASTM B564 UNS N08825 MSS SP-97 BW Licensor-2	
1	16	3	SCH100	SCH80S	P31P-002B7	Outlet ASTM B564 UNS N08825 MSS SP-97 BW Licensor-2	
1	12	4	SCH100	SCH120	P31P-0029B	Outlet ASTM B564 UNS N08825 MSS SP-97 BW Licensor-2	
1	14	4	SCH100	SCH120	P31P-0029H	Outlet ASTM B564 UNS N08825 MSS SP-97 BW Licensor-2	
1	16	4	SCH100	SCH120	P31P-002B8	Outlet ASTM B564 UNS N08825 MSS SP-97 BW Licensor-2	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30P-0001C	Plug ASTM B564 UNS N08825 ASME B16.11 NPT Round head Licensor-2	
1	0.75				P30P-0001D	Plug ASTM B564 UNS N08825 ASME B16.11 NPT Round head Licensor-2	
1	1				P30P-0001E	Plug ASTM B564 UNS N08825 ASME B16.11 NPT Round head Licensor-2	
1	1.5				P30P-0001F	Plug ASTM B564 UNS N08825 ASME B16.11 NPT Round head Licensor-2	

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FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P61P-00134	Flange WN ASTM B564 UNS N08825 Class 1500 ASME B16.5 RJ Licensor-2	
1	0.75		SCH80S		P61P-00135	Flange WN ASTM B564 UNS N08825 Class 1500 ASME B16.5 RJ Licensor-2	
1	1		SCH80S		P61P-00136	Flange WN ASTM B564 UNS N08825 Class 1500 ASME B16.5 RJ Licensor-2	
1	1.5		SCH160		P61P-0013W	Flange WN ASTM B564 UNS N08825 Class 1500 ASME B16.5 RJ Licensor-2	
1	2		SCH80S		P61P-0013B	Flange WN ASTM B564 UNS N08825 Class 1500 ASME B16.5 RJ Licensor-2	
1	3		SCH80S		P61P-0013C	Flange WN ASTM B564 UNS N08825 Class 1500 ASME B16.5 RJ Licensor-2	
1	4		SCH120		P61P-0013D	Flange WN ASTM B564 UNS N08825 Class 1500 ASME B16.5 RJ Licensor-2	
1	6		SCH120		P61P-0013E	Flange WN ASTM B564 UNS N08825 Class 1500 ASME B16.5 RJ Licensor-2	
1	8		SCH100		P61P-0013F	Flange WN ASTM B564 UNS N08825 Class 1500 ASME B16.5 RJ Licensor-2	
1	10		SCH100		P61P-00138	Flange WN ASTM B564 UNS N08825 Class 1500 ASME B16.5 RJ Licensor-2	
1	12		SCH100		P61P-00139	Flange WN ASTM B564 UNS N08825 Class 1500 ASME B16.5 RJ Licensor-2	
1	14		SCH100		P61P-0013A	Flange WN ASTM B564 UNS N08825 Class 1500 ASME B16.5 RJ Licensor-2	
1	16		SCH100		P61P-0014E	Flange WN ASTM B564 UNS N08825 Class 1500 ASME B16.5 RJ Licensor-2	
541	0.5				P61P-0013G	Flange NPT ASTM B564 UNS N08825 Class 1500 ASME B16.5 RJ Licensor-2	
541	0.75				P61P-0013H	Flange NPT ASTM B564 UNS N08825 Class 1500 ASME B16.5 RJ Licensor-2	
805	0.5		SCH80S		P61P-0013J	Flange WN ASTM B564 UNS N08825 Class 2500 ASME B16.5 RJ Licensor-2	
805	0.75		SCH80S		P61P-0013K	Flange WN ASTM B564 UNS N08825 Class 2500 ASME B16.5 RJ Licensor-2	
805	1		SCH80S		P61P-0013L	Flange WN ASTM B564 UNS N08825 Class 2500 ASME B16.5 RJ Licensor-2	
805	1.5		SCH160		P61P-00145	Flange WN ASTM B564 UNS N08825 Class 2500 ASME B16.5 RJ Licensor-2	
805	2		SCH80S		P61P-0013R	Flange WN ASTM B564 UNS N08825 Class 2500 ASME B16.5 RJ Licensor-2	
805	3		SCH80S		P61P-0013S	Flange WN ASTM B564 UNS N08825 Class 2500 ASME B16.5 RJ Licensor-2	
805	4		SCH120		P61P-0013T	Flange WN ASTM B564 UNS N08825 Class 2500 ASME B16.5 RJ Licensor-2	
805	6		SCH120		P61P-0013U	Flange WN ASTM B564 UNS N08825 Class 2500 ASME B16.5 RJ Licensor-2	
805	8		SCH100		P61P-0013V	Flange WN ASTM B564 UNS N08825 Class 2500 ASME B16.5 RJ Licensor-2	
805	10		SCH100		P61P-0013N	Flange WN ASTM B564 UNS N08825 Class 2500 ASME B16.5 RJ Licensor-2	
805	12		SCH100		P61P-0013P	Flange WN ASTM B564 UNS N08825 Class 2500 ASME B16.5 RJ Licensor-2	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67P-000BG	Blind flange ASTM B564 UNS N08825 Class 1500 ASME B16.5 RJ Licensor-2	
1	0.75				P67P-000BH	Blind flange ASTM B564 UNS N08825 Class 1500 ASME B16.5 RJ Licensor-2	
1	1				P67P-000BJ	Blind flange ASTM B564 UNS N08825 Class 1500 ASME B16.5 RJ Licensor-2	
1	1.5				P67P-000BK	Blind flange ASTM B564 UNS N08825 Class 1500 ASME B16.5 RJ Licensor-2	
1	2				P67P-000BP	Blind flange ASTM B564 UNS N08825 Class 1500 ASME B16.5 RJ Licensor-2	
1	3				P67P-000BR	Blind flange ASTM B564 UNS N08825 Class 1500 ASME B16.5 RJ Licensor-2	
1	4				P67P-000BS	Blind flange ASTM B564 UNS N08825 Class 1500 ASME B16.5 RJ Licensor-2	
1	6				P67P-000BT	Blind flange ASTM B564 UNS N08825 Class 1500 ASME B16.5 RJ Licensor-2	
1	8				P67P-000BU	Blind flange ASTM B564 UNS N08825 Class 1500 ASME B16.5 RJ Licensor-2	
1	10				P67P-000BL	Blind flange ASTM B564 UNS N08825 Class 1500 ASME B16.5 RJ Licensor-2	
1	12				P67P-000BM	Blind flange ASTM B564 UNS N08825 Class 1500 ASME B16.5 RJ Licensor-2	
1	14				P67P-000BN	Blind flange ASTM B564 UNS N08825 Class 1500 ASME B16.5 RJ Licensor-2	
1	16				P67P-000BV	Blind flange ASTM B564 UNS N08825 Class 1500 ASME B16.5 RJ Licensor-2	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P75T-000L8	Ring joint gasket UNS N08825 Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	0.75				P75T-000L9	Ring joint gasket UNS N08825 Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	1				P75T-000LA	Ring joint gasket UNS N08825 Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	1.5				P75T-000LB	Ring joint gasket UNS N08825 Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	2				P75T-000LF	Ring joint gasket UNS N08825 Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	3				P75T-000LG	Ring joint gasket UNS N08825 Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	4				P75T-000LH	Ring joint gasket UNS N08825 Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	6				P75T-000LJ	Ring joint gasket UNS N08825 Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	8				P75T-000LK	Ring joint gasket UNS N08825 Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	10				P75T-000LC	Ring joint gasket UNS N08825 Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	12				P75T-000LD	Ring joint gasket UNS N08825 Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	14				P75T-000LE	Ring joint gasket UNS N08825 Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	16				P75T-0012D	Ring joint gasket UNS N08825 Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	0.5				P75T-000K3	Ring joint gasket UNS N08825 Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	

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GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
805	0.75				P75T-000K4	Ring joint gasket UNS N08825 Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	1				P75T-000K5	Ring joint gasket UNS N08825 Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	1.5				P75T-000K6	Ring joint gasket UNS N08825 Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	2				P75T-000LN	Ring joint gasket UNS N08825 Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	3				P75T-000K7	Ring joint gasket UNS N08825 Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	4				P75T-000LP	Ring joint gasket UNS N08825 Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	6				P75T-000K8	Ring joint gasket UNS N08825 Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	8				P75T-000LR	Ring joint gasket UNS N08825 Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	10				P75T-000LL	Ring joint gasket UNS N08825 Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	12				P75T-000LM	Ring joint gasket UNS N08825 Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-2				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	3-16				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
805	0.5-1				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
805	1.5				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
805	2				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
805	3-12				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81P-0004V	Gate valve ASTM B564 UNS N08825 Class 1500 API 602 BW Sch80S Trim UNS N08825 Body and disc seats Stellite-6 WB-BG-OS&Y Handwheel operated Severe wet H2S service Licensor-2	
1	0.75				P81P-0004W	Gate valve ASTM B564 UNS N08825 Class 1500 API 602 BW Sch80S Trim UNS N08825 Body and disc seats Stellite-6 WB-BG-OS&Y Handwheel operated Severe wet H2S service Licensor-2	
1	1				P81P-0004X	Gate valve ASTM B564 UNS N08825 Class 1500 API 602 BW Sch80S Trim UNS N08825 Body and disc seats Stellite-6 WB-BG-OS&Y Handwheel operated Severe wet H2S service Licensor-2	
1	1.5				P81P-0004Y	Gate valve ASTM B564 UNS N08825 Class 1500 API 602 BW Sch160 Trim UNS N08825 Body and disc seats Stellite-6 WB-BG-OS&Y Handwheel operated Severe wet H2S service Licensor-2	
1	2				P81R-000GH	Gate valve ASTM A494 Grade CU5MCuC Class 1500 API 600 BW Sch80S Trim UNS N08825 Body and disc seats Stellite-6 PSB-BG-OS&Y Handwheel operated Severe wet H2S service	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82P-0004L	Globe valve ASTM B564 UNS N08825 Class 1500 API 602 BW Sch80S Trim UNS N08825 Body and disc seats Stellite-6 WB-BG-OS&Y Handwheel operated Severe wet H2S service Licensor-2	
1	0.75				P82P-0004M	Globe valve ASTM B564 UNS N08825 Class 1500 API 602 BW Sch80S Trim UNS N08825 Body and disc seats Stellite-6 WB-BG-OS&Y Handwheel operated Severe wet H2S service Licensor-2	
1	1				P82P-0004N	Globe valve ASTM B564 UNS N08825 Class 1500 API 602 BW Sch80S Trim UNS N08825 Body and disc seats Stellite-6 WB-BG-OS&Y Handwheel operated Severe wet H2S service Licensor-2	
1	1.5				P82P-0004P	Globe valve ASTM B564 UNS N08825 Class 1500 API 602 BW Sch160 Trim UNS N08825 Body and disc seats Stellite-6 WB-BG-OS&Y Handwheel operated Severe wet H2S service Licensor-2	
4601	0.75				P82P-0004D	Y-pattern globe valve ASTM B564 UNS N08825 Class 1500 ASME B16.34 BW Sch80S Trim UNS N08825 Body and disc seats Stellite-6 WB-BG-OS&Y Handwheel operated Severe wet H2S service Licensor-2	
4601	1				P82P-0004E	Y-pattern globe valve ASTM B564 UNS N08825 Class 1500 ASME B16.34 BW Sch80S Trim UNS N08825 Body and disc seats Stellite-6 WB-BG-OS&Y Handwheel operated Severe wet H2S service Licensor-2	
4601	1.5				P82P-0004K	Y-pattern globe valve ASTM B564 UNS N08825 Class 1500 ASME B16.34 BW Sch160 Trim UNS N08825 Body and disc seats Stellite-6 WB-BG-OS&Y Handwheel operated Severe wet H2S service Licensor-2	
4601	2				P82R-0008R	Y-pattern globe valve ASTM A494 Grade CU5MCuC Class 1500 ASME B16.34 BW Sch80S Trim UNS N08825 Body and disc seats Stellite-6 PSB-BG-OS&Y Handwheel operated Severe wet H2S service	
4601	3				P82R-0008S	Y-pattern globe valve ASTM A494 Grade CU5MCuC Class 1500 ASME B16.34 BW Sch80S Trim UNS N08825 Body and disc seats Stellite-6 PSB-BG-OS&Y Handwheel operated Severe wet H2S service	
4601	4				P82R-0009Z	Y-pattern globe valve ASTM A494 Grade CU5MCuC Class 1500 ASME B16.34 BW Sch120 Trim UNS N08825 Body and disc seats Stellite-6 PSB-BG-OS&Y Gear operated Severe wet H2S service	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83P-0004N	Check valve ASTM B564 UNS N08825 Class 1500 API 602 BW Sch80S Trim UNS N08825 Body and disc seats Stellite-6 Lift-type Welded cover Severe wet H2S service Licensor-2	
1	0.75				P83P-0004P	Check valve ASTM B564 UNS N08825 Class 1500 API 602 BW Sch80S Trim UNS N08825 Body and disc seats Stellite-6 Lift-type Welded cover Severe wet H2S service Licensor-2	
1	1				P83P-0004R	Check valve ASTM B564 UNS N08825 Class 1500 API 602 BW Sch80S Trim UNS N08825 Body and disc seats Stellite-6 Lift-type Welded cover Severe wet H2S service Licensor-2	
1	1.5				P83P-0004S	Check valve ASTM B564 UNS N08825 Class 1500 API 602 BW Sch160 Trim UNS N08825 Body and disc seats Stellite-6 Lift-type Welded cover Severe wet H2S service Licensor-2	
1	2				P83R-000BZ	Check valve ASTM A494 Grade CU5MCuC Class 1500 BS 1868 BW Sch80S Trim UNS N08825 Body and disc seats Stellite-6 Swing-type Pressure seal cap Severe wet H2S service	
1	3				P83R-000C0	Check valve ASTM A494 Grade CU5MCuC Class 1500 BS 1868 BW Sch80S Trim UNS N08825 Body and disc seats Stellite-6 Swing-type Pressure seal cap Severe wet H2S service	

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CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	4				P83R-000BX	Check valve ASTM A494 Grade CU5MCuC Class 1500 BS 1868 BW Sch120 Trim UNS N08825 Body and disc seats Stellite-6 Swing-type Pressure seal cap Severe wet H2S service	
1	6				P83R-000C1	Check valve ASTM A494 Grade CU5MCuC Class 1500 BS 1868 BW Sch120 Trim UNS N08825 Body and disc seats Stellite-6 Swing-type Pressure seal cap Severe wet H2S service	

DP CHECK VALVE (XDP)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	8				P88R-0006A	Dual plate check valve ASTM A494 Grade CU5MCuC Class 1500 API 594 Lug-type ASME B16.5 RJ Trim UNS N08825 and Stellite-6 Internal wetted parts UNS N08825 Spring Inconel Retainerless-type Severe wet H2S service	

ORIFICE FLANGE (FO)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2		SCH80S		P66P-00036	Orifice flange WN ASTM B564 UNS N08825 Class 1500 ASME B16.36 RJ NPS3/4 SW tap x 1 Licensor-2	
200	2		SCH80S		P66P-00037	Orifice flange WN ASTM B564 UNS N08825 Class 1500 ASME B16.36 RJ NPS3/4 SW tap x 1 with Jack screw Licensor-2	

PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P72P-0002H	Paddle blank ASTM B564 UNS N08825 Class 1500 Standard-drawing Flange ASME B16.5 RJ Licensor-2	
1	0.75				P72P-0002J	Paddle blank ASTM B564 UNS N08825 Class 1500 Standard-drawing Flange ASME B16.5 RJ Licensor-2	
1	1				P72P-0002K	Paddle blank ASTM B564 UNS N08825 Class 1500 Standard-drawing Flange ASME B16.5 RJ Licensor-2	
1	1.5				P72P-0002L	Paddle blank ASTM B564 UNS N08825 Class 1500 Standard-drawing Flange ASME B16.5 RJ Licensor-2	
1	2				P72P-0002R	Paddle blank ASTM B564 UNS N08825 Class 1500 Standard-drawing Flange ASME B16.5 RJ Licensor-2	
1	3				P72P-0002S	Paddle blank ASTM B564 UNS N08825 Class 1500 Standard-drawing Flange ASME B16.5 RJ Licensor-2	
1	4				P72P-0002T	Paddle blank ASTM B564 UNS N08825 Class 1500 Standard-drawing Flange ASME B16.5 RJ Licensor-2	
1	6				P72P-0002U	Paddle blank ASTM B564 UNS N08825 Class 1500 Standard-drawing Flange ASME B16.5 RJ Licensor-2	
1	8				P72P-0002V	Paddle blank ASTM B564 UNS N08825 Class 1500 Standard-drawing Flange ASME B16.5 RJ Licensor-2	
1	10				P72P-0002M	Paddle blank ASTM B564 UNS N08825 Class 1500 Standard-drawing Flange ASME B16.5 RJ Licensor-2	
1	12				P72P-0002N	Paddle blank ASTM B564 UNS N08825 Class 1500 Standard-drawing Flange ASME B16.5 RJ Licensor-2	
1	14				P72P-0002P	Paddle blank ASTM B564 UNS N08825 Class 1500 Standard-drawing Flange ASME B16.5 RJ Licensor-2	
1	16				P72P-00038	Paddle blank ASTM B564 UNS N08825 Class 1500 Standard-drawing Flange ASME B16.5 RJ Licensor-2	

PADDLE SPACER (PS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P72P-0002W	Paddle spacer ASTM B564 UNS N08825 Class 1500 Standard-drawing Flange ASME B16.5 RJ Licensor-2	
1	0.75				P72P-0002X	Paddle spacer ASTM B564 UNS N08825 Class 1500 Standard-drawing Flange ASME B16.5 RJ Licensor-2	
1	1				P72P-0002Y	Paddle spacer ASTM B564 UNS N08825 Class 1500 Standard-drawing Flange ASME B16.5 RJ Licensor-2	
1	1.5				P72P-0002Z	Paddle spacer ASTM B564 UNS N08825 Class 1500 Standard-drawing Flange ASME B16.5 RJ Licensor-2	
1	2				P72P-00033	Paddle spacer ASTM B564 UNS N08825 Class 1500 Standard-drawing Flange ASME B16.5 RJ Licensor-2	
1	3				P72P-00034	Paddle spacer ASTM B564 UNS N08825 Class 1500 Standard-drawing Flange ASME B16.5 RJ Licensor-2	
1	4				P72P-00035	Paddle spacer ASTM B564 UNS N08825 Class 1500 Standard-drawing Flange ASME B16.5 RJ Licensor-2	
1	6				P72P-00036	Paddle spacer ASTM B564 UNS N08825 Class 1500 Standard-drawing Flange ASME B16.5 RJ Licensor-2	
1	8				P72P-00037	Paddle spacer ASTM B564 UNS N08825 Class 1500 Standard-drawing Flange ASME B16.5 RJ Licensor-2	
1	10				P72P-00030	Paddle spacer ASTM B564 UNS N08825 Class 1500 Standard-drawing Flange ASME B16.5 RJ Licensor-2	
1	12				P72P-00031	Paddle spacer ASTM B564 UNS N08825 Class 1500 Standard-drawing Flange ASME B16.5 RJ Licensor-2	
1	14				P72P-00032	Paddle spacer ASTM B564 UNS N08825 Class 1500 Standard-drawing Flange ASME B16.5 RJ Licensor-2	
1	16				P72P-00039	Paddle spacer ASTM B564 UNS N08825 Class 1500 Standard-drawing Flange ASME B16.5 RJ Licensor-2	

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BOLT TABLE (B_N1YR02 , STUD ASME RJ, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	110	P80S-0090F	R12	P75T-000L8
0.75	4	0.750	115	P80S-0090G	R14	P75T-000L9
1	4	0.875	130	P80S-005ZB	R16	P75T-000LA
1.5	4	1.000	140	P80S-0061A	R20	P75T-000LB
2	8	0.875	150	P80S-005ZF	R24	P75T-000LF
3	8	1.125	180	P80S-0064T	R35	P75T-000LG
4	8	1.250	230	P80S-0068H	R39	P75T-000LH
6	12	1.375	300	P80S-006J1	R46	P75T-000LJ
8	12	1.625	345	P80S-00A5K	R50	P75T-000LK
10	12	1.875	395	P80S-00AW8	R54	P75T-000LC
12	16	2.000	445	P80S-00BH5	R58	P75T-000LD
14	16	2.250	490	P80S-00DLE	R63	P75T-000LE
16	16	2.500	540	P80S-00DZM	R67	P75T-0012D

BOLT TABLE (B_N1YR02_805 , STUD ASME RJ, OPTION CODE 805)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	125	P80S-0090J	R13	P75T-000K3
0.75	4	0.750	130	P80S-0090K	R16	P75T-000K4
1	4	0.875	140	P80S-005ZD	R18	P75T-000K5
1.5	4	1.125	175	P80S-0064S	R23	P75T-000K6
2	8	1.000	180	P80S-0061J	R26	P75T-000LN
3	8	1.250	260	P80S-0068P	R32	P75T-000K7
4	8	1.500	305	P80S-006LS	R38	P75T-000LP
6	8	2.000	410	P80S-00BBD	R47	P75T-000K8
8	12	2.000	450	P80S-00BH6	R51	P75T-000LR
10	12	2.500	575	P80S-00DZV	R55	P75T-000LL
12	12	2.750	635	P80S-01RAT	R60	P75T-000LM
14	14	3.000	695		R64	
16	14	3.000	755		R68	

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BRANCH TABLE (T_N1YR02)

RUN PIPE SIZE (in) \ BRANCH SIZE (in)	0.5	0.75	1	1.5	2	3	4	6	8	10	12	14	16
0.5	TS												
0.75		TS											
1		TR	TS										
1.5		TR	TR	TS									
2		L	TR	TR	TS								
3		L	L	TR	TR	TS							
4	L	L	L	L	TR	TR	TS						
6	L	L	L	L	L	TR	TR	TS					
8		L	L	L	L	L	TR	TR	TS				
10		L	L	L	L	L	TR	TR	TR	TS			
12		L	L	L	L	L	L	TR	TR	TR	TS		
14		L	L	L	L	L	L	TR	TR	TR	TR	TS	
16		L	L	L	L	L	L	TR	TR	TR	TR	TR	TS

TR : REDUCING TEE
TS : STRAIGHT TEE
L : OUTLET

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PIPING CLASS

N2A502 REV NO. 2

Material : Killed CS
Rating : ASME CLASS 1500
Flange Face : RJ
C.A.(mm) : 3.00
Gasket : Ring Octagonal
Service : PROCESS - WET SEVERE SOUR SERVICE SUBJECT TO NACE + HIC STD + AMINES OR CAUSTIC - STRESS RELIEVED
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
5	BOLTING CONFIRMING TO B7M / 2HM SHALL BE USED UNDER CONDITIONS (A) DIRECT EXPOSURE TO SOUR ENVIRONMENTS (B) WHEN THE BOLTING WILL BE BURIED OR INSULATED
27	PWHT OF CARBON STEEL PIPING IN WET H2S, CAUSTIC AND AMINE SERVICES SHALL BE IN ACCORDANCE WITH SECTION 10.2, 10.3, AND 10.4 OF PROJECT SPECIFICATION 3550-8440-SP-0002 MATERIALS REQUIREMENTS FOR PRESSURISED EQUIPMENT AND PIPING. FOR CAUSTIC AND AMINE SERVICE THE FOLLOWING SHALL APPLY: - PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF ALL SITE PIPING FABRICATION WELDS IS REQUIRED FOR ALL WALL THICKNESSES. FOR MODERATE AND SEVERE WET H2S SERVICE THE FOLLOWING SHALL APPLY: PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF SITE FABRICATION CIRCUMFERENTIAL OR BRANCH WELDS IS NOT REQUIRED IF WELDS ARE MULTIPASS AND IN ACCORDANCE WITH PARA 10.2.12 OF PROJECT SPECIFICATION 3550-8440-SP-0002. FOR SERVICES MEETING THE WET H2S CRITERIA AND CAUSTIC OR AMINE CRITERIA THE MORE STRINGENT PWHT REQUIREMENT SHALL GOVERN.

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
200	WITH JACK SCREW (FO)
541	NPT(F) (F)
805	CLASS 2500 (B,F,FR,G)
4208	45 DEGREE LATERAL STRAIGHT TEE (TLS)
4601	Y-PATTERN (W)

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PIPING CLASS
N2A502 REV NO. 2

PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P01A-00143	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	0.75		SCH160		P01A-0010R	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1		SCH160		P01A-0014M	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1.5		SCH160		P01A-0015J	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	2		SCH160		P01A-0019T	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	3		SCH160		P01A-001S5	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	4		SCH160		P01A-001TN	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	6		SCH160		P01A-001VD	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	8		SCH140		P01A-001WJ	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	10		XXS		P01A-0079W	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	12		SCH140		P01A-005CK	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	14		SCH140		P01A-005CL	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	16		SCH140		P01A-005CM	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P02A-00172	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	0.75		SCH160		P02A-000V8	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1		SCH160		P02A-000V7	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1.5		SCH160		P02A-000V9	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	2		SCH160		P02A-000KW	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		SCH160		P02A-000U4	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		SCH160		P02A-002JE	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		SCH160		P02A-002J9	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		SCH140		P02A-003F9	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	10		XXS		P02A-003RY	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	12		SCH140		P02A-003FA	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	14		SCH140		P02A-003FB	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	16		SCH140		P02A-003FC	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P03A-0012Y	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	0.75		SCH160		P03A-000RS	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1		SCH160		P03A-000RR	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1.5		SCH160		P03A-000RP	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	2		SCH160		P03A-000HU	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		SCH160		P03A-000RB	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		SCH160		P03A-002FY	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		SCH160		P03A-002FT	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		SCH140		P03A-003D4	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	10		XXS		P03A-003NL	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	12		SCH140		P03A-003D5	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	14		SCH140		P03A-003D6	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	16		SCH140		P03A-003D7	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P21A-002M0	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	0.75		SCH160		P21A-002B8	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1		SCH160		P21A-002B6	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5		SCH160		P21A-002B9	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2		SCH160		P21A-00245	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		SCH160		P21A-002AG	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		SCH160		P21A-003GZ	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6		SCH160		P21A-003GU	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8		SCH140		P21A-003Z0	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10		XXS		P21A-0049B	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12		SCH140		P21A-003Z1	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	

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STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14		SCH140		P21A-003Z2	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16		SCH140		P21A-003Z3	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	

STRAIGHT LATERAL TEE (TLS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75		SCH160		P22A-000DZ	Straight lateral-tee ASTM A234 Grade WPB Seamless ASME B16.9 BW 60 degree	
1	1		SCH160		P22A-000F3	Straight lateral-tee ASTM A234 Grade WPB Seamless ASME B16.9 BW 60 degree	
1	1.5		SCH160		P22A-000F4	Straight lateral-tee ASTM A234 Grade WPB Seamless ASME B16.9 BW 60 degree	
1	2		SCH160		P22A-000F5	Straight lateral-tee ASTM A234 Grade WPB Seamless ASME B16.9 BW 60 degree	
1	3		SCH160		P22A-000F6	Straight lateral-tee ASTM A234 Grade WPB Seamless ASME B16.9 BW 60 degree	
1	4		SCH160		P22A-000F7	Straight lateral-tee ASTM A234 Grade WPB Seamless ASME B16.9 BW 60 degree	
1	6		SCH160		P22A-000F8	Straight lateral-tee ASTM A234 Grade WPB Seamless ASME B16.9 BW 60 degree	
1	8		SCH140		P22A-000F9	Straight lateral-tee ASTM A234 Grade WPB Seamless ASME B16.9 BW 60 degree	
1	10		XXS		P22A-000EZ	Straight lateral-tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW 60 degree	
1	12		SCH140		P22A-000F0	Straight lateral-tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW 60 degree	
1	14		SCH140		P22A-000F1	Straight lateral-tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW 60 degree	
1	16		SCH140		P22A-000F2	Straight lateral-tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW 60 degree	
4208	2		SCH160		P22A-000CA	Straight lateral-tee ASTM A234 Grade WPB Seamless ASME B16.9 BW 45 degree	
4208	3		SCH160		P22A-000CB	Straight lateral-tee ASTM A234 Grade WPB Seamless ASME B16.9 BW 45 degree	
4208	4		SCH160		P22A-000CC	Straight lateral-tee ASTM A234 Grade WPB Seamless ASME B16.9 BW 45 degree	
4208	6		SCH160		P22A-000CD	Straight lateral-tee ASTM A234 Grade WPB Seamless ASME B16.9 BW 45 degree	
4208	8		SCH140		P22A-000CE	Straight lateral-tee ASTM A234 Grade WPB Seamless ASME B16.9 BW 45 degree	
4208	10		XXS		P22A-000CK	Straight lateral-tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW 45 degree	
4208	12		SCH140		P22A-000CL	Straight lateral-tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW 45 degree	
4208	14		SCH140		P22A-000CM	Straight lateral-tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW 45 degree	
4208	16		SCH140		P22A-000CN	Straight lateral-tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW 45 degree	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75	SCH160	SCH160	P24A-004B6	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.75	SCH160	SCH160	P24A-004B2	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	1	SCH160	SCH160	P24A-004BA	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	SCH160	SCH160	P24A-00AEU	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	SCH160	SCH160	P24A-003AX	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	SCH160	SCH160	P24A-004LF	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	SCH160	SCH160	P24A-0045H	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	SCH160	SCH160	P24A-00GPP	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	SCH160	SCH160	P24A-00GSS	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	SCH160	SCH160	P24A-00H9L	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	SCH160	SCH160	P24A-00GPR	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH140	SCH160	P24A-00K2T	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH140	SCH160	P24A-00K2U	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	XXS	SCH160	P24A-00LBE	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	6	XXS	SCH160	P24A-00K2V	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	8	XXS	SCH140	P24A-00K2W	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	6	SCH140	SCH160	P24A-00M5X	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	8	SCH140	SCH140	P24A-00M5Y	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	10	SCH140	XXS	P24A-00M5W	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	6	SCH140	SCH160	P24A-00M60	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	8	SCH140	SCH140	P24A-00M61	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	10	SCH140	XXS	P24A-00M5Z	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	12	SCH140	SCH140	P24A-00J6M	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	6	SCH140	SCH160	P24A-00NWA	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	8	SCH140	SCH140	P24A-00NWB	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	10	SCH140	XXS	P24A-00NW9	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	12	SCH140	SCH140	P24A-00J6N	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	14	SCH140	SCH140	P24A-00J6P	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	

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CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	XXS	P27A-003ZL	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.5	SCH160	XXS	P27A-003ZM	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.75	SCH160	SCH160	P27A-002T5	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.5	SCH160	XXS	P27A-003ZN	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.75	SCH160	SCH160	P27A-002T7	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	1	SCH160	SCH160	P27A-002T4	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	0.75	SCH160	SCH160	P27A-0025L	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	SCH160	SCH160	P27A-0025K	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	SCH160	SCH160	P27A-0025J	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	SCH160	SCH160	P27A-00301	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	SCH160	SCH160	P27A-002NC	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	1.5	SCH160	SCH160	P27A-0073L	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	SCH160	SCH160	P27A-00746	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	SCH160	SCH160	P27A-0074N	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	SCH160	SCH160	P27A-007NZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	SCH160	SCH160	P27A-007PP	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH140	SCH160	P27A-007VZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH140	SCH160	P27A-007X7	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	XXS	SCH160	P27A-00EMU	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	6	XXS	SCH160	P27A-00EMV	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	8	XXS	SCH140	P27A-00EMW	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	6	SCH140	SCH160	P27A-00BD0	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	8	SCH140	SCH140	P27A-00BD1	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	10	SCH140	XXS	P27A-00G4V	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	6	SCH140	SCH160	P27A-00DGB	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	8	SCH140	SCH140	P27A-00DGR	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	10	SCH140	XXS	P27A-00G4W	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	12	SCH140	SCH140	P27A-00DGA	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	8	SCH140	SCH140	P27A-00DGF	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	10	SCH140	XXS	P27A-00HC5	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	12	SCH140	SCH140	P27A-00DGD	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	14	SCH140	SCH140	P27A-00DGE	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	XXS	P28A-003ZE	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.5	SCH160	XXS	P28A-003ZF	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.75	SCH160	SCH160	P28A-002TU	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.5	SCH160	XXS	P28A-003ZG	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.75	SCH160	SCH160	P28A-002TW	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	1	SCH160	SCH160	P28A-002TR	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	0.75	SCH160	SCH160	P28A-002SU	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	SCH160	SCH160	P28A-002ST	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	SCH160	SCH160	P28A-002SS	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	SCH160	SCH160	P28A-0030P	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	SCH160	SCH160	P28A-002NY	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	1.5	SCH160	SCH160	P28A-008GK	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	SCH160	SCH160	P28A-008GL	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	SCH160	SCH160	P28A-008J1	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	SCH160	SCH160	P28A-008ZE	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	SCH160	SCH160	P28A-008GM	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH140	SCH160	P28A-00BSJ	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH140	SCH160	P28A-00AH9	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	XXS	SCH160	P28A-00BSK	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	6	XXS	SCH160	P28A-00BSL	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	8	XXS	SCH140	P28A-00BSM	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	6	SCH140	SCH160	P28A-00AHC	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	8	SCH140	SCH140	P28A-00AHD	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	10	SCH140	XXS	P28A-00DBU	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14	6	SCH140	SCH160	P28A-00AHG	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	8	SCH140	SCH140	P28A-00AHH	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	10	SCH140	XXS	P28A-00DBV	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	12	SCH140	SCH140	P28A-00AHF	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	8	SCH140	SCH140	P28A-00AHM	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	10	SCH140	XXS	P28A-00EKV	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	12	SCH140	SCH140	P28A-00AHK	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	14	SCH140	SCH140	P28A-00AHL	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P29A-00336	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	0.75		SCH160		P29A-0037X	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	1		SCH160		P29A-001VW	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5		SCH160		P29A-001VX	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	2		SCH160		P29A-001W3	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	3		SCH160		P29A-001W6	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	4		SCH160		P29A-001WX	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	6		SCH160		P29A-0033C	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	8		SCH140		P29A-003FX	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	10		XXS		P29A-003FY	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service	
1	12		SCH140		P29A-003GJ	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service	
1	14		SCH140		P29A-003GK	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service	
1	16		SCH140		P29A-003TS	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P41A-000B9	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		XXS		P41A-000BA	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		XXS		P41A-000D8	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		XXS		P41A-000D9	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2	0.75	SCH160	SCH160	P31B-007NC	Outlet ASTM A105 MSS SP-97 BW	
1	3	0.75	SCH160	SCH160	P31B-00CMV	Outlet ASTM A105 MSS SP-97 BW	
1	4	0.75	SCH160	SCH160	P31B-00CLV	Outlet ASTM A105 MSS SP-97 BW	
1	6	0.75	SCH160	SCH160	P31B-00CKM	Outlet ASTM A105 MSS SP-97 BW	
1	8	0.75	SCH140	SCH160	P31B-00C9W	Outlet ASTM A105 MSS SP-97 BW	
1	10	0.75	XXS	SCH160	P31B-00XJF	Outlet ASTM A105 MSS SP-97 BW	
1	12	0.75	SCH140	SCH160	P31B-00CS9	Outlet ASTM A105 MSS SP-97 BW	
1	14	0.75	SCH140	SCH160	P31B-00ZHH	Outlet ASTM A105 MSS SP-97 BW	
1	16	0.75	SCH140	SCH160	P31B-0111C	Outlet ASTM A105 MSS SP-97 BW	
1	3	1	SCH160	SCH160	P31B-00B4K	Outlet ASTM A105 MSS SP-97 BW	
1	4	1	SCH160	SCH160	P31B-00B3N	Outlet ASTM A105 MSS SP-97 BW	
1	6	1	SCH160	SCH160	P31B-00AZE	Outlet ASTM A105 MSS SP-97 BW	
1	8	1	SCH140	SCH160	P31B-00AVJ	Outlet ASTM A105 MSS SP-97 BW	
1	10	1	XXS	SCH160	P31B-00YKR	Outlet ASTM A105 MSS SP-97 BW	
1	12	1	SCH140	SCH160	P31B-00BWM	Outlet ASTM A105 MSS SP-97 BW	
1	14	1	SCH140	SCH160	P31B-00ZHJ	Outlet ASTM A105 MSS SP-97 BW	
1	16	1	SCH140	SCH160	P31B-0111D	Outlet ASTM A105 MSS SP-97 BW	
1	4	1.5	SCH160	SCH160	P31B-00BP6	Outlet ASTM A105 MSS SP-97 BW	
1	6	1.5	SCH160	SCH160	P31B-00BJK	Outlet ASTM A105 MSS SP-97 BW	
1	8	1.5	SCH140	SCH160	P31B-00BHP	Outlet ASTM A105 MSS SP-97 BW	
1	10	1.5	XXS	SCH160	P31B-00YKS	Outlet ASTM A105 MSS SP-97 BW	
1	12	1.5	SCH140	SCH160	P31B-00CEL	Outlet ASTM A105 MSS SP-97 BW	
1	14	1.5	SCH140	SCH160	P31B-00XBG	Outlet ASTM A105 MSS SP-97 BW	
1	16	1.5	SCH140	SCH160	P31B-00C9D	Outlet ASTM A105 MSS SP-97 BW	
1	6	2	SCH160	SCH160	P31B-007SS	Outlet ASTM A105 MSS SP-97 BW	

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OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	8	2	SCH140	SCH160	P31B-00AHF	Outlet ASTM A105 MSS SP-97 BW	
1	10	2	XXS	SCH160	P31B-00ASP	Outlet ASTM A105 MSS SP-97 BW	
1	12	2	SCH140	SCH160	P31B-00ARS	Outlet ASTM A105 MSS SP-97 BW	
1	14	2	SCH140	SCH160	P31B-00CBB	Outlet ASTM A105 MSS SP-97 BW	
1	16	2	SCH140	SCH160	P31B-00C6H	Outlet ASTM A105 MSS SP-97 BW	
1	8	3	SCH140	SCH160	P31B-00A38	Outlet ASTM A105 MSS SP-97 BW	
1	10	3	XXS	SCH160	P31B-009CZ	Outlet ASTM A105 MSS SP-97 BW	
1	12	3	SCH140	SCH160	P31B-0097D	Outlet ASTM A105 MSS SP-97 BW	
1	14	3	SCH140	SCH160	P31B-0091K	Outlet ASTM A105 MSS SP-97 BW	
1	16	3	SCH140	SCH160	P31B-00909	Outlet ASTM A105 MSS SP-97 BW	
1	12	4	SCH140	SCH160	P31B-00953	Outlet ASTM A105 MSS SP-97 BW	
1	14	4	SCH140	SCH160	P31B-008Z9	Outlet ASTM A105 MSS SP-97 BW	
1	16	4	SCH140	SCH160	P31B-008TE	Outlet ASTM A105 MSS SP-97 BW	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30B-0002D	Plug ASTM A105 ASME B16.11 NPT Round head	
1	0.75				P30B-0002E	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1				P30B-0002F	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1.5				P30B-0002G	Plug ASTM A105 ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P61B-00664	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
1	0.75		SCH160		P61B-0065U	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
1	1		SCH160		P61B-0065V	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
1	1.5		SCH160		P61B-0065W	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
1	2		SCH160		P61B-0066J	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
1	3		SCH160		P61B-0067T	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
1	4		SCH160		P61B-00671	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
1	6		SCH160		P61B-0066K	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
1	8		SCH140		P61B-009VL	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
1	10		XXS		P61B-009VK	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
1	12		SCH140		P61B-00B1T	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
1	14		SCH140		P61B-00B1U	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
1	16		SCH140		P61B-00BUL	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
541	0.5				P61B-00DLH	Flange NPT ASTM A105 Class 1500 ASME B16.5 RJ	
541	0.75				P61B-00CW7	Flange NPT ASTM A105 Class 1500 ASME B16.5 RJ	
805	0.5		XXS		P61B-00666	Flange WN ASTM A105 Class 2500 ASME B16.5 RJ	
805	0.75		SCH160		P61B-00667	Flange WN ASTM A105 Class 2500 ASME B16.5 RJ	
805	1		SCH160		P61B-00668	Flange WN ASTM A105 Class 2500 ASME B16.5 RJ	
805	1.5		SCH160		P61B-00669	Flange WN ASTM A105 Class 2500 ASME B16.5 RJ	
805	2		SCH160		P61B-0066M	Flange WN ASTM A105 Class 2500 ASME B16.5 RJ	
805	3		SCH160		P61B-006JE	Flange WN ASTM A105 Class 2500 ASME B16.5 RJ	
805	4		SCH160		P61B-00672	Flange WN ASTM A105 Class 2500 ASME B16.5 RJ	
805	6		SCH160		P61B-0066N	Flange WN ASTM A105 Class 2500 ASME B16.5 RJ	
805	8		SCH140		P61B-009VN	Flange WN ASTM A105 Class 2500 ASME B16.5 RJ	
805	10		XXS		P61B-009VM	Flange WN ASTM A105 Class 2500 ASME B16.5 RJ	
805	12		SCH140		P61B-00B1V	Flange WN ASTM A105 Class 2500 ASME B16.5 RJ	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67B-001VE	Blind flange ASTM A105 Class 1500 ASME B16.5 RJ	
1	0.75				P67B-001VF	Blind flange ASTM A105 Class 1500 ASME B16.5 RJ	
1	1				P67B-001VG	Blind flange ASTM A105 Class 1500 ASME B16.5 RJ	
1	1.5				P67B-001VH	Blind flange ASTM A105 Class 1500 ASME B16.5 RJ	
1	2				P67B-0014J	Blind flange ASTM A105 Class 1500 ASME B16.5 RJ	
1	3				P67B-0014G	Blind flange ASTM A105 Class 1500 ASME B16.5 RJ	
1	4				P67B-0014F	Blind flange ASTM A105 Class 1500 ASME B16.5 RJ	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	6				P67B-0014E	Blind flange ASTM A105 Class 1500 ASME B16.5 RJ	
1	8				P67B-0014D	Blind flange ASTM A105 Class 1500 ASME B16.5 RJ	
1	10				P67B-0014P	Blind flange ASTM A105 Class 1500 ASME B16.5 RJ	
1	12				P67B-0014N	Blind flange ASTM A105 Class 1500 ASME B16.5 RJ	
1	14				P67B-0014M	Blind flange ASTM A105 Class 1500 ASME B16.5 RJ	
1	16				P67B-0014L	Blind flange ASTM A105 Class 1500 ASME B16.5 RJ	

REDUCING FLANGE (FR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
805	3	2		SCH160	P62B-000PV	Reducing flange WN ASTM A105 Class 2500 ASME B16.5 RJ	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P75T-000JT	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	0.75				P75T-000JU	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	1				P75T-000JV	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	1.5				P75T-000JW	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	2				P75T-0008A	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	3				P75T-0008E	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	4				P75T-0008D	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	6				P75T-0008C	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	8				P75T-0008B	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	10				P75T-0008L	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	12				P75T-0008K	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	14				P75T-0008J	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	16				P75T-0008H	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	0.5				P75T-000KT	Ring joint gasket Soft iron Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	0.75				P75T-000KU	Ring joint gasket Soft iron Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	1				P75T-000KV	Ring joint gasket Soft iron Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	1.5				P75T-000KW	Ring joint gasket Soft iron Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	2				P75T-000L6	Ring joint gasket Soft iron Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	3				P75T-000MC	Ring joint gasket Soft iron Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	4				P75T-000ME	Ring joint gasket Soft iron Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	6				P75T-000L7	Ring joint gasket Soft iron Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	8				P75T-000MD	Ring joint gasket Soft iron Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	10				P75T-000KX	Ring joint gasket Soft iron Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	12				P75T-000MB	Ring joint gasket Soft iron Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-2				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	3-16				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
805	0.5-1				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
805	1.5				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
805	2				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
805	3-12				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81B-002EZ	Gate valve ASTM A105 Class 1500 API 602 BW XXS Trim SS316L Body and disc seats Stellite-6 WB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service	
1	0.75				P81B-002F0	Gate valve ASTM A105 Class 1500 API 602 BW Sch160 Trim SS316L Body and disc seats Stellite-6 WB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service	
1	1				P81B-002F1	Gate valve ASTM A105 Class 1500 API 602 BW Sch160 Trim SS316L Body and disc seats Stellite-6 WB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service	
1	1.5				P81B-002F2	Gate valve ASTM A105 Class 1500 API 602 BW Sch160 Trim SS316L Body and disc seats Stellite-6 WB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service	

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GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
4601	0.75				P82B-0022L	Y-pattern globe valve ASTM A105 Class 1500 ASME B16.34 BW Sch160 Trim SS316L Body and disc seats Stellite-6 WB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service	
4601	1				P82B-0022M	Y-pattern globe valve ASTM A105 Class 1500 ASME B16.34 BW Sch160 Trim SS316L Body and disc seats Stellite-6 WB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service	
4601	1.5				P82B-0022V	Y-pattern globe valve ASTM A105 Class 1500 ASME B16.34 BW Sch160 Trim SS316L Body and disc seats Stellite-6 WB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service	
4601	2				P82C-00484	Y-pattern globe valve ASTM A216 Grade WCB Class 1500 ASME B16.34 BW Sch160 Trim SS316L Body and disc seats Stellite-6 PSB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service	
4601	3				P82C-00483	Y-pattern globe valve ASTM A216 Grade WCB Class 1500 ASME B16.34 BW Sch160 Trim SS316L Body and disc seats Stellite-6 PSB-BG-OS&Y Gear operated Severe wet H2S service Amine service	
4601	12				P82C-0047J	Y-pattern globe valve ASTM A216 Grade WCB Class 1500 ASME B16.34 BW Sch140 Trim SS316L Body and disc seats Stellite-6 PSB-BG-OS&Y Gear operated Severe wet H2S service Amine service	
4601	14				P82C-003X7	Y-pattern globe valve ASTM A216 Grade WCB Class 1500 ASME B16.34 BW Sch140 Trim SS316L Body and disc seats Stellite-6 PSB-BG-OS&Y Gear operated Severe wet H2S service Amine service	
4601	16				P82C-00482	Y-pattern globe valve ASTM A216 Grade WCB Class 1500 ASME B16.34 BW Sch140 Trim SS316L Body and disc seats Stellite-6 PSB-BG-OS&Y Gear operated Severe wet H2S service Amine service	

ORIFICE FLANGE (FO)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	12		SCH140		P66B-008V2	Orifice flange WN ASTM A105 Class 1500 ASME B16.36 RJ NPS3/4 SW tap x 1	
200	12		SCH140		P66B-008V3	Orifice flange WN ASTM A105 Class 1500 ASME B16.36 RJ NPS3/4 SW tap x 1 with Jack screw	

PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P72B-000JD	Paddle blank ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	0.75				P72B-000JE	Paddle blank ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	1				P72B-000JF	Paddle blank ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	1.5				P72B-000JG	Paddle blank ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	2				P72B-000JH	Paddle blank ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	3				P72B-000KG	Paddle blank ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	4				P72B-000KH	Paddle blank ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	6				P72B-000KJ	Paddle blank ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	8				P72B-000KK	Paddle blank ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	10				P72B-000KR	Paddle blank ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	12				P72B-000KT	Paddle blank ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	14				P72B-000KU	Paddle blank ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	16				P72B-000KV	Paddle blank ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	

PADDLE SPACER (PS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P72B-000JN	Paddle spacer ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	0.75				P72B-000JP	Paddle spacer ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	1				P72B-000JR	Paddle spacer ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	1.5				P72B-000JS	Paddle spacer ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	2				P72B-000JT	Paddle spacer ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	3				P72B-000KL	Paddle spacer ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	4				P72B-000KM	Paddle spacer ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	6				P72B-000KN	Paddle spacer ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	8				P72B-000KP	Paddle spacer ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	10				P72B-000KS	Paddle spacer ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	12				P72B-000KW	Paddle spacer ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	14				P72B-000KX	Paddle spacer ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	16				P72B-000KY	Paddle spacer ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	

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BOLT TABLE (B_N2A502 , STUD ASME RJ, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	110	P80S-0090F	R12	P75T-000JT
0.75	4	0.750	115	P80S-0090G	R14	P75T-000JU
1	4	0.875	130	P80S-005ZB	R16	P75T-000JV
1.5	4	1.000	140	P80S-0061A	R20	P75T-000JW
2	8	0.875	150	P80S-005ZF	R24	P75T-0008A
3	8	1.125	180	P80S-0064T	R35	P75T-0008E
4	8	1.250	230	P80S-0068H	R39	P75T-0008D
6	12	1.375	300	P80S-006J1	R46	P75T-0008C
8	12	1.625	345	P80S-00A5K	R50	P75T-0008B
10	12	1.875	395	P80S-00AW8	R54	P75T-0008L
12	16	2.000	445	P80S-00BH5	R58	P75T-0008K
14	16	2.250	490	P80S-00DLE	R63	P75T-0008J
16	16	2.500	540	P80S-00DZM	R67	P75T-0008H

BOLT TABLE (B_N2A502_805 , STUD ASME RJ, OPTION CODE 805)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	125	P80S-0090J	R13	P75T-000KT
0.75	4	0.750	130	P80S-0090K	R16	P75T-000KU
1	4	0.875	140	P80S-005ZD	R18	P75T-000KV
1.5	4	1.125	175	P80S-0064S	R23	P75T-000KW
2	8	1.000	180	P80S-0061J	R26	P75T-000L6
3	8	1.250	260	P80S-0068P	R32	P75T-000MC
4	8	1.500	305	P80S-006LS	R38	P75T-000ME
6	8	2.000	410	P80S-00BBD	R47	P75T-000L7
8	12	2.000	450	P80S-00BH6	R51	P75T-000MD
10	12	2.500	575	P80S-00DZV	R55	P75T-000KX
12	12	2.750	635	P80S-01RAT	R60	P75T-000MB
14	14	3.000	695		R64	
16	14	3.000	755		R68	

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BRANCH TABLE (T_N2A502)

RUN PIPE SIZE (in) \ BRANCH SIZE (in)	0.5	0.75	1	1.5	2	3	4	6	8	10	12	14	16
0.5	TS												
0.75		TS											
1		TR	TS										
1.5		TR	TR	TS									
2		L	TR	TR	TS								
3		L	L	TR	TR	TS							
4	L	L	L	L	TR	TR	TS						
6	L	L	L	L	L	TR	TR	TS					
8		L	L	L	L	L	TR	TR	TS				
10		L	L	L	L	L	TR	TR	TR	TS			
12		L	L	L	L	L	L	TR	TR	TR	TS		
14		L	L	L	L	L	L	TR	TR	TR	TR	TS	
16		L	L	L	L	L	L	TR	TR	TR	TR	TR	TS

TS : STRAIGHT TEE
TR : REDUCING TEE
L : OUTLET

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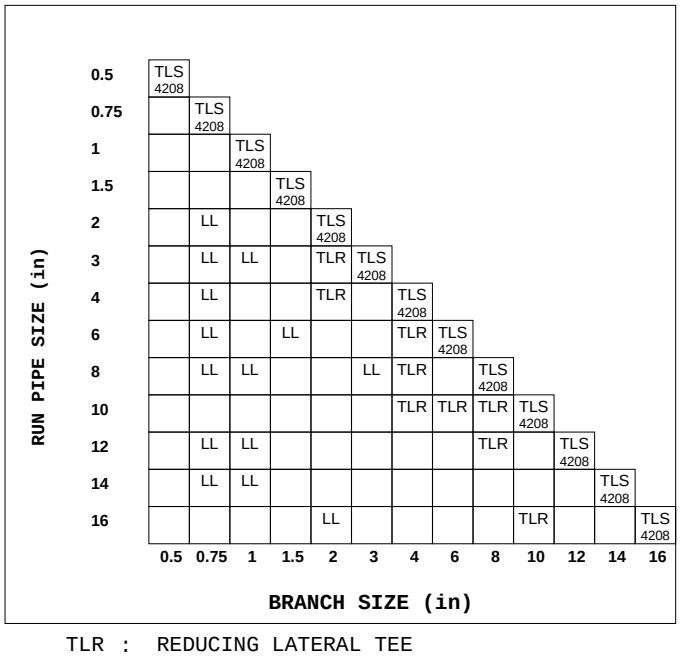
BRANCH TABLE (T_N2A502_2)



TLR : REDUCING LATERAL TEE
LL : LATROLET
TLS : STRAIGHT LATERAL TEE

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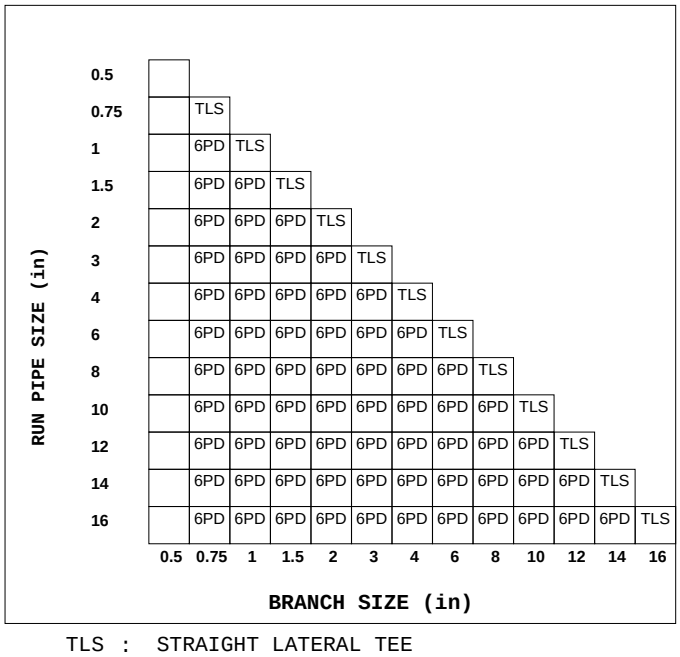
BRANCH TABLE (T_N2A502_3)



RUN PIPE SIZE (in) \ BRANCH SIZE (in)	0.5	0.75	1	1.5	2	3	4	6	8	10	12	14	16
0.5													
0.75		TLS											
1		6PD	TLS										
1.5		6PD	6PD	TLS									
2		6PD	6PD	6PD	TLS								
3		6PD	6PD	6PD	6PD	TLS							
4		6PD	6PD	6PD	6PD	6PD	TLS						
6		6PD	6PD	6PD	6PD	6PD	6PD	TLS					
8		6PD	6PD	6PD	6PD	6PD	6PD	6PD	TLS				
10		6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	TLS			
12		6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	TLS		
14		6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	TLS	
16		6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	TLS

TLS : STRAIGHT LATERAL TEE
6PD : REINFORCING PAD 60 DEG

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PIPING CLASS

N2A602 REV NO. 2

Material : Killed CS
Rating : ASME CLASS 1500
Flange Face : RJ
C.A.(mm) : 3.00
Gasket : Ring Octagonal
Service : PROCESS -WET LOW SEVERITY SOUR SERVICE SUBJECT TO NACE + HYDROGEN SERVICE
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
5	BOLTING CONFIRMING TO B7M / 2HM SHALL BE USED UNDER CONDITIONS (A) DIRECT EXPOSURE TO SOUR ENVIRONMENTS (B) WHEN THE BOLTING WILL BE BURIED OR INSULATED
27	PWHT OF CARBON STEEL PIPING IN WET H2S, CAUSTIC AND AMINE SERVICES SHALL BE IN ACCORDANCE WITH SECTION 10.2, 10.3, AND 10.4 OF PROJECT SPECIFICATION 3550-8440-SP-0002 MATERIALS REQUIREMENTS FOR PRESSURISED EQUIPMENT AND PIPING. FOR CAUSTIC AND AMINE SERVICE THE FOLLOWING SHALL APPLY: - PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF ALL SITE PIPING FABRICATION WELDS IS REQUIRED FOR ALL WALL THICKNESSES. FOR MODERATE AND SEVERE WET H2S SERVICE THE FOLLOWING SHALL APPLY: PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF SITE FABRICATION CIRCUMFERENTIAL OR BRANCH WELDS IS NOT REQUIRED IF WELDS ARE MULTIPASS AND IN ACCORDANCE WITH PARA 10.2.12 OF PROJECT SPECIFICATION 3550-8440-SP-0002. FOR SERVICES MEETING THE WET H2S CRITERIA AND CAUSTIC OR AMINE CRITERIA THE MORE STRINGENT PWHT REQUIREMENT SHALL GOVERN.

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
541	NPT(F) (F)
805	CLASS 2500 (B,F,FR,G)
4601	Y-PATTERN (W)

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PIPING CLASS
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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P01A-00143	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	0.75		SCH160		P01A-0010R	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1		SCH160		P01A-0014M	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1.5		SCH160		P01A-0015J	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	2		SCH160		P01A-0019T	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	3		SCH160		P01A-001S5	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	4		SCH160		P01A-001TN	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	6		SCH160		P01A-001VD	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	8		SCH140		P01A-001WJ	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	10		XXS		P01A-0079W	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P02A-00172	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	0.75		SCH160		P02A-000V8	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1		SCH160		P02A-000V7	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1.5		SCH160		P02A-000V9	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	2		SCH160		P02A-000KW	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		SCH160		P02A-000U4	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		SCH160		P02A-002JE	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		SCH160		P02A-002J9	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		SCH140		P02A-003F9	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	10		XXS		P02A-003RY	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P03A-0012Y	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	0.75		SCH160		P03A-000RS	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1		SCH160		P03A-000RR	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1.5		SCH160		P03A-000RP	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	2		SCH160		P03A-000HU	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		SCH160		P03A-000RB	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		SCH160		P03A-002FY	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		SCH160		P03A-002FT	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		SCH140		P03A-003D4	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	10		XXS		P03A-003NL	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P21A-002M0	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	0.75		SCH160		P21A-002B8	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1		SCH160		P21A-002B6	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5		SCH160		P21A-002B9	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2		SCH160		P21A-00245	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		SCH160		P21A-002AG	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		SCH160		P21A-003GZ	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6		SCH160		P21A-003GU	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8		SCH140		P21A-003Z0	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10		XXS		P21A-0049B	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75	SCH160	SCH160	P24A-004B6	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.75	SCH160	SCH160	P24A-004B2	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	1	SCH160	SCH160	P24A-004BA	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	SCH160	SCH160	P24A-00AEU	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	SCH160	SCH160	P24A-003AX	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	SCH160	SCH160	P24A-004LF	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	SCH160	SCH160	P24A-0045H	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	SCH160	SCH160	P24A-00GPP	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	SCH160	SCH160	P24A-00GSS	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	SCH160	SCH160	P24A-00H9L	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	SCH160	SCH160	P24A-00GPR	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH140	SCH160	P24A-00K2T	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH140	SCH160	P24A-00K2U	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	XXS	SCH160	P24A-00LBE	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	6	XXS	SCH160	P24A-00K2V	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	8	XXS	SCH140	P24A-00K2W	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	XXS	P27A-003ZL	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.5	SCH160	XXS	P27A-003ZM	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.75	SCH160	SCH160	P27A-002T5	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.5	SCH160	XXS	P27A-003ZN	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.75	SCH160	SCH160	P27A-002T7	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	1	SCH160	SCH160	P27A-002T4	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	0.75	SCH160	SCH160	P27A-0025L	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	SCH160	SCH160	P27A-0025K	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	SCH160	SCH160	P27A-0025J	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	SCH160	SCH160	P27A-00301	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	SCH160	SCH160	P27A-002NC	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	1.5	SCH160	SCH160	P27A-0073L	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	SCH160	SCH160	P27A-00746	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	SCH160	SCH160	P27A-0074N	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	SCH160	SCH160	P27A-007NZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	SCH160	SCH160	P27A-007PP	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH140	SCH160	P27A-007VZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH140	SCH160	P27A-007X7	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	XXS	SCH160	P27A-00EMU	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	6	XXS	SCH160	P27A-00EMV	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	8	XXS	SCH140	P27A-00EMW	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	XXS	P28A-003ZE	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.5	SCH160	XXS	P28A-003ZF	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.75	SCH160	SCH160	P28A-002TU	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.5	SCH160	XXS	P28A-003ZG	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.75	SCH160	SCH160	P28A-002TW	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	1	SCH160	SCH160	P28A-002TR	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	0.75	SCH160	SCH160	P28A-002SU	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	SCH160	SCH160	P28A-002ST	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	SCH160	SCH160	P28A-002SS	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	SCH160	SCH160	P28A-0030P	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	SCH160	SCH160	P28A-002NY	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	1.5	SCH160	SCH160	P28A-008GK	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	SCH160	SCH160	P28A-008GL	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	SCH160	SCH160	P28A-008J1	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	SCH160	SCH160	P28A-008ZE	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	SCH160	SCH160	P28A-008GM	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH140	SCH160	P28A-00BSJ	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH140	SCH160	P28A-00AH9	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	XXS	SCH160	P28A-00BSK	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	6	XXS	SCH160	P28A-00BSL	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	8	XXS	SCH140	P28A-00BSM	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	

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CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P29A-001UE	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	0.75		SCH160		P29A-001UF	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	1		SCH160		P29A-001TC	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	1.5		SCH160		P29A-001TD	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	2		SCH160		P29A-001TK	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	3		SCH160		P29A-001TN	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	4		SCH160		P29A-001WH	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	6		SCH160		P29A-0032B	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	8		SCH140		P29A-00334	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Moderate wet H2S service	
1	10		XXS		P29A-00335	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Moderate wet H2S service	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P41A-000B9	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		XXS		P41A-000BA	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		XXS		P41A-000D8	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		XXS		P41A-000D9	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2	0.75	SCH160	SCH160	P31B-007NC	Outlet ASTM A105 MSS SP-97 BW	
1	3	0.75	SCH160	SCH160	P31B-00CMV	Outlet ASTM A105 MSS SP-97 BW	
1	4	0.75	SCH160	SCH160	P31B-00CLV	Outlet ASTM A105 MSS SP-97 BW	
1	6	0.75	SCH160	SCH160	P31B-00CKM	Outlet ASTM A105 MSS SP-97 BW	
1	8	0.75	SCH140	SCH160	P31B-00C9W	Outlet ASTM A105 MSS SP-97 BW	
1	10	0.75	XXS	SCH160	P31B-00XJF	Outlet ASTM A105 MSS SP-97 BW	
1	3	1	SCH160	SCH160	P31B-00B4K	Outlet ASTM A105 MSS SP-97 BW	
1	4	1	SCH160	SCH160	P31B-00B3N	Outlet ASTM A105 MSS SP-97 BW	
1	6	1	SCH160	SCH160	P31B-00AZE	Outlet ASTM A105 MSS SP-97 BW	
1	8	1	SCH140	SCH160	P31B-00AVJ	Outlet ASTM A105 MSS SP-97 BW	
1	10	1	XXS	SCH160	P31B-00YKR	Outlet ASTM A105 MSS SP-97 BW	
1	4	1.5	SCH160	SCH160	P31B-00BP6	Outlet ASTM A105 MSS SP-97 BW	
1	6	1.5	SCH160	SCH160	P31B-00BJK	Outlet ASTM A105 MSS SP-97 BW	
1	8	1.5	SCH140	SCH160	P31B-00BHP	Outlet ASTM A105 MSS SP-97 BW	
1	10	1.5	XXS	SCH160	P31B-00YKS	Outlet ASTM A105 MSS SP-97 BW	
1	6	2	SCH160	SCH160	P31B-007SS	Outlet ASTM A105 MSS SP-97 BW	
1	8	2	SCH140	SCH160	P31B-00AHF	Outlet ASTM A105 MSS SP-97 BW	
1	10	2	XXS	SCH160	P31B-00ASP	Outlet ASTM A105 MSS SP-97 BW	
1	8	3	SCH140	SCH160	P31B-00A38	Outlet ASTM A105 MSS SP-97 BW	
1	10	3	XXS	SCH160	P31B-009CZ	Outlet ASTM A105 MSS SP-97 BW	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30B-0002D	Plug ASTM A105 ASME B16.11 NPT Round head	
1	0.75				P30B-0002E	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1				P30B-0002F	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1.5				P30B-0002G	Plug ASTM A105 ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P61B-00664	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
1	0.75		SCH160		P61B-0065U	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
1	1		SCH160		P61B-0065V	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
1	1.5		SCH160		P61B-0065W	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
1	2		SCH160		P61B-0066J	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
1	3		SCH160		P61B-0067T	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
1			SCH160		P61B-00671	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
1	6		SCH160		P61B-0066K	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	8		SCH140		P61B-009VL	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
1	10		XXS		P61B-009VK	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
541	0.5				P61B-00DLH	Flange NPT ASTM A105 Class 1500 ASME B16.5 RJ	
541	0.75				P61B-00CW7	Flange NPT ASTM A105 Class 1500 ASME B16.5 RJ	
805	0.5		XXS		P61B-00666	Flange WN ASTM A105 Class 2500 ASME B16.5 RJ	
805	0.75		SCH160		P61B-00667	Flange WN ASTM A105 Class 2500 ASME B16.5 RJ	
805	1		SCH160		P61B-00668	Flange WN ASTM A105 Class 2500 ASME B16.5 RJ	
805	1.5		SCH160		P61B-00669	Flange WN ASTM A105 Class 2500 ASME B16.5 RJ	
805	2		SCH160		P61B-0066M	Flange WN ASTM A105 Class 2500 ASME B16.5 RJ	
805	3		SCH160		P61B-006JE	Flange WN ASTM A105 Class 2500 ASME B16.5 RJ	
805	4		SCH160		P61B-00672	Flange WN ASTM A105 Class 2500 ASME B16.5 RJ	
805	6		SCH160		P61B-0066N	Flange WN ASTM A105 Class 2500 ASME B16.5 RJ	
805	8		SCH140		P61B-009VN	Flange WN ASTM A105 Class 2500 ASME B16.5 RJ	
805	10		XXS		P61B-009VM	Flange WN ASTM A105 Class 2500 ASME B16.5 RJ	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67B-001VE	Blind flange ASTM A105 Class 1500 ASME B16.5 RJ	
1	0.75				P67B-001VF	Blind flange ASTM A105 Class 1500 ASME B16.5 RJ	
1	1				P67B-001VG	Blind flange ASTM A105 Class 1500 ASME B16.5 RJ	
1	1.5				P67B-001VH	Blind flange ASTM A105 Class 1500 ASME B16.5 RJ	
1	2				P67B-0014J	Blind flange ASTM A105 Class 1500 ASME B16.5 RJ	
1	3				P67B-0014G	Blind flange ASTM A105 Class 1500 ASME B16.5 RJ	
1	4				P67B-0014F	Blind flange ASTM A105 Class 1500 ASME B16.5 RJ	
1	6				P67B-0014E	Blind flange ASTM A105 Class 1500 ASME B16.5 RJ	
1	8				P67B-0014D	Blind flange ASTM A105 Class 1500 ASME B16.5 RJ	
1	10				P67B-0014P	Blind flange ASTM A105 Class 1500 ASME B16.5 RJ	

REDUCING FLANGE (FR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	1.5		SCH160	P62B-000PH	Reducing flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
1	3	2		SCH160	P62B-000PJ	Reducing flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
805	3	2		SCH160	P62B-000PV	Reducing flange WN ASTM A105 Class 2500 ASME B16.5 RJ	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P75T-000JT	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	0.75				P75T-000JU	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	1				P75T-000JV	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	1.5				P75T-000JW	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	2				P75T-0008A	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	3				P75T-0008E	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	4				P75T-0008D	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	6				P75T-0008C	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	8				P75T-0008B	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	10				P75T-0008L	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	0.5				P75T-000KT	Ring joint gasket Soft iron Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	0.75				P75T-000KU	Ring joint gasket Soft iron Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	1				P75T-000KV	Ring joint gasket Soft iron Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	1.5				P75T-000KW	Ring joint gasket Soft iron Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	2				P75T-000L6	Ring joint gasket Soft iron Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	3				P75T-000MC	Ring joint gasket Soft iron Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	4				P75T-000ME	Ring joint gasket Soft iron Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	6				P75T-000L7	Ring joint gasket Soft iron Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	8				P75T-000MD	Ring joint gasket Soft iron Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	10				P75T-000KX	Ring joint gasket Soft iron Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	

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BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-2				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	3-10				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
805	0.5-1				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
805	1.5				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
805	2				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
805	3-10				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81B-002F3	Gate valve ASTM A105 Class 1500 API 602 BW XXS Trim SS316L Body and disc seats Stellite-6 WB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	0.75				P81B-0021K	Gate valve ASTM A105 Class 1500 API 602 BW Sch160 Trim SS316L Body and disc seats Stellite-6 WB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	1				P81B-0021L	Gate valve ASTM A105 Class 1500 API 602 BW Sch160 Trim SS316L Body and disc seats Stellite-6 WB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	1.5				P81B-0021M	Gate valve ASTM A105 Class 1500 API 602 BW Sch160 Trim SS316L Body and disc seats Stellite-6 WB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	2				P81C-006UU	Gate valve ASTM A216 Grade WCB Class 1500 API 600 BW Sch160 Trim SS316L Body and disc seats Stellite-6 PSB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	3				P81C-006UV	Gate valve ASTM A216 Grade WCB Class 1500 API 600 BW Sch160 Trim SS316L Body and disc seats Stellite-6 PSB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	4				P81C-006P4	Gate valve ASTM A216 Grade WCB Class 1500 API 600 BW Sch160 Trim SS316L Body and disc seats Stellite-6 PSB-BG-OS&Y Gear operated Moderate wet H2S service	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82B-001UJ	Globe valve ASTM A105 Class 1500 API 602 BW XXS Trim SS316L Body and disc seats Stellite-6 WB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	0.75				P82B-001L6	Globe valve ASTM A105 Class 1500 API 602 BW Sch160 Trim SS316L Body and disc seats Stellite-6 WB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	1				P82B-001L7	Globe valve ASTM A105 Class 1500 API 602 BW Sch160 Trim SS316L Body and disc seats Stellite-6 WB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	1.5				P82B-001L8	Globe valve ASTM A105 Class 1500 API 602 BW Sch160 Trim SS316L Body and disc seats Stellite-6 WB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	2				P82C-003AW	Globe valve ASTM A216 Grade WCB Class 1500 BS 1873 BW Sch160 Trim SS316L Body and disc seats Stellite-6 PSB-BG-OS&Y Handwheel operated Moderate wet H2S service	
1	3				P82C-00437	Globe valve ASTM A216 Grade WCB Class 1500 BS 1873 BW Sch160 Trim SS316L Body and disc seats Stellite-6 PSB-BG-OS&Y Gear operated Moderate wet H2S service	
1	4				P82C-003TD	Globe valve ASTM A216 Grade WCB Class 1500 BS 1873 BW Sch160 Trim SS316L Body and disc seats Stellite-6 PSB-BG-OS&Y Gear operated Moderate wet H2S service	
1	6				P82C-003TE	Globe valve ASTM A216 Grade WCB Class 1500 BS 1873 BW Sch160 Trim SS316L Body and disc seats Stellite-6 PSB-BG-OS&Y Gear operated Moderate wet H2S service	
1	8				P82C-003V3	Globe valve ASTM A216 Grade WCB Class 1500 BS 1873 BW Sch140 Trim SS316L Body and disc seats Stellite-6 PSB-BG-OS&Y Gear operated Moderate wet H2S service	
4601	1.5				P82B-0022U	Y-pattern globe valve ASTM A105 Class 1500 ASME B16.34 BW Sch160 Trim SS316L Body and disc seats Stellite-6 WB-BG-OS&Y Handwheel operated Moderate wet H2S service	
4601	2				P82C-0047K	Y-pattern globe valve ASTM A216 Grade WCB Class 1500 ASME B16.34 BW Sch160 Trim SS316L Body and disc seats Stellite-6 PSB-BG-OS&Y Handwheel operated Moderate wet H2S service	
4601	3				P82C-00485	Y-pattern globe valve ASTM A216 Grade WCB Class 1500 ASME B16.34 BW Sch160 Trim SS316L Body and disc seats Stellite-6 PSB-BG-OS&Y Gear operated Moderate wet H2S service	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83B-001D7	Check valve ASTM A105 Class 1500 API 602 BW XXS Trim SS316L Body and disc seats Stellite-6 Lift-type Welded cover Moderate wet H2S service	
1	0.75				P83B-001D0	Check valve ASTM A105 Class 1500 API 602 BW Sch160 Trim SS316L Body and disc seats Stellite-6 Lift-type Welded cover Moderate wet H2S service	
1	1				P83B-001D1	Check valve ASTM A105 Class 1500 API 602 BW Sch160 Trim SS316L Body and disc seats Stellite-6 Lift-type Welded cover Moderate wet H2S service	
1	1.5				P83B-001D2	Check valve ASTM A105 Class 1500 API 602 BW Sch160 Trim SS316L Body and disc seats Stellite-6 Lift-type Welded cover Moderate wet H2S service	
1	2				P83C-00346	Check valve ASTM A216 Grade WCB Class 1500 BS 1868 BW Sch160 Trim SS316L Body and disc seats Stellite-6 Swing-type Pressure seal cap Moderate wet H2S service	
1	3				P83C-00347	Check valve ASTM A216 Grade WCB Class 1500 BS 1868 BW Sch160 Trim SS316L Body and disc seats Stellite-6 Swing-type Pressure seal cap Moderate wet H2S service	
1	4				P83C-00341	Check valve ASTM A216 Grade WCB Class 1500 BS 1868 BW Sch160 Trim SS316L Body and disc seats Stellite-6 Swing-type Pressure seal cap Moderate wet H2S service	

PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P72B-000JD	Paddle blank ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	0.75				P72B-000JE	Paddle blank ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	1				P72B-000JF	Paddle blank ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	

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PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5				P72B-000JG	Paddle blank ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	2				P72B-000JH	Paddle blank ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	3				P72B-000KG	Paddle blank ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	4				P72B-000KH	Paddle blank ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	6				P72B-000KJ	Paddle blank ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	8				P72B-000KK	Paddle blank ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	10				P72B-000KR	Paddle blank ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	

PADDLE SPACER (PS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P72B-000JN	Paddle spacer ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	0.75				P72B-000JP	Paddle spacer ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	1				P72B-000JR	Paddle spacer ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	1.5				P72B-000JS	Paddle spacer ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	2				P72B-000JT	Paddle spacer ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	3				P72B-000KL	Paddle spacer ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	4				P72B-000KM	Paddle spacer ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	6				P72B-000KN	Paddle spacer ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	8				P72B-000KP	Paddle spacer ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	10				P72B-000KS	Paddle spacer ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	

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BOLT TABLE (B_N2A602 , STUD ASME RJ, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	110	P80S-0090F	R12	P75T-000JT
0.75	4	0.750	115	P80S-0090G	R14	P75T-000JU
1	4	0.875	130	P80S-005ZB	R16	P75T-000JV
1.5	4	1.000	140	P80S-0061A	R20	P75T-000JW
2	8	0.875	150	P80S-005ZF	R24	P75T-0008A
3	8	1.125	180	P80S-0064T	R35	P75T-0008E
4	8	1.250	230	P80S-0068H	R39	P75T-0008D
6	12	1.375	300	P80S-006J1	R46	P75T-0008C
8	12	1.625	345	P80S-00A5K	R50	P75T-0008B
10	12	1.875	395	P80S-00AW8	R54	P75T-0008L

BOLT TABLE (B_N2A602_805 , STUD ASME RJ, OPTION CODE 805)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	125	P80S-0090J	R13	P75T-000KT
0.75	4	0.750	130	P80S-0090K	R16	P75T-000KU
1	4	0.875	140	P80S-005ZD	R18	P75T-000KV
1.5	4	1.125	175	P80S-0064S	R23	P75T-000KW
2	8	1.000	180	P80S-0061J	R26	P75T-000L6
3	8	1.250	260	P80S-0068P	R32	P75T-000MC
4	8	1.500	305	P80S-006LS	R38	P75T-000ME
6	8	2.000	410	P80S-00BBD	R47	P75T-000L7
8	12	2.000	450	P80S-00BH6	R51	P75T-000MD
10	12	2.500	575	P80S-00DZV	R55	P75T-000KX

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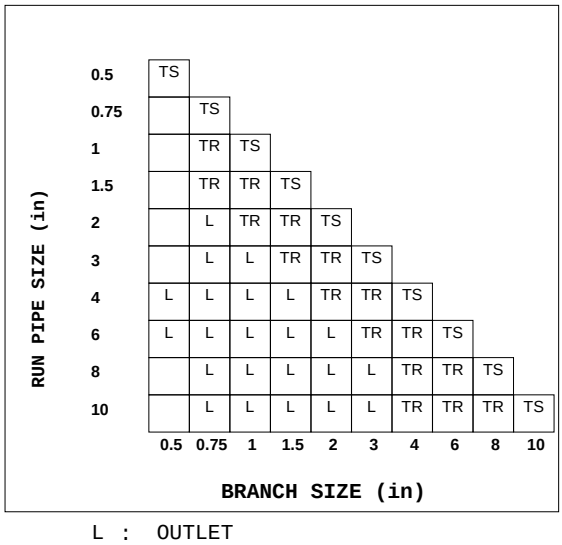
BRANCH TABLE (T_N2A602)



L : OUTLET
TS : STRAIGHT TEE
TR : REDUCING TEE

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PIPING CLASS

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Material : Killed CS
Rating : ASME CLASS 1500
Flange Face : RJ
C.A.(mm) : 3.00
Gasket : Ring Octagonal
Service : PROCESS - GENERAL PROCES NON SOUR NON CORROSIVE
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED

DETAIL NOTES :

NO.	DESCRIPTION
999	HOLD ITEMS. ORDER PLACEMENT SHALL NOT BE DONE BEFORE RELEASING HOLD.

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
200	WITH JACK SCREW (FO)
541	NPT(F) (F)
805	CLASS 2500 (B,F,G)
4602	DISSIMILAR TYPE CHECK VALVE (X)

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PIPING CLASS
N2AP01 REV NO. 2

PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P01A-0078U	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE Licensor-1	
1	0.75		SCH160		P01A-0078V	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE Licensor-1	
1	1		SCH160		P01A-0078W	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE Licensor-1	
1	1.5		SCH160		P01A-0078X	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE Licensor-1	
1	2		SCH160		P01A-007A4	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Licensor-1	
1	3		SCH160		P01A-007A5	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Licensor-1	
1	4		SCH160		P01A-008YH	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Licensor-1	
1	6		SCH160		P01A-008YJ	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Licensor-1	
1	8		SCH140		P01A-008YK	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE Licensor-1	
1	10		XXS		P01A-0078K	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE Licensor-1	
1	12		SCH140		P01A-009JW	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE Licensor-1	
1	14		SCH140		P01A-009JX	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE Licensor-1	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P02A-003TW	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	0.75		SCH160		P02A-003TX	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	1		SCH160		P02A-003TY	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	1.5		SCH160		P02A-003TZ	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	2		SCH160		P02A-003S8	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	3		SCH160		P02A-003S9	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	4		SCH160		P02A-004ZH	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	6		SCH160		P02A-004ZJ	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	8		SCH140		P02A-004ZK	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	10		XXS		P02A-003R1	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Licensor-1	
1	12		SCH140		P02A-00541	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Licensor-1	
1	14		SCH140		P02A-00542	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Licensor-1	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P03A-003RJ	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	0.75		SCH160		P03A-003RK	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	1		SCH160		P03A-003RL	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	1.5		SCH160		P03A-003RM	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	2		SCH160		P03A-003NX	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	3		SCH160		P03A-003NY	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	4		SCH160		P03A-004JZ	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	6		SCH160		P03A-004K0	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	8		SCH140		P03A-004K1	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius Licensor-1	
1	10		XXS		P03A-003MP	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Licensor-1	
1	12		SCH140		P03A-004R0	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Licensor-1	
1	14		SCH140		P03A-004R1	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius Licensor-1	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P21A-004B8	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	0.75		SCH160		P21A-004B9	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	1		SCH160		P21A-004BA	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	1.5		SCH160		P21A-004BB	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	2		SCH160		P21A-0049L	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	3		SCH160		P21A-0049M	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	4		SCH160		P21A-00531	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	6		SCH160		P21A-00532	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	8		SCH140		P21A-00533	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	10		XXS		P21A-0048J	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	12		SCH140		P21A-0057A	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	14		SCH140		P21A-0057B	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	

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REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75	SCH160	SCH160	P24A-00K7S	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	1.5	0.75	SCH160	SCH160	P24A-00K7T	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	1.5	1	SCH160	SCH160	P24A-00K7U	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	2	1	SCH160	SCH160	P24A-00L7N	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	2	1.5	SCH160	SCH160	P24A-00L7P	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	3	1.5	SCH160	SCH160	P24A-00PJF	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	3	2	SCH160	SCH160	P24A-00K37	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	4	2	SCH160	SCH160	P24A-00PJG	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	4	3	SCH160	SCH160	P24A-00PJH	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	6	3	SCH160	SCH160	P24A-00PJJ	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	6	4	SCH160	SCH160	P24A-00PJK	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	8	4	SCH140	SCH160	P24A-00PJL	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	8	6	SCH140	SCH160	P24A-00PJM	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	10	4	XXS	SCH160	P24A-00PJN	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	10	6	XXS	SCH160	P24A-00PJP	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	10	8	XXS	SCH140	P24A-00PJR	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	12	6	SCH140	SCH160	P24A-00R9F	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	12	8	SCH140	SCH140	P24A-00R9G	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	12	10	SCH140	XXS	P24A-00R9E	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	14	6	SCH140	SCH160	P24A-00R9C	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	14	8	SCH140	SCH140	P24A-00R9D	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	14	10	SCH140	XXS	P24A-00R9A	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	14	12	SCH140	SCH140	P24A-00R9B	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	SCH160	P27A-00ETE	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	1	0.5	SCH160	SCH160	P27A-00ETF	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	1	0.75	SCH160	SCH160	P27A-00ETG	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	1.5	0.5	SCH160	SCH160	P27A-00ETH	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	1.5	0.75	SCH160	SCH160	P27A-00ETJ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	1.5	1	SCH160	SCH160	P27A-00ETK	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	2	0.75	SCH160	SCH160	P27A-00HWE	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	2	1	SCH160	SCH160	P27A-00HWF	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	2	1.5	SCH160	SCH160	P27A-00HWG	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	3	1.5	SCH160	SCH160	P27A-00HWH	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	3	2	SCH160	SCH160	P27A-00ENG	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	4	1.5	SCH160	SCH160	P27A-00HWJ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	4	2	SCH160	SCH160	P27A-00HWK	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	4	3	SCH160	SCH160	P27A-00HWL	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	6	3	SCH160	SCH160	P27A-00HWM	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	6	4	SCH160	SCH160	P27A-00HWN	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	8	4	SCH140	SCH160	P27A-00HWP	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	8	6	SCH140	SCH160	P27A-00HWR	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	10	4	XXS	SCH160	P27A-00HWS	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	10	6	XXS	SCH160	P27A-00HWT	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	10	8	XXS	SCH140	P27A-00HWU	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	12	6	SCH140	SCH160	P27A-00JFH	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	12	8	SCH140	SCH140	P27A-00JFJ	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	12	10	SCH140	XXS	P27A-00JFG	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	14	6	SCH140	SCH160	P27A-00JFE	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	14	8	SCH140	SCH140	P27A-00JFF	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	14	10	SCH140	XXS	P27A-00JFC	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	14	12	SCH140	SCH140	P27A-00JFD	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	SCH160	P28A-00BX8	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	1	0.5	SCH160	SCH160	P28A-00BX9	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	

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ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75	SCH160	SCH160	P28A-00BXA	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	1.5	0.5	SCH160	SCH160	P28A-00BXB	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	1.5	0.75	SCH160	SCH160	P28A-00BXC	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	1.5	1	SCH160	SCH160	P28A-00BXD	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	2	0.75	SCH160	SCH160	P28A-00F5Z	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	2	1	SCH160	SCH160	P28A-00F60	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	2	1.5	SCH160	SCH160	P28A-00F61	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	3	1.5	SCH160	SCH160	P28A-00F62	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	3	2	SCH160	SCH160	P28A-00BT8	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	4	1.5	SCH160	SCH160	P28A-00F63	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	4	2	SCH160	SCH160	P28A-00F64	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	4	3	SCH160	SCH160	P28A-00F65	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	6	3	SCH160	SCH160	P28A-00F66	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	6	4	SCH160	SCH160	P28A-00F67	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	8	4	SCH140	SCH160	P28A-00F68	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	8	6	SCH140	SCH160	P28A-00F69	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	10	4	XXS	SCH160	P28A-00F6A	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	10	6	XXS	SCH160	P28A-00F6B	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	10	8	XXS	SCH140	P28A-00F6C	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	12	6	SCH140	SCH160	P28A-00FSN	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	12	8	SCH140	SCH140	P28A-00FSP	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	12	10	SCH140	XXS	P28A-00FSM	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	14	6	SCH140	SCH160	P28A-00FSK	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	14	8	SCH140	SCH140	P28A-00FSL	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	14	10	SCH140	XXS	P28A-00FSH	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	14	12	SCH140	SCH140	P28A-00FSJ	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P29A-0035G	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	0.75		SCH160		P29A-0035H	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	1		SCH160		P29A-0035J	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	1.5		SCH160		P29A-0035K	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	2		SCH160		P29A-0033S	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	3		SCH160		P29A-0033T	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	4		SCH160		P29A-005HU	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	6		SCH160		P29A-005HV	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	8		SCH140		P29A-005HW	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Licensor-1	
1	10		XXS		P29A-00323	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	12		SCH140		P29A-005MY	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	
1	14		SCH140		P29A-005MZ	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Licensor-1	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P41A-0017X	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Licensor-1	
1	0.75		XXS		P41A-0017Y	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Licensor-1	
1	1		XXS		P41A-0017Z	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Licensor-1	
1	1.5		XXS		P41A-00180	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Licensor-1	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2	0.75	SCH160	SCH160	P31B-011V4	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	3	0.75	SCH160	SCH160	P31B-011V5	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	4	0.75	SCH160	SCH160	P31B-011V7	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	6	0.75	SCH160	SCH160	P31B-011VA	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	8	0.75	SCH140	SCH160	P31B-011VE	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	10	0.75	XXS	SCH160	P31B-011VJ	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	12	0.75	SCH140	SCH160	P31B-0137N	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	14	0.75	SCH140	SCH160	P31B-0137V	Outlet ASTM A105 MSS SP-97 BW Licensor-1	

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OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	1	SCH160	SCH160	P31B-011V6	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	4	1	SCH160	SCH160	P31B-011V8	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	6	1	SCH160	SCH160	P31B-011VB	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	8	1	SCH140	SCH160	P31B-011VF	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	10	1	XXS	SCH160	P31B-011VK	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	12	1	SCH140	SCH160	P31B-0137P	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	14	1	SCH140	SCH160	P31B-0137W	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	4	1.5	SCH160	SCH160	P31B-011V9	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	6	1.5	SCH160	SCH160	P31B-011VC	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	8	1.5	SCH140	SCH160	P31B-011VG	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	10	1.5	XXS	SCH160	P31B-011VL	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	12	1.5	SCH140	SCH160	P31B-0137R	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	14	1.5	SCH140	SCH160	P31B-0137X	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	6	2	SCH160	SCH160	P31B-011VD	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	8	2	SCH140	SCH160	P31B-011VH	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	10	2	XXS	SCH160	P31B-011VM	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	12	2	SCH140	SCH160	P31B-0137S	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	14	2	SCH140	SCH160	P31B-0137Y	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	8	3	SCH140	SCH160	P31B-0137L	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	10	3	XXS	SCH160	P31B-0137M	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	12	3	SCH140	SCH160	P31B-0137T	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	14	3	SCH140	SCH160	P31B-0137Z	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	12	4	SCH140	SCH160	P31B-0137U	Outlet ASTM A105 MSS SP-97 BW Licensor-1	
1	14	4	SCH140	SCH160	P31B-01380	Outlet ASTM A105 MSS SP-97 BW Licensor-1	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30B-00067	Plug ASTM A105 ASME B16.11 NPT Round head Licensor-1	
1	0.75				P30B-00068	Plug ASTM A105 ASME B16.11 NPT Round head Licensor-1	
1	1				P30B-00069	Plug ASTM A105 ASME B16.11 NPT Round head Licensor-1	
1	1.5				P30B-0006A	Plug ASTM A105 ASME B16.11 NPT Round head Licensor-1	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P61B-00D43	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ Licensor-1	
1	0.75		SCH160		P61B-00D44	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ Licensor-1	
1	1		SCH160		P61B-00D45	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ Licensor-1	
1	1.5		SCH160		P61B-00D46	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ Licensor-1	
1	2		SCH160		P61B-00ADM	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ Licensor-1	
1	3		SCH160		P61B-00D48	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ Licensor-1	
1	4		SCH160		P61B-00D49	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ Licensor-1	
1	6		SCH160		P61B-00D4A	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ Licensor-1	
1	8		SCH140		P61B-00D4B	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ Licensor-1	
1	10		XXS		P61B-00D47	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ Licensor-1	
1	12		SCH140		P61B-00DNF	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ Licensor-1	
1	14		SCH140		P61B-00DNG	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ Licensor-1	
541	0.5				P61B-00DLD	Flange NPT ASTM A105 Class 1500 ASME B16.5 RJ Licensor-1	
541	0.75				P61B-00CY2	Flange NPT ASTM A105 Class 1500 ASME B16.5 RJ Licensor-1	
805	0.5		SCH160		P61B-00D4C	Flange WN ASTM A105 Class 2500 ASME B16.5 RJ Licensor-1	
805	0.75		SCH160		P61B-00D4D	Flange WN ASTM A105 Class 2500 ASME B16.5 RJ Licensor-1	
805	1		SCH160		P61B-00D4E	Flange WN ASTM A105 Class 2500 ASME B16.5 RJ Licensor-1	
805	1.5		SCH160		P61B-00D4F	Flange WN ASTM A105 Class 2500 ASME B16.5 RJ Licensor-1	
805	2		SCH160		P61B-00D4H	Flange WN ASTM A105 Class 2500 ASME B16.5 RJ Licensor-1	
805	3		SCH160		P61B-00D4J	Flange WN ASTM A105 Class 2500 ASME B16.5 RJ Licensor-1	
805	4		SCH160		P61B-00D4K	Flange WN ASTM A105 Class 2500 ASME B16.5 RJ Licensor-1	
805	6		SCH160		P61B-00D4L	Flange WN ASTM A105 Class 2500 ASME B16.5 RJ Licensor-1	
805	8		SCH140		P61B-00D4M	Flange WN ASTM A105 Class 2500 ASME B16.5 RJ Licensor-1	
805	10		XXS		P61B-00D4G	Flange WN ASTM A105 Class 2500 ASME B16.5 RJ Licensor-1	
805	12		SCH140		P61B-00DNH	Flange WN ASTM A105 Class 2500 ASME B16.5 RJ Licensor-1	

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FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
805	14		SCH140		P61B-00DNM	Flange WN ASTM A105 Class 2500 Standard-drawing RJ Licensor-1	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67B-002WE	Blind flange ASTM A105 Class 1500 ASME B16.5 RJ Licensor-1	
1	0.75				P67B-002WF	Blind flange ASTM A105 Class 1500 ASME B16.5 RJ Licensor-1	
1	1				P67B-002WG	Blind flange ASTM A105 Class 1500 ASME B16.5 RJ Licensor-1	
1	1.5				P67B-002WH	Blind flange ASTM A105 Class 1500 ASME B16.5 RJ Licensor-1	
1	2				P67B-002WJ	Blind flange ASTM A105 Class 1500 ASME B16.5 RJ Licensor-1	
1	3				P67B-002Y0	Blind flange ASTM A105 Class 1500 ASME B16.5 RJ Licensor-1	
1	4				P67B-002Y1	Blind flange ASTM A105 Class 1500 ASME B16.5 RJ Licensor-1	
1	6				P67B-002Y2	Blind flange ASTM A105 Class 1500 ASME B16.5 RJ Licensor-1	
1	8				P67B-002Y3	Blind flange ASTM A105 Class 1500 ASME B16.5 RJ Licensor-1	
1	10				P67B-002XZ	Blind flange ASTM A105 Class 1500 ASME B16.5 RJ Licensor-1	
1	12				P67B-0031K	Blind flange ASTM A105 Class 1500 ASME B16.5 RJ Licensor-1	
1	14				P67B-0031L	Blind flange ASTM A105 Class 1500 ASME B16.5 RJ Licensor-1	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P75T-000JT	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	0.75				P75T-000JU	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	1				P75T-000JV	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	1.5				P75T-000JW	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	2				P75T-0008A	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	3				P75T-0008E	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	4				P75T-0008D	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	6				P75T-0008C	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	8				P75T-0008B	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	10				P75T-0008L	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	12				P75T-0008K	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	14				P75T-0008J	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	0.5				P75T-000KT	Ring joint gasket Soft iron Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	0.75				P75T-000KU	Ring joint gasket Soft iron Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	1				P75T-000KV	Ring joint gasket Soft iron Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	1.5				P75T-000KW	Ring joint gasket Soft iron Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	2				P75T-000L6	Ring joint gasket Soft iron Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	3				P75T-000MC	Ring joint gasket Soft iron Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	4				P75T-000ME	Ring joint gasket Soft iron Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	6				P75T-000L7	Ring joint gasket Soft iron Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	8				P75T-000MD	Ring joint gasket Soft iron Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	10				P75T-000KX	Ring joint gasket Soft iron Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	12				P75T-000MB	Ring joint gasket Soft iron Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	14				P75T-0013L	Ring joint gasket Soft iron Class 2500 ASME B16.20 Flange Standard-drawing RJ Octagonal type	999

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-2				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	3-14				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
805	0.5-1				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
805	1.5				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
805	2				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
805	3-12				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
805	14				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	999

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GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81B-0020D	Gate valve ASTM A105 Class 1500 API 602 Flange ASME B16.5 RJ Trim number 8 WB-BG-OS&Y Handwheel operated Licensor-1	
1	0.75				P81B-0020E	Gate valve ASTM A105 Class 1500 API 602 Flange ASME B16.5 RJ Trim number 8 WB-BG-OS&Y Handwheel operated Licensor-1	
1	1				P81B-0020F	Gate valve ASTM A105 Class 1500 API 602 Flange ASME B16.5 RJ Trim number 8 WB-BG-OS&Y Handwheel operated Licensor-1	
1	1.5				P81B-0020G	Gate valve ASTM A105 Class 1500 API 602 Flange ASME B16.5 RJ Trim number 8 WB-BG-OS&Y Handwheel operated Licensor-1	
1	2				P81C-008NX	Gate valve ASTM A216 Grade WCB Class 1500 API 600 BW Sch160 Trim number 8 PSB-BG-OS&Y Handwheel operated Licensor-1	
1	3				P81C-008NY	Gate valve ASTM A216 Grade WCB Class 1500 API 600 BW Sch160 Trim number 8 PSB-BG-OS&Y Handwheel operated Licensor-1	
1	4				P81C-008NZ	Gate valve ASTM A216 Grade WCB Class 1500 API 600 BW Sch160 Trim number 8 PSB-BG-OS&Y Gear operated Licensor-1	
1	6				P81C-008P0	Gate valve ASTM A216 Grade WCB Class 1500 API 600 BW Sch160 Trim number 8 PSB-BG-OS&Y Gear operated Licensor-1	
1	10				P81C-009Y9	Gate valve ASTM A216 Grade WCB Class 1500 API 600 BW XXS Trim number 8 PSB-BG-OS&Y Gear operated Licensor-1	
1	14				P81C-009YA	Gate valve ASTM A216 Grade WCB Class 1500 API 600 BW Sch140 Trim number 8 PSB-BG-OS&Y Gear operated Licensor-1	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82B-001HZ	Globe valve ASTM A105 Class 1500 API 602 Flange ASME B16.5 RJ Trim number 8 WB-BG-OS&Y Handwheel operated Licensor-1	
1	0.75				P82B-001J0	Globe valve ASTM A105 Class 1500 API 602 Flange ASME B16.5 RJ Trim number 8 WB-BG-OS&Y Handwheel operated Licensor-1	
1	1				P82B-001J1	Globe valve ASTM A105 Class 1500 API 602 Flange ASME B16.5 RJ Trim number 8 WB-BG-OS&Y Handwheel operated Licensor-1	
1	1.5				P82B-001J2	Globe valve ASTM A105 Class 1500 API 602 Flange ASME B16.5 RJ Trim number 8 WB-BG-OS&Y Handwheel operated Licensor-1	
1	2				P82C-00469	Globe valve ASTM A216 Grade WCB Class 1500 BS 1873 BW Sch160 Trim number 8 PSB-BG-OS&Y Handwheel operated Licensor-1	
1	3				P82C-0046A	Globe valve ASTM A216 Grade WCB Class 1500 BS 1873 BW Sch160 Trim number 8 PSB-BG-OS&Y Gear operated Licensor-1	
1	4				P82C-0046B	Globe valve ASTM A216 Grade WCB Class 1500 BS 1873 BW Sch160 Trim number 8 PSB-BG-OS&Y Gear operated Licensor-1	
1	6				P82C-0046C	Globe valve ASTM A216 Grade WCB Class 1500 BS 1873 BW Sch160 Trim number 8 PSB-BG-OS&Y Gear operated Licensor-1	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83B-0017J	Check valve ASTM A105 Class 1500 API 602 Flange ASME B16.5 RJ Trim number 8 Lift-type Welded cover Licensor-1	
1	0.75				P83B-0017K	Check valve ASTM A105 Class 1500 API 602 Flange ASME B16.5 RJ Trim number 8 Lift-type Welded cover Licensor-1	
1	1				P83B-0017L	Check valve ASTM A105 Class 1500 API 602 Flange ASME B16.5 RJ Trim number 8 Lift-type Welded cover Licensor-1	
1	1.5				P83B-0017M	Check valve ASTM A105 Class 1500 API 602 Flange ASME B16.5 RJ Trim number 8 Lift-type Welded cover Licensor-1	
1	2				P83C-003SB	Check valve ASTM A216 Grade WCB Class 1500 BS 1868 BW Sch160 Trim number 8 Swing-type Pressure seal cap Licensor-1	
1	3				P83C-003SC	Check valve ASTM A216 Grade WCB Class 1500 BS 1868 BW Sch160 Trim number 8 Swing-type Pressure seal cap Licensor-1	
1	4				P83C-003SD	Check valve ASTM A216 Grade WCB Class 1500 BS 1868 BW Sch160 Trim number 8 Swing-type Pressure seal cap Licensor-1	
1	6				P83C-003SE	Check valve ASTM A216 Grade WCB Class 1500 BS 1868 BW Sch160 Trim number 8 Swing-type Pressure seal cap Licensor-1	
4602	10				P83C-004F7	Check valve ASTM A216 Grade WCB Class 1500 BS 1868 BW XXS Trim number 8 Swing-type Pressure seal cap Licensor-1	

DP CHECK VALVE (XDP)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	10				P88C-003ZL	Dual plate check valve ASTM A216 Grade WCB Class 1500 API 594 Lug-type ASME B16.5 RJ Trim number 8 Internal wetted parts 13Cr Spring Inconel Retainerless-type Licensor-1	

ORIFICE FLANGE (FO)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2		SCH160		P66B-008SE	Orifice flange WN ASTM A105 Class 1500 ASME B16.36 RJ NPS1/2 SW tap x 1 Licensor-1	
200	2		SCH160		P66B-008SF	Orifice flange WN ASTM A105 Class 1500 ASME B16.36 RJ NPS1/2 SW tap x 1 with Jack screw Licensor-1	

PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P72B-000TE	Paddle blank ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ Licensor-1	
1	0.75				P72B-000TF	Paddle blank ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ Licensor-1	
1	1				P72B-000TG	Paddle blank ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ Licensor-1	

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PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5				P72B-000TH	Paddle blank ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ Licensor-1	
1	2				P72B-000TJ	Paddle blank ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ Licensor-1	
1	3				P72B-000X2	Paddle blank ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ Licensor-1	
1	4				P72B-000X3	Paddle blank ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ Licensor-1	
1	6				P72B-000X4	Paddle blank ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ Licensor-1	
1	8				P72B-000X5	Paddle blank ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ Licensor-1	
1	10				P72B-000X1	Paddle blank ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ Licensor-1	
1	12				P72B-000Y2	Paddle blank ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ Licensor-1	
1	14				P72B-000Y3	Paddle blank ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ Licensor-1	

PADDLE SPACER (PS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P72B-000T9	Paddle spacer ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ Licensor-1	
1	0.75				P72B-000TA	Paddle spacer ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ Licensor-1	
1	1				P72B-000TB	Paddle spacer ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ Licensor-1	
1	1.5				P72B-000TC	Paddle spacer ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ Licensor-1	
1	2				P72B-000TD	Paddle spacer ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ Licensor-1	
1	3				P72B-000X7	Paddle spacer ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ Licensor-1	
1	4				P72B-000X8	Paddle spacer ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ Licensor-1	
1	6				P72B-000X9	Paddle spacer ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ Licensor-1	
1	8				P72B-000XA	Paddle spacer ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ Licensor-1	
1	10				P72B-000X6	Paddle spacer ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ Licensor-1	
1	12				P72B-000Y0	Paddle spacer ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ Licensor-1	
1	14				P72B-000Y1	Paddle spacer ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ Licensor-1	

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BOLT TABLE (B_N2AP01 , STUD ASME RJ, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	110	P80S-003XK	R12	P75T-000JT
0.75	4	0.750	115	P80S-003XL	R14	P75T-000JU
1	4	0.875	130	P80S-0041B	R16	P75T-000JV
1.5	4	1.000	140	P80S-0043F	R20	P75T-000JW
2	8	0.875	150	P80S-0041F	R24	P75T-0008A
3	8	1.125	180	P80S-0046T	R35	P75T-0008E
4	8	1.250	230	P80S-004AU	R39	P75T-0008D
6	12	1.375	300	P80S-003ED	R46	P75T-0008C
8	12	1.625	345	P80S-005TY	R50	P75T-0008B
10	12	1.875	395	P80S-008P7	R54	P75T-0008L
12	16	2.000	445	P80S-005VN	R58	P75T-0008K
14	16	2.250	490	P80S-00P4J	R63	P75T-0008J

BOLT TABLE (B_N2AP01_805 , STUD ASME RJ, OPTION CODE 805)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	125	P80S-003XN	R13	P75T-000KT
0.75	4	0.750	130	P80S-003XP	R16	P75T-000KU
1	4	0.875	140	P80S-0041D	R18	P75T-000KV
1.5	4	1.125	175	P80S-0046S	R23	P75T-000KW
2	8	1.000	180	P80S-0043R	R26	P75T-000L6
3	8	1.250	260	P80S-004B0	R32	P75T-000MC
4	8	1.500	305	P80S-008MZ	R38	P75T-000ME
6	8	2.000	410	P80S-005VF	R47	P75T-000L7
8	12	2.000	450	P80S-005VP	R51	P75T-000MD
10	12	2.500	575	P80S-00P1K	R55	P75T-000KX
12	12	2.750	635	P80S-00PWW	R60	P75T-000MB
14	14	3.000	695	P80S-00PNU	R64	P75T-0013L

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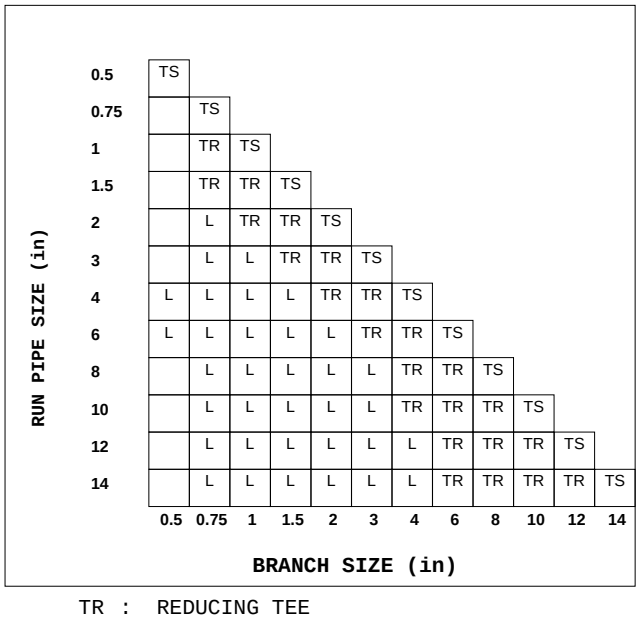
BRANCH TABLE (T_N2AP01)



TR : REDUCING TEE
L : OUTLET
TS : STRAIGHT TEE

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N2AR02 REV NO. 2

Material : Killed CS
Rating : ASME CLASS 1500
Flange Face : RJ
C.A.(mm) : 3.00
Gasket : Ring Octagonal
Service : PROCESS - WET SEVERE SOUR SERVICE SUBJECT TO NACE + HIC STD
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
5	BOLTING CONFIRMING TO B7M / 2HM SHALL BE USED UNDER CONDITIONS (A) DIRECT EXPOSURE TO SOUR ENVIRONMENTS (B) WHEN THE BOLTING WILL BE BURIED OR INSULATED
27	PWHT OF CARBON STEEL PIPING IN WET H2S, CAUSTIC AND AMINE SERVICES SHALL BE IN ACCORDANCE WITH SECTION 10.2, 10.3, AND 10.4 OF PROJECT SPECIFICATION 3550-8440-SP-0002 MATERIALS REQUIREMENTS FOR PRESSURISED EQUIPMENT AND PIPING. FOR CAUSTIC AND AMINE SERVICE THE FOLLOWING SHALL APPLY: - PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF ALL SITE PIPING FABRICATION WELDS IS REQUIRED FOR ALL WALL THICKNESSES. FOR MODERATE AND SEVERE WET H2S SERVICE THE FOLLOWING SHALL APPLY: PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF SITE FABRICATION CIRCUMFERENTIAL OR BRANCH WELDS IS NOT REQUIRED IF WELDS ARE MULTIPASS AND IN ACCORDANCE WITH PARA 10.2.12 OF PROJECT SPECIFICATION 3550-8440-SP-0002. FOR SERVICES MEETING THE WET H2S CRITERIA AND CAUSTIC OR AMINE CRITERIA THE MORE STRINGENT PWHT REQUIREMENT SHALL GOVERN.

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
541	NPT(F) (F)
805	CLASS 2500 (B,F,G,PB,PS)
4601	Y-PATTERN (W)

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PIPING CLASS
N2AR02 REV NO. 2

PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P01A-00143	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	0.75		XXS		P01A-0014D	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1		XXS		P01A-0014U	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1.5		XXS		P01A-00162	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	2		SCH160		P01A-0019T	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	3		XXS		P01A-001SB	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	4		XXS		P01A-001TV	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	6		SCH160		P01A-001VD	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	8		SCH140		P01A-001WJ	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	10		XXS		P01A-0079W	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	12		SCH140		P01A-005CK	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	14		SCH140		P01A-005CL	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	16		SCH140		P01A-005CM	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P02A-00172	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	0.75		XXS		P02A-000XH	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1		XXS		P02A-000XJ	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1.5		XXS		P02A-002N4	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	2		SCH160		P02A-000KW	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		XXS		P02A-002JA	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		XXS		P02A-002K0	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		SCH160		P02A-002J9	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		SCH140		P02A-003F9	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	10		XXS		P02A-003RY	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	12		SCH140		P02A-003FA	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	14		SCH140		P02A-003FB	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	16		SCH140		P02A-003FC	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P03A-0012Y	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	0.75		XXS		P03A-000U9	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1		XXS		P03A-000U8	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1.5		XXS		P03A-002KD	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	2		SCH160		P03A-000HU	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		XXS		P03A-002FU	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		XXS		P03A-002GH	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		SCH160		P03A-002FT	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		SCH140		P03A-003D4	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	10		XXS		P03A-003NL	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	12		SCH140		P03A-003D5	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	14		SCH140		P03A-003D6	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	16		SCH140		P03A-003D7	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P21A-002M0	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	0.75		XXS		P21A-002DR	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1		XXS		P21A-002DP	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5		XXS		P21A-003KU	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2		SCH160		P21A-00245	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		XXS		P21A-003GV	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		XXS		P21A-003HF	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6		SCH160		P21A-003GU	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8		SCH140		P21A-003Z0	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10		XXS		P21A-0049B	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12		SCH140		P21A-003Z1	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	

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STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14		SCH140		P21A-003Z2	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16		SCH140		P21A-003Z3	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75	XXS	XXS	P24A-004LR	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.75	XXS	XXS	P24A-00K06	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	1	XXS	XXS	P24A-00H61	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	SCH160	XXS	P24A-0044B	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	SCH160	XXS	P24A-003GG	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	XXS	XXS	P24A-00K07	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	XXS	SCH160	P24A-00PZD	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	XXS	SCH160	P24A-00PZC	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	XXS	XXS	P24A-00GT9	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	SCH160	XXS	P24A-00K2R	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	SCH160	XXS	P24A-00MSF	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH140	XXS	P24A-00MNN	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH140	SCH160	P24A-00K2U	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	XXS	XXS	P24A-00K4N	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	6	XXS	SCH160	P24A-00K2V	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	8	XXS	SCH140	P24A-00K2W	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	6	SCH140	SCH160	P24A-00M5X	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	8	SCH140	SCH140	P24A-00M5Y	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	10	SCH140	XXS	P24A-00M5W	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	6	SCH140	SCH160	P24A-00M60	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	8	SCH140	SCH140	P24A-00M61	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	10	SCH140	XXS	P24A-00M5Z	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	12	SCH140	SCH140	P24A-00J6M	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	6	SCH140	SCH160	P24A-00NWA	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	8	SCH140	SCH140	P24A-00NWB	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	10	SCH140	XXS	P24A-00NW9	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	12	SCH140	SCH140	P24A-00J6N	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	14	SCH140	SCH140	P24A-00J6P	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	XXS	XXS	P27A-004M7	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.5	XXS	XXS	P27A-004MF	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.75	XXS	XXS	P27A-002ZZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.5	XXS	XXS	P27A-004N3	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.75	XXS	XXS	P27A-004ND	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	1	XXS	XXS	P27A-004NR	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	0.75	SCH160	XXS	P27A-0029F	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	SCH160	XXS	P27A-0029H	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	SCH160	XXS	P27A-0029K	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	XXS	XXS	P27A-006BZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	XXS	SCH160	P27A-00EFU	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	1.5	XXS	XXS	P27A-0073V	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	XXS	SCH160	P27A-00J8W	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	XXS	XXS	P27A-0074Z	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	SCH160	XXS	P27A-007P0	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	SCH160	XXS	P27A-00GJX	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH140	XXS	P27A-007W0	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH140	SCH160	P27A-007X7	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	XXS	XXS	P27A-00EPT	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	6	XXS	SCH160	P27A-00EMV	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	8	XXS	SCH140	P27A-00EMW	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	6	SCH140	SCH160	P27A-00BD0	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	8	SCH140	SCH140	P27A-00BD1	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	

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CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	12	10	SCH140	XXS	P27A-00G4V	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	6	SCH140	SCH160	P27A-00DGB	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	8	SCH140	SCH140	P27A-00DGR	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	10	SCH140	XXS	P27A-00G4W	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	12	SCH140	SCH140	P27A-00DGA	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	8	SCH140	SCH140	P27A-00DGF	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	10	SCH140	XXS	P27A-00HC5	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	12	SCH140	SCH140	P27A-00DGD	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	14	SCH140	SCH140	P27A-00DGE	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	XXS	XXS	P28A-00BNX	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.5	XXS	XXS	P28A-00BNY	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.75	XXS	XXS	P28A-0030M	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.5	XXS	XXS	P28A-00BNZ	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.75	XXS	XXS	P28A-00BP0	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	1	XXS	XXS	P28A-008W0	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	0.75	SCH160	XXS	P28A-00288	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	SCH160	XXS	P28A-00289	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	SCH160	XXS	P28A-0028A	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	XXS	XXS	P28A-00BP2	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	XXS	SCH160	P28A-00BJW	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	1.5	XXS	XXS	P28A-00BP3	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	XXS	SCH160	P28A-00FJY	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	XXS	XXS	P28A-008JW	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	SCH160	XXS	P28A-00BRY	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	SCH160	XXS	P28A-00DT7	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH140	XXS	P28A-00DT8	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH140	SCH160	P28A-00AH9	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	XXS	XXS	P28A-00BUL	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	6	XXS	SCH160	P28A-00BSL	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	8	XXS	SCH140	P28A-00BSM	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	6	SCH140	SCH160	P28A-00AHC	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	8	SCH140	SCH140	P28A-00AHD	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	10	SCH140	XXS	P28A-00DBU	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	6	SCH140	SCH160	P28A-00AHG	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	8	SCH140	SCH140	P28A-00AHH	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	10	SCH140	XXS	P28A-00DBV	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	12	SCH140	SCH140	P28A-00AHF	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	8	SCH140	SCH140	P28A-00AHM	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	10	SCH140	XXS	P28A-00EKV	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	12	SCH140	SCH140	P28A-00AHK	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	14	SCH140	SCH140	P28A-00AHL	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P29A-00336	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	0.75		XXS		P29A-00337	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	1		XXS		P29A-00338	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5		XXS		P29A-00339	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	2		SCH160		P29A-001W3	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	3		XXS		P29A-0033B	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	4		XXS		P29A-004VW	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	6		SCH160		P29A-0033C	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	8		SCH140		P29A-003FX	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	10		XXS		P29A-003FY	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service	
1	12		SCH140		P29A-003GJ	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service	
1	14		SCH140		P29A-003GK	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service	

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CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	16		SCH140		P29A-003TS	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Severe wet H2S service	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P41A-000B9	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		XXS		P41A-000BA	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		XXS		P41A-000D8	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		XXS		P41A-000D9	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2	0.75	SCH160	XXS	P31B-00CP2	Outlet ASTM A105 MSS SP-97 BW	
1	3	0.75	XXS	XXS	P31B-00CMJ	Outlet ASTM A105 MSS SP-97 BW	
1	4	0.75	XXS	XXS	P31B-00CLG	Outlet ASTM A105 MSS SP-97 BW	
1	6	0.75	SCH160	XXS	P31B-00YLN	Outlet ASTM A105 MSS SP-97 BW	
1	8	0.75	SCH140	XXS	P31B-012SV	Outlet ASTM A105 MSS SP-97 BW	
1	10	0.75	XXS	XXS	P31B-00Y6C	Outlet ASTM A105 MSS SP-97 BW	
1	12	0.75	SCH140	XXS	P31B-012SW	Outlet ASTM A105 MSS SP-97 BW	
1	14	0.75	SCH140	XXS	P31B-012SX	Outlet ASTM A105 MSS SP-97 BW	
1	16	0.75	SCH140	XXS	P31B-012SY	Outlet ASTM A105 MSS SP-97 BW	
1	3	1	XXS	XXS	P31B-00B48	Outlet ASTM A105 MSS SP-97 BW	
1	4	1	XXS	XXS	P31B-00B04	Outlet ASTM A105 MSS SP-97 BW	
1	6	1	SCH160	XXS	P31B-00AZ1	Outlet ASTM A105 MSS SP-97 BW	
1	8	1	SCH140	XXS	P31B-012RR	Outlet ASTM A105 MSS SP-97 BW	
1	10	1	XXS	XXS	P31B-00XLH	Outlet ASTM A105 MSS SP-97 BW	
1	12	1	SCH140	XXS	P31B-012RT	Outlet ASTM A105 MSS SP-97 BW	
1	14	1	SCH140	XXS	P31B-00BRC	Outlet ASTM A105 MSS SP-97 BW	
1	16	1	SCH140	XXS	P31B-00BCG	Outlet ASTM A105 MSS SP-97 BW	
1	4	1.5	XXS	XXS	P31B-00BMC	Outlet ASTM A105 MSS SP-97 BW	
1	6	1.5	SCH160	XXS	P31B-00BJ7	Outlet ASTM A105 MSS SP-97 BW	
1	8	1.5	SCH140	XXS	P31B-012RS	Outlet ASTM A105 MSS SP-97 BW	
1	10	1.5	XXS	XXS	P31B-00XLJ	Outlet ASTM A105 MSS SP-97 BW	
1	12	1.5	SCH140	XXS	P31B-012RU	Outlet ASTM A105 MSS SP-97 BW	
1	14	1.5	SCH140	XXS	P31B-00C9L	Outlet ASTM A105 MSS SP-97 BW	
1	16	1.5	SCH140	XXS	P31B-00C8T	Outlet ASTM A105 MSS SP-97 BW	
1	6	2	SCH160	SCH160	P31B-007SS	Outlet ASTM A105 MSS SP-97 BW	
1	8	2	SCH140	SCH160	P31B-00AHF	Outlet ASTM A105 MSS SP-97 BW	
1	10	2	XXS	SCH160	P31B-00ASP	Outlet ASTM A105 MSS SP-97 BW	
1	12	2	SCH140	SCH160	P31B-00ARS	Outlet ASTM A105 MSS SP-97 BW	
1	14	2	SCH140	SCH160	P31B-00CBB	Outlet ASTM A105 MSS SP-97 BW	
1	16	2	SCH140	SCH160	P31B-00C6H	Outlet ASTM A105 MSS SP-97 BW	
1	8	3	SCH140	XXS	P31B-009XV	Outlet ASTM A105 MSS SP-97 BW	
1	10	3	XXS	XXS	P31B-0097J	Outlet ASTM A105 MSS SP-97 BW	
1	12	3	SCH140	XXS	P31B-0096B	Outlet ASTM A105 MSS SP-97 BW	
1	14	3	SCH140	XXS	P31B-0090E	Outlet ASTM A105 MSS SP-97 BW	
1	16	3	SCH140	XXS	P31B-008U8	Outlet ASTM A105 MSS SP-97 BW	
1	12	4	SCH140	XXS	P31B-008ZL	Outlet ASTM A105 MSS SP-97 BW	
1	14	4	SCH140	XXS	P31B-008TS	Outlet ASTM A105 MSS SP-97 BW	
1	16	4	SCH140	XXS	P31B-008LH	Outlet ASTM A105 MSS SP-97 BW	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30B-0002D	Plug ASTM A105 ASME B16.11 NPT Round head	
1	0.75				P30B-0002E	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1				P30B-0002F	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1.5				P30B-0002G	Plug ASTM A105 ASME B16.11 NPT Round head	

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FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P61B-00664	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
1	0.75		XXS		P61B-005V2	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
1	1		XXS		P61B-009W2	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
1	1.5		XXS		P61B-009WB	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
1	2		SCH160		P61B-0066J	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
1	3		XXS		P61B-0066V	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
1	4		XXS		P61B-0069F	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
1	6		SCH160		P61B-0066K	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
1	8		SCH140		P61B-009VL	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
1	10		XXS		P61B-009VK	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
1	12		SCH140		P61B-00B1T	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
1	14		SCH140		P61B-00B1U	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
1	16		SCH140		P61B-00BUL	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
541	0.5				P61B-00DLH	Flange NPT ASTM A105 Class 1500 ASME B16.5 RJ	
541	0.75				P61B-00CW7	Flange NPT ASTM A105 Class 1500 ASME B16.5 RJ	
805	0.5		XXS		P61B-00666	Flange WN ASTM A105 Class 2500 ASME B16.5 RJ	
805	0.75		XXS		P61B-009W3	Flange WN ASTM A105 Class 2500 ASME B16.5 RJ	
805	1		XXS		P61B-006JH	Flange WN ASTM A105 Class 2500 ASME B16.5 RJ	
805	1.5		XXS		P61B-006JJ	Flange WN ASTM A105 Class 2500 ASME B16.5 RJ	
805	2		SCH160		P61B-0066M	Flange WN ASTM A105 Class 2500 ASME B16.5 RJ	
805	3		XXS		P61B-0066Z	Flange WN ASTM A105 Class 2500 ASME B16.5 RJ	
805	4		XXS		P61B-0069G	Flange WN ASTM A105 Class 2500 ASME B16.5 RJ	
805	6		SCH160		P61B-0066N	Flange WN ASTM A105 Class 2500 ASME B16.5 RJ	
805	8		SCH140		P61B-009VN	Flange WN ASTM A105 Class 2500 ASME B16.5 RJ	
805	10		XXS		P61B-009VM	Flange WN ASTM A105 Class 2500 ASME B16.5 RJ	
805	12		SCH140		P61B-00B1V	Flange WN ASTM A105 Class 2500 ASME B16.5 RJ	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67B-001VE	Blind flange ASTM A105 Class 1500 ASME B16.5 RJ	
1	0.75				P67B-001VF	Blind flange ASTM A105 Class 1500 ASME B16.5 RJ	
1	1				P67B-001VG	Blind flange ASTM A105 Class 1500 ASME B16.5 RJ	
1	1.5				P67B-001VH	Blind flange ASTM A105 Class 1500 ASME B16.5 RJ	
1	2				P67B-0014J	Blind flange ASTM A105 Class 1500 ASME B16.5 RJ	
1	3				P67B-0014G	Blind flange ASTM A105 Class 1500 ASME B16.5 RJ	
1	4				P67B-0014F	Blind flange ASTM A105 Class 1500 ASME B16.5 RJ	
1	6				P67B-0014E	Blind flange ASTM A105 Class 1500 ASME B16.5 RJ	
1	8				P67B-0014D	Blind flange ASTM A105 Class 1500 ASME B16.5 RJ	
1	10				P67B-0014P	Blind flange ASTM A105 Class 1500 ASME B16.5 RJ	
1	12				P67B-0014N	Blind flange ASTM A105 Class 1500 ASME B16.5 RJ	
1	14				P67B-0014M	Blind flange ASTM A105 Class 1500 ASME B16.5 RJ	
1	16				P67B-0014L	Blind flange ASTM A105 Class 1500 ASME B16.5 RJ	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P75T-000JT	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	0.75				P75T-000JU	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	1				P75T-000JV	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	1.5				P75T-000JW	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	2				P75T-0008A	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	3				P75T-0008E	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	4				P75T-0008D	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	6				P75T-0008C	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	8				P75T-0008B	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	10				P75T-0008L	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	12				P75T-0008K	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	14				P75T-0008J	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	16				P75T-0008H	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	0.5				P75T-000KT	Ring joint gasket Soft iron Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	

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GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
805	0.75				P75T-000KU	Ring joint gasket Soft iron Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	1				P75T-000KV	Ring joint gasket Soft iron Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	1.5				P75T-000KW	Ring joint gasket Soft iron Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	2				P75T-000L6	Ring joint gasket Soft iron Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	3				P75T-000MC	Ring joint gasket Soft iron Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	4				P75T-000ME	Ring joint gasket Soft iron Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	6				P75T-000L7	Ring joint gasket Soft iron Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	8				P75T-000MD	Ring joint gasket Soft iron Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	10				P75T-000KX	Ring joint gasket Soft iron Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	12				P75T-000MB	Ring joint gasket Soft iron Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-2				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	3-16				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
805	0.5-1				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
805	1.5				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
805	2				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
805	3-12				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81B-002V2	Gate valve ASTM A105 Class 1500 API 602 BW XXS Trim SS316L Body and disc seats Stellite-6 WB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	0.75				P81B-002V3	Gate valve ASTM A105 Class 1500 API 602 BW XXS Trim SS316L Body and disc seats Stellite-6 WB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	1				P81B-002V4	Gate valve ASTM A105 Class 1500 API 602 BW XXS Trim SS316L Body and disc seats Stellite-6 WB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	1.5				P81B-002V5	Gate valve ASTM A105 Class 1500 API 602 BW XXS Trim SS316L Body and disc seats Stellite-6 WB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	2				P81C-006NT	Gate valve ASTM A216 Grade WCB Class 1500 API 600 BW Sch160 Trim SS316L Body and disc seats Stellite-6 PSB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	3				P81C-008DF	Gate valve ASTM A216 Grade WCB Class 1500 API 600 BW XXS Trim SS316L Body and disc seats Stellite-6 PSB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	4				P81C-008DG	Gate valve ASTM A216 Grade WCB Class 1500 API 600 BW XXS Trim SS316L Body and disc seats Stellite-6 PSB-BG-OS&Y Gear operated Severe wet H2S service	
1	6				P81C-006NW	Gate valve ASTM A216 Grade WCB Class 1500 API 600 BW Sch160 Trim SS316L Body and disc seats Stellite-6 PSB-BG-OS&Y Gear operated Severe wet H2S service	
1	8				P81C-006NX	Gate valve ASTM A216 Grade WCB Class 1500 API 600 BW Sch140 Trim SS316L Body and disc seats Stellite-6 PSB-BG-OS&Y Gear operated Severe wet H2S service	
1	10				P81C-006NY	Gate valve ASTM A216 Grade WCB Class 1500 API 600 BW XXS Trim SS316L Body and disc seats Stellite-6 PSB-BG-OS&Y Gear operated Severe wet H2S service	
1	12				P81C-006NZ	Gate valve ASTM A216 Grade WCB Class 1500 API 600 BW Sch140 Trim SS316L Body and disc seats Stellite-6 PSB-BG-OS&Y Gear operated Severe wet H2S service	
1	14				P81C-006P0	Gate valve ASTM A216 Grade WCB Class 1500 API 600 BW Sch140 Trim SS316L Body and disc seats Stellite-6 PSB-BG-OS&Y Gear operated Severe wet H2S service	
1	16				P81C-006P1	Gate valve ASTM A216 Grade WCB Class 1500 API 600 BW Sch140 Trim SS316L Body and disc seats Stellite-6 PSB-BG-OS&Y Gear operated Severe wet H2S service	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82B-00218	Globe valve ASTM A105 Class 1500 API 602 BW XXS Trim SS316L Body and disc seats Stellite-6 WB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	0.75				P82B-00219	Globe valve ASTM A105 Class 1500 API 602 BW XXS Trim SS316L Body and disc seats Stellite-6 WB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	1				P82B-0021A	Globe valve ASTM A105 Class 1500 API 602 BW XXS Trim SS316L Body and disc seats Stellite-6 WB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	1.5				P82B-0021B	Globe valve ASTM A105 Class 1500 API 602 BW XXS Trim SS316L Body and disc seats Stellite-6 WB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	2				P82C-00389	Globe valve ASTM A216 Grade WCB Class 1500 BS 1873 BW Sch160 Trim SS316L Body and disc seats Stellite-6 PSB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	3				P82C-0043J	Globe valve ASTM A216 Grade WCB Class 1500 BS 1873 BW XXS Trim SS316L Body and disc seats Stellite-6 PSB-BG-OS&Y Gear operated Severe wet H2S service	
1	12				P82C-0038B	Globe valve ASTM A216 Grade WCB Class 1500 BS 1873 BW Sch140 Trim SS316L Body and disc seats Stellite-6 PSB-BG-OS&Y Gear operated Severe wet H2S service	
1	14				P82C-0038C	Globe valve ASTM A216 Grade WCB Class 1500 BS 1873 BW Sch140 Trim SS316L Body and disc seats Stellite-6 PSB-BG-OS&Y Gear operated Severe wet H2S service	
1	16				P82C-0038D	Globe valve ASTM A216 Grade WCB Class 1500 BS 1873 BW Sch140 Trim SS316L Body and disc seats Stellite-6 PSB-BG-OS&Y Gear operated Severe wet H2S service	
46 1	0.75				P82B-0022N	Y-pattern globe valve ASTM A105 Class 1500 ASME B16.34 BW XXS Trim SS316L Body and disc seats Stellite-6 WB-BG-OS&Y Handwheel operated Severe wet H2S service	

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GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
4601	1				P82B-0022W	Y-pattern globe valve ASTM A105 Class 1500 ASME B16.34 BW XXS Trim SS316L Body and disc seats Stellite-6 WB-BG-OS&Y Handwheel operated Severe wet H2S service	
4601	1.5				P82B-0022X	Y-pattern globe valve ASTM A105 Class 1500 ASME B16.34 BW XXS Trim SS316L Body and disc seats Stellite-6 WB-BG-OS&Y Handwheel operated Severe wet H2S service	
4601	2				P82C-00486	Y-pattern globe valve ASTM A216 Grade WCB Class 1500 ASME B16.34 BW Sch160 Trim SS316L Body and disc seats Stellite-6 PSB-BG-OS&Y Handwheel operated Severe wet H2S service	
4601	3				P82C-0047L	Y-pattern globe valve ASTM A216 Grade WCB Class 1500 ASME B16.34 BW XXS Trim SS316L Body and disc seats Stellite-6 PSB-BG-OS&Y Gear operated Severe wet H2S service	
4601	4				P82C-0047M	Y-pattern globe valve ASTM A216 Grade WCB Class 1500 ASME B16.34 BW XXS Trim SS316L Body and disc seats Stellite-6 PSB-BG-OS&Y Gear operated Severe wet H2S service	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83B-001H0	Check valve ASTM A105 Class 1500 API 602 BW XXS Trim SS316L Body and disc seats Stellite-6 Lift-type Welded cover Severe wet H2S service	
1	0.75				P83B-001H1	Check valve ASTM A105 Class 1500 API 602 BW XXS Trim SS316L Body and disc seats Stellite-6 Lift-type Welded cover Severe wet H2S service	
1	1				P83B-001H2	Check valve ASTM A105 Class 1500 API 602 BW XXS Trim SS316L Body and disc seats Stellite-6 Lift-type Welded cover Severe wet H2S service	
1	1.5				P83B-001H3	Check valve ASTM A105 Class 1500 API 602 BW XXS Trim SS316L Body and disc seats Stellite-6 Lift-type Welded cover Severe wet H2S service	
1	2				P83C-0033X	Check valve ASTM A216 Grade WCB Class 1500 BS 1868 BW Sch160 Trim SS316L Body and disc seats Stellite-6 Swing-type Pressure seal cap Severe wet H2S service	
1	3				P83C-003N9	Check valve ASTM A216 Grade WCB Class 1500 BS 1868 BW XXS Trim SS316L Body and disc seats Stellite-6 Swing-type Pressure seal cap Severe wet H2S service	
1	4				P83C-003NA	Check valve ASTM A216 Grade WCB Class 1500 BS 1868 BW XXS Trim SS316L Body and disc seats Stellite-6 Swing-type Pressure seal cap Severe wet H2S service	
1	6				P83C-00340	Check valve ASTM A216 Grade WCB Class 1500 BS 1868 BW Sch160 Trim SS316L Body and disc seats Stellite-6 Swing-type Pressure seal cap Severe wet H2S service	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75				P71B-000M0	Spectacle blank ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	2				P71B-000LT	Spectacle blank ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	4				P71B-000LZ	Spectacle blank ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	

PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P72B-000JD	Paddle blank ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	0.75				P72B-000JE	Paddle blank ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	1				P72B-000JF	Paddle blank ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	1.5				P72B-000JG	Paddle blank ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	2				P72B-000JH	Paddle blank ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	3				P72B-000KG	Paddle blank ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	4				P72B-000KH	Paddle blank ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	6				P72B-000KJ	Paddle blank ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	8				P72B-000KK	Paddle blank ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	10				P72B-000KR	Paddle blank ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	12				P72B-000KT	Paddle blank ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	14				P72B-000KU	Paddle blank ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	16				P72B-000KV	Paddle blank ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
805	3				P72B-000LU	Paddle blank ASTM A105 Class 2500 Standard-drawing Flange ASME B16.5 RJ	

PADDLE SPACER (PS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P72B-000JN	Paddle spacer ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	0.75				P72B-000JP	Paddle spacer ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	1				P72B-000JR	Paddle spacer ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	1.5				P72B-000JS	Paddle spacer ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	2				P72B-000JT	Paddle spacer ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	3				P72B-000KL	Paddle spacer ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	4				P72B-000KM	Paddle spacer ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	6				P72B-000KN	Paddle spacer ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	8				P72B-000KP	Paddle spacer ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	10				P72B-000KS	Paddle spacer ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	12				P72B-000KW	Paddle spacer ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	14				P72B-000KX	Paddle spacer ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	

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PADDLE SPACER (PS)							
OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	16				P72B-000KY	Paddle spacer ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
805	3				P72B-000LE	Paddle spacer ASTM A105 Class 2500 Standard-drawing Flange ASME B16.5 RJ	

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BOLT TABLE (B_N2AR02 , STUD ASME RJ, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	110	P80S-0090F	R12	P75T-000JT
0.75	4	0.750	115	P80S-0090G	R14	P75T-000JU
1	4	0.875	130	P80S-005ZB	R16	P75T-000JV
1.5	4	1.000	140	P80S-0061A	R20	P75T-000JW
2	8	0.875	150	P80S-005ZF	R24	P75T-0008A
3	8	1.125	180	P80S-0064T	R35	P75T-0008E
4	8	1.250	230	P80S-0068H	R39	P75T-0008D
6	12	1.375	300	P80S-006J1	R46	P75T-0008C
8	12	1.625	345	P80S-00A5K	R50	P75T-0008B
10	12	1.875	395	P80S-00AW8	R54	P75T-0008L
12	16	2.000	445	P80S-00BH5	R58	P75T-0008K
14	16	2.250	490	P80S-00DLE	R63	P75T-0008J
16	16	2.500	540	P80S-00DZM	R67	P75T-0008H

BOLT TABLE (B_N2AR02_805 , STUD ASME RJ, OPTION CODE 805)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	125	P80S-0090J	R13	P75T-000KT
0.75	4	0.750	130	P80S-0090K	R16	P75T-000KU
1	4	0.875	140	P80S-005ZD	R18	P75T-000KV
1.5	4	1.125	175	P80S-0064S	R23	P75T-000KW
2	8	1.000	180	P80S-0061J	R26	P75T-000L6
3	8	1.250	260	P80S-0068P	R32	P75T-000MC
4	8	1.500	305	P80S-006LS	R38	P75T-000ME
6	8	2.000	410	P80S-00BBD	R47	P75T-000L7
8	12	2.000	450	P80S-00BH6	R51	P75T-000MD
10	12	2.500	575	P80S-00DZV	R55	P75T-000KX
12	12	2.750	635	P80S-01RAT	R60	P75T-000MB
14	14	3.000	695		R64	
16	14	3.000	755		R68	

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BRANCH TABLE (T_N2AR02)

RUN PIPE SIZE (in) \ BRANCH SIZE (in)	0.5	0.75	1	1.5	2	3	4	6	8	10	12	14	16
0.5	TS												
0.75		TS											
1		TR	TS										
1.5		TR	TR	TS									
2		L	TR	TR	TS								
3		L	L	TR	TR	TS							
4	L	L	L	L	TR	TR	TS						
6	L	L	L	L	L	TR	TR	TS					
8		L	L	L	L	L	TR	TR	TS				
10		L	L	L	L	L	TR	TR	TR	TS			
12		L	L	L	L	L	L	TR	TR	TR	TS		
14		L	L	L	L	L	L	TR	TR	TR	TR	TS	
16		L	L	L	L	L	L	TR	TR	TR	TR	TR	TS

L : OUTLET
TS : STRAIGHT TEE
TR : REDUCING TEE

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PIPING CLASS

N2D602 REV NO. 2

Material : 1-1/4Cr - 1/2Mo
Rating : ASME CLASS 1500
Flange Face : RJ
C.A.(mm) : 3.00
Gasket : Ring Octagonal
Service : PROCESS -WET LOW SEVERITY SOUR SERVICE SUBJECT TO NACE + HYDROGEN SERVICE
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
5	BOLTING CONFIRMING TO B7M / 2HM SHALL BE USED UNDER CONDITIONS (A) DIRECT EXPOSURE TO SOUR ENVIRONMENTS (B) WHEN THE BOLTING WILL BE BURIED OR INSULATED

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
541	NPT(F) (F)
805	CLASS 2500 (B,F,G)
4601	Y-PATTERN (W)

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PIPING CLASS
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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P01F-00089	Pipe ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M PE	
1	0.75		XXS		P01F-000BZ	Pipe ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M PE	
1	1		XXS		P01F-000C0	Pipe ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M PE	
1	1.5		XXS		P01F-000C1	Pipe ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M PE	
1	2		XXS		P01F-000C3	Pipe ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M BE	
1	3		XXS		P01F-0003P	Pipe ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M BE	
1	4		XXS		P01F-000C4	Pipe ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M BE	
1	6		XXS		P01F-000C5	Pipe ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M BE	
1	8		27.10mm		P01F-001RC	Pipe ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M BE	
1	10		32.90mm		P01F-001RD	Pipe ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P02F-0007A	90 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	0.75		XXS		P02F-000B5	90 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	1		XXS		P02F-000B6	90 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	1.5		XXS		P02F-000B7	90 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	2		XXS		P02F-000B9	90 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	3		XXS		P02F-000BA	90 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	4		XXS		P02F-000BB	90 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	6		XXS		P02F-000BC	90 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	8		27.10mm		P02F-000KA	90 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	10		32.90mm		P02F-000KB	90 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P03F-00077	45 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	0.75		XXS		P03F-000AY	45 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	1		XXS		P03F-000AZ	45 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	1.5		XXS		P03F-000B0	45 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	2		XXS		P03F-000B2	45 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	3		XXS		P03F-000B3	45 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	4		XXS		P03F-000B4	45 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	6		XXS		P03F-000B5	45 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	8		27.10mm		P03F-000K1	45 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	10		32.90mm		P03F-000K2	45 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P21F-00078	Straight tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	0.75		XXS		P21F-000AW	Straight tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	1		XXS		P21F-000AX	Straight tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	1.5		XXS		P21F-000AY	Straight tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	2		XXS		P21F-000B0	Straight tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	3		XXS		P21F-000B1	Straight tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	4		XXS		P21F-000B2	Straight tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	6		XXS		P21F-000B3	Straight tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	8		27.10mm		P21F-000K4	Straight tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	10		32.90mm		P21F-000K5	Straight tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75	XXS	XXS	P24F-000Y4	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	1.5	0.75	XXS	XXS	P24F-000Y5	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	1.5	1	XXS	XXS	P24F-000Y6	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	2	1	XXS	XXS	P24F-000Y7	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	2	1.5	XXS	XXS	P24F-000Y8	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	3	1.5	XXS	XXS	P24F-000Y9	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	

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REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	XXS	XXS	P24F-000YA	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	4	2	XXS	XXS	P24F-000YB	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	4	3	XXS	XXS	P24F-000YC	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	6	3	XXS	XXS	P24F-000YD	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	6	4	XXS	XXS	P24F-000YE	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	8	4	27.10mm	XXS	P24F-0025B	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	8	6	27.10mm	XXS	P24F-0025F	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	10	4	32.90mm	XXS	P24F-0025C	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	10	6	32.90mm	XXS	P24F-0025D	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	10	8	32.90mm	27.10mm	P24F-0025E	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	XXS	XXS	P27F-000T0	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	1	0.5	XXS	XXS	P27F-000T1	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	1	0.75	XXS	XXS	P27F-000T2	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	1.5	0.5	XXS	XXS	P27F-000T3	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	1.5	0.75	XXS	XXS	P27F-000T4	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	1.5	1	XXS	XXS	P27F-000T5	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	2	0.75	XXS	XXS	P27F-000T6	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	2	1	XXS	XXS	P27F-000T7	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	2	1.5	XXS	XXS	P27F-000T8	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	3	1.5	XXS	XXS	P27F-000T9	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	3	2	XXS	XXS	P27F-000TA	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	4	1.5	XXS	XXS	P27F-000TB	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	4	2	XXS	XXS	P27F-000TC	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	4	3	XXS	XXS	P27F-000TD	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	6	3	XXS	XXS	P27F-000TE	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	6	4	XXS	XXS	P27F-000TF	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	8	4	27.10mm	XXS	P27F-001LW	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	8	6	27.10mm	XXS	P27F-001LX	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	10	4	32.90mm	XXS	P27F-001LY	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	10	6	32.90mm	XXS	P27F-001LZ	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	10	8	32.90mm	27.10mm	P27F-001M0	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	XXS	XXS	P28F-000T0	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	1	0.5	XXS	XXS	P28F-000T1	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	1	0.75	XXS	XXS	P28F-000T2	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	1.5	0.5	XXS	XXS	P28F-000T3	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	1.5	0.75	XXS	XXS	P28F-000T4	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	1.5	1	XXS	XXS	P28F-000T5	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	2	0.75	XXS	XXS	P28F-000T6	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	2	1	XXS	XXS	P28F-000T7	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	2	1.5	XXS	XXS	P28F-000T8	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	3	1.5	XXS	XXS	P28F-000T9	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	3	2	XXS	XXS	P28F-000TA	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	4	1.5	XXS	XXS	P28F-000TB	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	4	2	XXS	XXS	P28F-000TC	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	4	3	XXS	XXS	P28F-000TD	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	6	3	XXS	XXS	P28F-000TE	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	6	4	XXS	XXS	P28F-000TF	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	8	4	27.10mm	XXS	P28F-001MD	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	8	6	27.10mm	XXS	P28F-001ME	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	10	4	32.90mm	XXS	P28F-001MF	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	10	6	32.90mm	XXS	P28F-001MG	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	10	8	32.90mm	27.10mm	P28F-001MH	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	

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CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P29F-000AN	Cap ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	0.75		XXS		P29F-000AP	Cap ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	1		XXS		P29F-000AR	Cap ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	1.5		XXS		P29F-000AS	Cap ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	2		XXS		P29F-000AU	Cap ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	3		XXS		P29F-000AV	Cap ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	4		XXS		P29F-000AW	Cap ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	6		XXS		P29F-000AX	Cap ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	8		27.10mm		P29F-000JD	Cap ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	10		32.90mm		P29F-000JE	Cap ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P41F-0002D	Straight nipple ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		XXS		P41F-0002E	Straight nipple ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		XXS		P41F-0002F	Straight nipple ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		XXS		P41F-0002G	Straight nipple ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2	0.75	XXS	XXS	P31G-001A4	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	3	0.75	XXS	XXS	P31G-001A5	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	4	0.75	XXS	XXS	P31G-001A7	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	6	0.75	XXS	XXS	P31G-001AA	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	8	0.75	27.10mm	XXS	P31G-002LA	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	10	0.75	32.90mm	XXS	P31G-002LF	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	3	1	XXS	XXS	P31G-001A6	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	4	1	XXS	XXS	P31G-001A8	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	6	1	XXS	XXS	P31G-001AB	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	8	1	27.10mm	XXS	P31G-002LB	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	10	1	32.90mm	XXS	P31G-002LG	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	4	1.5	XXS	XXS	P31G-001A9	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	6	1.5	XXS	XXS	P31G-001AC	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	8	1.5	27.10mm	XXS	P31G-002LC	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	10	1.5	32.90mm	XXS	P31G-002LH	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	6	2	XXS	XXS	P31G-001AD	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	8	2	27.10mm	XXS	P31G-002LD	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	10	2	32.90mm	XXS	P31G-002LJ	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	8	3	27.10mm	XXS	P31G-002LE	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	10	3	32.90mm	XXS	P31G-002LK	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30G-0001G	Plug ASTM A182 Grade F11 Class 1 ASME B16.11 NPT Round head	
1	0.75				P30G-0001H	Plug ASTM A182 Grade F11 Class 1 ASME B16.11 NPT Round head	
1	1				P30G-0001J	Plug ASTM A182 Grade F11 Class 1 ASME B16.11 NPT Round head	
1	1.5				P30G-0001K	Plug ASTM A182 Grade F11 Class 1 ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P61G-000K6	Flange WN ASTM A182 Grade F11 Class 2 Class 1500 ASME B16.5 RJ	
1	0.75		XXS		P61G-000K7	Flange WN ASTM A182 Grade F11 Class 2 Class 1500 ASME B16.5 RJ	
1	1		XXS		P61G-000K8	Flange WN ASTM A182 Grade F11 Class 2 Class 1500 ASME B16.5 RJ	
1	1.5		XXS		P61G-000K9	Flange WN ASTM A182 Grade F11 Class 2 Class 1500 ASME B16.5 RJ	
1	2		XXS		P61G-000KD	Flange WN ASTM A182 Grade F11 Class 2 Class 1500 ASME B16.5 RJ	
1	3		XXS		P61G-0008Z	Flange WN ASTM A182 Grade F11 Class 2 Class 1500 ASME B16.5 RJ	
1	4		XXS		P61G-000KE	Flange WN ASTM A182 Grade F11 Class 2 Class 1500 ASME B16.5 RJ	
1	6		XXS		P61G-000KF	Flange WN ASTM A182 Grade F11 Class 2 Class 1500 ASME B16.5 RJ	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	8		27.10mm		P61G-0015B	Flange WN ASTM A182 Grade F11 Class 2 Class 1500 ASME B16.5 RJ	
1	10		32.90mm		P61G-0015D	Flange WN ASTM A182 Grade F11 Class 2 Class 1500 ASME B16.5 RJ	
541	0.5				P61G-001AZ	Flange NPT ASTM A182 Grade F11 Class 2 Class 1500 ASME B16.5 RJ	
541	0.75				P61G-00158	Flange NPT ASTM A182 Grade F11 Class 2 Class 1500 ASME B16.5 RJ	
805	0.5		XXS		P61G-000KH	Flange WN ASTM A182 Grade F11 Class 2 Class 2500 ASME B16.5 RJ	
805	0.75		XXS		P61G-000KJ	Flange WN ASTM A182 Grade F11 Class 2 Class 2500 ASME B16.5 RJ	
805	1		XXS		P61G-000KK	Flange WN ASTM A182 Grade F11 Class 2 Class 2500 ASME B16.5 RJ	
805	1.5		XXS		P61G-000KL	Flange WN ASTM A182 Grade F11 Class 2 Class 2500 ASME B16.5 RJ	
805	2		XXS		P61G-000KP	Flange WN ASTM A182 Grade F11 Class 2 Class 2500 ASME B16.5 RJ	
805	3		XXS		P61G-00096	Flange WN ASTM A182 Grade F11 Class 2 Class 2500 ASME B16.5 RJ	
805	4		XXS		P61G-000KR	Flange WN ASTM A182 Grade F11 Class 2 Class 2500 ASME B16.5 RJ	
805	6		XXS		P61G-000KS	Flange WN ASTM A182 Grade F11 Class 2 Class 2500 ASME B16.5 RJ	
805	8		27.10mm		P61G-0015C	Flange WN ASTM A182 Grade F11 Class 2 Class 2500 ASME B16.5 RJ	
805	10		32.90mm		P61G-0015E	Flange WN ASTM A182 Grade F11 Class 2 Class 2500 ASME B16.5 RJ	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67G-0002P	Blind flange ASTM A182 Grade F11 Class 2 Class 1500 ASME B16.5 RJ	
1	0.75				P67G-0002R	Blind flange ASTM A182 Grade F11 Class 2 Class 1500 ASME B16.5 RJ	
1	1				P67G-0002S	Blind flange ASTM A182 Grade F11 Class 2 Class 1500 ASME B16.5 RJ	
1	1.5				P67G-0002T	Blind flange ASTM A182 Grade F11 Class 2 Class 1500 ASME B16.5 RJ	
1	2				P67G-000A4	Blind flange ASTM A182 Grade F11 Class 2 Class 1500 ASME B16.5 RJ	
1	3				P67G-00052	Blind flange ASTM A182 Grade F11 Class 2 Class 1500 ASME B16.5 RJ	
1	4				P67G-000A5	Blind flange ASTM A182 Grade F11 Class 2 Class 1500 ASME B16.5 RJ	
1	6				P67G-000A6	Blind flange ASTM A182 Grade F11 Class 2 Class 1500 ASME B16.5 RJ	
1	8				P67G-000A7	Blind flange ASTM A182 Grade F11 Class 2 Class 1500 ASME B16.5 RJ	
1	10				P67G-00050	Blind flange ASTM A182 Grade F11 Class 2 Class 1500 ASME B16.5 RJ	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P75T-000KE	Ring joint gasket 5Cr-1/2Mo Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	0.75				P75T-000KF	Ring joint gasket 5Cr-1/2Mo Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	1				P75T-000KG	Ring joint gasket 5Cr-1/2Mo Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	1.5				P75T-000KH	Ring joint gasket 5Cr-1/2Mo Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	2				P75T-000KS	Ring joint gasket 5Cr-1/2Mo Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	3				P75T-000L3	Ring joint gasket 5Cr-1/2Mo Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	4				P75T-000L4	Ring joint gasket 5Cr-1/2Mo Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	6				P75T-00116	Ring joint gasket 5Cr-1/2Mo Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	8				P75T-000L5	Ring joint gasket 5Cr-1/2Mo Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	10				P75T-000NK	Ring joint gasket 5Cr-1/2Mo Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	0.5				P75T-000KJ	Ring joint gasket 5Cr-1/2Mo Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	0.75				P75T-000KK	Ring joint gasket 5Cr-1/2Mo Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	1				P75T-000KL	Ring joint gasket 5Cr-1/2Mo Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	1.5				P75T-000KM	Ring joint gasket 5Cr-1/2Mo Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	2				P75T-000MH	Ring joint gasket 5Cr-1/2Mo Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	3				P75T-000P2	Ring joint gasket 5Cr-1/2Mo Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	4				P75T-000R6	Ring joint gasket 5Cr-1/2Mo Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	6				P75T-000R7	Ring joint gasket 5Cr-1/2Mo Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	8				P75T-000R8	Ring joint gasket 5Cr-1/2Mo Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	10				P75T-000MF	Ring joint gasket 5Cr-1/2Mo Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-2				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	3-10				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
805	0.5-1				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
805	1.5				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	

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BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
805	2				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
805	3-10				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81G-000CW	Gate valve ASTM A182 Grade F11 Class 2 Class 1500 API 602 BW XXS Trim SS316L Body and disc seats Stellite-6 WB-BG-OS&Y Handwheel operated Moderate wet H2S service Fluid-2	
1	0.75				P81G-000CX	Gate valve ASTM A182 Grade F11 Class 2 Class 1500 API 602 BW XXS Trim SS316L Body and disc seats Stellite-6 WB-BG-OS&Y Handwheel operated Moderate wet H2S service Fluid-2	
1	1				P81G-000CY	Gate valve ASTM A182 Grade F11 Class 2 Class 1500 API 602 BW XXS Trim SS316L Body and disc seats Stellite-6 WB-BG-OS&Y Handwheel operated Moderate wet H2S service Fluid-2	
1	1.5				P81G-000CZ	Gate valve ASTM A182 Grade F11 Class 2 Class 1500 API 602 BW XXS Trim SS316L Body and disc seats Stellite-6 WB-BG-OS&Y Handwheel operated Moderate wet H2S service Fluid-2	
1	2				P81H-000YU	Gate valve ASTM A217 Grade WC6 Class 1500 API 600 BW XXS Trim SS316L Body and disc seats Stellite-6 PSB-BG-OS&Y Handwheel operated Moderate wet H2S service Fluid-2	
1	3				P81H-000YV	Gate valve ASTM A217 Grade WC6 Class 1500 API 600 BW XXS Trim SS316L Body and disc seats Stellite-6 PSB-BG-OS&Y Handwheel operated Moderate wet H2S service Fluid-2	
1	4				P81H-000YW	Gate valve ASTM A217 Grade WC6 Class 1500 API 600 BW XXS Trim SS316L Body and disc seats Stellite-6 PSB-BG-OS&Y Gear operated Moderate wet H2S service Fluid-2	
1	6				P81H-000YX	Gate valve ASTM A217 Grade WC6 Class 1500 API 600 BW XXS Trim SS316L Body and disc seats Stellite-6 PSB-BG-OS&Y Gear operated Moderate wet H2S service Fluid-2	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82G-0007B	Globe valve ASTM A182 Grade F11 Class 2 Class 1500 API 602 BW XXS Trim SS316L Body and disc seats Stellite-6 WB-BG-OS&Y Handwheel operated Moderate wet H2S service Fluid-2	
1	0.75				P82G-0007C	Globe valve ASTM A182 Grade F11 Class 2 Class 1500 API 602 BW XXS Trim SS316L Body and disc seats Stellite-6 WB-BG-OS&Y Handwheel operated Moderate wet H2S service Fluid-2	
1	1				P82G-0007D	Globe valve ASTM A182 Grade F11 Class 2 Class 1500 API 602 BW XXS Trim SS316L Body and disc seats Stellite-6 WB-BG-OS&Y Handwheel operated Moderate wet H2S service Fluid-2	
1	1.5				P82G-0007E	Globe valve ASTM A182 Grade F11 Class 2 Class 1500 API 602 BW XXS Trim SS316L Body and disc seats Stellite-6 WB-BG-OS&Y Handwheel operated Moderate wet H2S service Fluid-2	
1	2				P82H-000F5	Globe valve ASTM A217 Grade WC6 Class 1500 BS 1873 BW XXS Trim SS316L Body and disc seats Stellite-6 PSB-BG-OS&Y Gear operated Moderate wet H2S service Fluid-2	
1	3				P82H-000F6	Globe valve ASTM A217 Grade WC6 Class 1500 BS 1873 BW XXS Trim SS316L Body and disc seats Stellite-6 PSB-BG-OS&Y Gear operated Moderate wet H2S service Fluid-2	
4601	1.5				P82G-0007V	Y-pattern globe valve ASTM A182 Grade F11 Class 2 Class 1500 ASME B16.34 BW XXS Trim SS316L Body and disc seats Stellite-6 WB-BG-OS&Y Handwheel operated Moderate wet H2S service Fluid-2	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83G-0005N	Check valve ASTM A182 Grade F11 Class 2 Class 1500 API 602 BW XXS Trim SS316L Body and disc seats Stellite-6 Lift-type Welded cover Moderate wet H2S service	
1	0.75				P83G-0005P	Check valve ASTM A182 Grade F11 Class 2 Class 1500 API 602 BW XXS Trim SS316L Body and disc seats Stellite-6 Lift-type Welded cover Moderate wet H2S service	
1	1				P83G-0005R	Check valve ASTM A182 Grade F11 Class 2 Class 1500 API 602 BW XXS Trim SS316L Body and disc seats Stellite-6 Lift-type Welded cover Moderate wet H2S service	
1	1.5				P83G-0005S	Check valve ASTM A182 Grade F11 Class 2 Class 1500 API 602 BW XXS Trim SS316L Body and disc seats Stellite-6 Lift-type Welded cover Moderate wet H2S service	
1	2				P83H-0008P	Check valve ASTM A217 Grade WC6 Class 1500 BS 1868 BW XXS Trim SS316L Body and disc seats Stellite-6 Swing-type Pressure seal cap Moderate wet H2S service	
1	3				P83H-0008R	Check valve ASTM A217 Grade WC6 Class 1500 BS 1868 BW XXS Trim SS316L Body and disc seats Stellite-6 Swing-type Pressure seal cap Moderate wet H2S service	
1	4				P83H-0008S	Check valve ASTM A217 Grade WC6 Class 1500 BS 1868 BW XXS Trim SS316L Body and disc seats Stellite-6 Swing-type Pressure seal cap Moderate wet H2S service	
1	6				P83H-0008T	Check valve ASTM A217 Grade WC6 Class 1500 BS 1868 BW XXS Trim SS316L Body and disc seats Stellite-6 Swing-type Pressure seal cap Moderate wet H2S service	

PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P72G-0003T	Paddle blank ASTM A182 Grade F11 Class 2 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	0.75				P72G-0003U	Paddle blank ASTM A182 Grade F11 Class 2 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	1				P72G-0003V	Paddle blank ASTM A182 Grade F11 Class 2 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	1.5				P72G-0003W	Paddle blank ASTM A182 Grade F11 Class 2 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	2				P72G-00040	Paddle blank ASTM A182 Grade F11 Class 2 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	3				P72G-00041	Paddle blank ASTM A182 Grade F11 Class 2 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	4				P72G-00042	Paddle blank ASTM A182 Grade F11 Class 2 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	6				P72G-00043	Paddle blank ASTM A182 Grade F11 Class 2 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	8				P72G-00044	Paddle blank ASTM A182 Grade F11 Class 2 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	10				P72G-0003X	Paddle blank ASTM A182 Grade F11 Class 2 Class 1500 Standard-drawing Flange ASME B16.5 RJ	

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PADDLE SPACER (PS)							
OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P72G-00045	Paddle spacer ASTM A182 Grade F11 Class 2 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	0.75				P72G-00046	Paddle spacer ASTM A182 Grade F11 Class 2 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	1				P72G-00047	Paddle spacer ASTM A182 Grade F11 Class 2 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	1.5				P72G-00048	Paddle spacer ASTM A182 Grade F11 Class 2 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	2				P72G-0004C	Paddle spacer ASTM A182 Grade F11 Class 2 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	3				P72G-0004D	Paddle spacer ASTM A182 Grade F11 Class 2 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	4				P72G-0004E	Paddle spacer ASTM A182 Grade F11 Class 2 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	6				P72G-0004F	Paddle spacer ASTM A182 Grade F11 Class 2 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	8				P72G-0004G	Paddle spacer ASTM A182 Grade F11 Class 2 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	10				P72G-00049	Paddle spacer ASTM A182 Grade F11 Class 2 Class 1500 Standard-drawing Flange ASME B16.5 RJ	

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BOLT TABLE (B_N2D602 , STUD ASME RJ, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	110	P80S-0090F	R12	P75T-000KE
0.75	4	0.750	115	P80S-0090G	R14	P75T-000KF
1	4	0.875	130	P80S-005ZB	R16	P75T-000KG
1.5	4	1.000	140	P80S-0061A	R20	P75T-000KH
2	8	0.875	150	P80S-005ZF	R24	P75T-000KS
3	8	1.125	180	P80S-0064T	R35	P75T-000L3
4	8	1.250	230	P80S-0068H	R39	P75T-000L4
6	12	1.375	300	P80S-006J1	R46	P75T-00116
8	12	1.625	345	P80S-00A5K	R50	P75T-000L5
10	12	1.875	395	P80S-00AW8	R54	P75T-000NK

BOLT TABLE (B_N2D602_805 , STUD ASME RJ, OPTION CODE 805)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	125	P80S-0090J	R13	P75T-000KJ
0.75	4	0.750	130	P80S-0090K	R16	P75T-000KK
1	4	0.875	140	P80S-005ZD	R18	P75T-000KL
1.5	4	1.125	175	P80S-0064S	R23	P75T-000KM
2	8	1.000	180	P80S-0061J	R26	P75T-000MH
3	8	1.250	260	P80S-0068P	R32	P75T-000P2
4	8	1.500	305	P80S-006LS	R38	P75T-000R6
6	8	2.000	410	P80S-00BBD	R47	P75T-000R7
8	12	2.000	450	P80S-00BH6	R51	P75T-000R8
10	12	2.500	575	P80S-00DZV	R55	P75T-000MF

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BRANCH TABLE (T_N2D602)

RUN PIPE SIZE (in) \ BRANCH SIZE (in)	0.5	0.75	1	1.5	2	3	4	6	8	10
0.5	TS									
0.75		TS								
1		TR	TS							
1.5		TR	TR	TS						
2		L	TR	TR	TS					
3		L	L	TR	TR	TS				
4	L	L	L	L	TR	TR	TS			
6	L	L	L	L	L	TR	TR	TS		
8		L	L	L	L	L	TR	TR	TS	
10		L	L	L	L	L	TR	TR	TR	TS

TS : STRAIGHT TEE
TR : REDUCING TEE
L : OUTLET

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PIPING CLASS

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Material : Killed CS
Rating : ASME CLASS 1500
Flange Face : RJ
C.A.(mm) : 3.00
Gasket : Ring Octagonal
Service : PROCESS - WET SEVERE SOUR SERVICE SUBJECT TO NACE + HIC STD + AMINES OR CAUSTIC - STRESS RELIEVED
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
5	BOLTING CONFIRMING TO B7M / 2HM SHALL BE USED UNDER CONDITIONS (A) DIRECT EXPOSURE TO SOUR ENVIRONMENTS (B) WHEN THE BOLTING WILL BE BURIED OR INSULATED
27	PWHT OF CARBON STEEL PIPING IN WET H2S, CAUSTIC AND AMINE SERVICES SHALL BE IN ACCORDANCE WITH SECTION 10.2, 10.3, AND 10.4 OF PROJECT SPECIFICATION 3550-8440-SP-0002 MATERIALS REQUIREMENTS FOR PRESSURISED EQUIPMENT AND PIPING. FOR CAUSTIC AND AMINE SERVICE THE FOLLOWING SHALL APPLY: - PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF ALL SITE PIPING FABRICATION WELDS IS REQUIRED FOR ALL WALL THICKNESSES. FOR MODERATE AND SEVERE WET H2S SERVICE THE FOLLOWING SHALL APPLY: PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF SITE FABRICATION CIRCUMFERENTIAL OR BRANCH WELDS IS NOT REQUIRED IF WELDS ARE MULTIPASS AND IN ACCORDANCE WITH PARA 10.2.12 OF PROJECT SPECIFICATION 3550-8440-SP-0002. FOR SERVICES MEETING THE WET H2S CRITERIA AND CAUSTIC OR AMINE CRITERIA THE MORE STRINGENT PWHT REQUIREMENT SHALL GOVERN.

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
805	CLASS 2500 (B,F,G)

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PIPING CLASS
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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P01A-00143	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	0.75		XXS		P01A-0014D	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1		XXS		P01A-0014U	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1.5		XXS		P01A-00162	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	2		XXS		P01A-001R0	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	3		XXS		P01A-001SB	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P02A-00172	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	0.75		XXS		P02A-000XH	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1		XXS		P02A-000XJ	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1.5		XXS		P02A-002N4	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	2		XXS		P02A-00111	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		XXS		P02A-002JA	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P03A-0012Y	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	0.75		XXS		P03A-000U9	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1		XXS		P03A-000U8	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1.5		XXS		P03A-002KD	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	2		XXS		P03A-000XH	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		XXS		P03A-002FU	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P21A-002M0	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	0.75		XXS		P21A-002DR	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1		XXS		P21A-002DP	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5		XXS		P21A-003KU	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2		XXS		P21A-002G3	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		XXS		P21A-003GV	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75	XXS	XXS	P24A-004LR	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.75	XXS	XXS	P24A-00K06	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	1	XXS	XXS	P24A-00H61	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	XXS	XXS	P24A-00H63	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	XXS	XXS	P24A-006TT	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	XXS	XXS	P24A-00K07	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	XXS	XXS	P24A-00GPM	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	XXS	XXS	P27A-004M7	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.5	XXS	XXS	P27A-004MF	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.75	XXS	XXS	P27A-002ZZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.5	XXS	XXS	P27A-004N3	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.75	XXS	XXS	P27A-004ND	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	1	XXS	XXS	P27A-004NR	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	0.75	XXS	XXS	P27A-00341	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	XXS	XXS	P27A-0033N	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	XXS	XXS	P27A-00339	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	XXS	XXS	P27A-006BZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	XXS	XXS	P27A-006C9	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	XXS	XXS	P28A-00BNX	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.5	XXS	XXS	P28A-00BNY	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.75	XXS	XXS	P28A-0030M	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.5	XXS	XXS	P28A-00BNZ	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.75	XXS	XXS	P28A-00BP0	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	1	XXS	XXS	P28A-008W0	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	0.75	XXS	XXS	P28A-00BP1	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	XXS	XXS	P28A-004KN	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	XXS	XXS	P28A-004KP	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	XXS	XXS	P28A-00BP2	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	XXS	XXS	P28A-008GE	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P29A-00336	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	0.75		XXS		P29A-00337	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	1		XXS		P29A-00338	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5		XXS		P29A-00339	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	2		XXS		P29A-0033A	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	3		XXS		P29A-0033B	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2	0.75	XXS	XXS	P31B-00CP1	Outlet ASTM A105 MSS SP-97 BW	
1	3	0.75	XXS	XXS	P31B-00CMJ	Outlet ASTM A105 MSS SP-97 BW	
1	3	1	XXS	XXS	P31B-00B48	Outlet ASTM A105 MSS SP-97 BW	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P61B-00664	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
1	0.75		XXS		P61B-005V2	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
1	1		XXS		P61B-009W2	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
1	1.5		XXS		P61B-009WB	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
1	2		XXS		P61B-0066U	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
1	3		XXS		P61B-0066V	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
805	0.5		XXS		P61B-00666	Flange WN ASTM A105 Class 2500 ASME B16.5 RJ	
805	0.75		XXS		P61B-009W3	Flange WN ASTM A105 Class 2500 ASME B16.5 RJ	
805	1		XXS		P61B-006JH	Flange WN ASTM A105 Class 2500 ASME B16.5 RJ	
805	1.5		XXS		P61B-006JJ	Flange WN ASTM A105 Class 2500 ASME B16.5 RJ	
805	2		XXS		P61B-0066Y	Flange WN ASTM A105 Class 2500 ASME B16.5 RJ	
805	3		XXS		P61B-0066Z	Flange WN ASTM A105 Class 2500 ASME B16.5 RJ	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67B-001VE	Blind flange ASTM A105 Class 1500 ASME B16.5 RJ	
1	0.75				P67B-001VF	Blind flange ASTM A105 Class 1500 ASME B16.5 RJ	
1	1				P67B-001VG	Blind flange ASTM A105 Class 1500 ASME B16.5 RJ	
1	1.5				P67B-001VH	Blind flange ASTM A105 Class 1500 ASME B16.5 RJ	
1	2				P67B-0014J	Blind flange ASTM A105 Class 1500 ASME B16.5 RJ	
1	3				P67B-0014G	Blind flange ASTM A105 Class 1500 ASME B16.5 RJ	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P75T-000JT	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	0.75				P75T-000JU	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	1				P75T-000JV	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	1.5				P75T-000JW	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	2				P75T-0008A	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	

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GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3				P75T-0008E	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	0.5				P75T-000KT	Ring joint gasket Soft iron Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	0.75				P75T-000KU	Ring joint gasket Soft iron Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	1				P75T-000KV	Ring joint gasket Soft iron Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	1.5				P75T-000KW	Ring joint gasket Soft iron Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	2				P75T-000L6	Ring joint gasket Soft iron Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	3				P75T-000MC	Ring joint gasket Soft iron Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-2				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	3				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
805	0.5-1				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
805	1.5				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
805	2				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
805	3				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81B-0030T	Gate valve ASTM A105 Class 1500 API 602 BW XXS Trim SS316L Body and disc seats Stellite-6 WB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service C.A.=4.5mm	
1	0.75				P81B-0030U	Gate valve ASTM A105 Class 1500 API 602 BW XXS Trim SS316L Body and disc seats Stellite-6 WB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service C.A.=4.5mm	
1	1				P81B-0030V	Gate valve ASTM A105 Class 1500 API 602 BW XXS Trim SS316L Body and disc seats Stellite-6 WB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service C.A.=4.5mm	
1	1.5				P81B-0030W	Gate valve ASTM A105 Class 1500 API 602 BW XXS Trim SS316L Body and disc seats Stellite-6 WB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service C.A.=4.5mm	
1	2				P81C-00958	Gate valve ASTM A216 Grade WCB Class 1500 API 600 BW XXS Trim SS316L Body and disc seats Stellite-6 PSB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service C.A.=4.5mm	
1	3				P81C-009YZ	Gate valve ASTM A216 Grade WCB Class 1500 API 600 BW XXS Trim SS316L Body and disc seats Stellite-6 PSB-BG-OS&Y Handwheel operated Severe wet H2S service Amine service C.A.=4.5mm	

PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P72B-000JD	Paddle blank ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	0.75				P72B-000JE	Paddle blank ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	1				P72B-000JF	Paddle blank ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	1.5				P72B-000JG	Paddle blank ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	2				P72B-000JH	Paddle blank ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	3				P72B-000KG	Paddle blank ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	

PADDLE SPACER (PS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P72B-000JN	Paddle spacer ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	0.75				P72B-000JP	Paddle spacer ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	1				P72B-000JR	Paddle spacer ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	1.5				P72B-000JS	Paddle spacer ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	2				P72B-000JT	Paddle spacer ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	3				P72B-000KL	Paddle spacer ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	

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N3A502 REV NO. 2

BOLT TABLE (B_N3A502 , STUD ASME RJ, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	110	P80S-0090F	R12	P75T-000JT
0.75	4	0.750	115	P80S-0090G	R14	P75T-000JU
1	4	0.875	130	P80S-005ZB	R16	P75T-000JV
1.5	4	1.000	140	P80S-0061A	R20	P75T-000JW
2	8	0.875	150	P80S-005ZF	R24	P75T-0008A
3	8	1.125	180	P80S-0064T	R35	P75T-0008E

BOLT TABLE (B_N3A502_805 , STUD ASME RJ, OPTION CODE 805)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	125	P80S-0090J	R13	P75T-000KT
0.75	4	0.750	130	P80S-0090K	R16	P75T-000KU
1	4	0.875	140	P80S-005ZD	R18	P75T-000KV
1.5	4	1.125	175	P80S-0064S	R23	P75T-000KW
2	8	1.000	180	P80S-0061J	R26	P75T-000L6
3	8	1.250	260	P80S-0068P	R32	P75T-000MC

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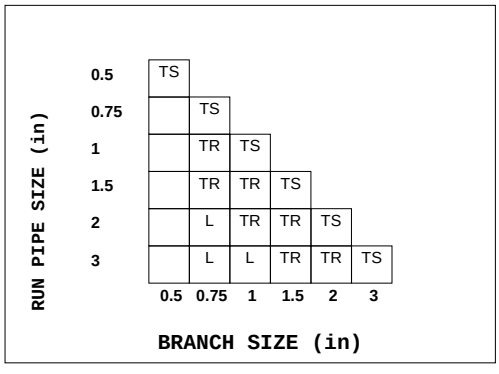
BRANCH TABLE (T_N3A502)



TR : REDUCING TEE
TS : STRAIGHT TEE
L : OUTLET

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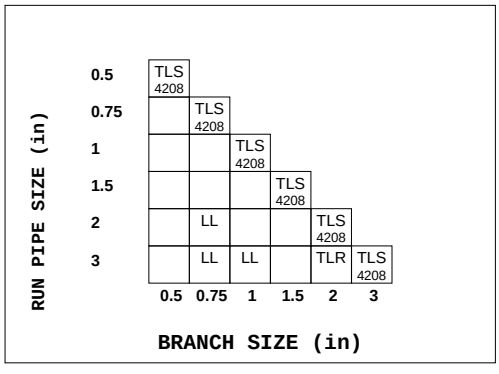
BRANCH TABLE (T_N3A502_2)



LL : LATROLET
TLS : STRAIGHT LATERAL TEE
TLR : REDUCING LATERAL TEE

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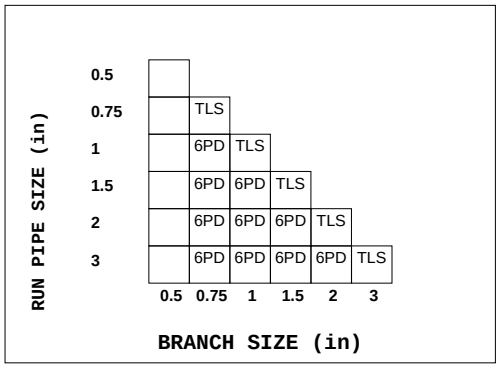
BRANCH TABLE (T_N3A502_3)



TLS : STRAIGHT LATERAL TEE
6PD : REINFORCING PAD 60 DEG

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PIPING CLASS

N3A702 REV NO. 2

Material : Killed CS
Rating : ASME CLASS 1500
Flange Face : RJ
C.A.(mm) : 4.50
Gasket : Ring Octagonal
Service : PROCESS - WET SEVERE SOUR SERVICE SUBJECT TO NACE + HIC STD + HYDROGEN SERVICE
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
5	BOLTING CONFIRMING TO B7M / 2HM SHALL BE USED UNDER CONDITIONS (A) DIRECT EXPOSURE TO SOUR ENVIRONMENTS (B) WHEN THE BOLTING WILL BE BURIED OR INSULATED
27	PWHT OF CARBON STEEL PIPING IN WET H2S, CAUSTIC AND AMINE SERVICES SHALL BE IN ACCORDANCE WITH SECTION 10.2, 10.3, AND 10.4 OF PROJECT SPECIFICATION 3550-8440-SP-0002 MATERIALS REQUIREMENTS FOR PRESSURISED EQUIPMENT AND PIPING. FOR CAUSTIC AND AMINE SERVICE THE FOLLOWING SHALL APPLY: - PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF ALL SITE PIPING FABRICATION WELDS IS REQUIRED FOR ALL WALL THICKNESSES. FOR MODERATE AND SEVERE WET H2S SERVICE THE FOLLOWING SHALL APPLY: PWHT OF ALL COMPONENT MANUFACTURING WELDS IS REQUIRED FOR ALL WALL THICKNESSES.- PWHT OF SITE FABRICATION CIRCUMFERENTIAL OR BRANCH WELDS IS NOT REQUIRED IF WELDS ARE MULTIPASS AND IN ACCORDANCE WITH PARA 10.2.12 OF PROJECT SPECIFICATION 3550-8440-SP-0002. FOR SERVICES MEETING THE WET H2S CRITERIA AND CAUSTIC OR AMINE CRITERIA THE MORE STRINGENT PWHT REQUIREMENT SHALL GOVERN.

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
541	NPT(F) (F)
805	CLASS 2500 (B,F,FR,G)
4208	45 DEGREE LATERAL STRAIGHT TEE (TLS)
4601	Y-PATTERN (W)

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PIPING CLASS
N3A702 REV NO. 2

PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P01A-00143	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	0.75		XXS		P01A-0014D	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1		XXS		P01A-0014U	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1.5		XXS		P01A-00162	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	2		XXS		P01A-001R0	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	3		XXS		P01A-001SB	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	4		SCH160		P01A-001TN	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	6		SCH160		P01A-001VD	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P02A-00172	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	0.75		XXS		P02A-000XH	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1		XXS		P02A-000XJ	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1.5		XXS		P02A-002N4	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	2		XXS		P02A-00111	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		XXS		P02A-002JA	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		SCH160		P02A-002JE	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		SCH160		P02A-002J9	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P03A-0012Y	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	0.75		XXS		P03A-000U9	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1		XXS		P03A-000U8	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1.5		XXS		P03A-002KD	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	2		XXS		P03A-000XH	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		XXS		P03A-002FU	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		SCH160		P03A-002FY	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		SCH160		P03A-002FT	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P21A-002M0	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	0.75		XXS		P21A-002DR	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1		XXS		P21A-002DP	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5		XXS		P21A-003KU	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2		XXS		P21A-002G3	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		XXS		P21A-003GV	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		SCH160		P21A-003GZ	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6		SCH160		P21A-003GU	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

STRAIGHT LATERAL TEE (TLS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75		XXS		P22A-000E0	Straight lateral-tee ASTM A234 Grade WPB Seamless ASME B16.9 BW 60 degree	
1	1		XXS		P22A-000FA	Straight lateral-tee ASTM A234 Grade WPB Seamless ASME B16.9 BW 60 degree	
1	1.5		XXS		P22A-000FB	Straight lateral-tee ASTM A234 Grade WPB Seamless ASME B16.9 BW 60 degree	
1	2		XXS		P22A-000FC	Straight lateral-tee ASTM A234 Grade WPB Seamless ASME B16.9 BW 60 degree	
1	3		XXS		P22A-000FD	Straight lateral-tee ASTM A234 Grade WPB Seamless ASME B16.9 BW 60 degree	
1	4		SCH160		P22A-000F7	Straight lateral-tee ASTM A234 Grade WPB Seamless ASME B16.9 BW 60 degree	
1	6		SCH160		P22A-000F8	Straight lateral-tee ASTM A234 Grade WPB Seamless ASME B16.9 BW 60 degree	
4208	2		XXS		P22A-000CF	Straight lateral-tee ASTM A234 Grade WPB Seamless ASME B16.9 BW 45 degree	
4208	3		XXS		P22A-000CG	Straight lateral-tee ASTM A234 Grade WPB Seamless ASME B16.9 BW 45 degree	
4208	4		SCH160		P22A-000CC	Straight lateral-tee ASTM A234 Grade WPB Seamless ASME B16.9 BW 45 degree	
4208	6		SCH160		P22A-000CD	Straight lateral-tee ASTM A234 Grade WPB Seamless ASME B16.9 BW 45 degree	

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REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75	XXS	XXS	P24A-004LR	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.75	XXS	XXS	P24A-00K06	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	1	XXS	XXS	P24A-00H61	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	XXS	XXS	P24A-00H63	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	XXS	XXS	P24A-006TT	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	XXS	XXS	P24A-00K07	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	XXS	XXS	P24A-00GPM	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	SCH160	XXS	P24A-00K2N	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	SCH160	XXS	P24A-00K2P	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	SCH160	XXS	P24A-00K2R	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	SCH160	SCH160	P24A-00GPR	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	XXS	XXS	P27A-004M7	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.5	XXS	XXS	P27A-004MF	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.75	XXS	XXS	P27A-002ZZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.5	XXS	XXS	P27A-004N3	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.75	XXS	XXS	P27A-004ND	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	1	XXS	XXS	P27A-004NR	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	0.75	XXS	XXS	P27A-00341	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	XXS	XXS	P27A-0033N	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	XXS	XXS	P27A-00339	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	XXS	XXS	P27A-006BZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	XXS	XXS	P27A-006C9	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	1.5	SCH160	XXS	P27A-0073M	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	SCH160	XXS	P27A-00747	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	SCH160	XXS	P27A-0074P	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	SCH160	XXS	P27A-007P0	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	SCH160	SCH160	P27A-007PP	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	XXS	XXS	P28A-00BNX	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.5	XXS	XXS	P28A-00BNY	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.75	XXS	XXS	P28A-0030M	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.5	XXS	XXS	P28A-00BNZ	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.75	XXS	XXS	P28A-00BP0	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	1	XXS	XXS	P28A-008W0	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	0.75	XXS	XXS	P28A-00BP1	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	XXS	XXS	P28A-004KN	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	XXS	XXS	P28A-004KP	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	XXS	XXS	P28A-00BP2	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	XXS	XXS	P28A-008GE	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	1.5	SCH160	XXS	P28A-00BN8	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	SCH160	XXS	P28A-00AVE	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	SCH160	XXS	P28A-00AKB	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	SCH160	XXS	P28A-00BRY	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	SCH160	SCH160	P28A-008GM	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P29A-00336	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	0.75		XXS		P29A-00337	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	1		XXS		P29A-00338	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	1.5		XXS		P29A-00339	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	2		XXS		P29A-0033A	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	3		XXS		P29A-0033B	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	
1	4		SCH160		P29A-001WX	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	

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CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	6		SCH160		P29A-0033C	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW Severe wet H2S service	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P41A-000B9	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		XXS		P41A-000BA	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		XXS		P41A-000D8	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		XXS		P41A-000D9	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2	0.75	XXS	XXS	P31B-00CP1	Outlet ASTM A105 MSS SP-97 BW	
1	3	0.75	XXS	XXS	P31B-00CMJ	Outlet ASTM A105 MSS SP-97 BW	
1	4	0.75	SCH160	XXS	P31B-00CLK	Outlet ASTM A105 MSS SP-97 BW	
1	6	0.75	SCH160	XXS	P31B-00YLN	Outlet ASTM A105 MSS SP-97 BW	
1	3	1	XXS	XXS	P31B-00B48	Outlet ASTM A105 MSS SP-97 BW	
1	4	1	SCH160	XXS	P31B-00B07	Outlet ASTM A105 MSS SP-97 BW	
1	6	1	SCH160	XXS	P31B-00AZ1	Outlet ASTM A105 MSS SP-97 BW	
1	4	1.5	SCH160	XXS	P31B-00BNW	Outlet ASTM A105 MSS SP-97 BW	
1	6	1.5	SCH160	XXS	P31B-00BJ7	Outlet ASTM A105 MSS SP-97 BW	
1	6	2	SCH160	XXS	P31B-007SB	Outlet ASTM A105 MSS SP-97 BW	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30B-0002D	Plug ASTM A105 ASME B16.11 NPT Round head	
1	0.75				P30B-0002E	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1				P30B-0002F	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1.5				P30B-0002G	Plug ASTM A105 ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P61B-00664	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
1	0.75		XXS		P61B-005V2	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
1	1		XXS		P61B-009W2	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
1	1.5		XXS		P61B-009WB	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
1	2		XXS		P61B-0066U	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
1	3		XXS		P61B-0066V	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
1	4		SCH160		P61B-00671	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
1	6		SCH160		P61B-0066K	Flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
541	0.5				P61B-00DLH	Flange NPT ASTM A105 Class 1500 ASME B16.5 RJ	
541	0.75				P61B-00CW7	Flange NPT ASTM A105 Class 1500 ASME B16.5 RJ	
805	0.5		XXS		P61B-00666	Flange WN ASTM A105 Class 2500 ASME B16.5 RJ	
805	0.75		XXS		P61B-009W3	Flange WN ASTM A105 Class 2500 ASME B16.5 RJ	
805	1		XXS		P61B-006JH	Flange WN ASTM A105 Class 2500 ASME B16.5 RJ	
805	1.5		XXS		P61B-006JJ	Flange WN ASTM A105 Class 2500 ASME B16.5 RJ	
805	2		XXS		P61B-0066Y	Flange WN ASTM A105 Class 2500 ASME B16.5 RJ	
805	3		XXS		P61B-0066Z	Flange WN ASTM A105 Class 2500 ASME B16.5 RJ	
805	4		SCH160		P61B-00672	Flange WN ASTM A105 Class 2500 ASME B16.5 RJ	
805	6		SCH160		P61B-0066N	Flange WN ASTM A105 Class 2500 ASME B16.5 RJ	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67B-001VE	Blind flange ASTM A105 Class 1500 ASME B16.5 RJ	
1	0.75				P67B-001VF	Blind flange ASTM A105 Class 1500 ASME B16.5 RJ	
1	1				P67B-001VG	Blind flange ASTM A105 Class 1500 ASME B16.5 RJ	
1	1.5				P67B-001VH	Blind flange ASTM A105 Class 1500 ASME B16.5 RJ	
1	2				P67B-0014J	Blind flange ASTM A105 Class 1500 ASME B16.5 RJ	
1	3				P67B-0014G	Blind flange ASTM A105 Class 1500 ASME B16.5 RJ	

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BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	4				P67B-0014F	Blind flange ASTM A105 Class 1500 ASME B16.5 RJ	
1	6				P67B-0014E	Blind flange ASTM A105 Class 1500 ASME B16.5 RJ	

REDUCING FLANGE (FR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	1.5		XXS	P62B-000PK	Reducing flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
1	3	2		XXS	P62B-000PL	Reducing flange WN ASTM A105 Class 1500 ASME B16.5 RJ	
805	3	2		XXS	P62B-000PW	Reducing flange WN ASTM A105 Class 2500 ASME B16.5 RJ	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P75T-000JT	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	0.75				P75T-000JU	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	1				P75T-000JV	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	1.5				P75T-000JW	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	2				P75T-0008A	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	3				P75T-0008E	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	4				P75T-0008D	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	6				P75T-0008C	Ring joint gasket Soft iron Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	0.5				P75T-000KT	Ring joint gasket Soft iron Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	0.75				P75T-000KU	Ring joint gasket Soft iron Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	1				P75T-000KV	Ring joint gasket Soft iron Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	1.5				P75T-000KW	Ring joint gasket Soft iron Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	2				P75T-000L6	Ring joint gasket Soft iron Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	3				P75T-000MC	Ring joint gasket Soft iron Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	4				P75T-000ME	Ring joint gasket Soft iron Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	6				P75T-000L7	Ring joint gasket Soft iron Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-2				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	3-6				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
805	0.5-1				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
805	1.5				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
805	2				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
805	3-6				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81B-0021A	Gate valve ASTM A105 Class 1500 API 602 BW XXS Trim SS316L Body and disc seats Stellite-6 WB-BG-OS&Y Handwheel operated Severe wet H2S service C.A.=4.5mm	
1	0.75				P81B-0021B	Gate valve ASTM A105 Class 1500 API 602 BW XXS Trim SS316L Body and disc seats Stellite-6 WB-BG-OS&Y Handwheel operated Severe wet H2S service C.A.=4.5mm	
1	1				P81B-0021C	Gate valve ASTM A105 Class 1500 API 602 BW XXS Trim SS316L Body and disc seats Stellite-6 WB-BG-OS&Y Handwheel operated Severe wet H2S service C.A.=4.5mm	
1	1.5				P81B-0021D	Gate valve ASTM A105 Class 1500 API 602 BW XXS Trim SS316L Body and disc seats Stellite-6 WB-BG-OS&Y Handwheel operated Severe wet H2S service C.A.=4.5mm	
1	2				P81C-006VU	Gate valve ASTM A216 Grade WCB Class 1500 API 600 BW XXS Trim SS316L Body and disc seats Stellite-6 PSB-BG-OS&Y Handwheel operated Severe wet H2S service C.A.=4.5mm	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82B-001UK	Globe valve ASTM A105 Class 1500 API 602 BW XXS Trim SS316L Body and disc seats Stellite-6 WB-BG-OS&Y Handwheel operated Severe wet H2S service C.A.=4.5mm	
1	0.75				P82B-001UL	Globe valve ASTM A105 Class 1500 API 602 BW XXS Trim SS316L Body and disc seats Stellite-6 WB-BG-OS&Y Handwheel operated Severe wet H2S service C.A.=4.5mm	
1	1				P82B-001UM	Globe valve ASTM A105 Class 1500 API 602 BW XXS Trim SS316L Body and disc seats Stellite-6 WB-BG-OS&Y Handwheel operated Severe wet H2S service C.A.=4.5mm	
1	1.5				P82B-001UN	Globe valve ASTM A105 Class 1500 API 602 BW XXS Trim SS316L Body and disc seats Stellite-6 WB-BG-OS&Y Handwheel operated Severe wet H2S service C.A.=4.5mm	
1	2				P82C-003BN	Globe valve ASTM A216 Grade WCB Class 1500 BS 1873 BW XXS Trim SS316L Body and disc seats Stellite-6 PSB-BG-OS&Y Handwheel operated Severe wet H2S service C.A.=4.5mm	

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GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3				P82C-0043K	Globe valve ASTM A216 Grade WCB Class 1500 BS 1873 BW XXS Trim SS316L Body and disc seats Stellite-6 PSB-BG-OS&Y Gear operated Severe wet H2S service C.A.=4.5mm	
1	4				P82C-00384	Globe valve ASTM A216 Grade WCB Class 1500 BS 1873 BW Sch160 Trim SS316L Body and disc seats Stellite-6 PSB-BG-OS&Y Gear operated Severe wet H2S service C.A.=4.5mm	
1	6				P82C-00385	Globe valve ASTM A216 Grade WCB Class 1500 BS 1873 BW Sch160 Trim SS316L Body and disc seats Stellite-6 PSB-BG-OS&Y Gear operated Severe wet H2S service C.A.=4.5mm	
4601	0.75				P82B-0022P	Y-pattern globe valve ASTM A105 Class 1500 ASME B16.34 BW XXS Trim SS316L Body and disc seats Stellite-6 WB-BG-OS&Y Handwheel operated Severe wet H2S service C.A.=4.5mm	
4601	1				P82B-001KW	Y-pattern globe valve ASTM A105 Class 1500 ASME B16.34 BW XXS Trim SS316L Body and disc seats Stellite-6 WB-BG-OS&Y Handwheel operated Severe wet H2S service C.A.=4.5mm	
4601	1.5				P82B-0022Y	Y-pattern globe valve ASTM A105 Class 1500 ASME B16.34 BW XXS Trim SS316L Body and disc seats Stellite-6 WB-BG-OS&Y Handwheel operated Severe wet H2S service C.A.=4.5mm	
4601	2				P82C-003BL	Y-pattern globe valve ASTM A216 Grade WCB Class 1500 ASME B16.34 BW XXS Trim SS316L Body and disc seats Stellite-6 PSB-BG-OS&Y Handwheel operated Severe wet H2S service C.A.=4.5mm	
4601	3				P82C-0043L	Y-pattern globe valve ASTM A216 Grade WCB Class 1500 ASME B16.34 BW XXS Trim SS316L Body and disc seats Stellite-6 PSB-BG-OS&Y Gear operated Severe wet H2S service C.A.=4.5mm	
4601	6				P82C-00388	Y-pattern globe valve ASTM A216 Grade WCB Class 1500 ASME B16.34 BW Sch160 Trim SS316L Body and disc seats Stellite-6 PSB-BG-OS&Y Gear operated Severe wet H2S service C.A.=4.5mm	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83B-001D8	Check valve ASTM A105 Class 1500 API 602 BW XXS Trim SS316L Body and disc seats Stellite-6 Lift-type Welded cover Severe wet H2S service C.A.=4.5mm	
1	0.75				P83B-001D9	Check valve ASTM A105 Class 1500 API 602 BW XXS Trim SS316L Body and disc seats Stellite-6 Lift-type Welded cover Severe wet H2S service C.A.=4.5mm	
1	1				P83B-001DA	Check valve ASTM A105 Class 1500 API 602 BW XXS Trim SS316L Body and disc seats Stellite-6 Lift-type Welded cover Severe wet H2S service C.A.=4.5mm	
1	1.5				P83B-001DB	Check valve ASTM A105 Class 1500 API 602 BW XXS Trim SS316L Body and disc seats Stellite-6 Lift-type Welded cover Severe wet H2S service C.A.=4.5mm	
1	2				P83C-0039H	Check valve ASTM A216 Grade WCB Class 1500 BS 1868 BW XXS Trim SS316L Body and disc seats Stellite-6 Swing-type Pressure seal cap Severe wet H2S service C.A.=4.5mm	
1	3				P83C-0039J	Check valve ASTM A216 Grade WCB Class 1500 BS 1868 BW XXS Trim SS316L Body and disc seats Stellite-6 Swing-type Pressure seal cap Severe wet H2S service C.A.=4.5mm	
1	4				P83C-0039K	Check valve ASTM A216 Grade WCB Class 1500 BS 1868 BW Sch160 Trim SS316L Body and disc seats Stellite-6 Swing-type Pressure seal cap Severe wet H2S service C.A.=4.5mm	
1	6				P83C-0039L	Check valve ASTM A216 Grade WCB Class 1500 BS 1868 BW Sch160 Trim SS316L Body and disc seats Stellite-6 Swing-type Pressure seal cap Severe wet H2S service C.A.=4.5mm	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	6				P71B-000M1	Spectacle blank ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	

PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P72B-000JD	Paddle blank ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	0.75				P72B-000JE	Paddle blank ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	1				P72B-000JF	Paddle blank ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	1.5				P72B-000JG	Paddle blank ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	2				P72B-000JH	Paddle blank ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	3				P72B-000KG	Paddle blank ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	4				P72B-000KH	Paddle blank ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	6				P72B-000KJ	Paddle blank ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	

PADDLE SPACER (PS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P72B-000JN	Paddle spacer ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	0.75				P72B-000JP	Paddle spacer ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	1				P72B-000JR	Paddle spacer ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	1.5				P72B-000JS	Paddle spacer ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	2				P72B-000JT	Paddle spacer ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	3				P72B-000KL	Paddle spacer ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	4				P72B-000KM	Paddle spacer ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	6				P72B-000KN	Paddle spacer ASTM A105 Class 1500 Standard-drawing Flange ASME B16.5 RJ	

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BOLT TABLE (B_N3A702 , STUD ASME RJ, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	110	P80S-0090F	R12	P75T-000JT
0.75	4	0.750	115	P80S-0090G	R14	P75T-000JU
1	4	0.875	130	P80S-005ZB	R16	P75T-000JV
1.5	4	1.000	140	P80S-0061A	R20	P75T-000JW
2	8	0.875	150	P80S-005ZF	R24	P75T-0008A
3	8	1.125	180	P80S-0064T	R35	P75T-0008E
4	8	1.250	230	P80S-0068H	R39	P75T-0008D
6	12	1.375	300	P80S-006J1	R46	P75T-0008C

BOLT TABLE (B_N3A702_805 , STUD ASME RJ, OPTION CODE 805)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	125	P80S-0090J	R13	P75T-000KT
0.75	4	0.750	130	P80S-0090K	R16	P75T-000KU
1	4	0.875	140	P80S-005ZD	R18	P75T-000KV
1.5	4	1.125	175	P80S-0064S	R23	P75T-000KW
2	8	1.000	180	P80S-0061J	R26	P75T-000L6
3	8	1.250	260	P80S-0068P	R32	P75T-000MC
4	8	1.500	305	P80S-006LS	R38	P75T-000ME
6	8	2.000	410	P80S-00BBD	R47	P75T-000L7

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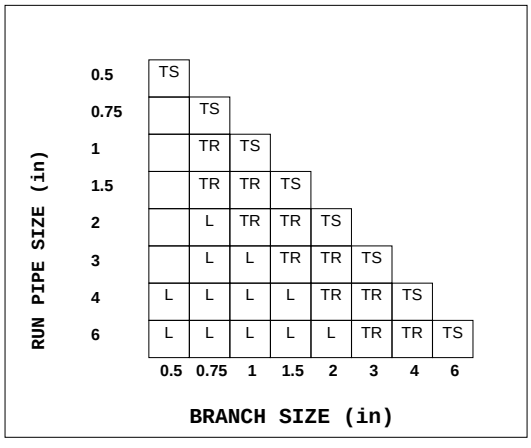
BRANCH TABLE (T_N3A702)



L : OUTLET
TS : STRAIGHT TEE
TR : REDUCING TEE

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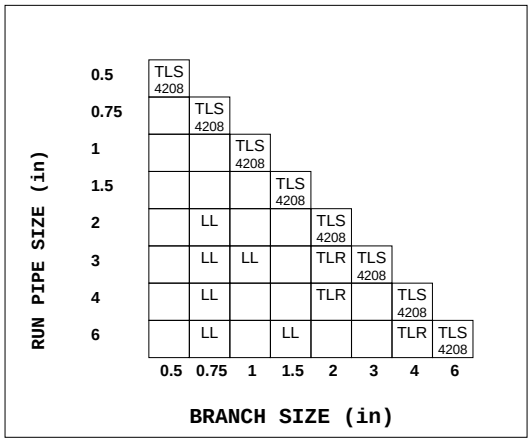
BRANCH TABLE (T_N3A702_2)



LL : LATROLET
TLS : STRAIGHT LATERAL TEE
TLR : REDUCING LATERAL TEE

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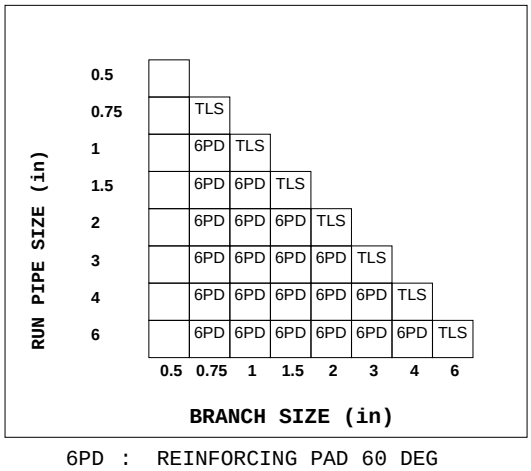
BRANCH TABLE (T_N3A702_3)



6PD : REINFORCING PAD 60 DEG
TLS : STRAIGHT LATERAL TEE

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Material : 1-1/4Cr - 1/2Mo
Rating : ASME CLASS 1500
Flange Face : RJ
C.A.(mm) : 4.50
Gasket : Ring Octagonal
Service : PROCESS - WET SEVERE SOUR SERVICE SUBJECT TO NACE + HIC STD + HYDROGEN SERVICE
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
5	BOLTING CONFIRMING TO B7M / 2HM SHALL BE USED UNDER CONDITIONS (A) DIRECT EXPOSURE TO SOUR ENVIRONMENTS (B) WHEN THE BOLTING WILL BE BURIED OR INSULATED

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
541	NPT(F) (F)
805	CLASS 2500 (B,F,G)
4601	Y-PATTERN (W)

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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P01F-00089	Pipe ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M PE	
1	0.75		XXS		P01F-000BZ	Pipe ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M PE	
1	1		XXS		P01F-000C0	Pipe ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M PE	
1	1.5		XXS		P01F-000C1	Pipe ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M PE	
1	2		XXS		P01F-000C3	Pipe ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M BE	
1	3		XXS		P01F-0003P	Pipe ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M BE	
1	4		XXS		P01F-000C4	Pipe ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M BE	
1	6		XXS		P01F-000C5	Pipe ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M BE	
1	8		25.50mm		P01F-001SN	Pipe ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M BE	
1	10		30.50mm		P01F-001SL	Pipe ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M BE	
1	12		35.20mm		P01F-001SM	Pipe ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P02F-0007A	90 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	0.75		XXS		P02F-000B5	90 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	1		XXS		P02F-000B6	90 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	1.5		XXS		P02F-000B7	90 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	2		XXS		P02F-000B9	90 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	3		XXS		P02F-000BA	90 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	4		XXS		P02F-000BB	90 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	6		XXS		P02F-000BC	90 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	8		25.50mm		P02F-000NS	90 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	10		30.50mm		P02F-000NP	90 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	12		35.20mm		P02F-000NR	90 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P03F-00077	45 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	0.75		XXS		P03F-000AY	45 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	1		XXS		P03F-000AZ	45 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	1.5		XXS		P03F-000B0	45 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	2		XXS		P03F-000B2	45 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	3		XXS		P03F-000B3	45 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	4		XXS		P03F-000B4	45 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	6		XXS		P03F-000B5	45 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	8		25.50mm		P03F-000NA	45 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	10		30.50mm		P03F-000N8	45 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	
1	12		35.20mm		P03F-000N9	45 degree elbow ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P21F-00078	Straight tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	0.75		XXS		P21F-000AW	Straight tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	1		XXS		P21F-000AX	Straight tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	1.5		XXS		P21F-000AY	Straight tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	2		XXS		P21F-000B0	Straight tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	3		XXS		P21F-000B1	Straight tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	4		XXS		P21F-000B2	Straight tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	6		XXS		P21F-000B3	Straight tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	8		25.50mm		P21F-000NG	Straight tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	10		30.50mm		P21F-000NE	Straight tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	12		35.20mm		P21F-000NF	Straight tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75	XXS	XXS	P24F-000Y4	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	1.5	0.75	XXS	XXS	P24F-000Y5	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	

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REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5	1	XXS	XXS	P24F-000Y6	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	2	1	XXS	XXS	P24F-000Y7	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	2	1.5	XXS	XXS	P24F-000Y8	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	3	1.5	XXS	XXS	P24F-000Y9	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	3	2	XXS	XXS	P24F-000YA	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	4	2	XXS	XXS	P24F-000YB	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	4	3	XXS	XXS	P24F-000YC	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	6	3	XXS	XXS	P24F-000YD	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	6	4	XXS	XXS	P24F-000YE	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	8	4	25.50mm	XXS	P24F-002LK	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	8	6	25.50mm	XXS	P24F-002LL	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	10	4	30.50mm	XXS	P24F-002LM	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	10	6	30.50mm	XXS	P24F-002LN	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	10	8	30.50mm	25.50mm	P24F-002LP	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	12	6	35.20mm	XXS	P24F-002LS	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	12	8	35.20mm	25.50mm	P24F-002LT	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	12	10	35.20mm	30.50mm	P24F-002LR	Reducing tee ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	XXS	XXS	P27F-000T0	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	1	0.5	XXS	XXS	P27F-000T1	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	1	0.75	XXS	XXS	P27F-000T2	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	1.5	0.5	XXS	XXS	P27F-000T3	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	1.5	0.75	XXS	XXS	P27F-000T4	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	1.5	1	XXS	XXS	P27F-000T5	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	2	0.75	XXS	XXS	P27F-000T6	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	2	1	XXS	XXS	P27F-000T7	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	2	1.5	XXS	XXS	P27F-000T8	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	3	1.5	XXS	XXS	P27F-000T9	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	3	2	XXS	XXS	P27F-000TA	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	4	1.5	XXS	XXS	P27F-000TB	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	4	2	XXS	XXS	P27F-000TC	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	4	3	XXS	XXS	P27F-000TD	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	6	3	XXS	XXS	P27F-000TE	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	6	4	XXS	XXS	P27F-000TF	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	8	4	25.50mm	XXS	P27F-001Y4	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	8	6	25.50mm	XXS	P27F-001Y5	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	10	4	30.50mm	XXS	P27F-001Y6	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	10	6	30.50mm	XXS	P27F-001Y7	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	10	8	30.50mm	25.50mm	P27F-001Y8	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	12	6	35.20mm	XXS	P27F-001YA	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	12	8	35.20mm	25.50mm	P27F-001YB	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	12	10	35.20mm	30.50mm	P27F-001Y9	Concentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	XXS	XXS	P28F-000T0	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	1	0.5	XXS	XXS	P28F-000T1	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	1	0.75	XXS	XXS	P28F-000T2	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	1.5	0.5	XXS	XXS	P28F-000T3	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	1.5	0.75	XXS	XXS	P28F-000T4	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	1.5	1	XXS	XXS	P28F-000T5	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	2	0.75	XXS	XXS	P28F-000T6	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	2	1	XXS	XXS	P28F-000T7	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	2	1.5	XXS	XXS	P28F-000T8	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	3	1.5	XXS	XXS	P28F-000T9	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	3	2	XXS	XXS	P28F-000TA	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	4	1.5	XXS	XXS	P28F-000TB	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	4	2	XXS	XXS	P28F-000TC	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	4	3	XXS	XXS	P28F-000TD	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	6	3	XXS	XXS	P28F-000TE	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	6	4	XXS	XXS	P28F-000TF	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	8	4	25.50mm	XXS	P28F-001YK	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	8	6	25.50mm	XXS	P28F-001YL	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	10	4	30.50mm	XXS	P28F-001YM	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	10	6	30.50mm	XXS	P28F-001YN	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	10	8	30.50mm	25.50mm	P28F-001YP	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	12	6	35.20mm	XXS	P28F-001YS	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	12	8	35.20mm	25.50mm	P28F-001YT	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	12	10	35.20mm	30.50mm	P28F-001YR	Eccentric reducer ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P29F-000AN	Cap ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	0.75		XXS		P29F-000AP	Cap ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	1		XXS		P29F-000AR	Cap ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	1.5		XXS		P29F-000AS	Cap ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	2		XXS		P29F-000AU	Cap ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	3		XXS		P29F-000AV	Cap ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	4		XXS		P29F-000AW	Cap ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	6		XXS		P29F-000AX	Cap ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	8		25.50mm		P29F-000M1	Cap ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	10		30.50mm		P29F-000LZ	Cap ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	
1	12		35.20mm		P29F-000M0	Cap ASTM A234 Grade WP11 Class 1 Seamless ASME B16.9 BW	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		8.80mm		P41F-0003X	Straight nipple ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		9.30mm		P41F-0003Y	Straight nipple ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		10.30mm		P41F-0003Z	Straight nipple ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		11.70mm		P41F-00040	Straight nipple ASTM A335 Grade P11 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2	0.75	XXS	XXS	P31G-001A4	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	3	0.75	XXS	XXS	P31G-001A5	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	4	0.75	XXS	XXS	P31G-001A7	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	6	0.75	XXS	XXS	P31G-001AA	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	8	0.75	25.50mm	XXS	P31G-002VG	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	10	0.75	30.50mm	XXS	P31G-002VM	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	12	0.75	35.20mm	XXS	P31G-002VT	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	3	1	XXS	XXS	P31G-001A6	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	4	1	XXS	XXS	P31G-001A8	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	6	1	XXS	XXS	P31G-001AB	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	8	1	25.50mm	XXS	P31G-002VH	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	10	1	30.50mm	XXS	P31G-002VN	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	12	1	35.20mm	XXS	P31G-002VU	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	4	1.5	XXS	XXS	P31G-001A9	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	6	1.5	XXS	XXS	P31G-001AC	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	8	1.5	25.50mm	XXS	P31G-002VJ	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	10	1.5	30.50mm	XXS	P31G-002VP	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	12	1.5	35.20mm	XXS	P31G-002VV	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	6	2	XXS	XXS	P31G-001AD	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	8	2	25.50mm	XXS	P31G-002VK	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	10	2	30.50mm	XXS	P31G-002VR	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	12	2	35.20mm	XXS	P31G-002VW	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	8	3	25.50mm	XXS	P31G-002VL	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	

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OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	10	3	30.50mm	XXS	P31G-002VS	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	12	3	35.20mm	XXS	P31G-002VX	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	
1	12	4	35.20mm	XXS	P31G-002VY	Outlet ASTM A182 Grade F11 Class 1 MSS SP-97 BW	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30G-0001G	Plug ASTM A182 Grade F11 Class 1 ASME B16.11 NPT Round head	
1	0.75				P30G-0001H	Plug ASTM A182 Grade F11 Class 1 ASME B16.11 NPT Round head	
1	1				P30G-0001J	Plug ASTM A182 Grade F11 Class 1 ASME B16.11 NPT Round head	
1	1.5				P30G-0001K	Plug ASTM A182 Grade F11 Class 1 ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P61G-000K6	Flange WN ASTM A182 Grade F11 Class 2 Class 1500 ASME B16.5 RJ	
1	0.75		XXS		P61G-000K7	Flange WN ASTM A182 Grade F11 Class 2 Class 1500 ASME B16.5 RJ	
1	1		XXS		P61G-000K8	Flange WN ASTM A182 Grade F11 Class 2 Class 1500 ASME B16.5 RJ	
1	1.5		XXS		P61G-000K9	Flange WN ASTM A182 Grade F11 Class 2 Class 1500 ASME B16.5 RJ	
1	2		XXS		P61G-000KD	Flange WN ASTM A182 Grade F11 Class 2 Class 1500 ASME B16.5 RJ	
1	3		XXS		P61G-0008Z	Flange WN ASTM A182 Grade F11 Class 2 Class 1500 ASME B16.5 RJ	
1	4		XXS		P61G-000KE	Flange WN ASTM A182 Grade F11 Class 2 Class 1500 ASME B16.5 RJ	
1	6		XXS		P61G-000KF	Flange WN ASTM A182 Grade F11 Class 2 Class 1500 ASME B16.5 RJ	
1	8		25.50mm		P61G-001B8	Flange WN ASTM A182 Grade F11 Class 2 Class 1500 ASME B16.5 RJ	
1	10		30.50mm		P61G-001B6	Flange WN ASTM A182 Grade F11 Class 2 Class 1500 ASME B16.5 RJ	
1	12		35.20mm		P61G-001B7	Flange WN ASTM A182 Grade F11 Class 2 Class 1500 ASME B16.5 RJ	
541	0.5				P61G-001AZ	Flange NPT ASTM A182 Grade F11 Class 2 Class 1500 ASME B16.5 RJ	
541	0.75				P61G-00158	Flange NPT ASTM A182 Grade F11 Class 2 Class 1500 ASME B16.5 RJ	
805	0.5		XXS		P61G-000KH	Flange WN ASTM A182 Grade F11 Class 2 Class 2500 ASME B16.5 RJ	
805	0.75		XXS		P61G-000KJ	Flange WN ASTM A182 Grade F11 Class 2 Class 2500 ASME B16.5 RJ	
805	1		XXS		P61G-000KK	Flange WN ASTM A182 Grade F11 Class 2 Class 2500 ASME B16.5 RJ	
805	1.5		XXS		P61G-000KL	Flange WN ASTM A182 Grade F11 Class 2 Class 2500 ASME B16.5 RJ	
805	2		XXS		P61G-000KP	Flange WN ASTM A182 Grade F11 Class 2 Class 2500 ASME B16.5 RJ	
805	3		XXS		P61G-00096	Flange WN ASTM A182 Grade F11 Class 2 Class 2500 ASME B16.5 RJ	
805	4		XXS		P61G-000KR	Flange WN ASTM A182 Grade F11 Class 2 Class 2500 ASME B16.5 RJ	
805	6		XXS		P61G-000KS	Flange WN ASTM A182 Grade F11 Class 2 Class 2500 ASME B16.5 RJ	
805	8		25.50mm		P61G-001BB	Flange WN ASTM A182 Grade F11 Class 2 Class 2500 ASME B16.5 RJ	
805	10		30.50mm		P61G-001B9	Flange WN ASTM A182 Grade F11 Class 2 Class 2500 ASME B16.5 RJ	
805	12		35.20mm		P61G-001BA	Flange WN ASTM A182 Grade F11 Class 2 Class 2500 ASME B16.5 RJ	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67G-0002P	Blind flange ASTM A182 Grade F11 Class 2 Class 1500 ASME B16.5 RJ	
1	0.75				P67G-0002R	Blind flange ASTM A182 Grade F11 Class 2 Class 1500 ASME B16.5 RJ	
1	1				P67G-0002S	Blind flange ASTM A182 Grade F11 Class 2 Class 1500 ASME B16.5 RJ	
1	1.5				P67G-0002T	Blind flange ASTM A182 Grade F11 Class 2 Class 1500 ASME B16.5 RJ	
1	2				P67G-000A4	Blind flange ASTM A182 Grade F11 Class 2 Class 1500 ASME B16.5 RJ	
1	3				P67G-00052	Blind flange ASTM A182 Grade F11 Class 2 Class 1500 ASME B16.5 RJ	
1	4				P67G-000A5	Blind flange ASTM A182 Grade F11 Class 2 Class 1500 ASME B16.5 RJ	
1	6				P67G-000A6	Blind flange ASTM A182 Grade F11 Class 2 Class 1500 ASME B16.5 RJ	
1	8				P67G-000A7	Blind flange ASTM A182 Grade F11 Class 2 Class 1500 ASME B16.5 RJ	
1	10				P67G-00050	Blind flange ASTM A182 Grade F11 Class 2 Class 1500 ASME B16.5 RJ	
1	12				P67G-00051	Blind flange ASTM A182 Grade F11 Class 2 Class 1500 ASME B16.5 RJ	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P75T-000KE	Ring joint gasket 5Cr-1/2Mo Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	0.75				P75T-000KF	Ring joint gasket 5Cr-1/2Mo Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	1				P75T-000KG	Ring joint gasket 5Cr-1/2Mo Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	1.5				P75T-000KH	Ring joint gasket 5Cr-1/2Mo Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	

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GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2				P75T-000KS	Ring joint gasket 5Cr-1/2Mo Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	3				P75T-000L3	Ring joint gasket 5Cr-1/2Mo Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	4				P75T-000L4	Ring joint gasket 5Cr-1/2Mo Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	6				P75T-00116	Ring joint gasket 5Cr-1/2Mo Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	8				P75T-000L5	Ring joint gasket 5Cr-1/2Mo Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	10				P75T-000NK	Ring joint gasket 5Cr-1/2Mo Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	12				P75T-000P1	Ring joint gasket 5Cr-1/2Mo Class 1500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	0.5				P75T-000KJ	Ring joint gasket 5Cr-1/2Mo Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	0.75				P75T-000KK	Ring joint gasket 5Cr-1/2Mo Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	1				P75T-000KL	Ring joint gasket 5Cr-1/2Mo Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	1.5				P75T-000KM	Ring joint gasket 5Cr-1/2Mo Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	2				P75T-000MH	Ring joint gasket 5Cr-1/2Mo Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	3				P75T-000P2	Ring joint gasket 5Cr-1/2Mo Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	4				P75T-000R6	Ring joint gasket 5Cr-1/2Mo Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	6				P75T-000R7	Ring joint gasket 5Cr-1/2Mo Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	8				P75T-000R8	Ring joint gasket 5Cr-1/2Mo Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	10				P75T-000MF	Ring joint gasket 5Cr-1/2Mo Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
805	12				P75T-000MG	Ring joint gasket 5Cr-1/2Mo Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-2				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	3-12				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
805	0.5-1				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
805	1.5				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
805	2				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
805	3-12				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81G-000D4	Gate valve ASTM A182 Grade F11 Class 2 Class 1500 API 602 BW XXS Trim SS316L Body and disc seats Stellite-6 WB-BG-OS&Y Handwheel operated Severe wet H2S service Fluid-2 C.A.=4.5mm	
1	0.75				P81G-000D5	Gate valve ASTM A182 Grade F11 Class 2 Class 1500 API 602 BW XXS Trim SS316L Body and disc seats Stellite-6 WB-BG-OS&Y Handwheel operated Severe wet H2S service Fluid-2 C.A.=4.5mm	
1	1				P81G-000D6	Gate valve ASTM A182 Grade F11 Class 2 Class 1500 API 602 BW XXS Trim SS316L Body and disc seats Stellite-6 WB-BG-OS&Y Handwheel operated Severe wet H2S service Fluid-2 C.A.=4.5mm	
1	1.5				P81G-000D7	Gate valve ASTM A182 Grade F11 Class 2 Class 1500 API 602 BW XXS Trim SS316L Body and disc seats Stellite-6 WB-BG-OS&Y Handwheel operated Severe wet H2S service Fluid-2 C.A.=4.5mm	
1	2				P81H-000Z6	Gate valve ASTM A217 Grade WC6 Class 1500 API 600 BW XXS Trim SS316L Body and disc seats Stellite-6 PSB-BG-OS&Y Handwheel operated Severe wet H2S service Fluid-2 C.A.=4.5mm	
1	3				P81H-000Z7	Gate valve ASTM A217 Grade WC6 Class 1500 API 600 BW XXS Trim SS316L Body and disc seats Stellite-6 PSB-BG-OS&Y Handwheel operated Severe wet H2S service Fluid-2 C.A.=4.5mm	
1	4				P81H-000Z8	Gate valve ASTM A217 Grade WC6 Class 1500 API 600 BW XXS Trim SS316L Body and disc seats Stellite-6 PSB-BG-OS&Y Gear operated Severe wet H2S service Fluid-2 C.A.=4.5mm	
1	6				P81H-000Z9	Gate valve ASTM A217 Grade WC6 Class 1500 API 600 BW XXS Trim SS316L Body and disc seats Stellite-6 PSB-BG-OS&Y Gear operated Severe wet H2S service Fluid-2 C.A.=4.5mm	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82G-0007K	Globe valve ASTM A182 Grade F11 Class 2 Class 1500 API 602 BW XXS Trim SS316L Body and disc seats Stellite-6 WB-BG-OS&Y Handwheel operated Severe wet H2S service Fluid-2 C.A.=4.5mm	
1	0.75				P82G-0007L	Globe valve ASTM A182 Grade F11 Class 2 Class 1500 API 602 BW XXS Trim SS316L Body and disc seats Stellite-6 WB-BG-OS&Y Handwheel operated Severe wet H2S service Fluid-2 C.A.=4.5mm	
1	1				P82G-0007M	Globe valve ASTM A182 Grade F11 Class 2 Class 1500 API 602 BW XXS Trim SS316L Body and disc seats Stellite-6 WB-BG-OS&Y Handwheel operated Severe wet H2S service Fluid-2 C.A.=4.5mm	
1	1.5				P82G-0007N	Globe valve ASTM A182 Grade F11 Class 2 Class 1500 API 602 BW XXS Trim SS316L Body and disc seats Stellite-6 WB-BG-OS&Y Handwheel operated Severe wet H2S service Fluid-2 C.A.=4.5mm	
1	2				P82H-000F7	Globe valve ASTM A217 Grade WC6 Class 1500 BS 1873 BW XXS Trim SS316L Body and disc seats Stellite-6 PSB-BG-OS&Y Gear operated Severe wet H2S service Fluid-2 C.A.=4.5mm	
1	3				P82H-000F8	Globe valve ASTM A217 Grade WC6 Class 1500 BS 1873 BW XXS Trim SS316L Body and disc seats Stellite-6 PSB-BG-OS&Y Gear operated Severe wet H2S service Fluid-2 C.A.=4.5mm	
1	4				P82H-000CR	Globe valve ASTM A217 Grade WC6 Class 1500 BS 1873 BW XXS Trim SS316L Body and disc seats Stellite-6 PSB-BG-OS&Y Gear operated Severe wet H2S service Fluid-2 C.A.=4.5mm	
1	6				P82H-000CS	Globe valve ASTM A217 Grade WC6 Class 1500 BS 1873 BW XXS Trim SS316L Body and disc seats Stellite-6 PSB-BG-OS&Y Gear operated Severe wet H2S service Fluid-2 C.A.=4.5mm	
46 1	0.75				P82G-0007U	Y-pattern globe valve ASTM A182 Grade F11 Class 2 Class 1500 ASME B16.34 BW XXS Trim SS316L Body and disc seats Stellite-6 WB-BG-OS&Y Handwheel operated Severe wet H2S service Fluid-2 C.A.=4.5mm	

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GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
4601	1				P82G-0007W	Y-pattern globe valve ASTM A182 Grade F11 Class 2 Class 1500 ASME B16.34 BW XXS Trim SS316L Body and disc seats Stellite-6 WB-BG-OS&Y Handwheel operated Severe wet H2S service Fluid-2 C.A.=4.5mm	
4601	1.5				P82G-0007X	Y-pattern globe valve ASTM A182 Grade F11 Class 2 Class 1500 ASME B16.34 BW XXS Trim SS316L Body and disc seats Stellite-6 WB-BG-OS&Y Handwheel operated Severe wet H2S service Fluid-2 C.A.=4.5mm	
4601	3				P82H-000CT	Y-pattern globe valve ASTM A217 Grade WC6 Class 1500 ASME B16.34 BW XXS Trim SS316L Body and disc seats Stellite-6 PSB-BG-OS&Y Handwheel operated Severe wet H2S service Fluid-2 C.A.=4.5mm	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83G-0005T	Check valve ASTM A182 Grade F11 Class 2 Class 1500 API 602 BW XXS Trim SS316L Body and disc seats Stellite-6 Lift-type Welded cover Severe wet H2S service C.A.=4.5mm	
1	0.75				P83G-0005U	Check valve ASTM A182 Grade F11 Class 2 Class 1500 API 602 BW XXS Trim SS316L Body and disc seats Stellite-6 Lift-type Welded cover Severe wet H2S service C.A.=4.5mm	
1	1				P83G-0005V	Check valve ASTM A182 Grade F11 Class 2 Class 1500 API 602 BW XXS Trim SS316L Body and disc seats Stellite-6 Lift-type Welded cover Severe wet H2S service C.A.=4.5mm	
1	1.5				P83G-0005W	Check valve ASTM A182 Grade F11 Class 2 Class 1500 API 602 BW XXS Trim SS316L Body and disc seats Stellite-6 Lift-type Welded cover Severe wet H2S service C.A.=4.5mm	
1	2				P83H-0008U	Check valve ASTM A217 Grade WC6 Class 1500 BS 1868 BW XXS Trim SS316L Body and disc seats Stellite-6 Swing-type Pressure seal cap Severe wet H2S service C.A.=4.5mm	
1	3				P83H-0007X	Check valve ASTM A217 Grade WC6 Class 1500 BS 1868 BW XXS Trim SS316L Body and disc seats Stellite-6 Swing-type Pressure seal cap Severe wet H2S service C.A.=4.5mm	
1	4				P83H-0008V	Check valve ASTM A217 Grade WC6 Class 1500 BS 1868 BW XXS Trim SS316L Body and disc seats Stellite-6 Swing-type Pressure seal cap Severe wet H2S service C.A.=4.5mm	
1	6				P83H-0008W	Check valve ASTM A217 Grade WC6 Class 1500 BS 1868 BW XXS Trim SS316L Body and disc seats Stellite-6 Swing-type Pressure seal cap Severe wet H2S service C.A.=4.5mm	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3				P71G-00044	Spectacle blank ASTM A182 Grade F11 Class 2 Class 1500 Standard-drawing Flange ASME B16.5 RJ	

PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P72G-0003T	Paddle blank ASTM A182 Grade F11 Class 2 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	0.75				P72G-0003U	Paddle blank ASTM A182 Grade F11 Class 2 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	1				P72G-0003V	Paddle blank ASTM A182 Grade F11 Class 2 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	1.5				P72G-0003W	Paddle blank ASTM A182 Grade F11 Class 2 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	2				P72G-00040	Paddle blank ASTM A182 Grade F11 Class 2 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	3				P72G-00041	Paddle blank ASTM A182 Grade F11 Class 2 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	4				P72G-00042	Paddle blank ASTM A182 Grade F11 Class 2 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	6				P72G-00043	Paddle blank ASTM A182 Grade F11 Class 2 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	8				P72G-00044	Paddle blank ASTM A182 Grade F11 Class 2 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	10				P72G-0003X	Paddle blank ASTM A182 Grade F11 Class 2 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	12				P72G-0003Y	Paddle blank ASTM A182 Grade F11 Class 2 Class 1500 Standard-drawing Flange ASME B16.5 RJ	

PADDLE SPACER (PS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P72G-00045	Paddle spacer ASTM A182 Grade F11 Class 2 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	0.75				P72G-00046	Paddle spacer ASTM A182 Grade F11 Class 2 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	1				P72G-00047	Paddle spacer ASTM A182 Grade F11 Class 2 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	1.5				P72G-00048	Paddle spacer ASTM A182 Grade F11 Class 2 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	2				P72G-0004C	Paddle spacer ASTM A182 Grade F11 Class 2 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	3				P72G-0004D	Paddle spacer ASTM A182 Grade F11 Class 2 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	4				P72G-0004E	Paddle spacer ASTM A182 Grade F11 Class 2 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	6				P72G-0004F	Paddle spacer ASTM A182 Grade F11 Class 2 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	8				P72G-0004G	Paddle spacer ASTM A182 Grade F11 Class 2 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	10				P72G-00049	Paddle spacer ASTM A182 Grade F11 Class 2 Class 1500 Standard-drawing Flange ASME B16.5 RJ	
1	12				P72G-0004A	Paddle spacer ASTM A182 Grade F11 Class 2 Class 1500 Standard-drawing Flange ASME B16.5 RJ	

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BOLT TABLE (B_N3D702 , STUD ASME RJ, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	110	P80S-0090F	R12	P75T-000KE
0.75	4	0.750	115	P80S-0090G	R14	P75T-000KF
1	4	0.875	130	P80S-005ZB	R16	P75T-000KG
1.5	4	1.000	140	P80S-0061A	R20	P75T-000KH
2	8	0.875	150	P80S-005ZF	R24	P75T-000KS
3	8	1.125	180	P80S-0064T	R35	P75T-000L3
4	8	1.250	230	P80S-0068H	R39	P75T-000L4
6	12	1.375	300	P80S-006J1	R46	P75T-00116
8	12	1.625	345	P80S-00A5K	R50	P75T-000L5
10	12	1.875	395	P80S-00AW8	R54	P75T-000NK
12	16	2.000	445	P80S-00BH5	R58	P75T-000P1

BOLT TABLE (B_N3D702_805 , STUD ASME RJ, OPTION CODE 805)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	125	P80S-0090J	R13	P75T-000KJ
0.75	4	0.750	130	P80S-0090K	R16	P75T-000KK
1	4	0.875	140	P80S-005ZD	R18	P75T-000KL
1.5	4	1.125	175	P80S-0064S	R23	P75T-000KM
2	8	1.000	180	P80S-0061J	R26	P75T-000MH
3	8	1.250	260	P80S-0068P	R32	P75T-000P2
4	8	1.500	305	P80S-006LS	R38	P75T-000R6
6	8	2.000	410	P80S-00BBD	R47	P75T-000R7
8	12	2.000	450	P80S-00BH6	R51	P75T-000R8
10	12	2.500	575	P80S-00DZV	R55	P75T-000MF
12	12	2.750	635	P80S-01RAT	R60	P75T-000MG

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BRANCH TABLE (T_N3D702)

RUN PIPE SIZE (in) \ BRANCH SIZE (in)	0.5	0.75	1	1.5	2	3	4	6	8	10	12
0.5	TS										
0.75		TS									
1		TR	TS								
1.5		TR	TR	TS							
2		L	TR	TR	TS						
3		L	L	TR	TR	TS					
4	L	L	L	L	TR	TR	TS				
6	L	L	L	L	L	TR	TR	TS			
8		L	L	L	L	L	TR	TR	TS		
10		L	L	L	L	L	TR	TR	TR	TS	
12		L	L	L	L	L	L	TR	TR	TR	TS

TR : REDUCING TEE
TS : STRAIGHT TEE
L : OUTLET

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PIPING CLASS

P0LG REV NO. 2

Material : SS316L
Rating : ASME CLASS 2500
Flange Face : RJ
C.A.(mm) : 0.00
Gasket : Ring Octagonal
Service : UTILITY - POWER PIPING, CORROSIVE SERVICE : / CHEMICAL
Design Code : ASME B31.1
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
541	NPT(F) (F)
4603	WITH ALTERNATIVE GLAND PACKING MATERIAL (V)

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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P01J-002NT	Pipe ASME SA312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE	
1	0.75		SCH160		P01J-002NU	Pipe ASME SA312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE	
1	1		SCH160		P01J-002NV	Pipe ASME SA312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE	
1	1.5		SCH160		P01J-001GP	Pipe ASME SA312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE	
1	2		SCH160		P01J-001GR	Pipe ASME SA312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M BE	
1	3		SCH160		P01J-002NY	Pipe ASME SA312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M BE	
1	4		SCH160		P01J-002NZ	Pipe ASME SA312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M BE	
1	6		SCH160		P01J-002P0	Pipe ASME SA312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M BE	
1	8		SCH140		P01J-002P1	Pipe ASME SA312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M BE	
1	10		XXS		P01J-002NW	Pipe ASME SA312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M BE	
1	12		SCH140		P01J-002NX	Pipe ASME SA312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P02J-0022V	90 degree elbow ASME SA403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	0.75		SCH160		P02J-0022W	90 degree elbow ASME SA403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	1		SCH160		P02J-0022X	90 degree elbow ASME SA403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	1.5		SCH160		P02J-00194	90 degree elbow ASME SA403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	2		SCH160		P02J-00195	90 degree elbow ASME SA403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	3		SCH160		P02J-0022Y	90 degree elbow ASME SA403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	4		SCH160		P02J-0022Z	90 degree elbow ASME SA403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	6		SCH160		P02J-00230	90 degree elbow ASME SA403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P03J-0022L	45 degree elbow ASME SA403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	0.75		SCH160		P03J-0022M	45 degree elbow ASME SA403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	1		SCH160		P03J-0022N	45 degree elbow ASME SA403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	1.5		SCH160		P03J-00180	45 degree elbow ASME SA403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	2		SCH160		P03J-00181	45 degree elbow ASME SA403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	3		SCH160		P03J-0022P	45 degree elbow ASME SA403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	4		SCH160		P03J-0022R	45 degree elbow ASME SA403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	6		SCH160		P03J-0022S	45 degree elbow ASME SA403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P21J-001SZ	Straight tee ASME SA403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	0.75		SCH160		P21J-001T0	Straight tee ASME SA403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	1		SCH160		P21J-001T1	Straight tee ASME SA403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	1.5		SCH160		P21J-0011G	Straight tee ASME SA403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	2		SCH160		P21J-0011H	Straight tee ASME SA403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	3		SCH160		P21J-001T2	Straight tee ASME SA403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	4		SCH160		P21J-001T3	Straight tee ASME SA403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	6		SCH160		P21J-001T4	Straight tee ASME SA403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75	SCH160	SCH160	P24J-007L8	Reducing tee ASME SA403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	1.5	0.75	SCH160	SCH160	P24J-007L9	Reducing tee ASME SA403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	1.5	1	SCH160	SCH160	P24J-007LA	Reducing tee ASME SA403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	2	1	SCH160	SCH160	P24J-007LB	Reducing tee ASME SA403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	2	1.5	SCH160	SCH160	P24J-004UU	Reducing tee ASME SA403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	3	1.5	SCH160	SCH160	P24J-007LC	Reducing tee ASME SA403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	

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REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	SCH160	SCH160	P24J-007LD	Reducing tee ASME SA403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	4	2	SCH160	SCH160	P24J-007LE	Reducing tee ASME SA403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	4	3	SCH160	SCH160	P24J-007LF	Reducing tee ASME SA403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	6	3	SCH160	SCH160	P24J-007LG	Reducing tee ASME SA403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	6	4	SCH160	SCH160	P24J-007LH	Reducing tee ASME SA403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	SCH160	P27J-006D3	Concentric reducer ASME SA403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	1	0.5	SCH160	SCH160	P27J-006D4	Concentric reducer ASME SA403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	1	0.75	SCH160	SCH160	P27J-006D5	Concentric reducer ASME SA403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	1.5	0.5	SCH160	SCH160	P27J-006D6	Concentric reducer ASME SA403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	1.5	0.75	SCH160	SCH160	P27J-006D7	Concentric reducer ASME SA403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	1.5	1	SCH160	SCH160	P27J-006D8	Concentric reducer ASME SA403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	2	0.75	SCH160	SCH160	P27J-006D9	Concentric reducer ASME SA403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	2	1	SCH160	SCH160	P27J-006DA	Concentric reducer ASME SA403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	2	1.5	SCH160	SCH160	P27J-003N5	Concentric reducer ASME SA403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	3	1.5	SCH160	SCH160	P27J-006DB	Concentric reducer ASME SA403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	3	2	SCH160	SCH160	P27J-006DC	Concentric reducer ASME SA403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	4	1.5	SCH160	SCH160	P27J-006DD	Concentric reducer ASME SA403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	4	2	SCH160	SCH160	P27J-006DE	Concentric reducer ASME SA403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	4	3	SCH160	SCH160	P27J-006DF	Concentric reducer ASME SA403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	6	3	SCH160	SCH160	P27J-006DG	Concentric reducer ASME SA403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	6	4	SCH160	SCH160	P27J-006DH	Concentric reducer ASME SA403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	SCH160	P28J-006E3	Eccentric reducer ASME SA403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	1	0.5	SCH160	SCH160	P28J-006E4	Eccentric reducer ASME SA403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	1	0.75	SCH160	SCH160	P28J-006E5	Eccentric reducer ASME SA403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	1.5	0.5	SCH160	SCH160	P28J-006E6	Eccentric reducer ASME SA403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	1.5	0.75	SCH160	SCH160	P28J-006E7	Eccentric reducer ASME SA403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	1.5	1	SCH160	SCH160	P28J-006E8	Eccentric reducer ASME SA403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	2	0.75	SCH160	SCH160	P28J-006E9	Eccentric reducer ASME SA403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	2	1	SCH160	SCH160	P28J-006EA	Eccentric reducer ASME SA403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	2	1.5	SCH160	SCH160	P28J-003NU	Eccentric reducer ASME SA403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	3	1.5	SCH160	SCH160	P28J-006EB	Eccentric reducer ASME SA403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	3	2	SCH160	SCH160	P28J-006EC	Eccentric reducer ASME SA403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	4	1.5	SCH160	SCH160	P28J-006ED	Eccentric reducer ASME SA403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	4	2	SCH160	SCH160	P28J-006EE	Eccentric reducer ASME SA403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	4	3	SCH160	SCH160	P28J-006EF	Eccentric reducer ASME SA403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	6	3	SCH160	SCH160	P28J-006EG	Eccentric reducer ASME SA403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	6	4	SCH160	SCH160	P28J-006EH	Eccentric reducer ASME SA403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P29J-003XX	Cap ASME SA403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	0.75		SCH160		P29J-003XY	Cap ASME SA403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	1		SCH160		P29J-003XZ	Cap ASME SA403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	1.5		SCH160		P29J-000YL	Cap ASME SA403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	2		SCH160		P29J-000YM	Cap ASME SA403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	3		SCH160		P29J-003Y2	Cap ASME SA403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	4		SCH160		P29J-003Y3	Cap ASME SA403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	6		SCH160		P29J-003Y4	Cap ASME SA403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	8		SCH140		P29J-003Y5	Cap ASME SA403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	10		XXS		P29J-003Y0	Cap ASME SA403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	
1	12		SCH140		P29J-003Y1	Cap ASME SA403 Grade WP316/WP316L Class S dual grade Seamless ASME B16.9 BW	

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STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P41J-001VX	Straight nipple ASME SA312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		SCH160		P41J-001VY	Straight nipple ASME SA312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		SCH160		P41J-001VZ	Straight nipple ASME SA312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		SCH160		P41J-001W0	Straight nipple ASME SA312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2	0.75	SCH160	SCH160	P31K-00F78	Outlet ASME SA182 Grade F316/F316L dual grade MSS SP-97 BW	
1	3	0.75	SCH160	SCH160	P31K-00F79	Outlet ASME SA182 Grade F316/F316L dual grade MSS SP-97 BW	
1	4	0.75	SCH160	SCH160	P31K-00F7B	Outlet ASME SA182 Grade F316/F316L dual grade MSS SP-97 BW	
1	6	0.75	SCH160	SCH160	P31K-00F7E	Outlet ASME SA182 Grade F316/F316L dual grade MSS SP-97 BW	
1	8	0.75	SCH140	SCH160	P31K-00F7J	Outlet ASME SA182 Grade F316/F316L dual grade MSS SP-97 BW	
1	10	0.75	XXS	SCH160	P31K-00F7P	Outlet ASME SA182 Grade F316/F316L dual grade MSS SP-97 BW	
1	12	0.75	SCH140	SCH160	P31K-00F7V	Outlet ASME SA182 Grade F316/F316L dual grade MSS SP-97 BW	
1	3	1	SCH160	SCH160	P31K-00F7A	Outlet ASME SA182 Grade F316/F316L dual grade MSS SP-97 BW	
1	4	1	SCH160	SCH160	P31K-00F7C	Outlet ASME SA182 Grade F316/F316L dual grade MSS SP-97 BW	
1	6	1	SCH160	SCH160	P31K-00F7F	Outlet ASME SA182 Grade F316/F316L dual grade MSS SP-97 BW	
1	8	1	SCH140	SCH160	P31K-00F7K	Outlet ASME SA182 Grade F316/F316L dual grade MSS SP-97 BW	
1	10	1	XXS	SCH160	P31K-00F7R	Outlet ASME SA182 Grade F316/F316L dual grade MSS SP-97 BW	
1	12	1	SCH140	SCH160	P31K-00F7W	Outlet ASME SA182 Grade F316/F316L dual grade MSS SP-97 BW	
1	4	1.5	SCH160	SCH160	P31K-00F7D	Outlet ASME SA182 Grade F316/F316L dual grade MSS SP-97 BW	
1	6	1.5	SCH160	SCH160	P31K-00F7G	Outlet ASME SA182 Grade F316/F316L dual grade MSS SP-97 BW	
1	8	1.5	SCH140	SCH160	P31K-00F7L	Outlet ASME SA182 Grade F316/F316L dual grade MSS SP-97 BW	
1	10	1.5	XXS	SCH160	P31K-00F7S	Outlet ASME SA182 Grade F316/F316L dual grade MSS SP-97 BW	
1	12	1.5	SCH140	SCH160	P31K-00F7X	Outlet ASME SA182 Grade F316/F316L dual grade MSS SP-97 BW	
1	6	2	SCH160	SCH160	P31K-00F7H	Outlet ASME SA182 Grade F316/F316L dual grade MSS SP-97 BW	
1	8	2	SCH140	SCH160	P31K-00F7M	Outlet ASME SA182 Grade F316/F316L dual grade MSS SP-97 BW	
1	10	2	XXS	SCH160	P31K-00F7T	Outlet ASME SA182 Grade F316/F316L dual grade MSS SP-97 BW	
1	12	2	SCH140	SCH160	P31K-00F7Y	Outlet ASME SA182 Grade F316/F316L dual grade MSS SP-97 BW	
1	8	3	SCH140	SCH160	P31K-00F7N	Outlet ASME SA182 Grade F316/F316L dual grade MSS SP-97 BW	
1	10	3	XXS	SCH160	P31K-00F7U	Outlet ASME SA182 Grade F316/F316L dual grade MSS SP-97 BW	
1	12	3	SCH140	SCH160	P31K-00F7Z	Outlet ASME SA182 Grade F316/F316L dual grade MSS SP-97 BW	
1	12	4	SCH140	SCH160	P31K-00F80	Outlet ASME SA182 Grade F316/F316L dual grade MSS SP-97 BW	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30K-0002R	Plug ASME SA182 Grade F316/F316L dual grade ASME B16.11 NPT Round head	
1	0.75				P30K-0002S	Plug ASME SA182 Grade F316/F316L dual grade ASME B16.11 NPT Round head	
1	1				P30K-0002T	Plug ASME SA182 Grade F316/F316L dual grade ASME B16.11 NPT Round head	
1	1.5				P30K-0002U	Plug ASME SA182 Grade F316/F316L dual grade ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P61K-005WP	Flange WN ASME SA182 Grade F316/F316L dual grade Class 2500 ASME B16.5 RJ	
1	0.75		SCH160		P61K-005WR	Flange WN ASME SA182 Grade F316/F316L dual grade Class 2500 ASME B16.5 RJ	
1	1		SCH160		P61K-005WS	Flange WN ASME SA182 Grade F316/F316L dual grade Class 2500 ASME B16.5 RJ	
1	1.5		SCH160		P61K-003EK	Flange WN ASME SA182 Grade F316/F316L dual grade Class 2500 ASME B16.5 RJ	
1	2		SCH160		P61K-003EL	Flange WN ASME SA182 Grade F316/F316L dual grade Class 2500 ASME B16.5 RJ	
1	3		SCH160		P61K-005WV	Flange WN ASME SA182 Grade F316/F316L dual grade Class 2500 ASME B16.5 RJ	
1	4		SCH160		P61K-005WW	Flange WN ASME SA182 Grade F316/F316L dual grade Class 2500 ASME B16.5 RJ	
1	6		SCH160		P61K-005WX	Flange WN ASME SA182 Grade F316/F316L dual grade Class 2500 ASME B16.5 RJ	
1	8		SCH140		P61K-005WY	Flange WN ASME SA182 Grade F316/F316L dual grade Class 2500 ASME B16.5 RJ	
1	10		XXS		P61K-005WT	Flange WN ASME SA182 Grade F316/F316L dual grade Class 2500 ASME B16.5 RJ	
1	12		SCH140		P61K-005WU	Flange WN ASME SA182 Grade F316/F316L dual grade Class 2500 ASME B16.5 RJ	
541	0.5				P61K-006A3	Flange NPT ASME SA182 Grade F316/F316L dual grade Class 2500 ASME B16.5 RJ	
541	0.75				P61K-005ZE	Flange NPT ASME SA182 Grade F316/F316L dual grade Class 2500 ASME B16.5 RJ	

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BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67K-001FK	Blind flange ASME SA182 Grade F316/F316L dual grade Class 2500 ASME B16.5 RJ	
1	0.75				P67K-001FL	Blind flange ASME SA182 Grade F316/F316L dual grade Class 2500 ASME B16.5 RJ	
1	1				P67K-001FM	Blind flange ASME SA182 Grade F316/F316L dual grade Class 2500 ASME B16.5 RJ	
1	1.5				P67K-001FN	Blind flange ASME SA182 Grade F316/F316L dual grade Class 2500 ASME B16.5 RJ	
1	2				P67K-001FS	Blind flange ASME SA182 Grade F316/F316L dual grade Class 2500 ASME B16.5 RJ	
1	3				P67K-001FT	Blind flange ASME SA182 Grade F316/F316L dual grade Class 2500 ASME B16.5 RJ	
1	4				P67K-001FU	Blind flange ASME SA182 Grade F316/F316L dual grade Class 2500 ASME B16.5 RJ	
1	6				P67K-001FV	Blind flange ASME SA182 Grade F316/F316L dual grade Class 2500 ASME B16.5 RJ	
1	8				P67K-001FW	Blind flange ASME SA182 Grade F316/F316L dual grade Class 2500 ASME B16.5 RJ	
1	10				P67K-001FP	Blind flange ASME SA182 Grade F316/F316L dual grade Class 2500 ASME B16.5 RJ	
1	12				P67K-001FR	Blind flange ASME SA182 Grade F316/F316L dual grade Class 2500 ASME B16.5 RJ	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P75T-000NT	Ring joint gasket SS TP316 Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	0.75				P75T-000NU	Ring joint gasket SS TP316 Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	1				P75T-000NV	Ring joint gasket SS TP316 Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	1.5				P75T-000NW	Ring joint gasket SS TP316 Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	2				P75T-000NX	Ring joint gasket SS TP316 Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	3				P75T-0011E	Ring joint gasket SS TP316 Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	4				P75T-0011F	Ring joint gasket SS TP316 Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	6				P75T-0011G	Ring joint gasket SS TP316 Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	8				P75T-0011H	Ring joint gasket SS TP316 Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	10				P75T-0011C	Ring joint gasket SS TP316 Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	12				P75T-0011D	Ring joint gasket SS TP316 Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-1				See Attached Bolt Table	Bolt and Nut ASME SA193 Grade B7 / SA194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	1.5				See Attached Bolt Table	Bolt and Nut ASME SA193 Grade B7 / SA194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
1	2				See Attached Bolt Table	Bolt and Nut ASME SA193 Grade B7 / SA194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	3-12				See Attached Bolt Table	Bolt and Nut ASME SA193 Grade B7 / SA194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81K-00195	Gate valve ASME SA182 Grade F316/F316L dual grade Class 2500 API 602 Flange ASME B16.5 RJ Trim number 12 WB-BG-OS&Y Handwheel operated	
1	0.75				P81K-00196	Gate valve ASME SA182 Grade F316/F316L dual grade Class 2500 API 602 Flange ASME B16.5 RJ Trim number 12 WB-BG-OS&Y Handwheel operated	
1	1				P81K-00197	Gate valve ASME SA182 Grade F316/F316L dual grade Class 2500 API 602 Flange ASME B16.5 RJ Trim number 12 WB-BG-OS&Y Handwheel operated	
1	1.5				P81K-00198	Gate valve ASME SA182 Grade F316/F316L dual grade Class 2500 API 602 Flange ASME B16.5 RJ Trim number 12 WB-BG-OS&Y Handwheel operated	
1	2				P81L-002U5	Gate valve ASME SA351 Grade CF3M Class 2500 API 600 BW Sch160 Trim number 12 PSB-BG-OS&Y Handwheel operated	
1	3				P81L-002U6	Gate valve ASME SA351 Grade CF3M Class 2500 API 600 BW Sch160 Trim number 12 PSB-BG-OS&Y Gear operated	
1	4				P81L-002U7	Gate valve ASME SA351 Grade CF3M Class 2500 API 600 BW Sch160 Trim number 12 PSB-BG-OS&Y Gear operated	
1	6				P81L-002U8	Gate valve ASME SA351 Grade CF3M Class 2500 API 600 BW Sch160 Trim number 12 PSB-BG-OS&Y Gear operated	
1	8				P81L-002U9	Gate valve ASME SA351 Grade CF3M Class 2500 API 600 BW Sch140 Trim number 12 PSB-BG-OS&Y Gear operated	
4603	0.5				P81K-001DV	Gate valve ASME SA182 Grade F316/F316L dual grade Class 2500 API 602 Flange ASME B16.5 RJ Trim number 12 WB-BG-OS&Y Handwheel operated Fluid-1	
4603	0.75				P81K-001DW	Gate valve ASME SA182 Grade F316/F316L dual grade Class 2500 API 602 Flange ASME B16.5 RJ Trim number 12 WB-BG-OS&Y Handwheel operated Fluid-1	
4603	1				P81K-001DX	Gate valve ASME SA182 Grade F316/F316L dual grade Class 2500 API 602 Flange ASME B16.5 RJ Trim number 12 WB-BG-OS&Y Handwheel operated Fluid-1	
4603	1.5				P81K-001DY	Gate valve ASME SA182 Grade F316/F316L dual grade Class 2500 API 602 Flange ASME B16.5 RJ Trim number 12 WB-BG-OS&Y Handwheel operated Fluid-1	
4603	2				P81L-002VR	Gate valve ASME SA351 Grade CF3M Class 2500 API 600 BW Sch160 Trim number 12 PSB-BG-OS&Y Handwheel operated Fluid-1	

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GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82K-000VL	Globe valve ASME SA182 Grade F316/F316L dual grade Class 2500 API 602 Flange ASME B16.5 RJ Trim number 12 WB-BG-OS&Y Handwheel operated	
1	0.75				P82K-000VM	Globe valve ASME SA182 Grade F316/F316L dual grade Class 2500 API 602 Flange ASME B16.5 RJ Trim number 12 WB-BG-OS&Y Handwheel operated	
1	1				P82K-000VN	Globe valve ASME SA182 Grade F316/F316L dual grade Class 2500 API 602 Flange ASME B16.5 RJ Trim number 12 WB-BG-OS&Y Handwheel operated	
1	1.5				P82K-000VP	Globe valve ASME SA182 Grade F316/F316L dual grade Class 2500 API 602 Flange ASME B16.5 RJ Trim number 12 WB-BG-OS&Y Handwheel operated	
1	2				P82L-001YB	Globe valve ASME SA351 Grade CF3M Class 2500 BS 1873 BW Sch160 Trim number 12 PSB-BG-OS&Y Gear operated	
1	3				P82L-001JN	Globe valve ASME SA351 Grade CF3M Class 2500 BS 1873 BW Sch160 Trim number 12 PSB-BG-OS&Y Gear operated	
1	4				P82L-001JP	Globe valve ASME SA351 Grade CF3M Class 2500 BS 1873 BW Sch160 Trim number 12 PSB-BG-OS&Y Gear operated	
1	6				P82L-001JR	Globe valve ASME SA351 Grade CF3M Class 2500 BS 1873 BW Sch160 Trim number 12 PSB-BG-OS&Y Gear operated	
1	8				P82L-001JS	Globe valve ASME SA351 Grade CF3M Class 2500 BS 1873 BW Sch140 Trim number 12 PSB-BG-OS&Y Gear operated	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83K-000TE	Check valve ASME SA182 Grade F316/F316L dual grade Class 2500 API 602 Flange ASME B16.5 RJ Trim number 12 Lift-type Welded cover	
1	0.75				P83K-000TF	Check valve ASME SA182 Grade F316/F316L dual grade Class 2500 API 602 Flange ASME B16.5 RJ Trim number 12 Lift-type Welded cover	
1	1				P83K-000TG	Check valve ASME SA182 Grade F316/F316L dual grade Class 2500 API 602 Flange ASME B16.5 RJ Trim number 12 Lift-type Welded cover	
1	1.5				P83K-000TH	Check valve ASME SA182 Grade F316/F316L dual grade Class 2500 API 602 Flange ASME B16.5 RJ Trim number 12 Lift-type Welded cover	
1	2				P83L-001GA	Check valve ASME SA351 Grade CF3M Class 2500 BS 1868 BW Sch160 Trim number 12 Swing-type Pressure seal cap	

PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P72K-0008Y	Paddle blank ASME SA182 Grade F316/F316L dual grade Class 2500 Standard-drawing Flange ASME B16.5 RJ	
1	0.75				P72K-0008Z	Paddle blank ASME SA182 Grade F316/F316L dual grade Class 2500 Standard-drawing Flange ASME B16.5 RJ	
1	1				P72K-00090	Paddle blank ASME SA182 Grade F316/F316L dual grade Class 2500 Standard-drawing Flange ASME B16.5 RJ	
1	1.5				P72K-00091	Paddle blank ASME SA182 Grade F316/F316L dual grade Class 2500 Standard-drawing Flange ASME B16.5 RJ	
1	2				P72K-00094	Paddle blank ASME SA182 Grade F316/F316L dual grade Class 2500 Standard-drawing Flange ASME B16.5 RJ	
1	3				P72K-00095	Paddle blank ASME SA182 Grade F316/F316L dual grade Class 2500 Standard-drawing Flange ASME B16.5 RJ	
1	4				P72K-00096	Paddle blank ASME SA182 Grade F316/F316L dual grade Class 2500 Standard-drawing Flange ASME B16.5 RJ	
1	6				P72K-00097	Paddle blank ASME SA182 Grade F316/F316L dual grade Class 2500 Standard-drawing Flange ASME B16.5 RJ	
1	8				P72K-00098	Paddle blank ASME SA182 Grade F316/F316L dual grade Class 2500 Standard-drawing Flange ASME B16.5 RJ	
1	10				P72K-00092	Paddle blank ASME SA182 Grade F316/F316L dual grade Class 2500 Standard-drawing Flange ASME B16.5 RJ	
1	12				P72K-00093	Paddle blank ASME SA182 Grade F316/F316L dual grade Class 2500 Standard-drawing Flange ASME B16.5 RJ	

PADDLE SPACER (PS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P72K-00099	Paddle spacer ASME SA182 Grade F316/F316L dual grade Class 2500 Standard-drawing Flange ASME B16.5 RJ	
1	0.75				P72K-0009A	Paddle spacer ASME SA182 Grade F316/F316L dual grade Class 2500 Standard-drawing Flange ASME B16.5 RJ	
1	1				P72K-0009B	Paddle spacer ASME SA182 Grade F316/F316L dual grade Class 2500 Standard-drawing Flange ASME B16.5 RJ	
1	1.5				P72K-0009C	Paddle spacer ASME SA182 Grade F316/F316L dual grade Class 2500 Standard-drawing Flange ASME B16.5 RJ	
1	2				P72K-0009F	Paddle spacer ASME SA182 Grade F316/F316L dual grade Class 2500 Standard-drawing Flange ASME B16.5 RJ	
1	3				P72K-0009G	Paddle spacer ASME SA182 Grade F316/F316L dual grade Class 2500 Standard-drawing Flange ASME B16.5 RJ	
1	4				P72K-0009H	Paddle spacer ASME SA182 Grade F316/F316L dual grade Class 2500 Standard-drawing Flange ASME B16.5 RJ	
1	6				P72K-0009J	Paddle spacer ASME SA182 Grade F316/F316L dual grade Class 2500 Standard-drawing Flange ASME B16.5 RJ	
1	8				P72K-0009K	Paddle spacer ASME SA182 Grade F316/F316L dual grade Class 2500 Standard-drawing Flange ASME B16.5 RJ	
1	10				P72K-0009D	Paddle spacer ASME SA182 Grade F316/F316L dual grade Class 2500 Standard-drawing Flange ASME B16.5 RJ	
1	12				P72K-0009E	Paddle spacer ASME SA182 Grade F316/F316L dual grade Class 2500 Standard-drawing Flange ASME B16.5 RJ	

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BOLT TABLE (B_P0LG , STUD ASME RJ, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	125	P80S-00M8A	R13	P75T-000NT
0.75	4	0.750	130	P80S-00M89	R16	P75T-000NU
1	4	0.875	140	P80S-00M2Y	R18	P75T-000NV
1.5	4	1.125	175	P80S-00LNH	R23	P75T-000NW
2	8	1.000	180	P80S-00LY6	R26	P75T-000NX
3	8	1.250	260	P80S-00LBY	R32	P75T-0011E
4	8	1.500	305	P80S-00N3M	R38	P75T-0011F
6	8	2.000	410	P80S-03BEU	R47	P75T-0011G
8	12	2.000	450	P80S-03BF2	R51	P75T-0011H
10	12	2.500	575	P80S-03BNU	R55	P75T-0011C
12	12	2.750	635	P80S-03BTD	R60	P75T-0011D

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BRANCH TABLE (T_P0LG)

RUN PIPE SIZE (in) \ BRANCH SIZE (in)	0.5	0.75	1	1.5	2	3	4	6	8	10	12
0.5	TS										
0.75		TS									
1		TR	TS								
1.5		TR	TR	TS							
2		L	TR	TR	TS						
3		L	L	TR	TR	TS					
4	L	L	L	L	TR	TR	TS				
6	L	L	L	L	L	TR	TR	TS			
8		L	L	L	L	L	TR	TR	TS		
10		L	L	L	L	L	TR	TR	TR	TS	
12		L	L	L	L	L	L	TR	TR	TR	TS

TS : STRAIGHT TEE
TR : REDUCING TEE
L : OUTLET

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PIPING CLASS

P0MS REV NO. 2

Material : SS347
Rating : ASME CLASS 2500
Flange Face : RJ
C.A.(mm) : 0.00
Gasket : Ring Octagonal
Service : HIGH PRESSURE STEAM
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED

DETAIL NOTES :

NO.	DESCRIPTION
999	HOLD ITEMS. ORDER PLACEMENT SHALL NOT BE DONE BEFORE RELEASING HOLD.

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
541	NPT(F) (F)

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PIPING CLASS
P0MS REV NO. 2

PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P01J-002RZ	Pipe ASTM A312 Grade TP347 Seamless ASME B36.10M/B36.19M PE	
1	0.75		SCH160		P01J-002S0	Pipe ASTM A312 Grade TP347 Seamless ASME B36.10M/B36.19M PE	
1	1		SCH160		P01J-002S1	Pipe ASTM A312 Grade TP347 Seamless ASME B36.10M/B36.19M PE	
1	1.5		SCH160		P01J-002S2	Pipe ASTM A312 Grade TP347 Seamless ASME B36.10M/B36.19M PE	
1	2		SCH80S		P01J-002S3	Pipe ASTM A312 Grade TP347 Seamless ASME B36.10M/B36.19M BE	
1	3		SCH80S		P01J-002S4	Pipe ASTM A312 Grade TP347 Seamless ASME B36.10M/B36.19M BE	
1	4		SCH80S		P01J-002S5	Pipe ASTM A312 Grade TP347 Seamless ASME B36.10M/B36.19M BE	
1	6		SCH120		P01J-002S6	Pipe ASTM A312 Grade TP347 Seamless ASME B36.10M/B36.19M BE	
1	8		SCH100		P01J-002SE	Pipe ASTM A358 Grade 347 Class 1 EFW ASME B36.10M/B36.19M BE	
1	10		SCH100		P01J-002S7	Pipe ASTM A358 Grade 347 Class 1 EFW ASME B36.10M/B36.19M BE	
1	12		SCH100		P01J-002S8	Pipe ASTM A358 Grade 347 Class 1 EFW ASME B36.10M/B36.19M BE	
1	14		SCH100		P01J-002S9	Pipe ASTM A358 Grade 347 Class 1 EFW ASME B36.10M/B36.19M BE	
1	16		SCH100		P01J-002SA	Pipe ASTM A358 Grade 347 Class 1 EFW ASME B36.10M/B36.19M BE	
1	18		SCH100		P01J-002SB	Pipe ASTM A358 Grade 347 Class 1 EFW ASME B36.10M/B36.19M BE	
1	20		SCH100		P01J-002SC	Pipe ASTM A358 Grade 347 Class 1 EFW ASME B36.10M/B36.19M BE	
1	24		SCH100		P01J-002SD	Pipe ASTM A358 Grade 347 Class 1 EFW ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P02J-0024W	90 degree elbow ASTM A403 Grade WP347 Class S Seamless ASME B16.9 BW Long radius	
1	0.75		SCH160		P02J-0024X	90 degree elbow ASTM A403 Grade WP347 Class S Seamless ASME B16.9 BW Long radius	
1	1		SCH160		P02J-0024Y	90 degree elbow ASTM A403 Grade WP347 Class S Seamless ASME B16.9 BW Long radius	
1	1.5		SCH160		P02J-0024Z	90 degree elbow ASTM A403 Grade WP347 Class S Seamless ASME B16.9 BW Long radius	
1	2		SCH80S		P02J-00250	90 degree elbow ASTM A403 Grade WP347 Class S Seamless ASME B16.9 BW Long radius	
1	3		SCH80S		P02J-00251	90 degree elbow ASTM A403 Grade WP347 Class S Seamless ASME B16.9 BW Long radius	
1	4		SCH80S		P02J-00252	90 degree elbow ASTM A403 Grade WP347 Class S Seamless ASME B16.9 BW Long radius	
1	6		SCH120		P02J-00253	90 degree elbow ASTM A403 Grade WP347 Class S Seamless ASME B16.9 BW Long radius	
1	8		SCH100		P02J-0025B	90 degree elbow ASTM A403 Grade WP347 Class WX Weld ASME B16.9 BW Long radius	
1	10		SCH100		P02J-00254	90 degree elbow ASTM A403 Grade WP347 Class WX Weld ASME B16.9 BW Long radius	
1	12		SCH100		P02J-00255	90 degree elbow ASTM A403 Grade WP347 Class WX Weld ASME B16.9 BW Long radius	
1	14		SCH100		P02J-00256	90 degree elbow ASTM A403 Grade WP347 Class WX Weld ASME B16.9 BW Long radius	
1	16		SCH100		P02J-00257	90 degree elbow ASTM A403 Grade WP347 Class WX Weld ASME B16.9 BW Long radius	
1	18		SCH100		P02J-00258	90 degree elbow ASTM A403 Grade WP347 Class WX Weld ASME B16.9 BW Long radius	
1	20		SCH100		P02J-00259	90 degree elbow ASTM A403 Grade WP347 Class WX Weld ASME B16.9 BW Long radius	
1	24		SCH100		P02J-0025A	90 degree elbow ASTM A403 Grade WP347 Class WX Weld ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P03J-0024M	45 degree elbow ASTM A403 Grade WP347 Class S Seamless ASME B16.9 BW Long radius	
1	0.75		SCH160		P03J-0024N	45 degree elbow ASTM A403 Grade WP347 Class S Seamless ASME B16.9 BW Long radius	
1	1		SCH160		P03J-0024P	45 degree elbow ASTM A403 Grade WP347 Class S Seamless ASME B16.9 BW Long radius	
1	1.5		SCH160		P03J-0024R	45 degree elbow ASTM A403 Grade WP347 Class S Seamless ASME B16.9 BW Long radius	
1	2		SCH80S		P03J-0024S	45 degree elbow ASTM A403 Grade WP347 Class S Seamless ASME B16.9 BW Long radius	
1	3		SCH80S		P03J-0024T	45 degree elbow ASTM A403 Grade WP347 Class S Seamless ASME B16.9 BW Long radius	
1	4		SCH80S		P03J-0024U	45 degree elbow ASTM A403 Grade WP347 Class S Seamless ASME B16.9 BW Long radius	
1	6		SCH120		P03J-0024V	45 degree elbow ASTM A403 Grade WP347 Class S Seamless ASME B16.9 BW Long radius	
1	8		SCH100		P03J-00253	45 degree elbow ASTM A403 Grade WP347 Class WX Weld ASME B16.9 BW Long radius	
1	10		SCH100		P03J-0024W	45 degree elbow ASTM A403 Grade WP347 Class WX Weld ASME B16.9 BW Long radius	
1	12		SCH100		P03J-0024X	45 degree elbow ASTM A403 Grade WP347 Class WX Weld ASME B16.9 BW Long radius	
1	14		SCH100		P03J-0024Y	45 degree elbow ASTM A403 Grade WP347 Class WX Weld ASME B16.9 BW Long radius	
1	16		SCH100		P03J-0024Z	45 degree elbow ASTM A403 Grade WP347 Class WX Weld ASME B16.9 BW Long radius	
1	18		SCH100		P03J-00250	45 degree elbow ASTM A403 Grade WP347 Class WX Weld ASME B16.9 BW Long radius	
1	20		SCH100		P03J-00251	45 degree elbow ASTM A403 Grade WP347 Class WX Weld ASME B16.9 BW Long radius	
1	24		SCH100		P03J-00252	45 degree elbow ASTM A403 Grade WP347 Class WX Weld ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P21J-001UV	Straight tee ASTM A403 Grade WP347 Class S Seamless ASME B16.9 BW	
1	0.75		SCH160		P21J-001UW	Straight tee ASTM A403 Grade WP347 Class S Seamless ASME B16.9 BW	

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STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		SCH160		P21J-001UX	Straight tee ASTM A403 Grade WP347 Class S Seamless ASME B16.9 BW	
1	1.5		SCH160		P21J-001UY	Straight tee ASTM A403 Grade WP347 Class S Seamless ASME B16.9 BW	
1	2		SCH80S		P21J-001UZ	Straight tee ASTM A403 Grade WP347 Class S Seamless ASME B16.9 BW	
1	3		SCH80S		P21J-001V0	Straight tee ASTM A403 Grade WP347 Class S Seamless ASME B16.9 BW	
1	4		SCH80S		P21J-001V1	Straight tee ASTM A403 Grade WP347 Class S Seamless ASME B16.9 BW	
1	6		SCH120		P21J-001V2	Straight tee ASTM A403 Grade WP347 Class S Seamless ASME B16.9 BW	
1	8		SCH100		P21J-001VA	Straight tee ASTM A403 Grade WP347 Class WX Weld ASME B16.9 BW	
1	10		SCH100		P21J-001V3	Straight tee ASTM A403 Grade WP347 Class WX Weld ASME B16.9 BW	
1	12		SCH100		P21J-001V4	Straight tee ASTM A403 Grade WP347 Class WX Weld ASME B16.9 BW	
1	14		SCH100		P21J-001V5	Straight tee ASTM A403 Grade WP347 Class WX Weld ASME B16.9 BW	
1	16		SCH100		P21J-001V6	Straight tee ASTM A403 Grade WP347 Class WX Weld ASME B16.9 BW	
1	18		SCH100		P21J-001V7	Straight tee ASTM A403 Grade WP347 Class WX Weld ASME B16.9 BW	
1	20		SCH100		P21J-001V8	Straight tee ASTM A403 Grade WP347 Class WX Weld ASME B16.9 BW	
1	24		SCH100		P21J-001V9	Straight tee ASTM A403 Grade WP347 Class WX Weld ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75	SCH160	SCH160	P24J-007UC	Reducing tee ASTM A403 Grade WP347 Class S Seamless ASME B16.9 BW	
1	1.5	0.75	SCH160	SCH160	P24J-007UD	Reducing tee ASTM A403 Grade WP347 Class S Seamless ASME B16.9 BW	
1	1.5	1	SCH160	SCH160	P24J-007UE	Reducing tee ASTM A403 Grade WP347 Class S Seamless ASME B16.9 BW	
1	2	1	SCH80S	SCH160	P24J-007VY	Reducing tee ASTM A403 Grade WP347 Class S Seamless ASME B16.9 BW	
1	2	1.5	SCH80S	SCH160	P24J-007UF	Reducing tee ASTM A403 Grade WP347 Class S Seamless ASME B16.9 BW	
1	3	1.5	SCH80S	SCH160	P24J-007UG	Reducing tee ASTM A403 Grade WP347 Class S Seamless ASME B16.9 BW	
1	3	2	SCH80S	SCH80S	P24J-007UH	Reducing tee ASTM A403 Grade WP347 Class S Seamless ASME B16.9 BW	
1	4	2	SCH80S	SCH80S	P24J-007UJ	Reducing tee ASTM A403 Grade WP347 Class S Seamless ASME B16.9 BW	
1	4	3	SCH80S	SCH80S	P24J-007UK	Reducing tee ASTM A403 Grade WP347 Class S Seamless ASME B16.9 BW	
1	6	3	SCH120	SCH80S	P24J-007UL	Reducing tee ASTM A403 Grade WP347 Class S Seamless ASME B16.9 BW	
1	6	4	SCH120	SCH80S	P24J-007UM	Reducing tee ASTM A403 Grade WP347 Class S Seamless ASME B16.9 BW	
1	8	4	SCH100	SCH80S	P24J-007UN	Reducing tee ASTM A403 Grade WP347 Class WX Weld ASME B16.9 BW	
1	8	6	SCH100	SCH120	P24J-007UP	Reducing tee ASTM A403 Grade WP347 Class WX Weld ASME B16.9 BW	
1	10	4	SCH100	SCH80S	P24J-007UR	Reducing tee ASTM A403 Grade WP347 Class WX Weld ASME B16.9 BW	
1	10	6	SCH100	SCH120	P24J-007US	Reducing tee ASTM A403 Grade WP347 Class WX Weld ASME B16.9 BW	
1	10	8	SCH100	SCH100	P24J-007UT	Reducing tee ASTM A403 Grade WP347 Class WX Weld ASME B16.9 BW	
1	12	6	SCH100	SCH120	P24J-007UV	Reducing tee ASTM A403 Grade WP347 Class WX Weld ASME B16.9 BW	
1	12	8	SCH100	SCH100	P24J-007UW	Reducing tee ASTM A403 Grade WP347 Class WX Weld ASME B16.9 BW	
1	12	10	SCH100	SCH100	P24J-007UU	Reducing tee ASTM A403 Grade WP347 Class WX Weld ASME B16.9 BW	
1	14	6	SCH100	SCH120	P24J-007UZ	Reducing tee ASTM A403 Grade WP347 Class WX Weld ASME B16.9 BW	
1	14	8	SCH100	SCH100	P24J-007V0	Reducing tee ASTM A403 Grade WP347 Class WX Weld ASME B16.9 BW	
1	14	10	SCH100	SCH100	P24J-007UX	Reducing tee ASTM A403 Grade WP347 Class WX Weld ASME B16.9 BW	
1	14	12	SCH100	SCH100	P24J-007UY	Reducing tee ASTM A403 Grade WP347 Class WX Weld ASME B16.9 BW	
1	16	6	SCH100	SCH120	P24J-007V4	Reducing tee ASTM A403 Grade WP347 Class WX Weld ASME B16.9 BW	
1	16	8	SCH100	SCH100	P24J-007V5	Reducing tee ASTM A403 Grade WP347 Class WX Weld ASME B16.9 BW	
1	16	10	SCH100	SCH100	P24J-007V1	Reducing tee ASTM A403 Grade WP347 Class WX Weld ASME B16.9 BW	
1	16	12	SCH100	SCH100	P24J-007V2	Reducing tee ASTM A403 Grade WP347 Class WX Weld ASME B16.9 BW	
1	16	14	SCH100	SCH100	P24J-007V3	Reducing tee ASTM A403 Grade WP347 Class WX Weld ASME B16.9 BW	
1	18	8	SCH100	SCH100	P24J-007VA	Reducing tee ASTM A403 Grade WP347 Class WX Weld ASME B16.9 BW	
1	18	10	SCH100	SCH100	P24J-007V6	Reducing tee ASTM A403 Grade WP347 Class WX Weld ASME B16.9 BW	
1	18	12	SCH100	SCH100	P24J-007V7	Reducing tee ASTM A403 Grade WP347 Class WX Weld ASME B16.9 BW	
1	18	14	SCH100	SCH100	P24J-007V8	Reducing tee ASTM A403 Grade WP347 Class WX Weld ASME B16.9 BW	
1	18	16	SCH100	SCH100	P24J-007V9	Reducing tee ASTM A403 Grade WP347 Class WX Weld ASME B16.9 BW	
1	20	8	SCH100	SCH100	P24J-007VG	Reducing tee ASTM A403 Grade WP347 Class WX Weld ASME B16.9 BW	
1	20	10	SCH100	SCH100	P24J-007VB	Reducing tee ASTM A403 Grade WP347 Class WX Weld ASME B16.9 BW	
1	20	12	SCH100	SCH100	P24J-007VC	Reducing tee ASTM A403 Grade WP347 Class WX Weld ASME B16.9 BW	
1	20	14	SCH100	SCH100	P24J-007VD	Reducing tee ASTM A403 Grade WP347 Class WX Weld ASME B16.9 BW	
1	20	16	SCH100	SCH100	P24J-007VE	Reducing tee ASTM A403 Grade WP347 Class WX Weld ASME B16.9 BW	
1	20	18	SCH100	SCH100	P24J-007VF	Reducing tee ASTM A403 Grade WP347 Class WX Weld ASME B16.9 BW	
1	24	10	SCH100	SCH100	P24J-007VH	Reducing tee ASTM A403 Grade WP347 Class WX Weld ASME B16.9 BW	
1	24	12	SCH100	SCH100	P24J-007VJ	Reducing tee ASTM A403 Grade WP347 Class WX Weld ASME B16.9 BW	
1	24	14	SCH100	SCH100	P24J-007VK	Reducing tee ASTM A403 Grade WP347 Class WX Weld ASME B16.9 BW	

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REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	24	16	SCH100	SCH100	P24J-007VL	Reducing tee ASTM A403 Grade WP347 Class WX Weld ASME B16.9 BW	
1	24	18	SCH100	SCH100	P24J-007VM	Reducing tee ASTM A403 Grade WP347 Class WX Weld ASME B16.9 BW	
1	24	20	SCH100	SCH100	P24J-007VN	Reducing tee ASTM A403 Grade WP347 Class WX Weld ASME B16.9 BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	SCH160	P27J-006L5	Concentric reducer ASTM A403 Grade WP347 Class S Seamless ASME B16.9 BW	
1	1	0.5	SCH160	SCH160	P27J-006L6	Concentric reducer ASTM A403 Grade WP347 Class S Seamless ASME B16.9 BW	
1	1	0.75	SCH160	SCH160	P27J-006L7	Concentric reducer ASTM A403 Grade WP347 Class S Seamless ASME B16.9 BW	
1	1.5	0.5	SCH160	SCH160	P27J-006L8	Concentric reducer ASTM A403 Grade WP347 Class S Seamless ASME B16.9 BW	
1	1.5	0.75	SCH160	SCH160	P27J-006L9	Concentric reducer ASTM A403 Grade WP347 Class S Seamless ASME B16.9 BW	
1	1.5	1	SCH160	SCH160	P27J-006LA	Concentric reducer ASTM A403 Grade WP347 Class S Seamless ASME B16.9 BW	
1	2	0.75	SCH80S	SCH160	P27J-006ME	Concentric reducer ASTM A403 Grade WP347 Class S Seamless ASME B16.9 BW	
1	2	1	SCH80S	SCH160	P27J-006MF	Concentric reducer ASTM A403 Grade WP347 Class S Seamless ASME B16.9 BW	
1	2	1.5	SCH80S	SCH160	P27J-006LB	Concentric reducer ASTM A403 Grade WP347 Class S Seamless ASME B16.9 BW	
1	3	1.5	SCH80S	SCH160	P27J-006LC	Concentric reducer ASTM A403 Grade WP347 Class S Seamless ASME B16.9 BW	
1	3	2	SCH80S	SCH80S	P27J-006LD	Concentric reducer ASTM A403 Grade WP347 Class S Seamless ASME B16.9 BW	
1	4	1.5	SCH80S	SCH160	P27J-006LE	Concentric reducer ASTM A403 Grade WP347 Class S Seamless ASME B16.9 BW	
1	4	2	SCH80S	SCH80S	P27J-006LF	Concentric reducer ASTM A403 Grade WP347 Class S Seamless ASME B16.9 BW	
1	4	3	SCH80S	SCH80S	P27J-006LG	Concentric reducer ASTM A403 Grade WP347 Class S Seamless ASME B16.9 BW	
1	6	3	SCH120	SCH80S	P27J-006LH	Concentric reducer ASTM A403 Grade WP347 Class S Seamless ASME B16.9 BW	
1	6	4	SCH120	SCH80S	P27J-006LJ	Concentric reducer ASTM A403 Grade WP347 Class S Seamless ASME B16.9 BW	
1	8	4	SCH100	SCH80S	P27J-006LK	Concentric reducer ASTM A403 Grade WP347 Class WX Weld ASME B16.9 BW	
1	8	6	SCH100	SCH120	P27J-006LL	Concentric reducer ASTM A403 Grade WP347 Class WX Weld ASME B16.9 BW	
1	10	4	SCH100	SCH80S	P27J-006LM	Concentric reducer ASTM A403 Grade WP347 Class WX Weld ASME B16.9 BW	
1	10	6	SCH100	SCH120	P27J-006LN	Concentric reducer ASTM A403 Grade WP347 Class WX Weld ASME B16.9 BW	
1	10	8	SCH100	SCH100	P27J-006LP	Concentric reducer ASTM A403 Grade WP347 Class WX Weld ASME B16.9 BW	
1	12	6	SCH100	SCH120	P27J-006LS	Concentric reducer ASTM A403 Grade WP347 Class WX Weld ASME B16.9 BW	
1	12	8	SCH100	SCH100	P27J-006LT	Concentric reducer ASTM A403 Grade WP347 Class WX Weld ASME B16.9 BW	
1	12	10	SCH100	SCH100	P27J-006LR	Concentric reducer ASTM A403 Grade WP347 Class WX Weld ASME B16.9 BW	
1	14	6	SCH100	SCH120	P27J-006LW	Concentric reducer ASTM A403 Grade WP347 Class WX Weld ASME B16.9 BW	
1	14	8	SCH100	SCH100	P27J-006LX	Concentric reducer ASTM A403 Grade WP347 Class WX Weld ASME B16.9 BW	
1	14	10	SCH100	SCH100	P27J-006LU	Concentric reducer ASTM A403 Grade WP347 Class WX Weld ASME B16.9 BW	
1	14	12	SCH100	SCH100	P27J-006LV	Concentric reducer ASTM A403 Grade WP347 Class WX Weld ASME B16.9 BW	
1	16	8	SCH100	SCH100	P27J-006M1	Concentric reducer ASTM A403 Grade WP347 Class WX Weld ASME B16.9 BW	
1	16	10	SCH100	SCH100	P27J-006LY	Concentric reducer ASTM A403 Grade WP347 Class WX Weld ASME B16.9 BW	
1	16	12	SCH100	SCH100	P27J-006LZ	Concentric reducer ASTM A403 Grade WP347 Class WX Weld ASME B16.9 BW	
1	16	14	SCH100	SCH100	P27J-006M0	Concentric reducer ASTM A403 Grade WP347 Class WX Weld ASME B16.9 BW	
1	18	10	SCH100	SCH100	P27J-006M2	Concentric reducer ASTM A403 Grade WP347 Class WX Weld ASME B16.9 BW	
1	18	12	SCH100	SCH100	P27J-006M3	Concentric reducer ASTM A403 Grade WP347 Class WX Weld ASME B16.9 BW	
1	18	14	SCH100	SCH100	P27J-006M4	Concentric reducer ASTM A403 Grade WP347 Class WX Weld ASME B16.9 BW	
1	18	16	SCH100	SCH100	P27J-006M5	Concentric reducer ASTM A403 Grade WP347 Class WX Weld ASME B16.9 BW	
1	20	12	SCH100	SCH100	P27J-006M6	Concentric reducer ASTM A403 Grade WP347 Class WX Weld ASME B16.9 BW	
1	20	14	SCH100	SCH100	P27J-006M7	Concentric reducer ASTM A403 Grade WP347 Class WX Weld ASME B16.9 BW	
1	20	16	SCH100	SCH100	P27J-006M8	Concentric reducer ASTM A403 Grade WP347 Class WX Weld ASME B16.9 BW	
1	20	18	SCH100	SCH100	P27J-006M9	Concentric reducer ASTM A403 Grade WP347 Class WX Weld ASME B16.9 BW	
1	24	16	SCH100	SCH100	P27J-006MA	Concentric reducer ASTM A403 Grade WP347 Class WX Weld ASME B16.9 BW	
1	24	18	SCH100	SCH100	P27J-006MB	Concentric reducer ASTM A403 Grade WP347 Class WX Weld ASME B16.9 BW	
1	24	20	SCH100	SCH100	P27J-006MC	Concentric reducer ASTM A403 Grade WP347 Class WX Weld ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	SCH160	P28J-006MF	Eccentric reducer ASTM A403 Grade WP347 Class S Seamless ASME B16.9 BW	
1	1	0.5	SCH160	SCH160	P28J-006MG	Eccentric reducer ASTM A403 Grade WP347 Class S Seamless ASME B16.9 BW	
1	1	0.75	SCH160	SCH160	P28J-006MH	Eccentric reducer ASTM A403 Grade WP347 Class S Seamless ASME B16.9 BW	
1	1.5	0.5	SCH160	SCH160	P28J-006MJ	Eccentric reducer ASTM A403 Grade WP347 Class S Seamless ASME B16.9 BW	
1	1.5	0.75	SCH160	SCH160	P28J-006MK	Eccentric reducer ASTM A403 Grade WP347 Class S Seamless ASME B16.9 BW	
1	1.5	1	SCH160	SCH160	P28J-006ML	Eccentric reducer ASTM A403 Grade WP347 Class S Seamless ASME B16.9 BW	
1	2	0.75	SCH80S	SCH160	P28J-006NR	Eccentric reducer ASTM A403 Grade WP347 Class S Seamless ASME B16.9 BW	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2	1	SCH80S	SCH160	P28J-006NS	Eccentric reducer ASTM A403 Grade WP347 Class S Seamless ASME B16.9 BW	
1	2	1.5	SCH80S	SCH160	P28J-006MM	Eccentric reducer ASTM A403 Grade WP347 Class S Seamless ASME B16.9 BW	
1	3	1.5	SCH80S	SCH160	P28J-006MN	Eccentric reducer ASTM A403 Grade WP347 Class S Seamless ASME B16.9 BW	
1	3	2	SCH80S	SCH80S	P28J-006MP	Eccentric reducer ASTM A403 Grade WP347 Class S Seamless ASME B16.9 BW	
1	4	1.5	SCH80S	SCH160	P28J-006MR	Eccentric reducer ASTM A403 Grade WP347 Class S Seamless ASME B16.9 BW	
1	4	2	SCH80S	SCH80S	P28J-006MS	Eccentric reducer ASTM A403 Grade WP347 Class S Seamless ASME B16.9 BW	
1	4	3	SCH80S	SCH80S	P28J-006MT	Eccentric reducer ASTM A403 Grade WP347 Class S Seamless ASME B16.9 BW	
1	6	3	SCH120	SCH80S	P28J-006MU	Eccentric reducer ASTM A403 Grade WP347 Class S Seamless ASME B16.9 BW	
1	6	4	SCH120	SCH80S	P28J-006MV	Eccentric reducer ASTM A403 Grade WP347 Class S Seamless ASME B16.9 BW	
1	8	4	SCH100	SCH80S	P28J-006MW	Eccentric reducer ASTM A403 Grade WP347 Class WX Weld ASME B16.9 BW	
1	8	6	SCH100	SCH120	P28J-006MX	Eccentric reducer ASTM A403 Grade WP347 Class WX Weld ASME B16.9 BW	
1	10	4	SCH100	SCH80S	P28J-006MY	Eccentric reducer ASTM A403 Grade WP347 Class WX Weld ASME B16.9 BW	
1	10	6	SCH100	SCH120	P28J-006MZ	Eccentric reducer ASTM A403 Grade WP347 Class WX Weld ASME B16.9 BW	
1	10	8	SCH100	SCH100	P28J-006N0	Eccentric reducer ASTM A403 Grade WP347 Class WX Weld ASME B16.9 BW	
1	12	6	SCH100	SCH120	P28J-006N2	Eccentric reducer ASTM A403 Grade WP347 Class WX Weld ASME B16.9 BW	
1	12	8	SCH100	SCH100	P28J-006N3	Eccentric reducer ASTM A403 Grade WP347 Class WX Weld ASME B16.9 BW	
1	12	10	SCH100	SCH100	P28J-006N1	Eccentric reducer ASTM A403 Grade WP347 Class WX Weld ASME B16.9 BW	
1	14	6	SCH100	SCH120	P28J-006N6	Eccentric reducer ASTM A403 Grade WP347 Class WX Weld ASME B16.9 BW	
1	14	8	SCH100	SCH100	P28J-006N7	Eccentric reducer ASTM A403 Grade WP347 Class WX Weld ASME B16.9 BW	
1	14	10	SCH100	SCH100	P28J-006N4	Eccentric reducer ASTM A403 Grade WP347 Class WX Weld ASME B16.9 BW	
1	14	12	SCH100	SCH100	P28J-006N5	Eccentric reducer ASTM A403 Grade WP347 Class WX Weld ASME B16.9 BW	
1	16	8	SCH100	SCH100	P28J-006NB	Eccentric reducer ASTM A403 Grade WP347 Class WX Weld ASME B16.9 BW	
1	16	10	SCH100	SCH100	P28J-006N8	Eccentric reducer ASTM A403 Grade WP347 Class WX Weld ASME B16.9 BW	
1	16	12	SCH100	SCH100	P28J-006N9	Eccentric reducer ASTM A403 Grade WP347 Class WX Weld ASME B16.9 BW	
1	16	14	SCH100	SCH100	P28J-006NA	Eccentric reducer ASTM A403 Grade WP347 Class WX Weld ASME B16.9 BW	
1	18	10	SCH100	SCH100	P28J-006NC	Eccentric reducer ASTM A403 Grade WP347 Class WX Weld ASME B16.9 BW	
1	18	12	SCH100	SCH100	P28J-006ND	Eccentric reducer ASTM A403 Grade WP347 Class WX Weld ASME B16.9 BW	
1	18	14	SCH100	SCH100	P28J-006NE	Eccentric reducer ASTM A403 Grade WP347 Class WX Weld ASME B16.9 BW	
1	18	16	SCH100	SCH100	P28J-006NF	Eccentric reducer ASTM A403 Grade WP347 Class WX Weld ASME B16.9 BW	
1	20	12	SCH100	SCH100	P28J-006NG	Eccentric reducer ASTM A403 Grade WP347 Class WX Weld ASME B16.9 BW	
1	20	14	SCH100	SCH100	P28J-006NH	Eccentric reducer ASTM A403 Grade WP347 Class WX Weld ASME B16.9 BW	
1	20	16	SCH100	SCH100	P28J-006NJ	Eccentric reducer ASTM A403 Grade WP347 Class WX Weld ASME B16.9 BW	
1	20	18	SCH100	SCH100	P28J-006NK	Eccentric reducer ASTM A403 Grade WP347 Class WX Weld ASME B16.9 BW	
1	24	16	SCH100	SCH100	P28J-006NL	Eccentric reducer ASTM A403 Grade WP347 Class WX Weld ASME B16.9 BW	
1	24	18	SCH100	SCH100	P28J-006NM	Eccentric reducer ASTM A403 Grade WP347 Class WX Weld ASME B16.9 BW	
1	24	20	SCH100	SCH100	P28J-006NN	Eccentric reducer ASTM A403 Grade WP347 Class WX Weld ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P29J-003Z9	Cap ASTM A403 Grade WP347 Class S Seamless ASME B16.9 BW	
1	0.75		SCH160		P29J-003ZA	Cap ASTM A403 Grade WP347 Class S Seamless ASME B16.9 BW	
1	1		SCH160		P29J-003ZB	Cap ASTM A403 Grade WP347 Class S Seamless ASME B16.9 BW	
1	1.5		SCH160		P29J-003ZC	Cap ASTM A403 Grade WP347 Class S Seamless ASME B16.9 BW	
1	2		SCH80S		P29J-003ZJ	Cap ASTM A403 Grade WP347 Class S Seamless ASME B16.9 BW	
1	3		SCH80S		P29J-003ZM	Cap ASTM A403 Grade WP347 Class S Seamless ASME B16.9 BW	
1	4		SCH80S		P29J-003ZN	Cap ASTM A403 Grade WP347 Class S Seamless ASME B16.9 BW	
1	6		SCH120		P29J-003ZP	Cap ASTM A403 Grade WP347 Class S Seamless ASME B16.9 BW	
1	8		SCH100		P29J-003ZR	Cap ASTM A403 Grade WP347 Class S Seamless ASME B16.9 BW	
1	10		SCH100		P29J-003ZD	Cap ASTM A403 Grade WP347 Class S Seamless ASME B16.9 BW	
1	12		SCH100		P29J-003ZE	Cap ASTM A403 Grade WP347 Class S Seamless ASME B16.9 BW	
1	14		SCH100		P29J-003ZF	Cap ASTM A403 Grade WP347 Class S Seamless ASME B16.9 BW	
1	16		SCH100		P29J-003ZG	Cap ASTM A403 Grade WP347 Class S Seamless ASME B16.9 BW	
1	18		SCH100		P29J-003ZH	Cap ASTM A403 Grade WP347 Class S Seamless ASME B16.9 BW	
1	20		SCH100		P29J-003ZK	Cap ASTM A403 Grade WP347 Class S Seamless ASME B16.9 BW	
1	24		SCH100		P29J-003ZL	Cap ASTM A403 Grade WP347 Class S Seamless ASME B16.9 BW	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P41J-001WA	Straight nipple ASTM A312 Grade TP347 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

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STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75		SCH160		P41J-001WB	Straight nipple ASTM A312 Grade TP347 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		SCH160		P41J-001WC	Straight nipple ASTM A312 Grade TP347 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		SCH160		P41J-001WD	Straight nipple ASTM A312 Grade TP347 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2	0.75	SCH80S	SCH160	P31K-00FW9	Outlet ASTM A182 Grade F347 MSS SP-97 BW	
1	3	0.75	SCH80S	SCH160	P31K-00FWA	Outlet ASTM A182 Grade F347 MSS SP-97 BW	
1	4	0.75	SCH80S	SCH160	P31K-00FWB	Outlet ASTM A182 Grade F347 MSS SP-97 BW	
1	6	0.75	SCH120	SCH160	P31K-00FWC	Outlet ASTM A182 Grade F347 MSS SP-97 BW	
1	8	0.75	SCH100	SCH160	P31K-00FWD	Outlet ASTM A182 Grade F347 MSS SP-97 BW	
1	10	0.75	SCH100	SCH160	P31K-00FWE	Outlet ASTM A182 Grade F347 MSS SP-97 BW	
1	12	0.75	SCH100	SCH160	P31K-00FWF	Outlet ASTM A182 Grade F347 MSS SP-97 BW	
1	14	0.75	SCH100	SCH160	P31K-00FWG	Outlet ASTM A182 Grade F347 MSS SP-97 BW	
1	16	0.75	SCH100	SCH160	P31K-00FWM	Outlet ASTM A182 Grade F347 MSS SP-97 BW	
1	18	0.75	SCH100	SCH160	P31K-00FWP	Outlet ASTM A182 Grade F347 MSS SP-97 BW	
1	20	0.75	SCH100	SCH160	P31K-00FWT	Outlet ASTM A182 Grade F347 MSS SP-97 BW	
1	24	0.75	SCH100	SCH160	P31K-00FWW	Outlet ASTM A182 Grade F347 MSS SP-97 BW	
1	3	1	SCH80S	SCH160	P31K-00FV4	Outlet ASTM A182 Grade F347 MSS SP-97 BW	
1	4	1	SCH80S	SCH160	P31K-00FV5	Outlet ASTM A182 Grade F347 MSS SP-97 BW	
1	6	1	SCH120	SCH160	P31K-00FV7	Outlet ASTM A182 Grade F347 MSS SP-97 BW	
1	8	1	SCH100	SCH160	P31K-00FWH	Outlet ASTM A182 Grade F347 MSS SP-97 BW	
1	10	1	SCH100	SCH160	P31K-00FWJ	Outlet ASTM A182 Grade F347 MSS SP-97 BW	
1	12	1	SCH100	SCH160	P31K-00FWK	Outlet ASTM A182 Grade F347 MSS SP-97 BW	
1	14	1	SCH100	SCH160	P31K-00FWL	Outlet ASTM A182 Grade F347 MSS SP-97 BW	
1	16	1	SCH100	SCH160	P31K-00FWN	Outlet ASTM A182 Grade F347 MSS SP-97 BW	
1	18	1	SCH100	SCH160	P31K-00FWR	Outlet ASTM A182 Grade F347 MSS SP-97 BW	
1	20	1	SCH100	SCH160	P31K-00FWU	Outlet ASTM A182 Grade F347 MSS SP-97 BW	
1	24	1	SCH100	SCH160	P31K-00FWX	Outlet ASTM A182 Grade F347 MSS SP-97 BW	
1	4	1.5	SCH80S	SCH160	P31K-00FV6	Outlet ASTM A182 Grade F347 MSS SP-97 BW	
1	6	1.5	SCH120	SCH160	P31K-00FV8	Outlet ASTM A182 Grade F347 MSS SP-97 BW	
1	8	1.5	SCH100	SCH160	P31K-00FVA	Outlet ASTM A182 Grade F347 MSS SP-97 BW	
1	10	1.5	SCH100	SCH160	P31K-00FVD	Outlet ASTM A182 Grade F347 MSS SP-97 BW	
1	12	1.5	SCH100	SCH160	P31K-00FVG	Outlet ASTM A182 Grade F347 MSS SP-97 BW	
1	14	1.5	SCH100	SCH160	P31K-00FVL	Outlet ASTM A182 Grade F347 MSS SP-97 BW	
1	16	1.5	SCH100	SCH160	P31K-00FVR	Outlet ASTM A182 Grade F347 MSS SP-97 BW	
1	18	1.5	SCH100	SCH160	P31K-00FWS	Outlet ASTM A182 Grade F347 MSS SP-97 BW	
1	20	1.5	SCH100	SCH160	P31K-00FWV	Outlet ASTM A182 Grade F347 MSS SP-97 BW	
1	24	1.5	SCH100	SCH160	P31K-00FWY	Outlet ASTM A182 Grade F347 MSS SP-97 BW	
1	6	2	SCH120	SCH80S	P31K-00FV9	Outlet ASTM A182 Grade F347 MSS SP-97 BW	
1	8	2	SCH100	SCH80S	P31K-00FVB	Outlet ASTM A182 Grade F347 MSS SP-97 BW	
1	10	2	SCH100	SCH80S	P31K-00FVE	Outlet ASTM A182 Grade F347 MSS SP-97 BW	
1	12	2	SCH100	SCH80S	P31K-00FVH	Outlet ASTM A182 Grade F347 MSS SP-97 BW	
1	14	2	SCH100	SCH80S	P31K-00FVM	Outlet ASTM A182 Grade F347 MSS SP-97 BW	
1	16	2	SCH100	SCH80S	P31K-00FVS	Outlet ASTM A182 Grade F347 MSS SP-97 BW	
1	18	2	SCH100	SCH80S	P31K-00FVV	Outlet ASTM A182 Grade F347 MSS SP-97 BW	
1	20	2	SCH100	SCH80S	P31K-00FVZ	Outlet ASTM A182 Grade F347 MSS SP-97 BW	
1	24	2	SCH100	SCH80S	P31K-00FW3	Outlet ASTM A182 Grade F347 MSS SP-97 BW	
1	8	3	SCH100	SCH80S	P31K-00FVC	Outlet ASTM A182 Grade F347 MSS SP-97 BW	
1	10	3	SCH100	SCH80S	P31K-00FVF	Outlet ASTM A182 Grade F347 MSS SP-97 BW	
1	12	3	SCH100	SCH80S	P31K-00FVJ	Outlet ASTM A182 Grade F347 MSS SP-97 BW	
1	14	3	SCH100	SCH80S	P31K-00FVN	Outlet ASTM A182 Grade F347 MSS SP-97 BW	
1	16	3	SCH100	SCH80S	P31K-00FVT	Outlet ASTM A182 Grade F347 MSS SP-97 BW	
1	18	3	SCH100	SCH80S	P31K-00FVW	Outlet ASTM A182 Grade F347 MSS SP-97 BW	
1	20	3	SCH100	SCH80S	P31K-00FW0	Outlet ASTM A182 Grade F347 MSS SP-97 BW	
1	24	3	SCH100	SCH80S	P31K-00FW4	Outlet ASTM A182 Grade F347 MSS SP-97 BW	
1	12	4	SCH100	SCH80S	P31K-00FVK	Outlet ASTM A182 Grade F347 MSS SP-97 BW	
1	14	4	SCH100	SCH80S	P31K-00FVP	Outlet ASTM A182 Grade F347 MSS SP-97 BW	
1	16	4	SCH100	SCH80S	P31K-00FVU	Outlet ASTM A182 Grade F347 MSS SP-97 BW	

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OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	18	4	SCH100	SCH80S	P31K-00FVX	Outlet ASTM A182 Grade F347 MSS SP-97 BW	
1	20	4	SCH100	SCH80S	P31K-00FW1	Outlet ASTM A182 Grade F347 MSS SP-97 BW	
1	24	4	SCH100	SCH80S	P31K-00FW5	Outlet ASTM A182 Grade F347 MSS SP-97 BW	
1	18	6	SCH100	SCH120	P31K-00FVY	Outlet ASTM A182 Grade F347 MSS SP-97 BW	
1	20	6	SCH100	SCH120	P31K-00FW2	Outlet ASTM A182 Grade F347 MSS SP-97 BW	
1	24	6	SCH100	SCH120	P31K-00FW6	Outlet ASTM A182 Grade F347 MSS SP-97 BW	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30K-0005M	Plug ASTM A182 Grade F347 ASME B16.11 NPT Round head	
1	0.75				P30K-0005N	Plug ASTM A182 Grade F347 ASME B16.11 NPT Round head	
1	1				P30K-0005P	Plug ASTM A182 Grade F347 ASME B16.11 NPT Round head	
1	1.5				P30K-0005R	Plug ASTM A182 Grade F347 ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P61K-0061T	Flange WN ASTM A182 Grade F347 Class 2500 ASME B16.5 RJ	
1	0.75		SCH160		P61K-0061U	Flange WN ASTM A182 Grade F347 Class 2500 ASME B16.5 RJ	
1	1		SCH160		P61K-0061V	Flange WN ASTM A182 Grade F347 Class 2500 ASME B16.5 RJ	
1	1.5		SCH160		P61K-0061W	Flange WN ASTM A182 Grade F347 Class 2500 ASME B16.5 RJ	
1	2		SCH80S		P61K-0061Z	Flange WN ASTM A182 Grade F347 Class 2500 ASME B16.5 RJ	
1	3		SCH80S		P61K-00620	Flange WN ASTM A182 Grade F347 Class 2500 ASME B16.5 RJ	
1	4		SCH80S		P61K-00621	Flange WN ASTM A182 Grade F347 Class 2500 ASME B16.5 RJ	
1	6		SCH120		P61K-00622	Flange WN ASTM A182 Grade F347 Class 2500 ASME B16.5 RJ	
1	8		SCH100		P61K-00623	Flange WN ASTM A182 Grade F347 Class 2500 ASME B16.5 RJ	
1	10		SCH100		P61K-0061X	Flange WN ASTM A182 Grade F347 Class 2500 ASME B16.5 RJ	
1	12		SCH100		P61K-0061Y	Flange WN ASTM A182 Grade F347 Class 2500 ASME B16.5 RJ	
1	14		SCH100		P61K-00624	Flange WN ASTM A182 Grade F347 Class 2500 Standard-drawing RJ	
1	16		SCH100		P61K-00625	Flange WN ASTM A182 Grade F347 Class 2500 Standard-drawing RJ	
1	18		SCH100		P61K-00626	Flange WN ASTM A182 Grade F347 Class 2500 Standard-drawing RJ	
1	20		SCH100		P61K-00627	Flange WN ASTM A182 Grade F347 Class 2500 Standard-drawing RJ	
1	24		SCH100		P61K-00628	Flange WN ASTM A182 Grade F347 Class 2500 Standard-drawing RJ	
541	0.5				P61K-006A4	Flange NPT ASTM A182 Grade F347 Class 2500 ASME B16.5 RJ	
541	0.75				P61K-00629	Flange NPT ASTM A182 Grade F347 Class 2500 ASME B16.5 RJ	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67K-001VG	Blind flange ASTM A182 Grade F347 Class 2500 ASME B16.5 RJ	
1	0.75				P67K-001VH	Blind flange ASTM A182 Grade F347 Class 2500 ASME B16.5 RJ	
1	1				P67K-001VJ	Blind flange ASTM A182 Grade F347 Class 2500 ASME B16.5 RJ	
1	1.5				P67K-001VK	Blind flange ASTM A182 Grade F347 Class 2500 ASME B16.5 RJ	
1	2				P67K-001VN	Blind flange ASTM A182 Grade F347 Class 2500 ASME B16.5 RJ	
1	3				P67K-001VP	Blind flange ASTM A182 Grade F347 Class 2500 ASME B16.5 RJ	
1	4				P67K-001VR	Blind flange ASTM A182 Grade F347 Class 2500 ASME B16.5 RJ	
1	6				P67K-001VS	Blind flange ASTM A182 Grade F347 Class 2500 ASME B16.5 RJ	
1	8				P67K-001VT	Blind flange ASTM A182 Grade F347 Class 2500 ASME B16.5 RJ	
1	10				P67K-001VL	Blind flange ASTM A182 Grade F347 Class 2500 ASME B16.5 RJ	
1	12				P67K-001VM	Blind flange ASTM A182 Grade F347 Class 2500 ASME B16.5 RJ	
1	14				P67K-001VU	Blind flange ASTM A182 Grade F347 Class 2500 Standard-drawing RJ	
1	16				P67K-001VV	Blind flange ASTM A182 Grade F347 Class 2500 Standard-drawing RJ	
1	18				P67K-001VW	Blind flange ASTM A182 Grade F347 Class 2500 Standard-drawing RJ	
1	20				P67K-001VX	Blind flange ASTM A182 Grade F347 Class 2500 Standard-drawing RJ	
1	24				P67K-001VY	Blind flange ASTM A182 Grade F347 Class 2500 Standard-drawing RJ	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P75T-000JX	Ring joint gasket SS TP347 Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	0.75				P75T-000JY	Ring joint gasket SS TP347 Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	

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GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P75T-000JZ	Ring joint gasket SS TP347 Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	1.5				P75T-000K0	Ring joint gasket SS TP347 Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	2				P75T-000P3	Ring joint gasket SS TP347 Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	3				P75T-000P4	Ring joint gasket SS TP347 Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	4				P75T-0011J	Ring joint gasket SS TP347 Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	6				P75T-000M9	Ring joint gasket SS TP347 Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	8				P75T-000MA	Ring joint gasket SS TP347 Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	10				P75T-000K1	Ring joint gasket SS TP347 Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	12				P75T-000K2	Ring joint gasket SS TP347 Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	14				P75T-0013T	Ring joint gasket SS TP347 Class 2500 ASME B16.20 Flange Standard-drawing RJ Octagonal type	999
1	16				P75T-0013U	Ring joint gasket SS TP347 Class 2500 ASME B16.20 Flange Standard-drawing RJ Octagonal type	999
1	18				P75T-0013W	Ring joint gasket SS TP347 Class 2500 ASME B16.20 Flange Standard-drawing RJ Octagonal type	999
1	20				P75T-0013V	Ring joint gasket SS TP347 Class 2500 ASME B16.20 Flange Standard-drawing RJ Octagonal type	999
1	24				P75T-00146	Ring joint gasket SS TP347 Class 2500 ASME B16.20 Flange Standard-drawing RJ Octagonal type	999

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-1				See Attached Bolt Table	Bolt and Nut ASTM A453 Grade 660 Class C / A453 Grade 660 Class C ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	1.5				See Attached Bolt Table	Bolt and Nut ASTM A453 Grade 660 Class C / A453 Grade 660 Class C ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
1	2				See Attached Bolt Table	Bolt and Nut ASTM A453 Grade 660 Class C / A453 Grade 660 Class C ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	3-12				See Attached Bolt Table	Bolt and Nut ASTM A453 Grade 660 Class C / A453 Grade 660 Class C ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
1	14-24				See Attached Bolt Table	Bolt and Nut ASTM A453 Grade 660 Class C / A453 Grade 660 Class C ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	999

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81K-001MV	Gate valve ASTM A182 Grade F347 Class 2500 API 602 Flange ASME B16.5 RJ Trim SS347 WB-BG-OS&Y Handwheel operated Fluid-2 Fluid-5	
1	0.75				P81K-001MW	Gate valve ASTM A182 Grade F347 Class 2500 API 602 Flange ASME B16.5 RJ Trim SS347 WB-BG-OS&Y Handwheel operated Fluid-2 Fluid-5	
1	1				P81K-001MX	Gate valve ASTM A182 Grade F347 Class 2500 API 602 Flange ASME B16.5 RJ Trim SS347 WB-BG-OS&Y Handwheel operated Fluid-2 Fluid-5	
1	1.5				P81K-001MY	Gate valve ASTM A182 Grade F347 Class 2500 API 602 Flange ASME B16.5 RJ Trim SS347 WB-BG-OS&Y Handwheel operated Fluid-2 Fluid-5	
1	3				P81L-0037A	Gate valve ASTM A351 Grade CF8C Class 2500 API 600 BW Sch80S Trim SS347 PSB-BG-OS&Y Gear operated Fluid-2 Fluid-5	
1	10				P81L-003HA	Gate valve ASTM A351 Grade CF8C Class 2500 API 600 BW Sch100 Trim SS347 PSB-BG-OS&Y Gear operated Fluid-2 Fluid-5	
1	14				P81L-0037B	Gate valve ASTM A351 Grade CF8C Class 2500 API 600 BW Sch100 Trim SS347 PSB-BG-OS&Y Gear operated Fluid-2 Fluid-5	
1	16				P81L-0037C	Gate valve ASTM A351 Grade CF8C Class 2500 API 600 BW Sch100 Trim SS347 PSB-BG-OS&Y Gear operated Fluid-2 Fluid-5	
1	18				P81L-0037D	Gate valve ASTM A351 Grade CF8C Class 2500 API 600 BW Sch100 Trim SS347 PSB-BG-OS&Y Gear operated Fluid-2 Fluid-5	
1	20				P81L-0037E	Gate valve ASTM A351 Grade CF8C Class 2500 API 600 BW Sch100 Trim SS347 PSB-BG-OS&Y Gear operated Fluid-2 Fluid-5	
1	24				P81L-0037F	Gate valve ASTM A351 Grade CF8C Class 2500 API 600 BW Sch100 Trim SS347 PSB-BG-OS&Y Gear operated Fluid-2 Fluid-5	

PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P72K-000JH	Paddle blank ASTM A182 Grade F347 Class 2500 Standard-drawing Flange ASME B16.5 RJ	
1	0.75				P72K-000JJ	Paddle blank ASTM A182 Grade F347 Class 2500 Standard-drawing Flange ASME B16.5 RJ	
1	1				P72K-000JK	Paddle blank ASTM A182 Grade F347 Class 2500 Standard-drawing Flange ASME B16.5 RJ	
1	1.5				P72K-000JL	Paddle blank ASTM A182 Grade F347 Class 2500 Standard-drawing Flange ASME B16.5 RJ	
1	2				P72K-000JP	Paddle blank ASTM A182 Grade F347 Class 2500 Standard-drawing Flange ASME B16.5 RJ	
1	3				P72K-000JR	Paddle blank ASTM A182 Grade F347 Class 2500 Standard-drawing Flange ASME B16.5 RJ	
1	4				P72K-000JS	Paddle blank ASTM A182 Grade F347 Class 2500 Standard-drawing Flange ASME B16.5 RJ	
1	6				P72K-000JT	Paddle blank ASTM A182 Grade F347 Class 2500 Standard-drawing Flange ASME B16.5 RJ	
1	8				P72K-000JU	Paddle blank ASTM A182 Grade F347 Class 2500 Standard-drawing Flange ASME B16.5 RJ	
1	10				P72K-000JM	Paddle blank ASTM A182 Grade F347 Class 2500 Standard-drawing Flange ASME B16.5 RJ	
1	12				P72K-000JN	Paddle blank ASTM A182 Grade F347 Class 2500 Standard-drawing Flange ASME B16.5 RJ	
1	14				P72K-000K6	Paddle blank ASTM A182 Grade F347 Class 2500 Standard-drawing Flange Standard-drawing RJ	
1	16				P72K-000K7	Paddle blank ASTM A182 Grade F347 Class 2500 Standard-drawing Flange Standard-drawing RJ	
1	18				P72K-000K8	Paddle blank ASTM A182 Grade F347 Class 2500 Standard-drawing Flange Standard-drawing RJ	

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PADDLE BLANK (PB)							
OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	20				P72K-000K9	Paddle blank ASTM A182 Grade F347 Class 2500 Standard-drawing Flange Standard-drawing RJ	
1	24				P72K-000KA	Paddle blank ASTM A182 Grade F347 Class 2500 Standard-drawing Flange Standard-drawing RJ	

PADDLE SPACER (PS)							
OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P72K-000JV	Paddle spacer ASTM A182 Grade F347 Class 2500 Standard-drawing Flange ASME B16.5 RJ	
1	0.75				P72K-000JW	Paddle spacer ASTM A182 Grade F347 Class 2500 Standard-drawing Flange ASME B16.5 RJ	
1	1				P72K-000JX	Paddle spacer ASTM A182 Grade F347 Class 2500 Standard-drawing Flange ASME B16.5 RJ	
1	1.5				P72K-000JY	Paddle spacer ASTM A182 Grade F347 Class 2500 Standard-drawing Flange ASME B16.5 RJ	
1	2				P72K-000K1	Paddle spacer ASTM A182 Grade F347 Class 2500 Standard-drawing Flange ASME B16.5 RJ	
1	3				P72K-000K2	Paddle spacer ASTM A182 Grade F347 Class 2500 Standard-drawing Flange ASME B16.5 RJ	
1	4				P72K-000K3	Paddle spacer ASTM A182 Grade F347 Class 2500 Standard-drawing Flange ASME B16.5 RJ	
1	6				P72K-000K4	Paddle spacer ASTM A182 Grade F347 Class 2500 Standard-drawing Flange ASME B16.5 RJ	
1	8				P72K-000K5	Paddle spacer ASTM A182 Grade F347 Class 2500 Standard-drawing Flange ASME B16.5 RJ	
1	10				P72K-000JZ	Paddle spacer ASTM A182 Grade F347 Class 2500 Standard-drawing Flange ASME B16.5 RJ	
1	12				P72K-000K0	Paddle spacer ASTM A182 Grade F347 Class 2500 Standard-drawing Flange ASME B16.5 RJ	
1	14				P72K-000KB	Paddle spacer ASTM A182 Grade F347 Class 2500 Standard-drawing Flange Standard-drawing RJ	
1	16				P72K-000KC	Paddle spacer ASTM A182 Grade F347 Class 2500 Standard-drawing Flange Standard-drawing RJ	
1	18				P72K-000KD	Paddle spacer ASTM A182 Grade F347 Class 2500 Standard-drawing Flange Standard-drawing RJ	
1	20				P72K-000KE	Paddle spacer ASTM A182 Grade F347 Class 2500 Standard-drawing Flange Standard-drawing RJ	
1	24				P72K-000KF	Paddle spacer ASTM A182 Grade F347 Class 2500 Standard-drawing Flange Standard-drawing RJ	

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BOLT TABLE (B_P0MS , STUD ASME RJ, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	125	P80S-03W4E	R13	P75T-000JX
0.75	4	0.750	130	P80S-03W4F	R16	P75T-000JY
1	4	0.875	140	P80S-03W7L	R18	P75T-000JZ
1.5	4	1.125	175	P80S-03WDE	R23	P75T-000K0
2	8	1.000	180	P80S-03WA4	R26	P75T-000P3
3	8	1.250	260	P80S-03WHF	R32	P75T-000P4
4	8	1.500	305	P80S-03WPS	R38	P75T-0011J
6	8	2.000	410	P80S-03X59	R47	P75T-000M9
8	12	2.000	450	P80S-03X5H	R51	P75T-000MA
10	12	2.500	575	P80S-03XDF	R55	P75T-000K1
12	12	2.750	635	P80S-03XH1	R60	P75T-000K2
14	14	3.000	695	P80S-03XLP	R64	P75T-0013T
16	14	3.000	755	P80S-03XM2	R68	P75T-0013U
18	16	3.000	815		R72	P75T-0013W
20	16	3.000	875		R76	P75T-0013V
24	18	3.000	950	P80S-03XMB	R81	P75T-00146

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PIPING CLASS

P0MS

REV NO. 2

BRANCH TABLE (T_P0MS)

RUN PIPE SIZE (in) \ BRANCH SIZE (in)	0.5	0.75	1	1.5	2	3	4	6	8	10	12	14	16	18	20	24
0.5	TS															
0.75		TS														
1		TR	TS													
1.5		TR	TR	TS												
2		L	TR	TR	TS											
3		L	L	TR	TR	TS										
4	L	L	L	L	TR	TR	TS									
6	L	L	L	L	L	TR	TR	TS								
8		L	L	L	L	L	TR	TR	TS							
10		L	L	L	L	L	TR	TR	TR	TS						
12		L	L	L	L	L	L	TR	TR	TR	TS					
14		L	L	L	L	L	L	TR	TR	TR	TR	TS				
16		L	L	L	L	L	L	TR	TR	TR	TR	TR	TS			
18		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TS		
20		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TR	TS	
24		L	L	L	L	L	L	L	9PD	TR	TR	TR	TR	TR	TR	TS

9PD : REINFORCING PAD 90 DEG
TS : STRAIGHT TEE
TR : REDUCING TEE
L : OUTLET

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PIPING CLASS

P1AH02 REV NO. 2

Material : Killed CS
Rating : ASME CLASS 2500
Flange Face : RJ
C.A.(mm) : 1.50
Gasket : Ring Octagonal
Service : PROCESS - HYDROGEN OR HYDROGEN RICH HYDROCARBON MIXTURE
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
16	PIPE CLASS SHALL BE USED WITHIN THE NORMAL OPERATING PRESSURE/TEMPERATURE LIMITS SPECIFIED IN API RP 941. PRESSURE / TEMPERATURE SPECIFIED IN THE PIPE CLASS EXCEEDING API RP 941 LIMITS SHOULD BE REGARDED AS UPSET CONDITIONS RATHER THAN FOR CONTINUOUS SERVICE

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
541	NPT(F) (F)

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PIPING CLASS
P1AH02 REV NO. 2

PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P01A-000XM	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	0.75		SCH160		P01A-0010R	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1		SCH160		P01A-0014M	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1.5		SCH160		P01A-0015J	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P02A-000UR	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	0.75		SCH160		P02A-000V8	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1		SCH160		P02A-000V7	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1.5		SCH160		P02A-000V9	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P03A-0018K	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	0.75		SCH160		P03A-000RS	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1		SCH160		P03A-000RR	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1.5		SCH160		P03A-000RP	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P21A-002TV	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	0.75		SCH160		P21A-002B8	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1		SCH160		P21A-002B6	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5		SCH160		P21A-002B9	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75	SCH160	SCH160	P24A-004B6	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.75	SCH160	SCH160	P24A-004B2	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	1	SCH160	SCH160	P24A-004BA	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	XS	P27A-00HP0	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.5	SCH160	XS	P27A-00HP1	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.75	SCH160	SCH160	P27A-002T5	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.5	SCH160	XS	P27A-00HP2	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.75	SCH160	SCH160	P27A-002T7	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	1	SCH160	SCH160	P27A-002T4	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	XS	P28A-00EYC	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.5	SCH160	XS	P28A-00EYD	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.75	SCH160	SCH160	P28A-002TU	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.5	SCH160	XS	P28A-00EYE	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.75	SCH160	SCH160	P28A-002TW	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	1	SCH160	SCH160	P28A-002TR	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P29A-002KS	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	0.75		SCH160		P29A-000TX	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1		SCH160		P29A-000TY	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5		SCH160		P29A-000TZ	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P41A-000B9	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		XXS		P41A-000BA	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		XXS		P41A-000D8	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		XXS		P41A-000D9	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30B-0002D	Plug ASTM A105 ASME B16.11 NPT Round head	
1	0.75				P30B-0002E	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1				P30B-0002F	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1.5				P30B-0002G	Plug ASTM A105 ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P61B-00CW8	Flange WN ASTM A105 Class 2500 ASME B16.5 RJ	
1	0.75		SCH160		P61B-00667	Flange WN ASTM A105 Class 2500 ASME B16.5 RJ	
1	1		SCH160		P61B-00668	Flange WN ASTM A105 Class 2500 ASME B16.5 RJ	
1	1.5		SCH160		P61B-00669	Flange WN ASTM A105 Class 2500 ASME B16.5 RJ	
541	0.5				P61B-00DM4	Flange NPT ASTM A105 Class 2500 ASME B16.5 RJ	
541	0.75				P61B-00CWE	Flange NPT ASTM A105 Class 2500 ASME B16.5 RJ	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67B-001WN	Blind flange ASTM A105 Class 2500 ASME B16.5 RJ	
1	0.75				P67B-001WP	Blind flange ASTM A105 Class 2500 ASME B16.5 RJ	
1	1				P67B-001W2	Blind flange ASTM A105 Class 2500 ASME B16.5 RJ	
1	1.5				P67B-001W3	Blind flange ASTM A105 Class 2500 ASME B16.5 RJ	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P75T-000KT	Ring joint gasket Soft iron Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	0.75				P75T-000KU	Ring joint gasket Soft iron Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	1				P75T-000KV	Ring joint gasket Soft iron Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	1.5				P75T-000KW	Ring joint gasket Soft iron Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-1				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	1.5				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82B-0025V	Globe valve ASTM A105 Class 2500 API 602 BW XS Trim SS316L Body and disc seats Stellite-6 WB-BG-OS&Y Handwheel operated	
1	0.75				P82B-0025W	Globe valve ASTM A105 Class 2500 API 602 BW Sch160 Trim SS316L Body and disc seats Stellite-6 WB-BG-OS&Y Handwheel operated	
1	1				P82B-0025X	Globe valve ASTM A105 Class 2500 API 602 BW Sch160 Trim SS316L Body and disc seats Stellite-6 WB-BG-OS&Y Handwheel operated	
1	1.5				P82B-0025Y	Globe valve ASTM A105 Class 2500 API 602 BW Sch160 Trim SS316L Body and disc seats Stellite-6 WB-BG-OS&Y Handwheel operated	

PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P72B-000LL	Paddle blank ASTM A105 Class 2500 Standard-drawing Flange ASME B16.5 RJ	
1	0.75				P72B-000LM	Paddle blank ASTM A105 Class 2500 Standard-drawing Flange ASME B16.5 RJ	
1	1				P72B-000LN	Paddle blank ASTM A105 Class 2500 Standard-drawing Flange ASME B16.5 RJ	
1	1.5				P72B-000LP	Paddle blank ASTM A105 Class 2500 Standard-drawing Flange ASME B16.5 RJ	

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PADDLE SPACER (PS)							
OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P72B-000L7	Paddle spacer ASTM A105 Class 2500 Standard-drawing Flange ASME B16.5 RJ	
1	0.75				P72B-000L8	Paddle spacer ASTM A105 Class 2500 Standard-drawing Flange ASME B16.5 RJ	
1	1				P72B-000L9	Paddle spacer ASTM A105 Class 2500 Standard-drawing Flange ASME B16.5 RJ	
1	1.5				P72B-000LA	Paddle spacer ASTM A105 Class 2500 Standard-drawing Flange ASME B16.5 RJ	

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BOLT TABLE (B_P1AH02 , STUD ASME RJ, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	125	P80S-003XN	R13	P75T-000KT
0.75	4	0.750	130	P80S-003XP	R16	P75T-000KU
1	4	0.875	140	P80S-0041D	R18	P75T-000KV
1.5	4	1.125	175	P80S-0046S	R23	P75T-000KW

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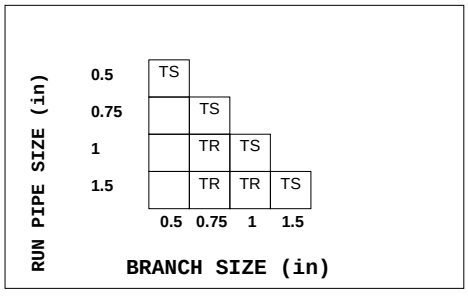
BRANCH TABLE (T_P1AH02)



TS : STRAIGHT TEE
TR : REDUCING TEE

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PIPING CLASS

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Material : SS321
Rating : ASME CLASS 2500
Flange Face : RJ
C.A.(mm) : 1.50
Gasket : Ring Octagonal
Service : PROCESS -WET LOW SEVERITY SOUR SERVICE SUBJECT TO NACE + HYDROGEN SERVICE
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
5	BOLTING CONFIRMING TO B7M / 2HM SHALL BE USED UNDER CONDITIONS (A) DIRECT EXPOSURE TO SOUR ENVIRONMENTS (B) WHEN THE BOLTING WILL BE BURIED OR INSULATED

DETAIL NOTES :

NO.	DESCRIPTION
999	HOLD ITEMS. ORDER PLACEMENT SHALL NOT BE DONE BEFORE RELEASING HOLD.

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
200	WITH JACK SCREW (FO)
541	NPT(F) (F)
4004	ALTERNATIVE MATERIAL (INCOLOY 825) FOR DRAIN LINE (9L,F,L,P)
4208	45 DEGREE LATERAL STRAIGHT TEE (TLS)
4601	Y-PATTERN (W)

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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P01J-002FE	Pipe ASTM A312 Grade TP321 Seamless ASME B36.10M/B36.19M PE Moderate wet H2S service	
1	0.75		SCH160		P01J-002FF	Pipe ASTM A312 Grade TP321 Seamless ASME B36.10M/B36.19M PE Moderate wet H2S service	
1	1		SCH160		P01J-002FG	Pipe ASTM A312 Grade TP321 Seamless ASME B36.10M/B36.19M PE Moderate wet H2S service	
1	1.5		SCH160		P01J-002FH	Pipe ASTM A312 Grade TP321 Seamless ASME B36.10M/B36.19M PE Moderate wet H2S service	
1	2		SCH160		P01J-002FJ	Pipe ASTM A312 Grade TP321 Seamless ASME B36.10M/B36.19M BE Moderate wet H2S service	
1	3		XXS		P01J-002G9	Pipe ASTM A312 Grade TP321 Seamless ASME B36.10M/B36.19M BE Moderate wet H2S service	
1	4		XXS		P01J-002GA	Pipe ASTM A312 Grade TP321 Seamless ASME B36.10M/B36.19M BE Moderate wet H2S service	
1	6		23.70mm		P01J-002WJ	Pipe ASTM A312 Grade TP321 Seamless ASME B36.10M/B36.19M BE Moderate wet H2S service	
1	8		SCH160		P01J-002WK	Pipe ASTM A358 Grade 321 Class 1 EFW ASME B36.10M/B36.19M BE Moderate wet H2S service	
1	10		SCH160		P01J-002G1	Pipe ASTM A358 Grade 321 Class 1 EFW ASME B36.10M/B36.19M BE Moderate wet H2S service	
1	12		SCH160		P01J-002G2	Pipe ASTM A358 Grade 321 Class 1 EFW ASME B36.10M/B36.19M BE Moderate wet H2S service	
1	14		SCH140		P01J-002FR	Pipe ASTM A358 Grade 321 Class 1 EFW ASME B36.10M/B36.19M BE Moderate wet H2S service	
1	16		SCH140		P01J-002FS	Pipe ASTM A358 Grade 321 Class 1 EFW ASME B36.10M/B36.19M BE Moderate wet H2S service	
1	18		SCH140		P01J-002FT	Pipe ASTM A358 Grade 321 Class 1 EFW ASME B36.10M/B36.19M BE Moderate wet H2S service	
1	20		SCH140		P01J-002N0	Pipe ASTM A358 Grade 321 Class 1 EFW ASME B36.10M/B36.19M BE Moderate wet H2S service	
4004	1		SCH80S		P01M-000ER	Pipe ASTM B423 UNS N08825 Seamless ASME B36.10M/B36.19M PE Licensor-2	
4004	2		SCH160		P01M-000GC	Pipe ASTM B423 UNS N08825 Seamless ASME B36.10M/B36.19M BE Licensor-2	
4004	3		SCH160		P01M-000GD	Pipe ASTM B423 UNS N08825 Seamless ASME B36.10M/B36.19M BE Licensor-2	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P02J-001YV	90 degree elbow ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Long radius Moderate wet H2S service	
1	0.75		SCH160		P02J-001YW	90 degree elbow ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Long radius Moderate wet H2S service	
1	1		SCH160		P02J-001YX	90 degree elbow ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Long radius Moderate wet H2S service	
1	1.5		SCH160		P02J-001YY	90 degree elbow ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Long radius Moderate wet H2S service	
1	2		SCH160		P02J-001YZ	90 degree elbow ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Long radius Moderate wet H2S service	
1	3		XXS		P02J-001ZP	90 degree elbow ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Long radius Moderate wet H2S service	
1	4		XXS		P02J-001ZR	90 degree elbow ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Long radius Moderate wet H2S service	
1	6		23.70mm		P02J-0028W	90 degree elbow ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Long radius Moderate wet H2S service	
1	8		SCH160		P02J-0028X	90 degree elbow ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Long radius Moderate wet H2S service	
1	10		SCH160		P02J-001ZF	90 degree elbow ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Long radius Moderate wet H2S service	
1	12		SCH160		P02J-001ZG	90 degree elbow ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Long radius Moderate wet H2S service	
1	14		SCH140		P02J-001Z5	90 degree elbow ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Long radius Moderate wet H2S service	
1	16		SCH140		P02J-001Z6	90 degree elbow ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Long radius Moderate wet H2S service	
1	18		SCH140		P02J-001Z7	90 degree elbow ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Long radius Moderate wet H2S service	
1	20		SCH140		P02J-0022C	90 degree elbow ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Long radius Moderate wet H2S service	
4004	1		SCH80S		P02M-000DA	90 degree elbow ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Long radius Licensor-2	
4004	2		SCH160		P02M-000F4	90 degree elbow ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Long radius Licensor-2	
4004	3		SCH160		P02M-000F5	90 degree elbow ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Long radius Licensor-2	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P03J-001WA	45 degree elbow ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Long radius Moderate wet H2S service	
1	0.75		SCH160		P03J-001WB	45 degree elbow ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Long radius Moderate wet H2S service	
1	1		SCH160		P03J-001WC	45 degree elbow ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Long radius Moderate wet H2S service	
1	1.5		SCH160		P03J-001WD	45 degree elbow ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Long radius Moderate wet H2S service	
1	2		SCH160		P03J-001WE	45 degree elbow ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Long radius Moderate wet H2S service	
1	3		XXS		P03J-001X5	45 degree elbow ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Long radius Moderate wet H2S service	
1	4		XXS		P03J-001X6	45 degree elbow ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Long radius Moderate wet H2S service	
1	6		23.70mm		P03J-0028L	45 degree elbow ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Long radius Moderate wet H2S service	
1	8		SCH160		P03J-0028M	45 degree elbow ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Long radius Moderate wet H2S service	

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45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	10		SCH160		P03J-001WX	45 degree elbow ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Long radius Moderate wet H2S service	
1	12		SCH160		P03J-001WY	45 degree elbow ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Long radius Moderate wet H2S service	
1	14		SCH140		P03J-001WL	45 degree elbow ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Long radius Moderate wet H2S service	
1	16		SCH140		P03J-001WM	45 degree elbow ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Long radius Moderate wet H2S service	
1	18		SCH140		P03J-001WN	45 degree elbow ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Long radius Moderate wet H2S service	
1	20		SCH140		P03J-00224	45 degree elbow ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Long radius Moderate wet H2S service	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P21J-001MV	Straight tee ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	0.75		SCH160		P21J-001MW	Straight tee ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	1		SCH160		P21J-001MX	Straight tee ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	1.5		SCH160		P21J-001MY	Straight tee ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	2		SCH160		P21J-001MZ	Straight tee ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	3		XXS		P21J-001NP	Straight tee ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	4		XXS		P21J-001NR	Straight tee ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	6		23.70mm		P21J-001YU	Straight tee ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	8		SCH160		P21J-001YV	Straight tee ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	10		SCH160		P21J-001NF	Straight tee ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	12		SCH160		P21J-001NG	Straight tee ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	14		SCH140		P21J-001N5	Straight tee ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	16		SCH140		P21J-001N6	Straight tee ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	18		SCH140		P21J-001N7	Straight tee ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	20		SCH140		P21J-001SA	Straight tee ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	

STRAIGHT LATERAL TEE (TLS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75		SCH160		P22J-00051	Straight lateral-tee ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW 60 degree Moderate wet H2S service	
1	1		SCH160		P22J-0005R	Straight lateral-tee ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW 60 degree Moderate wet H2S service	
1	1.5		SCH160		P22J-0005S	Straight lateral-tee ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW 60 degree Moderate wet H2S service	
1	2		SCH160		P22J-0005T	Straight lateral-tee ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW 60 degree Moderate wet H2S service	
1	3		XXS		P22J-0005U	Straight lateral-tee ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW 60 degree Moderate wet H2S service	
1	4		XXS		P22J-0005V	Straight lateral-tee ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW 60 degree Moderate wet H2S service	
1	6		23.70mm		P22J-0005W	Straight lateral-tee ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW 60 degree Moderate wet H2S service	
1	8		SCH160		P22J-00063	Straight lateral-tee ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW 60 degree Moderate wet H2S service	
1	10		SCH160		P22J-0005X	Straight lateral-tee ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW 60 degree Moderate wet H2S service	
1	12		SCH160		P22J-0005Y	Straight lateral-tee ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW 60 degree Moderate wet H2S service	
1	14		SCH140		P22J-0005Z	Straight lateral-tee ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW 60 degree Moderate wet H2S service	
1	16		SCH140		P22J-00060	Straight lateral-tee ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW 60 degree Moderate wet H2S service	
1	18		SCH140		P22J-00061	Straight lateral-tee ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW 60 degree Moderate wet H2S service	
1	20		SCH140		P22J-00062	Straight lateral-tee ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW 60 degree Moderate wet H2S service	
4208	2		SCH160		P22J-0004C	Straight lateral-tee ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW 45 degree Moderate wet H2S service	
4208	3		XXS		P22J-0004R	Straight lateral-tee ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW 45 degree Moderate wet H2S service	
4208	4		XXS		P22J-0004S	Straight lateral-tee ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW 45 degree Moderate wet H2S service	
4208	6		23.70mm		P22J-0004T	Straight lateral-tee ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW 45 degree Moderate wet H2S service	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75	SCH160	SCH160	P24J-0072M	Reducing tee ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	1.5	0.75	SCH160	SCH160	P24J-0072N	Reducing tee ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	

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REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5	1	SCH160	SCH160	P24J-0072P	Reducing tee ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	2	1	SCH160	SCH160	P24J-0072R	Reducing tee ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	2	1.5	SCH160	SCH160	P24J-0072S	Reducing tee ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	3	1.5	XXS	SCH160	P24J-0089L	Reducing tee ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	3	2	XXS	SCH160	P24J-0089M	Reducing tee ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	4	2	XXS	SCH160	P24J-0089N	Reducing tee ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	4	3	XXS	XXS	P24J-0074P	Reducing tee ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	6	3	23.70mm	XXS	P24J-0089P	Reducing tee ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	6	4	23.70mm	XXS	P24J-0089R	Reducing tee ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	8	4	SCH160	XXS	P24J-008A3	Reducing tee ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	8	6	SCH160	23.70mm	P24J-0089S	Reducing tee ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	10	4	SCH160	XXS	P24J-008AD	Reducing tee ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	10	6	SCH160	23.70mm	P24J-008AE	Reducing tee ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	10	8	SCH160	SCH160	P24J-008AB	Reducing tee ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	12	6	SCH160	23.70mm	P24J-008AF	Reducing tee ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	12	8	SCH160	SCH160	P24J-008AC	Reducing tee ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	12	10	SCH160	SCH160	P24J-0074C	Reducing tee ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	14	6	SCH140	23.70mm	P24J-0089X	Reducing tee ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	14	8	SCH140	SCH160	P24J-0089Y	Reducing tee ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	14	10	SCH140	SCH160	P24J-008AG	Reducing tee ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	14	12	SCH140	SCH160	P24J-008AH	Reducing tee ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	16	6	SCH140	23.70mm	P24J-008A2	Reducing tee ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	16	8	SCH140	SCH160	P24J-0089Z	Reducing tee ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	16	10	SCH140	SCH160	P24J-008AJ	Reducing tee ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	16	12	SCH140	SCH160	P24J-007SK	Reducing tee ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	16	14	SCH140	SCH140	P24J-0073D	Reducing tee ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	18	8	SCH140	SCH160	P24J-008A1	Reducing tee ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	18	10	SCH140	SCH160	P24J-008AK	Reducing tee ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	18	12	SCH140	SCH160	P24J-008AL	Reducing tee ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	18	14	SCH140	SCH140	P24J-0073J	Reducing tee ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	18	16	SCH140	SCH140	P24J-0073K	Reducing tee ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	20	8	SCH140	SCH160	P24J-008A0	Reducing tee ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	20	10	SCH140	SCH160	P24J-008AM	Reducing tee ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	20	12	SCH140	SCH160	P24J-007SS	Reducing tee ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	20	14	SCH140	SCH140	P24J-007L7	Reducing tee ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	20	16	SCH140	SCH140	P24J-007GX	Reducing tee ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	20	18	SCH140	SCH140	P24J-007NB	Reducing tee ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	

REDUCING LATERAL TEE (TLR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	12	8	SCH160	SCH160	P25J-001MX	Reducing lateral-tee ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW 45 degree Moderate wet H2S service	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	SCH160	P27J-005XR	Concentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	1	0.5	SCH160	SCH160	P27J-005XS	Concentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	1	0.75	SCH160	SCH160	P27J-005XT	Concentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	1.5	0.5	SCH160	SCH160	P27J-005XU	Concentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	1.5	0.75	SCH160	SCH160	P27J-005XV	Concentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	1.5	1	SCH160	SCH160	P27J-005XW	Concentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	2	0.75	SCH160	SCH160	P27J-005XX	Concentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	2	1	SCH160	SCH160	P27J-005XY	Concentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	2	1.5	SCH160	SCH160	P27J-005XZ	Concentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	3	1.5	XXS	SCH160	P27J-00701	Concentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	3	2	XXS	SCH160	P27J-00702	Concentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	4	1.5	XXS	SCH160	P27J-00703	Concentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	4	2	XXS	SCH160	P27J-00704	Concentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	4	3	XXS	XXS	P27J-00600	Concentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	6	3	23.70mm	XXS	P27J-00706	Concentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	6	4	23.70mm	XXS	P27J-00707	Concentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	8	4	SCH160	XXS	P27J-00705	Concentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	8	6	SCH160	23.70mm	P27J-00708	Concentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	10	4	SCH160	XXS	P27J-0070M	Concentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	10	6	SCH160	23.70mm	P27J-0070X	Concentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	10	8	SCH160	SCH160	P27J-0070N	Concentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	12	6	SCH160	23.70mm	P27J-0070W	Concentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	12	8	SCH160	SCH160	P27J-0070P	Concentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	12	10	SCH160	SCH160	P27J-005ZH	Concentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	14	6	SCH140	23.70mm	P27J-0070D	Concentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	14	8	SCH140	SCH160	P27J-0070E	Concentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	14	10	SCH140	SCH160	P27J-0070U	Concentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	14	12	SCH140	SCH160	P27J-0070V	Concentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	16	8	SCH140	SCH160	P27J-0070F	Concentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	16	10	SCH140	SCH160	P27J-0070T	Concentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	16	12	SCH140	SCH160	P27J-006HN	Concentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	16	14	SCH140	SCH140	P27J-005YM	Concentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	18	10	SCH140	SCH160	P27J-0070R	Concentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	18	12	SCH140	SCH160	P27J-0070S	Concentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	18	14	SCH140	SCH140	P27J-005YS	Concentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	18	16	SCH140	SCH140	P27J-005YT	Concentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	20	12	SCH140	SCH160	P27J-006HV	Concentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	20	14	SCH140	SCH140	P27J-006D2	Concentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	20	16	SCH140	SCH140	P27J-006AJ	Concentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	20	18	SCH140	SCH140	P27J-006D1	Concentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	SCH160	P28J-005YM	Eccentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	1	0.5	SCH160	SCH160	P28J-005YN	Eccentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	1	0.75	SCH160	SCH160	P28J-005YP	Eccentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	1.5	0.5	SCH160	SCH160	P28J-005YR	Eccentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	1.5	0.75	SCH160	SCH160	P28J-005YS	Eccentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	1.5	1	SCH160	SCH160	P28J-005YT	Eccentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	2	0.75	SCH160	SCH160	P28J-005YU	Eccentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	2	1	SCH160	SCH160	P28J-005YV	Eccentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	2	1.5	SCH160	SCH160	P28J-005YW	Eccentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	3	1.5	XXS	SCH160	P28J-0071H	Eccentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	3	2	XXS	SCH160	P28J-0071J	Eccentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	4	1.5	XXS	SCH160	P28J-0071K	Eccentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	4	2	XXS	SCH160	P28J-0071L	Eccentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	4	3	XXS	XXS	P28J-0060X	Eccentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	6	3	23.70mm	XXS	P28J-0071M	Eccentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	6	4	23.70mm	XXS	P28J-0071N	Eccentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	8	4	SCH160	XXS	P28J-0071P	Eccentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	8	6	SCH160	23.70mm	P28J-0071R	Eccentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	10	4	SCH160	XXS	P28J-00724	Eccentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	10	6	SCH160	23.70mm	P28J-00725	Eccentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	10	8	SCH160	SCH160	P28J-00726	Eccentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	12	6	SCH160	23.70mm	P28J-00727	Eccentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	12	8	SCH160	SCH160	P28J-00728	Eccentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	12	10	SCH160	SCH160	P28J-0060E	Eccentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	14	6	SCH140	23.70mm	P28J-0071W	Eccentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14	8	SCH140	SCH160	P28J-0071X	Eccentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	14	10	SCH140	SCH160	P28J-00729	Eccentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	14	12	SCH140	SCH160	P28J-0072A	Eccentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	16	8	SCH140	SCH160	P28J-0071Y	Eccentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	16	10	SCH140	SCH160	P28J-0072B	Eccentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	16	12	SCH140	SCH160	P28J-006K0	Eccentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	16	14	SCH140	SCH140	P28J-005ZJ	Eccentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	18	10	SCH140	SCH160	P28J-0072C	Eccentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	18	12	SCH140	SCH160	P28J-0072D	Eccentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	18	14	SCH140	SCH140	P28J-005ZN	Eccentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	18	16	SCH140	SCH140	P28J-005ZP	Eccentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	20	12	SCH140	SCH160	P28J-006K6	Eccentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	20	14	SCH140	SCH140	P28J-006E1	Eccentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	20	16	SCH140	SCH140	P28J-006BY	Eccentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	20	18	SCH140	SCH140	P28J-006E2	Eccentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P29J-003V0	Cap ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	0.75		SCH160		P29J-003V1	Cap ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	1		SCH160		P29J-003V2	Cap ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	1.5		SCH160		P29J-003V3	Cap ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	2		SCH160		P29J-003V9	Cap ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	3		XXS		P29J-003VN	Cap ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	4		XXS		P29J-003VP	Cap ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	6		23.70mm		P29J-0042F	Cap ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	8		SCH160		P29J-0042G	Cap ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	10		SCH160		P29J-003VE	Cap ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	12		SCH160		P29J-003VF	Cap ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	14		SCH140		P29J-003V6	Cap ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	16		SCH140		P29J-003V7	Cap ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	18		SCH140		P29J-003V8	Cap ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	20		SCH140		P29J-003XM	Cap ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P41J-001T0	Straight nipple ASTM A312 Grade TP321 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Moderate wet H2S service	
1	0.75		XXS		P41J-001T1	Straight nipple ASTM A312 Grade TP321 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Moderate wet H2S service	
1	1		XXS		P41J-001T2	Straight nipple ASTM A312 Grade TP321 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Moderate wet H2S service	
1	1.5		XXS		P41J-001T3	Straight nipple ASTM A312 Grade TP321 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Moderate wet H2S service	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2	0.75	SCH160	SCH160	P31K-00ESV	Outlet ASTM A182 Grade F321 MSS SP-97 BW Moderate wet H2S service	
1	3	0.75	XXS	SCH160	P31K-00G87	Outlet ASTM A182 Grade F321 MSS SP-97 BW Moderate wet H2S service	
1	4	0.75	XXS	SCH160	P31K-00G88	Outlet ASTM A182 Grade F321 MSS SP-97 BW Moderate wet H2S service	
1	6	0.75	23.70mm	SCH160	P31K-00G89	Outlet ASTM A182 Grade F321 MSS SP-97 BW Moderate wet H2S service	
1	8	0.75	SCH160	SCH160	P31K-00G8D	Outlet ASTM A182 Grade F321 MSS SP-97 BW Moderate wet H2S service	
1	10	0.75	SCH160	SCH160	P31K-00G8Y	Outlet ASTM A182 Grade F321 MSS SP-97 BW Moderate wet H2S service	
1	12	0.75	SCH160	SCH160	P31K-00G90	Outlet ASTM A182 Grade F321 MSS SP-97 BW Moderate wet H2S service	
1	14	0.75	SCH140	SCH160	P31K-00ETM	Outlet ASTM A182 Grade F321 MSS SP-97 BW Moderate wet H2S service	
1	16	0.75	SCH140	SCH160	P31K-00ETU	Outlet ASTM A182 Grade F321 MSS SP-97 BW Moderate wet H2S service	
1	18	0.75	SCH140	SCH160	P31K-00EU0	Outlet ASTM A182 Grade F321 MSS SP-97 BW Moderate wet H2S service	
1	20	0.75	SCH140	SCH160	P31K-00F59	Outlet ASTM A182 Grade F321 MSS SP-97 BW Moderate wet H2S service	
1	3	1	XXS	SCH160	P31K-00G80	Outlet ASTM A182 Grade F321 MSS SP-97 BW Moderate wet H2S service	
1	4	1	XXS	SCH160	P31K-00G81	Outlet ASTM A182 Grade F321 MSS SP-97 BW Moderate wet H2S service	
1	6	1	23.70mm	SCH160	P31K-00G8A	Outlet ASTM A182 Grade F321 MSS SP-97 BW Moderate wet H2S service	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	8	1	SCH160	SCH160	P31K-00G8E	Outlet ASTM A182 Grade F321 MSS SP-97 BW Moderate wet H2S service	
1	10	1	SCH160	SCH160	P31K-00G8Z	Outlet ASTM A182 Grade F321 MSS SP-97 BW Moderate wet H2S service	
1	12	1	SCH160	SCH160	P31K-00G91	Outlet ASTM A182 Grade F321 MSS SP-97 BW Moderate wet H2S service	
1	14	1	SCH140	SCH160	P31K-00ETN	Outlet ASTM A182 Grade F321 MSS SP-97 BW Moderate wet H2S service	
1	16	1	SCH140	SCH160	P31K-00ETV	Outlet ASTM A182 Grade F321 MSS SP-97 BW Moderate wet H2S service	
1	18	1	SCH140	SCH160	P31K-00EU1	Outlet ASTM A182 Grade F321 MSS SP-97 BW Moderate wet H2S service	
1	20	1	SCH140	SCH160	P31K-00F5A	Outlet ASTM A182 Grade F321 MSS SP-97 BW Moderate wet H2S service	
1	4	1.5	XXS	SCH160	P31K-00G82	Outlet ASTM A182 Grade F321 MSS SP-97 BW Moderate wet H2S service	
1	6	1.5	23.70mm	SCH160	P31K-00G8B	Outlet ASTM A182 Grade F321 MSS SP-97 BW Moderate wet H2S service	
1	8	1.5	SCH160	SCH160	P31K-00G83	Outlet ASTM A182 Grade F321 MSS SP-97 BW Moderate wet H2S service	
1	10	1.5	SCH160	SCH160	P31K-00EU9	Outlet ASTM A182 Grade F321 MSS SP-97 BW Moderate wet H2S service	
1	12	1.5	SCH160	SCH160	P31K-00EUC	Outlet ASTM A182 Grade F321 MSS SP-97 BW Moderate wet H2S service	
1	14	1.5	SCH140	SCH160	P31K-00ETP	Outlet ASTM A182 Grade F321 MSS SP-97 BW Moderate wet H2S service	
1	16	1.5	SCH140	SCH160	P31K-00ETW	Outlet ASTM A182 Grade F321 MSS SP-97 BW Moderate wet H2S service	
1	18	1.5	SCH140	SCH160	P31K-00EU2	Outlet ASTM A182 Grade F321 MSS SP-97 BW Moderate wet H2S service	
1	20	1.5	SCH140	SCH160	P31K-00F5B	Outlet ASTM A182 Grade F321 MSS SP-97 BW Moderate wet H2S service	
1	6	2	23.70mm	SCH160	P31K-00G8C	Outlet ASTM A182 Grade F321 MSS SP-97 BW Moderate wet H2S service	
1	8	2	SCH160	SCH160	P31K-00G84	Outlet ASTM A182 Grade F321 MSS SP-97 BW Moderate wet H2S service	
1	10	2	SCH160	SCH160	P31K-00G8V	Outlet ASTM A182 Grade F321 MSS SP-97 BW Moderate wet H2S service	
1	12	2	SCH160	SCH160	P31K-00G8X	Outlet ASTM A182 Grade F321 MSS SP-97 BW Moderate wet H2S service	
1	14	2	SCH140	SCH160	P31K-00ETR	Outlet ASTM A182 Grade F321 MSS SP-97 BW Moderate wet H2S service	
1	16	2	SCH140	SCH160	P31K-00ETX	Outlet ASTM A182 Grade F321 MSS SP-97 BW Moderate wet H2S service	
1	18	2	SCH140	SCH160	P31K-00EU3	Outlet ASTM A182 Grade F321 MSS SP-97 BW Moderate wet H2S service	
1	20	2	SCH140	SCH160	P31K-00F5C	Outlet ASTM A182 Grade F321 MSS SP-97 BW Moderate wet H2S service	
1	8	3	SCH160	XXS	P31K-00G85	Outlet ASTM A182 Grade F321 MSS SP-97 BW Moderate wet H2S service	
1	10	3	SCH160	XXS	P31K-00G8W	Outlet ASTM A182 Grade F321 MSS SP-97 BW Moderate wet H2S service	
1	12	3	SCH160	XXS	P31K-00EV7	Outlet ASTM A182 Grade F321 MSS SP-97 BW Moderate wet H2S service	
1	14	3	SCH140	XXS	P31K-00G8H	Outlet ASTM A182 Grade F321 MSS SP-97 BW Moderate wet H2S service	
1	16	3	SCH140	XXS	P31K-00FMN	Outlet ASTM A182 Grade F321 MSS SP-97 BW Moderate wet H2S service	
1	18	3	SCH140	XXS	P31K-00G8K	Outlet ASTM A182 Grade F321 MSS SP-97 BW Moderate wet H2S service	
1	20	3	SCH140	XXS	P31K-00FMZ	Outlet ASTM A182 Grade F321 MSS SP-97 BW Moderate wet H2S service	
1	12	4	SCH160	XXS	P31K-00EV8	Outlet ASTM A182 Grade F321 MSS SP-97 BW Moderate wet H2S service	
1	14	4	SCH140	XXS	P31K-00G8J	Outlet ASTM A182 Grade F321 MSS SP-97 BW Moderate wet H2S service	
1	16	4	SCH140	XXS	P31K-00FMP	Outlet ASTM A182 Grade F321 MSS SP-97 BW Moderate wet H2S service	
1	18	4	SCH140	XXS	P31K-00G8L	Outlet ASTM A182 Grade F321 MSS SP-97 BW Moderate wet H2S service	
1	20	4	SCH140	XXS	P31K-00FN0	Outlet ASTM A182 Grade F321 MSS SP-97 BW Moderate wet H2S service	
1	18	6	SCH140	23.70mm	P31K-00G8M	Outlet ASTM A182 Grade F321 MSS SP-97 BW Moderate wet H2S service	
1	20	6	SCH140	23.70mm	P31K-00G8N	Outlet ASTM A182 Grade F321 MSS SP-97 BW Moderate wet H2S service	
4004	10	1	SCH160	SCH80S	P31P-002BJ	Outlet ASTM B564 UNS N08825 MSS SP-97 BW Licensor-2	
4004	10	2	SCH160	SCH160	P31P-002BK	Outlet ASTM B564 UNS N08825 MSS SP-97 BW Licensor-2	
4004	14	2	SCH140	SCH160	P31P-002BM	Outlet ASTM B564 UNS N08825 MSS SP-97 BW Licensor-2	
4004	10	3	SCH160	SCH160	P31P-002BL	Outlet ASTM B564 UNS N08825 MSS SP-97 BW Licensor-2	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30K-00059	Plug ASTM A182 Grade F321 ASME B16.11 NPT Round head Moderate wet H2S service	
1	0.75				P30K-0005A	Plug ASTM A182 Grade F321 ASME B16.11 NPT Round head Moderate wet H2S service	
1	1				P30K-0005B	Plug ASTM A182 Grade F321 ASME B16.11 NPT Round head Moderate wet H2S service	
1	1.5				P30K-0005C	Plug ASTM A182 Grade F321 ASME B16.11 NPT Round head Moderate wet H2S service	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P61K-005HB	Flange WN ASTM A182 Grade F321 Class 2500 ASME B16.5 RJ Moderate wet H2S service	
1	0.75		SCH160		P61K-005HC	Flange WN ASTM A182 Grade F321 Class 2500 ASME B16.5 RJ Moderate wet H2S service	
1	1		SCH160		P61K-005HD	Flange WN ASTM A182 Grade F321 Class 2500 ASME B16.5 RJ Moderate wet H2S service	
1	1.5		SCH160		P61K-005HE	Flange WN ASTM A182 Grade F321 Class 2500 ASME B16.5 RJ Moderate wet H2S service	
1	2		SCH160		P61K-005HH	Flange WN ASTM A182 Grade F321 Class 2500 ASME B16.5 RJ Moderate wet H2S service	
1	3		XXS		P61K-005J3	Flange WN ASTM A182 Grade F321 Class 2500 ASME B16.5 RJ Moderate wet H2S service	
1	4		XXS		P61K-005J4	Flange WN ASTM A182 Grade F321 Class 2500 ASME B16.5 RJ Moderate wet H2S service	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	6		23.70mm		P61K-00697	Flange WN ASTM A182 Grade F321 Class 2500 ASME B16.5 RJ Moderate wet H2S service	
1	8		SCH160		P61K-00698	Flange WN ASTM A182 Grade F321 Class 2500 ASME B16.5 RJ Moderate wet H2S service	
1	10		SCH160		P61K-005HV	Flange WN ASTM A182 Grade F321 Class 2500 ASME B16.5 RJ Moderate wet H2S service	
1	12		SCH160		P61K-005HW	Flange WN ASTM A182 Grade F321 Class 2500 ASME B16.5 RJ Moderate wet H2S service	
1	14		SCH140		P61K-005HN	Flange WN ASTM A182 Grade F321 Class 2500 Standard-drawing RJ Moderate wet H2S service	
1	16		SCH140		P61K-005HP	Flange WN ASTM A182 Grade F321 Class 2500 Standard-drawing RJ Moderate wet H2S service	
1	18		SCH140		P61K-005HR	Flange WN ASTM A182 Grade F321 Class 2500 Standard-drawing RJ Moderate wet H2S service	
1	20		SCH140		P61K-005VV	Flange WN ASTM A182 Grade F321 Class 2500 Standard-drawing RJ Moderate wet H2S service	
4004	1		SCH80S		P61P-0013L	Flange WN ASTM B564 UNS N08825 Class 2500 ASME B16.5 RJ Licensor-2	
4004	2		SCH160		P61P-00148	Flange WN ASTM B564 UNS N08825 Class 2500 ASME B16.5 RJ Licensor-2	
4004	3		SCH160		P61P-00149	Flange WN ASTM B564 UNS N08825 Class 2500 ASME B16.5 RJ Licensor-2	
541	0.5				P61K-006A5	Flange NPT ASTM A182 Grade F321 Class 2500 ASME B16.5 RJ Moderate wet H2S service	
541	0.75				P61K-005ZA	Flange NPT ASTM A182 Grade F321 Class 2500 ASME B16.5 RJ Moderate wet H2S service	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67K-001MG	Blind flange ASTM A182 Grade F321 Class 2500 ASME B16.5 RJ Moderate wet H2S service	
1	0.75				P67K-001MH	Blind flange ASTM A182 Grade F321 Class 2500 ASME B16.5 RJ Moderate wet H2S service	
1	1				P67K-001MJ	Blind flange ASTM A182 Grade F321 Class 2500 ASME B16.5 RJ Moderate wet H2S service	
1	1.5				P67K-001MK	Blind flange ASTM A182 Grade F321 Class 2500 ASME B16.5 RJ Moderate wet H2S service	
1	2				P67K-001MN	Blind flange ASTM A182 Grade F321 Class 2500 ASME B16.5 RJ Moderate wet H2S service	
1	3				P67K-001MP	Blind flange ASTM A182 Grade F321 Class 2500 ASME B16.5 RJ Moderate wet H2S service	
1	4				P67K-001MR	Blind flange ASTM A182 Grade F321 Class 2500 ASME B16.5 RJ Moderate wet H2S service	
1	6				P67K-001MS	Blind flange ASTM A182 Grade F321 Class 2500 ASME B16.5 RJ Moderate wet H2S service	
1	8				P67K-001MT	Blind flange ASTM A182 Grade F321 Class 2500 ASME B16.5 RJ Moderate wet H2S service	
1	10				P67K-001ML	Blind flange ASTM A182 Grade F321 Class 2500 ASME B16.5 RJ Moderate wet H2S service	
1	12				P67K-001MM	Blind flange ASTM A182 Grade F321 Class 2500 ASME B16.5 RJ Moderate wet H2S service	
1	14				P67K-001MU	Blind flange ASTM A182 Grade F321 Class 2500 Standard-drawing RJ Moderate wet H2S service	
1	16				P67K-001MV	Blind flange ASTM A182 Grade F321 Class 2500 Standard-drawing RJ Moderate wet H2S service	
1	18				P67K-001MW	Blind flange ASTM A182 Grade F321 Class 2500 Standard-drawing RJ Moderate wet H2S service	
1	20				P67K-001U0	Blind flange ASTM A182 Grade F321 Class 2500 Standard-drawing RJ Moderate wet H2S service	

REDUCING FLANGE (FR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2		SCH160	P62K-000CT	Reducing flange WN ASTM A182 Grade F321 Class 2500 ASME B16.5 RJ Moderate wet H2S service	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P75T-000JX	Ring joint gasket SS TP347 Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	0.75				P75T-000JY	Ring joint gasket SS TP347 Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	1				P75T-000JZ	Ring joint gasket SS TP347 Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	1.5				P75T-000K0	Ring joint gasket SS TP347 Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	2				P75T-000P3	Ring joint gasket SS TP347 Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	3				P75T-000P4	Ring joint gasket SS TP347 Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	4				P75T-0011J	Ring joint gasket SS TP347 Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	6				P75T-000M9	Ring joint gasket SS TP347 Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	8				P75T-000MA	Ring joint gasket SS TP347 Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	10				P75T-000K1	Ring joint gasket SS TP347 Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	12				P75T-000K2	Ring joint gasket SS TP347 Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	14				P75T-0013T	Ring joint gasket SS TP347 Class 2500 ASME B16.20 Flange Standard-drawing RJ Octagonal type	999
1	16				P75T-0013U	Ring joint gasket SS TP347 Class 2500 ASME B16.20 Flange Standard-drawing RJ Octagonal type	999
1	18				P75T-0013W	Ring joint gasket SS TP347 Class 2500 ASME B16.20 Flange Standard-drawing RJ Octagonal type	999
1	20				P75T-0013V	Ring joint gasket SS TP347 Class 2500 ASME B16.20 Flange Standard-drawing RJ Octagonal type	999

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	1.5				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	

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BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	3-12				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
1	14-16				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	999

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81K-001LA	Gate valve ASTM A182 Grade F321 Class 2500 API 602 BW Sch160 Trim SS347 WB-BG-OS&Y Handwheel operated Moderate wet H2S service Fluid-2	
1	0.75				P81K-001FU	Gate valve ASTM A182 Grade F321 Class 2500 API 602 BW Sch160 Trim SS347 WB-BG-OS&Y Handwheel operated Moderate wet H2S service Fluid-2	
1	1				P81K-001FV	Gate valve ASTM A182 Grade F321 Class 2500 API 602 BW Sch160 Trim SS347 WB-BG-OS&Y Handwheel operated Moderate wet H2S service Fluid-2	
1	1.5				P81K-001FW	Gate valve ASTM A182 Grade F321 Class 2500 API 602 BW Sch160 Trim SS347 WB-BG-OS&Y Handwheel operated Moderate wet H2S service Fluid-2	
1	2				P81L-002T5	Gate valve ASTM A351 Grade CF8C Class 2500 API 600 BW Sch160 Trim SS347 PSB-BG-OS&Y Handwheel operated Moderate wet H2S service Fluid-2	
1	3				P81L-002YK	Gate valve ASTM A351 Grade CF8C Class 2500 API 600 BW XXS Trim SS347 PSB-BG-OS&Y Gear operated Moderate wet H2S service Fluid-2	
1	4				P81L-0035C	Gate valve ASTM A351 Grade CF8C Class 2500 API 600 BW XXS Trim SS347 PSB-BG-OS&Y Gear operated Moderate wet H2S service Fluid-2	
1	6				P81L-0035E	Gate valve ASTM A351 Grade CF8C Class 2500 API 600 BW T=23.70 mm Trim SS347 PSB-BG-OS&Y Gear operated Moderate wet H2S service Fluid-2	
1	8				P81L-002UB	Gate valve ASTM A351 Grade CF8C Class 2500 API 600 BW Sch160 Trim SS347 PSB-BG-OS&Y Gear operated Moderate wet H2S service Fluid-2	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82K-0013J	Globe valve ASTM A182 Grade F321 Class 2500 API 602 BW Sch160 Trim SS347 WB-BG-OS&Y Handwheel operated Moderate wet H2S service Fluid-2	
1	0.75				P82K-000ZX	Globe valve ASTM A182 Grade F321 Class 2500 API 602 BW Sch160 Trim SS347 WB-BG-OS&Y Handwheel operated Moderate wet H2S service Fluid-2	
1	1				P82K-000ZY	Globe valve ASTM A182 Grade F321 Class 2500 API 602 BW Sch160 Trim SS347 WB-BG-OS&Y Handwheel operated Moderate wet H2S service Fluid-2	
1	1.5				P82K-000ZZ	Globe valve ASTM A182 Grade F321 Class 2500 API 602 BW Sch160 Trim SS347 WB-BG-OS&Y Handwheel operated Moderate wet H2S service Fluid-2	
1	2				P82L-001YC	Globe valve ASTM A351 Grade CF8C Class 2500 BS 1873 BW Sch160 Trim SS347 PSB-BG-OS&Y Gear operated Moderate wet H2S service Fluid-2	
1	3				P82L-001HD	Globe valve ASTM A351 Grade CF8C Class 2500 BS 1873 BW XXS Trim SS347 PSB-BG-OS&Y Gear operated Moderate wet H2S service Fluid-2	
1	4				P82L-001S8	Globe valve ASTM A351 Grade CF8C Class 2500 BS 1873 BW XXS Trim SS347 PSB-BG-OS&Y Gear operated Moderate wet H2S service Fluid-2	
1	6				P82L-001SB	Globe valve ASTM A351 Grade CF8C Class 2500 BS 1873 BW T=23.70 mm Trim SS347 PSB-BG-OS&Y Gear operated Moderate wet H2S service Fluid-2	
1	8				P82L-001SA	Globe valve ASTM A351 Grade CF8C Class 2500 BS 1873 BW Sch160 Trim SS347 PSB-BG-OS&Y Gear operated Moderate wet H2S service Fluid-2	
1	10				P82L-001SC	Globe valve ASTM A351 Grade CF8C Class 2500 BS 1873 BW Sch160 Trim SS347 PSB-BG-OS&Y Gear operated Moderate wet H2S service Fluid-2	
1	12				P82L-001SD	Globe valve ASTM A351 Grade CF8C Class 2500 BS 1873 BW Sch160 Trim SS347 PSB-BG-OS&Y Gear operated Moderate wet H2S service Fluid-2	
4601	0.75				P82K-00157	Y-pattern globe valve ASTM A182 Grade F321 Class 2500 ASME B16.34 BW Sch160 Trim SS347 WB-BG-OS&Y Handwheel operated Moderate wet H2S service Fluid-2	
4601	1				P82K-0015A	Y-pattern globe valve ASTM A182 Grade F321 Class 2500 ASME B16.34 BW Sch160 Trim SS347 WB-BG-OS&Y Handwheel operated Moderate wet H2S service Fluid-2	
4601	1.5				P82K-0015B	Y-pattern globe valve ASTM A182 Grade F321 Class 2500 ASME B16.34 BW Sch160 Trim SS347 WB-BG-OS&Y Handwheel operated Moderate wet H2S service Fluid-2	
4601	2				P82L-001TP	Y-pattern globe valve ASTM A351 Grade CF8C Class 2500 ASME B16.34 BW Sch160 Trim SS347 PSB-BG-OS&Y Handwheel operated Moderate wet H2S service Fluid-2	
4601	3				P82L-001HE	Y-pattern globe valve ASTM A351 Grade CF8C Class 2500 ASME B16.34 BW XXS Trim SS347 PSB-BG-OS&Y Gear operated Moderate wet H2S service Fluid-2	
4601	8				P82L-001TK	Y-pattern globe valve ASTM A351 Grade CF8C Class 2500 ASME B16.34 BW Sch160 Trim SS347 PSB-BG-OS&Y Gear operated Moderate wet H2S service Fluid-2	
4601	10				P82L-001TJ	Y-pattern globe valve ASTM A351 Grade CF8C Class 2500 ASME B16.34 BW Sch160 Trim SS347 PSB-BG-OS&Y Gear operated Moderate wet H2S service Fluid-2	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83K-000Y1	Check valve ASTM A182 Grade F321 Class 2500 API 602 BW Sch160 Trim SS347 Lift-type Welded cover Moderate wet H2S service	
1	0.75				P83K-000W5	Check valve ASTM A182 Grade F321 Class 2500 API 602 BW Sch160 Trim SS347 Lift-type Welded cover Moderate wet H2S service	
1	1				P83K-000W6	Check valve ASTM A182 Grade F321 Class 2500 API 602 BW Sch160 Trim SS347 Lift-type Welded cover Moderate wet H2S service	
1	1.5				P83K-000W7	Check valve ASTM A182 Grade F321 Class 2500 API 602 BW Sch160 Trim SS347 Lift-type Welded cover Moderate wet H2S service	
1	2				P83L-001H4	Check valve ASTM A351 Grade CF8C Class 2500 BS 1868 BW Sch160 Trim SS347 Swing-type Pressure seal cap Moderate wet H2S service	
1	3				P83L-001FU	Check valve ASTM A351 Grade CF8C Class 2500 BS 1868 BW XXS Trim SS347 Swing-type Pressure seal cap Moderate wet H2S service	
1	4				P83L-001NC	Check valve ASTM A351 Grade CF8C Class 2500 BS 1868 BW XXS Trim SS347 Swing-type Pressure seal cap Moderate wet H2S service	

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CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	6				P83L-001NR	Check valve ASTM A351 Grade CF8C Class 2500 BS 1868 BW T=23.70 mm Trim SS347 Swing-type Pressure seal cap Moderate wet H2S service	

DP CHECK VALVE (XDP)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	8				P88L-000Z9	Dual plate check valve ASTM A351 Grade CF8C Class 2500 API 594 Lug-type ASME B16.5 RJ Trim SS347 Internal wetted parts SS347 Spring Inconel Retainerless-type Moderate wet H2S service	

ORIFICE FLANGE (FO)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2		SCH160		P66K-003WB	Orifice flange WN ASTM A182 Grade F321 Class 2500 ASME B16.36 RJ NPS3/4 SW tap x 1 Moderate wet H2S service	
1	3		XXS		P66K-003WC	Orifice flange WN ASTM A182 Grade F321 Class 2500 ASME B16.36 RJ NPS3/4 SW tap x 1 Moderate wet H2S service	
1	4		XXS		P66K-003WD	Orifice flange WN ASTM A182 Grade F321 Class 2500 ASME B16.36 RJ NPS3/4 SW tap x 1 Moderate wet H2S service	
1	6		23.70mm		P66K-003WE	Orifice flange WN ASTM A182 Grade F321 Class 2500 ASME B16.36 RJ NPS3/4 SW tap x 1 Moderate wet H2S service	
1	8		SCH160		P66K-003WF	Orifice flange WN ASTM A182 Grade F321 Class 2500 ASME B16.36 RJ NPS3/4 SW tap x 1 Moderate wet H2S service	
200	2		SCH160		P66K-003WG	Orifice flange WN ASTM A182 Grade F321 Class 2500 ASME B16.36 RJ NPS3/4 SW tap x 1 Moderate wet H2S service with Jack screw	
200	3		XXS		P66K-003WH	Orifice flange WN ASTM A182 Grade F321 Class 2500 ASME B16.36 RJ NPS3/4 SW tap x 1 Moderate wet H2S service with Jack screw	
200	4		XXS		P66K-003WJ	Orifice flange WN ASTM A182 Grade F321 Class 2500 ASME B16.36 RJ NPS3/4 SW tap x 1 Moderate wet H2S service with Jack screw	
200	6		23.70mm		P66K-003WK	Orifice flange WN ASTM A182 Grade F321 Class 2500 ASME B16.36 RJ NPS3/4 SW tap x 1 Moderate wet H2S service with Jack screw	
200	8		SCH160		P66K-003WL	Orifice flange WN ASTM A182 Grade F321 Class 2500 ASME B16.36 RJ NPS3/4 SW tap x 1 Moderate wet H2S service with Jack screw	

PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P72K-000D8	Paddle blank ASTM A182 Grade F321 Class 2500 Standard-drawing Flange ASME B16.5 RJ Moderate wet H2S service	
1	0.75				P72K-000D9	Paddle blank ASTM A182 Grade F321 Class 2500 Standard-drawing Flange ASME B16.5 RJ Moderate wet H2S service	
1	1				P72K-000DA	Paddle blank ASTM A182 Grade F321 Class 2500 Standard-drawing Flange ASME B16.5 RJ Moderate wet H2S service	
1	1.5				P72K-000DB	Paddle blank ASTM A182 Grade F321 Class 2500 Standard-drawing Flange ASME B16.5 RJ Moderate wet H2S service	
1	2				P72K-000DE	Paddle blank ASTM A182 Grade F321 Class 2500 Standard-drawing Flange ASME B16.5 RJ Moderate wet H2S service	
1	3				P72K-000DF	Paddle blank ASTM A182 Grade F321 Class 2500 Standard-drawing Flange ASME B16.5 RJ Moderate wet H2S service	
1	4				P72K-000DG	Paddle blank ASTM A182 Grade F321 Class 2500 Standard-drawing Flange ASME B16.5 RJ Moderate wet H2S service	
1	6				P72K-000DH	Paddle blank ASTM A182 Grade F321 Class 2500 Standard-drawing Flange ASME B16.5 RJ Moderate wet H2S service	
1	8				P72K-000DJ	Paddle blank ASTM A182 Grade F321 Class 2500 Standard-drawing Flange ASME B16.5 RJ Moderate wet H2S service	
1	10				P72K-000DC	Paddle blank ASTM A182 Grade F321 Class 2500 Standard-drawing Flange ASME B16.5 RJ Moderate wet H2S service	
1	12				P72K-000DD	Paddle blank ASTM A182 Grade F321 Class 2500 Standard-drawing Flange ASME B16.5 RJ Moderate wet H2S service	
1	14				P72K-000DK	Paddle blank ASTM A182 Grade F321 Class 2500 Standard-drawing Flange Standard-drawing RJ Moderate wet H2S service	
1	16				P72K-000DL	Paddle blank ASTM A182 Grade F321 Class 2500 Standard-drawing Flange Standard-drawing RJ Moderate wet H2S service	
1	18				P72K-000DM	Paddle blank ASTM A182 Grade F321 Class 2500 Standard-drawing Flange Standard-drawing RJ Moderate wet H2S service	
1	20				P72K-000GH	Paddle blank ASTM A182 Grade F321 Class 2500 Standard-drawing Flange Standard-drawing RJ Moderate wet H2S service	

PADDLE SPACER (PS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P72K-000DN	Paddle spacer ASTM A182 Grade F321 Class 2500 Standard-drawing Flange ASME B16.5 RJ Moderate wet H2S service	
1	0.75				P72K-000DP	Paddle spacer ASTM A182 Grade F321 Class 2500 Standard-drawing Flange ASME B16.5 RJ Moderate wet H2S service	
1	1				P72K-000DR	Paddle spacer ASTM A182 Grade F321 Class 2500 Standard-drawing Flange ASME B16.5 RJ Moderate wet H2S service	
1	1.5				P72K-000DS	Paddle spacer ASTM A182 Grade F321 Class 2500 Standard-drawing Flange ASME B16.5 RJ Moderate wet H2S service	
1	2				P72K-000DV	Paddle spacer ASTM A182 Grade F321 Class 2500 Standard-drawing Flange ASME B16.5 RJ Moderate wet H2S service	
1	3				P72K-000DW	Paddle spacer ASTM A182 Grade F321 Class 2500 Standard-drawing Flange ASME B16.5 RJ Moderate wet H2S service	
1	4				P72K-000DX	Paddle spacer ASTM A182 Grade F321 Class 2500 Standard-drawing Flange ASME B16.5 RJ Moderate wet H2S service	

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PADDLE SPACER (PS)							
OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	6				P72K-000DY	Paddle spacer ASTM A182 Grade F321 Class 2500 Standard-drawing Flange ASME B16.5 RJ Moderate wet H2S service	
1	8				P72K-000DZ	Paddle spacer ASTM A182 Grade F321 Class 2500 Standard-drawing Flange ASME B16.5 RJ Moderate wet H2S service	
1	10				P72K-000DT	Paddle spacer ASTM A182 Grade F321 Class 2500 Standard-drawing Flange ASME B16.5 RJ Moderate wet H2S service	
1	12				P72K-000DU	Paddle spacer ASTM A182 Grade F321 Class 2500 Standard-drawing Flange ASME B16.5 RJ Moderate wet H2S service	
1	14				P72K-000E0	Paddle spacer ASTM A182 Grade F321 Class 2500 Standard-drawing Flange Standard-drawing RJ Moderate wet H2S service	
1	16				P72K-000E1	Paddle spacer ASTM A182 Grade F321 Class 2500 Standard-drawing Flange Standard-drawing RJ Moderate wet H2S service	
1	18				P72K-000E2	Paddle spacer ASTM A182 Grade F321 Class 2500 Standard-drawing Flange Standard-drawing RJ Moderate wet H2S service	
1	20				P72K-000GJ	Paddle spacer ASTM A182 Grade F321 Class 2500 Standard-drawing Flange Standard-drawing RJ Moderate wet H2S service	

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BOLT TABLE (B_P1M602 , STUD ASME RJ, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	125	P80S-0090J	R13	P75T-000JX
0.75	4	0.750	130	P80S-0090K	R16	P75T-000JY
1	4	0.875	140	P80S-005ZD	R18	P75T-000JZ
1.5	4	1.125	175	P80S-0064S	R23	P75T-000K0
2	8	1.000	180	P80S-0061J	R26	P75T-000P3
3	8	1.250	260	P80S-0068P	R32	P75T-000P4
4	8	1.500	305	P80S-006LS	R38	P75T-0011J
6	8	2.000	410	P80S-00BBD	R47	P75T-000M9
8	12	2.000	450	P80S-00BH6	R51	P75T-000MA
10	12	2.500	575	P80S-00DZV	R55	P75T-000K1
12	12	2.750	635	P80S-01RAT	R60	P75T-000K2
14	14	3.000	695	P80S-01VKF	R64	P75T-0013T
16	14	3.000	755	P80S-01VKU	R68	P75T-0013U
18	16	3.000	815		R72	P75T-0013W
20	16	3.000	875		R76	P75T-0013V

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PIPING CLASS

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BRANCH TABLE (T_P1M602)

RUN PIPE SIZE (in) \ BRANCH SIZE (in)	0.5	0.75	1	1.5	2	3	4	6	8	10	12	14	16	18	20
0.5	TS														
0.75		TS													
1		TR	TS												
1.5		TR	TR	TS											
2		L	TR	TR	TS										
3		L	L	TR	TR	TS									
4	L	L	L	L	TR	TR	TS								
6	L	L	L	L	L	TR	TR	TS							
8		L	L	L	L	L	TR	TR	TS						
10		L	L	L	L	L	TR	TR	TR	TS					
12		L	L	L	L	L	L	TR	TR	TR	TS				
14		L	L	L	L	L	L	TR	TR	TR	TR	TS			
16		L	L	L	L	L	L	TR	TR	TR	TR	TR	TS		
18		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TS	
20		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TR	TS

L : OUTLET
TS : STRAIGHT TEE
TR : REDUCING TEE

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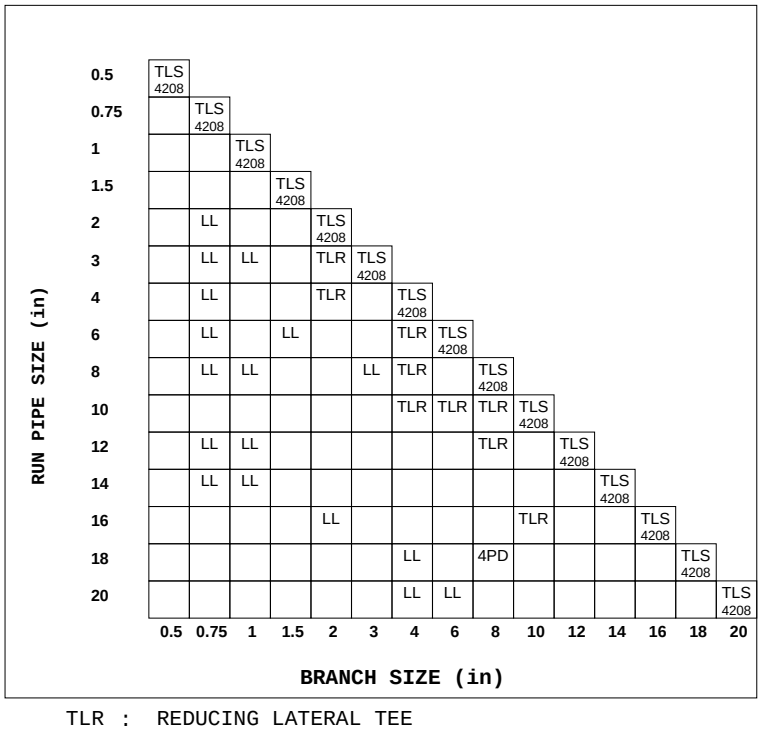
PIPING CLASS

P1M602 REV NO. 2

BRANCH TABLE (T_P1M602_2)



TLR : REDUCING LATERAL TEE
TLS : STRAIGHT LATERAL TEE
LL : LATROLET
4PD : REINFORCING PAD 45 DEG

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PIPING CLASS

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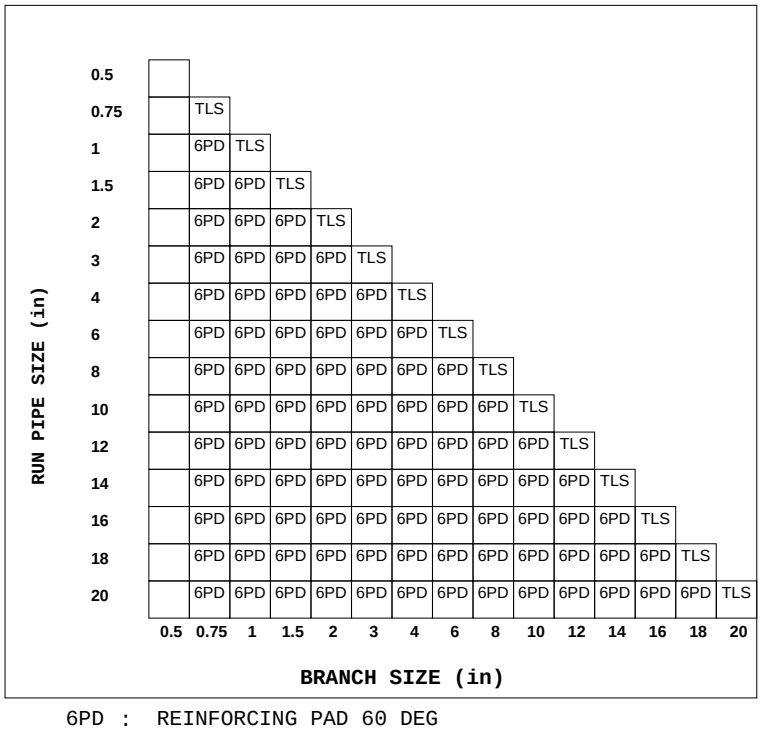
BRANCH TABLE (T_P1M602_3)



RUN PIPE SIZE (in) \ BRANCH SIZE (in)	0.5	0.75	1	1.5	2	3	4	6	8	10	12	14	16	18	20
0.5															
0.75		TLS													
1		6PD	TLS												
1.5		6PD	6PD	TLS											
2		6PD	6PD	6PD	TLS										
3		6PD	6PD	6PD	6PD	TLS									
4		6PD	6PD	6PD	6PD	6PD	TLS								
6		6PD	6PD	6PD	6PD	6PD	6PD	TLS							
8		6PD	6PD	6PD	6PD	6PD	6PD	6PD	TLS						
10		6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	TLS					
12		6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	TLS				
14		6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	TLS			
16		6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	TLS		
18		6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	TLS	
20		6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	TLS

6PD : REINFORCING PAD 60 DEG
TLS : STRAIGHT LATERAL TEE

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PIPING CLASS
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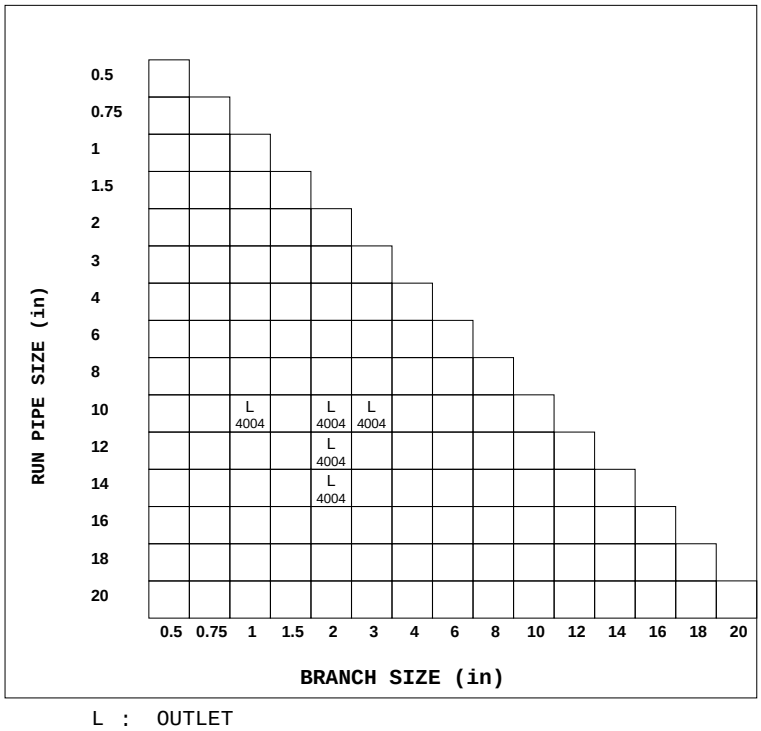
BRANCH TABLE (T_P1M602_4)



L : OUTLET

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PIPING CLASS

P1MQ REV NO. 2

Material : SS321
Rating : ASME CLASS 2500
Flange Face : RJ
C.A.(mm) : 1.50
Gasket : Ring Octagonal
Service : PROCESS - WET SEVERE SOUR SERVICE SUBJECT TO NACE + HIC STD.:
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
5	BOLTING CONFIRMING TO B7M / 2HM SHALL BE USED UNDER CONDITIONS (A) DIRECT EXPOSURE TO SOUR ENVIRONMENTS (B) WHEN THE BOLTING WILL BE BURIED OR INSULATED

DETAIL NOTES :

NO.	DESCRIPTION
999	HOLD ITEMS. ORDER PLACEMENT SHALL NOT BE DONE BEFORE RELEASING HOLD.

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
541	NPT(F) (F)

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PIPING CLASS
P1MQ REV NO. 2

PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P01J-002FE	Pipe ASTM A312 Grade TP321 Seamless ASME B36.10M/B36.19M PE Moderate wet H2S service	
1	0.75		SCH160		P01J-002FF	Pipe ASTM A312 Grade TP321 Seamless ASME B36.10M/B36.19M PE Moderate wet H2S service	
1	1		SCH160		P01J-002FG	Pipe ASTM A312 Grade TP321 Seamless ASME B36.10M/B36.19M PE Moderate wet H2S service	
1	1.5		SCH160		P01J-002FH	Pipe ASTM A312 Grade TP321 Seamless ASME B36.10M/B36.19M PE Moderate wet H2S service	
1	2		SCH160		P01J-002FJ	Pipe ASTM A312 Grade TP321 Seamless ASME B36.10M/B36.19M BE Moderate wet H2S service	
1	3		SCH160		P01J-002FK	Pipe ASTM A312 Grade TP321 Seamless ASME B36.10M/B36.19M BE Moderate wet H2S service	
1	4		SCH160		P01J-002FL	Pipe ASTM A312 Grade TP321 Seamless ASME B36.10M/B36.19M BE Moderate wet H2S service	
1	6		SCH160		P01J-002FM	Pipe ASTM A312 Grade TP321 Seamless ASME B36.10M/B36.19M BE Moderate wet H2S service	
1	8		SCH140		P01J-002FU	Pipe ASTM A358 Grade 321 Class 1 EFW ASME B36.10M/B36.19M BE Moderate wet H2S service	
1	10		XXS		P01J-002FN	Pipe ASTM A358 Grade 321 Class 1 EFW ASME B36.10M/B36.19M BE Moderate wet H2S service	
1	12		SCH140		P01J-002FP	Pipe ASTM A358 Grade 321 Class 1 EFW ASME B36.10M/B36.19M BE Moderate wet H2S service	
1	14		SCH120		P01J-002MZ	Pipe ASTM A358 Grade 321 Class 1 EFW ASME B36.10M/B36.19M BE Moderate wet H2S service	
1	16		SCH140		P01J-002FS	Pipe ASTM A358 Grade 321 Class 1 EFW ASME B36.10M/B36.19M BE Moderate wet H2S service	
1	18		SCH120		P01J-002N1	Pipe ASTM A358 Grade 321 Class 1 EFW ASME B36.10M/B36.19M BE Moderate wet H2S service	
1	20		SCH140		P01J-002N0	Pipe ASTM A358 Grade 321 Class 1 EFW ASME B36.10M/B36.19M BE Moderate wet H2S service	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P02J-001YV	90 degree elbow ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Long radius Moderate wet H2S service	
1	0.75		SCH160		P02J-001YW	90 degree elbow ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Long radius Moderate wet H2S service	
1	1		SCH160		P02J-001YX	90 degree elbow ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Long radius Moderate wet H2S service	
1	1.5		SCH160		P02J-001YY	90 degree elbow ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Long radius Moderate wet H2S service	
1	2		SCH160		P02J-001YZ	90 degree elbow ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Long radius Moderate wet H2S service	
1	3		SCH160		P02J-001Z0	90 degree elbow ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Long radius Moderate wet H2S service	
1	4		SCH160		P02J-001Z1	90 degree elbow ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Long radius Moderate wet H2S service	
1	6		SCH160		P02J-001Z2	90 degree elbow ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Long radius Moderate wet H2S service	
1	8		SCH140		P02J-001Z8	90 degree elbow ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Long radius Moderate wet H2S service	
1	10		XXS		P02J-001Z3	90 degree elbow ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Long radius Moderate wet H2S service	
1	12		SCH140		P02J-001Z4	90 degree elbow ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Long radius Moderate wet H2S service	
1	14		SCH120		P02J-00229	90 degree elbow ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Long radius Moderate wet H2S service	
1	16		SCH140		P02J-001Z6	90 degree elbow ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Long radius Moderate wet H2S service	
1	18		SCH120		P02J-0022B	90 degree elbow ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Long radius Moderate wet H2S service	
1	20		SCH140		P02J-0022C	90 degree elbow ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Long radius Moderate wet H2S service	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P03J-001WA	45 degree elbow ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Long radius Moderate wet H2S service	
1	0.75		SCH160		P03J-001WB	45 degree elbow ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Long radius Moderate wet H2S service	
1	1		SCH160		P03J-001WC	45 degree elbow ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Long radius Moderate wet H2S service	
1	1.5		SCH160		P03J-001WD	45 degree elbow ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Long radius Moderate wet H2S service	
1	2		SCH160		P03J-001WE	45 degree elbow ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Long radius Moderate wet H2S service	
1	3		SCH160		P03J-001WF	45 degree elbow ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Long radius Moderate wet H2S service	
1	4		SCH160		P03J-001WG	45 degree elbow ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Long radius Moderate wet H2S service	
1	6		SCH160		P03J-001WH	45 degree elbow ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Long radius Moderate wet H2S service	
1	8		SCH140		P03J-001WP	45 degree elbow ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Long radius Moderate wet H2S service	
1	10		XXS		P03J-001WJ	45 degree elbow ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Long radius Moderate wet H2S service	
1	12		SCH140		P03J-001WK	45 degree elbow ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Long radius Moderate wet H2S service	
1	14		SCH120		P03J-00221	45 degree elbow ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Long radius Moderate wet H2S service	
1	16		SCH140		P03J-001WM	45 degree elbow ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Long radius Moderate wet H2S service	

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45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	18		SCH120		P03J-00223	45 degree elbow ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Long radius Moderate wet H2S service	
1	20		SCH140		P03J-00224	45 degree elbow ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Long radius Moderate wet H2S service	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P21J-001MV	Straight tee ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	0.75		SCH160		P21J-001MW	Straight tee ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	1		SCH160		P21J-001MX	Straight tee ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	1.5		SCH160		P21J-001MY	Straight tee ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	2		SCH160		P21J-001MZ	Straight tee ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	3		SCH160		P21J-001N0	Straight tee ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	4		SCH160		P21J-001N1	Straight tee ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	6		SCH160		P21J-001N2	Straight tee ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	8		SCH140		P21J-001N8	Straight tee ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	10		XXS		P21J-001N3	Straight tee ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	12		SCH140		P21J-001N4	Straight tee ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	14		SCH120		P21J-001S8	Straight tee ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	16		SCH140		P21J-001N6	Straight tee ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	18		SCH120		P21J-001S9	Straight tee ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	20		SCH140		P21J-001SA	Straight tee ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75	SCH160	SCH160	P24J-0072M	Reducing tee ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	1.5	0.75	SCH160	SCH160	P24J-0072N	Reducing tee ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	1.5	1	SCH160	SCH160	P24J-0072P	Reducing tee ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	2	1	SCH160	SCH160	P24J-0072R	Reducing tee ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	2	1.5	SCH160	SCH160	P24J-0072S	Reducing tee ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	3	1.5	SCH160	SCH160	P24J-0072T	Reducing tee ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	3	2	SCH160	SCH160	P24J-0072U	Reducing tee ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	4	2	SCH160	SCH160	P24J-0072V	Reducing tee ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	4	3	SCH160	SCH160	P24J-0072W	Reducing tee ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	6	3	SCH160	SCH160	P24J-0072X	Reducing tee ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	6	4	SCH160	SCH160	P24J-0072Y	Reducing tee ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	8	4	SCH140	SCH160	P24J-0072Z	Reducing tee ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	8	6	SCH140	SCH160	P24J-00730	Reducing tee ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	10	4	XXS	SCH160	P24J-00731	Reducing tee ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	10	6	XXS	SCH160	P24J-00732	Reducing tee ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	10	8	XXS	SCH140	P24J-00733	Reducing tee ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	12	6	SCH140	SCH160	P24J-00735	Reducing tee ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	12	8	SCH140	SCH140	P24J-00736	Reducing tee ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	12	10	SCH140	XXS	P24J-00734	Reducing tee ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	14	6	SCH120	SCH160	P24J-007H7	Reducing tee ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	14	8	SCH120	SCH140	P24J-007H8	Reducing tee ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	14	10	SCH120	XXS	P24J-007H5	Reducing tee ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	14	12	SCH120	SCH140	P24J-007H6	Reducing tee ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	16	6	SCH140	SCH160	P24J-0073E	Reducing tee ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	16	8	SCH140	SCH140	P24J-0073F	Reducing tee ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	16	10	SCH140	XXS	P24J-0073B	Reducing tee ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	16	12	SCH140	SCH140	P24J-0073C	Reducing tee ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	16	14	SCH140	SCH120	P24J-007H4	Reducing tee ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	18	8	SCH120	SCH140	P24J-007H3	Reducing tee ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	18	10	SCH120	XXS	P24J-007H0	Reducing tee ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	18	12	SCH120	SCH140	P24J-007H1	Reducing tee ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	18	14	SCH120	SCH120	P24J-007GT	Reducing tee ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	18	16	SCH120	SCH140	P24J-007H2	Reducing tee ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	20	8	SCH140	SCH140	P24J-007GZ	Reducing tee ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	20	10	SCH140	XXS	P24J-007GU	Reducing tee ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	

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PIPING CLASS
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REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	20	12	SCH140	SCH140	P24J-007GV	Reducing tee ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	20	14	SCH140	SCH120	P24J-007GW	Reducing tee ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	20	16	SCH140	SCH140	P24J-007GX	Reducing tee ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	20	18	SCH140	SCH120	P24J-007GY	Reducing tee ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	SCH160	P27J-005XR	Concentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	1	0.5	SCH160	SCH160	P27J-005XS	Concentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	1	0.75	SCH160	SCH160	P27J-005XT	Concentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	1.5	0.5	SCH160	SCH160	P27J-005XU	Concentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	1.5	0.75	SCH160	SCH160	P27J-005XV	Concentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	1.5	1	SCH160	SCH160	P27J-005XW	Concentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	2	0.75	SCH160	SCH160	P27J-005XX	Concentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	2	1	SCH160	SCH160	P27J-005XY	Concentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	2	1.5	SCH160	SCH160	P27J-005XZ	Concentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	3	1.5	SCH160	SCH160	P27J-005Y0	Concentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	3	2	SCH160	SCH160	P27J-005Y1	Concentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	4	1.5	SCH160	SCH160	P27J-005Y2	Concentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	4	2	SCH160	SCH160	P27J-005Y3	Concentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	4	3	SCH160	SCH160	P27J-005Y4	Concentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	6	3	SCH160	SCH160	P27J-005Y5	Concentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	6	4	SCH160	SCH160	P27J-005Y6	Concentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	8	4	SCH140	SCH160	P27J-005Y7	Concentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	8	6	SCH140	SCH160	P27J-005Y8	Concentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	10	4	XXS	SCH160	P27J-005Y9	Concentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	10	6	XXS	SCH160	P27J-005YA	Concentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	10	8	XXS	SCH140	P27J-005YB	Concentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	12	6	SCH140	SCH160	P27J-005YD	Concentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	12	8	SCH140	SCH140	P27J-005YE	Concentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	12	10	SCH140	XXS	P27J-005YC	Concentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	14	6	SCH120	SCH160	P27J-006A9	Concentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	14	8	SCH120	SCH140	P27J-006AE	Concentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	14	10	SCH120	XXS	P27J-006AC	Concentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	14	12	SCH120	SCH140	P27J-006AD	Concentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	16	8	SCH140	SCH140	P27J-005YN	Concentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	16	10	SCH140	XXS	P27J-005YK	Concentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	16	12	SCH140	SCH140	P27J-005YL	Concentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	16	14	SCH140	SCH120	P27J-006AA	Concentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	18	10	SCH120	XXS	P27J-006AF	Concentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	18	12	SCH120	SCH140	P27J-006AL	Concentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	18	14	SCH120	SCH120	P27J-006AB	Concentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	18	16	SCH120	SCH140	P27J-006AM	Concentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	20	12	SCH140	SCH140	P27J-006AG	Concentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	20	14	SCH140	SCH120	P27J-006AH	Concentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	20	16	SCH140	SCH140	P27J-006AJ	Concentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	20	18	SCH140	SCH120	P27J-006AK	Concentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH160	SCH160	P28J-005YM	Eccentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	1	0.5	SCH160	SCH160	P28J-005YN	Eccentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	1	0.75	SCH160	SCH160	P28J-005YP	Eccentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	

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PIPING CLASS
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ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5	0.5	SCH160	SCH160	P28J-005YR	Eccentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	1.5	0.75	SCH160	SCH160	P28J-005YS	Eccentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	1.5	1	SCH160	SCH160	P28J-005YT	Eccentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	2	0.75	SCH160	SCH160	P28J-005YU	Eccentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	2	1	SCH160	SCH160	P28J-005YV	Eccentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	2	1.5	SCH160	SCH160	P28J-005YW	Eccentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	3	1.5	SCH160	SCH160	P28J-005YX	Eccentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	3	2	SCH160	SCH160	P28J-005YY	Eccentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	4	1.5	SCH160	SCH160	P28J-005YZ	Eccentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	4	2	SCH160	SCH160	P28J-005Z0	Eccentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	4	3	SCH160	SCH160	P28J-005Z1	Eccentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	6	3	SCH160	SCH160	P28J-005Z2	Eccentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	6	4	SCH160	SCH160	P28J-005Z3	Eccentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	8	4	SCH140	SCH160	P28J-005Z4	Eccentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	8	6	SCH140	SCH160	P28J-005Z5	Eccentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	10	4	XXS	SCH160	P28J-005Z6	Eccentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	10	6	XXS	SCH160	P28J-005Z7	Eccentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	10	8	XXS	SCH140	P28J-005Z8	Eccentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	12	6	SCH140	SCH160	P28J-005ZA	Eccentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	12	8	SCH140	SCH140	P28J-005ZB	Eccentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	12	10	SCH140	XXS	P28J-005Z9	Eccentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	14	6	SCH120	SCH160	P28J-006BN	Eccentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	14	8	SCH120	SCH140	P28J-006BP	Eccentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	14	10	SCH120	XXS	P28J-006BL	Eccentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	14	12	SCH120	SCH140	P28J-006BM	Eccentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	16	8	SCH140	SCH140	P28J-005ZK	Eccentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	16	10	SCH140	XXS	P28J-005ZG	Eccentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	16	12	SCH140	SCH140	P28J-005ZH	Eccentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	16	14	SCH140	SCH120	P28J-006BR	Eccentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	18	10	SCH120	XXS	P28J-006BS	Eccentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	18	12	SCH120	SCH140	P28J-006BT	Eccentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	18	14	SCH120	SCH120	P28J-006BU	Eccentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	18	16	SCH120	SCH140	P28J-006BV	Eccentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	20	12	SCH140	SCH140	P28J-006BW	Eccentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	20	14	SCH140	SCH120	P28J-006BX	Eccentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	20	16	SCH140	SCH140	P28J-006BY	Eccentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	20	18	SCH140	SCH120	P28J-006BZ	Eccentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P29J-003V0	Cap ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	0.75		SCH160		P29J-003V1	Cap ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	1		SCH160		P29J-003V2	Cap ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	1.5		SCH160		P29J-003V3	Cap ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	2		SCH160		P29J-003V9	Cap ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	3		SCH160		P29J-003VA	Cap ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	4		SCH160		P29J-003VB	Cap ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	6		SCH160		P29J-003VC	Cap ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	8		SCH140		P29J-003VD	Cap ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	10		XXS		P29J-003V4	Cap ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	12		SCH140		P29J-003V5	Cap ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	14		SCH120		P29J-003XJ	Cap ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	16		SCH140		P29J-003V7	Cap ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	18		SCH120		P29J-003XL	Cap ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	20		SCH140		P29J-003XM	Cap ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P41J-001T0	Straight nipple ASTM A312 Grade TP321 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Moderate wet H2S service	

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STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75		XXS		P41J-001T1	Straight nipple ASTM A312 Grade TP321 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Moderate wet H2S service	
1	1		XXS		P41J-001T2	Straight nipple ASTM A312 Grade TP321 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Moderate wet H2S service	
1	1.5		XXS		P41J-001T3	Straight nipple ASTM A312 Grade TP321 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Moderate wet H2S service	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2	0.75	SCH160	SCH160	P31K-00ESV	Outlet ASTM A182 Grade F321 MSS SP-97 BW Moderate wet H2S service	
1	3	0.75	SCH160	SCH160	P31K-00ESW	Outlet ASTM A182 Grade F321 MSS SP-97 BW Moderate wet H2S service	
1	4	0.75	SCH160	SCH160	P31K-00ESY	Outlet ASTM A182 Grade F321 MSS SP-97 BW Moderate wet H2S service	
1	6	0.75	SCH160	SCH160	P31K-00ET1	Outlet ASTM A182 Grade F321 MSS SP-97 BW Moderate wet H2S service	
1	8	0.75	SCH140	SCH160	P31K-00ET5	Outlet ASTM A182 Grade F321 MSS SP-97 BW Moderate wet H2S service	
1	10	0.75	XXS	SCH160	P31K-00ETA	Outlet ASTM A182 Grade F321 MSS SP-97 BW Moderate wet H2S service	
1	12	0.75	SCH140	SCH160	P31K-00ETF	Outlet ASTM A182 Grade F321 MSS SP-97 BW Moderate wet H2S service	
1	14	0.75	SCH120	SCH160	P31K-00F55	Outlet ASTM A182 Grade F321 MSS SP-97 BW Moderate wet H2S service	
1	16	0.75	SCH140	SCH160	P31K-00ETU	Outlet ASTM A182 Grade F321 MSS SP-97 BW Moderate wet H2S service	
1	18	0.75	SCH120	SCH160	P31K-00F5L	Outlet ASTM A182 Grade F321 MSS SP-97 BW Moderate wet H2S service	
1	20	0.75	SCH140	SCH160	P31K-00F59	Outlet ASTM A182 Grade F321 MSS SP-97 BW Moderate wet H2S service	
1	3	1	SCH160	SCH160	P31K-00ESX	Outlet ASTM A182 Grade F321 MSS SP-97 BW Moderate wet H2S service	
1	4	1	SCH160	SCH160	P31K-00ESZ	Outlet ASTM A182 Grade F321 MSS SP-97 BW Moderate wet H2S service	
1	6	1	SCH160	SCH160	P31K-00ET2	Outlet ASTM A182 Grade F321 MSS SP-97 BW Moderate wet H2S service	
1	8	1	SCH140	SCH160	P31K-00ET6	Outlet ASTM A182 Grade F321 MSS SP-97 BW Moderate wet H2S service	
1	10	1	XXS	SCH160	P31K-00ETB	Outlet ASTM A182 Grade F321 MSS SP-97 BW Moderate wet H2S service	
1	12	1	SCH140	SCH160	P31K-00ETG	Outlet ASTM A182 Grade F321 MSS SP-97 BW Moderate wet H2S service	
1	14	1	SCH120	SCH160	P31K-00F56	Outlet ASTM A182 Grade F321 MSS SP-97 BW Moderate wet H2S service	
1	16	1	SCH140	SCH160	P31K-00ETV	Outlet ASTM A182 Grade F321 MSS SP-97 BW Moderate wet H2S service	
1	18	1	SCH120	SCH160	P31K-00F5M	Outlet ASTM A182 Grade F321 MSS SP-97 BW Moderate wet H2S service	
1	20	1	SCH140	SCH160	P31K-00F5A	Outlet ASTM A182 Grade F321 MSS SP-97 BW Moderate wet H2S service	
1	4	1.5	SCH160	SCH160	P31K-00ET0	Outlet ASTM A182 Grade F321 MSS SP-97 BW Moderate wet H2S service	
1	6	1.5	SCH160	SCH160	P31K-00ET3	Outlet ASTM A182 Grade F321 MSS SP-97 BW Moderate wet H2S service	
1	8	1.5	SCH140	SCH160	P31K-00ET7	Outlet ASTM A182 Grade F321 MSS SP-97 BW Moderate wet H2S service	
1	10	1.5	XXS	SCH160	P31K-00ETC	Outlet ASTM A182 Grade F321 MSS SP-97 BW Moderate wet H2S service	
1	12	1.5	SCH140	SCH160	P31K-00ETH	Outlet ASTM A182 Grade F321 MSS SP-97 BW Moderate wet H2S service	
1	14	1.5	SCH120	SCH160	P31K-00F57	Outlet ASTM A182 Grade F321 MSS SP-97 BW Moderate wet H2S service	
1	16	1.5	SCH140	SCH160	P31K-00ETW	Outlet ASTM A182 Grade F321 MSS SP-97 BW Moderate wet H2S service	
1	18	1.5	SCH120	SCH160	P31K-00F5N	Outlet ASTM A182 Grade F321 MSS SP-97 BW Moderate wet H2S service	
1	20	1.5	SCH140	SCH160	P31K-00F5B	Outlet ASTM A182 Grade F321 MSS SP-97 BW Moderate wet H2S service	
1	6	2	SCH160	SCH160	P31K-00ET4	Outlet ASTM A182 Grade F321 MSS SP-97 BW Moderate wet H2S service	
1	8	2	SCH140	SCH160	P31K-00ET8	Outlet ASTM A182 Grade F321 MSS SP-97 BW Moderate wet H2S service	
1	10	2	XXS	SCH160	P31K-00ETD	Outlet ASTM A182 Grade F321 MSS SP-97 BW Moderate wet H2S service	
1	12	2	SCH140	SCH160	P31K-00ETJ	Outlet ASTM A182 Grade F321 MSS SP-97 BW Moderate wet H2S service	
1	14	2	SCH120	SCH160	P31K-00F58	Outlet ASTM A182 Grade F321 MSS SP-97 BW Moderate wet H2S service	
1	16	2	SCH140	SCH160	P31K-00ETX	Outlet ASTM A182 Grade F321 MSS SP-97 BW Moderate wet H2S service	
1	18	2	SCH120	SCH160	P31K-00F5G	Outlet ASTM A182 Grade F321 MSS SP-97 BW Moderate wet H2S service	
1	20	2	SCH140	SCH160	P31K-00F5C	Outlet ASTM A182 Grade F321 MSS SP-97 BW Moderate wet H2S service	
1	8	3	SCH140	SCH160	P31K-00ET9	Outlet ASTM A182 Grade F321 MSS SP-97 BW Moderate wet H2S service	
1	10	3	XXS	SCH160	P31K-00ETE	Outlet ASTM A182 Grade F321 MSS SP-97 BW Moderate wet H2S service	
1	12	3	SCH140	SCH160	P31K-00ETK	Outlet ASTM A182 Grade F321 MSS SP-97 BW Moderate wet H2S service	
1	14	3	SCH120	SCH160	P31K-00F50	Outlet ASTM A182 Grade F321 MSS SP-97 BW Moderate wet H2S service	
1	16	3	SCH140	SCH160	P31K-00ETY	Outlet ASTM A182 Grade F321 MSS SP-97 BW Moderate wet H2S service	
1	18	3	SCH120	SCH160	P31K-00F5H	Outlet ASTM A182 Grade F321 MSS SP-97 BW Moderate wet H2S service	
1	20	3	SCH140	SCH160	P31K-00F5D	Outlet ASTM A182 Grade F321 MSS SP-97 BW Moderate wet H2S service	
1	12	4	SCH140	SCH160	P31K-00ETL	Outlet ASTM A182 Grade F321 MSS SP-97 BW Moderate wet H2S service	
1	14	4	SCH120	SCH160	P31K-00F51	Outlet ASTM A182 Grade F321 MSS SP-97 BW Moderate wet H2S service	
1	16	4	SCH140	SCH160	P31K-00ETZ	Outlet ASTM A182 Grade F321 MSS SP-97 BW Moderate wet H2S service	
1	18	4	SCH120	SCH160	P31K-00F5J	Outlet ASTM A182 Grade F321 MSS SP-97 BW Moderate wet H2S service	
1	20	4	SCH140	SCH160	P31K-00F5E	Outlet ASTM A182 Grade F321 MSS SP-97 BW Moderate wet H2S service	
1	18	6	SCH120	SCH160	P31K-00F5K	Outlet ASTM A182 Grade F321 MSS SP-97 BW Moderate wet H2S service	
1	20	6	SCH140	SCH160	P31K-00F5F	Outlet ASTM A182 Grade F321 MSS SP-97 BW Moderate wet H2S service	

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PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30K-00059	Plug ASTM A182 Grade F321 ASME B16.11 NPT Round head Moderate wet H2S service	
1	0.75				P30K-0005A	Plug ASTM A182 Grade F321 ASME B16.11 NPT Round head Moderate wet H2S service	
1	1				P30K-0005B	Plug ASTM A182 Grade F321 ASME B16.11 NPT Round head Moderate wet H2S service	
1	1.5				P30K-0005C	Plug ASTM A182 Grade F321 ASME B16.11 NPT Round head Moderate wet H2S service	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH160		P61K-005HB	Flange WN ASTM A182 Grade F321 Class 2500 ASME B16.5 RJ Moderate wet H2S service	
1	0.75		SCH160		P61K-005HC	Flange WN ASTM A182 Grade F321 Class 2500 ASME B16.5 RJ Moderate wet H2S service	
1	1		SCH160		P61K-005HD	Flange WN ASTM A182 Grade F321 Class 2500 ASME B16.5 RJ Moderate wet H2S service	
1	1.5		SCH160		P61K-005HE	Flange WN ASTM A182 Grade F321 Class 2500 ASME B16.5 RJ Moderate wet H2S service	
1	2		SCH160		P61K-005HH	Flange WN ASTM A182 Grade F321 Class 2500 ASME B16.5 RJ Moderate wet H2S service	
1	3		SCH160		P61K-005HJ	Flange WN ASTM A182 Grade F321 Class 2500 ASME B16.5 RJ Moderate wet H2S service	
1	4		SCH160		P61K-005HK	Flange WN ASTM A182 Grade F321 Class 2500 ASME B16.5 RJ Moderate wet H2S service	
1	6		SCH160		P61K-005HL	Flange WN ASTM A182 Grade F321 Class 2500 ASME B16.5 RJ Moderate wet H2S service	
1	8		SCH140		P61K-005HM	Flange WN ASTM A182 Grade F321 Class 2500 ASME B16.5 RJ Moderate wet H2S service	
1	10		XXS		P61K-005HF	Flange WN ASTM A182 Grade F321 Class 2500 ASME B16.5 RJ Moderate wet H2S service	
1	12		SCH140		P61K-005HG	Flange WN ASTM A182 Grade F321 Class 2500 ASME B16.5 RJ Moderate wet H2S service	
1	14		SCH120		P61K-005VS	Flange WN ASTM A182 Grade F321 Class 2500 Standard-drawing RJ Moderate wet H2S service	
1	16		SCH140		P61K-005HP	Flange WN ASTM A182 Grade F321 Class 2500 Standard-drawing RJ Moderate wet H2S service	
1	18		SCH120		P61K-005VU	Flange WN ASTM A182 Grade F321 Class 2500 Standard-drawing RJ Moderate wet H2S service	
541	0.5				P61K-006A5	Flange NPT ASTM A182 Grade F321 Class 2500 ASME B16.5 RJ Moderate wet H2S service	
541	0.75				P61K-005ZA	Flange NPT ASTM A182 Grade F321 Class 2500 ASME B16.5 RJ Moderate wet H2S service	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67K-001MG	Blind flange ASTM A182 Grade F321 Class 2500 ASME B16.5 RJ Moderate wet H2S service	
1	0.75				P67K-001MH	Blind flange ASTM A182 Grade F321 Class 2500 ASME B16.5 RJ Moderate wet H2S service	
1	1				P67K-001MJ	Blind flange ASTM A182 Grade F321 Class 2500 ASME B16.5 RJ Moderate wet H2S service	
1	1.5				P67K-001MK	Blind flange ASTM A182 Grade F321 Class 2500 ASME B16.5 RJ Moderate wet H2S service	
1	2				P67K-001MN	Blind flange ASTM A182 Grade F321 Class 2500 ASME B16.5 RJ Moderate wet H2S service	
1	3				P67K-001MP	Blind flange ASTM A182 Grade F321 Class 2500 ASME B16.5 RJ Moderate wet H2S service	
1	4				P67K-001MR	Blind flange ASTM A182 Grade F321 Class 2500 ASME B16.5 RJ Moderate wet H2S service	
1	6				P67K-001MS	Blind flange ASTM A182 Grade F321 Class 2500 ASME B16.5 RJ Moderate wet H2S service	
1	8				P67K-001MT	Blind flange ASTM A182 Grade F321 Class 2500 ASME B16.5 RJ Moderate wet H2S service	
1	10				P67K-001ML	Blind flange ASTM A182 Grade F321 Class 2500 ASME B16.5 RJ Moderate wet H2S service	
1	12				P67K-001MM	Blind flange ASTM A182 Grade F321 Class 2500 ASME B16.5 RJ Moderate wet H2S service	
1	14				P67K-001MU	Blind flange ASTM A182 Grade F321 Class 2500 Standard-drawing RJ Moderate wet H2S service	
1	16				P67K-001MV	Blind flange ASTM A182 Grade F321 Class 2500 Standard-drawing RJ Moderate wet H2S service	
1	18				P67K-001MW	Blind flange ASTM A182 Grade F321 Class 2500 Standard-drawing RJ Moderate wet H2S service	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P75T-000JX	Ring joint gasket SS TP347 Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	0.75				P75T-000JY	Ring joint gasket SS TP347 Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	1				P75T-000JZ	Ring joint gasket SS TP347 Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	1.5				P75T-000K0	Ring joint gasket SS TP347 Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	2				P75T-000P3	Ring joint gasket SS TP347 Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	3				P75T-000P4	Ring joint gasket SS TP347 Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	4				P75T-0011J	Ring joint gasket SS TP347 Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	6				P75T-000M9	Ring joint gasket SS TP347 Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	8				P75T-000MA	Ring joint gasket SS TP347 Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	10				P75T-000K1	Ring joint gasket SS TP347 Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	12				P75T-000K2	Ring joint gasket SS TP347 Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	14				P75T-0013T	Ring joint gasket SS TP347 Class 2500 ASME B16.20 Flange Standard-drawing RJ Octagonal type	999
1	16				P75T-0013U	Ring joint gasket SS TP347 Class 2500 ASME B16.20 Flange Standard-drawing RJ Octagonal type	999
1	18				P75T-0013W	Ring joint gasket SS TP347 Class 2500 ASME B16.20 Flange Standard-drawing RJ Octagonal type	999

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BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-1				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	1.5				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
1	2				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	3-12				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
1	14-16				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	999

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81K-001CH	Gate valve ASTM A182 Grade F321 Class 2500 API 602 Flange ASME B16.5 RJ Trim SS347 WB-BG-OS&Y Handwheel operated Moderate wet H2S service Fluid-2	
1	0.75				P81K-001CJ	Gate valve ASTM A182 Grade F321 Class 2500 API 602 Flange ASME B16.5 RJ Trim SS347 WB-BG-OS&Y Handwheel operated Moderate wet H2S service Fluid-2	
1	1				P81K-001CK	Gate valve ASTM A182 Grade F321 Class 2500 API 602 Flange ASME B16.5 RJ Trim SS347 WB-BG-OS&Y Handwheel operated Moderate wet H2S service Fluid-2	
1	1.5				P81K-001CL	Gate valve ASTM A182 Grade F321 Class 2500 API 602 Flange ASME B16.5 RJ Trim SS347 WB-BG-OS&Y Handwheel operated Moderate wet H2S service Fluid-2	
1	2				P81L-002T5	Gate valve ASTM A351 Grade CF8C Class 2500 API 600 BW Sch160 Trim SS347 PSB-BG-OS&Y Handwheel operated Moderate wet H2S service Fluid-2	
1	3				P81L-002T3	Gate valve ASTM A351 Grade CF8C Class 2500 API 600 BW Sch160 Trim SS347 PSB-BG-OS&Y Gear operated Moderate wet H2S service Fluid-2	
1	4				P81L-002T4	Gate valve ASTM A351 Grade CF8C Class 2500 API 600 BW Sch160 Trim SS347 PSB-BG-OS&Y Gear operated Moderate wet H2S service Fluid-2	
1	6				P81L-002UA	Gate valve ASTM A351 Grade CF8C Class 2500 API 600 BW Sch160 Trim SS347 PSB-BG-OS&Y Gear operated Moderate wet H2S service Fluid-2	
1	8				P81L-002T6	Gate valve ASTM A351 Grade CF8C Class 2500 API 600 BW Sch140 Trim SS347 PSB-BG-OS&Y Gear operated Moderate wet H2S service Fluid-2	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82K-000Y3	Globe valve ASTM A182 Grade F321 Class 2500 API 602 Flange ASME B16.5 RJ Trim SS347 WB-BG-OS&Y Handwheel operated Moderate wet H2S service Fluid-2	
1	0.75				P82K-000Y4	Globe valve ASTM A182 Grade F321 Class 2500 API 602 Flange ASME B16.5 RJ Trim SS347 WB-BG-OS&Y Handwheel operated Moderate wet H2S service Fluid-2	
1	1				P82K-000Y5	Globe valve ASTM A182 Grade F321 Class 2500 API 602 Flange ASME B16.5 RJ Trim SS347 WB-BG-OS&Y Handwheel operated Moderate wet H2S service Fluid-2	
1	1.5				P82K-000Y6	Globe valve ASTM A182 Grade F321 Class 2500 API 602 Flange ASME B16.5 RJ Trim SS347 WB-BG-OS&Y Handwheel operated Moderate wet H2S service Fluid-2	
1	2				P82L-001YC	Globe valve ASTM A351 Grade CF8C Class 2500 BS 1873 BW Sch160 Trim SS347 PSB-BG-OS&Y Gear operated Moderate wet H2S service Fluid-2	
1	3				P82L-001HV	Globe valve ASTM A351 Grade CF8C Class 2500 BS 1873 BW Sch160 Trim SS347 PSB-BG-OS&Y Gear operated Moderate wet H2S service Fluid-2	
1	4				P82L-001HW	Globe valve ASTM A351 Grade CF8C Class 2500 BS 1873 BW Sch160 Trim SS347 PSB-BG-OS&Y Gear operated Moderate wet H2S service Fluid-2	
1	6				P82L-001HX	Globe valve ASTM A351 Grade CF8C Class 2500 BS 1873 BW Sch160 Trim SS347 PSB-BG-OS&Y Gear operated Moderate wet H2S service Fluid-2	
1	8				P82L-001HY	Globe valve ASTM A351 Grade CF8C Class 2500 BS 1873 BW Sch140 Trim SS347 PSB-BG-OS&Y Gear operated Moderate wet H2S service Fluid-2	

PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P72K-000D8	Paddle blank ASTM A182 Grade F321 Class 2500 Standard-drawing Flange ASME B16.5 RJ Moderate wet H2S service	
1	0.75				P72K-000D9	Paddle blank ASTM A182 Grade F321 Class 2500 Standard-drawing Flange ASME B16.5 RJ Moderate wet H2S service	
1	1				P72K-000DA	Paddle blank ASTM A182 Grade F321 Class 2500 Standard-drawing Flange ASME B16.5 RJ Moderate wet H2S service	
1	1.5				P72K-000DB	Paddle blank ASTM A182 Grade F321 Class 2500 Standard-drawing Flange ASME B16.5 RJ Moderate wet H2S service	
1	2				P72K-000DE	Paddle blank ASTM A182 Grade F321 Class 2500 Standard-drawing Flange ASME B16.5 RJ Moderate wet H2S service	
1	3				P72K-000DF	Paddle blank ASTM A182 Grade F321 Class 2500 Standard-drawing Flange ASME B16.5 RJ Moderate wet H2S service	
1	4				P72K-000DG	Paddle blank ASTM A182 Grade F321 Class 2500 Standard-drawing Flange ASME B16.5 RJ Moderate wet H2S service	
1	6				P72K-000DH	Paddle blank ASTM A182 Grade F321 Class 2500 Standard-drawing Flange ASME B16.5 RJ Moderate wet H2S service	
1	8				P72K-000DJ	Paddle blank ASTM A182 Grade F321 Class 2500 Standard-drawing Flange ASME B16.5 RJ Moderate wet H2S service	
1	10				P72K-000DC	Paddle blank ASTM A182 Grade F321 Class 2500 Standard-drawing Flange ASME B16.5 RJ Moderate wet H2S service	
1	12				P72K-000DD	Paddle blank ASTM A182 Grade F321 Class 2500 Standard-drawing Flange ASME B16.5 RJ Moderate wet H2S service	
1	14				P72K-000DK	Paddle blank ASTM A182 Grade F321 Class 2500 Standard-drawing Flange Standard-drawing RJ Moderate wet H2S service	
1	16				P72K-000DL	Paddle blank ASTM A182 Grade F321 Class 2500 Standard-drawing Flange Standard-drawing RJ Moderate wet H2S service	
1	18				P72K-000DM	Paddle blank ASTM A182 Grade F321 Class 2500 Standard-drawing Flange Standard-drawing RJ Moderate wet H2S service	

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PADDLE SPACER (PS)							
OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P72K-000DN	Paddle spacer ASTM A182 Grade F321 Class 2500 Standard-drawing Flange ASME B16.5 RJ Moderate wet H2S service	
1	0.75				P72K-000DP	Paddle spacer ASTM A182 Grade F321 Class 2500 Standard-drawing Flange ASME B16.5 RJ Moderate wet H2S service	
1	1				P72K-000DR	Paddle spacer ASTM A182 Grade F321 Class 2500 Standard-drawing Flange ASME B16.5 RJ Moderate wet H2S service	
1	1.5				P72K-000DS	Paddle spacer ASTM A182 Grade F321 Class 2500 Standard-drawing Flange ASME B16.5 RJ Moderate wet H2S service	
1	2				P72K-000DV	Paddle spacer ASTM A182 Grade F321 Class 2500 Standard-drawing Flange ASME B16.5 RJ Moderate wet H2S service	
1	3				P72K-000DW	Paddle spacer ASTM A182 Grade F321 Class 2500 Standard-drawing Flange ASME B16.5 RJ Moderate wet H2S service	
1	4				P72K-000DX	Paddle spacer ASTM A182 Grade F321 Class 2500 Standard-drawing Flange ASME B16.5 RJ Moderate wet H2S service	
1	6				P72K-000DY	Paddle spacer ASTM A182 Grade F321 Class 2500 Standard-drawing Flange ASME B16.5 RJ Moderate wet H2S service	
1	8				P72K-000DZ	Paddle spacer ASTM A182 Grade F321 Class 2500 Standard-drawing Flange ASME B16.5 RJ Moderate wet H2S service	
1	10				P72K-000DT	Paddle spacer ASTM A182 Grade F321 Class 2500 Standard-drawing Flange ASME B16.5 RJ Moderate wet H2S service	
1	12				P72K-000DU	Paddle spacer ASTM A182 Grade F321 Class 2500 Standard-drawing Flange ASME B16.5 RJ Moderate wet H2S service	
1	14				P72K-000E0	Paddle spacer ASTM A182 Grade F321 Class 2500 Standard-drawing Flange Standard-drawing RJ Moderate wet H2S service	
1	16				P72K-000E1	Paddle spacer ASTM A182 Grade F321 Class 2500 Standard-drawing Flange Standard-drawing RJ Moderate wet H2S service	
1	18				P72K-000E2	Paddle spacer ASTM A182 Grade F321 Class 2500 Standard-drawing Flange Standard-drawing RJ Moderate wet H2S service	

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PIPING CLASS
P1MQ REV NO. 2

BOLT TABLE (B_P1MQ , STUD ASME RJ, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	125	P80S-0090J	R13	P75T-000JX
0.75	4	0.750	130	P80S-0090K	R16	P75T-000JY
1	4	0.875	140	P80S-005ZD	R18	P75T-000JZ
1.5	4	1.125	175	P80S-0064S	R23	P75T-000K0
2	8	1.000	180	P80S-0061J	R26	P75T-000P3
3	8	1.250	260	P80S-0068P	R32	P75T-000P4
4	8	1.500	305	P80S-006LS	R38	P75T-0011J
6	8	2.000	410	P80S-00BBD	R47	P75T-000M9
8	12	2.000	450	P80S-00BH6	R51	P75T-000MA
10	12	2.500	575	P80S-00DZV	R55	P75T-000K1
12	12	2.750	635	P80S-01RAT	R60	P75T-000K2
14	14	3.000	695	P80S-01VKF	R64	P75T-0013T
16	14	3.000	755	P80S-01VKU	R68	P75T-0013U
18	16	3.000	815		R72	P75T-0013W
20	16	3.000	875		R76	

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PIPING CLASS

P1MQ REV NO. 2

BRANCH TABLE (T_P1MQ)

RUN PIPE SIZE (in) \ BRANCH SIZE (in)	0.5	0.75	1	1.5	2	3	4	6	8	10	12	14	16	18	20
0.5	TS														
0.75		TS													
1		TR	TS												
1.5		TR	TR	TS											
2		L	TR	TR	TS										
3		L	L	TR	TR	TS									
4	L	L	L	L	TR	TR	TS								
6	L	L	L	L	L	TR	TR	TS							
8		L	L	L	L	L	TR	TR	TS						
10		L	L	L	L	L	TR	TR	TR	TS					
12		L	L	L	L	L	L	TR	TR	TR	TS				
14		L	L	L	L	L	L	TR	TR	TR	TR	TS			
16		L	L	L	L	L	L	TR	TR	TR	TR	TR	TS		
18		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TS	
20		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TR	TS

TS : STRAIGHT TEE
TR : REDUCING TEE
L : OUTLET

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PIPING CLASS

P1Y702 REV NO. 2

Material : Incoloy 825
Rating : ASME CLASS 2500
Flange Face : RJ
C.A.(mm) : 1.50
Gasket : Ring Octagonal
Service : PROCESS - WET SEVERE SOUR SERVICE SUBJECT TO NACE + HIC STD + HYDROGEN SERVICE
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
5	BOLTING CONFIRMING TO B7M / 2HM SHALL BE USED UNDER CONDITIONS (A) DIRECT EXPOSURE TO SOUR ENVIRONMENTS (B) WHEN THE BOLTING WILL BE BURIED OR INSULATED

DETAIL NOTES :

NO.	DESCRIPTION
999	HOLD ITEMS. ORDER PLACEMENT SHALL NOT BE DONE BEFORE RELEASING HOLD.

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
541	NPT(F) (F)
4601	Y-PATTERN (W)

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PIPING CLASS
P1Y702 REV NO. 2

PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P01M-000EN	Pipe ASTM B423 UNS N08825 Seamless ASME B36.10M/B36.19M PE Licensor-2	
1	0.75		SCH80S		P01M-000EP	Pipe ASTM B423 UNS N08825 Seamless ASME B36.10M/B36.19M PE Licensor-2	
1	1		SCH80S		P01M-000ER	Pipe ASTM B423 UNS N08825 Seamless ASME B36.10M/B36.19M PE Licensor-2	
1	1.5		SCH160		P01M-000F2	Pipe ASTM B423 UNS N08825 Seamless ASME B36.10M/B36.19M PE Licensor-2	
1	2		SCH160		P01M-000GC	Pipe ASTM B423 UNS N08825 Seamless ASME B36.10M/B36.19M BE Licensor-2	
1	3		SCH160		P01M-000GD	Pipe ASTM B423 UNS N08825 Seamless ASME B36.10M/B36.19M BE Licensor-2	
1	4		SCH120		P01M-000EV	Pipe ASTM B423 UNS N08825 Seamless ASME B36.10M/B36.19M BE Licensor-2	
1	6		SCH160		P01M-000GV	Pipe ASTM B423 UNS N08825 Seamless ASME B36.10M/B36.19M BE Licensor-2	
1	8		SCH120		P01M-000H0	Pipe ASTM B705 UNS N08825 Class 1 Weld ASME B36.10M/B36.19M BE Licensor-2	
1	10		SCH120		P01M-000GW	Pipe ASTM B705 UNS N08825 Class 1 Weld ASME B36.10M/B36.19M BE Licensor-2	
1	12		SCH120		P01M-000GX	Pipe ASTM B705 UNS N08825 Class 1 Weld ASME B36.10M/B36.19M BE Licensor-2	
1	14		SCH120		P01M-000GY	Pipe ASTM B705 UNS N08825 Class 1 Weld ASME B36.10M/B36.19M BE Licensor-2	
1	16		SCH120		P01M-000GZ	Pipe ASTM B705 UNS N08825 Class 1 Weld ASME B36.10M/B36.19M BE Licensor-2	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P02M-000D8	90 degree elbow ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Long radius Licensor-2	
1	0.75		SCH80S		P02M-000D9	90 degree elbow ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Long radius Licensor-2	
1	1		SCH80S		P02M-000DA	90 degree elbow ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Long radius Licensor-2	
1	1.5		SCH160		P02M-000DM	90 degree elbow ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Long radius Licensor-2	
1	2		SCH160		P02M-000F4	90 degree elbow ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Long radius Licensor-2	
1	3		SCH160		P02M-000F5	90 degree elbow ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Long radius Licensor-2	
1	4		SCH120		P02M-000DE	90 degree elbow ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Long radius Licensor-2	
1	6		SCH160		P02M-000FA	90 degree elbow ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Long radius Licensor-2	
1	8		SCH120		P02M-000FF	90 degree elbow ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Long radius Licensor-2	
1	10		SCH120		P02M-000FB	90 degree elbow ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Long radius Licensor-2	
1	12		SCH120		P02M-000FC	90 degree elbow ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Long radius Licensor-2	
1	14		SCH120		P02M-000FD	90 degree elbow ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Long radius Licensor-2	
1	16		SCH120		P02M-000FE	90 degree elbow ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Long radius Licensor-2	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P03M-001E4	45 degree elbow ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Long radius Licensor-2	
1	0.75		SCH80S		P03M-001E5	45 degree elbow ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Long radius Licensor-2	
1	1		SCH80S		P03M-001E6	45 degree elbow ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Long radius Licensor-2	
1	1.5		SCH160		P03M-001EH	45 degree elbow ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Long radius Licensor-2	
1	2		SCH160		P03M-001G1	45 degree elbow ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Long radius Licensor-2	
1	3		SCH160		P03M-001G2	45 degree elbow ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Long radius Licensor-2	
1	4		SCH120		P03M-001EA	45 degree elbow ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Long radius Licensor-2	
1	6		SCH160		P03M-001G7	45 degree elbow ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Long radius Licensor-2	
1	8		SCH120		P03M-001GC	45 degree elbow ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Long radius Licensor-2	
1	10		SCH120		P03M-001G8	45 degree elbow ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Long radius Licensor-2	
1	12		SCH120		P03M-001G9	45 degree elbow ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Long radius Licensor-2	
1	14		SCH120		P03M-001GA	45 degree elbow ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Long radius Licensor-2	
1	16		SCH120		P03M-001GB	45 degree elbow ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Long radius Licensor-2	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P21M-000BS	Straight tee ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	0.75		SCH80S		P21M-000BT	Straight tee ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	1		SCH80S		P21M-000BU	Straight tee ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	1.5		SCH160		P21M-000C0	Straight tee ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	2		SCH160		P21M-000DB	Straight tee ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	3		SCH160		P21M-000DC	Straight tee ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	4		SCH120		P21M-000BY	Straight tee ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	6		SCH160		P21M-000DH	Straight tee ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	8		SCH120		P21M-000DN	Straight tee ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	
1	10		SCH120		P21M-000DJ	Straight tee ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	
1	12		SCH120		P21M-000DK	Straight tee ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	

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STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14		SCH120		P21M-000DL	Straight tee ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	
1	16		SCH120		P21M-000DM	Straight tee ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75	SCH80S	SCH80S	P24M-000XC	Reducing tee ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	1.5	0.75	SCH160	SCH80S	P24M-000Y7	Reducing tee ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	1.5	1	SCH160	SCH80S	P24M-000Y8	Reducing tee ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	2	1	SCH160	SCH80S	P24M-00107	Reducing tee ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	2	1.5	SCH160	SCH160	P24M-00108	Reducing tee ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	3	1.5	SCH160	SCH160	P24M-00109	Reducing tee ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	3	2	SCH160	SCH160	P24M-0010A	Reducing tee ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	4	2	SCH120	SCH160	P24M-0010B	Reducing tee ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	4	3	SCH120	SCH160	P24M-0010C	Reducing tee ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	6	3	SCH160	SCH160	P24M-0010E	Reducing tee ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	6	4	SCH160	SCH120	P24M-0010H	Reducing tee ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	8	4	SCH120	SCH120	P24M-0010F	Reducing tee ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	
1	8	6	SCH120	SCH160	P24M-0010G	Reducing tee ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	
1	10	4	SCH120	SCH120	P24M-0010J	Reducing tee ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	
1	10	6	SCH120	SCH160	P24M-0010K	Reducing tee ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	
1	10	8	SCH120	SCH120	P24M-0010L	Reducing tee ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	
1	12	6	SCH120	SCH160	P24M-0010P	Reducing tee ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	
1	12	8	SCH120	SCH120	P24M-0010N	Reducing tee ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	
1	12	10	SCH120	SCH120	P24M-0010M	Reducing tee ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	
1	14	6	SCH120	SCH160	P24M-0010T	Reducing tee ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	
1	14	8	SCH120	SCH120	P24M-0010U	Reducing tee ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	
1	14	10	SCH120	SCH120	P24M-0010R	Reducing tee ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	
1	14	12	SCH120	SCH120	P24M-0010S	Reducing tee ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	
1	16	6	SCH120	SCH160	P24M-0010Y	Reducing tee ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	
1	16	8	SCH120	SCH120	P24M-0010Z	Reducing tee ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	
1	16	10	SCH120	SCH120	P24M-0010V	Reducing tee ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	
1	16	12	SCH120	SCH120	P24M-0010W	Reducing tee ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	
1	16	14	SCH120	SCH120	P24M-0010X	Reducing tee ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH80S	SCH80S	P27M-000VZ	Concentric reducer ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	1	0.5	SCH80S	SCH80S	P27M-000W0	Concentric reducer ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	1	0.75	SCH80S	SCH80S	P27M-000W1	Concentric reducer ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	1.5	0.5	SCH160	SCH80S	P27M-000WY	Concentric reducer ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	1.5	0.75	SCH160	SCH80S	P27M-000WZ	Concentric reducer ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	1.5	1	SCH160	SCH80S	P27M-000X0	Concentric reducer ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	2	0.75	SCH160	SCH80S	P27M-000ZY	Concentric reducer ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	2	1	SCH160	SCH80S	P27M-000ZZ	Concentric reducer ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	2	1.5	SCH160	SCH160	P27M-00100	Concentric reducer ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	3	1.5	SCH160	SCH160	P27M-00101	Concentric reducer ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	3	2	SCH160	SCH160	P27M-00102	Concentric reducer ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	4	1.5	SCH120	SCH160	P27M-00103	Concentric reducer ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	4	2	SCH120	SCH160	P27M-00104	Concentric reducer ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	4	3	SCH120	SCH160	P27M-00105	Concentric reducer ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	6	3	SCH160	SCH160	P27M-00107	Concentric reducer ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	6	4	SCH160	SCH120	P27M-0010R	Concentric reducer ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	8	4	SCH120	SCH120	P27M-00108	Concentric reducer ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	
1	8	6	SCH120	SCH160	P27M-00109	Concentric reducer ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	
1	10	4	SCH120	SCH120	P27M-0010A	Concentric reducer ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	
1	10	6	SCH120	SCH160	P27M-0010B	Concentric reducer ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	
1	10	8	SCH120	SCH120	P27M-0010C	Concentric reducer ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	
1	12	6	SCH120	SCH160	P27M-0010E	Concentric reducer ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	
1	12	8	SCH120	SCH120	P27M-0010F	Concentric reducer ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	

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CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	12	10	SCH120	SCH120	P27M-0010D	Concentric reducer ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	
1	14	6	SCH120	SCH160	P27M-0010J	Concentric reducer ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	
1	14	8	SCH120	SCH120	P27M-0010K	Concentric reducer ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	
1	14	10	SCH120	SCH120	P27M-0010G	Concentric reducer ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	
1	14	12	SCH120	SCH120	P27M-0010H	Concentric reducer ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	
1	16	8	SCH120	SCH120	P27M-0010P	Concentric reducer ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	
1	16	10	SCH120	SCH120	P27M-0010L	Concentric reducer ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	
1	16	12	SCH120	SCH120	P27M-0010M	Concentric reducer ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	
1	16	14	SCH120	SCH120	P27M-0010N	Concentric reducer ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH80S	SCH80S	P28M-000XX	Eccentric reducer ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	1	0.5	SCH80S	SCH80S	P28M-000XY	Eccentric reducer ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	1	0.75	SCH80S	SCH80S	P28M-000XZ	Eccentric reducer ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	1.5	0.5	SCH160	SCH80S	P28M-000YW	Eccentric reducer ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	1.5	0.75	SCH160	SCH80S	P28M-000YX	Eccentric reducer ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	1.5	1	SCH160	SCH80S	P28M-000YY	Eccentric reducer ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	2	0.75	SCH160	SCH80S	P28M-0011Y	Eccentric reducer ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	2	1	SCH160	SCH80S	P28M-0011Z	Eccentric reducer ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	2	1.5	SCH160	SCH160	P28M-00120	Eccentric reducer ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	3	1.5	SCH160	SCH160	P28M-00121	Eccentric reducer ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	3	2	SCH160	SCH160	P28M-00122	Eccentric reducer ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	4	1.5	SCH120	SCH160	P28M-00123	Eccentric reducer ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	4	2	SCH120	SCH160	P28M-00124	Eccentric reducer ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	4	3	SCH120	SCH160	P28M-00125	Eccentric reducer ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	6	3	SCH160	SCH160	P28M-00127	Eccentric reducer ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	6	4	SCH160	SCH120	P28M-0012R	Eccentric reducer ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	8	4	SCH120	SCH120	P28M-00128	Eccentric reducer ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	
1	8	6	SCH120	SCH160	P28M-00129	Eccentric reducer ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	
1	10	4	SCH120	SCH120	P28M-0012A	Eccentric reducer ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	
1	10	6	SCH120	SCH160	P28M-0012B	Eccentric reducer ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	
1	10	8	SCH120	SCH120	P28M-0012C	Eccentric reducer ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	
1	12	6	SCH120	SCH160	P28M-0012E	Eccentric reducer ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	
1	12	8	SCH120	SCH120	P28M-0012F	Eccentric reducer ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	
1	12	10	SCH120	SCH120	P28M-0012D	Eccentric reducer ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	
1	14	6	SCH120	SCH160	P28M-0012J	Eccentric reducer ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	
1	14	8	SCH120	SCH120	P28M-0012K	Eccentric reducer ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	
1	14	10	SCH120	SCH120	P28M-0012G	Eccentric reducer ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	
1	14	12	SCH120	SCH120	P28M-0012H	Eccentric reducer ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	
1	16	8	SCH120	SCH120	P28M-0012P	Eccentric reducer ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	
1	16	10	SCH120	SCH120	P28M-0012L	Eccentric reducer ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	
1	16	12	SCH120	SCH120	P28M-0012M	Eccentric reducer ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	
1	16	14	SCH120	SCH120	P28M-0012N	Eccentric reducer ASTM B366 Grade WPNICMC Class WX Weld ASME B16.9 BW Licensor-2	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P29M-0009H	Cap ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	0.75		SCH80S		P29M-0009J	Cap ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	1		SCH80S		P29M-0009K	Cap ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	1.5		SCH160		P29M-0009X	Cap ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	2		SCH160		P29M-000AW	Cap ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	3		SCH160		P29M-000AX	Cap ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	4		SCH120		P29M-0009U	Cap ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	6		SCH160		P29M-000B6	Cap ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	8		SCH120		P29M-000B7	Cap ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	10		SCH120		P29M-000B2	Cap ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	12		SCH120		P29M-000B3	Cap ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	
1	14		SCH120		P29M-000B4	Cap ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	

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CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	16		SCH120		P29M-000B5	Cap ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Licensor-2	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P41M-000A4	Straight nipple ASTM B423 UNS N08825 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Licensor-2	
1	0.75		XXS		P41M-000A5	Straight nipple ASTM B423 UNS N08825 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Licensor-2	
1	1		XXS		P41M-000A6	Straight nipple ASTM B423 UNS N08825 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Licensor-2	
1	1.5		XXS		P41M-000A7	Straight nipple ASTM B423 UNS N08825 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Licensor-2	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2	0.75	SCH160	SCH80S	P31P-0029J	Outlet ASTM B564 UNS N08825 MSS SP-97 BW Licensor-2	
1	3	0.75	SCH160	SCH80S	P31P-0029K	Outlet ASTM B564 UNS N08825 MSS SP-97 BW Licensor-2	
1	4	0.75	SCH120	SCH80S	P31P-0028N	Outlet ASTM B564 UNS N08825 MSS SP-97 BW Licensor-2	
1	6	0.75	SCH160	SCH80S	P31P-0029N	Outlet ASTM B564 UNS N08825 MSS SP-97 BW Licensor-2	
1	8	0.75	SCH120	SCH80S	P31P-0029T	Outlet ASTM B564 UNS N08825 MSS SP-97 BW Licensor-2	
1	10	0.75	SCH120	SCH80S	P31P-0029Y	Outlet ASTM B564 UNS N08825 MSS SP-97 BW Licensor-2	
1	12	0.75	SCH120	SCH80S	P31P-002A3	Outlet ASTM B564 UNS N08825 MSS SP-97 BW Licensor-2	
1	14	0.75	SCH120	SCH80S	P31P-002A9	Outlet ASTM B564 UNS N08825 MSS SP-97 BW Licensor-2	
1	16	0.75	SCH120	SCH80S	P31P-002AF	Outlet ASTM B564 UNS N08825 MSS SP-97 BW Licensor-2	
1	3	1	SCH160	SCH80S	P31P-0029L	Outlet ASTM B564 UNS N08825 MSS SP-97 BW Licensor-2	
1	4	1	SCH120	SCH80S	P31P-0028P	Outlet ASTM B564 UNS N08825 MSS SP-97 BW Licensor-2	
1	6	1	SCH160	SCH80S	P31P-0029P	Outlet ASTM B564 UNS N08825 MSS SP-97 BW Licensor-2	
1	8	1	SCH120	SCH80S	P31P-0029U	Outlet ASTM B564 UNS N08825 MSS SP-97 BW Licensor-2	
1	10	1	SCH120	SCH80S	P31P-0029Z	Outlet ASTM B564 UNS N08825 MSS SP-97 BW Licensor-2	
1	12	1	SCH120	SCH80S	P31P-002A4	Outlet ASTM B564 UNS N08825 MSS SP-97 BW Licensor-2	
1	14	1	SCH120	SCH80S	P31P-002AA	Outlet ASTM B564 UNS N08825 MSS SP-97 BW Licensor-2	
1	16	1	SCH120	SCH80S	P31P-002AG	Outlet ASTM B564 UNS N08825 MSS SP-97 BW Licensor-2	
1	4	1.5	SCH120	SCH160	P31P-0029M	Outlet ASTM B564 UNS N08825 MSS SP-97 BW Licensor-2	
1	6	1.5	SCH160	SCH160	P31P-0029R	Outlet ASTM B564 UNS N08825 MSS SP-97 BW Licensor-2	
1	8	1.5	SCH120	SCH160	P31P-0029V	Outlet ASTM B564 UNS N08825 MSS SP-97 BW Licensor-2	
1	10	1.5	SCH120	SCH160	P31P-002A0	Outlet ASTM B564 UNS N08825 MSS SP-97 BW Licensor-2	
1	12	1.5	SCH120	SCH160	P31P-002A5	Outlet ASTM B564 UNS N08825 MSS SP-97 BW Licensor-2	
1	14	1.5	SCH120	SCH160	P31P-002AB	Outlet ASTM B564 UNS N08825 MSS SP-97 BW Licensor-2	
1	16	1.5	SCH120	SCH160	P31P-002AH	Outlet ASTM B564 UNS N08825 MSS SP-97 BW Licensor-2	
1	6	2	SCH160	SCH160	P31P-0029S	Outlet ASTM B564 UNS N08825 MSS SP-97 BW Licensor-2	
1	8	2	SCH120	SCH160	P31P-0029W	Outlet ASTM B564 UNS N08825 MSS SP-97 BW Licensor-2	
1	10	2	SCH120	SCH160	P31P-002A1	Outlet ASTM B564 UNS N08825 MSS SP-97 BW Licensor-2	
1	12	2	SCH120	SCH160	P31P-002A6	Outlet ASTM B564 UNS N08825 MSS SP-97 BW Licensor-2	
1	14	2	SCH120	SCH160	P31P-002AC	Outlet ASTM B564 UNS N08825 MSS SP-97 BW Licensor-2	
1	16	2	SCH120	SCH160	P31P-002AJ	Outlet ASTM B564 UNS N08825 MSS SP-97 BW Licensor-2	
1	8	3	SCH120	SCH160	P31P-0029X	Outlet ASTM B564 UNS N08825 MSS SP-97 BW Licensor-2	
1	10	3	SCH120	SCH160	P31P-002A2	Outlet ASTM B564 UNS N08825 MSS SP-97 BW Licensor-2	
1	12	3	SCH120	SCH160	P31P-002A7	Outlet ASTM B564 UNS N08825 MSS SP-97 BW Licensor-2	
1	14	3	SCH120	SCH160	P31P-002AD	Outlet ASTM B564 UNS N08825 MSS SP-97 BW Licensor-2	
1	16	3	SCH120	SCH160	P31P-002AK	Outlet ASTM B564 UNS N08825 MSS SP-97 BW Licensor-2	
1	12	4	SCH120	SCH120	P31P-002A8	Outlet ASTM B564 UNS N08825 MSS SP-97 BW Licensor-2	
1	14	4	SCH120	SCH120	P31P-002AE	Outlet ASTM B564 UNS N08825 MSS SP-97 BW Licensor-2	
1	16	4	SCH120	SCH120	P31P-002AL	Outlet ASTM B564 UNS N08825 MSS SP-97 BW Licensor-2	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30P-0001C	Plug ASTM B564 UNS N08825 ASME B16.11 NPT Round head Licensor-2	
1	0.75				P30P-0001D	Plug ASTM B564 UNS N08825 ASME B16.11 NPT Round head Licensor-2	
1	1				P30P-0001E	Plug ASTM B564 UNS N08825 ASME B16.11 NPT Round head Licensor-2	
1	1.5				P30P-0001F	Plug ASTM B564 UNS N08825 ASME B16.11 NPT Round head Licensor-2	

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FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P61P-0013J	Flange WN ASTM B564 UNS N08825 Class 2500 ASME B16.5 RJ Licensor-2	
1	0.75		SCH80S		P61P-0013K	Flange WN ASTM B564 UNS N08825 Class 2500 ASME B16.5 RJ Licensor-2	
1	1		SCH80S		P61P-0013L	Flange WN ASTM B564 UNS N08825 Class 2500 ASME B16.5 RJ Licensor-2	
1	1.5		SCH160		P61P-00145	Flange WN ASTM B564 UNS N08825 Class 2500 ASME B16.5 RJ Licensor-2	
1	2		SCH160		P61P-00148	Flange WN ASTM B564 UNS N08825 Class 2500 ASME B16.5 RJ Licensor-2	
1	3		SCH160		P61P-00149	Flange WN ASTM B564 UNS N08825 Class 2500 ASME B16.5 RJ Licensor-2	
1	4		SCH120		P61P-0013T	Flange WN ASTM B564 UNS N08825 Class 2500 ASME B16.5 RJ Licensor-2	
1	6		SCH160		P61P-0014A	Flange WN ASTM B564 UNS N08825 Class 2500 ASME B16.5 RJ Licensor-2	
1	8		SCH120		P61P-0014B	Flange WN ASTM B564 UNS N08825 Class 2500 ASME B16.5 RJ Licensor-2	
1	10		SCH120		P61P-00146	Flange WN ASTM B564 UNS N08825 Class 2500 ASME B16.5 RJ Licensor-2	
1	12		SCH120		P61P-00147	Flange WN ASTM B564 UNS N08825 Class 2500 ASME B16.5 RJ Licensor-2	
1	16		SCH120		P61P-0014F	Flange WN ASTM B564 UNS N08825 Class 2500 Standard-drawing RJ Licensor-2	
541	0.5				P61P-0014G	Flange NPT ASTM B564 UNS N08825 Class 2500 ASME B16.5 RJ Licensor-2	
541	0.75				P61P-0014H	Flange NPT ASTM B564 UNS N08825 Class 2500 ASME B16.5 RJ Licensor-2	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67P-000BW	Blind flange ASTM B564 UNS N08825 Class 2500 ASME B16.5 RJ Licensor-2	
1	0.75				P67P-000BX	Blind flange ASTM B564 UNS N08825 Class 2500 ASME B16.5 RJ Licensor-2	
1	1				P67P-000BY	Blind flange ASTM B564 UNS N08825 Class 2500 ASME B16.5 RJ Licensor-2	
1	1.5				P67P-000BZ	Blind flange ASTM B564 UNS N08825 Class 2500 ASME B16.5 RJ Licensor-2	
1	2				P67P-000C2	Blind flange ASTM B564 UNS N08825 Class 2500 ASME B16.5 RJ Licensor-2	
1	3				P67P-000C3	Blind flange ASTM B564 UNS N08825 Class 2500 ASME B16.5 RJ Licensor-2	
1	4				P67P-000C4	Blind flange ASTM B564 UNS N08825 Class 2500 ASME B16.5 RJ Licensor-2	
1	6				P67P-000C5	Blind flange ASTM B564 UNS N08825 Class 2500 ASME B16.5 RJ Licensor-2	
1	8				P67P-000C6	Blind flange ASTM B564 UNS N08825 Class 2500 ASME B16.5 RJ Licensor-2	
1	10				P67P-000C0	Blind flange ASTM B564 UNS N08825 Class 2500 ASME B16.5 RJ Licensor-2	
1	12				P67P-000C1	Blind flange ASTM B564 UNS N08825 Class 2500 ASME B16.5 RJ Licensor-2	
1	16				P67P-000C7	Blind flange ASTM B564 UNS N08825 Class 2500 Standard-drawing RJ Licensor-2	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P75T-000K3	Ring joint gasket UNS N08825 Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	0.75				P75T-000K4	Ring joint gasket UNS N08825 Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	1				P75T-000K5	Ring joint gasket UNS N08825 Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	1.5				P75T-000K6	Ring joint gasket UNS N08825 Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	2				P75T-000LN	Ring joint gasket UNS N08825 Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	3				P75T-000K7	Ring joint gasket UNS N08825 Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	4				P75T-000LP	Ring joint gasket UNS N08825 Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	6				P75T-000K8	Ring joint gasket UNS N08825 Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	8				P75T-000LR	Ring joint gasket UNS N08825 Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	10				P75T-000LL	Ring joint gasket UNS N08825 Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	12				P75T-000LM	Ring joint gasket UNS N08825 Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	16				P75T-0013X	Ring joint gasket UNS N08825 Class 2500 ASME B16.20 Flange Standard-drawing RJ Octagonal type	999

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-1				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	1.5				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
1	2				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	3-12				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
1	14-16				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	999

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81P-0004K	Gate valve ASTM B564 UNS N08825 Class 2500 API 602 BW Sch80S Trim UNS N08825 WB-BG-OS&Y Handwheel operated Severe wet H2S service Licensor-2	

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GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75				P81P-0004L	Gate valve ASTM B564 UNS N08825 Class 2500 API 602 BW Sch80S Trim UNS N08825 WB-BG-OS&Y Handwheel operated Severe wet H2S service Licensor-2	
1	1				P81P-0004M	Gate valve ASTM B564 UNS N08825 Class 2500 API 602 BW Sch80S Trim UNS N08825 WB-BG-OS&Y Handwheel operated Severe wet H2S service Licensor-2	
1	1.5				P81P-0004N	Gate valve ASTM B564 UNS N08825 Class 2500 API 602 BW Sch160 Trim UNS N08825 WB-BG-OS&Y Handwheel operated Severe wet H2S service Licensor-2	
1	2				P81R-000FU	Gate valve ASTM A494 Grade CU5MCuC Class 2500 API 600 BW Sch160 Trim UNS N08825 PSB-BG-OS&Y Handwheel operated Severe wet H2S service	
1	3				P81R-000FV	Gate valve ASTM A494 Grade CU5MCuC Class 2500 API 600 BW Sch160 Trim UNS N08825 PSB-BG-OS&Y Gear operated Severe wet H2S service	
1	4				P81R-000E5	Gate valve ASTM A494 Grade CU5MCuC Class 2500 API 600 BW Sch120 Trim UNS N08825 PSB-BG-OS&Y Gear operated Severe wet H2S service	
1	6				P81R-000G7	Gate valve ASTM A494 Grade CU5MCuC Class 2500 API 600 BW Sch160 Trim UNS N08825 PSB-BG-OS&Y Gear operated Severe wet H2S service	
1	8				P81R-000GA	Gate valve ASTM A494 Grade CU5MCuC Class 2500 API 600 BW Sch120 Trim UNS N08825 PSB-BG-OS&Y Gear operated Severe wet H2S service	
1	10				P81R-000G8	Gate valve ASTM A494 Grade CU5MCuC Class 2500 API 600 BW Sch120 Trim UNS N08825 PSB-BG-OS&Y Gear operated Severe wet H2S service	
1	12				P81R-000G9	Gate valve ASTM A494 Grade CU5MCuC Class 2500 API 600 BW Sch120 Trim UNS N08825 PSB-BG-OS&Y Gear operated Severe wet H2S service	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82P-0004F	Globe valve ASTM B564 UNS N08825 Class 2500 API 602 BW Sch80S Trim UNS N08825 WB-BG-OS&Y Handwheel operated Severe wet H2S service Licensor-2	
1	0.75				P82P-0004G	Globe valve ASTM B564 UNS N08825 Class 2500 API 602 BW Sch80S Trim UNS N08825 WB-BG-OS&Y Handwheel operated Severe wet H2S service Licensor-2	
1	1				P82P-0004H	Globe valve ASTM B564 UNS N08825 Class 2500 API 602 BW Sch80S Trim UNS N08825 WB-BG-OS&Y Handwheel operated Severe wet H2S service Licensor-2	
1	1.5				P82P-0004J	Globe valve ASTM B564 UNS N08825 Class 2500 API 602 BW Sch160 Trim UNS N08825 WB-BG-OS&Y Handwheel operated Severe wet H2S service Licensor-2	
1	2				P82R-000A4	Globe valve ASTM A494 Grade CU5MCuC Class 2500 BS 1873 BW Sch160 Trim UNS N08825 PSB-BG-OS&Y Gear operated Severe wet H2S service	
1	3				P82R-0009J	Globe valve ASTM A494 Grade CU5MCuC Class 2500 BS 1873 BW Sch160 Trim UNS N08825 PSB-BG-OS&Y Gear operated Severe wet H2S service	
1	4				P82R-0008K	Globe valve ASTM A494 Grade CU5MCuC Class 2500 BS 1873 BW Sch120 Trim UNS N08825 PSB-BG-OS&Y Gear operated Severe wet H2S service	
1	6				P82R-0009T	Globe valve ASTM A494 Grade CU5MCuC Class 2500 BS 1873 BW Sch160 Trim UNS N08825 PSB-BG-OS&Y Gear operated Severe wet H2S service	
1	8				P82R-0009U	Globe valve ASTM A494 Grade CU5MCuC Class 2500 BS 1873 BW Sch120 Trim UNS N08825 PSB-BG-OS&Y Gear operated Severe wet H2S service	
4601	0.75				P82P-0004R	Y-pattern globe valve ASTM B564 UNS N08825 Class 2500 ASME B16.34 BW Sch80S Trim UNS N08825 WB-BG-OS&Y Handwheel operated Severe wet H2S service Licensor-2	
4601	3				P82R-000A0	Y-pattern globe valve ASTM A494 Grade CU5MCuC Class 2500 ASME B16.34 BW Sch160 Trim UNS N08825 PSB-BG-OS&Y Gear operated Severe wet H2S service	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83P-0004J	Check valve ASTM B564 UNS N08825 Class 2500 API 602 BW Sch80S Trim UNS N08825 Lift-type Welded cover Severe wet H2S service Licensor-2	
1	0.75				P83P-0004K	Check valve ASTM B564 UNS N08825 Class 2500 API 602 BW Sch80S Trim UNS N08825 Lift-type Welded cover Severe wet H2S service Licensor-2	
1	1				P83P-0004L	Check valve ASTM B564 UNS N08825 Class 2500 API 602 BW Sch80S Trim UNS N08825 Lift-type Welded cover Severe wet H2S service Licensor-2	
1	1.5				P83P-0004M	Check valve ASTM B564 UNS N08825 Class 2500 API 602 BW Sch160 Trim UNS N08825 Lift-type Welded cover Severe wet H2S service Licensor-2	
1	2				P83R-000B2	Check valve ASTM A494 Grade CU5MCuC Class 2500 BS 1868 BW Sch160 Trim UNS N08825 Swing-type Pressure seal cap Severe wet H2S service	
1	3				P83R-000B3	Check valve ASTM A494 Grade CU5MCuC Class 2500 BS 1868 BW Sch160 Trim UNS N08825 Swing-type Pressure seal cap Severe wet H2S service	
1	4				P83R-000A4	Check valve ASTM A494 Grade CU5MCuC Class 2500 BS 1868 BW Sch120 Trim UNS N08825 Swing-type Pressure seal cap Severe wet H2S service	
1	6				P83R-000BS	Check valve ASTM A494 Grade CU5MCuC Class 2500 BS 1868 BW Sch160 Trim UNS N08825 Swing-type Pressure seal cap Severe wet H2S service	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3				P71P-00028	Spectacle blank ASTM B564 UNS N08825 Class 2500 Standard-drawing Flange ASME B16.5 RJ Licensor-2	

PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P72P-0003A	Paddle blank ASTM B564 UNS N08825 Class 2500 Standard-drawing Flange ASME B16.5 RJ Licensor-2	
1	0.75				P72P-0003B	Paddle blank ASTM B564 UNS N08825 Class 2500 Standard-drawing Flange ASME B16.5 RJ Licensor-2	
1	1				P72P-0003C	Paddle blank ASTM B564 UNS N08825 Class 2500 Standard-drawing Flange ASME B16.5 RJ Licensor-2	
1	1.5				P72P-0003D	Paddle blank ASTM B564 UNS N08825 Class 2500 Standard-drawing Flange ASME B16.5 RJ Licensor-2	
1	2				P72P-0003G	Paddle blank ASTM B564 UNS N08825 Class 2500 Standard-drawing Flange ASME B16.5 RJ Licensor-2	
1	3				P72P-0003H	Paddle blank ASTM B564 UNS N08825 Class 2500 Standard-drawing Flange ASME B16.5 RJ Licensor-2	

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PADDLE BLANK (PB)							
OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	4				P72P-0003J	Paddle blank ASTM B564 UNS N08825 Class 2500 Standard-drawing Flange ASME B16.5 RJ Licensor-2	
1	6				P72P-0003K	Paddle blank ASTM B564 UNS N08825 Class 2500 Standard-drawing Flange ASME B16.5 RJ Licensor-2	
1	8				P72P-0003L	Paddle blank ASTM B564 UNS N08825 Class 2500 Standard-drawing Flange ASME B16.5 RJ Licensor-2	
1	10				P72P-0003E	Paddle blank ASTM B564 UNS N08825 Class 2500 Standard-drawing Flange ASME B16.5 RJ Licensor-2	
1	12				P72P-0003F	Paddle blank ASTM B564 UNS N08825 Class 2500 Standard-drawing Flange ASME B16.5 RJ Licensor-2	
1	16				P72P-0003M	Paddle blank ASTM B564 UNS N08825 Class 2500 Standard-drawing Flange Standard-drawing RJ Licensor-2	

PADDLE SPACER (PS)							
OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P72P-0003N	Paddle spacer ASTM B564 UNS N08825 Class 2500 Standard-drawing Flange ASME B16.5 RJ Licensor-2	
1	0.75				P72P-0003P	Paddle spacer ASTM B564 UNS N08825 Class 2500 Standard-drawing Flange ASME B16.5 RJ Licensor-2	
1	1				P72P-0003R	Paddle spacer ASTM B564 UNS N08825 Class 2500 Standard-drawing Flange ASME B16.5 RJ Licensor-2	
1	1.5				P72P-0003S	Paddle spacer ASTM B564 UNS N08825 Class 2500 Standard-drawing Flange ASME B16.5 RJ Licensor-2	
1	2				P72P-0003V	Paddle spacer ASTM B564 UNS N08825 Class 2500 Standard-drawing Flange ASME B16.5 RJ Licensor-2	
1	3				P72P-0003W	Paddle spacer ASTM B564 UNS N08825 Class 2500 Standard-drawing Flange ASME B16.5 RJ Licensor-2	
1	4				P72P-0003X	Paddle spacer ASTM B564 UNS N08825 Class 2500 Standard-drawing Flange ASME B16.5 RJ Licensor-2	
1	6				P72P-0003Y	Paddle spacer ASTM B564 UNS N08825 Class 2500 Standard-drawing Flange ASME B16.5 RJ Licensor-2	
1	8				P72P-0003Z	Paddle spacer ASTM B564 UNS N08825 Class 2500 Standard-drawing Flange ASME B16.5 RJ Licensor-2	
1	10				P72P-0003T	Paddle spacer ASTM B564 UNS N08825 Class 2500 Standard-drawing Flange ASME B16.5 RJ Licensor-2	
1	12				P72P-0003U	Paddle spacer ASTM B564 UNS N08825 Class 2500 Standard-drawing Flange ASME B16.5 RJ Licensor-2	
1	16				P72P-00040	Paddle spacer ASTM B564 UNS N08825 Class 2500 Standard-drawing Flange Standard-drawing RJ Licensor-2	

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PIPING CLASS
P1Y702 REV NO. 2

BOLT TABLE (B_P1Y702 , STUD ASME RJ, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	125	P80S-0090J	R13	P75T-000K3
0.75	4	0.750	130	P80S-0090K	R16	P75T-000K4
1	4	0.875	140	P80S-005ZD	R18	P75T-000K5
1.5	4	1.125	175	P80S-0064S	R23	P75T-000K6
2	8	1.000	180	P80S-0061J	R26	P75T-000LN
3	8	1.250	260	P80S-0068P	R32	P75T-000K7
4	8	1.500	305	P80S-006LS	R38	P75T-000LP
6	8	2.000	410	P80S-00BBD	R47	P75T-000K8
8	12	2.000	450	P80S-00BH6	R51	P75T-000LR
10	12	2.500	575	P80S-00DZV	R55	P75T-000LL
12	12	2.750	635	P80S-01RAT	R60	P75T-000LM
14	14	3.000	695	P80S-01VKF	R64	
16	14	3.000	755	P80S-01VKU	R68	P75T-0013X

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BRANCH TABLE (T_P1Y702)

RUN PIPE SIZE (in) \ BRANCH SIZE (in)	0.5	0.75	1	1.5	2	3	4	6	8	10	12	14	16
0.5	TS												
0.75		TS											
1		TR	TS										
1.5		TR	TR	TS									
2		L	TR	TR	TS								
3		L	L	TR	TR	TS							
4	L	L	L	L	TR	TR	TS						
6	L	L	L	L	L	TR	TR	TS					
8		L	L	L	L	L	TR	TR	TS				
10		L	L	L	L	L	TR	TR	TR	TS			
12		L	L	L	L	L	L	TR	TR	TR	TS		
14		L	L	L	L	L	L	TR	TR	TR	TR	TS	
16		L	L	L	L	L	L	TR	TR	TR	TR	TR	TS

L : OUTLET
TS : STRAIGHT TEE
TR : REDUCING TEE

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PIPING CLASS

P2AG REV NO. 2

Material : CS (ASME)
Rating : ASME CLASS 2500
Flange Face : RJ
C.A.(mm) : 3.00
Gasket : Ring Octagonal
Service : PROCESS - POWER PIPING:HHP BOILER FEED WATER

Design Code : ASME B31.1
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED

DETAIL NOTES :

NO.	DESCRIPTION
999	HOLD ITEMS. ORDER PLACEMENT SHALL NOT BE DONE BEFORE RELEASING HOLD.

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
541	NPT(F) (F)

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PIPING CLASS
P2AG REV NO. 2

PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P01A-00434	Pipe ASME SA106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	0.75		XXS		P01A-007AA	Pipe ASME SA106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1		XXS		P01A-007AB	Pipe ASME SA106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1.5		XXS		P01A-007AC	Pipe ASME SA106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	2		XXS		P01A-007Z8	Pipe ASME SA106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	3		XXS		P01A-007Z9	Pipe ASME SA106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	4		XXS		P01A-007ZA	Pipe ASME SA106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	6		23.00mm		P01A-0084F	Pipe ASME SA106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	8		29.00mm		P01A-0084N	Pipe ASME SA333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	10		35.00mm		P01A-0084H	Pipe ASME SA333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	12		41.00mm		P01A-008PF	Pipe ASME SA333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	14		45.00mm		P01A-0084K	Pipe ASME SA333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	16		50.00mm		P01A-0084L	Pipe ASME SA333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	18		56.00mm		P01A-00850	Pipe ASME SA333 Grade 6 Seamless ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P02A-002J1	90 degree elbow ASME SA234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	0.75		XXS		P02A-003SD	90 degree elbow ASME SA234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1		XXS		P02A-003SE	90 degree elbow ASME SA234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1.5		XXS		P02A-003SF	90 degree elbow ASME SA234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	2		XXS		P02A-0048U	90 degree elbow ASME SA234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		XXS		P02A-0048V	90 degree elbow ASME SA234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		XXS		P02A-0048W	90 degree elbow ASME SA234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		23.00mm		P02A-004BD	90 degree elbow ASME SA234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		29.00mm		P02A-004BL	90 degree elbow ASME SA420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	10		35.00mm		P02A-004BF	90 degree elbow ASME SA420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	12		41.00mm		P02A-004GS	90 degree elbow ASME SA420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	14		45.00mm		P02A-004BH	90 degree elbow ASME SA420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	16		50.00mm		P02A-004BJ	90 degree elbow ASME SA420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	18		56.00mm		P02A-004BT	90 degree elbow ASME SA420 Grade WPL6 Seamless ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P03A-002FJ	45 degree elbow ASME SA234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	0.75		XXS		P03A-003P2	45 degree elbow ASME SA234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1		XXS		P03A-003P3	45 degree elbow ASME SA234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1.5		XXS		P03A-003P4	45 degree elbow ASME SA234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	2		XXS		P03A-0046A	45 degree elbow ASME SA234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		XXS		P03A-0046B	45 degree elbow ASME SA234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		XXS		P03A-0046C	45 degree elbow ASME SA234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		23.00mm		P03A-0048X	45 degree elbow ASME SA234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		29.00mm		P03A-00493	45 degree elbow ASME SA420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	10		35.00mm		P03A-0048Y	45 degree elbow ASME SA420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	12		41.00mm		P03A-004DY	45 degree elbow ASME SA420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	14		45.00mm		P03A-00490	45 degree elbow ASME SA420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	16		50.00mm		P03A-00491	45 degree elbow ASME SA420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	18		56.00mm		P03A-0049E	45 degree elbow ASME SA420 Grade WPL6 Seamless ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P21A-003GK	Straight tee ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	0.75		XXS		P21A-0049T	Straight tee ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	1		XXS		P21A-0049U	Straight tee ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	1.5		XXS		P21A-0049V	Straight tee ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	2		XXS		P21A-004SA	Straight tee ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	3		XXS		P21A-004SB	Straight tee ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	4		XXS		P21A-004SC	Straight tee ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	6		23.00mm		P21A-004US	Straight tee ASME SA234 Grade WPB Seamless ASME B16.9 BW	

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STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	8		29.00mm		P21A-004V1	Straight tee ASME SA420 Grade WPL6 Seamless ASME B16.9 BW	
1	10		35.00mm		P21A-004UW	Straight tee ASME SA420 Grade WPL6 Seamless ASME B16.9 BW	
1	12		41.00mm		P21A-004Z7	Straight tee ASME SA420 Grade WPL6 Seamless ASME B16.9 BW	
1	14		45.00mm		P21A-004UY	Straight tee ASME SA420 Grade WPL6 Seamless ASME B16.9 BW	
1	16		50.00mm		P21A-004UZ	Straight tee ASME SA420 Grade WPL6 Seamless ASME B16.9 BW	
1	18		56.00mm		P21A-0057C	Straight tee ASME SA420 Grade WPL6-W Weld ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75	XXS	XXS	P24A-00K35	Reducing tee ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.75	XXS	XXS	P24A-00K38	Reducing tee ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	1	XXS	XXS	P24A-00K39	Reducing tee ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	XXS	XXS	P24A-00MTJ	Reducing tee ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	XXS	XXS	P24A-00MTK	Reducing tee ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	XXS	XXS	P24A-00MTL	Reducing tee ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	XXS	XXS	P24A-00MTM	Reducing tee ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	XXS	XXS	P24A-00MTN	Reducing tee ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	XXS	XXS	P24A-00MTP	Reducing tee ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	23.00mm	XXS	P24A-00N17	Reducing tee ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	23.00mm	XXS	P24A-00N18	Reducing tee ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	29.00mm	XXS	P24A-00N1V	Reducing tee ASME SA420 Grade WPL6 Seamless ASME B16.9 BW	
1	8	6	29.00mm	23.00mm	P24A-00N1W	Reducing tee ASME SA420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	4	35.00mm	XXS	P24A-00N1X	Reducing tee ASME SA420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	6	35.00mm	23.00mm	P24A-00N1Y	Reducing tee ASME SA420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	8	35.00mm	29.00mm	P24A-00N1Z	Reducing tee ASME SA420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	6	41.00mm	23.00mm	P24A-00NW4	Reducing tee ASME SA420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	8	41.00mm	29.00mm	P24A-00NW5	Reducing tee ASME SA420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	10	41.00mm	35.00mm	P24A-00NW3	Reducing tee ASME SA420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	6	45.00mm	23.00mm	P24A-00N2G	Reducing tee ASME SA420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	8	45.00mm	29.00mm	P24A-00N2H	Reducing tee ASME SA420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	10	45.00mm	35.00mm	P24A-00N2E	Reducing tee ASME SA420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	12	45.00mm	41.00mm	P24A-00NW7	Reducing tee ASME SA420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	6	50.00mm	23.00mm	P24A-00N2L	Reducing tee ASME SA420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	8	50.00mm	29.00mm	P24A-00N2M	Reducing tee ASME SA420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	10	50.00mm	35.00mm	P24A-00N2J	Reducing tee ASME SA420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	12	50.00mm	41.00mm	P24A-00NW6	Reducing tee ASME SA420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	14	50.00mm	45.00mm	P24A-00N2N	Reducing tee ASME SA420 Grade WPL6 Seamless ASME B16.9 BW	
1	18	8	56.00mm	29.00mm	P24A-00R9M	Reducing tee ASME SA420 Grade WPL6-W Weld ASME B16.9 BW	
1	18	10	56.00mm	35.00mm	P24A-00R9H	Reducing tee ASME SA420 Grade WPL6-W Weld ASME B16.9 BW	
1	18	12	56.00mm	41.00mm	P24A-00R9J	Reducing tee ASME SA420 Grade WPL6-W Weld ASME B16.9 BW	
1	18	14	56.00mm	45.00mm	P24A-00R9K	Reducing tee ASME SA420 Grade WPL6-W Weld ASME B16.9 BW	
1	18	16	56.00mm	50.00mm	P24A-00R9L	Reducing tee ASME SA420 Grade WPL6-W Weld ASME B16.9 BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	XXS	XXS	P27A-00EN7	Concentric reducer ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.5	XXS	XXS	P27A-00EN8	Concentric reducer ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.75	XXS	XXS	P27A-00EN9	Concentric reducer ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.5	XXS	XXS	P27A-00ENA	Concentric reducer ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.75	XXS	XXS	P27A-00ENB	Concentric reducer ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	1	XXS	XXS	P27A-00ENC	Concentric reducer ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	2	0.75	XXS	XXS	P27A-00GEP	Concentric reducer ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	XXS	XXS	P27A-00GER	Concentric reducer ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	XXS	XXS	P27A-00GES	Concentric reducer ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	XXS	XXS	P27A-00GET	Concentric reducer ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	XXS	XXS	P27A-00GEU	Concentric reducer ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	4	1.5	XXS	XXS	P27A-00GEV	Concentric reducer ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	XXS	XXS	P27A-00GEW	Concentric reducer ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	XXS	XXS	P27A-00GEX	Concentric reducer ASME SA234 Grade WPB Seamless ASME B16.9 BW	

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CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	6	3	23.00mm	XXS	P27A-00GV8	Concentric reducer ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	23.00mm	XXS	P27A-00GV9	Concentric reducer ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	29.00mm	XXS	P27A-00GVU	Concentric reducer ASME SA420 Grade WPL6 Seamless ASME B16.9 BW	
1	8	6	29.00mm	23.00mm	P27A-00GVV	Concentric reducer ASME SA420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	4	35.00mm	XXS	P27A-00GVW	Concentric reducer ASME SA420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	6	35.00mm	23.00mm	P27A-00GVX	Concentric reducer ASME SA420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	8	35.00mm	29.00mm	P27A-00GVY	Concentric reducer ASME SA420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	6	41.00mm	23.00mm	P27A-00HC0	Concentric reducer ASME SA420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	8	41.00mm	29.00mm	P27A-00HC1	Concentric reducer ASME SA420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	10	41.00mm	35.00mm	P27A-00HBZ	Concentric reducer ASME SA420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	6	45.00mm	23.00mm	P27A-00GW8	Concentric reducer ASME SA420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	8	45.00mm	29.00mm	P27A-00GW9	Concentric reducer ASME SA420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	10	45.00mm	35.00mm	P27A-00GW6	Concentric reducer ASME SA420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	12	45.00mm	41.00mm	P27A-00HC3	Concentric reducer ASME SA420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	8	50.00mm	29.00mm	P27A-00GW5	Concentric reducer ASME SA420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	10	50.00mm	35.00mm	P27A-00GW2	Concentric reducer ASME SA420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	12	50.00mm	41.00mm	P27A-00HC2	Concentric reducer ASME SA420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	14	50.00mm	45.00mm	P27A-00GW4	Concentric reducer ASME SA420 Grade WPL6 Seamless ASME B16.9 BW	
1	18	10	56.00mm	35.00mm	P27A-00JFK	Concentric reducer ASME SA420 Grade WPL6-W Weld ASME B16.9 BW	
1	18	12	56.00mm	41.00mm	P27A-00JFL	Concentric reducer ASME SA420 Grade WPL6-W Weld ASME B16.9 BW	
1	18	14	56.00mm	45.00mm	P27A-00JFM	Concentric reducer ASME SA420 Grade WPL6-W Weld ASME B16.9 BW	
1	18	16	56.00mm	50.00mm	P27A-00JFN	Concentric reducer ASME SA420 Grade WPL6-W Weld ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	XXS	XXS	P28A-00BSZ	Eccentric reducer ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.5	XXS	XXS	P28A-00BT0	Eccentric reducer ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.75	XXS	XXS	P28A-00BT1	Eccentric reducer ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.5	XXS	XXS	P28A-00BT2	Eccentric reducer ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.75	XXS	XXS	P28A-00BT3	Eccentric reducer ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	1	XXS	XXS	P28A-00BT4	Eccentric reducer ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	2	0.75	XXS	XXS	P28A-00DLW	Eccentric reducer ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	XXS	XXS	P28A-00DLX	Eccentric reducer ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	XXS	XXS	P28A-00DLY	Eccentric reducer ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	XXS	XXS	P28A-00DLZ	Eccentric reducer ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	XXS	XXS	P28A-00DM0	Eccentric reducer ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	4	1.5	XXS	XXS	P28A-00DM1	Eccentric reducer ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	XXS	XXS	P28A-00DM2	Eccentric reducer ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	XXS	XXS	P28A-00DM3	Eccentric reducer ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	23.00mm	XXS	P28A-00E2H	Eccentric reducer ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	23.00mm	XXS	P28A-00E2J	Eccentric reducer ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	29.00mm	XXS	P28A-00E36	Eccentric reducer ASME SA420 Grade WPL6 Seamless ASME B16.9 BW	
1	8	6	29.00mm	23.00mm	P28A-00E37	Eccentric reducer ASME SA420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	4	35.00mm	XXS	P28A-00E38	Eccentric reducer ASME SA420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	6	35.00mm	23.00mm	P28A-00E39	Eccentric reducer ASME SA420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	8	35.00mm	29.00mm	P28A-00E3A	Eccentric reducer ASME SA420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	6	41.00mm	23.00mm	P28A-00EKP	Eccentric reducer ASME SA420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	8	41.00mm	29.00mm	P28A-00EKR	Eccentric reducer ASME SA420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	10	41.00mm	35.00mm	P28A-00EKN	Eccentric reducer ASME SA420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	6	45.00mm	23.00mm	P28A-00E3G	Eccentric reducer ASME SA420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	8	45.00mm	29.00mm	P28A-00E3H	Eccentric reducer ASME SA420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	10	45.00mm	35.00mm	P28A-00E3E	Eccentric reducer ASME SA420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	12	45.00mm	41.00mm	P28A-00EKT	Eccentric reducer ASME SA420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	8	50.00mm	29.00mm	P28A-00E3M	Eccentric reducer ASME SA420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	10	50.00mm	35.00mm	P28A-00E3J	Eccentric reducer ASME SA420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	12	50.00mm	41.00mm	P28A-00EKS	Eccentric reducer ASME SA420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	14	50.00mm	45.00mm	P28A-00E3L	Eccentric reducer ASME SA420 Grade WPL6 Seamless ASME B16.9 BW	
1	18	10	56.00mm	35.00mm	P28A-00FST	Eccentric reducer ASME SA420 Grade WPL6-W Weld ASME B16.9 BW	
1	18	12	56.00mm	41.00mm	P28A-00FSU	Eccentric reducer ASME SA420 Grade WPL6-W Weld ASME B16.9 BW	

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ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	18	14	56.00mm	45.00mm	P28A-00FSV	Eccentric reducer ASME SA420 Grade WPL6-W Weld ASME B16.9 BW	
1	18	16	56.00mm	50.00mm	P28A-00FSW	Eccentric reducer ASME SA420 Grade WPL6-W Weld ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P29A-001UH	Cap ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	0.75		XXS		P29A-0033H	Cap ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	1		XXS		P29A-0033J	Cap ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	1.5		XXS		P29A-0033K	Cap ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	2		XXS		P29A-003JX	Cap ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	3		XXS		P29A-003JY	Cap ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	4		XXS		P29A-003JZ	Cap ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	6		23.00mm		P29A-003N0	Cap ASME SA234 Grade WPB Seamless ASME B16.9 BW	
1	8		29.00mm		P29A-003NA	Cap ASME SA420 Grade WPL6 Seamless ASME B16.9 BW	
1	10		35.00mm		P29A-003N5	Cap ASME SA420 Grade WPL6 Seamless ASME B16.9 BW	
1	12		41.00mm		P29A-003TR	Cap ASME SA420 Grade WPL6 Seamless ASME B16.9 BW	
1	14		45.00mm		P29A-003N7	Cap ASME SA420 Grade WPL6 Seamless ASME B16.9 BW	
1	16		50.00mm		P29A-003N8	Cap ASME SA420 Grade WPL6 Seamless ASME B16.9 BW	
1	18		56.00mm		P29A-003NF	Cap ASME SA420 Grade WPL6 Seamless ASME B16.9 BW	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P41A-0017T	Straight nipple ASME SA106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		XXS		P41A-0017U	Straight nipple ASME SA106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		XXS		P41A-0017V	Straight nipple ASME SA106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		XXS		P41A-0017W	Straight nipple ASME SA106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2	0.75	XXS	XXS	P31B-0106P	Outlet ASME SA105 MSS SP-97 BW	
1	3	0.75	XXS	XXS	P31B-0106R	Outlet ASME SA105 MSS SP-97 BW	
1	4	0.75	XXS	XXS	P31B-0106T	Outlet ASME SA105 MSS SP-97 BW	
1	6	0.75	23.00mm	XXS	P31B-010JY	Outlet ASME SA105 MSS SP-97 BW	
1	8	0.75	29.00mm	XXS	P31B-010K2	Outlet ASME SA105 MSS SP-97 BW	
1	10	0.75	35.00mm	XXS	P31B-010K5	Outlet ASME SA105 MSS SP-97 BW	
1	12	0.75	41.00mm	XXS	P31B-0111B	Outlet ASME SA105 MSS SP-97 BW	
1	14	0.75	45.00mm	XXS	P31B-010KA	Outlet ASME SA105 MSS SP-97 BW	
1	16	0.75	50.00mm	XXS	P31B-010KK	Outlet ASME SA105 MSS SP-97 BW	
1	18	0.75	56.00mm	XXS	P31B-010LN	Outlet ASME SA105 MSS SP-97 BW	
1	3	1	XXS	XXS	P31B-0106S	Outlet ASME SA105 MSS SP-97 BW	
1	4	1	XXS	XXS	P31B-0106U	Outlet ASME SA105 MSS SP-97 BW	
1	6	1	23.00mm	XXS	P31B-010J2	Outlet ASME SA105 MSS SP-97 BW	
1	8	1	29.00mm	XXS	P31B-010J4	Outlet ASME SA105 MSS SP-97 BW	
1	10	1	35.00mm	XXS	P31B-010J6	Outlet ASME SA105 MSS SP-97 BW	
1	12	1	41.00mm	XXS	P31B-01116	Outlet ASME SA105 MSS SP-97 BW	
1	14	1	45.00mm	XXS	P31B-010KB	Outlet ASME SA105 MSS SP-97 BW	
1	16	1	50.00mm	XXS	P31B-010JA	Outlet ASME SA105 MSS SP-97 BW	
1	18	1	56.00mm	XXS	P31B-010LP	Outlet ASME SA105 MSS SP-97 BW	
1	4	1.5	XXS	XXS	P31B-0106V	Outlet ASME SA105 MSS SP-97 BW	
1	6	1.5	23.00mm	XXS	P31B-010J3	Outlet ASME SA105 MSS SP-97 BW	
1	8	1.5	29.00mm	XXS	P31B-010J5	Outlet ASME SA105 MSS SP-97 BW	
1	10	1.5	35.00mm	XXS	P31B-010J7	Outlet ASME SA105 MSS SP-97 BW	
1	12	1.5	41.00mm	XXS	P31B-01117	Outlet ASME SA105 MSS SP-97 BW	
1	14	1.5	45.00mm	XXS	P31B-010KC	Outlet ASME SA105 MSS SP-97 BW	
1	16	1.5	50.00mm	XXS	P31B-010JB	Outlet ASME SA105 MSS SP-97 BW	
1	18	1.5	56.00mm	XXS	P31B-010LR	Outlet ASME SA105 MSS SP-97 BW	
1	6	2	23.00mm	XXS	P31B-010JZ	Outlet ASME SA105 MSS SP-97 BW	
1	8	2	29.00mm	XXS	P31B-010K0	Outlet ASME SA105 MSS SP-97 BW	
1	10	2	35.00mm	XXS	P31B-010K3	Outlet ASME SA105 MSS SP-97 BW	

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OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	12	2	41.00mm	XXS	P31B-01118	Outlet ASME SA105 MSS SP-97 BW	
1	14	2	45.00mm	XXS	P31B-010KD	Outlet ASME SA105 MSS SP-97 BW	
1	16	2	50.00mm	XXS	P31B-010KG	Outlet ASME SA105 MSS SP-97 BW	
1	18	2	56.00mm	XXS	P31B-010LS	Outlet ASME SA105 MSS SP-97 BW	
1	8	3	29.00mm	XXS	P31B-010K1	Outlet ASME SA105 MSS SP-97 BW	
1	10	3	35.00mm	XXS	P31B-010K4	Outlet ASME SA105 MSS SP-97 BW	
1	12	3	41.00mm	XXS	P31B-01119	Outlet ASME SA105 MSS SP-97 BW	
1	14	3	45.00mm	XXS	P31B-010KE	Outlet ASME SA105 MSS SP-97 BW	
1	16	3	50.00mm	XXS	P31B-010KH	Outlet ASME SA105 MSS SP-97 BW	
1	18	3	56.00mm	XXS	P31B-010LT	Outlet ASME SA105 MSS SP-97 BW	
1	12	4	41.00mm	XXS	P31B-0111A	Outlet ASME SA105 MSS SP-97 BW	
1	14	4	45.00mm	XXS	P31B-010KF	Outlet ASME SA105 MSS SP-97 BW	
1	16	4	50.00mm	XXS	P31B-010KJ	Outlet ASME SA105 MSS SP-97 BW	
1	18	4	56.00mm	XXS	P31B-010LU	Outlet ASME SA105 MSS SP-97 BW	
1	18	6	56.00mm	23.00mm	P31B-010LV	Outlet ASME SA105 MSS SP-97 BW	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30B-00034	Plug ASME SA105 ASME B16.11 NPT Round head	
1	0.75				P30B-00035	Plug ASME SA105 ASME B16.11 NPT Round head	
1	1				P30B-00036	Plug ASME SA105 ASME B16.11 NPT Round head	
1	1.5				P30B-00037	Plug ASME SA105 ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P61B-00BDG	Flange WN ASME SA105 Class 2500 ASME B16.5 RJ	
1	0.75		XXS		P61B-00BDH	Flange WN ASME SA105 Class 2500 ASME B16.5 RJ	
1	1		XXS		P61B-00BDJ	Flange WN ASME SA105 Class 2500 ASME B16.5 RJ	
1	1.5		XXS		P61B-00BDK	Flange WN ASME SA105 Class 2500 ASME B16.5 RJ	
1	2		XXS		P61B-00BDN	Flange WN ASME SA105 Class 2500 ASME B16.5 RJ	
1	3		XXS		P61B-00BDP	Flange WN ASME SA105 Class 2500 ASME B16.5 RJ	
1	4		XXS		P61B-00BDR	Flange WN ASME SA105 Class 2500 ASME B16.5 RJ	
1	6		23.00mm		P61B-00BJK	Flange WN ASME SA105 Class 2500 ASME B16.5 RJ	
1	8		29.00mm		P61B-00BJL	Flange WN ASME SA105 Class 2500 ASME B16.5 RJ	
1	10		35.00mm		P61B-00BJH	Flange WN ASME SA105 Class 2500 ASME B16.5 RJ	
1	12		41.00mm		P61B-00BUK	Flange WN ASME SA105 Class 2500 ASME B16.5 RJ	
1	14		45.00mm		P61B-00BJM	Flange WN ASME SA105 Class 2500 Standard-drawing RJ	
1	16		50.00mm		P61B-00BJN	Flange WN ASME SA105 Class 2500 Standard-drawing RJ	
1	18		56.00mm		P61B-00BKB	Flange WN ASME SA105 Class 2500 Standard-drawing RJ	
541	0.5				P61B-00DM3	Flange NPT ASME SA105 Class 2500 ASME B16.5 RJ	
541	0.75				P61B-00CY1	Flange NPT ASME SA105 Class 2500 ASME B16.5 RJ	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67B-001VY	Blind flange ASME SA105 Class 2500 ASME B16.5 RJ	
1	0.75				P67B-001VZ	Blind flange ASME SA105 Class 2500 ASME B16.5 RJ	
1	1				P67B-001W0	Blind flange ASME SA105 Class 2500 ASME B16.5 RJ	
1	1.5				P67B-001W1	Blind flange ASME SA105 Class 2500 ASME B16.5 RJ	
1	2				P67B-002SK	Blind flange ASME SA105 Class 2500 ASME B16.5 RJ	
1	3				P67B-002SL	Blind flange ASME SA105 Class 2500 ASME B16.5 RJ	
1	4				P67B-002SM	Blind flange ASME SA105 Class 2500 ASME B16.5 RJ	
1	6				P67B-002SN	Blind flange ASME SA105 Class 2500 ASME B16.5 RJ	
1	8				P67B-002SP	Blind flange ASME SA105 Class 2500 ASME B16.5 RJ	
1	10				P67B-002SH	Blind flange ASME SA105 Class 2500 ASME B16.5 RJ	
1	12				P67B-002SJ	Blind flange ASME SA105 Class 2500 ASME B16.5 RJ	
1	14				P67B-002SR	Blind flange ASME SA105 Class 2500 Standard-drawing RJ	
1	16				P67B-002SS	Blind flange ASME SA105 Class 2500 Standard-drawing RJ	
1	18				P67B-002ST	Blind flange ASME SA105 Class 2500 Standard-drawing RJ	

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GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P75T-000KT	Ring joint gasket Soft iron Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	0.75				P75T-000KU	Ring joint gasket Soft iron Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	1				P75T-000KV	Ring joint gasket Soft iron Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	1.5				P75T-000KW	Ring joint gasket Soft iron Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	2				P75T-000L6	Ring joint gasket Soft iron Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	3				P75T-000MC	Ring joint gasket Soft iron Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	4				P75T-000ME	Ring joint gasket Soft iron Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	6				P75T-000L7	Ring joint gasket Soft iron Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	8				P75T-000MD	Ring joint gasket Soft iron Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	10				P75T-000KX	Ring joint gasket Soft iron Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	12				P75T-000MB	Ring joint gasket Soft iron Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	14				P75T-0013L	Ring joint gasket Soft iron Class 2500 ASME B16.20 Flange Standard-drawing RJ Octagonal type	999
1	16				P75T-00142	Ring joint gasket Soft iron Class 2500 ASME B16.20 Flange Standard-drawing RJ Octagonal type	999
1	18				P75T-00143	Ring joint gasket Soft iron Class 2500 ASME B16.20 Flange Standard-drawing RJ Octagonal type	999

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-1				See Attached Bolt Table	Bolt and Nut ASME SA193 Grade B7 / SA194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	1.5				See Attached Bolt Table	Bolt and Nut ASME SA193 Grade B7 / SA194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
1	2				See Attached Bolt Table	Bolt and Nut ASME SA193 Grade B7 / SA194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	3-12				See Attached Bolt Table	Bolt and Nut ASME SA193 Grade B7 / SA194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
1	14-16				See Attached Bolt Table	Bolt and Nut ASME SA193 Grade B7 / SA194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	999

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81B-002F7	Gate valve ASME SA105 Class 2500 API 602 Flange ASME B16.5 RJ Trim number 5 WB-BG-OS&Y Handwheel operated	
1	0.75				P81B-002F8	Gate valve ASME SA105 Class 2500 API 602 Flange ASME B16.5 RJ Trim number 5 WB-BG-OS&Y Handwheel operated	
1	1				P81B-002F9	Gate valve ASME SA105 Class 2500 API 602 Flange ASME B16.5 RJ Trim number 5 WB-BG-OS&Y Handwheel operated	
1	1.5				P81B-002FA	Gate valve ASME SA105 Class 2500 API 602 Flange ASME B16.5 RJ Trim number 5 WB-BG-OS&Y Handwheel operated	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82B-001KM	Globe valve ASME SA105 Class 2500 API 602 Flange ASME B16.5 RJ Trim number 5 WB-BG-OS&Y Handwheel operated	
1	0.75				P82B-001KN	Globe valve ASME SA105 Class 2500 API 602 Flange ASME B16.5 RJ Trim number 5 WB-BG-OS&Y Handwheel operated	
1	1				P82B-001KP	Globe valve ASME SA105 Class 2500 API 602 Flange ASME B16.5 RJ Trim number 5 WB-BG-OS&Y Handwheel operated	
1	1.5				P82B-001KR	Globe valve ASME SA105 Class 2500 API 602 Flange ASME B16.5 RJ Trim number 5 WB-BG-OS&Y Handwheel operated	

PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P72B-000KZ	Paddle blank ASME SA105 Class 2500 Standard-drawing Flange ASME B16.5 RJ	
1	0.75				P72B-000L0	Paddle blank ASME SA105 Class 2500 Standard-drawing Flange ASME B16.5 RJ	
1	1				P72B-000L1	Paddle blank ASME SA105 Class 2500 Standard-drawing Flange ASME B16.5 RJ	
1	1.5				P72B-000L2	Paddle blank ASME SA105 Class 2500 Standard-drawing Flange ASME B16.5 RJ	
1	2				P72B-000P1	Paddle blank ASME SA105 Class 2500 Standard-drawing Flange ASME B16.5 RJ	
1	3				P72B-000P2	Paddle blank ASME SA105 Class 2500 Standard-drawing Flange ASME B16.5 RJ	
1	4				P72B-000P3	Paddle blank ASME SA105 Class 2500 Standard-drawing Flange ASME B16.5 RJ	
1	6				P72B-000P4	Paddle blank ASME SA105 Class 2500 Standard-drawing Flange ASME B16.5 RJ	
1	8				P72B-000P5	Paddle blank ASME SA105 Class 2500 Standard-drawing Flange ASME B16.5 RJ	
1	10				P72B-000NZ	Paddle blank ASME SA105 Class 2500 Standard-drawing Flange ASME B16.5 RJ	
1	12				P72B-000P0	Paddle blank ASME SA105 Class 2500 Standard-drawing Flange ASME B16.5 RJ	
1	14				P72B-000NV	Paddle blank ASME SA105 Class 2500 Standard-drawing Flange Standard-drawing RJ	

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PADDLE SPACER (PS)							
OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P72B-000L3	Paddle spacer ASME SA105 Class 2500 Standard-drawing Flange ASME B16.5 RJ	
1	0.75				P72B-000L4	Paddle spacer ASME SA105 Class 2500 Standard-drawing Flange ASME B16.5 RJ	
1	1				P72B-000L5	Paddle spacer ASME SA105 Class 2500 Standard-drawing Flange ASME B16.5 RJ	
1	1.5				P72B-000L6	Paddle spacer ASME SA105 Class 2500 Standard-drawing Flange ASME B16.5 RJ	
1	2				P72B-000P8	Paddle spacer ASME SA105 Class 2500 Standard-drawing Flange ASME B16.5 RJ	
1	3				P72B-000P9	Paddle spacer ASME SA105 Class 2500 Standard-drawing Flange ASME B16.5 RJ	
1	4				P72B-000PA	Paddle spacer ASME SA105 Class 2500 Standard-drawing Flange ASME B16.5 RJ	
1	6				P72B-000PB	Paddle spacer ASME SA105 Class 2500 Standard-drawing Flange ASME B16.5 RJ	
1	8				P72B-000PC	Paddle spacer ASME SA105 Class 2500 Standard-drawing Flange ASME B16.5 RJ	
1	10				P72B-000P6	Paddle spacer ASME SA105 Class 2500 Standard-drawing Flange ASME B16.5 RJ	
1	12				P72B-000P7	Paddle spacer ASME SA105 Class 2500 Standard-drawing Flange ASME B16.5 RJ	
1	14				P72B-000PD	Paddle spacer ASME SA105 Class 2500 Standard-drawing Flange Standard-drawing RJ	

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BOLT TABLE (B_P2AG , STUD ASME RJ, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	125	P80S-00M8A	R13	P75T-000KT
0.75	4	0.750	130	P80S-00M89	R16	P75T-000KU
1	4	0.875	140	P80S-00M2Y	R18	P75T-000KV
1.5	4	1.125	175	P80S-00LNH	R23	P75T-000KW
2	8	1.000	180	P80S-00LY6	R26	P75T-000L6
3	8	1.250	260	P80S-00LBY	R32	P75T-000MC
4	8	1.500	305	P80S-00N3M	R38	P75T-000ME
6	8	2.000	410	P80S-03BEU	R47	P75T-000L7
8	12	2.000	450	P80S-03BF2	R51	P75T-000MD
10	12	2.500	575	P80S-03BNU	R55	P75T-000KX
12	12	2.750	635	P80S-03BTD	R60	P75T-000MB
14	14	3.000	695	P80S-03VBP	R64	P75T-0013L
16	14	3.000	755	P80S-03VC2	R68	P75T-00142
18	16	3.000	815		R72	P75T-00143

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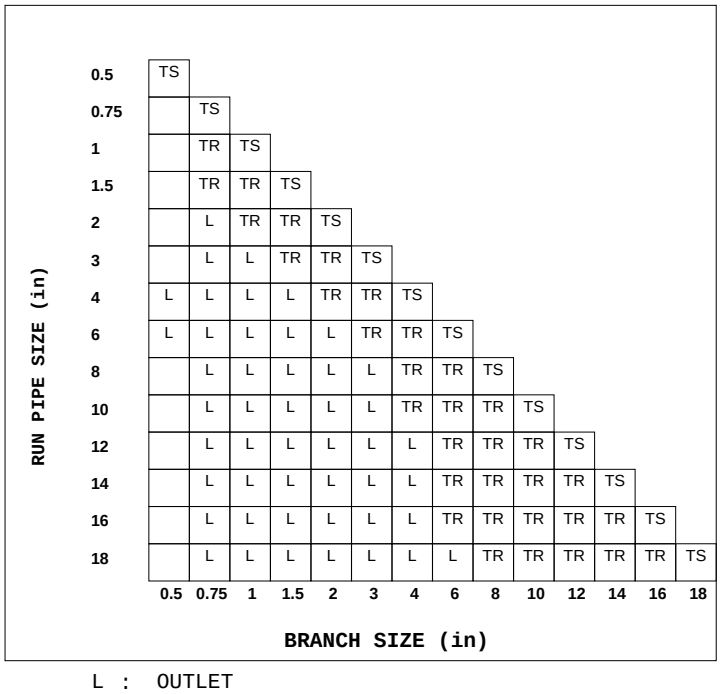
BRANCH TABLE (T_P2AG)



L : OUTLET
TS : STRAIGHT TEE
TR : REDUCING TEE

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PIPING CLASS

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Material	:	Killed CS
Rating	:	ASME CLASS 2500
Flange Face	:	RJ
C.A.(mm)	:	3.00
Gasket	:	Ring Octagonal
Service	:	UTILITY:
Design Code	:	ASME B31.3
Heat Treatment	:	

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED

DETAIL NOTES :

NO.	DESCRIPTION
999	HOLD ITEMS. ORDER PLACEMENT SHALL NOT BE DONE BEFORE RELEASING HOLD.

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
200	WITH JACK SCREW (FO)
541	NPT(F) (F)

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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P01A-00143	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	0.75		XXS		P01A-0014D	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1		XXS		P01A-0014U	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1.5		XXS		P01A-00162	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	2		XXS		P01A-001R0	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	3		XXS		P01A-001SB	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	4		XXS		P01A-001TV	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	6		XXS		P01A-001VH	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	8		25.40mm		P01A-005PP	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	10		31.75mm		P01A-005PN	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	12		36.00mm		P01A-0044C	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	14		39.00mm		P01A-007HU	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	16		44.00mm		P01A-007HV	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	18		SCH160		P01A-007AD	Pipe ASTM A671 Grade CC60 Class 22 EFW ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P02A-00172	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	0.75		XXS		P02A-000XH	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1		XXS		P02A-000XJ	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1.5		XXS		P02A-002N4	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	2		XXS		P02A-00111	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		XXS		P02A-002JA	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		XXS		P02A-002K0	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		XXS		P02A-002K1	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		25.40mm		P02A-003PK	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	10		31.75mm		P02A-003PH	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	12		36.00mm		P02A-002K6	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	14		39.00mm		P02A-003ZL	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	16		44.00mm		P02A-003SG	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	18		SCH160		P02A-003SH	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P03A-0012Y	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	0.75		XXS		P03A-000U9	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1		XXS		P03A-000U8	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1.5		XXS		P03A-002KD	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	2		XXS		P03A-000XH	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		XXS		P03A-002FU	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		XXS		P03A-002GH	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		XXS		P03A-002GJ	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		25.40mm		P03A-003M8	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	10		31.75mm		P03A-003M6	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	12		36.00mm		P03A-002GP	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	14		39.00mm		P03A-003XY	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	16		44.00mm		P03A-003P5	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	18		SCH160		P03A-003P6	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P21A-002M0	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	0.75		XXS		P21A-002DR	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1		XXS		P21A-002DP	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5		XXS		P21A-003KU	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2		XXS		P21A-002G3	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		XXS		P21A-003GV	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		XXS		P21A-003HF	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6		XXS		P21A-003HG	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	8		25.40mm		P21A-0047L	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10		31.75mm		P21A-0047J	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12		36.00mm		P21A-003HN	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14		39.00mm		P21A-004HB	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16		44.00mm		P21A-004HC	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	18		SCH160		P21A-0049W	Straight tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75	XXS	XXS	P24A-004LR	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.75	XXS	XXS	P24A-00K06	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	1	XXS	XXS	P24A-00H61	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	XXS	XXS	P24A-00H63	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	XXS	XXS	P24A-006TT	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	XXS	XXS	P24A-00K07	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	XXS	XXS	P24A-00GPM	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	XXS	XXS	P24A-00GT8	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	XXS	XXS	P24A-00GT9	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	XXS	XXS	P24A-00K08	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	XXS	XXS	P24A-00K09	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	25.40mm	XXS	P24A-00L76	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	8	6	25.40mm	XXS	P24A-00K43	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	4	31.75mm	XXS	P24A-00L77	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	6	31.75mm	XXS	P24A-00L74	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	8	31.75mm	25.40mm	P24A-00L75	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	6	36.00mm	XXS	P24A-00GY1	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	8	36.00mm	25.40mm	P24A-00L78	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	10	36.00mm	31.75mm	P24A-00JZ2	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	6	39.00mm	XXS	P24A-00L7B	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	8	39.00mm	25.40mm	P24A-00L7C	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	10	39.00mm	31.75mm	P24A-00L79	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	12	39.00mm	36.00mm	P24A-00L7A	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	6	44.00mm	XXS	P24A-00L7F	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	8	44.00mm	25.40mm	P24A-00L7G	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	10	44.00mm	31.75mm	P24A-00L73	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	12	44.00mm	36.00mm	P24A-00L7D	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	14	44.00mm	39.00mm	P24A-00L7E	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	18	8	SCH160	25.40mm	P24A-00L7M	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	18	10	SCH160	31.75mm	P24A-00L7H	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	18	12	SCH160	36.00mm	P24A-00L7J	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	18	14	SCH160	39.00mm	P24A-00L7K	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	18	16	SCH160	44.00mm	P24A-00L7L	Reducing tee ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	XXS	XXS	P27A-004M7	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.5	XXS	XXS	P27A-004MF	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.75	XXS	XXS	P27A-002ZZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.5	XXS	XXS	P27A-004N3	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.75	XXS	XXS	P27A-004ND	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	1	XXS	XXS	P27A-004NR	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	0.75	XXS	XXS	P27A-00341	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	XXS	XXS	P27A-0033N	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	XXS	XXS	P27A-00339	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	XXS	XXS	P27A-006BZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	XXS	XXS	P27A-006C9	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	1.5	XXS	XXS	P27A-0073V	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	XXS	XXS	P27A-0074A	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	XXS	XXS	P27A-0074Z	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	6	3	XXS	XXS	P27A-007PA	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	XXS	XXS	P27A-007R2	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	25.40mm	XXS	P27A-00FEK	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	8	6	25.40mm	XXS	P27A-00EJ8	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	4	31.75mm	XXS	P27A-00FEJ	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	6	31.75mm	XXS	P27A-00EJA	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	8	31.75mm	25.40mm	P27A-00EJB	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	6	36.00mm	XXS	P27A-00BME	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	8	36.00mm	25.40mm	P27A-00EJD	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	10	36.00mm	31.75mm	P27A-00EJC	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	6	39.00mm	XXS	P27A-00FEN	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	8	39.00mm	25.40mm	P27A-00FEP	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	10	39.00mm	31.75mm	P27A-00FEL	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	12	39.00mm	36.00mm	P27A-00FEM	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	8	44.00mm	25.40mm	P27A-00FFF	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	10	44.00mm	31.75mm	P27A-00FEH	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	12	44.00mm	36.00mm	P27A-00FER	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	14	44.00mm	39.00mm	P27A-00FES	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	18	10	SCH160	31.75mm	P27A-00FET	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	18	12	SCH160	36.00mm	P27A-00FEU	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	18	14	SCH160	39.00mm	P27A-00FEV	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	18	16	SCH160	44.00mm	P27A-00FEW	Concentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	XXS	XXS	P28A-00BNX	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.5	XXS	XXS	P28A-00BNY	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1	0.75	XXS	XXS	P28A-0030M	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.5	XXS	XXS	P28A-00BNZ	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	0.75	XXS	XXS	P28A-00BP0	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5	1	XXS	XXS	P28A-008W0	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	0.75	XXS	XXS	P28A-00BP1	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	XXS	XXS	P28A-004KN	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	XXS	XXS	P28A-004KP	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	XXS	XXS	P28A-00BP2	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	XXS	XXS	P28A-008GE	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	1.5	XXS	XXS	P28A-00BP3	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	XXS	XXS	P28A-008JV	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	XXS	XXS	P28A-008JW	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	XXS	XXS	P28A-00BP4	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	XXS	XXS	P28A-00BP5	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	25.40mm	XXS	P28A-00CKF	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	8	6	25.40mm	XXS	P28A-00BMH	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	4	31.75mm	XXS	P28A-00CKG	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	6	31.75mm	XXS	P28A-00BMK	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	8	31.75mm	25.40mm	P28A-00BML	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	6	36.00mm	XXS	P28A-008MP	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	8	36.00mm	25.40mm	P28A-00BMN	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	10	36.00mm	31.75mm	P28A-00BMM	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	6	39.00mm	XXS	P28A-00CKK	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	8	39.00mm	25.40mm	P28A-00CKL	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	10	39.00mm	31.75mm	P28A-00CKH	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14	12	39.00mm	36.00mm	P28A-00CKJ	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	8	44.00mm	25.40mm	P28A-00CLD	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	10	44.00mm	31.75mm	P28A-00CKM	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	12	44.00mm	36.00mm	P28A-00CKN	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16	14	44.00mm	39.00mm	P28A-00CKP	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	18	10	SCH160	31.75mm	P28A-00CKR	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	18	12	SCH160	36.00mm	P28A-00CKS	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	

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ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	18	14	SCH160	39.00mm	P28A-00CKT	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	
1	18	16	SCH160	44.00mm	P28A-00CKU	Eccentric reducer ASTM A420 Grade WPL6-W Weld ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P29A-0013Z	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	0.75		XXS		P29A-000W5	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1		XXS		P29A-000W3	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5		XXS		P29A-0031N	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2		XXS		P29A-000YP	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		XXS		P29A-000L4	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		XXS		P29A-000M5	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6		XXS		P29A-000N9	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8		25.40mm		P29A-0031M	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10		31.75mm		P29A-0031K	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12		36.00mm		P29A-001XA	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	14		39.00mm		P29A-003CL	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	16		44.00mm		P29A-0033X	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	18		SCH160		P29A-0033Y	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P41A-000B9	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		XXS		P41A-000BA	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		XXS		P41A-000D8	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		10.60mm		P41A-001AU	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2	0.75	XXS	XXS	P31B-00CP1	Outlet ASTM A105 MSS SP-97 BW	
1	3	0.75	XXS	XXS	P31B-00CMJ	Outlet ASTM A105 MSS SP-97 BW	
1	4	0.75	XXS	XXS	P31B-00CLG	Outlet ASTM A105 MSS SP-97 BW	
1	6	0.75	XXS	XXS	P31B-00XG5	Outlet ASTM A105 MSS SP-97 BW	
1	8	0.75	25.40mm	XXS	P31B-00C54	Outlet ASTM A105 MSS SP-97 BW	
1	10	0.75	31.75mm	XXS	P31B-00CF3	Outlet ASTM A105 MSS SP-97 BW	
1	12	0.75	36.00mm	XXS	P31B-00YGA	Outlet ASTM A105 MSS SP-97 BW	
1	14	0.75	39.00mm	XXS	P31B-00YG4	Outlet ASTM A105 MSS SP-97 BW	
1	16	0.75	44.00mm	XXS	P31B-00YFZ	Outlet ASTM A105 MSS SP-97 BW	
1	18	0.75	SCH160	XXS	P31B-00YFV	Outlet ASTM A105 MSS SP-97 BW	
1	3	1	XXS	XXS	P31B-00B48	Outlet ASTM A105 MSS SP-97 BW	
1	4	1	XXS	XXS	P31B-00B04	Outlet ASTM A105 MSS SP-97 BW	
1	6	1	XXS	XXS	P31B-00AYY	Outlet ASTM A105 MSS SP-97 BW	
1	8	1	25.40mm	XXS	P31B-00AV5	Outlet ASTM A105 MSS SP-97 BW	
1	10	1	31.75mm	XXS	P31B-00BZZ	Outlet ASTM A105 MSS SP-97 BW	
1	12	1	36.00mm	XXS	P31B-00YGB	Outlet ASTM A105 MSS SP-97 BW	
1	14	1	39.00mm	XXS	P31B-00YG5	Outlet ASTM A105 MSS SP-97 BW	
1	16	1	44.00mm	XXS	P31B-00YFU	Outlet ASTM A105 MSS SP-97 BW	
1	18	1	SCH160	XXS	P31B-00YFW	Outlet ASTM A105 MSS SP-97 BW	
1	4	1.5	XXS	XXS	P31B-00BMC	Outlet ASTM A105 MSS SP-97 BW	
1	6	1.5	XXS	XXS	P31B-00BJ3	Outlet ASTM A105 MSS SP-97 BW	
1	8	1.5	25.40mm	XXS	P31B-00BH5	Outlet ASTM A105 MSS SP-97 BW	
1	10	1.5	31.75mm	XXS	P31B-00AUB	Outlet ASTM A105 MSS SP-97 BW	
1	12	1.5	36.00mm	XXS	P31B-00YGC	Outlet ASTM A105 MSS SP-97 BW	
1	14	1.5	39.00mm	XXS	P31B-00YG6	Outlet ASTM A105 MSS SP-97 BW	
1	16	1.5	44.00mm	XXS	P31B-00YG0	Outlet ASTM A105 MSS SP-97 BW	
1	18	1.5	SCH160	XXS	P31B-00YFX	Outlet ASTM A105 MSS SP-97 BW	
1	6	2	XXS	XXS	P31B-007SA	Outlet ASTM A105 MSS SP-97 BW	
1	8	2	25.40mm	XXS	P31B-00AGV	Outlet ASTM A105 MSS SP-97 BW	
1	10	2	31.75mm	XXS	P31B-00AS8	Outlet ASTM A105 MSS SP-97 BW	

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OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	12	2	36.00mm	XXS	P31B-00YGD	Outlet ASTM A105 MSS SP-97 BW	
1	14	2	39.00mm	XXS	P31B-00YG7	Outlet ASTM A105 MSS SP-97 BW	
1	16	2	44.00mm	XXS	P31B-00YG1	Outlet ASTM A105 MSS SP-97 BW	
1	18	2	SCH160	XXS	P31B-009FC	Outlet ASTM A105 MSS SP-97 BW	
1	8	3	25.40mm	XXS	P31B-009XY	Outlet ASTM A105 MSS SP-97 BW	
1	10	3	31.75mm	XXS	P31B-0097S	Outlet ASTM A105 MSS SP-97 BW	
1	12	3	36.00mm	XXS	P31B-00YGE	Outlet ASTM A105 MSS SP-97 BW	
1	14	3	39.00mm	XXS	P31B-00YG8	Outlet ASTM A105 MSS SP-97 BW	
1	16	3	44.00mm	XXS	P31B-00YG2	Outlet ASTM A105 MSS SP-97 BW	
1	18	3	SCH160	XXS	P31B-008M6	Outlet ASTM A105 MSS SP-97 BW	
1	12	4	36.00mm	XXS	P31B-00YGF	Outlet ASTM A105 MSS SP-97 BW	
1	14	4	39.00mm	XXS	P31B-00YG9	Outlet ASTM A105 MSS SP-97 BW	
1	16	4	44.00mm	XXS	P31B-00YG3	Outlet ASTM A105 MSS SP-97 BW	
1	18	4	SCH160	XXS	P31B-008EC	Outlet ASTM A105 MSS SP-97 BW	
1	18	6	SCH160	XXS	P31B-00YFY	Outlet ASTM A105 MSS SP-97 BW	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30B-0002D	Plug ASTM A105 ASME B16.11 NPT Round head	
1	0.75				P30B-0002E	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1				P30B-0002F	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1.5				P30B-0002G	Plug ASTM A105 ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P61B-00666	Flange WN ASTM A105 Class 2500 ASME B16.5 RJ	
1	0.75		XXS		P61B-009W3	Flange WN ASTM A105 Class 2500 ASME B16.5 RJ	
1	1		XXS		P61B-006JH	Flange WN ASTM A105 Class 2500 ASME B16.5 RJ	
1	1.5		XXS		P61B-006JJ	Flange WN ASTM A105 Class 2500 ASME B16.5 RJ	
1	2		XXS		P61B-0066Y	Flange WN ASTM A105 Class 2500 ASME B16.5 RJ	
1	3		XXS		P61B-0066Z	Flange WN ASTM A105 Class 2500 ASME B16.5 RJ	
1	4		XXS		P61B-0069G	Flange WN ASTM A105 Class 2500 ASME B16.5 RJ	
1	6		XXS		P61B-0069H	Flange WN ASTM A105 Class 2500 ASME B16.5 RJ	
1	8		25.40mm		P61B-006JG	Flange WN ASTM A105 Class 2500 ASME B16.5 RJ	
1	10		31.75mm		P61B-006JF	Flange WN ASTM A105 Class 2500 ASME B16.5 RJ	
1	12		36.00mm		P61B-0069P	Flange WN ASTM A105 Class 2500 ASME B16.5 RJ	
1	14		39.00mm		P61B-00ADG	Flange WN ASTM A105 Class 2500 Standard-drawing RJ	
1	16		44.00mm		P61B-00ADH	Flange WN ASTM A105 Class 2500 Standard-drawing RJ	
1	18		SCH160		P61B-009XA	Flange WN ASTM A105 Class 2500 Standard-drawing RJ	
541	0.5				P61B-00DM4	Flange NPT ASTM A105 Class 2500 ASME B16.5 RJ	
541	0.75				P61B-00CWE	Flange NPT ASTM A105 Class 2500 ASME B16.5 RJ	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67B-001WN	Blind flange ASTM A105 Class 2500 ASME B16.5 RJ	
1	0.75				P67B-001WP	Blind flange ASTM A105 Class 2500 ASME B16.5 RJ	
1	1				P67B-001W2	Blind flange ASTM A105 Class 2500 ASME B16.5 RJ	
1	1.5				P67B-001W3	Blind flange ASTM A105 Class 2500 ASME B16.5 RJ	
1	2				P67B-001Z6	Blind flange ASTM A105 Class 2500 ASME B16.5 RJ	
1	3				P67B-001Z7	Blind flange ASTM A105 Class 2500 ASME B16.5 RJ	
1	4				P67B-001Z8	Blind flange ASTM A105 Class 2500 ASME B16.5 RJ	
1	6				P67B-001W6	Blind flange ASTM A105 Class 2500 ASME B16.5 RJ	
1	8				P67B-001W7	Blind flange ASTM A105 Class 2500 ASME B16.5 RJ	
1	10				P67B-001W4	Blind flange ASTM A105 Class 2500 ASME B16.5 RJ	
1	12				P67B-001W5	Blind flange ASTM A105 Class 2500 ASME B16.5 RJ	
1	14				P67B-002LX	Blind flange ASTM A105 Class 2500 Standard-drawing RJ	
1	16				P67B-002LY	Blind flange ASTM A105 Class 2500 Standard-drawing RJ	
1	18				P67B-001WR	Blind flange ASTM A105 Class 2500 Standard-drawing RJ	

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GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P75T-000KT	Ring joint gasket Soft iron Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	0.75				P75T-000KU	Ring joint gasket Soft iron Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	1				P75T-000KV	Ring joint gasket Soft iron Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	1.5				P75T-000KW	Ring joint gasket Soft iron Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	2				P75T-000L6	Ring joint gasket Soft iron Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	3				P75T-000MC	Ring joint gasket Soft iron Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	4				P75T-000ME	Ring joint gasket Soft iron Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	6				P75T-000L7	Ring joint gasket Soft iron Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	8				P75T-000MD	Ring joint gasket Soft iron Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	10				P75T-000KX	Ring joint gasket Soft iron Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	12				P75T-000MB	Ring joint gasket Soft iron Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	14				P75T-0013L	Ring joint gasket Soft iron Class 2500 ASME B16.20 Flange Standard-drawing RJ Octagonal type	999
1	16				P75T-00142	Ring joint gasket Soft iron Class 2500 ASME B16.20 Flange Standard-drawing RJ Octagonal type	999
1	18				P75T-00143	Ring joint gasket Soft iron Class 2500 ASME B16.20 Flange Standard-drawing RJ Octagonal type	999

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-1				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	1.5				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
1	2				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	3-12				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
1	14-16				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	999

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81B-001TU	Gate valve ASTM A105 Class 2500 API 602 Flange ASME B16.5 RJ Trim number 5 WB-BG-OS&Y Handwheel operated	
1	0.75				P81B-001TV	Gate valve ASTM A105 Class 2500 API 602 Flange ASME B16.5 RJ Trim number 5 WB-BG-OS&Y Handwheel operated	
1	1				P81B-001TW	Gate valve ASTM A105 Class 2500 API 602 Flange ASME B16.5 RJ Trim number 5 WB-BG-OS&Y Handwheel operated	
1	1.5				P81B-001TX	Gate valve ASTM A105 Class 2500 API 602 Flange ASME B16.5 RJ Trim number 5 WB-BG-OS&Y Handwheel operated	
1	2				P81C-00645	Gate valve ASTM A216 Grade WCB Class 2500 API 600 BW XXS Trim number 5 PSB-BG-OS&Y Handwheel operated	
1	3				P81C-00646	Gate valve ASTM A216 Grade WCB Class 2500 API 600 BW XXS Trim number 5 PSB-BG-OS&Y Gear operated	
1	4				P81C-00647	Gate valve ASTM A216 Grade WCB Class 2500 API 600 BW XXS Trim number 5 PSB-BG-OS&Y Gear operated	
1	6				P81C-00648	Gate valve ASTM A216 Grade WCB Class 2500 API 600 BW XXS Trim number 5 PSB-BG-OS&Y Gear operated	
1	8				P81C-00649	Gate valve ASTM A216 Grade WCB Class 2500 API 600 BW T=25.4 mm Trim number 5 PSB-BG-OS&Y Gear operated	
1	10				P81C-0064A	Gate valve ASTM A216 Grade WCB Class 2500 API 600 BW T=31.75 mm Trim number 5 PSB-BG-OS&Y Gear operated	
1	12				P81C-0064B	Gate valve ASTM A216 Grade WCB Class 2500 API 600 BW T=36 mm Trim number 5 PSB-BG-OS&Y Gear operated	
1	14				P81C-0064C	Gate valve ASTM A216 Grade WCB Class 2500 API 600 BW T=39 mm Trim number 5 PSB-BG-OS&Y Gear operated	
1	16				P81C-0064D	Gate valve ASTM A216 Grade WCB Class 2500 API 600 BW T=44 mm Trim number 5 PSB-BG-OS&Y Gear operated	
1	18				P81C-0064E	Gate valve ASTM A216 Grade WCB Class 2500 API 600 BW Sch160 Trim number 5 PSB-BG-OS&Y Gear operated	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82B-001KH	Globe valve ASTM A105 Class 2500 API 602 Flange ASME B16.5 RJ Trim number 5 WB-BG-OS&Y Handwheel operated	
1	0.75				P82B-001KJ	Globe valve ASTM A105 Class 2500 API 602 Flange ASME B16.5 RJ Trim number 5 WB-BG-OS&Y Handwheel operated	
1	1				P82B-001KK	Globe valve ASTM A105 Class 2500 API 602 Flange ASME B16.5 RJ Trim number 5 WB-BG-OS&Y Handwheel operated	
1	1.5				P82B-001KL	Globe valve ASTM A105 Class 2500 API 602 Flange ASME B16.5 RJ Trim number 5 WB-BG-OS&Y Handwheel operated	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83B-0014V	Check valve ASTM A105 Class 2500 API 602 Flange ASME B16.5 RJ Trim number 5 Lift-type Welded cover	

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CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75				P83B-0014W	Check valve ASTM A105 Class 2500 API 602 Flange ASME B16.5 RJ Trim number 5 Lift-type Welded cover	
1	1				P83B-0014X	Check valve ASTM A105 Class 2500 API 602 Flange ASME B16.5 RJ Trim number 5 Lift-type Welded cover	
1	1.5				P83B-0014Y	Check valve ASTM A105 Class 2500 API 602 Flange ASME B16.5 RJ Trim number 5 Lift-type Welded cover	
1	2				P83C-002ZC	Check valve ASTM A216 Grade WCB Class 2500 BS 1868 BW XXS Trim number 5 Swing-type Pressure seal cap	
1	3				P83C-002ZD	Check valve ASTM A216 Grade WCB Class 2500 BS 1868 BW XXS Trim number 5 Swing-type Pressure seal cap	
1	4				P83C-002ZE	Check valve ASTM A216 Grade WCB Class 2500 BS 1868 BW XXS Trim number 5 Swing-type Pressure seal cap	
1	6				P83C-002ZF	Check valve ASTM A216 Grade WCB Class 2500 BS 1868 BW XXS Trim number 5 Swing-type Pressure seal cap	

DP CHECK VALVE (XDP)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	8				P88C-002J6	Dual plate check valve ASTM A216 Grade WCB Class 2500 API 594 Lug-type ASME B16.5 RJ Trim number 5 Internal wetted parts 13Cr Spring Inconel Retainerless-type	
1	10				P88C-002J4	Dual plate check valve ASTM A216 Grade WCB Class 2500 API 594 Lug-type ASME B16.5 RJ Trim number 5 Internal wetted parts 13Cr Spring Inconel Retainerless-type	
1	12				P88C-002J5	Dual plate check valve ASTM A216 Grade WCB Class 2500 API 594 Lug-type ASME B16.5 RJ Trim number 5 Internal wetted parts 13Cr Spring Inconel Retainerless-type	

ORIFICE FLANGE (FO)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2		XXS		P66B-008SG	Orifice flange WN ASTM A105 Class 2500 ASME B16.36 RJ NPS1/2 SW tap x 1	
200	2		XXS		P66B-008SH	Orifice flange WN ASTM A105 Class 2500 ASME B16.36 RJ NPS1/2 SW tap x 1 with Jack screw	

PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P72B-000LL	Paddle blank ASTM A105 Class 2500 Standard-drawing Flange ASME B16.5 RJ	
1	0.75				P72B-000LM	Paddle blank ASTM A105 Class 2500 Standard-drawing Flange ASME B16.5 RJ	
1	1				P72B-000LN	Paddle blank ASTM A105 Class 2500 Standard-drawing Flange ASME B16.5 RJ	
1	1.5				P72B-000LP	Paddle blank ASTM A105 Class 2500 Standard-drawing Flange ASME B16.5 RJ	
1	2				P72B-000LT	Paddle blank ASTM A105 Class 2500 Standard-drawing Flange ASME B16.5 RJ	
1	3				P72B-000LU	Paddle blank ASTM A105 Class 2500 Standard-drawing Flange ASME B16.5 RJ	
1	4				P72B-000LV	Paddle blank ASTM A105 Class 2500 Standard-drawing Flange ASME B16.5 RJ	
1	6				P72B-000LW	Paddle blank ASTM A105 Class 2500 Standard-drawing Flange ASME B16.5 RJ	
1	8				P72B-000LX	Paddle blank ASTM A105 Class 2500 Standard-drawing Flange ASME B16.5 RJ	
1	10				P72B-000LR	Paddle blank ASTM A105 Class 2500 Standard-drawing Flange ASME B16.5 RJ	
1	12				P72B-000LS	Paddle blank ASTM A105 Class 2500 Standard-drawing Flange ASME B16.5 RJ	
1	16				P72B-000LY	Paddle blank ASTM A105 Class 2500 Standard-drawing Flange Standard-drawing RJ	
1	18				P72B-000LZ	Paddle blank ASTM A105 Class 2500 Standard-drawing Flange Standard-drawing RJ	

PADDLE SPACER (PS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P72B-000L7	Paddle spacer ASTM A105 Class 2500 Standard-drawing Flange ASME B16.5 RJ	
1	0.75				P72B-000L8	Paddle spacer ASTM A105 Class 2500 Standard-drawing Flange ASME B16.5 RJ	
1	1				P72B-000L9	Paddle spacer ASTM A105 Class 2500 Standard-drawing Flange ASME B16.5 RJ	
1	1.5				P72B-000LA	Paddle spacer ASTM A105 Class 2500 Standard-drawing Flange ASME B16.5 RJ	
1	2				P72B-000LD	Paddle spacer ASTM A105 Class 2500 Standard-drawing Flange ASME B16.5 RJ	
1	3				P72B-000LE	Paddle spacer ASTM A105 Class 2500 Standard-drawing Flange ASME B16.5 RJ	
1	4				P72B-000LF	Paddle spacer ASTM A105 Class 2500 Standard-drawing Flange ASME B16.5 RJ	
1	6				P72B-000LG	Paddle spacer ASTM A105 Class 2500 Standard-drawing Flange ASME B16.5 RJ	
1	8				P72B-000LH	Paddle spacer ASTM A105 Class 2500 Standard-drawing Flange ASME B16.5 RJ	
1	10				P72B-000LB	Paddle spacer ASTM A105 Class 2500 Standard-drawing Flange ASME B16.5 RJ	
1	12				P72B-000LC	Paddle spacer ASTM A105 Class 2500 Standard-drawing Flange ASME B16.5 RJ	
1	16				P72B-000LJ	Paddle spacer ASTM A105 Class 2500 Standard-drawing Flange Standard-drawing RJ	
1	18				P72B-000LK	Paddle spacer ASTM A105 Class 2500 Standard-drawing Flange Standard-drawing RJ	

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BOLT TABLE (B_P2AS , STUD ASME RJ, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	125	P80S-003XN	R13	P75T-000KT
0.75	4	0.750	130	P80S-003XP	R16	P75T-000KU
1	4	0.875	140	P80S-0041D	R18	P75T-000KV
1.5	4	1.125	175	P80S-0046S	R23	P75T-000KW
2	8	1.000	180	P80S-0043R	R26	P75T-000L6
3	8	1.250	260	P80S-004B0	R32	P75T-000MC
4	8	1.500	305	P80S-008MZ	R38	P75T-000ME
6	8	2.000	410	P80S-005VF	R47	P75T-000L7
8	12	2.000	450	P80S-005VP	R51	P75T-000MD
10	12	2.500	575	P80S-00P1K	R55	P75T-000KX
12	12	2.750	635	P80S-00PWW	R60	P75T-000MB
14	14	3.000	695	P80S-00PNU	R64	P75T-0013L
16	14	3.000	755	P80S-00PNF	R68	P75T-00142
18	16	3.000	815		R72	P75T-00143

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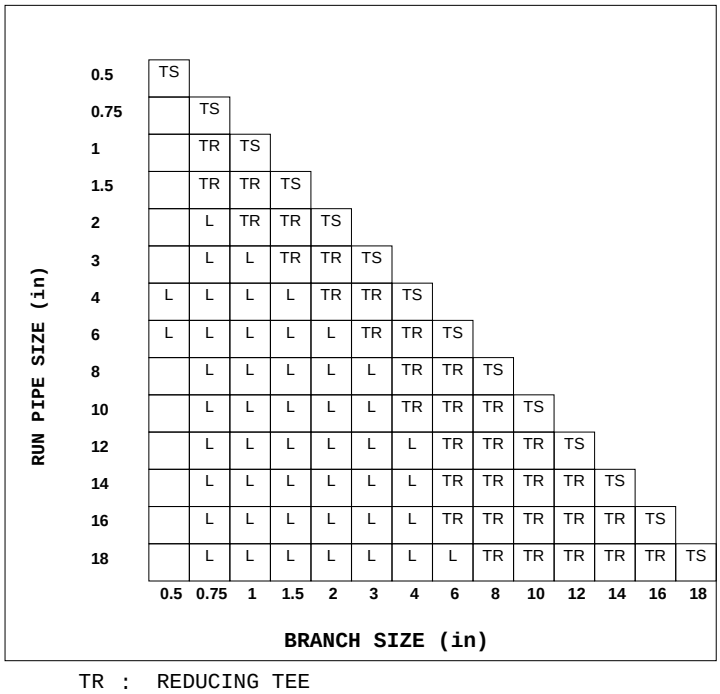
BRANCH TABLE (T_P2AS)



TR : REDUCING TEE
TS : STRAIGHT TEE
L : OUTLET

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PIPING CLASS

P2M602 REV NO. 2

Material : SS321
Rating : ASME CLASS 2500
Flange Face : RJ
C.A.(mm) : 3.00
Gasket : Ring Octagonal
Service : PROCESS -WET LOW SEVERITY SOUR SERVICE SUBJECT TO NACE + HYDROGEN SERVICE
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
5	BOLTING CONFIRMING TO B7M / 2HM SHALL BE USED UNDER CONDITIONS (A) DIRECT EXPOSURE TO SOUR ENVIRONMENTS (B) WHEN THE BOLTING WILL BE BURIED OR INSULATED

DETAIL NOTES :

NO.	DESCRIPTION
999	HOLD ITEMS. ORDER PLACEMENT SHALL NOT BE DONE BEFORE RELEASING HOLD.

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
541	NPT(F) (F)
4004	ALTERNATIVE MATERIAL (INCOLOY 825) FOR DRAIN LINE (9L,F,L,P)
4601	Y-PATTERN (W)

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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P01J-002G4	Pipe ASTM A312 Grade TP321 Seamless ASME B36.10M/B36.19M PE Moderate wet H2S service	
1	0.75		XXS		P01J-002G5	Pipe ASTM A312 Grade TP321 Seamless ASME B36.10M/B36.19M PE Moderate wet H2S service	
1	1		XXS		P01J-002G6	Pipe ASTM A312 Grade TP321 Seamless ASME B36.10M/B36.19M PE Moderate wet H2S service	
1	1.5		XXS		P01J-002G7	Pipe ASTM A312 Grade TP321 Seamless ASME B36.10M/B36.19M PE Moderate wet H2S service	
1	2		XXS		P01J-002G8	Pipe ASTM A312 Grade TP321 Seamless ASME B36.10M/B36.19M BE Moderate wet H2S service	
1	3		XXS		P01J-002G9	Pipe ASTM A312 Grade TP321 Seamless ASME B36.10M/B36.19M BE Moderate wet H2S service	
1	4		XXS		P01J-002GA	Pipe ASTM A312 Grade TP321 Seamless ASME B36.10M/B36.19M BE Moderate wet H2S service	
1	6		23.70mm		P01J-002WJ	Pipe ASTM A312 Grade TP321 Seamless ASME B36.10M/B36.19M BE Moderate wet H2S service	
1	8		SCH160		P01J-002WK	Pipe ASTM A358 Grade 321 Class 1 EFW ASME B36.10M/B36.19M BE Moderate wet H2S service	
1	10		SCH160		P01J-002G1	Pipe ASTM A358 Grade 321 Class 1 EFW ASME B36.10M/B36.19M BE Moderate wet H2S service	
1	12		SCH160		P01J-002G2	Pipe ASTM A358 Grade 321 Class 1 EFW ASME B36.10M/B36.19M BE Moderate wet H2S service	
1	14		SCH160		P01J-002G3	Pipe ASTM A358 Grade 321 Class 1 EFW ASME B36.10M/B36.19M BE Moderate wet H2S service	
1	16		SCH140		P01J-002FS	Pipe ASTM A358 Grade 321 Class 1 EFW ASME B36.10M/B36.19M BE Moderate wet H2S service	
1	18		SCH160		P01J-002PY	Pipe ASTM A358 Grade 321 Class 1 EFW ASME B36.10M/B36.19M BE Moderate wet H2S service	
1	20		SCH140		P01J-002N0	Pipe ASTM A358 Grade 321 Class 1 EFW ASME B36.10M/B36.19M BE Moderate wet H2S service	
4004	2		SCH160		P01M-000GC	Pipe ASTM B423 UNS N08825 Seamless ASME B36.10M/B36.19M BE Licensor-2	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P02J-001ZJ	90 degree elbow ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Long radius Moderate wet H2S service	
1	0.75		XXS		P02J-001ZK	90 degree elbow ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Long radius Moderate wet H2S service	
1	1		XXS		P02J-001ZL	90 degree elbow ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Long radius Moderate wet H2S service	
1	1.5		XXS		P02J-001ZM	90 degree elbow ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Long radius Moderate wet H2S service	
1	2		XXS		P02J-001ZN	90 degree elbow ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Long radius Moderate wet H2S service	
1	3		XXS		P02J-001ZP	90 degree elbow ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Long radius Moderate wet H2S service	
1	4		XXS		P02J-001ZR	90 degree elbow ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Long radius Moderate wet H2S service	
1	6		23.70mm		P02J-0028W	90 degree elbow ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Long radius Moderate wet H2S service	
1	8		SCH160		P02J-0028X	90 degree elbow ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Long radius Moderate wet H2S service	
1	10		SCH160		P02J-001ZF	90 degree elbow ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Long radius Moderate wet H2S service	
1	12		SCH160		P02J-001ZG	90 degree elbow ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Long radius Moderate wet H2S service	
1	14		SCH160		P02J-001ZH	90 degree elbow ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Long radius Moderate wet H2S service	
1	16		SCH140		P02J-001Z6	90 degree elbow ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Long radius Moderate wet H2S service	
1	18		SCH160		P02J-00241	90 degree elbow ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Long radius Moderate wet H2S service	
1	20		SCH140		P02J-0022C	90 degree elbow ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Long radius Moderate wet H2S service	
4004	2		SCH160		P02M-000F4	90 degree elbow ASTM B366 Grade WPNICMC Class S Seamless ASME B16.9 BW Long radius Licensor-2	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P03J-001X0	45 degree elbow ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Long radius Moderate wet H2S service	
1	0.75		XXS		P03J-001X1	45 degree elbow ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Long radius Moderate wet H2S service	
1	1		XXS		P03J-001X2	45 degree elbow ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Long radius Moderate wet H2S service	
1	1.5		XXS		P03J-001X3	45 degree elbow ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Long radius Moderate wet H2S service	
1	2		XXS		P03J-001X4	45 degree elbow ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Long radius Moderate wet H2S service	
1	3		XXS		P03J-001X5	45 degree elbow ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Long radius Moderate wet H2S service	
1	4		XXS		P03J-001X6	45 degree elbow ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Long radius Moderate wet H2S service	
1	6		23.70mm		P03J-0028L	45 degree elbow ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Long radius Moderate wet H2S service	
1	8		SCH160		P03J-0028M	45 degree elbow ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Long radius Moderate wet H2S service	
1	10		SCH160		P03J-001WX	45 degree elbow ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Long radius Moderate wet H2S service	
1	12		SCH160		P03J-001WY	45 degree elbow ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Long radius Moderate wet H2S service	
1	14		SCH160		P03J-001WZ	45 degree elbow ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Long radius Moderate wet H2S service	

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45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	16		SCH140		P03J-001WM	45 degree elbow ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Long radius Moderate wet H2S service	
1	18		SCH160		P03J-0023T	45 degree elbow ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Long radius Moderate wet H2S service	
1	20		SCH140		P03J-00224	45 degree elbow ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Long radius Moderate wet H2S service	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P21J-001NJ	Straight tee ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	0.75		XXS		P21J-001NK	Straight tee ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	1		XXS		P21J-001NL	Straight tee ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	1.5		XXS		P21J-001NM	Straight tee ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	2		XXS		P21J-001NN	Straight tee ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	3		XXS		P21J-001NP	Straight tee ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	4		XXS		P21J-001NR	Straight tee ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	6		23.70mm		P21J-001YU	Straight tee ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	8		SCH160		P21J-001YV	Straight tee ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	10		SCH160		P21J-001NF	Straight tee ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	12		SCH160		P21J-001NG	Straight tee ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	14		SCH160		P21J-001NH	Straight tee ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	16		SCH140		P21J-001N6	Straight tee ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	18		SCH160		P21J-001U1	Straight tee ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	20		SCH140		P21J-001SA	Straight tee ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75	XXS	XXS	P24J-0074F	Reducing tee ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	1.5	0.75	XXS	XXS	P24J-0074G	Reducing tee ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	1.5	1	XXS	XXS	P24J-0074H	Reducing tee ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	2	1	XXS	XXS	P24J-0074J	Reducing tee ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	2	1.5	XXS	XXS	P24J-0074K	Reducing tee ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	3	1.5	XXS	XXS	P24J-0074L	Reducing tee ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	3	2	XXS	XXS	P24J-0074M	Reducing tee ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	4	2	XXS	XXS	P24J-0074N	Reducing tee ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	4	3	XXS	XXS	P24J-0074P	Reducing tee ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	6	3	23.70mm	XXS	P24J-0089P	Reducing tee ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	6	4	23.70mm	XXS	P24J-0089R	Reducing tee ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	8	4	SCH160	XXS	P24J-008A3	Reducing tee ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	8	6	SCH160	23.70mm	P24J-0089S	Reducing tee ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	10	4	SCH160	XXS	P24J-008AD	Reducing tee ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	10	6	SCH160	23.70mm	P24J-008AE	Reducing tee ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	10	8	SCH160	SCH160	P24J-008AB	Reducing tee ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	12	6	SCH160	23.70mm	P24J-008AF	Reducing tee ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	12	8	SCH160	SCH160	P24J-008AC	Reducing tee ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	12	10	SCH160	SCH160	P24J-0074C	Reducing tee ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	14	6	SCH160	23.70mm	P24J-008B7	Reducing tee ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	14	8	SCH160	SCH160	P24J-008AN	Reducing tee ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	14	10	SCH160	SCH160	P24J-0074D	Reducing tee ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	14	12	SCH160	SCH160	P24J-0074E	Reducing tee ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	16	6	SCH140	23.70mm	P24J-008A2	Reducing tee ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	16	8	SCH140	SCH160	P24J-0089Z	Reducing tee ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	16	10	SCH140	SCH160	P24J-008AJ	Reducing tee ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	16	12	SCH140	SCH160	P24J-007SK	Reducing tee ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	16	14	SCH140	SCH160	P24J-007SL	Reducing tee ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	18	8	SCH160	SCH160	P24J-008AR	Reducing tee ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	18	10	SCH160	SCH160	P24J-008AP	Reducing tee ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	18	12	SCH160	SCH160	P24J-007SG	Reducing tee ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	18	14	SCH160	SCH160	P24J-007SN	Reducing tee ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	18	16	SCH160	SCH140	P24J-007SP	Reducing tee ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	20	8	SCH140	SCH160	P24J-008A0	Reducing tee ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	

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REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	20	10	SCH140	SCH160	P24J-008AM	Reducing tee ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	20	12	SCH140	SCH160	P24J-007SS	Reducing tee ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	20	14	SCH140	SCH160	P24J-007ST	Reducing tee ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	20	16	SCH140	SCH140	P24J-007GX	Reducing tee ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	20	18	SCH140	SCH160	P24J-007SU	Reducing tee ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	XXS	XXS	P27J-005ZL	Concentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	1	0.5	XXS	XXS	P27J-005ZM	Concentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	1	0.75	XXS	XXS	P27J-005ZN	Concentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	1.5	0.5	XXS	XXS	P27J-005ZP	Concentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	1.5	0.75	XXS	XXS	P27J-005ZR	Concentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	1.5	1	XXS	XXS	P27J-005ZS	Concentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	2	0.75	XXS	XXS	P27J-005ZT	Concentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	2	1	XXS	XXS	P27J-005ZU	Concentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	2	1.5	XXS	XXS	P27J-005ZV	Concentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	3	1.5	XXS	XXS	P27J-005ZW	Concentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	3	2	XXS	XXS	P27J-005ZX	Concentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	4	1.5	XXS	XXS	P27J-005ZY	Concentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	4	2	XXS	XXS	P27J-005ZZ	Concentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	4	3	XXS	XXS	P27J-00600	Concentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	6	3	23.70mm	XXS	P27J-00706	Concentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	6	4	23.70mm	XXS	P27J-00707	Concentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	8	4	SCH160	XXS	P27J-00705	Concentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	8	6	SCH160	23.70mm	P27J-00708	Concentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	10	4	SCH160	XXS	P27J-0070M	Concentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	10	6	SCH160	23.70mm	P27J-0070X	Concentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	10	8	SCH160	SCH160	P27J-0070N	Concentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	12	6	SCH160	23.70mm	P27J-0070W	Concentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	12	8	SCH160	SCH160	P27J-0070P	Concentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	12	10	SCH160	SCH160	P27J-005ZH	Concentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	14	6	SCH160	23.70mm	P27J-00710	Concentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	14	8	SCH160	SCH160	P27J-0070Y	Concentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	14	10	SCH160	SCH160	P27J-005ZJ	Concentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	14	12	SCH160	SCH160	P27J-005ZK	Concentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	16	8	SCH140	SCH160	P27J-0070F	Concentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	16	10	SCH140	SCH160	P27J-0070T	Concentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	16	12	SCH140	SCH160	P27J-006HN	Concentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	16	14	SCH140	SCH160	P27J-006HP	Concentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	18	10	SCH160	SCH160	P27J-0070Z	Concentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	18	12	SCH160	SCH160	P27J-006HJ	Concentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	18	14	SCH160	SCH160	P27J-006HT	Concentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	18	16	SCH160	SCH140	P27J-006HU	Concentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	20	12	SCH140	SCH160	P27J-006HV	Concentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	20	14	SCH140	SCH160	P27J-006HW	Concentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	20	16	SCH140	SCH140	P27J-006AJ	Concentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	20	18	SCH140	SCH160	P27J-006HX	Concentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	XXS	XXS	P28J-0060H	Eccentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	1	0.5	XXS	XXS	P28J-0060J	Eccentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	

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ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75	XXS	XXS	P28J-0060K	Eccentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	1.5	0.5	XXS	XXS	P28J-0060L	Eccentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	1.5	0.75	XXS	XXS	P28J-0060M	Eccentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	1.5	1	XXS	XXS	P28J-0060N	Eccentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	2	0.75	XXS	XXS	P28J-0060P	Eccentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	2	1	XXS	XXS	P28J-0060R	Eccentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	2	1.5	XXS	XXS	P28J-0060S	Eccentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	3	1.5	XXS	XXS	P28J-0060T	Eccentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	3	2	XXS	XXS	P28J-0060U	Eccentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	4	1.5	XXS	XXS	P28J-0060V	Eccentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	4	2	XXS	XXS	P28J-0060W	Eccentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	4	3	XXS	XXS	P28J-0060X	Eccentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	6	3	23.70mm	XXS	P28J-0071M	Eccentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	6	4	23.70mm	XXS	P28J-0071N	Eccentric reducer ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	8	4	SCH160	XXS	P28J-0071P	Eccentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	8	6	SCH160	23.70mm	P28J-0071R	Eccentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	10	4	SCH160	XXS	P28J-00724	Eccentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	10	6	SCH160	23.70mm	P28J-00725	Eccentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	10	8	SCH160	SCH160	P28J-00726	Eccentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	12	6	SCH160	23.70mm	P28J-00727	Eccentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	12	8	SCH160	SCH160	P28J-00728	Eccentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	12	10	SCH160	SCH160	P28J-0060E	Eccentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	14	6	SCH160	23.70mm	P28J-0072E	Eccentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	14	8	SCH160	SCH160	P28J-0072F	Eccentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	14	10	SCH160	SCH160	P28J-0060F	Eccentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	14	12	SCH160	SCH160	P28J-0060G	Eccentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	16	8	SCH140	SCH160	P28J-0071Y	Eccentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	16	10	SCH140	SCH160	P28J-0072B	Eccentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	16	12	SCH140	SCH160	P28J-006K0	Eccentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	16	14	SCH140	SCH160	P28J-006K1	Eccentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	18	10	SCH160	SCH160	P28J-0072G	Eccentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	18	12	SCH160	SCH160	P28J-006JW	Eccentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	18	14	SCH160	SCH160	P28J-006K4	Eccentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	18	16	SCH160	SCH140	P28J-006K5	Eccentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	20	12	SCH140	SCH160	P28J-006K6	Eccentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	20	14	SCH140	SCH160	P28J-006K7	Eccentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	20	16	SCH140	SCH140	P28J-006BY	Eccentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	
1	20	18	SCH140	SCH160	P28J-006K8	Eccentric reducer ASTM A403 Grade WP321 Class WX Weld ASME B16.9 BW Moderate wet H2S service	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P29J-003VH	Cap ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	0.75		XXS		P29J-003VJ	Cap ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	1		XXS		P29J-003VK	Cap ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	1.5		XXS		P29J-003VL	Cap ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	2		XXS		P29J-003VM	Cap ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	3		XXS		P29J-003VN	Cap ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	4		XXS		P29J-003VP	Cap ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	6		23.70mm		P29J-0042F	Cap ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	8		SCH160		P29J-0042G	Cap ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	10		SCH160		P29J-003VE	Cap ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	12		SCH160		P29J-003VF	Cap ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	14		SCH160		P29J-003VG	Cap ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	16		SCH140		P29J-003V7	Cap ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	18		SCH160		P29J-003YD	Cap ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	
1	20		SCH140		P29J-003XM	Cap ASTM A403 Grade WP321 Class S Seamless ASME B16.9 BW Moderate wet H2S service	

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STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P41J-001T0	Straight nipple ASTM A312 Grade TP321 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Moderate wet H2S service	
1	0.75		XXS		P41J-001T1	Straight nipple ASTM A312 Grade TP321 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Moderate wet H2S service	
1	1		XXS		P41J-001T2	Straight nipple ASTM A312 Grade TP321 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Moderate wet H2S service	
1	1.5		11.30mm		P41J-001WP	Straight nipple ASTM A312 Grade TP321 Seamless ASME B36.10M/B36.19M PE - NPT L=100mm Moderate wet H2S service	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2	0.75	XXS	XXS	P31K-00EUG	Outlet ASTM A182 Grade F321 MSS SP-97 BW Moderate wet H2S service	
1	3	0.75	XXS	XXS	P31K-00EUH	Outlet ASTM A182 Grade F321 MSS SP-97 BW Moderate wet H2S service	
1	4	0.75	XXS	XXS	P31K-00EUK	Outlet ASTM A182 Grade F321 MSS SP-97 BW Moderate wet H2S service	
1	6	0.75	23.70mm	XXS	P31K-00G92	Outlet ASTM A182 Grade F321 MSS SP-97 BW Moderate wet H2S service	
1	8	0.75	SCH160	XXS	P31K-00G96	Outlet ASTM A182 Grade F321 MSS SP-97 BW Moderate wet H2S service	
1	10	0.75	SCH160	XXS	P31K-00G9A	Outlet ASTM A182 Grade F321 MSS SP-97 BW Moderate wet H2S service	
1	12	0.75	SCH160	XXS	P31K-00EV3	Outlet ASTM A182 Grade F321 MSS SP-97 BW Moderate wet H2S service	
1	14	0.75	SCH160	XXS	P31K-00EV9	Outlet ASTM A182 Grade F321 MSS SP-97 BW Moderate wet H2S service	
1	16	0.75	SCH140	XXS	P31K-00FMJ	Outlet ASTM A182 Grade F321 MSS SP-97 BW Moderate wet H2S service	
1	18	0.75	SCH160	XXS	P31K-00FMR	Outlet ASTM A182 Grade F321 MSS SP-97 BW Moderate wet H2S service	
1	20	0.75	SCH140	XXS	P31K-00FMV	Outlet ASTM A182 Grade F321 MSS SP-97 BW Moderate wet H2S service	
1	3	1	XXS	XXS	P31K-00EUJ	Outlet ASTM A182 Grade F321 MSS SP-97 BW Moderate wet H2S service	
1	4	1	XXS	XXS	P31K-00EUL	Outlet ASTM A182 Grade F321 MSS SP-97 BW Moderate wet H2S service	
1	6	1	23.70mm	XXS	P31K-00G93	Outlet ASTM A182 Grade F321 MSS SP-97 BW Moderate wet H2S service	
1	8	1	SCH160	XXS	P31K-00G97	Outlet ASTM A182 Grade F321 MSS SP-97 BW Moderate wet H2S service	
1	10	1	SCH160	XXS	P31K-00G9B	Outlet ASTM A182 Grade F321 MSS SP-97 BW Moderate wet H2S service	
1	12	1	SCH160	XXS	P31K-00EV4	Outlet ASTM A182 Grade F321 MSS SP-97 BW Moderate wet H2S service	
1	14	1	SCH160	XXS	P31K-00EVA	Outlet ASTM A182 Grade F321 MSS SP-97 BW Moderate wet H2S service	
1	16	1	SCH140	XXS	P31K-00FMK	Outlet ASTM A182 Grade F321 MSS SP-97 BW Moderate wet H2S service	
1	18	1	SCH160	XXS	P31K-00FMS	Outlet ASTM A182 Grade F321 MSS SP-97 BW Moderate wet H2S service	
1	20	1	SCH140	XXS	P31K-00FMW	Outlet ASTM A182 Grade F321 MSS SP-97 BW Moderate wet H2S service	
1	4	1.5	XXS	XXS	P31K-00EUM	Outlet ASTM A182 Grade F321 MSS SP-97 BW Moderate wet H2S service	
1	6	1.5	23.70mm	XXS	P31K-00G94	Outlet ASTM A182 Grade F321 MSS SP-97 BW Moderate wet H2S service	
1	8	1.5	SCH160	XXS	P31K-00G98	Outlet ASTM A182 Grade F321 MSS SP-97 BW Moderate wet H2S service	
1	10	1.5	SCH160	XXS	P31K-00G9C	Outlet ASTM A182 Grade F321 MSS SP-97 BW Moderate wet H2S service	
1	12	1.5	SCH160	XXS	P31K-00EV5	Outlet ASTM A182 Grade F321 MSS SP-97 BW Moderate wet H2S service	
1	14	1.5	SCH160	XXS	P31K-00EVB	Outlet ASTM A182 Grade F321 MSS SP-97 BW Moderate wet H2S service	
1	16	1.5	SCH140	XXS	P31K-00FML	Outlet ASTM A182 Grade F321 MSS SP-97 BW Moderate wet H2S service	
1	18	1.5	SCH160	XXS	P31K-00FMT	Outlet ASTM A182 Grade F321 MSS SP-97 BW Moderate wet H2S service	
1	20	1.5	SCH140	XXS	P31K-00FMX	Outlet ASTM A182 Grade F321 MSS SP-97 BW Moderate wet H2S service	
1	6	2	23.70mm	XXS	P31K-00G95	Outlet ASTM A182 Grade F321 MSS SP-97 BW Moderate wet H2S service	
1	8	2	SCH160	XXS	P31K-00G99	Outlet ASTM A182 Grade F321 MSS SP-97 BW Moderate wet H2S service	
1	10	2	SCH160	XXS	P31K-00G9D	Outlet ASTM A182 Grade F321 MSS SP-97 BW Moderate wet H2S service	
1	12	2	SCH160	XXS	P31K-00EV6	Outlet ASTM A182 Grade F321 MSS SP-97 BW Moderate wet H2S service	
1	14	2	SCH160	XXS	P31K-00EVC	Outlet ASTM A182 Grade F321 MSS SP-97 BW Moderate wet H2S service	
1	16	2	SCH140	XXS	P31K-00FMM	Outlet ASTM A182 Grade F321 MSS SP-97 BW Moderate wet H2S service	
1	18	2	SCH160	XXS	P31K-00FMU	Outlet ASTM A182 Grade F321 MSS SP-97 BW Moderate wet H2S service	
1	20	2	SCH140	XXS	P31K-00FMY	Outlet ASTM A182 Grade F321 MSS SP-97 BW Moderate wet H2S service	
1	8	3	SCH160	XXS	P31K-00G85	Outlet ASTM A182 Grade F321 MSS SP-97 BW Moderate wet H2S service	
1	10	3	SCH160	XXS	P31K-00G8W	Outlet ASTM A182 Grade F321 MSS SP-97 BW Moderate wet H2S service	
1	12	3	SCH160	XXS	P31K-00EV7	Outlet ASTM A182 Grade F321 MSS SP-97 BW Moderate wet H2S service	
1	14	3	SCH160	XXS	P31K-00EVD	Outlet ASTM A182 Grade F321 MSS SP-97 BW Moderate wet H2S service	
1	16	3	SCH140	XXS	P31K-00FMN	Outlet ASTM A182 Grade F321 MSS SP-97 BW Moderate wet H2S service	
1	18	3	SCH160	XXS	P31K-00FLR	Outlet ASTM A182 Grade F321 MSS SP-97 BW Moderate wet H2S service	
1	20	3	SCH140	XXS	P31K-00FMZ	Outlet ASTM A182 Grade F321 MSS SP-97 BW Moderate wet H2S service	
1	12	4	SCH160	XXS	P31K-00EV8	Outlet ASTM A182 Grade F321 MSS SP-97 BW Moderate wet H2S service	
1	14	4	SCH160	XXS	P31K-00EVE	Outlet ASTM A182 Grade F321 MSS SP-97 BW Moderate wet H2S service	
1	16	4	SCH140	XXS	P31K-00FMP	Outlet ASTM A182 Grade F321 MSS SP-97 BW Moderate wet H2S service	
1	18	4	SCH160	XXS	P31K-00FLS	Outlet ASTM A182 Grade F321 MSS SP-97 BW Moderate wet H2S service	
1	20	4	SCH140	XXS	P31K-00FN0	Outlet ASTM A182 Grade F321 MSS SP-97 BW Moderate wet H2S service	
1	18	6	SCH160	23.70mm	P31K-00G9E	Outlet ASTM A182 Grade F321 MSS SP-97 BW Moderate wet H2S service	

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OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	20	6	SCH140	23.70mm	P31K-00G8N	Outlet ASTM A182 Grade F321 MSS SP-97 BW Moderate wet H2S service	
4004	12	2	SCH160	SCH160	P31P-002BN	Outlet ASTM B564 UNS N08825 MSS SP-97 BW Licensor-2	
4004	14	2	SCH160	SCH160	P31P-002BP	Outlet ASTM B564 UNS N08825 MSS SP-97 BW Licensor-2	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30K-00059	Plug ASTM A182 Grade F321 ASME B16.11 NPT Round head Moderate wet H2S service	
1	0.75				P30K-0005A	Plug ASTM A182 Grade F321 ASME B16.11 NPT Round head Moderate wet H2S service	
1	1				P30K-0005B	Plug ASTM A182 Grade F321 ASME B16.11 NPT Round head Moderate wet H2S service	
1	1.5				P30K-0005C	Plug ASTM A182 Grade F321 ASME B16.11 NPT Round head Moderate wet H2S service	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XXS		P61K-005HY	Flange WN ASTM A182 Grade F321 Class 2500 ASME B16.5 RJ Moderate wet H2S service	
1	0.75		XXS		P61K-005HZ	Flange WN ASTM A182 Grade F321 Class 2500 ASME B16.5 RJ Moderate wet H2S service	
1	1		XXS		P61K-005J0	Flange WN ASTM A182 Grade F321 Class 2500 ASME B16.5 RJ Moderate wet H2S service	
1	1.5		XXS		P61K-005J1	Flange WN ASTM A182 Grade F321 Class 2500 ASME B16.5 RJ Moderate wet H2S service	
1	2		XXS		P61K-005J2	Flange WN ASTM A182 Grade F321 Class 2500 ASME B16.5 RJ Moderate wet H2S service	
1	3		XXS		P61K-005J3	Flange WN ASTM A182 Grade F321 Class 2500 ASME B16.5 RJ Moderate wet H2S service	
1	4		XXS		P61K-005J4	Flange WN ASTM A182 Grade F321 Class 2500 ASME B16.5 RJ Moderate wet H2S service	
1	6		23.70mm		P61K-00697	Flange WN ASTM A182 Grade F321 Class 2500 ASME B16.5 RJ Moderate wet H2S service	
1	8		SCH160		P61K-00698	Flange WN ASTM A182 Grade F321 Class 2500 ASME B16.5 RJ Moderate wet H2S service	
1	10		SCH160		P61K-005HV	Flange WN ASTM A182 Grade F321 Class 2500 ASME B16.5 RJ Moderate wet H2S service	
1	12		SCH160		P61K-005HW	Flange WN ASTM A182 Grade F321 Class 2500 ASME B16.5 RJ Moderate wet H2S service	
1	14		SCH160		P61K-005HX	Flange WN ASTM A182 Grade F321 Class 2500 Standard-drawing RJ Moderate wet H2S service	
1	16		SCH140		P61K-005HP	Flange WN ASTM A182 Grade F321 Class 2500 Standard-drawing RJ Moderate wet H2S service	
1	18		SCH160		P61K-005ZB	Flange WN ASTM A182 Grade F321 Class 2500 Standard-drawing RJ Moderate wet H2S service	
1	20		SCH140		P61K-005VV	Flange WN ASTM A182 Grade F321 Class 2500 Standard-drawing RJ Moderate wet H2S service	
4004	2		SCH160		P61P-00148	Flange WN ASTM B564 UNS N08825 Class 2500 ASME B16.5 RJ Licensor-2	
541	0.5				P61K-006A5	Flange NPT ASTM A182 Grade F321 Class 2500 ASME B16.5 RJ Moderate wet H2S service	
541	0.75				P61K-005ZA	Flange NPT ASTM A182 Grade F321 Class 2500 ASME B16.5 RJ Moderate wet H2S service	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67K-001MG	Blind flange ASTM A182 Grade F321 Class 2500 ASME B16.5 RJ Moderate wet H2S service	
1	0.75				P67K-001MH	Blind flange ASTM A182 Grade F321 Class 2500 ASME B16.5 RJ Moderate wet H2S service	
1	1				P67K-001MJ	Blind flange ASTM A182 Grade F321 Class 2500 ASME B16.5 RJ Moderate wet H2S service	
1	1.5				P67K-001MK	Blind flange ASTM A182 Grade F321 Class 2500 ASME B16.5 RJ Moderate wet H2S service	
1	2				P67K-001MN	Blind flange ASTM A182 Grade F321 Class 2500 ASME B16.5 RJ Moderate wet H2S service	
1	3				P67K-001MP	Blind flange ASTM A182 Grade F321 Class 2500 ASME B16.5 RJ Moderate wet H2S service	
1	4				P67K-001MR	Blind flange ASTM A182 Grade F321 Class 2500 ASME B16.5 RJ Moderate wet H2S service	
1	6				P67K-001MS	Blind flange ASTM A182 Grade F321 Class 2500 ASME B16.5 RJ Moderate wet H2S service	
1	8				P67K-001MT	Blind flange ASTM A182 Grade F321 Class 2500 ASME B16.5 RJ Moderate wet H2S service	
1	10				P67K-001ML	Blind flange ASTM A182 Grade F321 Class 2500 ASME B16.5 RJ Moderate wet H2S service	
1	12				P67K-001MM	Blind flange ASTM A182 Grade F321 Class 2500 ASME B16.5 RJ Moderate wet H2S service	
1	14				P67K-001MU	Blind flange ASTM A182 Grade F321 Class 2500 Standard-drawing RJ Moderate wet H2S service	
1	16				P67K-001MV	Blind flange ASTM A182 Grade F321 Class 2500 Standard-drawing RJ Moderate wet H2S service	
1	18				P67K-001MW	Blind flange ASTM A182 Grade F321 Class 2500 Standard-drawing RJ Moderate wet H2S service	
1	20				P67K-001U0	Blind flange ASTM A182 Grade F321 Class 2500 Standard-drawing RJ Moderate wet H2S service	

REDUCING FLANGE (FR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5	0.5		XXS	P62K-000C4	Reducing flange WN ASTM A182 Grade F321 Class 2500 ASME B16.5 RJ Moderate wet H2S service	
1	1.5	0.75		XXS	P62K-000BM	Reducing flange WN ASTM A182 Grade F321 Class 2500 ASME B16.5 RJ Moderate wet H2S service	
1	2	0.75		XXS	P62K-000C5	Reducing flange WN ASTM A182 Grade F321 Class 2500 ASME B16.5 RJ Moderate wet H2S service	
1	2	1		XXS	P62K-000BH	Reducing flange WN ASTM A182 Grade F321 Class 2500 ASME B16.5 RJ Moderate wet H2S service	
1	3	1.5		XXS	P62K-000BJ	Reducing flange WN ASTM A182 Grade F321 Class 2500 ASME B16.5 RJ Moderate wet H2S service	
1	3	1.5		XXS	P62K-000BK	Reducing flange WN ASTM A182 Grade F321 Class 2500 ASME B16.5 RJ Moderate wet H2S service	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2		XXS	P62K-000BL	Reducing flange WN ASTM A182 Grade F321 Class 2500 ASME B16.5 RJ Moderate wet H2S service	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P75T-000JX	Ring joint gasket SS TP347 Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	0.75				P75T-000JY	Ring joint gasket SS TP347 Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	1				P75T-000JZ	Ring joint gasket SS TP347 Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	1.5				P75T-000K0	Ring joint gasket SS TP347 Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	2				P75T-000P3	Ring joint gasket SS TP347 Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	3				P75T-000P4	Ring joint gasket SS TP347 Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	4				P75T-0011J	Ring joint gasket SS TP347 Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	6				P75T-000M9	Ring joint gasket SS TP347 Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	8				P75T-000MA	Ring joint gasket SS TP347 Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	10				P75T-000K1	Ring joint gasket SS TP347 Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	12				P75T-000K2	Ring joint gasket SS TP347 Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	14				P75T-0013T	Ring joint gasket SS TP347 Class 2500 ASME B16.20 Flange Standard-drawing RJ Octagonal type	999
1	16				P75T-0013U	Ring joint gasket SS TP347 Class 2500 ASME B16.20 Flange Standard-drawing RJ Octagonal type	999
1	18				P75T-0013W	Ring joint gasket SS TP347 Class 2500 ASME B16.20 Flange Standard-drawing RJ Octagonal type	999
1	20				P75T-0013V	Ring joint gasket SS TP347 Class 2500 ASME B16.20 Flange Standard-drawing RJ Octagonal type	999

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-1				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	1.5				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
1	2				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	3-12				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
1	14-16				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7M / A194 Grade 2HM ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	999

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81K-001FX	Gate valve ASTM A182 Grade F321 Class 2500 API 602 BW XXS Trim SS347 WB-BG-OS&Y Handwheel operated Moderate wet H2S service Fluid-2	
1	0.75				P81K-001FY	Gate valve ASTM A182 Grade F321 Class 2500 API 602 BW XXS Trim SS347 WB-BG-OS&Y Handwheel operated Moderate wet H2S service Fluid-2	
1	1				P81K-001FZ	Gate valve ASTM A182 Grade F321 Class 2500 API 602 BW XXS Trim SS347 WB-BG-OS&Y Handwheel operated Moderate wet H2S service Fluid-2	
1	1.5				P81K-001G0	Gate valve ASTM A182 Grade F321 Class 2500 API 602 BW XXS Trim SS347 WB-BG-OS&Y Handwheel operated Moderate wet H2S service Fluid-2	
1	2				P81L-002YJ	Gate valve ASTM A351 Grade CF8C Class 2500 API 600 BW XXS Trim SS347 PSB-BG-OS&Y Handwheel operated Moderate wet H2S service Fluid-2	
1	3				P81L-002YK	Gate valve ASTM A351 Grade CF8C Class 2500 API 600 BW XXS Trim SS347 PSB-BG-OS&Y Gear operated Moderate wet H2S service Fluid-2	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82K-00100	Globe valve ASTM A182 Grade F321 Class 2500 API 602 BW XXS Trim SS347 WB-BG-OS&Y Handwheel operated Moderate wet H2S service Fluid-2	
1	0.75				P82K-00101	Globe valve ASTM A182 Grade F321 Class 2500 API 602 BW XXS Trim SS347 WB-BG-OS&Y Handwheel operated Moderate wet H2S service Fluid-2	
1	1				P82K-00102	Globe valve ASTM A182 Grade F321 Class 2500 API 602 BW XXS Trim SS347 WB-BG-OS&Y Handwheel operated Moderate wet H2S service Fluid-2	
1	1.5				P82K-00103	Globe valve ASTM A182 Grade F321 Class 2500 API 602 BW XXS Trim SS347 WB-BG-OS&Y Handwheel operated Moderate wet H2S service Fluid-2	
1	2				P82L-001YD	Globe valve ASTM A351 Grade CF8C Class 2500 BS 1873 BW XXS Trim SS347 PSB-BG-OS&Y Gear operated Moderate wet H2S service Fluid-2	
1	3				P82L-001HD	Globe valve ASTM A351 Grade CF8C Class 2500 BS 1873 BW XXS Trim SS347 PSB-BG-OS&Y Gear operated Moderate wet H2S service Fluid-2	
4601	1				P82K-000XW	Y-pattern globe valve ASTM A182 Grade F321 Class 2500 ASME B16.34 BW XXS Trim SS347 WB-BG-OS&Y Handwheel operated Moderate wet H2S service Fluid-2	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83K-000US	Check valve ASTM A182 Grade F321 Class 2500 API 602 BW XXS Trim SS347 Lift-type Welded cover Moderate wet H2S service	
1	0.75				P83K-000UT	Check valve ASTM A182 Grade F321 Class 2500 API 602 BW XXS Trim SS347 Lift-type Welded cover Moderate wet H2S service	

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CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P83K-000UU	Check valve ASTM A182 Grade F321 Class 2500 API 602 BW XXS Trim SS347 Lift-type Welded cover Moderate wet H2S service	
1	1.5				P83K-000UV	Check valve ASTM A182 Grade F321 Class 2500 API 602 BW XXS Trim SS347 Lift-type Welded cover Moderate wet H2S service	
1	2				P83L-001FT	Check valve ASTM A351 Grade CF8C Class 2500 BS 1868 BW XXS Trim SS347 Swing-type Pressure seal cap Moderate wet H2S service	
1	3				P83L-001FU	Check valve ASTM A351 Grade CF8C Class 2500 BS 1868 BW XXS Trim SS347 Swing-type Pressure seal cap Moderate wet H2S service	

PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P72K-000D8	Paddle blank ASTM A182 Grade F321 Class 2500 Standard-drawing Flange ASME B16.5 RJ Moderate wet H2S service	
1	0.75				P72K-000D9	Paddle blank ASTM A182 Grade F321 Class 2500 Standard-drawing Flange ASME B16.5 RJ Moderate wet H2S service	
1	1				P72K-000DA	Paddle blank ASTM A182 Grade F321 Class 2500 Standard-drawing Flange ASME B16.5 RJ Moderate wet H2S service	
1	1.5				P72K-000DB	Paddle blank ASTM A182 Grade F321 Class 2500 Standard-drawing Flange ASME B16.5 RJ Moderate wet H2S service	
1	2				P72K-000DE	Paddle blank ASTM A182 Grade F321 Class 2500 Standard-drawing Flange ASME B16.5 RJ Moderate wet H2S service	
1	3				P72K-000DF	Paddle blank ASTM A182 Grade F321 Class 2500 Standard-drawing Flange ASME B16.5 RJ Moderate wet H2S service	
1	4				P72K-000DG	Paddle blank ASTM A182 Grade F321 Class 2500 Standard-drawing Flange ASME B16.5 RJ Moderate wet H2S service	
1	6				P72K-000DH	Paddle blank ASTM A182 Grade F321 Class 2500 Standard-drawing Flange ASME B16.5 RJ Moderate wet H2S service	
1	8				P72K-000DJ	Paddle blank ASTM A182 Grade F321 Class 2500 Standard-drawing Flange ASME B16.5 RJ Moderate wet H2S service	
1	10				P72K-000DC	Paddle blank ASTM A182 Grade F321 Class 2500 Standard-drawing Flange ASME B16.5 RJ Moderate wet H2S service	
1	12				P72K-000DD	Paddle blank ASTM A182 Grade F321 Class 2500 Standard-drawing Flange ASME B16.5 RJ Moderate wet H2S service	
1	14				P72K-000DK	Paddle blank ASTM A182 Grade F321 Class 2500 Standard-drawing Flange Standard-drawing RJ Moderate wet H2S service	
1	16				P72K-000DL	Paddle blank ASTM A182 Grade F321 Class 2500 Standard-drawing Flange Standard-drawing RJ Moderate wet H2S service	
1	18				P72K-000DM	Paddle blank ASTM A182 Grade F321 Class 2500 Standard-drawing Flange Standard-drawing RJ Moderate wet H2S service	
1	20				P72K-000GH	Paddle blank ASTM A182 Grade F321 Class 2500 Standard-drawing Flange Standard-drawing RJ Moderate wet H2S service	

PADDLE SPACER (PS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P72K-000DN	Paddle spacer ASTM A182 Grade F321 Class 2500 Standard-drawing Flange ASME B16.5 RJ Moderate wet H2S service	
1	0.75				P72K-000DP	Paddle spacer ASTM A182 Grade F321 Class 2500 Standard-drawing Flange ASME B16.5 RJ Moderate wet H2S service	
1	1				P72K-000DR	Paddle spacer ASTM A182 Grade F321 Class 2500 Standard-drawing Flange ASME B16.5 RJ Moderate wet H2S service	
1	1.5				P72K-000DS	Paddle spacer ASTM A182 Grade F321 Class 2500 Standard-drawing Flange ASME B16.5 RJ Moderate wet H2S service	
1	2				P72K-000DV	Paddle spacer ASTM A182 Grade F321 Class 2500 Standard-drawing Flange ASME B16.5 RJ Moderate wet H2S service	
1	3				P72K-000DW	Paddle spacer ASTM A182 Grade F321 Class 2500 Standard-drawing Flange ASME B16.5 RJ Moderate wet H2S service	
1	4				P72K-000DX	Paddle spacer ASTM A182 Grade F321 Class 2500 Standard-drawing Flange ASME B16.5 RJ Moderate wet H2S service	
1	6				P72K-000DY	Paddle spacer ASTM A182 Grade F321 Class 2500 Standard-drawing Flange ASME B16.5 RJ Moderate wet H2S service	
1	8				P72K-000DZ	Paddle spacer ASTM A182 Grade F321 Class 2500 Standard-drawing Flange ASME B16.5 RJ Moderate wet H2S service	
1	10				P72K-000DT	Paddle spacer ASTM A182 Grade F321 Class 2500 Standard-drawing Flange ASME B16.5 RJ Moderate wet H2S service	
1	12				P72K-000DU	Paddle spacer ASTM A182 Grade F321 Class 2500 Standard-drawing Flange ASME B16.5 RJ Moderate wet H2S service	
1	14				P72K-000E0	Paddle spacer ASTM A182 Grade F321 Class 2500 Standard-drawing Flange Standard-drawing RJ Moderate wet H2S service	
1	16				P72K-000E1	Paddle spacer ASTM A182 Grade F321 Class 2500 Standard-drawing Flange Standard-drawing RJ Moderate wet H2S service	
1	18				P72K-000E2	Paddle spacer ASTM A182 Grade F321 Class 2500 Standard-drawing Flange Standard-drawing RJ Moderate wet H2S service	
1	20				P72K-000GJ	Paddle spacer ASTM A182 Grade F321 Class 2500 Standard-drawing Flange Standard-drawing RJ Moderate wet H2S service	

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BOLT TABLE (B_P2M602 , STUD ASME RJ, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	125	P80S-0090J	R13	P75T-000JX
0.75	4	0.750	130	P80S-0090K	R16	P75T-000JY
1	4	0.875	140	P80S-005ZD	R18	P75T-000JZ
1.5	4	1.125	175	P80S-0064S	R23	P75T-000K0
2	8	1.000	180	P80S-0061J	R26	P75T-000P3
3	8	1.250	260	P80S-0068P	R32	P75T-000P4
4	8	1.500	305	P80S-006LS	R38	P75T-0011J
6	8	2.000	410	P80S-00BBD	R47	P75T-000M9
8	12	2.000	450	P80S-00BH6	R51	P75T-000MA
10	12	2.500	575	P80S-00DZV	R55	P75T-000K1
12	12	2.750	635	P80S-01RAT	R60	P75T-000K2
14	14	3.000	695	P80S-01VKF	R64	P75T-0013T
16	14	3.000	755	P80S-01VKU	R68	P75T-0013U
18	16	3.000	815		R72	P75T-0013W
20	16	3.000	875		R76	P75T-0013V

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BRANCH TABLE (T_P2M602)

RUN PIPE SIZE (in) \ BRANCH SIZE (in)	0.5	0.75	1	1.5	2	3	4	6	8	10	12	14	16	18	20
0.5	TS														
0.75		TS													
1		TR	TS												
1.5		TR	TR	TS											
2		L	TR	TR	TS										
3		L	L	TR	TR	TS									
4	L	L	L	L	TR	TR	TS								
6	L	L	L	L	L	TR	TR	TS							
8		L	L	L	L	L	TR	TR	TS						
10		L	L	L	L	L	TR	TR	TR	TS					
12		L	L	L	L	L	L	TR	TR	TR	TS				
14		L	L	L	L	L	L	TR	TR	TR	TR	TS			
16		L	L	L	L	L	L	TR	TR	TR	TR	TR	TS		
18		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TS	
20		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TR	TS

TR : REDUCING TEE
L : OUTLET
TS : STRAIGHT TEE

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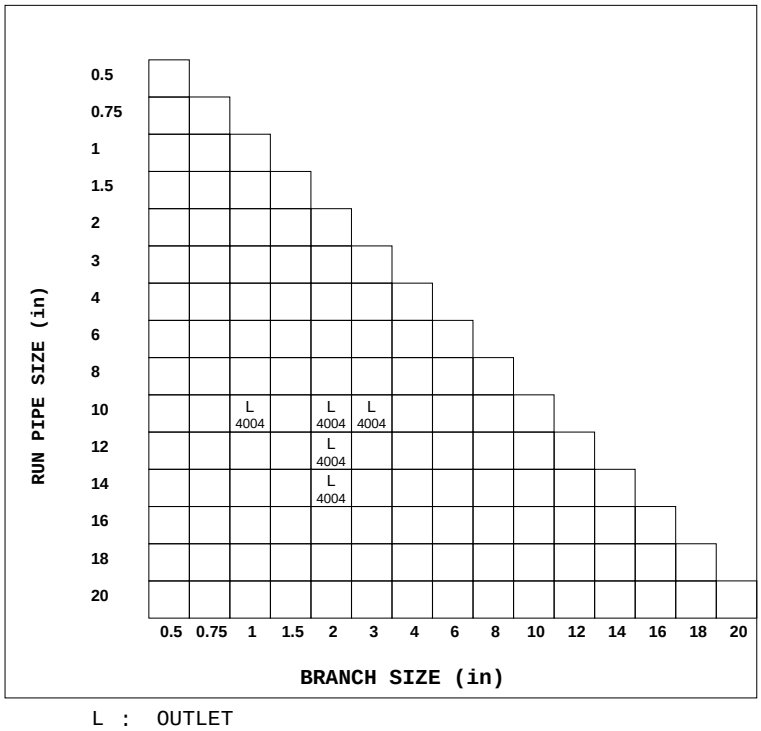
PIPING CLASS
P2M602 REV NO. 2

BRANCH TABLE (T_P2M602_4)



L : OUTLET

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Material : Killed CS
Rating : ASME CLASS 2500
Flange Face : RJ
C.A.(mm) : 6.00
Gasket : Ring Octagonal
Service : PROCESS - GENERAL PROCESS NON SOUR, NON CORROSIVE
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED

DETAIL NOTES :

NO.	DESCRIPTION
37	TO BE USED ONLY FOR ORIFICE FLANGE ASSEMLY UPTO 425 DEG C

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
200	WITH JACK SCREW (FO)
541	NPT(F) (F)
4001	ALTERNATIVE MATERIAL FOR INSTRUMENT CONNECTION (F,P,V)
4405	FLANGE NPT WITH ALTERNATIVE MATERIAL FOR INSTRUMENT CONNECTION (F)
4601	Y-PATTERN (W)

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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		10.70mm		P01A-00921	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	1.5		12.30mm		P01A-00922	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE	
1	2		13.70mm		P01A-00923	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	3		16.90mm		P01A-00924	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	4		19.80mm		P01A-00925	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	6		25.80mm		P01A-00927	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	8		31.50mm		P01A-00928	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	10		37.60mm		P01A-00926	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
1	12		XXS		P01A-0043S	Pipe ASTM A333 Grade 6 Seamless ASME B36.10M/B36.19M BE	
4001	0.5		SCH160		P01J-001L1	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE	37
4001	0.75		SCH160		P01J-001HC	Pipe ASTM A312 Grade TP316/TP316L dual grade Seamless ASME B36.10M/B36.19M PE	37

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		10.70mm		P02A-0052D	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1.5		12.30mm		P02A-0052E	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	2		13.70mm		P02A-0052F	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		16.90mm		P02A-0052G	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		19.80mm		P02A-0052H	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		25.80mm		P02A-0052K	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	8		31.50mm		P02A-0052L	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	10		37.60mm		P02A-0052J	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	12		XXS		P02A-002JP	90 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		10.70mm		P03A-004ND	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	1.5		12.30mm		P03A-004NE	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	2		13.70mm		P03A-004NF	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		16.90mm		P03A-004NG	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		19.80mm		P03A-004NH	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		25.80mm		P03A-004NB	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	8		31.50mm		P03A-004NC	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	10		37.60mm		P03A-004NA	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	
1	12		XXS		P03A-002G7	45 degree elbow ASTM A420 Grade WPL6 Seamless ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		10.70mm		P21A-0055F	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5		12.30mm		P21A-0055G	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2		13.70mm		P21A-0055H	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		16.90mm		P21A-0055J	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		19.80mm		P21A-0055K	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6		25.80mm		P21A-0055M	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	8		31.50mm		P21A-0055N	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10		37.60mm		P21A-0055L	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12		XXS		P21A-003H9	Straight tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5	1	12.30mm	10.70mm	P24A-00PZH	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	13.70mm	10.70mm	P24A-00PZJ	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	13.70mm	12.30mm	P24A-00PZK	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	16.90mm	12.30mm	P24A-00PZL	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	16.90mm	13.70mm	P24A-00PZM	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	19.80mm	13.70mm	P24A-00PZN	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	19.80mm	16.90mm	P24A-00PZP	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	25.80mm	16.90mm	P24A-00PZR	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	

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REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	6	4	25.80mm	19.80mm	P24A-00PZS	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	8	4	31.50mm	19.80mm	P24A-00PZT	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	8	6	31.50mm	25.80mm	P24A-00PZU	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	4	37.60mm	19.80mm	P24A-00PZV	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	6	37.60mm	25.80mm	P24A-00PZW	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	8	37.60mm	31.50mm	P24A-00PZX	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	6	XXS	25.80mm	P24A-00PZZ	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	8	XXS	31.50mm	P24A-00R00	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	10	XXS	37.60mm	P24A-00PZY	Reducing tee ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5	1	12.30mm	10.70mm	P27A-00J90	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	13.70mm	10.70mm	P27A-00J91	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	13.70mm	12.30mm	P27A-00J92	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	16.90mm	12.30mm	P27A-00J93	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	16.90mm	13.70mm	P27A-00J94	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	1.5	19.80mm	12.30mm	P27A-00J95	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	19.80mm	13.70mm	P27A-00J96	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	19.80mm	16.90mm	P27A-00J97	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	25.80mm	16.90mm	P27A-00J9L	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	6	4	25.80mm	19.80mm	P27A-00J9M	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	8	4	31.50mm	19.80mm	P27A-00J9J	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	8	6	31.50mm	25.80mm	P27A-00J9K	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	4	37.60mm	19.80mm	P27A-00J9C	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	6	37.60mm	25.80mm	P27A-00J9D	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	8	37.60mm	31.50mm	P27A-00J9E	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	6	XXS	25.80mm	P27A-00J9G	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	8	XXS	31.50mm	P27A-00J9H	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	10	XXS	37.60mm	P27A-00J9F	Concentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5	1	12.30mm	10.70mm	P28A-00FK2	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1	13.70mm	10.70mm	P28A-00FK3	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2	1.5	13.70mm	12.30mm	P28A-00FK4	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	1.5	16.90mm	12.30mm	P28A-00FK5	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3	2	16.90mm	13.70mm	P28A-00FK6	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	1.5	19.80mm	12.30mm	P28A-00FK7	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	19.80mm	13.70mm	P28A-00FK8	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	19.80mm	16.90mm	P28A-00FK9	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	25.80mm	16.90mm	P28A-00FKL	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	6	4	25.80mm	19.80mm	P28A-00FKM	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	8	4	31.50mm	19.80mm	P28A-00FKN	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	8	6	31.50mm	25.80mm	P28A-00FKP	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	4	37.60mm	19.80mm	P28A-00FKE	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	6	37.60mm	25.80mm	P28A-00FKF	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10	8	37.60mm	31.50mm	P28A-00FKG	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	6	XXS	25.80mm	P28A-00FKJ	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	8	XXS	31.50mm	P28A-00FKK	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12	10	XXS	37.60mm	P28A-00FKH	Eccentric reducer ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		10.70mm		P29A-005LD	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	1.5		12.30mm		P29A-005LE	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	2		13.70mm		P29A-005LF	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		16.90mm		P29A-005LG	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		19.80mm		P29A-005LH	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	

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CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	6		25.80mm		P29A-005LM	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	8		31.50mm		P29A-005LN	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	10		37.60mm		P29A-005LL	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	
1	12		XXS		P29A-001VA	Cap ASTM A420 Grade WPL6 Seamless ASME B16.9 BW	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		12.70mm		P41A-001CG	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		14.40mm		P41A-001CH	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	1	16.90mm	10.70mm	P31B-012RX	Outlet ASTM A105 MSS SP-97 BW	
1	4	1	19.80mm	10.70mm	P31B-012RY	Outlet ASTM A105 MSS SP-97 BW	
1	6	1	25.80mm	10.70mm	P31B-012S0	Outlet ASTM A105 MSS SP-97 BW	
1	8	1	31.50mm	10.70mm	P31B-012S3	Outlet ASTM A105 MSS SP-97 BW	
1	10	1	37.60mm	10.70mm	P31B-012S7	Outlet ASTM A105 MSS SP-97 BW	
1	12	1	XXS	10.70mm	P31B-012SB	Outlet ASTM A105 MSS SP-97 BW	
1	4	1.5	19.80mm	12.30mm	P31B-012RZ	Outlet ASTM A105 MSS SP-97 BW	
1	6	1.5	25.80mm	12.30mm	P31B-012S1	Outlet ASTM A105 MSS SP-97 BW	
1	8	1.5	31.50mm	12.30mm	P31B-012S4	Outlet ASTM A105 MSS SP-97 BW	
1	10	1.5	37.60mm	12.30mm	P31B-012S8	Outlet ASTM A105 MSS SP-97 BW	
1	12	1.5	XXS	12.30mm	P31B-012SC	Outlet ASTM A105 MSS SP-97 BW	
1	6	2	25.80mm	13.70mm	P31B-012S2	Outlet ASTM A105 MSS SP-97 BW	
1	8	2	31.50mm	13.70mm	P31B-012S5	Outlet ASTM A105 MSS SP-97 BW	
1	10	2	37.60mm	13.70mm	P31B-012S9	Outlet ASTM A105 MSS SP-97 BW	
1	12	2	XXS	13.70mm	P31B-012SD	Outlet ASTM A105 MSS SP-97 BW	
1	8	3	31.50mm	16.90mm	P31B-012S6	Outlet ASTM A105 MSS SP-97 BW	
1	10	3	37.60mm	16.90mm	P31B-012SA	Outlet ASTM A105 MSS SP-97 BW	
1	12	3	XXS	16.90mm	P31B-012SE	Outlet ASTM A105 MSS SP-97 BW	
1	12	4	XXS	19.80mm	P31B-012SF	Outlet ASTM A105 MSS SP-97 BW	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P30B-0002F	Plug ASTM A105 ASME B16.11 NPT Round head	
1	1.5				P30B-0002G	Plug ASTM A105 ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		10.70mm		P61B-00DJ3	Flange WN ASTM A105 Class 2500 ASME B16.5 RJ	
1	1.5		12.30mm		P61B-00DJ4	Flange WN ASTM A105 Class 2500 ASME B16.5 RJ	
1	2		13.70mm		P61B-00DJ6	Flange WN ASTM A105 Class 2500 ASME B16.5 RJ	
1	3		16.90mm		P61B-00DJ7	Flange WN ASTM A105 Class 2500 ASME B16.5 RJ	
1	4		19.80mm		P61B-00DJ8	Flange WN ASTM A105 Class 2500 ASME B16.5 RJ	
1	6		25.80mm		P61B-00DJ9	Flange WN ASTM A105 Class 2500 ASME B16.5 RJ	
1	8		31.50mm		P61B-00DJA	Flange WN ASTM A105 Class 2500 ASME B16.5 RJ	
1	10		37.60mm		P61B-00DJ5	Flange WN ASTM A105 Class 2500 ASME B16.5 RJ	
1	12		XXS		P61B-00B1M	Flange WN ASTM A105 Class 2500 ASME B16.5 RJ	
4001	0.5		SCH160		P61K-00381	Flange WN ASTM A182 Grade F316/F316L dual grade Class 2500 ASME B16.5 RJ	37
4001	0.75		SCH160		P61K-00382	Flange WN ASTM A182 Grade F316/F316L dual grade Class 2500 ASME B16.5 RJ	37
4405	0.5				P61K-0047S	Flange NPT ASTM A182 Grade F316/F316L dual grade Class 2500 ASME B16.5 RJ	37
4405	0.75				P61K-006XX	Flange NPT ASTM A182 Grade F316/F316L dual grade Class 2500 ASME B16.5 RJ	37
541	1				P61B-00CWF	Flange NPT ASTM A105 Class 2500 ASME B16.5 RJ	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P67B-001W2	Blind flange ASTM A105 Class 2500 ASME B16.5 RJ	
1	1.5				P67B-001W3	Blind flange ASTM A105 Class 2500 ASME B16.5 RJ	

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BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2				P67B-001Z6	Blind flange ASTM A105 Class 2500 ASME B16.5 RJ	
1	3				P67B-001Z7	Blind flange ASTM A105 Class 2500 ASME B16.5 RJ	
1	4				P67B-001Z8	Blind flange ASTM A105 Class 2500 ASME B16.5 RJ	
1	6				P67B-001W6	Blind flange ASTM A105 Class 2500 ASME B16.5 RJ	
1	8				P67B-001W7	Blind flange ASTM A105 Class 2500 ASME B16.5 RJ	
1	10				P67B-001W4	Blind flange ASTM A105 Class 2500 ASME B16.5 RJ	
1	12				P67B-001W5	Blind flange ASTM A105 Class 2500 ASME B16.5 RJ	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P75T-000KT	Ring joint gasket Soft iron Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	0.75				P75T-000KU	Ring joint gasket Soft iron Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	1				P75T-000KV	Ring joint gasket Soft iron Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	1.5				P75T-000KW	Ring joint gasket Soft iron Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	2				P75T-000L6	Ring joint gasket Soft iron Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	3				P75T-000MC	Ring joint gasket Soft iron Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	4				P75T-000ME	Ring joint gasket Soft iron Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	6				P75T-000L7	Ring joint gasket Soft iron Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	8				P75T-000MD	Ring joint gasket Soft iron Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	10				P75T-000KX	Ring joint gasket Soft iron Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	
1	12				P75T-000MB	Ring joint gasket Soft iron Class 2500 ASME B16.20 Flange ASME B16.5 RJ Octagonal type	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-1				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	1.5				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
1	2				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	3-12				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P81B-002XN	Gate valve ASTM A105 Class 2500 API 602 BW T=10.70 mm Trim number 8 WB-BG-OS&Y Handwheel operated C.A.=6.0mm	
1	1.5				P81B-002XP	Gate valve ASTM A105 Class 2500 API 602 BW T=12.30 mm Trim number 8 WB-BG-OS&Y Handwheel operated C.A.=6.0mm	
1	2				P81C-008RY	Gate valve ASTM A216 Grade WCB Class 2500 API 600 BW T=13.70 mm Trim number 8 PSB-BG-OS&Y Handwheel operated C.A.=6.0mm	
1	3				P81C-008RZ	Gate valve ASTM A216 Grade WCB Class 2500 API 600 BW T=16.90 mm Trim number 8 PSB-BG-OS&Y Gear operated C.A.=6.0mm	
1	4				P81C-008S0	Gate valve ASTM A216 Grade WCB Class 2500 API 600 BW T=19.80 mm Trim number 8 PSB-BG-OS&Y Gear operated C.A.=6.0mm	
1	6				P81C-008S1	Gate valve ASTM A216 Grade WCB Class 2500 API 600 BW T=25.80 mm Trim number 8 PSB-BG-OS&Y Gear operated C.A.=6.0mm	
1	8				P81C-008S2	Gate valve ASTM A216 Grade WCB Class 2500 API 600 BW T=31.50 mm Trim number 8 PSB-BG-OS&Y Gear operated C.A.=6.0mm	
1	10				P81C-008S3	Gate valve ASTM A216 Grade WCB Class 2500 API 600 BW T=37.60 mm Trim number 8 PSB-BG-OS&Y Gear operated C.A.=6.0mm	
1	12				P81C-008S4	Gate valve ASTM A216 Grade WCB Class 2500 API 600 BW XXS Trim number 8 PSB-BG-OS&Y Gear operated C.A.=6.0mm	
4001	0.5				P81K-001PH	Gate valve ASTM A182 Grade F316/F316L dual grade Class 2500 API 602 Flange ASME B16.5 RJ Trim SS316L Body and disc seats Stellite-6 WB-BG-OS&Y Handwheel operated	37
4001	0.75				P81K-001UT	Gate valve ASTM A182 Grade F316/F316L dual grade Class 2500 API 602 Flange ASME B16.5 RJ Trim SS316L Body and disc seats Stellite-6 WB-BG-OS&Y Handwheel operated	37

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2				P82C-0047N	Globe valve ASTM A216 Grade WCB Class 2500 BS 1873 BW T=13.70 mm Trim number 8 PSB-BG-OS&Y Gear operated C.A.=6.0mm	
1	3				P82C-0047P	Globe valve ASTM A216 Grade WCB Class 2500 BS 1873 BW T=16.90 mm Trim number 8 PSB-BG-OS&Y Gear operated C.A.=6.0mm	
1	4				P82C-0047R	Globe valve ASTM A216 Grade WCB Class 2500 BS 1873 BW T=19.80 mm Trim number 8 PSB-BG-OS&Y Gear operated C.A.=6.0mm	
1	6				P82C-0047S	Globe valve ASTM A216 Grade WCB Class 2500 BS 1873 BW T=25.80 mm Trim number 8 PSB-BG-OS&Y Gear operated C.A.=6.0mm	
1	8				P82C-0047T	Globe valve ASTM A216 Grade WCB Class 2500 BS 1873 BW T=31.50 mm Trim number 8 PSB-BG-OS&Y Gear operated C.A.=6.0mm	
1	10				P82C-0047U	Globe valve ASTM A216 Grade WCB Class 2500 BS 1873 BW T=37.60 mm Trim number 8 PSB-BG-OS&Y Gear operated C.A.=6.0mm	

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GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
4601	1				P82B-0022Z	Y-pattern globe valve ASTM A105 Class 2500 ASME B16.34 BW T=10.70 mm Trim SS316L Body and disc seats Stellite-6 WB-BG-OS&Y Handwheel operated C.A.=6.0mm	
4601	1.5				P82B-0020D	Y-pattern globe valve ASTM A105 Class 2500 ASME B16.34 BW T=12.30 mm Trim SS316L Body and disc seats Stellite-6 WB-BG-OS&Y Handwheel operated C.A.=6.0mm	
4601	2				P82C-0043W	Y-pattern globe valve ASTM A216 Grade WCB Class 2500 ASME B16.34 BW T=13.70 mm Trim SS316L Body and disc seats Stellite-6 PSB-BG-OS&Y Gear operated C.A.=6.0mm	
4601	3				P82C-0043X	Y-pattern globe valve ASTM A216 Grade WCB Class 2500 ASME B16.34 BW T=16.90 mm Trim SS316L Body and disc seats Stellite-6 PSB-BG-OS&Y Gear operated C.A.=6.0mm	
4601	4				P82C-0043Y	Y-pattern globe valve ASTM A216 Grade WCB Class 2500 ASME B16.34 BW T=19.80 mm Trim SS316L Body and disc seats Stellite-6 PSB-BG-OS&Y Gear operated C.A.=6.0mm	
4601	6				P82C-0043Z	Y-pattern globe valve ASTM A216 Grade WCB Class 2500 ASME B16.34 BW T=25.80 mm Trim SS316L Body and disc seats Stellite-6 PSB-BG-OS&Y Gear operated C.A.=6.0mm	
4601	8				P82C-00440	Y-pattern globe valve ASTM A216 Grade WCB Class 2500 ASME B16.34 BW T=31.50 mm Trim SS316L Body and disc seats Stellite-6 PSB-BG-OS&Y Gear operated C.A.=6.0mm	
4601	10				P82C-00441	Y-pattern globe valve ASTM A216 Grade WCB Class 2500 ASME B16.34 BW T=37.60 mm Trim SS316L Body and disc seats Stellite-6 PSB-BG-OS&Y Gear operated C.A.=6.0mm	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P83B-001JM	Check valve ASTM A105 Class 2500 API 602 BW T=10.70 mm Trim number 8 Lift-type Welded cover C.A.=6.0mm	
1	1.5				P83B-001JN	Check valve ASTM A105 Class 2500 API 602 BW T=12.30 mm Trim number 8 Lift-type Welded cover C.A.=6.0mm	
1	2				P83C-003TH	Check valve ASTM A216 Grade WCB Class 2500 BS 1868 BW T=13.70 mm Trim number 8 Swing-type Pressure seal cap C.A.=6.0mm	
1	3				P83C-003TJ	Check valve ASTM A216 Grade WCB Class 2500 BS 1868 BW T=16.90 mm Trim number 8 Swing-type Pressure seal cap C.A.=6.0mm	
1	4				P83C-003TK	Check valve ASTM A216 Grade WCB Class 2500 BS 1868 BW T=19.80 mm Trim number 8 Swing-type Pressure seal cap C.A.=6.0mm	
1	6				P83C-003TL	Check valve ASTM A216 Grade WCB Class 2500 BS 1868 BW T=25.80 mm Trim number 8 Swing-type Pressure seal cap C.A.=6.0mm	

DP CHECK VALVE (XDP)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	8				P88C-003CL	Dual plate check valve ASTM A216 Grade WCB Class 2500 API 594 Lug-type ASME B16.5 RJ Trim number 8 Internal wetted parts 13Cr Spring Inconel Retainerless-type C.A.=6.0mm	
1	10				P88C-003CJ	Dual plate check valve ASTM A216 Grade WCB Class 2500 API 594 Lug-type ASME B16.5 RJ Trim number 8 Internal wetted parts 13Cr Spring Inconel Retainerless-type C.A.=6.0mm	
1	12				P88C-003CK	Dual plate check valve ASTM A216 Grade WCB Class 2500 API 594 Lug-type ASME B16.5 RJ Trim number 8 Internal wetted parts 13Cr Spring Inconel Retainerless-type C.A.=6.0mm	

ORIFICE FLANGE (FO)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2		13.70mm		P66B-008V4	Orifice flange WN ASTM A105 Class 2500 ASME B16.36 RJ NPS3/4 SW tap x 1	
200	2		13.70mm		P66B-008V5	Orifice flange WN ASTM A105 Class 2500 ASME B16.36 RJ NPS3/4 SW tap x 1 with Jack screw	

PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P72B-000LN	Paddle blank ASTM A105 Class 2500 Standard-drawing Flange ASME B16.5 RJ	
1	1.5				P72B-000LP	Paddle blank ASTM A105 Class 2500 Standard-drawing Flange ASME B16.5 RJ	
1	2				P72B-000LT	Paddle blank ASTM A105 Class 2500 Standard-drawing Flange ASME B16.5 RJ	
1	3				P72B-000LU	Paddle blank ASTM A105 Class 2500 Standard-drawing Flange ASME B16.5 RJ	
1	4				P72B-000LV	Paddle blank ASTM A105 Class 2500 Standard-drawing Flange ASME B16.5 RJ	
1	6				P72B-000LW	Paddle blank ASTM A105 Class 2500 Standard-drawing Flange ASME B16.5 RJ	
1	8				P72B-000LX	Paddle blank ASTM A105 Class 2500 Standard-drawing Flange ASME B16.5 RJ	
1	10				P72B-000LR	Paddle blank ASTM A105 Class 2500 Standard-drawing Flange ASME B16.5 RJ	
1	12				P72B-000LS	Paddle blank ASTM A105 Class 2500 Standard-drawing Flange ASME B16.5 RJ	

PADDLE SPACER (PS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P72B-000L9	Paddle spacer ASTM A105 Class 2500 Standard-drawing Flange ASME B16.5 RJ	
1	1.5				P72B-000LA	Paddle spacer ASTM A105 Class 2500 Standard-drawing Flange ASME B16.5 RJ	
1	2				P72B-000LD	Paddle spacer ASTM A105 Class 2500 Standard-drawing Flange ASME B16.5 RJ	
1	3				P72B-000LE	Paddle spacer ASTM A105 Class 2500 Standard-drawing Flange ASME B16.5 RJ	
1	4				P72B-000LF	Paddle spacer ASTM A105 Class 2500 Standard-drawing Flange ASME B16.5 RJ	
1	6				P72B-000LG	Paddle spacer ASTM A105 Class 2500 Standard-drawing Flange ASME B16.5 RJ	
1	8				P72B-000LH	Paddle spacer ASTM A105 Class 2500 Standard-drawing Flange ASME B16.5 RJ	
1	10				P72B-000LB	Paddle spacer ASTM A105 Class 2500 Standard-drawing Flange ASME B16.5 RJ	
1	12				P72B-000LC	Paddle spacer ASTM A105 Class 2500 Standard-drawing Flange ASME B16.5 RJ	

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BOLT TABLE (B_P4AP02 , STUD ASME RJ, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.750	125	P80S-003XN	R13	P75T-000KT
0.75	4	0.750	130	P80S-003XP	R16	P75T-000KU
1	4	0.875	140	P80S-0041D	R18	P75T-000KV
1.5	4	1.125	175	P80S-0046S	R23	P75T-000KW
2	8	1.000	180	P80S-0043R	R26	P75T-000L6
3	8	1.250	260	P80S-004B0	R32	P75T-000MC
4	8	1.500	305	P80S-008MZ	R38	P75T-000ME
6	8	2.000	410	P80S-005VF	R47	P75T-000L7
8	12	2.000	450	P80S-005VP	R51	P75T-000MD
10	12	2.500	575	P80S-00P1K	R55	P75T-000KX
12	12	2.750	635	P80S-00PWW	R60	P75T-000MB

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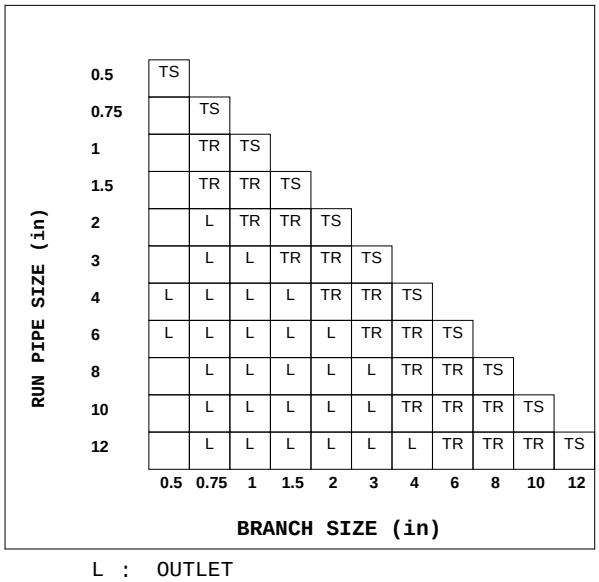
BRANCH TABLE (T_P4AP02)



L : OUTLET
TS : STRAIGHT TEE
TR : REDUCING TEE

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Material : GRP
Rating : ASME CLASS 150
Flange Face : FF
C.A.(mm) : 0.00
Gasket : Sheet
Service : UTILITY - WATER SERVICE (UNDERGROUND): / SEA WATER-INTAKE & OUTFALL (A/G), SEA WATER (U/G) / FIRE WATER U/G / POTABLE WATER / DRINKING WATER (U/G) / RAW WATER (U/G) / WASTE WATER (U/G) / DEMINERALISED WATER (U/G) / COOLING WATER SUPPLY/RETURN (U/G)

Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
31	THE USE OF RTRP PIPING FOR SEA WATER ABOVEGROUND MAY BE CONSIDERED FOR SHORT INTERFACE LENGTHS SUBJECT TO EMPLOYER APPROVAL
33	LAMINATED BUTT & STRAP IS THE PREFERRED METHOD OF JOINTING
35	CONTRACTOR SHALL DESIGN UNDERGROUND UTILITIES PIPING SYSTEM TO SUIT DESIGN CONDITIONS SPECIFIED IN BASIC ENGINEERING DESIGN DATA 3550-8820-SP-0001 PARA 4.4

DETAIL NOTES :

NO.	DESCRIPTION
999	HOLD ITEMS. ORDER PLACEMENT SHALL NOT BE DONE BEFORE RELEASING HOLD.

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
200	WITH JACK SCREW (FO)
773	CLASS 300 (B,F,G,V)
4209	MECHANICAL JOINT SPIGOT END AND ADHESIVE JOINT SPIGOT END (ADP)
4210	MECHANICAL JOINT SPIGOT END AND ADHESIVE JOINT BELL END (ADP)
4211	MECHANICAL JOINT BELL ENDS (CPS)
4607	ALTERNATIVE VALVE MATERIAL FOR FIRE WATER (V,W,X)

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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P01M-000H1	Pipe ASTM B466 UNS C70620 Seamless ASME B36.10M/B36.19M NPT	
1	0.75		SCH80S		P01M-000H2	Pipe ASTM B466 UNS C70620 Seamless ASME B36.10M/B36.19M NPT	
1	1		SCH80S		P01M-000H3	Pipe ASTM B466 UNS C70620 Seamless ASME B36.10M/B36.19M NPT	
1	1.5		SCH80S		P01M-000H4	Pipe ASTM B466 UNS C70620 Seamless ASME B36.10M/B36.19M NPT	
1	2		MFR_STD		P01N-002A6	Pipe Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell and spigot ends Fluid-1	
1	3		MFR_STD		P01N-002A8	Pipe Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell and spigot ends Fluid-1	
1	4		MFR_STD		P01N-0022K	Pipe Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell and spigot ends Fluid-1	
1	6		MFR_STD		P01N-0022L	Pipe Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell and spigot ends Fluid-1	
1	8		MFR_STD		P01N-0022M	Pipe Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell and spigot ends Fluid-1	
1	10		MFR_STD		P01N-0022D	Pipe Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell and spigot ends Fluid-1	
1	12		MFR_STD		P01N-0022E	Pipe Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell and spigot ends Fluid-1	
1	14		MFR_STD		P01N-0022F	Pipe Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell and spigot ends Fluid-1	
1	16		MFR_STD		P01N-0022G	Pipe Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell and spigot ends Fluid-1	
1	18		MFR_STD		P01N-0022H	Pipe Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell and spigot ends Fluid-1	
1	20		MFR_STD		P01N-0022J	Pipe Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell and spigot ends Fluid-1	
1	24		MFR_STD		P01N-002A7	Pipe Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell and spigot ends Fluid-1	
1	26		MFR_STD		P01N-002CH	Pipe Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell and spigot ends Fluid-1	
1	30		MFR_STD		P01N-002CJ	Pipe Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell and spigot ends Fluid-1	
1	32		MFR_STD		P01N-002CK	Pipe Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell and spigot ends Fluid-1	
1	36		MFR_STD		P01N-002CL	Pipe Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell and spigot ends Fluid-1	
1	40		MFR_STD		P01N-002CN	Pipe Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell and spigot ends Fluid-1	
1	44		MFR_STD		P01N-002AC	Pipe Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends Fluid-1	
1	48		MFR_STD		P01N-001XH	Pipe Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends Fluid-1	
1	52		MFR_STD		P01N-001XJ	Pipe Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends Fluid-1	
1	56		MFR_STD		P01N-001XK	Pipe Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends Fluid-1	
1	60		MFR_STD		P01N-001XL	Pipe Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends Fluid-1	
1	64		MFR_STD		P01N-002AD	Pipe Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends Fluid-1	
1	68		MFR_STD		P01N-002AE	Pipe Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends Fluid-1	
1	72		MFR_STD		P01N-002K4	Pipe Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends Fluid-1	
1	76		MFR_STD		P01N-002AF	Pipe Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends Fluid-1	
1	84		MFR_STD		P01N-002AG	Pipe Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends Fluid-1	
1	96		MFR_STD		P01N-002AH	Pipe Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends Fluid-1	
1	100		MFR_STD		P01N-002K3	Pipe Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends Fluid-1	
1	104		MFR_STD		P01N-002A9	Pipe Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends Fluid-1	
1	116		MFR_STD		P01N-002AS	Pipe Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends Fluid-1	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P02P-0000V	90 degree elbow ASTM B151 UNS C70620 Class 3000 ASME B16.11 NPT	
1	0.75				P02P-0000W	90 degree elbow ASTM B151 UNS C70620 Class 3000 ASME B16.11 NPT	
1	1				P02P-0000S	90 degree elbow ASTM B151 UNS C70620 Class 3000 ASME B16.11 NPT	
1	1.5				P02P-0000T	90 degree elbow ASTM B151 UNS C70620 Class 3000 ASME B16.11 NPT	
1	2		MFR_STD		P02N-001M8	90 degree elbow Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	3		MFR_STD		P02N-001MA	90 degree elbow Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	4		MFR_STD		P02N-001FT	90 degree elbow Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	6		MFR_STD		P02N-001FU	90 degree elbow Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	8		MFR_STD		P02N-001FV	90 degree elbow Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	10		MFR_STD		P02N-001FL	90 degree elbow Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	12		MFR_STD		P02N-001FM	90 degree elbow Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	14		MFR_STD		P02N-001FN	90 degree elbow Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	16		MFR_STD		P02N-001FP	90 degree elbow Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	18		MFR_STD		P02N-001FR	90 degree elbow Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	20		MFR_STD		P02N-001FS	90 degree elbow Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	24		MFR_STD		P02N-001M9	90 degree elbow Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	26		MFR_STD		P02N-001PM	90 degree elbow Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	30		MFR_STD		P02N-001PN	90 degree elbow Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	32		MFR_STD		P02N-001PP	90 degree elbow Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	36		MFR_STD		P02N-001PR	90 degree elbow Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	40		MFR_STD		P02N-001PT	90 degree elbow Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	44		MFR_STD		P02N-001MD	90 degree elbow Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends Fluid-1	
1	48		MFR_STD		P02N-001BA	90 degree elbow Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends Fluid-1	
1	52		MFR_STD		P02N-001BB	90 degree elbow Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends Fluid-1	
1	56		MFR_STD		P02N-001BC	90 degree elbow Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends Fluid-1	
1	60		MFR_STD		P02N-001BD	90 degree elbow Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends Fluid-1	
1	64		MFR_STD		P02N-001MF	90 degree elbow Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends Fluid-1	
1	68		MFR_STD		P02N-001MG	90 degree elbow Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends Fluid-1	
1	76		MFR_STD		P02N-001MH	90 degree elbow Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends Fluid-1	
1	84		MFR_STD		P02N-001MJ	90 degree elbow Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends Fluid-1	
1	96		MFR_STD		P02N-001MK	90 degree elbow Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends Fluid-1	
1	104		MFR_STD		P02N-001ME	90 degree elbow Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends Fluid-1	
1	116		MFR_STD		P02N-001MT	90 degree elbow Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends Fluid-1	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P03P-0000T	45 degree elbow ASTM B151 UNS C70620 Class 3000 ASME B16.11 NPT	
1	0.75				P03P-0000U	45 degree elbow ASTM B151 UNS C70620 Class 3000 ASME B16.11 NPT	
1	1				P03P-0000V	45 degree elbow ASTM B151 UNS C70620 Class 3000 ASME B16.11 NPT	
1	1.5				P03P-0000X	45 degree elbow ASTM B151 UNS C70620 Class 3000 ASME B16.11 NPT	
1	2		MFR_STD		P03N-000PE	45 degree elbow Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	3		MFR_STD		P03N-000PG	45 degree elbow Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	4		MFR_STD		P03N-000JB	45 degree elbow Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	6		MFR_STD		P03N-000JC	45 degree elbow Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	8		MFR_STD		P03N-000JD	45 degree elbow Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	10		MFR_STD		P03N-000J5	45 degree elbow Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	12		MFR_STD		P03N-000J6	45 degree elbow Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	14		MFR_STD		P03N-000J7	45 degree elbow Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	16		MFR_STD		P03N-000J8	45 degree elbow Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	18		MFR_STD		P03N-000J9	45 degree elbow Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	20		MFR_STD		P03N-000JA	45 degree elbow Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	24		MFR_STD		P03N-000PF	45 degree elbow Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	26		MFR_STD		P03N-000SU	45 degree elbow Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	30		MFR_STD		P03N-000SV	45 degree elbow Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	32		MFR_STD		P03N-000SW	45 degree elbow Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	36		MFR_STD		P03N-000SX	45 degree elbow Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	40		MFR_STD		P03N-000SZ	45 degree elbow Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	44		MFR_STD		P03N-000PK	45 degree elbow Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends Fluid-1	
1	48		MFR_STD		P03N-000EE	45 degree elbow Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends Fluid-1	
1	52		MFR_STD		P03N-000EF	45 degree elbow Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends Fluid-1	
1	56		MFR_STD		P03N-000EG	45 degree elbow Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends Fluid-1	
1	60		MFR_STD		P03N-000EH	45 degree elbow Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends Fluid-1	
1	64		MFR_STD		P03N-000PL	45 degree elbow Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends Fluid-1	
1	68		MFR_STD		P03N-000PM	45 degree elbow Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends Fluid-1	
1	76		MFR_STD		P03N-000PP	45 degree elbow Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends Fluid-1	
1	84		MFR_STD		P03N-000PR	45 degree elbow Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends Fluid-1	
1	96		MFR_STD		P03N-000PS	45 degree elbow Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends Fluid-1	
1	104		MFR_STD		P03N-000PN	45 degree elbow Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends Fluid-1	
1	116		MFR_STD		P03N-000PZ	45 degree elbow Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends Fluid-1	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P21P-0000U	Straight tee ASTM B151 UNS C70620 Class 3000 ASME B16.11 NPT	
1	0.75				P21P-0000V	Straight tee ASTM B151 UNS C70620 Class 3000 ASME B16.11 NPT	
1	1				P21P-0000W	Straight tee ASTM B151 UNS C70620 Class 3000 ASME B16.11 NPT	
1	1.5				P21P-0000X	Straight tee ASTM B151 UNS C70620 Class 3000 ASME B16.11 NPT	
1	2		MFR_STD		P21N-000MT	Straight tee Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	3		MFR_STD		P21N-000MV	Straight tee Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	4		MFR_STD		P21N-000GZ	Straight tee Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	6		MFR_STD		P21N-000H0	Straight tee Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	

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STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	8		MFR_STD		P21N-000H1	Straight tee Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	10		MFR_STD		P21N-000GT	Straight tee Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	12		MFR_STD		P21N-000GU	Straight tee Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	14		MFR_STD		P21N-000GV	Straight tee Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	16		MFR_STD		P21N-000GW	Straight tee Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	18		MFR_STD		P21N-000GX	Straight tee Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	20		MFR_STD		P21N-000GY	Straight tee Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	24		MFR_STD		P21N-000MU	Straight tee Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	26		MFR_STD		P21N-000R5	Straight tee Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	30		MFR_STD		P21N-000R6	Straight tee Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	32		MFR_STD		P21N-000R7	Straight tee Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	36		MFR_STD		P21N-000R8	Straight tee Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	40		MFR_STD		P21N-000RA	Straight tee Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	44		MFR_STD		P21N-000MS	Straight tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends Fluid-1	
1	48		MFR_STD		P21N-000D1	Straight tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends Fluid-1	
1	52		MFR_STD		P21N-000D2	Straight tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends Fluid-1	
1	56		MFR_STD		P21N-000D3	Straight tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends Fluid-1	
1	60		MFR_STD		P21N-000D4	Straight tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends Fluid-1	
1	64		MFR_STD		P21N-000MW	Straight tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends Fluid-1	
1	68		MFR_STD		P21N-000MX	Straight tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends Fluid-1	
1	76		MFR_STD		P21N-000MZ	Straight tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends Fluid-1	
1	84		MFR_STD		P21N-000N0	Straight tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends Fluid-1	
1	96		MFR_STD		P21N-000N1	Straight tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends Fluid-1	
1	104		MFR_STD		P21N-000MY	Straight tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends Fluid-1	
1	116		MFR_STD		P21N-000NC	Straight tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends Fluid-1	

STRAIGHT LATERAL TEE (TLS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2		MFR_STD		P22N-0006G	Straight lateral-tee Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends 45 degree Fluid-1	
1	3		MFR_STD		P22N-0006H	Straight lateral-tee Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends 45 degree Fluid-1	
1	4		MFR_STD		P22N-0006J	Straight lateral-tee Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends 45 degree Fluid-1	
1	6		MFR_STD		P22N-0007G	Straight lateral-tee Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends 45 degree Fluid-1	
1	12		MFR_STD		P22N-0007Z	Straight lateral-tee Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends 45 degree Fluid-1	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75			P24P-00015	Reducing tee ASTM B151 UNS C70620 Class 3000 ASME B16.11 NPT	
1	1.5	0.75			P24P-00016	Reducing tee ASTM B151 UNS C70620 Class 3000 ASME B16.11 NPT	
1	1.5	1			P24P-00017	Reducing tee ASTM B151 UNS C70620 Class 3000 ASME B16.11 NPT	
1	3	2	MFR_STD	MFR_STD	P24N-00CB0	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	4	2	MFR_STD	MFR_STD	P24N-00CB1	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	4	3	MFR_STD	MFR_STD	P24N-00CB2	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	6	2	MFR_STD	MFR_STD	P24N-00CB4	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	6	3	MFR_STD	MFR_STD	P24N-00CB3	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	6	4	MFR_STD	MFR_STD	P24N-00BDV	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	8	2	MFR_STD	MFR_STD	P24N-00CB5	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	8	3	MFR_STD	MFR_STD	P24N-00CB6	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	8	4	MFR_STD	MFR_STD	P24N-00BDW	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	8	6	MFR_STD	MFR_STD	P24N-00BDX	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	10	2	MFR_STD	MFR_STD	P24N-00CNP	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	10	3	MFR_STD	MFR_STD	P24N-00CNR	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	10	4	MFR_STD	MFR_STD	P24N-00BDY	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	10	6	MFR_STD	MFR_STD	P24N-00BDZ	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	10	8	MFR_STD	MFR_STD	P24N-00BE0	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	12	2	MFR_STD	MFR_STD	P24N-00CB7	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	12	3	MFR_STD	MFR_STD	P24N-00CB8	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	12	4	MFR_STD	MFR_STD	P24N-00BE2	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	

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REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	12	6	MFR_STD	MFR_STD	P24N-00BE3	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	12	8	MFR_STD	MFR_STD	P24N-00BE4	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	12	10	MFR_STD	MFR_STD	P24N-00BE1	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	14	2	MFR_STD	MFR_STD	P24N-00CNS	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	14	3	MFR_STD	MFR_STD	P24N-00CNT	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	14	4	MFR_STD	MFR_STD	P24N-00BE7	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	14	6	MFR_STD	MFR_STD	P24N-00BE8	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	14	8	MFR_STD	MFR_STD	P24N-00BE9	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	14	10	MFR_STD	MFR_STD	P24N-00BE5	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	14	12	MFR_STD	MFR_STD	P24N-00BE6	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	16	2	MFR_STD	MFR_STD	P24N-00CB9	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	16	3	MFR_STD	MFR_STD	P24N-00CBA	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	16	4	MFR_STD	MFR_STD	P24N-00BED	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	16	6	MFR_STD	MFR_STD	P24N-00BEE	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	16	8	MFR_STD	MFR_STD	P24N-00BEF	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	16	10	MFR_STD	MFR_STD	P24N-00BEA	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	16	12	MFR_STD	MFR_STD	P24N-00BEB	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	16	14	MFR_STD	MFR_STD	P24N-00BEC	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	18	2	MFR_STD	MFR_STD	P24N-00CJ9	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	18	3	MFR_STD	MFR_STD	P24N-00CJA	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	18	4	MFR_STD	MFR_STD	P24N-00BEL	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	18	6	MFR_STD	MFR_STD	P24N-00BEM	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	18	8	MFR_STD	MFR_STD	P24N-00BEN	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	18	10	MFR_STD	MFR_STD	P24N-00BEG	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	18	12	MFR_STD	MFR_STD	P24N-00BEH	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	18	14	MFR_STD	MFR_STD	P24N-00BEJ	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	18	16	MFR_STD	MFR_STD	P24N-00BEK	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	20	2	MFR_STD	MFR_STD	P24N-00CBB	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	20	3	MFR_STD	MFR_STD	P24N-00CBC	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	20	4	MFR_STD	MFR_STD	P24N-00BEV	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	20	6	MFR_STD	MFR_STD	P24N-00BEW	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	20	8	MFR_STD	MFR_STD	P24N-00BEX	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	20	10	MFR_STD	MFR_STD	P24N-00BEP	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	20	12	MFR_STD	MFR_STD	P24N-00BER	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	20	14	MFR_STD	MFR_STD	P24N-00BES	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	20	16	MFR_STD	MFR_STD	P24N-00BET	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	20	18	MFR_STD	MFR_STD	P24N-00BEU	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	24	2	MFR_STD	MFR_STD	P24N-00CNU	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	24	3	MFR_STD	MFR_STD	P24N-00CNV	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	24	4	MFR_STD	MFR_STD	P24N-00CNW	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	24	6	MFR_STD	MFR_STD	P24N-00CNX	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	24	8	MFR_STD	MFR_STD	P24N-00CNY	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	24	10	MFR_STD	MFR_STD	P24N-00CBD	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	24	12	MFR_STD	MFR_STD	P24N-00CBE	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	24	14	MFR_STD	MFR_STD	P24N-00CBF	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	24	16	MFR_STD	MFR_STD	P24N-00CBG	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	24	18	MFR_STD	MFR_STD	P24N-00CBH	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	24	20	MFR_STD	MFR_STD	P24N-00CBJ	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	26	4	MFR_STD	MFR_STD	P24N-00CTR	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	26	6	MFR_STD	MFR_STD	P24N-00CTS	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	26	8	MFR_STD	MFR_STD	P24N-00CTT	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	26	10	MFR_STD	MFR_STD	P24N-00CNZ	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	26	12	MFR_STD	MFR_STD	P24N-00CP0	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	26	14	MFR_STD	MFR_STD	P24N-00CP1	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	26	16	MFR_STD	MFR_STD	P24N-00CP2	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	26	18	MFR_STD	MFR_STD	P24N-00CP3	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	26	20	MFR_STD	MFR_STD	P24N-00CP4	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	26	24	MFR_STD	MFR_STD	P24N-00CP5	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	30	4	MFR_STD	MFR_STD	P24N-00CPE	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	

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REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	30	6	MFR_STD	MFR_STD	P24N-00CPF	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	30	8	MFR_STD	MFR_STD	P24N-00CPG	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	30	10	MFR_STD	MFR_STD	P24N-00CP6	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	30	12	MFR_STD	MFR_STD	P24N-00CP7	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	30	14	MFR_STD	MFR_STD	P24N-00CP8	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	30	16	MFR_STD	MFR_STD	P24N-00CP9	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	30	18	MFR_STD	MFR_STD	P24N-00CPA	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	30	20	MFR_STD	MFR_STD	P24N-00CPB	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	30	24	MFR_STD	MFR_STD	P24N-00CPC	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	30	26	MFR_STD	MFR_STD	P24N-00CPD	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	32	4	MFR_STD	MFR_STD	P24N-00CPT	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	32	6	MFR_STD	MFR_STD	P24N-00CPU	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	32	8	MFR_STD	MFR_STD	P24N-00CPV	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	32	10	MFR_STD	MFR_STD	P24N-00CPH	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	32	12	MFR_STD	MFR_STD	P24N-00CPJ	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	32	14	MFR_STD	MFR_STD	P24N-00CPK	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	32	16	MFR_STD	MFR_STD	P24N-00CPL	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	32	18	MFR_STD	MFR_STD	P24N-00CPM	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	32	20	MFR_STD	MFR_STD	P24N-00CPN	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	32	24	MFR_STD	MFR_STD	P24N-00CPP	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	32	26	MFR_STD	MFR_STD	P24N-00CPR	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	32	30	MFR_STD	MFR_STD	P24N-00CPS	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	36	4	MFR_STD	MFR_STD	P24N-00CR6	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	36	6	MFR_STD	MFR_STD	P24N-00CR7	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	36	8	MFR_STD	MFR_STD	P24N-00CR8	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	36	10	MFR_STD	MFR_STD	P24N-00CPW	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	36	12	MFR_STD	MFR_STD	P24N-00CPX	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	36	14	MFR_STD	MFR_STD	P24N-00CPY	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	36	16	MFR_STD	MFR_STD	P24N-00CPZ	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	36	18	MFR_STD	MFR_STD	P24N-00CR0	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	36	20	MFR_STD	MFR_STD	P24N-00CR1	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	36	24	MFR_STD	MFR_STD	P24N-00CR2	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	36	26	MFR_STD	MFR_STD	P24N-00CR3	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	36	30	MFR_STD	MFR_STD	P24N-00CR4	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	36	32	MFR_STD	MFR_STD	P24N-00CR5	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	40	4	MFR_STD	MFR_STD	P24N-00CU9	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	40	6	MFR_STD	MFR_STD	P24N-00CUA	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	40	8	MFR_STD	MFR_STD	P24N-00CUB	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	40	10	MFR_STD	MFR_STD	P24N-00CU0	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	40	12	MFR_STD	MFR_STD	P24N-00CU1	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	40	14	MFR_STD	MFR_STD	P24N-00CU2	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	40	16	MFR_STD	MFR_STD	P24N-00CU3	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	40	18	MFR_STD	MFR_STD	P24N-00CU4	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	40	20	MFR_STD	MFR_STD	P24N-00CU5	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	40	24	MFR_STD	MFR_STD	P24N-00CRH	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	40	26	MFR_STD	MFR_STD	P24N-00CRJ	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	40	30	MFR_STD	MFR_STD	P24N-00CU6	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	40	32	MFR_STD	MFR_STD	P24N-00CU7	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	40	36	MFR_STD	MFR_STD	P24N-00CRK	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	44	2	MFR_STD	MFR_STD	P24N-00CUR	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends (Run) and Adhesive joint Bell end (Branch) Fluid-1	
1	44	3	MFR_STD	MFR_STD	P24N-00CUT	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends (Run) and Adhesive joint Bell end (Branch) Fluid-1	
1	44	4	MFR_STD	MFR_STD	P24N-00CUU	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends (Run) and Adhesive joint Bell end (Branch) Fluid-1	
1	44	6	MFR_STD	MFR_STD	P24N-00CUW	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends (Run) and Adhesive joint Bell end (Branch) Fluid-1	
1	44	8	MFR_STD	MFR_STD	P24N-00CUX	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends (Run) and Adhesive joint Bell end (Branch) Fluid-1	
1	44	10	MFR_STD	MFR_STD	P24N-00CRS	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends (Run) and Adhesive joint Bell end (Branch) Fluid-1	
1	44	12	MFR_STD	MFR_STD	P24N-00CUM	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends (Run) and Adhesive joint Bell end (Branch) Fluid-1	
1	44	14	MFR_STD	MFR_STD	P24N-00CUN	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends (Run) and Adhesive joint Bell end (Branch) Fluid-1	

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PIPING CLASS
S0CW REV NO. 2

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	44	16	MFR_STD	MFR_STD	P24N-00CUP	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends (Run) and Adhesive joint Bell end (Branch) Fluid-1	
1	44	18	MFR_STD	MFR_STD	P24N-00CRT	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends (Run) and Adhesive joint Bell end (Branch) Fluid-1	
1	44	20	MFR_STD	MFR_STD	P24N-00CUS	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends (Run) and Adhesive joint Bell end (Branch) Fluid-1	
1	44	24	MFR_STD	MFR_STD	P24N-00CF4	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends (Run) and Adhesive joint Bell end (Branch) Fluid-1	
1	44	26	MFR_STD	MFR_STD	P24N-00CRU	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends (Run) and Adhesive joint Bell end (Branch) Fluid-1	
1	44	30	MFR_STD	MFR_STD	P24N-00CRV	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends (Run) and Adhesive joint Bell end (Branch) Fluid-1	
1	44	32	MFR_STD	MFR_STD	P24N-00CRW	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends (Run) and Adhesive joint Bell end (Branch) Fluid-1	
1	44	36	MFR_STD	MFR_STD	P24N-00CRX	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends (Run) and Adhesive joint Bell end (Branch) Fluid-1	
1	44	40	MFR_STD	MFR_STD	P24N-00CUV	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends (Run) and Adhesive joint Bell end (Branch) Fluid-1	
1	48	2	MFR_STD	MFR_STD	P24N-00CS4	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends (Run) and Adhesive joint Bell end (Branch) Fluid-1	
1	48	3	MFR_STD	MFR_STD	P24N-00CS7	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends (Run) and Adhesive joint Bell end (Branch) Fluid-1	
1	48	4	MFR_STD	MFR_STD	P24N-00CSC	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends (Run) and Adhesive joint Bell end (Branch) Fluid-1	
1	48	6	MFR_STD	MFR_STD	P24N-00CSE	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends (Run) and Adhesive joint Bell end (Branch) Fluid-1	
1	48	8	MFR_STD	MFR_STD	P24N-00CSF	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends (Run) and Adhesive joint Bell end (Branch) Fluid-1	
1	48	10	MFR_STD	MFR_STD	P24N-00CRZ	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends (Run) and Adhesive joint Bell end (Branch) Fluid-1	
1	48	12	MFR_STD	MFR_STD	P24N-00CS0	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends (Run) and Adhesive joint Bell end (Branch) Fluid-1	
1	48	14	MFR_STD	MFR_STD	P24N-00CS1	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends (Run) and Adhesive joint Bell end (Branch) Fluid-1	
1	48	16	MFR_STD	MFR_STD	P24N-00CS2	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends (Run) and Adhesive joint Bell end (Branch) Fluid-1	
1	48	18	MFR_STD	MFR_STD	P24N-00CS3	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends (Run) and Adhesive joint Bell end (Branch) Fluid-1	
1	48	20	MFR_STD	MFR_STD	P24N-00CS5	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends (Run) and Adhesive joint Bell end (Branch) Fluid-1	
1	48	24	MFR_STD	MFR_STD	P24N-00CF5	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends (Run) and Adhesive joint Bell end (Branch) Fluid-1	
1	48	26	MFR_STD	MFR_STD	P24N-00CS6	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends (Run) and Adhesive joint Bell end (Branch) Fluid-1	
1	48	30	MFR_STD	MFR_STD	P24N-00CS8	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends (Run) and Adhesive joint Bell end (Branch) Fluid-1	
1	48	32	MFR_STD	MFR_STD	P24N-00CS9	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends (Run) and Adhesive joint Bell end (Branch) Fluid-1	
1	48	36	MFR_STD	MFR_STD	P24N-00CSA	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends (Run) and Adhesive joint Bell end (Branch) Fluid-1	
1	48	40	MFR_STD	MFR_STD	P24N-00CSD	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends (Run) and Adhesive joint Bell end (Branch) Fluid-1	
1	48	44	MFR_STD	MFR_STD	P24N-00CC1	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends Fluid-1	
1	52	2	MFR_STD	MFR_STD	P24N-00CVM	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends (Run) and Adhesive joint Bell end (Branch) Fluid-1	
1	52	3	MFR_STD	MFR_STD	P24N-00CVS	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends (Run) and Adhesive joint Bell end (Branch) Fluid-1	
1	52	4	MFR_STD	MFR_STD	P24N-00CVT	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends (Run) and Adhesive joint Bell end (Branch) Fluid-1	
1	52	6	MFR_STD	MFR_STD	P24N-00CVV	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends (Run) and Adhesive joint Bell end (Branch) Fluid-1	
1	52	8	MFR_STD	MFR_STD	P24N-00CVW	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends (Run) and Adhesive joint Bell end (Branch) Fluid-1	
1	52	10	MFR_STD	MFR_STD	P24N-00CVG	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends (Run) and Adhesive joint Bell end (Branch) Fluid-1	
1	52	12	MFR_STD	MFR_STD	P24N-00CVH	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends (Run) and Adhesive joint Bell end (Branch) Fluid-1	
1	52	14	MFR_STD	MFR_STD	P24N-00CVJ	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends (Run) and Adhesive joint Bell end (Branch) Fluid-1	
1	52	16	MFR_STD	MFR_STD	P24N-00CVK	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends (Run) and Adhesive joint Bell end (Branch) Fluid-1	
1	52	18	MFR_STD	MFR_STD	P24N-00CVL	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends (Run) and Adhesive joint Bell end (Branch) Fluid-1	
1	52	20	MFR_STD	MFR_STD	P24N-00CVN	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends (Run) and Adhesive joint Bell end (Branch) Fluid-1	
1	52	24	MFR_STD	MFR_STD	P24N-00CVP	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends (Run) and Adhesive joint Bell end (Branch) Fluid-1	
1	52	26	MFR_STD	MFR_STD	P24N-00CVR	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends (Run) and Adhesive joint Bell end (Branch) Fluid-1	
1	52	30	MFR_STD	MFR_STD	P24N-00CSG	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends (Run) and Adhesive joint Bell end (Branch) Fluid-1	
1	52	32	MFR_STD	MFR_STD	P24N-00CSH	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends (Run) and Adhesive joint Bell end (Branch) Fluid-1	
1	52	36	MFR_STD	MFR_STD	P24N-00CSJ	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends (Run) and Adhesive joint Bell end (Branch) Fluid-1	
1	52	40	MFR_STD	MFR_STD	P24N-00CVU	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends (Run) and Adhesive joint Bell end (Branch) Fluid-1	
1	52	44	MFR_STD	MFR_STD	P24N-00CC7	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends Fluid-1	

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PIPING CLASS
S0CW **REV NO. 2**

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	52	48	MFR_STD	MFR_STD	P24N-00CC8	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends Fluid-1	
1	56	2	MFR_STD	MFR_STD	P24N-00CWG	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends (Run) and Adhesive joint Bell end (Branch) Fluid-1	
1	56	3	MFR_STD	MFR_STD	P24N-00CWL	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends (Run) and Adhesive joint Bell end (Branch) Fluid-1	
1	56	4	MFR_STD	MFR_STD	P24N-00CWM	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends (Run) and Adhesive joint Bell end (Branch) Fluid-1	
1	56	6	MFR_STD	MFR_STD	P24N-00CWP	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends (Run) and Adhesive joint Bell end (Branch) Fluid-1	
1	56	8	MFR_STD	MFR_STD	P24N-00CWR	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends (Run) and Adhesive joint Bell end (Branch) Fluid-1	
1	56	10	MFR_STD	MFR_STD	P24N-00CWB	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends (Run) and Adhesive joint Bell end (Branch) Fluid-1	
1	56	12	MFR_STD	MFR_STD	P24N-00CWC	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends (Run) and Adhesive joint Bell end (Branch) Fluid-1	
1	56	14	MFR_STD	MFR_STD	P24N-00CWD	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends (Run) and Adhesive joint Bell end (Branch) Fluid-1	
1	56	16	MFR_STD	MFR_STD	P24N-00CWE	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends (Run) and Adhesive joint Bell end (Branch) Fluid-1	
1	56	18	MFR_STD	MFR_STD	P24N-00CWF	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends (Run) and Adhesive joint Bell end (Branch) Fluid-1	
1	56	20	MFR_STD	MFR_STD	P24N-00CWH	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends (Run) and Adhesive joint Bell end (Branch) Fluid-1	
1	56	24	MFR_STD	MFR_STD	P24N-00CWJ	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends (Run) and Adhesive joint Bell end (Branch) Fluid-1	
1	56	26	MFR_STD	MFR_STD	P24N-00CWK	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends (Run) and Adhesive joint Bell end (Branch) Fluid-1	
1	56	30	MFR_STD	MFR_STD	P24N-00CSR	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends (Run) and Adhesive joint Bell end (Branch) Fluid-1	
1	56	32	MFR_STD	MFR_STD	P24N-00CSS	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends (Run) and Adhesive joint Bell end (Branch) Fluid-1	
1	56	36	MFR_STD	MFR_STD	P24N-00CST	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends (Run) and Adhesive joint Bell end (Branch) Fluid-1	
1	56	40	MFR_STD	MFR_STD	P24N-00CWN	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends (Run) and Adhesive joint Bell end (Branch) Fluid-1	
1	56	44	MFR_STD	MFR_STD	P24N-00CCD	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends Fluid-1	
1	56	48	MFR_STD	MFR_STD	P24N-00CCE	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends Fluid-1	
1	56	52	MFR_STD	MFR_STD	P24N-00CCF	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends Fluid-1	
1	60	2	MFR_STD	MFR_STD	P24N-00CWX	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends (Run) and Adhesive joint Bell end (Branch) Fluid-1	
1	60	3	MFR_STD	MFR_STD	P24N-00CX1	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends (Run) and Adhesive joint Bell end (Branch) Fluid-1	
1	60	4	MFR_STD	MFR_STD	P24N-00CX2	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends (Run) and Adhesive joint Bell end (Branch) Fluid-1	
1	60	6	MFR_STD	MFR_STD	P24N-00CX4	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends (Run) and Adhesive joint Bell end (Branch) Fluid-1	
1	60	8	MFR_STD	MFR_STD	P24N-00CX5	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends (Run) and Adhesive joint Bell end (Branch) Fluid-1	
1	60	10	MFR_STD	MFR_STD	P24N-00CWS	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends (Run) and Adhesive joint Bell end (Branch) Fluid-1	
1	60	12	MFR_STD	MFR_STD	P24N-00CWT	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends (Run) and Adhesive joint Bell end (Branch) Fluid-1	
1	60	14	MFR_STD	MFR_STD	P24N-00CWU	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends (Run) and Adhesive joint Bell end (Branch) Fluid-1	
1	60	16	MFR_STD	MFR_STD	P24N-00CWV	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends (Run) and Adhesive joint Bell end (Branch) Fluid-1	
1	60	18	MFR_STD	MFR_STD	P24N-00CWW	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends (Run) and Adhesive joint Bell end (Branch) Fluid-1	
1	60	20	MFR_STD	MFR_STD	P24N-00CWY	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends (Run) and Adhesive joint Bell end (Branch) Fluid-1	
1	60	24	MFR_STD	MFR_STD	P24N-00CWZ	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends (Run) and Adhesive joint Bell end (Branch) Fluid-1	
1	60	26	MFR_STD	MFR_STD	P24N-00CX0	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends (Run) and Adhesive joint Bell end (Branch) Fluid-1	
1	60	30	MFR_STD	MFR_STD	P24N-00CSV	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends (Run) and Adhesive joint Bell end (Branch) Fluid-1	
1	60	32	MFR_STD	MFR_STD	P24N-00CSW	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends (Run) and Adhesive joint Bell end (Branch) Fluid-1	
1	60	36	MFR_STD	MFR_STD	P24N-00CSX	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends (Run) and Adhesive joint Bell end (Branch) Fluid-1	
1	60	40	MFR_STD	MFR_STD	P24N-00CX3	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends (Run) and Adhesive joint Bell end (Branch) Fluid-1	
1	60	44	MFR_STD	MFR_STD	P24N-00CCM	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends Fluid-1	
1	60	48	MFR_STD	MFR_STD	P24N-00CCN	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends Fluid-1	
1	60	52	MFR_STD	MFR_STD	P24N-00CCP	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends Fluid-1	
1	60	56	MFR_STD	MFR_STD	P24N-00CCR	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends Fluid-1	
1	64	2	MFR_STD	MFR_STD	P24N-00CT4	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends (Run) and Adhesive joint Bell end (Branch) Fluid-1	
1	64	3	MFR_STD	MFR_STD	P24N-00CT7	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends (Run) and Adhesive joint Bell end (Branch) Fluid-1	
1	64	4	MFR_STD	MFR_STD	P24N-00CTC	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends (Run) and Adhesive joint Bell end (Branch) Fluid-1	
1	64	6	MFR_STD	MFR_STD	P24N-00CTD	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends (Run) and Adhesive joint Bell end (Branch) Fluid-1	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	64	8	MFR_STD	MFR_STD	P24N-00CTE	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends (Run) and Adhesive joint Bell end (Branch) Fluid-1	
1	64	10	MFR_STD	MFR_STD	P24N-00CSZ	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends (Run) and Adhesive joint Bell end (Branch) Fluid-1	
1	64	12	MFR_STD	MFR_STD	P24N-00CT0	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends (Run) and Adhesive joint Bell end (Branch) Fluid-1	
1	64	14	MFR_STD	MFR_STD	P24N-00CT1	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends (Run) and Adhesive joint Bell end (Branch) Fluid-1	
1	64	16	MFR_STD	MFR_STD	P24N-00CT2	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends (Run) and Adhesive joint Bell end (Branch) Fluid-1	
1	64	18	MFR_STD	MFR_STD	P24N-00CT3	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends (Run) and Adhesive joint Bell end (Branch) Fluid-1	
1	64	20	MFR_STD	MFR_STD	P24N-00CT5	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends (Run) and Adhesive joint Bell end (Branch) Fluid-1	
1	64	24	MFR_STD	MFR_STD	P24N-00CJB	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends (Run) and Adhesive joint Bell end (Branch) Fluid-1	
1	64	26	MFR_STD	MFR_STD	P24N-00CT6	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends (Run) and Adhesive joint Bell end (Branch) Fluid-1	
1	64	30	MFR_STD	MFR_STD	P24N-00CT8	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends (Run) and Adhesive joint Bell end (Branch) Fluid-1	
1	64	32	MFR_STD	MFR_STD	P24N-00CT9	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends (Run) and Adhesive joint Bell end (Branch) Fluid-1	
1	64	36	MFR_STD	MFR_STD	P24N-00CTA	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends (Run) and Adhesive joint Bell end (Branch) Fluid-1	
1	64	40	MFR_STD	MFR_STD	P24N-00CZY	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends (Run) and Adhesive joint Bell end (Branch) Fluid-1	
1	64	44	MFR_STD	MFR_STD	P24N-00CCW	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends Fluid-1	
1	64	48	MFR_STD	MFR_STD	P24N-00CCX	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends Fluid-1	
1	64	52	MFR_STD	MFR_STD	P24N-00CCY	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends Fluid-1	
1	64	56	MFR_STD	MFR_STD	P24N-00CCZ	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends Fluid-1	
1	64	60	MFR_STD	MFR_STD	P24N-00CD0	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends Fluid-1	
1	68	2	MFR_STD	MFR_STD	P24N-00CXA	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends (Run) and Adhesive joint Bell end (Branch) Fluid-1	
1	68	3	MFR_STD	MFR_STD	P24N-00CXC	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends (Run) and Adhesive joint Bell end (Branch) Fluid-1	
1	68	4	MFR_STD	MFR_STD	P24N-00CXF	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends (Run) and Adhesive joint Bell end (Branch) Fluid-1	
1	68	6	MFR_STD	MFR_STD	P24N-00CXH	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends (Run) and Adhesive joint Bell end (Branch) Fluid-1	
1	68	8	MFR_STD	MFR_STD	P24N-00CXJ	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends (Run) and Adhesive joint Bell end (Branch) Fluid-1	
1	68	10	MFR_STD	MFR_STD	P24N-00CX6	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends (Run) and Adhesive joint Bell end (Branch) Fluid-1	
1	68	12	MFR_STD	MFR_STD	P24N-00CX7	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends (Run) and Adhesive joint Bell end (Branch) Fluid-1	
1	68	14	MFR_STD	MFR_STD	P24N-00CX8	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends (Run) and Adhesive joint Bell end (Branch) Fluid-1	
1	68	16	MFR_STD	MFR_STD	P24N-00CX9	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends (Run) and Adhesive joint Bell end (Branch) Fluid-1	
1	68	18	MFR_STD	MFR_STD	P24N-00CFA	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends (Run) and Adhesive joint Bell end (Branch) Fluid-1	
1	68	20	MFR_STD	MFR_STD	P24N-00CXB	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends (Run) and Adhesive joint Bell end (Branch) Fluid-1	
1	68	24	MFR_STD	MFR_STD	P24N-00CJD	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends (Run) and Adhesive joint Bell end (Branch) Fluid-1	
1	68	26	MFR_STD	MFR_STD	P24N-00CTF	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends (Run) and Adhesive joint Bell end (Branch) Fluid-1	
1	68	30	MFR_STD	MFR_STD	P24N-00CXD	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends (Run) and Adhesive joint Bell end (Branch) Fluid-1	
1	68	32	MFR_STD	MFR_STD	P24N-00CXE	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends (Run) and Adhesive joint Bell end (Branch) Fluid-1	
1	68	36	MFR_STD	MFR_STD	P24N-00CTG	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends (Run) and Adhesive joint Bell end (Branch) Fluid-1	
1	68	40	MFR_STD	MFR_STD	P24N-00CXG	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends (Run) and Adhesive joint Bell end (Branch) Fluid-1	
1	68	44	MFR_STD	MFR_STD	P24N-00CD4	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends Fluid-1	
1	68	48	MFR_STD	MFR_STD	P24N-00CD5	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends Fluid-1	
1	68	52	MFR_STD	MFR_STD	P24N-00CD6	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends Fluid-1	
1	68	56	MFR_STD	MFR_STD	P24N-00CD7	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends Fluid-1	
1	68	60	MFR_STD	MFR_STD	P24N-00CD8	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends Fluid-1	
1	68	64	MFR_STD	MFR_STD	P24N-00CD9	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends Fluid-1	
1	76	2	MFR_STD	MFR_STD	P24N-00CXR	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends (Run) and Adhesive joint Bell end (Branch) Fluid-1	
1	76	3	MFR_STD	MFR_STD	P24N-00CXU	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends (Run) and Adhesive joint Bell end (Branch) Fluid-1	
1	76	4	MFR_STD	MFR_STD	P24N-00CXY	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends (Run) and Adhesive joint Bell end (Branch) Fluid-1	
1	76	6	MFR_STD	MFR_STD	P24N-00CY0	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends (Run) and Adhesive joint Bell end (Branch) Fluid-1	
1	76	8	MFR_STD	MFR_STD	P24N-00CY1	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends (Run) and Adhesive joint Bell end (Branch) Fluid-1	
1	76	10	MFR_STD	MFR_STD	P24N-00CXK	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends (Run) and Adhesive joint Bell end (Branch) Fluid-1	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	76	12	MFR_STD	MFR_STD	P24N-00CXL	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends (Run) and Adhesive joint Bell end (Branch) Fluid-1	
1	76	14	MFR_STD	MFR_STD	P24N-00CXM	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends (Run) and Adhesive joint Bell end (Branch) Fluid-1	
1	76	16	MFR_STD	MFR_STD	P24N-00CXN	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends (Run) and Adhesive joint Bell end (Branch) Fluid-1	
1	76	18	MFR_STD	MFR_STD	P24N-00CXP	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends (Run) and Adhesive joint Bell end (Branch) Fluid-1	
1	76	20	MFR_STD	MFR_STD	P24N-00CXS	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends (Run) and Adhesive joint Bell end (Branch) Fluid-1	
1	76	24	MFR_STD	MFR_STD	P24N-00CJE	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends (Run) and Adhesive joint Bell end (Branch) Fluid-1	
1	76	26	MFR_STD	MFR_STD	P24N-00CXT	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends (Run) and Adhesive joint Bell end (Branch) Fluid-1	
1	76	30	MFR_STD	MFR_STD	P24N-00CXV	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends (Run) and Adhesive joint Bell end (Branch) Fluid-1	
1	76	32	MFR_STD	MFR_STD	P24N-00CXW	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends (Run) and Adhesive joint Bell end (Branch) Fluid-1	
1	76	36	MFR_STD	MFR_STD	P24N-00CXX	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends (Run) and Adhesive joint Bell end (Branch) Fluid-1	
1	76	40	MFR_STD	MFR_STD	P24N-00CXZ	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends (Run) and Adhesive joint Bell end (Branch) Fluid-1	
1	76	44	MFR_STD	MFR_STD	P24N-00CDC	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends Fluid-1	
1	76	48	MFR_STD	MFR_STD	P24N-00CDD	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends Fluid-1	
1	76	52	MFR_STD	MFR_STD	P24N-00CDE	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends Fluid-1	
1	76	56	MFR_STD	MFR_STD	P24N-00CDF	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends Fluid-1	
1	76	60	MFR_STD	MFR_STD	P24N-00CDG	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends Fluid-1	
1	76	64	MFR_STD	MFR_STD	P24N-00CDH	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends Fluid-1	
1	76	68	MFR_STD	MFR_STD	P24N-00CDJ	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends Fluid-1	
1	84	2	MFR_STD	MFR_STD	P24N-00CY6	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends (Run) and Adhesive joint Bell end (Branch) Fluid-1	
1	84	3	MFR_STD	MFR_STD	P24N-00CY9	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends (Run) and Adhesive joint Bell end (Branch) Fluid-1	
1	84	4	MFR_STD	MFR_STD	P24N-00CYD	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends (Run) and Adhesive joint Bell end (Branch) Fluid-1	
1	84	6	MFR_STD	MFR_STD	P24N-00CYF	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends (Run) and Adhesive joint Bell end (Branch) Fluid-1	
1	84	8	MFR_STD	MFR_STD	P24N-00CYG	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends (Run) and Adhesive joint Bell end (Branch) Fluid-1	
1	84	10	MFR_STD	MFR_STD	P24N-00CFB	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends (Run) and Adhesive joint Bell end (Branch) Fluid-1	
1	84	12	MFR_STD	MFR_STD	P24N-00CY2	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends (Run) and Adhesive joint Bell end (Branch) Fluid-1	
1	84	14	MFR_STD	MFR_STD	P24N-00CY3	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends (Run) and Adhesive joint Bell end (Branch) Fluid-1	
1	84	16	MFR_STD	MFR_STD	P24N-00CY4	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends (Run) and Adhesive joint Bell end (Branch) Fluid-1	
1	84	18	MFR_STD	MFR_STD	P24N-00CY5	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends (Run) and Adhesive joint Bell end (Branch) Fluid-1	
1	84	20	MFR_STD	MFR_STD	P24N-00CY7	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends (Run) and Adhesive joint Bell end (Branch) Fluid-1	
1	84	24	MFR_STD	MFR_STD	P24N-00CY8	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends (Run) and Adhesive joint Bell end (Branch) Fluid-1	
1	84	26	MFR_STD	MFR_STD	P24N-00CTK	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends (Run) and Adhesive joint Bell end (Branch) Fluid-1	
1	84	30	MFR_STD	MFR_STD	P24N-00CYA	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends (Run) and Adhesive joint Bell end (Branch) Fluid-1	
1	84	32	MFR_STD	MFR_STD	P24N-00CYB	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends (Run) and Adhesive joint Bell end (Branch) Fluid-1	
1	84	36	MFR_STD	MFR_STD	P24N-00CTL	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends (Run) and Adhesive joint Bell end (Branch) Fluid-1	
1	84	40	MFR_STD	MFR_STD	P24N-00CYE	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends (Run) and Adhesive joint Bell end (Branch) Fluid-1	
1	84	44	MFR_STD	MFR_STD	P24N-00CDM	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends Fluid-1	
1	84	48	MFR_STD	MFR_STD	P24N-00CDN	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends Fluid-1	
1	84	52	MFR_STD	MFR_STD	P24N-00CDP	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends Fluid-1	
1	84	56	MFR_STD	MFR_STD	P24N-00CDR	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends Fluid-1	
1	84	60	MFR_STD	MFR_STD	P24N-00CDS	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends Fluid-1	
1	84	64	MFR_STD	MFR_STD	P24N-00CDT	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends Fluid-1	
1	84	68	MFR_STD	MFR_STD	P24N-00CDU	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends Fluid-1	
1	84	76	MFR_STD	MFR_STD	P24N-00CDV	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends Fluid-1	
1	96	2	MFR_STD	MFR_STD	P24N-00CYN	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends (Run) and Adhesive joint Bell end (Branch) Fluid-1	
1	96	3	MFR_STD	MFR_STD	P24N-00CYS	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends (Run) and Adhesive joint Bell end (Branch) Fluid-1	
1	96	4	MFR_STD	MFR_STD	P24N-00CFC	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends (Run) and Adhesive joint Bell end (Branch) Fluid-1	
1	96	6	MFR_STD	MFR_STD	P24N-00CFD	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends (Run) and Adhesive joint Bell end (Branch) Fluid-1	
1	96	8	MFR_STD	MFR_STD	P24N-00CYX	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends (Run) and Adhesive joint Bell end (Branch) Fluid-1	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	96	10	MFR_STD	MFR_STD	P24N-00CYH	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends (Run) and Adhesive joint Bell end (Branch) Fluid-1	
1	96	12	MFR_STD	MFR_STD	P24N-00CYJ	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends (Run) and Adhesive joint Bell end (Branch) Fluid-1	
1	96	14	MFR_STD	MFR_STD	P24N-00CYK	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends (Run) and Adhesive joint Bell end (Branch) Fluid-1	
1	96	16	MFR_STD	MFR_STD	P24N-00CYL	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends (Run) and Adhesive joint Bell end (Branch) Fluid-1	
1	96	18	MFR_STD	MFR_STD	P24N-00CYM	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends (Run) and Adhesive joint Bell end (Branch) Fluid-1	
1	96	20	MFR_STD	MFR_STD	P24N-00CYP	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends (Run) and Adhesive joint Bell end (Branch) Fluid-1	
1	96	24	MFR_STD	MFR_STD	P24N-00CFE	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends (Run) and Adhesive joint Bell end (Branch) Fluid-1	
1	96	26	MFR_STD	MFR_STD	P24N-00CYR	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends (Run) and Adhesive joint Bell end (Branch) Fluid-1	
1	96	30	MFR_STD	MFR_STD	P24N-00CTM	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends (Run) and Adhesive joint Bell end (Branch) Fluid-1	
1	96	32	MFR_STD	MFR_STD	P24N-00CYT	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends (Run) and Adhesive joint Bell end (Branch) Fluid-1	
1	96	36	MFR_STD	MFR_STD	P24N-00CYU	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends (Run) and Adhesive joint Bell end (Branch) Fluid-1	
1	96	40	MFR_STD	MFR_STD	P24N-00CYW	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends (Run) and Adhesive joint Bell end (Branch) Fluid-1	
1	96	44	MFR_STD	MFR_STD	P24N-00CDX	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends Fluid-1	
1	96	48	MFR_STD	MFR_STD	P24N-00CDY	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends Fluid-1	
1	96	52	MFR_STD	MFR_STD	P24N-00CDZ	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends Fluid-1	
1	96	56	MFR_STD	MFR_STD	P24N-00CE0	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends Fluid-1	
1	96	60	MFR_STD	MFR_STD	P24N-00CE1	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends Fluid-1	
1	96	64	MFR_STD	MFR_STD	P24N-00CE2	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends Fluid-1	
1	96	68	MFR_STD	MFR_STD	P24N-00CE3	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends Fluid-1	
1	96	76	MFR_STD	MFR_STD	P24N-00CE4	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends Fluid-1	
1	96	84	MFR_STD	MFR_STD	P24N-00CE5	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends Fluid-1	
1	104	2	MFR_STD	MFR_STD	P24N-00CZ3	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends (Run) and Adhesive joint Bell end (Branch) Fluid-1	
1	104	3	MFR_STD	MFR_STD	P24N-00CZ7	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends (Run) and Adhesive joint Bell end (Branch) Fluid-1	
1	104	4	MFR_STD	MFR_STD	P24N-00CZA	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends (Run) and Adhesive joint Bell end (Branch) Fluid-1	
1	104	6	MFR_STD	MFR_STD	P24N-00CZC	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends (Run) and Adhesive joint Bell end (Branch) Fluid-1	
1	104	8	MFR_STD	MFR_STD	P24N-00CZD	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends (Run) and Adhesive joint Bell end (Branch) Fluid-1	
1	104	10	MFR_STD	MFR_STD	P24N-00CYY	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends (Run) and Adhesive joint Bell end (Branch) Fluid-1	
1	104	12	MFR_STD	MFR_STD	P24N-00CYZ	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends (Run) and Adhesive joint Bell end (Branch) Fluid-1	
1	104	14	MFR_STD	MFR_STD	P24N-00CZ0	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends (Run) and Adhesive joint Bell end (Branch) Fluid-1	
1	104	16	MFR_STD	MFR_STD	P24N-00CZ1	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends (Run) and Adhesive joint Bell end (Branch) Fluid-1	
1	104	18	MFR_STD	MFR_STD	P24N-00CZ2	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends (Run) and Adhesive joint Bell end (Branch) Fluid-1	
1	104	20	MFR_STD	MFR_STD	P24N-00CZ4	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends (Run) and Adhesive joint Bell end (Branch) Fluid-1	
1	104	24	MFR_STD	MFR_STD	P24N-00CZ5	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends (Run) and Adhesive joint Bell end (Branch) Fluid-1	
1	104	26	MFR_STD	MFR_STD	P24N-00CZ6	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends (Run) and Adhesive joint Bell end (Branch) Fluid-1	
1	104	30	MFR_STD	MFR_STD	P24N-00CTN	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends (Run) and Adhesive joint Bell end (Branch) Fluid-1	
1	104	32	MFR_STD	MFR_STD	P24N-00CZ8	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends (Run) and Adhesive joint Bell end (Branch) Fluid-1	
1	104	36	MFR_STD	MFR_STD	P24N-00CTP	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends (Run) and Adhesive joint Bell end (Branch) Fluid-1	
1	104	40	MFR_STD	MFR_STD	P24N-00CZB	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends (Run) and Adhesive joint Bell end (Branch) Fluid-1	
1	104	44	MFR_STD	MFR_STD	P24N-00CNH	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends Fluid-1	
1	104	48	MFR_STD	MFR_STD	P24N-00CNJ	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends Fluid-1	
1	104	52	MFR_STD	MFR_STD	P24N-00CE8	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends Fluid-1	
1	104	56	MFR_STD	MFR_STD	P24N-00CE9	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends Fluid-1	
1	104	60	MFR_STD	MFR_STD	P24N-00CEA	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends Fluid-1	
1	104	64	MFR_STD	MFR_STD	P24N-00CEB	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends Fluid-1	
1	104	68	MFR_STD	MFR_STD	P24N-00CEC	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends Fluid-1	
1	104	76	MFR_STD	MFR_STD	P24N-00CED	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends Fluid-1	
1	104	84	MFR_STD	MFR_STD	P24N-00CEE	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends Fluid-1	
1	104	96	MFR_STD	MFR_STD	P24N-00CEF	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends Fluid-1	
1	116	2	MFR_STD	MFR_STD	P24N-00CZK	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends (Run) and Adhesive joint Bell end (Branch) Fluid-1	

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REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	116	3	MFR_STD	MFR_STD	P24N-00CZN	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends (Run) and Adhesive joint Bell end (Branch) Fluid-1	
1	116	4	MFR_STD	MFR_STD	P24N-00CZU	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends (Run) and Adhesive joint Bell end (Branch) Fluid-1	
1	116	6	MFR_STD	MFR_STD	P24N-00CZW	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends (Run) and Adhesive joint Bell end (Branch) Fluid-1	
1	116	8	MFR_STD	MFR_STD	P24N-00CZX	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends (Run) and Adhesive joint Bell end (Branch) Fluid-1	
1	116	10	MFR_STD	MFR_STD	P24N-00CZE	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends (Run) and Adhesive joint Bell end (Branch) Fluid-1	
1	116	12	MFR_STD	MFR_STD	P24N-00CZF	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends (Run) and Adhesive joint Bell end (Branch) Fluid-1	
1	116	14	MFR_STD	MFR_STD	P24N-00CZG	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends (Run) and Adhesive joint Bell end (Branch) Fluid-1	
1	116	16	MFR_STD	MFR_STD	P24N-00CZH	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends (Run) and Adhesive joint Bell end (Branch) Fluid-1	
1	116	18	MFR_STD	MFR_STD	P24N-00CZJ	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends (Run) and Adhesive joint Bell end (Branch) Fluid-1	
1	116	20	MFR_STD	MFR_STD	P24N-00CZL	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends (Run) and Adhesive joint Bell end (Branch) Fluid-1	
1	116	24	MFR_STD	MFR_STD	P24N-00CJG	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends (Run) and Adhesive joint Bell end (Branch) Fluid-1	
1	116	26	MFR_STD	MFR_STD	P24N-00CZM	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends (Run) and Adhesive joint Bell end (Branch) Fluid-1	
1	116	30	MFR_STD	MFR_STD	P24N-00CZP	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends (Run) and Adhesive joint Bell end (Branch) Fluid-1	
1	116	32	MFR_STD	MFR_STD	P24N-00CZR	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends (Run) and Adhesive joint Bell end (Branch) Fluid-1	
1	116	36	MFR_STD	MFR_STD	P24N-00CZS	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends (Run) and Adhesive joint Bell end (Branch) Fluid-1	
1	116	40	MFR_STD	MFR_STD	P24N-00CZV	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends (Run) and Adhesive joint Bell end (Branch) Fluid-1	
1	116	44	MFR_STD	MFR_STD	P24N-00CNK	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends Fluid-1	
1	116	48	MFR_STD	MFR_STD	P24N-00CGT	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends Fluid-1	
1	116	52	MFR_STD	MFR_STD	P24N-00CNL	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends Fluid-1	
1	116	56	MFR_STD	MFR_STD	P24N-00CNN	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends Fluid-1	
1	116	60	MFR_STD	MFR_STD	P24N-00CGU	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends Fluid-1	
1	116	64	MFR_STD	MFR_STD	P24N-00CGV	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends Fluid-1	
1	116	68	MFR_STD	MFR_STD	P24N-00CGW	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends Fluid-1	
1	116	76	MFR_STD	MFR_STD	P24N-00CGX	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends Fluid-1	
1	116	84	MFR_STD	MFR_STD	P24N-00CGY	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends Fluid-1	
1	116	96	MFR_STD	MFR_STD	P24N-00CGZ	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends Fluid-1	
1	116	104	MFR_STD	MFR_STD	P24N-00CGS	Reducing tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends Fluid-1	

REDUCING LATERAL TEE (TLR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	6	2	MFR_STD	MFR_STD	P25N-000YL	Reducing lateral-tee Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends 45 degree Fluid-1	
1	6	4	MFR_STD	MFR_STD	P25N-000YN	Reducing lateral-tee Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends 45 degree Fluid-1	
1	8	3	MFR_STD	MFR_STD	P25N-0011F	Reducing lateral-tee Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends 45 degree Fluid-1	
1	8	4	MFR_STD	MFR_STD	P25N-000T0	Reducing lateral-tee Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends 45 degree Fluid-1	
1	12	8	MFR_STD	MFR_STD	P25N-000YV	Reducing lateral-tee Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends 45 degree Fluid-1	
1	14	12	MFR_STD	MFR_STD	P25N-0011X	Reducing lateral-tee Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends 45 degree Fluid-1	
1	16	12	MFR_STD	MFR_STD	P25N-0011Y	Reducing lateral-tee Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends 45 degree Fluid-1	
1	104	30	MFR_STD	MFR_STD	P25N-000YK	Reducing lateral-tee Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends 45 degree Fluid-1	

SADDLE (SD)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	26	2			P52N-000BS	Saddle Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	26	3			P52N-000BT	Saddle Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	30	2			P52N-000BU	Saddle Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	30	3			P52N-000BV	Saddle Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	32	2			P52N-000BW	Saddle Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	32	3			P52N-000BX	Saddle Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	36	2			P52N-000BY	Saddle Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	36	3			P52N-000BZ	Saddle Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	40	2			P52N-000C2	Saddle Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	40	3			P52N-000C3	Saddle Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	

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CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	MFR_STD	MFR_STD	P27N-001LZ	Concentric reducer Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	4	2	MFR_STD	MFR_STD	P27N-001M0	Concentric reducer Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	4	3	MFR_STD	MFR_STD	P27N-001M1	Concentric reducer Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	6	3	MFR_STD	MFR_STD	P27N-001M2	Concentric reducer Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	6	4	MFR_STD	MFR_STD	P27N-001A1	Concentric reducer Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	8	4	MFR_STD	MFR_STD	P27N-001A2	Concentric reducer Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	8	6	MFR_STD	MFR_STD	P27N-001A3	Concentric reducer Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	10	4	MFR_STD	MFR_STD	P27N-001A4	Concentric reducer Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	10	6	MFR_STD	MFR_STD	P27N-001A5	Concentric reducer Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	10	8	MFR_STD	MFR_STD	P27N-001A6	Concentric reducer Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	12	6	MFR_STD	MFR_STD	P27N-001A8	Concentric reducer Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	12	8	MFR_STD	MFR_STD	P27N-001A9	Concentric reducer Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	12	10	MFR_STD	MFR_STD	P27N-001A7	Concentric reducer Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	14	6	MFR_STD	MFR_STD	P27N-001AC	Concentric reducer Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	14	8	MFR_STD	MFR_STD	P27N-001AD	Concentric reducer Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	14	10	MFR_STD	MFR_STD	P27N-001AA	Concentric reducer Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	14	12	MFR_STD	MFR_STD	P27N-001AB	Concentric reducer Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	16	8	MFR_STD	MFR_STD	P27N-001AH	Concentric reducer Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	16	10	MFR_STD	MFR_STD	P27N-001AE	Concentric reducer Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	16	12	MFR_STD	MFR_STD	P27N-001AF	Concentric reducer Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	16	14	MFR_STD	MFR_STD	P27N-001AG	Concentric reducer Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	18	10	MFR_STD	MFR_STD	P27N-001AJ	Concentric reducer Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	18	12	MFR_STD	MFR_STD	P27N-001AK	Concentric reducer Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	18	14	MFR_STD	MFR_STD	P27N-001AL	Concentric reducer Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	18	16	MFR_STD	MFR_STD	P27N-001AM	Concentric reducer Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	20	10	MFR_STD	MFR_STD	P27N-001M6	Concentric reducer Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	20	12	MFR_STD	MFR_STD	P27N-001AN	Concentric reducer Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	20	14	MFR_STD	MFR_STD	P27N-001AP	Concentric reducer Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	20	16	MFR_STD	MFR_STD	P27N-001AR	Concentric reducer Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	20	18	MFR_STD	MFR_STD	P27N-001AS	Concentric reducer Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	24	16	MFR_STD	MFR_STD	P27N-001M3	Concentric reducer Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	24	18	MFR_STD	MFR_STD	P27N-001M4	Concentric reducer Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	24	20	MFR_STD	MFR_STD	P27N-001M5	Concentric reducer Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	26	18	MFR_STD	MFR_STD	P27N-001TM	Concentric reducer Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	26	20	MFR_STD	MFR_STD	P27N-001TN	Concentric reducer Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	26	24	MFR_STD	MFR_STD	P27N-001TP	Concentric reducer Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	30	20	MFR_STD	MFR_STD	P27N-001TR	Concentric reducer Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	30	24	MFR_STD	MFR_STD	P27N-001TS	Concentric reducer Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	30	26	MFR_STD	MFR_STD	P27N-001TT	Concentric reducer Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	32	24	MFR_STD	MFR_STD	P27N-001TU	Concentric reducer Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	32	26	MFR_STD	MFR_STD	P27N-001TV	Concentric reducer Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	32	30	MFR_STD	MFR_STD	P27N-001TW	Concentric reducer Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	36	24	MFR_STD	MFR_STD	P27N-001TX	Concentric reducer Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	36	26	MFR_STD	MFR_STD	P27N-001TY	Concentric reducer Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	

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CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	36	30	MFR_STD	MFR_STD	P27N-001TZ	Concentric reducer Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	36	32	MFR_STD	MFR_STD	P27N-001U0	Concentric reducer Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	40	32	MFR_STD	MFR_STD	P27N-0023D	Concentric reducer Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	40	36	MFR_STD	MFR_STD	P27N-0023E	Concentric reducer Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	44	36	MFR_STD	MFR_STD	P27N-0022G	Concentric reducer Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint end (L) and Adhesive joint Bell end (S) Fluid-1	
1	44	40	MFR_STD	MFR_STD	P27N-0022J	Concentric reducer Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint end (L) and Adhesive joint Bell end (S) Fluid-1	
1	48	44	MFR_STD	MFR_STD	P27N-001MJ	Concentric reducer Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends Fluid-1	
1	52	30	MFR_STD	MFR_STD	P27N-0022K	Concentric reducer Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint end (L) and Adhesive joint Bell end (S) Fluid-1	
1	52	32	MFR_STD	MFR_STD	P27N-0022L	Concentric reducer Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint end (L) and Adhesive joint Bell end (S) Fluid-1	
1	52	36	MFR_STD	MFR_STD	P27N-0022M	Concentric reducer Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint end (L) and Adhesive joint Bell end (S) Fluid-1	
1	52	40	MFR_STD	MFR_STD	P27N-0022P	Concentric reducer Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint end (L) and Adhesive joint Bell end (S) Fluid-1	
1	52	44	MFR_STD	MFR_STD	P27N-001MK	Concentric reducer Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends Fluid-1	
1	52	48	MFR_STD	MFR_STD	P27N-0010P	Concentric reducer Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends Fluid-1	
1	56	36	MFR_STD	MFR_STD	P27N-0022R	Concentric reducer Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint end (L) and Adhesive joint Bell end (S) Fluid-1	
1	56	40	MFR_STD	MFR_STD	P27N-0022T	Concentric reducer Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint end (L) and Adhesive joint Bell end (S) Fluid-1	
1	56	44	MFR_STD	MFR_STD	P27N-001MP	Concentric reducer Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends Fluid-1	
1	56	48	MFR_STD	MFR_STD	P27N-0010Z	Concentric reducer Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends Fluid-1	
1	56	52	MFR_STD	MFR_STD	P27N-00110	Concentric reducer Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends Fluid-1	
1	60	36	MFR_STD	MFR_STD	P27N-0022U	Concentric reducer Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint end (L) and Adhesive joint Bell end (S) Fluid-1	
1	60	40	MFR_STD	MFR_STD	P27N-0022W	Concentric reducer Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint end (L) and Adhesive joint Bell end (S) Fluid-1	
1	60	44	MFR_STD	MFR_STD	P27N-001MR	Concentric reducer Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends Fluid-1	
1	60	48	MFR_STD	MFR_STD	P27N-00113	Concentric reducer Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends Fluid-1	
1	60	52	MFR_STD	MFR_STD	P27N-0010S	Concentric reducer Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends Fluid-1	
1	60	56	MFR_STD	MFR_STD	P27N-0010T	Concentric reducer Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends Fluid-1	
1	64	44	MFR_STD	MFR_STD	P27N-001MW	Concentric reducer Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends Fluid-1	
1	64	48	MFR_STD	MFR_STD	P27N-001MX	Concentric reducer Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends Fluid-1	
1	64	52	MFR_STD	MFR_STD	P27N-001MY	Concentric reducer Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends Fluid-1	
1	64	56	MFR_STD	MFR_STD	P27N-001MT	Concentric reducer Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends Fluid-1	
1	64	60	MFR_STD	MFR_STD	P27N-001N1	Concentric reducer Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends Fluid-1	
1	68	48	MFR_STD	MFR_STD	P27N-001MZ	Concentric reducer Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends Fluid-1	
1	68	52	MFR_STD	MFR_STD	P27N-001N0	Concentric reducer Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends Fluid-1	
1	68	56	MFR_STD	MFR_STD	P27N-001MU	Concentric reducer Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends Fluid-1	
1	68	60	MFR_STD	MFR_STD	P27N-001N2	Concentric reducer Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends Fluid-1	
1	68	64	MFR_STD	MFR_STD	P27N-001N3	Concentric reducer Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends Fluid-1	
1	76	48	MFR_STD	MFR_STD	P27N-001PF	Concentric reducer Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends Fluid-1	
1	76	52	MFR_STD	MFR_STD	P27N-001NK	Concentric reducer Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends Fluid-1	
1	76	56	MFR_STD	MFR_STD	P27N-001NL	Concentric reducer Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends Fluid-1	
1	76	60	MFR_STD	MFR_STD	P27N-001NM	Concentric reducer Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends Fluid-1	
1	76	64	MFR_STD	MFR_STD	P27N-001N4	Concentric reducer Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends Fluid-1	
1	76	68	MFR_STD	MFR_STD	P27N-001N5	Concentric reducer Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends Fluid-1	
1	84	56	MFR_STD	MFR_STD	P27N-001NF	Concentric reducer Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends Fluid-1	
1	84	60	MFR_STD	MFR_STD	P27N-001NG	Concentric reducer Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends Fluid-1	
1	84	64	MFR_STD	MFR_STD	P27N-001NH	Concentric reducer Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends Fluid-1	
1	84	68	MFR_STD	MFR_STD	P27N-001NJ	Concentric reducer Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends Fluid-1	

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CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	84	76	MFR_STD	MFR_STD	P27N-001N6	Concentric reducer Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends Fluid-1	
1	96	48	MFR_STD	MFR_STD	P27N-001PG	Concentric reducer Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends Fluid-1	
1	96	56	MFR_STD	MFR_STD	P27N-0022X	Concentric reducer Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends Fluid-1	
1	96	60	MFR_STD	MFR_STD	P27N-001NB	Concentric reducer Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends Fluid-1	
1	96	64	MFR_STD	MFR_STD	P27N-001NC	Concentric reducer Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends Fluid-1	
1	96	68	MFR_STD	MFR_STD	P27N-001ND	Concentric reducer Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends Fluid-1	
1	96	76	MFR_STD	MFR_STD	P27N-001NE	Concentric reducer Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends Fluid-1	
1	96	84	MFR_STD	MFR_STD	P27N-001N7	Concentric reducer Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends Fluid-1	
1	104	76	MFR_STD	MFR_STD	P27N-001N9	Concentric reducer Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends Fluid-1	
1	104	84	MFR_STD	MFR_STD	P27N-001NA	Concentric reducer Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends Fluid-1	
1	104	96	MFR_STD	MFR_STD	P27N-001N8	Concentric reducer Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends Fluid-1	
1	116	48	MFR_STD	MFR_STD	P27N-001PJ	Concentric reducer Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends Fluid-1	
1	116	68	MFR_STD	MFR_STD	P27N-001PL	Concentric reducer Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends Fluid-1	
1	116	84	MFR_STD	MFR_STD	P27N-001PM	Concentric reducer Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends Fluid-1	
1	116	96	MFR_STD	MFR_STD	P27N-001PK	Concentric reducer Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends Fluid-1	
1	116	104	MFR_STD	MFR_STD	P27N-001PH	Concentric reducer Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends Fluid-1	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	MFR_STD	MFR_STD	P28N-001EC	Eccentric reducer Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	4	2	MFR_STD	MFR_STD	P28N-001ED	Eccentric reducer Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	4	3	MFR_STD	MFR_STD	P28N-001EE	Eccentric reducer Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	6	3	MFR_STD	MFR_STD	P28N-001EF	Eccentric reducer Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	6	4	MFR_STD	MFR_STD	P28N-0011U	Eccentric reducer Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	8	4	MFR_STD	MFR_STD	P28N-0011V	Eccentric reducer Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	8	6	MFR_STD	MFR_STD	P28N-0011W	Eccentric reducer Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	10	4	MFR_STD	MFR_STD	P28N-0011X	Eccentric reducer Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	10	6	MFR_STD	MFR_STD	P28N-0011Y	Eccentric reducer Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	10	8	MFR_STD	MFR_STD	P28N-0011Z	Eccentric reducer Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	12	6	MFR_STD	MFR_STD	P28N-00121	Eccentric reducer Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	12	8	MFR_STD	MFR_STD	P28N-00122	Eccentric reducer Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	12	10	MFR_STD	MFR_STD	P28N-00120	Eccentric reducer Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	14	6	MFR_STD	MFR_STD	P28N-00125	Eccentric reducer Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	14	8	MFR_STD	MFR_STD	P28N-00126	Eccentric reducer Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	14	10	MFR_STD	MFR_STD	P28N-00123	Eccentric reducer Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	14	12	MFR_STD	MFR_STD	P28N-00124	Eccentric reducer Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	16	8	MFR_STD	MFR_STD	P28N-0012A	Eccentric reducer Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	16	10	MFR_STD	MFR_STD	P28N-00127	Eccentric reducer Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	16	12	MFR_STD	MFR_STD	P28N-00128	Eccentric reducer Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	16	14	MFR_STD	MFR_STD	P28N-00129	Eccentric reducer Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	18	10	MFR_STD	MFR_STD	P28N-0012B	Eccentric reducer Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	18	12	MFR_STD	MFR_STD	P28N-0012C	Eccentric reducer Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	18	14	MFR_STD	MFR_STD	P28N-0012D	Eccentric reducer Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	18	16	MFR_STD	MFR_STD	P28N-0012E	Eccentric reducer Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	20	10	MFR_STD	MFR_STD	P28N-001EG	Eccentric reducer Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	20	12	MFR_STD	MFR_STD	P28N-0012F	Eccentric reducer Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	20	14	MFR_STD	MFR_STD	P28N-0012G	Eccentric reducer Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	20	16	MFR_STD	MFR_STD	P28N-0012H	Eccentric reducer Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	20	18	MFR_STD	MFR_STD	P28N-0012J	Eccentric reducer Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	24	16	MFR_STD	MFR_STD	P28N-001EH	Eccentric reducer Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	24	18	MFR_STD	MFR_STD	P28N-001EJ	Eccentric reducer Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	24	20	MFR_STD	MFR_STD	P28N-001EK	Eccentric reducer Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	26	18	MFR_STD	MFR_STD	P28N-001LE	Eccentric reducer Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	26	20	MFR_STD	MFR_STD	P28N-001LF	Eccentric reducer Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	

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ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	26	24	MFR_STD	MFR_STD	P28N-001LG	Eccentric reducer Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	30	20	MFR_STD	MFR_STD	P28N-001LH	Eccentric reducer Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	30	24	MFR_STD	MFR_STD	P28N-001LJ	Eccentric reducer Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	30	26	MFR_STD	MFR_STD	P28N-001LK	Eccentric reducer Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	32	24	MFR_STD	MFR_STD	P28N-001LL	Eccentric reducer Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	32	26	MFR_STD	MFR_STD	P28N-001LM	Eccentric reducer Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	32	30	MFR_STD	MFR_STD	P28N-001LN	Eccentric reducer Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	36	24	MFR_STD	MFR_STD	P28N-001LP	Eccentric reducer Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	36	26	MFR_STD	MFR_STD	P28N-001LR	Eccentric reducer Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	36	30	MFR_STD	MFR_STD	P28N-001LS	Eccentric reducer Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	36	32	MFR_STD	MFR_STD	P28N-001LT	Eccentric reducer Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	40	32	MFR_STD	MFR_STD	P28N-001ME	Eccentric reducer Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	40	36	MFR_STD	MFR_STD	P28N-001MF	Eccentric reducer Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	44	36	MFR_STD	MFR_STD	P28N-001LU	Eccentric reducer Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint end (L) and Adhesive joint Bell end (S) Fluid-1	
1	44	40	MFR_STD	MFR_STD	P28N-001LW	Eccentric reducer Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint end (L) and Adhesive joint Bell end (S) Fluid-1	
1	48	44	MFR_STD	MFR_STD	P28N-001EX	Eccentric reducer Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends Fluid-1	
1	52	30	MFR_STD	MFR_STD	P28N-001LX	Eccentric reducer Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint end (L) and Adhesive joint Bell end (S) Fluid-1	
1	52	32	MFR_STD	MFR_STD	P28N-001LY	Eccentric reducer Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint end (L) and Adhesive joint Bell end (S) Fluid-1	
1	52	36	MFR_STD	MFR_STD	P28N-001LZ	Eccentric reducer Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint end (L) and Adhesive joint Bell end (S) Fluid-1	
1	52	40	MFR_STD	MFR_STD	P28N-001M1	Eccentric reducer Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint end (L) and Adhesive joint Bell end (S) Fluid-1	
1	52	44	MFR_STD	MFR_STD	P28N-001F0	Eccentric reducer Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends Fluid-1	
1	52	48	MFR_STD	MFR_STD	P28N-000RL	Eccentric reducer Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends Fluid-1	
1	56	36	MFR_STD	MFR_STD	P28N-001M2	Eccentric reducer Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint end (L) and Adhesive joint Bell end (S) Fluid-1	
1	56	40	MFR_STD	MFR_STD	P28N-001M4	Eccentric reducer Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint end (L) and Adhesive joint Bell end (S) Fluid-1	
1	56	44	MFR_STD	MFR_STD	P28N-001F2	Eccentric reducer Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends Fluid-1	
1	56	48	MFR_STD	MFR_STD	P28N-000RW	Eccentric reducer Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends Fluid-1	
1	56	52	MFR_STD	MFR_STD	P28N-000RX	Eccentric reducer Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends Fluid-1	
1	60	36	MFR_STD	MFR_STD	P28N-001M5	Eccentric reducer Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint end (L) and Adhesive joint Bell end (S) Fluid-1	
1	60	40	MFR_STD	MFR_STD	P28N-001M7	Eccentric reducer Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint end (L) and Adhesive joint Bell end (S) Fluid-1	
1	60	44	MFR_STD	MFR_STD	P28N-001F4	Eccentric reducer Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends Fluid-1	
1	60	48	MFR_STD	MFR_STD	P28N-000S0	Eccentric reducer Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends Fluid-1	
1	60	52	MFR_STD	MFR_STD	P28N-000RN	Eccentric reducer Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends Fluid-1	
1	60	56	MFR_STD	MFR_STD	P28N-000RP	Eccentric reducer Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends Fluid-1	
1	64	44	MFR_STD	MFR_STD	P28N-001F6	Eccentric reducer Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends Fluid-1	
1	64	48	MFR_STD	MFR_STD	P28N-001F7	Eccentric reducer Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends Fluid-1	
1	64	52	MFR_STD	MFR_STD	P28N-001F8	Eccentric reducer Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends Fluid-1	
1	64	56	MFR_STD	MFR_STD	P28N-001F9	Eccentric reducer Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends Fluid-1	
1	64	60	MFR_STD	MFR_STD	P28N-001G0	Eccentric reducer Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends Fluid-1	
1	68	48	MFR_STD	MFR_STD	P28N-001FA	Eccentric reducer Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends Fluid-1	
1	68	52	MFR_STD	MFR_STD	P28N-001FB	Eccentric reducer Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends Fluid-1	
1	68	56	MFR_STD	MFR_STD	P28N-001FC	Eccentric reducer Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends Fluid-1	
1	68	60	MFR_STD	MFR_STD	P28N-001FY	Eccentric reducer Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends Fluid-1	
1	68	64	MFR_STD	MFR_STD	P28N-001FZ	Eccentric reducer Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends Fluid-1	
1	76	48	MFR_STD	MFR_STD	P28N-001GX	Eccentric reducer Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends Fluid-1	
1	76	52	MFR_STD	MFR_STD	P28N-001FT	Eccentric reducer Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends Fluid-1	
1	76	56	MFR_STD	MFR_STD	P28N-001FU	Eccentric reducer Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends Fluid-1	
1	76	60	MFR_STD	MFR_STD	P28N-001FV	Eccentric reducer Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends Fluid-1	
1	76	64	MFR_STD	MFR_STD	P28N-001FW	Eccentric reducer Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends Fluid-1	
1	76	68	MFR_STD	MFR_STD	P28N-001FX	Eccentric reducer Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends Fluid-1	
1	84	56	MFR_STD	MFR_STD	P28N-001FM	Eccentric reducer Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends Fluid-1	
1	84	60	MFR_STD	MFR_STD	P28N-001FN	Eccentric reducer Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends Fluid-1	
1	84	64	MFR_STD	MFR_STD	P28N-001FP	Eccentric reducer Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends Fluid-1	
1	84	68	MFR_STD	MFR_STD	P28N-001FR	Eccentric reducer Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends Fluid-1	
1	84	76	MFR_STD	MFR_STD	P28N-001FS	Eccentric reducer Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends Fluid-1	
1	96	48	MFR_STD	MFR_STD	P28N-001GY	Eccentric reducer Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends Fluid-1	
1	96	56	MFR_STD	MFR_STD	P28N-001MD	Eccentric reducer Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends Fluid-1	

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ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	96	60	MFR_STD	MFR_STD	P28N-001FG	Eccentric reducer Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends Fluid-1	
1	96	64	MFR_STD	MFR_STD	P28N-001FH	Eccentric reducer Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends Fluid-1	
1	96	68	MFR_STD	MFR_STD	P28N-001FJ	Eccentric reducer Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends Fluid-1	
1	96	76	MFR_STD	MFR_STD	P28N-001FK	Eccentric reducer Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends Fluid-1	
1	96	84	MFR_STD	MFR_STD	P28N-001FL	Eccentric reducer Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends Fluid-1	
1	104	76	MFR_STD	MFR_STD	P28N-001FD	Eccentric reducer Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends Fluid-1	
1	104	84	MFR_STD	MFR_STD	P28N-001FE	Eccentric reducer Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends Fluid-1	
1	104	96	MFR_STD	MFR_STD	P28N-001FF	Eccentric reducer Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends Fluid-1	
1	116	48	MFR_STD	MFR_STD	P28N-001H0	Eccentric reducer Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends Fluid-1	
1	116	68	MFR_STD	MFR_STD	P28N-001H1	Eccentric reducer Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends Fluid-1	
1	116	84	MFR_STD	MFR_STD	P28N-001H2	Eccentric reducer Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends Fluid-1	
1	116	96	MFR_STD	MFR_STD	P28N-001H3	Eccentric reducer Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends Fluid-1	
1	116	104	MFR_STD	MFR_STD	P28N-001GZ	Eccentric reducer Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends Fluid-1	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P29P-00011	Cap ASTM B151 UNS C70620 Class 3000 ASME B16.11 NPT	
1	0.75				P29P-00012	Cap ASTM B151 UNS C70620 Class 3000 ASME B16.11 NPT	
1	1				P29P-00013	Cap ASTM B151 UNS C70620 Class 3000 ASME B16.11 NPT	
1	1.5				P29P-00014	Cap ASTM B151 UNS C70620 Class 3000 ASME B16.11 NPT	
1	2		MFR_STD		P29N-0006G	Cap Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	3		MFR_STD		P29N-0006K	Cap Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	4		MFR_STD		P29N-0006L	Cap Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	6		MFR_STD		P29N-0006M	Cap Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	8		MFR_STD		P29N-0006N	Cap Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	10		MFR_STD		P29N-0006B	Cap Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	12		MFR_STD		P29N-0006C	Cap Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	14		MFR_STD		P29N-0006D	Cap Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	16		MFR_STD		P29N-0006E	Cap Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	18		MFR_STD		P29N-0006F	Cap Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	20		MFR_STD		P29N-0006H	Cap Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	24		MFR_STD		P29N-0006J	Cap Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	26		MFR_STD		P29N-0007A	Cap Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	30		MFR_STD		P29N-0007B	Cap Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	32		MFR_STD		P29N-0007C	Cap Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	36		MFR_STD		P29N-0007D	Cap Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	40		MFR_STD		P29N-0007F	Cap Glass reinforced plastic Seamless Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	44		MFR_STD		P29N-0006S	Cap Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends Fluid-1	
1	48		MFR_STD		P29N-0002M	Cap Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends Fluid-1	
1	52		MFR_STD		P29N-0002N	Cap Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends Fluid-1	
1	56		MFR_STD		P29N-0002P	Cap Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends Fluid-1	
1	60		MFR_STD		P29N-0002R	Cap Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends Fluid-1	
1	64		MFR_STD		P29N-0006T	Cap Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends Fluid-1	
1	68		MFR_STD		P29N-0006U	Cap Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends Fluid-1	
1	76		MFR_STD		P29N-0006W	Cap Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends Fluid-1	
1	84		MFR_STD		P29N-0006X	Cap Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends Fluid-1	
1	96		MFR_STD		P29N-0006Y	Cap Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends Fluid-1	
1	104		MFR_STD		P29N-0006V	Cap Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends Fluid-1	
1	116		MFR_STD		P29N-00076	Cap Glass reinforced plastic Seamless Manufacturer-standard Butt and wrap joint ends Fluid-1	

CON SWAGED NIPPLE (SNC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH80S	SCH80S	P42P-0001X	Concentric swaged nipple ASTM B151 UNS C70620 Seamless MSS SP-95 NPT(L) - NPT(S)	
1	1	0.5	SCH80S	SCH80S	P42P-0001Y	Concentric swaged nipple ASTM B151 UNS C70620 Seamless MSS SP-95 NPT(L) - NPT(S)	
1	1	0.75	SCH80S	SCH80S	P42P-0001Z	Concentric swaged nipple ASTM B151 UNS C70620 Seamless MSS SP-95 NPT(L) - NPT(S)	
1	1.5	0.5	SCH80S	SCH80S	P42P-00020	Concentric swaged nipple ASTM B151 UNS C70620 Seamless MSS SP-95 NPT(L) - NPT(S)	
1	1.5	0.75	SCH80S	SCH80S	P42P-00021	Concentric swaged nipple ASTM B151 UNS C70620 Seamless MSS SP-95 NPT(L) - NPT(S)	
1	1.5	1	SCH80S	SCH80S	P42P-00022	Concentric swaged nipple ASTM B151 UNS C70620 Seamless MSS SP-95 NPT(L) - NPT(S)	

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ECC SWAGED NIPPLE (SNE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH80S	SCH80S	P43P-00010	Eccentric swaged nipple ASTM B151 UNS C70620 Seamless MSS SP-95 NPT(L) - NPT(S)	
1	1	0.5	SCH80S	SCH80S	P43P-00011	Eccentric swaged nipple ASTM B151 UNS C70620 Seamless MSS SP-95 NPT(L) - NPT(S)	
1	1	0.75	SCH80S	SCH80S	P43P-00012	Eccentric swaged nipple ASTM B151 UNS C70620 Seamless MSS SP-95 NPT(L) - NPT(S)	
1	1.5	0.5	SCH80S	SCH80S	P43P-00013	Eccentric swaged nipple ASTM B151 UNS C70620 Seamless MSS SP-95 NPT(L) - NPT(S)	
1	1.5	0.75	SCH80S	SCH80S	P43P-00014	Eccentric swaged nipple ASTM B151 UNS C70620 Seamless MSS SP-95 NPT(L) - NPT(S)	
1	1.5	1	SCH80S	SCH80S	P43P-00015	Eccentric swaged nipple ASTM B151 UNS C70620 Seamless MSS SP-95 NPT(L) - NPT(S)	

COUPLING (CPS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	4				P47N-000KS	Coupling Glass reinforced plastic Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	6				P47N-000KT	Coupling Glass reinforced plastic Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	8				P47N-000KU	Coupling Glass reinforced plastic Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	10				P47N-000KJ	Coupling Glass reinforced plastic Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	12				P47N-000KK	Coupling Glass reinforced plastic Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	14				P47N-000KL	Coupling Glass reinforced plastic Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	16				P47N-000KM	Coupling Glass reinforced plastic Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	18				P47N-000KN	Coupling Glass reinforced plastic Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	20				P47N-000KP	Coupling Glass reinforced plastic Manufacturer-standard Adhesive joint Bell ends Fluid-1	
1	24				P47N-000KR	Coupling Glass reinforced plastic Manufacturer-standard Adhesive joint Bell ends Fluid-1	
4211	4				P47N-000L2	Coupling Glass reinforced plastic Manufacturer-standard Mechanical joint Bell ends Fluid-1	
4211	6				P47N-000L3	Coupling Glass reinforced plastic Manufacturer-standard Mechanical joint Bell ends Fluid-1	
4211	8				P47N-000L4	Coupling Glass reinforced plastic Manufacturer-standard Mechanical joint Bell ends Fluid-1	
4211	10				P47N-000KV	Coupling Glass reinforced plastic Manufacturer-standard Mechanical joint Bell ends Fluid-1	
4211	12				P47N-000KW	Coupling Glass reinforced plastic Manufacturer-standard Mechanical joint Bell ends Fluid-1	
4211	14				P47N-000KX	Coupling Glass reinforced plastic Manufacturer-standard Mechanical joint Bell ends Fluid-1	
4211	16				P47N-000KY	Coupling Glass reinforced plastic Manufacturer-standard Mechanical joint Bell ends Fluid-1	
4211	18				P47N-000KZ	Coupling Glass reinforced plastic Manufacturer-standard Mechanical joint Bell ends Fluid-1	
4211	20				P47N-000L0	Coupling Glass reinforced plastic Manufacturer-standard Mechanical joint Bell ends Fluid-1	
4211	24				P47N-000L1	Coupling Glass reinforced plastic Manufacturer-standard Mechanical joint Bell ends Fluid-1	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P61P-0014L	Flange NPT ASTM B151 UNS C70620 Class 150 ASME B16.5 FF	
1	0.75				P61P-0014M	Flange NPT ASTM B151 UNS C70620 Class 150 ASME B16.5 FF	
1	1				P61P-0014N	Flange NPT ASTM B151 UNS C70620 Class 150 ASME B16.5 FF	
1	1.5				P61P-0014P	Flange NPT ASTM B151 UNS C70620 Class 150 ASME B16.5 FF	
1	2				P61N-000WX	Flange Adhesive joint Bell end Glass reinforced plastic Class 150 ASME B16.5 FF Fluid-1	
1	3				P61N-000X0	Flange Adhesive joint Bell end Glass reinforced plastic Class 150 ASME B16.5 FF Fluid-1	
1	4				P61N-000X1	Flange Adhesive joint Bell end Glass reinforced plastic Class 150 ASME B16.5 FF Fluid-1	
1	6				P61N-000X2	Flange Adhesive joint Bell end Glass reinforced plastic Class 150 ASME B16.5 FF Fluid-1	
1	8				P61N-000X3	Flange Adhesive joint Bell end Glass reinforced plastic Class 150 ASME B16.5 FF Fluid-1	
1	10				P61N-000WS	Flange Adhesive joint Bell end Glass reinforced plastic Class 150 ASME B16.5 FF Fluid-1	
1	12				P61N-000WT	Flange Adhesive joint Bell end Glass reinforced plastic Class 150 ASME B16.5 FF Fluid-1	
1	14				P61N-000WU	Flange Adhesive joint Bell end Glass reinforced plastic Class 150 ASME B16.5 FF Fluid-1	
1	16				P61N-000WV	Flange Adhesive joint Bell end Glass reinforced plastic Class 150 ASME B16.5 FF Fluid-1	
1	18				P61N-000WW	Flange Adhesive joint Bell end Glass reinforced plastic Class 150 ASME B16.5 FF Fluid-1	
1	20				P61N-000WY	Flange Adhesive joint Bell end Glass reinforced plastic Class 150 ASME B16.5 FF Fluid-1	
1	24				P61N-000WZ	Flange Adhesive joint Bell end Glass reinforced plastic Class 150 ASME B16.5 FF Fluid-1	
1	26				P61N-001CA	Flange Adhesive joint Bell end Glass reinforced plastic Class 150 ASME B16.47 Series A FF Fluid-1	
1	30				P61N-001CB	Flange Adhesive joint Bell end Glass reinforced plastic Class 150 ASME B16.47 Series A FF Fluid-1	
1	32				P61N-001CC	Flange Adhesive joint Bell end Glass reinforced plastic Class 150 ASME B16.47 Series A FF Fluid-1	
1	36				P61N-001CD	Flange Adhesive joint Bell end Glass reinforced plastic Class 150 ASME B16.47 Series A FF Fluid-1	
1	40				P61N-001CF	Flange Adhesive joint Bell end Glass reinforced plastic Class 150 ASME B16.47 Series A FF Fluid-1	
1	44				P61N-0019Y	Flange Butt and wrap joint end Glass reinforced plastic Class 150 ASME B16.47 Series A FF Fluid-1	
1	48				P61N-00192	Flange Butt and wrap joint end Glass reinforced plastic Class 150 ASME B16.47 Series A FF Fluid-1	
1	52				P61N-00193	Flange Butt and wrap joint end Glass reinforced plastic Class 150 ASME B16.47 Series A FF Fluid-1	
1	56				P61N-00194	Flange Butt and wrap joint end Glass reinforced plastic Class 150 ASME B16.47 Series A FF Fluid-1	
1	60				P61N-00195	Flange Butt and wrap joint end Glass reinforced plastic Class 150 ASME B16.47 Series A FF Fluid-1	
1	64				P61N-001B4	Flange Butt and wrap joint end Glass reinforced plastic Class E AWWA C207 FF Fluid-1	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	68				P61N-0019Z	Flange Butt and wrap joint end Glass reinforced plastic Class E AWWA C207 FF Fluid-1	
1	76				P61N-001A1	Flange Butt and wrap joint end Glass reinforced plastic Class E AWWA C207 FF Fluid-1	
1	84				P61N-001A2	Flange Butt and wrap joint end Glass reinforced plastic Class E AWWA C207 FF Fluid-1	
1	96				P61N-001A3	Flange Butt and wrap joint end Glass reinforced plastic Class E AWWA C207 FF Fluid-1	
1	104				P61N-001A0	Flange Butt and wrap joint end Glass reinforced plastic Class E AWWA C207 FF Fluid-1	
1	116				P61N-001AT	Flange Butt and wrap joint end Glass reinforced plastic Class E AWWA C207 FF Fluid-1	
773	2				P61N-0019S	Flange Adhesive joint Bell end Glass reinforced plastic Class 300 ASME B16.5 FF Fluid-1	
773	3				P61N-0019T	Flange Adhesive joint Bell end Glass reinforced plastic Class 300 ASME B16.5 FF Fluid-1	
773	4				P61N-0019U	Flange Adhesive joint Bell end Glass reinforced plastic Class 300 ASME B16.5 FF Fluid-1	
773	6				P61N-0019V	Flange Adhesive joint Bell end Glass reinforced plastic Class 300 ASME B16.5 FF Fluid-1	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2				P67N-000D5	Blind flange Glass reinforced plastic Class 150 ASME B16.5 FF Fluid-1	
1	3				P67N-000D8	Blind flange Glass reinforced plastic Class 150 ASME B16.5 FF Fluid-1	
1	4				P67N-000D9	Blind flange Glass reinforced plastic Class 150 ASME B16.5 FF Fluid-1	
1	6				P67N-000DA	Blind flange Glass reinforced plastic Class 150 ASME B16.5 FF Fluid-1	
1	8				P67N-000DB	Blind flange Glass reinforced plastic Class 150 ASME B16.5 FF Fluid-1	
1	10				P67N-000D0	Blind flange Glass reinforced plastic Class 150 ASME B16.5 FF Fluid-1	
1	12				P67N-000D1	Blind flange Glass reinforced plastic Class 150 ASME B16.5 FF Fluid-1	
1	14				P67N-000D2	Blind flange Glass reinforced plastic Class 150 ASME B16.5 FF Fluid-1	
1	16				P67N-000D3	Blind flange Glass reinforced plastic Class 150 ASME B16.5 FF Fluid-1	
1	18				P67N-000D4	Blind flange Glass reinforced plastic Class 150 ASME B16.5 FF Fluid-1	
1	20				P67N-000D6	Blind flange Glass reinforced plastic Class 150 ASME B16.5 FF Fluid-1	
1	24				P67N-000D7	Blind flange Glass reinforced plastic Class 150 ASME B16.5 FF Fluid-1	
1	26				P67N-000NB	Blind flange Glass reinforced plastic Class 150 ASME B16.47 Series A FF Fluid-1	
1	30				P67N-000MD	Blind flange Glass reinforced plastic Class 150 ASME B16.47 Series A FF Fluid-1	
1	32				P67N-000MW	Blind flange Glass reinforced plastic Class 150 ASME B16.47 Series A FF Fluid-1	
1	36				P67N-000ME	Blind flange Glass reinforced plastic Class 150 ASME B16.47 Series A FF Fluid-1	
1	40				P67N-000NC	Blind flange Glass reinforced plastic Class 150 ASME B16.47 Series A FF Fluid-1	
1	44				P67N-000MY	Blind flange Glass reinforced plastic Class 150 ASME B16.47 Series A FF Fluid-1	
1	48				P67N-000MG	Blind flange Glass reinforced plastic Class 150 ASME B16.47 Series A FF Fluid-1	
1	52				P67N-000MH	Blind flange Glass reinforced plastic Class 150 ASME B16.47 Series A FF Fluid-1	
1	56				P67N-000MJ	Blind flange Glass reinforced plastic Class 150 ASME B16.47 Series A FF Fluid-1	
1	60				P67N-000MK	Blind flange Glass reinforced plastic Class 150 ASME B16.47 Series A FF Fluid-1	
1	64				P67N-000P4	Blind flange Glass reinforced plastic Class E AWWA C207 FF Fluid-1	
1	68				P67N-000MZ	Blind flange Glass reinforced plastic Class E AWWA C207 FF Fluid-1	
1	76				P67N-000N0	Blind flange Glass reinforced plastic Class E AWWA C207 FF Fluid-1	
1	84				P67N-000N1	Blind flange Glass reinforced plastic Class E AWWA C207 FF Fluid-1	
1	96				P67N-000N3	Blind flange Glass reinforced plastic Class E AWWA C207 FF Fluid-1	
1	104				P67N-000N2	Blind flange Glass reinforced plastic Class E AWWA C207 FF Fluid-1	
1	116				P67N-000NF	Blind flange Glass reinforced plastic Class E AWWA C207 FF Fluid-1	

REDUCING FLANGE (FR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2	0.75			P62N-0005K	Reducing flange NPT Glass reinforced plastic Class 150 ASME B16.5 FF Fluid-1	
1	2	1			P62N-0005L	Reducing flange NPT Glass reinforced plastic Class 150 ASME B16.5 FF Fluid-1	

PUDDLE FLANGE (FP)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	64				P54N-0003U	Puddle flange Glass reinforced plastic Manufacturer-standard Butt and wrap joint ends Fluid-1	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P74U-001JE	Sheet gasket NBR Class 150 ASME B16.21 Flange ASME B16.5 FF 1.5mm-T	
1	0.75				P74U-001JF	Sheet gasket NBR Class 150 ASME B16.21 Flange ASME B16.5 FF 1.5mm-T	
1	1				P74U-001JG	Sheet gasket NBR Class 150 ASME B16.21 Flange ASME B16.5 FF 1.5mm-T	
1	1.5				P74U-001JH	Sheet gasket NBR Class 150 ASME B16.21 Flange ASME B16.5 FF 1.5mm-T	

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GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2				P74U-001ED	Sheet gasket NBR Class 150 ASME B16.21 Flange ASME B16.5 FF 1.5mm-T	
1	3				P74U-001EG	Sheet gasket NBR Class 150 ASME B16.21 Flange ASME B16.5 FF 1.5mm-T	
1	4				P74U-001EH	Sheet gasket NBR Class 150 ASME B16.21 Flange ASME B16.5 FF 1.5mm-T	
1	6				P74U-001EJ	Sheet gasket NBR Class 150 ASME B16.21 Flange ASME B16.5 FF 1.5mm-T	
1	8				P74U-001EK	Sheet gasket NBR Class 150 ASME B16.21 Flange ASME B16.5 FF 1.5mm-T	
1	10				P74U-001E8	Sheet gasket NBR Class 150 ASME B16.21 Flange ASME B16.5 FF 1.5mm-T	
1	12				P74U-001E9	Sheet gasket NBR Class 150 ASME B16.21 Flange ASME B16.5 FF 1.5mm-T	
1	14				P74U-001EA	Sheet gasket NBR Class 150 ASME B16.21 Flange ASME B16.5 FF 1.5mm-T	
1	16				P74U-001EB	Sheet gasket NBR Class 150 ASME B16.21 Flange ASME B16.5 FF 1.5mm-T	
1	18				P74U-001EC	Sheet gasket NBR Class 150 ASME B16.21 Flange ASME B16.5 FF 1.5mm-T	
1	20				P74U-001EE	Sheet gasket NBR Class 150 ASME B16.21 Flange ASME B16.5 FF 1.5mm-T	
1	24				P74U-001EF	Sheet gasket NBR Class 150 ASME B16.21 Flange ASME B16.5 FF 1.5mm-T	
1	26				P74U-001JJ	Sheet gasket NBR Class 150 ASME B16.21 Flange ASME B16.47-A FF 1.5mm-T	
1	30				P74U-001EL	Sheet gasket NBR Class 150 ASME B16.21 Flange ASME B16.47-A FF 1.5mm-T	
1	32				P74U-001J5	Sheet gasket NBR Class 150 ASME B16.21 Flange ASME B16.47-A FF 1.5mm-T	
1	36				P74U-001EM	Sheet gasket NBR Class 150 ASME B16.21 Flange ASME B16.47-A FF 1.5mm-T	
1	40				P74U-001JK	Sheet gasket NBR Class 150 ASME B16.21 Flange ASME B16.47-A FF 1.5mm-T	
1	44				P74U-001J7	Sheet gasket NBR Class 150 ASME B16.21 Flange ASME B16.47-A FF 1.5mm-T	
1	48				P74U-001EP	Sheet gasket NBR Class 150 ASME B16.21 Flange ASME B16.47-A FF 1.5mm-T	
1	52				P74U-001ER	Sheet gasket NBR Class 150 ASME B16.21 Flange ASME B16.47-A FF 1.5mm-T	
1	56				P74U-001ES	Sheet gasket NBR Class 150 ASME B16.21 Flange ASME B16.47-A FF 1.5mm-T	
1	60				P74U-001ET	Sheet gasket NBR Class 150 ASME B16.21 Flange ASME B16.47-A FF 1.5mm-T	
1	64				P74U-001K8	Sheet gasket NBR Class 150 ASME B16.21 Flange AWWA C207-E FF 1.5mm-T	
1	68				P74U-001J9	Sheet gasket NBR Class 150 ASME B16.21 Flange AWWA C207-E FF 1.5mm-T	
1	76				P74U-001JA	Sheet gasket NBR Class 150 ASME B16.21 Flange AWWA C207-E FF 1.5mm-T	
1	84				P74U-001JB	Sheet gasket NBR Class 150 ASME B16.21 Flange AWWA C207-E FF 1.5mm-T	
1	96				P74U-001JC	Sheet gasket NBR Class 150 ASME B16.21 Flange AWWA C207-E FF 1.5mm-T	
1	104				P74U-001J8	Sheet gasket NBR Class 150 ASME B16.21 Flange AWWA C207-E FF 1.5mm-T	
1	116				P74U-001JN	Sheet gasket NBR Class 150 ASME B16.21 Flange AWWA C207-E FF 1.5mm-T	
773	2				P74U-001H7	Sheet gasket NBR Class 300 ASME B16.21 Flange ASME B16.5 FF 1.5mm-T	
773	3				P74U-001H8	Sheet gasket NBR Class 300 ASME B16.21 Flange ASME B16.5 FF 1.5mm-T	
773	4				P74U-001H9	Sheet gasket NBR Class 300 ASME B16.21 Flange ASME B16.5 FF 1.5mm-T	
773	6				P74U-001HA	Sheet gasket NBR Class 300 ASME B16.21 Flange ASME B16.5 FF 1.5mm-T	
773	8				P74U-001JR	Sheet gasket NBR Class 300 ASME B16.21 Flange ASME B16.5 FF 1.5mm-T	
773	10				P74U-001JP	Sheet gasket NBR Class 300 ASME B16.21 Flange ASME B16.5 FF 1.5mm-T	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-16				See Attached Bolt Table	Bolt and Nut ASTM A307 Grade B / A563 Grade A ASME B1.1 Galvanized UNC Machine-bolt with one Heavy HEX nut with two Galvanized CS washers per ASTM F436 or equivalent	
1	18-116				See Attached Bolt Table	Bolt and Nut ASTM A307 Grade B / A563 Grade A ASME B1.1 Galvanized 8UN Machine-bolt with one Heavy HEX nut with two Galvanized CS washers per ASTM F436 or equivalent	
773	2-6				See Attached Bolt Table	Bolt and Nut ASTM A307 Grade B / A563 Grade A ASME B1.1 Galvanized UNC Machine-bolt with one Heavy HEX nut with two Galvanized CS washers per ASTM F436 or equivalent	999

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81R-000GS	Gate valve ASTM B148 UNS C95800 Class 800 Manufacturer-standard NPT Trim Aluminum-bronze BB-BG-OS&Y Handwheel operated	
1	0.75				P81R-000GT	Gate valve ASTM B148 UNS C95800 Class 800 Manufacturer-standard NPT Trim Aluminum-bronze BB-BG-OS&Y Handwheel operated	
1	1				P81R-000GU	Gate valve ASTM B148 UNS C95800 Class 800 Manufacturer-standard NPT Trim Aluminum-bronze BB-BG-OS&Y Handwheel operated	
1	1.5				P81R-000GV	Gate valve ASTM B148 UNS C95800 Class 800 Manufacturer-standard NPT Trim Aluminum-bronze BB-BG-OS&Y Handwheel operated	
1	2				P81R-000G6	Gate valve ASTM B148 UNS C95800 Class 150 Manufacturer-standard Flange ASME B16.5 FF Trim Aluminum-bronze BB-BG-OS&Y Handwheel operated	
1	3				P81R-000GK	Gate valve ASTM B148 UNS C95800 Class 150 Manufacturer-standard Flange ASME B16.5 FF Trim Aluminum-bronze BB-BG-OS&Y Handwheel operated	
4607	2				P81C-007TP	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 FF Trim number 8 BB-BG-OS&Y Handwheel operated	
4607	3				P81C-0057X	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 FF Trim number 8 BB-BG-OS&Y Handwheel operated	
4607	4				P81C-0057Y	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 FF Trim number 8 BB-BG-OS&Y Handwheel operated	
4607	6				P81C-0057Z	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 FF Trim number 8 BB-BG-OS&Y Handwheel operated	

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GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
4607	8				P81C-00580	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 FF Trim number 8 BB-BG-OS&Y Handwheel operated	
4607	10				P81C-003WZ	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 FF Trim number 8 BB-BG-OS&Y Handwheel operated	
4607	12				P81C-003X0	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 FF Trim number 8 BB-BG-OS&Y Handwheel operated	
4607	14				P81C-008DZ	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 FF Trim number 8 BB-BG-OS&Y Gear operated	
4607	16				P81C-007TL	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 FF Trim number 8 BB-BG-OS&Y Gear operated	
4607	18				P81C-007TM	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 FF Trim number 8 BB-BG-OS&Y Gear operated	
4607	20				P81C-007TN	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 FF Trim number 8 BB-BG-OS&Y Gear operated	
4607	24				P81C-008E0	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 FF Trim number 8 BB-BG-OS&Y Gear operated	
773	2				P81R-000GW	Gate valve ASTM B148 UNS C95800 Class 300 Manufacturer-standard Flange ASME B16.5 FF Trim Aluminum-bronze BB-BG-OS&Y Handwheel operated	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82R-000A5	Globe valve ASTM B148 UNS C95800 Class 800 Manufacturer-standard NPT Trim Aluminum-bronze BB-BG-OS&Y Handwheel operated	
1	0.75				P82R-000A6	Globe valve ASTM B148 UNS C95800 Class 800 Manufacturer-standard NPT Trim Aluminum-bronze BB-BG-OS&Y Handwheel operated	
1	1				P82R-000A7	Globe valve ASTM B148 UNS C95800 Class 800 Manufacturer-standard NPT Trim Aluminum-bronze BB-BG-OS&Y Handwheel operated	
1	1.5				P82R-000A8	Globe valve ASTM B148 UNS C95800 Class 800 Manufacturer-standard NPT Trim Aluminum-bronze BB-BG-OS&Y Handwheel operated	
1	2				P82R-0009M	Globe valve ASTM B148 UNS C95800 Class 150 Manufacturer-standard Flange ASME B16.5 FF Trim Aluminum-bronze BB-BG-OS&Y Handwheel operated	
1	3				P82R-0009N	Globe valve ASTM B148 UNS C95800 Class 150 Manufacturer-standard Flange ASME B16.5 FF Trim Aluminum-bronze BB-BG-OS&Y Handwheel operated	
1	4				P82R-0009P	Globe valve ASTM B148 UNS C95800 Class 150 Manufacturer-standard Flange ASME B16.5 FF Trim Aluminum-bronze BB-BG-OS&Y Handwheel operated	
1	6				P82R-0009R	Globe valve ASTM B148 UNS C95800 Class 150 Manufacturer-standard Flange ASME B16.5 FF Trim Aluminum-bronze BB-BG-OS&Y Handwheel operated	
1	8				P82R-0009S	Globe valve ASTM B148 UNS C95800 Class 150 Manufacturer-standard Flange ASME B16.5 FF Trim Aluminum-bronze BB-BG-OS&Y Handwheel operated	
4607	2				P82C-0043M	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 FF Trim number 8 BB-BG-OS&Y Handwheel operated	
4607	3				P82C-002JV	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 FF Trim number 8 BB-BG-OS&Y Handwheel operated	
4607	4				P82C-002JW	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 FF Trim number 8 BB-BG-OS&Y Handwheel operated	
4607	6				P82C-002JX	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 FF Trim number 8 BB-BG-OS&Y Handwheel operated	
4607	8				P82C-0043N	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 FF Trim number 8 BB-BG-OS&Y Handwheel operated	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83R-000C7	Check valve ASTM B148 UNS C95800 Class 800 Manufacturer-standard NPT Trim Aluminum-bronze Lift-type Bolted cover	
1	0.75				P83R-000C8	Check valve ASTM B148 UNS C95800 Class 800 Manufacturer-standard NPT Trim Aluminum-bronze Lift-type Bolted cover	
1	1				P83R-000C9	Check valve ASTM B148 UNS C95800 Class 800 Manufacturer-standard NPT Trim Aluminum-bronze Lift-type Bolted cover	
1	1.5				P83R-000CA	Check valve ASTM B148 UNS C95800 Class 800 Manufacturer-standard NPT Trim Aluminum-bronze Lift-type Bolted cover	
1	2				P83R-000BF	Check valve ASTM B148 UNS C95800 Class 150 Manufacturer-standard Flange ASME B16.5 FF Trim Aluminum-bronze Swing-type Bolted cover	
1	3				P83R-000BH	Check valve ASTM B148 UNS C95800 Class 150 Manufacturer-standard Flange ASME B16.5 FF Trim Aluminum-bronze Swing-type Bolted cover	
1	4				P83R-000BJ	Check valve ASTM B148 UNS C95800 Class 150 Manufacturer-standard Flange ASME B16.5 FF Trim Aluminum-bronze Swing-type Bolted cover	
1	6				P83R-000BK	Check valve ASTM B148 UNS C95800 Class 150 Manufacturer-standard Flange ASME B16.5 FF Trim Aluminum-bronze Swing-type Bolted cover	
1	8				P83R-000BL	Check valve ASTM B148 UNS C95800 Class 150 Manufacturer-standard Flange ASME B16.5 FF Trim Aluminum-bronze Swing-type Bolted cover	
1	10				P83R-000BA	Check valve ASTM B148 UNS C95800 Class 150 Manufacturer-standard Flange ASME B16.5 FF Trim Aluminum-bronze Swing-type Bolted cover	
1	12				P83R-000BB	Check valve ASTM B148 UNS C95800 Class 150 Manufacturer-standard Flange ASME B16.5 FF Trim Aluminum-bronze Swing-type Bolted cover	
1	14				P83R-000BC	Check valve ASTM B148 UNS C95800 Class 150 Manufacturer-standard Flange ASME B16.5 FF Trim Aluminum-bronze Swing-type Bolted cover	
1	16				P83R-000BD	Check valve ASTM B148 UNS C95800 Class 150 Manufacturer-standard Flange ASME B16.5 FF Trim Aluminum-bronze Swing-type Bolted cover	
1	18				P83R-000BE	Check valve ASTM B148 UNS C95800 Class 150 Manufacturer-standard Flange ASME B16.5 FF Trim Aluminum-bronze Swing-type Bolted cover	
1	20				P83R-000BG	Check valve ASTM B148 UNS C95800 Class 150 Manufacturer-standard Flange ASME B16.5 FF Trim Aluminum-bronze Swing-type Bolted cover	
1	24				P83R-000BT	Check valve ASTM B148 UNS C95800 Class 150 Manufacturer-standard Flange ASME B16.5 FF Trim Aluminum-bronze Swing-type Bolted cover	

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CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
4607	2				P83C-003RB	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 FF Trim number 8 Swing-type Bolted cover	
4607	3				P83C-003RE	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 FF Trim number 8 Swing-type Bolted cover	
4607	4				P83C-003RF	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 FF Trim number 8 Swing-type Bolted cover	
4607	6				P83C-003RG	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 FF Trim number 8 Swing-type Bolted cover	
4607	8				P83C-003RH	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 FF Trim number 8 Swing-type Bolted cover	
4607	10				P83C-003R6	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 FF Trim number 8 Swing-type Bolted cover	
4607	12				P83C-003R7	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 FF Trim number 8 Swing-type Bolted cover	
4607	14				P83C-003R8	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 FF Trim number 8 Swing-type Bolted cover	
4607	16				P83C-003R9	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 FF Trim number 8 Swing-type Bolted cover	
4607	18				P83C-003RA	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 FF Trim number 8 Swing-type Bolted cover	
4607	20				P83C-003RC	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 FF Trim number 8 Swing-type Bolted cover	
4607	24				P83C-003RD	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 FF Trim number 8 Swing-type Bolted cover	

DP CHECK VALVE (XDP)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	40				P88L-001JZ	Dual plate check valve ASTM A890 Grade 5A Class 150 API 594 Wafer-type ASME B16.47-A FF Trim UNS S32750 Internal wetted parts UNS S32750 Retainerless-type	
1	44				P88L-00152	Dual plate check valve ASTM A890 Grade 5A Class 150 API 594 Wafer-type ASME B16.47-A FF Trim UNS S32750 Internal wetted parts UNS S32750 Retainerless-type	
1	48				P88L-00153	Dual plate check valve ASTM A890 Grade 5A Class 150 API 594 Wafer-type ASME B16.47-A FF Trim UNS S32750 Internal wetted parts UNS S32750 Retainerless-type	
1	52				P88L-00154	Dual plate check valve ASTM A890 Grade 5A Class 150 API 594 Wafer-type ASME B16.47-A FF Trim UNS S32750 Internal wetted parts UNS S32750 Retainerless-type	
1	56				P88L-00155	Dual plate check valve ASTM A890 Grade 5A Class 150 API 594 Wafer-type ASME B16.47-A FF Trim UNS S32750 Internal wetted parts UNS S32750 Retainerless-type	

BUTTERFLY VALVE (H)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2				P86C-001YR	Concentric butterfly valve ASTM A216 Grade WCB Class 150 API 609 Category A Lug-type ASME B16.5 FF NBR lined Disc Aluminum-bronze Trim Aluminum-bronze Wrench lever operated	
1	3				P86C-002B6	Concentric butterfly valve ASTM A216 Grade WCB Class 150 API 609 Category A Lug-type ASME B16.5 FF NBR lined Disc Aluminum-bronze Trim Aluminum-bronze Wrench lever operated	
1	4				P86C-002B7	Concentric butterfly valve ASTM A216 Grade WCB Class 150 API 609 Category A Lug-type ASME B16.5 FF NBR lined Disc Aluminum-bronze Trim Aluminum-bronze Wrench lever operated	
1	6				P86C-002A7	Concentric butterfly valve ASTM A216 Grade WCB Class 150 API 609 Category A Lug-type ASME B16.5 FF NBR lined Disc Aluminum-bronze Trim Aluminum-bronze Gear operated	
1	8				P86C-002A8	Concentric butterfly valve ASTM A216 Grade WCB Class 150 API 609 Category A Lug-type ASME B16.5 FF NBR lined Disc Aluminum-bronze Trim Aluminum-bronze Gear operated	
1	10				P86C-002A2	Concentric butterfly valve ASTM A216 Grade WCB Class 150 API 609 Category A Lug-type ASME B16.5 FF NBR lined Disc Aluminum-bronze Trim Aluminum-bronze Gear operated	
1	12				P86C-002A3	Concentric butterfly valve ASTM A216 Grade WCB Class 150 API 609 Category A Lug-type ASME B16.5 FF NBR lined Disc Aluminum-bronze Trim Aluminum-bronze Gear operated	
1	14				P86C-002A4	Concentric butterfly valve ASTM A216 Grade WCB Class 150 API 609 Category A Lug-type ASME B16.5 FF NBR lined Disc Aluminum-bronze Trim Aluminum-bronze Gear operated	
1	16				P86C-002A5	Concentric butterfly valve ASTM A216 Grade WCB Class 150 API 609 Category A Lug-type ASME B16.5 FF NBR lined Disc Aluminum-bronze Trim Aluminum-bronze Gear operated	
1	18				P86C-002A6	Concentric butterfly valve ASTM A216 Grade WCB Class 150 API 609 Category A Lug-type ASME B16.5 FF NBR lined Disc Aluminum-bronze Trim Aluminum-bronze Gear operated	
1	20				P86C-002SC	Concentric butterfly valve ASTM A216 Grade WCB Class 150 API 609 Category A Double flanged ASME B16.5 FF NBR lined Disc Aluminum-bronze Trim Aluminum-bronze Gear operated	
1	24				P86C-002SD	Concentric butterfly valve ASTM A216 Grade WCB Class 150 API 609 Category A Double flanged ASME B16.5 FF NBR lined Disc Aluminum-bronze Trim Aluminum-bronze Gear operated	
1	30				P86C-0022G	Concentric butterfly valve ASTM A216 Grade WCB Class 150 API 609 Category A Double flanged ASME B16.47-A FF NBR lined Disc Aluminum-bronze Trim Aluminum-bronze Gear operated	
1	32				P86C-002B8	Concentric butterfly valve ASTM A216 Grade WCB Class 150 API 609 Category A Double flanged ASME B16.47-A FF NBR lined Disc Aluminum-bronze Trim Aluminum-bronze Gear operated	
1	36				P86C-002B9	Concentric butterfly valve ASTM A216 Grade WCB Class 150 API 609 Category A Double flanged ASME B16.47-A FF NBR lined Disc Aluminum-bronze Trim Aluminum-bronze Gear operated	
1	40				P86C-002BA	Concentric butterfly valve ASTM A216 Grade WCB Class 150 API 609 Category A Double flanged ASME B16.47-A FF NBR lined Disc Aluminum-bronze Trim Aluminum-bronze Gear operated	

NEEDLE VALVE (NV)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82R-000A9	Needle valve ASTM B148 UNS C95800 Class 800 Manufacturer-standard NPT Trim Aluminum-bronze BB-BG-OS&Y Handwheel operated	

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ORIFICE FLANGE (FO)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2		MFR_STD		P66N-0000X	Orifice flange WN Glass reinforced plastic Class 300 ASME B16.36 FF NPS1/2 NPT tap x 1	
1	3		MFR_STD		P66N-0000Y	Orifice flange WN Glass reinforced plastic Class 300 ASME B16.36 FF NPS1/2 NPT tap x 1	
1	4		MFR_STD		P66N-0000Z	Orifice flange WN Glass reinforced plastic Class 300 ASME B16.36 FF NPS1/2 NPT tap x 1	
1	6		MFR_STD		P66N-00010	Orifice flange WN Glass reinforced plastic Class 300 ASME B16.36 FF NPS1/2 NPT tap x 1	
1	8		MFR_STD		P66N-00011	Orifice flange WN Glass reinforced plastic Class 300 ASME B16.36 FF NPS1/2 NPT tap x 1	
1	10		MFR_STD		P66N-0000W	Orifice flange WN Glass reinforced plastic Class 300 ASME B16.36 FF NPS1/2 NPT tap x 1	
200	2		MFR_STD		P66N-00013	Orifice flange WN Glass reinforced plastic Class 300 ASME B16.36 FF NPS1/2 NPT tap x 1 with Jack screw	
200	3		MFR_STD		P66N-00014	Orifice flange WN Glass reinforced plastic Class 300 ASME B16.36 FF NPS1/2 NPT tap x 1 with Jack screw	
200	4		MFR_STD		P66N-00015	Orifice flange WN Glass reinforced plastic Class 300 ASME B16.36 FF NPS1/2 NPT tap x 1 with Jack screw	
200	6		MFR_STD		P66N-00016	Orifice flange WN Glass reinforced plastic Class 300 ASME B16.36 FF NPS1/2 NPT tap x 1 with Jack screw	
200	8		MFR_STD		P66N-00017	Orifice flange WN Glass reinforced plastic Class 300 ASME B16.36 FF NPS1/2 NPT tap x 1 with Jack screw	
200	10		MFR_STD		P66N-00012	Orifice flange WN Glass reinforced plastic Class 300 ASME B16.36 FF NPS1/2 NPT tap x 1 with Jack screw	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2				P71K-000FS	Spectacle blank ASTM A182 Grade F51 Class 150 Standard-drawing Flange ASME B16.5 FF	
1	3				P71K-000FT	Spectacle blank ASTM A182 Grade F51 Class 150 Standard-drawing Flange ASME B16.5 FF	
1	4				P71K-000FU	Spectacle blank ASTM A182 Grade F51 Class 150 Standard-drawing Flange ASME B16.5 FF	
1	6				P71K-000FV	Spectacle blank ASTM A182 Grade F51 Class 150 Standard-drawing Flange ASME B16.5 FF	
1	8				P71K-000FW	Spectacle blank ASTM A182 Grade F51 Class 150 Standard-drawing Flange ASME B16.5 FF	
1	10				P71K-000FP	Spectacle blank ASTM A182 Grade F51 Class 150 Standard-drawing Flange ASME B16.5 FF	
1	12				P71K-000FR	Spectacle blank ASTM A182 Grade F51 Class 150 Standard-drawing Flange ASME B16.5 FF	

PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72K-000KN	Paddle blank ASTM A182 Grade F51 Class 150 Standard-drawing Flange ASME B16.5 FF	
1	16				P72K-000KP	Paddle blank ASTM A182 Grade F51 Class 150 Standard-drawing Flange ASME B16.5 FF	
1	18				P72K-000KR	Paddle blank ASTM A182 Grade F51 Class 150 Standard-drawing Flange ASME B16.5 FF	
1	20				P72K-000KS	Paddle blank ASTM A182 Grade F51 Class 150 Standard-drawing Flange ASME B16.5 FF	
1	24				P72K-000KT	Paddle blank ASTM A182 Grade F51 Class 150 Standard-drawing Flange ASME B16.5 FF	
1	30				P72K-000HZ	Paddle blank ASTM A182 Grade F51 Class 150 Standard-drawing Flange ASME B16.47-A FF	
1	32				P72K-000J1	Paddle blank ASTM A182 Grade F51 Class 150 Standard-drawing Flange ASME B16.47-A FF	
1	36				P72K-000J2	Paddle blank ASTM A182 Grade F51 Class 150 Standard-drawing Flange ASME B16.47-A FF	
1	40				P72K-000J3	Paddle blank ASTM A182 Grade F51 Class 150 Standard-drawing Flange ASME B16.47-A FF	
1	44				P72K-000J4	Paddle blank ASTM A182 Grade F51 Class 150 Standard-drawing Flange ASME B16.47-A FF	
1	48				P72K-000J5	Paddle blank ASTM A182 Grade F51 Class 150 Standard-drawing Flange ASME B16.47-A FF	
1	52				P72K-000J6	Paddle blank ASTM A182 Grade F51 Class 150 Standard-drawing Flange ASME B16.47-A FF	
1	56				P72K-000J7	Paddle blank ASTM A182 Grade F51 Class 150 Standard-drawing Flange ASME B16.47-A FF	
1	60				P72K-000J8	Paddle blank ASTM A182 Grade F51 Class 150 Standard-drawing Flange ASME B16.47-A FF	

PADDLE SPACER (PS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72K-000KU	Paddle spacer ASTM A182 Grade F51 Class 150 Standard-drawing Flange ASME B16.5 FF	
1	16				P72K-000KV	Paddle spacer ASTM A182 Grade F51 Class 150 Standard-drawing Flange ASME B16.5 FF	
1	18				P72K-000KW	Paddle spacer ASTM A182 Grade F51 Class 150 Standard-drawing Flange ASME B16.5 FF	
1	20				P72K-000KX	Paddle spacer ASTM A182 Grade F51 Class 150 Standard-drawing Flange ASME B16.5 FF	
1	24				P72K-000KY	Paddle spacer ASTM A182 Grade F51 Class 150 Standard-drawing Flange ASME B16.5 FF	
1	30				P72K-000J0	Paddle spacer ASTM A182 Grade F51 Class 150 Standard-drawing Flange ASME B16.47-A FF	
1	32				P72K-000J9	Paddle spacer ASTM A182 Grade F51 Class 150 Standard-drawing Flange ASME B16.47-A FF	
1	36				P72K-000JA	Paddle spacer ASTM A182 Grade F51 Class 150 Standard-drawing Flange ASME B16.47-A FF	
1	40				P72K-000JB	Paddle spacer ASTM A182 Grade F51 Class 150 Standard-drawing Flange ASME B16.47-A FF	
1	44				P72K-000JC	Paddle spacer ASTM A182 Grade F51 Class 150 Standard-drawing Flange ASME B16.47-A FF	
1	48				P72K-000JD	Paddle spacer ASTM A182 Grade F51 Class 150 Standard-drawing Flange ASME B16.47-A FF	
1	52				P72K-000JE	Paddle spacer ASTM A182 Grade F51 Class 150 Standard-drawing Flange ASME B16.47-A FF	
1	56				P72K-000JF	Paddle spacer ASTM A182 Grade F51 Class 150 Standard-drawing Flange ASME B16.47-A FF	
1	60				P72K-000JG	Paddle spacer ASTM A182 Grade F51 Class 150 Standard-drawing Flange ASME B16.47-A FF	

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ADAPTOR (ADP)							
OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	4				P51N-0007V	Adaptor Glass reinforced plastic Manufacturer-standard Adhesive joint Spigot ends Fluid-1	
1	6				P51N-0007W	Adaptor Glass reinforced plastic Manufacturer-standard Adhesive joint Spigot ends Fluid-1	
1	8				P51N-0007X	Adaptor Glass reinforced plastic Manufacturer-standard Adhesive joint Spigot ends Fluid-1	
1	10				P51N-0007M	Adaptor Glass reinforced plastic Manufacturer-standard Adhesive joint Spigot ends Fluid-1	
1	12				P51N-0007N	Adaptor Glass reinforced plastic Manufacturer-standard Adhesive joint Spigot ends Fluid-1	
1	14				P51N-0007P	Adaptor Glass reinforced plastic Manufacturer-standard Adhesive joint Spigot ends Fluid-1	
1	16				P51N-0007R	Adaptor Glass reinforced plastic Manufacturer-standard Adhesive joint Spigot ends Fluid-1	
1	18				P51N-0007S	Adaptor Glass reinforced plastic Manufacturer-standard Adhesive joint Spigot ends Fluid-1	
1	20				P51N-0007T	Adaptor Glass reinforced plastic Manufacturer-standard Adhesive joint Spigot ends Fluid-1	
1	24				P51N-0007U	Adaptor Glass reinforced plastic Manufacturer-standard Adhesive joint Spigot ends Fluid-1	
4209	4				P51N-00085	Adaptor Glass reinforced plastic Manufacturer-standard Mechanical joint Spigot end and Adhesive joint Spigot end Fluid-1	
4209	6				P51N-00086	Adaptor Glass reinforced plastic Manufacturer-standard Mechanical joint Spigot end and Adhesive joint Spigot end Fluid-1	
4209	8				P51N-00087	Adaptor Glass reinforced plastic Manufacturer-standard Mechanical joint Spigot end and Adhesive joint Spigot end Fluid-1	
4209	10				P51N-0007Y	Adaptor Glass reinforced plastic Manufacturer-standard Mechanical joint Spigot end and Adhesive joint Spigot end Fluid-1	
4209	12				P51N-0007Z	Adaptor Glass reinforced plastic Manufacturer-standard Mechanical joint Spigot end and Adhesive joint Spigot end Fluid-1	
4209	14				P51N-00080	Adaptor Glass reinforced plastic Manufacturer-standard Mechanical joint Spigot end and Adhesive joint Spigot end Fluid-1	
4209	16				P51N-00081	Adaptor Glass reinforced plastic Manufacturer-standard Mechanical joint Spigot end and Adhesive joint Spigot end Fluid-1	
4209	18				P51N-00082	Adaptor Glass reinforced plastic Manufacturer-standard Mechanical joint Spigot end and Adhesive joint Spigot end Fluid-1	
4209	20				P51N-00083	Adaptor Glass reinforced plastic Manufacturer-standard Mechanical joint Spigot end and Adhesive joint Spigot end Fluid-1	
4209	24				P51N-00084	Adaptor Glass reinforced plastic Manufacturer-standard Mechanical joint Spigot end and Adhesive joint Spigot end Fluid-1	
4210	4				P51N-0008F	Adaptor Glass reinforced plastic Manufacturer-standard Mechanical joint Spigot end and Adhesive joint Bell end Fluid-1	
4210	6				P51N-0008G	Adaptor Glass reinforced plastic Manufacturer-standard Mechanical joint Spigot end and Adhesive joint Bell end Fluid-1	
4210	8				P51N-0008H	Adaptor Glass reinforced plastic Manufacturer-standard Mechanical joint Spigot end and Adhesive joint Bell end Fluid-1	
4210	10				P51N-00088	Adaptor Glass reinforced plastic Manufacturer-standard Mechanical joint Spigot end and Adhesive joint Bell end Fluid-1	
4210	12				P51N-00089	Adaptor Glass reinforced plastic Manufacturer-standard Mechanical joint Spigot end and Adhesive joint Bell end Fluid-1	
4210	14				P51N-0008A	Adaptor Glass reinforced plastic Manufacturer-standard Mechanical joint Spigot end and Adhesive joint Bell end Fluid-1	
4210	16				P51N-0008B	Adaptor Glass reinforced plastic Manufacturer-standard Mechanical joint Spigot end and Adhesive joint Bell end Fluid-1	
4210	18				P51N-0008C	Adaptor Glass reinforced plastic Manufacturer-standard Mechanical joint Spigot end and Adhesive joint Bell end Fluid-1	
4210	20				P51N-0008D	Adaptor Glass reinforced plastic Manufacturer-standard Mechanical joint Spigot end and Adhesive joint Bell end Fluid-1	
4210	24				P51N-0008E	Adaptor Glass reinforced plastic Manufacturer-standard Mechanical joint Spigot end and Adhesive joint Bell end Fluid-1	

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BOLT TABLE (B_S0CW , MACHINE ASME FF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	60	P80S-01S7C		
0.75	4	0.500	60	P80S-01S7C		
1	4	0.500	65	P80S-01S7D		
1.5	4	0.500	70	P80S-01S7E		
2	4	0.625	155	P80S-01S7Y		
3	4	0.625	155	P80S-01S7Y		
4	8	0.625	155	P80S-01S7Y		
6	8	0.750	220	P80S-01SA0		
8	8	0.750	220	P80S-01SA0		
10	12	0.875	285	P80S-01SC8		
12	12	0.875	350	P80S-041G4		
14	12	1.000	355	P80S-041G5		
16	16	1.000	415	P80S-041G6		
18	16	1.125	420	P80S-01SGD		
20	20	1.125	485	P80S-041G7		
24	20	1.250	550	P80S-041DH		
26	24	1.250	305	P80S-01SHX		
30	28	1.250	370	P80S-01SJA		
32	28	1.500	440	P80S-041G8		
36	32	1.500	505	P80S-041G9		
40	36	1.500	505	P80S-041G9		
44	40	1.500	330	P80S-041D1		
48	44	1.500	345	P80S-041D2		
52	44	1.750	370	P80S-041D3		
56	48	1.750	390	P80S-041D4		
60	52	1.750	405	P80S-041D5		
64	52	1.750	420	P80S-041D6		
68	60	1.750	435	P80S-041D7		
72	60	1.750	465			
76	64	2.000	490	P80S-041D8		
84	64	2.000	520	P80S-041D9		
96	68	2.250	575	P80S-041DA		
100			0			
104	72	2.500	620	P80S-041DB		
116	76	2.750	675	P80S-041DC		

BOLT TABLE (B_S0CW_773 , MACHINE ASME FF, OPTION CODE 773)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
2	8	0.625	85	P80S-01S95		
3	8	0.750	105	P80S-01S99		
4	8	0.750	110	P80S-01S9A		
6	12	0.750	120	P80S-01S9C		
8	12	0.875	135			
10	16	1.000	155			

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BRANCH TABLE (T_S0CW)

RUN PIPE SIZE (in)

	0.5	0.75	1	1.5	2	3	4	6	8	10	12	14	16	18	20	24	26	30	32	36	40	44	48	52	56	60	64	68	72	76	84
0.5	TS																														
0.75		TS																													
1		TR	TS																												
1.5		TR	TR	TS																											
2			TR	TR	TS																										
3				TR	TR	TS																									
4					TR	TR	TS																								
6					TR	TR	TR	TS																							
8					TR	TR	TR	TR	TS																						
10					TR	TR	TR	TR	TR	TS																					
12					TR	TR	TR	TR	TR	TR	TS																				
14					TR	TR	TR	TR	TR	TR	TR	TS																			
16					TR	TR	TR	TR	TR	TR	TR	TR	TS																		
18					TR	TR	TR	TR	TR	TR	TR	TR	TR	TS																	
20					TR	TR	TR	TR	TR	TR	TR	TR	TR	TR	TS																
24					TR	TR	TR	TR	TR	TR	TR	TR	TR	TR	TR	TS															
26					SD	SD	TR	TR	TR	TR	TR	TR	TR	TR	TR	TR	TS														
30					SD	SD	TR	TR	TR	TR	TR	TR	TR	TR	TR	TR	TR	TS													
32					SD	SD	TR	TR	TR	TR	TR	TR	TR	TR	TR	TR	TR	TR	TS												
36					SD	SD	TR	TR	TR	TR	TR	TR	TR	TR	TR	TR	TR	TR	TR	TS											
40					SD	SD	TR	TR	TR	TR	TR	TR	TR	TR	TR	TR	TR	TR	TR	TR	TS										
44					TR	TR	TR	TR	TR	TR	TR	TR	TR	TR	TR	TR	TR	TR	TR	TR	TR	TS									
48					TR	TR	TR	TR	TR	TR	TR	TR	TR	TR	TR	TR	TR	TR	TR	TR	TR	TR	TS								
52					TR	TR	TR	TR	TR	TR	TR	TR	TR	TR	TR	TR	TR	TR	TR	TR	TR	TR	TR	TS							
56					TR	TR	TR	TR	TR	TR	TR	TR	TR	TR	TR	TR	TR	TR	TR	TR	TR	TR	TR	TR	TS						
60					TR	TR	TR	TR	TR	TR	TR	TR	TR	TR	TR	TR	TR	TR	TR	TR	TR	TR	TR	TR	TR	TS					
64					TR	TR	TR	TR	TR	TR	TR	TR	TR	TR	TR	TR	TR	TR	TR	TR	TR	TR	TR	TR	TR	TR	TS				
68					TR	TR	TR	TR	TR	TR	TR	TR	TR	TR	TR	TR	TR	TR	TR	TR	TR	TR	TR	TR	TR	TR	TR	TS			
72																															
76					TR	TR	TR	TR	TR	TR	TR	TR	TR	TR	TR	TR	TR	TR	TR	TR	TR	TR	TR	TR	TR	TR	TR	TR	TR	TS	
84					TR	TR	TR	TR	TR	TR	TR	TR	TR	TR	TR	TR	TR	TR	TR	TR	TR	TR	TR	TR	TR	TR	TR	TR	TR	TR	TS
96					TR	TR	TR	TR	TR	TR	TR	TR	TR	TR	TR	TR	TR	TR	TR	TR	TR	TR	TR	TR	TR	TR	TR	TR	TR	TR	TR
100																															
104					TR	TR	TR	TR	TR	TR	TR	TR	TR	TR	TR	TR	TR	TR	TR	TR	TR	TR	TR	TR	TR	TR	TR	TR	TR	TR	TR
116					TR	TR	TR	TR	TR	TR	TR	TR	TR	TR	TR	TR	TR	TR	TR	TR	TR	TR	TR	TR	TR	TR	TR	TR	TR	TR	TR

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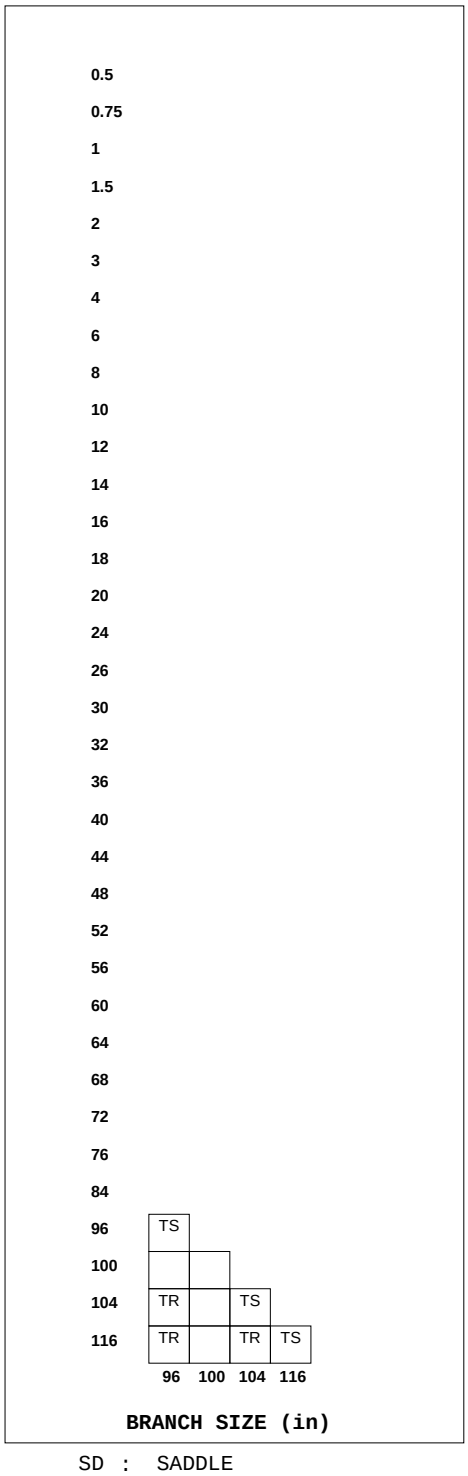

SD : SADDLE
TS : STRAIGHT TEE
TR : REDUCING TEE

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PIPING CLASS
S0CW REV NO. 2

BRANCH TABLE (T_S0CW_2)

RUN PIPE SIZE (in)

	0.5	0.75	1	1.5	2	3	4	6	8	10	12	14	16	18	20	24	26	30	32	36	40	44	48	52	56	60	64	68	72	76	84
0.5	TLS																														
0.75		TLS																													
1			TLS																												
1.5				TLS																											
2					TLS																										
3						TLS																									
4							TLS																								
6					TLR		TLR	TLS																							
8						TLR	TLR		TLS																						
10										TLS																					
12									TLR		TLS																				
14											TLR	TLS																			
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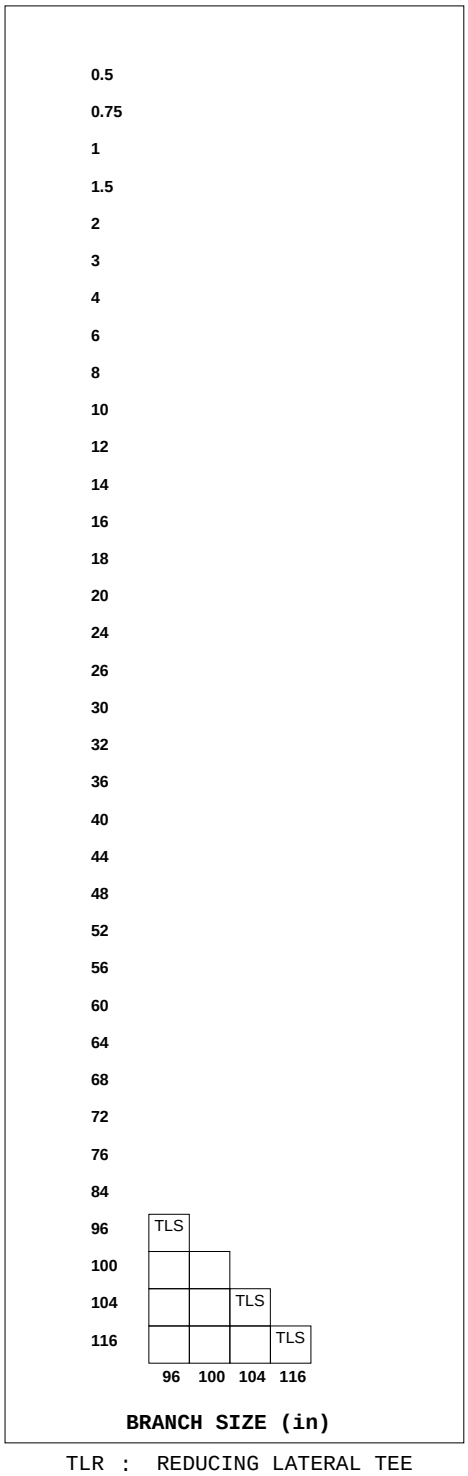
PIPING CLASS

S0CW REV NO. 2



TLR : REDUCING LATERAL TEE
TLS : STRAIGHT LATERAL TEE

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PIPING CLASS

S0RA **REV NO. 2**

Material : Killed CS (Galv.)
Rating : ASME CLASS 150
Flange Face : RF/FF
C.A.(mm) : 0.00
Gasket : Spiral Wound
Service : UTILITY - NON HYDROCARBON, CATEGORY D" FLUID : " / INSTRUMENT AIR <= 1 1/2 NB

Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
12	GALVANISED COATING SHALL BE IN ACCORDANCE WITH PROJECT STANDARD 3550-8440-SP-0008

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
200	WITH JACK SCREW (FO)
773	CLASS 300 (B,F,G,SB)
781	CLASS 600 (B,F,G)
2484	CLASS 300 RF (F,G)

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PIPING CLASS
S0RA REV NO. 2

PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P01A-000X3	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M NPT Galvanized	
1	0.75		XS		P01A-000X6	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M NPT Galvanized	
1	1		XS		P01A-000X7	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M NPT Galvanized	
1	1.5		XS		P01A-000XC	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M NPT Galvanized	
1	2		XS		P01A-000YX	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	3		STD		P01A-000YM	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	4		STD		P01A-000YU	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	6		STD		P01A-000Z3	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	8		SCH20		P01A-001AT	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	
1	10		SCH20		P01A-0014Y	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P02B-0001H	90 degree elbow ASTM A105 Class 3000 ASME B16.11 NPT Galvanized	
1	0.75				P02B-0001D	90 degree elbow ASTM A105 Class 3000 ASME B16.11 NPT Galvanized	
1	1				P02B-0001E	90 degree elbow ASTM A105 Class 3000 ASME B16.11 NPT Galvanized	
1	1.5				P02B-0001F	90 degree elbow ASTM A105 Class 3000 ASME B16.11 NPT Galvanized	
1	2		XS		P02A-000CP	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		STD		P02A-000CU	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		STD		P02A-000CZ	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		STD		P02A-000D6	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		SCH20		P02A-000GZ	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	10		SCH20		P02A-000H1	90 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P03B-00012	45 degree elbow ASTM A105 Class 3000 ASME B16.11 NPT Galvanized	
1	0.75				P03B-00013	45 degree elbow ASTM A105 Class 3000 ASME B16.11 NPT Galvanized	
1	1				P03B-00014	45 degree elbow ASTM A105 Class 3000 ASME B16.11 NPT Galvanized	
1	1.5				P03B-00015	45 degree elbow ASTM A105 Class 3000 ASME B16.11 NPT Galvanized	
1	2		XS		P03A-000AS	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	3		STD		P03A-000AX	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	4		STD		P03A-000B1	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	6		STD		P03A-000B9	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	8		SCH20		P03A-000EX	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	
1	10		SCH20		P03A-000F0	45 degree elbow ASTM A234 Grade WPB Seamless ASME B16.9 BW Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P21B-0002D	Straight tee ASTM A105 Class 3000 ASME B16.11 NPT Galvanized	
1	0.75				P21B-0002E	Straight tee ASTM A105 Class 3000 ASME B16.11 NPT Galvanized	
1	1				P21B-0002F	Straight tee ASTM A105 Class 3000 ASME B16.11 NPT Galvanized	
1	1.5				P21B-0002G	Straight tee ASTM A105 Class 3000 ASME B16.11 NPT Galvanized	
1	2		XS		P21A-001CJ	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		STD		P21A-001CU	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		STD		P21A-001CW	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6		STD		P21A-001D2	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8		SCH20		P21A-00215	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10		SCH20		P21A-00219	Straight tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5			P24B-00029	Reducing tee ASTM A105 Class 3000 ASME B16.11 NPT Galvanized	
1	1	0.5			P24B-00027	Reducing tee ASTM A105 Class 3000 ASME B16.11 NPT Galvanized	
1	1	0.75			P24B-00028	Reducing tee ASTM A105 Class 3000 ASME B16.11 NPT Galvanized	
1	1.5	0.5			P24B-0002A	Reducing tee ASTM A105 Class 3000 ASME B16.11 NPT Galvanized	
1	1.5	0.75			P24B-0002B	Reducing tee ASTM A105 Class 3000 ASME B16.11 NPT Galvanized	
1	1.5	1			P24B-0002C	Reducing tee ASTM A105 Class 3000 ASME B16.11 NPT Galvanized	

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REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	STD	XS	P24A-002HW	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P24A-002HY	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P24A-0021K	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	STD	P24A-0021A	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P24A-00229	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH20	STD	P24A-00J21	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH20	STD	P24A-005J4	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	SCH20	STD	P24A-00HMB	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	SCH20	STD	P24A-00HKS	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	SCH20	SCH20	P24A-002YX	Reducing tee ASTM A234 Grade WPB Seamless ASME B16.9 BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	STD	XS	P27A-001MZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P27A-001N0	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P27A-00189	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	STD	P27A-001AZ	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P27A-001GW	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH20	STD	P27A-003K2	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH20	STD	P27A-003K3	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	SCH20	STD	P27A-003K4	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	SCH20	STD	P27A-003K5	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	SCH20	SCH20	P27A-001UL	Concentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	STD	XS	P28A-001N5	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	2	STD	XS	P28A-001N6	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4	3	STD	STD	P28A-0018B	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	3	STD	STD	P28A-001AS	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6	4	STD	STD	P28A-00182	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	4	SCH20	STD	P28A-003JU	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8	6	SCH20	STD	P28A-003JV	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	4	SCH20	STD	P28A-003JW	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	6	SCH20	STD	P28A-003JX	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10	8	SCH20	SCH20	P28A-001V0	Eccentric reducer ASTM A234 Grade WPB Seamless ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P29B-0001P	Cap ASTM A105 Class 3000 ASME B16.11 NPT Galvanized	
1	0.75				P29B-0001R	Cap ASTM A105 Class 3000 ASME B16.11 NPT Galvanized	
1	1				P29B-0001S	Cap ASTM A105 Class 3000 ASME B16.11 NPT Galvanized	
1	1.5				P29B-0001T	Cap ASTM A105 Class 3000 ASME B16.11 NPT Galvanized	
1	2		XS		P29A-000A1	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	3		STD		P29A-000BK	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	4		STD		P29A-000A3	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	6		STD		P29A-000A9	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	8		SCH20		P29A-000EY	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	
1	10		SCH20		P29A-000E5	Cap ASTM A234 Grade WPB Seamless ASME B16.9 BW	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P41A-000VA	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M NPT - NPT Galvanized L=100mm	
1	0.75		XS		P41A-000VB	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M NPT - NPT Galvanized L=100mm	
1	1		XS		P41A-000VC	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M NPT - NPT Galvanized L=100mm	
1	1.5		XS		P41A-000VD	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M NPT - NPT Galvanized L=100mm	

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CON SWAGED NIPPLE (SNC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	XS	XS	P42A-0002J	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 NPT(L) - NPT(S) Galvanized	
1	1	0.5	XS	XS	P42A-0002E	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 NPT(L) - NPT(S) Galvanized	
1	1	0.75	XS	XS	P42A-0002K	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 NPT(L) - NPT(S) Galvanized	
1	1.5	0.5	XS	XS	P42A-0002M	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 NPT(L) - NPT(S) Galvanized	
1	1.5	0.75	XS	XS	P42A-0002T	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 NPT(L) - NPT(S) Galvanized	
1	1.5	1	XS	XS	P42A-0002W	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 NPT(L) - NPT(S) Galvanized	
1	2	0.5	XS	XS	P42A-000NA	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - NPT(S) Galvanized	
1	2	0.75	XS	XS	P42A-000NB	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - NPT(S) Galvanized	
1	2	1	XS	XS	P42A-000NC	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - NPT(S) Galvanized	
1	2	1.5	XS	XS	P42A-000ND	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - NPT(S) Galvanized	
1	3	1.5	STD	XS	P42A-000BK	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - NPT(S) Galvanized	

ECC SWAGED NIPPLE (SNE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	XS	XS	P43A-0004P	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 NPT(L) - NPT(S) Galvanized	
1	1	0.5	XS	XS	P43A-0004R	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 NPT(L) - NPT(S) Galvanized	
1	1	0.75	XS	XS	P43A-0004S	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 NPT(L) - NPT(S) Galvanized	
1	1.5	0.5	XS	XS	P43A-0004T	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 NPT(L) - NPT(S) Galvanized	
1	1.5	0.75	XS	XS	P43A-0004U	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 NPT(L) - NPT(S) Galvanized	
1	1.5	1	XS	XS	P43A-0004V	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 NPT(L) - NPT(S) Galvanized	
1	2	0.5	XS	XS	P43A-000F5	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - NPT(S) Galvanized	
1	2	0.75	XS	XS	P43A-000F6	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - NPT(S) Galvanized	
1	2	1	XS	XS	P43A-000F7	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - NPT(S) Galvanized	
1	2	1.5	XS	XS	P43A-000F8	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - NPT(S) Galvanized	
1	3	1.5	STD	XS	P43A-0005S	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 BE(L) - NPT(S) Galvanized	

UNION (UN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P49B-0000B	Union ASTM A105 Class 3000 MSS SP-83 NPT Galvanized	
1	0.75				P49B-0000C	Union ASTM A105 Class 3000 MSS SP-83 NPT Galvanized	
1	1				P49B-0000D	Union ASTM A105 Class 3000 MSS SP-83 NPT Galvanized	
1	1.5				P49B-0000E	Union ASTM A105 Class 3000 MSS SP-83 NPT Galvanized	

COUPLING (CPS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P47B-00014	Coupling ASTM A105 Class 3000 ASME B16.11 NPT - NPT Galvanized	
1	0.75				P47B-00015	Coupling ASTM A105 Class 3000 ASME B16.11 NPT - NPT Galvanized	
1	1				P47B-00016	Coupling ASTM A105 Class 3000 ASME B16.11 NPT - NPT Galvanized	
1	1.5				P47B-00017	Coupling ASTM A105 Class 3000 ASME B16.11 NPT - NPT Galvanized	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2 - 2.5	0.75			P31B-01381	Outlet ASTM A105 Class 3000 MSS SP-97 NPT Galvanized	
1	3 - 5	0.75			P31B-01382	Outlet ASTM A105 Class 3000 MSS SP-97 NPT Galvanized	
1	6 - 12	0.75			P31B-00E3W	Outlet ASTM A105 Class 3000 MSS SP-97 NPT Galvanized	
1	2	1			P31B-00DSD	Outlet ASTM A105 Class 3000 MSS SP-97 NPT Galvanized	
1	3	1			P31B-00E3S	Outlet ASTM A105 Class 3000 MSS SP-97 NPT Galvanized	
1	4 - 5	1			P31B-01383	Outlet ASTM A105 Class 3000 MSS SP-97 NPT Galvanized	
1	6 - 10	1			P31B-00E3N	Outlet ASTM A105 Class 3000 MSS SP-97 NPT Galvanized	
1	2	1.5			P31B-0058F	Outlet ASTM A105 Class 3000 MSS SP-97 NPT Galvanized	
1	3	1.5			P31B-00DSE	Outlet ASTM A105 Class 3000 MSS SP-97 NPT Galvanized	
1	4	1.5			P31B-005U5	Outlet ASTM A105 Class 3000 MSS SP-97 NPT Galvanized	
1	5 - 6	1.5			P31B-01384	Outlet ASTM A105 Class 3000 MSS SP-97 NPT Galvanized	
1	8 - 12	1.5			P31B-00E32	Outlet ASTM A105 Class 3000 MSS SP-97 NPT Galvanized	
1	6	2	STD	XS	P31B-007SH	Outlet ASTM A105 MSS SP-97 BW	
1	8	2	SCH20	XS	P31B-00NY2	Outlet ASTM A105 MSS SP-97 BW	
1	8	2	SCH20	XS	P31B-00TFB	Outlet ASTM A105 MSS SP-97 BW	
1	8	3	SCH20	STD	P31B-00P11	Outlet ASTM A105 MSS SP-97 BW	

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OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	10	3	SCH20	STD	P31B-00UPG	Outlet ASTM A105 MSS SP-97 BW	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30B-0002H	Plug ASTM A105 ASME B16.11 NPT Galvanized Round head	
1	0.75				P30B-0002J	Plug ASTM A105 ASME B16.11 NPT Galvanized Round head	
1	1				P30B-0002K	Plug ASTM A105 ASME B16.11 NPT Galvanized Round head	
1	1.5				P30B-0002L	Plug ASTM A105 ASME B16.11 NPT Galvanized Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P61B-002Z7	Flange NPT ASTM A105 Class 150 ASME B16.5 FF Galvanized	
1	0.75				P61B-002Z8	Flange NPT ASTM A105 Class 150 ASME B16.5 FF Galvanized	
1	1				P61B-002LK	Flange NPT ASTM A105 Class 150 ASME B16.5 FF Galvanized	
1	1.5				P61B-002LL	Flange NPT ASTM A105 Class 150 ASME B16.5 FF Galvanized	
1	2		XS		P61B-003NK	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	3		STD		P61B-001PW	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	4		STD		P61B-001R8	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	6		STD		P61B-001RT	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	8		SCH20		P61B-002BF	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
1	10		SCH20		P61B-002B4	Flange WN ASTM A105 Class 150 ASME B16.5 RF	
2484	0.75				P61B-001VC	Flange NPT ASTM A105 Class 300 ASME B16.5 RF Galvanized	
773	0.5				P61B-005SS	Flange NPT ASTM A105 Class 300 ASME B16.5 FF Galvanized	
773	0.75				P61B-005ST	Flange NPT ASTM A105 Class 300 ASME B16.5 FF Galvanized	
773	1				P61B-005SU	Flange NPT ASTM A105 Class 300 ASME B16.5 FF Galvanized	
773	1.5				P61B-005SV	Flange NPT ASTM A105 Class 300 ASME B16.5 FF Galvanized	
773	2		XS		P61B-001HW	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	3		STD		P61B-001LJ	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	4		STD		P61B-001MC	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	6		STD		P61B-001N2	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	8		SCH20		P61B-002LJ	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
773	10		SCH20		P61B-002LH	Flange WN ASTM A105 Class 300 ASME B16.5 RF	
781	0.5				P61B-007NF	Flange NPT ASTM A105 Class 600 ASME B16.5 RF Galvanized	
781	0.75				P61B-007NG	Flange NPT ASTM A105 Class 600 ASME B16.5 RF Galvanized	
781	1				P61B-00D10	Flange NPT ASTM A105 Class 600 ASME B16.5 RF Galvanized	
781	1.5				P61B-00D11	Flange NPT ASTM A105 Class 600 ASME B16.5 RF Galvanized	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67B-00151	Blind flange ASTM A105 Class 150 ASME B16.5 FF Galvanized	
1	0.75				P67B-00150	Blind flange ASTM A105 Class 150 ASME B16.5 FF Galvanized	
1	1				P67B-0014Z	Blind flange ASTM A105 Class 150 ASME B16.5 FF Galvanized	
1	1.5				P67B-0014Y	Blind flange ASTM A105 Class 150 ASME B16.5 FF Galvanized	
1	2				P67B-000FT	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	3				P67B-000FW	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	4				P67B-000FX	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	6				P67B-000FY	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	8				P67B-000FZ	Blind flange ASTM A105 Class 150 ASME B16.5 RF	
1	10				P67B-000FM	Blind flange ASTM A105 Class 150 ASME B16.5 RF	

REDUCING FLANGE (FR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2	0.75			P62B-0003Z	Reducing flange NPT ASTM A105 Class 150 ASME B16.5 RF	
1	2	1			P62B-00085	Reducing flange NPT ASTM A105 Class 150 ASME B16.5 RF	
1	2	1.5			P62B-00096	Reducing flange NPT ASTM A105 Class 150 ASME B16.5 RF	

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GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P74U-000VT	Sheet gasket Synthetic fiber Class 150 ASME B16.21 Flange ASME B16.5 FF 1.5mm-T	
1	0.75				P74U-000VU	Sheet gasket Synthetic fiber Class 150 ASME B16.21 Flange ASME B16.5 FF 1.5mm-T	
1	1				P74U-000VV	Sheet gasket Synthetic fiber Class 150 ASME B16.21 Flange ASME B16.5 FF 1.5mm-T	
1	1.5				P74U-000VW	Sheet gasket Synthetic fiber Class 150 ASME B16.21 Flange ASME B16.5 FF 1.5mm-T	
1	2				P73T-000LH	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	3				P73T-000LL	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	4				P73T-000LM	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	6				P73T-000LN	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	8				P73T-000LP	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
1	10				P73T-000LC	Spiral wound gasket SS316 winding / Graphite filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
2484	0.75				P73T-000FU	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	0.5				P74U-000VX	Sheet gasket Synthetic fiber Class 300 ASME B16.21 Flange ASME B16.5 FF 1.5mm-T	
773	0.75				P74U-000VY	Sheet gasket Synthetic fiber Class 300 ASME B16.21 Flange ASME B16.5 FF 1.5mm-T	
773	1				P74U-000VZ	Sheet gasket Synthetic fiber Class 300 ASME B16.21 Flange ASME B16.5 FF 1.5mm-T	
773	1.5				P74U-000W0	Sheet gasket Synthetic fiber Class 300 ASME B16.21 Flange ASME B16.5 FF 1.5mm-T	
773	2				P73T-000G2	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	3				P73T-000G5	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	4				P73T-000G6	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	6				P73T-000G7	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	8				P73T-000G8	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
773	10				P73T-000FX	Spiral wound gasket SS316 winding / Graphite filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	0.5				P73T-000J8	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	0.75				P73T-000J9	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1				P73T-000JA	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	
781	1.5				P73T-000JB	Spiral wound gasket SS316 winding / Graphite filler Class 600 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-10				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 Galvanized UNC Stud-bolt with two Heavy HEX nuts	
773	0.5-10				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 Galvanized UNC Stud-bolt with two Heavy HEX nuts	
781	0.5-6				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 Galvanized UNC Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81R-0007L	Gate valve ASTM B62 UNS C83600 Class 150 MSS SP-80 NPT Trim bronze UB-SG-ISRS Handwheel operated	
1	0.75				P81R-0007M	Gate valve ASTM B62 UNS C83600 Class 150 MSS SP-80 NPT Trim bronze UB-SG-ISRS Handwheel operated	
1	1				P81R-0007N	Gate valve ASTM B62 UNS C83600 Class 150 MSS SP-80 NPT Trim bronze UB-SG-ISRS Handwheel operated	
1	1.5				P81R-0007P	Gate valve ASTM B62 UNS C83600 Class 150 MSS SP-80 NPT Trim bronze UB-SG-ISRS Handwheel operated	
1	2				P81C-002DV	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	3				P81C-002DW	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	4				P81C-002DX	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	6				P81C-002DY	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	8				P81C-002DZ	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	10				P81C-002DT	Gate valve ASTM A216 Grade WCB Class 150 API 600 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82R-0003Z	Globe valve ASTM B62 UNS C83600 Class 150 MSS SP-80 NPT Trim bronze UB-SG-ISRS Handwheel operated	

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GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75				P82R-00040	Globe valve ASTM B62 UNS C83600 Class 150 MSS SP-80 NPT Trim bronze UB-SG-ISRS Handwheel operated	
1	1				P82R-00041	Globe valve ASTM B62 UNS C83600 Class 150 MSS SP-80 NPT Trim bronze UB-SG-ISRS Handwheel operated	
1	1.5				P82R-00042	Globe valve ASTM B62 UNS C83600 Class 150 MSS SP-80 NPT Trim bronze UB-SG-ISRS Handwheel operated	
1	2				P82C-000N5	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	3				P82C-000N6	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	4				P82C-000N7	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	6				P82C-000N8	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	
1	8				P82C-0026L	Globe valve ASTM A216 Grade WCB Class 150 BS 1873 Flange ASME B16.5 RF Trim number 8 BB-BG-OS&Y Handwheel operated	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83R-0005S	Check valve ASTM B62 UNS C83600 Class 150 MSS SP-80 NPT Trim bronze Swing-type Screw cap	
1	0.75				P83R-0005T	Check valve ASTM B62 UNS C83600 Class 150 MSS SP-80 NPT Trim bronze Swing-type Screw cap	
1	1				P83R-0005U	Check valve ASTM B62 UNS C83600 Class 150 MSS SP-80 NPT Trim bronze Swing-type Screw cap	
1	1.5				P83R-0005V	Check valve ASTM B62 UNS C83600 Class 150 MSS SP-80 NPT Trim bronze Swing-type Screw cap	
1	2				P83C-00144	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	3				P83C-00147	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	4				P83C-00148	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	6				P83C-00149	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	8				P83C-0014A	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	
1	10				P83C-00140	Check valve ASTM A216 Grade WCB Class 150 BS 1868 Flange ASME B16.5 RF Trim number 8 Swing-type Bolted cover	

ORIFICE FLANGE (FO)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2		XS		P66B-008RZ	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 NPT tap x 1	
1	3		STD		P66B-008S0	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 NPT tap x 1	
1	4		STD		P66B-008S1	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 NPT tap x 1	
1	6		STD		P66B-008S2	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 NPT tap x 1	
1	8		SCH20		P66B-008S3	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 NPT tap x 1	
1	10		SCH20		P66B-008RY	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 NPT tap x 1	
200	2		XS		P66B-008S7	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 NPT tap x 1 with Jack screw	
200	3		STD		P66B-008S8	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 NPT tap x 1 with Jack screw	
200	4		STD		P66B-008S9	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 NPT tap x 1 with Jack screw	
200	6		STD		P66B-008SA	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 NPT tap x 1 with Jack screw	
200	8		SCH20		P66B-008SB	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 NPT tap x 1 with Jack screw	
200	10		SCH20		P66B-008S6	Orifice flange WN ASTM A105 Class 300 ASME B16.36 RF NPS1/2 NPT tap x 1 with Jack screw	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71B-000FC	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 FF Galvanized	
1	0.75				P71B-000FD	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 FF Galvanized	
1	1				P71B-000FE	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 FF Galvanized	
1	1.5				P71B-000FF	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 FF Galvanized	
1	2				P71B-0000P	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	3				P71B-0000N	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	4				P71B-0000M	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	6				P71B-0000L	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	8				P71B-0000R	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
1	10				P71B-0000K	Spectacle blank ASTM A105 Class 150 Standard-drawing Flange ASME B16.5 RF	
773	0.5				P71B-000FG	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 FF Galvanized	
773	0.75				P71B-000FH	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 FF Galvanized	
773	1				P71B-000FJ	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 FF Galvanized	
773	1.5				P71B-000FK	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 FF Galvanized	

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BOLT TABLE (B_S0RA , MACHINE ASME FF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	60	P80S-017T2		
0.75	4	0.500	60	P80S-017T2		
1	4	0.500	65	P80S-017T3		
1.5	4	0.500	70	P80S-017T4		
2	4	0.625	85	P80S-017UU		
3	4	0.625	95	P80S-017UW		
4	8	0.625	95	P80S-017UW		
6	8	0.750	105	P80S-017UY		
8	8	0.750	110	P80S-017UZ		
10	12	0.875	120	P80S-017XU		

BOLT TABLE (B_S0RA_773 , MACHINE ASME FF, OPTION CODE 773)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	65	P80S-017T3		
0.75	4	0.625	75	P80S-017US		
1	4	0.625	75	P80S-017US		
1.5	4	0.750	90	P80S-017XM		
2	8	0.625	85	P80S-017UU		
3	8	0.750	105	P80S-017UY		
4	8	0.750	110	P80S-017UZ		
6	12	0.750	120	P80S-017V1		
8	12	0.875	135	P80S-017XX		
10	16	1.000	155	P80S-01801		

BOLT TABLE (B_S0RA_781 , STUD ASME RF, OPTION CODE 781)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	80	P80S-017T6		
0.75	4	0.625	90	P80S-017UV		
1	4	0.625	95	P80S-017UW		
1.5	4	0.750	110	P80S-017UZ		
2	8	0.625	110	P80S-017TC		
3	8	0.750	130	P80S-017V3		
4	8	0.875	150	P80S-017Y0		
6	12	1.000	175	P80S-01805		
8	12	1.125	195			
10	16	1.250	250			

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BRANCH TABLE (T_S0RA)

RUN PIPE SIZE (in) \ BRANCH SIZE (in)	0.5	0.75	1	1.5	2	3	4	6	8	10
0.5	TS									
0.75	TR	TS								
1	TR	TR	TS							
1.5	TR	TR	TR	TS						
2		L	L	L	TS					
3		L	L	L	TR	TS				
4		L	L	L	TR	TR	TS			
6		L	L	L	L	TR	TR	TS		
8		L	L	L	L	L	TR	TR	TS	
10		L	L	L	L	L	TR	TR	TR	TS

L : OUTLET
TR : REDUCING TEE
TS : STRAIGHT TEE

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Material : CPVC
Rating : ASME CLASS 150
Flange Face : FF
C.A.(mm) : 0.00
Gasket : Sheet
Service : UTILITY - SANITARY (U/G)
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED

DETAIL NOTES :

OPTION CODES:

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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80		P01N-00039	Pipe ASTM D1784 Class 23447 Seamless ASTM F441 PE	
1	0.75		SCH80		P01N-0003A	Pipe ASTM D1784 Class 23447 Seamless ASTM F441 PE	
1	1		SCH80		P01N-0003B	Pipe ASTM D1784 Class 23447 Seamless ASTM F441 PE	
1	1.5		SCH80		P01N-0003C	Pipe ASTM D1784 Class 23447 Seamless ASTM F441 PE	
1	2		SCH80		P01N-0003E	Pipe ASTM D1784 Class 23447 Seamless ASTM F441 PE	
1	3		SCH80		P01N-0003F	Pipe ASTM D1784 Class 23447 Seamless ASTM F441 PE	
1	4		SCH80		P01N-0003G	Pipe ASTM D1784 Class 23447 Seamless ASTM F441 PE	
1	6		SCH80		P01N-0003H	Pipe ASTM D1784 Class 23447 Seamless ASTM F441 PE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80		P02N-000TJ	90 degree elbow ASTM D1784 Class 23447 Seamless ASTM F439 Socket(F)-Socket(F) Long radius	
1	0.75		SCH80		P02N-000TX	90 degree elbow ASTM D1784 Class 23447 Seamless ASTM F439 Socket(F)-Socket(F) Long radius	
1	1		SCH80		P02N-000UC	90 degree elbow ASTM D1784 Class 23447 Seamless ASTM F439 Socket(F)-Socket(F) Long radius	
1	1.5		SCH80		P02N-000V9	90 degree elbow ASTM D1784 Class 23447 Seamless ASTM F439 Socket(F)-Socket(F) Long radius	
1	2		SCH80		P02N-000XF	90 degree elbow ASTM D1784 Class 23447 Seamless ASTM F439 Socket(F)-Socket(F) Long radius	
1	3		SCH80		P02N-000Z3	90 degree elbow ASTM D1784 Class 23447 Seamless ASTM F439 Socket(F)-Socket(F) Long radius	
1	4		SCH80		P02N-000P0	90 degree elbow ASTM D1784 Class 23447 Seamless ASTM F439 Socket(F)-Socket(F) Long radius	
1	6		SCH80		P02N-000RU	90 degree elbow ASTM D1784 Class 23447 Seamless ASTM F439 Socket(F)-Socket(F) Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80		P03N-00022	45 degree elbow ASTM D1784 Class 23447 Seamless ASTM F439 Socket(F)-Socket(F) Long radius	
1	0.75		SCH80		P03N-00023	45 degree elbow ASTM D1784 Class 23447 Seamless ASTM F439 Socket(F)-Socket(F) Long radius	
1	1		SCH80		P03N-00024	45 degree elbow ASTM D1784 Class 23447 Seamless ASTM F439 Socket(F)-Socket(F) Long radius	
1	1.5		SCH80		P03N-00025	45 degree elbow ASTM D1784 Class 23447 Seamless ASTM F439 Socket(F)-Socket(F) Long radius	
1	2		SCH80		P03N-00027	45 degree elbow ASTM D1784 Class 23447 Seamless ASTM F439 Socket(F)-Socket(F) Long radius	
1	3		SCH80		P03N-00028	45 degree elbow ASTM D1784 Class 23447 Seamless ASTM F439 Socket(F)-Socket(F) Long radius	
1	4		SCH80		P03N-00020	45 degree elbow ASTM D1784 Class 23447 Seamless ASTM F439 Socket(F)-Socket(F) Long radius	
1	6		SCH80		P03N-00029	45 degree elbow ASTM D1784 Class 23447 Seamless ASTM F439 Socket(F)-Socket(F) Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80		P21N-0001R	Straight tee ASTM D1784 Class 23447 Seamless ASTM F439 Socket(F)-Socket(F)	
1	0.75		SCH80		P21N-0001S	Straight tee ASTM D1784 Class 23447 Seamless ASTM F439 Socket(F)-Socket(F)	
1	1		SCH80		P21N-0001T	Straight tee ASTM D1784 Class 23447 Seamless ASTM F439 Socket(F)-Socket(F)	
1	1.5		SCH80		P21N-0001U	Straight tee ASTM D1784 Class 23447 Seamless ASTM F439 Socket(F)-Socket(F)	
1	2		SCH80		P21N-0001W	Straight tee ASTM D1784 Class 23447 Seamless ASTM F439 Socket(F)-Socket(F)	
1	3		SCH80		P21N-0001X	Straight tee ASTM D1784 Class 23447 Seamless ASTM F439 Socket(F)-Socket(F)	
1	4		SCH80		P21N-0001M	Straight tee ASTM D1784 Class 23447 Seamless ASTM F439 Socket(F)-Socket(F)	
1	6		SCH80		P21N-0001N	Straight tee ASTM D1784 Class 23447 Seamless ASTM F439 Socket(F)-Socket(F)	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75	SCH80	SCH80	P24N-00064	Reducing tee ASTM D1784 Class 23447 Seamless ASTM F439 Socket(F)-Socket(F)	
1	1.5	0.75	SCH80	SCH80	P24N-0006C	Reducing tee ASTM D1784 Class 23447 Seamless ASTM F439 Socket(F)-Socket(F)	
1	1.5	1	SCH80	SCH80	P24N-0006F	Reducing tee ASTM D1784 Class 23447 Seamless ASTM F439 Socket(F)-Socket(F)	
1	2	0.75	SCH80	SCH80	P24N-0006H	Reducing tee ASTM D1784 Class 23447 Seamless ASTM F439 Socket(F)-Socket(F)	
1	2	1	SCH80	SCH80	P24N-00068	Reducing tee ASTM D1784 Class 23447 Seamless ASTM F439 Socket(F)-Socket(F)	
1	2	1.5	SCH80	SCH80	P24N-0006M	Reducing tee ASTM D1784 Class 23447 Seamless ASTM F439 Socket(F)-Socket(F)	
1	3	0.75	SCH80	SCH80	P24N-00C6E	Reducing tee ASTM D1784 Class 23447 Seamless ASTM F439 Socket(F)-Socket(F)	
1	3	1	SCH80	SCH80	P24N-00C6F	Reducing tee ASTM D1784 Class 23447 Seamless ASTM F439 Socket(F)-Socket(F)	
1	3	1.5	SCH80	SCH80	P24N-00C6G	Reducing tee ASTM D1784 Class 23447 Seamless ASTM F439 Socket(F)-Socket(F)	
1	3	2	SCH80	SCH80	P24N-0006E	Reducing tee ASTM D1784 Class 23447 Seamless ASTM F439 Socket(F)-Socket(F)	
1	4	0.75	SCH80	SCH80	P24N-00C6J	Reducing tee ASTM D1784 Class 23447 Seamless ASTM F439 Socket(F)-Socket(F)	
1	4	1	SCH80	SCH80	P24N-00C6K	Reducing tee ASTM D1784 Class 23447 Seamless ASTM F439 Socket(F)-Socket(F)	
1	4	1.5	SCH80	SCH80	P24N-00C6L	Reducing tee ASTM D1784 Class 23447 Seamless ASTM F439 Socket(F)-Socket(F)	
1	4	2	SCH80	SCH80	P24N-0006L	Reducing tee ASTM D1784 Class 23447 Seamless ASTM F439 Socket(F)-Socket(F)	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	4	3	SCH80	SCH80	P24N-0006R	Reducing tee ASTM D1784 Class 23447 Seamless ASTM F439 Socket(F)-Socket(F)	
1	6	0.75	SCH80	SCH80	P24N-00C15	Reducing tee ASTM D1784 Class 23447 Seamless ASTM F439 Socket(F)-Socket(F)	
1	6	1	SCH80	SCH80	P24N-00C16	Reducing tee ASTM D1784 Class 23447 Seamless ASTM F439 Socket(F)-Socket(F)	
1	6	1.5	SCH80	SCH80	P24N-00C17	Reducing tee ASTM D1784 Class 23447 Seamless ASTM F439 Socket(F)-Socket(F)	
1	6	2	SCH80	SCH80	P24N-0006B	Reducing tee ASTM D1784 Class 23447 Seamless ASTM F439 Socket(F)-Socket(F)	
1	6	3	SCH80	SCH80	P24N-0006N	Reducing tee ASTM D1784 Class 23447 Seamless ASTM F439 Socket(F)-Socket(F)	
1	6	4	SCH80	SCH80	P24N-0006T	Reducing tee ASTM D1784 Class 23447 Seamless ASTM F439 Socket(F)-Socket(F)	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH80	SCH80	P27N-001K3	Concentric reducer ASTM D1784 Class 23447 Seamless ASTM F439 Socket(F)-Socket(F)	
1	1	0.5	SCH80	SCH80	P27N-001K4	Concentric reducer ASTM D1784 Class 23447 Seamless ASTM F439 Socket(F)-Socket(F)	
1	1	0.75	SCH80	SCH80	P27N-001K5	Concentric reducer ASTM D1784 Class 23447 Seamless ASTM F439 Socket(F)-Socket(F)	
1	1.5	0.5	SCH80	SCH80	P27N-001K6	Concentric reducer ASTM D1784 Class 23447 Seamless ASTM F439 Socket(F)-Socket(F)	
1	1.5	0.75	SCH80	SCH80	P27N-001K7	Concentric reducer ASTM D1784 Class 23447 Seamless ASTM F439 Socket(F)-Socket(F)	
1	1.5	1	SCH80	SCH80	P27N-001K8	Concentric reducer ASTM D1784 Class 23447 Seamless ASTM F439 Socket(F)-Socket(F)	
1	2	0.75	SCH80	SCH80	P27N-00043	Concentric reducer ASTM D1784 Class 23447 Seamless ASTM F439 Socket(F)-Socket(F)	
1	2	1	SCH80	SCH80	P27N-00045	Concentric reducer ASTM D1784 Class 23447 Seamless ASTM F439 Socket(F)-Socket(F)	
1	2	1.5	SCH80	SCH80	P27N-00048	Concentric reducer ASTM D1784 Class 23447 Seamless ASTM F439 Socket(F)-Socket(F)	
1	3	1.5	SCH80	SCH80	P27N-001NX	Concentric reducer ASTM D1784 Class 23447 Seamless ASTM F439 Socket(F)-Socket(F)	
1	3	2	SCH80	SCH80	P27N-00041	Concentric reducer ASTM D1784 Class 23447 Seamless ASTM F439 Socket(F)-Socket(F)	
1	4	1.5	SCH80	SCH80	P27N-001NY	Concentric reducer ASTM D1784 Class 23447 Seamless ASTM F439 Socket(F)-Socket(F)	
1	4	2	SCH80	SCH80	P27N-00042	Concentric reducer ASTM D1784 Class 23447 Seamless ASTM F439 Socket(F)-Socket(F)	
1	4	3	SCH80	SCH80	P27N-0004A	Concentric reducer ASTM D1784 Class 23447 Seamless ASTM F439 Socket(F)-Socket(F)	
1	6	3	SCH80	SCH80	P27N-00044	Concentric reducer ASTM D1784 Class 23447 Seamless ASTM F439 Socket(F)-Socket(F)	
1	6	4	SCH80	SCH80	P27N-00049	Concentric reducer ASTM D1784 Class 23447 Seamless ASTM F439 Socket(F)-Socket(F)	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH80	SCH80	P28N-001CD	Eccentric reducer ASTM D1784 Class 23447 Seamless ASTM F439 Socket(F)-Socket(F)	
1	1	0.5	SCH80	SCH80	P28N-001CE	Eccentric reducer ASTM D1784 Class 23447 Seamless ASTM F439 Socket(F)-Socket(F)	
1	1	0.75	SCH80	SCH80	P28N-001CF	Eccentric reducer ASTM D1784 Class 23447 Seamless ASTM F439 Socket(F)-Socket(F)	
1	1.5	0.5	SCH80	SCH80	P28N-001CG	Eccentric reducer ASTM D1784 Class 23447 Seamless ASTM F439 Socket(F)-Socket(F)	
1	1.5	0.75	SCH80	SCH80	P28N-001CH	Eccentric reducer ASTM D1784 Class 23447 Seamless ASTM F439 Socket(F)-Socket(F)	
1	1.5	1	SCH80	SCH80	P28N-001CJ	Eccentric reducer ASTM D1784 Class 23447 Seamless ASTM F439 Socket(F)-Socket(F)	
1	2	0.75	SCH80	SCH80	P28N-001CL	Eccentric reducer ASTM D1784 Class 23447 Seamless ASTM F439 Socket(F)-Socket(F)	
1	2	1	SCH80	SCH80	P28N-001CM	Eccentric reducer ASTM D1784 Class 23447 Seamless ASTM F439 Socket(F)-Socket(F)	
1	2	1.5	SCH80	SCH80	P28N-001CN	Eccentric reducer ASTM D1784 Class 23447 Seamless ASTM F439 Socket(F)-Socket(F)	
1	3	1.5	SCH80	SCH80	P28N-001GC	Eccentric reducer ASTM D1784 Class 23447 Seamless ASTM F439 Socket(F)-Socket(F)	
1	3	2	SCH80	SCH80	P28N-001AS	Eccentric reducer ASTM D1784 Class 23447 Seamless ASTM F439 Socket(F)-Socket(F)	
1	4	1.5	SCH80	SCH80	P28N-001GD	Eccentric reducer ASTM D1784 Class 23447 Seamless ASTM F439 Socket(F)-Socket(F)	
1	4	2	SCH80	SCH80	P28N-001AT	Eccentric reducer ASTM D1784 Class 23447 Seamless ASTM F439 Socket(F)-Socket(F)	
1	4	3	SCH80	SCH80	P28N-001AU	Eccentric reducer ASTM D1784 Class 23447 Seamless ASTM F439 Socket(F)-Socket(F)	
1	6	3	SCH80	SCH80	P28N-001AV	Eccentric reducer ASTM D1784 Class 23447 Seamless ASTM F439 Socket(F)-Socket(F)	
1	6	4	SCH80	SCH80	P28N-001AW	Eccentric reducer ASTM D1784 Class 23447 Seamless ASTM F439 Socket(F)-Socket(F)	

COUPLING (CPS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P47N-000J6	Coupling ASTM D1784 Class 23447 Seamless ASTM F439 Socket(F)-Socket(F)	
1	0.75				P47N-000J7	Coupling ASTM D1784 Class 23447 Seamless ASTM F439 Socket(F)-Socket(F)	
1	1				P47N-000J8	Coupling ASTM D1784 Class 23447 Seamless ASTM F439 Socket(F)-Socket(F)	
1	1.5				P47N-000J9	Coupling ASTM D1784 Class 23447 Seamless ASTM F439 Socket(F)-Socket(F)	
1	2				P47N-000FA	Coupling ASTM D1784 Class 23447 Seamless ASTM F439 Socket(F)-Socket(F)	
1	3				P47N-000FB	Coupling ASTM D1784 Class 23447 Seamless ASTM F439 Socket(F)-Socket(F)	
1	4				P47N-000FC	Coupling ASTM D1784 Class 23447 Seamless ASTM F439 Socket(F)-Socket(F)	
1	6				P47N-000FD	Coupling ASTM D1784 Class 23447 Seamless ASTM F439 Socket(F)-Socket(F)	

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BUSHING (BU)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5			P50N-0000D	Bushing ASTM D1784 Class 23447 ASTM F439 Socket(F)-PE(M)	
1	1	0.5			P50N-0000E	Bushing ASTM D1784 Class 23447 ASTM F439 Socket(F)-PE(M)	
1	1	0.75			P50N-0000F	Bushing ASTM D1784 Class 23447 ASTM F439 Socket(F)-PE(M)	
1	1.5	0.5			P50N-0000G	Bushing ASTM D1784 Class 23447 ASTM F439 Socket(F)-PE(M)	
1	1.5	0.75			P50N-0000H	Bushing ASTM D1784 Class 23447 ASTM F439 Socket(F)-PE(M)	
1	1.5	1			P50N-0000J	Bushing ASTM D1784 Class 23447 ASTM F439 Socket(F)-PE(M)	
1	2	0.5			P50N-0000S	Bushing ASTM D1784 Class 23447 ASTM F439 Socket(F)-PE(M)	
1	2	0.75			P50N-0000T	Bushing ASTM D1784 Class 23447 ASTM F439 Socket(F)-PE(M)	
1	2	1			P50N-0000U	Bushing ASTM D1784 Class 23447 ASTM F439 Socket(F)-PE(M)	
1	2	1.5			P50N-0000V	Bushing ASTM D1784 Class 23447 ASTM F439 Socket(F)-PE(M)	
1	3	0.5			P50N-0002L	Bushing ASTM D1784 Class 23447 ASTM F439 Socket(F)-PE(M)	
1	3	0.75			P50N-0002M	Bushing ASTM D1784 Class 23447 ASTM F439 Socket(F)-PE(M)	
1	3	1			P50N-0002N	Bushing ASTM D1784 Class 23447 ASTM F439 Socket(F)-PE(M)	
1	3	1.5			P50N-0002P	Bushing ASTM D1784 Class 23447 ASTM F439 Socket(F)-PE(M)	
1	3	2			P50N-0002R	Bushing ASTM D1784 Class 23447 ASTM F439 Socket(F)-PE(M)	
1	4	0.5			P50N-0002S	Bushing ASTM D1784 Class 23447 ASTM F439 Socket(F)-PE(M)	
1	4	0.75			P50N-0002T	Bushing ASTM D1784 Class 23447 ASTM F439 Socket(F)-PE(M)	
1	4	1			P50N-0002U	Bushing ASTM D1784 Class 23447 ASTM F439 Socket(F)-PE(M)	
1	4	1.5			P50N-0002V	Bushing ASTM D1784 Class 23447 ASTM F439 Socket(F)-PE(M)	
1	4	2			P50N-0002W	Bushing ASTM D1784 Class 23447 ASTM F439 Socket(F)-PE(M)	
1	4	3			P50N-0002X	Bushing ASTM D1784 Class 23447 ASTM F439 Socket(F)-PE(M)	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80		P61N-0002A	Flange Adhesive joint Socket end ASTM D1784 Class 23447 Class 150 ASME B16.5 FF	
1	0.75		SCH80		P61N-0002B	Flange Adhesive joint Socket end ASTM D1784 Class 23447 Class 150 ASME B16.5 FF	
1	1		SCH80		P61N-0002C	Flange Adhesive joint Socket end ASTM D1784 Class 23447 Class 150 ASME B16.5 FF	
1	1.5		SCH80		P61N-0002D	Flange Adhesive joint Socket end ASTM D1784 Class 23447 Class 150 ASME B16.5 FF	
1	2		SCH80		P61N-0002F	Flange Adhesive joint Socket end ASTM D1784 Class 23447 Class 150 ASME B16.5 FF	
1	3		SCH80		P61N-0002N	Flange Adhesive joint Socket end ASTM D1784 Class 23447 Class 150 ASME B16.5 FF	
1	4		SCH80		P61N-0002P	Flange Adhesive joint Socket end ASTM D1784 Class 23447 Class 150 ASME B16.5 FF	
1	6		SCH80		P61N-0002R	Flange Adhesive joint Socket end ASTM D1784 Class 23447 Class 150 ASME B16.5 FF	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67N-0002C	Blind flange ASTM D1784 Class 23447 Class 150 ASME B16.5 FF	
1	0.75				P67N-0002D	Blind flange ASTM D1784 Class 23447 Class 150 ASME B16.5 FF	
1	1				P67N-0002E	Blind flange ASTM D1784 Class 23447 Class 150 ASME B16.5 FF	
1	1.5				P67N-0002F	Blind flange ASTM D1784 Class 23447 Class 150 ASME B16.5 FF	
1	2				P67N-0002H	Blind flange ASTM D1784 Class 23447 Class 150 ASME B16.5 FF	
1	3				P67N-0002J	Blind flange ASTM D1784 Class 23447 Class 150 ASME B16.5 FF	
1	4				P67N-0002K	Blind flange ASTM D1784 Class 23447 Class 150 ASME B16.5 FF	
1	6				P67N-0002L	Blind flange ASTM D1784 Class 23447 Class 150 ASME B16.5 FF	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P74U-001JE	Sheet gasket NBR Class 150 ASME B16.21 Flange ASME B16.5 FF 1.5mm-T	
1	0.75				P74U-001JF	Sheet gasket NBR Class 150 ASME B16.21 Flange ASME B16.5 FF 1.5mm-T	
1	1				P74U-001JG	Sheet gasket NBR Class 150 ASME B16.21 Flange ASME B16.5 FF 1.5mm-T	
1	1.5				P74U-001JH	Sheet gasket NBR Class 150 ASME B16.21 Flange ASME B16.5 FF 1.5mm-T	
1	2				P74U-001ED	Sheet gasket NBR Class 150 ASME B16.21 Flange ASME B16.5 FF 1.5mm-T	
1	3				P74U-001EG	Sheet gasket NBR Class 150 ASME B16.21 Flange ASME B16.5 FF 1.5mm-T	
1	4				P74U-001EH	Sheet gasket NBR Class 150 ASME B16.21 Flange ASME B16.5 FF 1.5mm-T	
1	6				P74U-001EJ	Sheet gasket NBR Class 150 ASME B16.21 Flange ASME B16.5 FF 1.5mm-T	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-6				See Attached Bolt Table	Bolt and Nut ASTM A307 Grade B / A563 Grade A ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	

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BALL VALVE (Q)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P84N-0002R	Ball valve Long-pattern ASTM D1784 Class 23447 Class 150 ASTM F1970 Flange ASME B16.5 FF Ball CPVC Seat PTFE Trim CPVC Floating-type Side-entry Wrench lever operated Full bore	
1	0.75				P84N-0002S	Ball valve Long-pattern ASTM D1784 Class 23447 Class 150 ASTM F1970 Flange ASME B16.5 FF Ball CPVC Seat PTFE Trim CPVC Floating-type Side-entry Wrench lever operated Full bore	
1	1				P84N-0002T	Ball valve Long-pattern ASTM D1784 Class 23447 Class 150 ASTM F1970 Flange ASME B16.5 FF Ball CPVC Seat PTFE Trim CPVC Floating-type Side-entry Wrench lever operated Full bore	
1	1.5				P84N-0002U	Ball valve Long-pattern ASTM D1784 Class 23447 Class 150 ASTM F1970 Flange ASME B16.5 FF Ball CPVC Seat PTFE Trim CPVC Floating-type Side-entry Wrench lever operated Full bore	
1	2				P84N-0003H	Ball valve Long-pattern ASTM D1784 Class 23447 Class 150 ASTM F1970 Flange ASME B16.5 FF Ball CPVC Seat PTFE Trim CPVC Floating-type Side-entry Wrench lever operated Full bore	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75				P71N-0000P	Spectacle blank ASTM D1784 Class 23447 Class 150 Standard-drawing Flange ASME B16.5 FF	

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BOLT TABLE (B_S0SP , MACHINE ASME FF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	65	P80S-03NRU		
0.75	4	0.500	65	P80S-03NRU		
1	4	0.500	70	P80S-03NRV		
1.5	4	0.500	75	P80S-03NRW		
2	4	0.625	85	P80S-03M5H		
3	4	0.625	95	P80S-03M5K		
4	8	0.625	95	P80S-03M5K		
6	8	0.750	105	P80S-03M5M		

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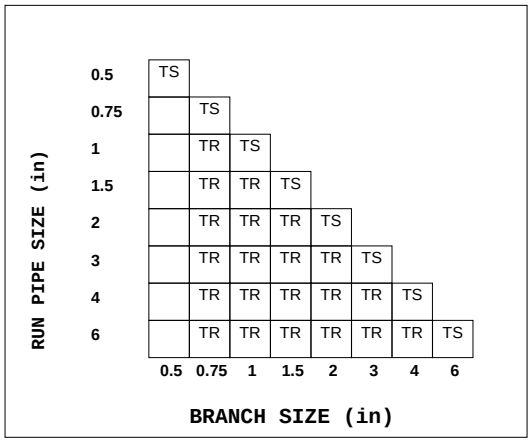
BRANCH TABLE (T_S0SP)



TR : REDUCING TEE
TS : STRAIGHT TEE

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Material : CPVC
Rating : ASME CLASS 150
Flange Face : FF
C.A.(mm) : 0.00
Gasket : Sheet
Service : UTILITY - POTABLE WATER (U/G)
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED

DETAIL NOTES :

OPTION CODES:

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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80		P01N-00039	Pipe ASTM D1784 Class 23447 Seamless ASTM F441 PE	
1	0.75		SCH80		P01N-0003A	Pipe ASTM D1784 Class 23447 Seamless ASTM F441 PE	
1	1		SCH80		P01N-0003B	Pipe ASTM D1784 Class 23447 Seamless ASTM F441 PE	
1	1.5		SCH80		P01N-0003C	Pipe ASTM D1784 Class 23447 Seamless ASTM F441 PE	
1	2		SCH80		P01N-0003E	Pipe ASTM D1784 Class 23447 Seamless ASTM F441 PE	
1	3		SCH80		P01N-0003F	Pipe ASTM D1784 Class 23447 Seamless ASTM F441 PE	
1	4		SCH80		P01N-0003G	Pipe ASTM D1784 Class 23447 Seamless ASTM F441 PE	
1	6		SCH80		P01N-0003H	Pipe ASTM D1784 Class 23447 Seamless ASTM F441 PE	
1	8		SCH80		P01N-00038	Pipe ASTM D1784 Class 23447 Seamless ASTM F441 PE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80		P02N-000TJ	90 degree elbow ASTM D1784 Class 23447 Seamless ASTM F439 Socket(F)-Socket(F) Long radius	
1	0.75		SCH80		P02N-000TX	90 degree elbow ASTM D1784 Class 23447 Seamless ASTM F439 Socket(F)-Socket(F) Long radius	
1	1		SCH80		P02N-000UC	90 degree elbow ASTM D1784 Class 23447 Seamless ASTM F439 Socket(F)-Socket(F) Long radius	
1	1.5		SCH80		P02N-000V9	90 degree elbow ASTM D1784 Class 23447 Seamless ASTM F439 Socket(F)-Socket(F) Long radius	
1	2		SCH80		P02N-000XF	90 degree elbow ASTM D1784 Class 23447 Seamless ASTM F439 Socket(F)-Socket(F) Long radius	
1	3		SCH80		P02N-000Z3	90 degree elbow ASTM D1784 Class 23447 Seamless ASTM F439 Socket(F)-Socket(F) Long radius	
1	4		SCH80		P02N-000P0	90 degree elbow ASTM D1784 Class 23447 Seamless ASTM F439 Socket(F)-Socket(F) Long radius	
1	6		SCH80		P02N-000RU	90 degree elbow ASTM D1784 Class 23447 Seamless ASTM F439 Socket(F)-Socket(F) Long radius	
1	8		SCH80		P02N-000T7	90 degree elbow ASTM D1784 Class 23447 Seamless ASTM F439 Socket(F)-Socket(F) Long radius	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80		P03N-00022	45 degree elbow ASTM D1784 Class 23447 Seamless ASTM F439 Socket(F)-Socket(F) Long radius	
1	0.75		SCH80		P03N-00023	45 degree elbow ASTM D1784 Class 23447 Seamless ASTM F439 Socket(F)-Socket(F) Long radius	
1	1		SCH80		P03N-00024	45 degree elbow ASTM D1784 Class 23447 Seamless ASTM F439 Socket(F)-Socket(F) Long radius	
1	1.5		SCH80		P03N-00025	45 degree elbow ASTM D1784 Class 23447 Seamless ASTM F439 Socket(F)-Socket(F) Long radius	
1	2		SCH80		P03N-00027	45 degree elbow ASTM D1784 Class 23447 Seamless ASTM F439 Socket(F)-Socket(F) Long radius	
1	3		SCH80		P03N-00028	45 degree elbow ASTM D1784 Class 23447 Seamless ASTM F439 Socket(F)-Socket(F) Long radius	
1	4		SCH80		P03N-00020	45 degree elbow ASTM D1784 Class 23447 Seamless ASTM F439 Socket(F)-Socket(F) Long radius	
1	6		SCH80		P03N-00029	45 degree elbow ASTM D1784 Class 23447 Seamless ASTM F439 Socket(F)-Socket(F) Long radius	
1	8		SCH80		P03N-00021	45 degree elbow ASTM D1784 Class 23447 Seamless ASTM F439 Socket(F)-Socket(F) Long radius	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80		P21N-0001R	Straight tee ASTM D1784 Class 23447 Seamless ASTM F439 Socket(F)-Socket(F)	
1	0.75		SCH80		P21N-0001S	Straight tee ASTM D1784 Class 23447 Seamless ASTM F439 Socket(F)-Socket(F)	
1	1		SCH80		P21N-0001T	Straight tee ASTM D1784 Class 23447 Seamless ASTM F439 Socket(F)-Socket(F)	
1	1.5		SCH80		P21N-0001U	Straight tee ASTM D1784 Class 23447 Seamless ASTM F439 Socket(F)-Socket(F)	
1	2		SCH80		P21N-0001W	Straight tee ASTM D1784 Class 23447 Seamless ASTM F439 Socket(F)-Socket(F)	
1	3		SCH80		P21N-0001X	Straight tee ASTM D1784 Class 23447 Seamless ASTM F439 Socket(F)-Socket(F)	
1	4		SCH80		P21N-0001M	Straight tee ASTM D1784 Class 23447 Seamless ASTM F439 Socket(F)-Socket(F)	
1	6		SCH80		P21N-0001N	Straight tee ASTM D1784 Class 23447 Seamless ASTM F439 Socket(F)-Socket(F)	
1	8		SCH80		P21N-0001P	Straight tee ASTM D1784 Class 23447 Seamless ASTM F439 Socket(F)-Socket(F)	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75	SCH80	SCH80	P24N-00064	Reducing tee ASTM D1784 Class 23447 Seamless ASTM F439 Socket(F)-Socket(F)	
1	1.5	0.75	SCH80	SCH80	P24N-0006C	Reducing tee ASTM D1784 Class 23447 Seamless ASTM F439 Socket(F)-Socket(F)	
1	1.5	1	SCH80	SCH80	P24N-0006F	Reducing tee ASTM D1784 Class 23447 Seamless ASTM F439 Socket(F)-Socket(F)	
1	2	0.75	SCH80	SCH80	P24N-0006H	Reducing tee ASTM D1784 Class 23447 Seamless ASTM F439 Socket(F)-Socket(F)	
1	2	1	SCH80	SCH80	P24N-00068	Reducing tee ASTM D1784 Class 23447 Seamless ASTM F439 Socket(F)-Socket(F)	
1	2	1.5	SCH80	SCH80	P24N-0006M	Reducing tee ASTM D1784 Class 23447 Seamless ASTM F439 Socket(F)-Socket(F)	
1	3	0.75	SCH80	SCH80	P24N-00C6E	Reducing tee ASTM D1784 Class 23447 Seamless ASTM F439 Socket(F)-Socket(F)	
1	3	1	SCH80	SCH80	P24N-00C6F	Reducing tee ASTM D1784 Class 23447 Seamless ASTM F439 Socket(F)-Socket(F)	
1	3	1.5	SCH80	SCH80	P24N-00C6G	Reducing tee ASTM D1784 Class 23447 Seamless ASTM F439 Socket(F)-Socket(F)	
1	3	2	SCH80	SCH80	P24N-0006E	Reducing tee ASTM D1784 Class 23447 Seamless ASTM F439 Socket(F)-Socket(F)	

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REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	4	0.75	SCH80	SCH80	P24N-00C6J	Reducing tee ASTM D1784 Class 23447 Seamless ASTM F439 Socket(F)-Socket(F)	
1	4	1	SCH80	SCH80	P24N-00C6K	Reducing tee ASTM D1784 Class 23447 Seamless ASTM F439 Socket(F)-Socket(F)	
1	4	1.5	SCH80	SCH80	P24N-00C6L	Reducing tee ASTM D1784 Class 23447 Seamless ASTM F439 Socket(F)-Socket(F)	
1	4	2	SCH80	SCH80	P24N-0006L	Reducing tee ASTM D1784 Class 23447 Seamless ASTM F439 Socket(F)-Socket(F)	
1	4	3	SCH80	SCH80	P24N-0006R	Reducing tee ASTM D1784 Class 23447 Seamless ASTM F439 Socket(F)-Socket(F)	
1	6	0.75	SCH80	SCH80	P24N-00C15	Reducing tee ASTM D1784 Class 23447 Seamless ASTM F439 Socket(F)-Socket(F)	
1	6	1	SCH80	SCH80	P24N-00C16	Reducing tee ASTM D1784 Class 23447 Seamless ASTM F439 Socket(F)-Socket(F)	
1	6	1.5	SCH80	SCH80	P24N-00C17	Reducing tee ASTM D1784 Class 23447 Seamless ASTM F439 Socket(F)-Socket(F)	
1	6	2	SCH80	SCH80	P24N-0006B	Reducing tee ASTM D1784 Class 23447 Seamless ASTM F439 Socket(F)-Socket(F)	
1	6	3	SCH80	SCH80	P24N-0006N	Reducing tee ASTM D1784 Class 23447 Seamless ASTM F439 Socket(F)-Socket(F)	
1	6	4	SCH80	SCH80	P24N-0006T	Reducing tee ASTM D1784 Class 23447 Seamless ASTM F439 Socket(F)-Socket(F)	
1	8	0.75	SCH80	SCH80	P24N-00CH9	Reducing tee ASTM D1784 Class 23447 Seamless ASTM F439 Socket(F)-Socket(F)	
1	8	1	SCH80	SCH80	P24N-00CHA	Reducing tee ASTM D1784 Class 23447 Seamless ASTM F439 Socket(F)-Socket(F)	
1	8	1.5	SCH80	SCH80	P24N-00CHB	Reducing tee ASTM D1784 Class 23447 Seamless ASTM F439 Socket(F)-Socket(F)	
1	8	2	SCH80	SCH80	P24N-0006D	Reducing tee ASTM D1784 Class 23447 Seamless ASTM F439 Socket(F)-Socket(F)	
1	8	3	SCH80	SCH80	P24N-0006K	Reducing tee ASTM D1784 Class 23447 Seamless ASTM F439 Socket(F)-Socket(F)	
1	8	4	SCH80	SCH80	P24N-0006S	Reducing tee ASTM D1784 Class 23447 Seamless ASTM F439 Socket(F)-Socket(F)	
1	8	6	SCH80	SCH80	P24N-0006V	Reducing tee ASTM D1784 Class 23447 Seamless ASTM F439 Socket(F)-Socket(F)	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH80	SCH80	P27N-001K3	Concentric reducer ASTM D1784 Class 23447 Seamless ASTM F439 Socket(F)-Socket(F)	
1	1	0.5	SCH80	SCH80	P27N-001K4	Concentric reducer ASTM D1784 Class 23447 Seamless ASTM F439 Socket(F)-Socket(F)	
1	1	0.75	SCH80	SCH80	P27N-001K5	Concentric reducer ASTM D1784 Class 23447 Seamless ASTM F439 Socket(F)-Socket(F)	
1	1.5	0.5	SCH80	SCH80	P27N-001K6	Concentric reducer ASTM D1784 Class 23447 Seamless ASTM F439 Socket(F)-Socket(F)	
1	1.5	0.75	SCH80	SCH80	P27N-001K7	Concentric reducer ASTM D1784 Class 23447 Seamless ASTM F439 Socket(F)-Socket(F)	
1	1.5	1	SCH80	SCH80	P27N-001K8	Concentric reducer ASTM D1784 Class 23447 Seamless ASTM F439 Socket(F)-Socket(F)	
1	2	0.75	SCH80	SCH80	P27N-00043	Concentric reducer ASTM D1784 Class 23447 Seamless ASTM F439 Socket(F)-Socket(F)	
1	2	1	SCH80	SCH80	P27N-00045	Concentric reducer ASTM D1784 Class 23447 Seamless ASTM F439 Socket(F)-Socket(F)	
1	2	1.5	SCH80	SCH80	P27N-00048	Concentric reducer ASTM D1784 Class 23447 Seamless ASTM F439 Socket(F)-Socket(F)	
1	3	1.5	SCH80	SCH80	P27N-001NX	Concentric reducer ASTM D1784 Class 23447 Seamless ASTM F439 Socket(F)-Socket(F)	
1	3	2	SCH80	SCH80	P27N-00041	Concentric reducer ASTM D1784 Class 23447 Seamless ASTM F439 Socket(F)-Socket(F)	
1	4	1.5	SCH80	SCH80	P27N-001NY	Concentric reducer ASTM D1784 Class 23447 Seamless ASTM F439 Socket(F)-Socket(F)	
1	4	2	SCH80	SCH80	P27N-00042	Concentric reducer ASTM D1784 Class 23447 Seamless ASTM F439 Socket(F)-Socket(F)	
1	4	3	SCH80	SCH80	P27N-0004A	Concentric reducer ASTM D1784 Class 23447 Seamless ASTM F439 Socket(F)-Socket(F)	
1	6	3	SCH80	SCH80	P27N-00044	Concentric reducer ASTM D1784 Class 23447 Seamless ASTM F439 Socket(F)-Socket(F)	
1	6	4	SCH80	SCH80	P27N-00049	Concentric reducer ASTM D1784 Class 23447 Seamless ASTM F439 Socket(F)-Socket(F)	
1	8	4	SCH80	SCH80	P27N-00046	Concentric reducer ASTM D1784 Class 23447 Seamless ASTM F439 Socket(F)-Socket(F)	
1	8	6	SCH80	SCH80	P27N-0004C	Concentric reducer ASTM D1784 Class 23447 Seamless ASTM F439 Socket(F)-Socket(F)	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH80	SCH80	P28N-001CD	Eccentric reducer ASTM D1784 Class 23447 Seamless ASTM F439 Socket(F)-Socket(F)	
1	1	0.5	SCH80	SCH80	P28N-001CE	Eccentric reducer ASTM D1784 Class 23447 Seamless ASTM F439 Socket(F)-Socket(F)	
1	1	0.75	SCH80	SCH80	P28N-001CF	Eccentric reducer ASTM D1784 Class 23447 Seamless ASTM F439 Socket(F)-Socket(F)	
1	1.5	0.5	SCH80	SCH80	P28N-001CG	Eccentric reducer ASTM D1784 Class 23447 Seamless ASTM F439 Socket(F)-Socket(F)	
1	1.5	0.75	SCH80	SCH80	P28N-001CH	Eccentric reducer ASTM D1784 Class 23447 Seamless ASTM F439 Socket(F)-Socket(F)	
1	1.5	1	SCH80	SCH80	P28N-001CJ	Eccentric reducer ASTM D1784 Class 23447 Seamless ASTM F439 Socket(F)-Socket(F)	
1	2	0.75	SCH80	SCH80	P28N-001CL	Eccentric reducer ASTM D1784 Class 23447 Seamless ASTM F439 Socket(F)-Socket(F)	
1	2	1	SCH80	SCH80	P28N-001CM	Eccentric reducer ASTM D1784 Class 23447 Seamless ASTM F439 Socket(F)-Socket(F)	
1	2	1.5	SCH80	SCH80	P28N-001CN	Eccentric reducer ASTM D1784 Class 23447 Seamless ASTM F439 Socket(F)-Socket(F)	
1	3	1.5	SCH80	SCH80	P28N-001GC	Eccentric reducer ASTM D1784 Class 23447 Seamless ASTM F439 Socket(F)-Socket(F)	
1	3	2	SCH80	SCH80	P28N-001AS	Eccentric reducer ASTM D1784 Class 23447 Seamless ASTM F439 Socket(F)-Socket(F)	
1	4	1.5	SCH80	SCH80	P28N-001GD	Eccentric reducer ASTM D1784 Class 23447 Seamless ASTM F439 Socket(F)-Socket(F)	
1	4	2	SCH80	SCH80	P28N-001AT	Eccentric reducer ASTM D1784 Class 23447 Seamless ASTM F439 Socket(F)-Socket(F)	
1	4	3	SCH80	SCH80	P28N-001AU	Eccentric reducer ASTM D1784 Class 23447 Seamless ASTM F439 Socket(F)-Socket(F)	
1	6	3	SCH80	SCH80	P28N-001AV	Eccentric reducer ASTM D1784 Class 23447 Seamless ASTM F439 Socket(F)-Socket(F)	
1	6	4	SCH80	SCH80	P28N-001AW	Eccentric reducer ASTM D1784 Class 23447 Seamless ASTM F439 Socket(F)-Socket(F)	
1	8	4	SCH80	SCH80	P28N-001HA	Eccentric reducer ASTM D1784 Class 23447 Seamless ASTM F439 Socket(F)-Socket(F)	

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ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	8	6	SCH80	SCH80	P28N-001HB	Eccentric reducer ASTM D1784 Class 23447 Seamless ASTM F439 Socket(F)-Socket(F)	

COUPLING (CPS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P47N-000J6	Coupling ASTM D1784 Class 23447 Seamless ASTM F439 Socket(F)-Socket(F)	
1	0.75				P47N-000J7	Coupling ASTM D1784 Class 23447 Seamless ASTM F439 Socket(F)-Socket(F)	
1	1				P47N-000J8	Coupling ASTM D1784 Class 23447 Seamless ASTM F439 Socket(F)-Socket(F)	
1	1.5				P47N-000J9	Coupling ASTM D1784 Class 23447 Seamless ASTM F439 Socket(F)-Socket(F)	
1	2				P47N-000FA	Coupling ASTM D1784 Class 23447 Seamless ASTM F439 Socket(F)-Socket(F)	
1	3				P47N-000FB	Coupling ASTM D1784 Class 23447 Seamless ASTM F439 Socket(F)-Socket(F)	
1	4				P47N-000FC	Coupling ASTM D1784 Class 23447 Seamless ASTM F439 Socket(F)-Socket(F)	
1	6				P47N-000FD	Coupling ASTM D1784 Class 23447 Seamless ASTM F439 Socket(F)-Socket(F)	
1	8				P47N-000JB	Coupling ASTM D1784 Class 23447 Seamless ASTM F439 Socket(F)-Socket(F)	

BUSHING (BU)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5			P50N-0000D	Bushing ASTM D1784 Class 23447 ASTM F439 Socket(F)-PE(M)	
1	1	0.5			P50N-0000E	Bushing ASTM D1784 Class 23447 ASTM F439 Socket(F)-PE(M)	
1	1	0.75			P50N-0000F	Bushing ASTM D1784 Class 23447 ASTM F439 Socket(F)-PE(M)	
1	1.5	0.5			P50N-0000G	Bushing ASTM D1784 Class 23447 ASTM F439 Socket(F)-PE(M)	
1	1.5	0.75			P50N-0000H	Bushing ASTM D1784 Class 23447 ASTM F439 Socket(F)-PE(M)	
1	1.5	1			P50N-0000J	Bushing ASTM D1784 Class 23447 ASTM F439 Socket(F)-PE(M)	
1	2	0.5			P50N-0000S	Bushing ASTM D1784 Class 23447 ASTM F439 Socket(F)-PE(M)	
1	2	0.75			P50N-0000T	Bushing ASTM D1784 Class 23447 ASTM F439 Socket(F)-PE(M)	
1	2	1			P50N-0000U	Bushing ASTM D1784 Class 23447 ASTM F439 Socket(F)-PE(M)	
1	2	1.5			P50N-0000V	Bushing ASTM D1784 Class 23447 ASTM F439 Socket(F)-PE(M)	
1	3	0.5			P50N-0002L	Bushing ASTM D1784 Class 23447 ASTM F439 Socket(F)-PE(M)	
1	3	0.75			P50N-0002M	Bushing ASTM D1784 Class 23447 ASTM F439 Socket(F)-PE(M)	
1	3	1			P50N-0002N	Bushing ASTM D1784 Class 23447 ASTM F439 Socket(F)-PE(M)	
1	3	1.5			P50N-0002P	Bushing ASTM D1784 Class 23447 ASTM F439 Socket(F)-PE(M)	
1	3	2			P50N-0002R	Bushing ASTM D1784 Class 23447 ASTM F439 Socket(F)-PE(M)	
1	4	0.5			P50N-0002S	Bushing ASTM D1784 Class 23447 ASTM F439 Socket(F)-PE(M)	
1	4	0.75			P50N-0002T	Bushing ASTM D1784 Class 23447 ASTM F439 Socket(F)-PE(M)	
1	4	1			P50N-0002U	Bushing ASTM D1784 Class 23447 ASTM F439 Socket(F)-PE(M)	
1	4	1.5			P50N-0002V	Bushing ASTM D1784 Class 23447 ASTM F439 Socket(F)-PE(M)	
1	4	2			P50N-0002W	Bushing ASTM D1784 Class 23447 ASTM F439 Socket(F)-PE(M)	
1	4	3			P50N-0002X	Bushing ASTM D1784 Class 23447 ASTM F439 Socket(F)-PE(M)	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80		P61N-0002A	Flange Adhesive joint Socket end ASTM D1784 Class 23447 Class 150 ASME B16.5 FF	
1	0.75		SCH80		P61N-0002B	Flange Adhesive joint Socket end ASTM D1784 Class 23447 Class 150 ASME B16.5 FF	
1	1		SCH80		P61N-0002C	Flange Adhesive joint Socket end ASTM D1784 Class 23447 Class 150 ASME B16.5 FF	
1	1.5		SCH80		P61N-0002D	Flange Adhesive joint Socket end ASTM D1784 Class 23447 Class 150 ASME B16.5 FF	
1	2		SCH80		P61N-0002F	Flange Adhesive joint Socket end ASTM D1784 Class 23447 Class 150 ASME B16.5 FF	
1	3		SCH80		P61N-0002N	Flange Adhesive joint Socket end ASTM D1784 Class 23447 Class 150 ASME B16.5 FF	
1	4		SCH80		P61N-0002P	Flange Adhesive joint Socket end ASTM D1784 Class 23447 Class 150 ASME B16.5 FF	
1	6		SCH80		P61N-0002R	Flange Adhesive joint Socket end ASTM D1784 Class 23447 Class 150 ASME B16.5 FF	
1	8		SCH80		P61N-0002S	Flange Adhesive joint Socket end ASTM D1784 Class 23447 Class 150 ASME B16.5 FF	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67N-0002C	Blind flange ASTM D1784 Class 23447 Class 150 ASME B16.5 FF	
1	0.75				P67N-0002D	Blind flange ASTM D1784 Class 23447 Class 150 ASME B16.5 FF	
1	1				P67N-0002E	Blind flange ASTM D1784 Class 23447 Class 150 ASME B16.5 FF	
1	1.5				P67N-0002F	Blind flange ASTM D1784 Class 23447 Class 150 ASME B16.5 FF	
1	2				P67N-0002H	Blind flange ASTM D1784 Class 23447 Class 150 ASME B16.5 FF	
1	3				P67N-0002J	Blind flange ASTM D1784 Class 23447 Class 150 ASME B16.5 FF	

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BLIND FLANGE (FB)							
OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	4				P67N-0002K	Blind flange ASTM D1784 Class 23447 Class 150 ASME B16.5 FF	
1	6				P67N-0002L	Blind flange ASTM D1784 Class 23447 Class 150 ASME B16.5 FF	
1	8				P67N-0002M	Blind flange ASTM D1784 Class 23447 Class 150 ASME B16.5 FF	

GASKET (G)							
OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P74U-001JE	Sheet gasket NBR Class 150 ASME B16.21 Flange ASME B16.5 FF 1.5mm-T	
1	0.75				P74U-001JF	Sheet gasket NBR Class 150 ASME B16.21 Flange ASME B16.5 FF 1.5mm-T	
1	1				P74U-001JG	Sheet gasket NBR Class 150 ASME B16.21 Flange ASME B16.5 FF 1.5mm-T	
1	1.5				P74U-001JH	Sheet gasket NBR Class 150 ASME B16.21 Flange ASME B16.5 FF 1.5mm-T	
1	2				P74U-001ED	Sheet gasket NBR Class 150 ASME B16.21 Flange ASME B16.5 FF 1.5mm-T	
1	3				P74U-001EG	Sheet gasket NBR Class 150 ASME B16.21 Flange ASME B16.5 FF 1.5mm-T	
1	4				P74U-001EH	Sheet gasket NBR Class 150 ASME B16.21 Flange ASME B16.5 FF 1.5mm-T	
1	6				P74U-001EJ	Sheet gasket NBR Class 150 ASME B16.21 Flange ASME B16.5 FF 1.5mm-T	
1	8				P74U-001EK	Sheet gasket NBR Class 150 ASME B16.21 Flange ASME B16.5 FF 1.5mm-T	

BOLT AND NUT (B)							
OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-8				See Attached Bolt Table	Bolt and Nut ASTM A307 Grade B / A563 Grade A ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	

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BOLT TABLE (B_S0SW , MACHINE ASME FF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	65	P80S-03NRU		
0.75	4	0.500	65	P80S-03NRU		
1	4	0.500	70	P80S-03NRV		
1.5	4	0.500	75	P80S-03NRW		
2	4	0.625	85	P80S-03M5H		
3	4	0.625	95	P80S-03M5K		
4	8	0.625	95	P80S-03M5K		
6	8	0.750	105	P80S-03M5M		
8	8	0.750	110	P80S-03M5N		

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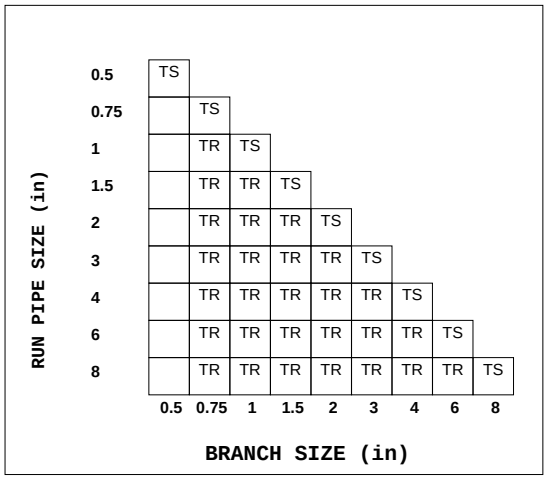
BRANCH TABLE (T_S0SW)



RUN PIPE SIZE (in) \ BRANCH SIZE (in)	0.5	0.75	1	1.5	2	3	4	6	8
0.5	TS								
0.75		TS							
1		TR	TS						
1.5		TR	TR	TS					
2		TR	TR	TR	TS				
3		TR	TR	TR	TR	TS			
4		TR	TR	TR	TR	TR	TS		
6		TR	TR	TR	TR	TR	TR	TS	
8		TR	TR	TR	TR	TR	TR	TR	TS

TS : STRAIGHT TEE
TR : REDUCING TEE

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PIPING CLASS

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Material : Killed CS (Galv.)
Rating : ASME CLASS 300
Flange Face : FF
C.A.(mm) : 0.00
Gasket : Spiral Wound
Service : UTILITY - NON HYDROCARBON, CATEGORY D" FLUID : " / INSTRUMENT AIR <= 1 1/2 NB
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED
12	GALVANISED COATING SHALL BE IN ACCORDANCE WITH PROJECT STANDARD 3550-8440-SP-0008

DETAIL NOTES :

OPTION CODES:

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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P01A-000X3	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M NPT Galvanized	
1	0.75		XS		P01A-000X6	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M NPT Galvanized	
1	1		XS		P01A-000X7	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M NPT Galvanized	
1	1.5		XS		P01A-000XC	Pipe ASTM A106 Grade B Seamless ASME B36.10M/B36.19M NPT Galvanized	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P02B-0001H	90 degree elbow ASTM A105 Class 3000 ASME B16.11 NPT Galvanized	
1	0.75				P02B-0001D	90 degree elbow ASTM A105 Class 3000 ASME B16.11 NPT Galvanized	
1	1				P02B-0001E	90 degree elbow ASTM A105 Class 3000 ASME B16.11 NPT Galvanized	
1	1.5				P02B-0001F	90 degree elbow ASTM A105 Class 3000 ASME B16.11 NPT Galvanized	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P03B-00012	45 degree elbow ASTM A105 Class 3000 ASME B16.11 NPT Galvanized	
1	0.75				P03B-00013	45 degree elbow ASTM A105 Class 3000 ASME B16.11 NPT Galvanized	
1	1				P03B-00014	45 degree elbow ASTM A105 Class 3000 ASME B16.11 NPT Galvanized	
1	1.5				P03B-00015	45 degree elbow ASTM A105 Class 3000 ASME B16.11 NPT Galvanized	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P21B-0002D	Straight tee ASTM A105 Class 3000 ASME B16.11 NPT Galvanized	
1	0.75				P21B-0002E	Straight tee ASTM A105 Class 3000 ASME B16.11 NPT Galvanized	
1	1				P21B-0002F	Straight tee ASTM A105 Class 3000 ASME B16.11 NPT Galvanized	
1	1.5				P21B-0002G	Straight tee ASTM A105 Class 3000 ASME B16.11 NPT Galvanized	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5			P24B-00029	Reducing tee ASTM A105 Class 3000 ASME B16.11 NPT Galvanized	
1	1	0.5			P24B-00027	Reducing tee ASTM A105 Class 3000 ASME B16.11 NPT Galvanized	
1	1	0.75			P24B-00028	Reducing tee ASTM A105 Class 3000 ASME B16.11 NPT Galvanized	
1	1.5	0.5			P24B-0002A	Reducing tee ASTM A105 Class 3000 ASME B16.11 NPT Galvanized	
1	1.5	0.75			P24B-0002B	Reducing tee ASTM A105 Class 3000 ASME B16.11 NPT Galvanized	
1	1.5	1			P24B-0002C	Reducing tee ASTM A105 Class 3000 ASME B16.11 NPT Galvanized	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P29B-0001P	Cap ASTM A105 Class 3000 ASME B16.11 NPT Galvanized	
1	0.75				P29B-0001R	Cap ASTM A105 Class 3000 ASME B16.11 NPT Galvanized	
1	1				P29B-0001S	Cap ASTM A105 Class 3000 ASME B16.11 NPT Galvanized	
1	1.5				P29B-0001T	Cap ASTM A105 Class 3000 ASME B16.11 NPT Galvanized	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		XS		P41A-000VA	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M NPT - NPT Galvanized L=100mm	
1	0.75		XS		P41A-000VB	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M NPT - NPT Galvanized L=100mm	
1	1		XS		P41A-000VC	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M NPT - NPT Galvanized L=100mm	
1	1.5		XS		P41A-000VD	Straight nipple ASTM A106 Grade B Seamless ASME B36.10M/B36.19M NPT - NPT Galvanized L=100mm	

CON SWAGED NIPPLE (SNC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	XS	XS	P42A-0002J	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 NPT(L) - NPT(S) Galvanized	
1	1	0.5	XS	XS	P42A-0002E	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 NPT(L) - NPT(S) Galvanized	
1	1	0.75	XS	XS	P42A-0002K	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 NPT(L) - NPT(S) Galvanized	
1	1.5	0.5	XS	XS	P42A-0002M	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 NPT(L) - NPT(S) Galvanized	
1	1.5	0.75	XS	XS	P42A-0002T	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 NPT(L) - NPT(S) Galvanized	
1	1.5	1	XS	XS	P42A-0002W	Concentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 NPT(L) - NPT(S) Galvanized	

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ECC SWAGED NIPPLE (SNE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	XS	XS	P43A-0004P	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 NPT(L) - NPT(S) Galvanized	
1	1	0.5	XS	XS	P43A-0004R	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 NPT(L) - NPT(S) Galvanized	
1	1	0.75	XS	XS	P43A-0004S	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 NPT(L) - NPT(S) Galvanized	
1	1.5	0.5	XS	XS	P43A-0004T	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 NPT(L) - NPT(S) Galvanized	
1	1.5	0.75	XS	XS	P43A-0004U	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 NPT(L) - NPT(S) Galvanized	
1	1.5	1	XS	XS	P43A-0004V	Eccentric swaged nipple ASTM A234 Grade WPB Seamless MSS SP-95 NPT(L) - NPT(S) Galvanized	

UNION (UN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P49B-0000B	Union ASTM A105 Class 3000 MSS SP-83 NPT Galvanized	
1	0.75				P49B-0000C	Union ASTM A105 Class 3000 MSS SP-83 NPT Galvanized	
1	1				P49B-0000D	Union ASTM A105 Class 3000 MSS SP-83 NPT Galvanized	
1	1.5				P49B-0000E	Union ASTM A105 Class 3000 MSS SP-83 NPT Galvanized	

COUPLING (CPS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P47B-00014	Coupling ASTM A105 Class 3000 ASME B16.11 NPT - NPT Galvanized	
1	0.75				P47B-00015	Coupling ASTM A105 Class 3000 ASME B16.11 NPT - NPT Galvanized	
1	1				P47B-00016	Coupling ASTM A105 Class 3000 ASME B16.11 NPT - NPT Galvanized	
1	1.5				P47B-00017	Coupling ASTM A105 Class 3000 ASME B16.11 NPT - NPT Galvanized	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30B-0002H	Plug ASTM A105 ASME B16.11 NPT Galvanized Round head	
1	0.75				P30B-0002J	Plug ASTM A105 ASME B16.11 NPT Galvanized Round head	
1	1				P30B-0002K	Plug ASTM A105 ASME B16.11 NPT Galvanized Round head	
1	1.5				P30B-0002L	Plug ASTM A105 ASME B16.11 NPT Galvanized Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P61B-005SS	Flange NPT ASTM A105 Class 300 ASME B16.5 FF Galvanized	
1	0.75				P61B-005ST	Flange NPT ASTM A105 Class 300 ASME B16.5 FF Galvanized	
1	1				P61B-005SU	Flange NPT ASTM A105 Class 300 ASME B16.5 FF Galvanized	
1	1.5				P61B-005SV	Flange NPT ASTM A105 Class 300 ASME B16.5 FF Galvanized	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67B-002DG	Blind flange ASTM A105 Class 300 ASME B16.5 FF Galvanized	
1	0.75				P67B-002DH	Blind flange ASTM A105 Class 300 ASME B16.5 FF Galvanized	
1	1				P67B-002DJ	Blind flange ASTM A105 Class 300 ASME B16.5 FF Galvanized	
1	1.5				P67B-002DK	Blind flange ASTM A105 Class 300 ASME B16.5 FF Galvanized	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P74U-000VX	Sheet gasket Synthetic fiber Class 300 ASME B16.21 Flange ASME B16.5 FF 1.5mm-T	
1	0.75				P74U-000VY	Sheet gasket Synthetic fiber Class 300 ASME B16.21 Flange ASME B16.5 FF 1.5mm-T	
1	1				P74U-000VZ	Sheet gasket Synthetic fiber Class 300 ASME B16.21 Flange ASME B16.5 FF 1.5mm-T	
1	1.5				P74U-000W0	Sheet gasket Synthetic fiber Class 300 ASME B16.21 Flange ASME B16.5 FF 1.5mm-T	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-1.5				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 Galvanized UNC Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81R-000CN	Gate valve ASTM B62 UNS C83600 Class 300 MSS SP-80 NPT Trim bronze UB-SG-ISRS Handwheel operated	

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GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75				P81R-000CP	Gate valve ASTM B62 UNS C83600 Class 300 MSS SP-80 NPT Trim bronze UB-SG-ISRS Handwheel operated	
1	1				P81R-000CR	Gate valve ASTM B62 UNS C83600 Class 300 MSS SP-80 NPT Trim bronze UB-SG-ISRS Handwheel operated	
1	1.5				P81R-000CS	Gate valve ASTM B62 UNS C83600 Class 300 MSS SP-80 NPT Trim bronze UB-SG-ISRS Handwheel operated	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82R-0007Y	Globe valve ASTM B62 UNS C83600 Class 300 MSS SP-80 NPT Trim bronze UB-SG-ISRS Handwheel operated	
1	0.75				P82R-0007Z	Globe valve ASTM B62 UNS C83600 Class 300 MSS SP-80 NPT Trim bronze UB-SG-ISRS Handwheel operated	
1	1				P82R-00080	Globe valve ASTM B62 UNS C83600 Class 300 MSS SP-80 NPT Trim bronze UB-SG-ISRS Handwheel operated	
1	1.5				P82R-00081	Globe valve ASTM B62 UNS C83600 Class 300 MSS SP-80 NPT Trim bronze UB-SG-ISRS Handwheel operated	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83R-00099	Check valve ASTM B62 UNS C83600 Class 300 MSS SP-80 NPT Trim bronze Swing-type Screw cap	
1	0.75				P83R-0009A	Check valve ASTM B62 UNS C83600 Class 300 MSS SP-80 NPT Trim bronze Swing-type Screw cap	
1	1				P83R-0009B	Check valve ASTM B62 UNS C83600 Class 300 MSS SP-80 NPT Trim bronze Swing-type Screw cap	
1	1.5				P83R-0009C	Check valve ASTM B62 UNS C83600 Class 300 MSS SP-80 NPT Trim bronze Swing-type Screw cap	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71B-000FG	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 FF Galvanized	
1	0.75				P71B-000FH	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 FF Galvanized	
1	1				P71B-000FJ	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 FF Galvanized	
1	1.5				P71B-000FK	Spectacle blank ASTM A105 Class 300 Standard-drawing Flange ASME B16.5 FF Galvanized	

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BOLT TABLE (B_T0RA , MACHINE ASME FF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	65	P80S-017T3		
0.75	4	0.625	75	P80S-017US		
1	4	0.625	75	P80S-017US		
1.5	4	0.750	90	P80S-017XM		

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T0RA

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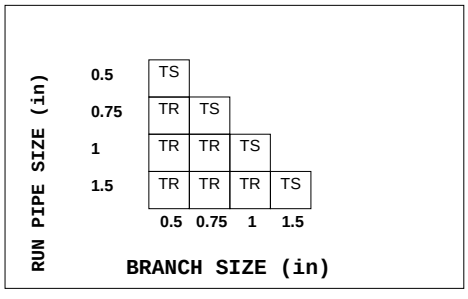
BRANCH TABLE (T_T0RA)



TS : STRAIGHT TEE
TR : REDUCING TEE

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PIPING CLASS

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Material : SS304L
Rating : ASME CLASS 150
Flange Face : RF
C.A.(mm) : 0.00
Gasket : Spiral Wound
Service : NITROGEN FOR POWDER, POWDER, PELLIET, SOLID STABILIZER, VENT GAS
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
541	NPT(F) (CA,L)
714	SW - NPT(F) (V)
773	CLASS 300 (B,F,G)

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PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P01J-000UC	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE	
1	0.75		SCH80S		P01J-000UD	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE	
1	1		SCH80S		P01J-000UE	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE	
1	1.5		SCH80S		P01J-000UF	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE	
1	2		SCH10S		P01J-000RD	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M BE	
1	3		SCH10S		P01J-000RE	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M BE	
1	4		SCH10S		P01J-000RF	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M BE	
1	6		SCH10S		P01J-000RG	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M BE	
1	8		SCH10S		P01J-001F7	Pipe ASTM A358 Grade 304/304L Class 1 dual grade EFW ASME B36.10M/B36.19M BE	
1	10		SCH10S		P01J-000S7	Pipe ASTM A358 Grade 304/304L Class 1 dual grade EFW ASME B36.10M/B36.19M BE	
1	12		SCH10S		P01J-000S8	Pipe ASTM A358 Grade 304/304L Class 1 dual grade EFW ASME B36.10M/B36.19M BE	
1	14		SCH10S		P01J-000S9	Pipe ASTM A358 Grade 304/304L Class 1 dual grade EFW ASME B36.10M/B36.19M BE	
1	16		SCH10S		P01J-000SA	Pipe ASTM A358 Grade 304/304L Class 1 dual grade EFW ASME B36.10M/B36.19M BE	
1	18		SCH10S		P01J-000SB	Pipe ASTM A358 Grade 304/304L Class 1 dual grade EFW ASME B36.10M/B36.19M BE	
1	20		SCH10S		P01J-000SC	Pipe ASTM A358 Grade 304/304L Class 1 dual grade EFW ASME B36.10M/B36.19M BE	
1	22		SCH10S		P01J-000SD	Pipe ASTM A358 Grade 304/304L Class 1 dual grade EFW ASME B36.10M/B36.19M BE	
1	24		SCH10S		P01J-000SE	Pipe ASTM A358 Grade 304/304L Class 1 dual grade EFW ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P02K-0001K	90 degree elbow ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	0.75				P02K-0001L	90 degree elbow ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	1				P02K-0001M	90 degree elbow ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	1.5				P02K-0001N	90 degree elbow ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	2		SCH10S		P02J-000J0	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	3		SCH10S		P02J-000J1	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	4		SCH10S		P02J-000J2	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	6		SCH10S		P02J-000J3	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	8		SCH10S		P02J-0017L	90 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius	
1	10		SCH10S		P02J-000JC	90 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius	
1	12		SCH10S		P02J-000JD	90 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius	
1	14		SCH10S		P02J-000JE	90 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius	
1	16		SCH10S		P02J-000JF	90 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius	
1	18		SCH10S		P02J-000JG	90 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius	
1	20		SCH10S		P02J-000JH	90 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius	
1	22		SCH10S		P02J-000JJ	90 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius	
1	24		SCH10S		P02J-000JK	90 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius	

90FACTORY-MADE BEND (9FM)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2		SCH10S		P08J-00068	90 degree factory-made bend ASTM A403 Grade WP304/WP304L Class S dual grade Seamless Standard-drawing BW 10DR Licensor-5	
1	3		SCH10S		P08J-00069	90 degree factory-made bend ASTM A403 Grade WP304/WP304L Class S dual grade Seamless Standard-drawing BW 10DR Licensor-5	
1	4		SCH10S		P08J-0006A	90 degree factory-made bend ASTM A403 Grade WP304/WP304L Class S dual grade Seamless Standard-drawing BW 10DR Licensor-5	
1	6		SCH10S		P08J-0006B	90 degree factory-made bend ASTM A403 Grade WP304/WP304L Class S dual grade Seamless Standard-drawing BW 10DR Licensor-5	
1	8		SCH10S		P08J-0006E	90 degree factory-made bend ASTM A403 Grade WP304/WP304L Class WX dual grade Weld Standard-drawing BW 10DR Licensor-5	
1	10		SCH10S		P08J-0006C	90 degree factory-made bend ASTM A403 Grade WP304/WP304L Class WX dual grade Weld Standard-drawing BW 10DR Licensor-5	
1	12		SCH10S		P08J-0006D	90 degree factory-made bend ASTM A403 Grade WP304/WP304L Class WX dual grade Weld Standard-drawing BW 10DR Licensor-5	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P03K-0001G	45 degree elbow ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	0.75				P03K-0001H	45 degree elbow ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	

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45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P03K-0001J	45 degree elbow ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	1.5				P03K-0001K	45 degree elbow ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	2		SCH10S		P03J-000HS	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	3		SCH10S		P03J-000HT	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	4		SCH10S		P03J-000HU	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	6		SCH10S		P03J-000HV	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	8		SCH10S		P03J-0016G	45 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius	
1	10		SCH10S		P03J-000J4	45 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius	
1	12		SCH10S		P03J-000J5	45 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius	
1	14		SCH10S		P03J-000J6	45 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius	
1	16		SCH10S		P03J-000J7	45 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius	
1	18		SCH10S		P03J-000J8	45 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius	
1	20		SCH10S		P03J-000J9	45 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius	
1	22		SCH10S		P03J-000JA	45 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius	
1	24		SCH10S		P03J-000JB	45 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius	

45FACTORY-MADE BEND (4FM)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2		SCH10S		P09J-00066	45 degree factory-made bend ASTM A403 Grade WP304/WP304L Class S dual grade Seamless Standard-drawing BW 10DR Licensor-5	
1	3		SCH10S		P09J-00067	45 degree factory-made bend ASTM A403 Grade WP304/WP304L Class S dual grade Seamless Standard-drawing BW 10DR Licensor-5	
1	4		SCH10S		P09J-00068	45 degree factory-made bend ASTM A403 Grade WP304/WP304L Class S dual grade Seamless Standard-drawing BW 10DR Licensor-5	
1	6		SCH10S		P09J-00069	45 degree factory-made bend ASTM A403 Grade WP304/WP304L Class S dual grade Seamless Standard-drawing BW 10DR Licensor-5	
1	8		SCH10S		P09J-0006C	45 degree factory-made bend ASTM A403 Grade WP304/WP304L Class WX dual grade Weld Standard-drawing BW 10DR Licensor-5	
1	10		SCH10S		P09J-0006A	45 degree factory-made bend ASTM A403 Grade WP304/WP304L Class WX dual grade Weld Standard-drawing BW 10DR Licensor-5	
1	12		SCH10S		P09J-0006B	45 degree factory-made bend ASTM A403 Grade WP304/WP304L Class WX dual grade Weld Standard-drawing BW 10DR Licensor-5	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P21K-0001G	Straight tee ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	0.75				P21K-0001H	Straight tee ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	1				P21K-0001J	Straight tee ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	1.5				P21K-0001K	Straight tee ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	2		SCH10S		P21J-000HM	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	3		SCH10S		P21J-000HN	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	4		SCH10S		P21J-000HP	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	6		SCH10S		P21J-000HR	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	8		SCH10S		P21J-000ZZ	Straight tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	10		SCH10S		P21J-000J0	Straight tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	12		SCH10S		P21J-000J1	Straight tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	14		SCH10S		P21J-000J2	Straight tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	16		SCH10S		P21J-000J3	Straight tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	18		SCH10S		P21J-000J4	Straight tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	20		SCH10S		P21J-000J5	Straight tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	22		SCH10S		P21J-000J6	Straight tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	24		SCH10S		P21J-000J7	Straight tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	

STRAIGHT LATERAL TEE (TLS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75				P22K-00001	Straight lateral-tee ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW 60 degree	
1	1				P22K-00002	Straight lateral-tee ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW 60 degree	
1	1.5				P22K-00003	Straight lateral-tee ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW 60 degree	

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STRAIGHT LATERAL TEE (TLS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2		SCH10S		P22J-00053	Straight lateral-tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW 60 degree	
1	3		SCH10S		P22J-00050	Straight lateral-tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW 60 degree	
1	4		SCH10S		P22J-0004Z	Straight lateral-tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW 60 degree	
1	6		SCH10S		P22J-0006D	Straight lateral-tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW 60 degree	
1	8		SCH10S		P22J-0006C	Straight lateral-tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW 60 degree	
1	10		SCH10S		P22J-00064	Straight lateral-tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW 60 degree	
1	12		SCH10S		P22J-00065	Straight lateral-tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW 60 degree	
1	14		SCH10S		P22J-00066	Straight lateral-tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW 60 degree	
1	16		SCH10S		P22J-00067	Straight lateral-tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW 60 degree	
1	18		SCH10S		P22J-00068	Straight lateral-tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW 60 degree	
1	20		SCH10S		P22J-00069	Straight lateral-tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW 60 degree	
1	24		SCH10S		P22J-0006B	Straight lateral-tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW 60 degree	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5			P24K-0001V	Reducing tee ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	1	0.5			P24K-0001W	Reducing tee ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	1	0.75			P24K-0001X	Reducing tee ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	1.5	0.5			P24K-0001Y	Reducing tee ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	1.5	0.75			P24K-0001Z	Reducing tee ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	1.5	1			P24K-00020	Reducing tee ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	2	1	SCH10S	SCH80S	P24J-0065A	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	2	1.5	SCH10S	SCH80S	P24J-0065B	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	3	1.5	SCH10S	SCH80S	P24J-004SV	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	3	2	SCH10S	SCH10S	P24J-002H7	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	4	2	SCH10S	SCH10S	P24J-002H8	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	4	3	SCH10S	SCH10S	P24J-002H9	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	6	3	SCH10S	SCH10S	P24J-002HA	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	6	4	SCH10S	SCH10S	P24J-002HB	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	8	4	SCH10S	SCH10S	P24J-004SY	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	8	6	SCH10S	SCH10S	P24J-004SZ	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	10	4	SCH10S	SCH10S	P24J-004T0	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	10	6	SCH10S	SCH10S	P24J-004T1	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	10	8	SCH10S	SCH10S	P24J-004T2	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	12	6	SCH10S	SCH10S	P24J-004T3	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	12	8	SCH10S	SCH10S	P24J-004T4	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	12	10	SCH10S	SCH10S	P24J-002HT	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	14	6	SCH10S	SCH10S	P24J-004T5	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	14	8	SCH10S	SCH10S	P24J-004T6	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	14	10	SCH10S	SCH10S	P24J-002HU	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	14	12	SCH10S	SCH10S	P24J-002HV	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	16	6	SCH10S	SCH10S	P24J-004T7	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	16	8	SCH10S	SCH10S	P24J-004T8	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	16	10	SCH10S	SCH10S	P24J-002HW	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	16	12	SCH10S	SCH10S	P24J-002HX	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	16	14	SCH10S	SCH10S	P24J-002HY	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	18	8	SCH10S	SCH10S	P24J-004T9	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	18	10	SCH10S	SCH10S	P24J-002HZ	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	18	12	SCH10S	SCH10S	P24J-002J0	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	18	14	SCH10S	SCH10S	P24J-002J1	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	18	16	SCH10S	SCH10S	P24J-002J2	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	20	8	SCH10S	SCH10S	P24J-0065C	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	20	10	SCH10S	SCH10S	P24J-002J3	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	20	12	SCH10S	SCH10S	P24J-002J4	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	20	14	SCH10S	SCH10S	P24J-002J5	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	

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PIPING CLASS
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REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	20	16	SCH10S	SCH10S	P24J-002J6	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	20	18	SCH10S	SCH10S	P24J-002J7	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	22	10	SCH10S	SCH10S	P24J-0086R	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	22	12	SCH10S	SCH10S	P24J-002J8	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	22	14	SCH10S	SCH10S	P24J-002J9	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	22	16	SCH10S	SCH10S	P24J-002JA	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	22	18	SCH10S	SCH10S	P24J-002JB	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	22	20	SCH10S	SCH10S	P24J-002JC	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	24	10	SCH10S	SCH10S	P24J-0065D	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	24	12	SCH10S	SCH10S	P24J-002P9	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	24	14	SCH10S	SCH10S	P24J-002JD	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	24	16	SCH10S	SCH10S	P24J-002JE	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	24	18	SCH10S	SCH10S	P24J-002JF	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	24	20	SCH10S	SCH10S	P24J-002JG	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	24	22	SCH10S	SCH10S	P24J-002JH	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	SCH10S	SCH10S	P27J-001PS	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	4	2	SCH10S	SCH10S	P27J-001PT	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	4	3	SCH10S	SCH10S	P27J-001PU	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	6	3	SCH10S	SCH10S	P27J-001PV	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	6	4	SCH10S	SCH10S	P27J-001PW	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	8	4	SCH10S	SCH10S	P27J-003L1	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	8	6	SCH10S	SCH10S	P27J-003L2	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	10	4	SCH10S	SCH10S	P27J-003L3	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	10	6	SCH10S	SCH10S	P27J-003L4	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	10	8	SCH10S	SCH10S	P27J-003L5	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	12	6	SCH10S	SCH10S	P27J-003L6	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	12	8	SCH10S	SCH10S	P27J-003L7	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	12	10	SCH10S	SCH10S	P27J-001RD	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	14	6	SCH10S	SCH10S	P27J-003L8	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	14	8	SCH10S	SCH10S	P27J-003L9	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	14	10	SCH10S	SCH10S	P27J-001RF	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	14	12	SCH10S	SCH10S	P27J-001RG	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	16	8	SCH10S	SCH10S	P27J-003LA	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	16	10	SCH10S	SCH10S	P27J-001RJ	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	16	12	SCH10S	SCH10S	P27J-001RK	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	16	14	SCH10S	SCH10S	P27J-001RL	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	18	10	SCH10S	SCH10S	P27J-001RM	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	18	12	SCH10S	SCH10S	P27J-001RN	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	18	14	SCH10S	SCH10S	P27J-001RP	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	18	16	SCH10S	SCH10S	P27J-001RR	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	20	12	SCH10S	SCH10S	P27J-001RS	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	20	14	SCH10S	SCH10S	P27J-001RT	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	20	16	SCH10S	SCH10S	P27J-001RU	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	20	18	SCH10S	SCH10S	P27J-001RV	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	24	16	SCH10S	SCH10S	P27J-001S0	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	24	18	SCH10S	SCH10S	P27J-001S1	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	24	20	SCH10S	SCH10S	P27J-001S2	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	SCH10S	SCH10S	P28J-001P8	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	4	2	SCH10S	SCH10S	P28J-001P9	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	4	3	SCH10S	SCH10S	P28J-001PA	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	6	3	SCH10S	SCH10S	P28J-001PB	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	6	4	SCH10S	SCH10S	P28J-001PC	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	8	4	SCH10S	SCH10S	P28J-003LP	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	

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ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	8	6	SCH10S	SCH10S	P28J-003LR	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	10	4	SCH10S	SCH10S	P28J-003LS	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	10	6	SCH10S	SCH10S	P28J-003LT	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	10	8	SCH10S	SCH10S	P28J-003LU	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	12	6	SCH10S	SCH10S	P28J-003LV	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	12	8	SCH10S	SCH10S	P28J-003LW	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	12	10	SCH10S	SCH10S	P28J-001PW	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	14	6	SCH10S	SCH10S	P28J-003LX	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	14	8	SCH10S	SCH10S	P28J-003LY	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	14	10	SCH10S	SCH10S	P28J-001PY	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	14	12	SCH10S	SCH10S	P28J-001PZ	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	16	8	SCH10S	SCH10S	P28J-003LZ	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	16	10	SCH10S	SCH10S	P28J-001R1	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	16	12	SCH10S	SCH10S	P28J-001R2	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	16	14	SCH10S	SCH10S	P28J-001R3	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	18	10	SCH10S	SCH10S	P28J-001R4	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	18	12	SCH10S	SCH10S	P28J-001R5	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	18	14	SCH10S	SCH10S	P28J-001R6	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	18	16	SCH10S	SCH10S	P28J-001R7	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	20	12	SCH10S	SCH10S	P28J-001R8	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	20	14	SCH10S	SCH10S	P28J-001R9	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	20	16	SCH10S	SCH10S	P28J-001RA	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	20	18	SCH10S	SCH10S	P28J-001RB	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	24	16	SCH10S	SCH10S	P28J-001RG	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	24	18	SCH10S	SCH10S	P28J-001RH	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	24	20	SCH10S	SCH10S	P28J-001RJ	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P29K-0001V	Cap ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	0.75				P29K-0001W	Cap ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	1				P29K-0001X	Cap ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	1.5				P29K-0001Y	Cap ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	2		SCH10S		P29J-000G1	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	3		SCH10S		P29J-000G2	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	4		SCH10S		P29J-000G3	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	6		SCH10S		P29J-000G4	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	8		SCH10S		P29J-000X3	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	10		SCH10S		P29J-000GB	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	12		SCH10S		P29J-000GC	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	14		SCH10S		P29J-000GD	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	16		SCH10S		P29J-000GE	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	18		SCH10S		P29J-000GF	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	20		SCH10S		P29J-000GG	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	22		SCH10S		P29J-000GH	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	24		SCH10S		P29J-000GJ	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
541	0.75				P29K-00020	Cap ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P41J-001FS	Straight nipple ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		SCH80S		P41J-001FT	Straight nipple ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		SCH80S		P41J-001FU	Straight nipple ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		SCH80S		P41J-001FV	Straight nipple ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

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CON SWAGED NIPPLE (SNC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH80S	SCH80S	P42J-00081	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	SCH80S	SCH80S	P42J-00082	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	SCH80S	SCH80S	P42J-00083	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	SCH80S	SCH80S	P42J-00084	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	SCH80S	SCH80S	P42J-00085	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	SCH80S	SCH80S	P42J-00086	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	SCH10S	SCH80S	P42J-000F9	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	SCH10S	SCH80S	P42J-000F6	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	SCH10S	SCH80S	P42J-000F7	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	SCH10S	SCH80S	P42J-000F8	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	SCH10S	SCH80S	P42J-000AG	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	

ECC SWAGED NIPPLE (SNE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH80S	SCH80S	P43J-0008D	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	SCH80S	SCH80S	P43J-0008E	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	SCH80S	SCH80S	P43J-0008F	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	SCH80S	SCH80S	P43J-0008G	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	SCH80S	SCH80S	P43J-0008H	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	SCH80S	SCH80S	P43J-0008J	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	SCH10S	SCH80S	P43J-000CT	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	SCH10S	SCH80S	P43J-000CU	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	SCH10S	SCH80S	P43J-000CV	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	SCH10S	SCH80S	P43J-000CW	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	SCH10S	SCH80S	P43J-0008P	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	

COUPLING (CPS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P47K-00035	Coupling ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW - SW	
1	0.75				P47K-00036	Coupling ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW - SW	
1	1				P47K-00037	Coupling ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW - SW	
1	1.5				P47K-00038	Coupling ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW - SW	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2 - 2.5	0.75			P31K-00GFG	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 SW	
1	3 - 5	0.75			P31K-00GFH	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 SW	
1	6 - 12	0.75			P31K-008YY	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 SW	
1	14 - 36	0.75			P31K-008YC	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 SW	
1	3	1			P31K-008ZG	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 SW	
1	4 - 5	1			P31K-00GFL	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 SW	
1	6 - 10	1			P31K-008ZU	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 SW	
1	12 - 36	1			P31K-008Z6	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 SW	
1	4	1.5			P31K-0099M	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 SW	
1	5 - 6	1.5			P31K-00GFS	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 SW	
1	8 - 12	1.5			P31K-0099Z	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 SW	
1	14 - 24	1.5			P31K-00991	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 SW	
541	1	0.75			P31K-00911	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 NPT	
541	1.5	0.75			P31K-00916	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 NPT	
541	2 - 2.5	0.75			P31K-00GFJ	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 NPT	
541	3 - 5	0.75			P31K-00GFK	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 NPT	

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OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
541	6 - 12	0.75			P31K-0091X	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 NPT	
541	14 - 36	0.75			P31K-0091B	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 NPT	
1	6	2	SCH10S	SCH10S	P31K-005AV	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	8	2	SCH10S	SCH10S	P31K-007G1	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	10	2	SCH10S	SCH10S	P31K-005JV	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	12	2	SCH10S	SCH10S	P31K-005JX	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	14	2	SCH10S	SCH10S	P31K-005K0	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	16	2	SCH10S	SCH10S	P31K-005K3	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	18	2	SCH10S	SCH10S	P31K-005K5	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	20	2	SCH10S	SCH10S	P31K-005K8	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	22	2	SCH10S	SCH10S	P31K-005L8	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	24	2	SCH10S	SCH10S	P31K-005B4	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	8	3	SCH10S	SCH10S	P31K-007XV	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	10	3	SCH10S	SCH10S	P31K-007KK	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	12	3	SCH10S	SCH10S	P31K-007LF	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	14	3	SCH10S	SCH10S	P31K-007ME	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	16	3	SCH10S	SCH10S	P31K-007NJ	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	18	3	SCH10S	SCH10S	P31K-007PR	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	20	3	SCH10S	SCH10S	P31K-007RR	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	22	3	SCH10S	SCH10S	P31K-00G49	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	24	3	SCH10S	SCH10S	P31K-007SP	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	12	4	SCH10S	SCH10S	P31K-00812	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	14	4	SCH10S	SCH10S	P31K-00821	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	16	4	SCH10S	SCH10S	P31K-00837	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	18	4	SCH10S	SCH10S	P31K-0084E	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	20	4	SCH10S	SCH10S	P31K-0085E	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	22	4	SCH10S	SCH10S	P31K-00G4A	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	24	4	SCH10S	SCH10S	P31K-0086F	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	18	6	SCH10S	SCH10S	P31K-008EY	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	20	6	SCH10S	SCH10S	P31K-008FP	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	22	6	SCH10S	SCH10S	P31K-00G4B	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	24	6	SCH10S	SCH10S	P31K-008GG	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30K-0001G	Plug ASTM A182 Grade F304/F304L dual grade ASME B16.11 NPT Round head	
1	0.75				P30K-0001H	Plug ASTM A182 Grade F304/F304L dual grade ASME B16.11 NPT Round head	
1	1				P30K-0001J	Plug ASTM A182 Grade F304/F304L dual grade ASME B16.11 NPT Round head	
1	1.5				P30K-0001K	Plug ASTM A182 Grade F304/F304L dual grade ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P61K-003A4	Flange SW ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	0.75		SCH80S		P61K-003A5	Flange SW ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	1		SCH80S		P61K-003A6	Flange SW ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	1.5		SCH80S		P61K-003A7	Flange SW ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	2				P63B-0001Y	Lap joint ASTM A105 Class 150 ASME B16.5	
1	3				P63B-00021	Lap joint ASTM A105 Class 150 ASME B16.5	
1	4				P63B-00022	Lap joint ASTM A105 Class 150 ASME B16.5	
1	6				P63B-00024	Lap joint ASTM A105 Class 150 ASME B16.5	
1	8				P63B-00023	Lap joint ASTM A105 Class 150 ASME B16.5	
1	10				P63B-0001T	Lap joint ASTM A105 Class 150 ASME B16.5	
1	12				P63B-0001U	Lap joint ASTM A105 Class 150 ASME B16.5	
1	14				P63B-0001V	Lap joint ASTM A105 Class 150 ASME B16.5	
1	16				P63B-0001W	Lap joint ASTM A105 Class 150 ASME B16.5	
1	18				P63B-0001X	Lap joint ASTM A105 Class 150 ASME B16.5	
1	20				P63B-0001Z	Lap joint ASTM A105 Class 150 ASME B16.5	
1	22				P63B-00075	Lap joint ASTM A105 Class 150 ASME B16.5	
1	24				P63B-00020	Lap joint ASTM A105 Class 150 ASME B16.5	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
773	0.5		SCH80S		P61K-003A9	Flange SW ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
773	0.75		SCH80S		P61K-003AA	Flange SW ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
773	1		SCH80S		P61K-003AB	Flange SW ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
773	1.5		SCH80S		P61K-003AC	Flange SW ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
773	2		SCH10S		P61K-0023W	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
773	3		SCH10S		P61K-0023X	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
773	4		SCH10S		P61K-0023Y	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
773	6		SCH10S		P61K-003AD	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
773	8		SCH10S		P61K-003AE	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
773	10		SCH10S		P61K-0024Y	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
773	12		SCH10S		P61K-0024Z	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
773	14		SCH10S		P61K-00250	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
773	16		SCH10S		P61K-00251	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
773	18		SCH10S		P61K-00252	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
773	20		SCH10S		P61K-00253	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
773	22		SCH10S		P61K-0061K	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
773	24		SCH10S		P61K-00258	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67K-000K9	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	0.75				P67K-000KA	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	1				P67K-000KB	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	1.5				P67K-000KC	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	2				P67K-000KD	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	3				P67K-000KE	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	4				P67K-000KF	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	6				P67K-000KG	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	8				P67K-000L7	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	10				P67K-000L1	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	12				P67K-000L2	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	14				P67K-000L3	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	16				P67K-000L4	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	18				P67K-000L5	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	20				P67K-000L6	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	22				P67K-001AR	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	24				P67K-000L9	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	

STUB END (SE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2		SCH10S		P45J-0000G	Stub end Short-pattern ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	3		SCH10S		P45J-0000H	Stub end Short-pattern ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	4		SCH10S		P45J-0000J	Stub end Short-pattern ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	6		SCH10S		P45J-0000K	Stub end Short-pattern ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	8		SCH10S		P45J-0000T	Stub end Short-pattern ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	10		SCH10S		P45J-0000L	Stub end Short-pattern ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	12		SCH10S		P45J-0000M	Stub end Short-pattern ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	14		SCH10S		P45J-0000N	Stub end Short-pattern ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	16		SCH10S		P45J-0000P	Stub end Short-pattern ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	18		SCH10S		P45J-0000R	Stub end Short-pattern ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	20		SCH10S		P45J-0000S	Stub end Short-pattern ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	22		SCH10S		P45J-00019	Stub end Short-pattern ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	24		SCH10S		P45J-0000U	Stub end Short-pattern ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P74U-001PC	Sheet gasket Non-asbestos Class 150 ASME B16.21 Flange ASME B16.5 RF 2.8mm-T Licensor-5 Type-2	
1	0.75				P74U-001PD	Sheet gasket Non-asbestos Class 150 ASME B16.21 Flange ASME B16.5 RF 2.8mm-T Licensor-5 Type-2	
1	1				P74U-001PE	Sheet gasket Non-asbestos Class 150 ASME B16.21 Flange ASME B16.5 RF 2.8mm-T Licensor-5 Type-2	

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GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5				P74U-001PF	Sheet gasket Non-asbestos Class 150 ASME B16.21 Flange ASME B16.5 RF 2.8mm-T Licensor-5 Type-2	
1	2				P74U-001PM	Sheet gasket Non-asbestos Class 150 ASME B16.21 Flange ASME B16.5 RF 2.8mm-T Licensor-5 Type-2	
1	3				P74U-001PS	Sheet gasket Non-asbestos Class 150 ASME B16.21 Flange ASME B16.5 RF 2.8mm-T Licensor-5 Type-2	
1	4				P74U-001PT	Sheet gasket Non-asbestos Class 150 ASME B16.21 Flange ASME B16.5 RF 2.8mm-T Licensor-5 Type-2	
1	6				P74U-001PU	Sheet gasket Non-asbestos Class 150 ASME B16.21 Flange ASME B16.5 RF 2.8mm-T Licensor-5 Type-2	
1	8				P74U-001PV	Sheet gasket Non-asbestos Class 150 ASME B16.21 Flange ASME B16.5 RF 2.8mm-T Licensor-5 Type-2	
1	10				P74U-001PG	Sheet gasket Non-asbestos Class 150 ASME B16.21 Flange ASME B16.5 RF 2.8mm-T Licensor-5 Type-2	
1	12				P74U-001PH	Sheet gasket Non-asbestos Class 150 ASME B16.21 Flange ASME B16.5 RF 2.8mm-T Licensor-5 Type-2	
1	14				P74U-001PJ	Sheet gasket Non-asbestos Class 150 ASME B16.21 Flange ASME B16.5 RF 2.8mm-T Licensor-5 Type-2	
1	16				P74U-001PK	Sheet gasket Non-asbestos Class 150 ASME B16.21 Flange ASME B16.5 RF 2.8mm-T Licensor-5 Type-2	
1	18				P74U-001PL	Sheet gasket Non-asbestos Class 150 ASME B16.21 Flange ASME B16.5 RF 2.8mm-T Licensor-5 Type-2	
1	20				P74U-001PN	Sheet gasket Non-asbestos Class 150 ASME B16.21 Flange ASME B16.5 RF 2.8mm-T Licensor-5 Type-2	
1	22				P74U-001PP	Sheet gasket Non-asbestos Class 150 ASME B16.21 Flange ASME B16.5 RF 2.8mm-T Licensor-5 Type-2	
1	24				P74U-001PR	Sheet gasket Non-asbestos Class 150 ASME B16.21 Flange ASME B16.5 RF 2.8mm-T Licensor-5 Type-2	
773	0.5				P73T-003U9	Spiral wound gasket SS316 winding / Non-asbestos filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-9 Special ID	
773	0.75				P73T-003UA	Spiral wound gasket SS316 winding / Non-asbestos filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-9 Special ID	
773	1				P73T-003UB	Spiral wound gasket SS316 winding / Non-asbestos filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-9 Special ID	
773	1.5				P73T-003UC	Spiral wound gasket SS316 winding / Non-asbestos filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-9 Special ID	
773	2				P73T-003UD	Spiral wound gasket SS316 winding / Non-asbestos filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-9 Special ID	
773	3				P73T-003UE	Spiral wound gasket SS316 winding / Non-asbestos filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-9 Special ID	
773	4				P73T-003UF	Spiral wound gasket SS316 winding / Non-asbestos filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-9 Special ID	
773	6				P73T-003UG	Spiral wound gasket SS316 winding / Non-asbestos filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-9 Special ID	
773	8				P73T-003VD	Spiral wound gasket SS316 winding / Non-asbestos filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-9 Special ID	
773	10				P73T-003V7	Spiral wound gasket SS316 winding / Non-asbestos filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-9 Special ID	
773	12				P73T-003V8	Spiral wound gasket SS316 winding / Non-asbestos filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-9 Special ID	
773	14				P73T-003V9	Spiral wound gasket SS316 winding / Non-asbestos filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-9 Special ID	
773	16				P73T-003VA	Spiral wound gasket SS316 winding / Non-asbestos filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-9 Special ID	
773	18				P73T-003VB	Spiral wound gasket SS316 winding / Non-asbestos filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-9 Special ID	
773	20				P73T-003VC	Spiral wound gasket SS316 winding / Non-asbestos filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-9 Special ID	
773	22				P73T-0041W	Spiral wound gasket SS316 winding / Non-asbestos filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-9 Special ID	
773	24				P73T-0041X	Spiral wound gasket SS316 winding / Non-asbestos filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-9 Special ID	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-16				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	18-24				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
773	0.5-10				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
773	12-24				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81K-00108	Gate valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	0.75				P81K-00109	Gate valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	1				P81K-0010A	Gate valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	1.5				P81K-0010B	Gate valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	2				P81L-00293	Gate valve ASTM A351 Grade CF8 Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	3				P81L-00294	Gate valve ASTM A351 Grade CF8 Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	4				P81L-00295	Gate valve ASTM A351 Grade CF8 Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	6				P81L-00296	Gate valve ASTM A351 Grade CF8 Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	

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GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	8				P81L-00297	Gate valve ASTM A351 Grade CF8 Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	10				P81L-002BX	Gate valve ASTM A351 Grade CF8 Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	12				P81L-002BY	Gate valve ASTM A351 Grade CF8 Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	14				P81L-002BZ	Gate valve ASTM A351 Grade CF8 Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated	
1	16				P81L-002C0	Gate valve ASTM A351 Grade CF8 Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated	
1	18				P81L-002C1	Gate valve ASTM A351 Grade CF8 Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated	
1	20				P81L-002C2	Gate valve ASTM A351 Grade CF8 Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated	
1	24				P81L-002C3	Gate valve ASTM A351 Grade CF8 Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated	
714	0.5				P81K-001LC	Gate valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW - NPT Trim number 12 BB-BG-OS&Y Handwheel operated	
714	0.75				P81K-001FD	Gate valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW - NPT Trim number 12 BB-BG-OS&Y Handwheel operated	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82K-000NR	Globe valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	0.75				P82K-000NS	Globe valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	1				P82K-000NT	Globe valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	1.5				P82K-000NU	Globe valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	2				P82L-00195	Globe valve ASTM A351 Grade CF8 Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	3				P82L-00196	Globe valve ASTM A351 Grade CF8 Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	4				P82L-00197	Globe valve ASTM A351 Grade CF8 Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	6				P82L-001AD	Globe valve ASTM A351 Grade CF8 Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	8				P82L-001AE	Globe valve ASTM A351 Grade CF8 Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83K-000LM	Check valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 Lift-type Bolted cover	
1	0.75				P83K-000LN	Check valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 Lift-type Bolted cover	
1	1				P83K-000LP	Check valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 Lift-type Bolted cover	
1	1.5				P83K-000LR	Check valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 Lift-type Bolted cover	
1	2				P83L-00196	Check valve ASTM A351 Grade CF8 Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	3				P83L-00197	Check valve ASTM A351 Grade CF8 Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	4				P83L-00198	Check valve ASTM A351 Grade CF8 Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	6				P83L-0019U	Check valve ASTM A351 Grade CF8 Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	8				P83L-0019V	Check valve ASTM A351 Grade CF8 Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	10				P83L-001AA	Check valve ASTM A351 Grade CF8 Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	12				P83L-001AB	Check valve ASTM A351 Grade CF8 Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	14				P83L-001AC	Check valve ASTM A351 Grade CF8 Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	16				P83L-001AD	Check valve ASTM A351 Grade CF8 Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	18				P83L-001AE	Check valve ASTM A351 Grade CF8 Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	

BALL VALVE (Q)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P84K-000PY	Ball valve Long-pattern ASTM A182 Grade F304/F304L dual grade Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design Licensor-5	
1	0.75				P84K-000PZ	Ball valve Long-pattern ASTM A182 Grade F304/F304L dual grade Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design Licensor-5	

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BALL VALVE (Q)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P84K-000R0	Ball valve Long-pattern ASTM A182 Grade F304/F304L dual grade Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design Licensor-5	
1	1.5				P84K-000R1	Ball valve Long-pattern ASTM A182 Grade F304/F304L dual grade Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design Licensor-5	
1	2				P84L-0034D	Ball valve Long-pattern ASTM A351 Grade CF8 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design Licensor-5	
1	3				P84L-0034E	Ball valve Long-pattern ASTM A351 Grade CF8 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design Licensor-5	
1	4				P84L-0034F	Ball valve Long-pattern ASTM A351 Grade CF8 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design Licensor-5	
1	6				P84L-0034P	Ball valve Long-pattern ASTM A351 Grade CF8 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design Licensor-5	
1	8				P84L-0034R	Ball valve Long-pattern ASTM A351 Grade CF8 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design Licensor-5	
1	10				P84L-0034G	Ball valve Long-pattern ASTM A351 Grade CF8 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design Licensor-5	
1	12				P84L-0034H	Ball valve Long-pattern ASTM A351 Grade CF8 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design Licensor-5	
1	14				P84L-0034J	Ball valve Long-pattern ASTM A351 Grade CF8 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design Licensor-5	
1	16				P84L-0034K	Ball valve Long-pattern ASTM A351 Grade CF8 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design Licensor-5	
1	18				P84L-0034L	Ball valve Long-pattern ASTM A351 Grade CF8 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design Licensor-5	
1	20				P84L-0034M	Ball valve Long-pattern ASTM A351 Grade CF8 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design Licensor-5	
1	22				P84L-003KD	Ball valve Long-pattern ASTM A351 Grade CF8 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design Licensor-5	
1	24				P84L-0034N	Ball valve Long-pattern ASTM A351 Grade CF8 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design Licensor-5	

BUTTERFLY VALVE (H)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	4				P86L-000ZU	Offset design butterfly valve ASTM A351 Grade CF8 Class 150 API 609 Category B Lug-type ASME B16.5 RF Disc SS316 Seat Stellite-6 Trim SS316 Triple eccentric design BG Gear operated	
1	6				P86L-000ZG	Offset design butterfly valve ASTM A351 Grade CF8 Class 150 API 609 Category B Lug-type ASME B16.5 RF Disc SS316 Seat Stellite-6 Trim SS316 Triple eccentric design BG Gear operated	
1	8				P86L-000ZH	Offset design butterfly valve ASTM A351 Grade CF8 Class 150 API 609 Category B Lug-type ASME B16.5 RF Disc SS316 Seat Stellite-6 Trim SS316 Triple eccentric design BG Gear operated	
1	10				P86L-000ZF	Offset design butterfly valve ASTM A351 Grade CF8 Class 150 API 609 Category B Lug-type ASME B16.5 RF Disc SS316 Seat Stellite-6 Trim SS316 Triple eccentric design BG Gear operated	
1	12				P86L-000Z9	Offset design butterfly valve ASTM A351 Grade CF8 Class 150 API 609 Category B Lug-type ASME B16.5 RF Disc SS316 Seat Stellite-6 Trim SS316 Triple eccentric design BG Gear operated	
1	14				P86L-000ZA	Offset design butterfly valve ASTM A351 Grade CF8 Class 150 API 609 Category B Lug-type ASME B16.5 RF Disc SS316 Seat Stellite-6 Trim SS316 Triple eccentric design BG Gear operated	
1	16				P86L-000ZB	Offset design butterfly valve ASTM A351 Grade CF8 Class 150 API 609 Category B Lug-type ASME B16.5 RF Disc SS316 Seat Stellite-6 Trim SS316 Triple eccentric design BG Gear operated	
1	18				P86L-000ZC	Offset design butterfly valve ASTM A351 Grade CF8 Class 150 API 609 Category B Lug-type ASME B16.5 RF Disc SS316 Seat Stellite-6 Trim SS316 Triple eccentric design BG Gear operated	
1	20				P86L-000ZD	Offset design butterfly valve ASTM A351 Grade CF8 Class 150 API 609 Category B Double flanged ASME B16.5 RF Disc SS316 Seat Stellite-6 Trim SS316 Triple eccentric design BG Gear operated	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71K-00065	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	0.75				P71K-00066	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	1				P71K-00067	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71K-00068	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	2				P71K-0006A	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	3				P71K-0006B	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	4				P71K-0006C	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	6				P71K-0006D	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	8				P71K-0006E	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	10				P71K-00069	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	12				P71K-0006F	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	

PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72K-0003T	Paddle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	

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PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	16				P72K-0003U	Paddle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	18				P72K-0003V	Paddle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	20				P72K-0003W	Paddle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	22				P72K-000HX	Paddle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	24				P72K-0003X	Paddle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	

PADDLE SPACER (PS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72K-0003Y	Paddle spacer ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	16				P72K-0003Z	Paddle spacer ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	18				P72K-00040	Paddle spacer ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	20				P72K-00041	Paddle spacer ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	22				P72K-000HY	Paddle spacer ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	24				P72K-00042	Paddle spacer ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	

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BOLT TABLE (B_X11F05 , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	60	P80S-003V2		
0.75	4	0.500	65	P80S-003V3		
1	4	0.500	70	P80S-003V4		
1.5	4	0.500	75	P80S-003V5		
2	4	0.625	90	P80S-003XF		
3	4	0.625	100	P80S-003VA		
4	8	0.625	100	P80S-003VA		
6	8	0.750	110	P80S-003XK		
8	8	0.750	120	P80S-003XM		
10	12	0.875	135	P80S-0041C		
12	12	0.875	135	P80S-0041C		
14	12	1.000	150	P80S-0043H		
16	16	1.000	155	P80S-0043J		
18	16	1.125	165	P80S-0046N		
20	20	1.125	175	P80S-0046S		
22	20	1.250	195	P80S-004AL		
24	20	1.250	195	P80S-004AL		

BOLT TABLE (B_X11F05_773 , STUD ASME RF, OPTION CODE 773)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-003V4		
0.75	4	0.625	75	P80S-003XC		
1	4	0.625	80	P80S-003XD		
1.5	4	0.750	95	P80S-00414		
2	8	0.625	90	P80S-003XF		
3	8	0.750	110	P80S-003XK		
4	8	0.750	115	P80S-003XL		
6	12	0.750	125	P80S-003XN		
8	12	0.875	140	P80S-0041D		
10	16	1.000	160	P80S-0043K		
12	16	1.125	175	P80S-0046S		
14	20	1.125	180	P80S-0046T		
16	20	1.250	190	P80S-004AK		
18	24	1.250	200	P80S-004AM		
20	24	1.250	210	P80S-004AP		
22	24	1.500	235	P80S-003F8		
24	24	1.500	235	P80S-003F8		

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BRANCH TABLE (T_X11F05)

RUN PIPE SIZE (in) \ BRANCH SIZE (in)	0.5	0.75	1	1.5	2	3	4	6	8	10	12	14	16	18	20	22	24
0.5	TS																
0.75	TR	TS															
1	TR	TR	TS														
1.5	TR	TR	TR	TS													
2	L	L	TR	TR	TS												
3	L	L	L	TR	TR	TS											
4	L	L	L	L	TR	TR	TS										
6	L	L	L	L	L	TR	TR	TS									
8	L	L	L	L	L	L	TR	TR	TS								
10	L	L	L	L	L	L	TR	TR	TR	TS							
12	L	L	L	L	L	L	L	TR	TR	TR	TS						
14		L	L	L	L	L	L	TR	TR	TR	TR	TS					
16		L	L	L	L	L	L	TR	TR	TR	TR	TR	TS				
18		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TS			
20	L	L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TR	TS		
22	L	L	L	L	L	L	L	L	9PD	TR	TR	TR	TR	TR	TR	TS	
24		L	L	L	L	L	L	L	9PD	TR	TR	TR	TR	TR	TR	TR	TS

9PD : REINFORCING PAD 90 DEG
TR : REDUCING TEE
L : OUTLET
TS : STRAIGHT TEE

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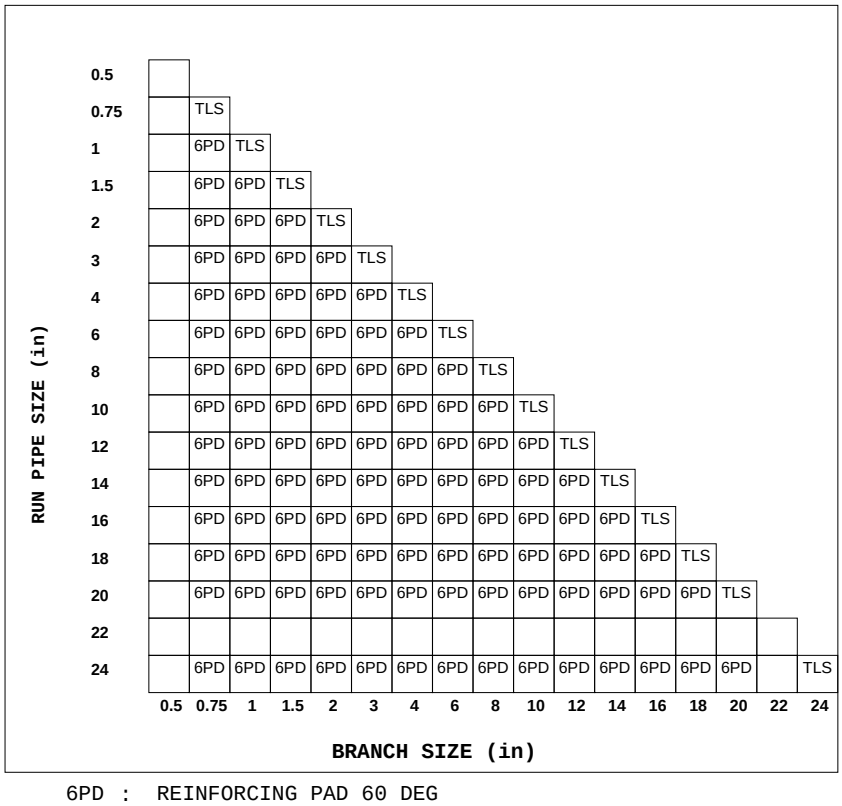
BRANCH TABLE (T_X11F05_3)



RUN PIPE SIZE (in) \ BRANCH SIZE (in)	0.5	0.75	1	1.5	2	3	4	6	8	10	12	14	16	18	20	22	24
0.5																	
0.75		TLS															
1		6PD	TLS														
1.5		6PD	6PD	TLS													
2		6PD	6PD	6PD	TLS												
3		6PD	6PD	6PD	6PD	TLS											
4		6PD	6PD	6PD	6PD	6PD	TLS										
6		6PD	6PD	6PD	6PD	6PD	6PD	TLS									
8		6PD	6PD	6PD	6PD	6PD	6PD	6PD	TLS								
10		6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	TLS							
12		6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	TLS						
14		6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	TLS					
16		6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	TLS				
18		6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	TLS			
20		6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	TLS		
22																	
24		6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD		TLS

6PD : REINFORCING PAD 60 DEG
TLS : STRAIGHT LATERAL TEE

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PIPING CLASS

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Material : SS304L
Rating : ASME CLASS 150
Flange Face : RF
C.A.(mm) : 0.00
Gasket : Spiral Wound
Service : POWDER
Design Code : ASME B31.3
Heat Treatment :

MAXIMUM DESIGN PRESSURES(MPaG)

Size Range (in) \ Design Temp (deg C)	Remarks

CLASS NOTES :

NO.	DESCRIPTION
1	ADDITIONAL VALVES SHALL BE ADDED IN INDIVIDUAL PIPE CLASSES WHEN SPECIFIED

DETAIL NOTES :

OPTION CODES:

NO.	DESCRIPTION (APPLICABLE SHORT CODES)
541	NPT(F) (CA,L)
714	SW - NPT(F) (V)
773	CLASS 300 (B,F,G)

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PIPING CLASS
X31F05 REV NO. 2

PIPE (P)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P01J-000UC	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE	
1	0.75		SCH80S		P01J-000UD	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE	
1	1		SCH80S		P01J-000UE	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE	
1	1.5		SCH80S		P01J-000UF	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE	
1	2		SCH10S		P01J-000RD	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M BE	
1	3		SCH10S		P01J-000RE	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M BE	
1	4		SCH10S		P01J-000RF	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M BE	
1	6		SCH10S		P01J-000RG	Pipe ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M BE	
1	8		SCH10S		P01J-001F7	Pipe ASTM A358 Grade 304/304L Class 1 dual grade EFW ASME B36.10M/B36.19M BE	
1	10		SCH10S		P01J-000S7	Pipe ASTM A358 Grade 304/304L Class 1 dual grade EFW ASME B36.10M/B36.19M BE	
1	12		SCH10S		P01J-000S8	Pipe ASTM A358 Grade 304/304L Class 1 dual grade EFW ASME B36.10M/B36.19M BE	
1	14		SCH10S		P01J-000S9	Pipe ASTM A358 Grade 304/304L Class 1 dual grade EFW ASME B36.10M/B36.19M BE	
1	16		SCH10S		P01J-000SA	Pipe ASTM A358 Grade 304/304L Class 1 dual grade EFW ASME B36.10M/B36.19M BE	
1	18		SCH10S		P01J-000SB	Pipe ASTM A358 Grade 304/304L Class 1 dual grade EFW ASME B36.10M/B36.19M BE	
1	20		SCH10S		P01J-000SC	Pipe ASTM A358 Grade 304/304L Class 1 dual grade EFW ASME B36.10M/B36.19M BE	

90 ELBOW (9L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P02K-0001K	90 degree elbow ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	0.75				P02K-0001L	90 degree elbow ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	1				P02K-0001M	90 degree elbow ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	1.5				P02K-0001N	90 degree elbow ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	2		SCH10S		P02J-000J0	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	3		SCH10S		P02J-000J1	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	4		SCH10S		P02J-000J2	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	6		SCH10S		P02J-000J3	90 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	8		SCH10S		P02J-0017L	90 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius	
1	10		SCH10S		P02J-000JC	90 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius	
1	12		SCH10S		P02J-000JD	90 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius	
1	14		SCH10S		P02J-000JE	90 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius	
1	16		SCH10S		P02J-000JF	90 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius	
1	18		SCH10S		P02J-000JG	90 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius	
1	20		SCH10S		P02J-000JH	90 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius	

90FACTORY-MADE BEND (9FM)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2		SCH10S		P08J-00068	90 degree factory-made bend ASTM A403 Grade WP304/WP304L Class S dual grade Seamless Standard-drawing BW 10DR Licensor-5	
1	3		SCH10S		P08J-00069	90 degree factory-made bend ASTM A403 Grade WP304/WP304L Class S dual grade Seamless Standard-drawing BW 10DR Licensor-5	
1	4		SCH10S		P08J-0006A	90 degree factory-made bend ASTM A403 Grade WP304/WP304L Class S dual grade Seamless Standard-drawing BW 10DR Licensor-5	
1	6		SCH10S		P08J-0006B	90 degree factory-made bend ASTM A403 Grade WP304/WP304L Class S dual grade Seamless Standard-drawing BW 10DR Licensor-5	
1	8		SCH10S		P08J-0006E	90 degree factory-made bend ASTM A403 Grade WP304/WP304L Class WX dual grade Weld Standard-drawing BW 10DR Licensor-5	
1	10		SCH10S		P08J-0006C	90 degree factory-made bend ASTM A403 Grade WP304/WP304L Class WX dual grade Weld Standard-drawing BW 10DR Licensor-5	
1	12		SCH10S		P08J-0006D	90 degree factory-made bend ASTM A403 Grade WP304/WP304L Class WX dual grade Weld Standard-drawing BW 10DR Licensor-5	

45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P03K-0001G	45 degree elbow ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	0.75				P03K-0001H	45 degree elbow ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	1				P03K-0001J	45 degree elbow ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	1.5				P03K-0001K	45 degree elbow ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	2		SCH10S		P03J-000HS	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	3		SCH10S		P03J-000HT	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	

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45 ELBOW (4L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	4		SCH10S		P03J-000HU	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	6		SCH10S		P03J-000HV	45 degree elbow ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW Long radius	
1	8		SCH10S		P03J-0016G	45 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius	
1	10		SCH10S		P03J-000J4	45 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius	
1	12		SCH10S		P03J-000J5	45 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius	
1	14		SCH10S		P03J-000J6	45 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius	
1	16		SCH10S		P03J-000J7	45 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius	
1	18		SCH10S		P03J-000J8	45 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius	
1	20		SCH10S		P03J-000J9	45 degree elbow ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW Long radius	

45FACTORY-MADE BEND (4FM)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2		SCH10S		P09J-00066	45 degree factory-made bend ASTM A403 Grade WP304/WP304L Class S dual grade Seamless Standard-drawing BW 10DR Licensor-5	
1	3		SCH10S		P09J-00067	45 degree factory-made bend ASTM A403 Grade WP304/WP304L Class S dual grade Seamless Standard-drawing BW 10DR Licensor-5	
1	4		SCH10S		P09J-00068	45 degree factory-made bend ASTM A403 Grade WP304/WP304L Class S dual grade Seamless Standard-drawing BW 10DR Licensor-5	
1	6		SCH10S		P09J-00069	45 degree factory-made bend ASTM A403 Grade WP304/WP304L Class S dual grade Seamless Standard-drawing BW 10DR Licensor-5	
1	8		SCH10S		P09J-0006C	45 degree factory-made bend ASTM A403 Grade WP304/WP304L Class WX dual grade Weld Standard-drawing BW 10DR Licensor-5	
1	10		SCH10S		P09J-0006A	45 degree factory-made bend ASTM A403 Grade WP304/WP304L Class WX dual grade Weld Standard-drawing BW 10DR Licensor-5	
1	12		SCH10S		P09J-0006B	45 degree factory-made bend ASTM A403 Grade WP304/WP304L Class WX dual grade Weld Standard-drawing BW 10DR Licensor-5	

STRAIGHT TEE (TS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P21K-0001G	Straight tee ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	0.75				P21K-0001H	Straight tee ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	1				P21K-0001J	Straight tee ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	1.5				P21K-0001K	Straight tee ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	2		SCH10S		P21J-000HM	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	3		SCH10S		P21J-000HN	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	4		SCH10S		P21J-000HP	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	6		SCH10S		P21J-000HR	Straight tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	8		SCH10S		P21J-000ZZ	Straight tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	10		SCH10S		P21J-000J0	Straight tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	12		SCH10S		P21J-000J1	Straight tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	14		SCH10S		P21J-000J2	Straight tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	16		SCH10S		P21J-000J3	Straight tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	18		SCH10S		P21J-000J4	Straight tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	20		SCH10S		P21J-000J5	Straight tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	

STRAIGHT LATERAL TEE (TLS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75				P22K-00001	Straight lateral-tee ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW 60 degree	
1	1				P22K-00002	Straight lateral-tee ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW 60 degree	
1	1.5				P22K-00003	Straight lateral-tee ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW 60 degree	
1	2		SCH10S		P22J-00053	Straight lateral-tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW 60 degree	
1	3		SCH10S		P22J-00050	Straight lateral-tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW 60 degree	
1	4		SCH10S		P22J-0004Z	Straight lateral-tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW 60 degree	
1	6		SCH10S		P22J-0006D	Straight lateral-tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW 60 degree	
1	8		SCH10S		P22J-0006C	Straight lateral-tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW 60 degree	
1	10		SCH10S		P22J-00064	Straight lateral-tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW 60 degree	
1	12		SCH10S		P22J-00065	Straight lateral-tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW 60 degree	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14		SCH10S		P22J-00066	Straight lateral-tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW 60 degree	
1	16		SCH10S		P22J-00067	Straight lateral-tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW 60 degree	
1	18		SCH10S		P22J-00068	Straight lateral-tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW 60 degree	
1	20		SCH10S		P22J-00069	Straight lateral-tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW 60 degree	

REDUCING TEE (TR)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1	0.75			P24K-0001X	Reducing tee ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	1.5	0.75			P24K-0001Z	Reducing tee ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	1.5	1			P24K-00020	Reducing tee ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	2	1	SCH10S	SCH80S	P24J-0065A	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	2	1.5	SCH10S	SCH80S	P24J-0065B	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	3	1.5	SCH10S	SCH80S	P24J-004SV	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	3	2	SCH10S	SCH10S	P24J-002H7	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	4	2	SCH10S	SCH10S	P24J-002H8	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	4	3	SCH10S	SCH10S	P24J-002H9	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	6	3	SCH10S	SCH10S	P24J-002HA	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	6	4	SCH10S	SCH10S	P24J-002HB	Reducing tee ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	8	4	SCH10S	SCH10S	P24J-004SY	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	8	6	SCH10S	SCH10S	P24J-004SZ	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	10	4	SCH10S	SCH10S	P24J-004T0	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	10	6	SCH10S	SCH10S	P24J-004T1	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	10	8	SCH10S	SCH10S	P24J-004T2	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	12	6	SCH10S	SCH10S	P24J-004T3	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	12	8	SCH10S	SCH10S	P24J-004T4	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	12	10	SCH10S	SCH10S	P24J-002HT	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	14	6	SCH10S	SCH10S	P24J-004T5	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	14	8	SCH10S	SCH10S	P24J-004T6	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	14	10	SCH10S	SCH10S	P24J-002HU	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	14	12	SCH10S	SCH10S	P24J-002HV	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	16	6	SCH10S	SCH10S	P24J-004T7	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	16	8	SCH10S	SCH10S	P24J-004T8	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	16	10	SCH10S	SCH10S	P24J-002HW	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	16	12	SCH10S	SCH10S	P24J-002HX	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	16	14	SCH10S	SCH10S	P24J-002HY	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	18	8	SCH10S	SCH10S	P24J-004T9	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	18	10	SCH10S	SCH10S	P24J-002HZ	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	18	12	SCH10S	SCH10S	P24J-002J0	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	18	14	SCH10S	SCH10S	P24J-002J1	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	18	16	SCH10S	SCH10S	P24J-002J2	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	20	8	SCH10S	SCH10S	P24J-0065C	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	20	10	SCH10S	SCH10S	P24J-002J3	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	20	12	SCH10S	SCH10S	P24J-002J4	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	20	14	SCH10S	SCH10S	P24J-002J5	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	20	16	SCH10S	SCH10S	P24J-002J6	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	20	18	SCH10S	SCH10S	P24J-002J7	Reducing tee ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	

CONCENTRIC REDUCER (RC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	SCH10S	SCH10S	P27J-001PS	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	4	2	SCH10S	SCH10S	P27J-001PT	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	4	3	SCH10S	SCH10S	P27J-001PU	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	6	3	SCH10S	SCH10S	P27J-001PV	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	6	4	SCH10S	SCH10S	P27J-001PW	Concentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	6	4	SCH10S	SCH10S	P27J-003L1	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	8	6	SCH10S	SCH10S	P27J-003L2	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	10	4	SCH10S	SCH10S	P27J-003L3	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	

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OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	10	6	SCH10S	SCH10S	P27J-003L4	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	10	8	SCH10S	SCH10S	P27J-003L5	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	12	6	SCH10S	SCH10S	P27J-003L6	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	12	8	SCH10S	SCH10S	P27J-003L7	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	12	10	SCH10S	SCH10S	P27J-001RD	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	14	6	SCH10S	SCH10S	P27J-003L8	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	14	8	SCH10S	SCH10S	P27J-003L9	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	14	10	SCH10S	SCH10S	P27J-001RF	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	14	12	SCH10S	SCH10S	P27J-001RG	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	16	8	SCH10S	SCH10S	P27J-003LA	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	16	10	SCH10S	SCH10S	P27J-001RJ	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	16	12	SCH10S	SCH10S	P27J-001RK	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	16	14	SCH10S	SCH10S	P27J-001RL	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	18	10	SCH10S	SCH10S	P27J-001RM	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	18	12	SCH10S	SCH10S	P27J-001RN	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	18	14	SCH10S	SCH10S	P27J-001RP	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	18	16	SCH10S	SCH10S	P27J-001RR	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	20	12	SCH10S	SCH10S	P27J-001RS	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	20	14	SCH10S	SCH10S	P27J-001RT	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	20	16	SCH10S	SCH10S	P27J-001RU	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	20	18	SCH10S	SCH10S	P27J-001RV	Concentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	

ECCENTRIC REDUCER (RE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	3	2	SCH10S	SCH10S	P28J-001P8	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	4	2	SCH10S	SCH10S	P28J-001P9	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	4	3	SCH10S	SCH10S	P28J-001PA	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	6	3	SCH10S	SCH10S	P28J-001PB	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	6	4	SCH10S	SCH10S	P28J-001PC	Eccentric reducer ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	8	4	SCH10S	SCH10S	P28J-003LP	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	8	6	SCH10S	SCH10S	P28J-003LR	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	10	4	SCH10S	SCH10S	P28J-003LS	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	10	6	SCH10S	SCH10S	P28J-003LT	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	10	8	SCH10S	SCH10S	P28J-003LU	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	12	6	SCH10S	SCH10S	P28J-003LV	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	12	8	SCH10S	SCH10S	P28J-003LW	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	12	10	SCH10S	SCH10S	P28J-001PW	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	14	6	SCH10S	SCH10S	P28J-003LX	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	14	8	SCH10S	SCH10S	P28J-003LY	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	14	10	SCH10S	SCH10S	P28J-001PY	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	14	12	SCH10S	SCH10S	P28J-001PZ	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	16	8	SCH10S	SCH10S	P28J-003LZ	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	16	10	SCH10S	SCH10S	P28J-001R1	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	16	12	SCH10S	SCH10S	P28J-001R2	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	16	14	SCH10S	SCH10S	P28J-001R3	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	18	10	SCH10S	SCH10S	P28J-001R4	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	18	12	SCH10S	SCH10S	P28J-001R5	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	18	14	SCH10S	SCH10S	P28J-001R6	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	18	16	SCH10S	SCH10S	P28J-001R7	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	20	12	SCH10S	SCH10S	P28J-001R8	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	20	14	SCH10S	SCH10S	P28J-001R9	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	20	16	SCH10S	SCH10S	P28J-001RA	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	20	18	SCH10S	SCH10S	P28J-001RB	Eccentric reducer ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	

CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P29K-0001V	Cap ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	0.75				P29K-0001W	Cap ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	1				P29K-0001X	Cap ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	

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CAP (CA)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1.5				P29K-0001Y	Cap ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW	
1	2		SCH10S		P29J-000G1	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	3		SCH10S		P29J-000G2	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	4		SCH10S		P29J-000G3	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	6		SCH10S		P29J-000G4	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	8		SCH10S		P29J-000X3	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	10		SCH10S		P29J-000GB	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	12		SCH10S		P29J-000GC	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	14		SCH10S		P29J-000GD	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	16		SCH10S		P29J-000GE	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	18		SCH10S		P29J-000GF	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	20		SCH10S		P29J-000GG	Cap ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
541	0.75				P29K-00020	Cap ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 NPT	

STRAIGHT NIPPLE (STN)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P41J-001FS	Straight nipple ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	0.75		SCH80S		P41J-001FT	Straight nipple ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1		SCH80S		P41J-001FU	Straight nipple ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	
1	1.5		SCH80S		P41J-001FV	Straight nipple ASTM A312 Grade TP304/TP304L dual grade Seamless ASME B36.10M/B36.19M PE - NPT L=100mm	

CON SWAGED NIPPLE (SNC)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH80S	SCH80S	P42J-00081	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	SCH80S	SCH80S	P42J-00082	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	SCH80S	SCH80S	P42J-00083	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	SCH80S	SCH80S	P42J-00084	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	SCH80S	SCH80S	P42J-00085	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	SCH80S	SCH80S	P42J-00086	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	SCH10S	SCH80S	P42J-000F9	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	SCH10S	SCH80S	P42J-000F6	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	SCH10S	SCH80S	P42J-000F7	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	SCH10S	SCH80S	P42J-000F8	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	SCH10S	SCH80S	P42J-000AG	Concentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	

ECC SWAGED NIPPLE (SNE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.75	0.5	SCH80S	SCH80S	P43J-0008D	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.5	SCH80S	SCH80S	P43J-0008E	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1	0.75	SCH80S	SCH80S	P43J-0008F	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.5	SCH80S	SCH80S	P43J-0008G	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	0.75	SCH80S	SCH80S	P43J-0008H	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	1.5	1	SCH80S	SCH80S	P43J-0008J	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 PE(L) - PE(S)	
1	2	0.5	SCH10S	SCH80S	P43J-000CT	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	2	0.75	SCH10S	SCH80S	P43J-000CU	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1	SCH10S	SCH80S	P43J-000CV	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	2	1.5	SCH10S	SCH80S	P43J-000CW	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	
1	3	1.5	SCH10S	SCH80S	P43J-0008P	Eccentric swaged nipple ASTM A403 Grade WP304/WP304L Class S dual grade Seamless MSS SP-95 BE(L) - PE(S)	

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COUPLING (CPS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P47K-00035	Coupling ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW - SW	
1	0.75				P47K-00036	Coupling ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW - SW	
1	1				P47K-00037	Coupling ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW - SW	
1	1.5				P47K-00038	Coupling ASTM A182 Grade F304/F304L dual grade Class 3000 ASME B16.11 SW - SW	

OUTLET (L)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2 - 2.5	0.75			P31K-00GFG	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 SW	
1	3 - 5	0.75			P31K-00GFH	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 SW	
1	6 - 12	0.75			P31K-008YY	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 SW	
1	14 - 36	0.75			P31K-008YC	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 SW	
1	3	1			P31K-008ZG	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 SW	
1	4 - 5	1			P31K-00GFL	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 SW	
1	6 - 10	1			P31K-008ZU	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 SW	
1	12 - 36	1			P31K-008Z6	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 SW	
1	4	1.5			P31K-0099M	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 SW	
1	5 - 6	1.5			P31K-00GFS	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 SW	
1	8 - 12	1.5			P31K-0099Z	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 SW	
1	14 - 24	1.5			P31K-00991	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 SW	
541	1	0.75			P31K-00911	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 NPT	
541	1.5	0.75			P31K-00916	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 NPT	
541	2 - 2.5	0.75			P31K-00GFJ	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 NPT	
541	3 - 5	0.75			P31K-00GFK	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 NPT	
541	6 - 12	0.75			P31K-0091X	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 NPT	
541	14 - 36	0.75			P31K-0091B	Outlet ASTM A182 Grade F304/F304L dual grade Class 3000 MSS SP-97 NPT	
1	6	2	SCH10S	SCH10S	P31K-005AV	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	8	2	SCH10S	SCH10S	P31K-007G1	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	10	2	SCH10S	SCH10S	P31K-005JV	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	12	2	SCH10S	SCH10S	P31K-005JX	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	14	2	SCH10S	SCH10S	P31K-005K0	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	16	2	SCH10S	SCH10S	P31K-005K3	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	18	2	SCH10S	SCH10S	P31K-005K5	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	20	2	SCH10S	SCH10S	P31K-005K8	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	8	3	SCH10S	SCH10S	P31K-007XV	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	10	3	SCH10S	SCH10S	P31K-007KK	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	12	3	SCH10S	SCH10S	P31K-007LF	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	14	3	SCH10S	SCH10S	P31K-007ME	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	16	3	SCH10S	SCH10S	P31K-007NJ	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	18	3	SCH10S	SCH10S	P31K-007PR	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	20	3	SCH10S	SCH10S	P31K-007RR	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	12	4	SCH10S	SCH10S	P31K-00812	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	14	4	SCH10S	SCH10S	P31K-00821	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	16	4	SCH10S	SCH10S	P31K-00837	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	18	4	SCH10S	SCH10S	P31K-0084E	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	20	4	SCH10S	SCH10S	P31K-0085E	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	18	6	SCH10S	SCH10S	P31K-008EY	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	
1	20	6	SCH10S	SCH10S	P31K-008FP	Outlet ASTM A182 Grade F304/F304L dual grade MSS SP-97 BW	

PLUG (PL)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P30K-0001G	Plug ASTM A182 Grade F304/F304L dual grade ASME B16.11 NPT Round head	
1	0.75				P30K-0001H	Plug ASTM A182 Grade F304/F304L dual grade ASME B16.11 NPT Round head	
1	1				P30K-0001J	Plug ASTM A182 Grade F304/F304L dual grade ASME B16.11 NPT Round head	
1	1.5				P30K-0001K	Plug ASTM A182 Grade F304/F304L dual grade ASME B16.11 NPT Round head	

FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5		SCH80S		P61K-003A4	Flange SW ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	0.75		SCH80S		P61K-003A5	Flange SW ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	

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FLANGE (F)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1		SCH80S		P61K-003A6	Flange SW ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	1.5		SCH80S		P61K-003A7	Flange SW ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	2				P63B-0001Y	Lap joint ASTM A105 Class 150 ASME B16.5	
1	3				P63B-00021	Lap joint ASTM A105 Class 150 ASME B16.5	
1	4				P63B-00022	Lap joint ASTM A105 Class 150 ASME B16.5	
1	6				P63B-00024	Lap joint ASTM A105 Class 150 ASME B16.5	
1	8				P63B-00023	Lap joint ASTM A105 Class 150 ASME B16.5	
1	10				P63B-0001T	Lap joint ASTM A105 Class 150 ASME B16.5	
1	12				P63B-0001U	Lap joint ASTM A105 Class 150 ASME B16.5	
1	14				P63B-0001V	Lap joint ASTM A105 Class 150 ASME B16.5	
1	16				P63B-0001W	Lap joint ASTM A105 Class 150 ASME B16.5	
1	18				P63B-0001X	Lap joint ASTM A105 Class 150 ASME B16.5	
1	20				P63B-0001Z	Lap joint ASTM A105 Class 150 ASME B16.5	
773	0.5		SCH80S		P61K-003A9	Flange SW ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
773	0.75		SCH80S		P61K-003AA	Flange SW ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
773	1		SCH80S		P61K-003AB	Flange SW ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
773	1.5		SCH80S		P61K-003AC	Flange SW ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
773	2		SCH10S		P61K-0023W	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
773	3		SCH10S		P61K-0023X	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
773	4		SCH10S		P61K-0023Y	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
773	6		SCH10S		P61K-003AD	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
773	8		SCH10S		P61K-003AE	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
773	10		SCH10S		P61K-0024Y	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
773	12		SCH10S		P61K-0024Z	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
773	14		SCH10S		P61K-00250	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
773	16		SCH10S		P61K-00251	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
773	18		SCH10S		P61K-00252	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	
773	20		SCH10S		P61K-00253	Flange WN ASTM A182 Grade F304/F304L dual grade Class 300 ASME B16.5 RF	

BLIND FLANGE (FB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P67K-000K9	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	0.75				P67K-000KA	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	1				P67K-000KB	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	1.5				P67K-000KC	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	2				P67K-000KD	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	3				P67K-000KE	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	4				P67K-000KF	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	6				P67K-000KG	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	8				P67K-000L7	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	10				P67K-000L1	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	12				P67K-000L2	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	14				P67K-000L3	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	16				P67K-000L4	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	18				P67K-000L5	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	
1	20				P67K-000L6	Blind flange ASTM A182 Grade F304/F304L dual grade Class 150 ASME B16.5 RF	

STUB END (SE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	2		SCH10S		P45J-0000G	Stub end Short-pattern ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	3		SCH10S		P45J-0000H	Stub end Short-pattern ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	4		SCH10S		P45J-0000J	Stub end Short-pattern ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	6		SCH10S		P45J-0000K	Stub end Short-pattern ASTM A403 Grade WP304/WP304L Class S dual grade Seamless ASME B16.9 BW	
1	8		SCH10S		P45J-0000T	Stub end Short-pattern ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	10		SCH10S		P45J-0000L	Stub end Short-pattern ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	12		SCH10S		P45J-0000M	Stub end Short-pattern ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	14		SCH10S		P45J-0000N	Stub end Short-pattern ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	16		SCH10S		P45J-0000P	Stub end Short-pattern ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	
1	18		SCH10S		P45J-0000R	Stub end Short-pattern ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	

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STUB END (SE)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	20		SCH10S		P45J-0000S	Stub end Short-pattern ASTM A403 Grade WP304/WP304L Class WX dual grade Weld ASME B16.9 BW	

GASKET (G)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P73T-003US	Spiral wound gasket SS316 winding / Non-asbestos filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-9 Special ID	
1	0.75				P73T-003UT	Spiral wound gasket SS316 winding / Non-asbestos filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-9 Special ID	
1	1				P73T-003UU	Spiral wound gasket SS316 winding / Non-asbestos filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-9 Special ID	
1	1.5				P73T-003UV	Spiral wound gasket SS316 winding / Non-asbestos filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-9 Special ID	
1	2				P73T-003V1	Spiral wound gasket SS316 winding / Non-asbestos filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-9 Special ID	
1	3				P73T-003V3	Spiral wound gasket SS316 winding / Non-asbestos filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-9 Special ID	
1	4				P73T-003V4	Spiral wound gasket SS316 winding / Non-asbestos filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-9 Special ID	
1	6				P73T-003V5	Spiral wound gasket SS316 winding / Non-asbestos filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-9 Special ID	
1	8				P73T-003V6	Spiral wound gasket SS316 winding / Non-asbestos filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-9 Special ID	
1	10				P73T-003UW	Spiral wound gasket SS316 winding / Non-asbestos filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-9 Special ID	
1	12				P73T-003UX	Spiral wound gasket SS316 winding / Non-asbestos filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-9 Special ID	
1	14				P73T-003UY	Spiral wound gasket SS316 winding / Non-asbestos filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-9 Special ID	
1	16				P73T-003UZ	Spiral wound gasket SS316 winding / Non-asbestos filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-9 Special ID	
1	18				P73T-003V0	Spiral wound gasket SS316 winding / Non-asbestos filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-9 Special ID	
1	20				P73T-003V2	Spiral wound gasket SS316 winding / Non-asbestos filler Class 150 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-9 Special ID	
773	0.5				P73T-003U9	Spiral wound gasket SS316 winding / Non-asbestos filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-9 Special ID	
773	0.75				P73T-003UA	Spiral wound gasket SS316 winding / Non-asbestos filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-9 Special ID	
773	1				P73T-003UB	Spiral wound gasket SS316 winding / Non-asbestos filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-9 Special ID	
773	1.5				P73T-003UC	Spiral wound gasket SS316 winding / Non-asbestos filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-9 Special ID	
773	2				P73T-003UD	Spiral wound gasket SS316 winding / Non-asbestos filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-9 Special ID	
773	3				P73T-003UE	Spiral wound gasket SS316 winding / Non-asbestos filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-9 Special ID	
773	4				P73T-003UF	Spiral wound gasket SS316 winding / Non-asbestos filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-9 Special ID	
773	6				P73T-003UG	Spiral wound gasket SS316 winding / Non-asbestos filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-9 Special ID	
773	8				P73T-003VD	Spiral wound gasket SS316 winding / Non-asbestos filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-9 Special ID	
773	10				P73T-003V7	Spiral wound gasket SS316 winding / Non-asbestos filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-9 Special ID	
773	12				P73T-003V8	Spiral wound gasket SS316 winding / Non-asbestos filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-9 Special ID	
773	14				P73T-003V9	Spiral wound gasket SS316 winding / Non-asbestos filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-9 Special ID	
773	16				P73T-003VA	Spiral wound gasket SS316 winding / Non-asbestos filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-9 Special ID	
773	18				P73T-003VB	Spiral wound gasket SS316 winding / Non-asbestos filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-9 Special ID	
773	20				P73T-003VC	Spiral wound gasket SS316 winding / Non-asbestos filler Class 300 ASME B16.20 Flange ASME B16.5 RF 4.5mm-T Outer-ring CS Inner-ring SS316 Licensor-5 Type-9 Special ID	

BOLT AND NUT (B)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5-16				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
1	18-20				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	
773	0.5-10				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 UNC Stud-bolt with two Heavy HEX nuts	
773	12-20				See Attached Bolt Table	Bolt and Nut ASTM A193 Grade B7 / A194 Grade 2H ASME B1.1 8UN Stud-bolt with two Heavy HEX nuts	

GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P81K-00108	Gate valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	0.75				P81K-00109	Gate valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	

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GATE VALVE (V)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	1				P81K-0010A	Gate valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	1.5				P81K-0010B	Gate valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	2				P81L-00293	Gate valve ASTM A351 Grade CF8 Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	3				P81L-00294	Gate valve ASTM A351 Grade CF8 Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	4				P81L-00295	Gate valve ASTM A351 Grade CF8 Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	6				P81L-00296	Gate valve ASTM A351 Grade CF8 Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	8				P81L-00297	Gate valve ASTM A351 Grade CF8 Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	10				P81L-002BX	Gate valve ASTM A351 Grade CF8 Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	12				P81L-002BY	Gate valve ASTM A351 Grade CF8 Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	14				P81L-002BZ	Gate valve ASTM A351 Grade CF8 Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated	
1	16				P81L-002C0	Gate valve ASTM A351 Grade CF8 Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated	
1	18				P81L-002C1	Gate valve ASTM A351 Grade CF8 Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated	
1	20				P81L-002C2	Gate valve ASTM A351 Grade CF8 Class 150 API 600 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Gear operated	
714	0.5				P81K-001LC	Gate valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW - NPT Trim number 12 BB-BG-OS&Y Handwheel operated	
714	0.75				P81K-001FD	Gate valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW - NPT Trim number 12 BB-BG-OS&Y Handwheel operated	

GLOBE VALVE (W)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P82K-000NR	Globe valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	0.75				P82K-000NS	Globe valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	1				P82K-000NT	Globe valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	1.5				P82K-000NU	Globe valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 BB-BG-OS&Y Handwheel operated	
1	2				P82L-00195	Globe valve ASTM A351 Grade CF8 Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	3				P82L-00196	Globe valve ASTM A351 Grade CF8 Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	4				P82L-00197	Globe valve ASTM A351 Grade CF8 Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	6				P82L-001AD	Globe valve ASTM A351 Grade CF8 Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	
1	8				P82L-001AE	Globe valve ASTM A351 Grade CF8 Class 150 BS 1873 Flange ASME B16.5 RF Trim number 12 BB-BG-OS&Y Handwheel operated	

CHECK VALVE (X)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P83K-000LM	Check valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 Lift-type Bolted cover	
1	0.75				P83K-000LN	Check valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 Lift-type Bolted cover	
1	1				P83K-000LP	Check valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 Lift-type Bolted cover	
1	1.5				P83K-000LR	Check valve ASTM A182 Grade F304/F304L dual grade Class 800 API 602 SW Trim number 12 Lift-type Bolted cover	
1	2				P83L-00196	Check valve ASTM A351 Grade CF8 Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	3				P83L-00197	Check valve ASTM A351 Grade CF8 Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	4				P83L-00198	Check valve ASTM A351 Grade CF8 Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	6				P83L-0019U	Check valve ASTM A351 Grade CF8 Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	8				P83L-0019V	Check valve ASTM A351 Grade CF8 Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	10				P83L-001AA	Check valve ASTM A351 Grade CF8 Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	12				P83L-001AB	Check valve ASTM A351 Grade CF8 Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	14				P83L-001AC	Check valve ASTM A351 Grade CF8 Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	16				P83L-001AD	Check valve ASTM A351 Grade CF8 Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	
1	18				P83L-001AE	Check valve ASTM A351 Grade CF8 Class 150 BS 1868 Flange ASME B16.5 RF Trim number 12 Swing-type Bolted cover	

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BALL VALVE (Q)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P84K-000PY	Ball valve Long-pattern ASTM A182 Grade F304/F304L dual grade Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design Licensor-5	
1	0.75				P84K-000PZ	Ball valve Long-pattern ASTM A182 Grade F304/F304L dual grade Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design Licensor-5	
1	1				P84K-000R0	Ball valve Long-pattern ASTM A182 Grade F304/F304L dual grade Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design Licensor-5	
1	1.5				P84K-000R1	Ball valve Long-pattern ASTM A182 Grade F304/F304L dual grade Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design Licensor-5	
1	2				P84L-0034D	Ball valve Long-pattern ASTM A351 Grade CF8 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design Licensor-5	
1	3				P84L-0034E	Ball valve Long-pattern ASTM A351 Grade CF8 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design Licensor-5	
1	4				P84L-0034F	Ball valve Long-pattern ASTM A351 Grade CF8 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Floating-type Side-entry Wrench lever operated Full bore Fire tested design Licensor-5	
1	6				P84L-0034P	Ball valve Long-pattern ASTM A351 Grade CF8 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design Licensor-5	
1	8				P84L-0034R	Ball valve Long-pattern ASTM A351 Grade CF8 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design Licensor-5	
1	10				P84L-0034G	Ball valve Long-pattern ASTM A351 Grade CF8 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design Licensor-5	
1	12				P84L-0034H	Ball valve Long-pattern ASTM A351 Grade CF8 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design Licensor-5	
1	14				P84L-0034J	Ball valve Long-pattern ASTM A351 Grade CF8 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design Licensor-5	
1	16				P84L-0034K	Ball valve Long-pattern ASTM A351 Grade CF8 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design Licensor-5	
1	18				P84L-0034L	Ball valve Long-pattern ASTM A351 Grade CF8 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design Licensor-5	
1	20				P84L-0034M	Ball valve Long-pattern ASTM A351 Grade CF8 Class 150 API 608 Flange ASME B16.5 RF Ball SS316 Seat R-PTFE Trim SS316 Trunnion-type Side-entry Gear operated Full bore Fire tested design Licensor-5	

SPECT BLANK (SB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	0.5				P71K-00065	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	0.75				P71K-00066	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	1				P71K-00067	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	1.5				P71K-00068	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	2				P71K-0006A	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	3				P71K-0006B	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	4				P71K-0006C	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	6				P71K-0006D	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	8				P71K-0006E	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	10				P71K-00069	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	12				P71K-0006F	Spectacle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	

PADDLE BLANK (PB)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72K-0003T	Paddle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	16				P72K-0003U	Paddle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	18				P72K-0003V	Paddle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	20				P72K-0003W	Paddle blank ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	

PADDLE SPACER (PS)

OPTION CODE	SIZE		WALL THICKNESS		IDENT CODE	DESCRIPTION	NOTE
	L / RUN	S / BRN	(L)	(S)			
1	14				P72K-0003Y	Paddle spacer ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	16				P72K-0003Z	Paddle spacer ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	18				P72K-00040	Paddle spacer ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	
1	20				P72K-00041	Paddle spacer ASTM A182 Grade F304/F304L dual grade Class 150 Standard-drawing Flange ASME B16.5 RF	

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BOLT TABLE (B_X31F05 , STUD ASME RF, OPTION CODE 1)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	60	P80S-003V2		
0.75	4	0.500	65	P80S-003V3		
1	4	0.500	70	P80S-003V4		
1.5	4	0.500	75	P80S-003V5		
2	4	0.625	90	P80S-003XF		
3	4	0.625	100	P80S-003VA		
4	8	0.625	100	P80S-003VA		
6	8	0.750	110	P80S-003XK		
8	8	0.750	120	P80S-003XM		
10	12	0.875	135	P80S-0041C		
12	12	0.875	135	P80S-0041C		
14	12	1.000	150	P80S-0043H		
16	16	1.000	155	P80S-0043J		
18	16	1.125	165	P80S-0046N		
20	20	1.125	175	P80S-0046S		

BOLT TABLE (B_X31F05_773 , STUD ASME RF, OPTION CODE 773)

FLANGE SIZE (in)	NO. OF BOLTS	BOLT DIAMETER (in)	BOLT LENGTH (mm)	BOLT IDENT CODE	RING NO.	RING GASKET IDENT CODE
0.5	4	0.500	70	P80S-003V4		
0.75	4	0.625	75	P80S-003XC		
1	4	0.625	80	P80S-003XD		
1.5	4	0.750	95	P80S-00414		
2	8	0.625	90	P80S-003XF		
3	8	0.750	110	P80S-003XK		
4	8	0.750	115	P80S-003XL		
6	12	0.750	125	P80S-003XN		
8	12	0.875	140	P80S-0041D		
10	16	1.000	160	P80S-0043K		
12	16	1.125	175	P80S-0046S		
14	20	1.125	180	P80S-0046T		
16	20	1.250	190	P80S-004AK		
18	24	1.250	200	P80S-004AM		
20	24	1.250	210	P80S-004AP		

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BRANCH TABLE (T_X31F05)

RUN PIPE SIZE (in) \ BRANCH SIZE (in)	0.5	0.75	1	1.5	2	3	4	6	8	10	12	14	16	18	20
0.5	TS														
0.75		TS													
1		TR	TS												
1.5		TR	TR	TS											
2		L	TR	TR	TS										
3		L	L	TR	TR	TS									
4	L	L	L	L	TR	TR	TS								
6	L	L	L	L	L	TR	TR	TS							
8		L	L	L	L	L	TR	TR	TS						
10		L	L	L	L	L	TR	TR	TR	TS					
12		L	L	L	L	L	L	TR	TR	TR	TS				
14		L	L	L	L	L	L	TR	TR	TR	TR	TS			
16		L	L	L	L	L	L	TR	TR	TR	TR	TR	TS		
18		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TS	
20		L	L	L	L	L	L	L	TR	TR	TR	TR	TR	TR	TS

TS : STRAIGHT TEE
TR : REDUCING TEE
L : OUTLET

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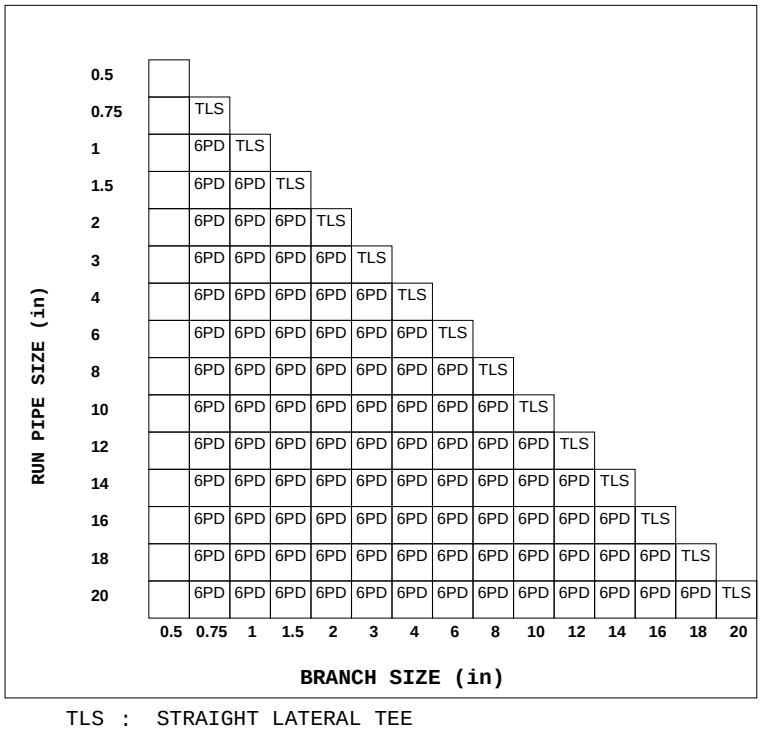
PIPING CLASS

X31F05 REV NO. 2

BRANCH TABLE (T_X31F05_3)



RUN PIPE SIZE (in) \ BRANCH SIZE (in)	0.5	0.75	1	1.5	2	3	4	6	8	10	12	14	16	18	20
0.5															
0.75		TLS													
1		6PD	TLS												
1.5		6PD	6PD	TLS											
2		6PD	6PD	6PD	TLS										
3		6PD	6PD	6PD	6PD	TLS									
4		6PD	6PD	6PD	6PD	6PD	TLS								
6		6PD	6PD	6PD	6PD	6PD	6PD	TLS							
8		6PD	6PD	6PD	6PD	6PD	6PD	6PD	TLS						
10		6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	TLS					
12		6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	TLS				
14		6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	TLS			
16		6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	TLS		
18		6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	TLS	
20		6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	6PD	TLS

TLS : STRAIGHT LATERAL TEE
6PD : REINFORCING PAD 60 DEG

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OPTION CODE	DESCRIPTION	SHORT CODE
24	Full port	Q,V
200	with Jack screw	FO
211	FF	B,F,G,V
221	RF	B,F,G,PB,PS,V
521	SW	V,X
541	NPT(F)	4L,9L,CA,CPR,CPS,F,L
714	SW - NPT(F)	CPS,V,W
773	Class 300	B,F,FR,G,PB,PS,SB,V
781	Class 600	B,F,FR,G,PB,PS
789	Class 900	B,F,G,PB,PS
797	Class 1500	B,F,FB,FR,G,V
805	Class 2500	B,F,FR,G,PB,PS,SB
851	Alternative wall thickness 1	4L,6PD,9L,CA,F,L,P,RC,RE,SNC,SNE,TR,TS
2484	Class 300 RF	F,G
2489	Class 600 RJ	B,F,G
2499	ASME B16.47 Series A RF	B,F,G
3001	Insulation gasket kit and bolts for flange	G
3487	Insulation gasket kit and bolts for flange Class 600 RF	G
4001	Alternative material for instrument connection	F,P,V
4004	Alternative material (Incoloy 825) for drain line	9L,F,L,P
4201	Externally epoxy coated for underground	P
4202	Short Radius	9L
4203	Sockolet on cap (cap=NPS3)	LC
4204	Sockolet on cap (cap=NPS4)	LC
4205	Sockolet on cap (cap=NPS6)	LC
4206	Sockolet on cap (cap=NPS8)	LC
4207	Sockolett on cap (cap=NPS10 and larger)	LC
4208	45 degree lateral straight tee	TLS
4209	Mechanical joint Spigot end and Adhesive joint Spigot end	ADP
4210	Mechanical joint Spigot end and Adhesive joint Bell end	ADP
4211	Mechanical joint Bell ends	CPS
4212	Weldolet for stand pipe	L

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OPTION CODE	DESCRIPTION	SHORT CODE
4213	Weldolet on elbow (Elbow=NPS24)	LE
4401	Large groove face	F,FB
4402	Large female face	F,FB
4403	Class 600 large tongue face	B,F,G
4404	Class 600 large male face	B,F,G
4405	Flange NPT with alternative material for instrument connection	F
4406	Orifice flange with 3/4" single tap	FO
4407	Orifice flange with jack screw and 3/4" single tap	FO
4601	Y-pattern	W
4602	Dissimilar type check valve	X,XDP
4603	with Alternative gland packing material	V
4604	with Spring loaded stuffing box	V
4606	Large male face	Q
4607	Alternative valve material for fire water	V,W,X
4608	Valve with nipples	V
4609	Full bore with SW-NPT(F) ends	V
4610	Jacketed valve (1.5" x 0.75")	PV
4611	Jacketed valve (3" x 2")	PV,X
4612	Class 300 Jacketed valve (3" x 2")	PV
4613	Valve with AIV service	V
4614	SW valve with nipples	V

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